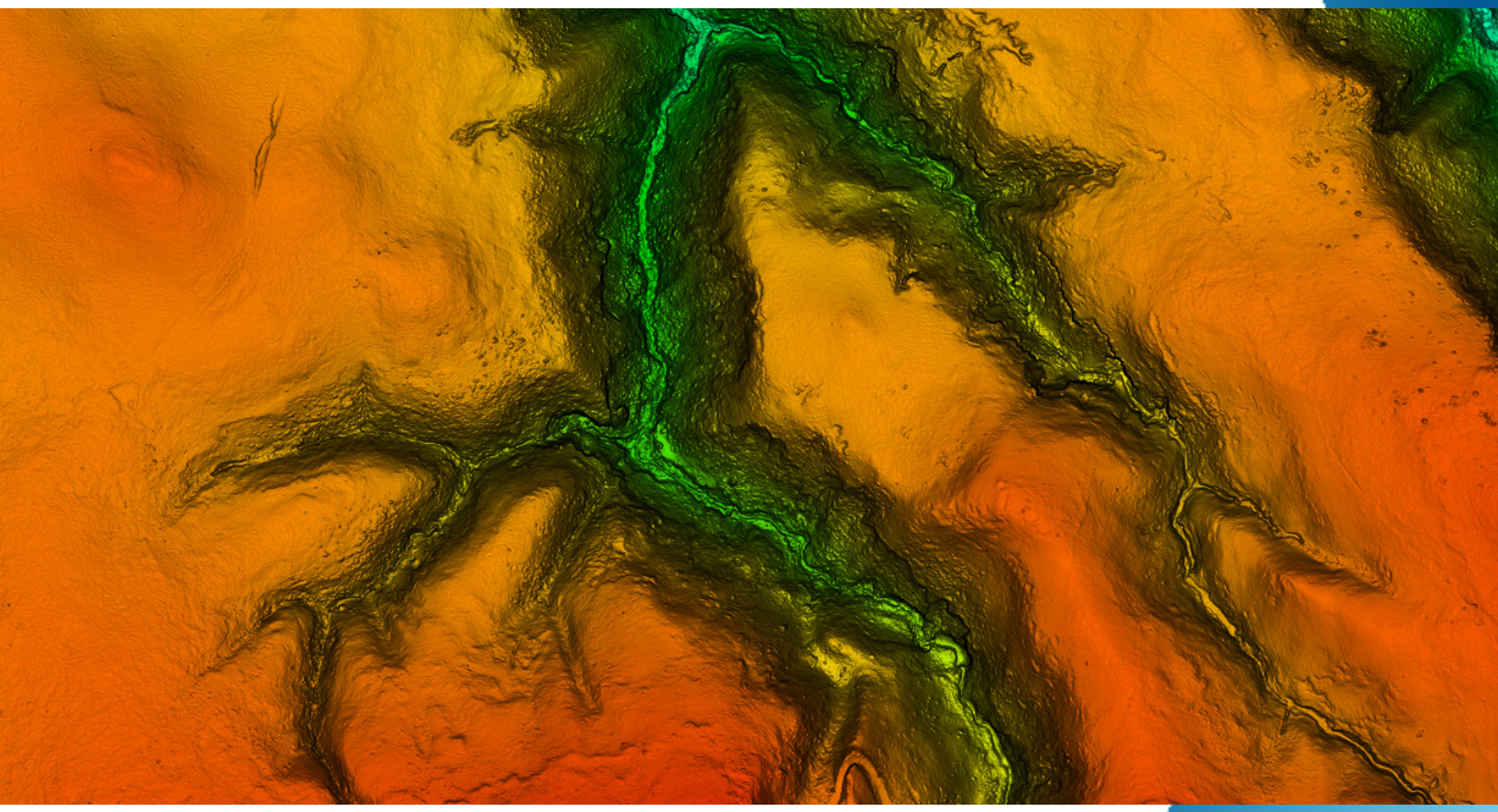
NV5 GEOSPATIAL



LA County LIDAR PROCESSING REPORT

2024

Submitted: January 30, 2025

Project ID: 300076
Work Unit: 300609

Prepared for:

USGS
science for a changing world

Prepared by:

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1. Summary / Scope

1.1. Summary

This report contains a summary of the LA County, Work Unit 300609 lidar acquisition task order, issued by USGS under their Contract 140G0221D0012 on August 17, 2023. The task order yielded a work unit area covering 4,259 square miles over California at Quality Level 1. The intent of this document is only to provide specific validation information for the data acquisition/collection, processing, and production of deliverables completed as specified in the task order.

1.2. Scope

Aerial topographic lidar was acquired using state of the art technology along with the necessary surveyed ground control points (GCPs) and airborne GPS and inertial navigation systems. The aerial data collection was designed with the following specifications listed in Table 1 below.

Table 1. Originally Planned Lidar Specifications

Average Point Density	Flight Altitude (AGL)	Field of View	Minimum Side Overlap	RMSEz
8 pts / m2	2532 m	58.5°	55%	≤ 10 cm

1.3. Coverage

The work unit boundary covers 4,259 square miles over California. Work unit extents are shown in Figure 1.

1.4. Duration

Lidar data was acquired from January 8, 2023 to January 7, 2024 in 41 total lifts. See “Section: 2.4. Time Period” for more details.

1.5. Issues

There are two LAZ files that are missing due to being entirely over water. In addition, there may be areas with temporal exclusions due to tidal constraints during acquisition. Breaklines were collected using the lowest tides.

LA County Work Unit 300609 Projected Coordinate System: UTM Zone 11 Horizontal Datum: NAD83 (2011) Vertical Datum: NAVD88 (GEOID 18) Units: Meters	
Lidar Point Cloud	Classified Point Cloud in .LAZ 1.4 format
Rasters	• 0.5-meter Hydro-flattened Bare Earth Digital Elevation Model (DEM) in GeoTIFF format • 0.5-meter Intensity images in GeoTIFF format • 1-meter Maximum Surface Height Raster • 1-meter Swath Seperation Images
Vectors	Shapefiles (*.shp) • Project Boundary • Lidar Tile Index • Flightlines Swath Geodatabase (*.gdb) • Continuous Hydro-flattened Breaklines
Reports	Reports in PDF format • Focus on Delivery • Survey Report • Processing Report
Metadata	XML Files (*.xml) • Breaklines • Classified Point Cloud • DEM • Intensity Imagery • DSM

LA County
Work Unit 300609 Boundary



Figure 1. Work Unit Boundary

2. Planning / Equipment

2.1. Flight Planning

Flight planning was based on the unique project requirements and characteristics of the project site. The basis of planning included: required accuracies, type of development, amount / type of vegetation within project area, required data posting, and potential altitude restrictions for flights in project vicinity.

Detailed project flight planning calculations were performed for the project using RiPARAMETER planning software.

2.2. Lidar Sensor

NV5 Geospatial utilized Riegl VQ1560iiS lidar sensors (Figure 2), serial number(s) 3546, 4040, 4046, 3061, , for data acquisition.

The Riegl 1560iiS system (System ID: R15S) is a dual channel waveform processing airborne scanning system with a pulse repetition rate of 4MHz, or up to 3900m AGL at a pulse repetition rate of 540kHz. This improved range increases the system's productivity. The system also utilizes a Multi-Pulse in the Air option (MPIA) and an integrated IMU/GNSS unit.

A brief summary of the aerial acquisition parameters for the project are shown in the lidar System Specifications in Table 2.

Table 2. Lidar System Specifications

		Riegl VQ1560iiS
Terrain and Aircraft Scanner	Flying Height	2532 m
	Recommended Ground Speed	145 kts
Scanner	Field of View	58.5°
	Scan Rate Setting Used	204 Hz
Laser	Laser Pulse Rate Used	1,534 kHz
	Multi Pulse in Air Mode	Yes
Coverage	Full Swath Width	2837 m
	Line Spacing	0.707 m
Point Spacing and Density	Average Nominal Point Spacing	0.35 m
	Average Point Density	8 pts / m^2

Figure 2. Riegl VQ1560iiS Lidar Sensor



2.3. Aircraft

All flights for the project were accomplished through the use of customized aircraft. Plane type and tail numbers are listed below.

Lidar Collection Planes

- Cessna Caravan (single-turboprop), Tail Number(s): N604MD, N840JA, N22TE, N208JA

These aircraft provided an ideal, stable aerial base for lidar acquisition. These aerial platforms have relatively fast cruise speeds, which are beneficial for project mobilization / demobilization while maintaining relatively slow stall speeds, proving ideal for collection of high-density, consistent data posting using a state-of-the-art lidar system. NV5 Geospatial's operating aircraft can be seen in Figure 3 below.

Figure 3. NV5 Geospatial's Aircraft



2.4. Time Period

Project specific flights were conducted between January 8, 2023 to January 7, 2024. Forty-One aircraft lifts were completed. Accomplished lifts are listed below.

Lift	Start UTC	End UTC
01052024A (SN3546,N604MD)	1/05/2024 10:11:19 PM	1/06/2024 2:18:54 AM
01062024A (SN3546,N604MD)	1/06/2024 10:32:28 PM	1/07/2024 1:54:31 AM
01072024A (SN3546,N604MD)	1/07/2024 7:34:47 PM	1/07/2024 8:24:49 PM
01082023A (SN3546,N604MD)	1/08/2024 5:57:55 PM	1/08/2024 7:57:58 PM
09252023A (SN4040,N840JA)	9/25/2023 7:49:58 PM	9/25/2023 9:33:58 PM
09252023A (SN4046,N22TE)	9/25/2023 7:15:57 PM	9/25/2023 11:37:19 PM
09252023B (SN4040,N840JA)	9/25/2023 11:44:18 PM	9/26/2023 2:02:38 AM
09262023A (SN4040,N840JA)	9/26/2023 4:52:19 PM	9/26/2023 6:11:37 PM
09262023A (SN4046,N22TE)	9/26/2023 4:26:10 PM	9/26/2023 8:52:58 PM
09262023B (SN4040,N840JA)	9/26/2023 6:34:36 PM	9/26/2023 7:17:20 PM
09262023C (SN4040,N840JA)	9/26/2023 10:34:28 PM	9/27/2023 1:31:52 AM
09272023A (SN4040,N840JA)	9/27/2023 6:35:09 PM	9/27/2023 9:00:14 PM
09272023A (SN4046,N22TE)	9/27/2023 6:09:48 PM	9/27/2023 10:06:08 PM
09272023B (SN4040,N840JA)	9/27/2023 11:40:50 PM	9/28/2023 12:15:22 AM
09272023C (SN4040,N840JA)	9/28/2023 12:42:53 AM	9/28/2023 1:24:51 AM
09282023A (SN4040,N840JA)	9/28/2023 10:36:16 PM	9/28/2023 10:52:38 PM
09282023A (SN4046,N22TE)	9/28/2023 10:07:26 PM	9/29/2023 12:59:04 AM

2.4. Time Period

Project specific flights were conducted between January 8, 2023 to January 7, 2024. Forty-One aircraft lifts were completed. Accomplished lifts are listed below.

Lift	Start UTC	End UTC
10032023B (SN4046,N22TE)	10/03/2023 11:25:24 PM	10/04/2023 1:15:15 AM
10032023C (SN4046,N22TE)	10/03/2023 4:02:40 AM	10/03/2023 8:02:22 AM
10042023A (SN4046,N22TE)	10/04/2023 5:51:18 PM	10/04/2023 8:25:29 PM
10042023B (SN4046,N22TE)	10/04/2023 10:45:37 PM	10/05/2023 1:31:32 AM
10052023A (SN4046,N22TE)	10/05/2023 4:42:41 PM	10/05/2023 8:55:30 PM
10052023B (SN4046,N22TE)	10/06/2023 12:23:21 AM	10/06/2023 4:04:46 AM
10062023A (SN4046,N22TE)	10/06/2023 5:44:26 PM	10/06/2023 8:50:05 PM
10062023B (SN4046,N22TE)	10/07/2023 12:01:49 AM	10/07/2023 3:29:10 AM
10152023A (SN4046,N22TE)	10/15/2023 7:01:12 AM	10/15/2023 10:02:23 AM
10222023A (SN4046,N22TE)	10/22/2023 6:20:22 AM	10/22/2023 8:17:53 AM
11112023A (SN3546,N604MD)	11/11/2023 8:27:41 PM	11/11/2023 11:07:46 PM
11212023A (SN3546,N604MD)	11/22/2023 6:52:27 AM	11/22/2023 11:27:00 AM
11232023A (SN3546,N604MD)	11/23/2023 8:51:42 AM	11/23/2023 9:28:34 AM
11302023A (SN3061,N208JA)	12/01/2023 12:03:16 AM	12/01/2023 1:15:32 AM
12022023A (SN3061,N208JA)	12/03/2023 5:23:57 AM	12/03/2023 5:51:55 AM
12022023B (SN3061,N208JA)	12/03/2023 7:37:45 AM	12/03/2023 11:45:27 AM
12032023A (SN3061,N208JA)	12/04/2023 2:57:41 AM	12/04/2023 6:19:50 AM

2.4. Time Period

Project specific flights were conducted between January 8, 2023 to January 7, 2024. Forty-One aircraft lifts were completed. Accomplished lifts are listed below.

Lift	Start UTC	End UTC
12042023B (SN3061,N208JA)	12/05/2023 5:47:33 AM	12/05/2023 7:19:56 AM
12072023A (SN3061,N208JA)	12/07/2023 9:36:10 PM	12/07/2023 9:39:56 PM
12072023B (SN3061,N208JA)	12/08/2023 8:00:33 AM	12/08/2023 9:03:51 AM
12092023A (SN3061,N208JA)	12/09/2023 5:29:26 PM	12/09/2023 6:41:40 PM

3. Processing Summary

3.1. Flight Logs

Flight logs were completed by Lidar sensor technicians for each mission during acquisition. These logs depict a variety of information, including:

- Job / Project #
- Flight Date / Lift Number
- FOV (Field of View)
- Scan Rate (HZ)
- Pulse Rate Frequency (Hz)
- Ground Speed
- Altitude
- Base Station
- PDOP avoidance times
- Flight Line #
- Flight Line Start and Stop Times
- Flight Line Altitude (AMSL)
- Heading
- Speed
- Returns
- Crab

Notes: (Visibility, winds, ride, weather, temperature, dew point, pressure, etc). Project specific flight logs for each sortie are available in Appendix A.

3.2. Lidar Processing

Applanix + POSPac software was used for post-processing of airborne GPS and inertial data (IMU), which is critical to the positioning and orientation of the lidar sensor during all flights. Applanix POSPac combines aircraft raw trajectory data with stationary GPS base station data yielding a “Smoothed Best Estimate Trajectory” (SBET) necessary for additional post processing software to develop the resulting geo-referenced point cloud from the lidar missions.

During the sensor trajectory processing (combining GPS & IMU datasets) certain statistical graphs and tables are generated within the Applanix POSPac processing environment which are commonly used as indicators of processing stability and accuracy. This data for analysis include: max horizontal / vertical GPS variance, separation plot, altitude plot, PDOP plot, base station baseline length, processing mode, number of satellite vehicles, and mission trajectory.

Each sensor is initially factory calibrated. Further adjustment is performed on each sensor by periodically flying boresight locations and using this data to update boresight values used in data processing. Various proprietary tools and methodologies are used during this process. Once all data has been processed with updated boresight values, FL to FL match is performed by using strip align and other proprietary tools/processes.

Point clouds in flightline swath format were created using the RiPROCESS software. The generated point cloud is the mathematical three dimensional composite of all returns from all laser pulses as determined from the aerial mission. Each flightline swath point cloud was calibrated using Strip Align software that corrects systematic geometric errors and improves the relative and absolute accuracy of the flightline swath point cloud. The calibrated point cloud swaths were imported into GeoCue distributive processing software and the imported data was then tiled so further processing could take place in TerraScan software. Using TerraScan, the vertical accuracy of the surveyed ground control was tested and any vertical bias was removed from the data. TerraScan and TerraModeler software packages were then used for automated data classification and manual cleanup. The data were manually reviewed and any remaining artifacts removed using functionality provided by TerraScan and TerraModeler.

DEMs and Intensity Images are then generated using proprietary software. In the bare earth surface model, above-ground features are excluded from the data set. Global Mapper is used as a final check of the bare earth dataset.

Finally, proprietary software is used to perform statistical analysis of the LAS files.

Software	Version
Applanix + POSPac	8.9
RiPROCESS	1.9.3.6
Microstation Connect	10.16.02.34
GeoCue	2020.1.22.3
Global Mapper	19.1;20.1
TerraModeler	23.013
TerraScan	23.025
TerraMatch	23.013
StripAlign	2.21

3.3. LAS Classification Scheme

The classification classes are determined by Lidar Base Specifications 2023 Rev. A and are an industry standard for the classification of lidar point clouds. All data starts the process as Class 1 (Unclassified), and then through automated classification routines, the classifications are determined using TerraScan macro processing.

The classes used in the dataset are as follows and have the following descriptions:

Table 3. LAS Classifications

	Classification Name	Description
1	Processed, but Unclassified	Laser returns that are not included in the bare earth class, or any other project classification
2	Bare earth	Laser returns that are determined to be bare earth using automated and manual cleaning algorithms
4	Medium Vegetation	Laser returns associated with vegetation between 3 and 10 feet.
5	High Vegetation	Laser returns associated with vegetation between 10 and 220 feet.
6	Buildings	Points falling on buildings, structures inside of water bodies, docks, and piers.
7	Low Noise	Laser returns that are often associated with scattering from reflective surfaces, or artificial points below the bare earth surface
9	Water	Laser returns that are found inside of hydro features
17	Bridge Deck	Laser returns falling on bridge decks
18	High Noise	Laser returns that are often associated with birds or artificial points above the bare earth surface
20	Ignored Ground	Bare earth points that fall within the given threshold of a collected hydro feature.
22	Temporal Exclusion	Points that were excluded due to differing ground conditions between flight dates.

3.4. Classified LAS Processing

The bare earth surface is then manually reviewed to ensure correct classification on the Class 2 (Ground) points. After the bare- earth surface is finalized; it is then used to generate all hydro-breaklines through heads-up digitization.

All ground (ASPRS Class 2) lidar data inside of the Lake Pond and Double Line Drain hydro flattening breaklines were then classified to water (ASPRS Class 9) using proprietary tools. A buffer of 1.5 feet/0.5 meter was also used around each hydro flattened feature to classify these ground (ASPRS Class 2) points to Ignored ground (ASPRS Class 20). All Lake Pond Island and Double Line Drain Island features were checked to ensure that the ground (ASPRS Class 2) points were reclassified to the correct classification after the automated classification was completed.

Any noise that was identified either through manual review or automated routines was classified to the appropriate class (ASPRS Class 7 and/or ASPRS Class 18) followed by flagging with the withheld bit.

All data was manually reviewed and any remaining artifacts removed using functionality provided by TerraScan and TerraModeler. Global Mapper is used as a final check of the bare earth dataset. GeoCue was then used to create the deliverable industry-standard LAS files for all point cloud data. NV5 Geospatial's proprietary software was used to perform final statistical analysis of the classes in the LAS files, on a per tile level to verify final classification metrics and full LAS header information.

3.5. Hydro-Flattened Breakline Processing

Using heads-up digitization, all Lake-Ponds, Double Line Drains, and Islands are manually collected that are within the project size specification. This includes Lake-Ponds greater than 2 acres in size, Double Line Drains with greater than a 100 foot nominal width, and Islands greater than 1 acre in size within a collected hydro feature. Lidar intensity imagery and bare-earth surface models are used to ensure appropriate and complete collection of these features.

Elevation values are assigned to all collected hydro features via NV5 Geospatial's proprietary software. This software sets Lake-Ponds to an appropriate, single elevation to allow for the generation of hydro-flattened digital elevation models (DEM). Double Line Drain elevations are assigned based on lidar elevations and surrounding terrain feature to ensure all breaklines match the lidar within acceptable tolerances. Some deviation is expected between breakline and lidar elevations due to monotonicity, connectivity, and flattening rules that are enforced on the breaklines. Once complete, horizontal placement, and vertical variances are reviewed, all breaklines are evaluated for topological consistency and data integrity using a combination of proprietary tools and manual review of hydro-flattened DEMs.

Breaklines are combined into one seamless shapefile, clipped to the project boundary, and imported into an Esri file geodatabase for delivery.

3.6. Hydro-Flattened Raster DEM Processing

Hydro-Flattened DEMs (topographic) represent a lidar-derived product illustrating the grounded terrain and associated breaklines (as described above) in raster form. NV5 Geospatial's proprietary software was used to take all input sources (bare earth lidar points, bridge and hydro breaklines, etc.) and create a Triangulated Irregular Network (TIN) on a tile-by-tile basis. Data extending past the tile edge is incorporated in this process so that proper triangulation can occur. From the TIN, linear interpolation is used to calculate the cell values for the raster product. The raster product is then clipped back to the tile edge so that no overlapping cells remain across the project area. A 32-bit floating point GeoTIFF DEM was generated for each tile with a pixel size of 0.5-meter. NV5 Geospatial's proprietary software was used to write appropriate horizontal and vertical projection information as well as applicable header values into the file during product generation. Each DEM is reviewed in Global Mapper to check for any surface anomalies and to ensure a seamless dataset. NV5 Geospatial ensures there are no void or no-data values (-999999) in each derived DEM. This is achieved by using propriety software checking all cell values that fall within the project boundary. NV5 Geospatial uses a proprietary tool called FOCUS on Delivery to check all formatting requirements of the DEMs against what is required before final delivery.

3.7. Intensity Image Processing

Intensity images represent reflectivity values collected by the lidar sensor during acquisition. Proprietary software generates intensity images using first returns and excluding those flagged with a withheld bit. Intensity images are linearly scaled to a value range specific to the project area to standardize the images and reduce differences between individual tiles. Appropriate horizontal projection information as well as applicable header values are written during product generation.

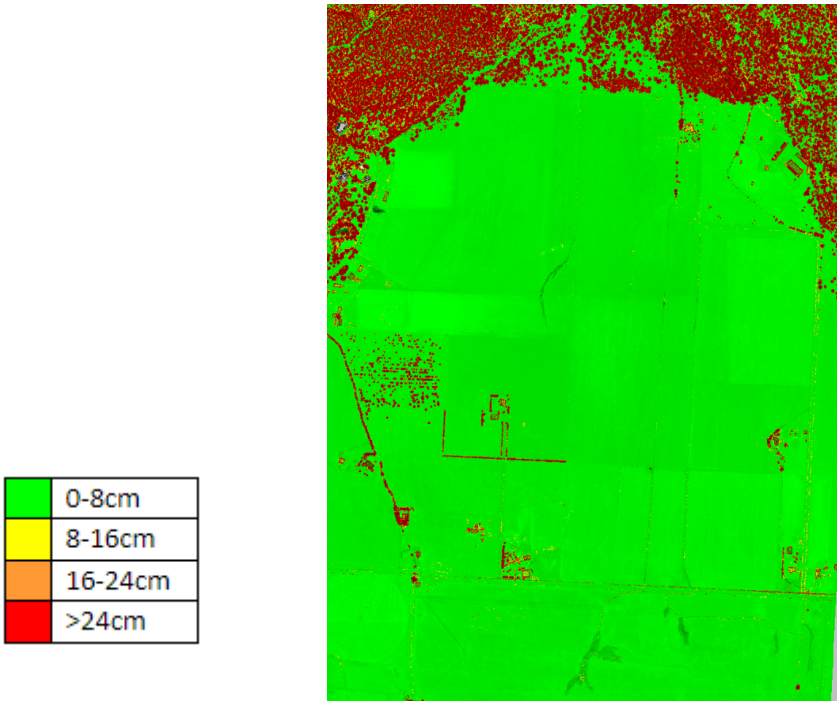
3.8. Maximum Surface Height Raster Processing

Maximum Surface Height rasters (topographic) represent a lidar-derived product illustrating natural and built-up features. NV5 Geospatial's proprietary software was used to take all classified lidar points, excluding those flagged with a withheld bit, and create a raster on a tile-by-tile basis. Data extending past the tile edge is incorporated in this process so that proper gridding can occur. The raster is created by laying a 1-meter DEM cell size over the area and assigning the values to cells by using the maximum lidar point that intersects that grid cell. The raster product is then clipped back to the tile edge so that no overlapping cells remain across the project area. A 32-bit floating point GeoTIFF was then generated for each tile with a pixel size of 1-meter. There is no interpolation type being used in creating the raster product. NV5 Geospatial's proprietary software was used to write appropriate horizontal and vertical projection information as well as applicable header values into the file during product generation. Each maximum surface height raster is reviewed in Global Mapper to check for any anomalies and to ensure a seamless dataset. NV5 Geospatial uses a proprietary tool called FOCUS on Delivery to check all formatting requirements of the DEMs against what is required before final delivery

3.9. Swath Separation Raster Processing

Swath Separation Images are rasters that represent the interswath alignment between flight lines and provide a qualitative evaluation of the positional quality of the point cloud. NV5 Geospatial proprietary software generated 1-meter raster images in GeoTIFF format using last returns, excluding points flagged with the withheld bit, and using a point-in-cell algorithm. Images are generated with a 75% intensity opacity and (4) absolute 8-cm intervals, see below for interval coloring. Intensity images are linearly scaled to a value range specific to the project area to standardize the images and reduce differences between individual tiles. Appropriate horizontal projection information as well as applicable header values are written to the file during product generation. NV5 Geospatial uses a proprietary tool called FOCUS on Delivery to check all formatting requirements of the images against what is required before final delivery.

Figure 4. Example of Swath Separation Raster



3.10. Point Density

The acquisition parameters were designed to acquire an average first-return density of 8 points/m2. First return density describes the density of pulses emitted from the laser that return at least one echo to the system. Multiple returns greater than 1 from a single pulse were not considered in first return density analysis. Some types of surfaces (e.g., breaks in terrain, water, and steep slopes) may have returned fewer pulses than originally emitted by the laser. First returns typically reflect off the highest feature on the landscape within the footprint of the pulse. In forested or urban areas, the highest feature could be a tree, building or power line, while in areas of unobstructed ground, the first return will be the only echo and represents the bare earth surface.

The density of ground-classified lidar returns was also analyzed for this project. Terrain character, land cover, and ground surface reflectivity all influenced the density of ground surface returns. In vegetated areas, fewer pulses may penetrate the canopy, resulting in lower ground density.

The average first-return density of lidar data for the project was 17.79 points/m2 while the average ground classified density was 9.5 points/m2. The statistical and spatial distributions of first return densities and classified ground return densities per 100 m x 100 m cell are portrayed in Figures 5 and 6.

LA County
Work Unit 300609 First Return Point Density

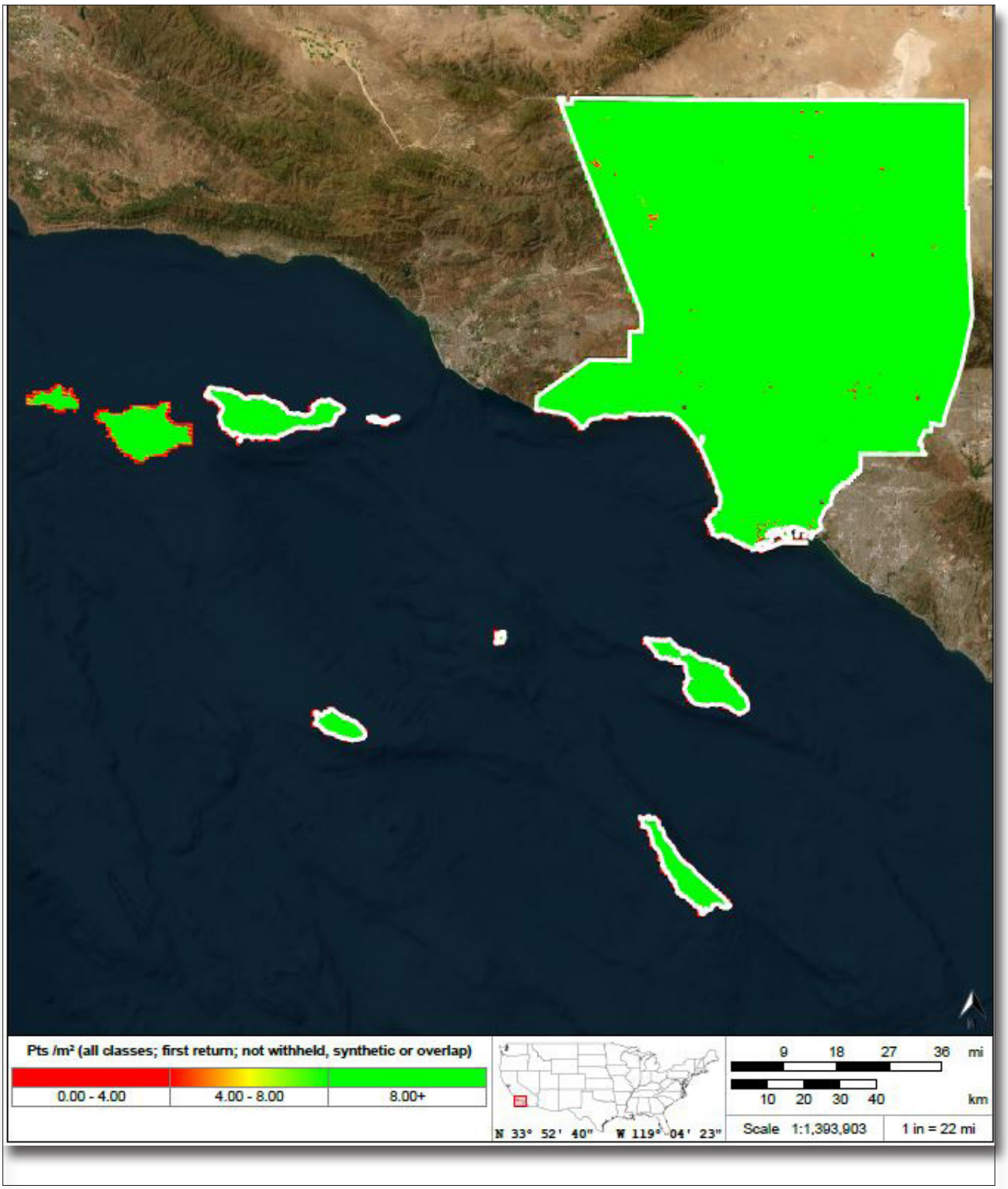


Figure 5. First Return Point Density

LA County
Work Unit 300609 Ground Point Density

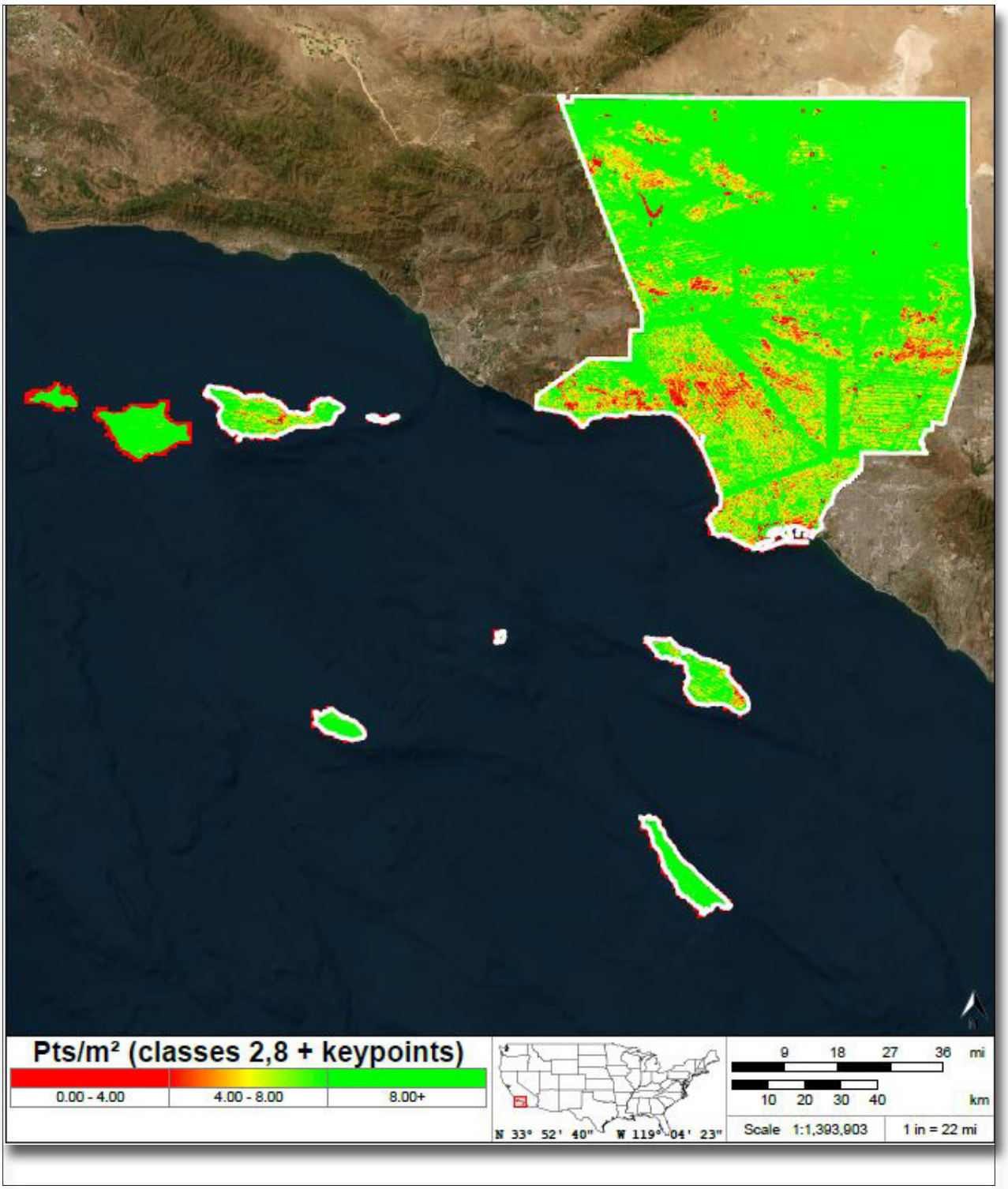


Figure 6. Ground First Return Point Density

LA County
Work Unit 300609 Tile Layout



Figure 7. Lidar Tile Layout

4. Project Coverage Verification

A proprietary tool (FOCUS on Flight) produces grid-based polygons of each flightline, depicting exactly where lidar points exist. These swath polygons are reviewed against the project boundary to verify adequate project coverage. Please refer to Figure 8.

LA County
Work Unit 300609 Lidar Coverage

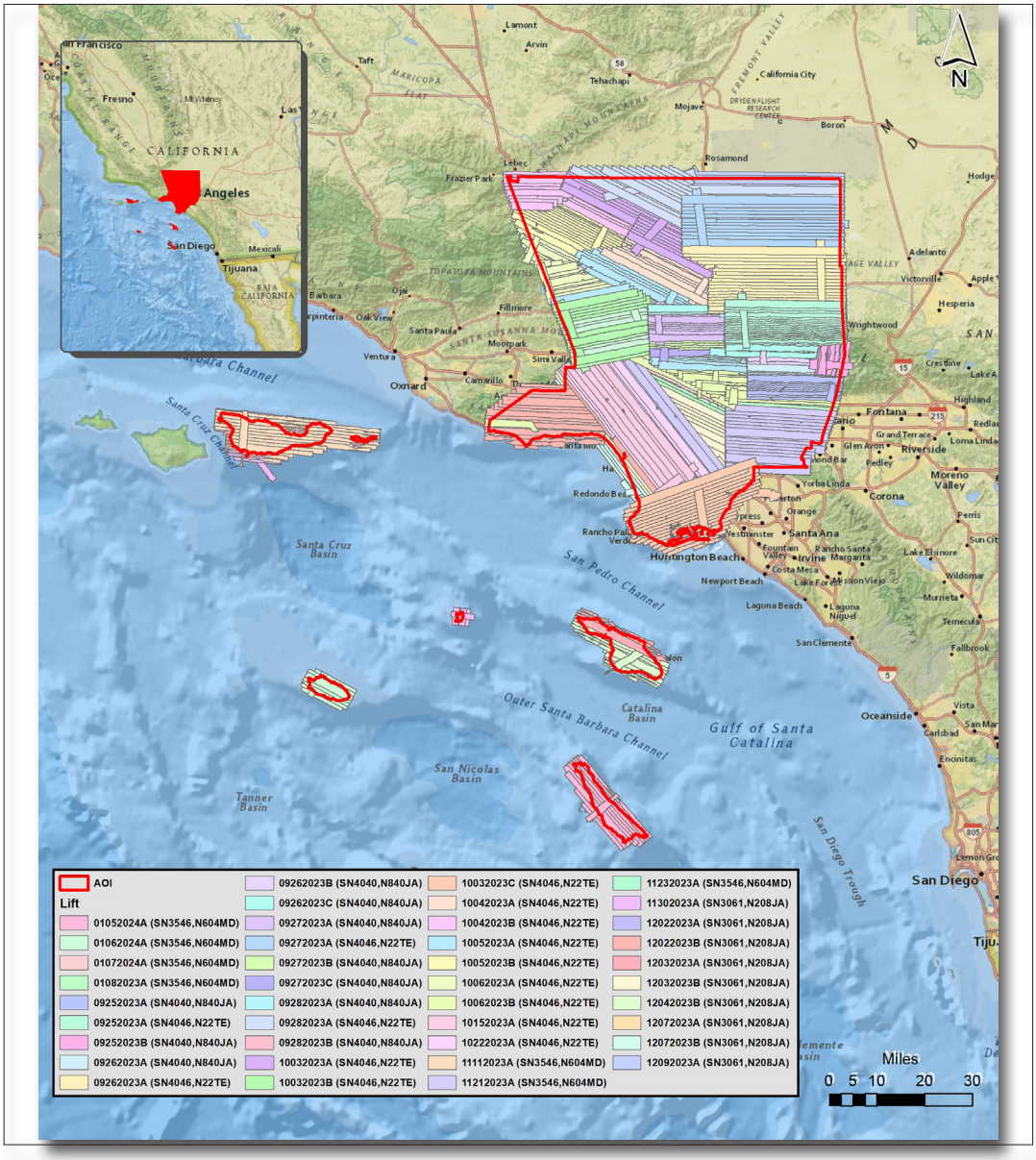


Figure 8. Lidar Coverage

5. Geometric Accuracy

5.1. Horizontal Accuracy

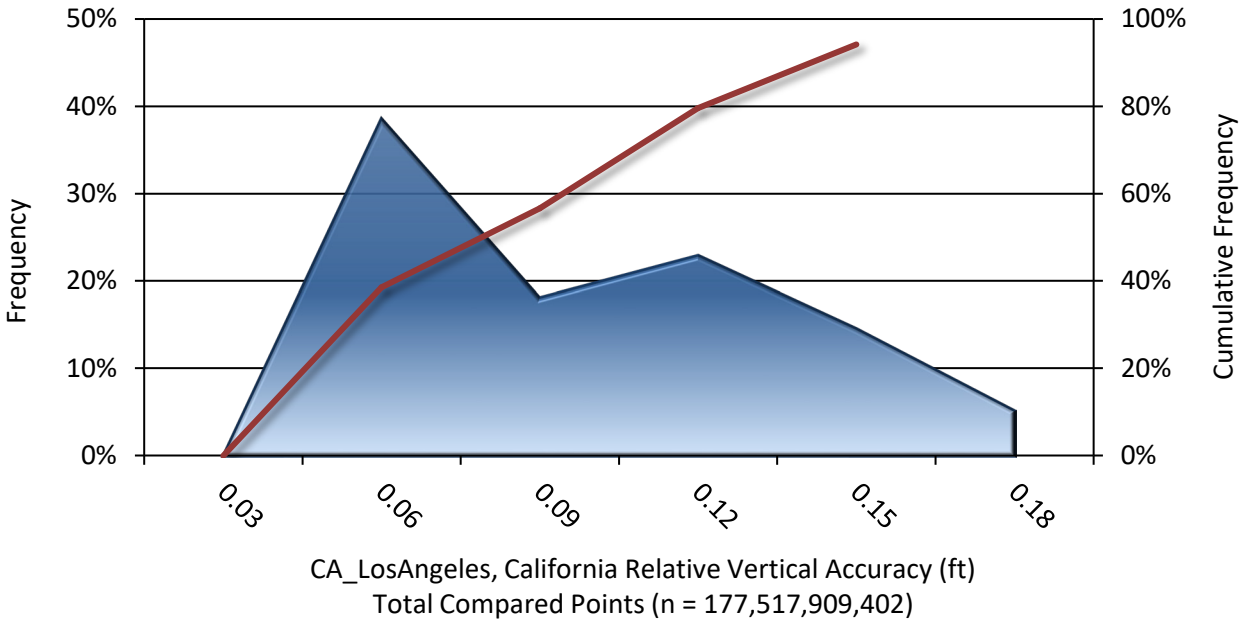
Lidar horizontal accuracy is a function of Global Navigation Satellite System (GNSS) derived positional error, flying altitude, and INS derived attitude error. The obtained $RMSE_r$ value is multiplied by a conversion factor of 1.7308 to yield the horizontal component of the National Standards for Spatial Data Accuracy (NSSDA) reporting standard where a theoretical point will fall within the obtained radius 95% of the time. Based on a flying altitude of 2500 meters, an IMU error of 0.002 decimal degrees, and a GNSS positional error of 0.019 meters, this project was compiled to meet 0.27 meter horizontal accuracy at the 95% confidence level. A summary is shown below.

Horizontal Accuracy	
$RMSE_r$	0.52 ft
	0.15 m
ACC_r	0.89 ft
	0.27 m

5.2. Relative Vertical Accuracy (Interswath Accuracy)

Relative vertical accuracy refers to the internal consistency of the data set as a whole: the ability to place an object in the same location given multiple flight lines, GPS conditions, and aircraft attitudes. When the lidar system is well calibrated, the swath-to-swath vertical divergence is low (<0.10 meters). The relative vertical accuracy was computed by comparing the ground surface model of each individual flight line with its neighbors in overlapping regions. The average (mean) line to line relative vertical accuracy for the LA County project was 0.071 feet (0.022 meters). A summary is shown below.

Relative Vertical Accuracy	
Sample	480 flight line surfaces
Average	0.071 ft
	0.022 m
Median	0.074 ft
	0.022 m
RMSE	0.092 ft
	0.028 m
Standard Deviation (1σ)	0.040 ft
	0.012 m
1.96σ	0.078 ft
	0.024 m



5.3. Intraswath Precision (Smooth Surface Precision)

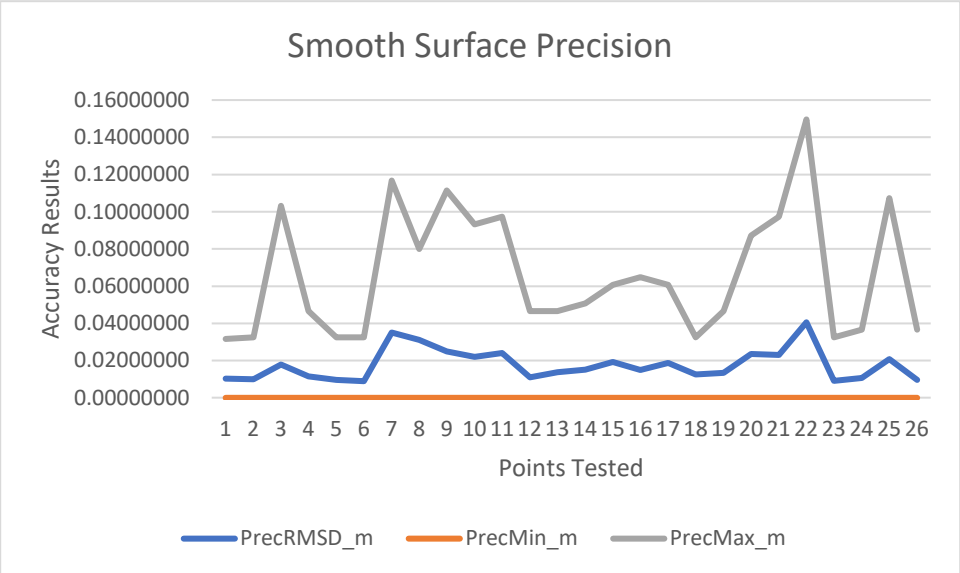
Intraswath Precision (smooth surface precision) is the measure of reliability of the lidar point cloud elevations along a planar surface. This measurement is performed on hard surfaces against a single flightline. NV5 digitized several large parking lots as polygons across the project area. These polygons were then used to calculate precision on a single FL basis using the below formula:

Precision = Range – (Slope x Cellsize x 1.414)

Range – Is the difference between the highest and lowest lidar points in each cell
Slope – is the maximum slope of the cell to its 8 neighbors
Cellsize – is set to the ANPS, rounded up to the next integer, and then doubled

NV5 calculated the RMSDz to be 1.7 cm, minimum slope-corrected range to be 0 cm, and the maximum slope-corrected range to be 6.6 cm.

Table 4. Intraswath Accuracy Results



Project Report Appendices

The following section contains the appendices as listed in the LA County Lidar Project Report.

Appendix A

Flight Logs

Project	946623-R037786.00 LA_County_Lidar_2023
Flightplan	LA_CountyV2_1560iiS_8ppms

Mission Name	S2223061_20231130_F1	**Mission Notes**
Mission Date	11/30/2023	Was able to collect Santa Barbara Island successful within the tide window. Was unable to collect
Aircraft	N208JA	Channel Island lines due to wx.
Pilot	Matthew Gill	
Co-Pilot		
Operator	Logan Melgosa	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KHHR	
Departure (Local Time)	3:38:00 PM	
Arrival (Local Time)	6:02:00 PM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00035	S	00:03:16	00:04:31	146.7	
00034	N	00:08:04	00:09:26	136.4	
00033	S	00:18:19	00:19:35	148.2	
00032	N	00:23:22	00:24:56	118.7	
00270	E	01:02:01	01:02:05	205.4	
00270	SW	01:05:13	01:09:50	141.4	
00018	SE	01:36:02	01:36:22	148.1	

Project	946623-R037786.00 LA_County_Lidar_2023
Flightplan	LA_CountyV2_1560iiS_8ppms

Mission Name	S2223061_20231201_F1
Mission Date	12/1/2023
Aircraft	N208JA
Pilot	Matthew Gill
Co-Pilot	
Operator	Logan Melgosa
Co-Operator	
Vendor	NV5 Geospatial
Base Airport	KCMA
Departure (Local Time)	6:50:00 PM
Arrival (Local Time)	9:33:00 PM

Mission Notes

Was able to collect the majority of the western Channel Islands within the tide window. We spent most of the day in mx in KFAT.

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00241	SW	02:59:52	03:08:09	133.8	
00242	NW	03:09:31	03:09:38	151.3	
00242	E	03:12:11	03:21:13	142.4	
00243	E	03:22:37	03:22:41	233.9	
00243	SW	03:26:03	03:37:41	127.5	
00244	E	03:41:21	03:52:28	140.3	
00245	SW	03:56:21	04:07:54	135.6	
00246	E	04:11:29	04:22:58	139.1	
00247	SW	04:26:50	04:38:36	136.8	
00248	E	04:41:30	04:53:10	138.1	

Project	946623-R037786.00	LA_County_Lidar_2023
Flightplan	LA_CountyV2_1560iiS_8ppms	

Mission Name	S2223061_20231202_F1	**Mission Notes**
Mission Date	12/2/2023	Was able to collect the majority of the Channel Islands for this project, we had a bit of a late start on our first lift due to the FBO being slow to fuel. We will be conducting a second lift over KLAX tonight.
Aircraft	N208JA	
Pilot	Matthew Gill	
Co-Pilot		
Operator	Logan Melgosa	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KCMA	
Departure (Local Time)	7:30:00 PM	
Arrival (Local Time)	10:15:00 PM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00249	SW	03:55:11	04:06:26	141.6	Refly 5-15 statute miles FEE due to clouds
00250	E	04:10:28	04:19:20	145.1	Refly 5-14 statute miles FEE due to clouds
00251	SW	04:22:34	04:28:37	143.2	Refly 5-14 statute miles FEE due to clouds
00252	E	04:31:45	04:37:36	144.5	Refly 6-13 statute miles FEE due to clouds
00253	SW	04:40:39	04:45:40	142.9	Refly 4-11 statute miles FEE due to clouds
00254	E	04:48:53	04:53:30	145.0	Refly 5-8 statute miles FEE due to clouds
00255	SW	04:56:52	05:00:43	144.1	
00256	E	05:04:00	05:07:21	147.7	
00257	SW	05:10:50	05:13:27	142.8	
00258	E	05:23:57	05:33:00	145.9	
00259	SW	05:39:15	05:51:55	142.9	

Project	946623-R037786.00 LA_County_Lidar_2023
Flightplan	LA_CountyV2_1560iiS_8ppms

Mission Name	S2223061_20231202_F2
Mission Date	12/2/2023
Aircraft	N208JA
Pilot	Matthew Gill
Co-Pilot	
Operator	Logan Melgosa
Co-Operator	
Vendor	NV5 Geospatial
Base Airport	KCMA
Departure (Local Time)	11:23:00 PM
Arrival (Local Time)	4:00:00 AM

Mission Notes

Was able to collect a big area of the lines in the class bravo KLAX airspace. We will finish up the collection in the bravo tomorrow.

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00272	E	07:37:45	07:41:57	137.7	
00273	SW	07:45:24	07:50:15	136.2	
00274	E	07:54:07	07:59:10	146.8	
00286	SW	08:05:37	08:14:50	141.8	
00285	E	08:17:13	08:26:05	147.4	
00284	SW	08:28:47	08:37:59	140.6	
00283	E	08:40:57	08:49:39	146.0	
00282	SW	08:53:12	09:02:06	139.4	
00281	E	09:05:17	09:13:32	147.1	
00280	SW	09:16:58	09:25:23	140.6	
00279	E	09:28:26	09:35:47	151.8	
00278	SW	09:39:20	09:46:52	138.7	
00277	E	09:49:48	09:56:28	146.2	
00276	SW	10:00:03	10:06:40	136.1	
00275	E	10:09:40	10:15:12	148.7	
00300	SE	10:21:34	10:33:55	146.1	
00299	NW	10:37:25	10:50:32	136.6	
00287	SW	10:58:41	11:07:52	142.3	
00288	E	11:10:33	11:19:24	147.2	
00289	SW	11:22:55	11:32:00	143.8	
00290	E	11:35:16	11:39:44	143.8	
00291	SW	11:43:40	11:45:27	144.0	

Project	946623-R037786.00 LA_County_Lidar_2023
Flightplan	LA_CountyV2_1560iiS_8ppms

Mission Name	S2223061_20231203_F1	**Mission Notes**
Mission Date	12/3/2023	Was able to finish collection on the Channel Islands and a small portion of Santa Catalina Island during the low tide window. In our next lift we will complete the section over LA proper in the bravo airspace.
Aircraft	N208JA	
Pilot	Matthew Gill	
Co-Pilot		
Operator	Logan Melgosa	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KCMA	
Departure (Local Time)	6:41:00 PM	
Arrival (Local Time)	10:50:00 PM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00260	SW	02:57:41	03:10:08	145.4	
00261	E	03:13:10	03:25:39	145.0	
00262	SW	03:28:38	03:31:48	138.9	
00262	SW	03:38:31	03:50:28	148.1	
00263	E	03:53:51	04:06:05	147.7	
00264	SW	04:09:19	04:20:49	145.8	
00265	E	04:23:49	04:34:32	147.9	
00266	SW	04:39:14	04:46:46	146.3	
00267	E	04:49:46	04:56:56	149.0	
00268	SW	05:00:00	05:06:32	145.6	
00269	E	05:09:34	05:14:26	149.0	
00018	SE	05:42:43	05:48:49	146.2	
00019	E	05:49:32	05:49:36	180.8	
00019	NW	05:51:58	05:58:54	146.5	
00020	SE	06:01:42	06:09:05	147.4	
00021	E	06:09:26	06:09:30	176.9	
00021	NW	06:12:07	06:19:50	146.6	

Project	946623-R037786.00 LA_County_Lidar_2023
Flightplan	LA_CountyV2_1560iiS_8ppms

Mission Name	S2223061_20231203_F2
Mission Date	12/3/2023
Aircraft	N208JA
Pilot	Matthew Gill
Co-Pilot	
Operator	Logan Melgosa
Co-Operator	
Vendor	NV5 Geospatial
Base Airport	KCMA
Departure (Local Time)	11:42:00 PM
Arrival (Local Time)	2:45:00 AM

Mission Notes

Was able to collect all of the lines directly over downtown LA. We were able to collect two more lines over KLAX without hitting the water. Will finish collection on future flight.

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00385	SE	08:03:16	08:11:28	146.5	
00386	NW	08:14:30	08:22:13	146.0	
00387	SE	08:25:15	08:32:21	148.3	
00388	E	08:32:31	08:32:34	144.5	
00388	NW	08:35:26	08:42:13	144.4	
00389	SE	08:45:10	08:51:18	148.6	
00390	NW	08:54:19	09:00:08	144.1	
00391	SE	09:03:27	09:08:38	146.9	
00392	NW	09:11:41	09:16:26	144.1	
00393	SE	09:19:27	09:23:32	149.1	
00394	NW	09:26:26	09:30:08	142.1	
00395	SE	09:33:17	09:36:14	148.6	
00396	NW	09:39:27	09:41:44	146.4	
00397	SE	09:44:50	09:46:24	149.9	
00398	NW	09:48:58	09:50:33	139.1	
00298	SE	10:07:21	10:19:30	146.7	
00297	NW	10:22:36	10:34:46	143.1	

Project	946623-R037786.00 LA_County_Lidar_2023
Flightplan	LA_CountyV2_1560iiS_8ppms

Mission Name	S2223061_20231204_F2	**Mission Notes**
Mission Date	12/4/2023	Was able to collect the rest of the Santa Catalina Island lines within the tide window. Will finish KLAX tomorrow during tide window and ATC allowance.
Aircraft	N208JA	
Pilot	Matthew Gill	
Co-Pilot		
Operator	Logan Melgosa	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KCMA	
Departure (Local Time)	9:19:00 PM	
Arrival (Local Time)	11:50:00 PM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00022	SE	05:47:32	05:55:31	145.3	
00023	NW	05:58:15	06:06:08	149.0	
00024	SE	06:09:07	06:17:11	145.5	
00025	NW	06:19:56	06:27:27	148.4	
00026	SE	06:30:22	06:37:31	147.0	
00027	NW	06:40:22	06:45:15	148.1	
00028	SE	06:48:10	06:52:56	144.4	
00029	NW	06:55:15	06:59:48	149.6	
00030	SE	07:02:44	07:07:34	133.5	
00031	NW	07:10:18	07:13:09	146.1	

Project	946623-R037786.00 LA_County_Lidar_2023
Flightplan	LA_CountyV2_1560iiS_8ppms

Mission Name	S2223061_20231207_F1	**Mission Notes**
Mission Date	12/7/2023	Was able to collect requested reflies over the Channel Islands without incident.
Aircraft	N208JA	
Pilot	Matthew Gill	
Co-Pilot		
Operator	Logan Melgosa	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KHHR	
Departure (Local Time)	12:53:00 PM	
Arrival (Local Time)	3:29:00 PM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00271	SW	21:36:09	21:39:56	135.8	
00249	SW	21:41:40	21:53:33	134.0	
00250	E	21:56:57	22:05:36	148.9	
00251	SW	22:08:51	22:15:32	129.5	
00252	E	22:18:04	22:23:47	147.9	
00253	SW	22:26:17	22:31:38	133.9	
00254	E	22:33:51	22:38:23	147.6	

Project	946623-R037786.00 LA_County_Lidar_2023
Flightplan	LA_CountyV2_1560iiS_8ppms

Mission Name	S2223061_20231207_F2	**Mission Notes**
Mission Date	12/7/2023	Was able to complete all of the lines in the KLAX airspace this evening. Just awaiting clearance to fly lines in restricted military space.
Aircraft	N208JA	
Pilot	Matthew Gill	
Co-Pilot		
Operator	Logan Melgosa	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KHHR	
Departure (Local Time)	11:40:00 PM	
Arrival (Local Time)	1:15:00 AM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00296	NW	08:00:32	08:12:33	140.8	
00295	SE	08:15:22	08:26:28	147.8	
00294	NW	08:29:44	08:40:56	142.2	
00293	SE	08:43:43	08:54:11	147.5	
00292	NW	08:57:25	08:59:42	141.4	

Project	946623-R037786.00 LA_County_Lidar_2023
Flightplan	LA_CountyV2_1560iiS_8ppms

Mission Name	S2223061_20231209_F1	**Mission Notes**
Mission Date	12/9/2023	Was able to complete lines over Edwards Air Force base without incident.
Aircraft	N208JA	
Pilot	Matthew Gill	
Co-Pilot		
Operator	Logan Melgosa	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	F90	
Departure (Local Time)	8:45:00 AM	
Arrival (Local Time)	11:28:00 AM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00160	SW	17:29:25	17:41:42	144.0	
00159	E	17:44:34	17:56:49	144.5	
00158	SW	18:00:12	18:12:30	143.8	
00157	E	18:15:17	18:27:36	143.8	

Project	946623-R037786.00 LA_County_Lidar_2023
Flightplan	LA_CountyV2_1560iiS_8ppms

Mission Name	S2223546_20231110_F2	**Mission Notes**
Mission Date	11/10/2023	Acquired data under high cirrus with smooth air.
Aircraft	N604MD	
Pilot	Grey Chandler	
Co-Pilot		
Operator	James Schoone	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KSBA	
Departure (Local Time)	11:51:00 AM	
Arrival (Local Time)	3:26:00 PM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00241	SW	20:13:54	20:22:08	134.9	
00242	E	20:25:58	20:34:55	143.4	
00243	SW	20:38:28	20:49:28	135.1	
00244	E	20:51:41	21:02:31	143.7	
00245	SW	21:04:29	21:15:59	136.4	
00246	E	21:17:48	21:28:54	143.9	
00247	SW	21:30:52	21:42:42	136.1	
00248	E	21:44:31	21:55:44	143.4	
00249	SW	21:57:47	22:09:35	134.8	
00250	E	22:12:56	22:21:50	144.5	
00251	SW	22:24:07	22:30:12	142.0	
00252	E	22:31:59	22:37:51	144.5	
00253	SW	22:40:04	22:44:59	146.3	
00254	E	22:46:34	22:51:00	151.2	
00255	SW	22:52:40	22:56:21	150.6	
00256	E	22:57:52	23:01:11	148.6	
00257	SW	23:02:58	23:05:30	147.6	
	N	23:07:53	23:12:17	160.1	

Project	946623-R037786.00 LA_County_Lidar_2023
Flightplan	LA_CountyV2_1560iiS_8ppms

Mission Name	S2223546_20231111_F1	**Mission Notes**
Mission Date	11/11/2023	Acquired data under clear skies with smooth air.
Aircraft	N604MD	
Pilot	Grey Chandler	
Co-Pilot		
Operator	James Schoone	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KSBA	
Departure (Local Time)	12:12:00 PM	
Arrival (Local Time)	3:20:00 PM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00258	E	20:27:40	20:37:04	140.5	
00259	E	20:40:37	20:41:08	139.7	
00259	SW	20:42:45	20:54:47	150.5	
00260	E	20:56:57	21:09:17	147.0	
00261	SW	21:11:23	21:23:19	152.0	
00262	E	21:25:09	21:37:26	147.6	
00263	SW	21:39:46	21:51:33	153.0	
00264	E	21:53:37	22:04:59	147.3	
00265	SW	22:06:53	22:17:12	153.5	
00266	E	22:18:53	22:26:24	147.0	
00267	SW	22:28:19	22:35:15	154.5	
00268	E	22:37:09	22:43:40	146.3	
00269	SW	22:46:06	22:50:49	154.1	
00270	E	22:52:20	22:56:47	146.7	
00271	SW	22:58:16	23:01:37	153.8	
	N	23:04:09	23:07:46	166.9	

Project	946623-R037786.00	LA_County_Lidar_2023
Flightplan	LA_CountyV2_1560iiS_8ppms	

Mission Name	S2223546_20231121_F1	**Mission Notes**
Mission Date	11/21/2023	Finally got a weather, wind, and ATC window to collect on LA County this evening with clear skies.
Aircraft	N604MD	Ruggedbook in 604MD was having trouble turning on, and had to reboot a few times before the screen
Pilot	Matthew Heiser	turned on. In addition the
Co-Pilot		
Operator	Patrick Graham	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	F70	
Departure (Local Time)	10:27:00 PM	
Arrival (Local Time)	3:50:00 AM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00320	NW	06:52:26	07:04:16	144.4	
00319	SE	07:07:38	07:19:29	144.7	
00318	NW	07:22:50	07:34:49	143.5	
00317	SE	07:38:30	07:50:35	142.8	
00316	NW	07:53:54	08:06:00	143.4	
00316	NE	08:09:52	08:12:04	143.9	Crossline
00127	E	08:18:59	08:27:35	140.5	
00128	SW	08:30:43	08:39:01	144.1	
00129	E	08:41:56	08:50:16	142.4	
00130	SW	08:53:21	09:01:30	143.8	
00131	E	09:04:17	09:12:20	144.3	
00132	SW	09:14:53	09:22:48	144.9	
00133	E	09:25:26	09:33:17	144.1	
00134	SW	09:35:50	09:43:33	145.3	
00135	E	09:46:14	09:53:51	145.5	
00136	SW	09:56:24	10:03:56	146.0	
00137	E	10:06:28	10:13:57	145.8	
00138	SW	10:16:28	10:23:54	146.1	
00139	E	10:26:32	10:33:11	145.8	
00140	SW	10:35:41	10:42:18	146.3	
00141	E	10:44:56	10:51:18	146.2	
00142	SW	10:53:53	11:00:14	146.4	
00143	E	11:02:51	11:09:11	146.1	
00144	SW	11:11:45	11:18:04	146.4	
00145	E	11:20:39	11:27:00	144.7	

Project	946623-R037786.00 LA_County_Lidar_2023
Flightplan	LA_CountyV2_1560iiS_8ppms

Mission Name	S2223546_20231123_F1	**Mission Notes**
Mission Date	11/23/2023	.
Aircraft	N604MD	
Pilot	Matthew Heiser	
Co-Pilot		
Operator	Patrick Graham	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	F70	
Departure (Local Time)	12:30:00 AM	
Arrival (Local Time)	2:00:00 AM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00326	E	12:00:00	12:30:00		Refly 91752
00327	E	12:00:00	12:30:00		Refly 90438
00328	E	12:00:00	12:30:00		Refly 85141

Project	946623-R037786.00	LA_County_Lidar_2023
Flightplan	LA_CountyV2_1560iiS_8ppms	

Mission Name	S2223546_20240105_F2	**Mission Notes**
Mission Date	1/5/2024	took off late afternoon to hit our scheduled window over san celemente island. then moved north to re-flight lines.
Aircraft	N604MD	
Pilot	Brian Murphy	
Co-Pilot	Daniel Luckett	
Operator	Mark Smith	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KHHR	
Departure (Local Time)	1:47:00 PM	
Arrival (Local Time)	6:54:00 PM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00010	SE	22:11:18	22:15:56	142.3	
00347	E	23:15:06	23:20:19	132.2	
00347	SW	23:24:11	23:28:51	147.5	
00348	E	23:32:09	23:37:45	128.2	
00355	SW	23:42:12	23:48:42	145.0	
00356	E	23:52:03	23:59:43	126.7	
00357	SW	00:03:22	00:10:13	146.7	
00010	SE	00:37:39	00:45:49	144.9	
00009	NW	00:47:13	00:55:27	145.8	
00008	SE	00:57:38	01:05:49	147.2	
00007	NW	01:07:19	01:15:35	145.3	
00006	SE	01:19:22	01:27:43	144.2	
00005	NW	01:30:15	01:38:10	146.5	
00004	SE	01:40:09	01:47:44	147.1	
00003	NW	01:49:45	01:57:00	144.1	
00002	SE	01:59:35	02:05:25	145.0	
00001	NW	02:07:50	02:12:38	139.4	
	NE	02:15:25	02:18:54	125.1	

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Mission Name	S2223546_20240106_F1	**Mission Notes**
Mission Date	1/6/2024	took off late afternoon to make our scheduled window for san nicolas island. then moved east to hit re-flight lines. we were clouded out and ended the flight with a few lines remaining.
Aircraft	N604MD	
Pilot	Brian Murphy	
Co-Pilot	Daniel Luckett	
Operator	Mark Smith	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KHHR	
Departure (Local Time)	1:55:00 PM	
Arrival (Local Time)	6:23:00 PM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes	
00011	NW	22:32:28	22:36:06	136.9		
00012	SE	22:38:27	22:42:23	143.9		
00013	NW	22:44:44	22:48:58	134.0		
00014	SE	22:51:10	22:55:04	145.9		
00015	NW	22:57:03	23:01:20	131.9		
00016	SE	23:03:25	23:07:19	144.2		
00017	NW	23:09:46	23:13:19	138.6		
	NE	23:16:46	23:18:48	145.5		
00347	E	23:49:04	23:53:50	144.4		
00348	SW	23:56:34	00:02:06	132.1		
00360	E	00:05:32	00:12:45	144.1		
00361	SW	00:14:39	00:22:36	131.0		
00362	E	00:24:51	00:31:52	147.9		
00363	SW	00:33:56	00:41:47	131.2		
00364	E	00:44:12	00:51:23	142.5		
00365	SW	00:53:27	01:01:18	129.1		
00370	E	01:02:57	01:09:39	145.3		
00371	SW	01:12:17	01:19:45	128.9		
00372	E	01:21:50	01:28:17	147.8		
00373	SW	01:30:18	01:37:36	130.5		
00374	E	01:39:50	01:46:28	144.3	clouds covered by adjacent overlap...	Refly 0-3 statute miles FEE due to clouds
00001	N	01:50:37	01:54:31	140.3		

Project	946623-R037786.00	LA_County_Lidar_2023
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Mission Name	S2223546_20240107_F1	**Mission Notes**
Mission Date	1/7/2024	we had mostly clear sky but the high winds around the mountains caused strong turbulence so we ended the flight.
Aircraft	N604MD	
Pilot	Daniel Luckett	
Co-Pilot		
Operator	Mark Smith	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KHHR	
Departure (Local Time)	11:08:00 AM	
Arrival (Local Time)	12:45:00 PM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00347	SW	19:34:47	19:40:14	126.0	
00348	E	19:43:23	19:48:45	134.1	
00401	SE	19:54:21	19:55:36	152.5	
00399	NW	19:58:51	20:01:12	115.5	
00401	SE	20:05:42	20:06:59	148.7	
00380	SE	20:15:15	20:24:49	137.2	

Project	946623-R037786.00 LA_County_Lidar_2023
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Mission Name	S2223546_20240108_F1	**Mission Notes**
Mission Date	1/8/2024	Took off with clear sky and completed the remaining re-flight lines.
Aircraft	N604MD	
Pilot	Brian Murphy	
Co-Pilot		
Operator	Mark Smith	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KHHR	
Departure (Local Time)	9:25:00 AM	
Arrival (Local Time)	12:16:00 PM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00347	SW	17:57:54	18:03:12	130.1	
00348	E	18:06:18	18:11:54	128.2	
00381	SE	18:19:30	18:28:59	139.8	
00382	NW	18:32:11	18:41:53	137.8	
00383	SE	18:44:55	18:54:20	142.2	
00384	NW	18:57:00	19:06:40	131.7	
	S	19:15:22	19:16:44	140.7	
00124	E	19:19:55	19:29:01	136.2	
00125	SW	19:32:12	19:41:08	137.6	
00126	E	19:44:20	19:53:46	129.1	
00001	S	19:56:43	19:57:58	152.6	

Project	946623-R037786.00	LA_County_Lidar_2023
Flightplan	LA_CountyV2_1560iiS_8ppms	

Mission Name	S2224040_20230925_F1	**Mission Notes**
Mission Date	9/25/2023	Captured 10 lines after skies cleared
Aircraft	N840JA	
Pilot	Kale Trimble	
Co-Pilot		
Operator	Matthew Moudy	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KHHR	
Departure (Local Time)	12:22:00 PM	
Arrival (Local Time)	2:57:00 PM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00474	SW	19:49:57	19:57:01	143.2	
00473	E	19:59:28	20:06:48	138.8	
00472	SW	20:09:31	20:16:52	138.7	
00471	SW	20:20:09	20:20:14	143.4	bad sensor trigger. Diverted by ATC
00471	E	20:21:46	20:28:58	142.6	
00470	SW	20:31:32	20:38:47	141.7	
00469	E	20:41:49	20:49:10	140.9	
00468	SW	20:52:00	20:59:39	135.8	
00467	E	21:02:01	21:09:34	138.0	
00466	SW	21:12:18	21:19:43	141.0	
00465	E	21:22:00	21:29:34	138.8	
	S	21:32:12	21:33:58	150.8	

Project	946623-R037786.00 LA_County_Lidar_2023
Flightplan	LA_CountyV2_1560iiS_8ppms

Mission Name	S2224040_20230925_F2	**Mission Notes**
Mission Date	9/25/2023	we are the afternoon crew, beginning around 3pm daily local time. today we completed lines 433-452
Aircraft	N840JA	with no issues. light haze for entire lift
Pilot	Brian Murphy	
Co-Pilot		
Operator	Em Newbury	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KHHR	
Departure (Local Time)	4:13:00 PM	
Arrival (Local Time)	7:33:00 PM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00433	N	23:44:17	23:47:06	138.5	
00434	S	23:51:30	23:54:19	139.0	
00435	N	23:57:54	00:00:37	144.7	
00436	S	00:03:59	00:06:46	141.6	
00437	N	00:10:44	00:13:31	140.9	
00438	S	00:18:05	00:20:54	140.5	
00439	N	00:25:26	00:28:16	140.1	
00440	S	00:32:03	00:34:49	143.8	
00441	N	00:38:18	00:41:09	138.7	
00442	S	00:44:48	00:47:34	143.2	
00443	N	00:51:13	00:54:03	140.4	
00444	S	00:59:10	01:01:58	141.6	
00445	N	01:06:31	01:09:20	140.7	
00446	S	01:14:47	01:17:38	138.5	
00447	N	01:22:15	01:24:57	146.3	
00448	S	01:29:46	01:32:34	139.8	
00449	N	01:36:42	01:39:19	149.3	
00450	S	01:41:59	01:44:40	145.5	
00451	N	01:47:52	01:50:29	148.6	
00452	S	01:53:17	01:56:04	139.1	
	SW	01:59:09	02:02:38	135.2	xline

Project	946623-R037786.00 LA_County_Lidar_2023
Flightplan	LA_CountyV2_1560iiS_8ppms

Mission Name	S2224040_20230926_F1	**Mission Notes**
Mission Date	9/26/2023	Collected 10 lines over the course of one lift.
Aircraft	N840JA	
Pilot	Ethan Hillmer	
Co-Pilot		
Operator	Matthew Moudy	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KHHR	
Departure (Local Time)	9:22:00 AM	
Arrival (Local Time)	12:40:00 PM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00458	E	18:34:35	18:40:19	146.4	
00457	SW	18:44:32	18:51:04	128.0	
00456	E	18:54:50	19:00:42	142.8	
00455	SW	19:04:32	19:10:55	131.7	
	S	19:14:34	19:17:20	144.7	
00464	E	16:52:18	16:53:49	146.6	pilot inadvertently shut camera door while approaching line. Noticed error and circled back to recapture the line
00464	E	17:00:51	17:08:04	145.7	
00463	SW	17:12:48	17:20:41	133.3	
00462	E	17:23:53	17:31:41	142.2	
00462	SW	17:37:18	17:38:22	124.7	Had to refly eastern portion of the line due to small data gap
00461	SW	17:44:12	17:52:25	128.0	
00460	E	17:55:31	18:01:20	143.7	
00459	SW	18:04:53	18:11:37	124.1	

Project	946623-R037786.00	LA_County_Lidar_2023
Flightplan	LA_CountyV2_1560iiS_8ppms	

Mission Name	S2224040_20230926_F2	**Mission Notes**
Mission Date	9/26/2023	afternoon lift had light haze. Finished up sections of lines that were leftover from the 2 other morning crews
Aircraft	N840JA	
Pilot	Brian Murphy	
Co-Pilot		
Operator	Em Newbury	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KHHR	
Departure (Local Time)	3:08:00 PM	
Arrival (Local Time)	6:56:00 PM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00454	E	22:34:27	22:40:28	139.9	
00432	SW	22:44:01	22:50:18	136.5	
00431	E	22:55:31	23:03:26	137.4	
00430	SW	23:07:04	23:15:17	132.3	
00429	E	23:18:47	23:26:39	140.8	
00453	SW	23:29:21	23:37:27	132.4	
00475	SW	23:39:01	23:39:07	140.7	accidental start
	SW	23:39:32	23:39:36	123.4	ignore
00475	E	23:42:33	23:46:01	147.9	
00428	E	23:54:13	00:01:34	150.7	
00427	SW	00:05:22	00:13:26	137.7	
00426	E	00:17:02	00:24:12	154.7	
00425	SW	00:27:34	00:35:58	132.5	
00424	E	00:39:24	00:47:19	140.6	
00423	SW	00:51:35	00:59:36	138.4	
	N	01:04:24	01:06:31	150.1	xline
00199	SW	01:10:30	01:17:13	135.0	
00200	E	01:19:55	01:26:10	145.4	
	S	01:30:30	01:31:52	136.5	xline

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Flightplan	LA_CountyV2_1560iiS_8ppms	

Mission Name	S2224040_20230927_F1	**Mission Notes**
Mission Date	9/27/2023	another clear day working the north mountains. had a sensor error midline at 217. Required a full sensor
Aircraft	N840JA	shutdown and restart, and line 217 was fully reflown after regaining POS accuracy
Pilot	Brian Murphy	
Co-Pilot		
Operator	Em Newbury	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KHHR	
Departure (Local Time)	4:12:00 PM	
Arrival (Local Time)	6:50:00 PM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00217	E	00:42:53	00:49:10	142.3	reflown line
00218	SW	00:52:27	00:59:11	132.5	
00219	E	01:03:01	01:09:19	141.5	
00220	SW	01:12:28	01:19:10	132.3	
	N	01:22:30	01:24:51	129.5	xline

Project	946623-R037786.00	LA_County_Lidar_2023
Flightplan	LA_CountyV2_1560iiS_8ppms	

Mission Name	S2224040_20230927_F3	**Mission Notes**
Mission Date	9/27/2023	Collected 13 lines after a delayed departure
Aircraft	N840JA	
Pilot	Ethan Hillmer	
Co-Pilot		
Operator	Matthew Moudy	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KHHR	
Departure (Local Time)	11:07:00 AM	
Arrival (Local Time)	2:22:00 PM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00201	SW	18:35:08	18:42:01	131.3	
00202	E	18:45:38	18:52:05	140.7	
00203	SW	18:56:08	18:56:37	137.6	
00203	SW	19:02:21	19:09:10	132.7	
00204	S	19:13:04	19:29:33	139.8	did not stop writing data in the turn between lines 204 and 205
00206	E	19:33:03	19:39:21	143.7	
00207	SW	19:42:51	19:49:54	127.7	
00208	E	19:53:01	19:59:14	145.0	
00209	SW	20:02:43	20:09:47	127.2	
00210	E	20:14:36	20:20:47	145.7	
00211	SW	20:24:21	20:31:37	123.4	
00212	E	20:35:35	20:41:48	145.1	
00213	SW	20:45:16	20:52:15	128.3	
	S	20:57:02	21:00:14	145.6	
00205	E	19:13:04	19:29:33	54.0	Manually added because sensor didn't turn off

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Mission Name	S2224040_20230927_F4	**Mission Notes**
Mission Date	9/27/2023	backfill notes
Aircraft	N22TE	
Pilot	Jack Martin	
Co-Pilot		
Operator	Em Newbury	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KHHR	
Departure (Local Time)	11:07:00 AM	
Arrival (Local Time)	2:22:00 PM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00214	E	23:40:49	23:47:01	144.4	
00215	SW	23:50:17	23:57:27	124.8	
00216	E	00:00:59	00:07:20	140.6	
00217	SW	00:10:58	00:15:22	133.9	

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Flightplan	LA_CountyV2_1560iiS_8ppms	

Mission Name	S2224040_20230928_F1	**Mission Notes**
Mission Date	9/28/2023	hazy day, completed 1 line and had our sensor error about halfway through the 2nd line. tried to troubleshoot but ultimately had to land due to the errors. While line 221 was completed, I am unsure if it is considered acceptable since the error happened so soon afterward
Aircraft	N840JA	
Pilot	Brian Murphy	
Co-Pilot		
Operator	Em Newbury	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KHHR	
Departure (Local Time)	3:09:00 PM	
Arrival (Local Time)	5:10:00 PM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00221	E	22:36:15	22:44:07	143.6	

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Flightplan	LA_CountyV2_1560iiS_8ppms	

Mission Name	S2224046_20230925_F1	**Mission Notes**
Mission Date	9/25/2023	Launched for east side of AOIs, acquired without issue, had one manual fire for laser dropoff midline.
Aircraft	N22TE	
Pilot	Karl Verschuren	
Co-Pilot		
Operator	Benjamin Miller	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KHHR	
Departure (Local Time)	11:39:00 AM	
Arrival (Local Time)	5:07:00 PM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00422	SW	19:15:56	19:25:15	142.4	
00421	E	19:28:06	19:37:02	148.5	
00420	SW	19:40:03	19:45:44	141.9	
00420	SW	19:49:07	19:53:21	144.8	
00419	E	20:02:31	20:11:21	150.8	
00418	SW	20:14:24	20:23:39	143.6	
00417	E	20:26:07	20:34:59	150.2	
00416	SW	20:38:13	20:47:31	143.0	
00415	E	20:50:01	20:58:54	149.7	
00414	SW	21:01:50	21:11:12	141.7	
00413	E	21:13:46	21:22:29	152.6	
00412	SW	21:25:19	21:34:37	142.7	
00411	E	21:37:29	21:46:27	147.7	
00410	SW	21:49:10	21:58:27	142.5	
00409	E	22:01:01	22:09:53	149.1	
00408	SW	22:12:33	22:21:45	144.1	
00407	E	22:24:14	22:33:08	148.7	
00406	SW	22:35:42	22:44:54	143.5	
00405	E	22:47:31	22:56:19	150.1	
00404	SW	22:58:50	23:08:03	142.7	
00403	E	23:10:30	23:19:19	149.0	
00402	SW	23:21:55	23:30:56	145.2	
	S	23:33:32	23:37:18	159.3	cross

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Flightplan	LA_CountyV2_1560iiS_8ppms	

Mission Name	S2224046_20230926_F1	**Mission Notes**
Mission Date	9/26/2023	Launched for NE, continuing from previous day. No issues
Aircraft	N22TE	
Pilot	Karl Verschuren	
Co-Pilot		
Operator	Benjamin Miller	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KHHR	
Departure (Local Time)	8:46:00 AM	
Arrival (Local Time)	2:21:00 PM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00198	SW	16:26:09	16:36:19	147.3	
00197	E	16:38:49	16:49:14	144.1	
00196	SW	16:51:45	17:01:56	147.6	
00195	E	17:04:16	17:14:43	143.8	
00194	SW	17:17:00	17:27:10	147.4	
00193	E	17:29:47	17:40:07	144.8	
00192	SW	17:42:25	17:52:34	147.1	
00191	E	17:54:50	18:05:01	146.5	
00190	SW	18:07:28	18:17:46	144.9	
00189	E	18:20:05	18:30:19	146.1	
00188	SW	18:32:38	18:42:57	144.2	
00187	E	18:45:33	18:55:28	147.6	
00186	SW	18:57:46	19:07:46	144.0	
00185	E	19:09:56	19:19:39	146.0	
00184	SW	19:22:08	19:32:02	146.0	
00183	E	19:36:39	19:46:51	149.9	
00182	SW	19:49:01	20:00:07	145.0	
00181	E	20:03:12	20:14:42	147.0	
00180	SW	20:17:29	20:29:22	147.1	
00179	E	20:31:47	20:43:49	146.7	
	S	20:47:36	20:52:57	157.9	cross

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Mission Name	S2224046_20230927_F1	**Mission Notes**
Mission Date	9/27/2023	Launched for NE corner, no issues except getting pushed around by ATC.
Aircraft	N22TE	
Pilot	Karl Verschuren	
Co-Pilot		
Operator	Benjamin Miller	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KHHR	
Departure (Local Time)	10:30:00 AM	
Arrival (Local Time)	3:39:00 PM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00178	SW	18:09:47	18:21:58	145.0	
00169	SW	18:27:08	18:27:15	142.2	misfire
00169	E	18:29:34	18:42:02	141.9	
00170	SW	18:44:10	18:56:35	142.4	
00171	E	18:58:46	19:01:28	148.5	
00171	E	19:06:29	19:16:18	146.6	manual fire
00172	SW	19:18:47	19:31:20	140.8	
00173	E	19:33:29	19:45:33	146.6	
00174	SW	19:47:52	20:00:32	139.3	
00175	E	20:02:45	20:14:40	148.5	
00176	SW	20:16:48	20:29:24	140.2	
00177	E	20:31:42	20:43:26	150.6	
00168	SW	20:47:16	21:00:02	138.6	
00167	E	21:02:17	21:14:04	150.1	
00166	SW	21:16:37	21:29:12	140.5	
00165	E	21:31:26	21:43:15	149.8	
00164	SW	21:46:00	21:58:28	141.8	
	S	22:01:16	22:06:07	152.0	cross

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Flightplan	LA_CountyV2_1560iiS_8ppms	

Mission Name	S2224046_20230928_F1	**Mission Notes**
Mission Date	9/28/2023	Delayed due to low overcast, once airborne we worked ne until Restricted airspace stopped us, then moved west. No issues.
Aircraft	N22TE	
Pilot	Karl Verschuren	
Co-Pilot		
Operator	Benjamin Miller	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KHHR	
Departure (Local Time)	2:26:00 PM	
Arrival (Local Time)	6:34:00 PM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00163	SW	22:07:25	22:20:09	138.9	
00162	E	22:22:30	22:34:34	146.7	
00161	SW	22:37:11	22:49:29	143.6	
00036	NW	22:53:51	22:55:55	137.7	
00037	SE	22:58:59	23:01:38	145.6	
00038	NW	23:04:19	23:07:42	145.8	
00039	SE	23:10:39	23:14:44	145.4	
00040	NW	23:17:58	23:22:54	139.7	
00041	SE	23:25:40	23:31:08	144.8	
00042	NW	23:34:34	23:40:48	143.0	
00043	SE	23:44:10	23:50:56	146.4	
00044	NW	23:53:38	00:01:16	142.9	
00045	SE	00:04:31	00:12:49	143.5	
00046	NW	00:15:24	00:24:09	146.4	
00047	SE	00:26:59	00:36:17	148.0	
00048	NW	00:38:56	00:49:09	143.8	
	E	00:53:05	00:59:04	170.9	cross

Project	946623-R037786.00	LA_County_Lidar_2023
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Mission Name	S2224046_20231002_F1	**Mission Notes**
Mission Date	10/2/2023	Had to dodge the clouds for this lift today so many lines are mixed around. Did 3 crosslines through most lines, was unable to do a crossline through lines 399 & 401. I believe we avoided clouds for the entirety of the day.
Aircraft	N22TE	
Pilot	Brian Murphy	
Co-Pilot		
Operator	Em Newbury	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KHHR	
Departure (Local Time)	10:28:00 AM	
Arrival (Local Time)	3:27:00 PM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00360	SW	17:55:29	18:03:20	133.3	
00361	E	18:07:49	18:15:25	137.0	
00362	SW	18:19:21	18:27:21	129.6	
00363	E	18:30:51	18:38:21	136.9	
00364	SW	18:42:21	18:50:06	132.0	
00365	E	18:53:54	19:01:03	142.2	
00370	SW	19:04:51	19:12:34	125.7	
00371	E	19:17:59	19:24:41	143.5	
00372	SW	19:27:44	19:35:07	128.8	
00373	E	19:38:32	19:45:20	140.6	
00374	SW	19:48:08	19:55:30	130.2	
	N	19:59:13	20:04:50	133.8	
00401	SE	20:10:55	20:12:14	145.9	
00399	NW	20:15:35	20:17:48	122.0	
00380	SE	20:21:31	20:30:57	138.8	
00381	NW	20:34:21	20:44:46	127.1	
00382	SE	20:48:09	20:57:38	141.1	
00383	NW	21:00:49	21:11:27	125.7	
00384	SE	21:14:04	21:22:57	143.4	
	N	21:28:02	21:30:06	133.5	
00124	E	21:32:55	21:41:59	136.4	
00125	SW	21:45:01	21:53:57	137.4	
00126	E	21:57:07	22:06:01	137.1	
	S	22:09:11	22:10:32	145.3	

Project	946623-R037786.00	LA_County_Lidar_2023
Flightplan	LA_CountyV2_1560iiS_8ppms	

Mission Name	S2224046_20231002_F2	**Mission Notes**
Mission Date	10/2/2023	Launched for 37786, LA bravo, at night and riacquire started bogging after a short time. We were only able to fly the southern Long Beach block which is tidal but we were well outside the range of two hrs from low. Clouds all over aoi and mts too dark to work in. On line 330 riacquire actually crashed. It was restarted and the block was continued however the lines are not all accounted for in uploader file. Will be making a sec upload manually to cover the lines flown after restarting software.
Aircraft	N22TE	
Pilot	Karl Verschuren	
Co-Pilot		
Operator	Benjamin Miller	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KHHR	
Departure (Local Time)	9:02:00 PM	
Arrival (Local Time)	10:37:00 PM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00339	SW	04:02:39	04:04:57	141.7	
00338	E	04:09:39	04:14:41	138.3	
00337	SW	04:18:12	04:23:13	145.6	
00336	E	04:25:59	04:31:41	142.9	
00335	SW	04:34:18	04:40:28	144.4	
00334	SW	04:44:18	04:44:24	143.5	misfire
00334	E	04:46:25	04:53:26	143.0	
00333	SW	04:56:02	05:03:21	147.2	
00332	E	05:05:49	05:14:17	139.7	
00331	SW	05:17:01	05:25:57	144.6	

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Mission Name	S2224046_20231002_F3	**Mission Notes**
Mission Date	10/2/2023	Sec half of sec flight
Aircraft	N22TE	
Pilot	Karl Verschuren	
Co-Pilot		
Operator	Benjamin Miller	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KHHR	
Departure (Local Time)	10:35:00 PM	
Arrival (Local Time)	1:18:00 AM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00321	E	12:00:00	12:30:00		
00322	E	12:00:00	12:30:00		software super boggy
00323	E	12:00:00	12:30:00		Check for clouds on east end last few lines
00324	E	12:00:00	12:30:00		
00325	E	12:00:00	12:30:00		
00326	E	12:00:00	12:30:00		
00327	E	12:00:00	12:30:00		
00328	E	12:00:00	12:30:00		software boggy
00329	E	12:00:00	12:30:00		
00330	E	12:00:00	12:30:00		Refly from Riacquire crash

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Mission Name	S2224046_20231003_F2	**Mission Notes**
Mission Date	10/3/2023	Sec flight for 37786 working to north and only issue was a gps glitch just after crossline, restarted the gps log on riacwuire but done think it was logging correctly, copied all pos files from IMU as back, hopefully no gap.
Aircraft	N22TE	
Pilot	Karl Verschuren	
Co-Pilot	Brian Murphy	
Operator	Benjamin Miller	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KHHR	
Departure (Local Time)	3:48:00 PM	
Arrival (Local Time)	6:38:00 PM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
	SW	23:21:28	23:21:31	147.1	misfire abort for atc
00376	SW	23:25:22	23:32:04	141.7	
00375	E	23:34:20	23:41:34	131.8	
00369	SW	23:44:35	23:51:26	143.2	
00368	E	23:53:51	00:01:02	137.7	
00367	SW	00:03:29	00:10:28	143.5	
00366	E	00:13:04	00:20:09	142.1	
00359	SW	00:23:08	00:30:19	146.6	
00358	E	00:32:19	00:39:35	142.5	
00357	SW	00:41:58	00:48:55	144.2	
00356	E	00:51:09	00:57:58	142.6	
00355	SW	01:00:30	01:07:01	144.4	
	S	01:09:35	01:15:14	145.3	cross

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Mission Name	S2224046_20231003_F3	**Mission Notes**
Mission Date	10/3/2023	Collect 13 lines over the course of the morning lift, before handing off operations to "second shift" crew
Aircraft	N22TE	
Pilot	Brian Murphy	
Co-Pilot	Karl Verschuren	
Operator	Matthew Moudy	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KHHR	
Departure (Local Time)	10:17:00 AM	
Arrival (Local Time)	2:34:00 PM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00049	NW	17:50:05	18:02:11	124.4	
00050	SE	18:05:10	18:16:02	140.8	
00051	NW	18:21:13	18:33:51	121.6	
00052	SE	18:36:52	18:47:55	139.3	
00053	NW	18:52:08	19:02:59	121.5	laser stoppped before completing line
00053	SE	19:08:31	19:10:07	142.4	western portion to complete line coverage
00054	SE	19:16:07	19:26:53	141.8	
00108	NW	19:32:58	19:41:08	130.8	
00109	SE	19:44:21	19:51:55	144.0	
00110	NW	19:56:06	20:05:07	122.9	
00111	SE	20:07:57	20:15:46	144.6	
00112	NW	20:21:32	20:23:31	125.7	had to break off line for ATC
00112	NW	20:28:26	20:37:18	127.9	
00113	SE	20:40:16	20:48:06	145.7	
00114	NW	20:52:30	21:01:26	128.0	
	NE	21:04:27	21:08:48	130.4	

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Mission Name	S2224046_20231004_F1	**Mission Notes**
Mission Date	10/4/2023	Launched for 37786 north, on first line attempt the IMU crashed, no input in POSAV, reboot, no other
Aircraft	N22TE	issues. Moderate turb.
Pilot	Brian Murphy	
Co-Pilot	Grey Chandler	
Operator	Benjamin Miller	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KHHR	
Departure (Local Time)	10:01:00 AM	
Arrival (Local Time)	2:00:00 PM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00115	NW	17:51:18	17:59:46	135.4	
00116	SE	18:02:52	18:11:29	133.3	
00117	NW	18:14:33	18:22:47	139.7	
00118	SE	18:25:46	18:34:11	136.2	
00119	NW	18:37:25	18:45:22	143.9	
00091	SE	18:48:50	18:56:57	132.5	
00092	NW	18:59:48	19:07:40	144.3	
00092	SE	19:11:07	19:11:29	140.7	wrong line abort
00093	SE	19:16:50	19:25:48	132.8	
00094	NW	19:29:08	19:38:06	138.7	
00095	SE	19:41:13	19:51:15	128.7	
00096	NW	19:53:53	20:02:53	148.8	
00097	SE	20:05:57	20:17:16	121.9	
	SW	20:22:30	20:25:29	150.3	cross

Project	946623-R037786.00	LA_County_Lidar_2023
Flightplan	LA_CountyV2_1560iiS_8ppms	

Mission Name	S2224046_20231004_F2	**Mission Notes**
Mission Date	10/4/2023	backfill notes
Aircraft	N22TE	
Pilot	Jack Martin	
Co-Pilot		
Operator	Matthew Moudy	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KHHR	
Departure (Local Time)	3:05:00 PM	
Arrival (Local Time)	5:59:00 PM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00146	E	22:45:36	22:51:03	137.9	
00147	SW	22:53:43	22:58:40	151.7	
00148	E	23:02:06	23:07:35	136.9	
00149	SW	23:09:20	23:14:19	151.5	
00150	E	23:16:35	23:22:05	135.5	
00151	SW	23:23:59	23:28:46	153.0	
00152	E	23:30:52	23:36:05	136.7	
00153	SW	23:37:55	23:42:11	152.8	
00154	E	23:43:57	23:48:11	137.8	
00155	SW	23:49:51	23:53:18	150.3	
00156	E	23:55:09	23:58:30	135.1	
	N	00:01:18	00:04:19	147.8	
00055	SE	00:06:42	00:14:10	133.7	
00056	NW	00:16:14	00:23:23	142.8	
00057	SE	00:25:53	00:33:57	128.7	
00058	NW	00:35:55	00:38:06	143.4	
00058	NW	00:45:37	00:52:59	144.5	
00059	SE	00:55:08	01:03:30	128.9	
00060	NW	01:05:40	01:13:15	144.1	
00061	SE	01:15:39	01:24:12	129.4	
	SW	01:29:20	01:31:32	141.4	

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Mission Name	S2224046_20231005_F1	**Mission Notes**
Mission Date	10/5/2023	First lift had to bounce around between blocks due to traffic. Targeted the higher elevation areas.
Aircraft	N22TE	
Pilot	Grey Chandler	
Co-Pilot	Jack Martin	
Operator	Will Griffith	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KHHR	
Departure (Local Time)	9:18:00 AM	
Arrival (Local Time)	2:20:00 PM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00098	NW	16:42:40	16:52:22	147.4	W - First Line
00099	NW	16:52:41	16:52:52	154.3	E, Had a misfire, but then had a good pass
00099	SE	16:54:39	17:06:26	124.8	E, Had a misfire, but then had a good pass
00100	NW	17:08:25	17:18:54	145.0	W
00101	SE	17:21:24	17:33:29	125.9	E
00102	NW	17:35:34	17:46:00	145.3	W
00103	SE	17:49:11	18:00:22	125.9	E
00104	NW	18:02:20	18:11:13	146.3	W
00105	SE	18:13:25	18:22:52	126.3	E
00106	NW	18:24:50	18:28:37	143.6	W
00107	SE	18:30:56	18:34:02	125.2	E,
	NE	18:36:26	18:39:32	132.1	XLINE - 183626 - N
00354	SW	18:48:24	18:54:35	147.4	W
00353	E	18:56:35	19:04:00	117.9	E
00352	SW	19:06:57	19:07:14	144.1	Started the line but ATC requested us to abort
00221	E	19:18:43	19:27:37	126.4	E
00222	SW	19:29:29	19:37:19	144.0	W
00223	E	19:39:20	19:48:12	127.2	E
00224	SW	19:50:44	19:58:41	142.3	W
00225	E	20:00:43	20:09:35	127.2	E
00226	SW	20:11:40	20:19:38	142.8	W
00227	E	20:22:02	20:30:50	127.2	E
00228	SW	20:32:44	20:40:14	144.0	W
00229	E	20:42:51	20:51:02	127.3	E - LAST LINE
	N	20:53:34	20:55:30	135.3	XLINE - 205334 - N

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Mission Name	S2224046_20231005_F2	**Mission Notes**
Mission Date	10/5/2023	We had less traffic on the second lift and were able to focus on just one block that ATC had us abort in the morning.
Aircraft	N22TE	
Pilot	Jack Martin	
Co-Pilot	Grey Chandler	
Operator	Will Griffith	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KHHR	
Departure (Local Time)	5:06:00 PM	
Arrival (Local Time)	9:43:00 PM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00062	NW	00:23:20	00:31:11	143.0	W - First Line
00063	SE	00:34:01	00:41:58	141.8	E
00064	NW	00:43:53	00:51:36	145.6	W
00065	SE	00:53:53	01:01:51	141.1	E
00066	NW	01:03:47	01:11:25	147.2	W
00067	SE	01:13:25	01:20:54	139.8	E - Flew most of the line but aborted towards the end b/c of traffic. Then did a refly on the remaining portion of the line heading west
00067	NW	01:26:32	01:28:05	145.2	E - Flew most of the line but aborted towards the end b/c of traffic. Then did a refly on the remaining portion of the line heading west
00068	NW	01:34:45	01:44:22	146.7	W
00069	SE	01:47:00	01:57:21	139.2	E
00070	NW	01:59:30	02:09:35	146.7	W
00071	SE	02:12:12	02:22:57	140.6	E
00072	NW	02:25:08	02:35:24	146.4	W
00073	SE	02:38:04	02:48:19	142.2	E
00074	NW	02:50:52	03:00:38	144.3	W
00075	SE	03:03:14	03:13:07	137.6	E
00076	NW	03:16:04	03:25:02	146.7	W
00077	SE	03:27:35	03:36:42	139.2	E
00078	NW	03:39:18	03:47:23	147.9	W
00079	SE	03:49:51	03:57:49	140.9	E - LAST LINE
	NE	04:00:45	04:04:46	144.9	XLINE - 040045 - N

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Mission Name	S2224046_20231006_F1	**Mission Notes**
Mission Date	10/6/2023	Captured 23 lines over the course of the first lift of the day
Aircraft	N22TE	
Pilot	Grey Chandler	
Co-Pilot	Jack Martin	
Operator	Matthew Moudy	
Co-Operator	Will Griffith	
Vendor	NV5 Geospatial	
Base Airport	KHHR	
Departure (Local Time)	10:16:00 AM	
Arrival (Local Time)	2:04:00 PM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00080	NW	17:44:25	17:51:36	146.0	
00081	SE	17:53:37	18:00:51	135.7	
00082	NW	18:02:30	18:08:38	150.6	
00083	SE	18:10:32	18:16:29	144.1	
00084	NW	18:18:20	18:22:52	178.3	
00084	SE	18:25:32	18:26:20	147.3	western mile of line due to cutting off line early
00085	SE	18:29:39	18:34:47	144.4	
00086	NW	18:37:12	18:41:33	142.9	
00087	SE	18:43:32	18:47:12	142.1	
00088	NW	18:49:20	18:52:25	137.1	
00089	SE	18:54:42	18:57:03	137.7	
00090	NW	18:59:24	19:01:04	138.2	
	NE	19:03:55	19:06:47	132.2	
00352	SW	19:14:27	19:22:10	135.0	
00351	E	19:24:24	19:31:24	116.0	
00350	SW	19:33:55	19:39:21	144.3	
00349	E	19:41:33	19:47:17	130.6	
00348	SW	19:49:47	19:55:08	134.7	
00347	E	19:57:40	20:03:00	128.8	
00346	SW	20:05:16	20:09:57	141.2	
00345	E	20:12:28	20:17:28	125.0	
00344	SW	20:19:38	20:23:48	144.2	
00343	E	20:26:25	20:29:40	128.1	
00342	SW	20:31:43	20:34:06	144.1	
00341	E	20:36:37	20:39:04	119.4	
00340	SW	20:41:50	20:43:03	141.1	
	S	20:46:14	20:50:04	117.4	

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Flightplan	LA_CountyV2_1560iiS_8ppms	

Mission Name	S2224046_20231006_F2	**Mission Notes**
Mission Date	10/6/2023	Captured 19 lines over course of our second lift
Aircraft	N22TE	
Pilot	Jack Martin	
Co-Pilot	Grey Chandler	
Operator	Matthew Moudy	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KHHR	
Departure (Local Time)	4:43:00 PM	
Arrival (Local Time)	8:48:00 PM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00284	E	00:01:48	00:05:40	135.7	
00379	SE	00:18:00	00:27:08	141.9	
00378	NW	00:29:15	00:38:11	144.1	
00377	SE	00:40:18	00:49:39	135.7	
00400	NW	00:51:55	00:53:21	152.7	
	SW	00:55:59	00:57:44	149.0	
00230	SW	01:04:00	01:10:53	145.6	
00231	E	01:13:27	01:20:05	143.6	
00232	SW	01:21:51	01:28:12	143.7	
00233	E	01:31:00	01:37:02	143.9	
00234	SW	01:39:08	01:44:49	145.6	
00235	E	01:47:29	01:53:13	135.8	
00236	SW	01:55:20	02:00:21	146.5	
00237	E	02:03:15	02:08:32	128.7	
00238	SW	02:10:35	02:14:58	143.7	
00239	E	02:17:27	02:18:54	131.4	
00239	SW	02:21:36	02:21:48	169.8	
00239	E	02:23:33	02:27:33	142.5	
00240	SW	02:29:28	02:32:59	142.3	
	N	02:36:18	02:38:32	153.8	
00120	E	02:42:35	02:51:07	145.4	
00121	SW	02:53:13	03:01:42	146.5	
00122	E	03:04:12	03:13:21	135.8	
00123	SW	03:15:23	03:23:55	145.4	
	S	03:27:59	03:29:09	144.4	

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Mission Name	S2224046_20231013_F1	**Mission Notes**
Mission Date	10/13/2023	Only collected one line inside LAX Bravo before we aborted the mission due to loss of aircraft and sensor GPS. Neighboring aircraft reported GPS loss at the same time.
Aircraft	N22TE	
Pilot	Grey Chandler	
Co-Pilot		
Operator	Matthew Moudy	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KHHR	
Departure (Local Time)	10:20:00 PM	
Arrival (Local Time)	11:48:00 PM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00301	SE	05:55:12	06:05:57	134.1	Laser stopped before end of western line
00301	NW	06:11:58	06:24:09	139.7	Attempted line in opposite direction and lost GPS on western end. Line complete

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Flightplan	LA_CountyV2_1560iiS_8ppms

Mission Name	S2224046_20231014_F1	**Mission Notes**
Mission Date	10/14/2023	The weather and clearance from ATC lined up allowing us to get a few hours of online time in the Bravo.
Aircraft	N22TE	
Pilot	Grey Chandler	
Co-Pilot		
Operator	Will Griffith	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KHHR	
Departure (Local Time)	11:30:00 PM	
Arrival (Local Time)	3:08:00 AM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00302	SE	07:01:10	07:14:30	136.6	E - FIRST LINE
00303	NW	07:18:45	07:31:36	142.4	W
00304	SE	07:33:54	07:47:19	136.5	E
00305	NW	07:50:02	08:02:47	142.3	W
00306	SE	08:04:57	08:18:08	136.7	E
00307	NW	08:21:14	08:33:47	143.0	W
00308	SE	08:36:00	08:48:58	137.7	E
00309	NW	08:51:01	09:03:23	143.8	W
00310	SE	09:05:40	09:18:30	138.3	E
00311	NW	09:21:05	09:26:58	146.1	W - First pass the sesnor stopped logging half way along the line, then had a misfire at 093318. Complete refly headed E at 093946
00311	NW	09:33:18	09:33:36	142.4	W - First pass the sesnor stopped logging half way along the line, then had a misfire at 093318. Complete refly headed E at 093946
00311	SE	09:39:46	09:52:27	139.2	W - First pass the sesnor stopped logging half way along the line, then had a misfire at 093318. Complete refly headed E at 093946
	SW	09:58:32	10:02:22	137.7	XLINE - 095832 - S

Project	946623-R037786.00	LA_County_Lidar_2023
Flightplan	LA_CountyV2_1560iiS_8ppms	

Mission Name	S2224046_20231021_F1	**Mission Notes**
Mission Date	10/21/2023	Collected 5 lines during night mission. ATC broke us off two lines hindering production
Aircraft	N22TE	
Pilot	Creston Saul	
Co-Pilot		
Operator	Matthew Moudy	
Co-Operator		
Vendor	NV5 Geospatial	
Base Airport	KHHR	
Departure (Local Time)	11:01:00 PM	
Arrival (Local Time)	1:36:00 AM	

Line	Heading	Start Time (UTC)	Stop Time (UTC)	Speed (kt)	Notes
00301	NW	06:20:21	06:33:44	135.5	
00300	SE	06:36:44	06:43:30	139.9	aborted line for ATC midway through line
00312	SE	06:55:03	06:59:58	138.9	aborted line for ATC midway through line, relown
00312	SE	07:13:58	07:26:30	140.5	
00313	NW	07:29:12	07:42:19	133.4	
00314	SE	07:44:48	07:57:17	140.1	
00315	NW	08:00:18	08:13:12	134.8	
	SW	08:15:37	08:17:53	120.7	

Appendix B

SBET and POSPac Reports

General Information

Mission Information

Project name	01052024A_3546
Processing date	2024-01-09 16:19:10
Mission date	2024-01-05 21:31:20
Mission duration	05:21:34.751
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N9922
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
240105_213101_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm0050.24g	GLONASS Broadcast Ephemeris
Ephm0060.24g	GLONASS Broadcast Ephemeris
Ephm0060.24n	GPS Broadcast Ephemeris

Output Files

Filename	File type
sbet_01052024A_3546.out	SBET Trajectory File

Rover Data Summary

First raw data file	240105_213101_INS-GPS_1.raw		
Last raw data file	240105_213101_INS-GPS_1.raw		
Start GPS week	2295		
Start time	509461.323 (1/5/2024 9:31:01 PM)		
End time	528756.074 (1/6/2024 2:52:36 AM)		
Start of fine alignment	509777.002 (1/5/2024 9:36:17 PM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.205	0.058	-1.282
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

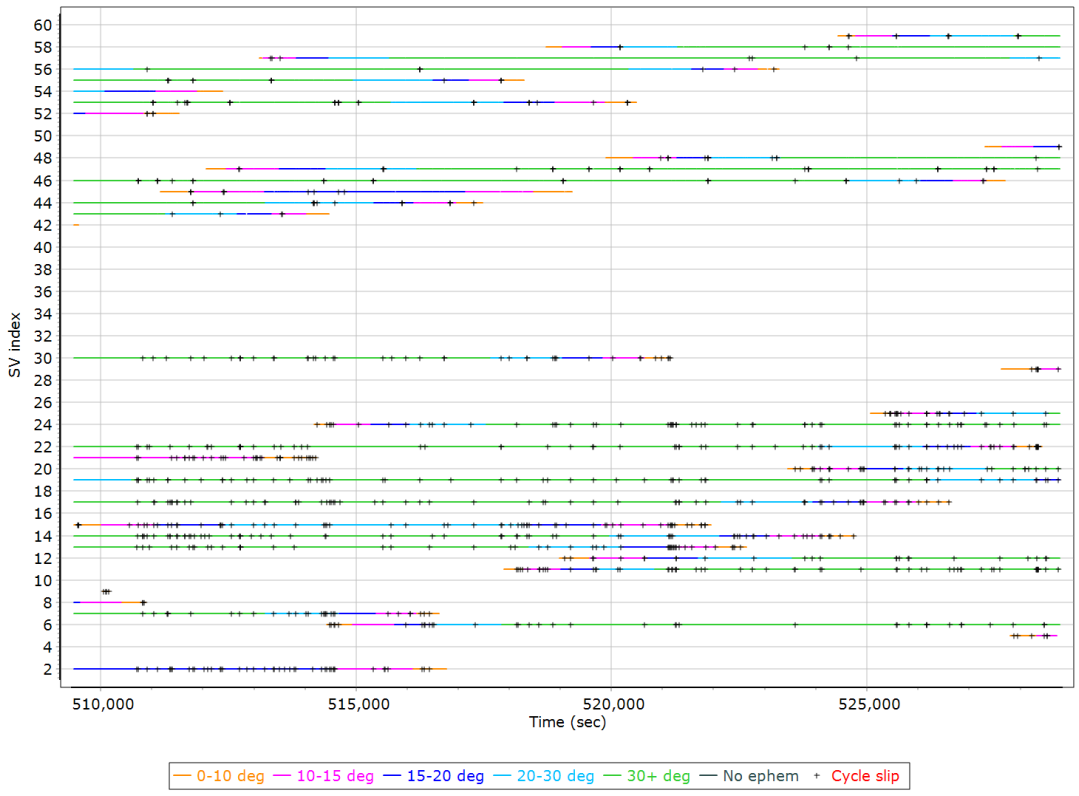
Rover Data QC

Raw IMU Import QC Summary

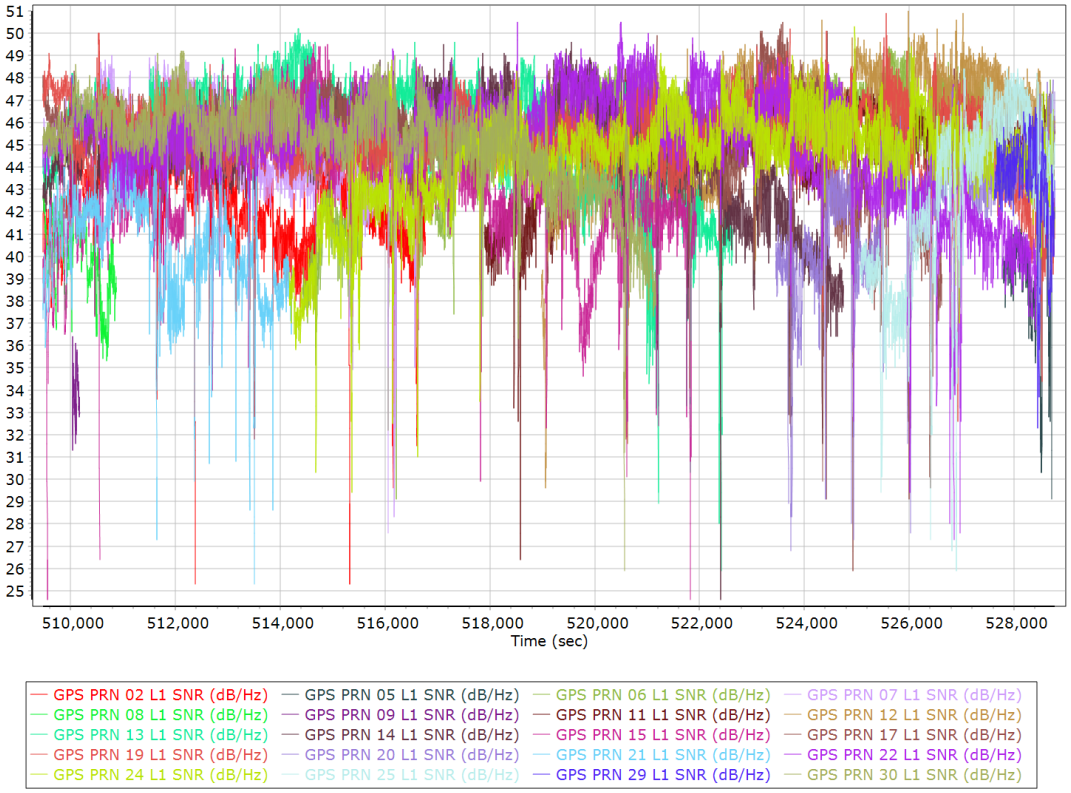
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_01052024A_3546.log
IMU Records Processed	3858032
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

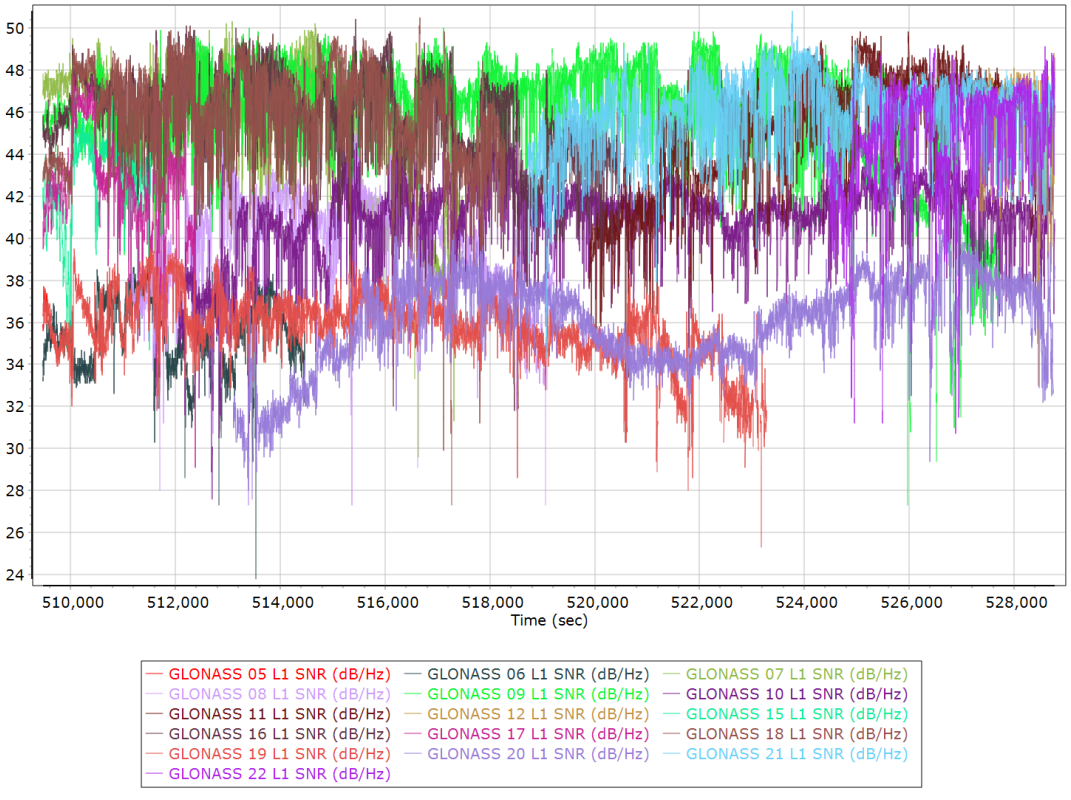
GPS/GLONASS L1 Satellite Lock/Elevation



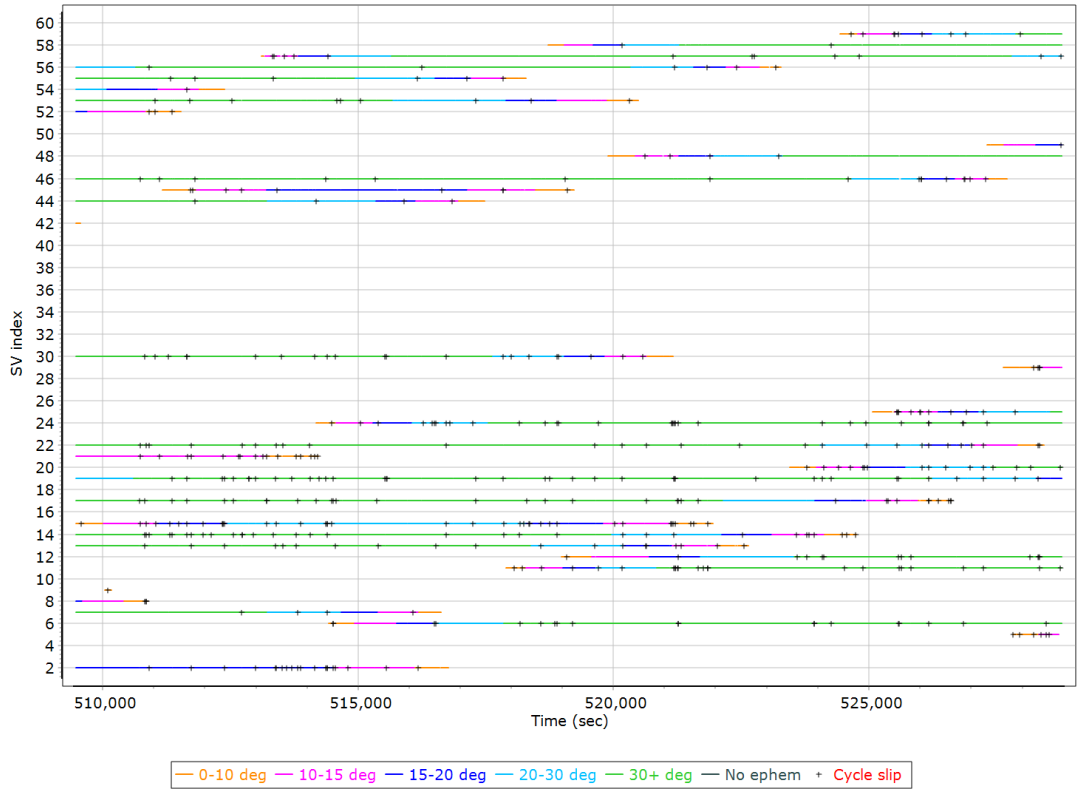
GPS L1 SNR



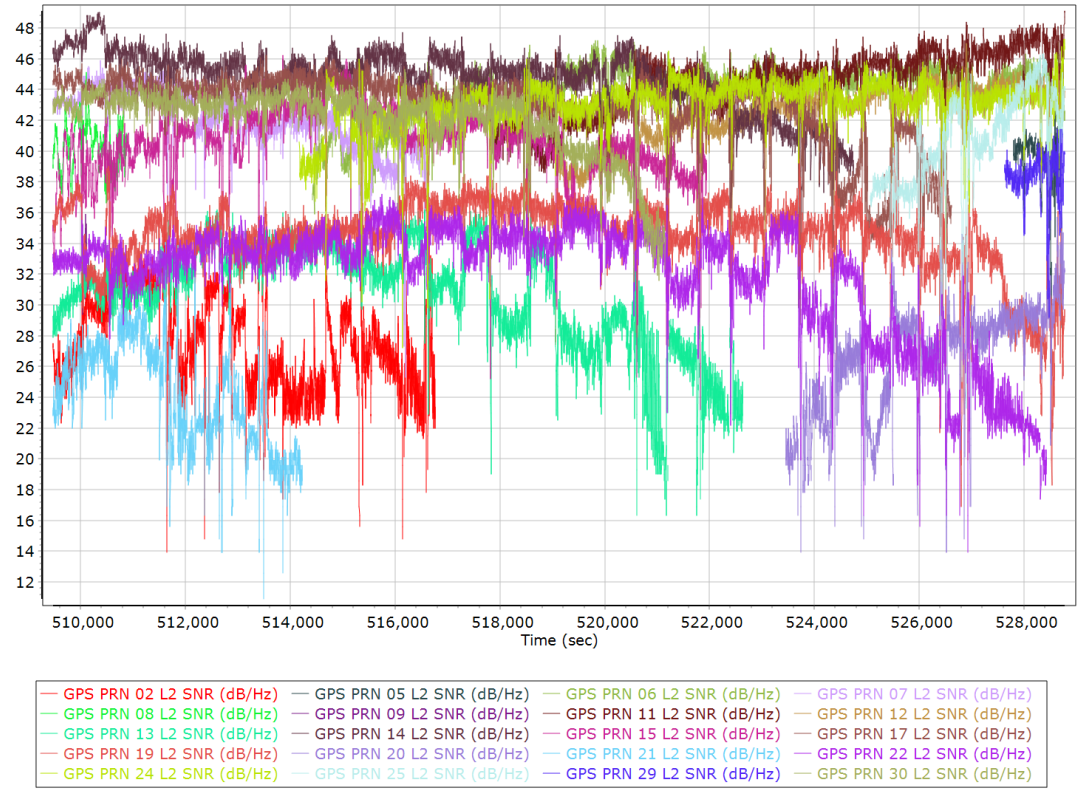
GLONASS L1 SNR



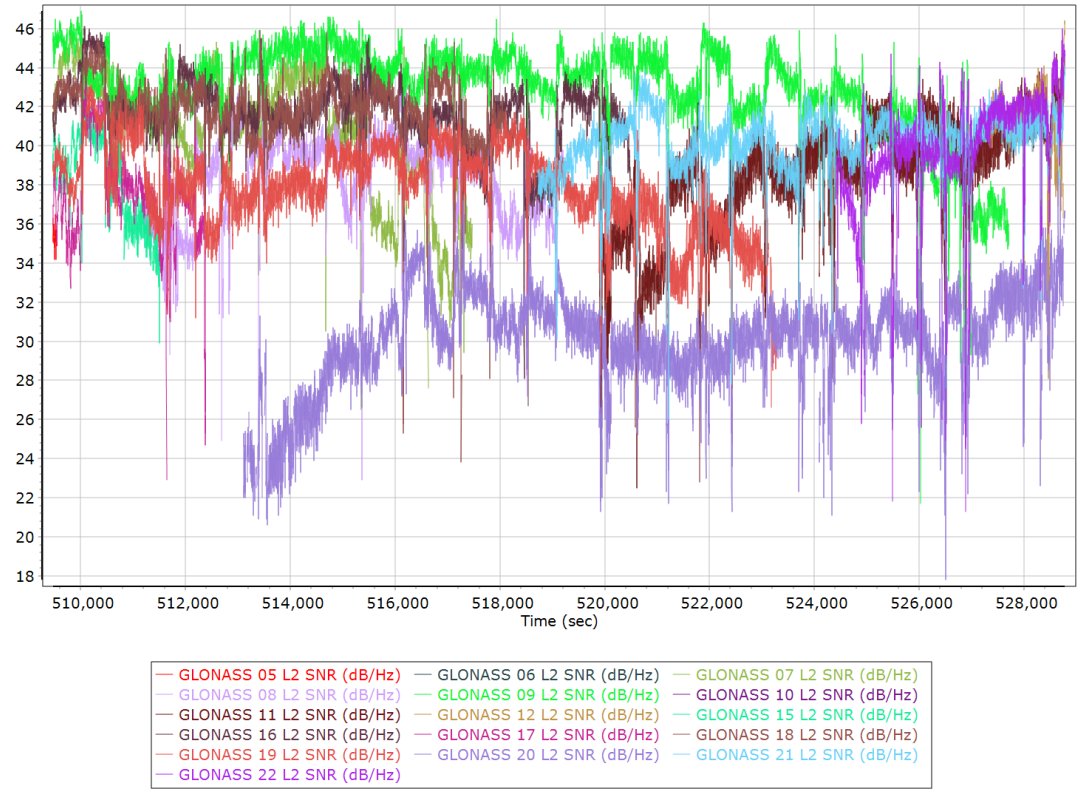
GPS/GLONASS L2 Satellite Lock/Elevation



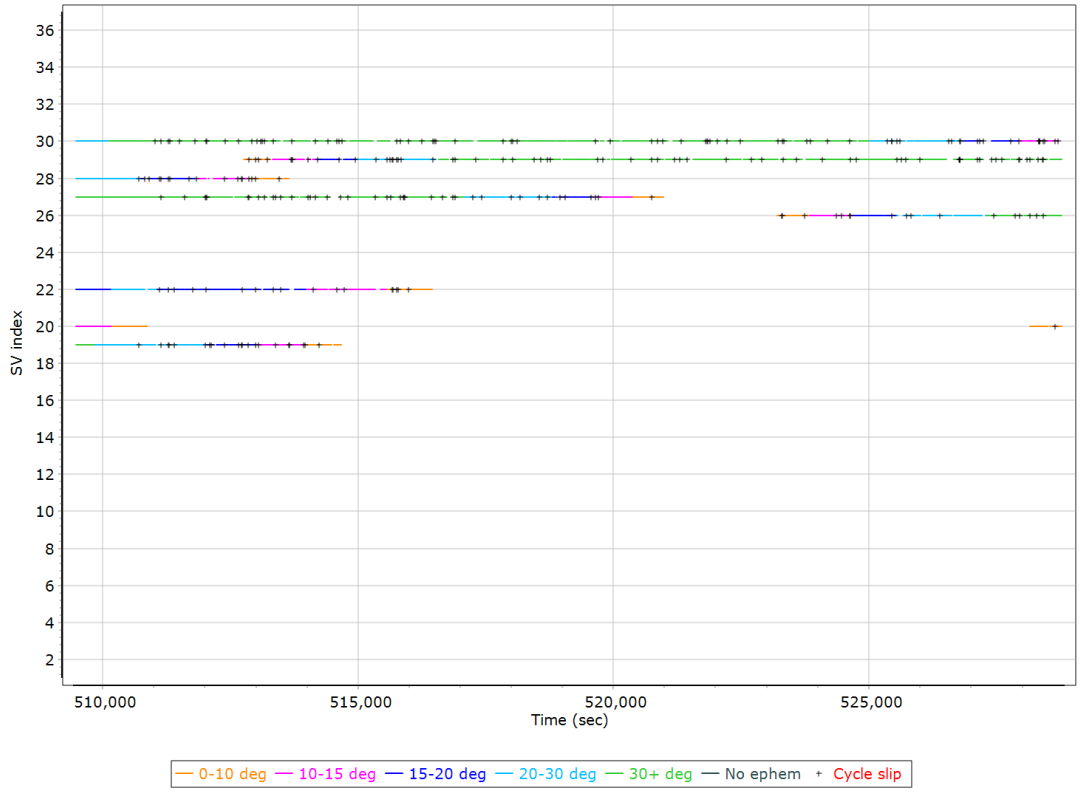
GPS L2 SNR



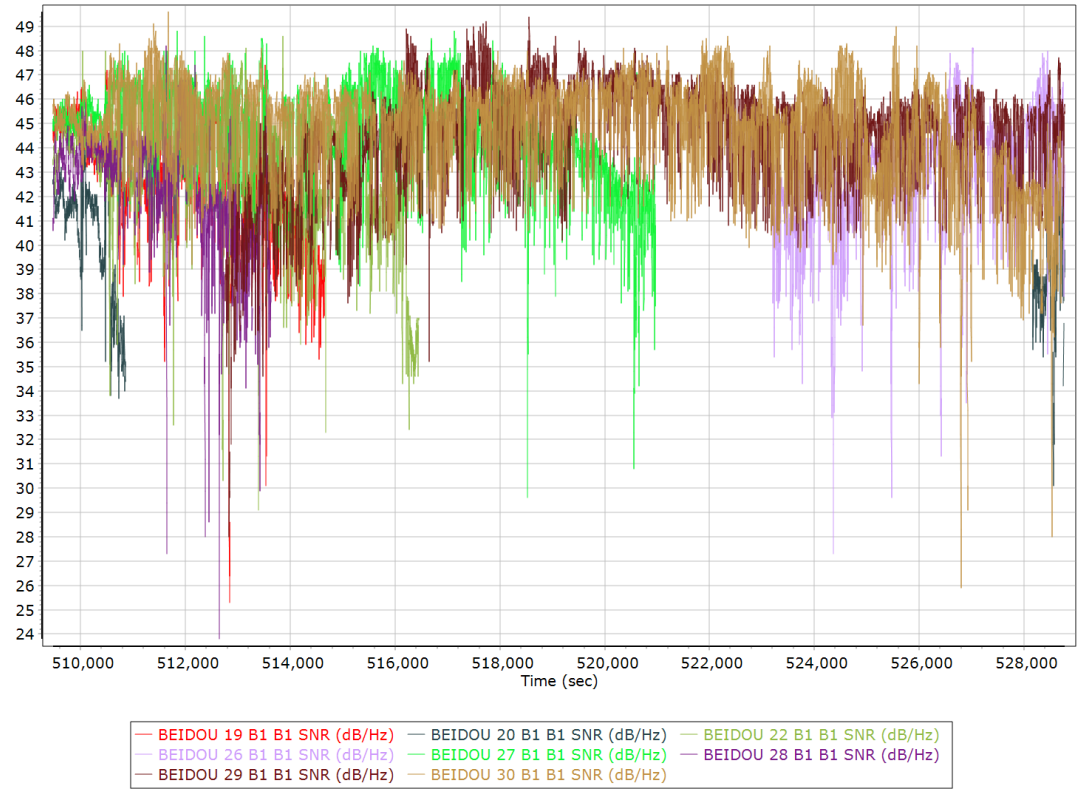
GLONASS L2 SNR



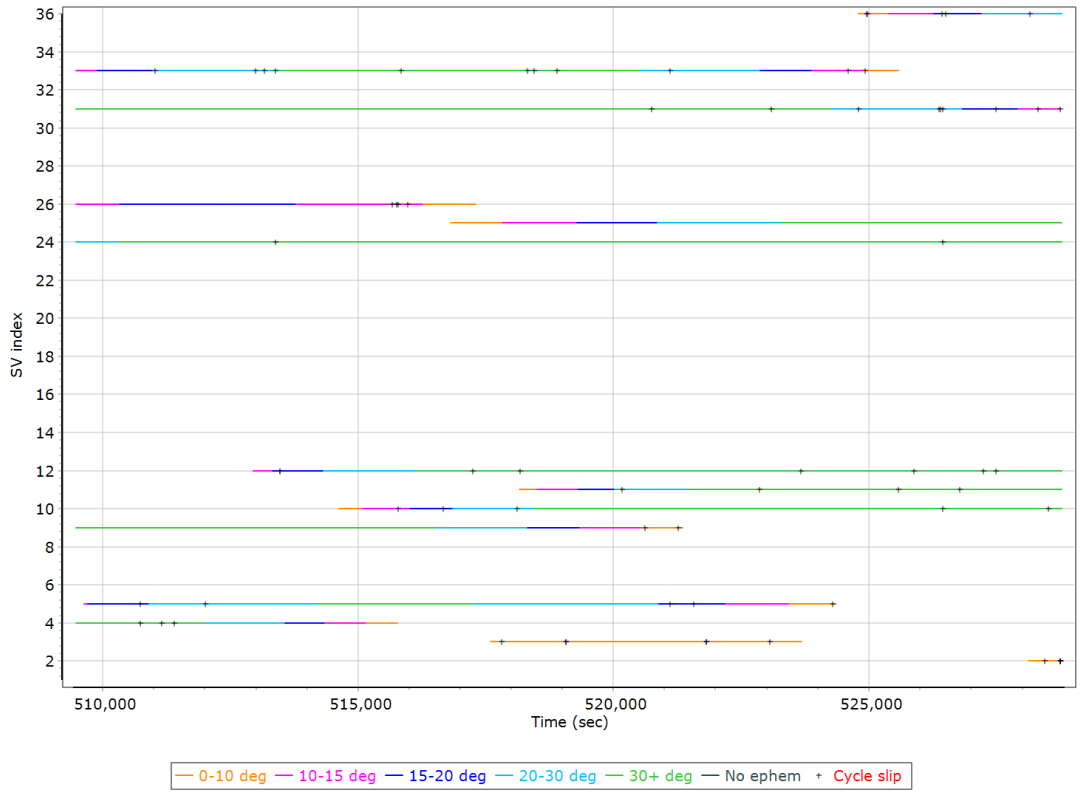
BEIDOU Satellite Lock/Elevation



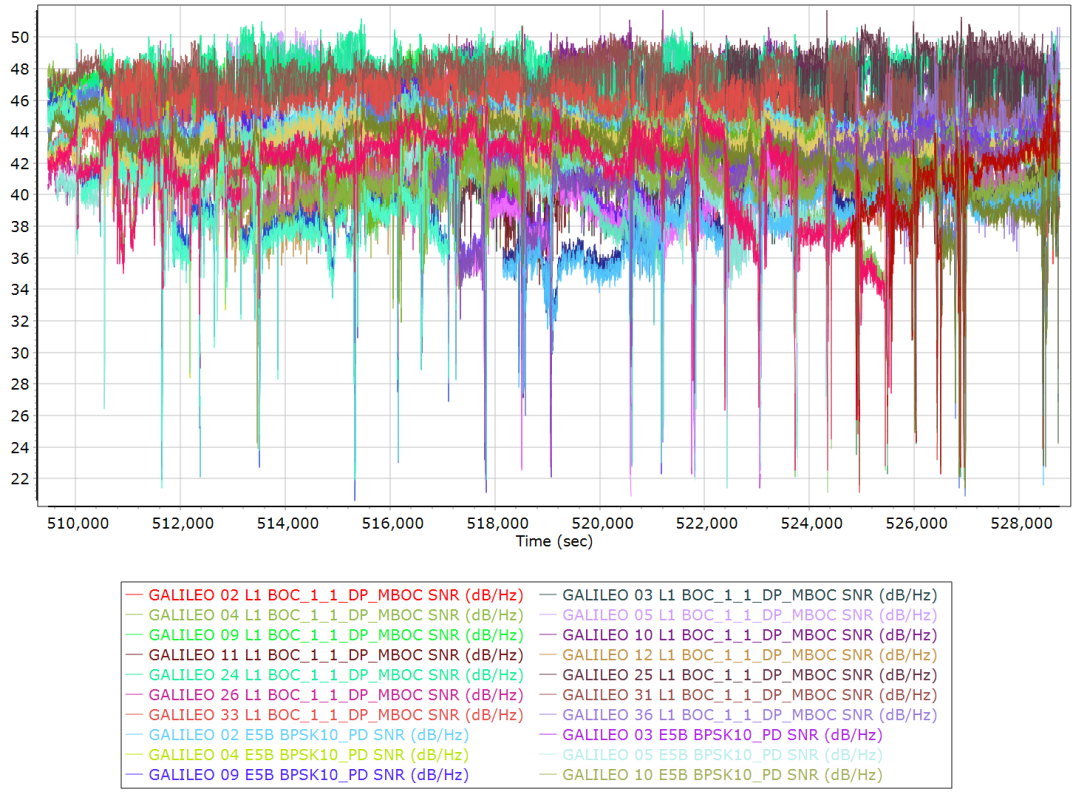
BEIDOU SNR



GALILEO Satellite Lock/Elevation

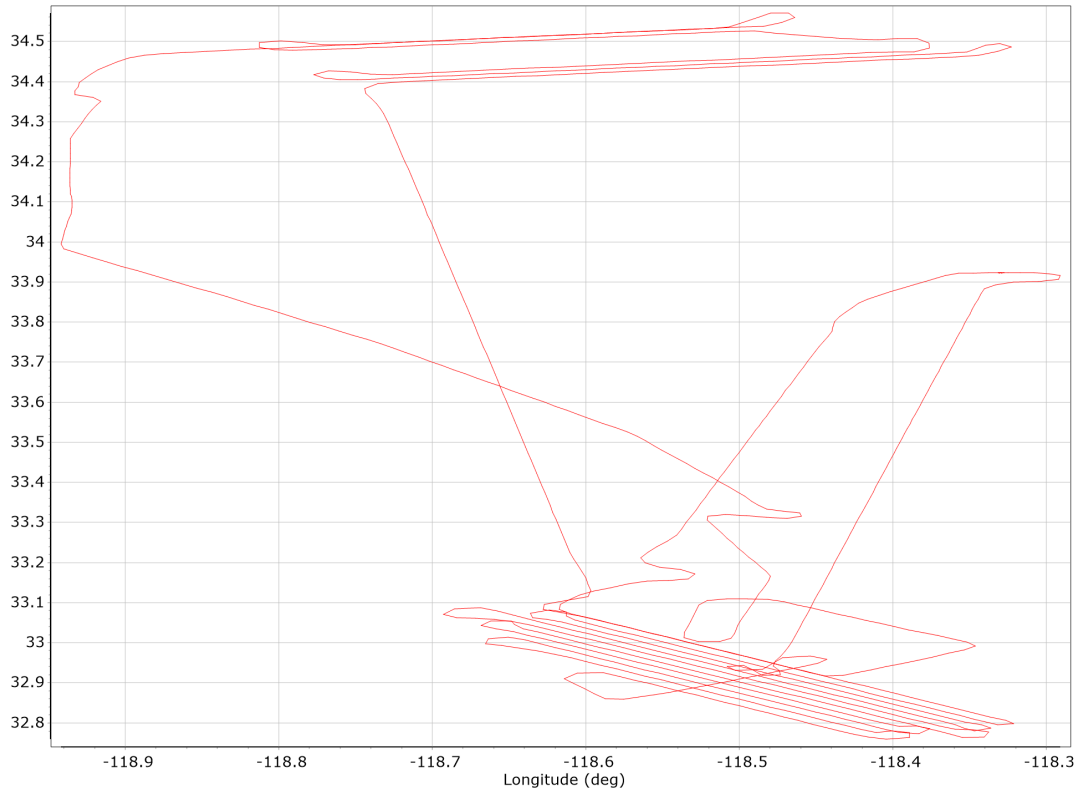


GALILEO SNR


50
48
46
44
42
40
38
36
34
32
30
28
26
24
22
510,000
512,000
514,000
516,000
518,000
520,000
522,000
524,000
526,000
528,000
Time (sec)
GALILEO 02 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 03 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 04 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 05 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 09 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 10 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 11 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 12 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 24 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 25 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 26 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 31 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 33 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 36 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 02 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 03 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 04 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 05 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 09 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 10 E5B BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

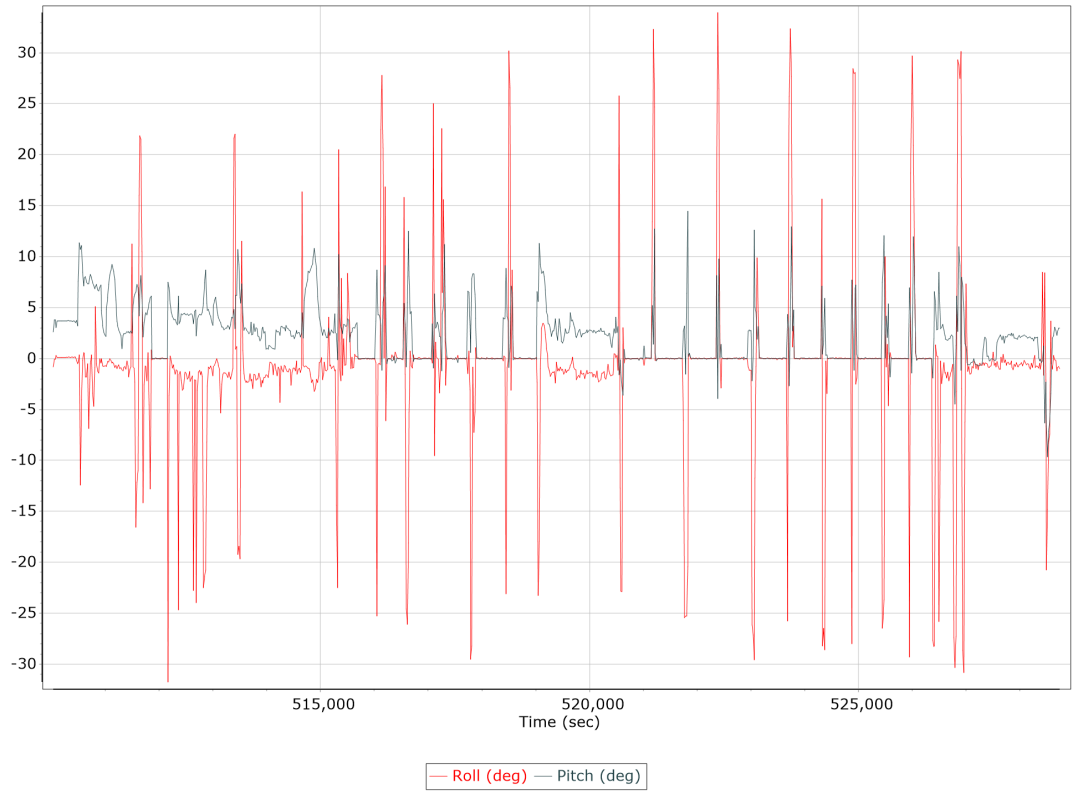
Top View



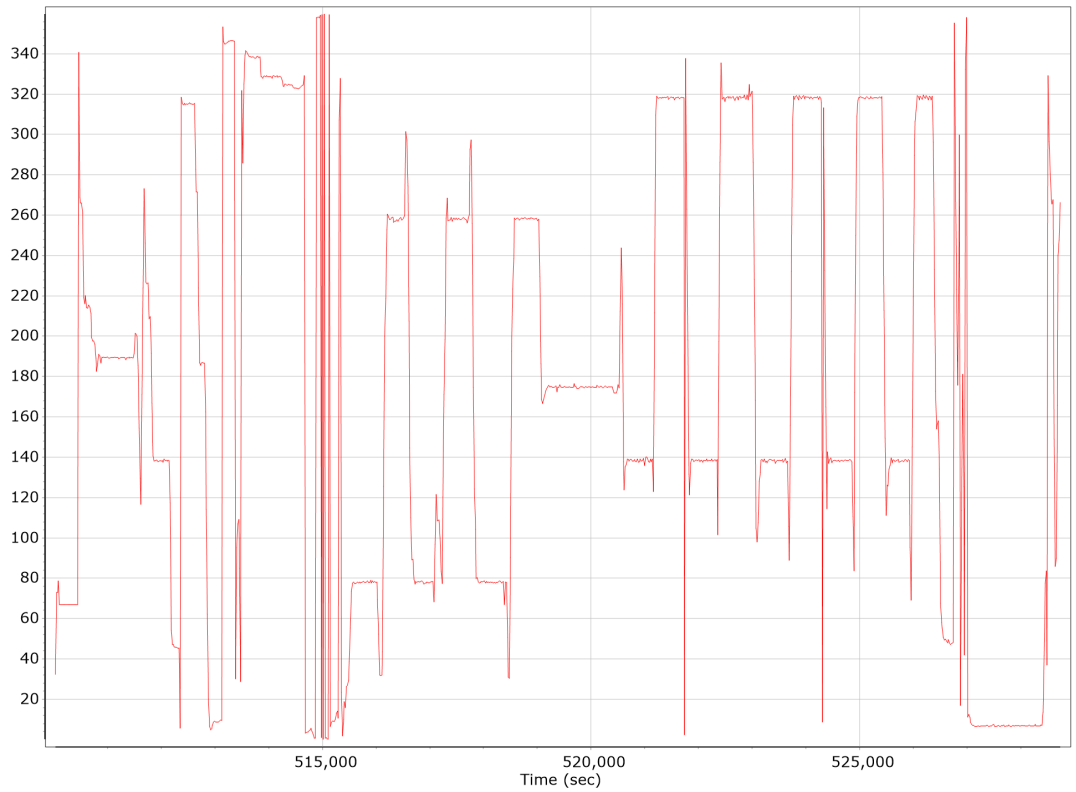
Altitude



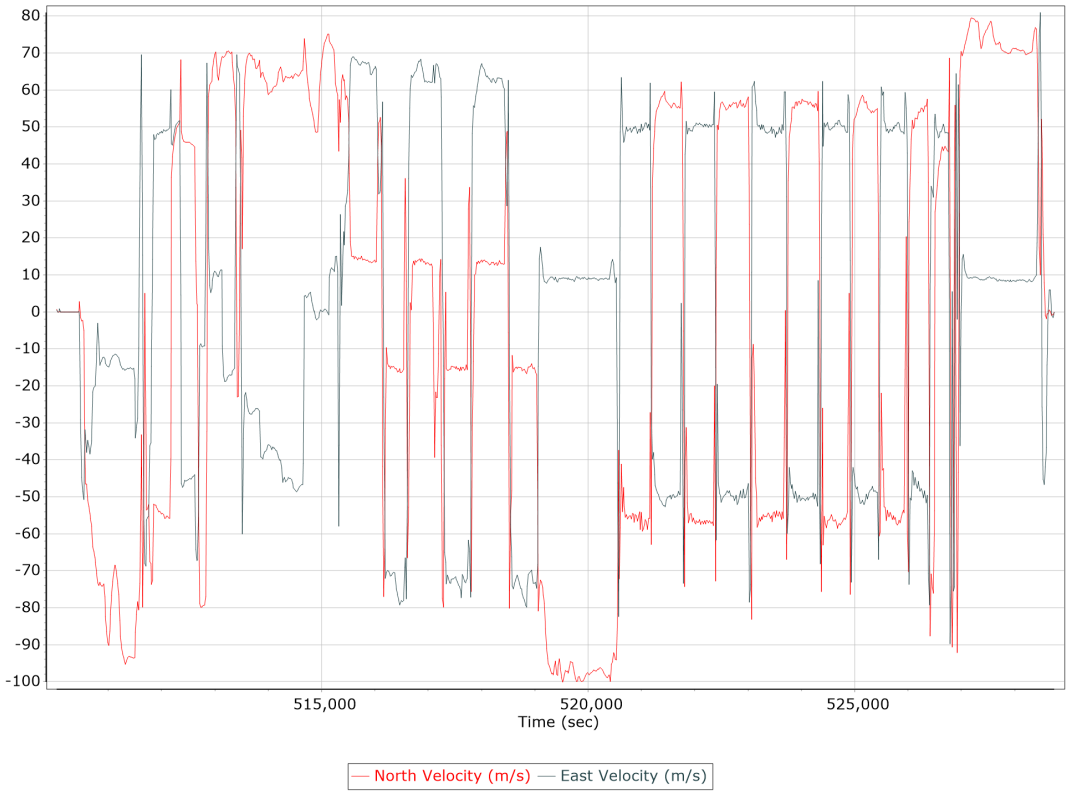
Roll/Pitch



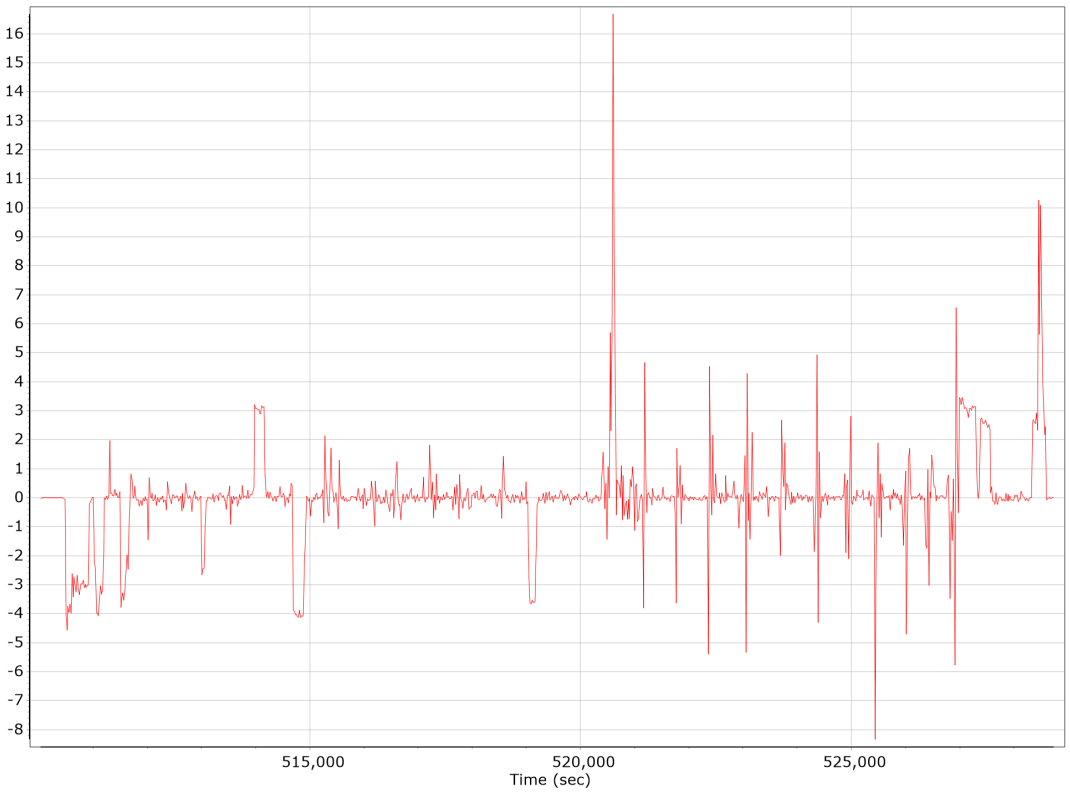
Heading



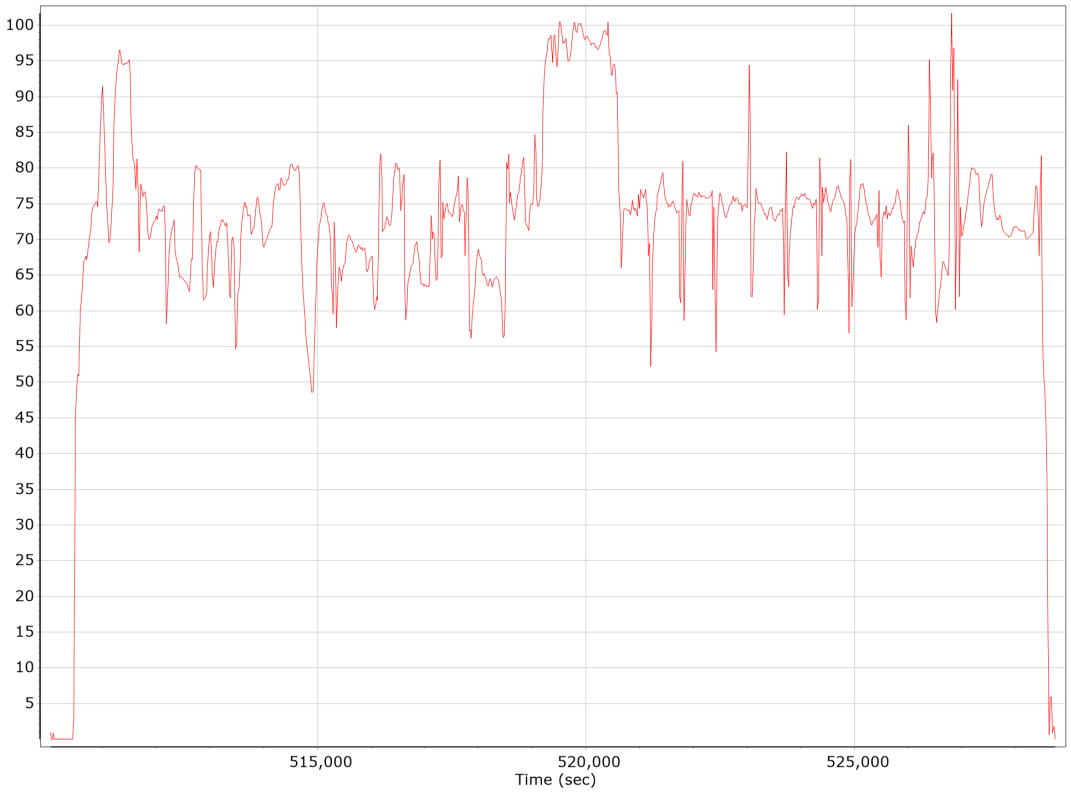
North/East Velocity



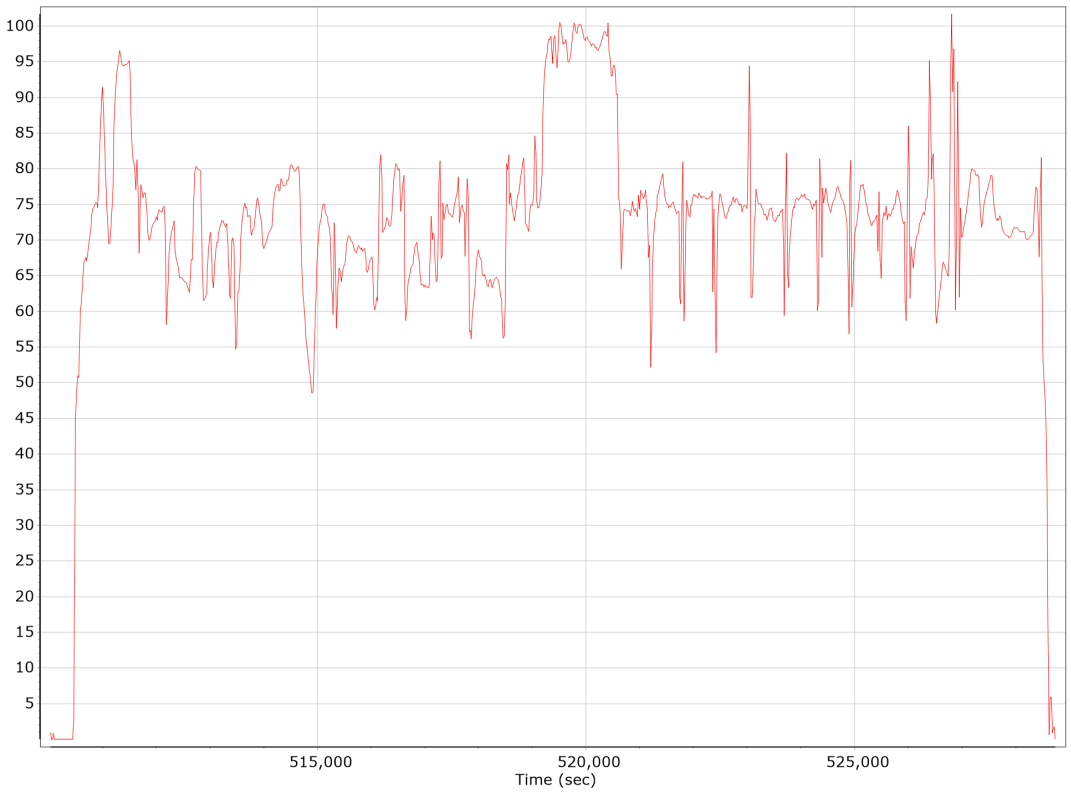
Down Velocity



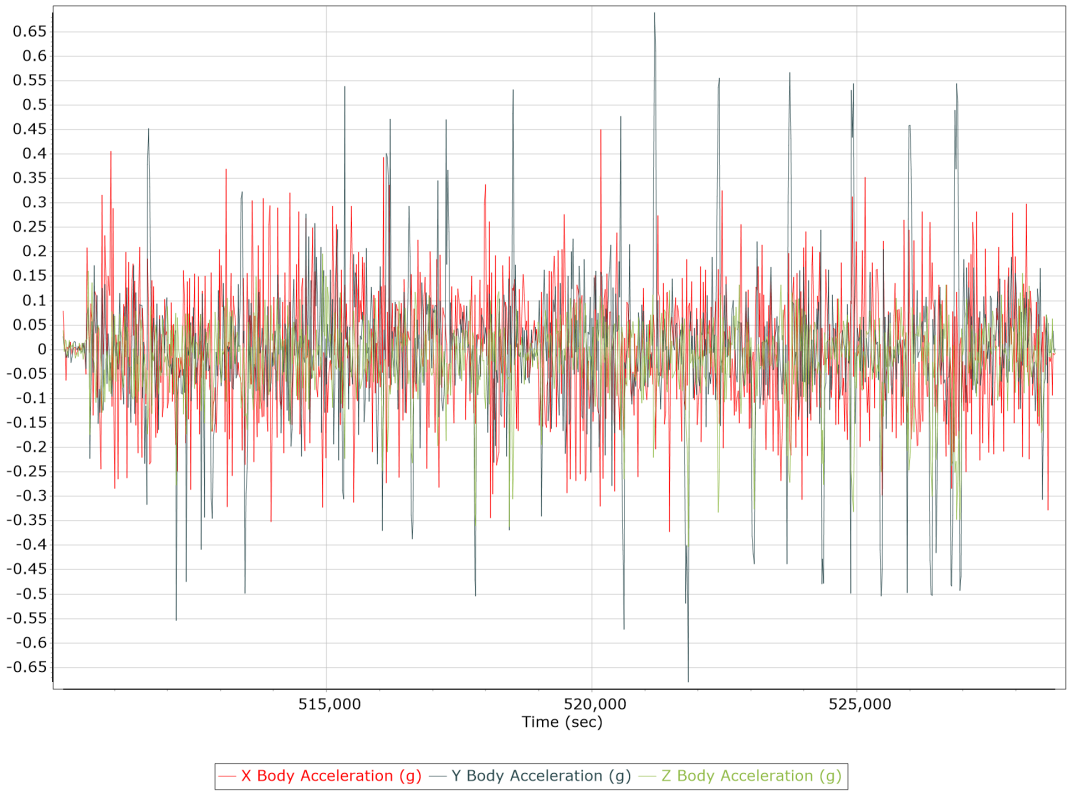
Total Speed



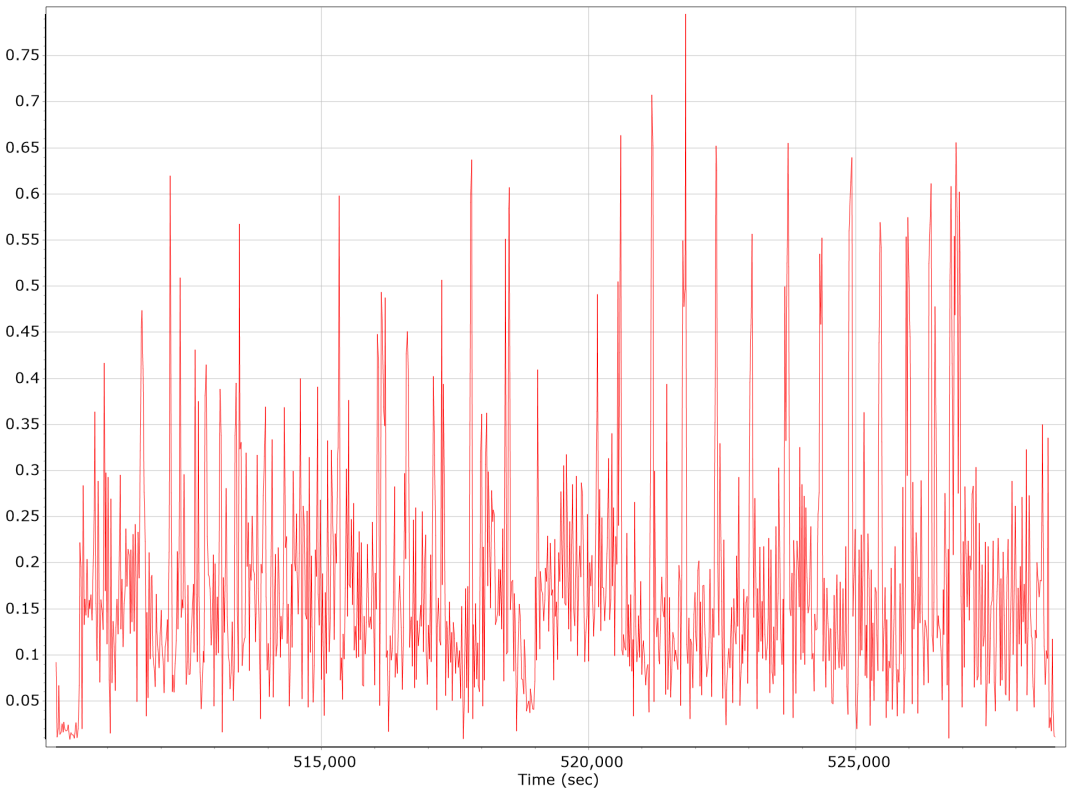
Ground Speed



Body Acceleration



Total Body Acceleration

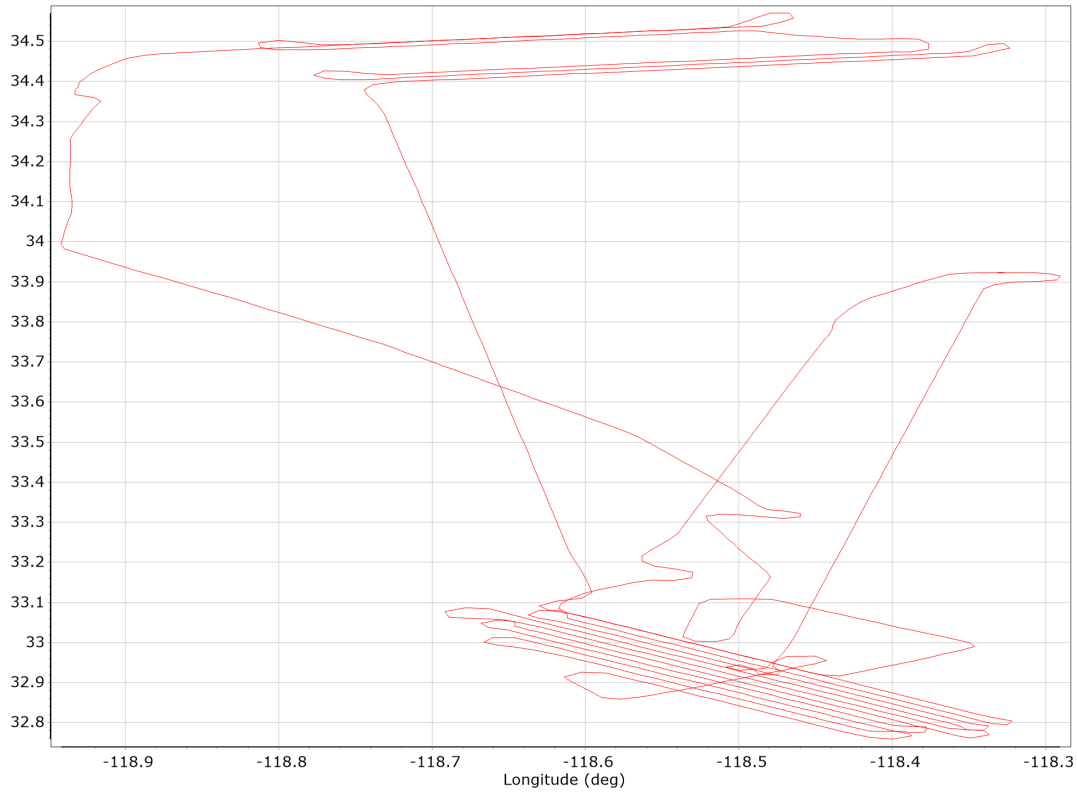


Body Angular Rate



Forward Processed Trajectory Information

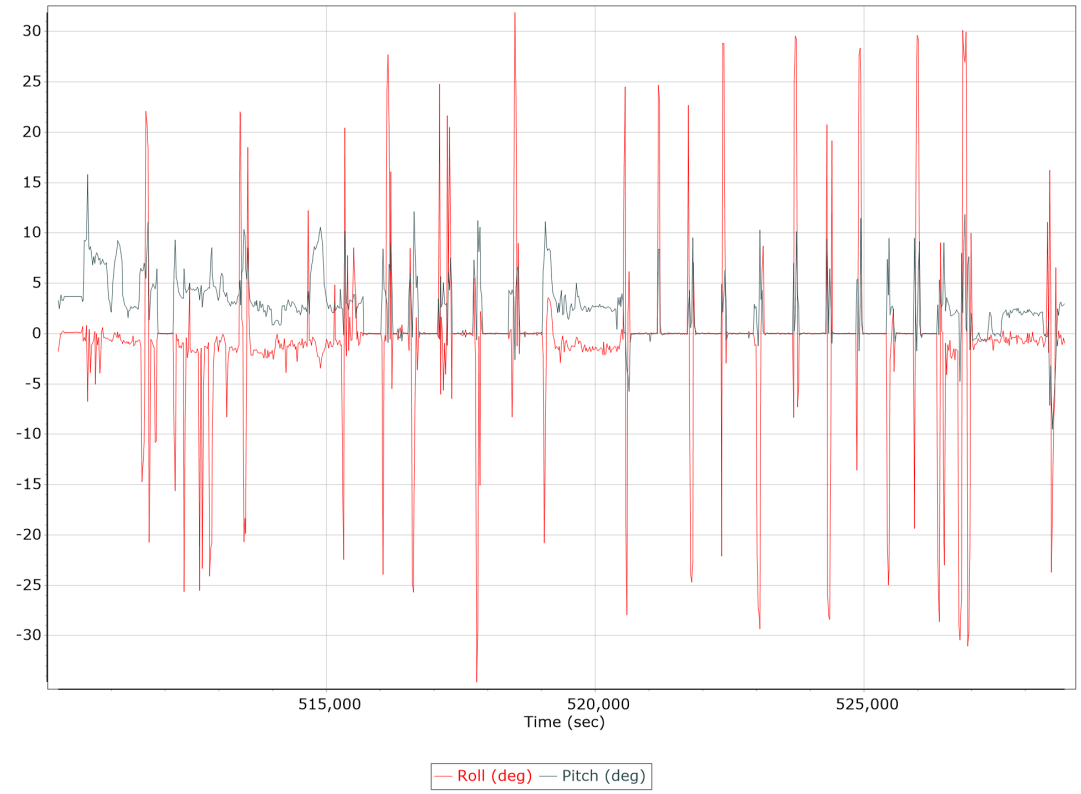
Top View



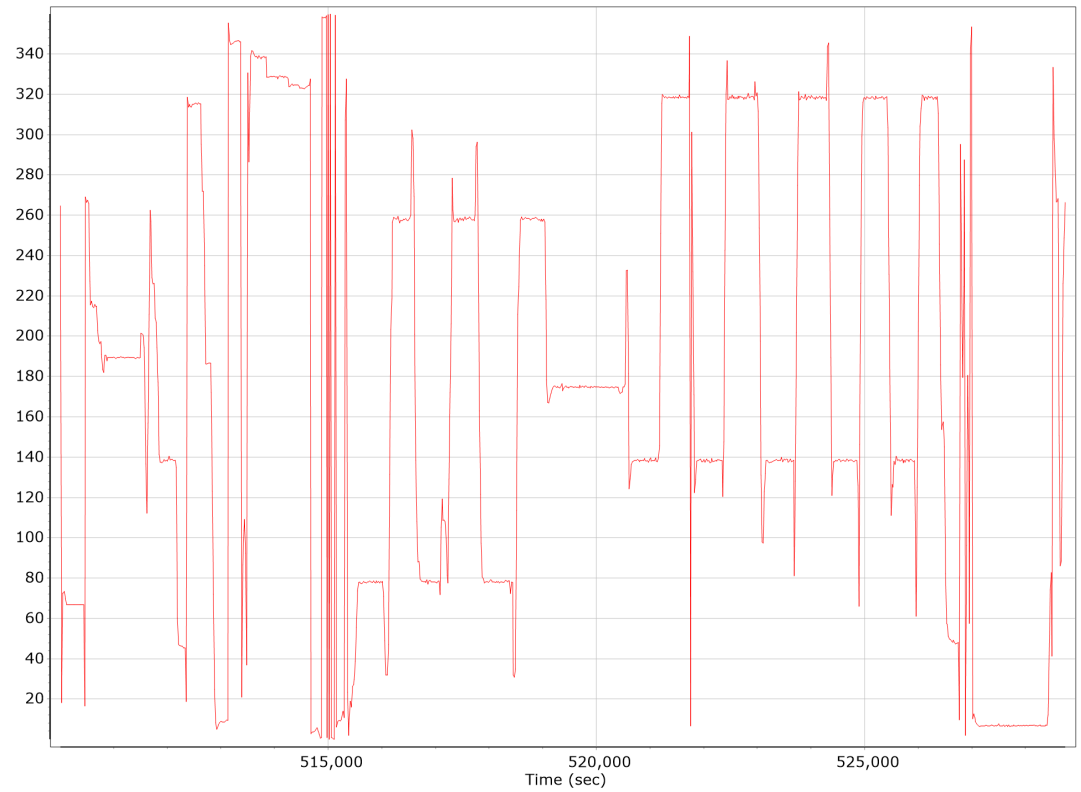
Altitude



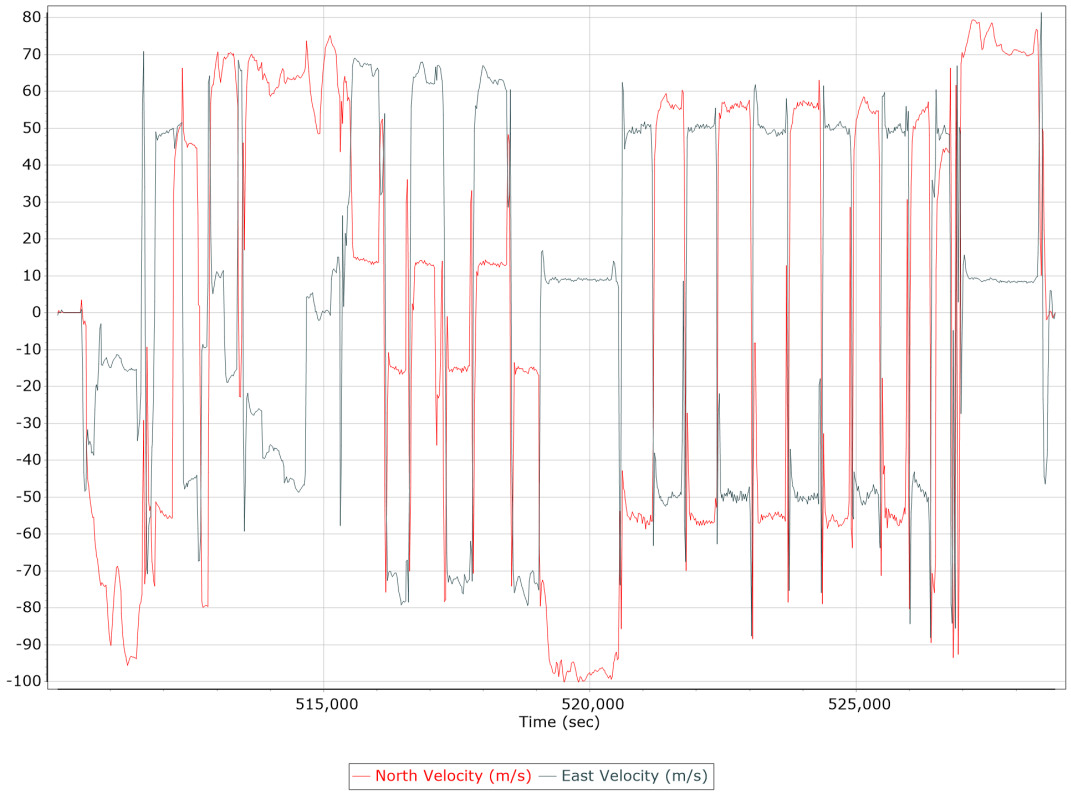
Roll/Pitch



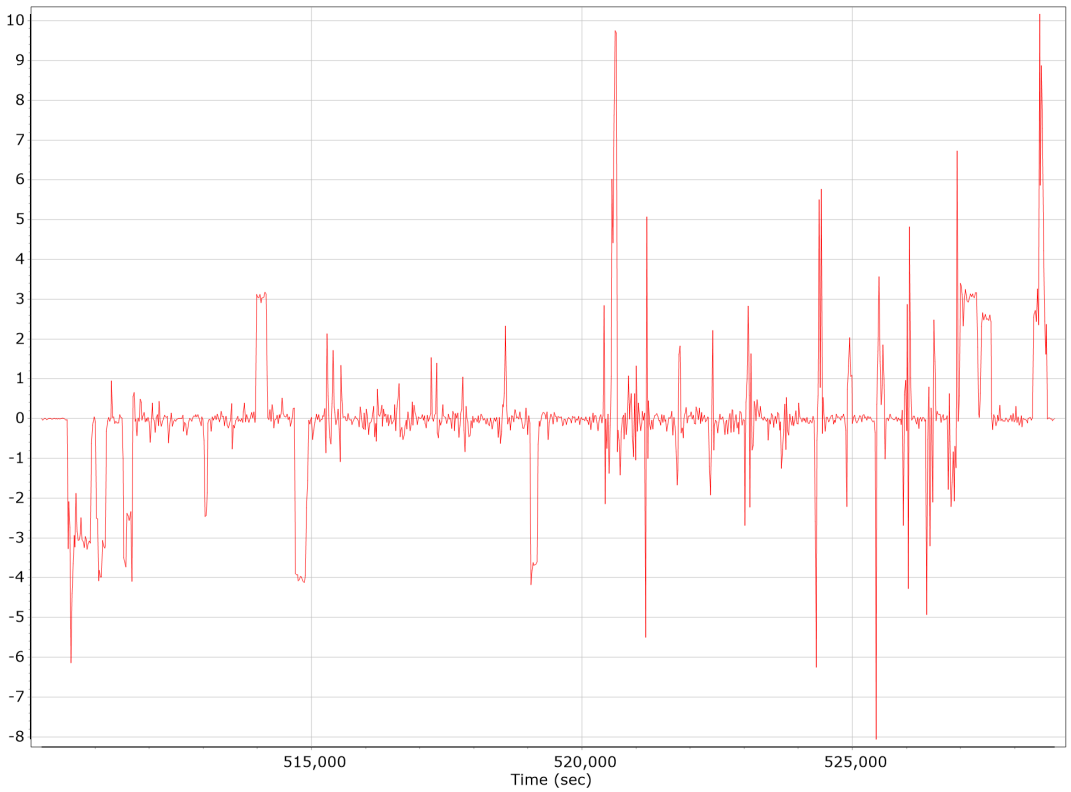
Heading



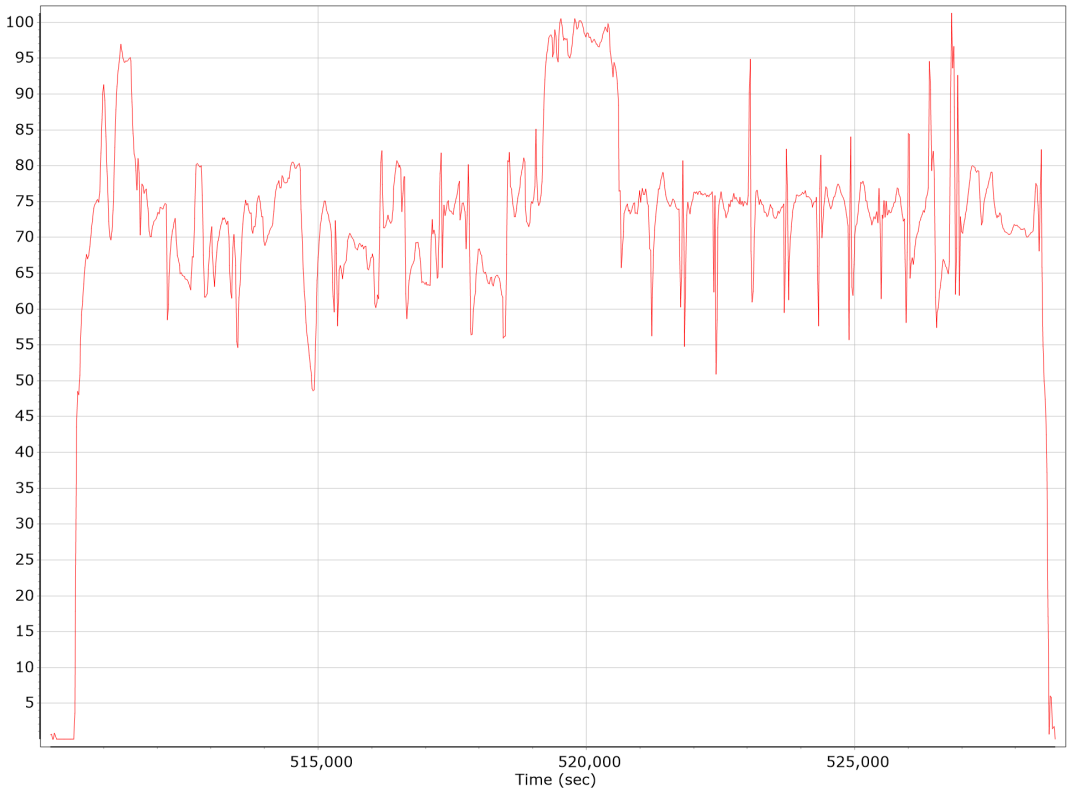
North/East Velocity



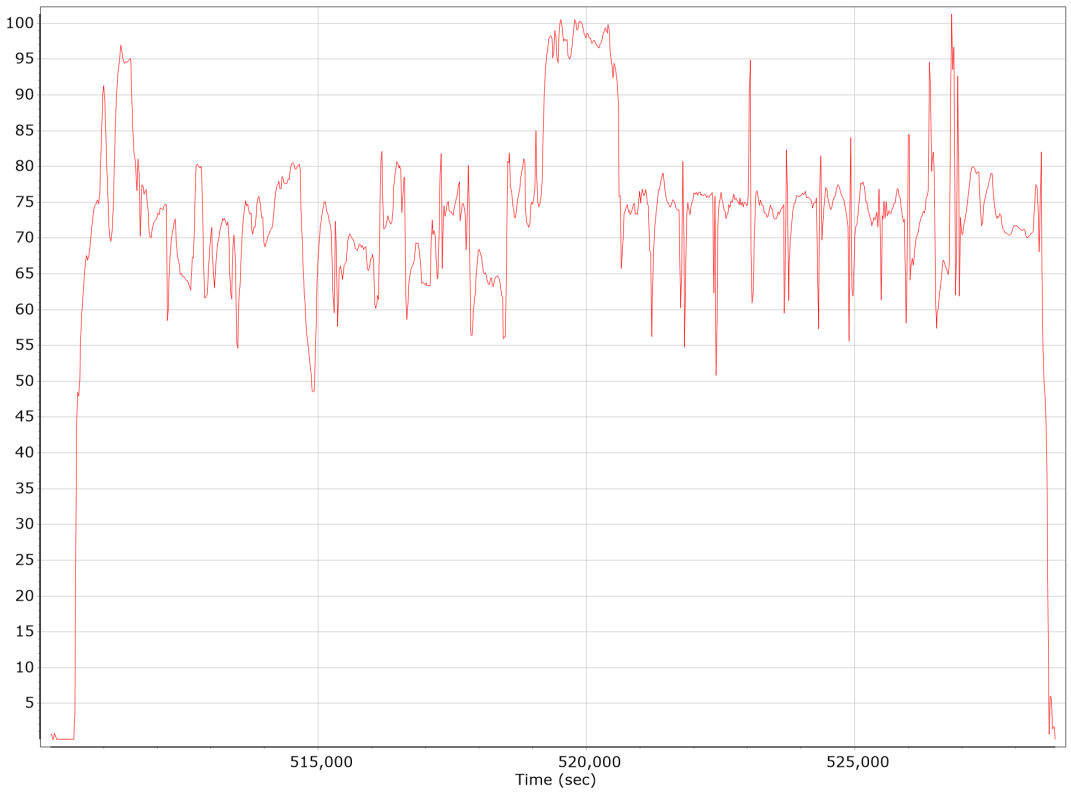
Down Velocity



Total Speed



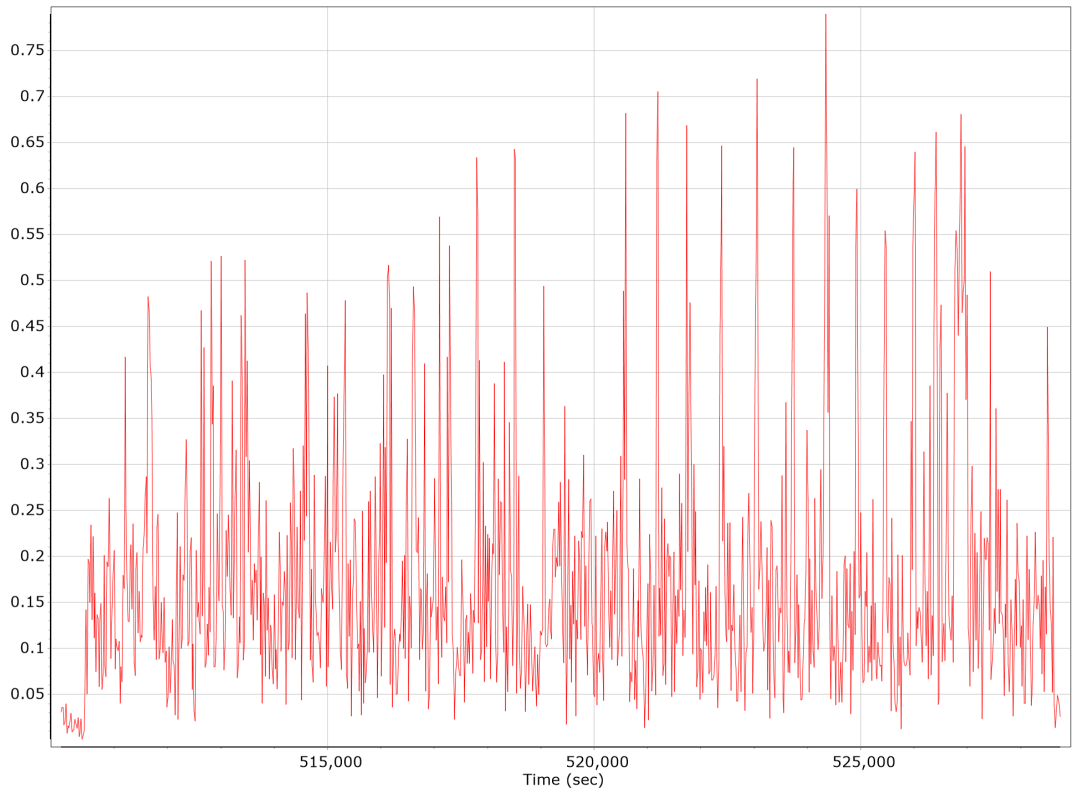
Ground Speed



Body Acceleration



Total Body Acceleration



Body Angular Rate

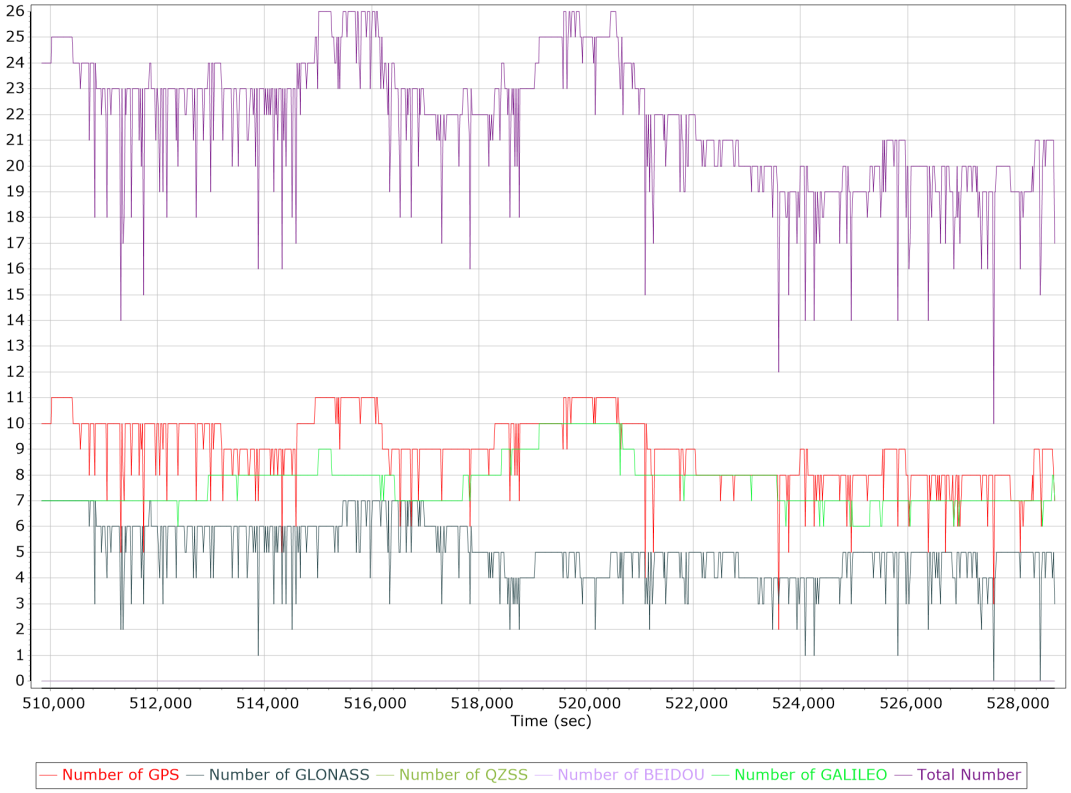


GNSS QC

GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	2	11	9
Number of GLONASS SV	0	7	5
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	5	10	8
Total number of SV	10	26	22
PDOP	0.94	3.21	1.20
QC Solution Gaps	1.00	1.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	19278.00	0.00	2.00
Percentage	99.99	0.00	0.01

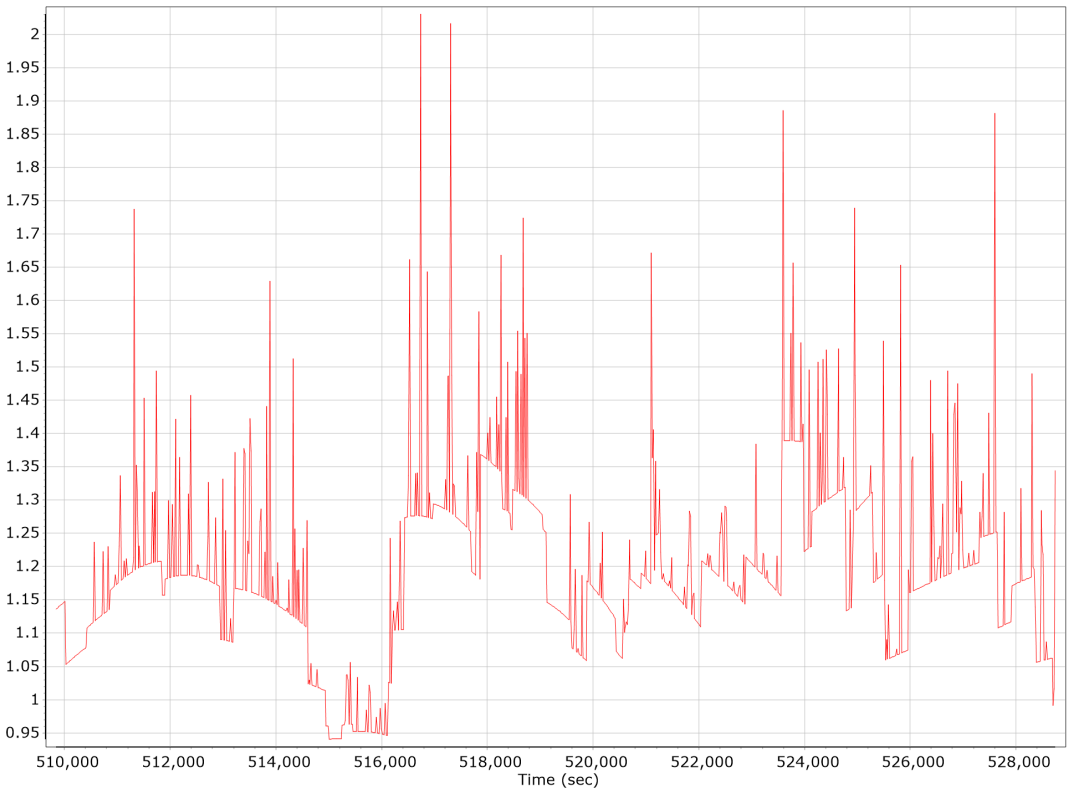
Num SVs in solution



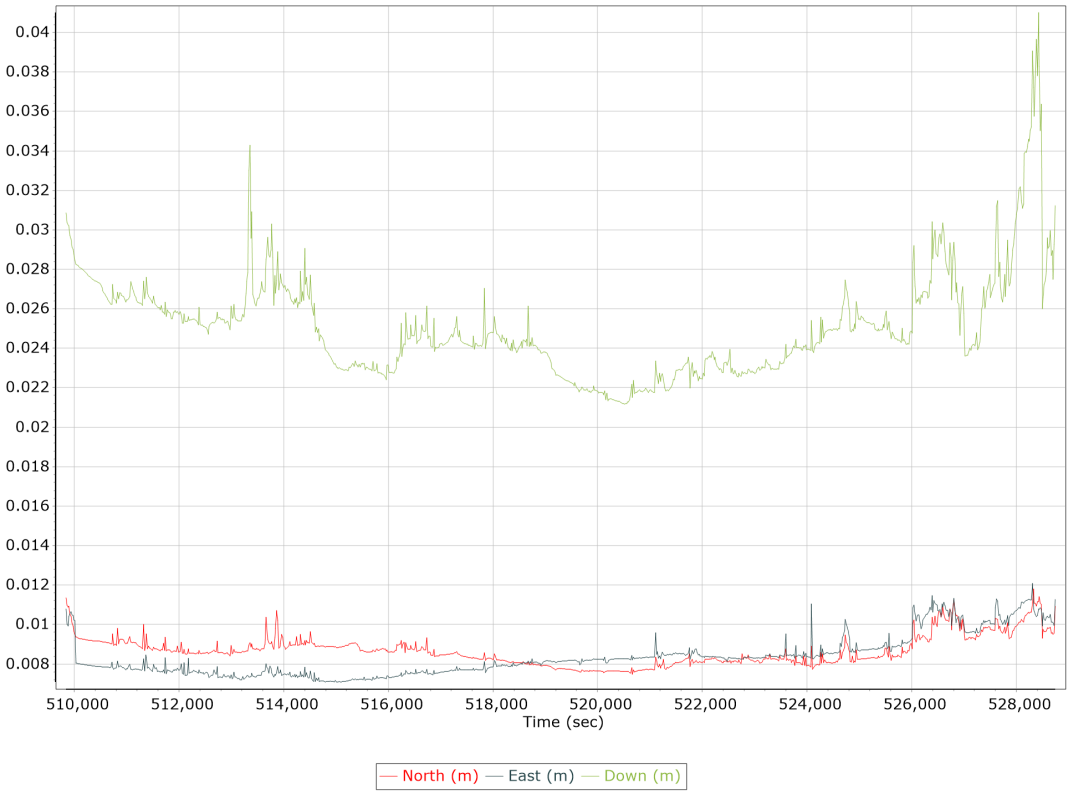
Forward/Reverse Separation



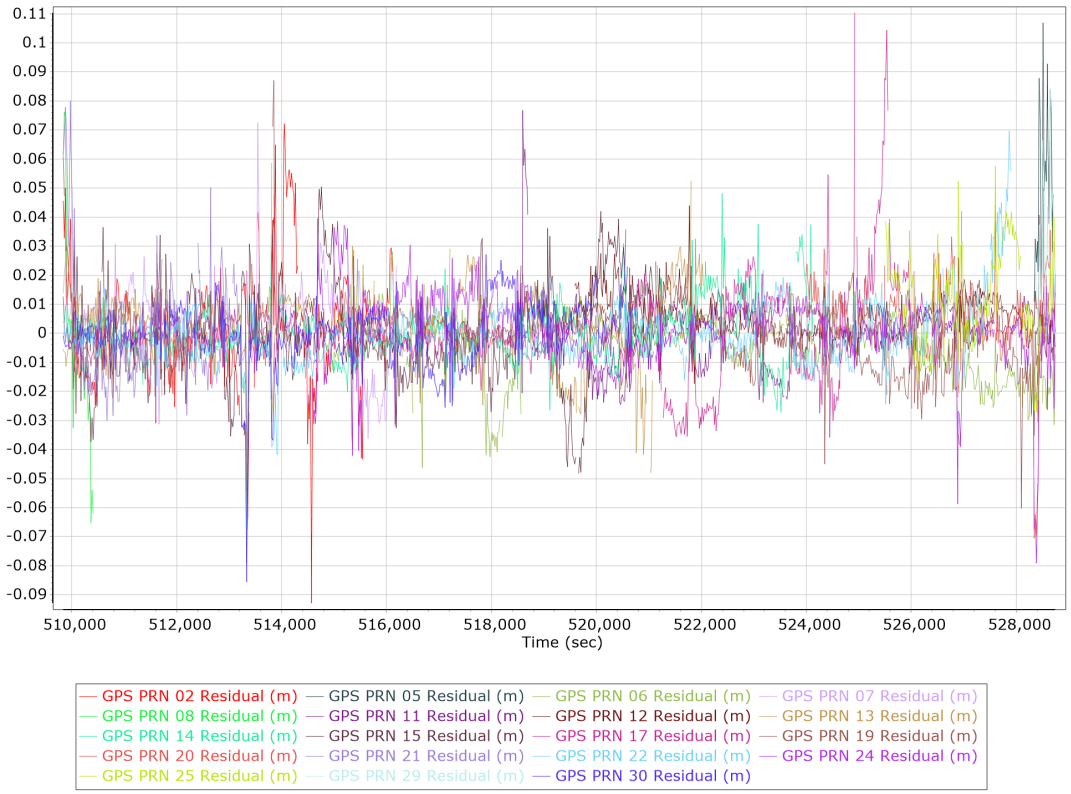
PDOP



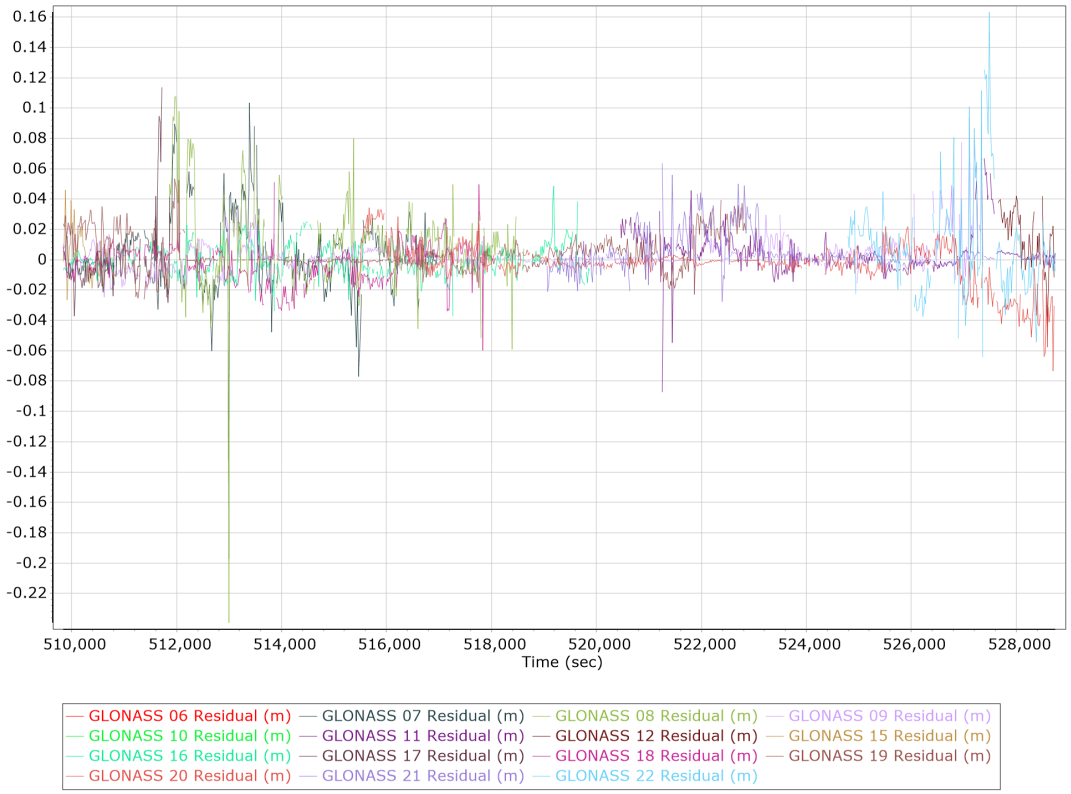
Estimated Position Accuracy



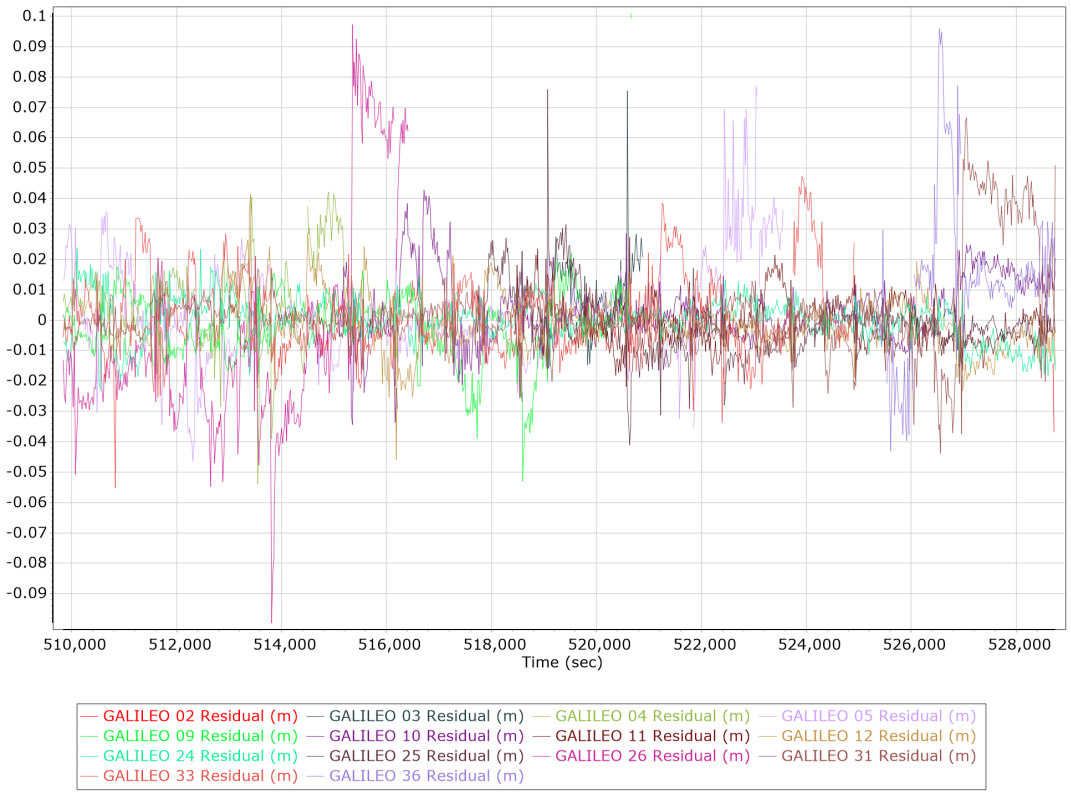
GPS Residuals



GLONASS Residuals



GALILEO Residuals



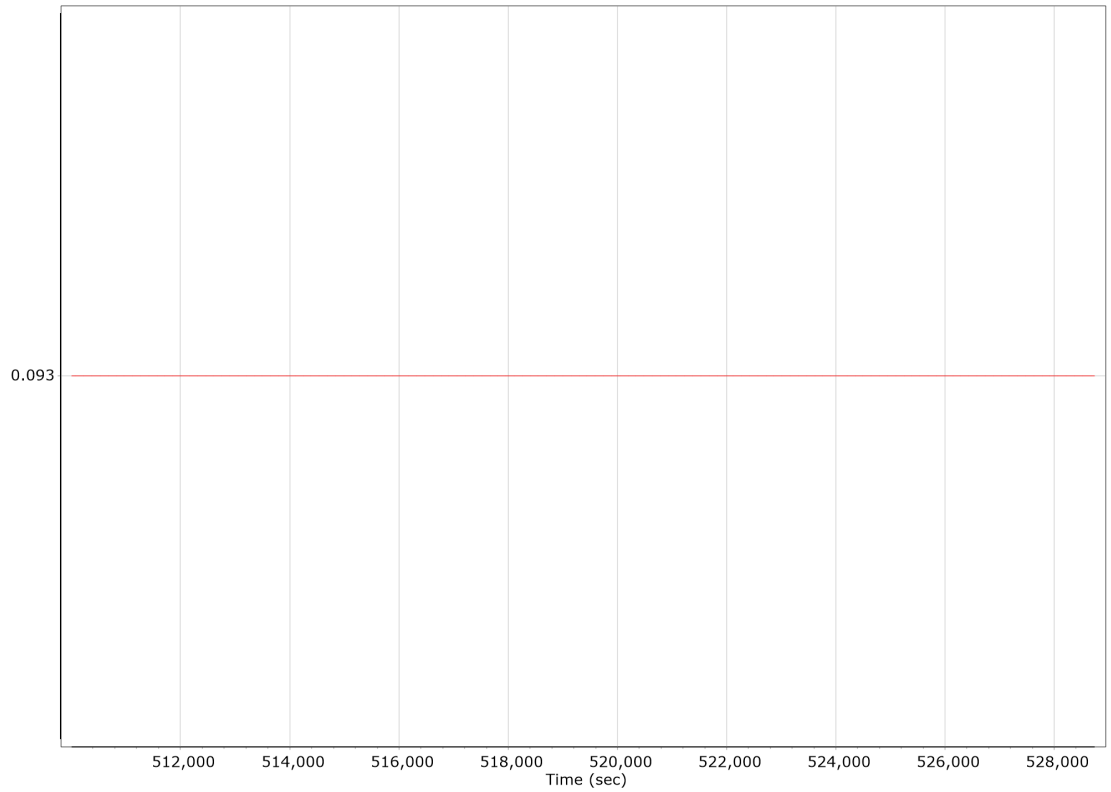
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	509462.000 (1/5/2024 9:31:02 PM)		
Processing end time	528755.000 (1/6/2024 2:52:35 AM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.093	0.062	-1.287
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

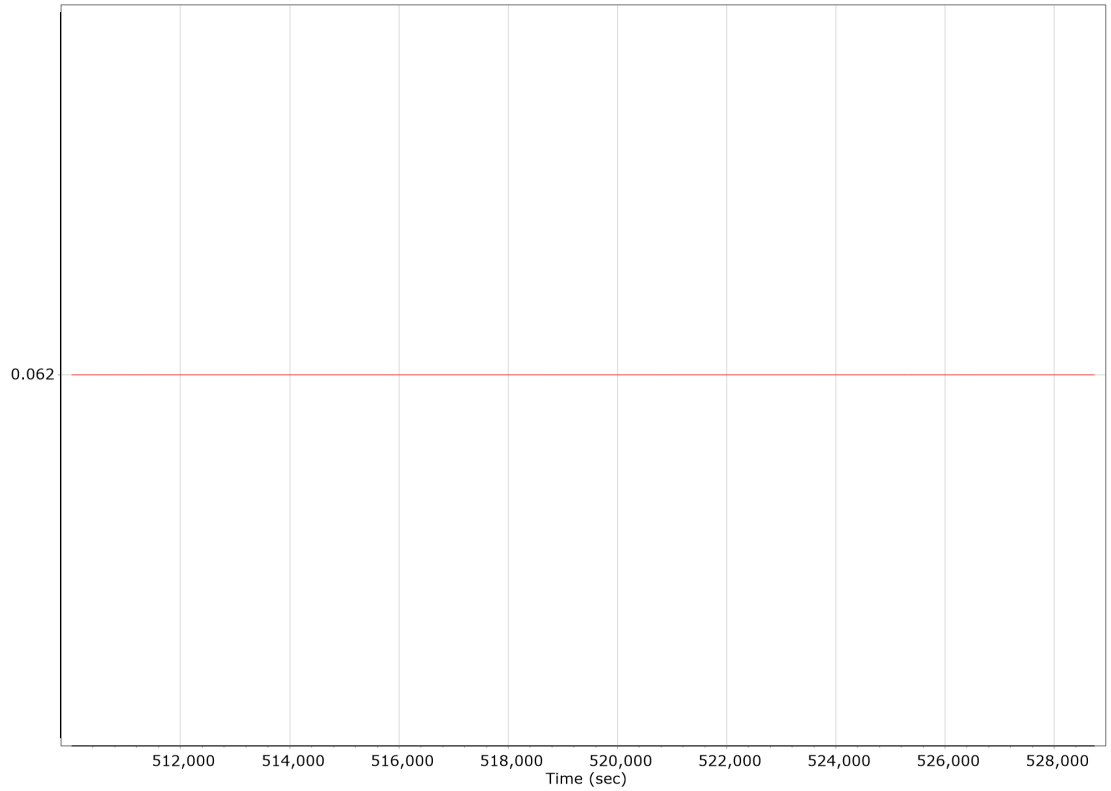
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

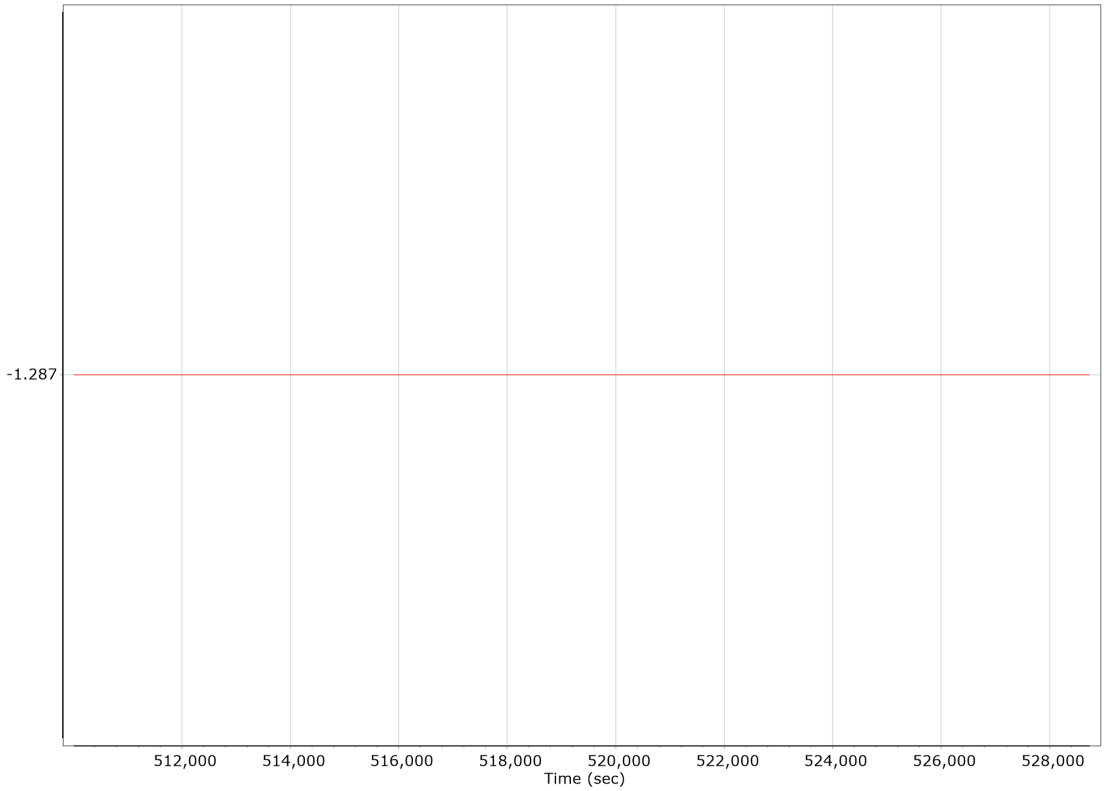
X Reference-Primary GNSS Lever Arm (m)



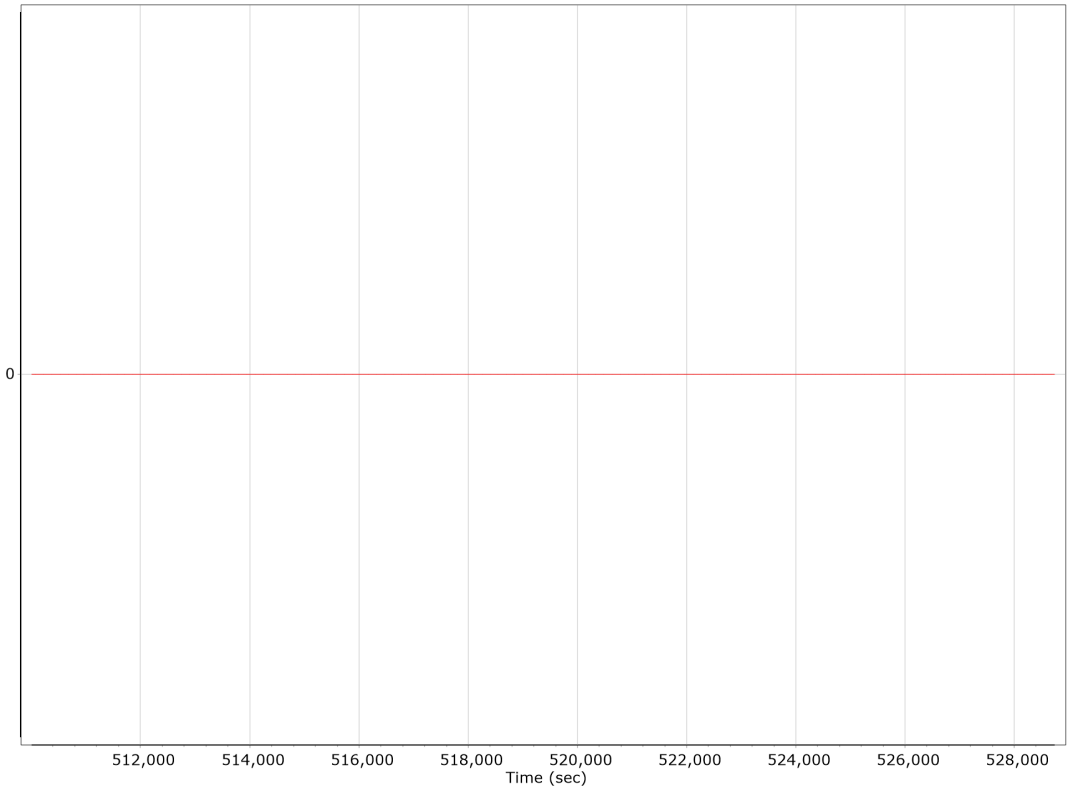
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



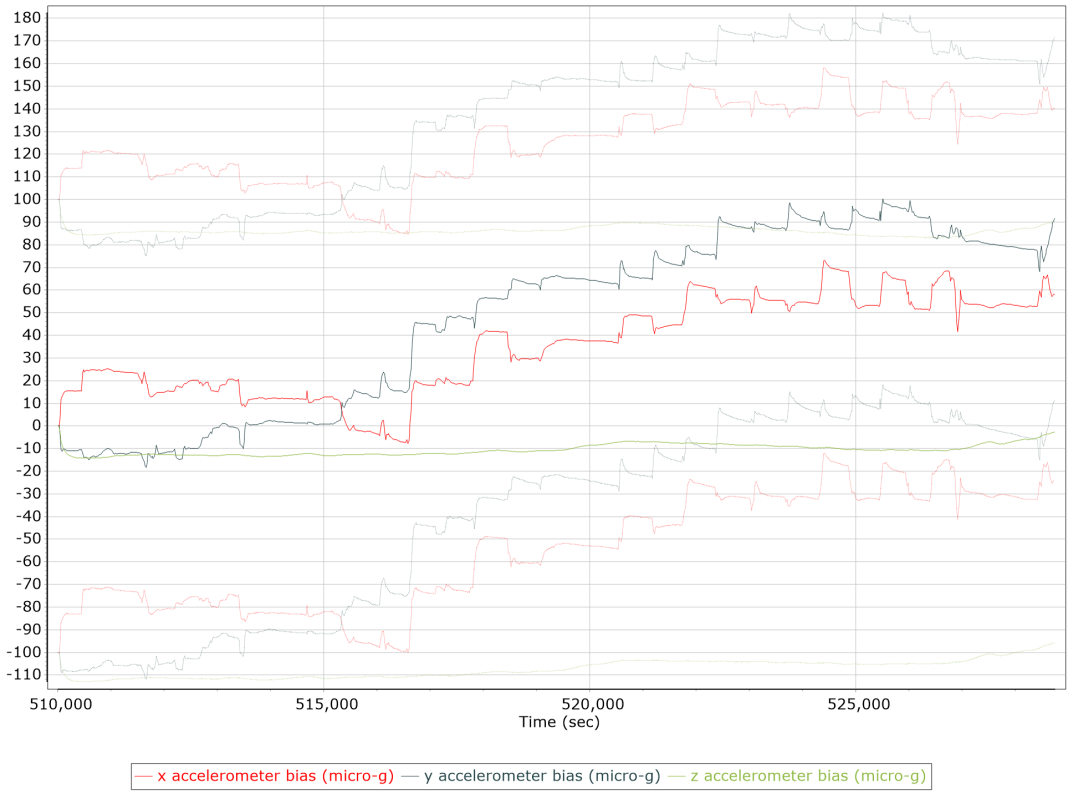
Reference-Primary GNSS Lever Arm Figure of Merit



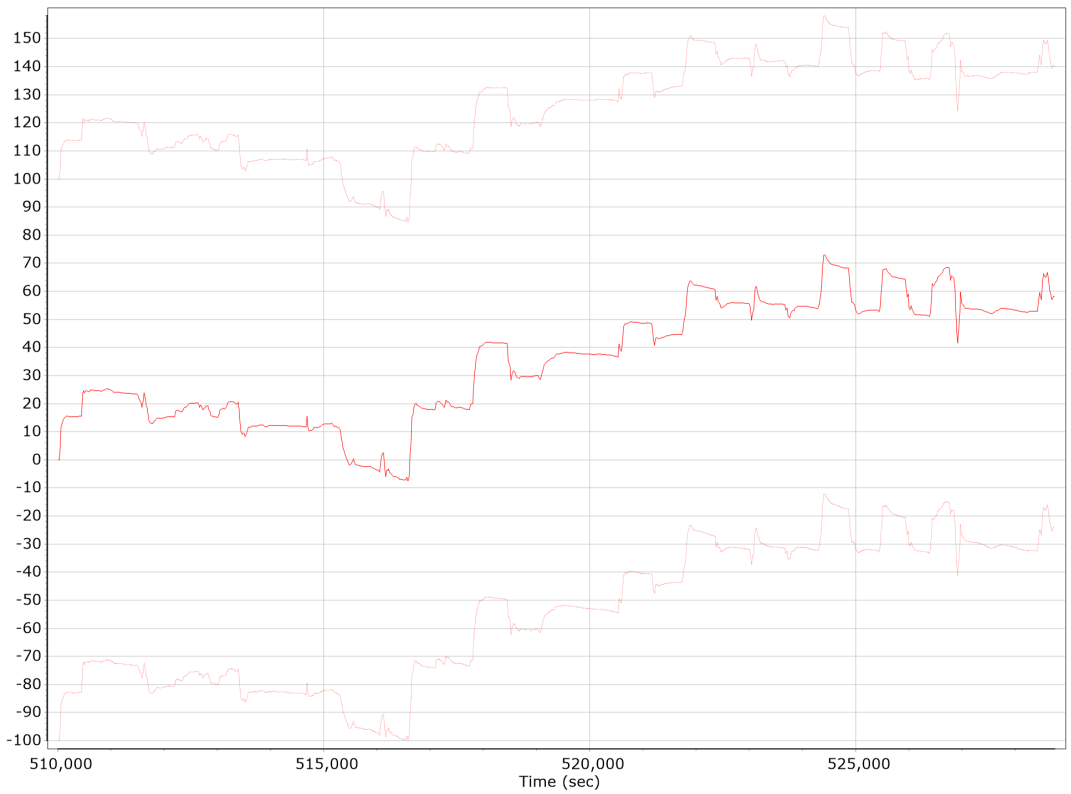
IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

Accelerometer Bias (micro-g)



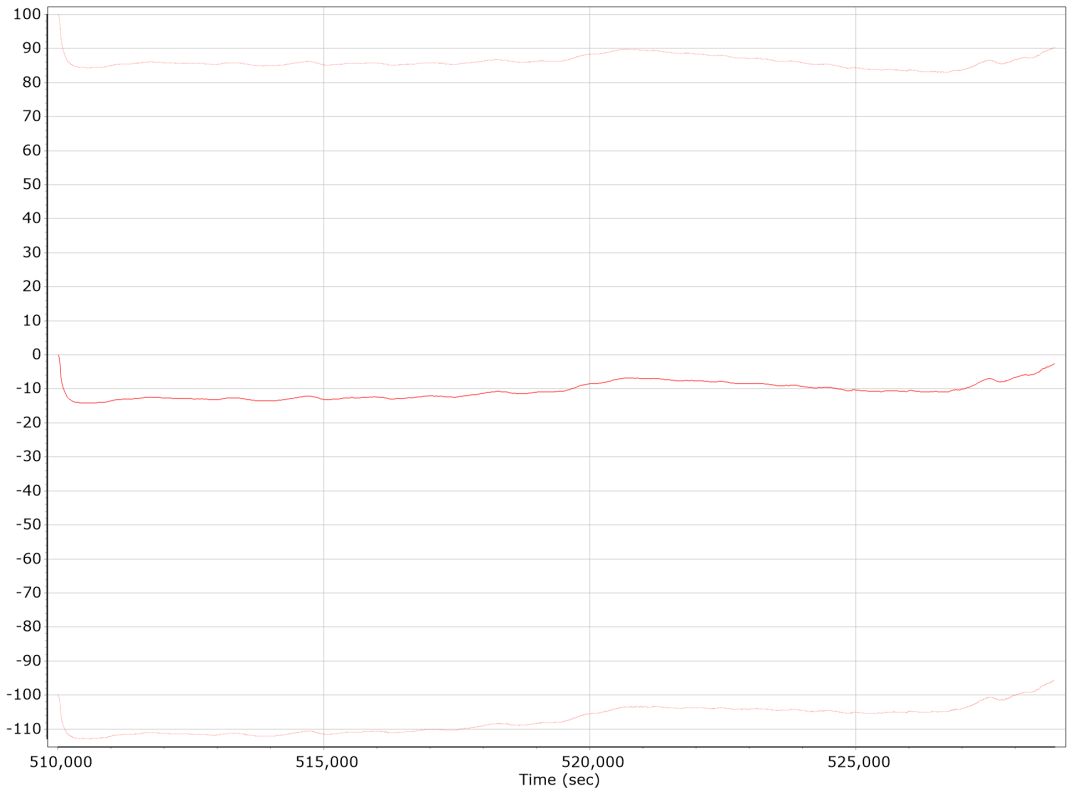
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



X Accelerometer Scale Error (ppm)



Y Accelerometer Scale Error (ppm)



Z Accelerometer Scale Error (ppm)



Gyro Bias (deg/h)



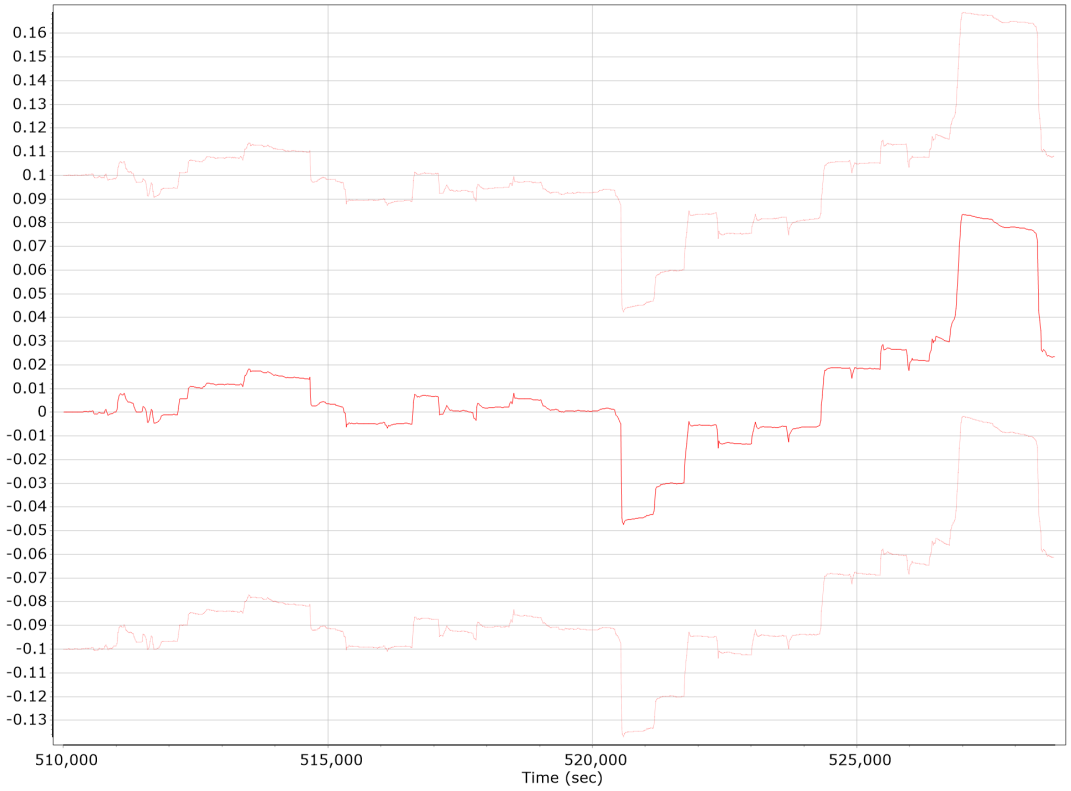
X Gyro Bias (deg/h)



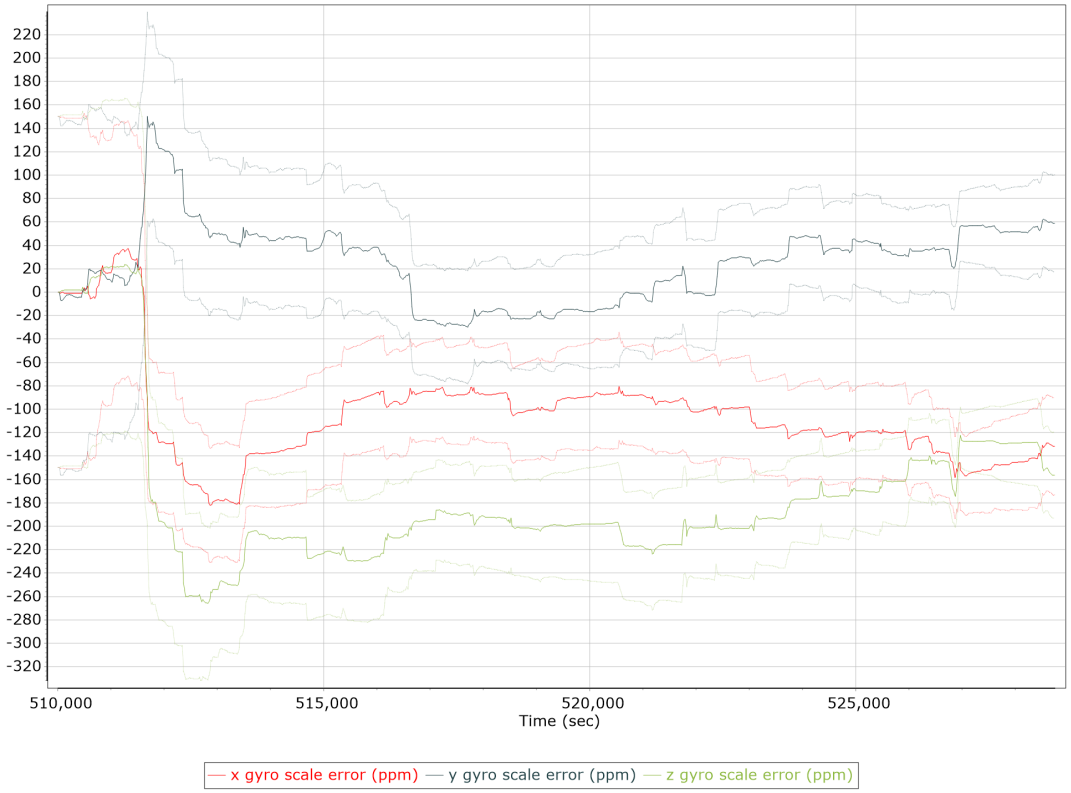
Y Gyro Bias (deg/h)



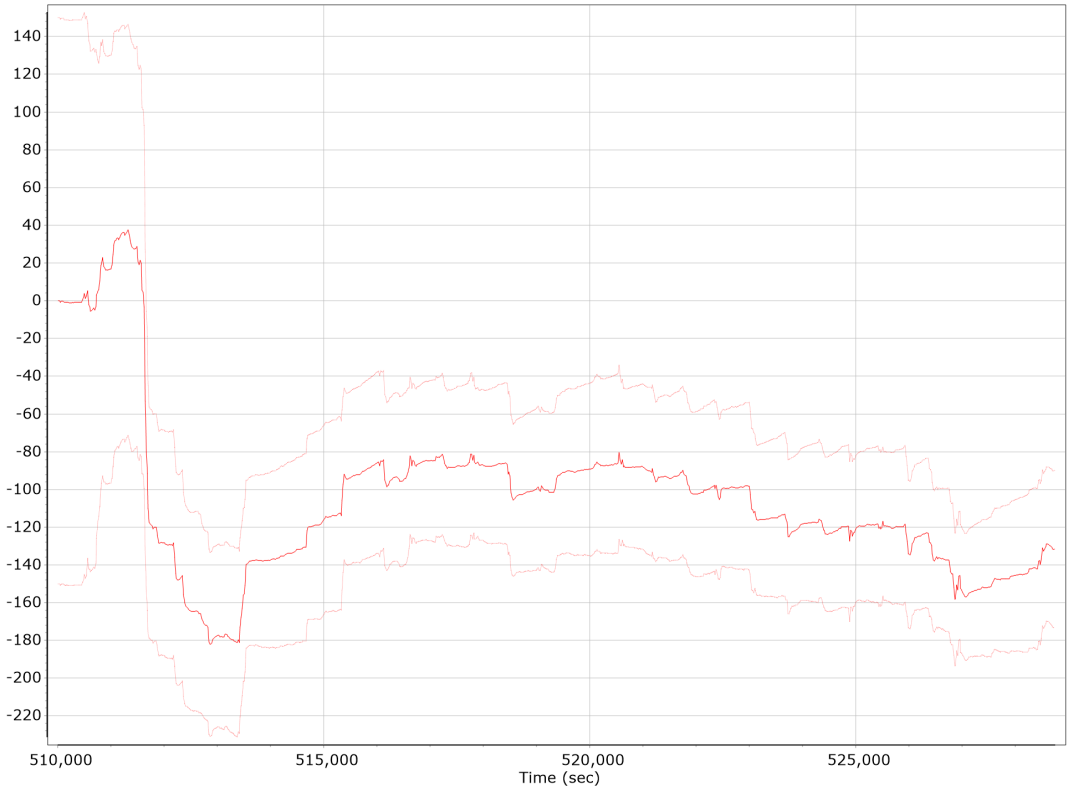
Z Gyro Bias (deg/h)



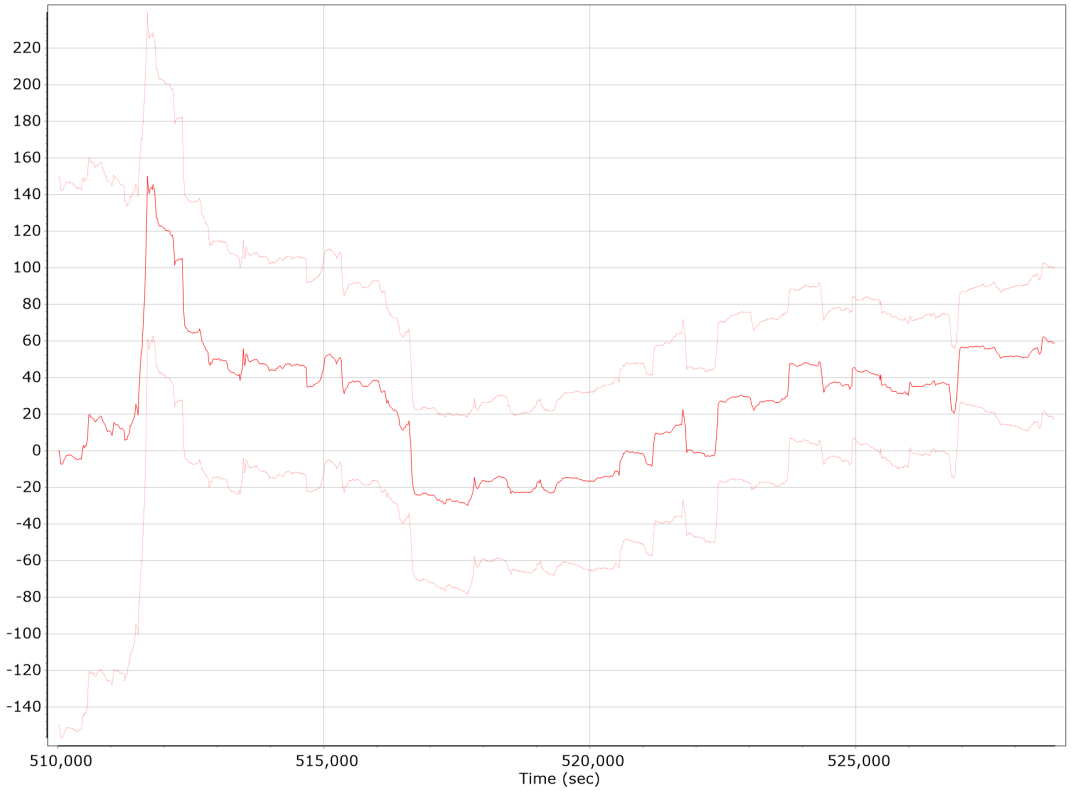
Gyro Scale Error (ppm)



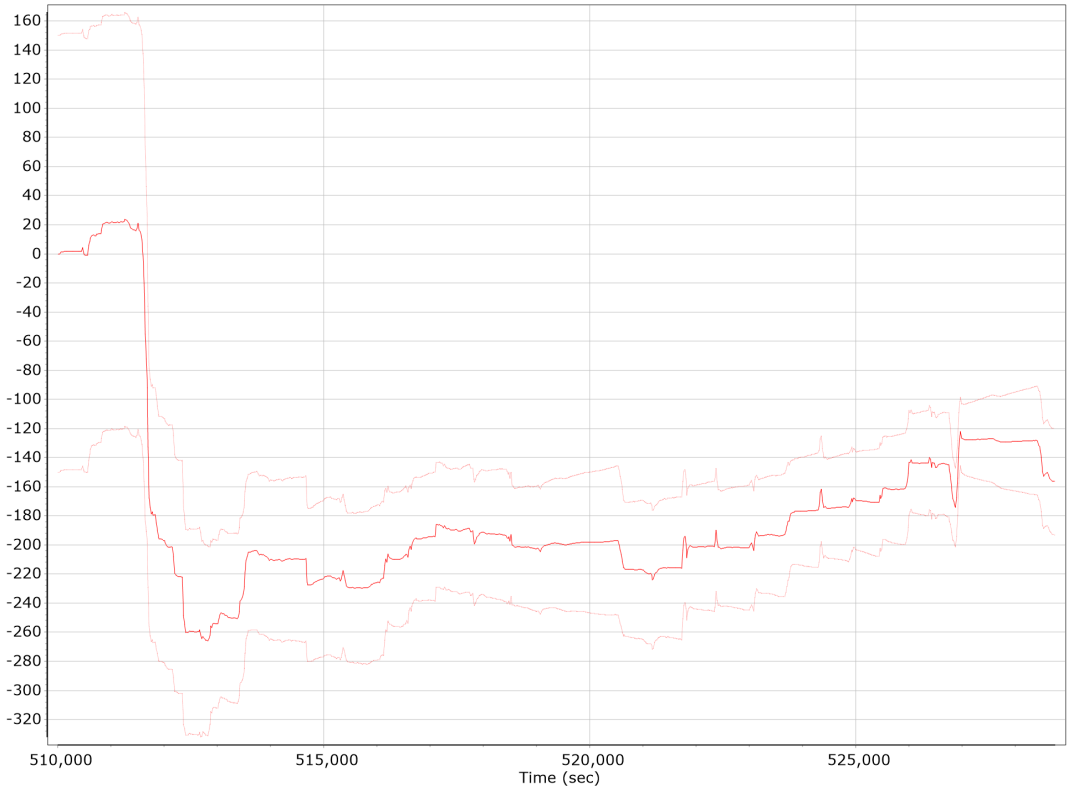
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)



Z Gyro Scale Error (ppm)

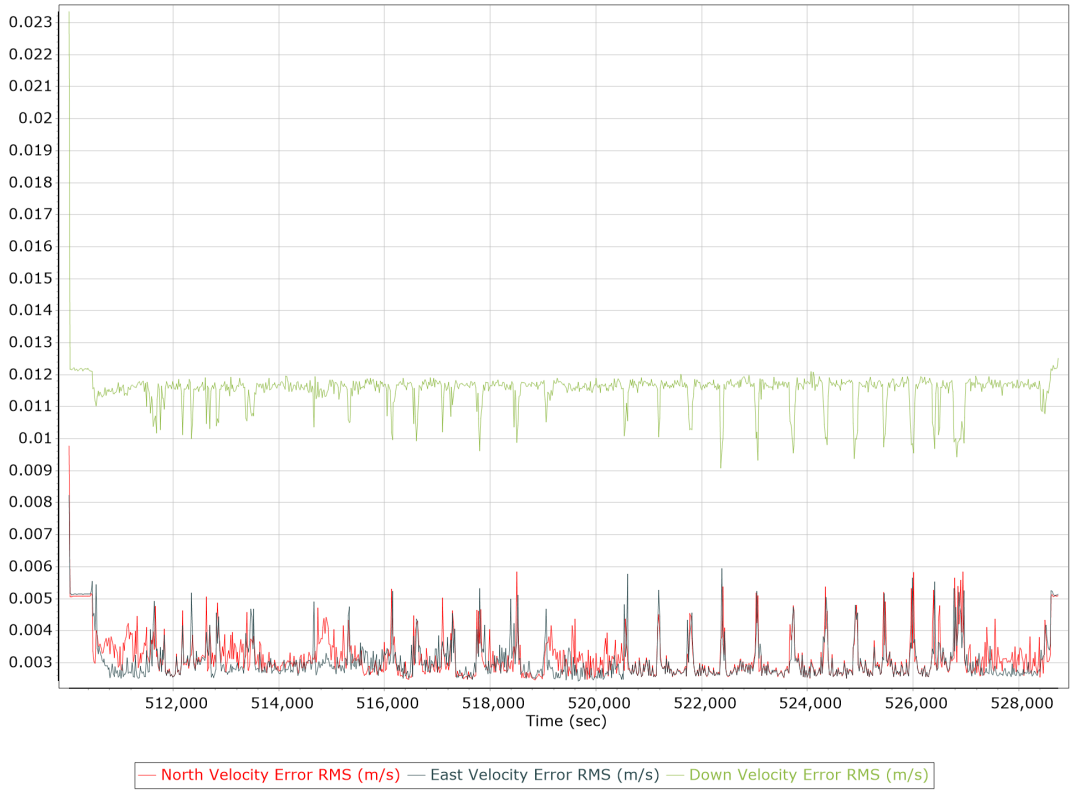


Smoothed Performance Metrics

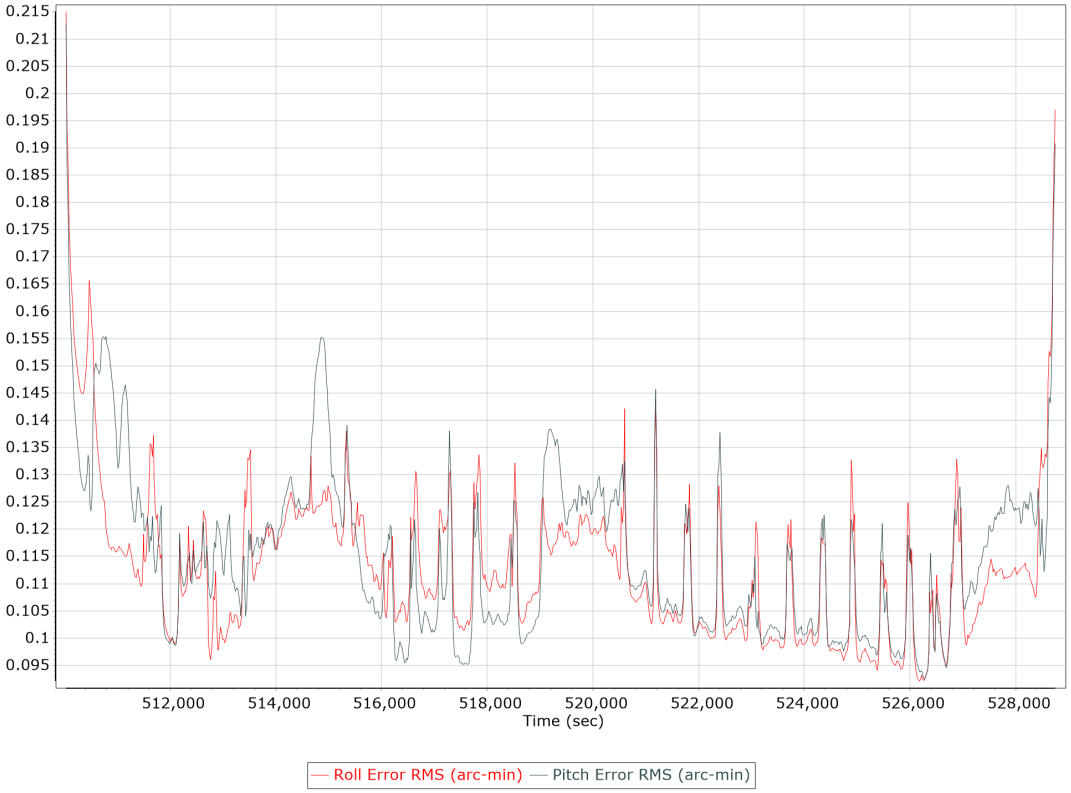
Position Error RMS (m)



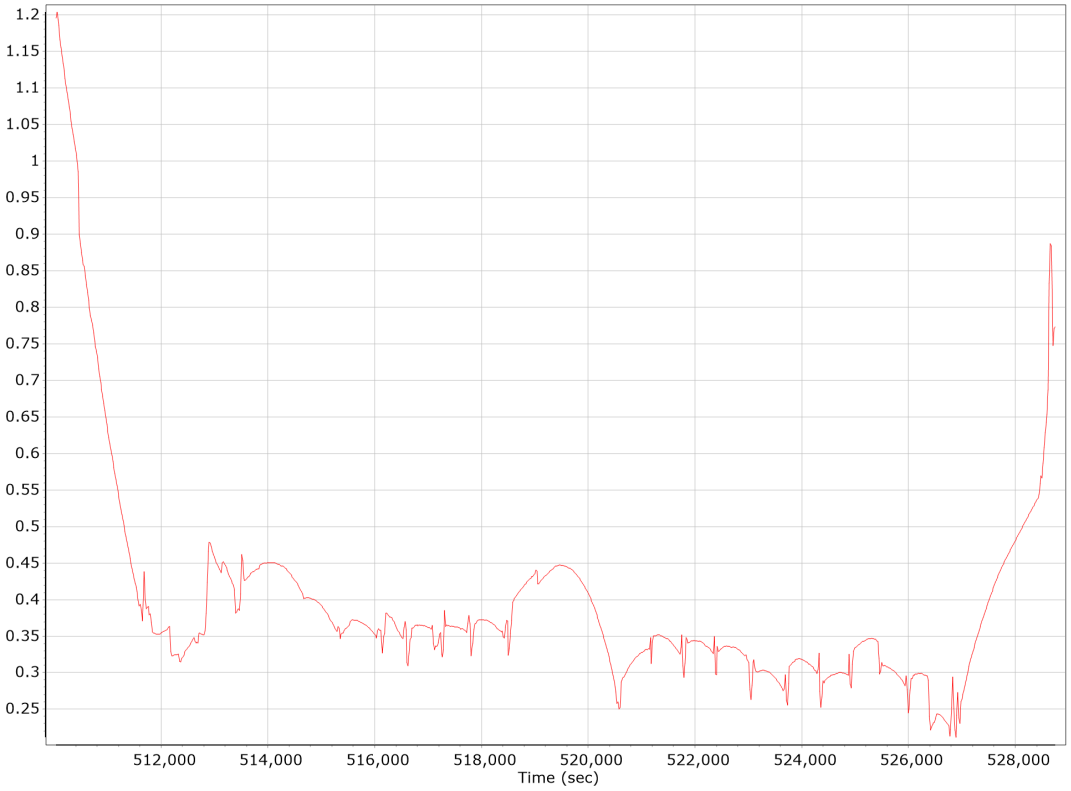
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)



Heading Error RMS (arc-min)



Forward Processed Performance Metrics

Position Error RMS (m)



Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

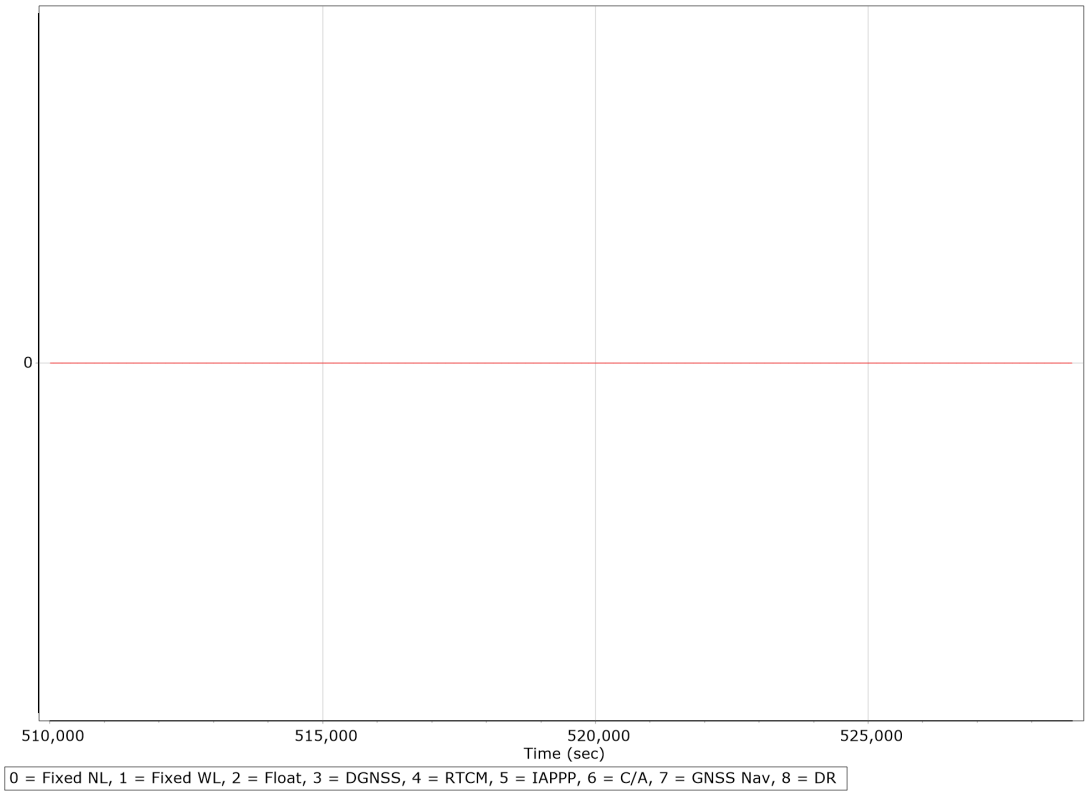


Heading Error RMS (arc-min)



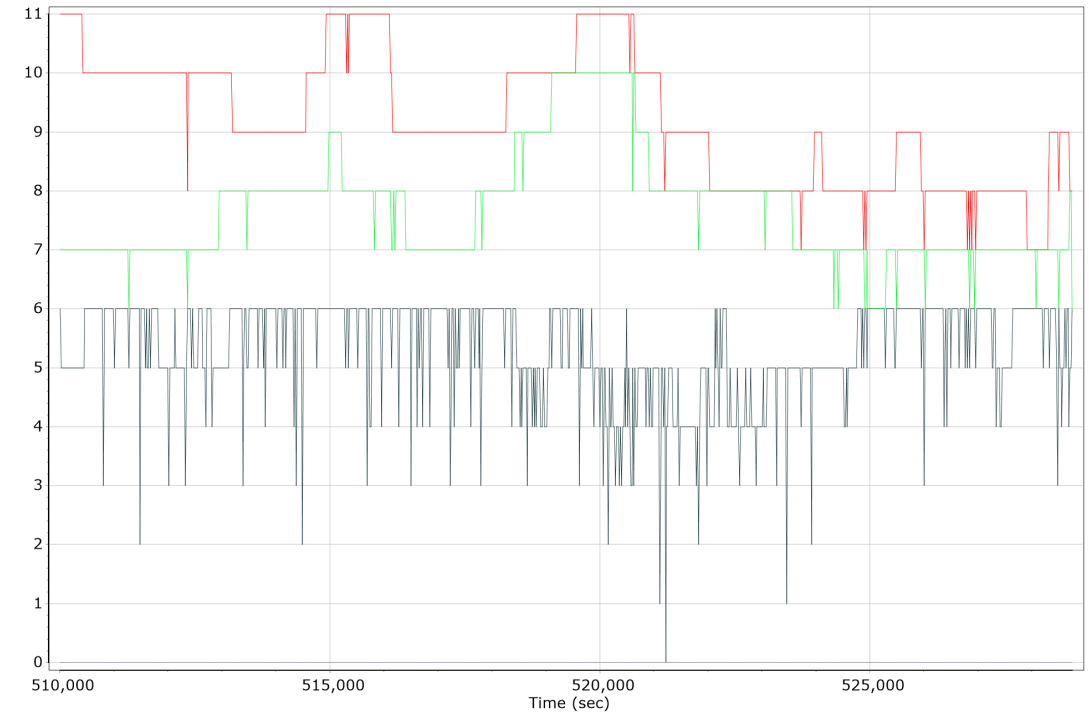
Forward Processed Solution Status

Processing Mode

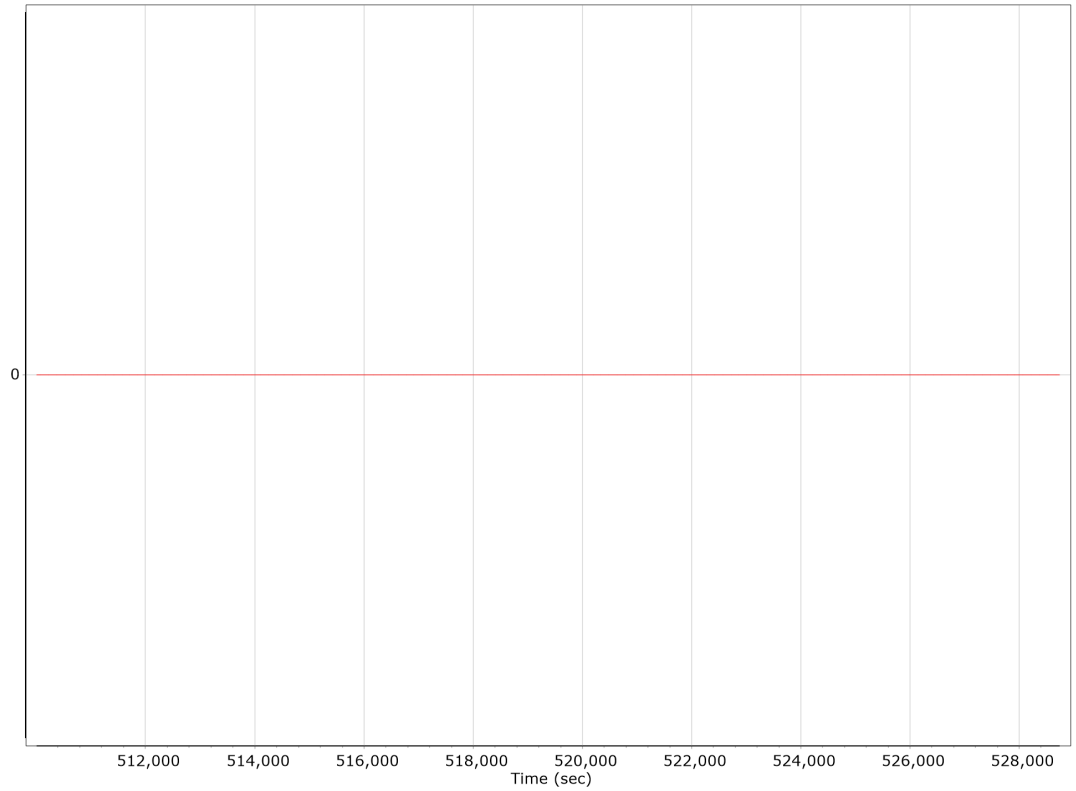


0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGNSS, 4 = RTCM, 5 = IAPPP, 6 = C/A, 7 = GNSS Nav, 8 = DR

Number of Satellites



Baseline Length



General Information

Mission Information

Project name	01062024A_3546
Processing date	2024-01-09 16:53:52
Mission date	2024-01-06 21:39:32
Mission duration	04:46:12.192
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N9922
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
240106_213913_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm0060.24g	GLONASS Broadcast Ephemeris
Ephm0060.24n	GPS Broadcast Ephemeris
Ephm0070.24g	GLONASS Broadcast Ephemeris
Ephm0070.24n	GPS Broadcast Ephemeris

Output Files

Filename	File type
sbet_01062024A_3546.out	SBET Trajectory File

Rover Data Summary

First raw data file	240106_213913_INS-GPS_1.raw		
Last raw data file	240106_213913_INS-GPS_1.raw		
Start GPS week	2295		
Start time	596353.444 (1/6/2024 9:39:13 PM)		
End time	8725.636 (1/7/2024 2:25:25 AM)		
Start of fine alignment	596738.839 (1/6/2024 9:45:38 PM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.205	0.058	-1.282
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

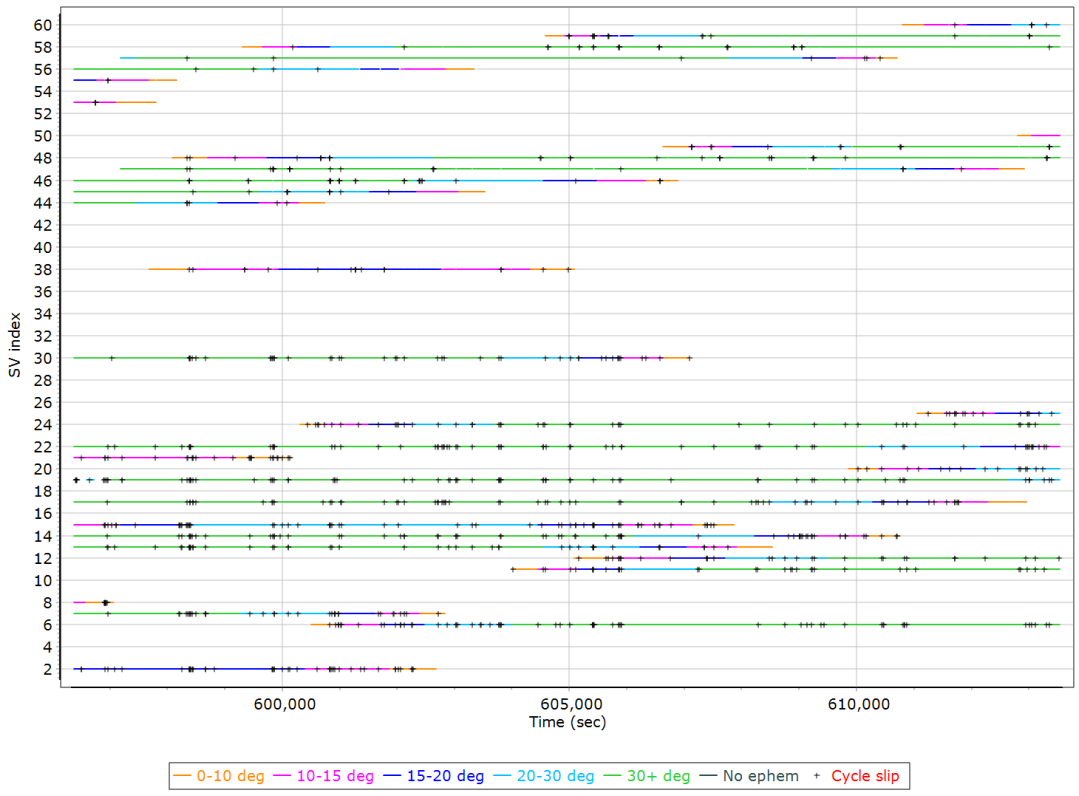
Rover Data QC

Raw IMU Import QC Summary

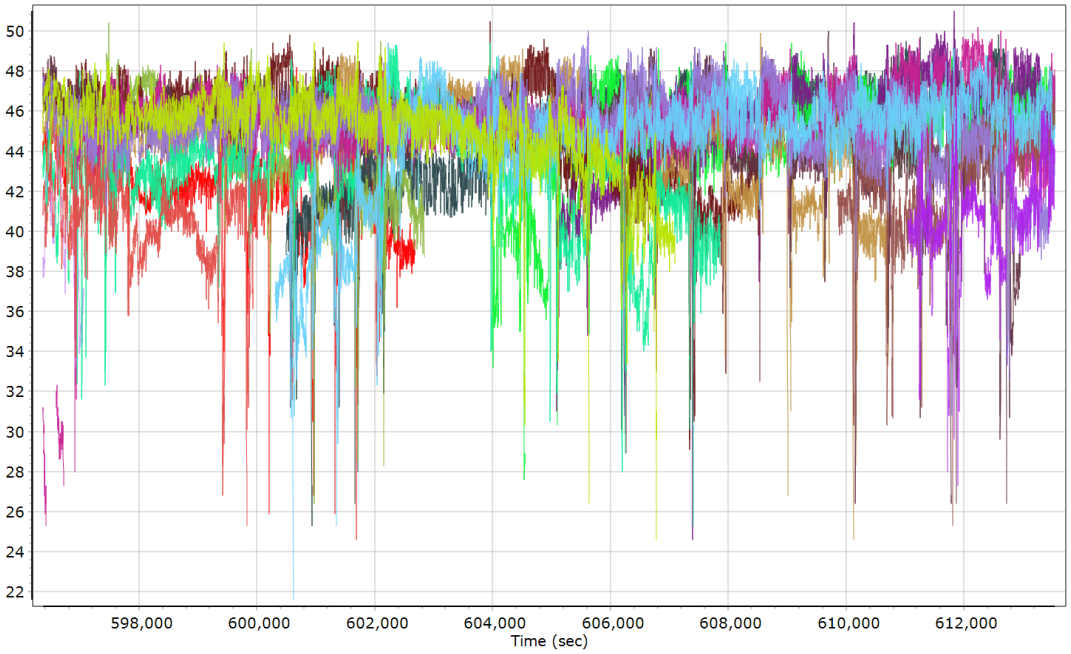
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_01062024A_3546.log
IMU Records Processed	3433699
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

GPS/GLONASS L1 Satellite Lock/Elevation

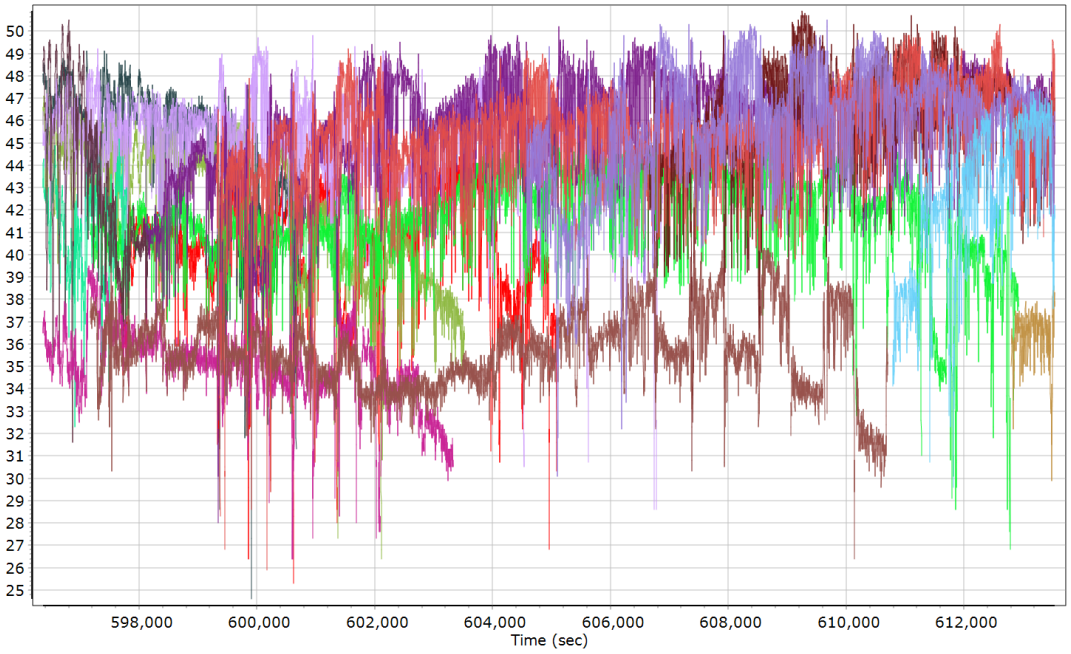


GPS L1 SNR



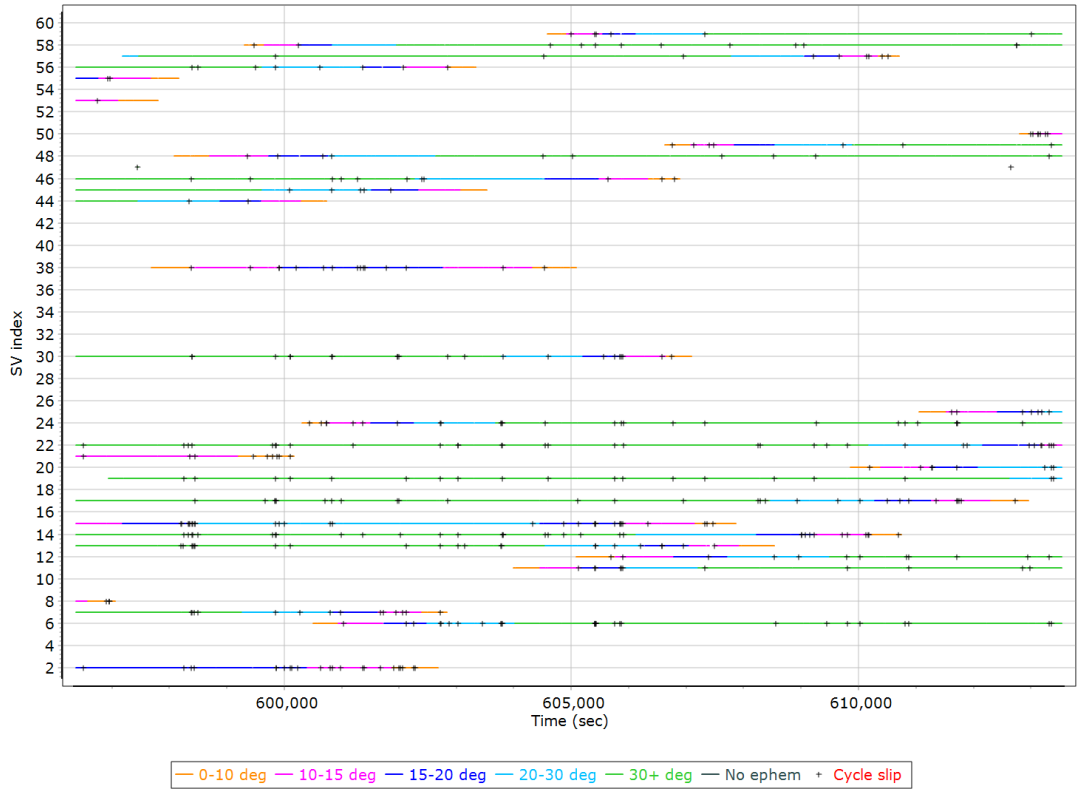
GPS PRN 02 L1 SNR (dB/Hz) GPS PRN 06 L1 SNR (dB/Hz) GPS PRN 07 L1 SNR (dB/Hz) GPS PRN 08 L1 SNR (dB/Hz)
GPS PRN 11 L1 SNR (dB/Hz) GPS PRN 12 L1 SNR (dB/Hz) GPS PRN 13 L1 SNR (dB/Hz) GPS PRN 14 L1 SNR (dB/Hz)
GPS PRN 15 L1 SNR (dB/Hz) GPS PRN 17 L1 SNR (dB/Hz) GPS PRN 19 L1 SNR (dB/Hz) GPS PRN 20 L1 SNR (dB/Hz)
GPS PRN 21 L1 SNR (dB/Hz) GPS PRN 22 L1 SNR (dB/Hz) GPS PRN 24 L1 SNR (dB/Hz) GPS PRN 25 L1 SNR (dB/Hz)
GPS PRN 30 L1 SNR (dB/Hz)

GLONASS L1 SNR

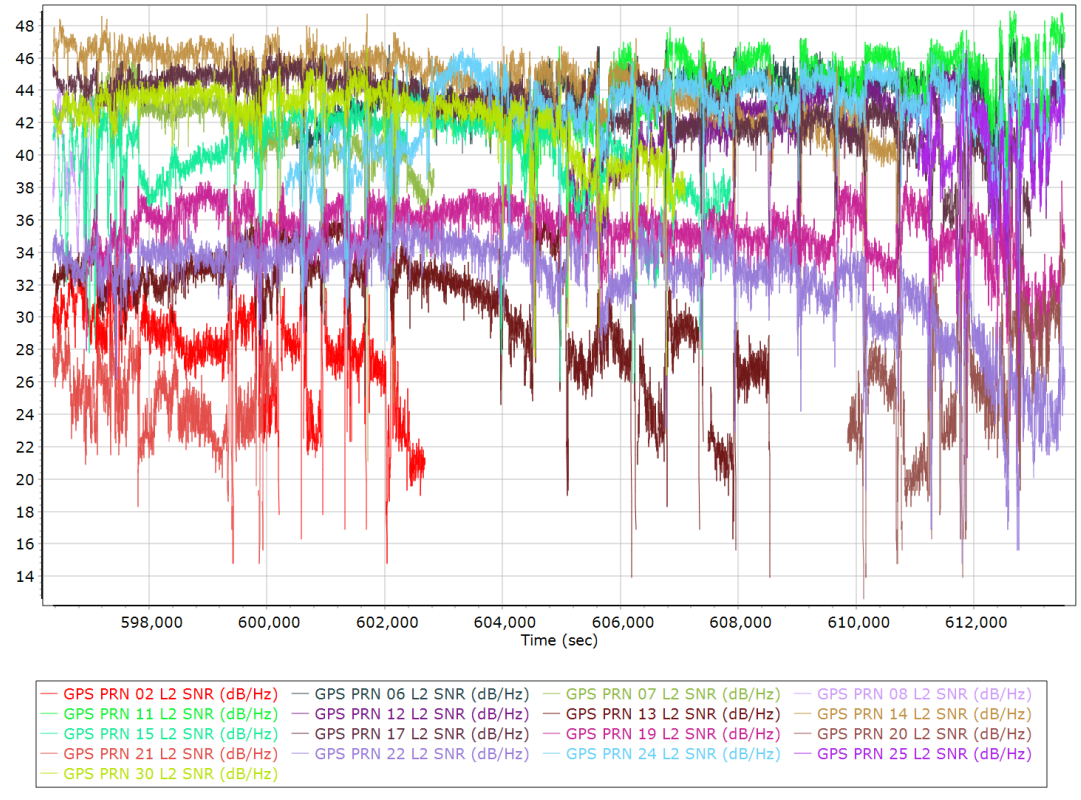


GLONASS 01 L1 SNR (dB/Hz) GLONASS 07 L1 SNR (dB/Hz) GLONASS 08 L1 SNR (dB/Hz)
GLONASS 09 L1 SNR (dB/Hz) GLONASS 10 L1 SNR (dB/Hz) GLONASS 11 L1 SNR (dB/Hz)
GLONASS 12 L1 SNR (dB/Hz) GLONASS 13 L1 SNR (dB/Hz) GLONASS 16 L1 SNR (dB/Hz)
GLONASS 18 L1 SNR (dB/Hz) GLONASS 19 L1 SNR (dB/Hz) GLONASS 20 L1 SNR (dB/Hz)
GLONASS 21 L1 SNR (dB/Hz) GLONASS 22 L1 SNR (dB/Hz) GLONASS 23 L1 SNR (dB/Hz)

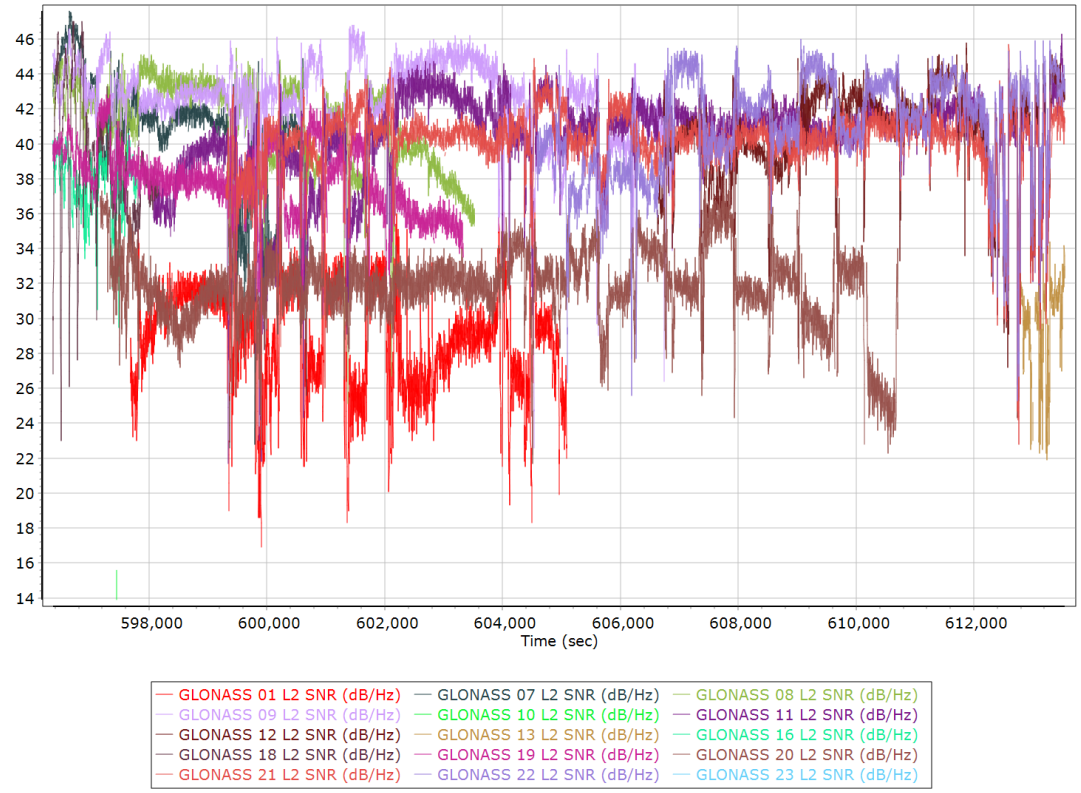
GPS/GLONASS L2 Satellite Lock/Elevation



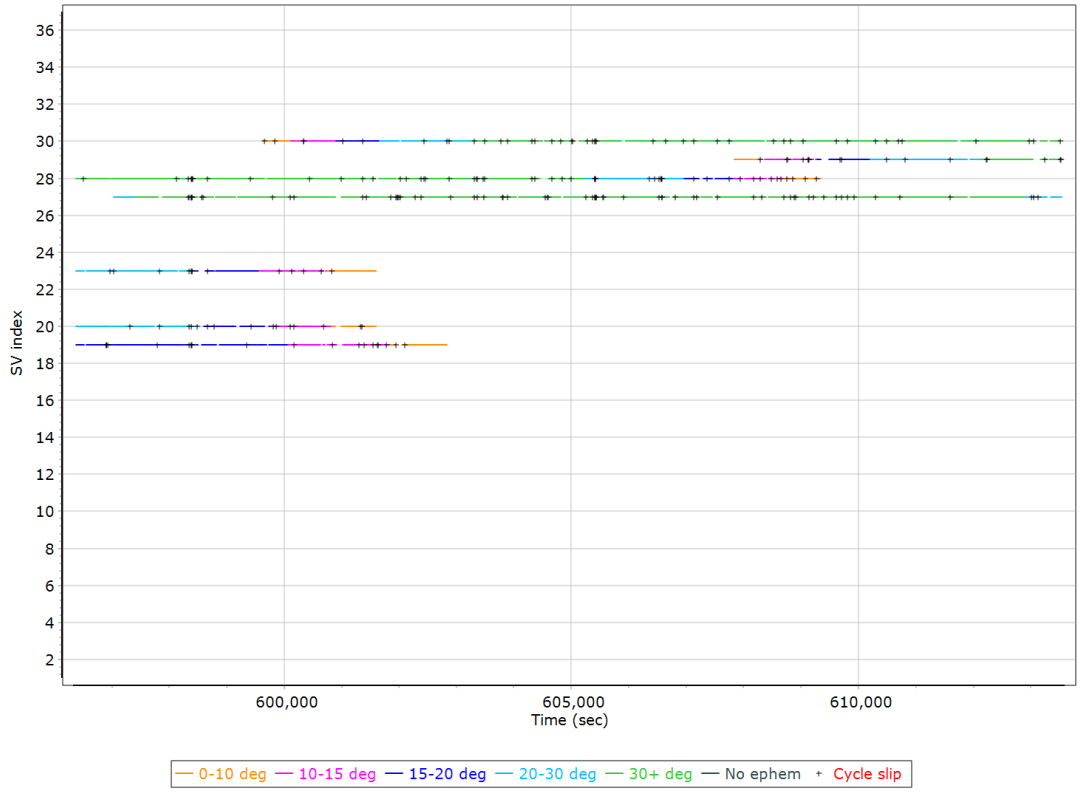
GPS L2 SNR



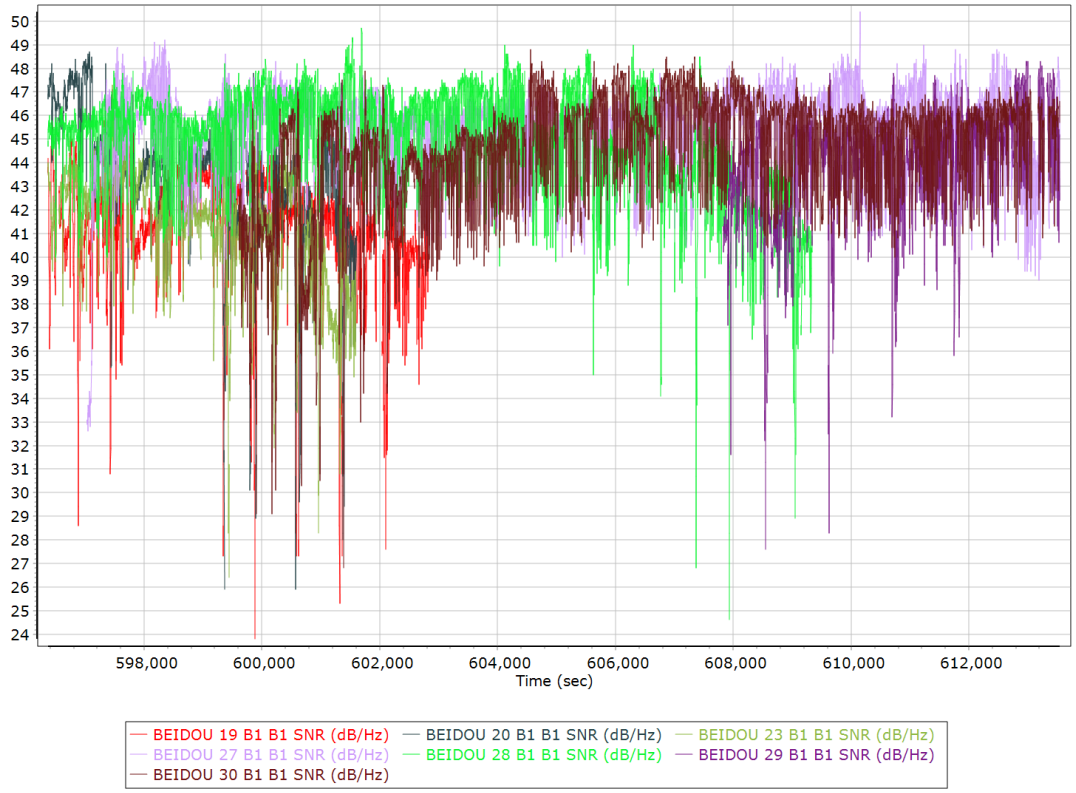
GLONASS L2 SNR



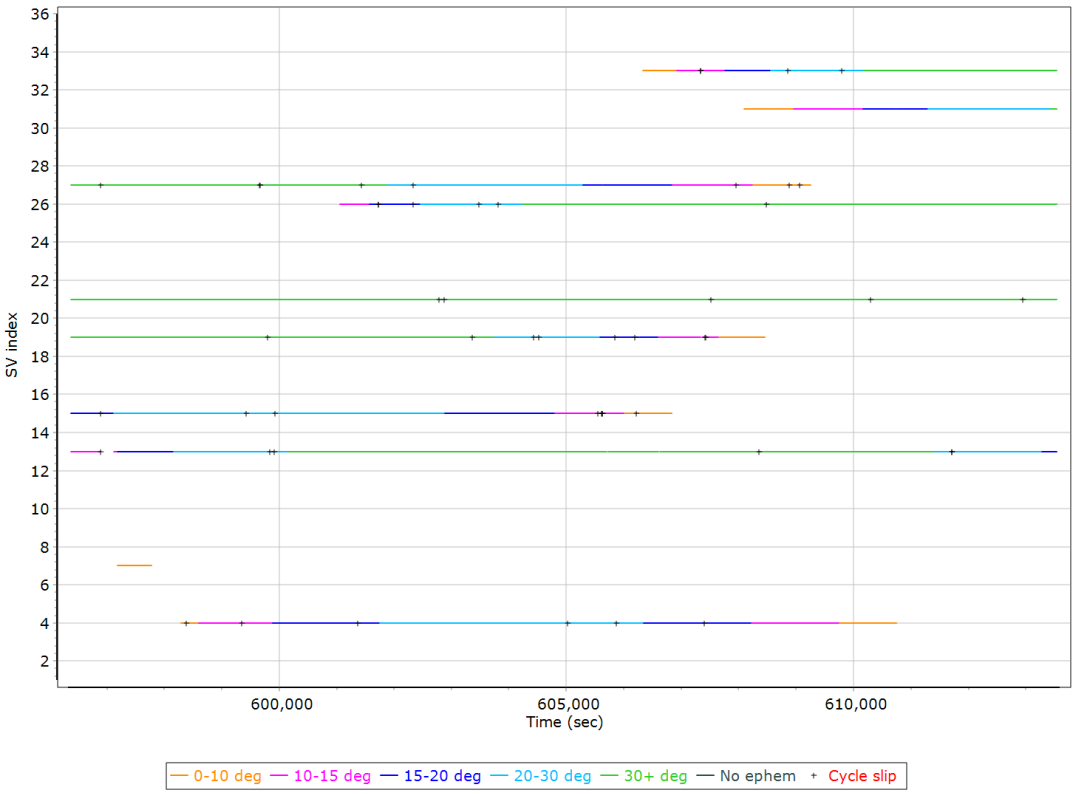
BEIDOU Satellite Lock/Elevation



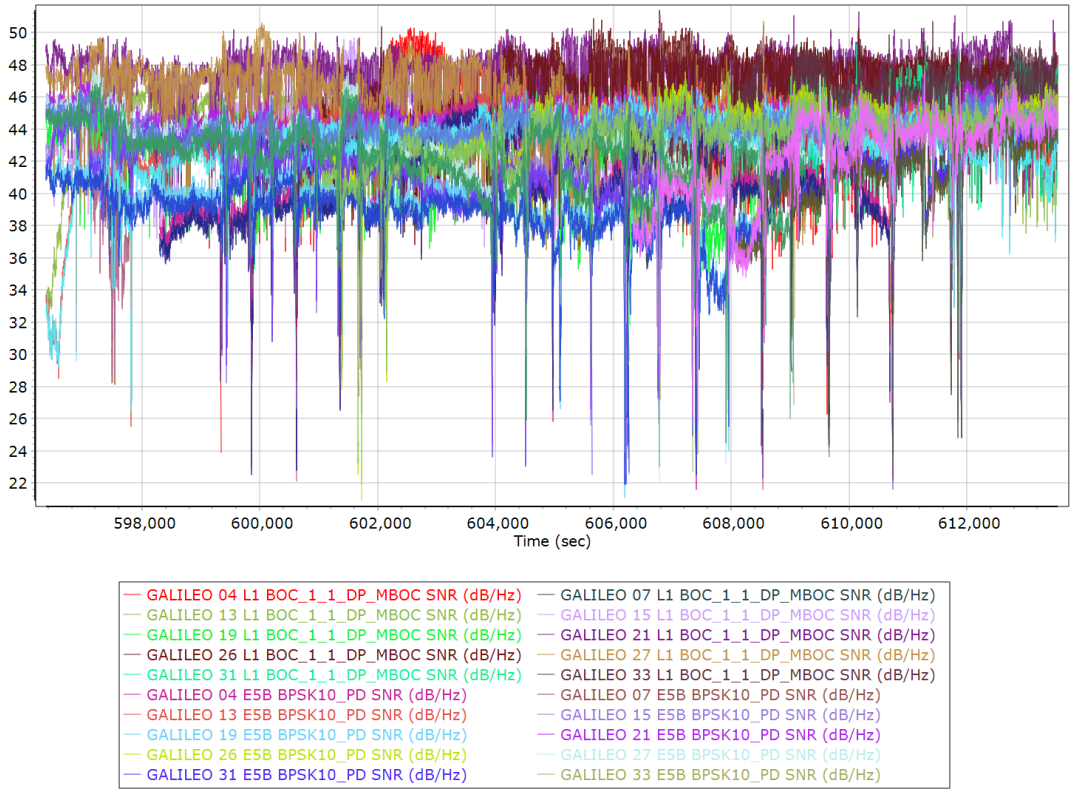
BEIDOU SNR



GALILEO Satellite Lock/Elevation

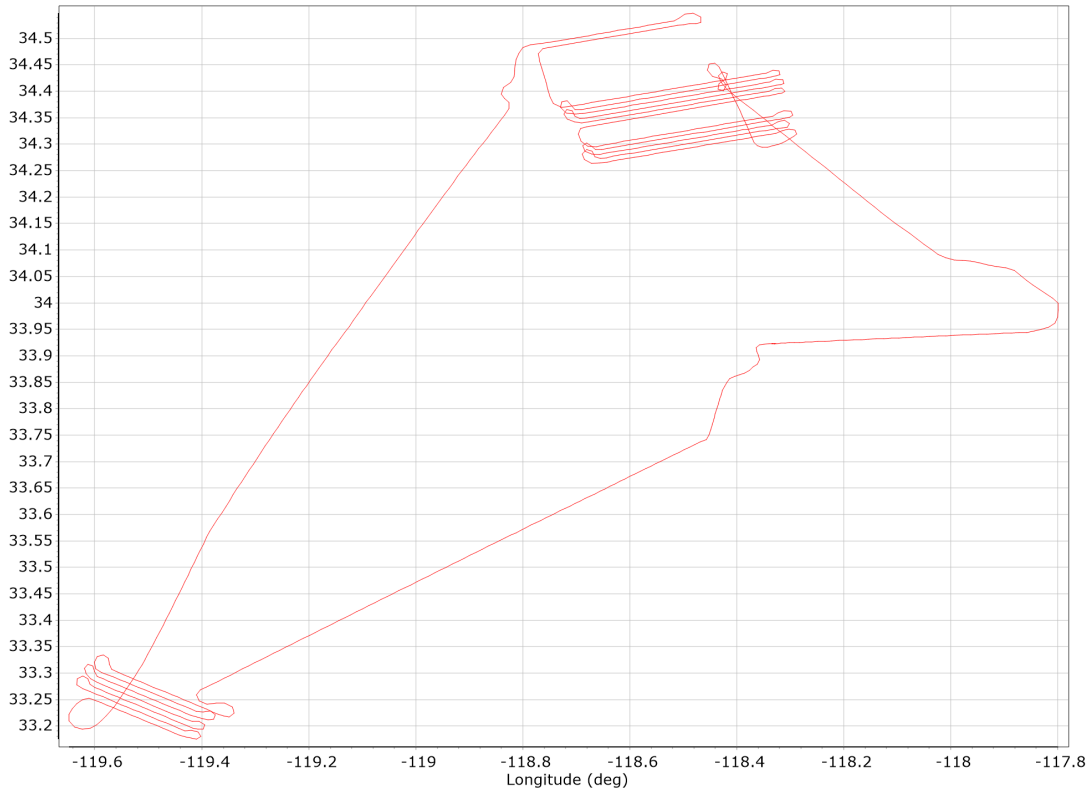


GALILEO SNR

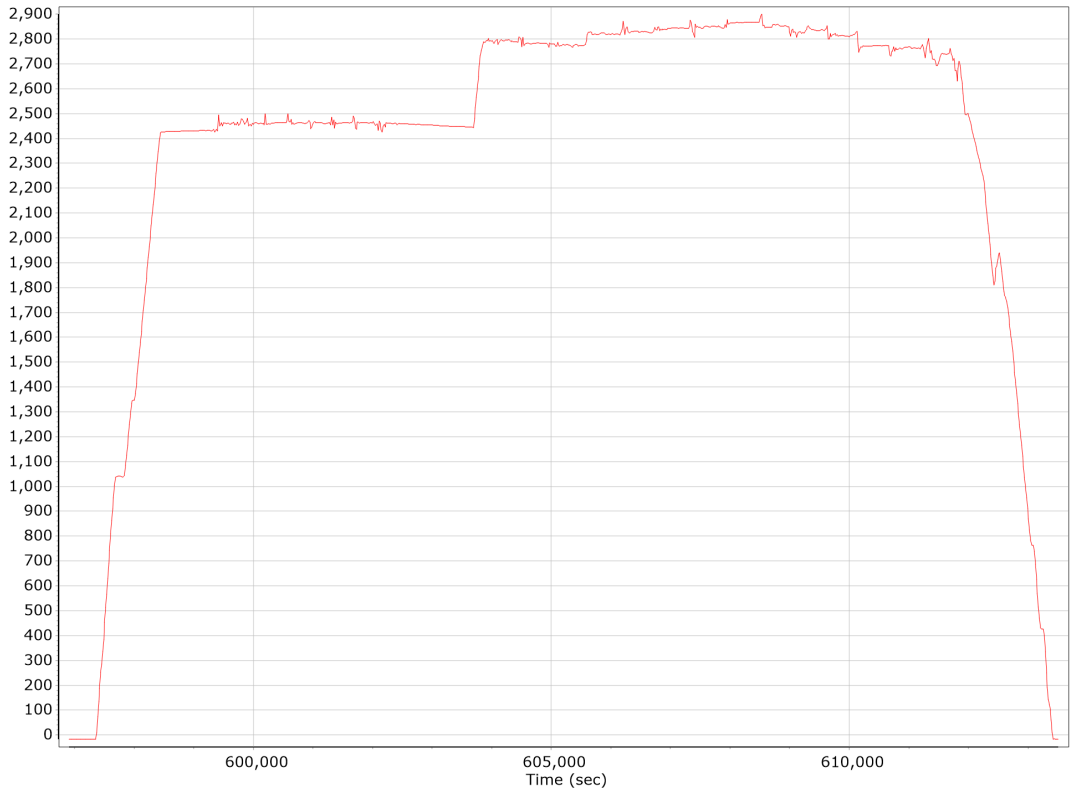

50
48
46
44
42
40
38
36
34
32
30
28
26
24
22
598,000
600,000
602,000
604,000
606,000
608,000
610,000
612,000
Time (sec)
GALILEO 04 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 07 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 13 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 15 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 19 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 21 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 26 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 27 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 31 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 33 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 04 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 07 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 13 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 15 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 19 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 21 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 26 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 27 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 31 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 33 E5B BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

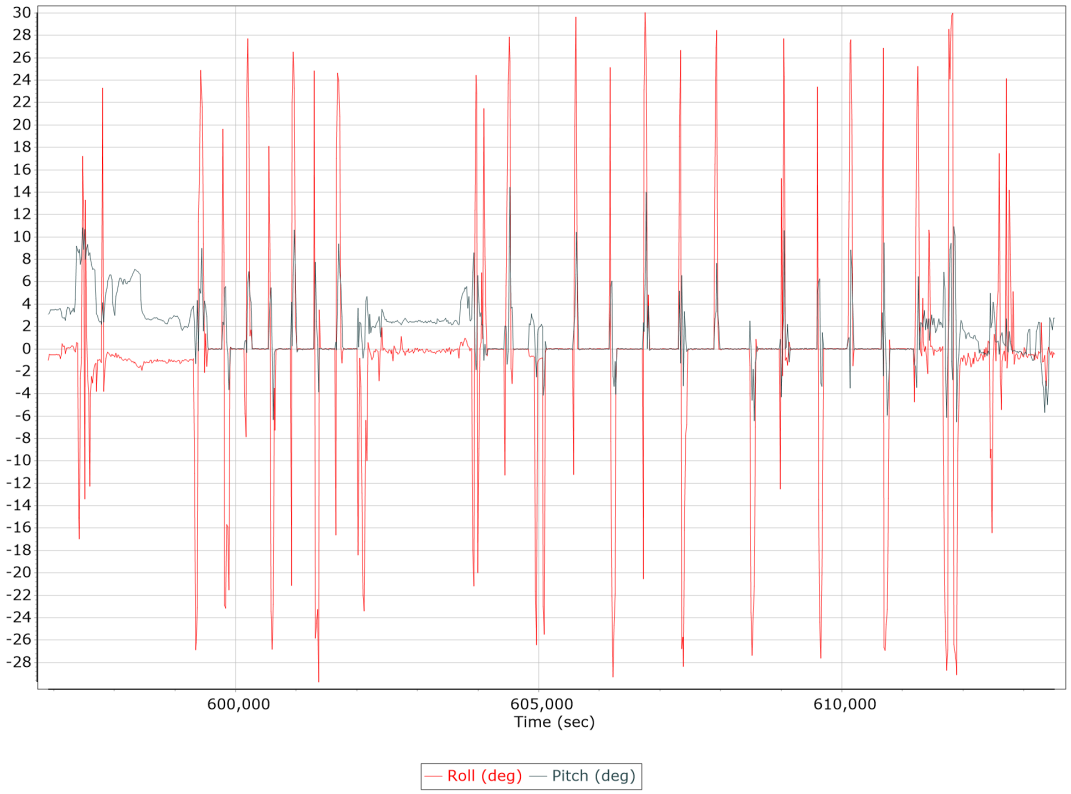
Top View



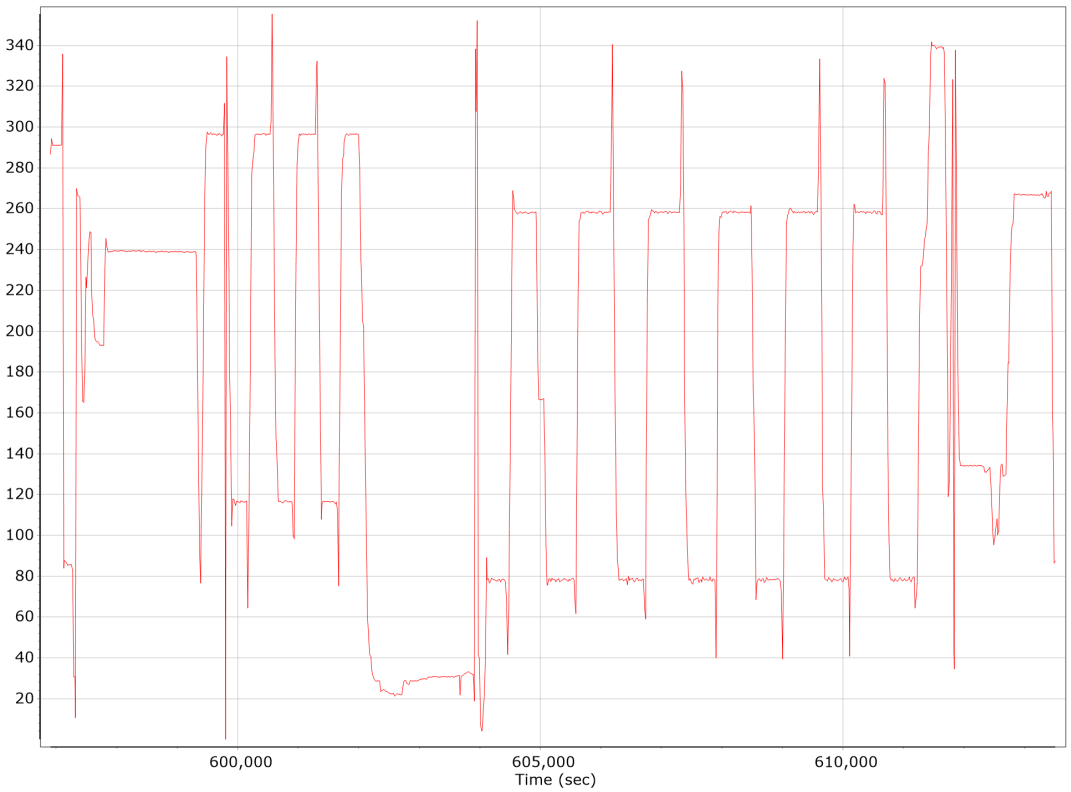
Altitude



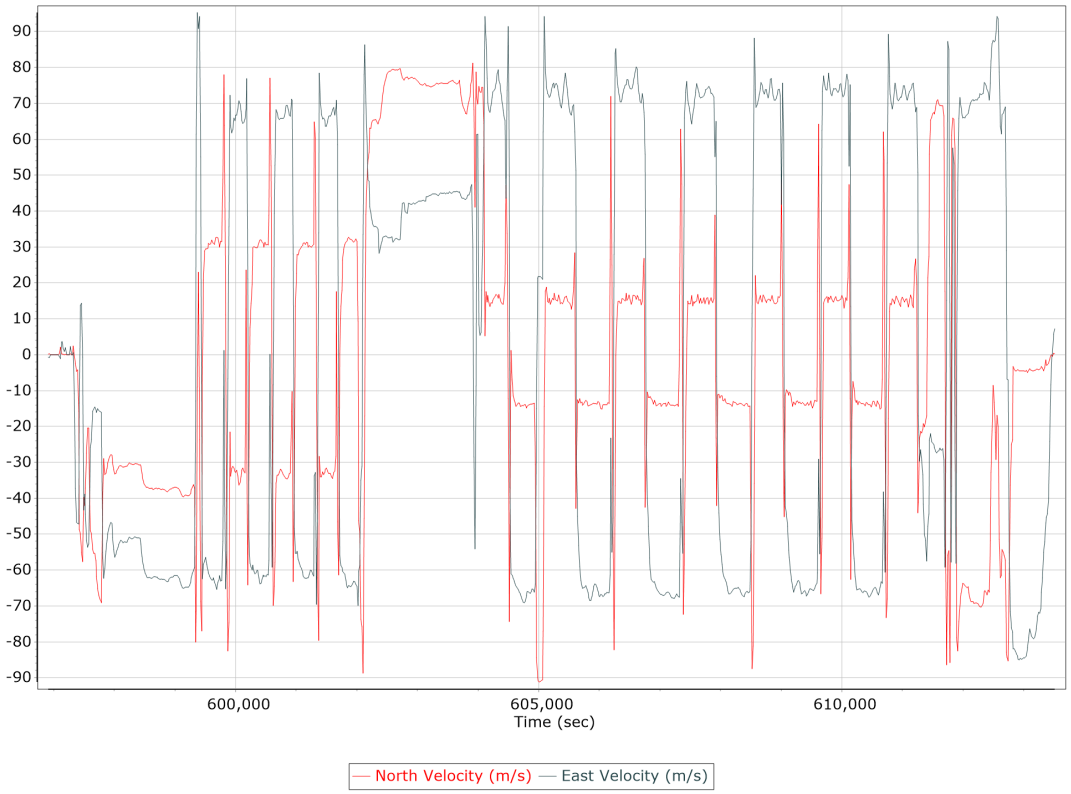
Roll/Pitch



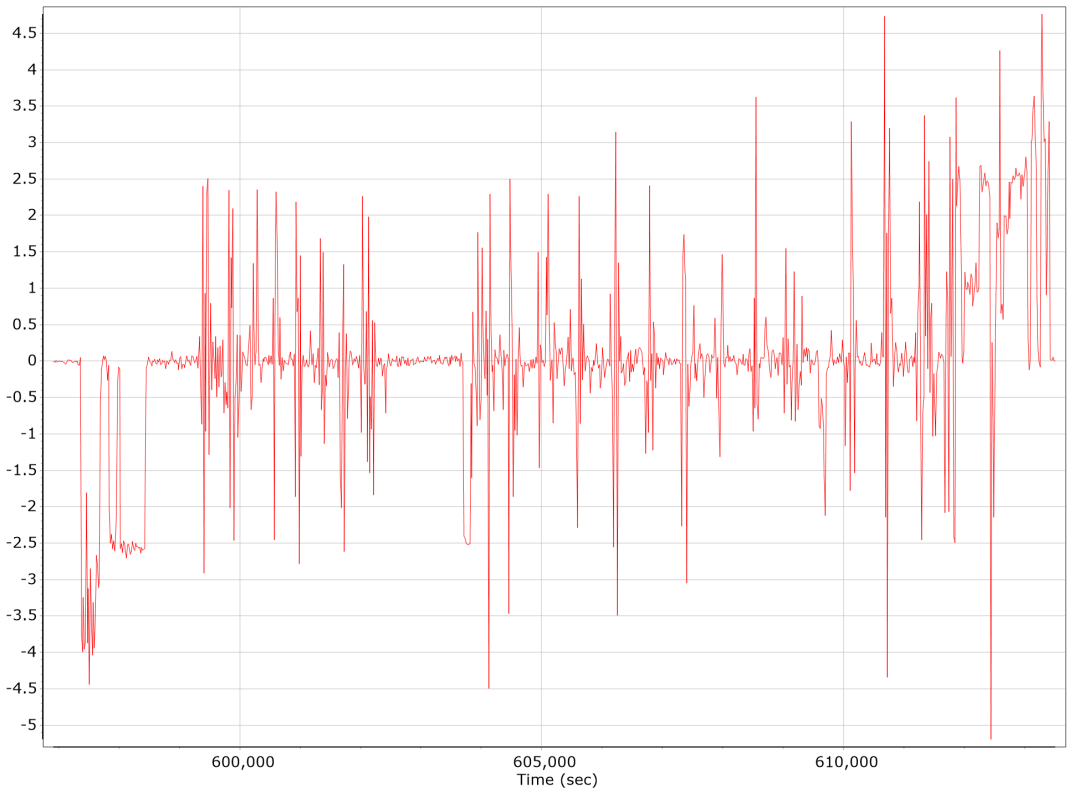
Heading



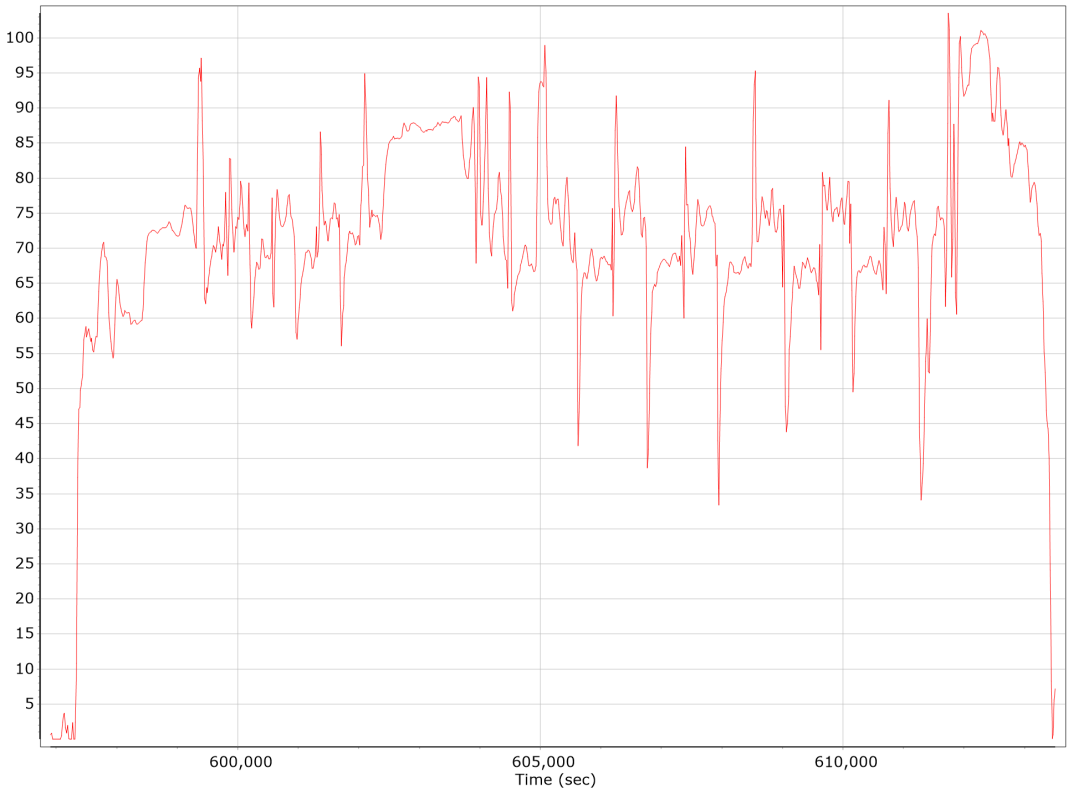
North/East Velocity



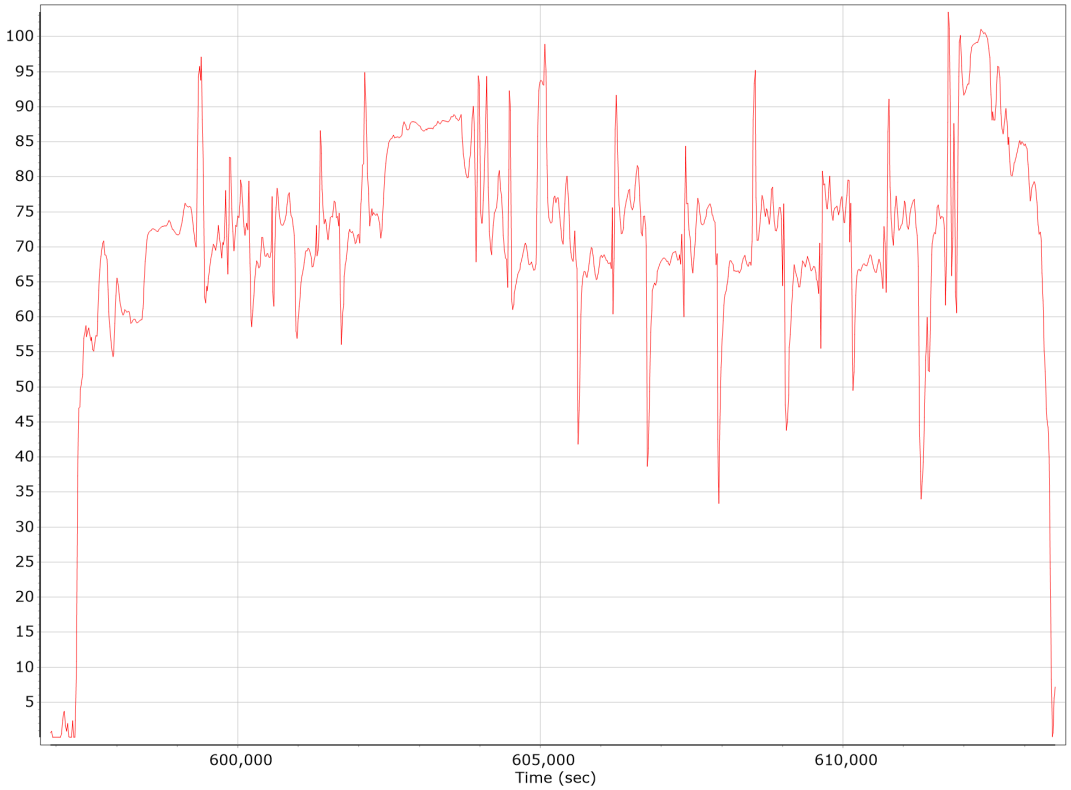
Down Velocity



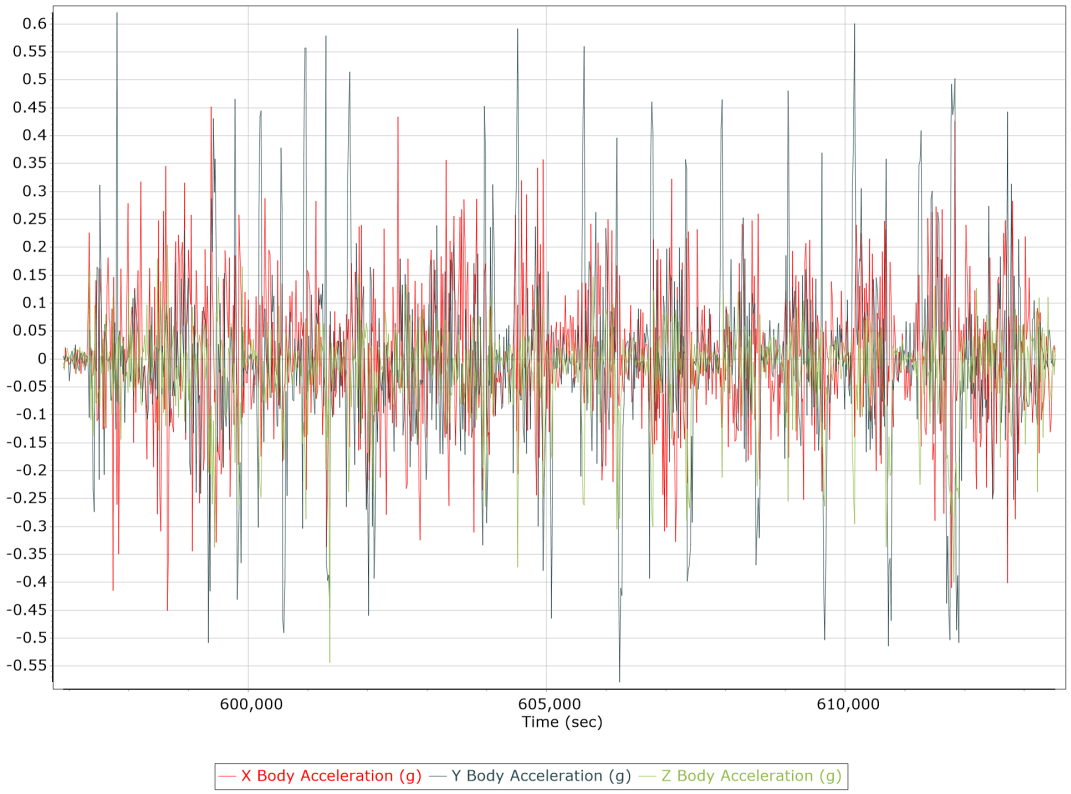
Total Speed



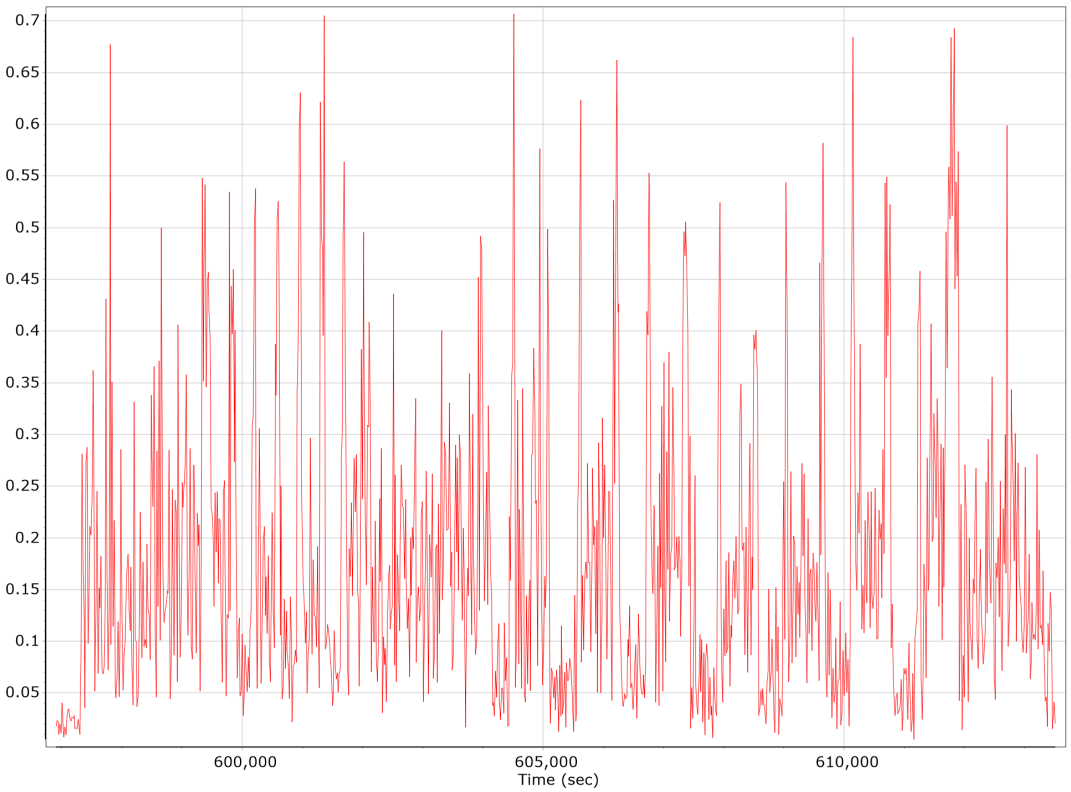
Ground Speed



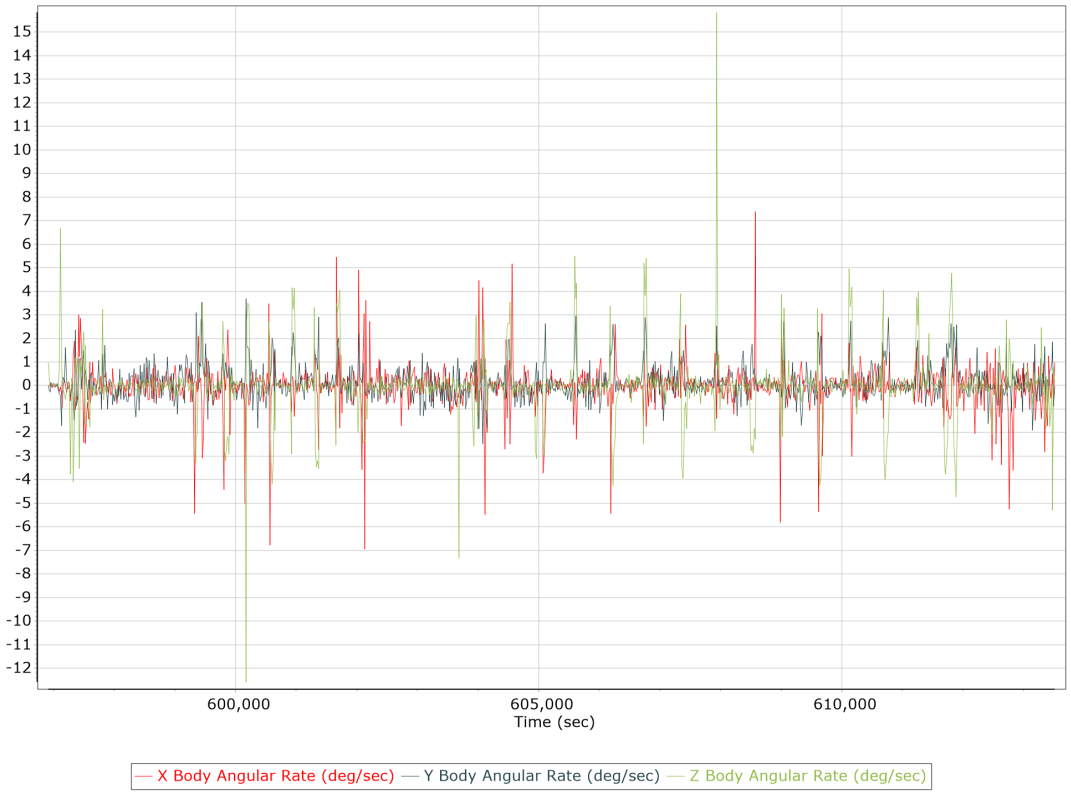
Body Acceleration



Total Body Acceleration

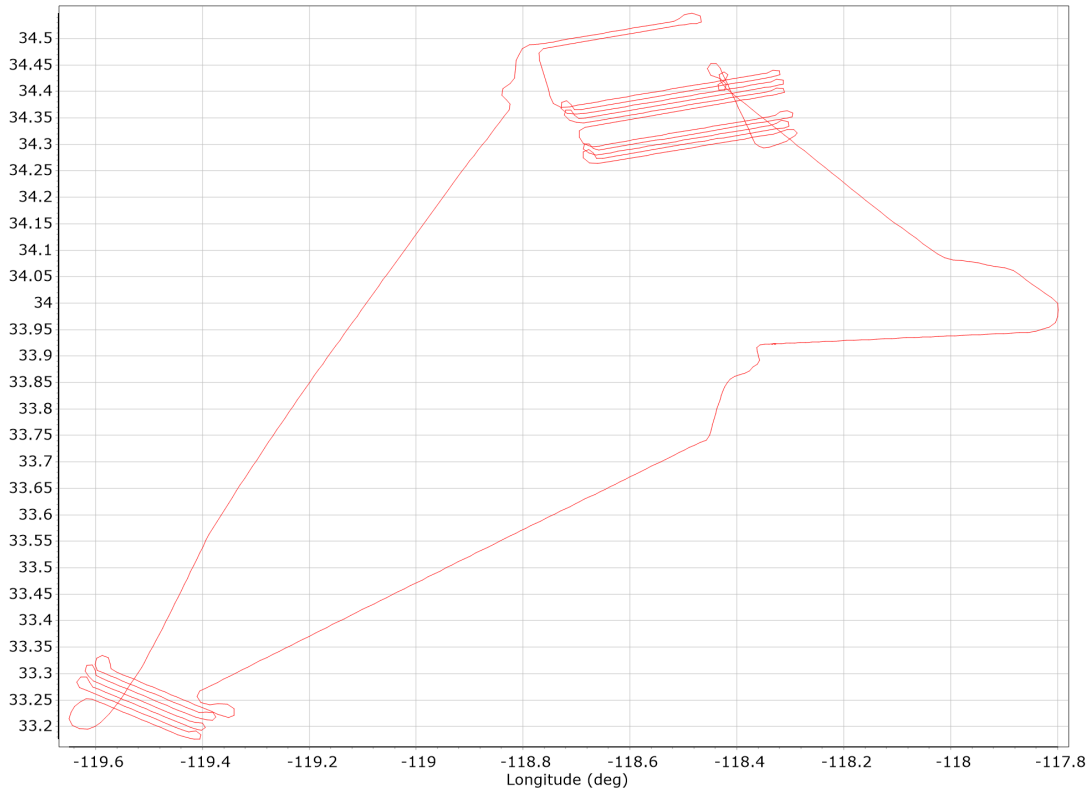


Body Angular Rate



Forward Processed Trajectory Information

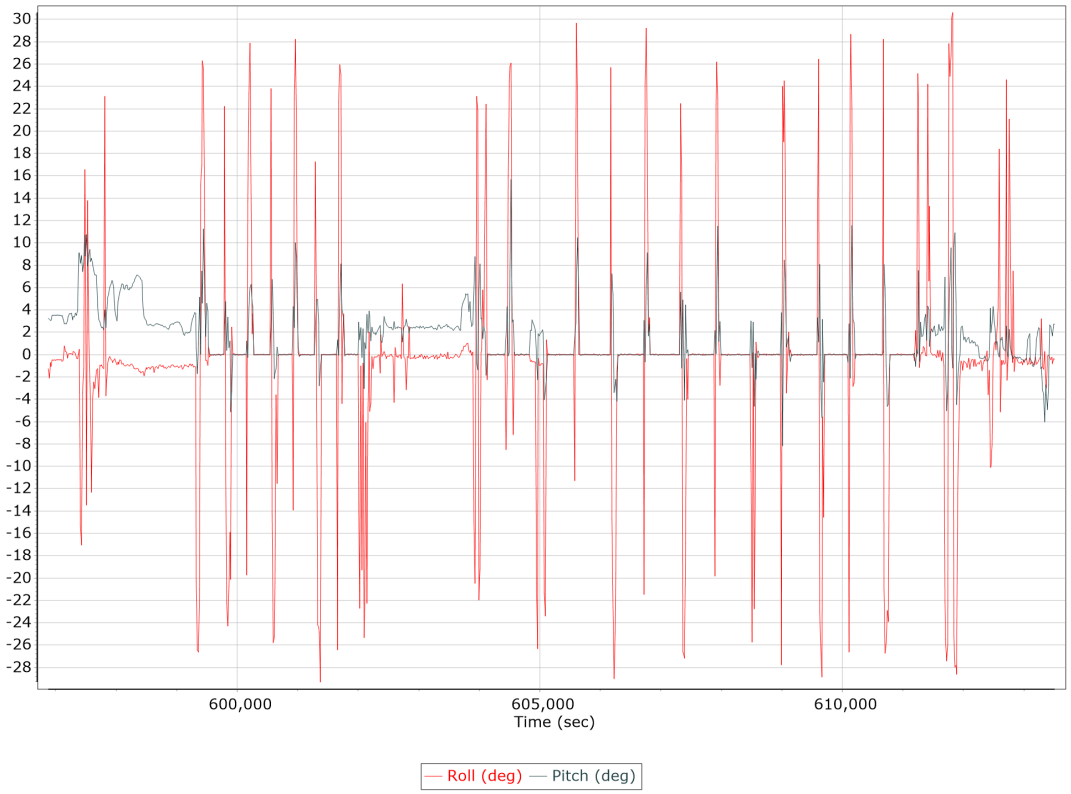
Top View



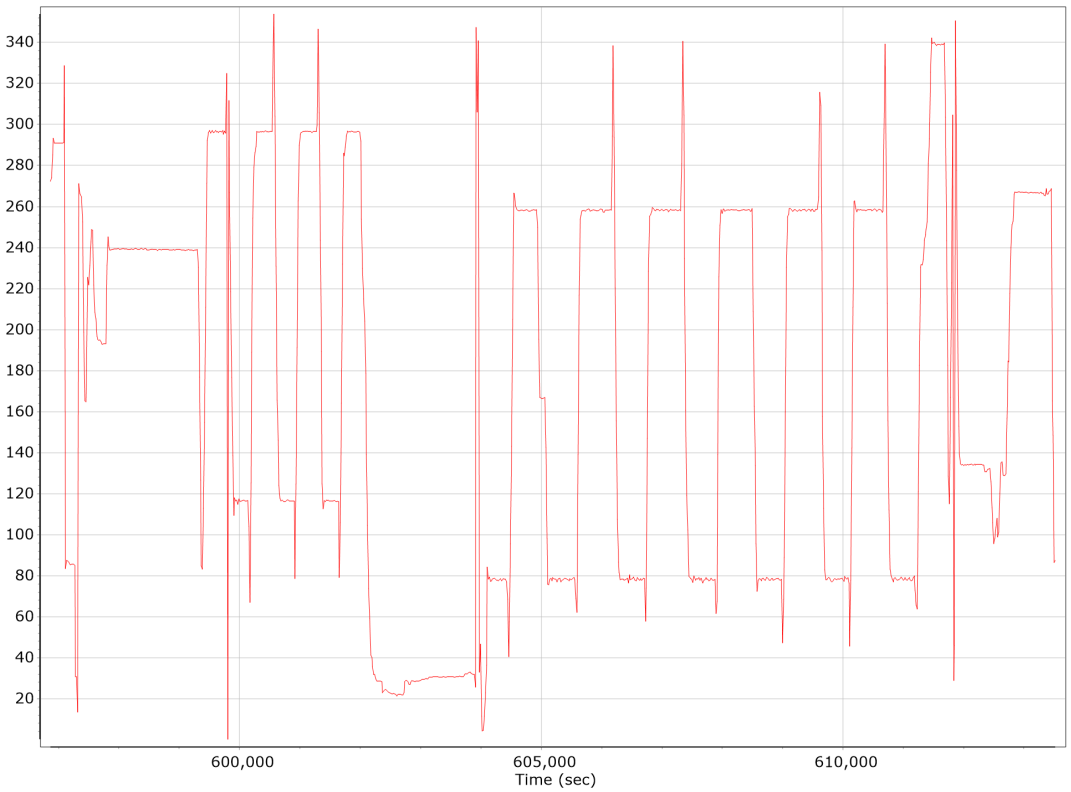
Altitude



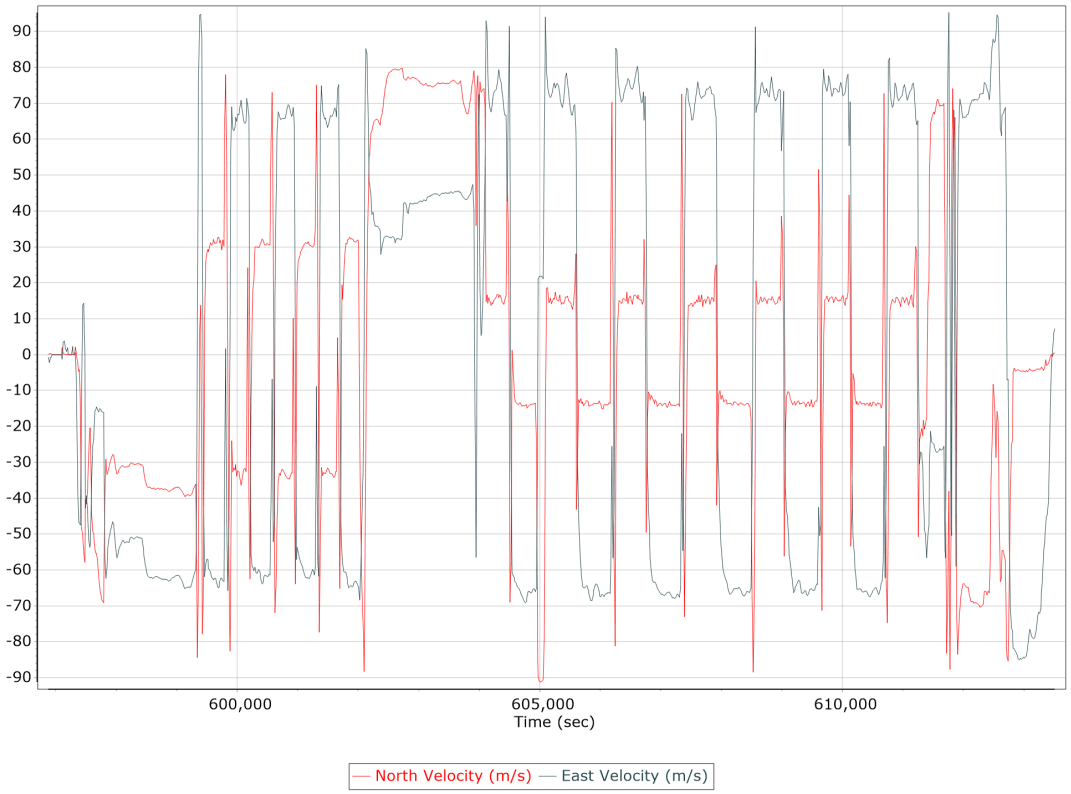
Roll/Pitch



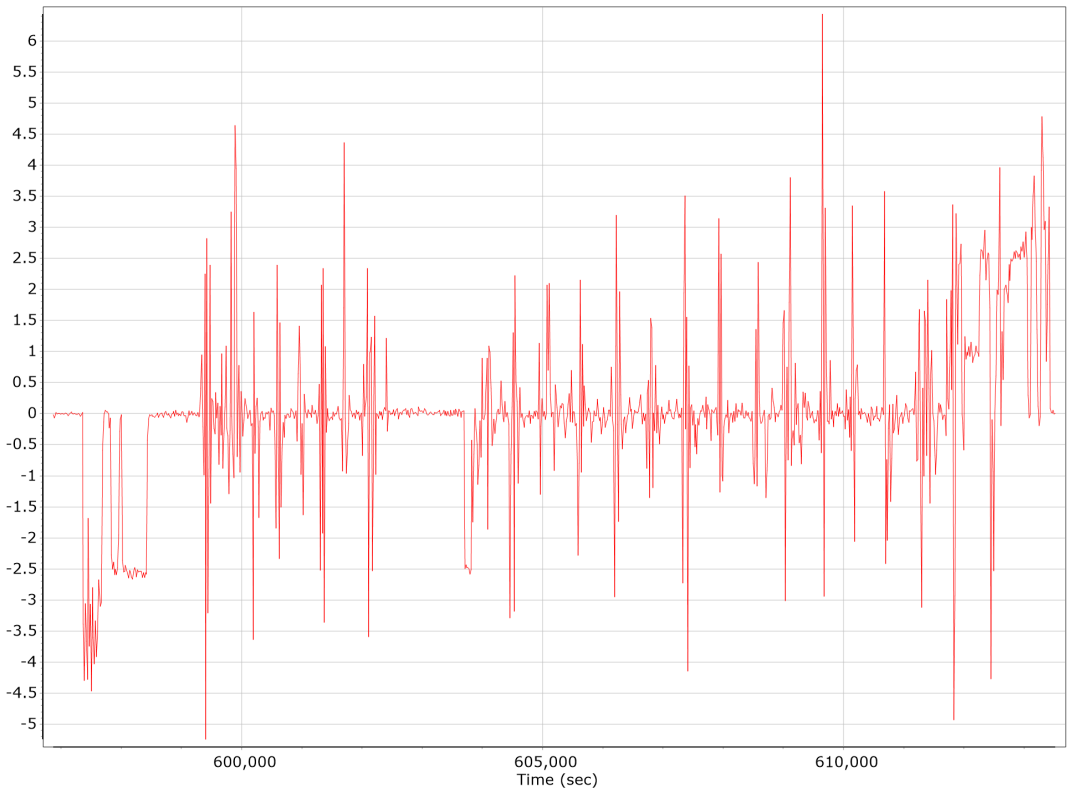
Heading



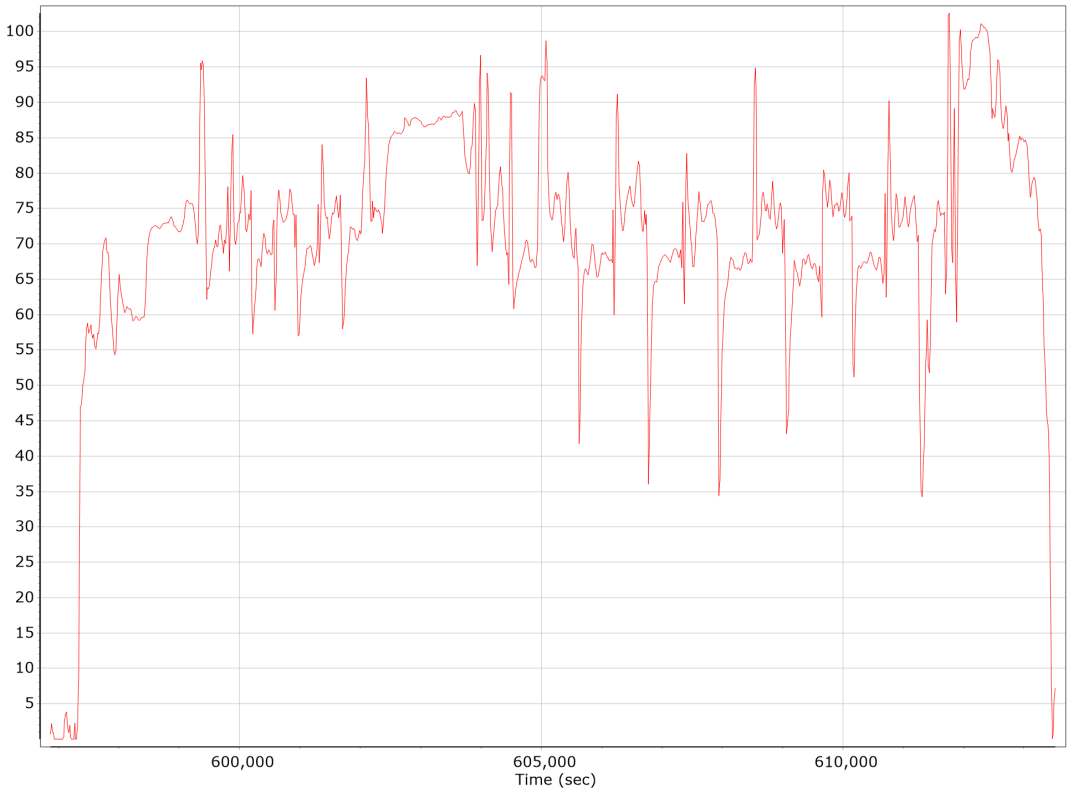
North/East Velocity



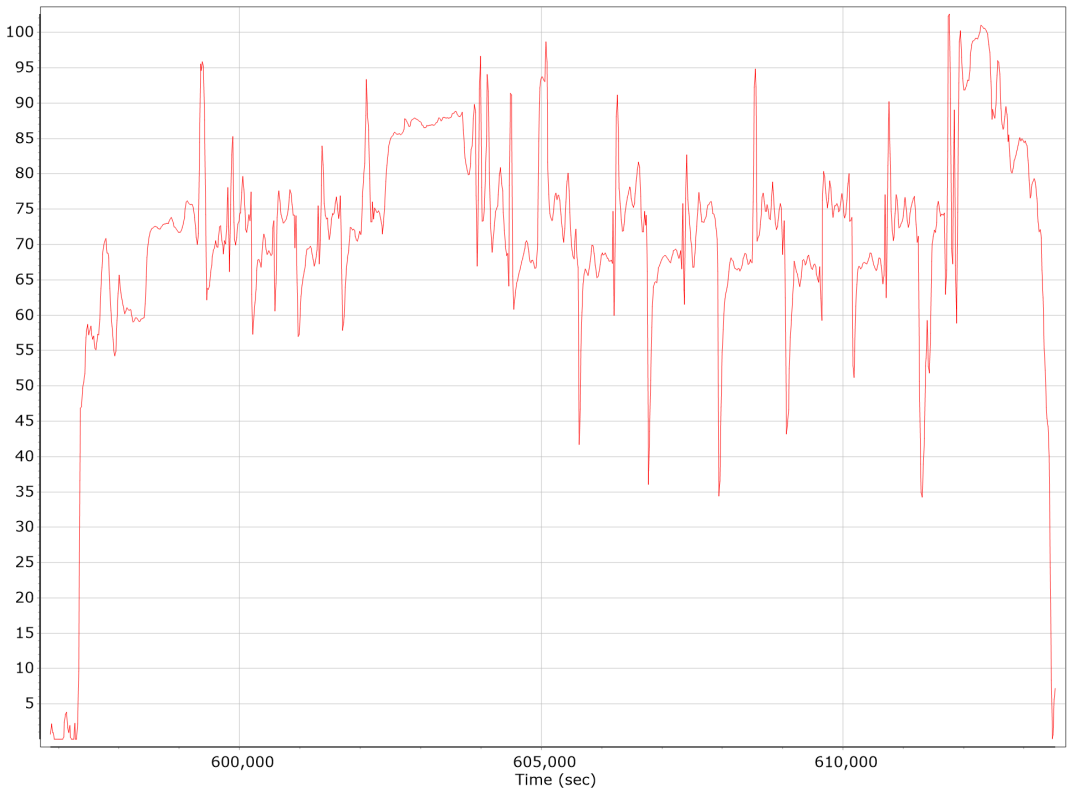
Down Velocity



Total Speed



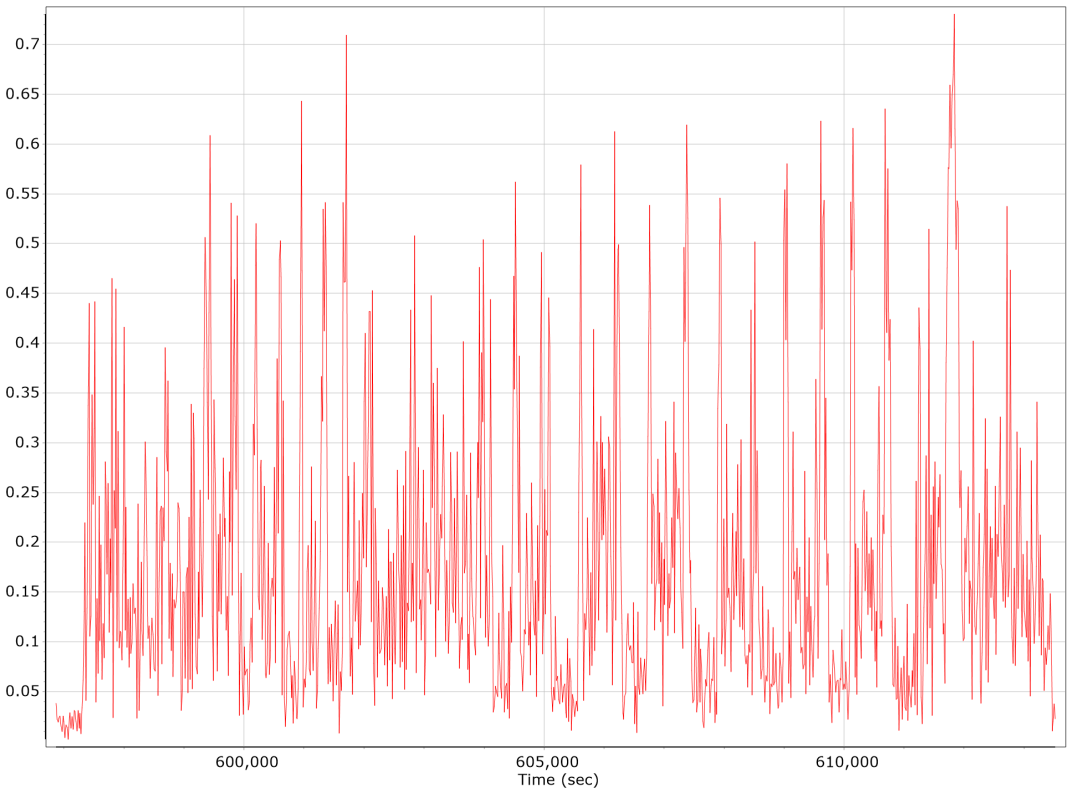
Ground Speed



Body Acceleration



Total Body Acceleration



Body Angular Rate

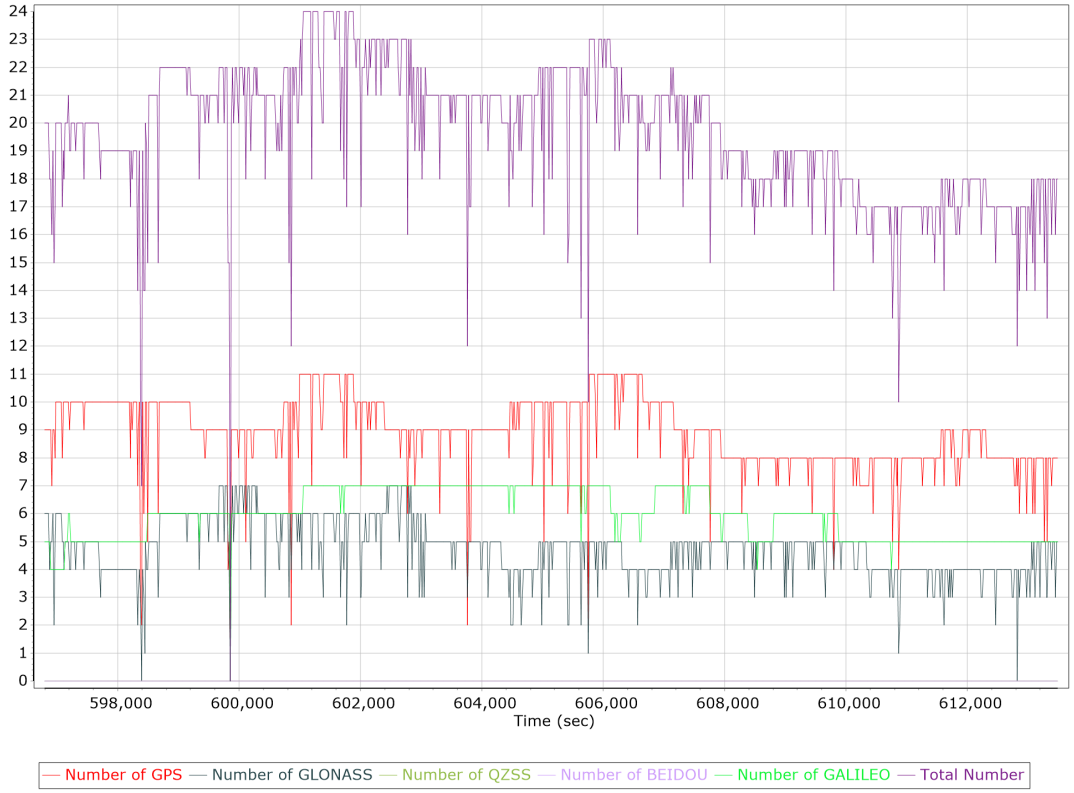


GNSS QC

GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	2	11	9
Number of GLONASS SV	0	7	5
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	2	7	6
Total number of SV	8	24	20
PDOP	1.01	3.37	1.26
QC Solution Gaps	1.00	2.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	17112.00	0.00	6.00
Percentage	99.96	0.00	0.04

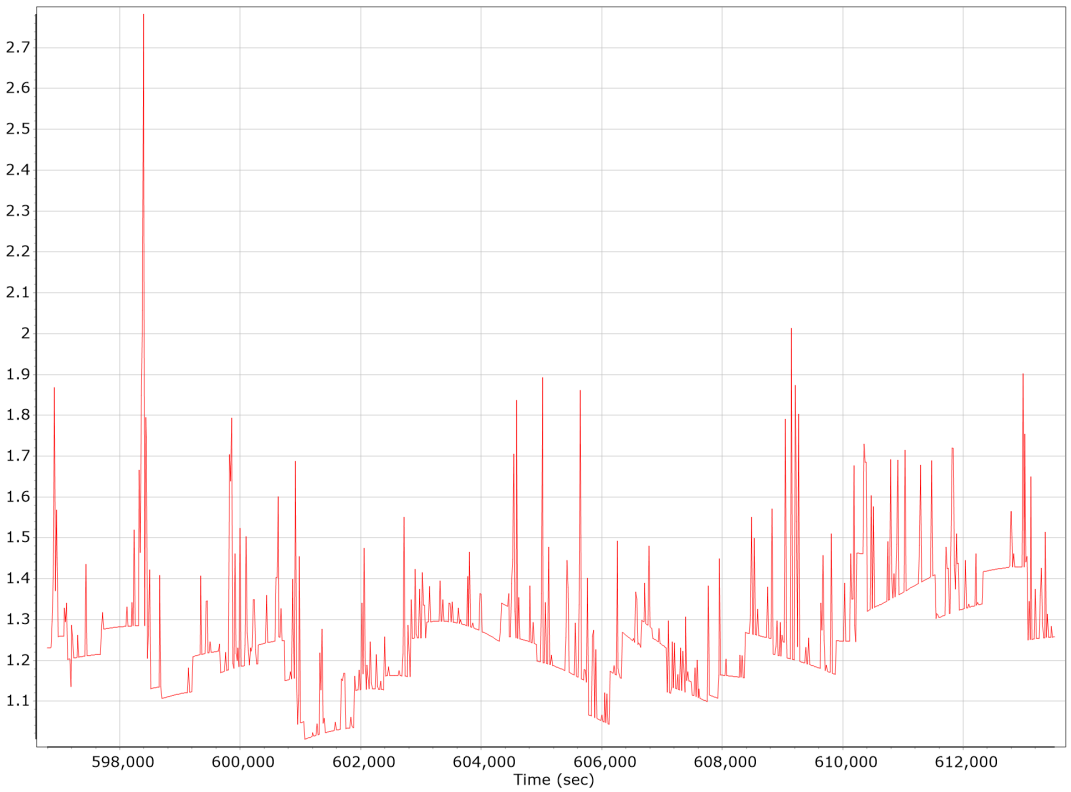
Num SVs in solution



Forward/Reverse Separation



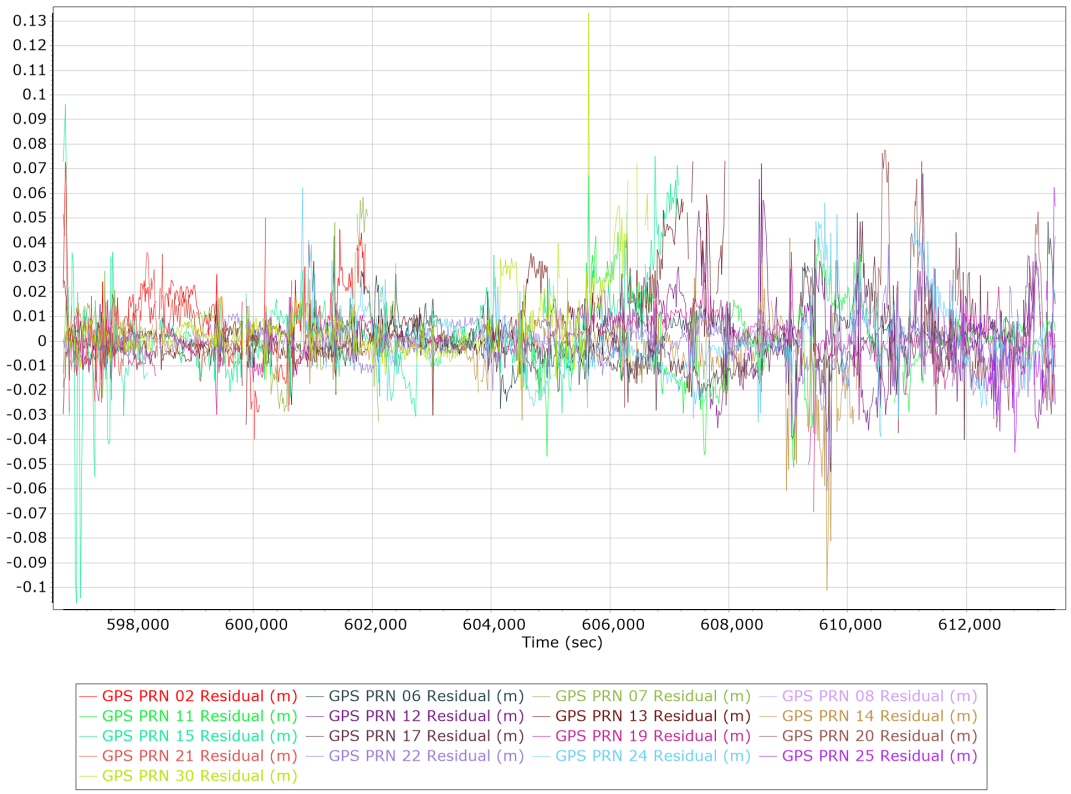
PDOP



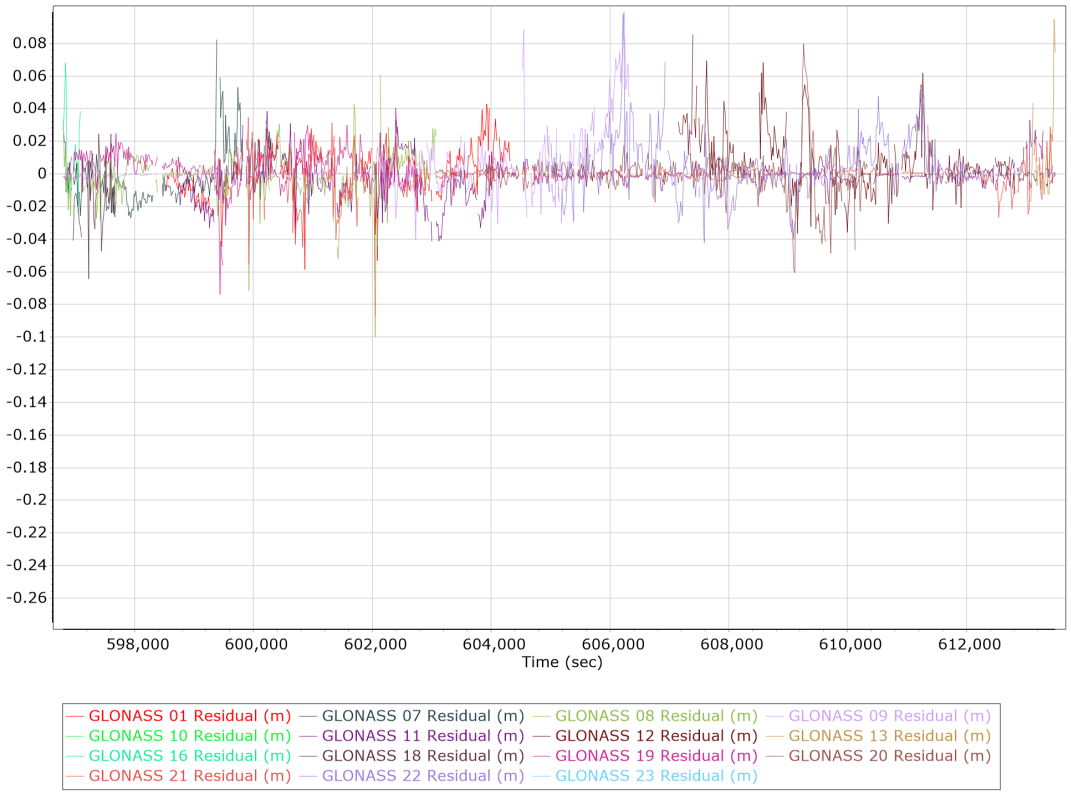
Estimated Position Accuracy



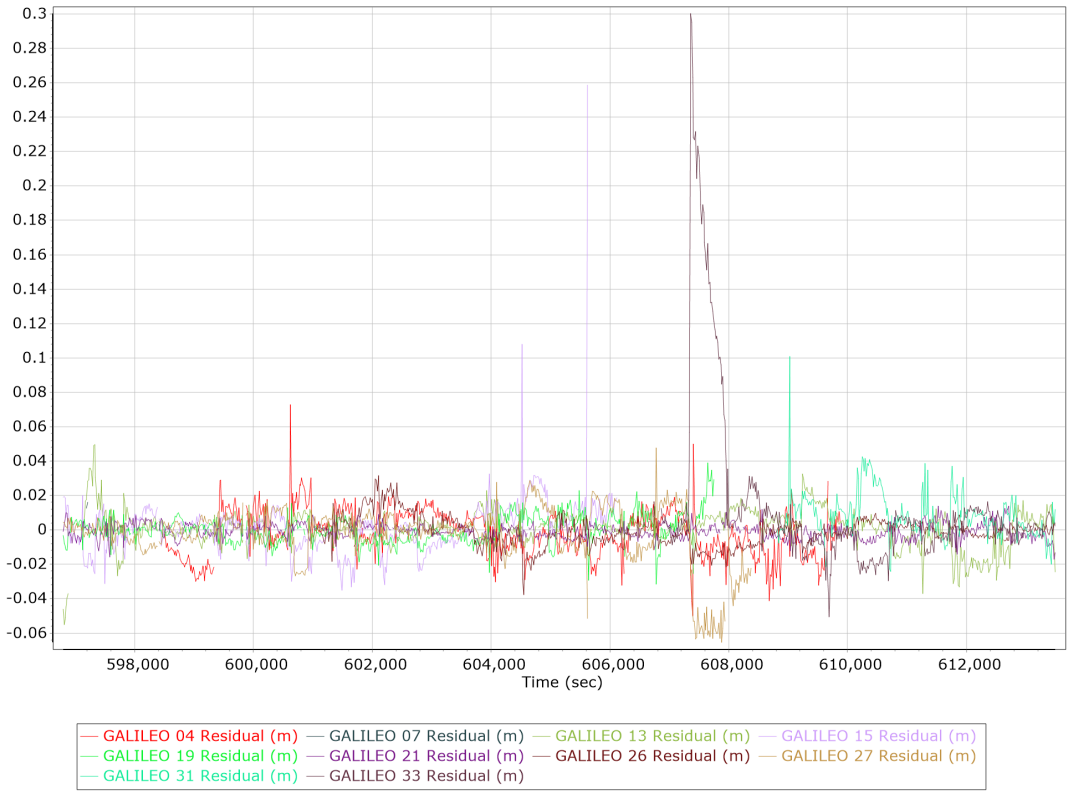
GPS Residuals



GLONASS Residuals



GALILEO Residuals



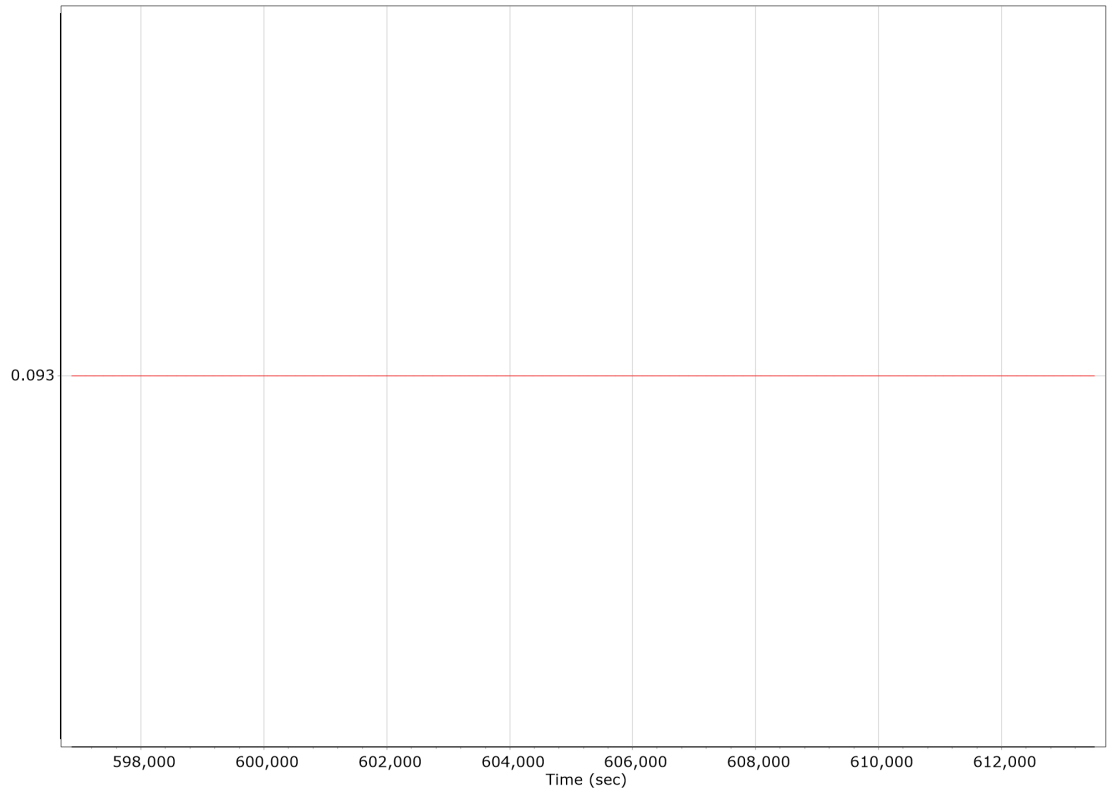
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	596354.000 (1/6/2024 9:39:14 PM)		
Processing end time	8725.000 (1/7/2024 2:25:25 AM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.093	0.062	-1.287
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

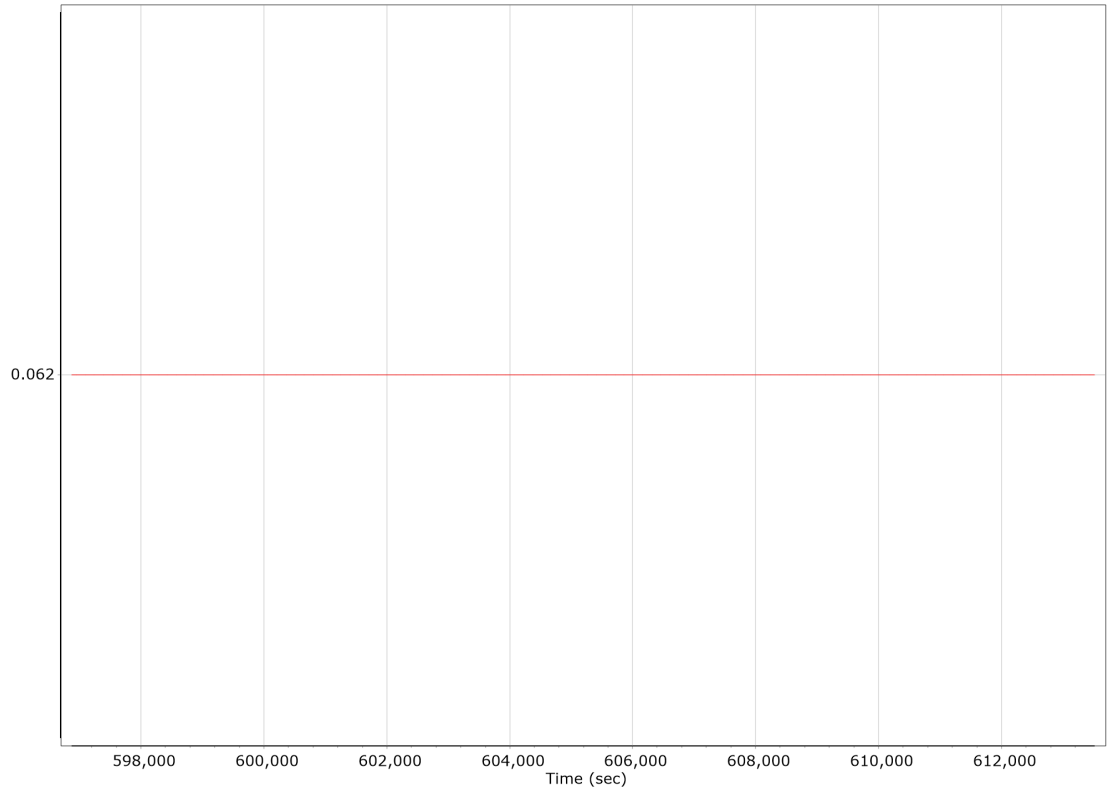
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

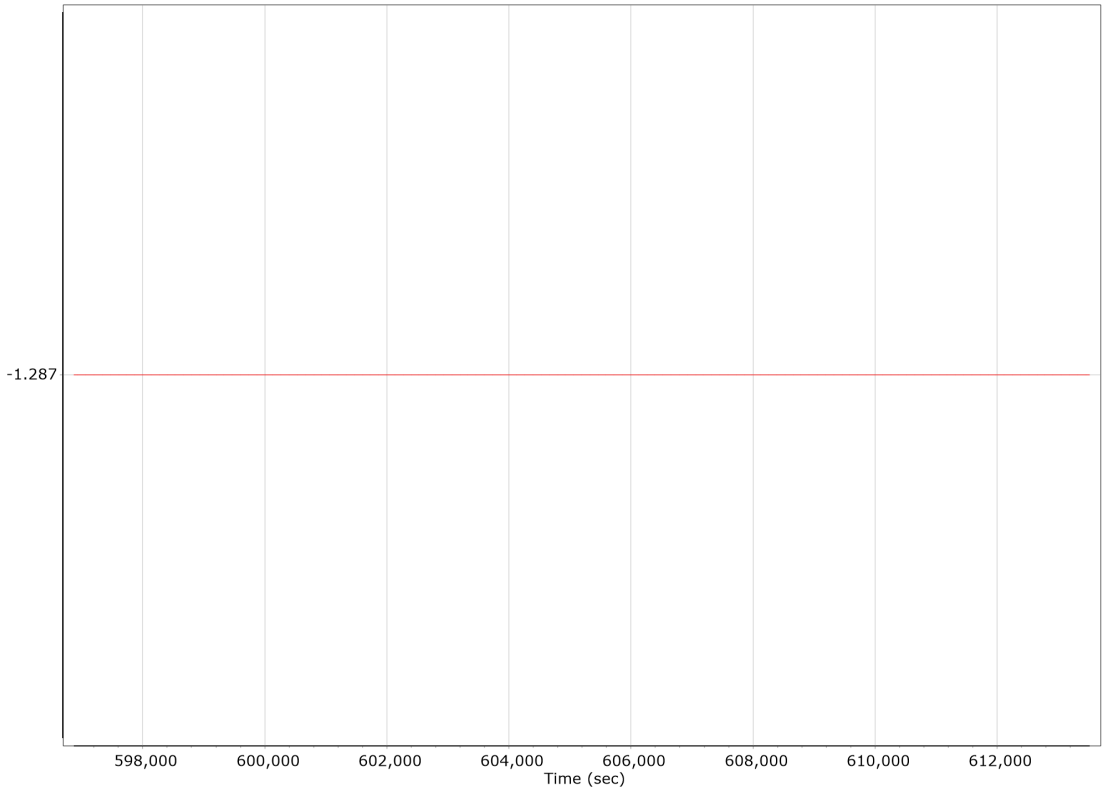
X Reference-Primary GNSS Lever Arm (m)



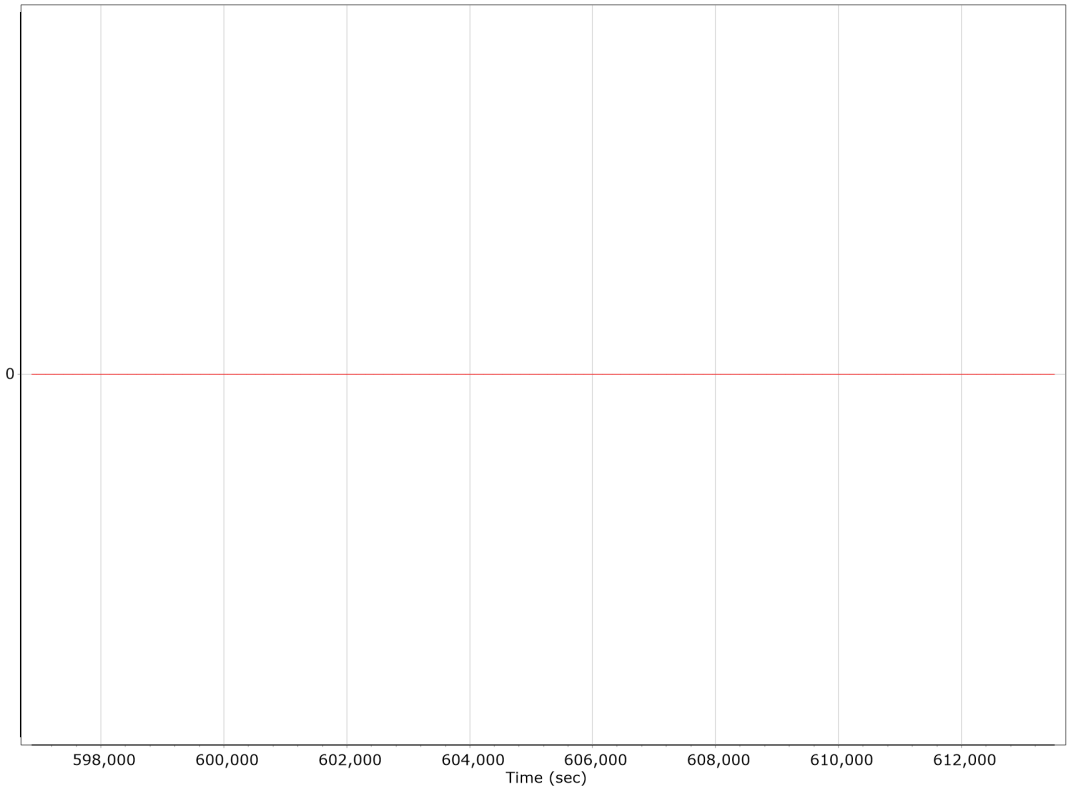
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



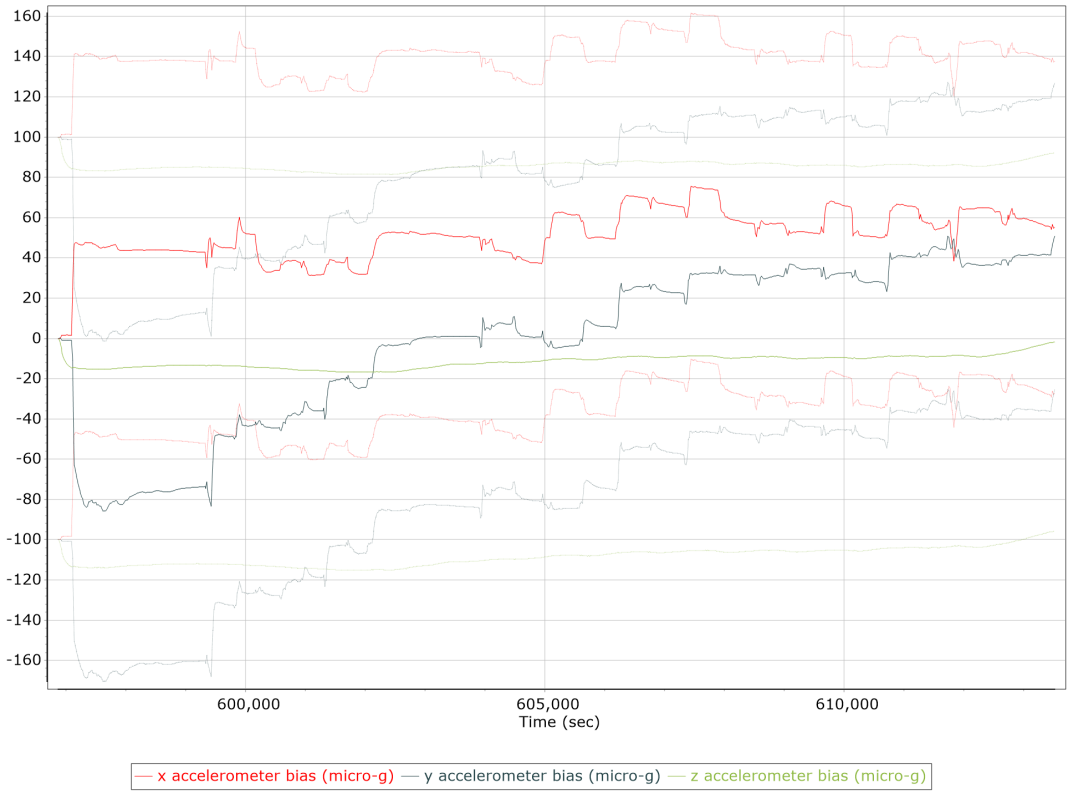
Reference-Primary GNSS Lever Arm Figure of Merit



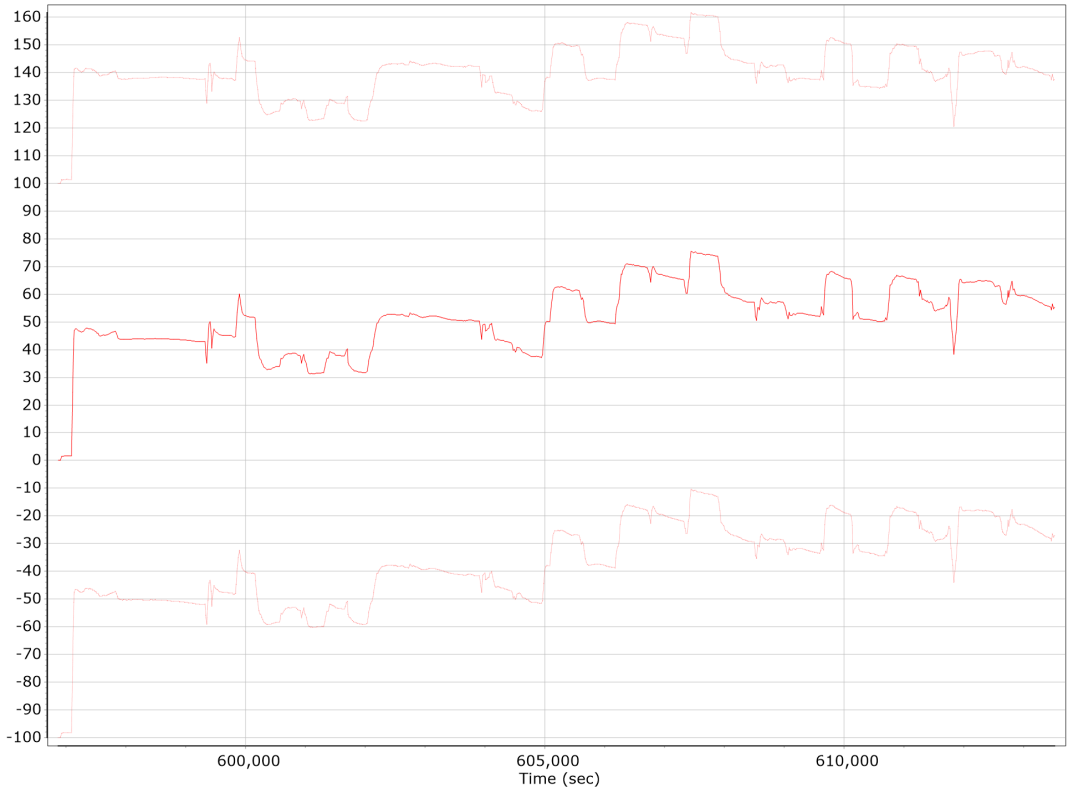
IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

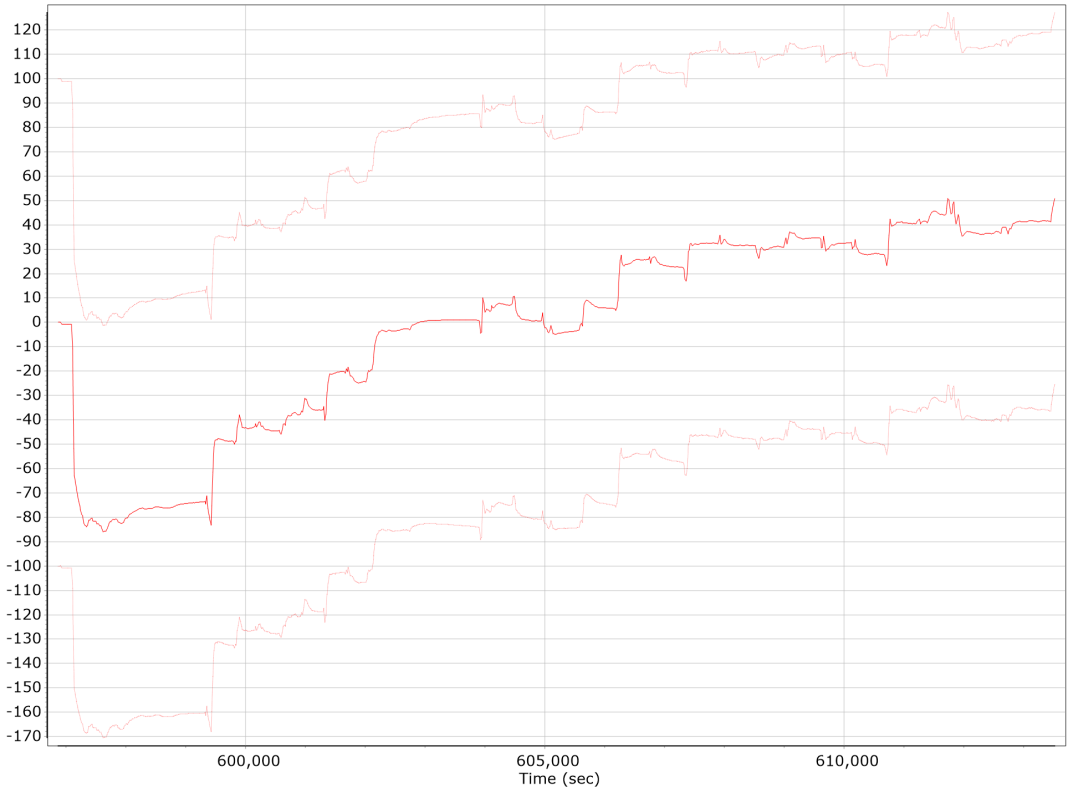
Accelerometer Bias (micro-g)



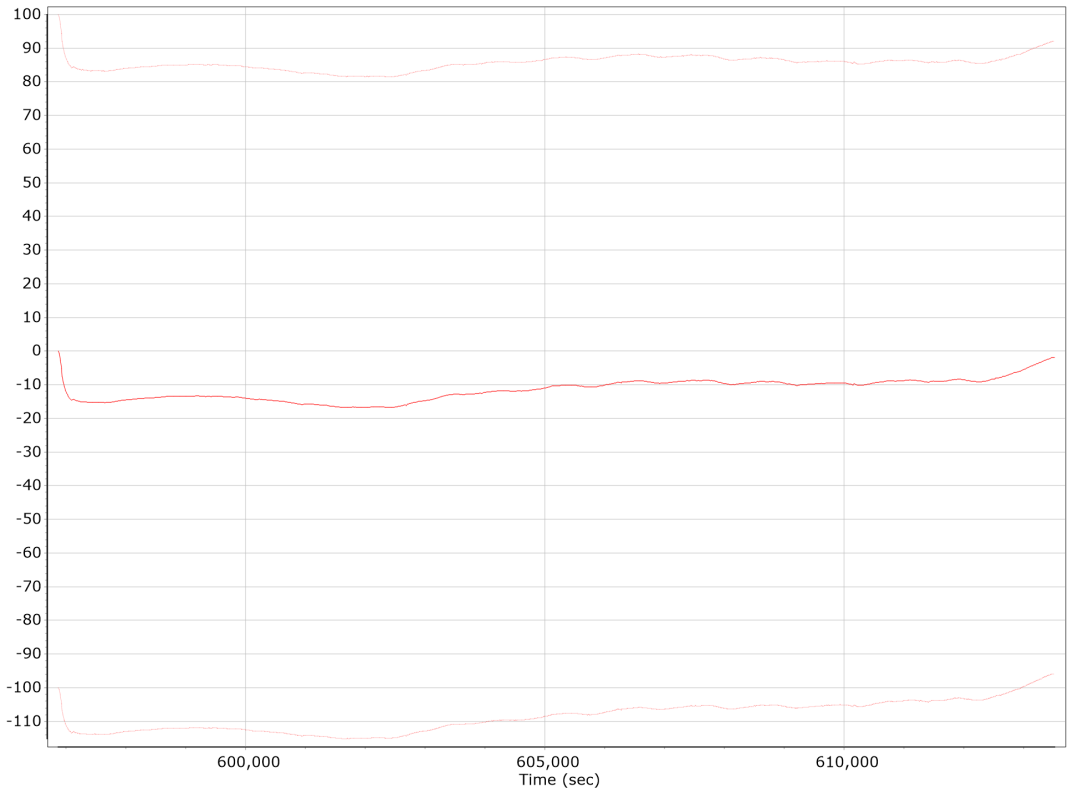
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



X Accelerometer Scale Error (ppm)



Y Accelerometer Scale Error (ppm)



Z Accelerometer Scale Error (ppm)



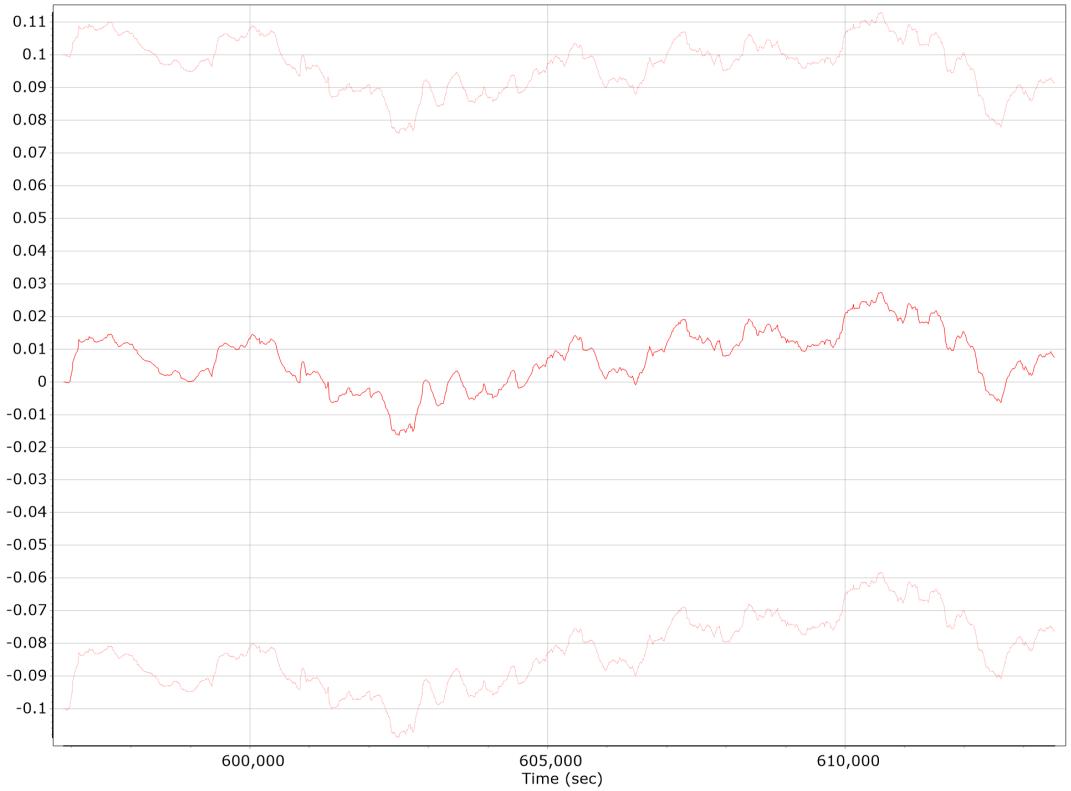
Gyro Bias (deg/h)



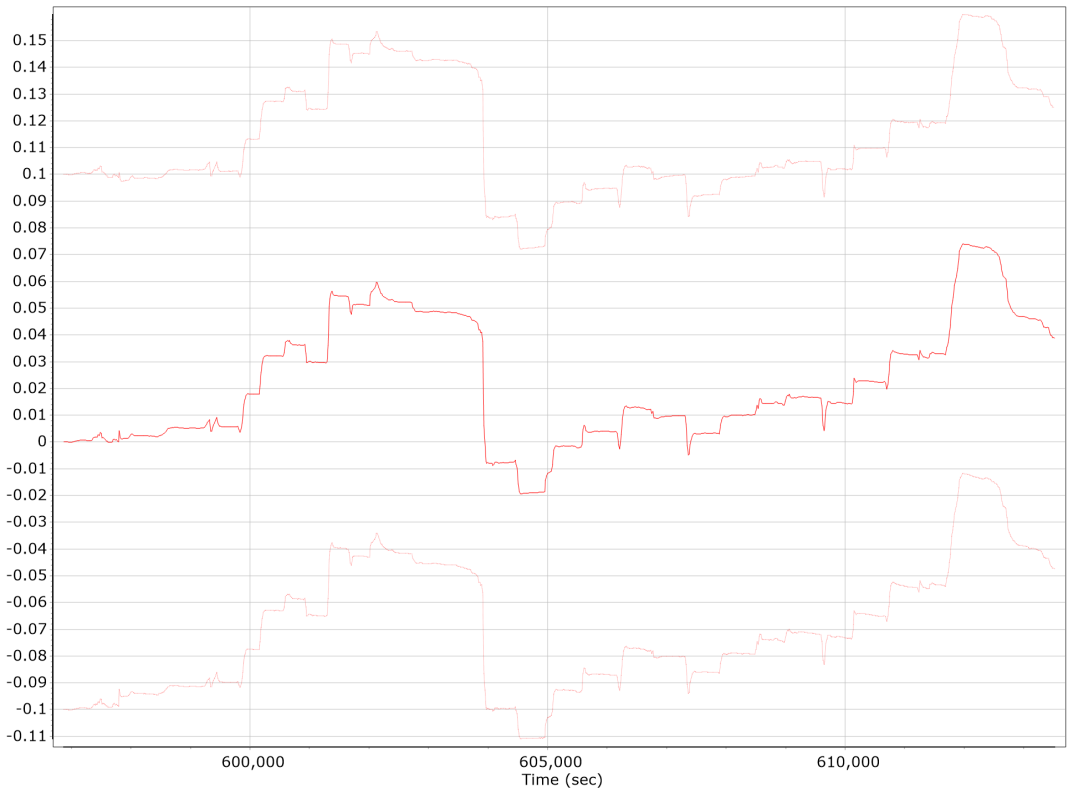
X Gyro Bias (deg/h)



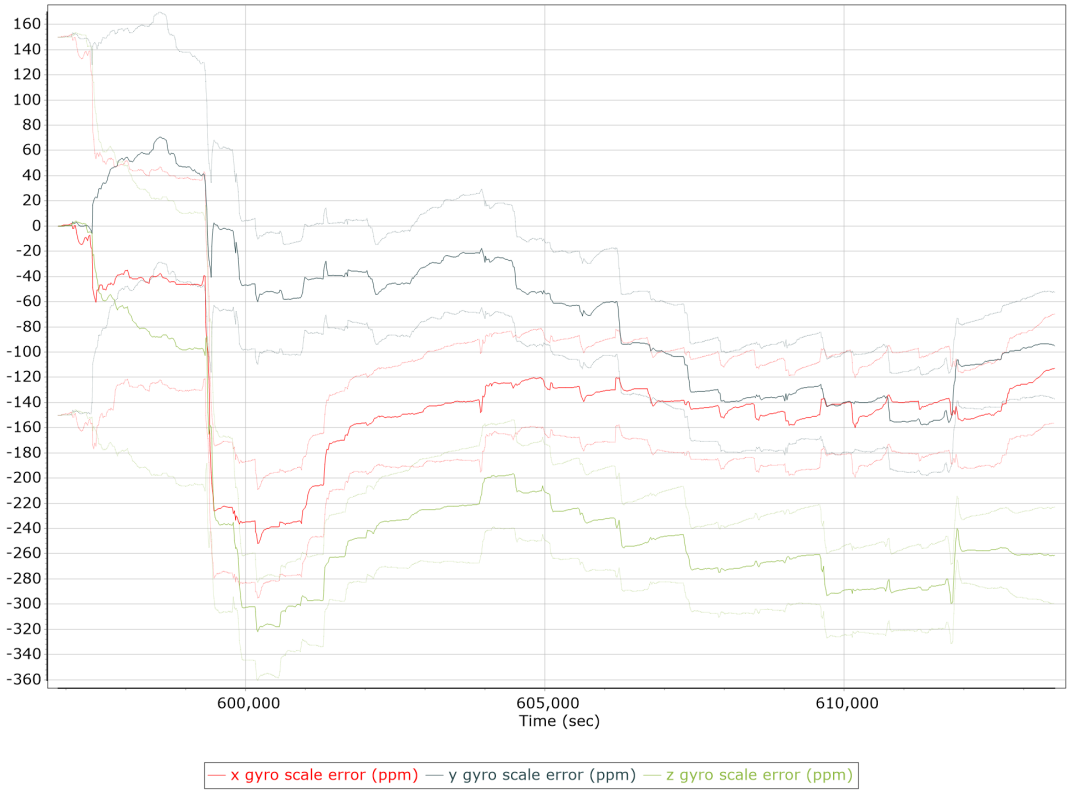
Y Gyro Bias (deg/h)



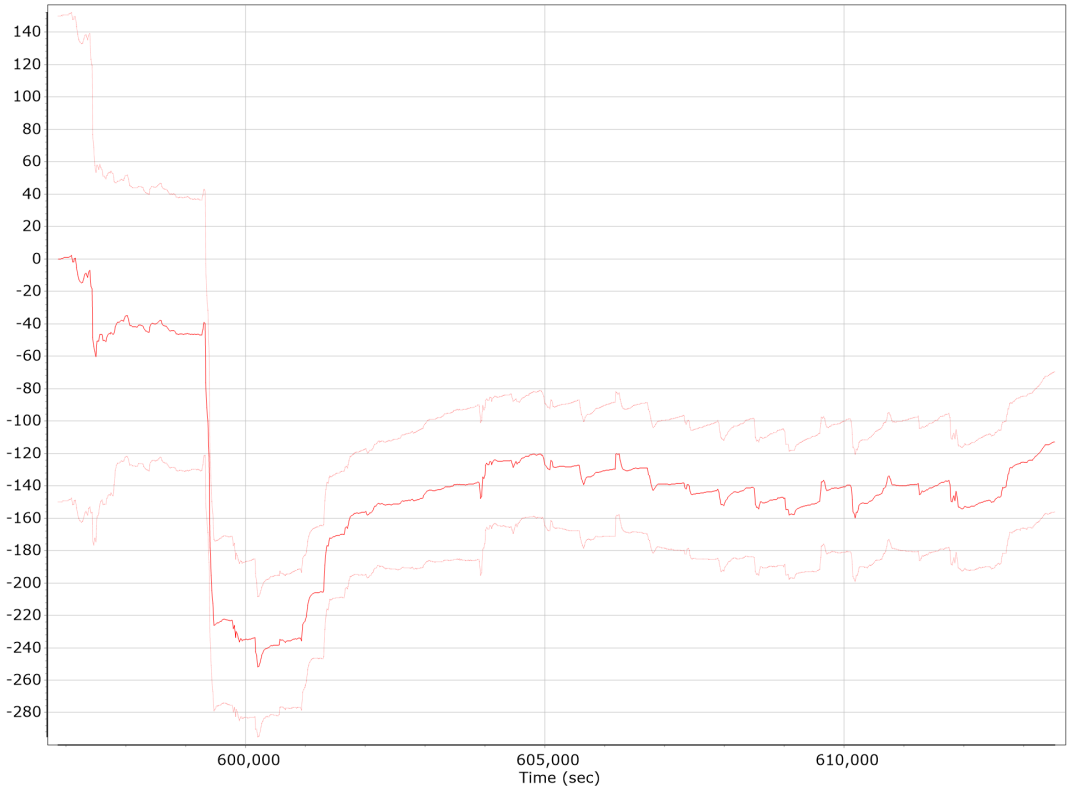
Z Gyro Bias (deg/h)



Gyro Scale Error (ppm)



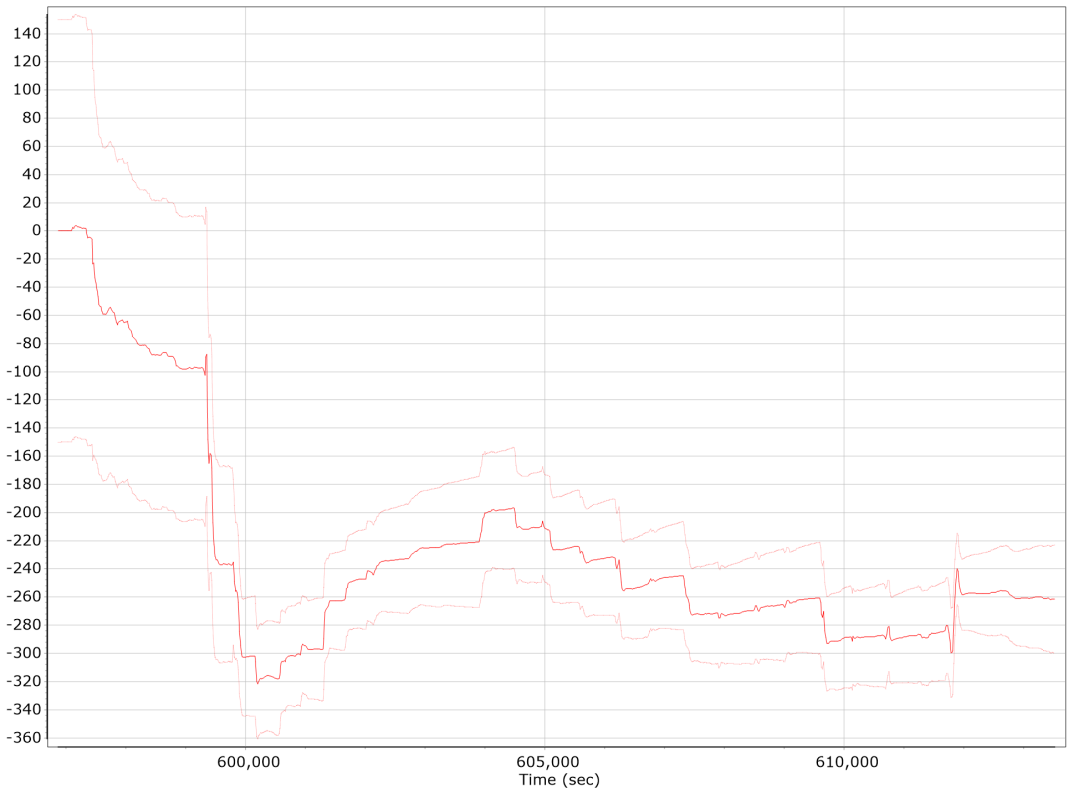
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)



Z Gyro Scale Error (ppm)

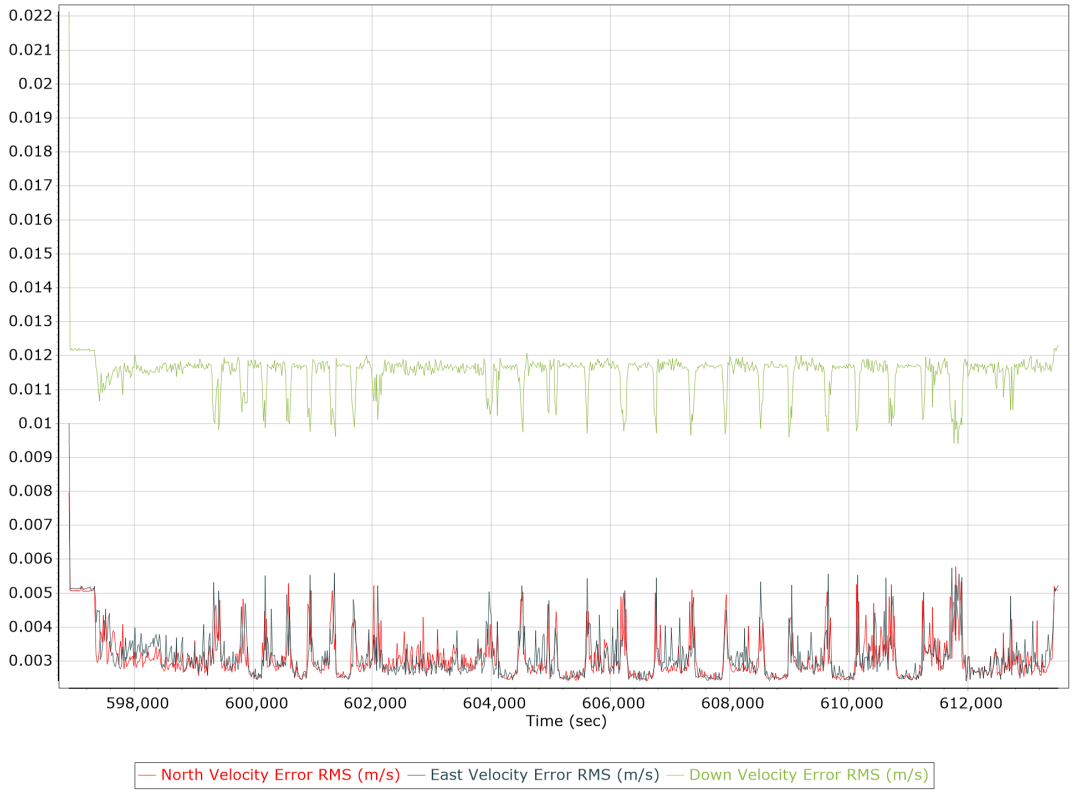


Smoothed Performance Metrics

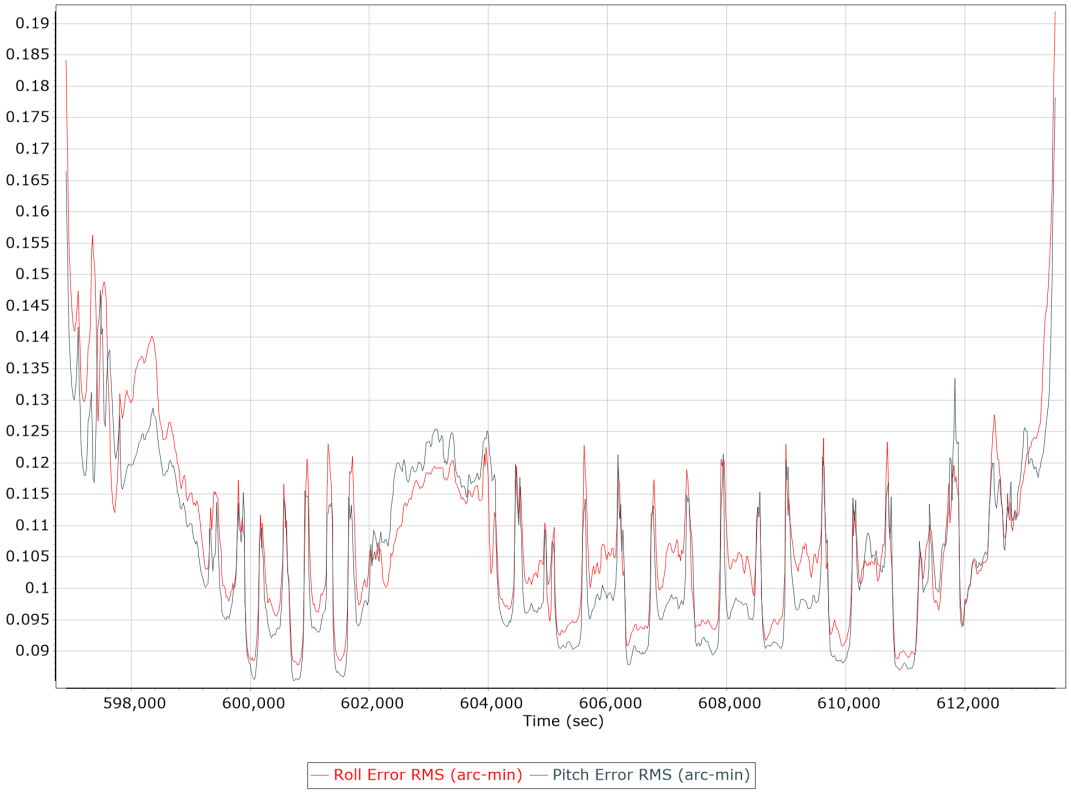
Position Error RMS (m)



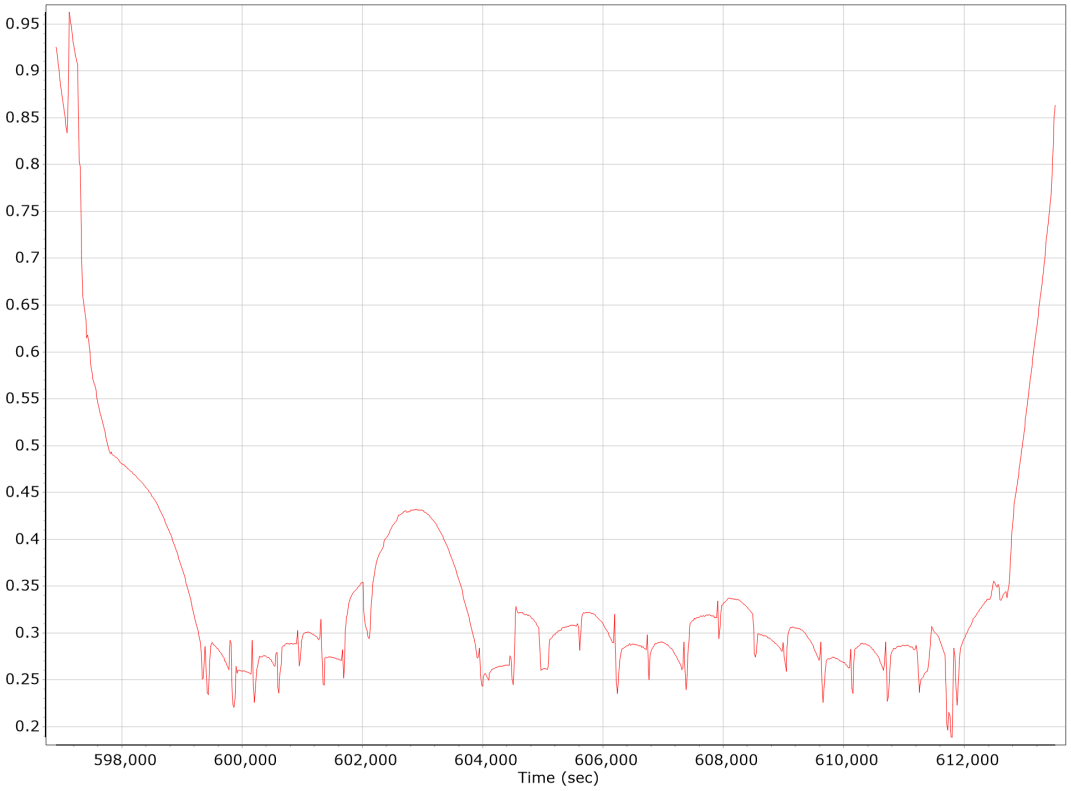
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)



Heading Error RMS (arc-min)



Forward Processed Performance Metrics

Position Error RMS (m)



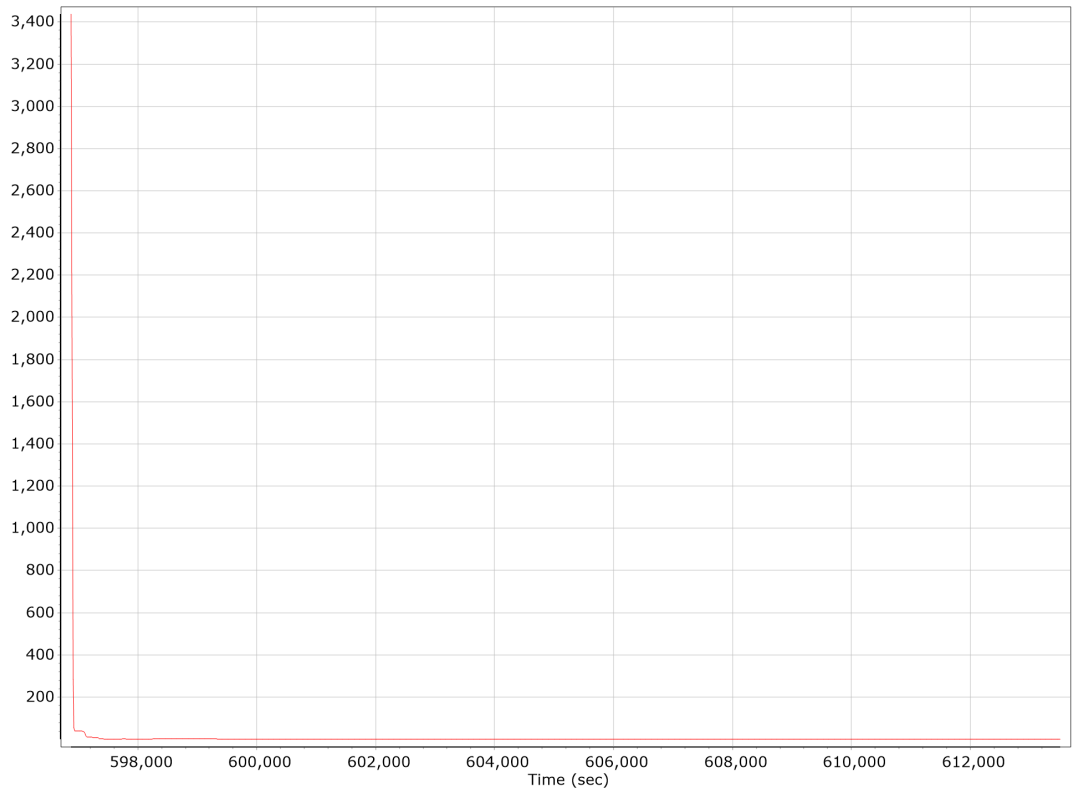
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

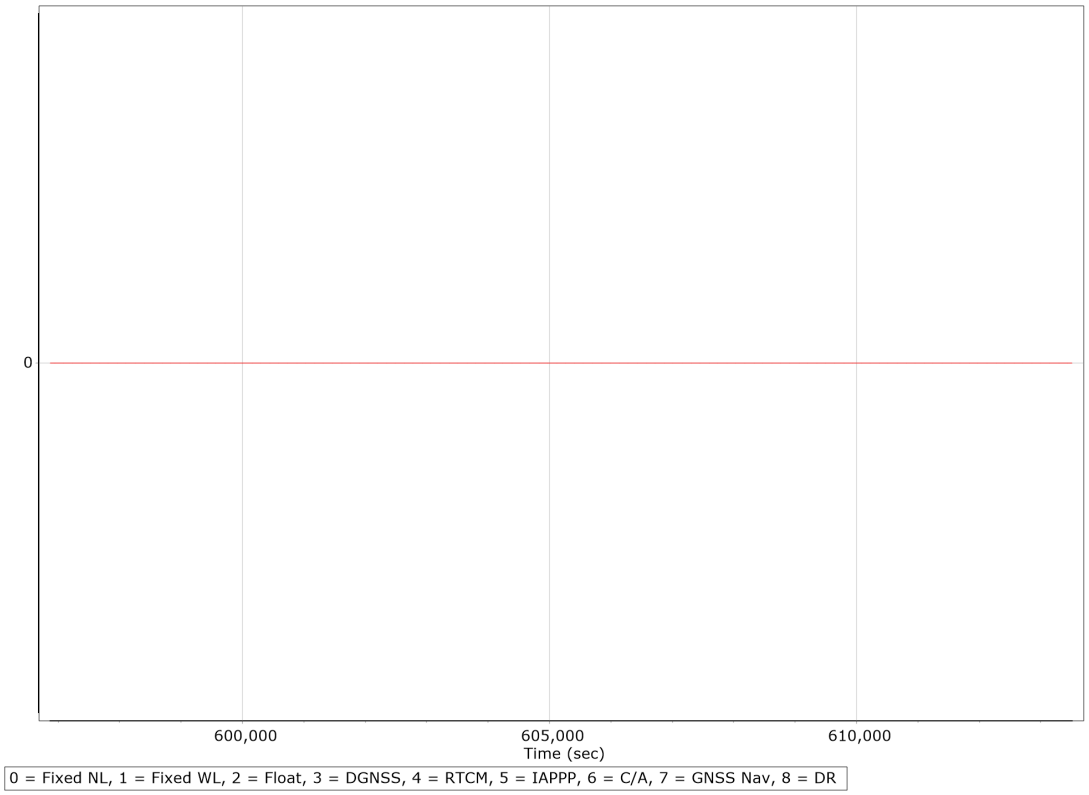


Heading Error RMS (arc-min)



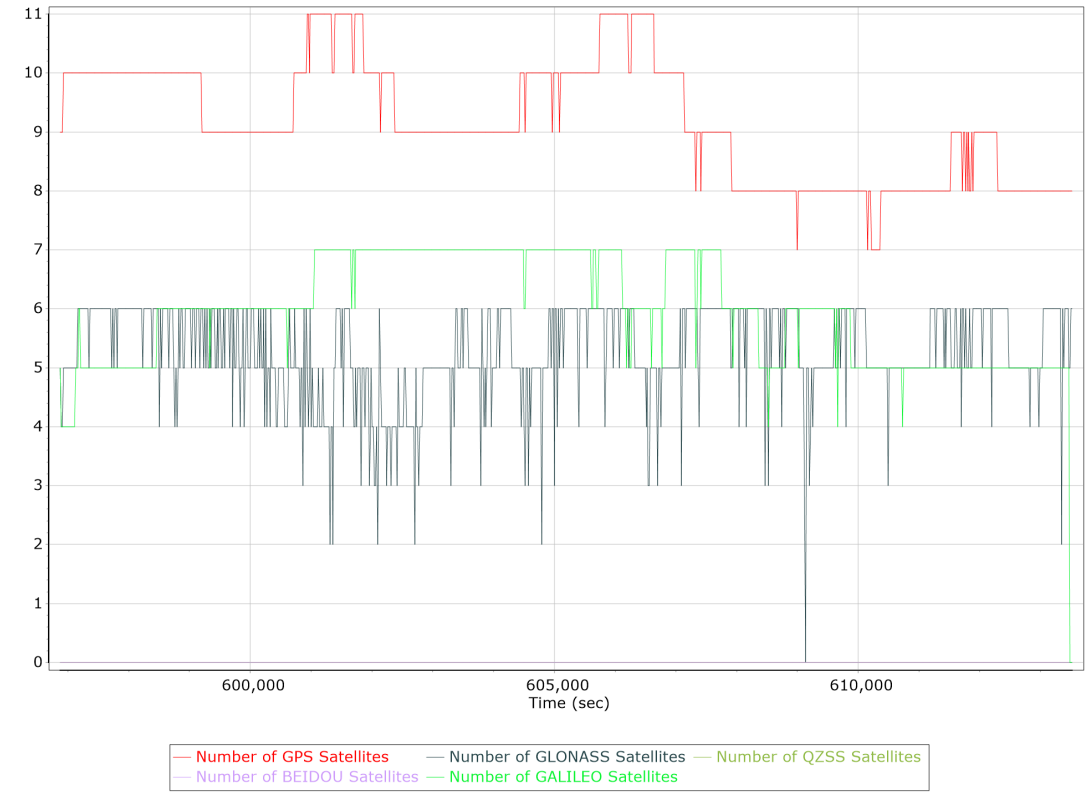
Forward Processed Solution Status

Processing Mode

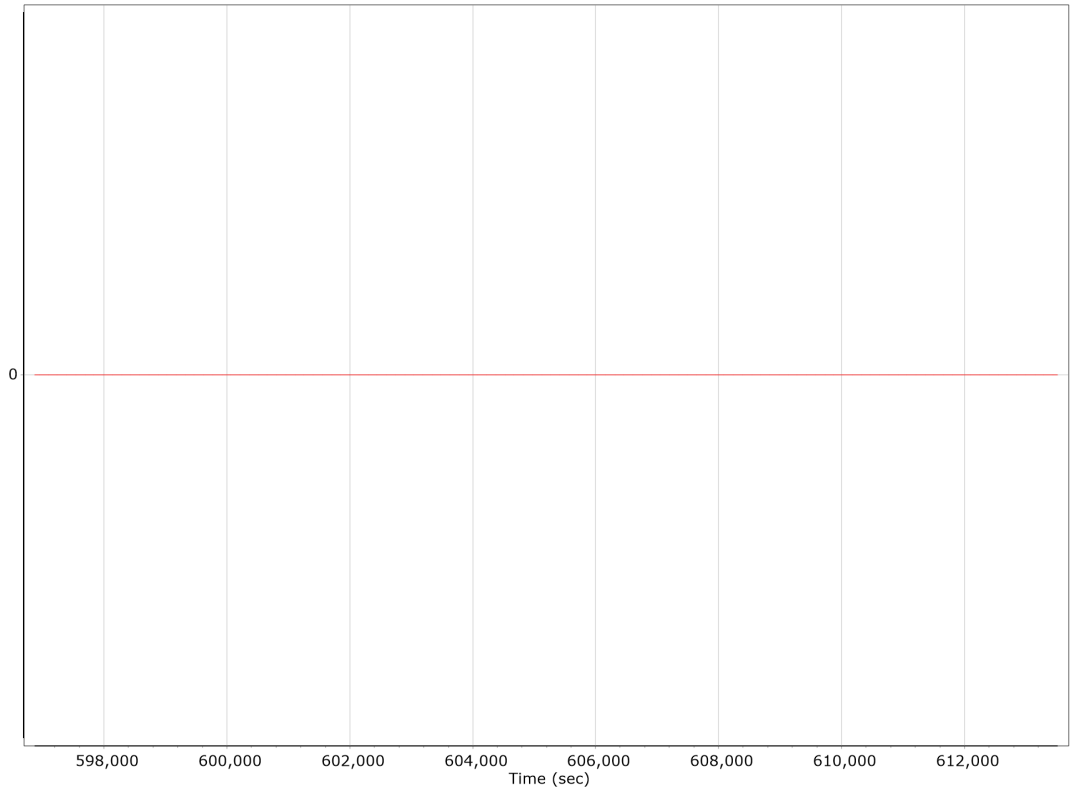


0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGNSS, 4 = RTCM, 5 = IAPPP, 6 = C/A, 7 = GNSS Nav, 8 = DR

Number of Satellites



Baseline Length



General Information

Mission Information

Project name	01072024A_3546
Processing date	2024-01-09 17:24:28
Mission date	2024-01-07 18:54:30
Mission duration	01:51:26.613
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N9922
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
240107_185411_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm0070.24g	GLONASS Broadcast Ephemeris
Ephm0070.24n	GPS Broadcast Ephemeris

Output Files

Filename	File type
sbet_01072024A_3546.out	SBET Trajectory File

Rover Data Summary

First raw data file	240107_185411_INS-GPS_1.raw		
Last raw data file	240107_185411_INS-GPS_1.raw		
Start GPS week	2296		
Start time	68051.347 (1/7/2024 6:54:11 PM)		
End time	74737.960 (1/7/2024 8:45:37 PM)		
Start of fine alignment	68339.919 (1/7/2024 6:58:59 PM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.205	0.058	-1.282
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

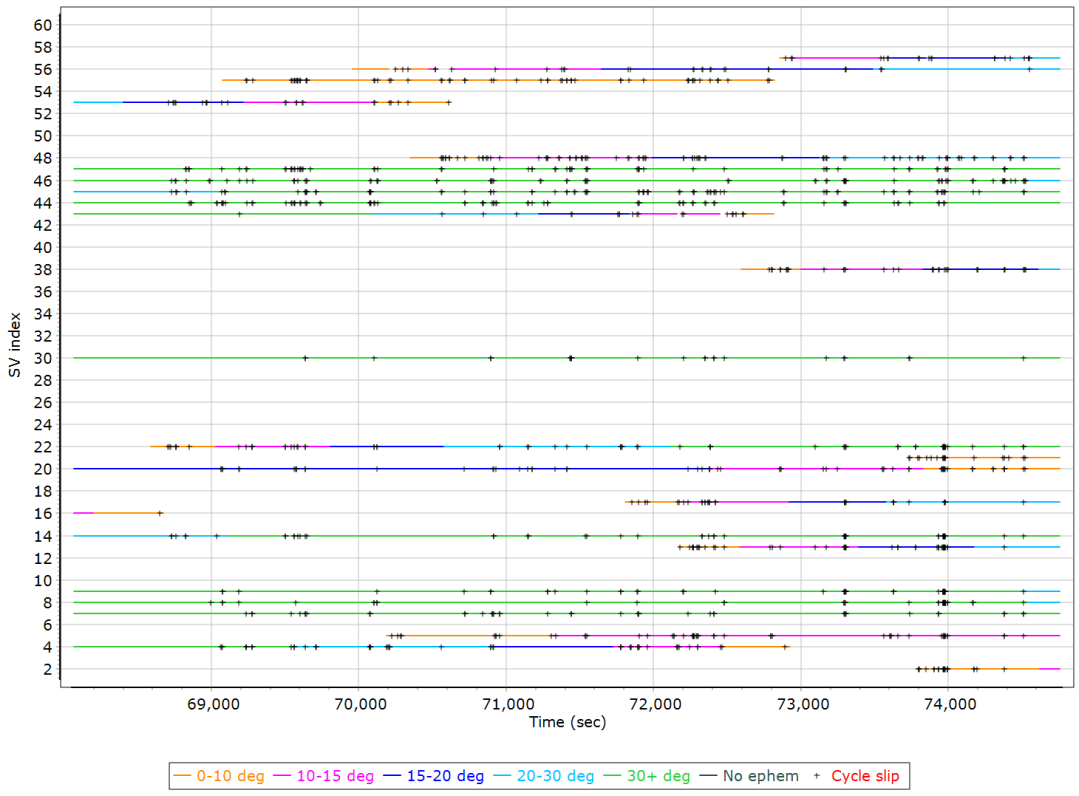
Rover Data QC

Raw IMU Import QC Summary

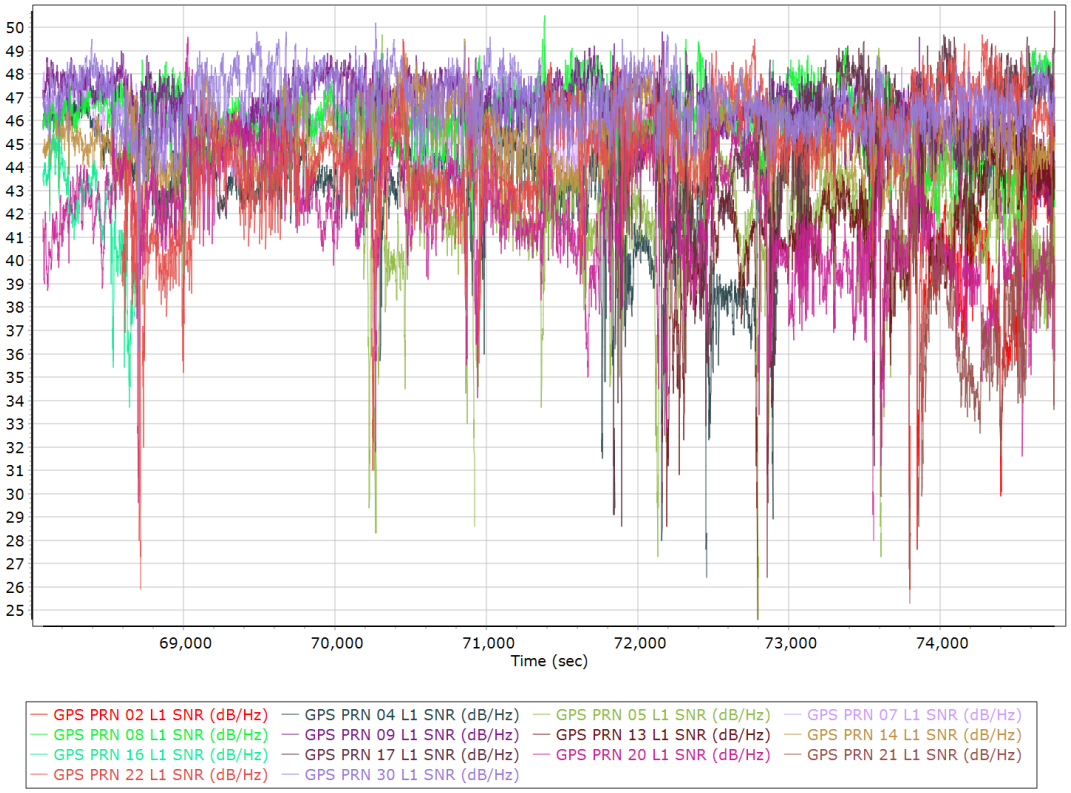
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_01072024A_3546.log
IMU Records Processed	1337160
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

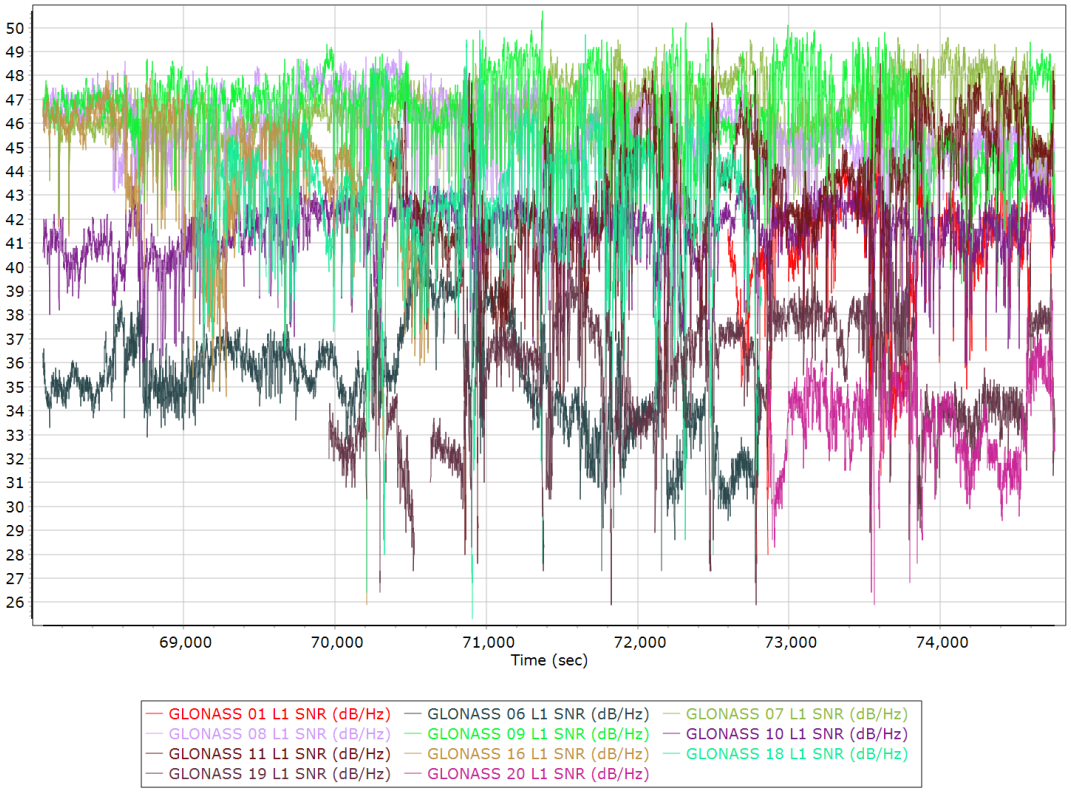
GPS/GLONASS L1 Satellite Lock/Elevation



GPS L1 SNR



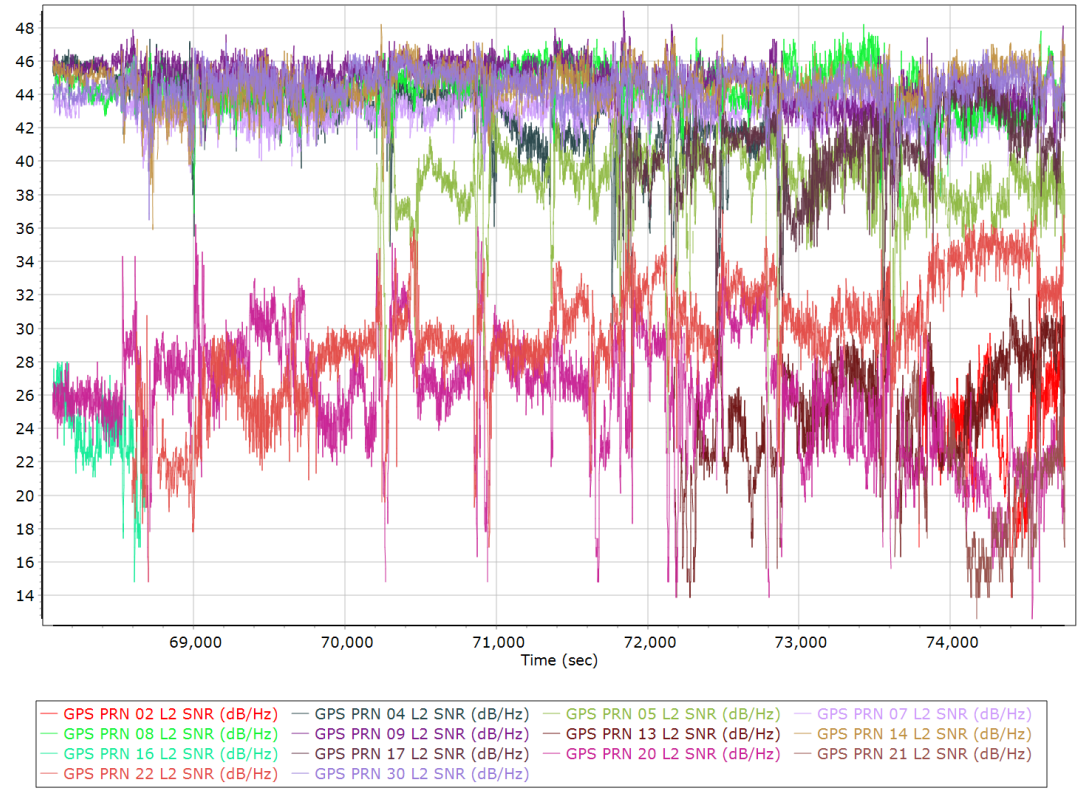
GLONASS L1 SNR



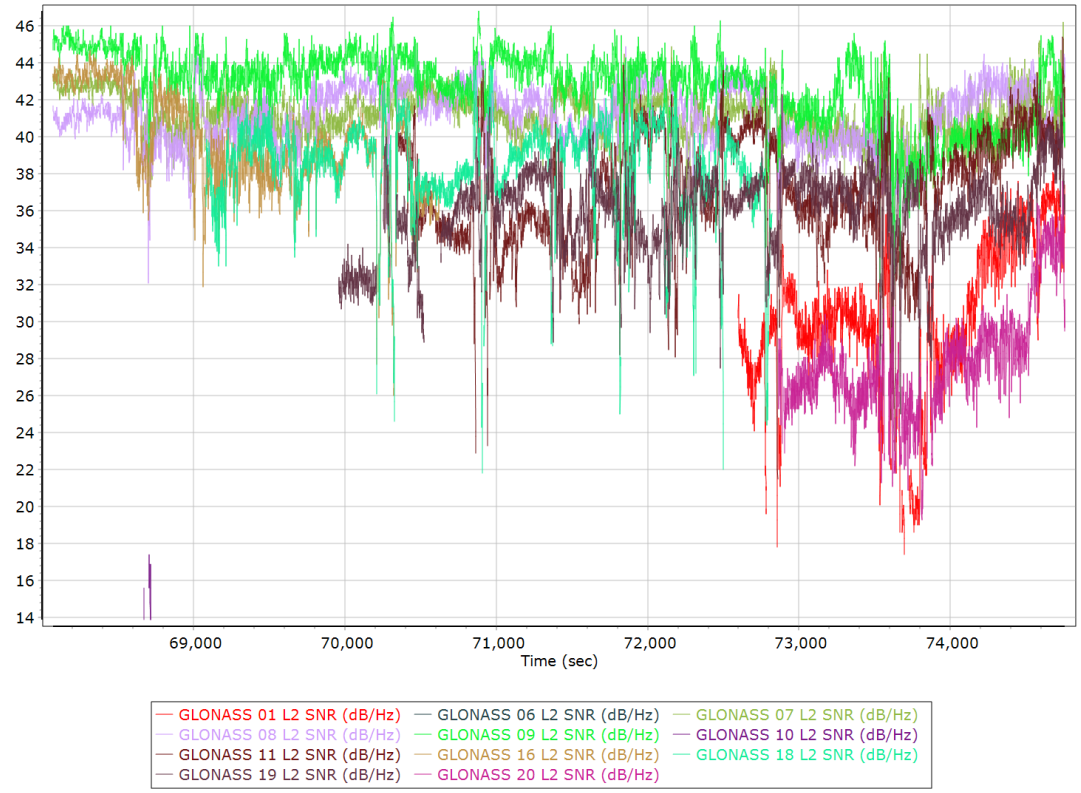
GPS/GLONASS L2 Satellite Lock/Elevation



GPS L2 SNR



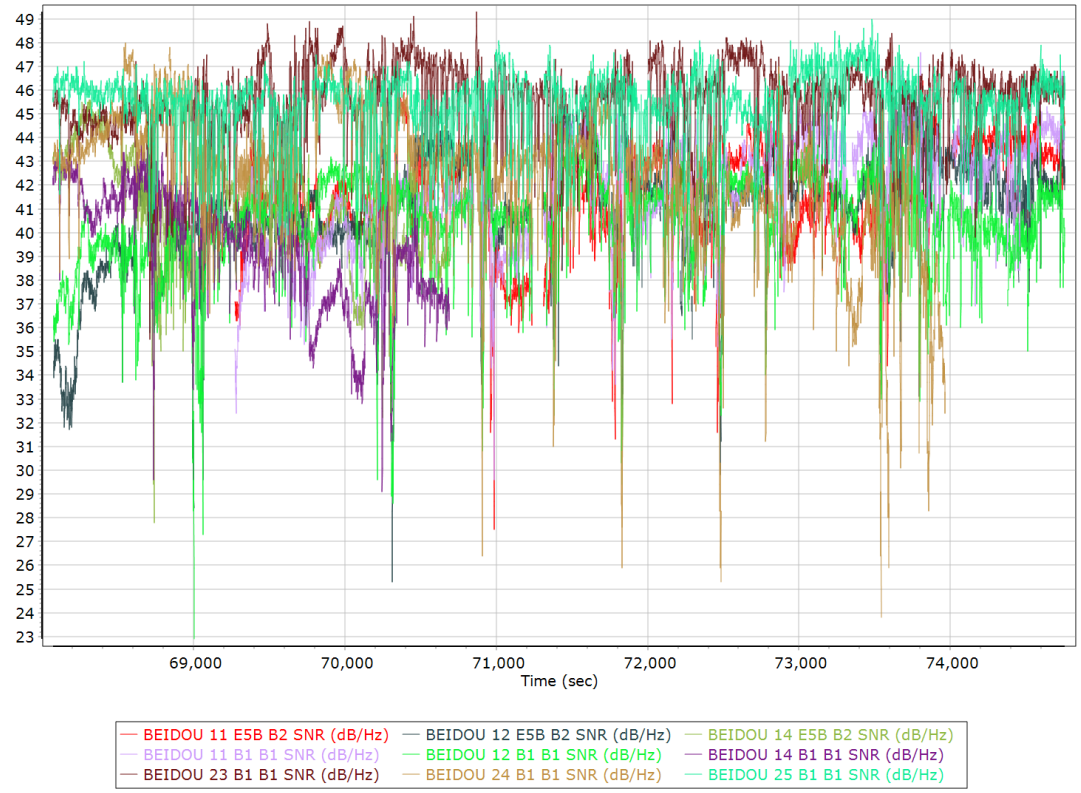
GLONASS L2 SNR



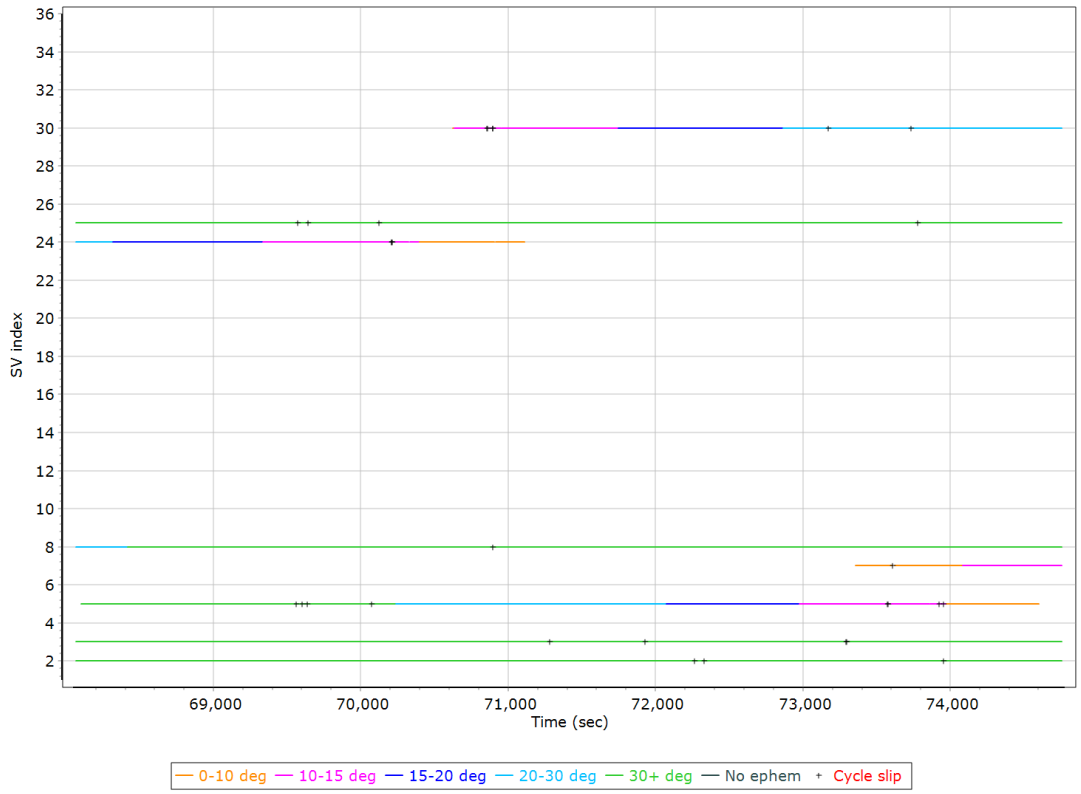
BEIDOU Satellite Lock/Elevation



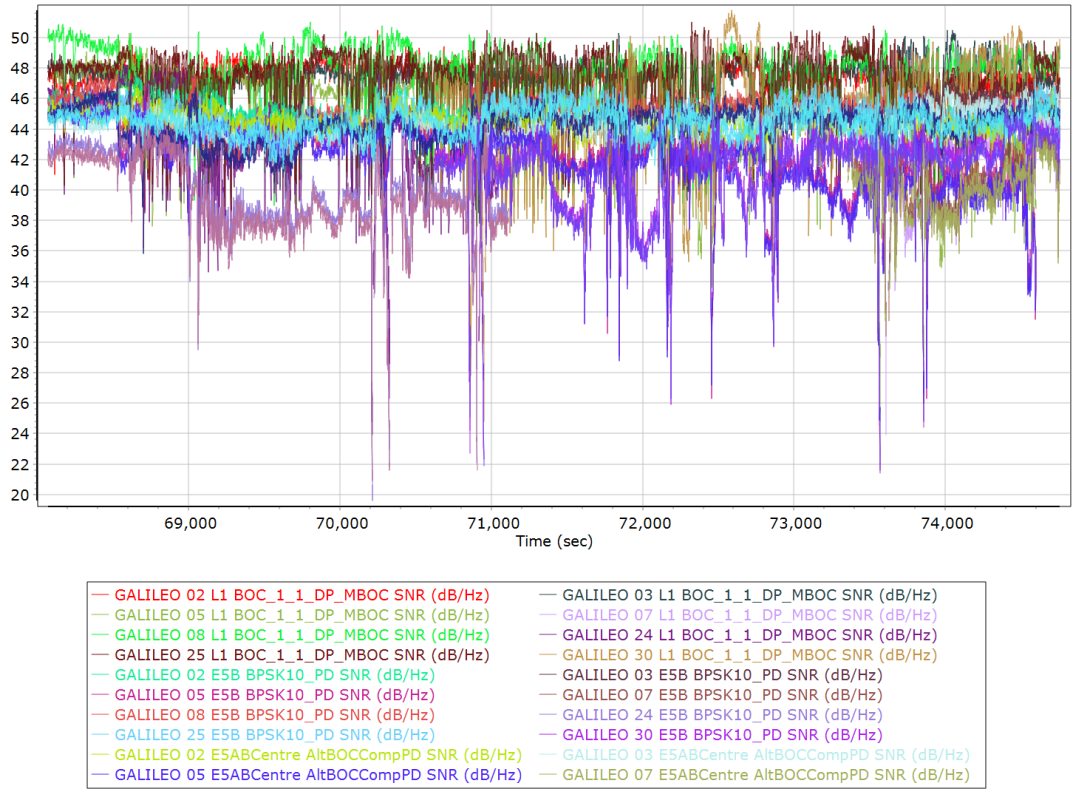
BEIDOU SNR



GALILEO Satellite Lock/Elevation



GALILEO SNR

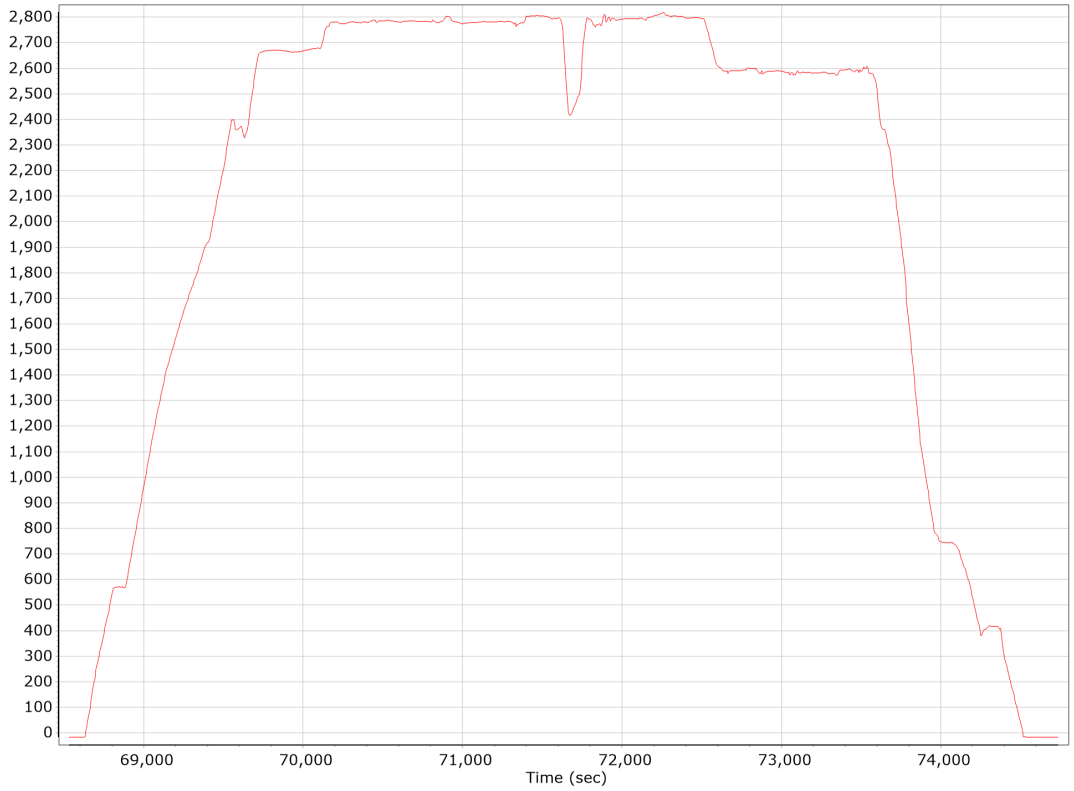

50
48
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42
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34
32
30
28
26
24
22
20
69,000
70,000
71,000
72,000
73,000
74,000
Time (sec)
GALILEO 02 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 03 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 05 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 07 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 08 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 24 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 25 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 30 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 02 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 03 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 05 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 07 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 08 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 24 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 25 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 30 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 02 E5ABCentre AltBOCCompPD SNR (dB/Hz)
GALILEO 03 E5ABCentre AltBOCCompPD SNR (dB/Hz)
GALILEO 05 E5ABCentre AltBOCCompPD SNR (dB/Hz)
GALILEO 07 E5ABCentre AltBOCCompPD SNR (dB/Hz)

Smoothed Trajectory Information

Top View



Altitude



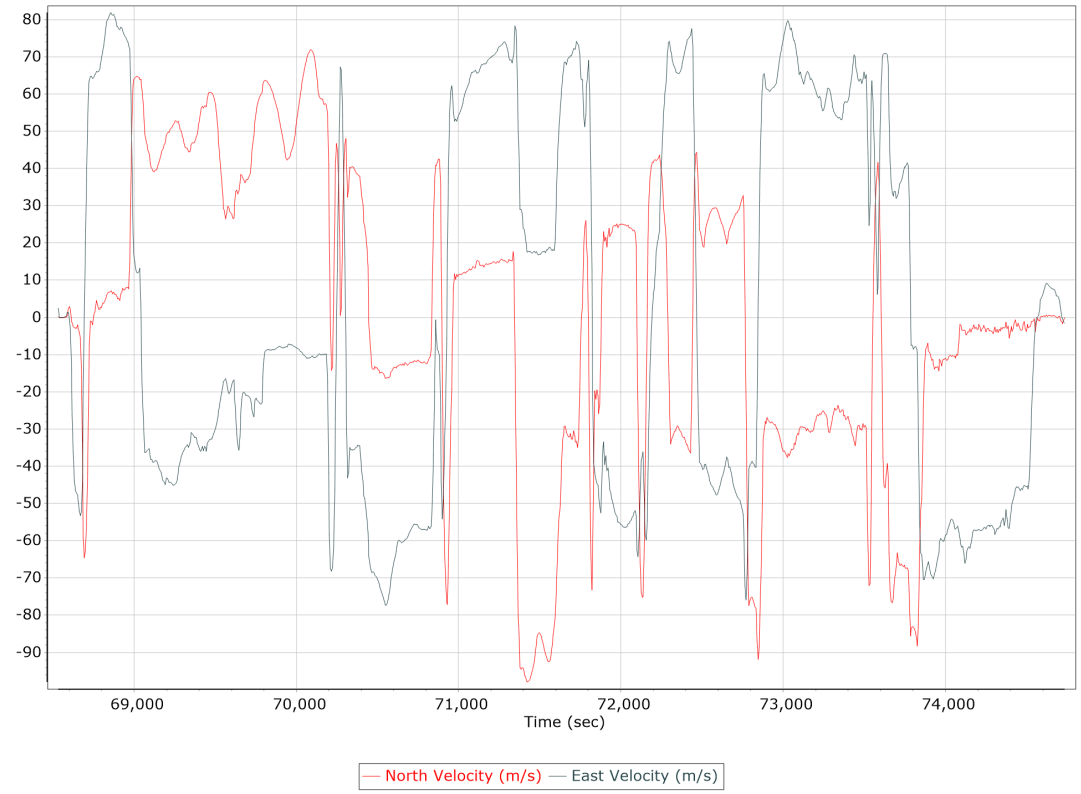
Roll/Pitch



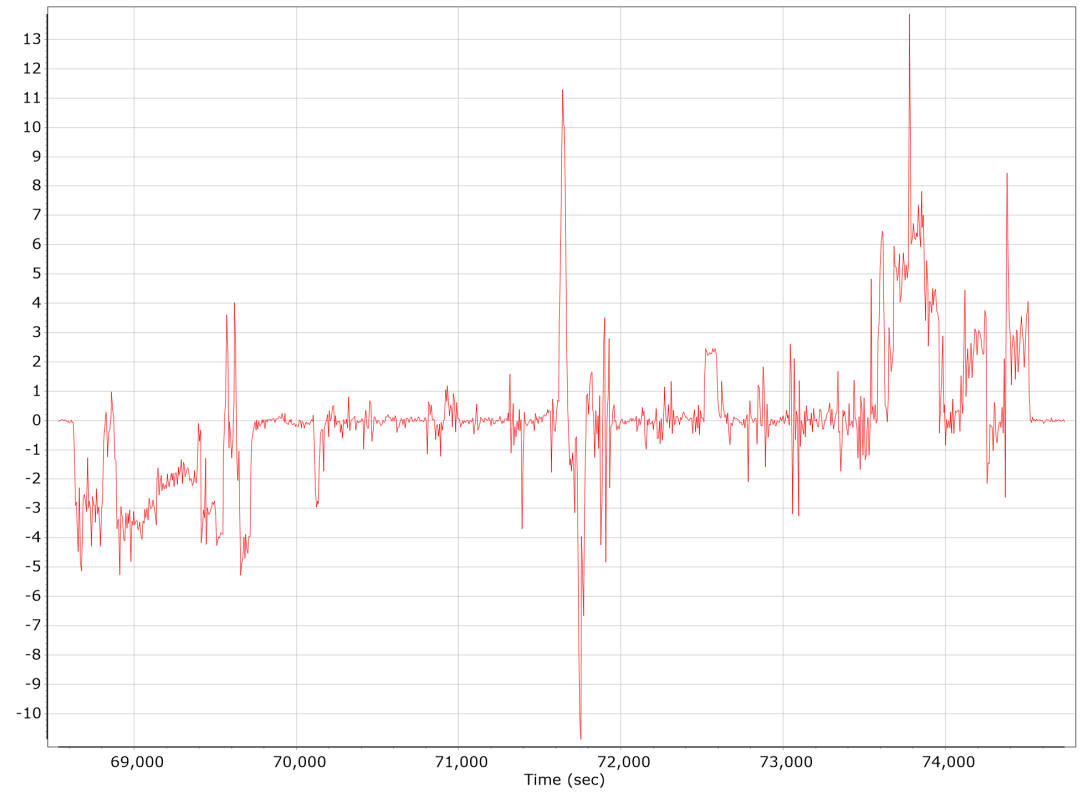
Heading



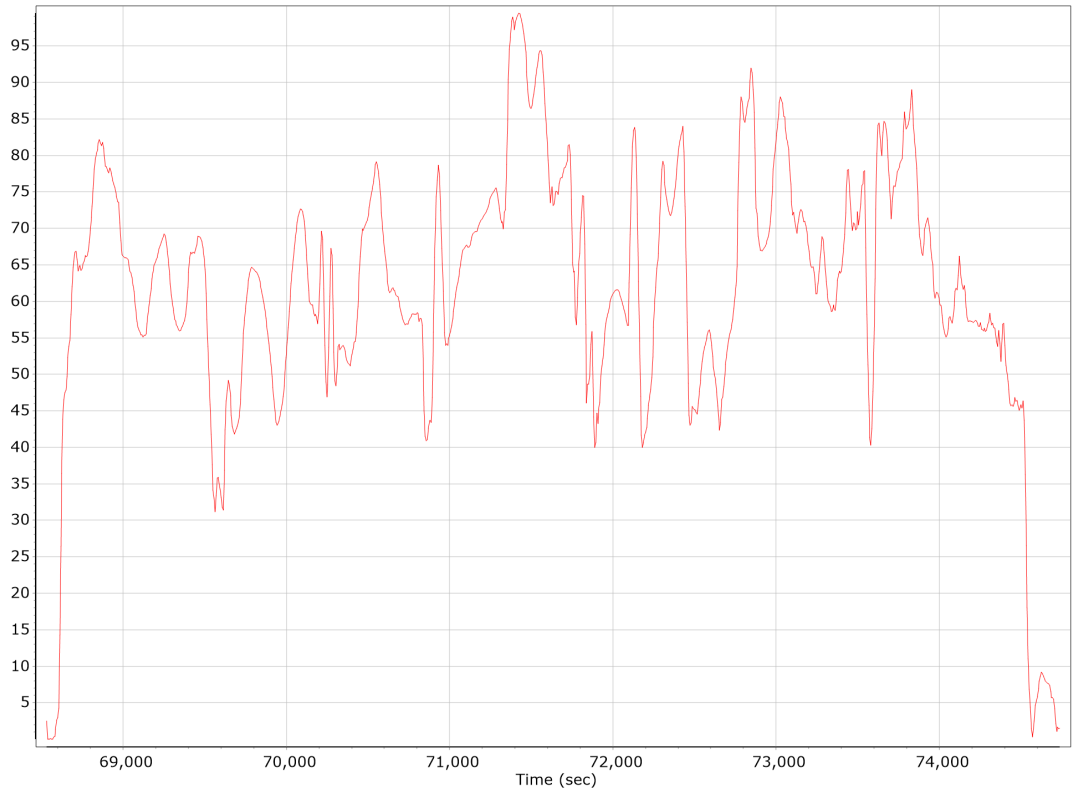
North/East Velocity



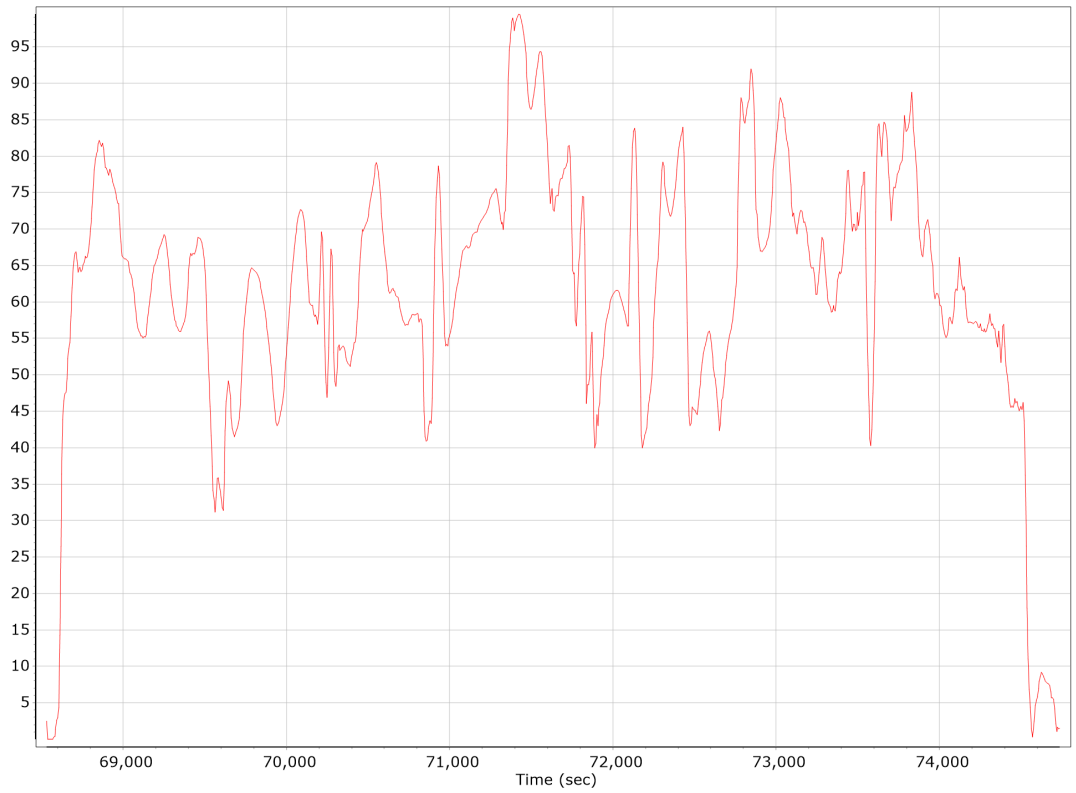
Down Velocity



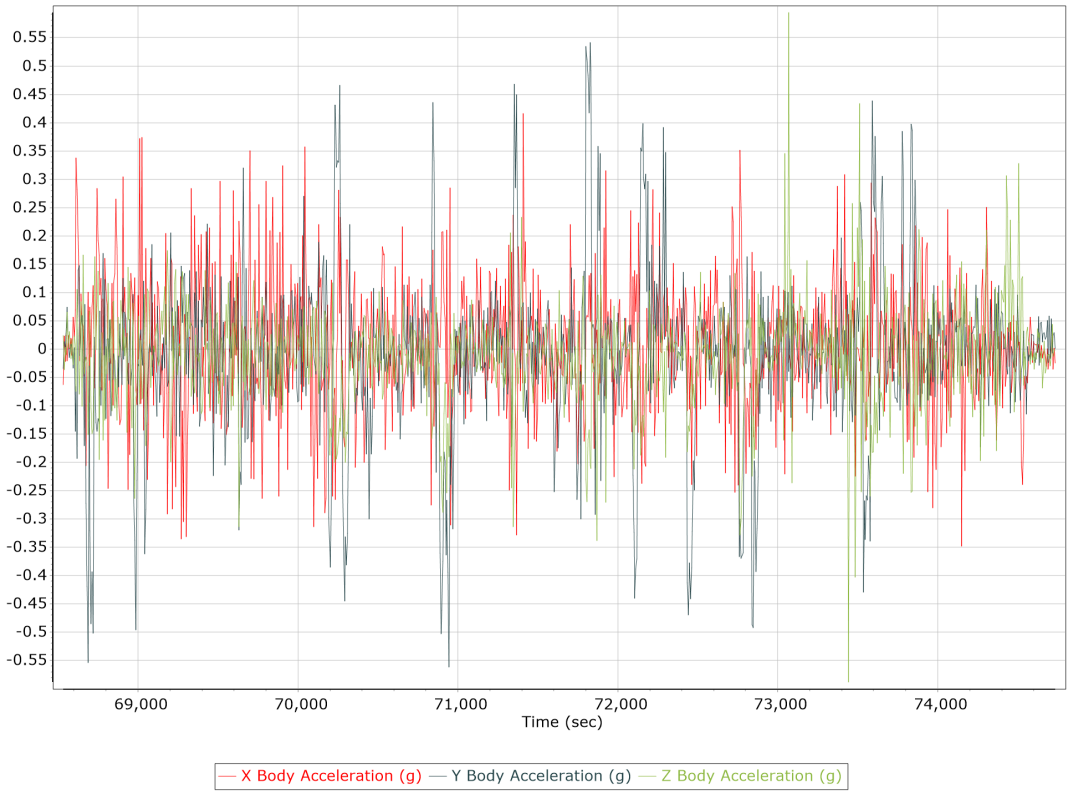
Total Speed



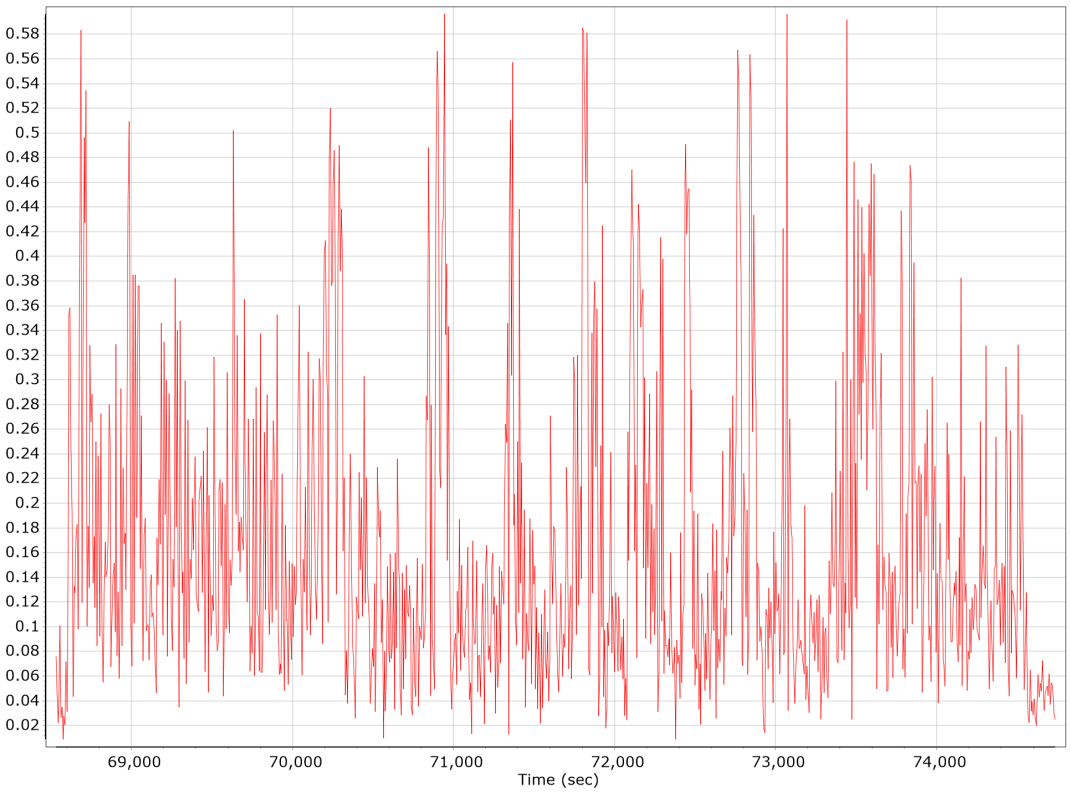
Ground Speed



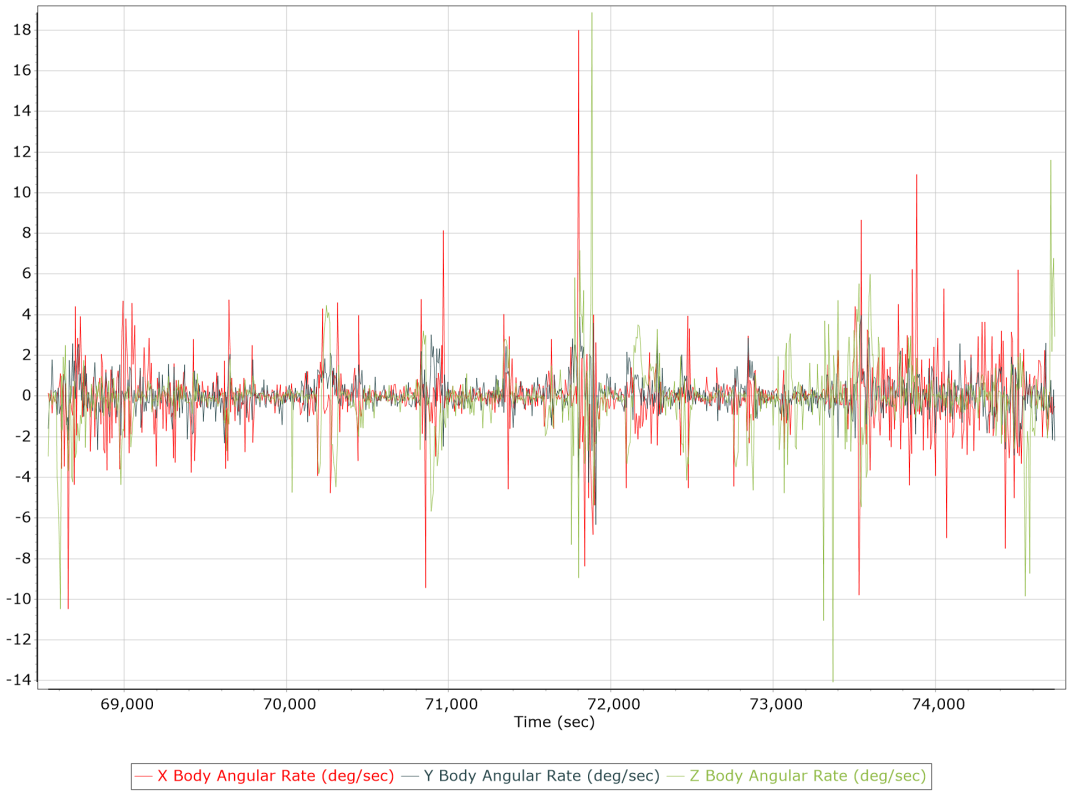
Body Acceleration



Total Body Acceleration



Body Angular Rate

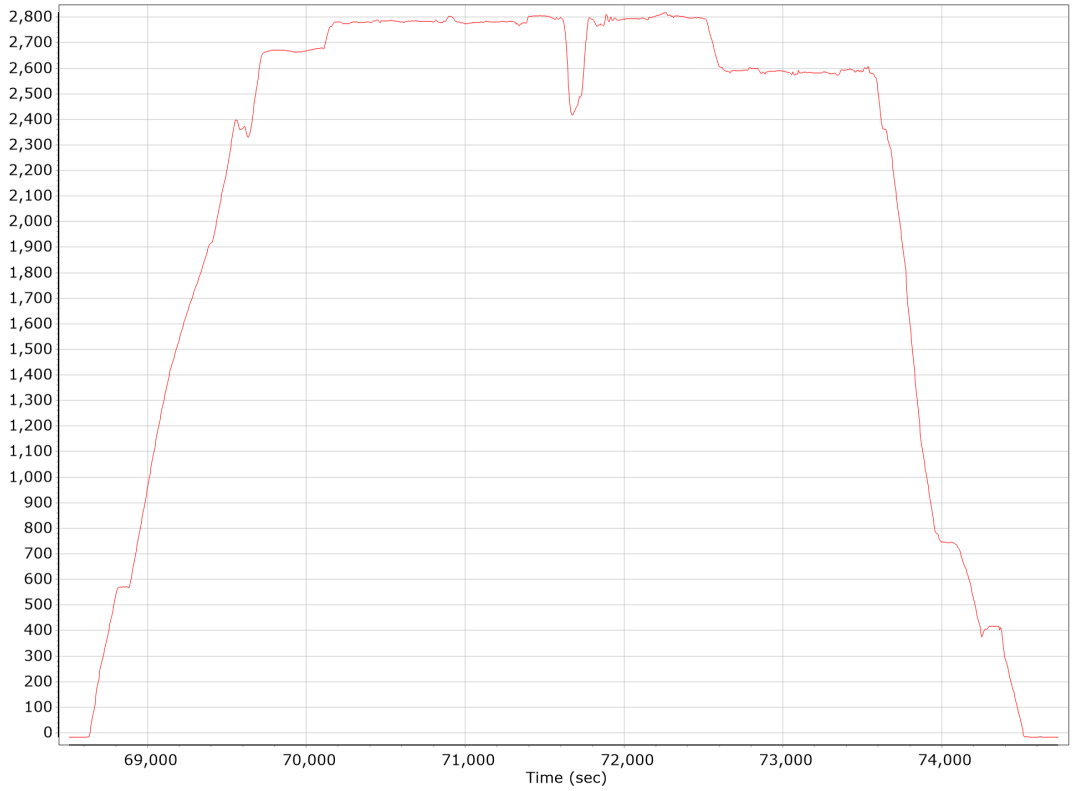


Forward Processed Trajectory Information

Top View



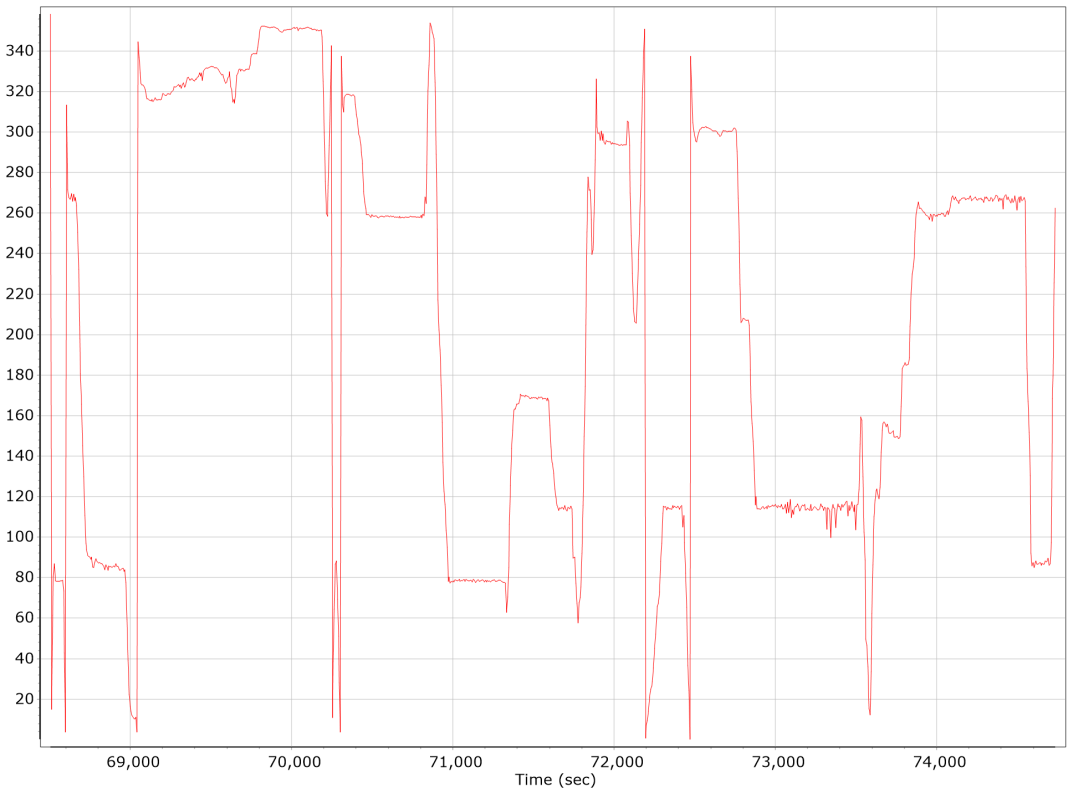
Altitude



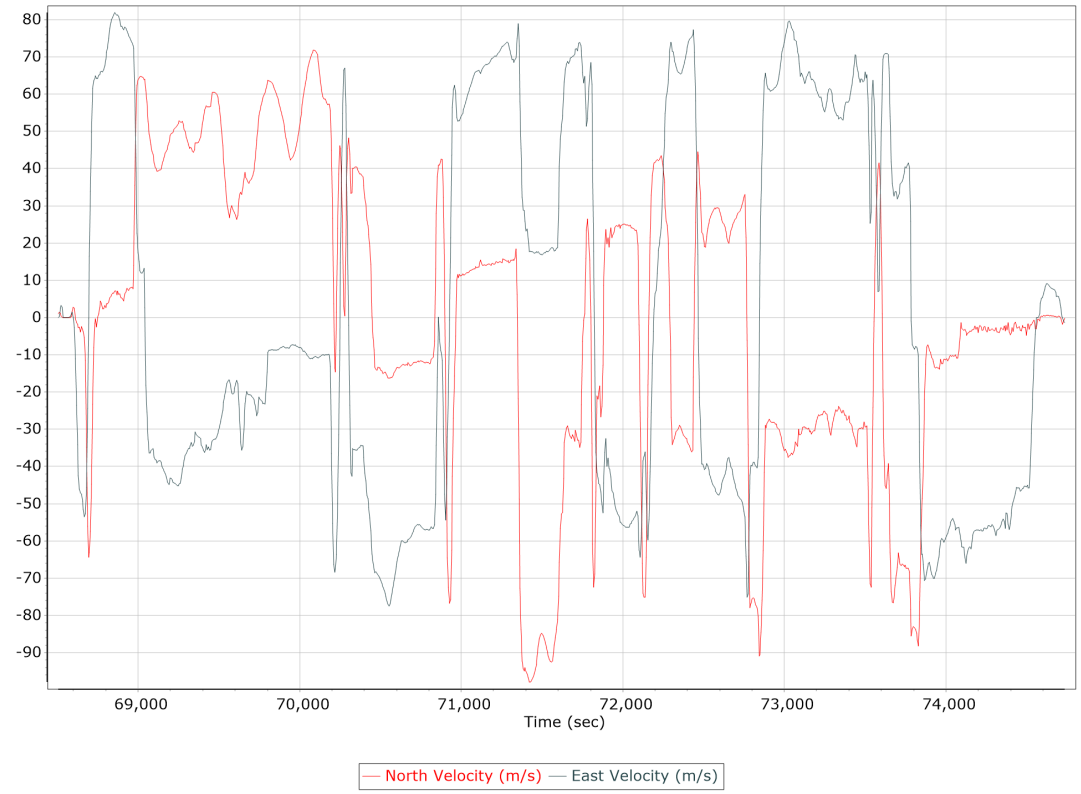
Roll/Pitch



Heading



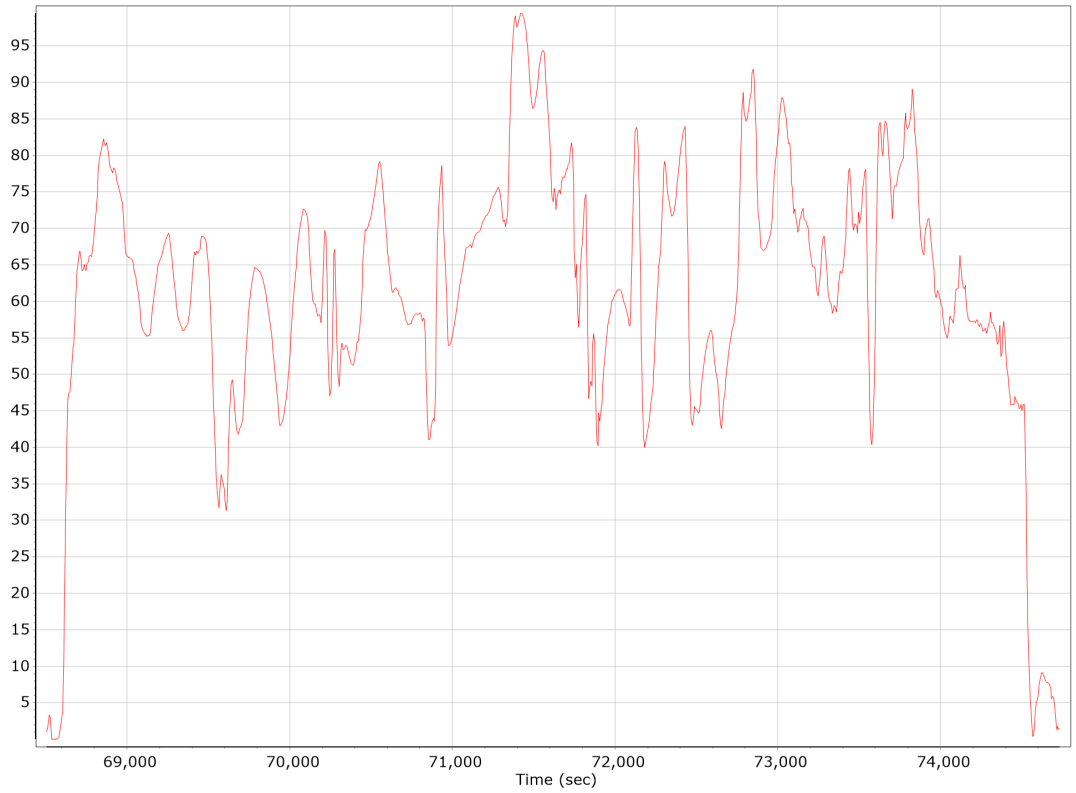
North/East Velocity



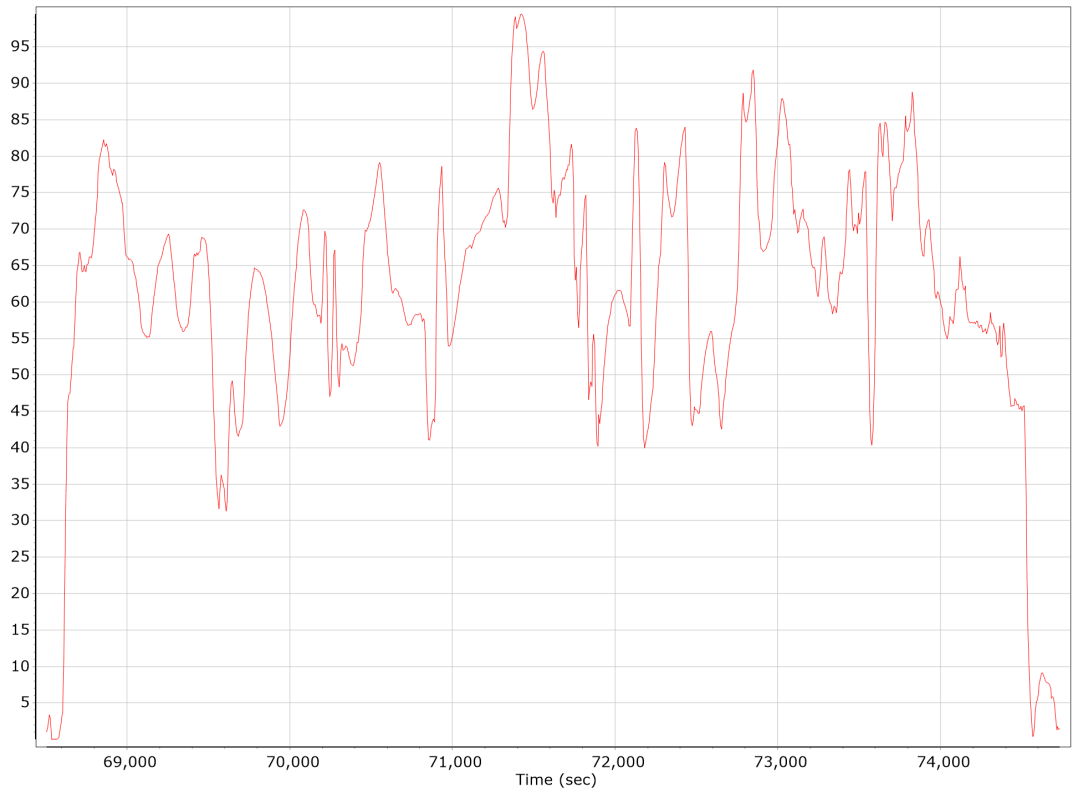
Down Velocity



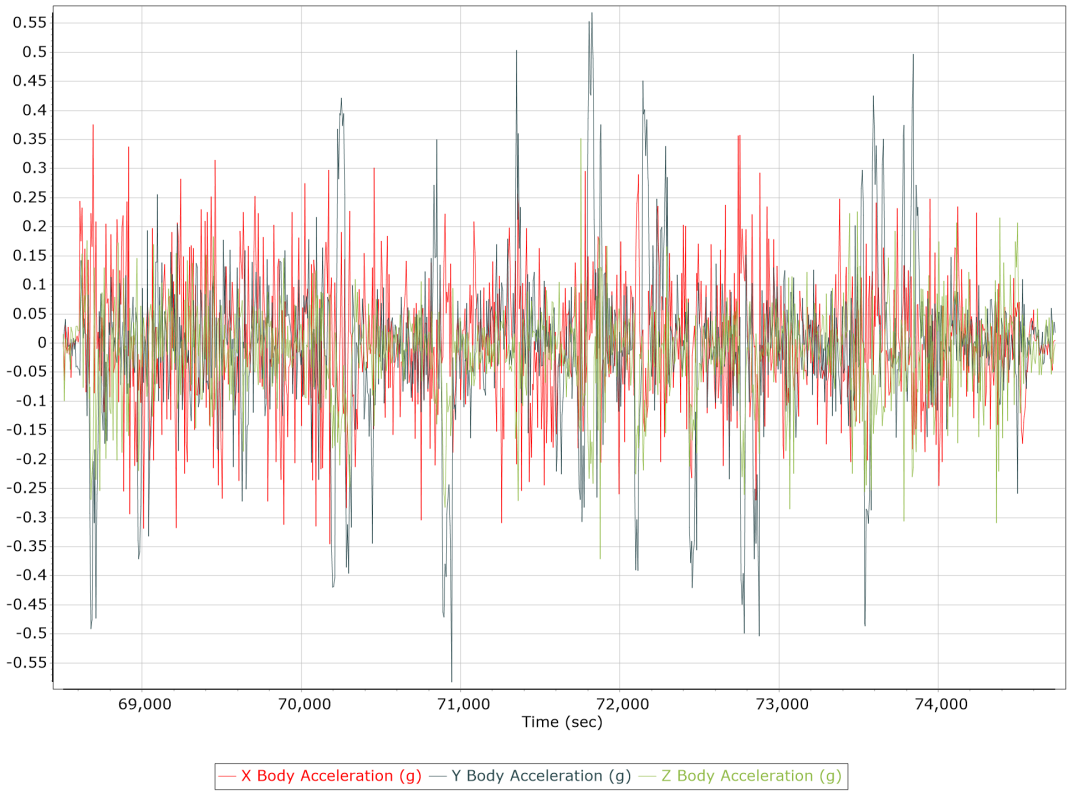
Total Speed



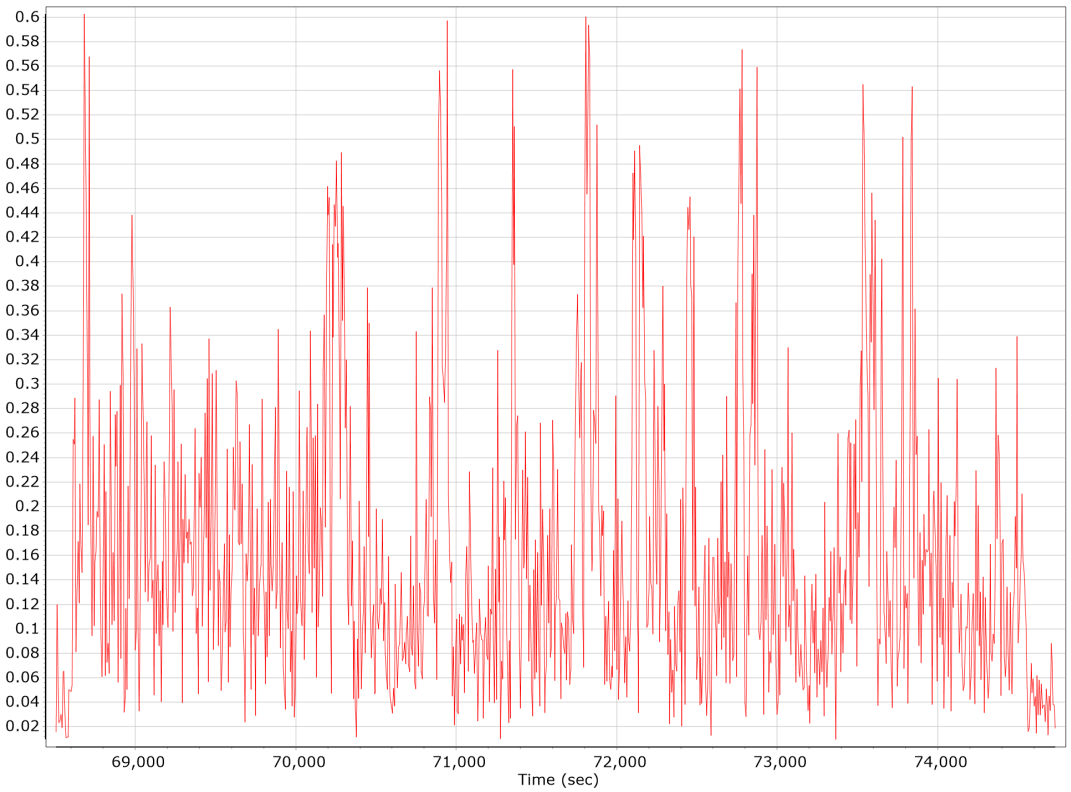
Ground Speed



Body Acceleration



Total Body Acceleration



Body Angular Rate

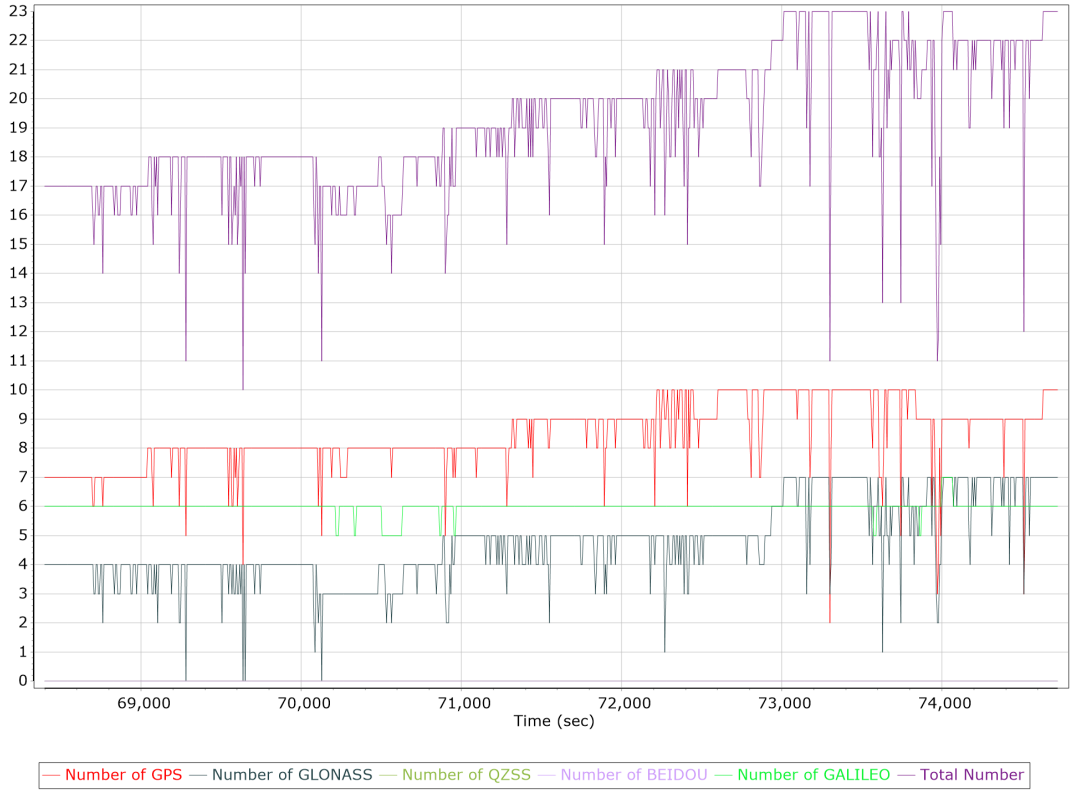


GNSS QC

GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	2	10	8
Number of GLONASS SV	0	7	5
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	5	7	6
Total number of SV	8	23	19
PDOP	0.99	2.44	1.21
QC Solution Gaps	1.00	1.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	6650.00	0.00	1.00
Percentage	99.98	0.00	0.02

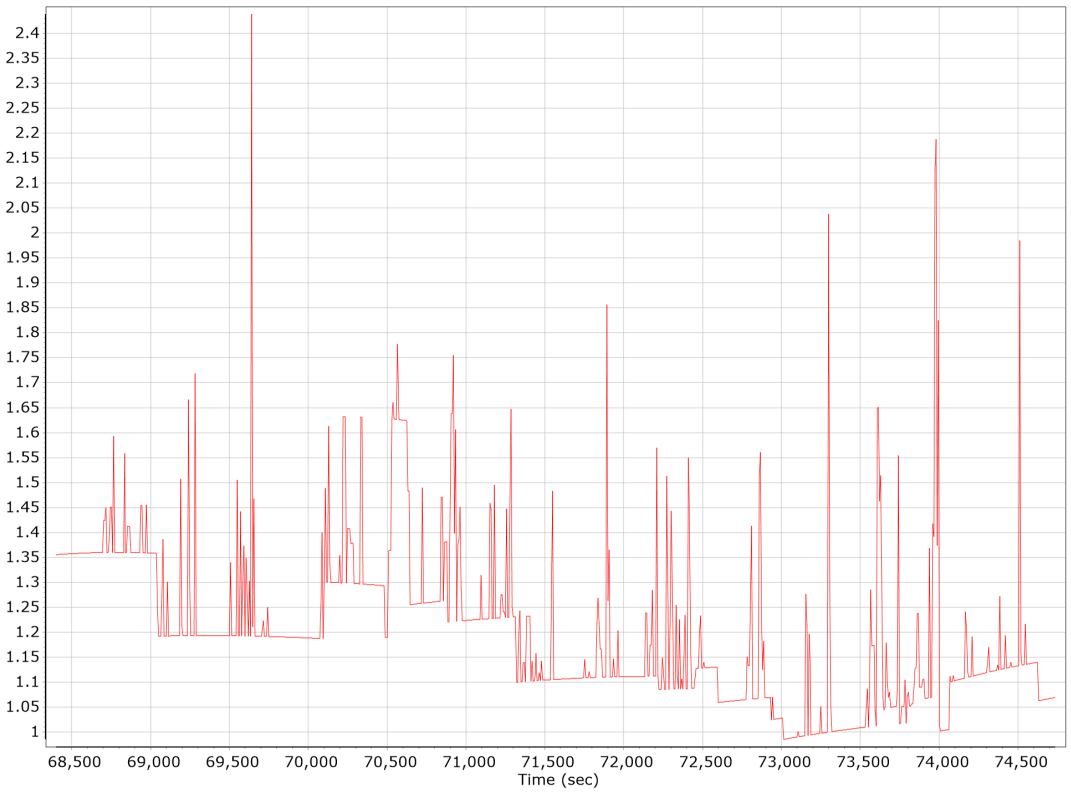
Num SVs in solution



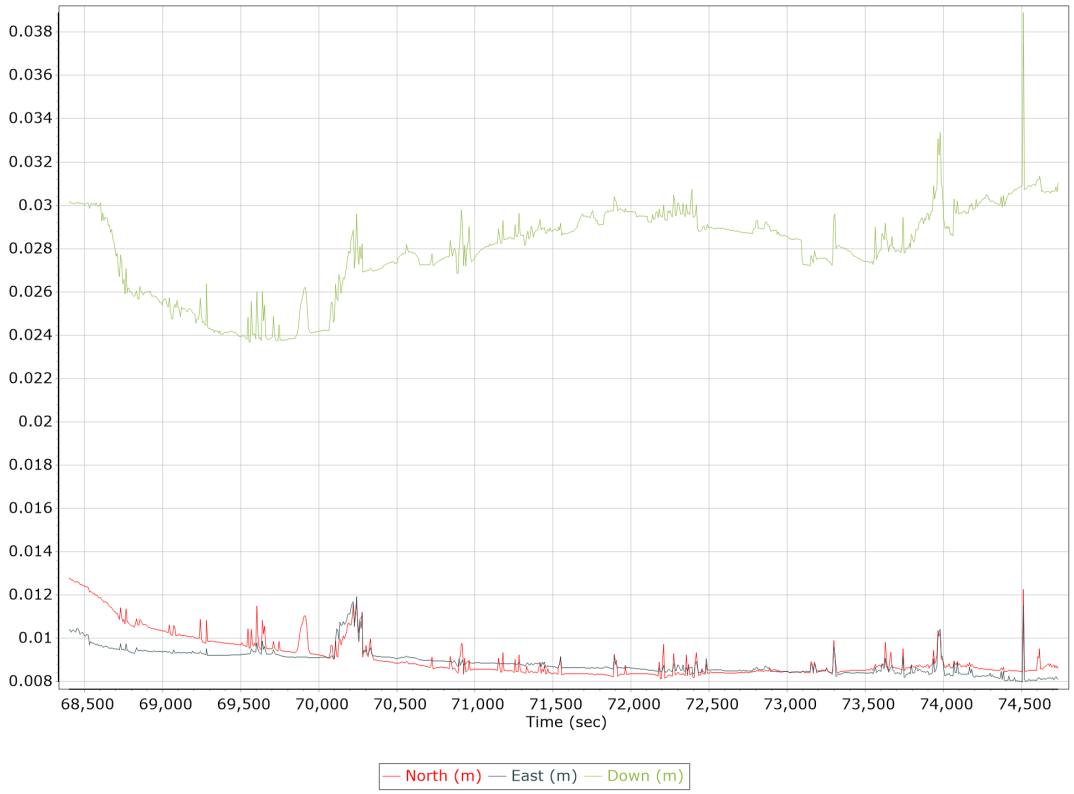
Forward/Reverse Separation



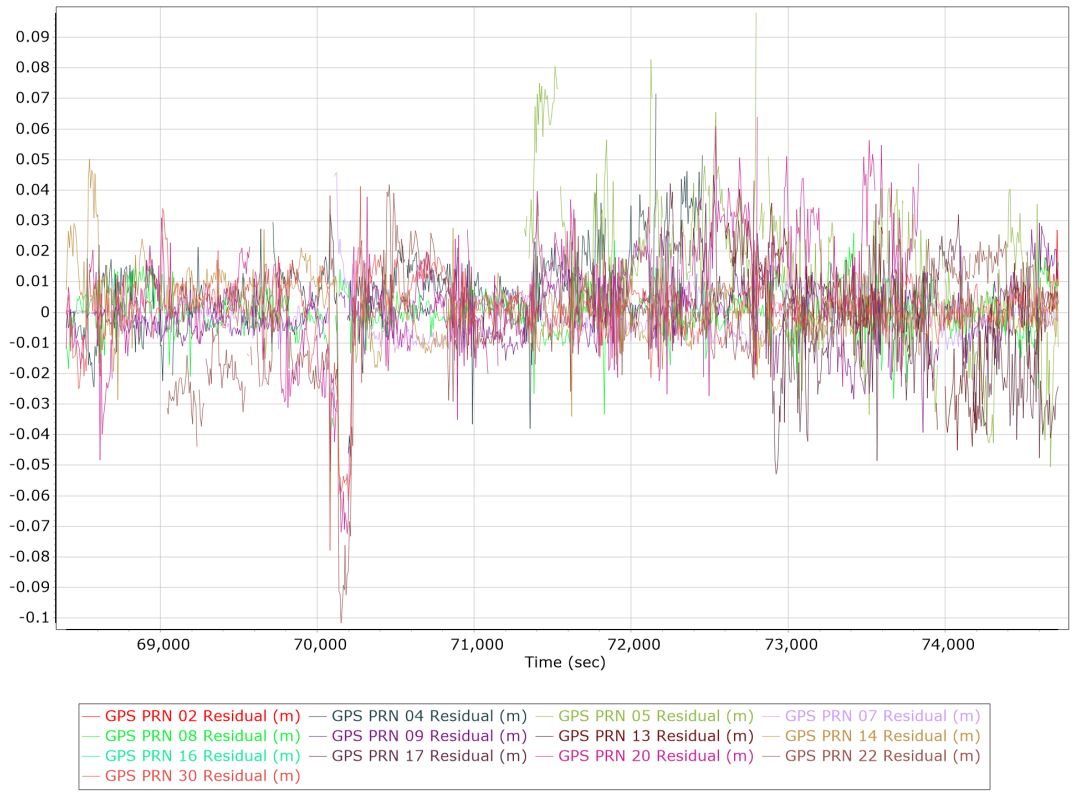
PDOP



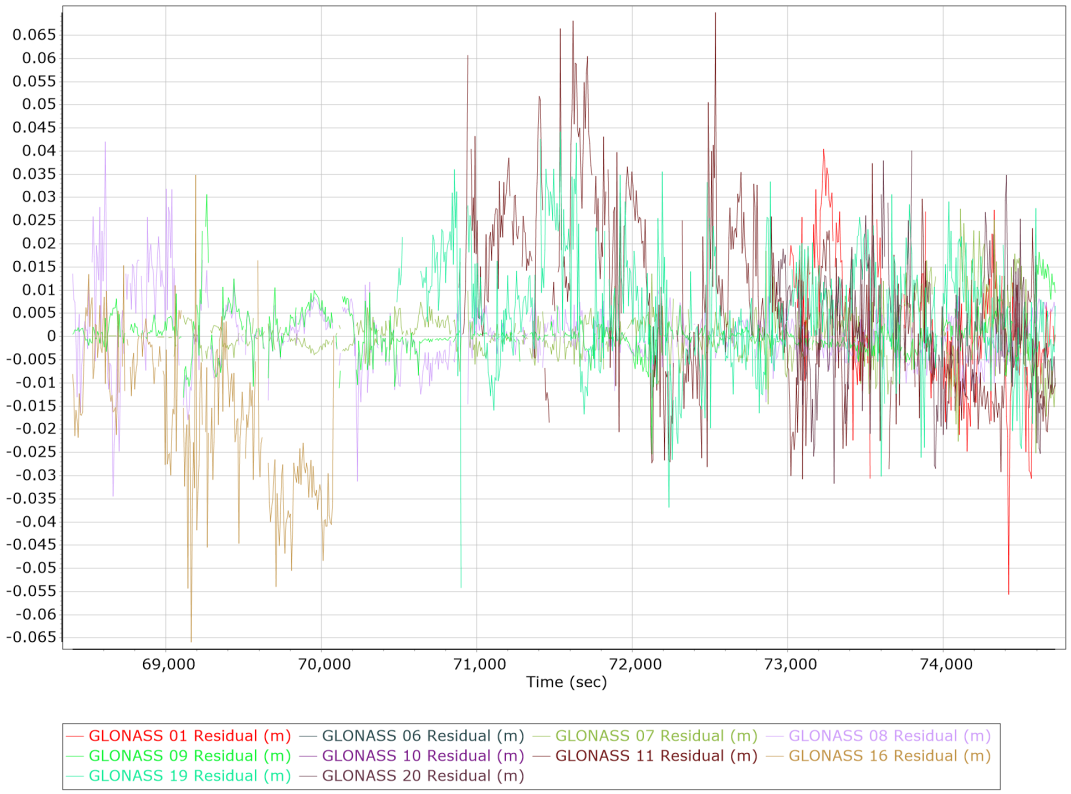
Estimated Position Accuracy



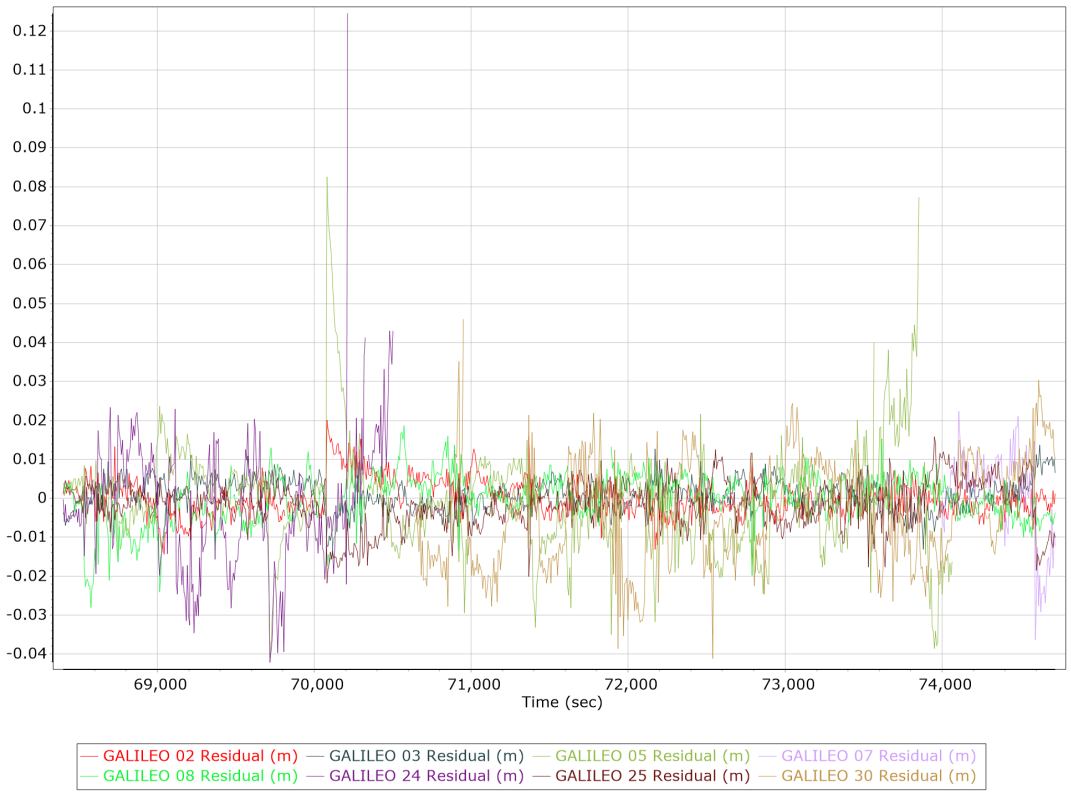
GPS Residuals



GLONASS Residuals



GALILEO Residuals



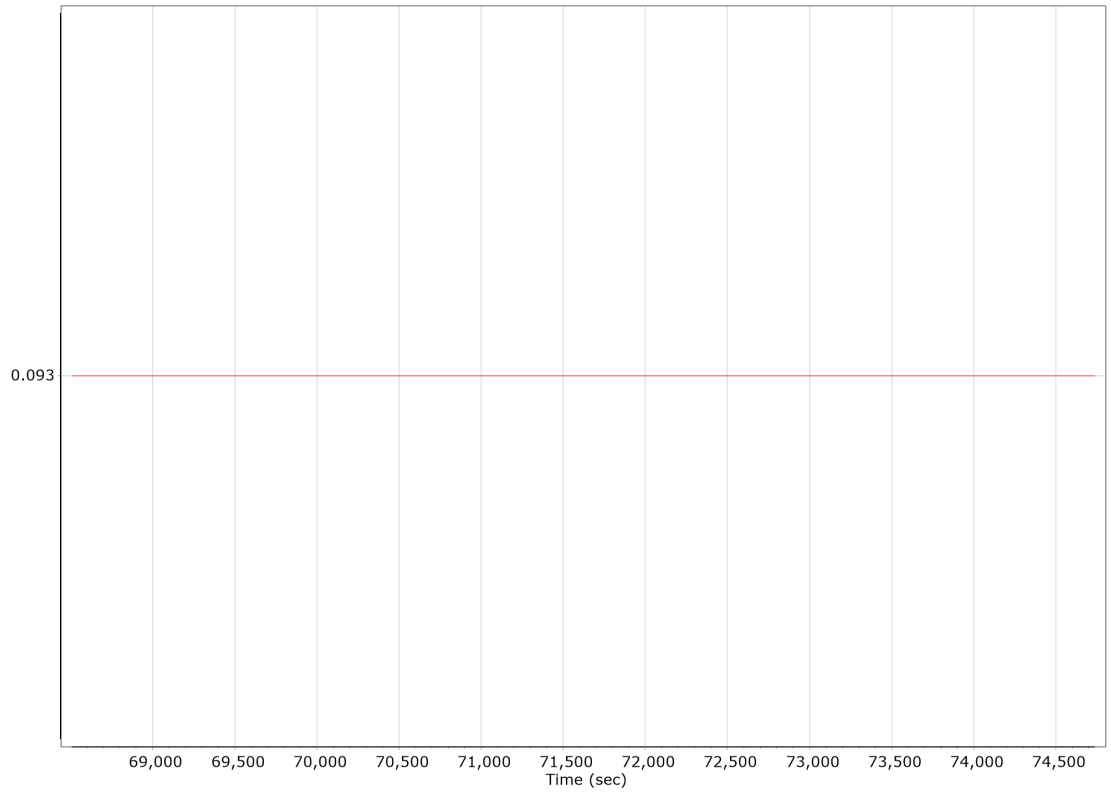
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	68052.000 (1/7/2024 6:54:12 PM)		
Processing end time	74738.000 (1/7/2024 8:45:38 PM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.093	0.062	-1.287
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

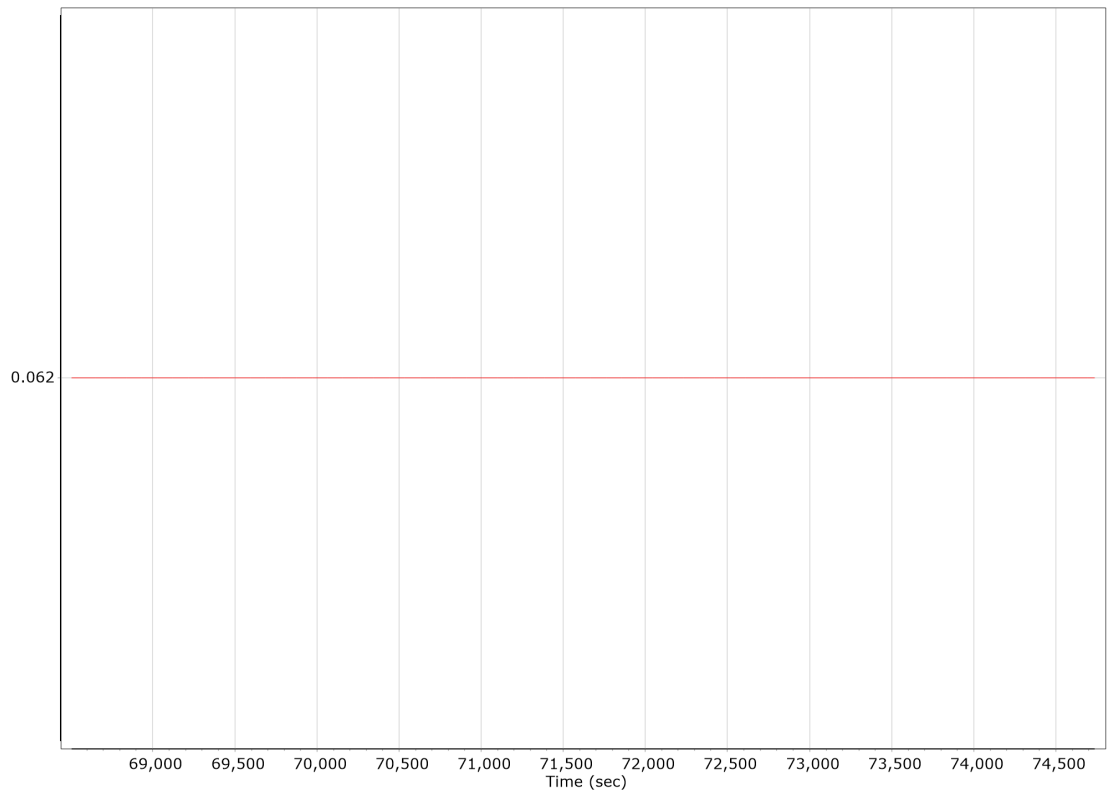
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

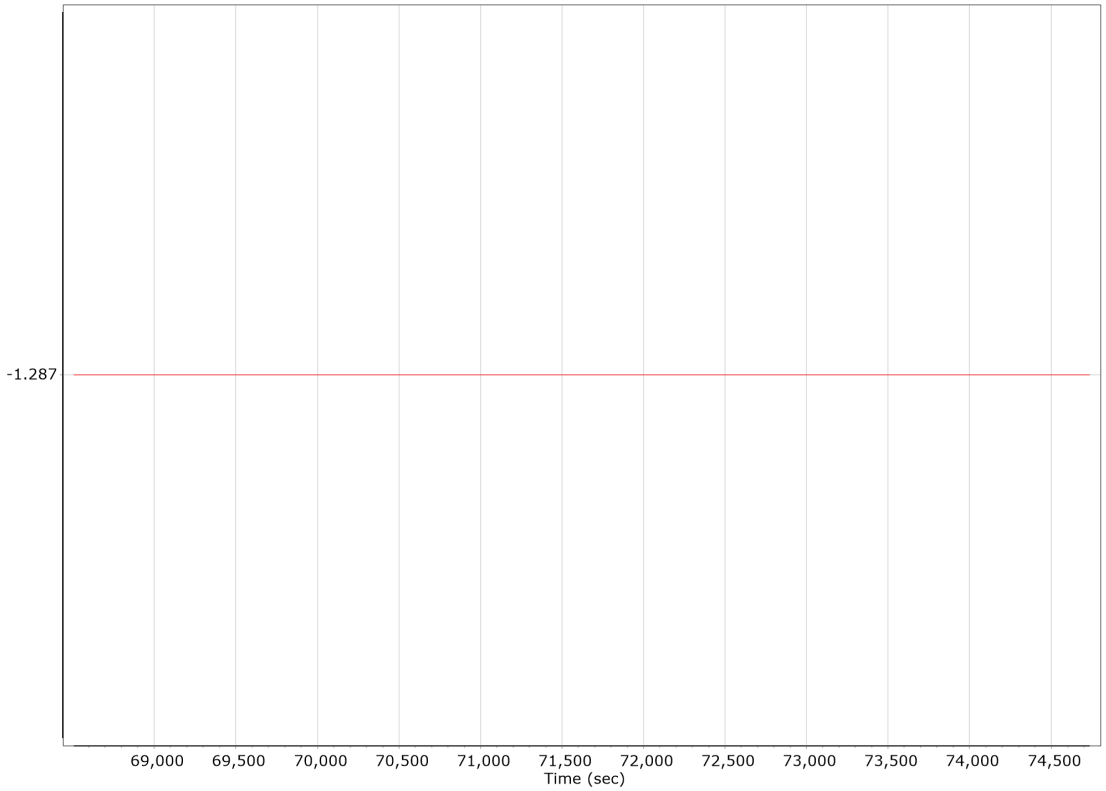
X Reference-Primary GNSS Lever Arm (m)



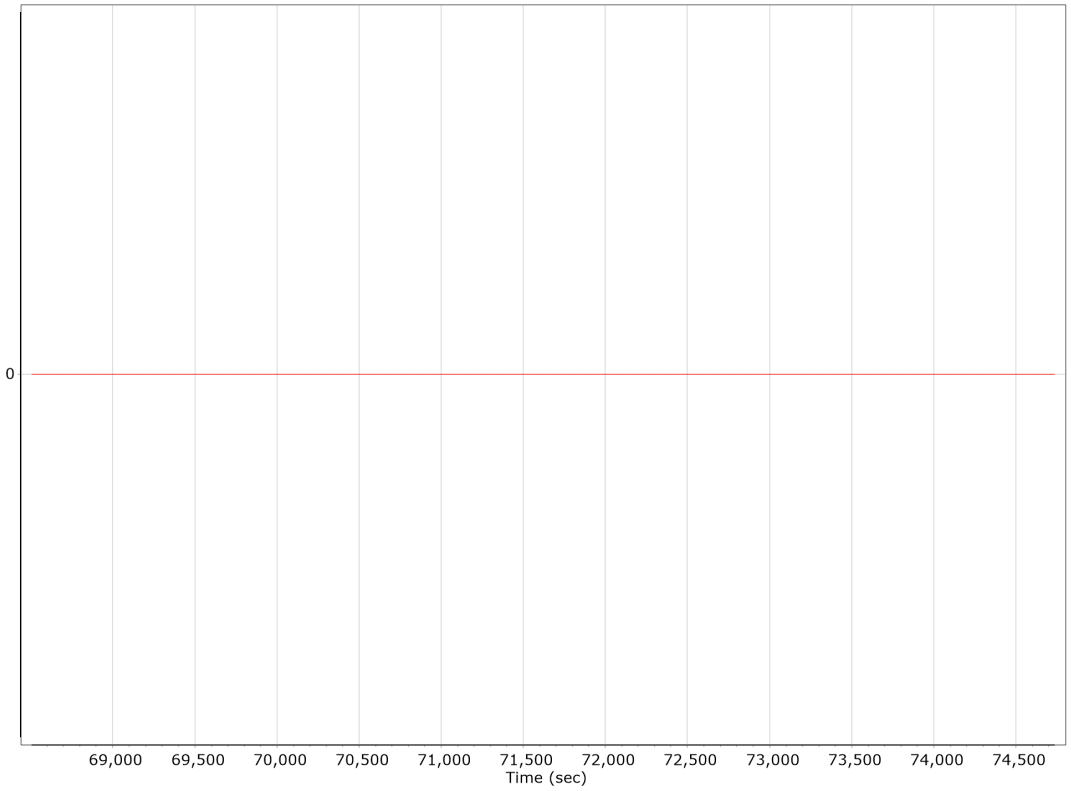
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



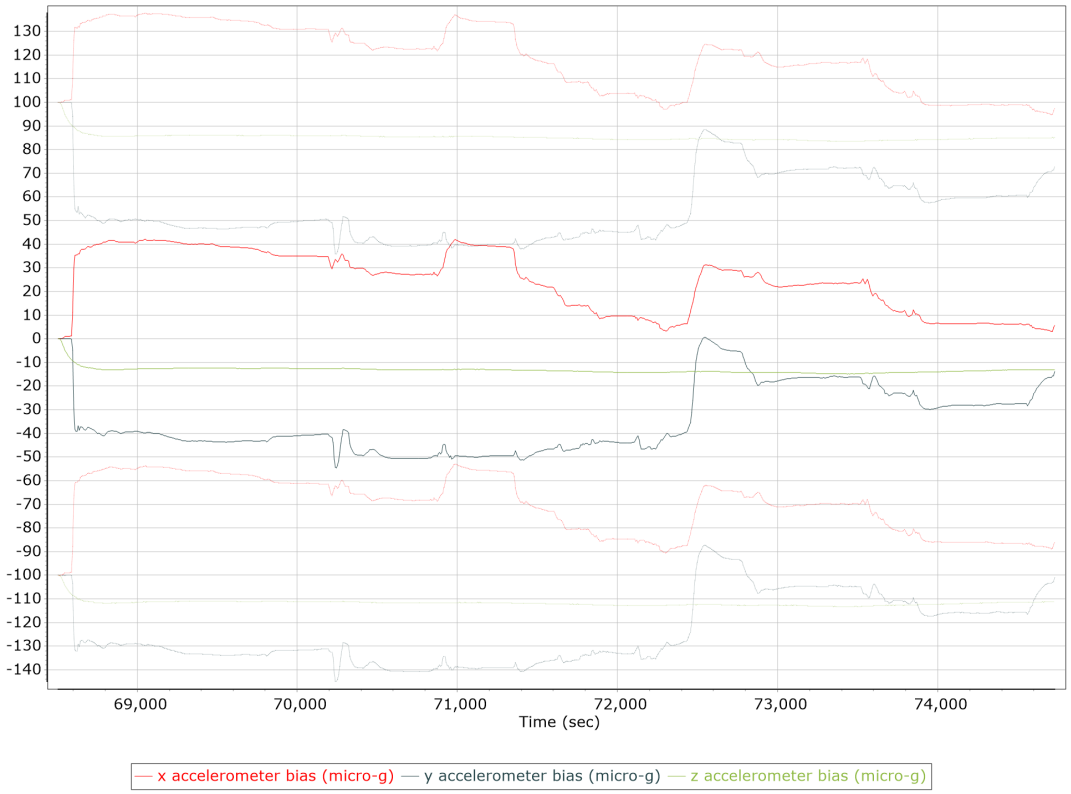
Reference-Primary GNSS Lever Arm Figure of Merit



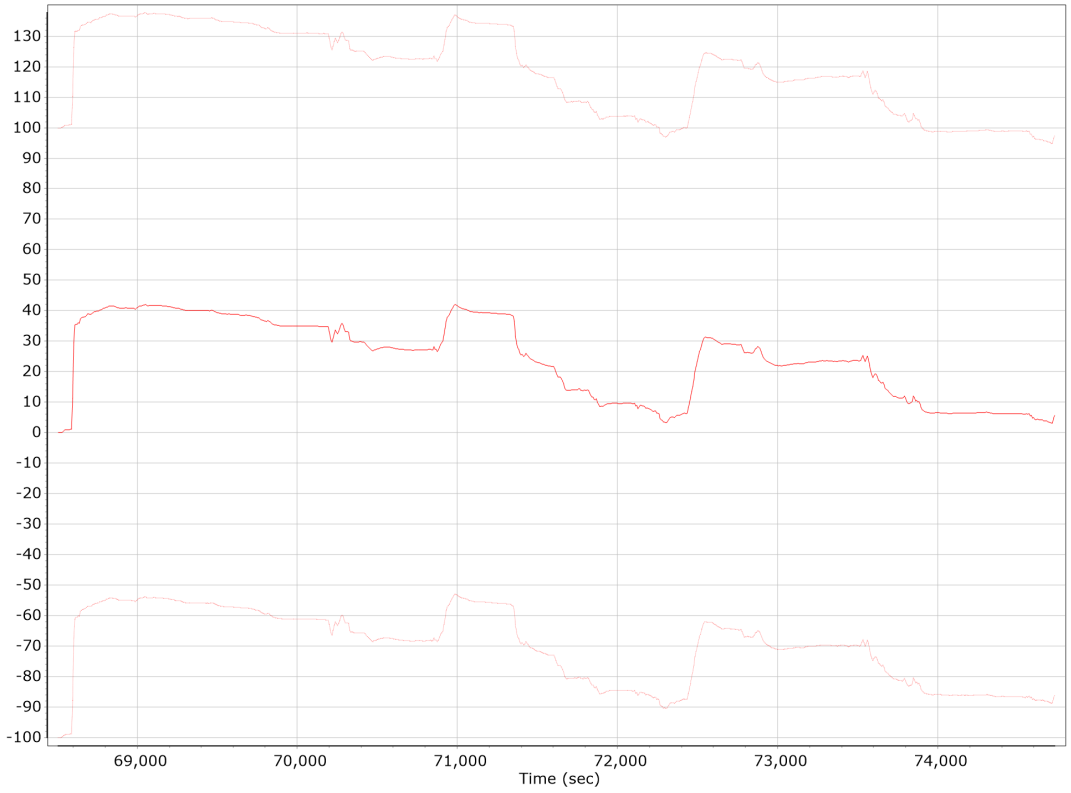
IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

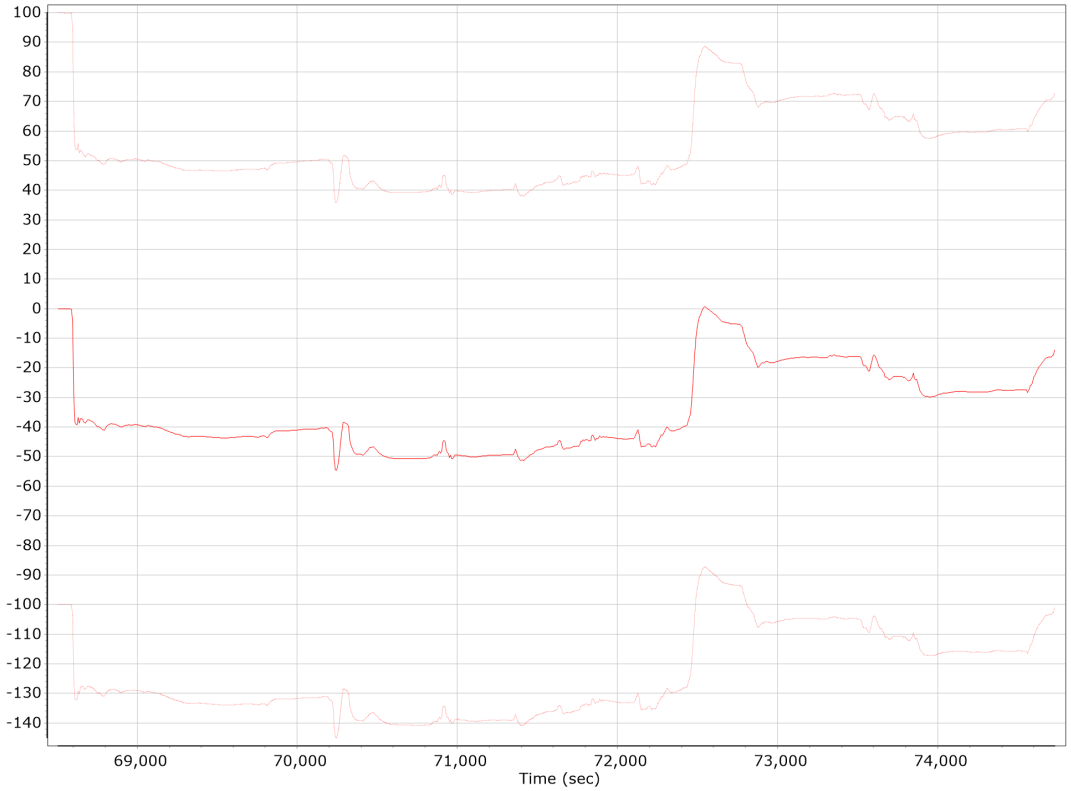
Accelerometer Bias (micro-g)



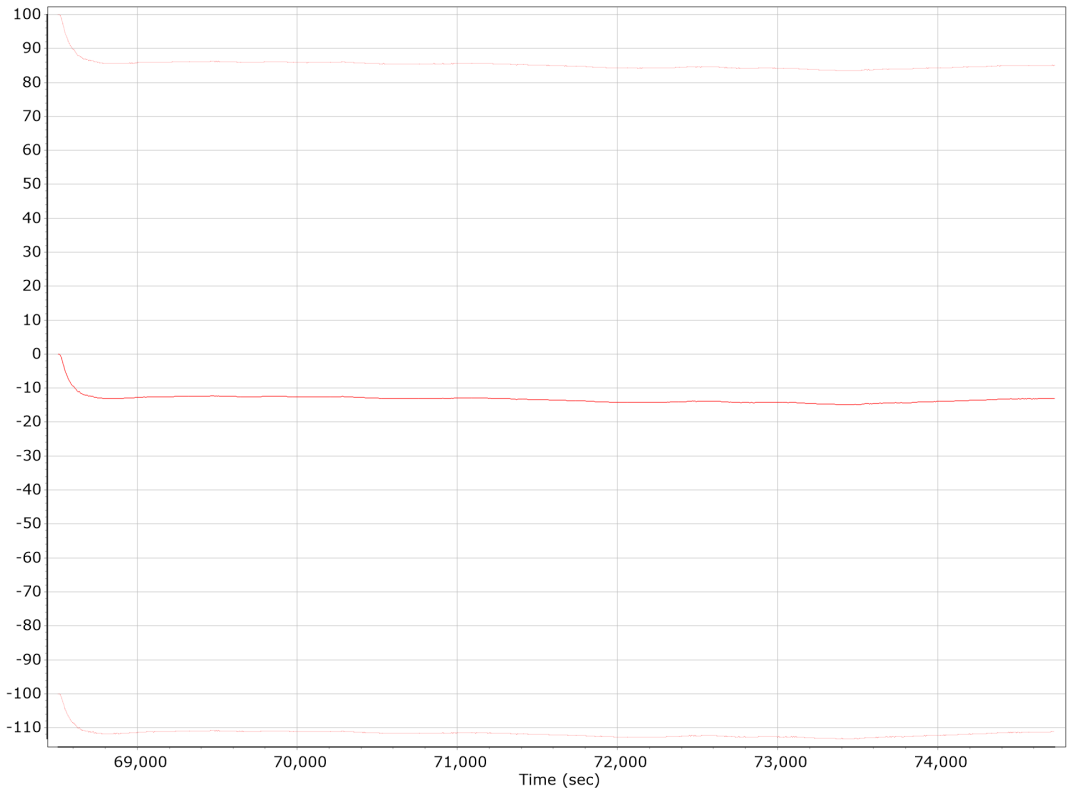
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



X Accelerometer Scale Error (ppm)



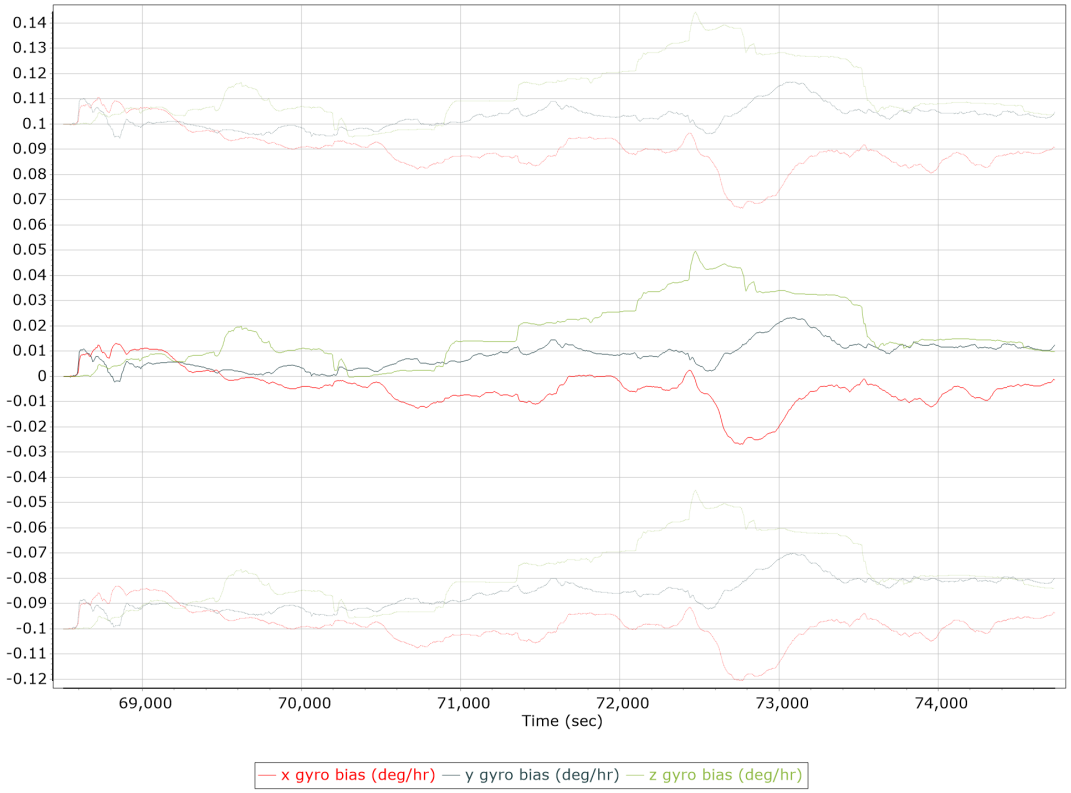
Y Accelerometer Scale Error (ppm)



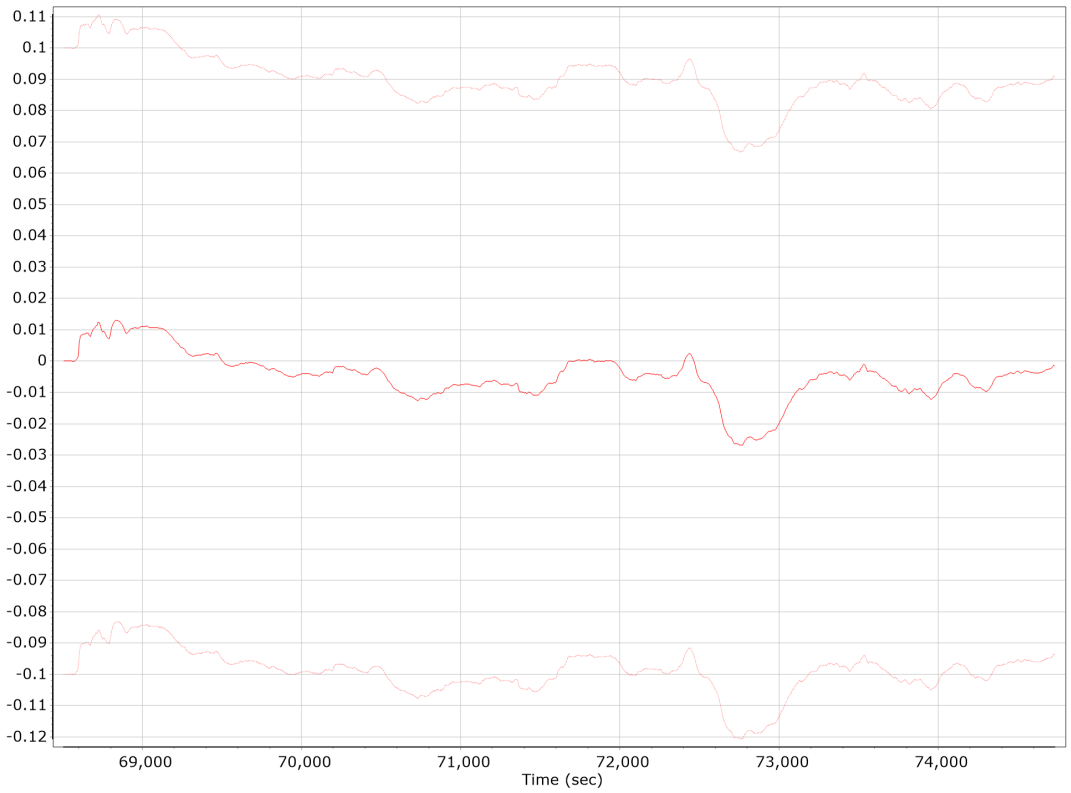
Z Accelerometer Scale Error (ppm)



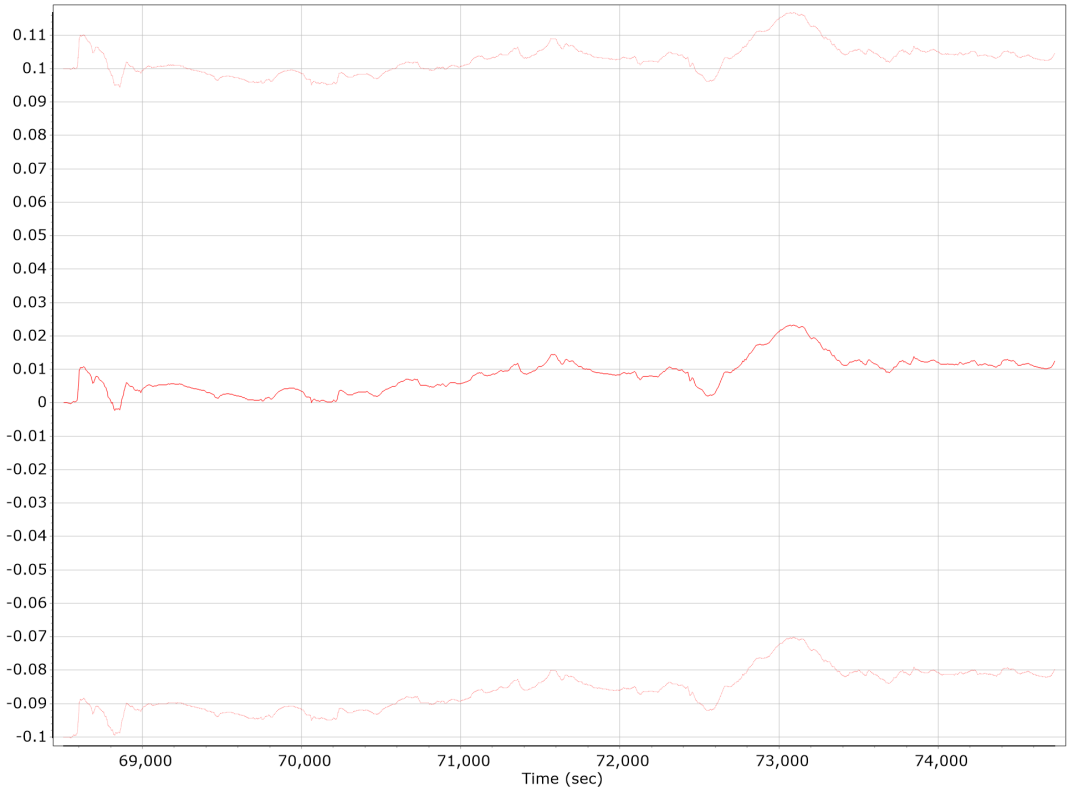
Gyro Bias (deg/h)



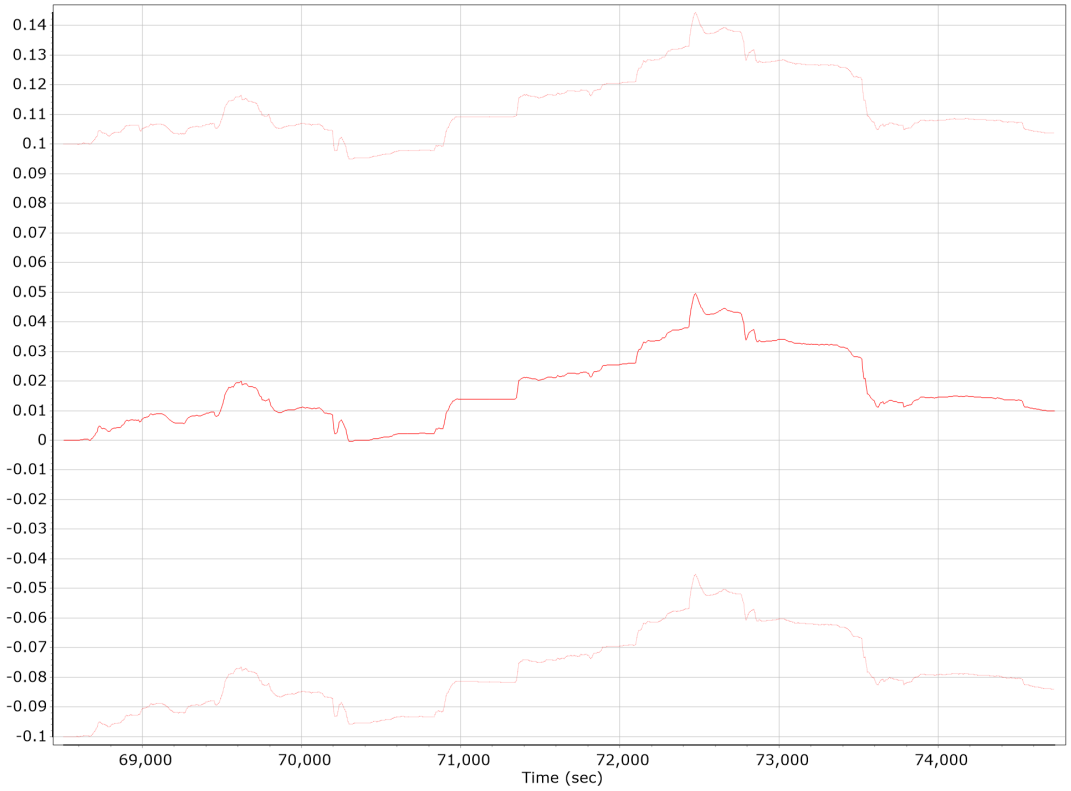
X Gyro Bias (deg/h)



Y Gyro Bias (deg/h)



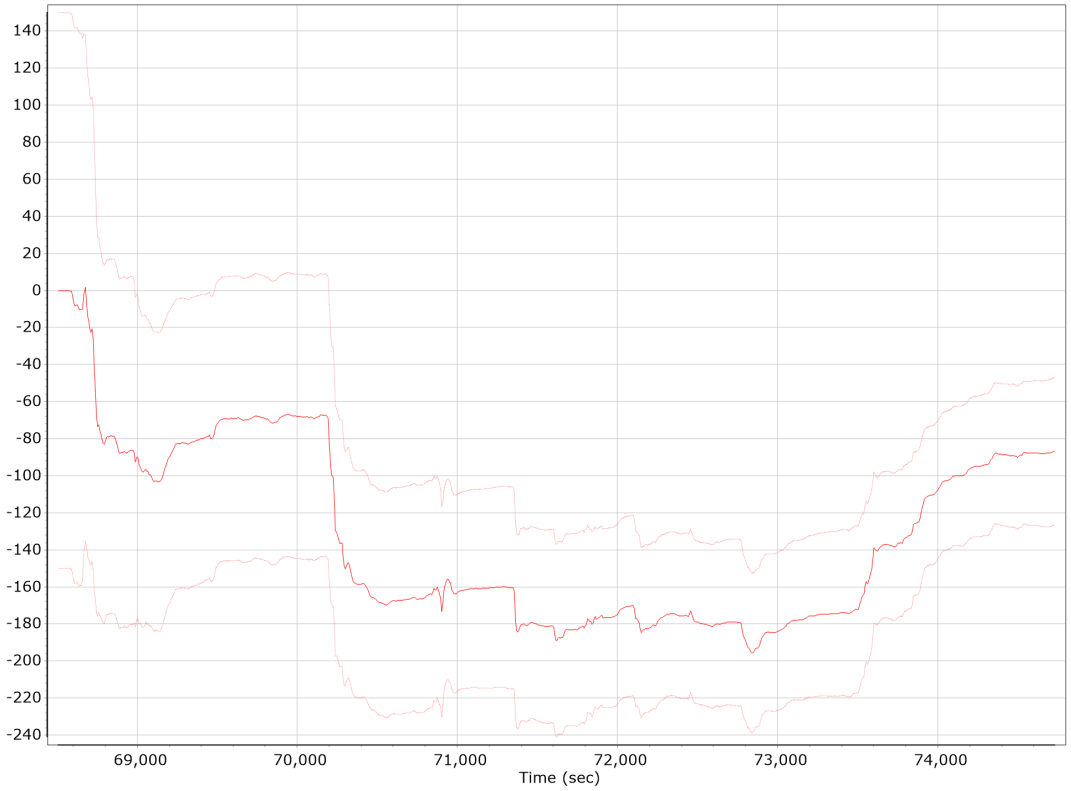
Z Gyro Bias (deg/h)



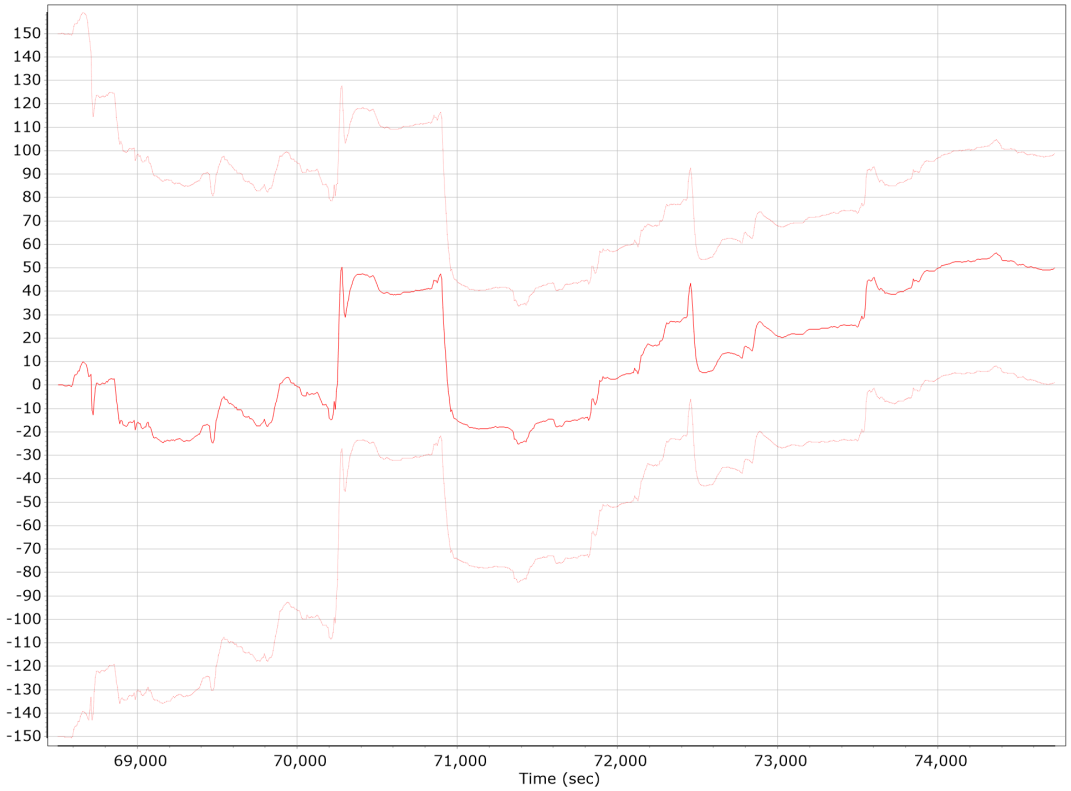
Gyro Scale Error (ppm)



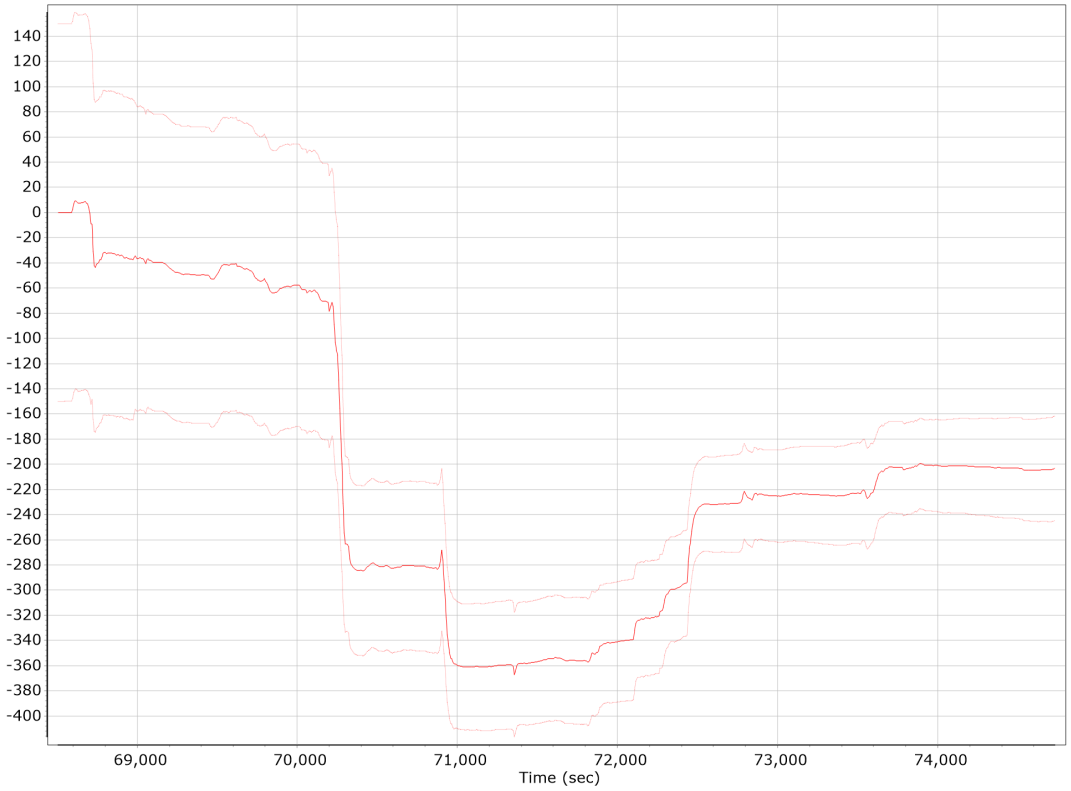
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)

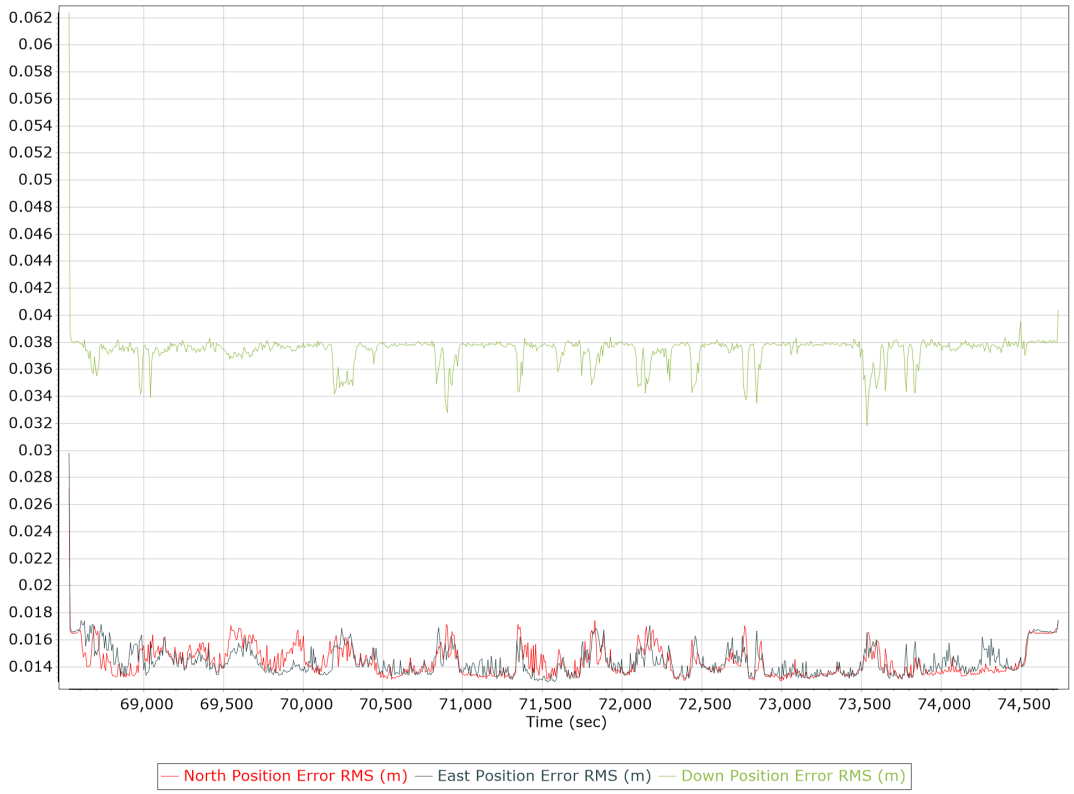


Z Gyro Scale Error (ppm)

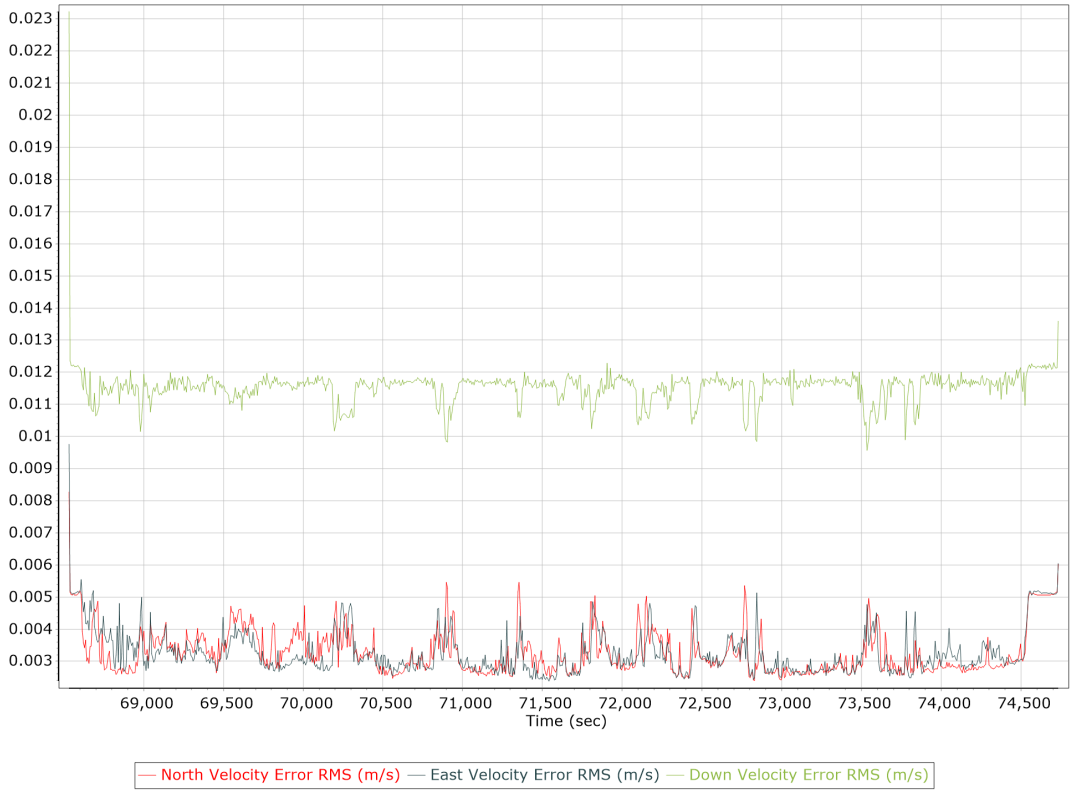


Smoothed Performance Metrics

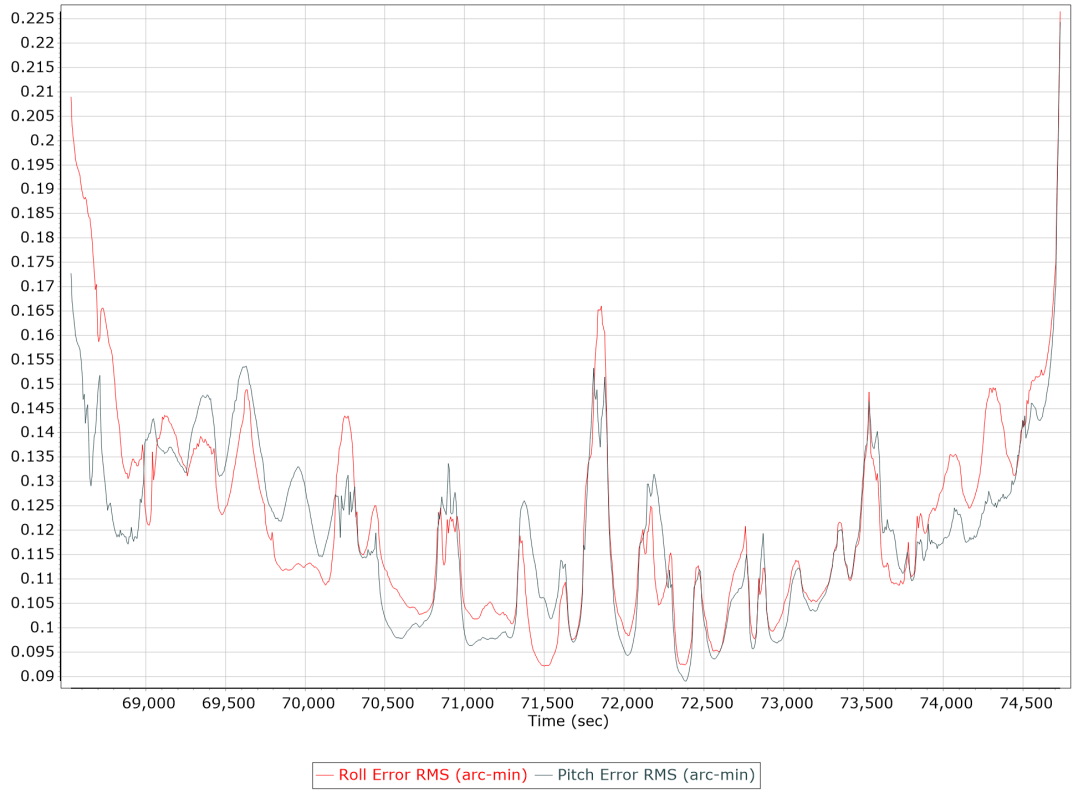
Position Error RMS (m)



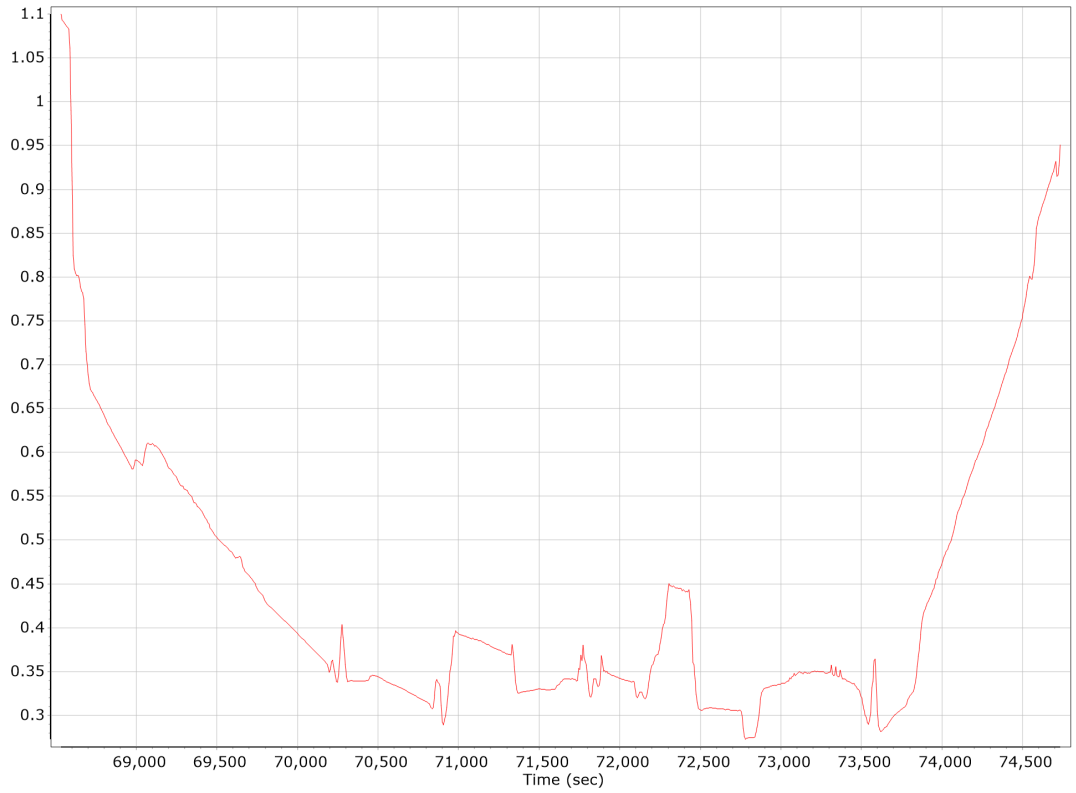
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)



Heading Error RMS (arc-min)



Forward Processed Performance Metrics

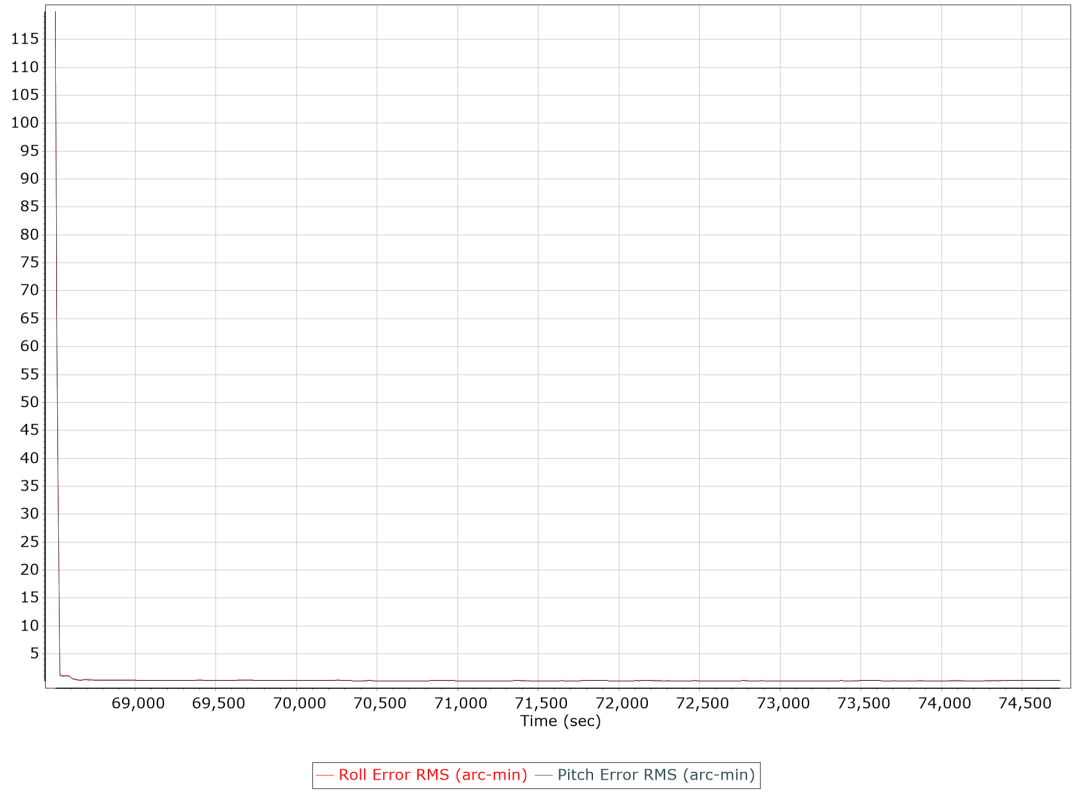
Position Error RMS (m)



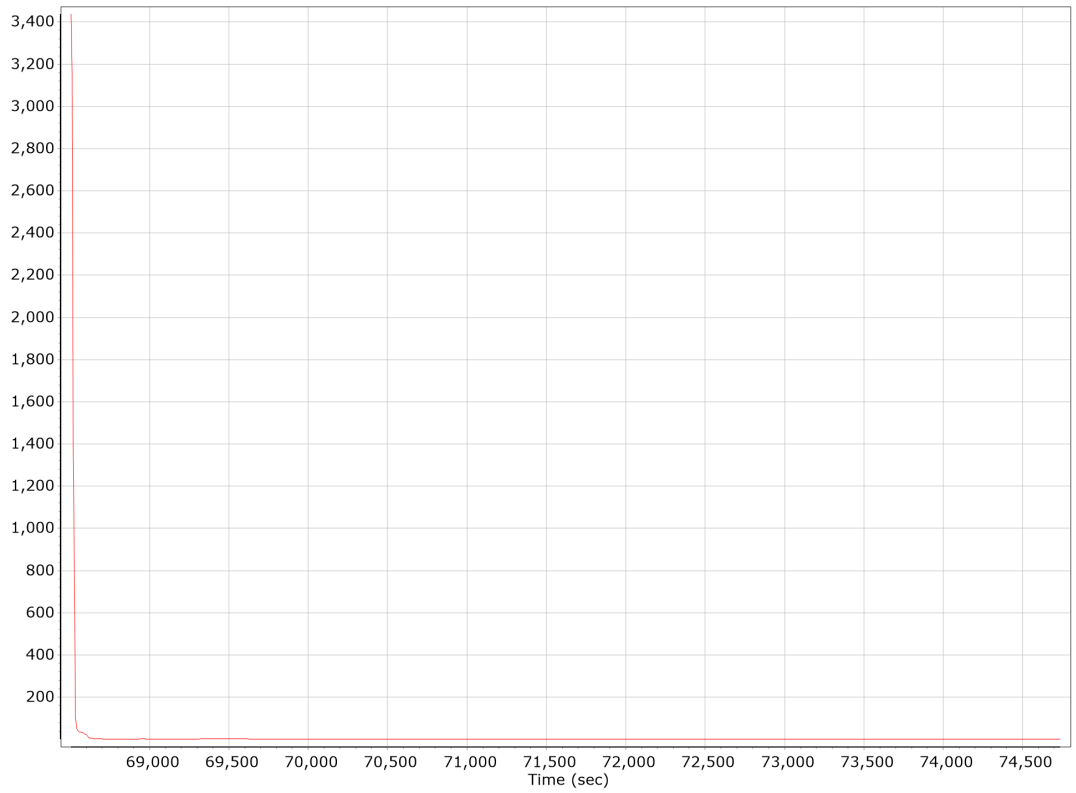
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

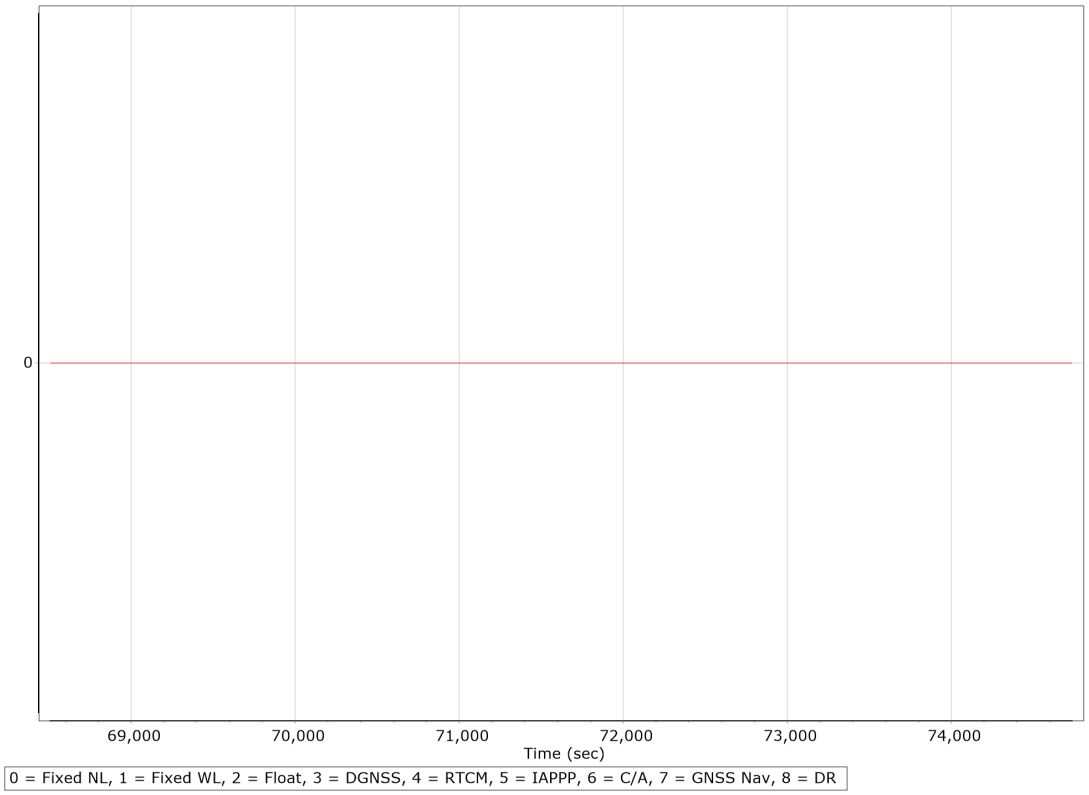


Heading Error RMS (arc-min)

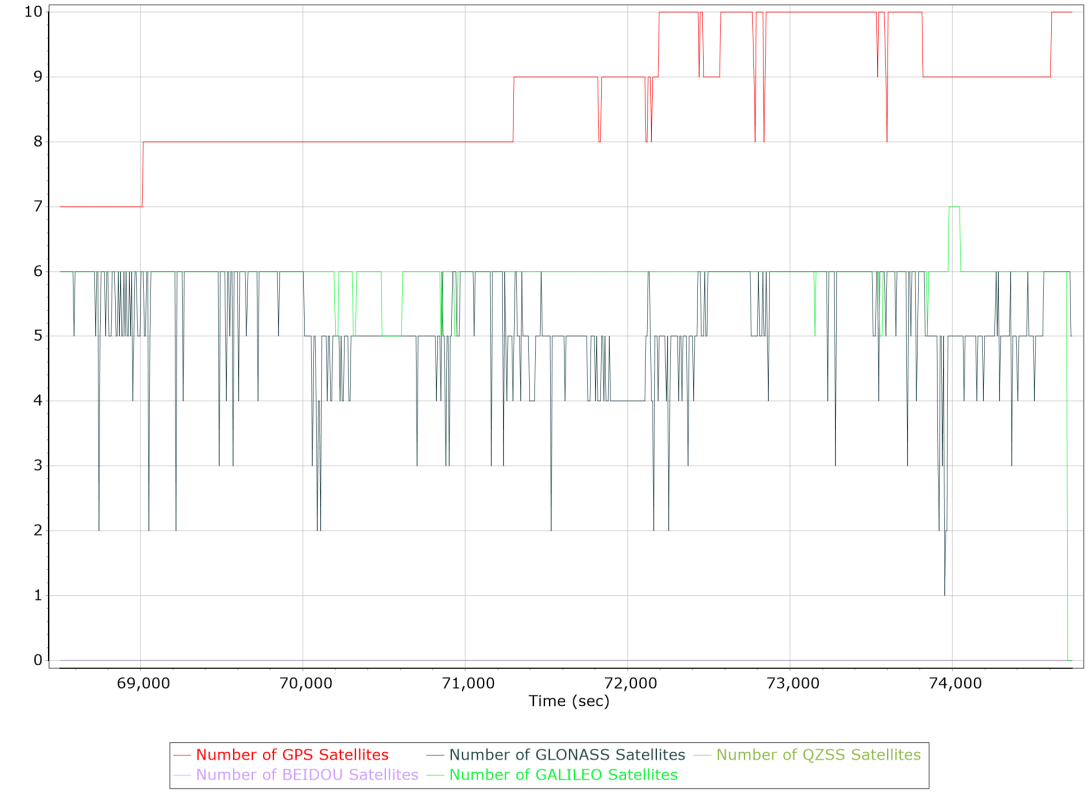


Forward Processed Solution Status

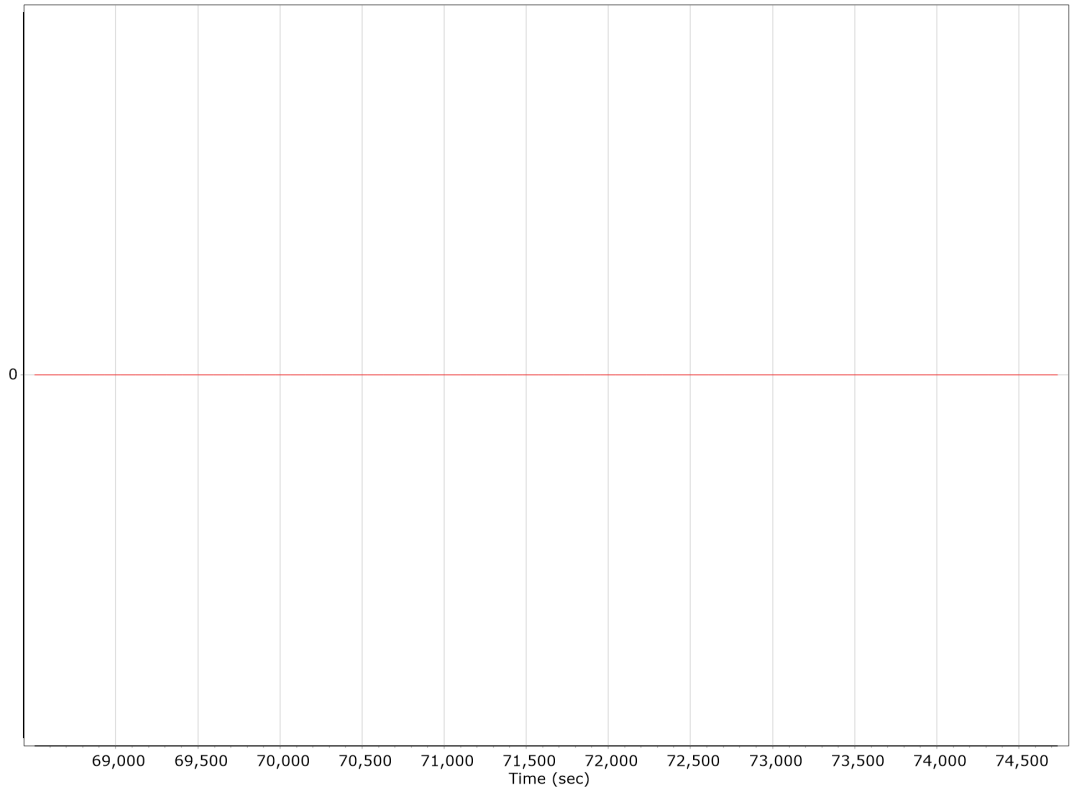
Processing Mode



Number of Satellites



Baseline Length



General Information

Mission Information

Project name	01082024A_3546
Processing date	2024-01-09 17:43:48
Mission date	2024-01-08 17:14:51
Mission duration	03:04:44.670
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N9922
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
240108_171442_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm0080.24g	GLONASS Broadcast Ephemeris
Ephm0080.24n	GPS Broadcast Ephemeris

Output Files

Filename	File type
sbet_01082024A_3546.out	SBET Trajectory File

Rover Data Summary

First raw data file	240108_171442_INS-GPS_1.raw		
Last raw data file	240108_171442_INS-GPS_1.raw		
Start GPS week	2296		
Start time	148472.600 (1/8/2024 5:14:32 PM)		
End time	159557.270 (1/8/2024 8:19:17 PM)		
Start of fine alignment	148810.682 (1/8/2024 5:20:10 PM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.205	0.058	-1.282
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

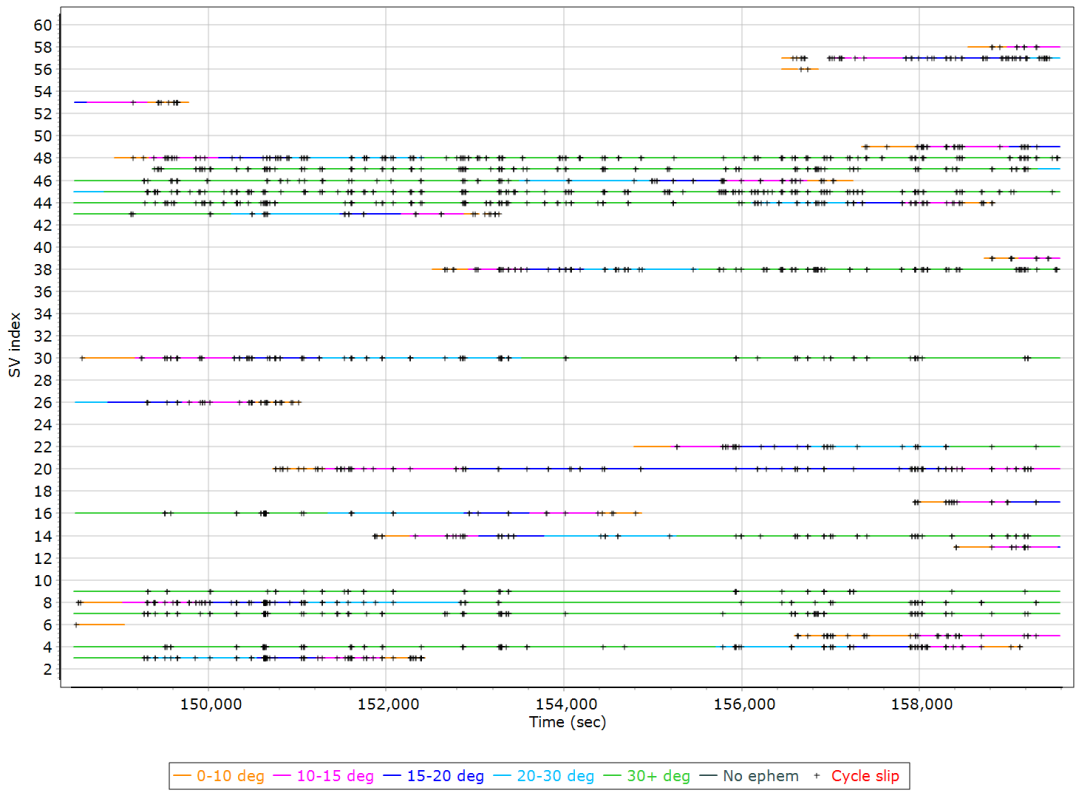
Rover Data QC

Raw IMU Import QC Summary

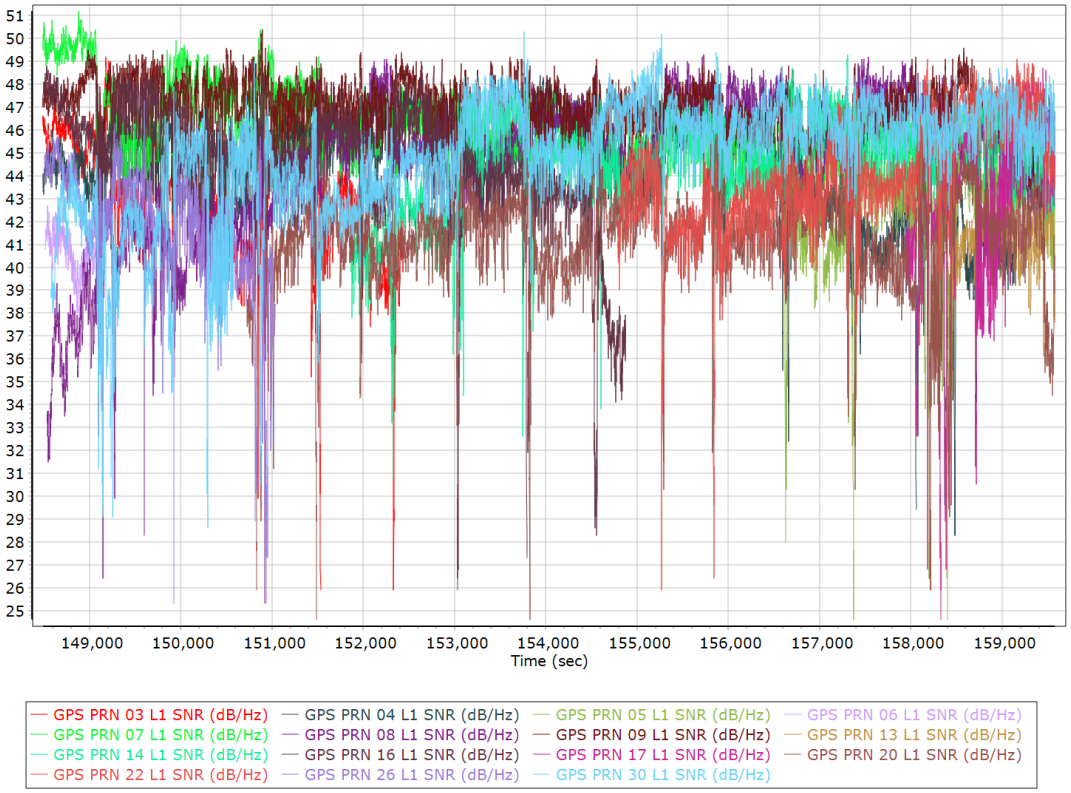
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_01082024A_3546.log
IMU Records Processed	2216439
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

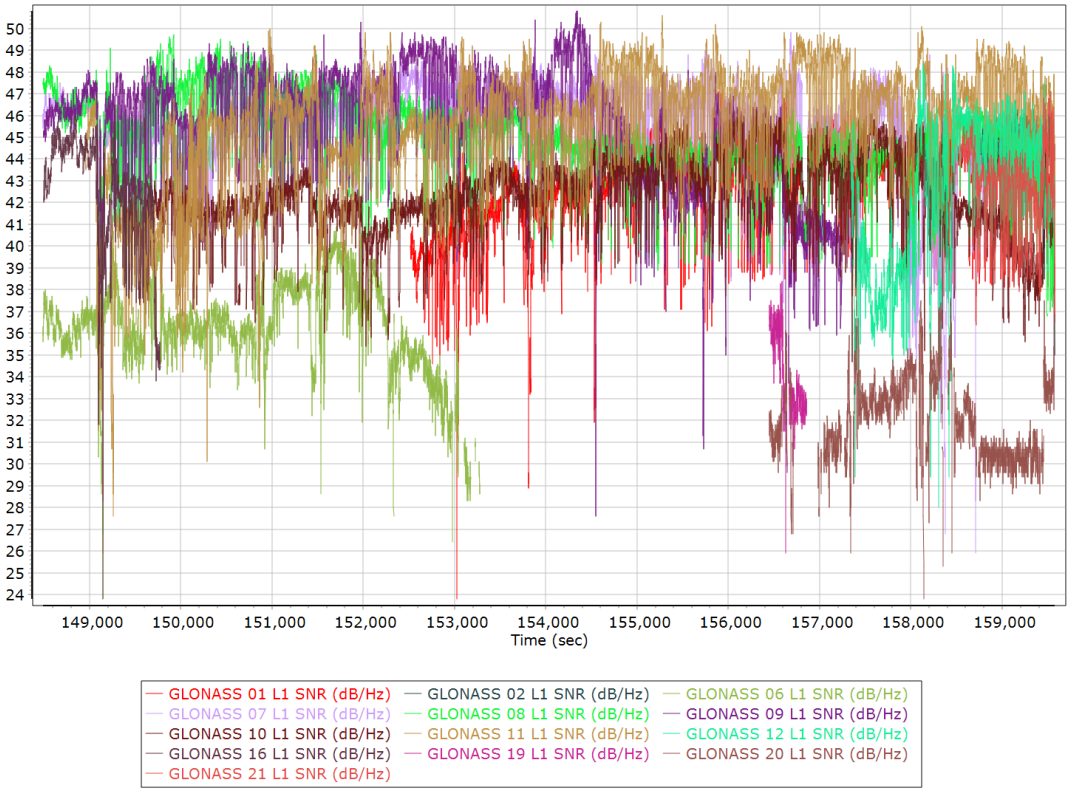
GPS/GLONASS L1 Satellite Lock/Elevation



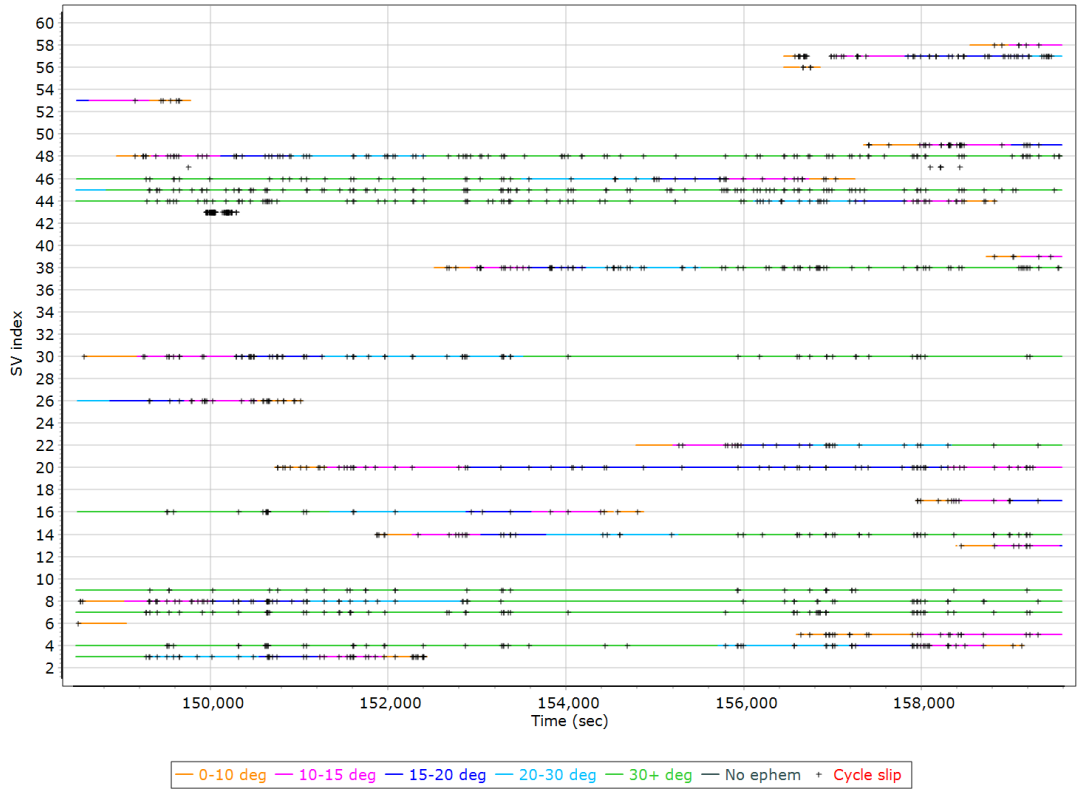
GPS L1 SNR



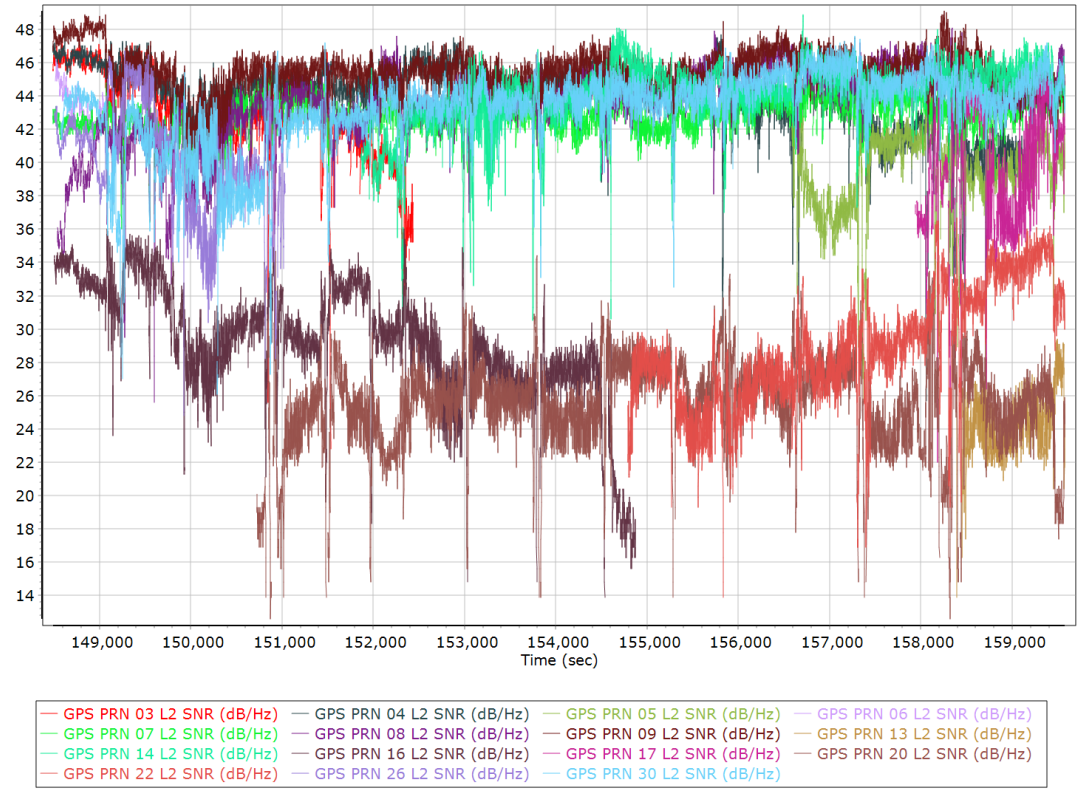
GLONASS L1 SNR



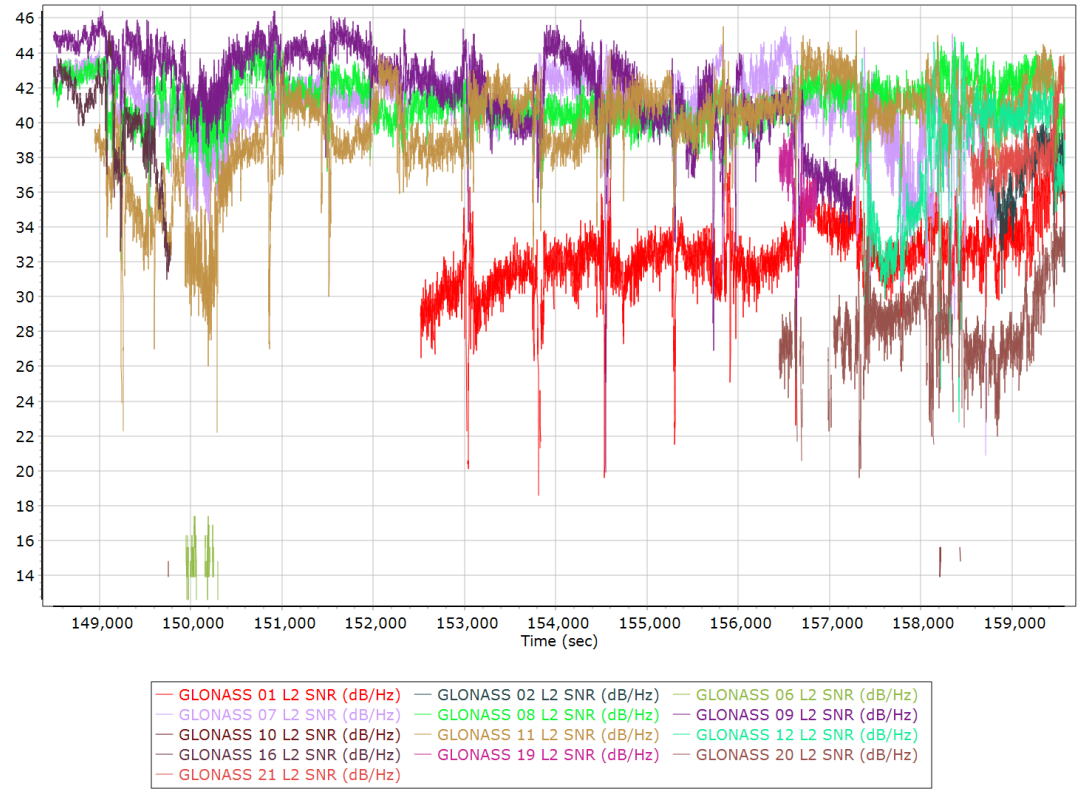
GPS/GLONASS L2 Satellite Lock/Elevation



GPS L2 SNR



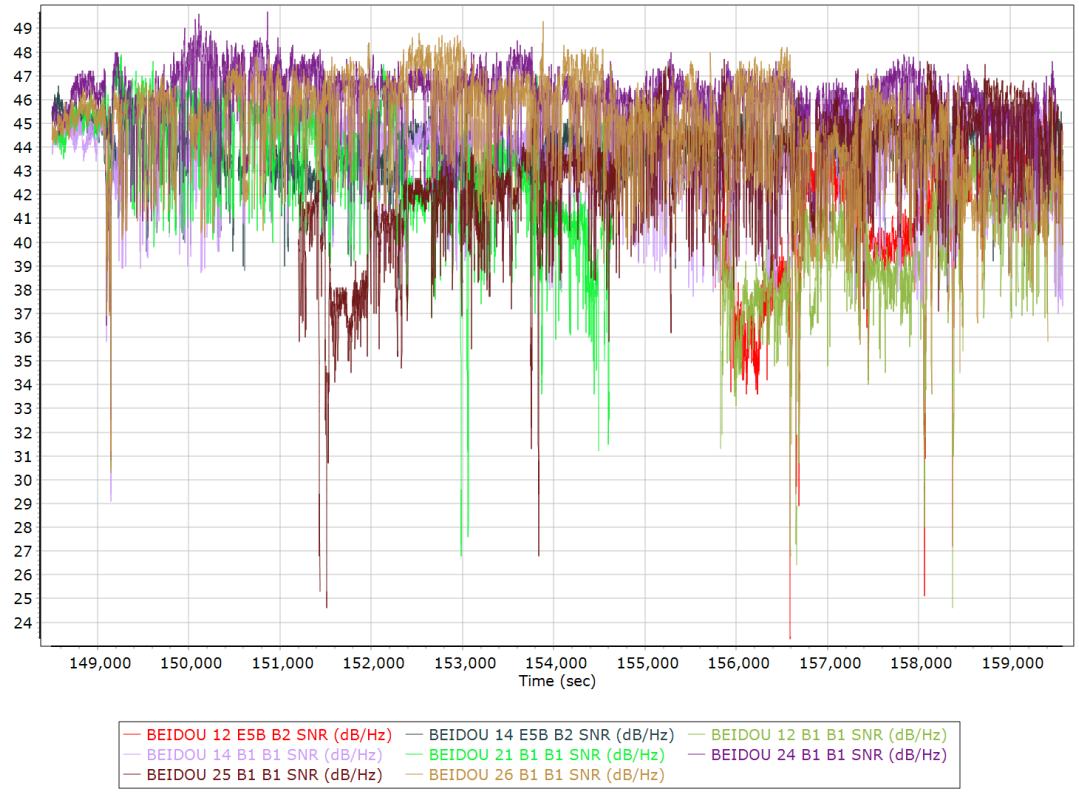
GLONASS L2 SNR



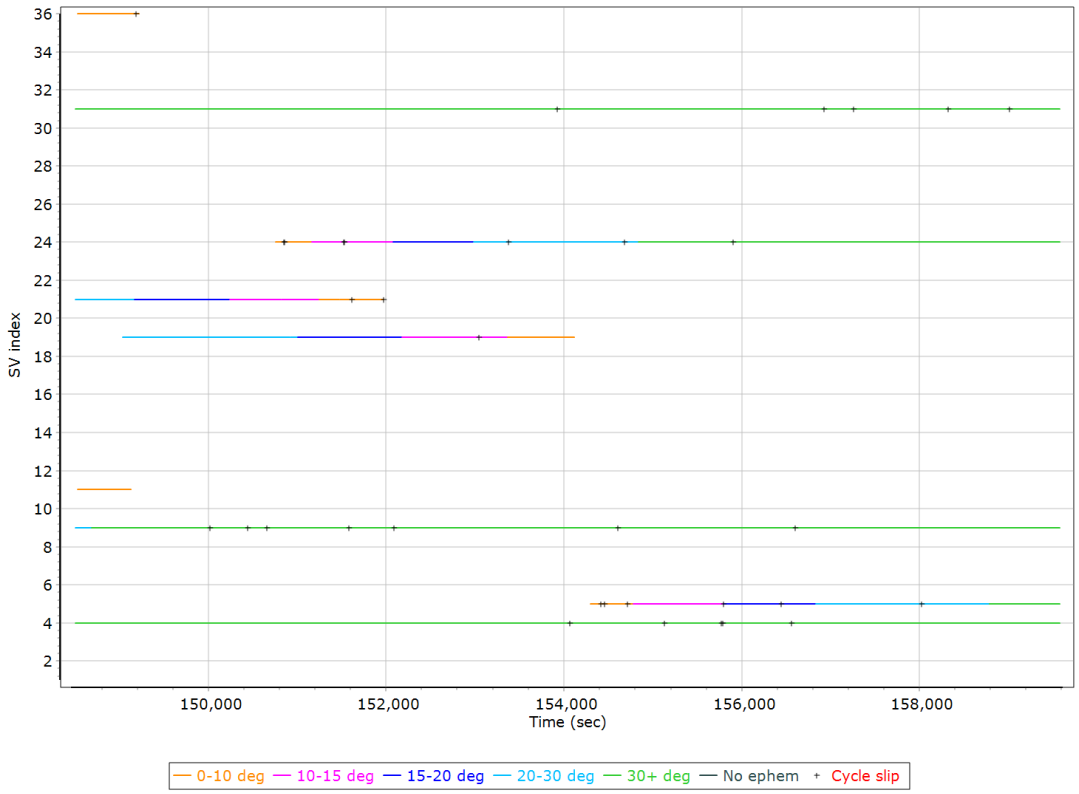
BEIDOU Satellite Lock/Elevation



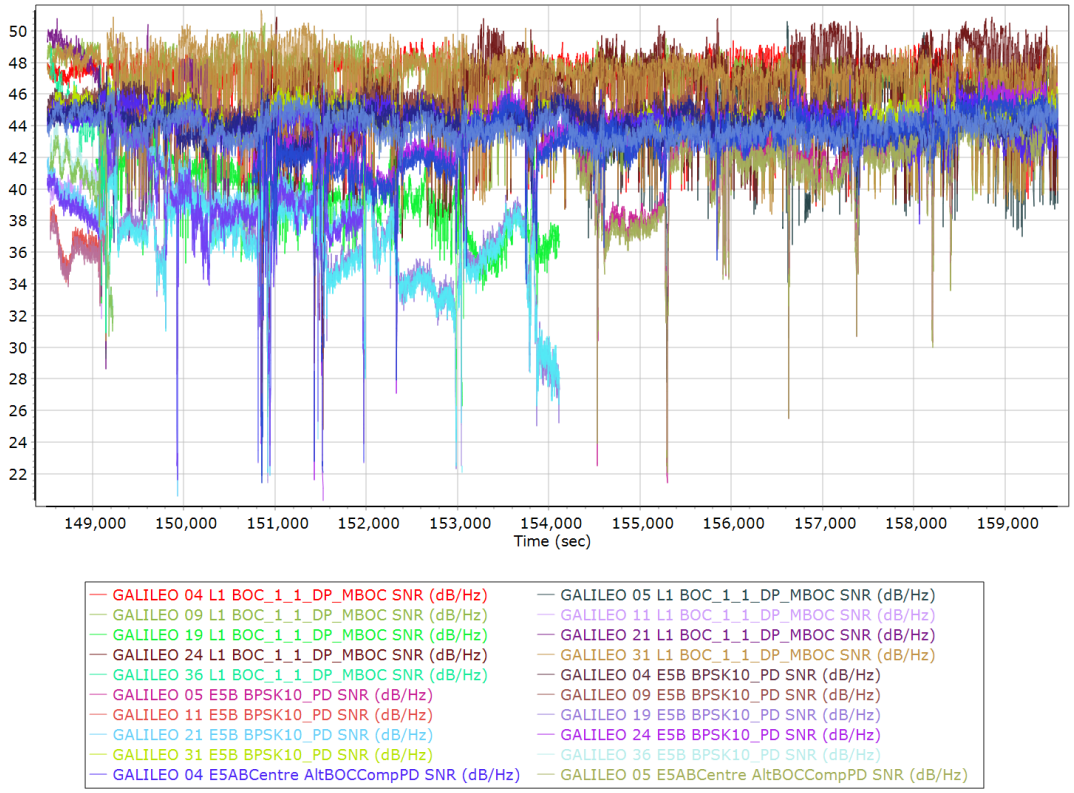
BEIDOU SNR



GALILEO Satellite Lock/Elevation

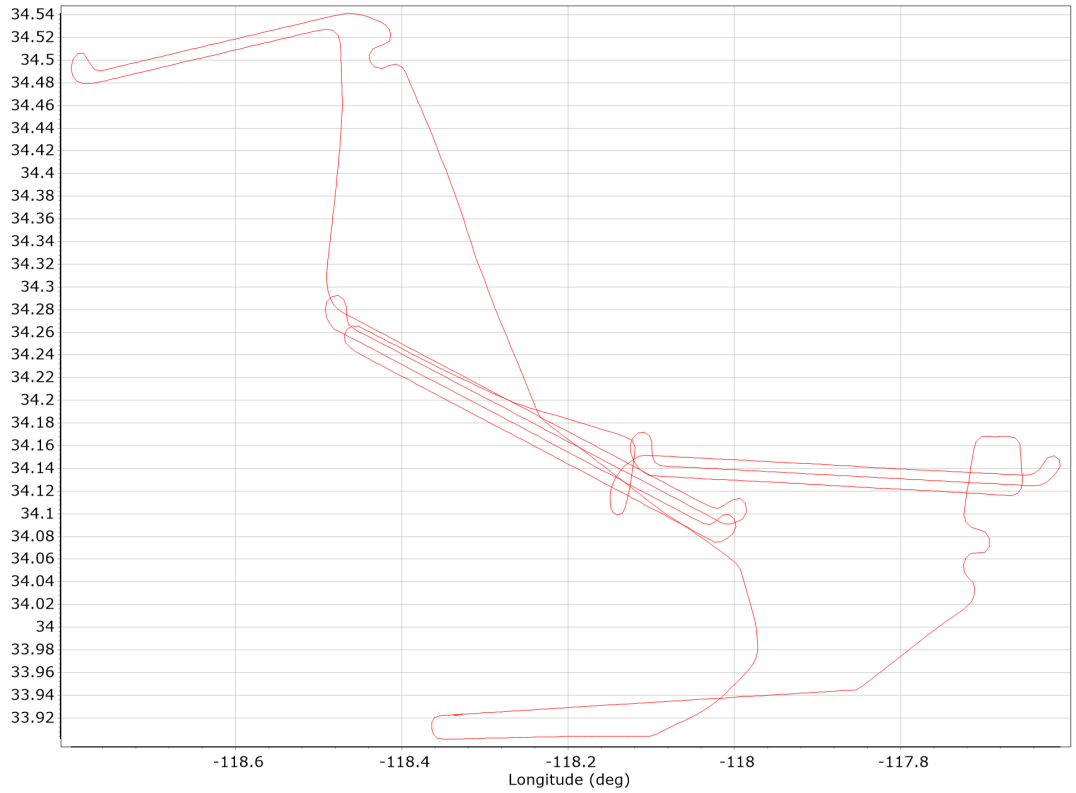


GALILEO SNR

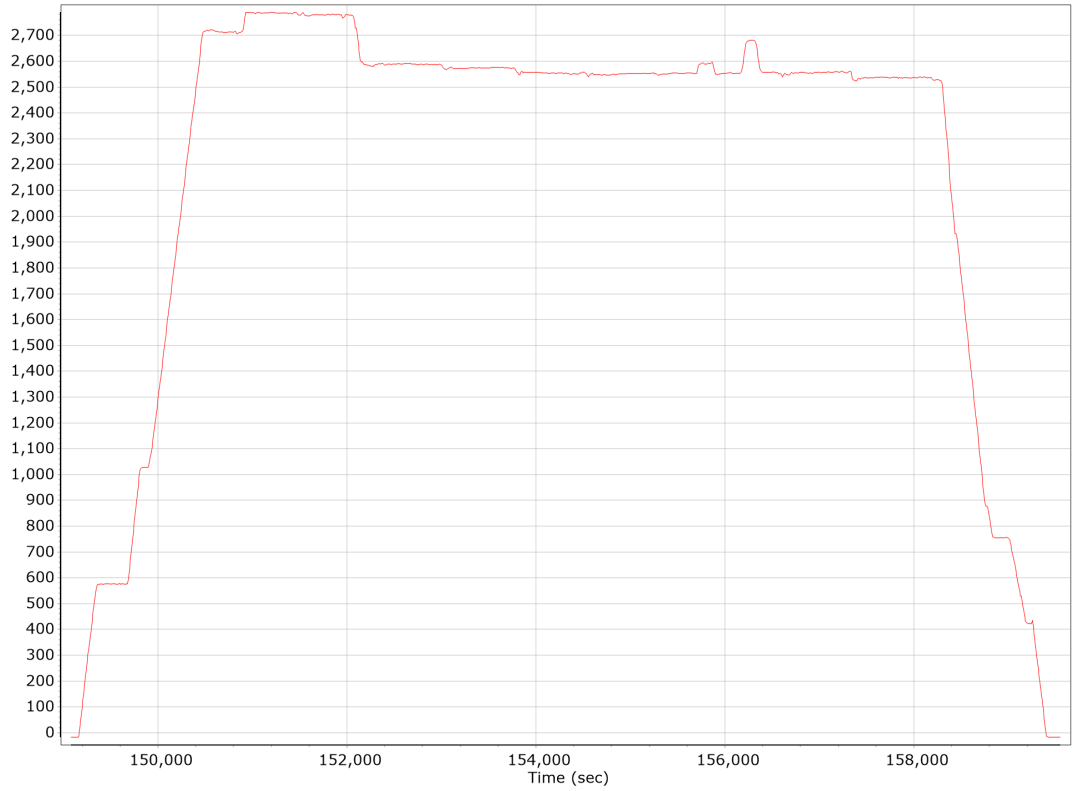

50
48
46
44
42
40
38
36
34
32
30
28
26
24
22
149,000
150,000
151,000
152,000
153,000
154,000
155,000
156,000
157,000
158,000
159,000
Time (sec)
GALILEO 04 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 05 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 09 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 11 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 19 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 21 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 24 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 31 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 36 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 04 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 05 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 09 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 11 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 19 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 21 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 24 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 31 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 36 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 04 E5ABCentre AltBOCCompPD SNR (dB/Hz)
GALILEO 05 E5ABCentre AltBOCCompPD SNR (dB/Hz)

Smoothed Trajectory Information

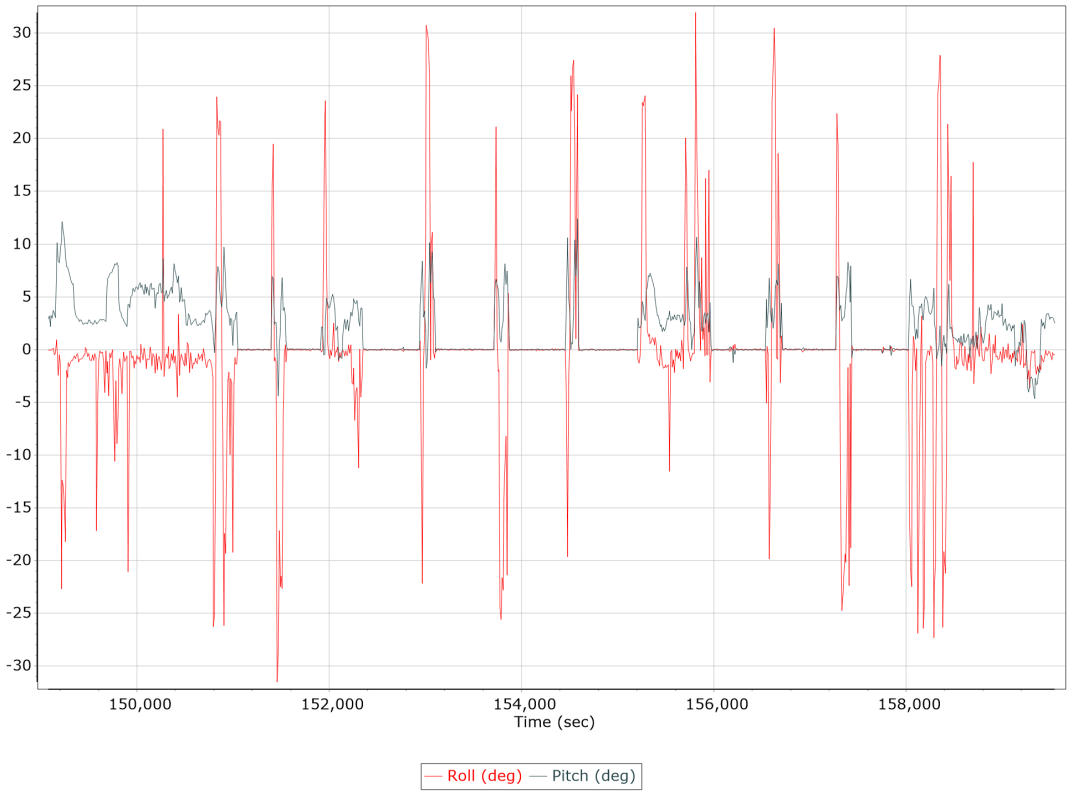
Top View



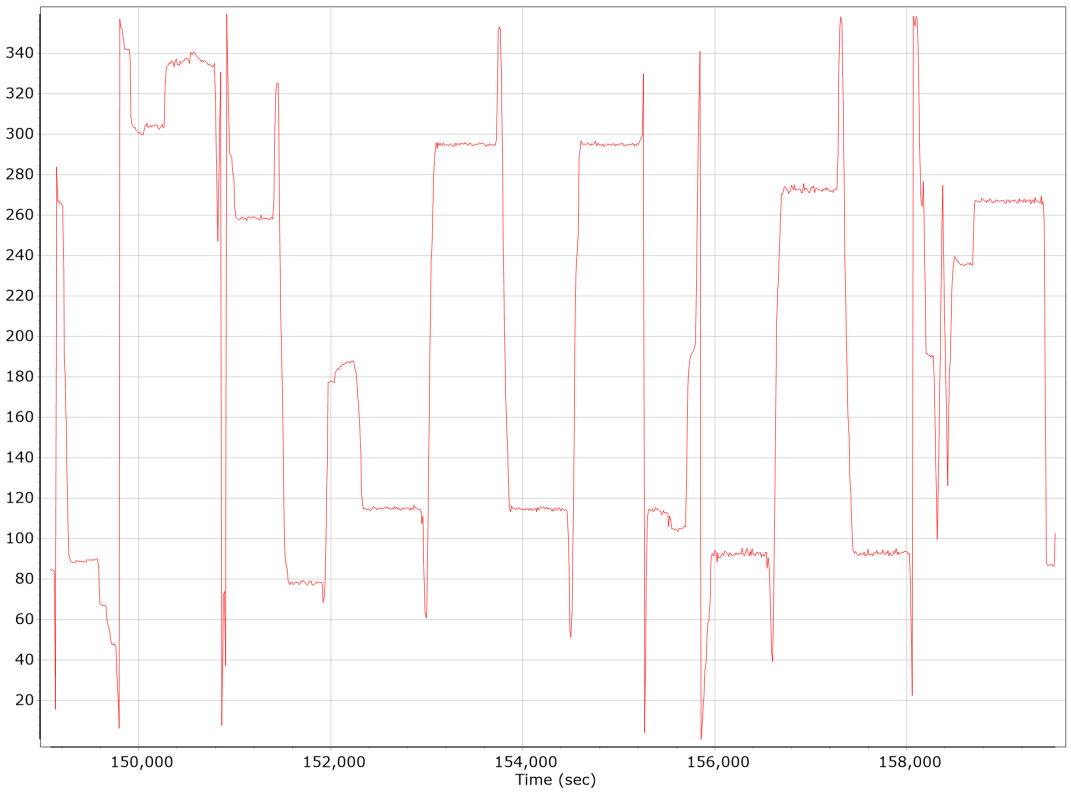
Altitude



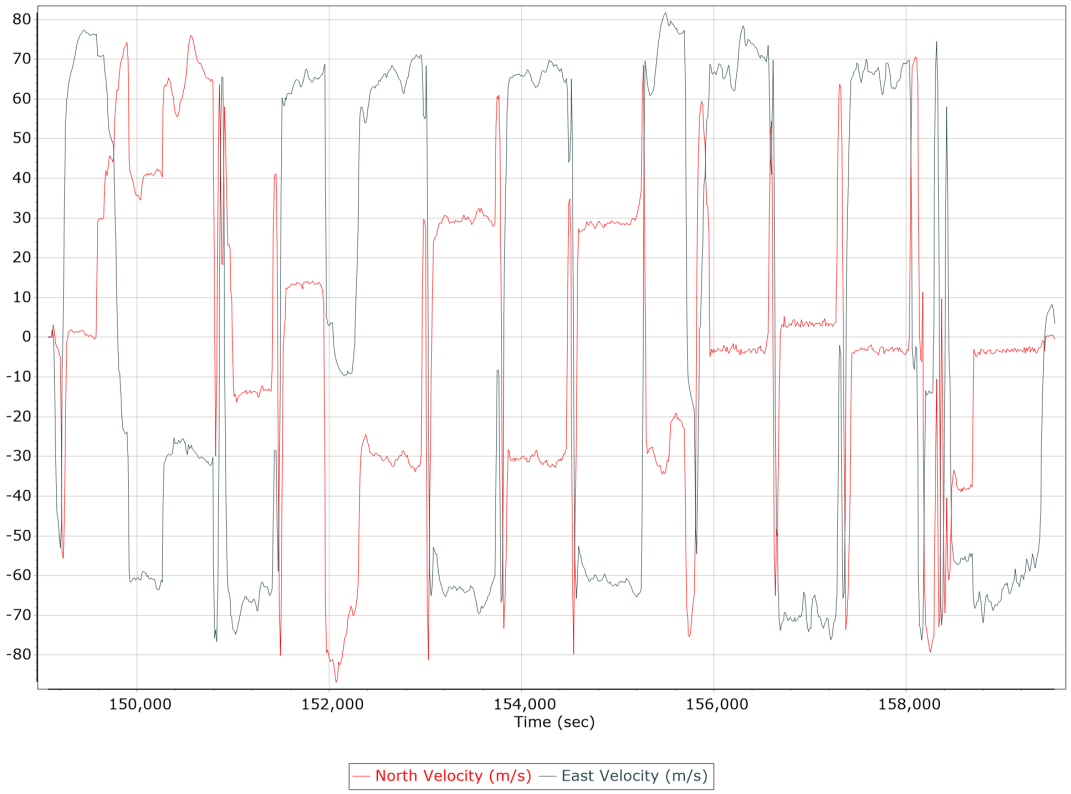
Roll/Pitch



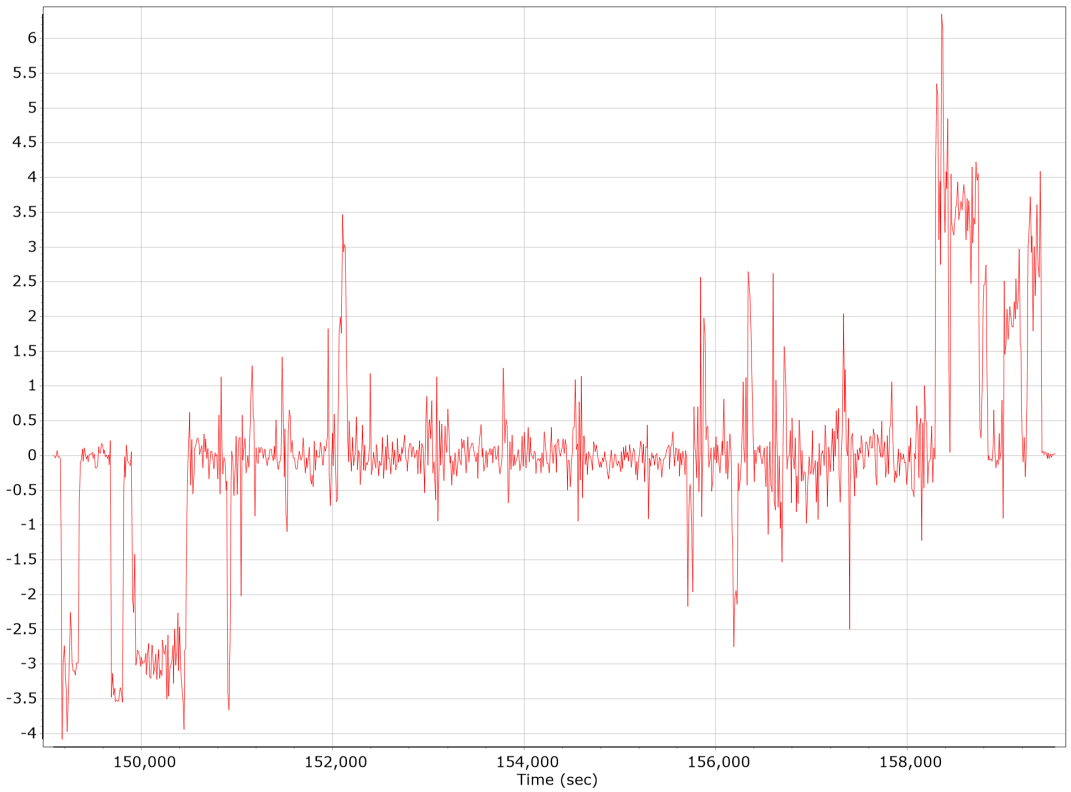
Heading



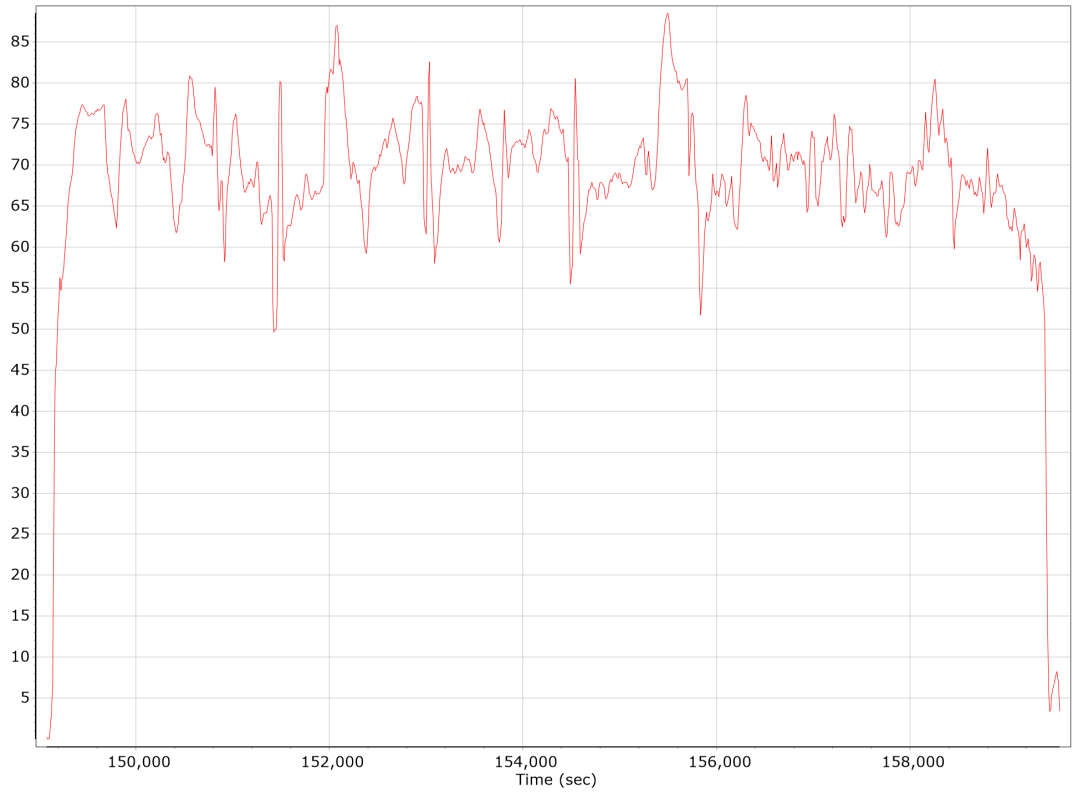
North/East Velocity



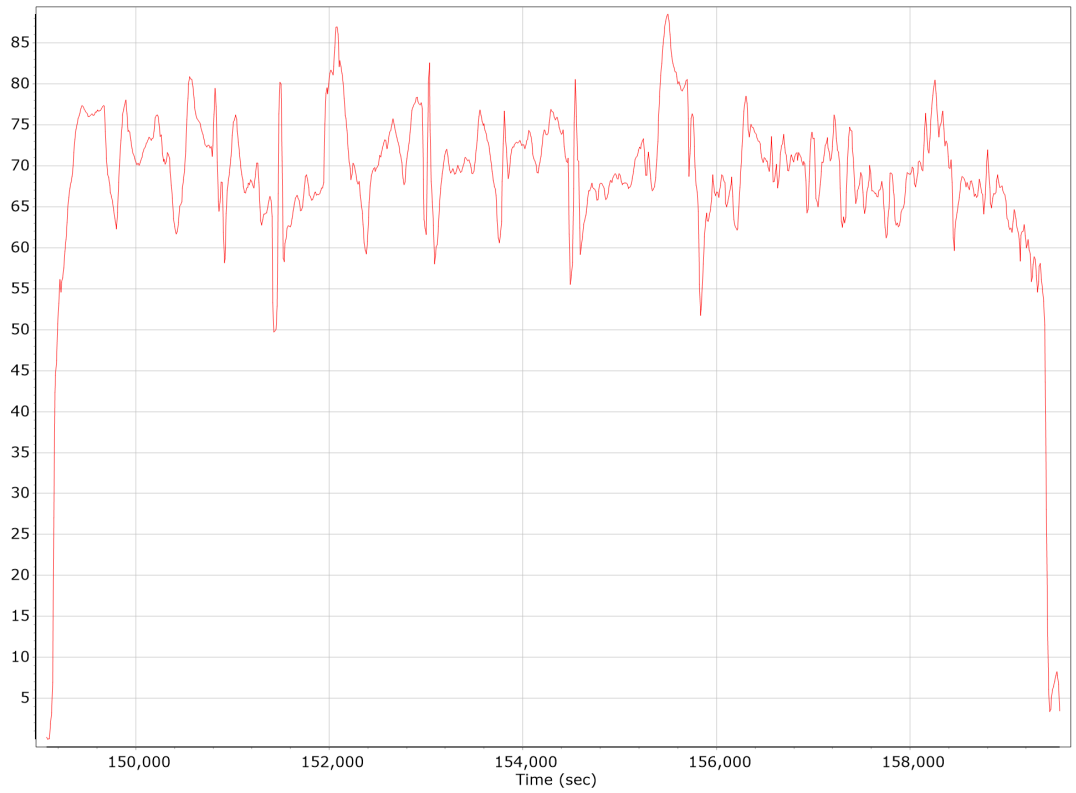
Down Velocity



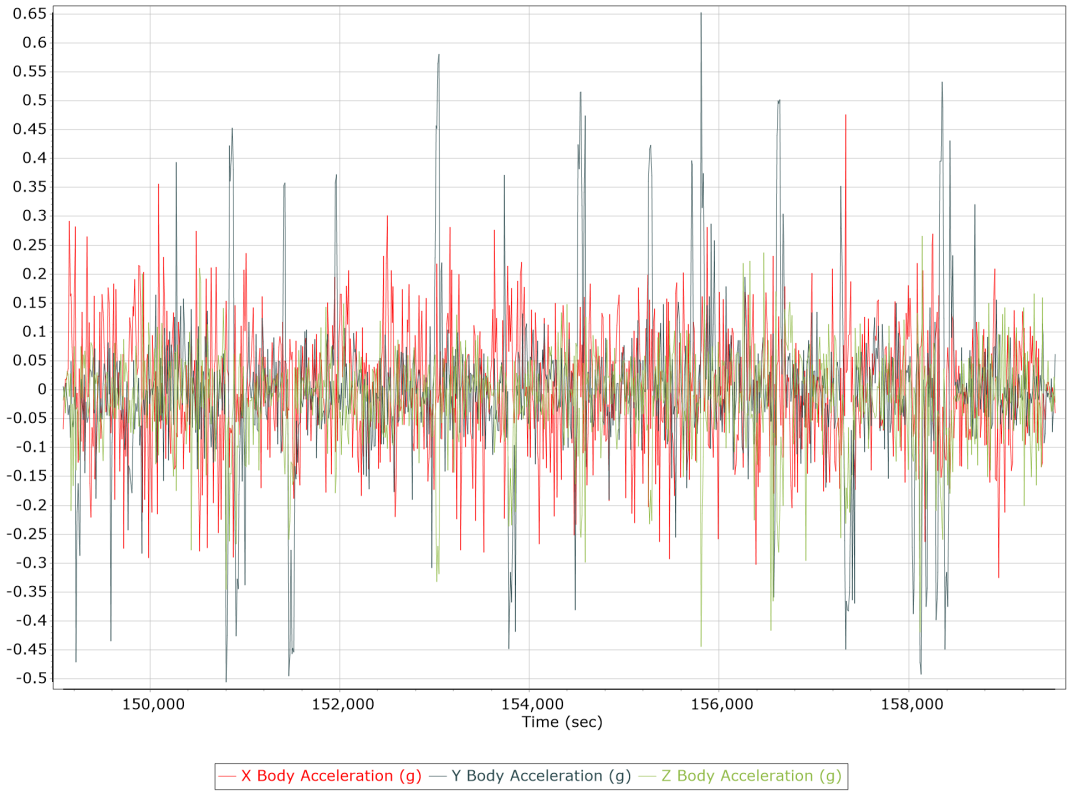
Total Speed



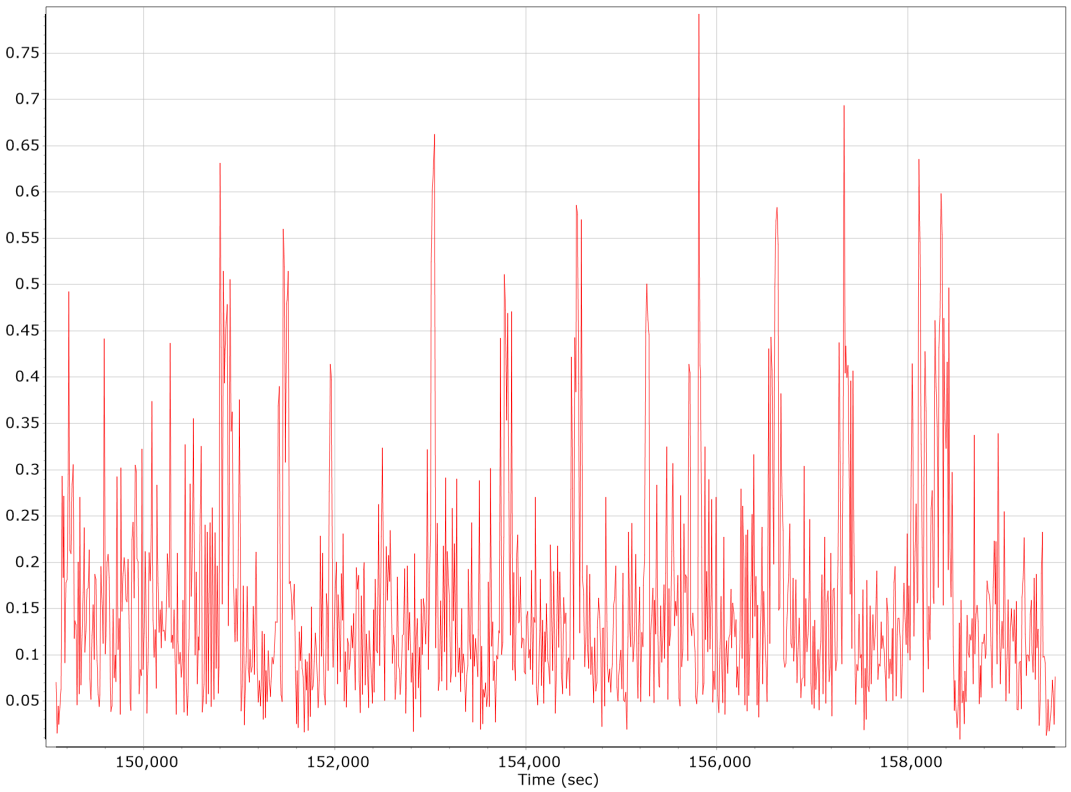
Ground Speed



Body Acceleration



Total Body Acceleration

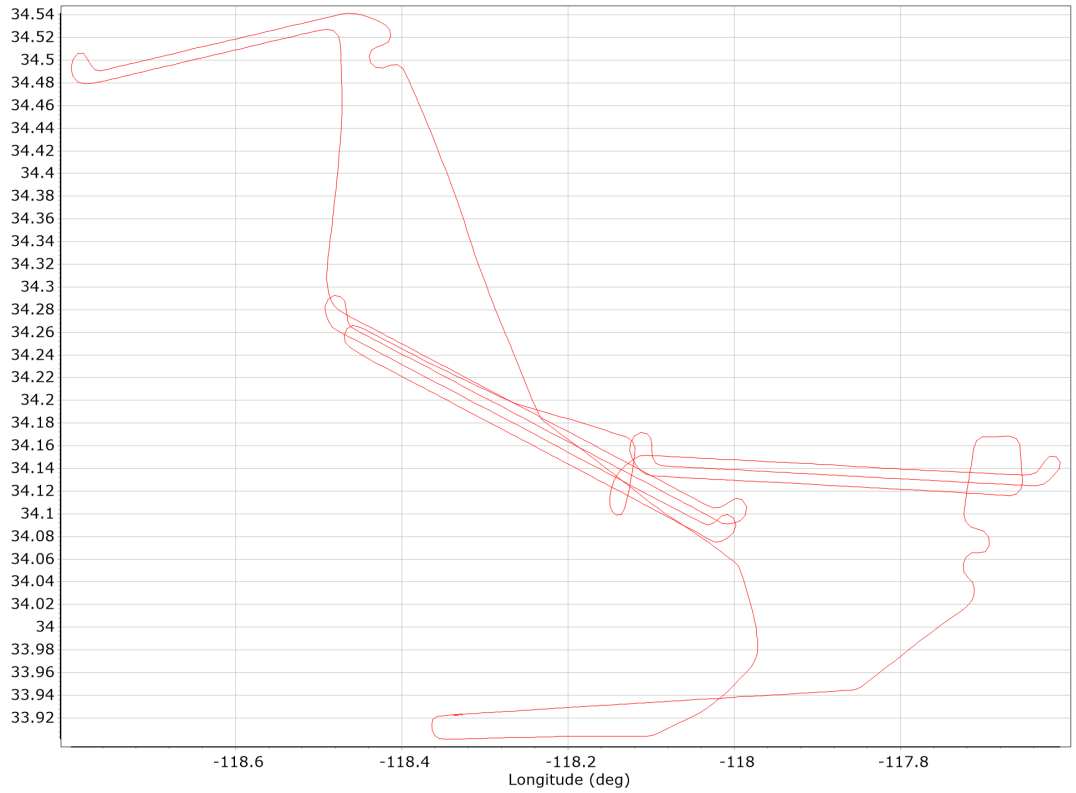


Body Angular Rate

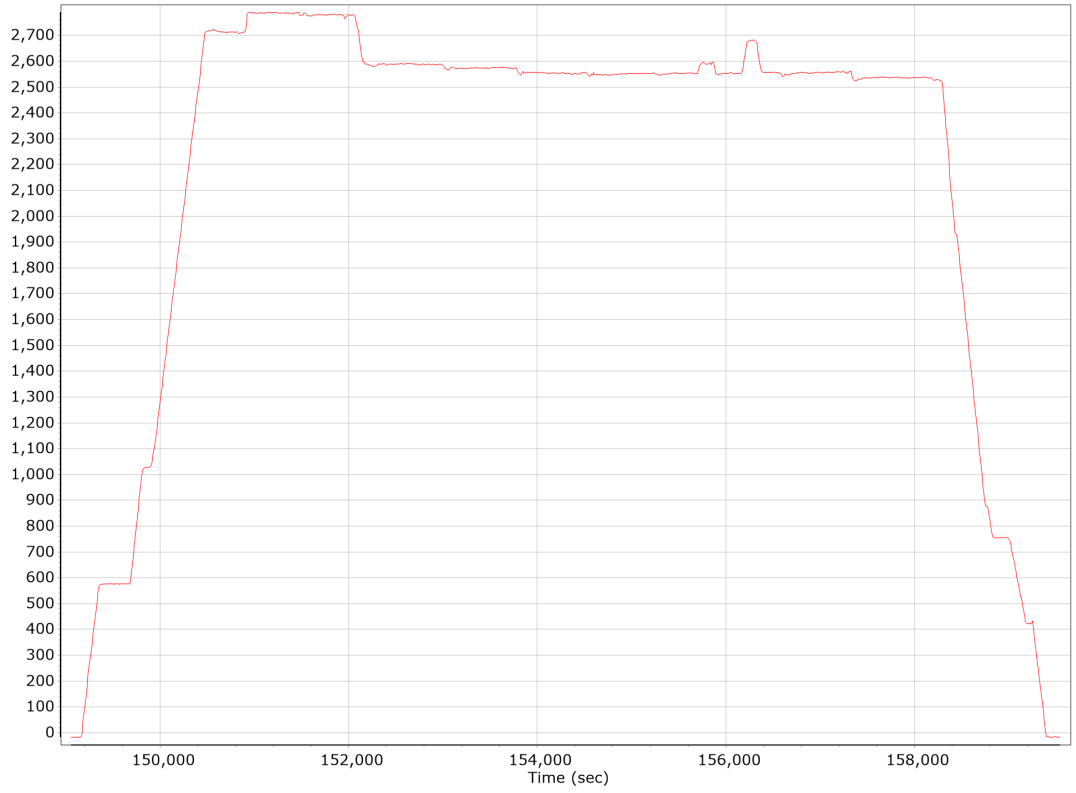


Forward Processed Trajectory Information

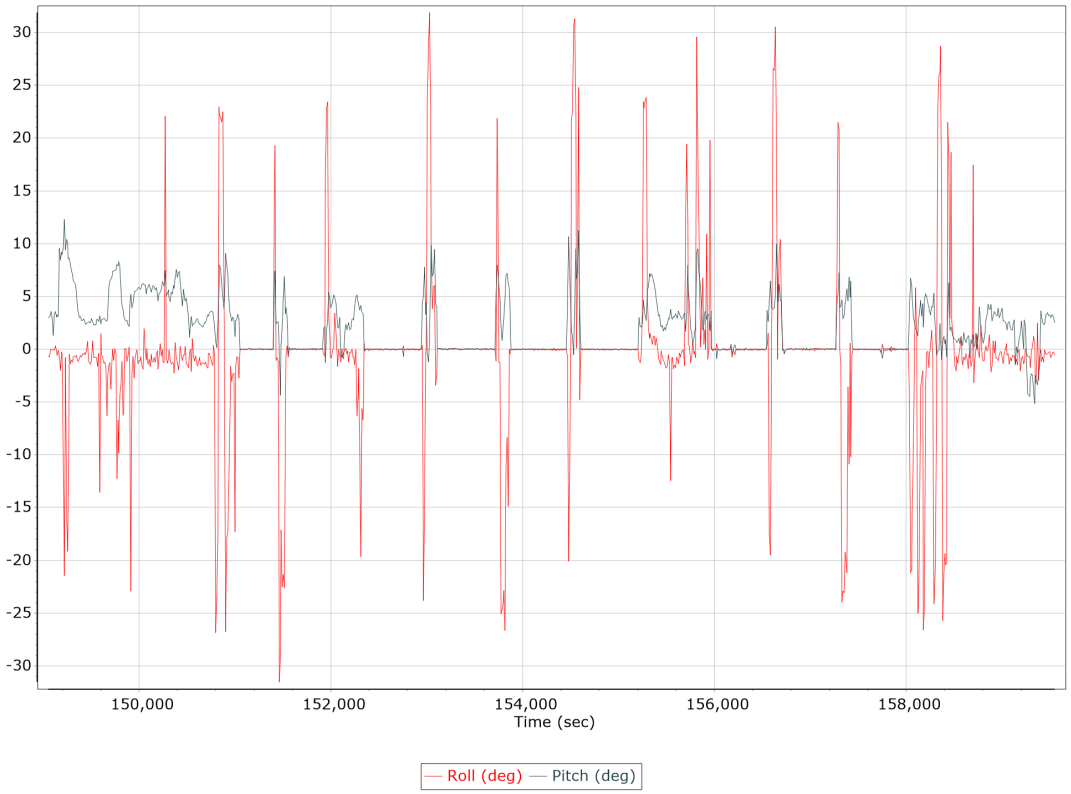
Top View



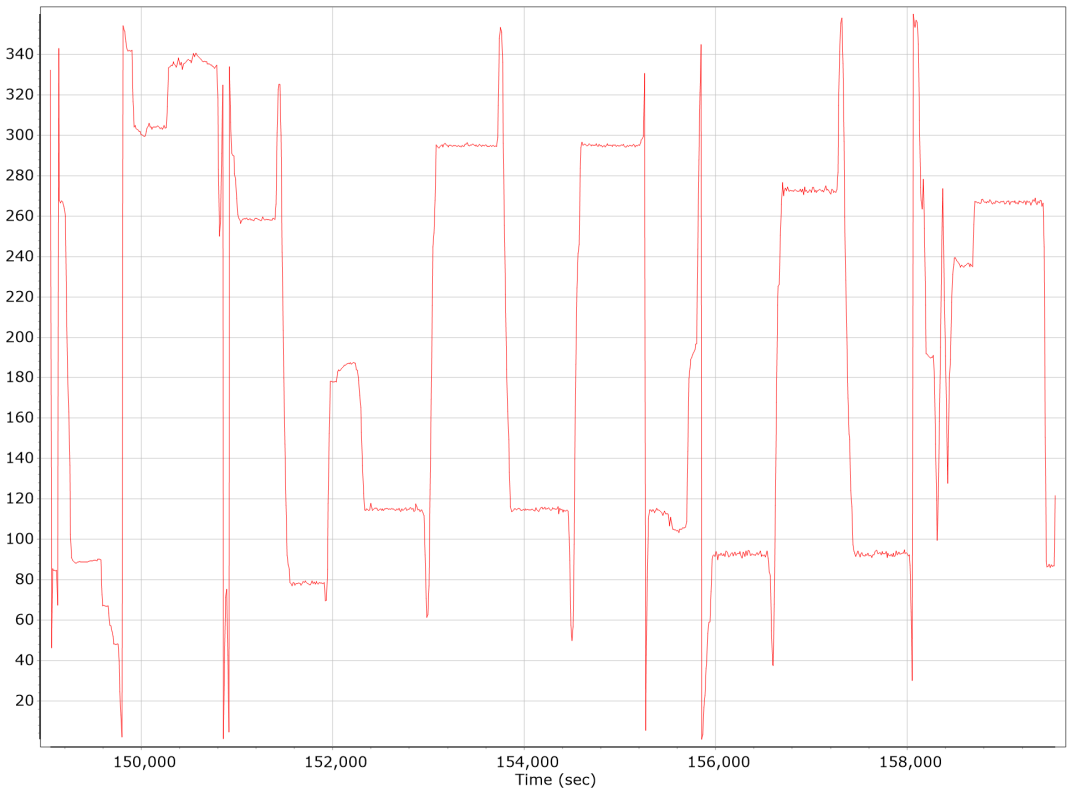
Altitude



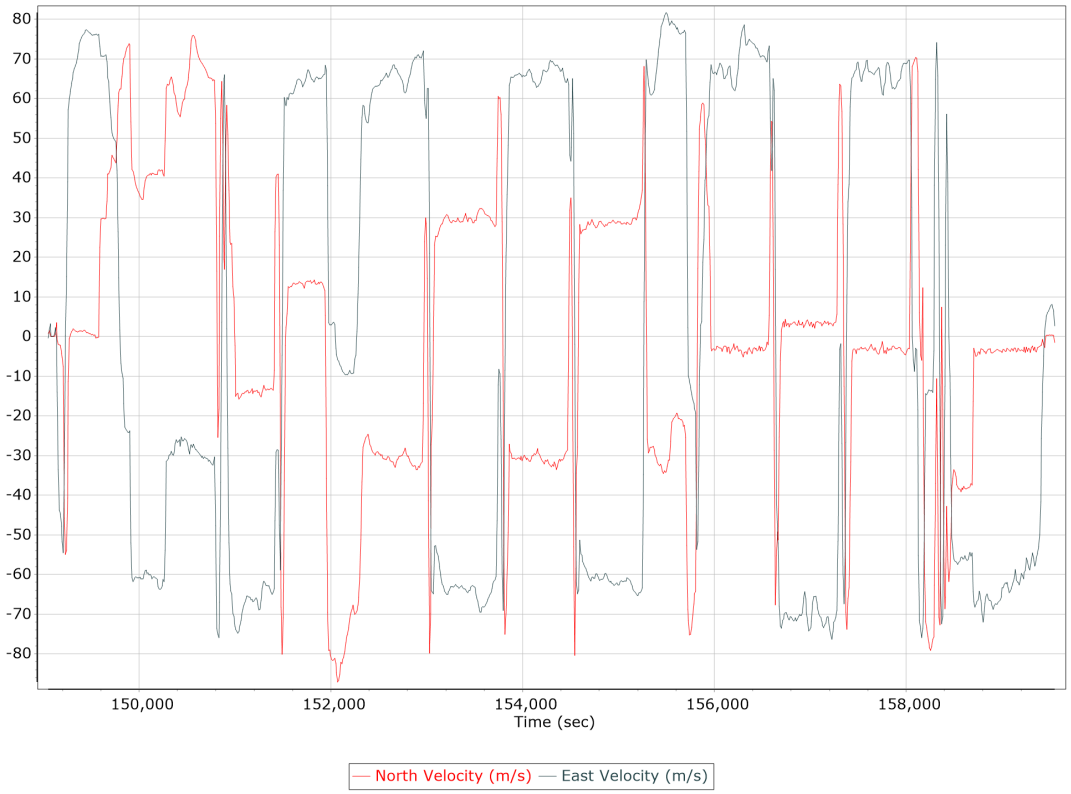
Roll/Pitch



Heading



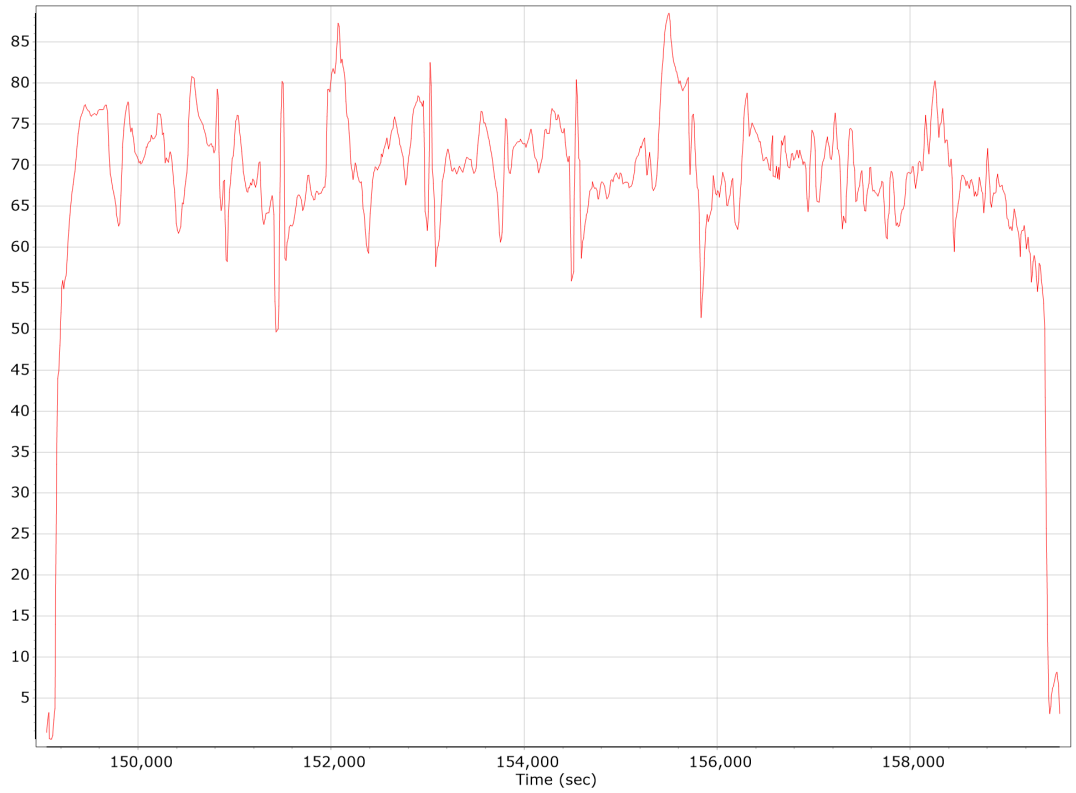
North/East Velocity



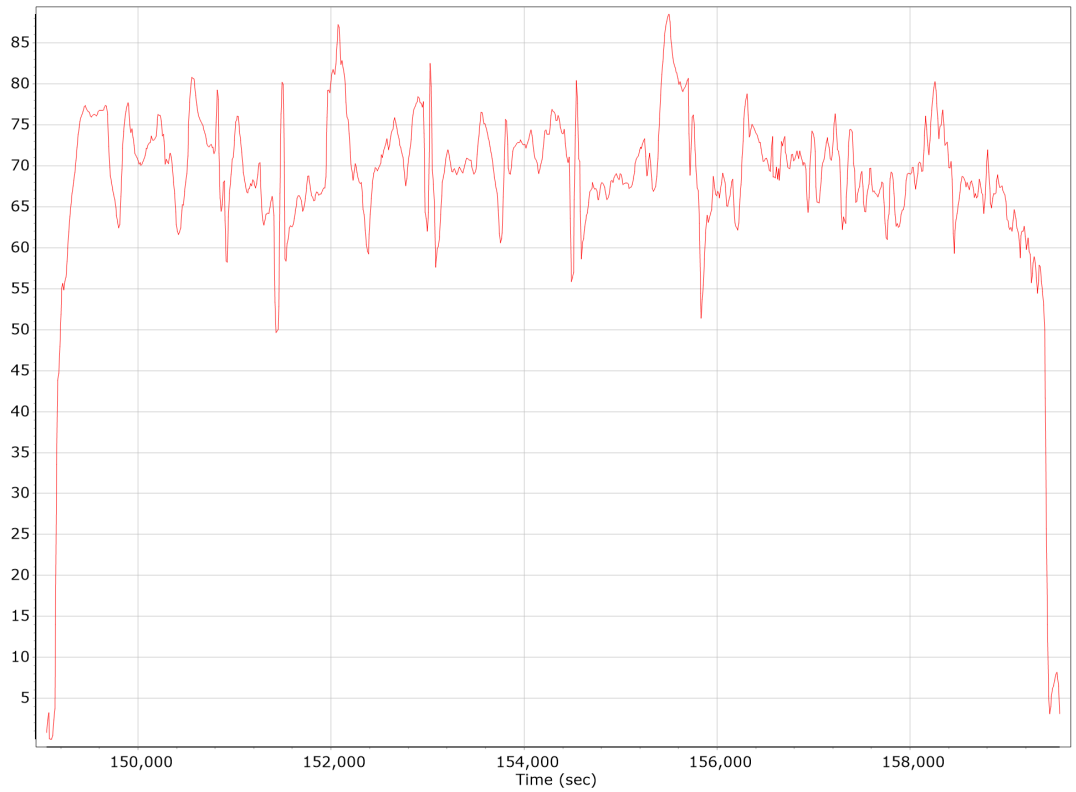
Down Velocity



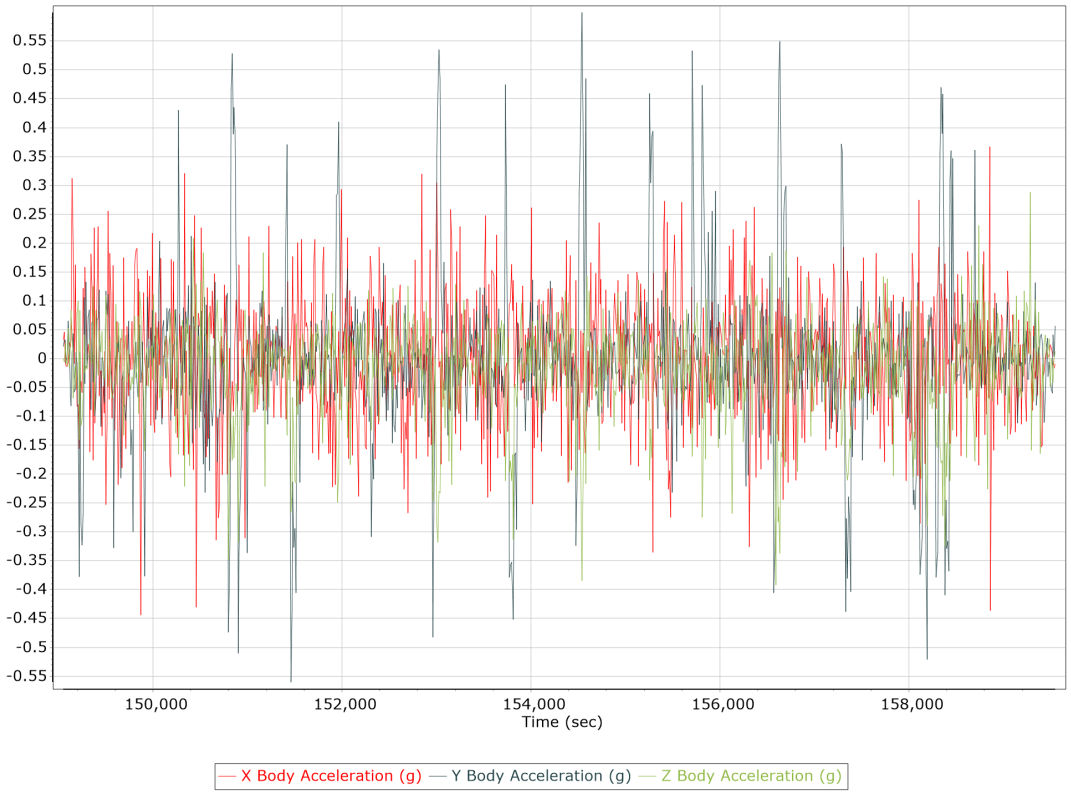
Total Speed



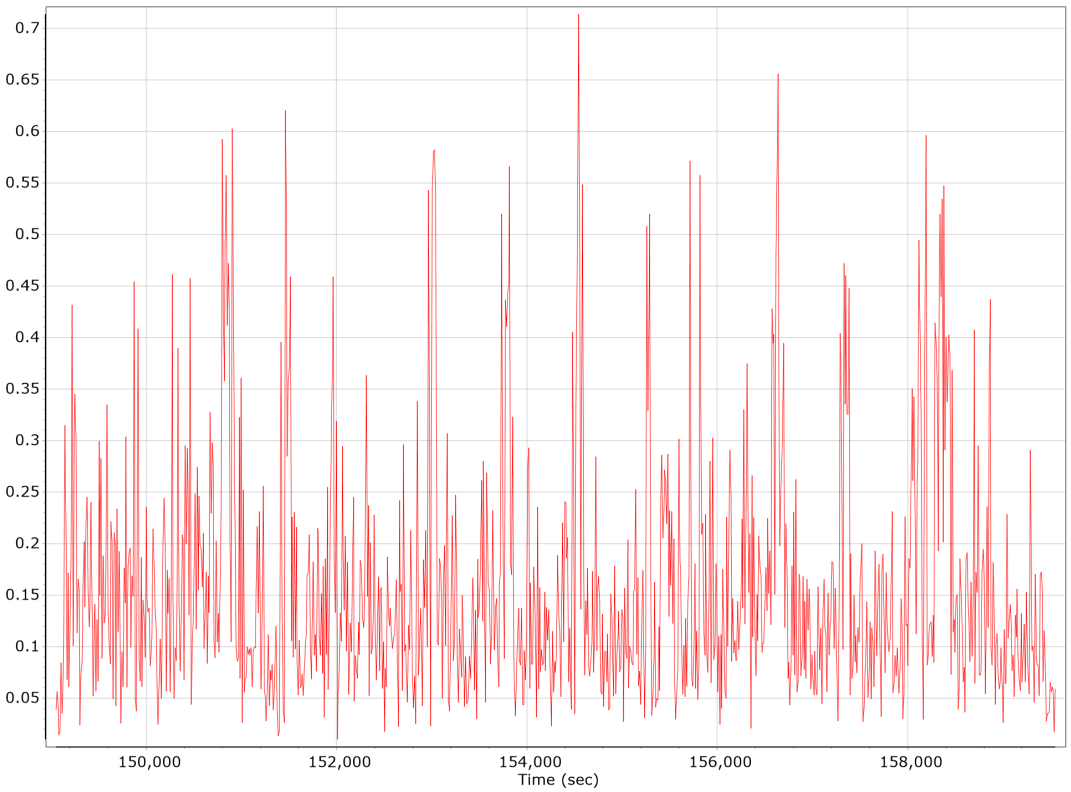
Ground Speed



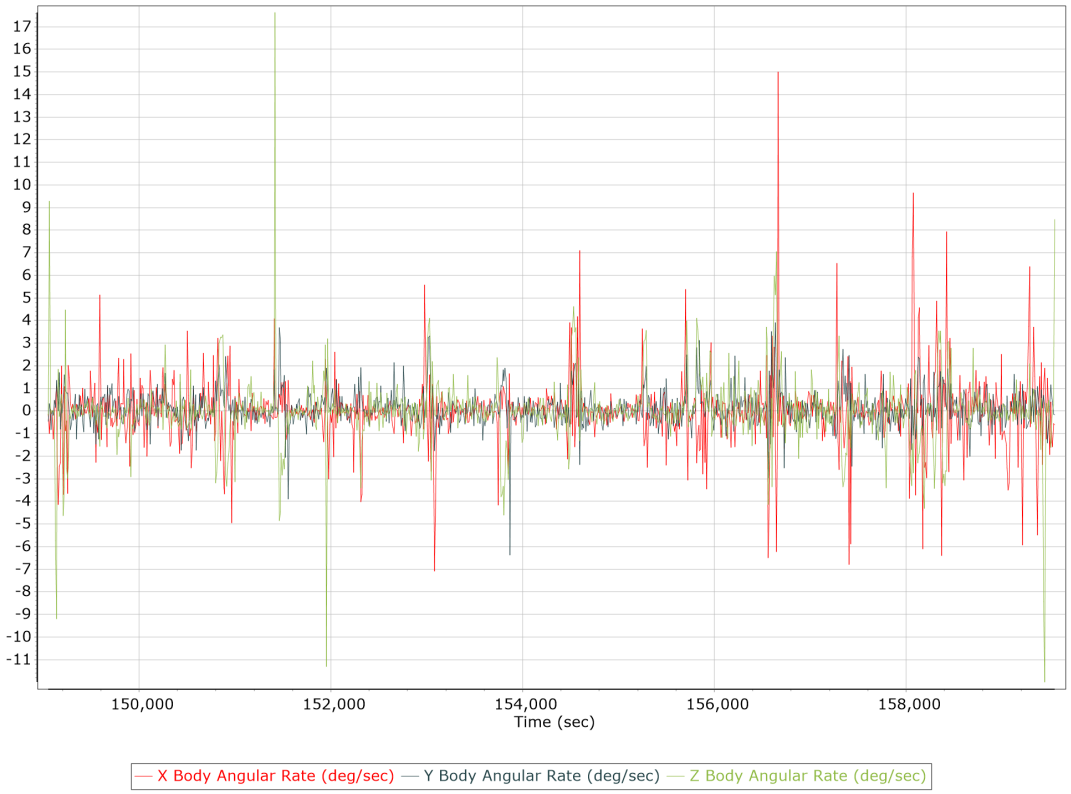
Body Acceleration



Total Body Acceleration



Body Angular Rate

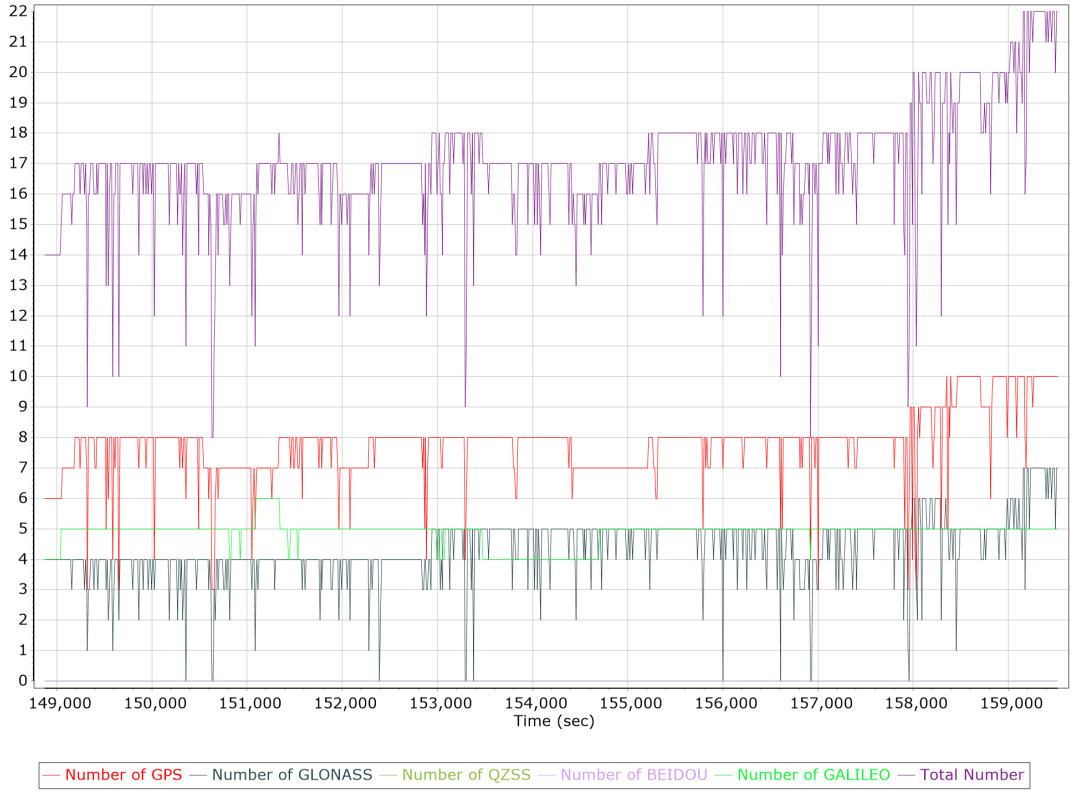


GNSS QC

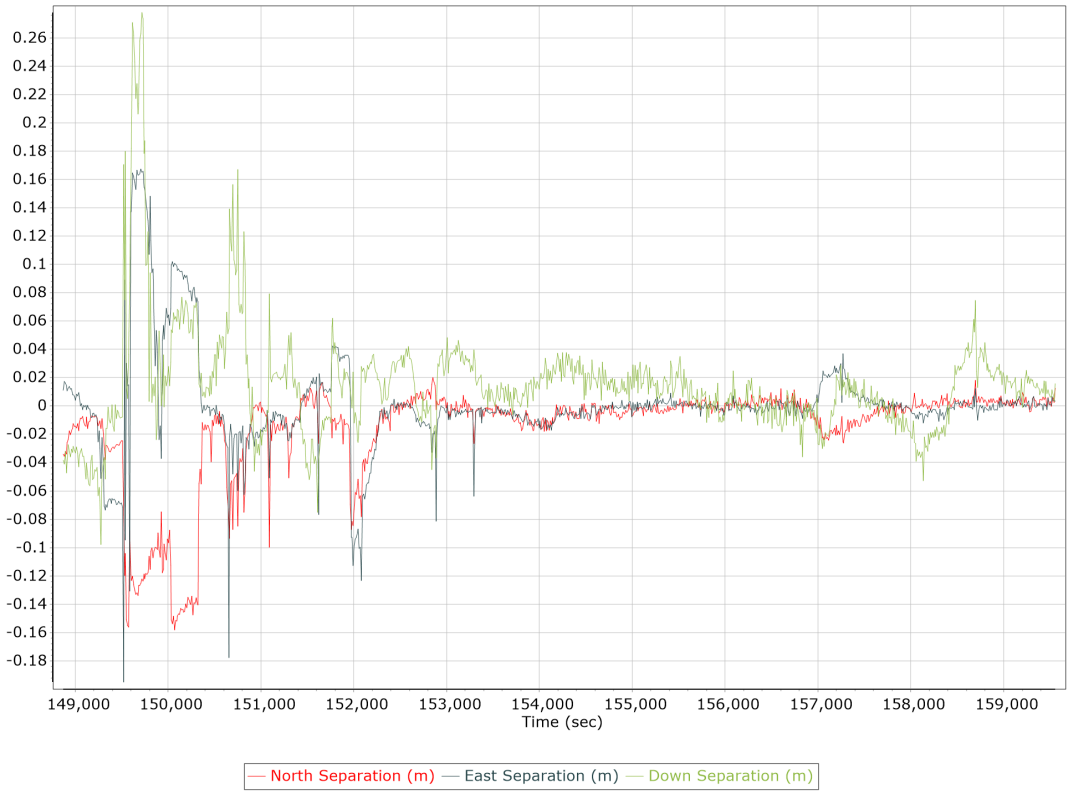
GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	2	10	8
Number of GLONASS SV	0	7	4
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	0	6	5
Total number of SV	7	22	17
PDOP	1.05	3.89	1.28
QC Solution Gaps	1.00	5.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	11016.00	0.00	15.00
Percentage	99.86	0.00	0.14

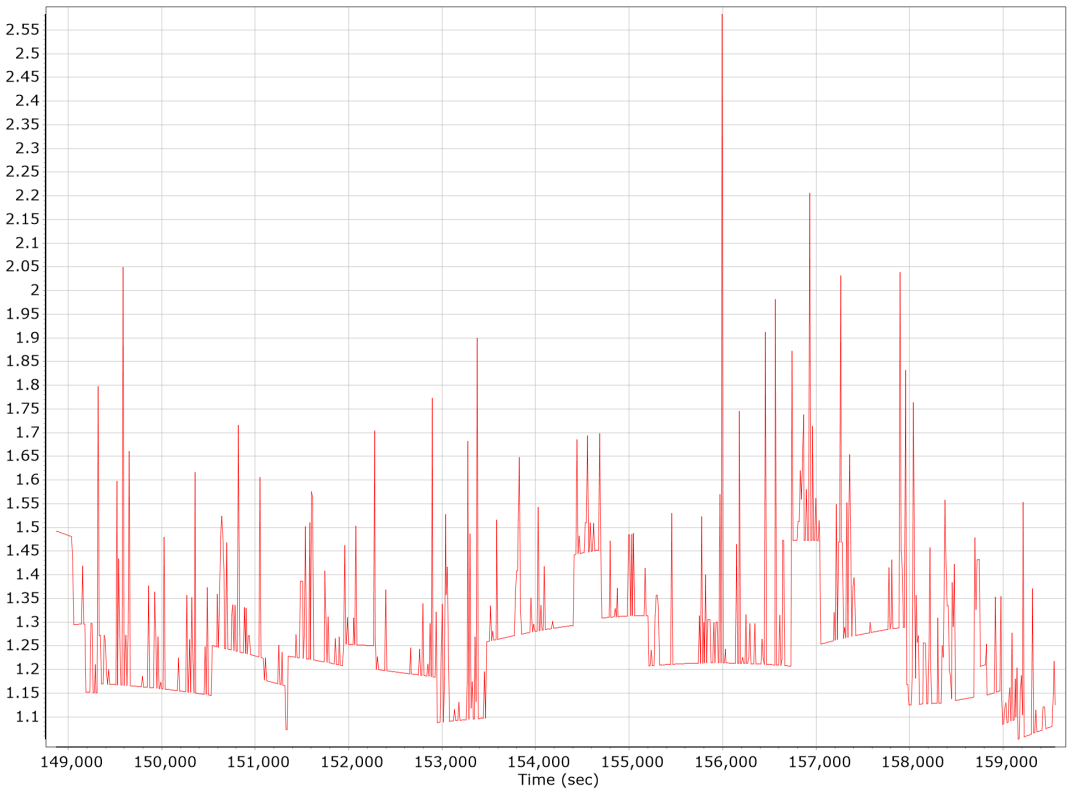
Num SVs in solution



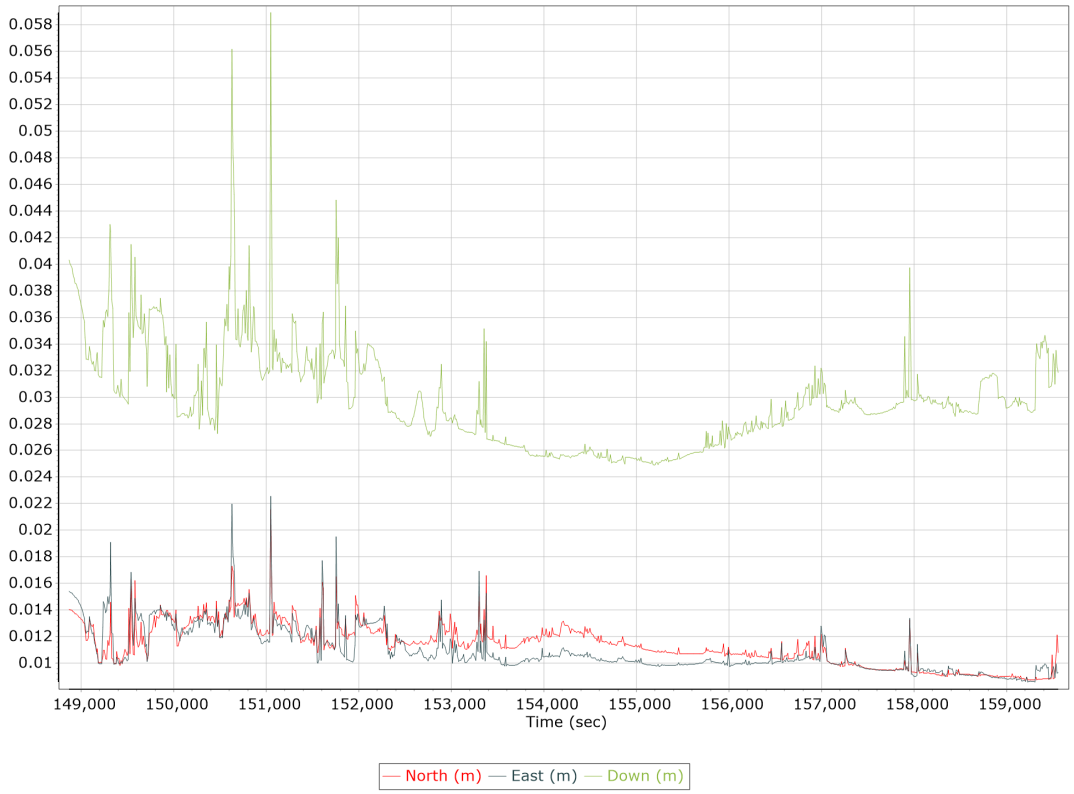
Forward/Reverse Separation



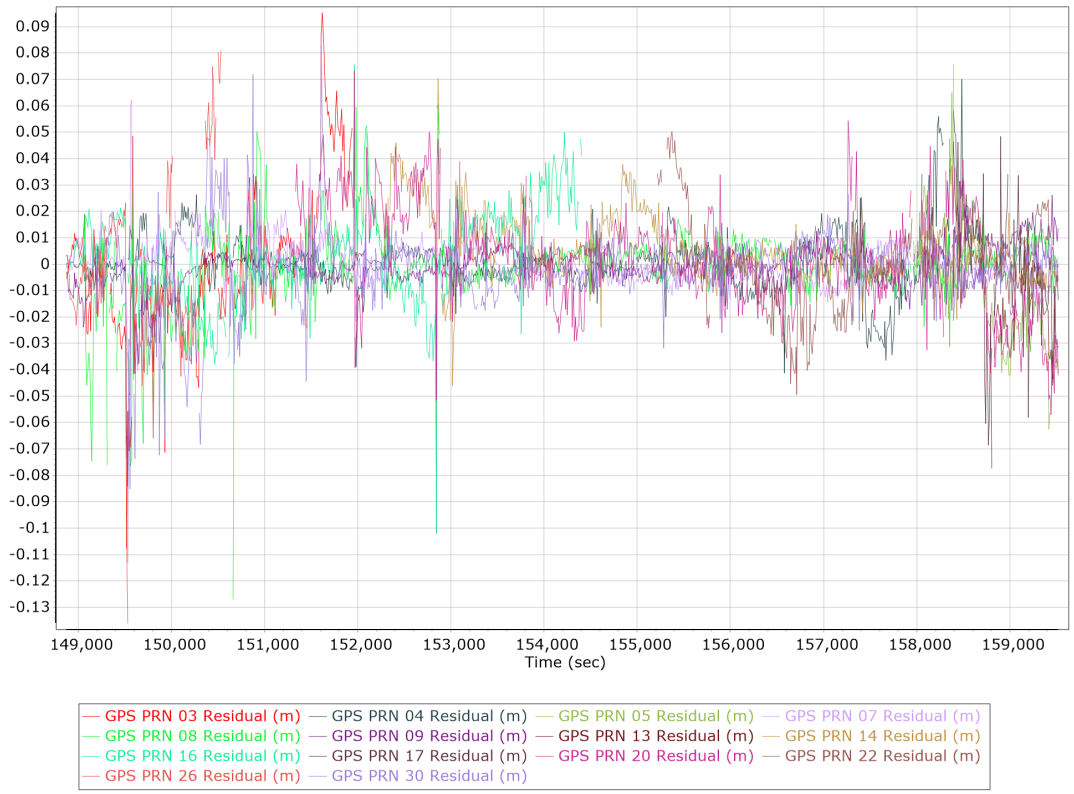
PDOP



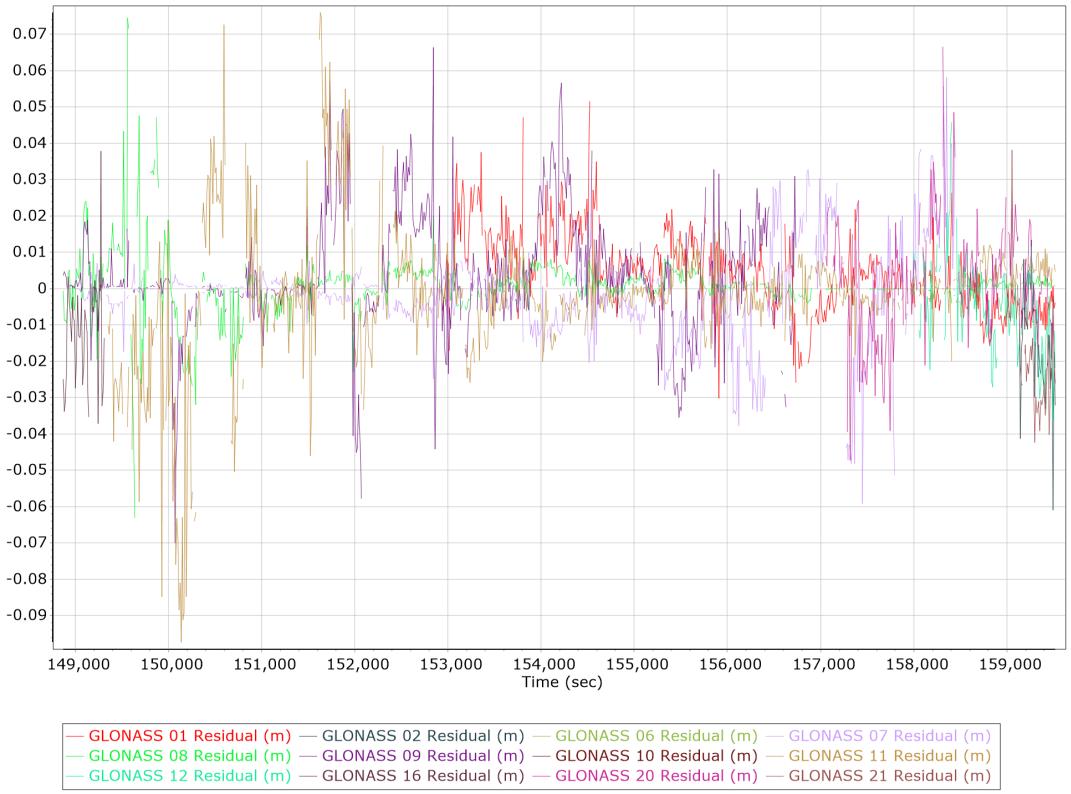
Estimated Position Accuracy



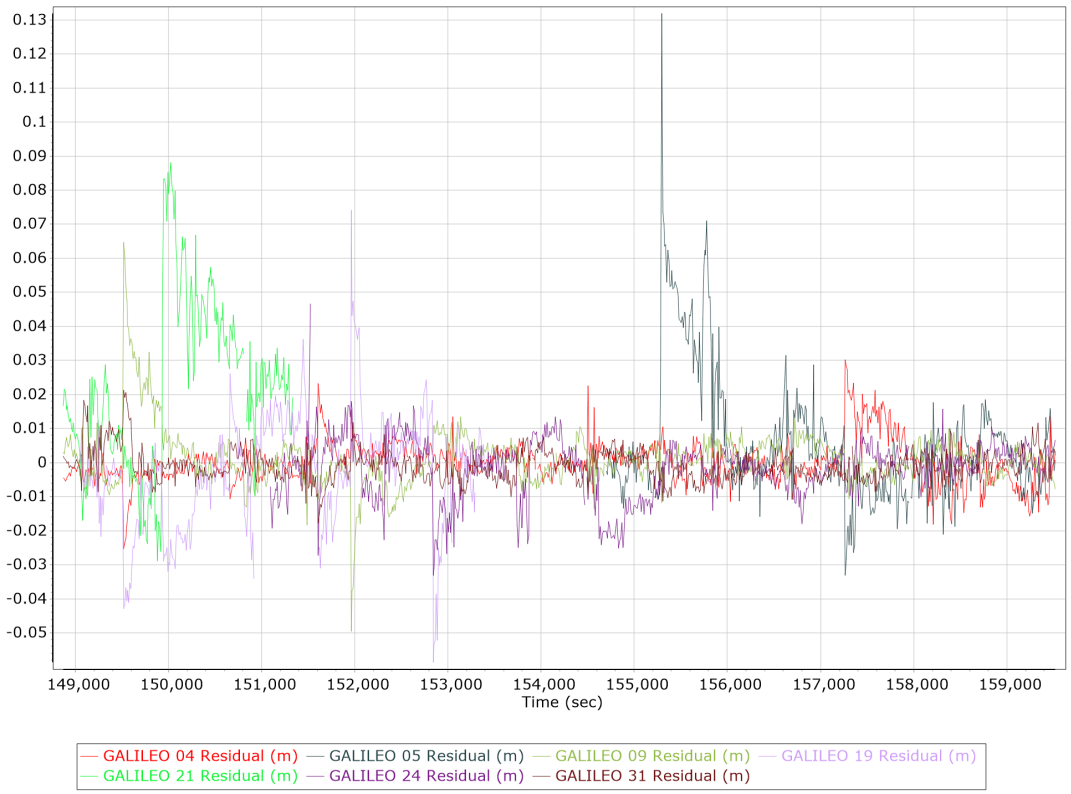
GPS Residuals



GLONASS Residuals



GALILEO Residuals



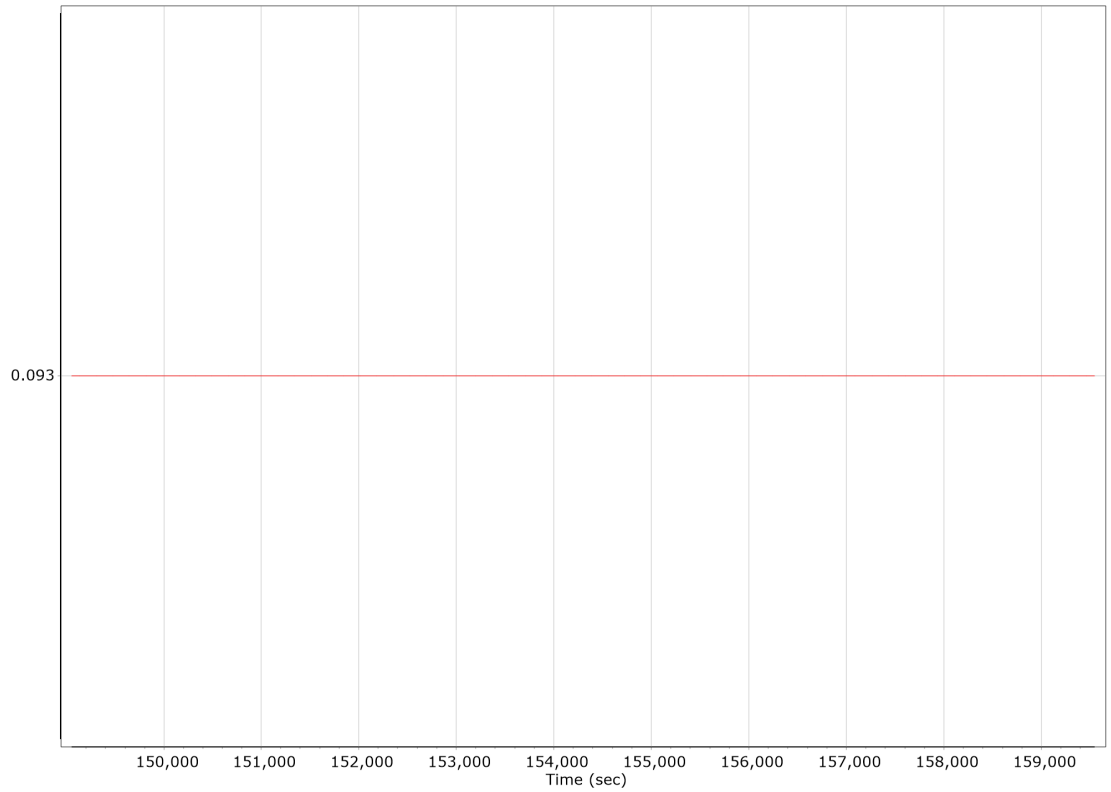
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	148473.000 (1/8/2024 5:14:33 PM)		
Processing end time	159557.000 (1/8/2024 8:19:17 PM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.093	0.062	-1.287
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

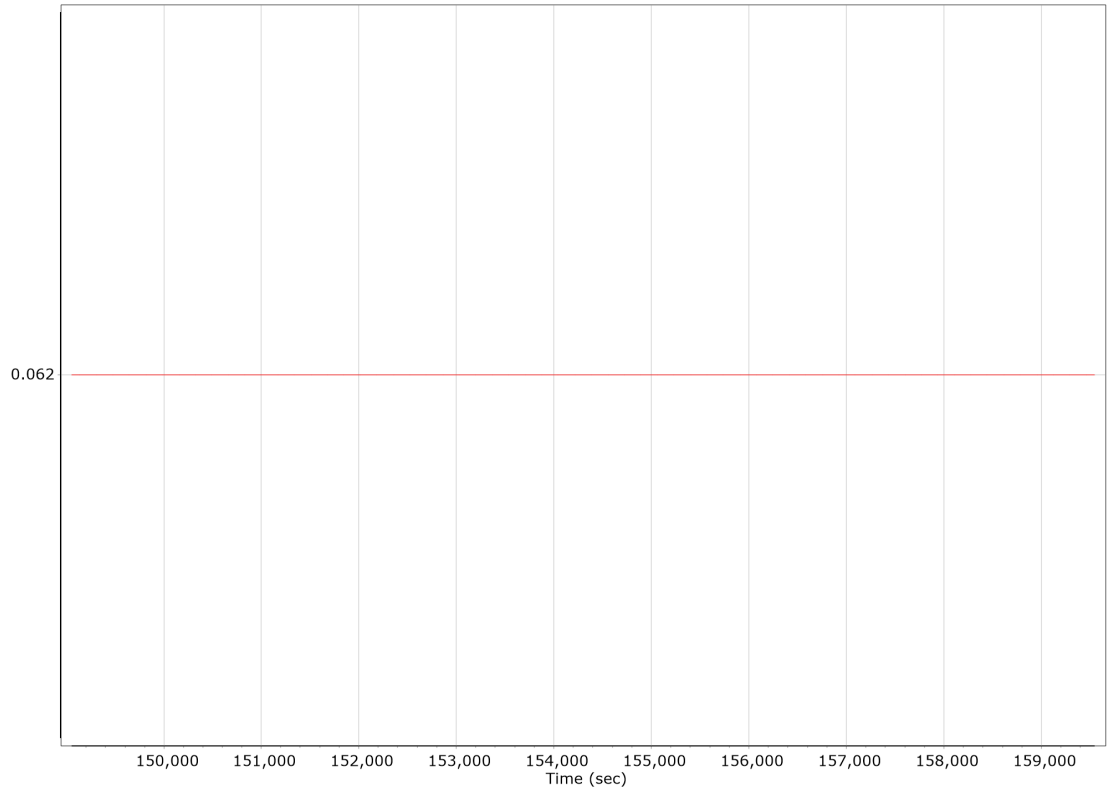
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

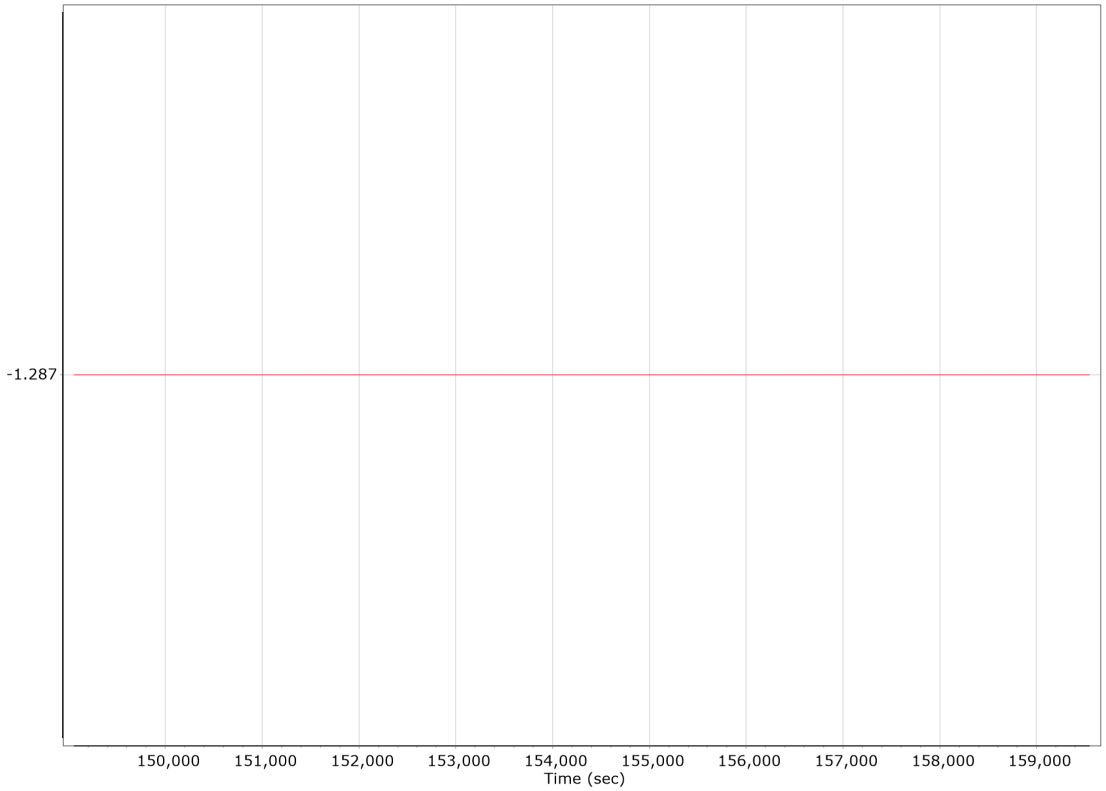
X Reference-Primary GNSS Lever Arm (m)



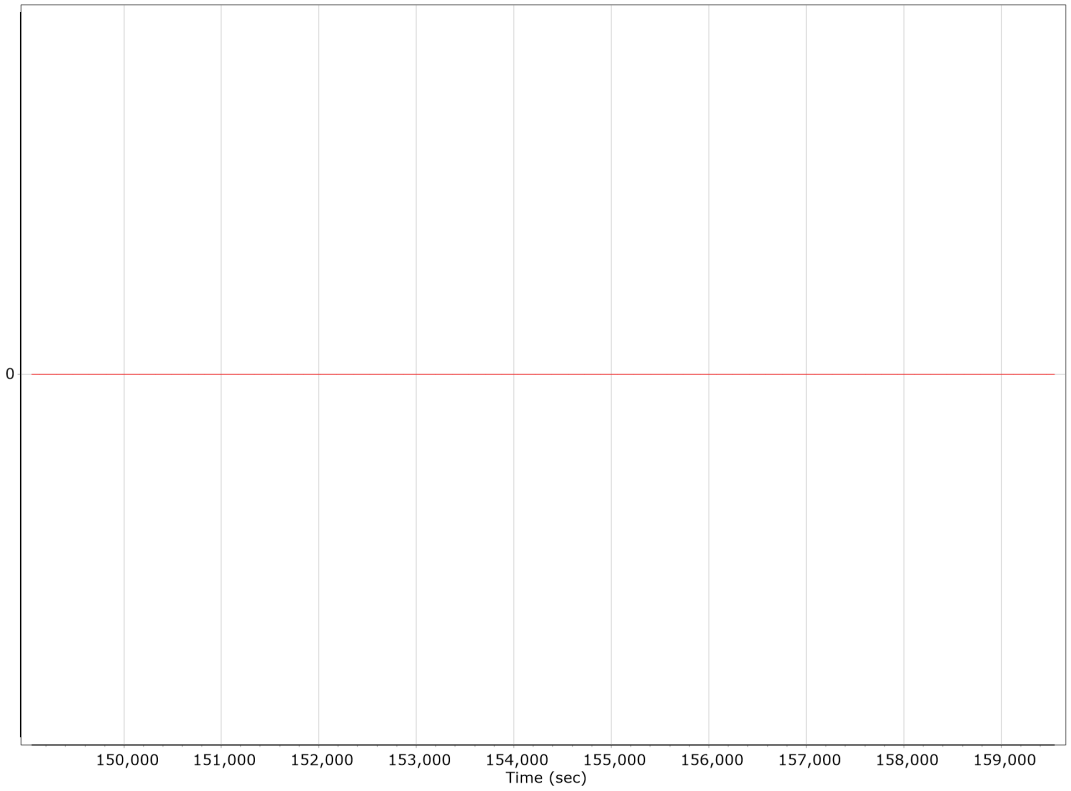
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



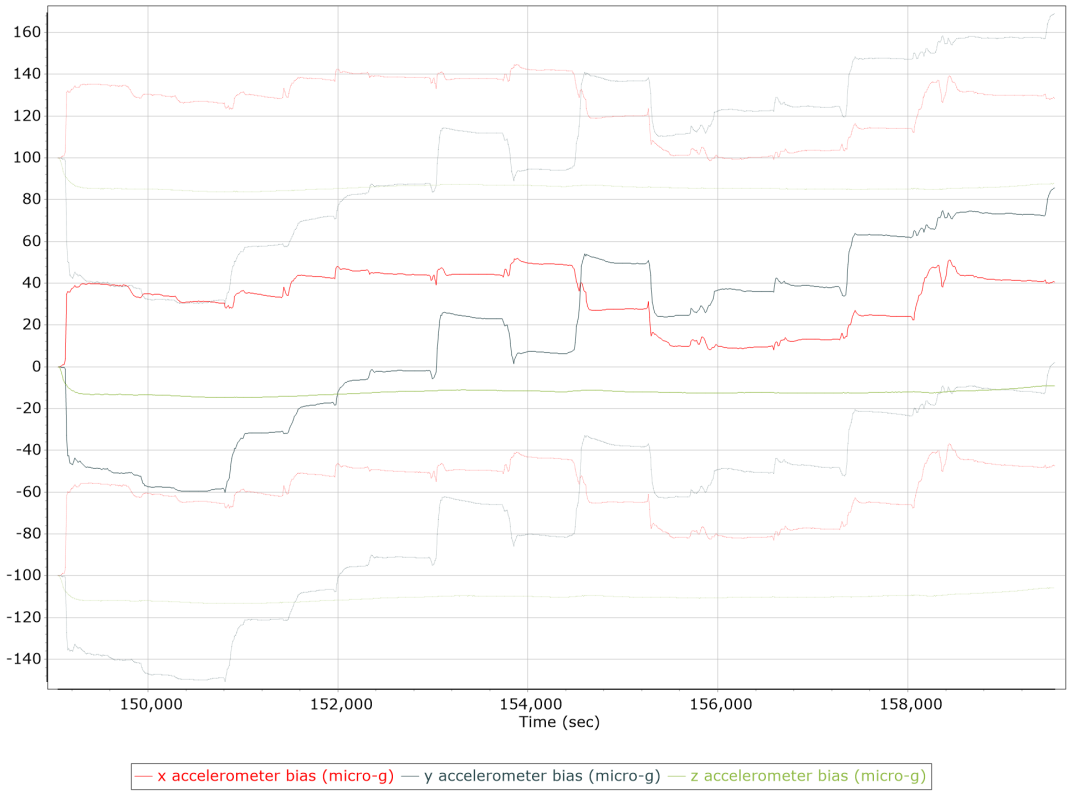
Reference-Primary GNSS Lever Arm Figure of Merit



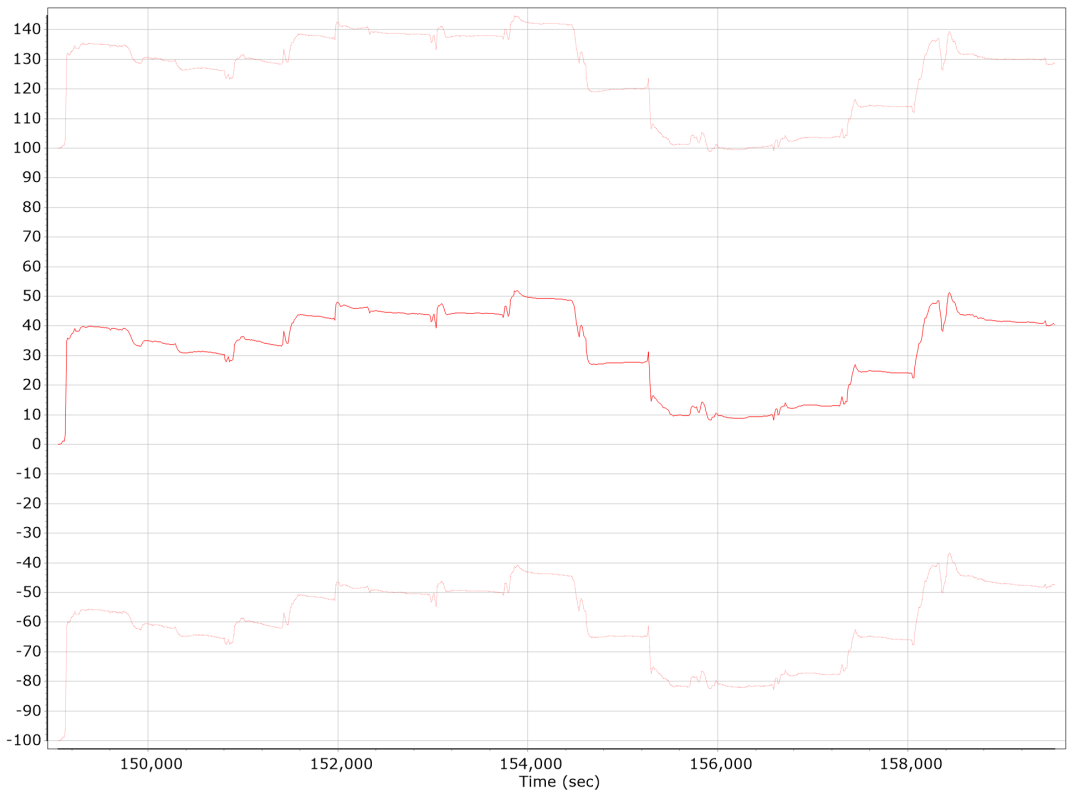
IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

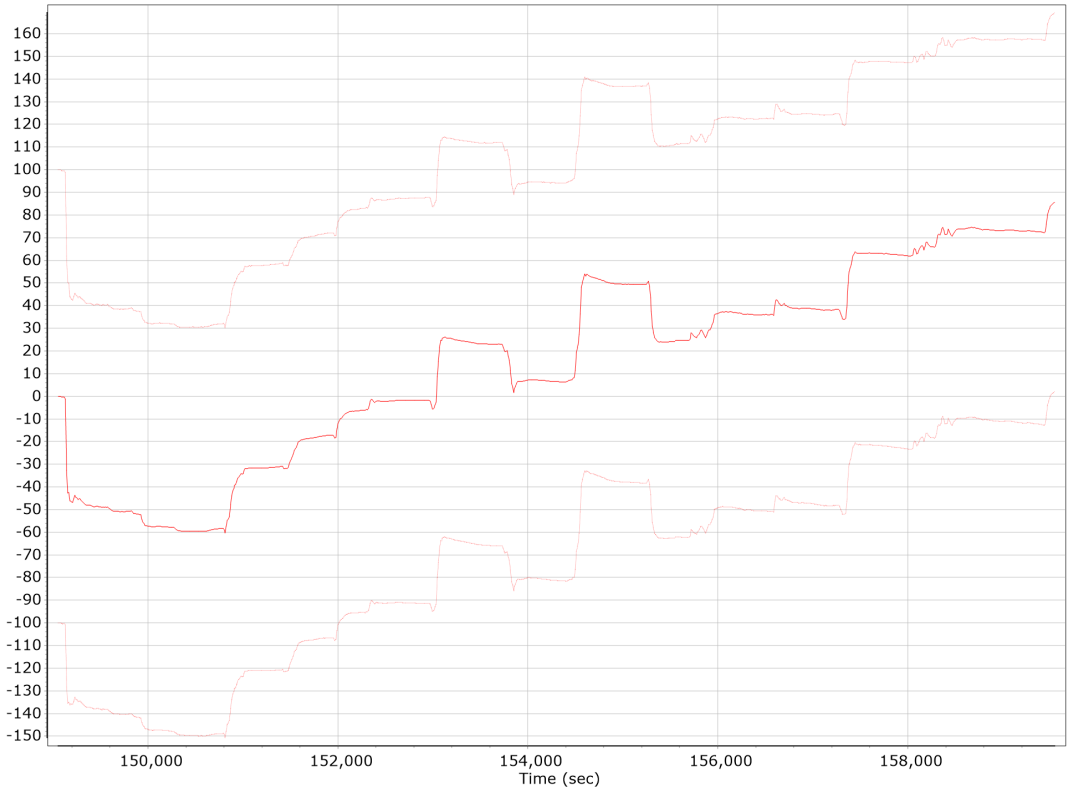
Accelerometer Bias (micro-g)



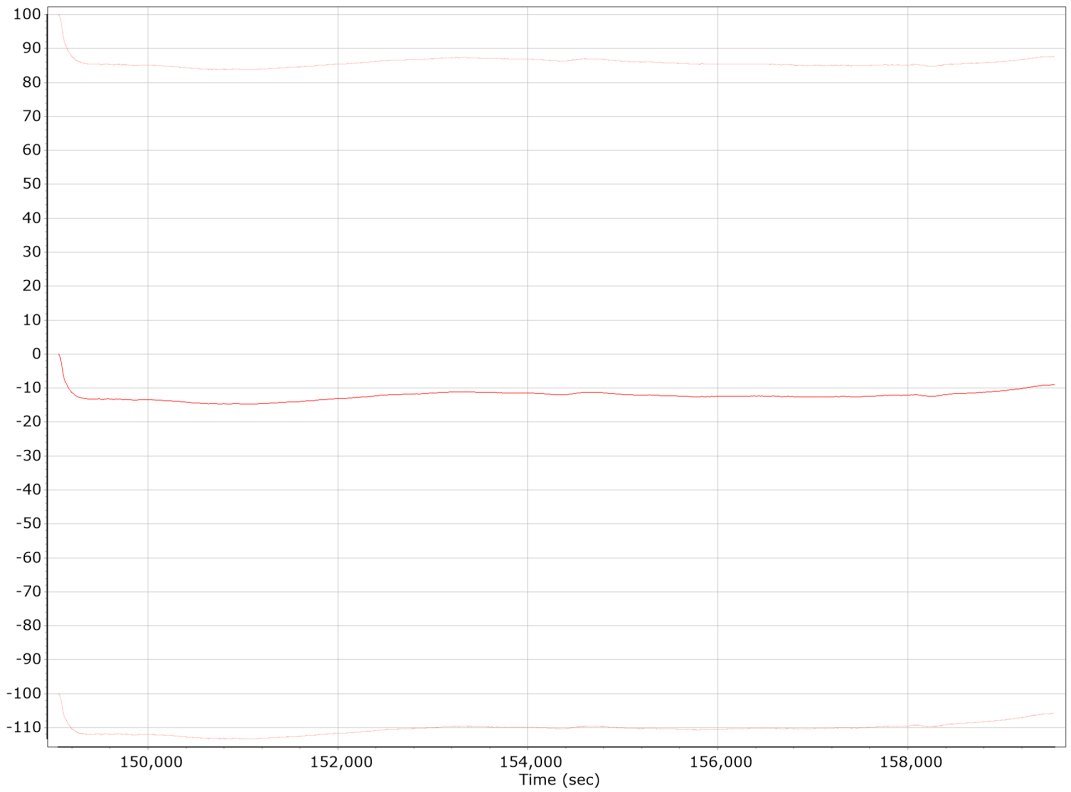
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



X Accelerometer Scale Error (ppm)



Y Accelerometer Scale Error (ppm)



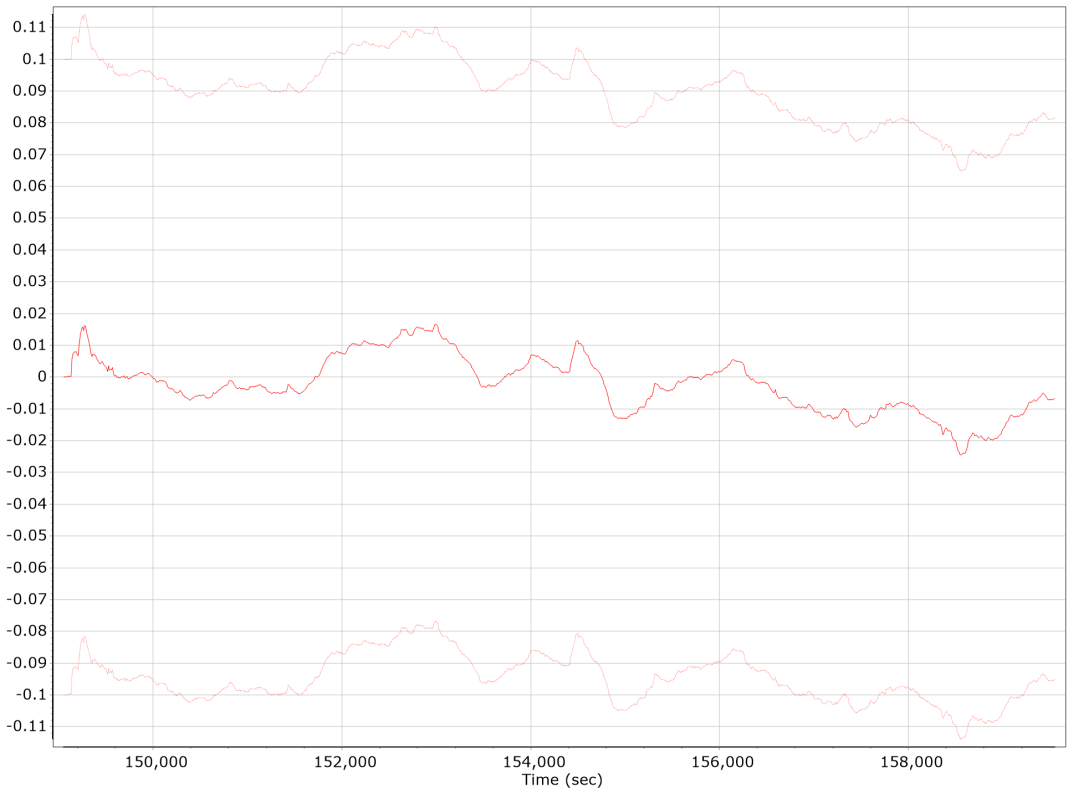
Z Accelerometer Scale Error (ppm)



Gyro Bias (deg/h)



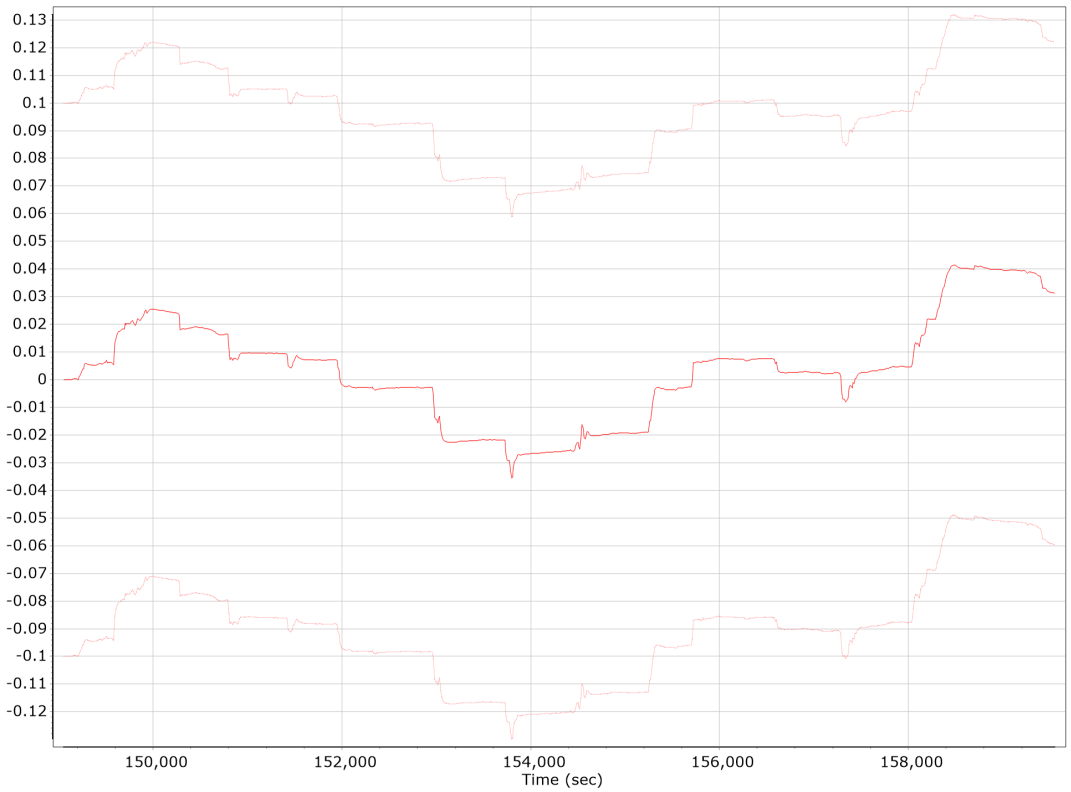
X Gyro Bias (deg/h)



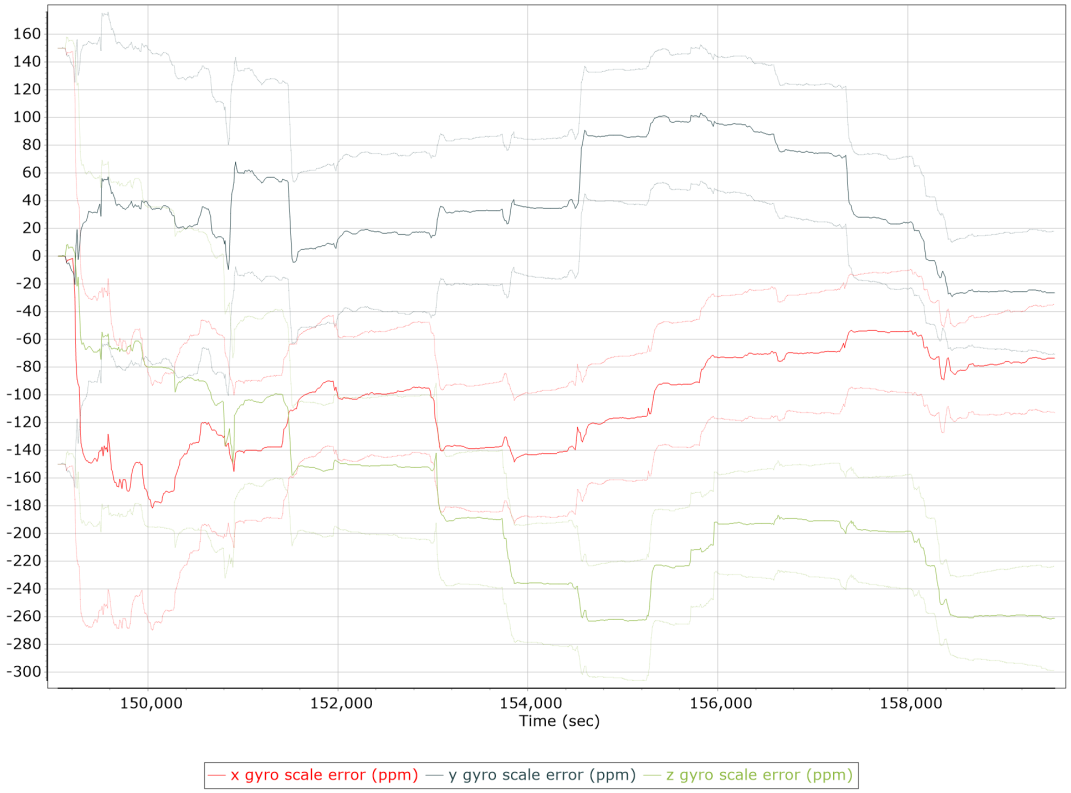
Y Gyro Bias (deg/h)



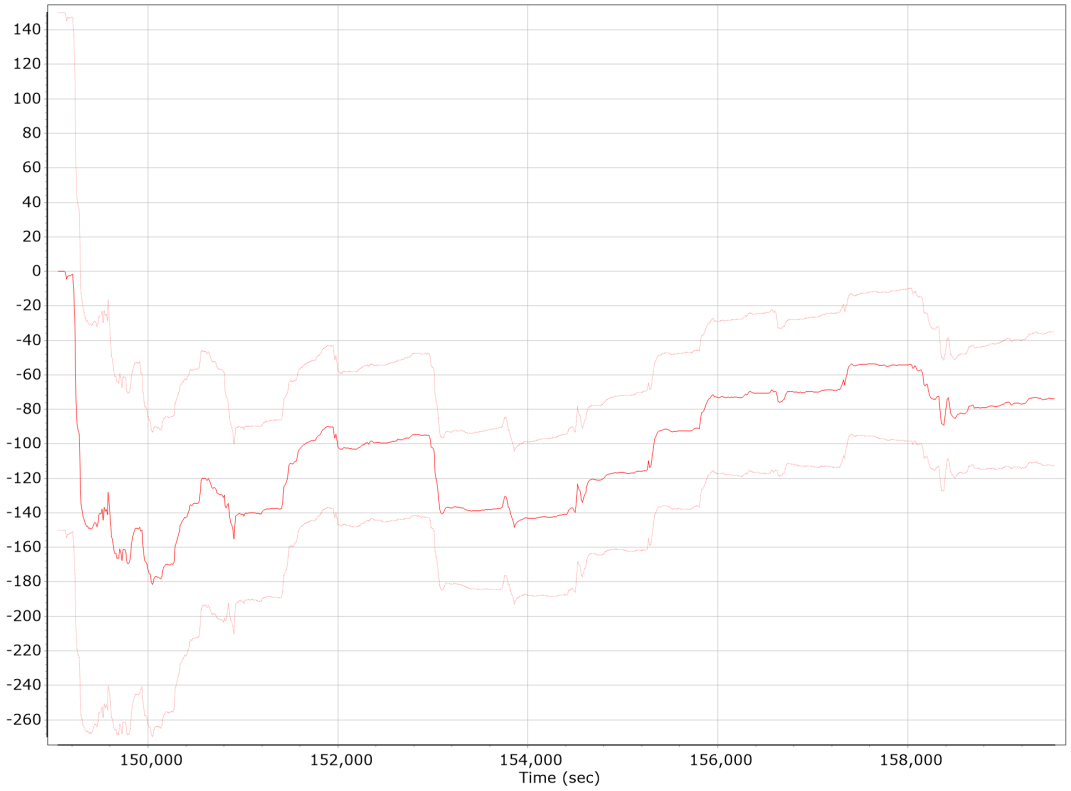
Z Gyro Bias (deg/h)



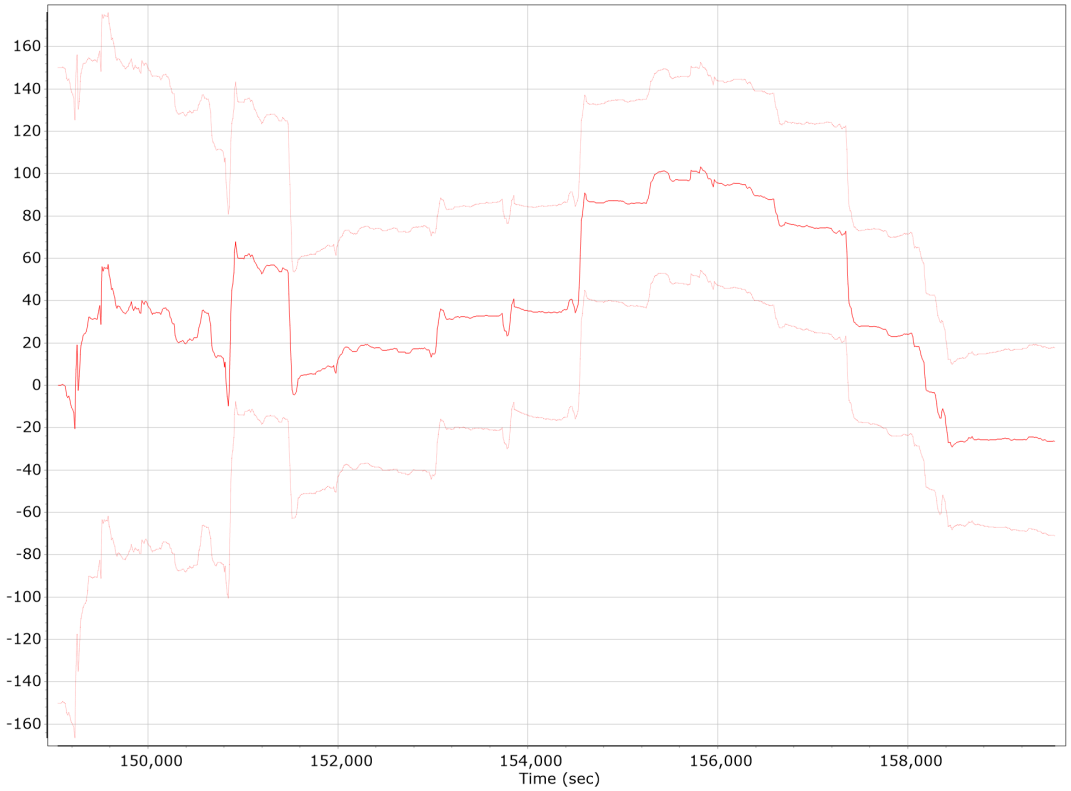
Gyro Scale Error (ppm)



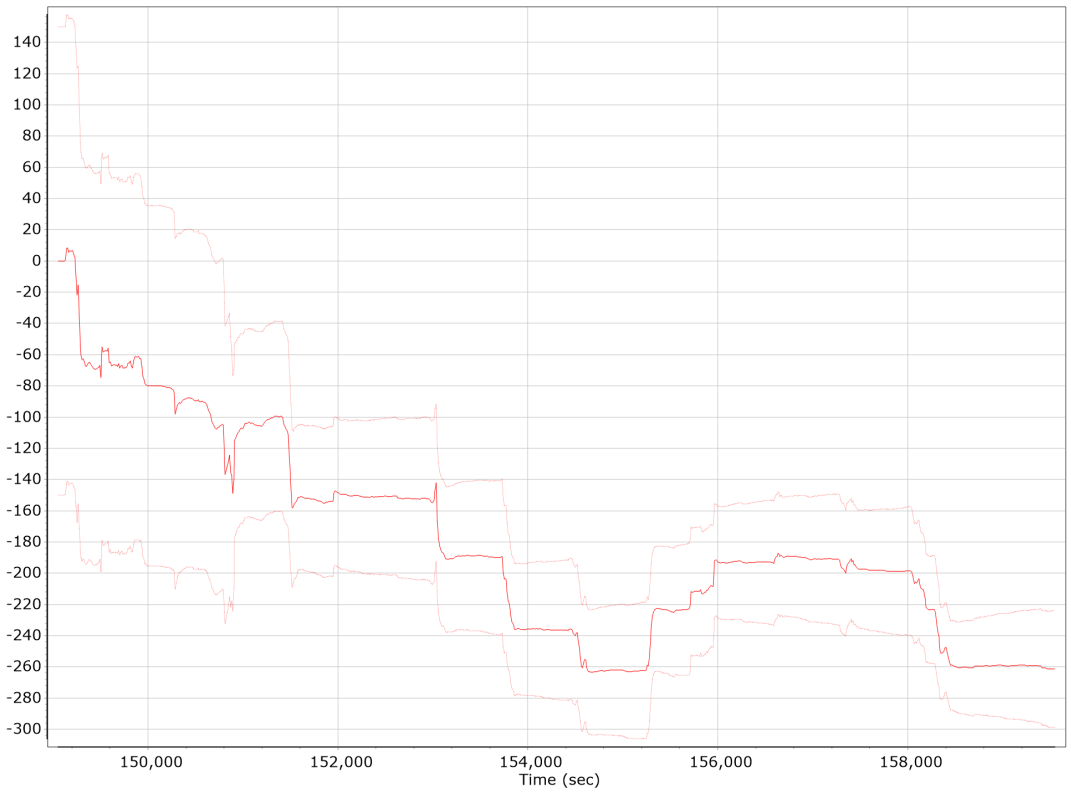
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)



Z Gyro Scale Error (ppm)



Smoothed Performance Metrics

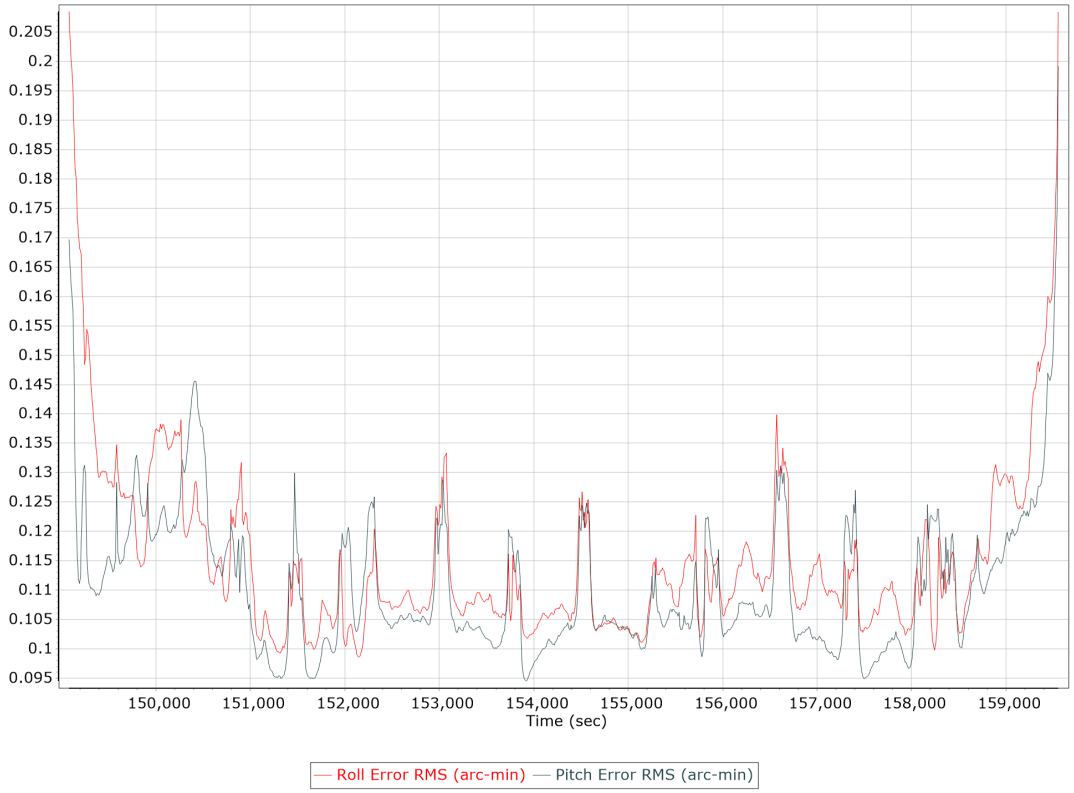
Position Error RMS (m)



Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)



Heading Error RMS (arc-min)

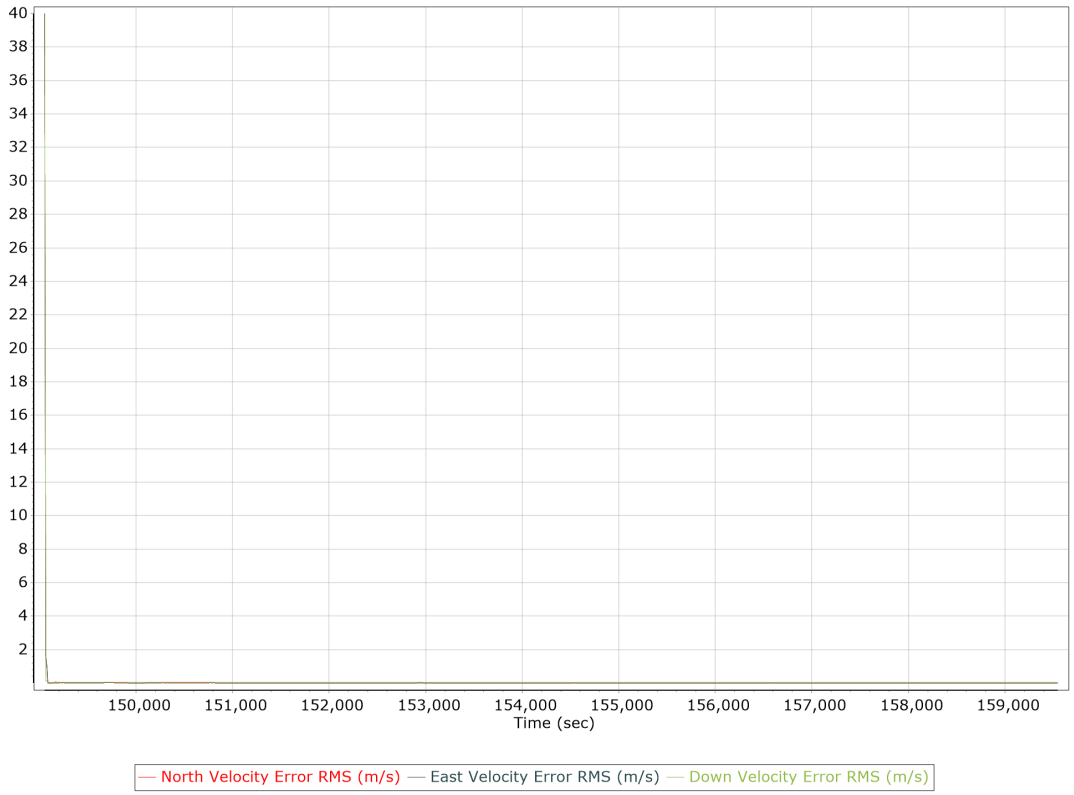


Forward Processed Performance Metrics

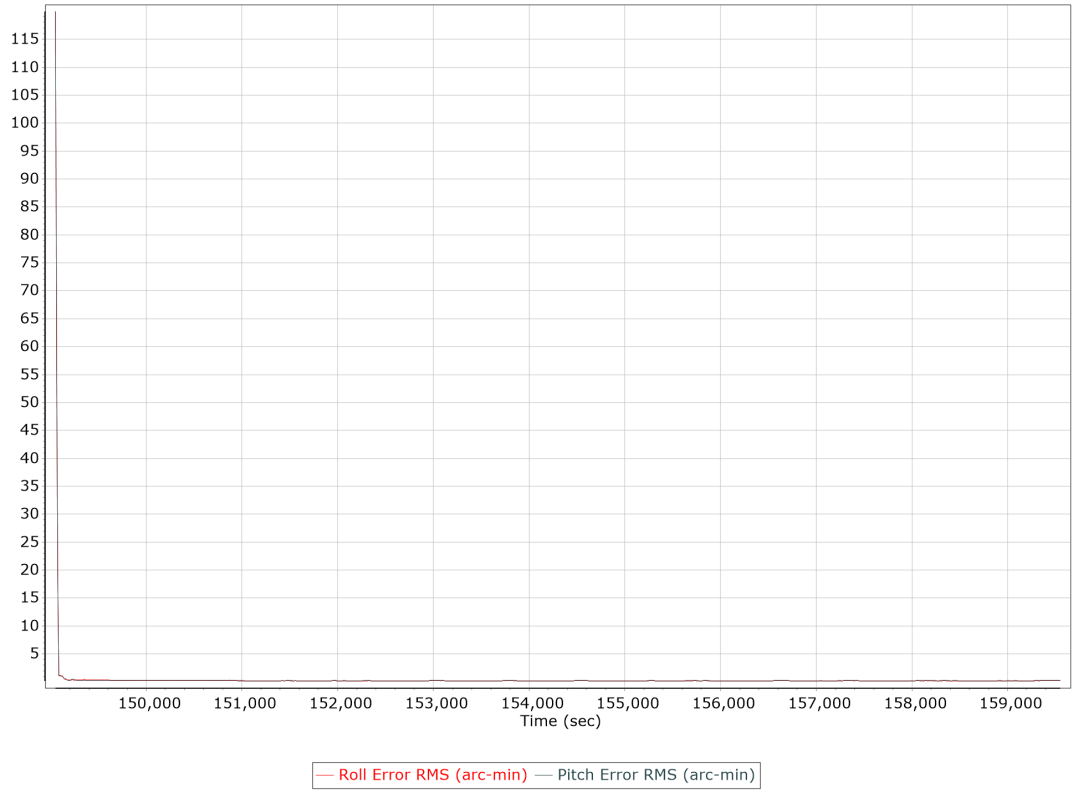
Position Error RMS (m)



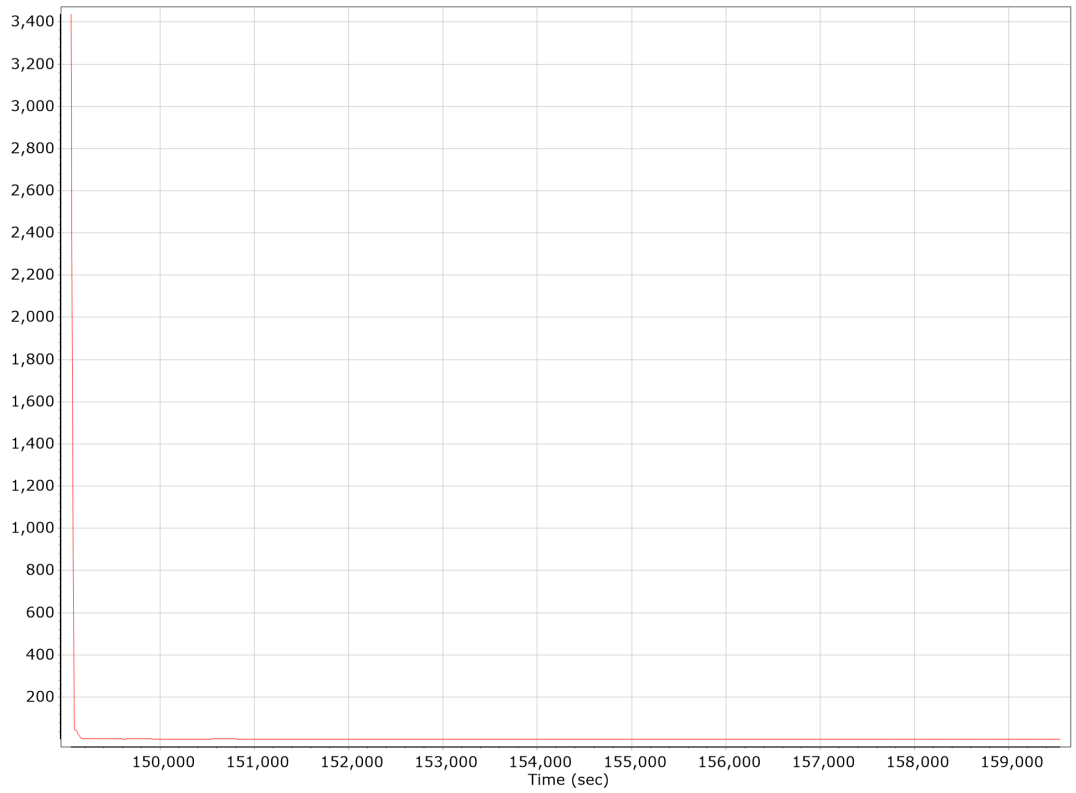
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)



Heading Error RMS (arc-min)

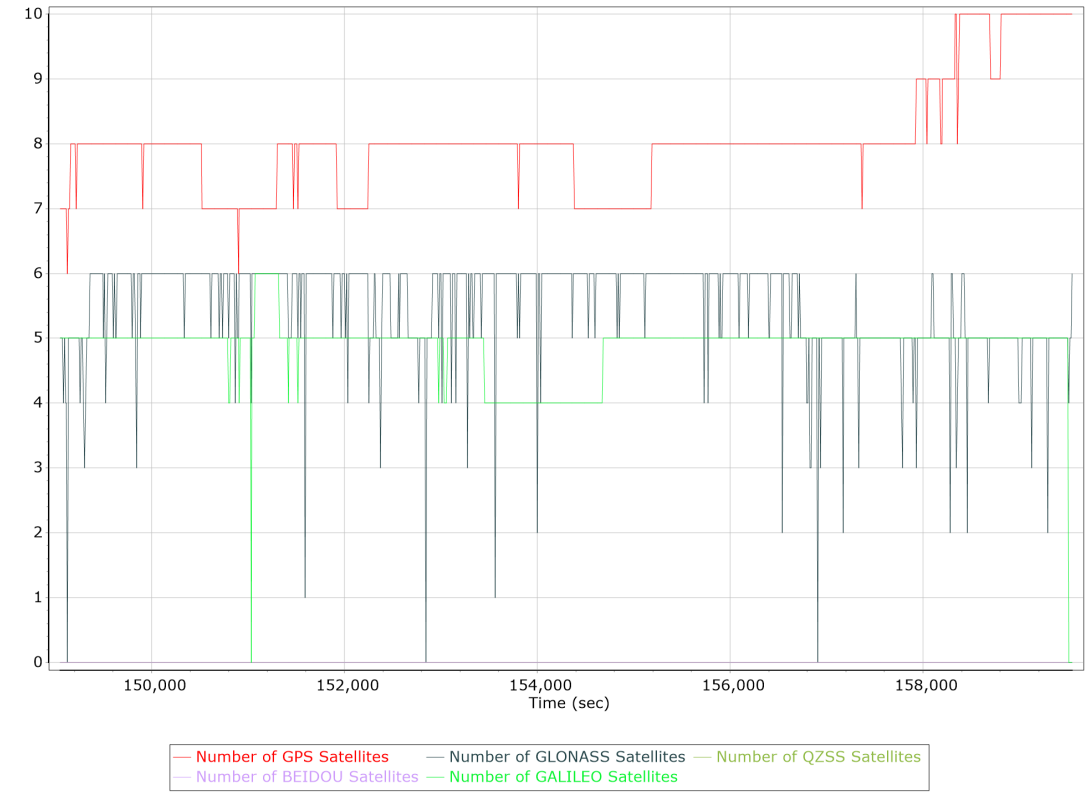


Forward Processed Solution Status

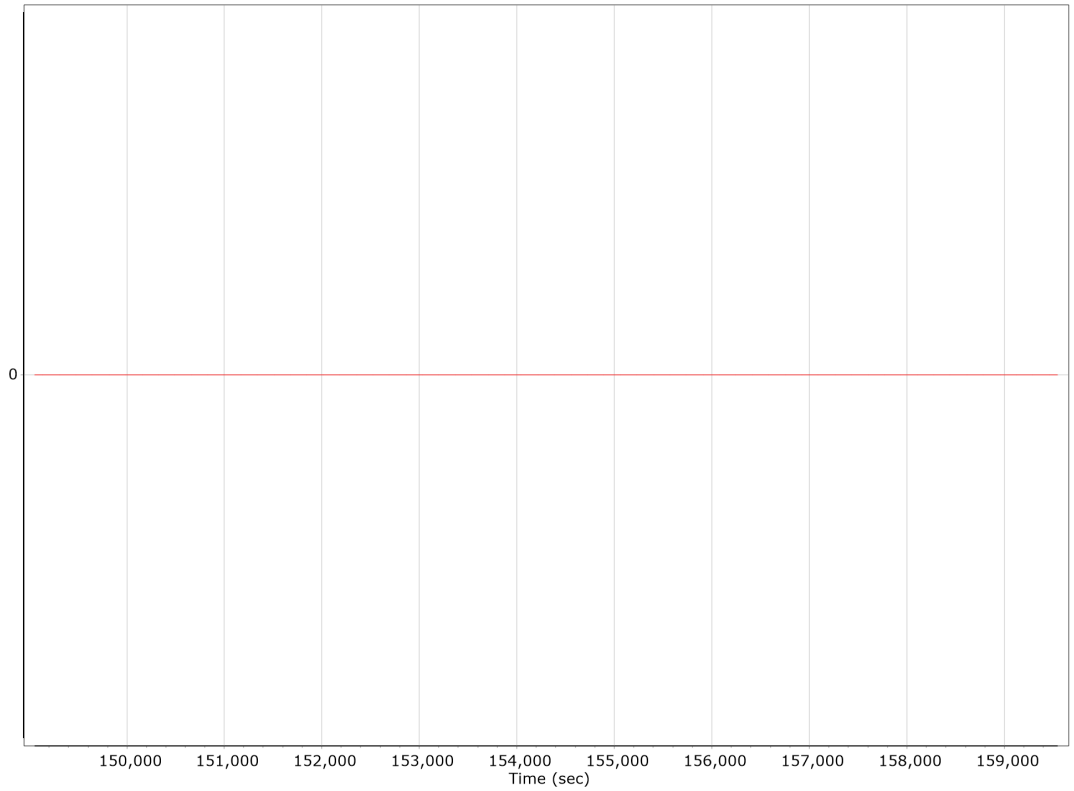
Processing Mode



Number of Satellites



Baseline Length



General Information

Mission Information

Project name	09252023A_4040
Processing date	2024-01-10 20:11:21
Mission date	2023-09-25 19:30:58
Mission duration	02:31:58.655
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N10451
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
230925_193039_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm2680.23g	GLONASS Broadcast Ephemeris
Ephm2680.23n	GPS Broadcast Ephemeris
IGS0OPSFIN_20232670000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232680000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232690000_01D_15M_ORB.SP3	GPS Precise Ephemeris

Output Files

Filename	File type
sbet_09252023A_4040.out	SBET Trajectory File

Rover Data Summary

First raw data file	230925_193039_INS-GPS_1.raw		
Last raw data file	230925_193039_INS-GPS_1.raw		
Start GPS week	2281		
Start time	156639.136 (9/25/2023 7:30:39 PM)		
End time	165757.791 (9/25/2023 10:02:37 PM)		
Start of fine alignment	156663.650 (9/25/2023 7:31:03 PM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.000	0.000	-0.900
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

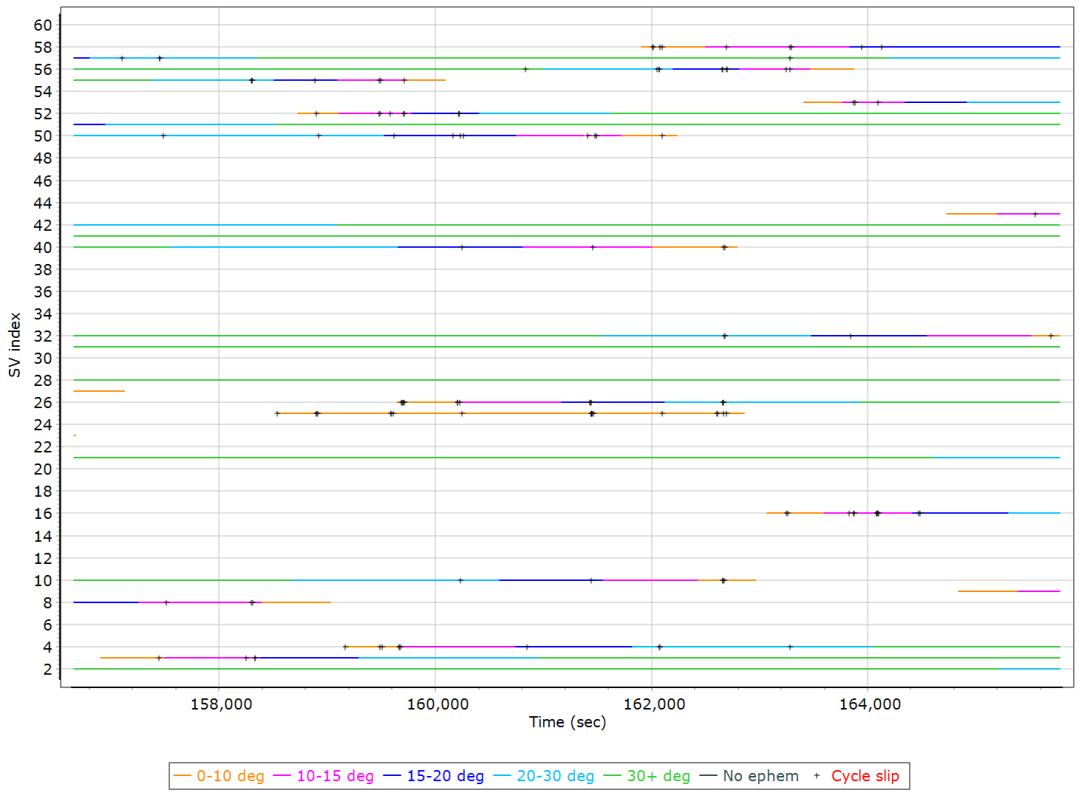
Rover Data QC

Raw IMU Import QC Summary

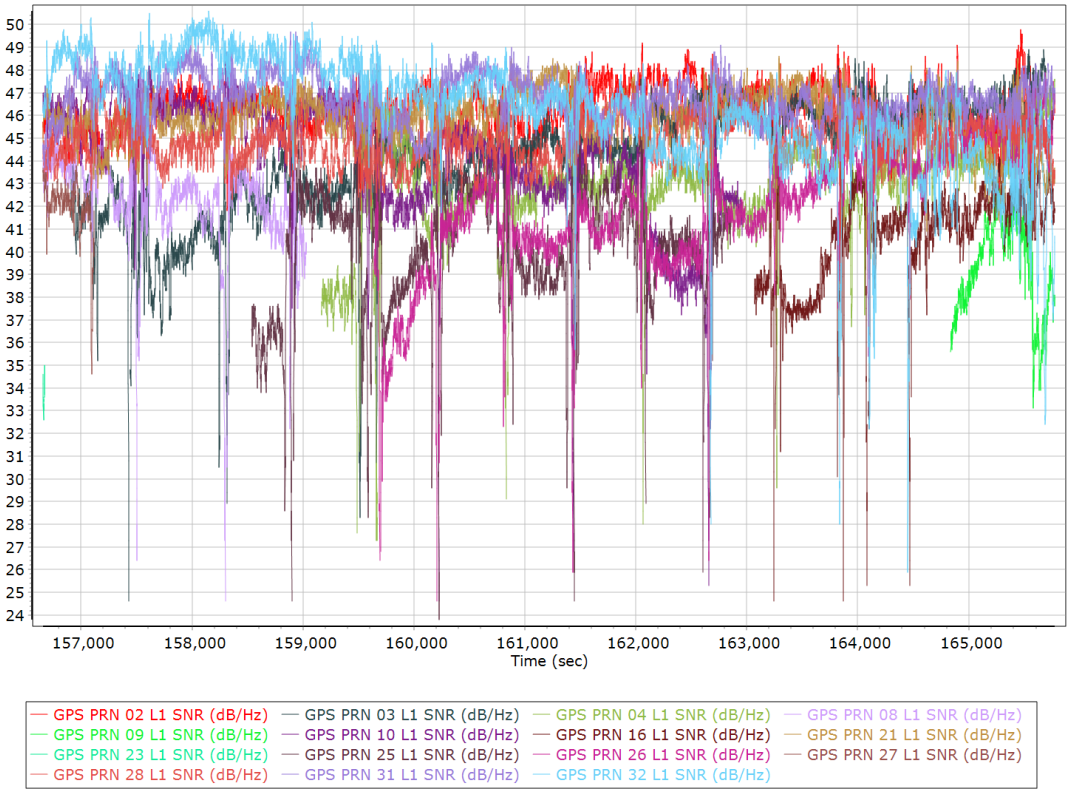
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_09252023A_4040.log
IMU Records Processed	1823478
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

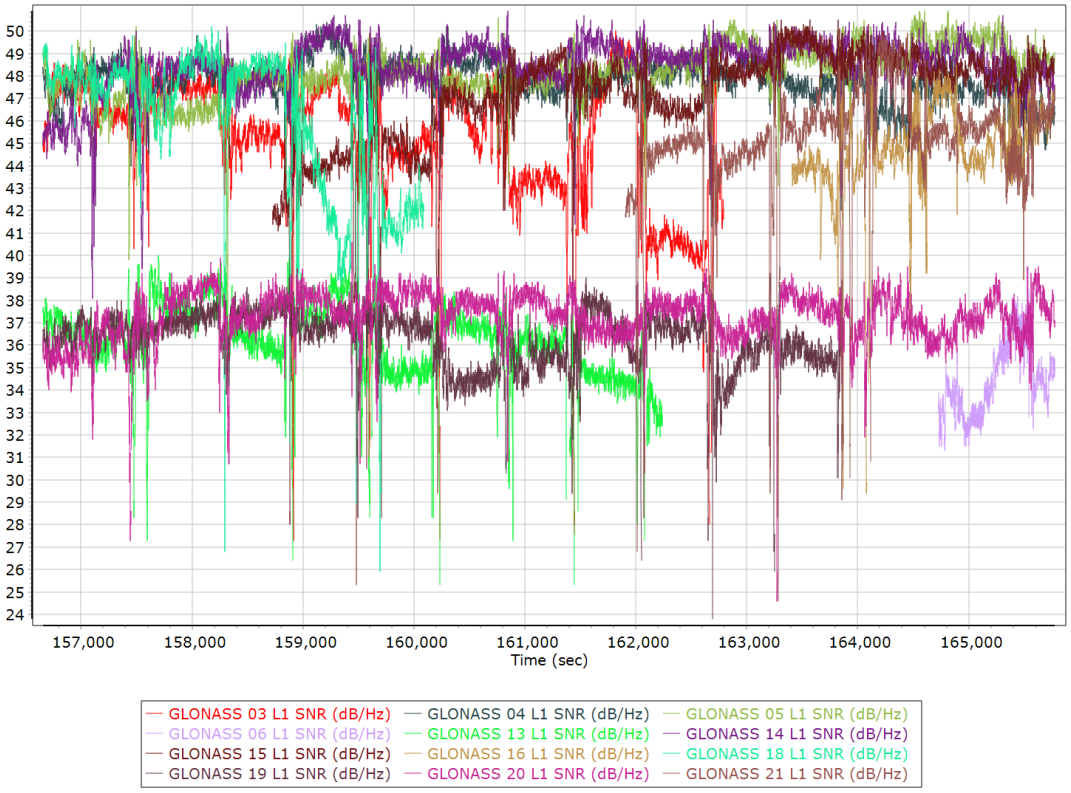
GPS/GLONASS L1 Satellite Lock/Elevation



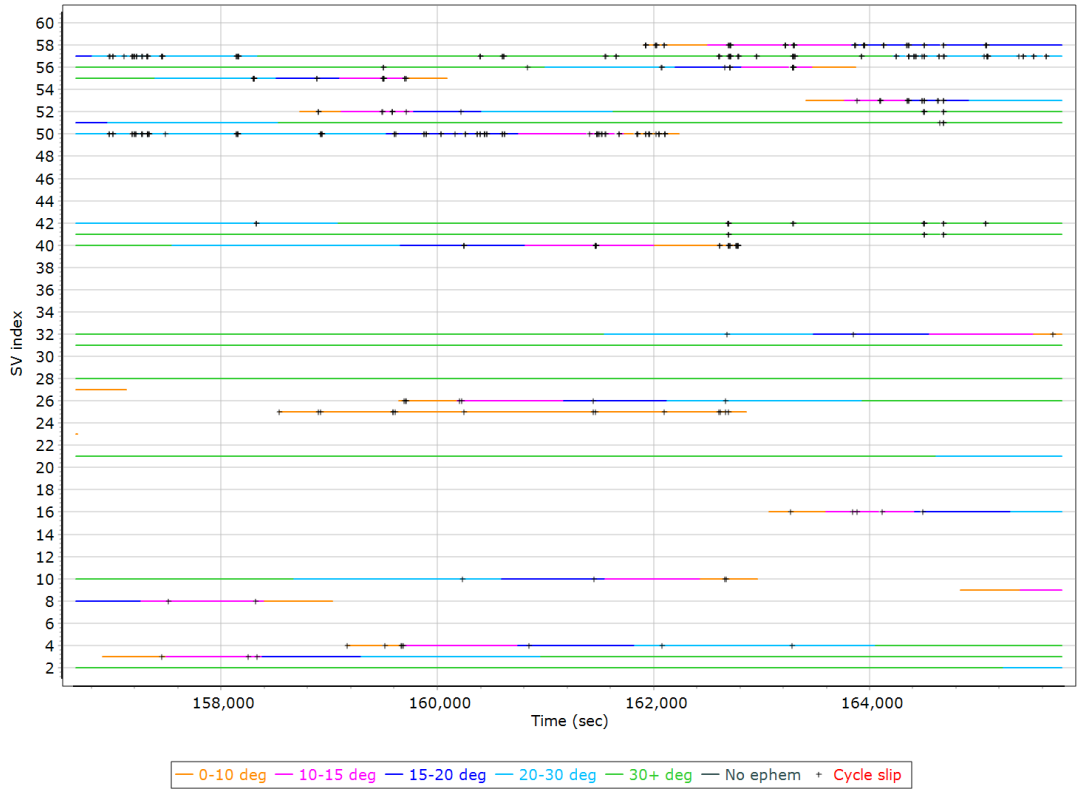
GPS L1 SNR



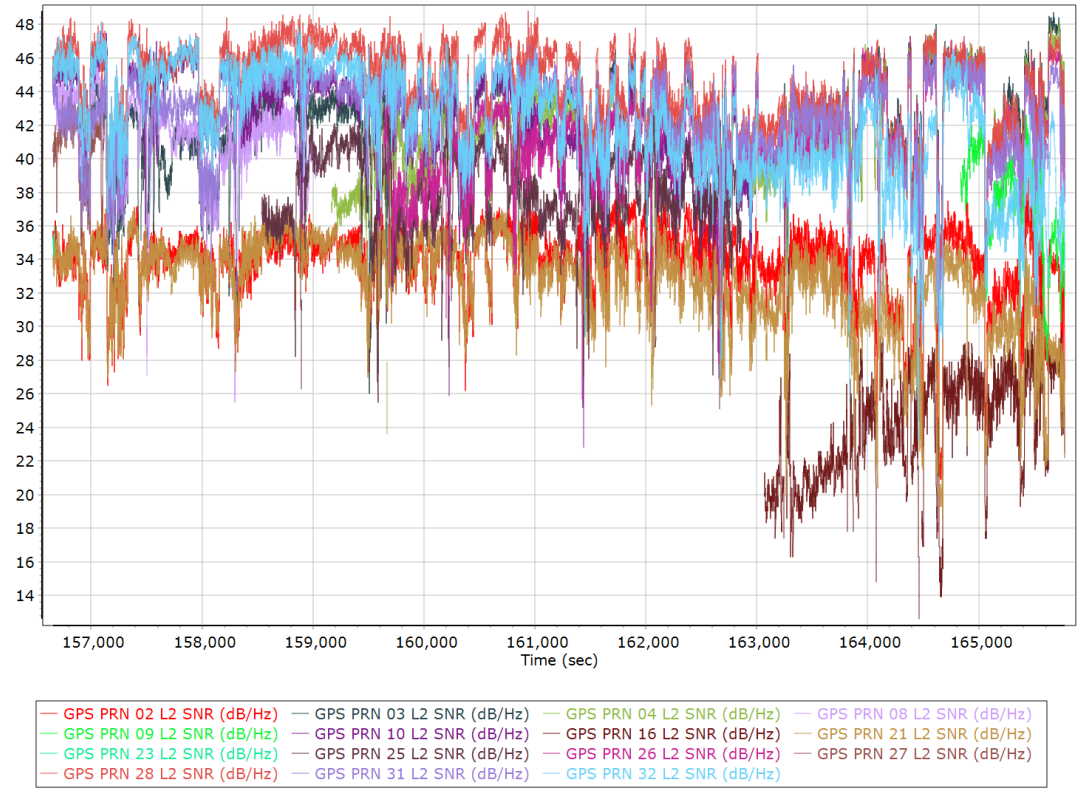
GLONASS L1 SNR



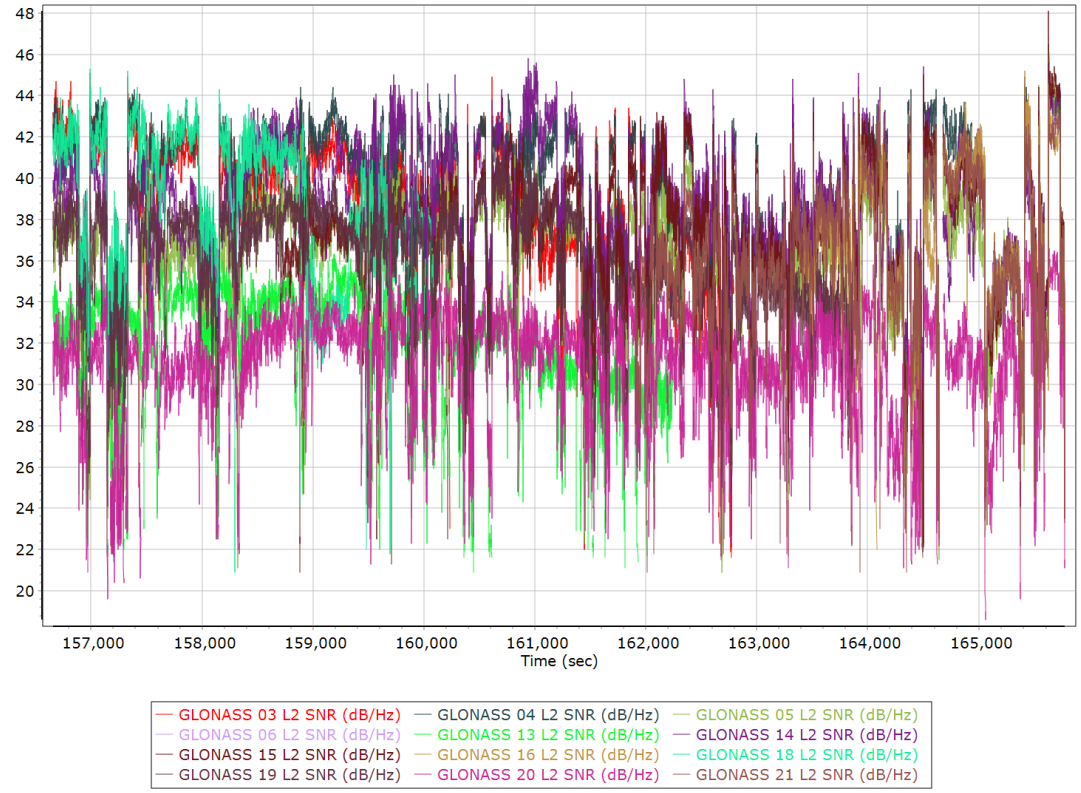
GPS/GLONASS L2 Satellite Lock/Elevation



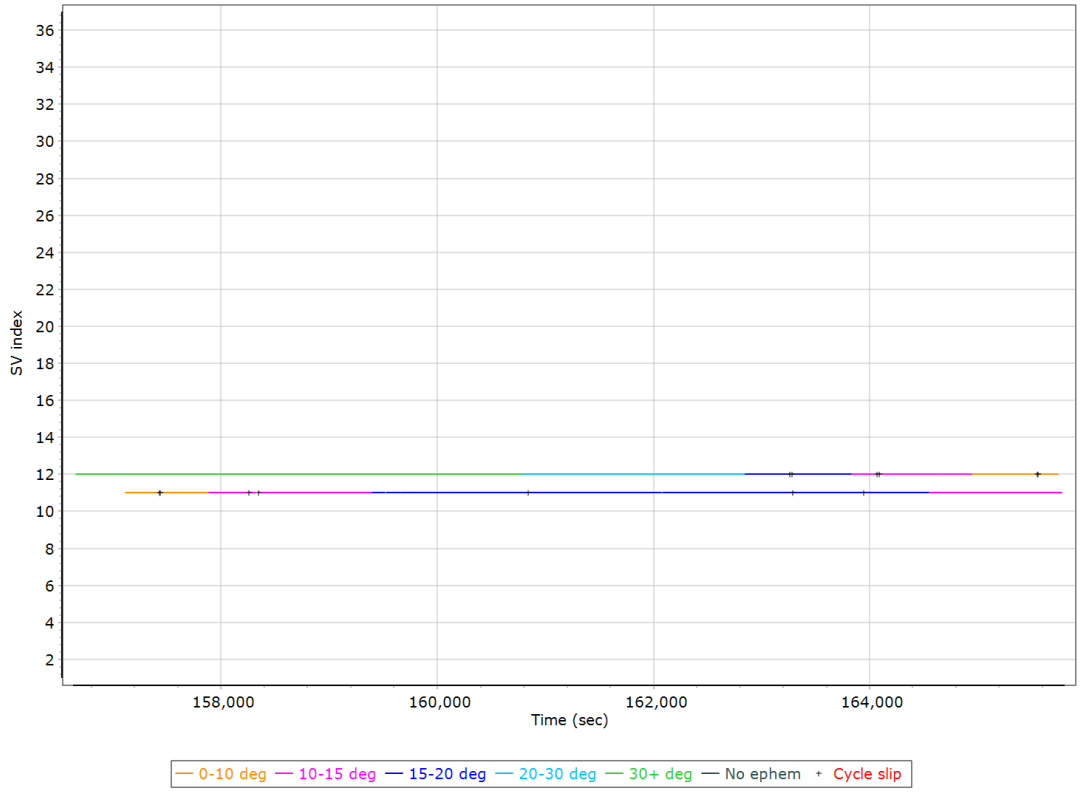
GPS L2 SNR



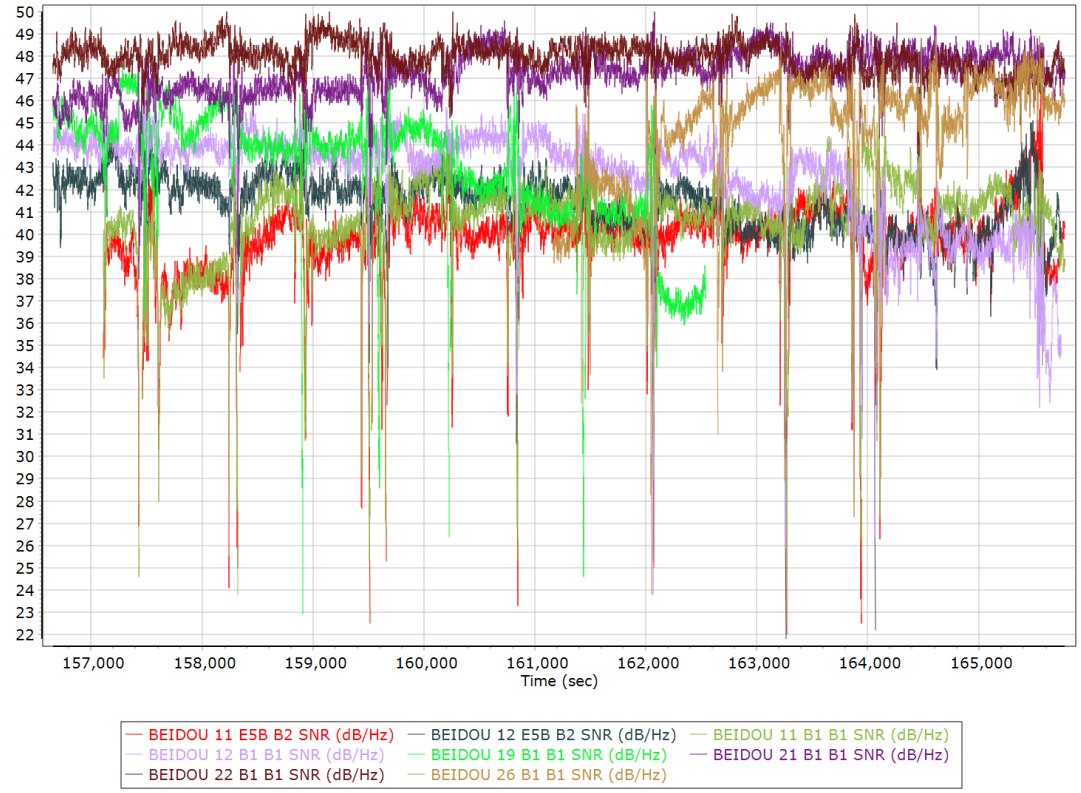
GLONASS L2 SNR



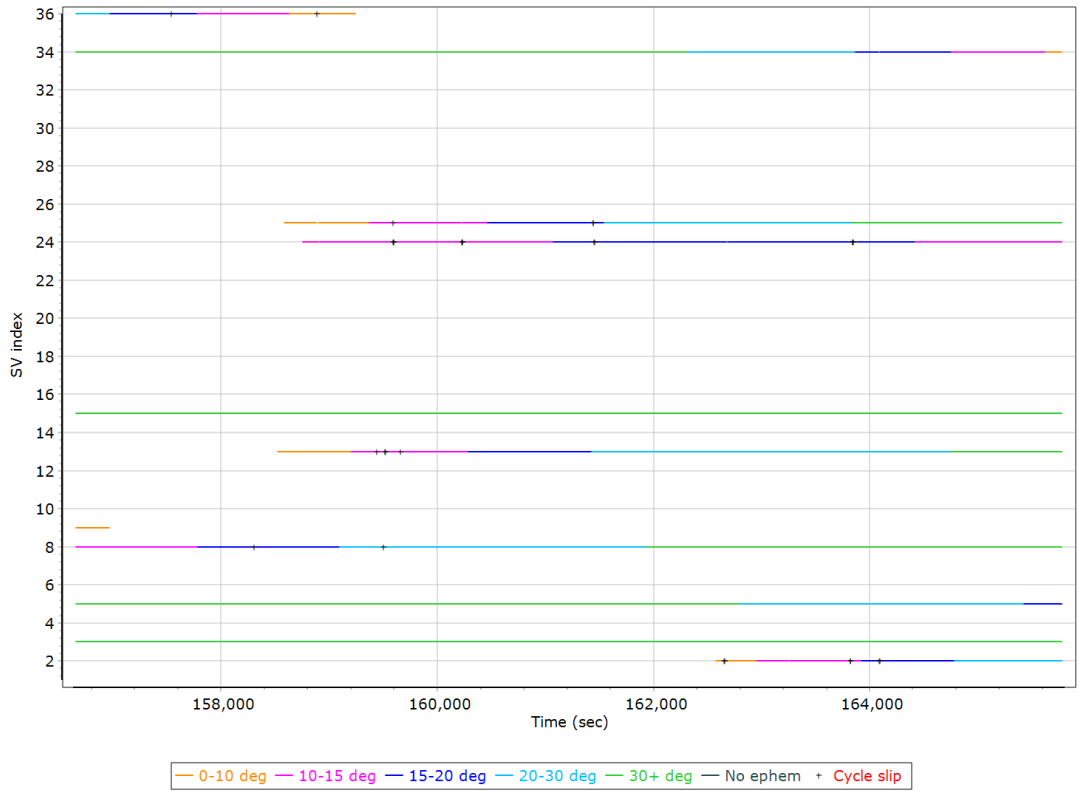
BEIDOU Satellite Lock/Elevation



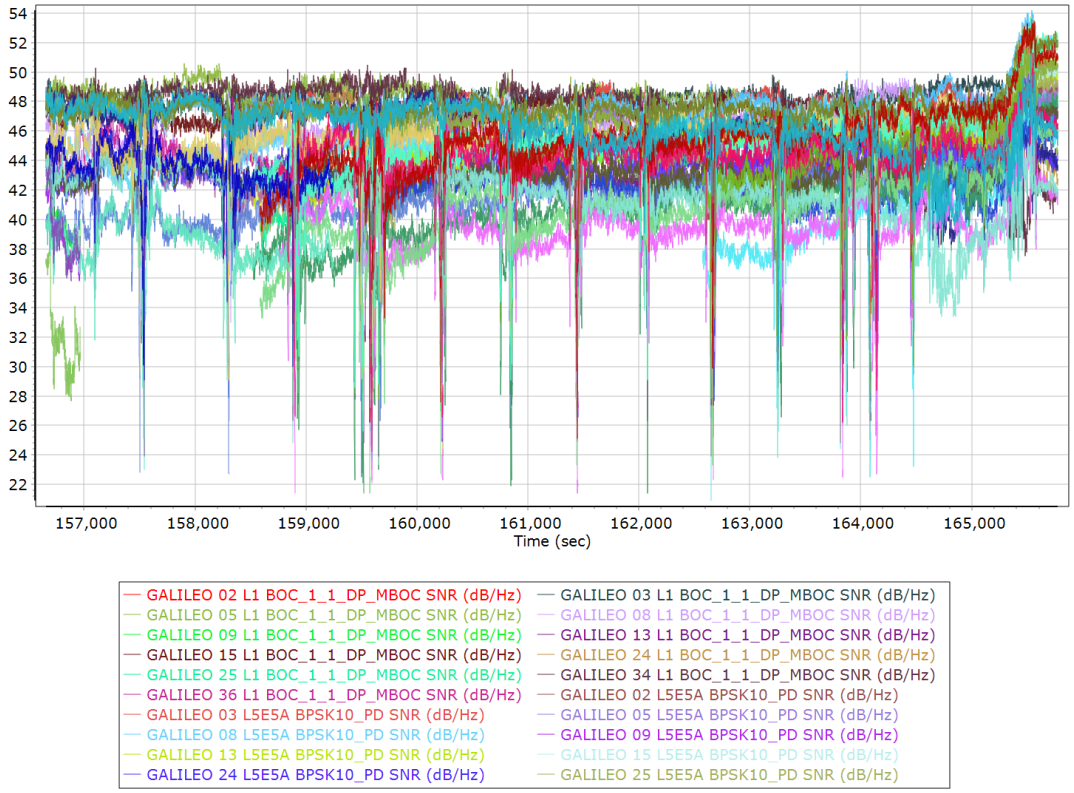
BEIDOU SNR



GALILEO Satellite Lock/Elevation

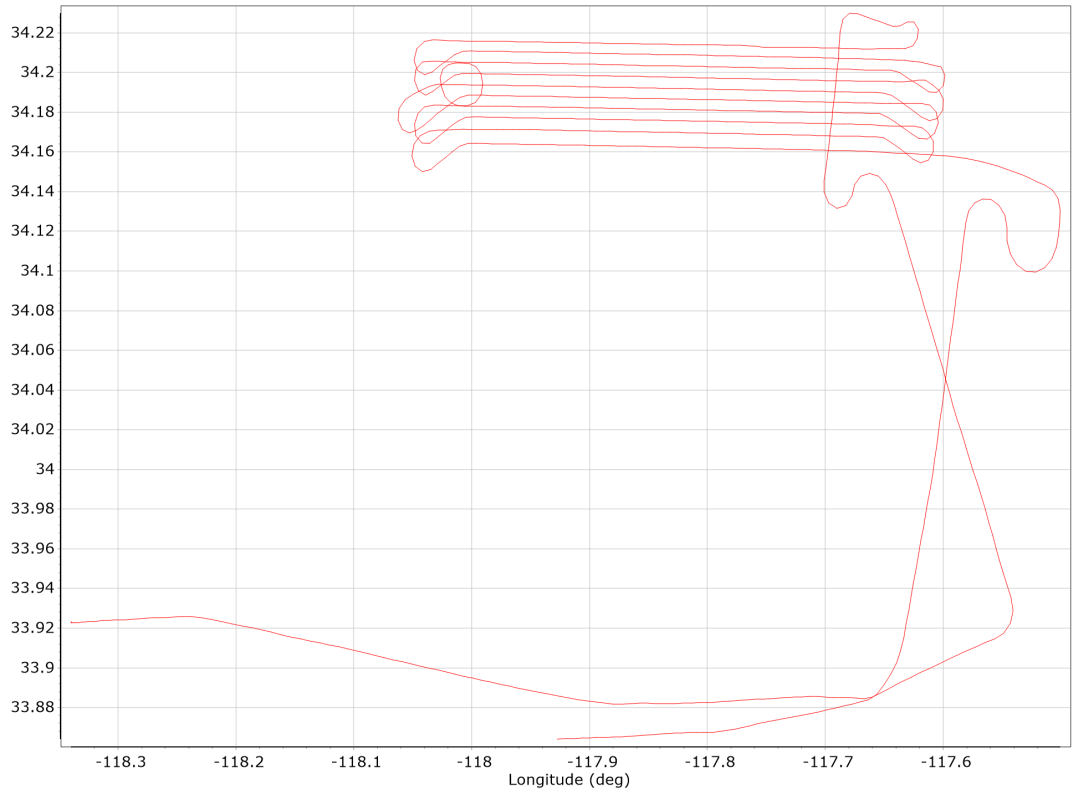


GALILEO SNR


54
52
50
48
46
44
42
40
38
36
34
32
30
28
26
24
22
157,000
158,000
159,000
160,000
161,000
162,000
163,000
164,000
165,000
Time (sec)
GALILEO 02 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 03 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 05 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 08 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 09 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 13 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 15 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 24 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 25 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 34 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 36 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 02 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 03 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 05 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 08 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 09 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 13 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 15 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 24 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 25 L5E5A BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

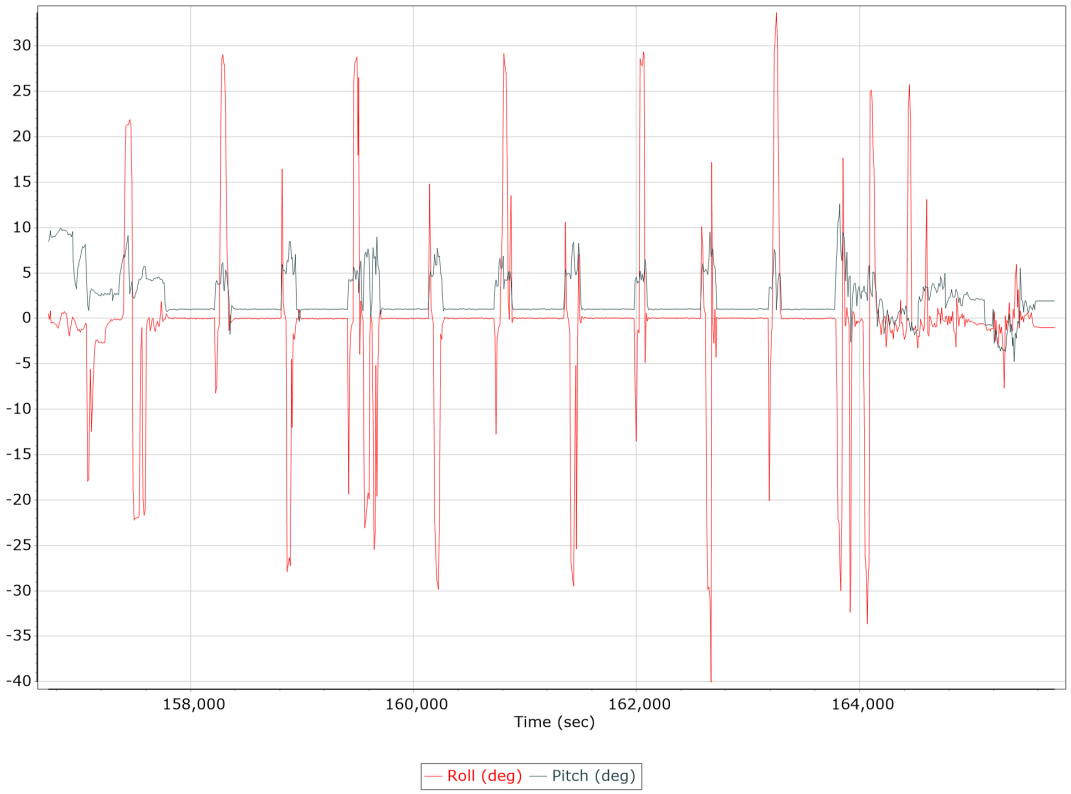
Top View



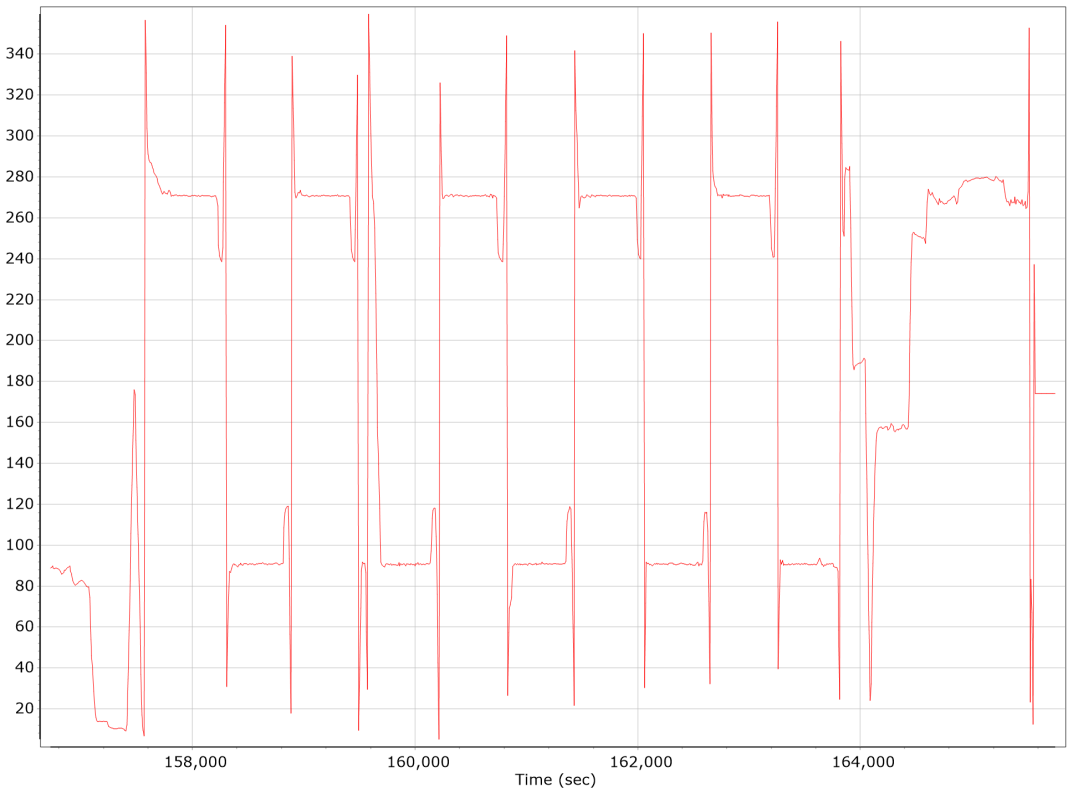
Altitude



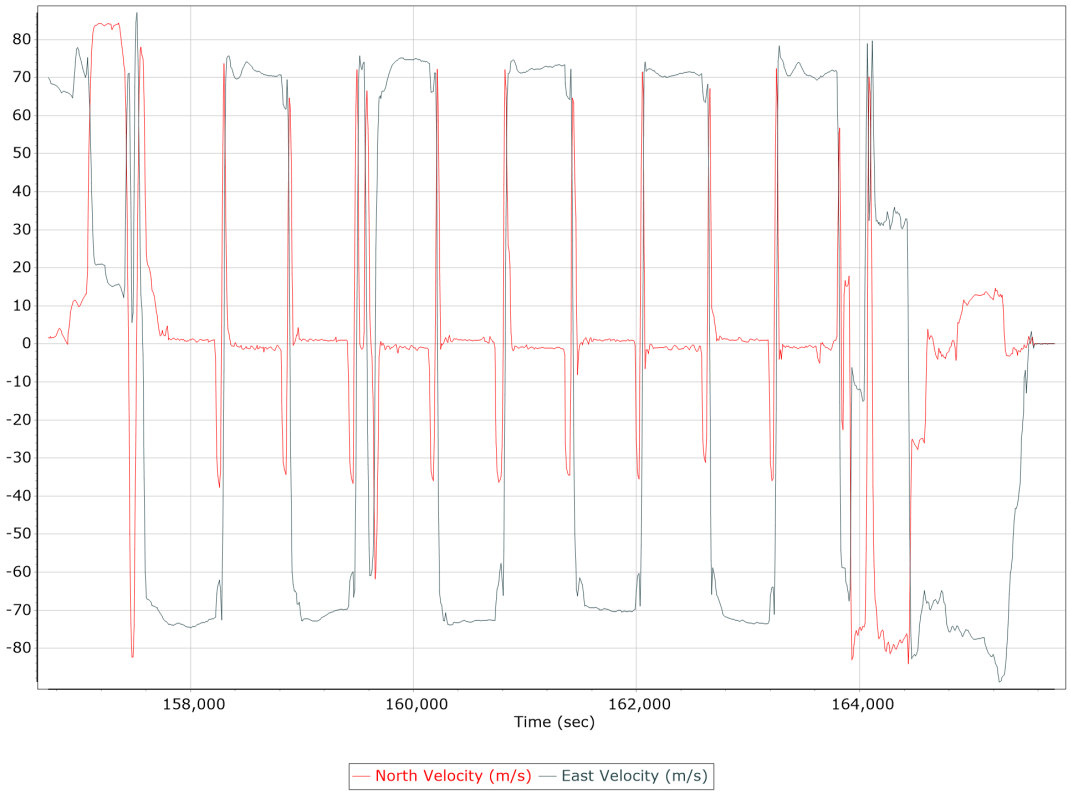
Roll/Pitch



Heading



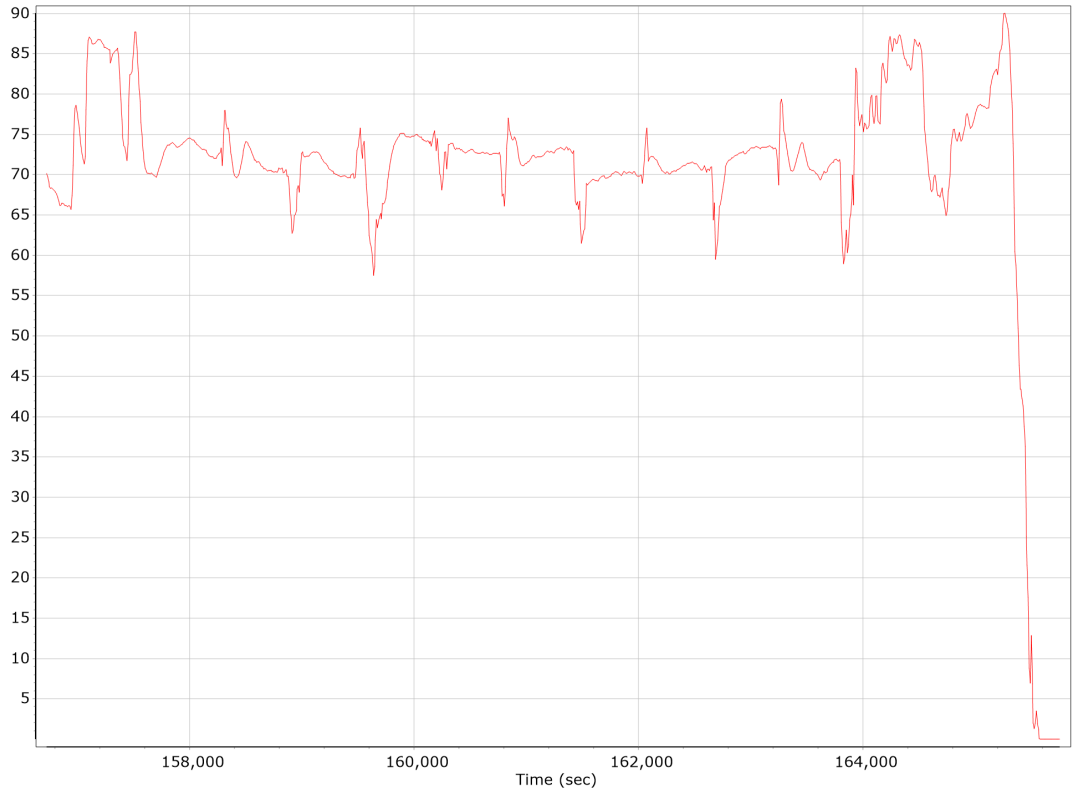
North/East Velocity



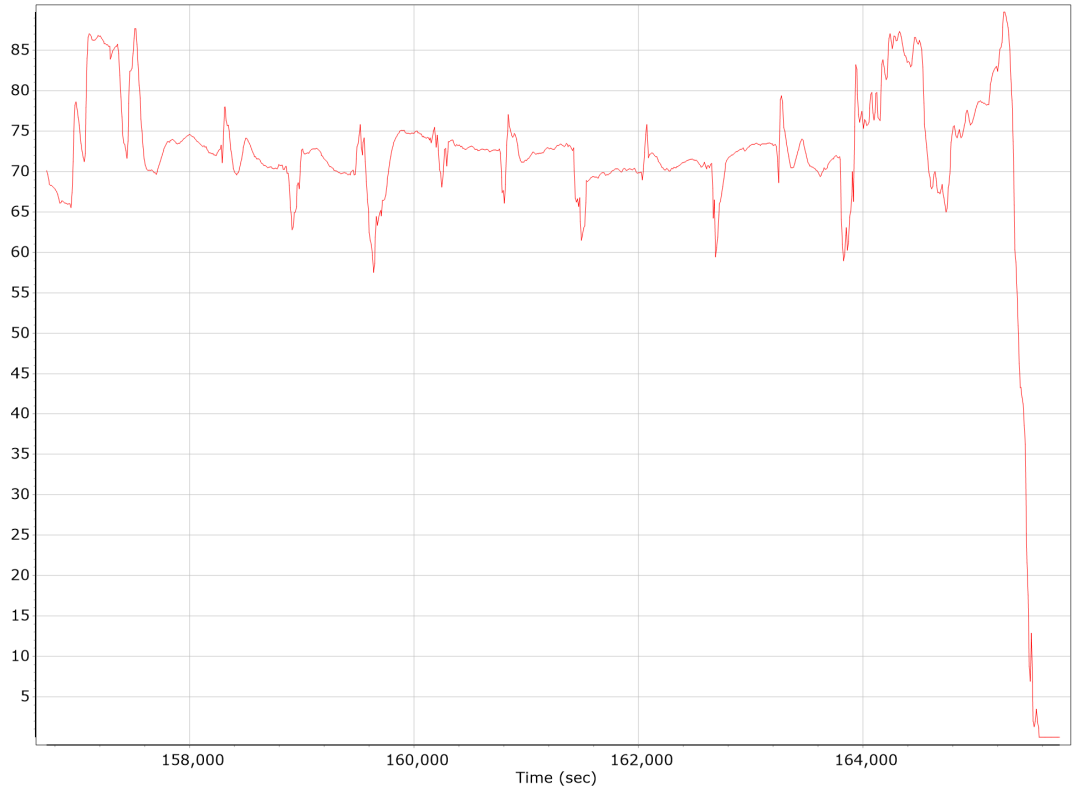
Down Velocity



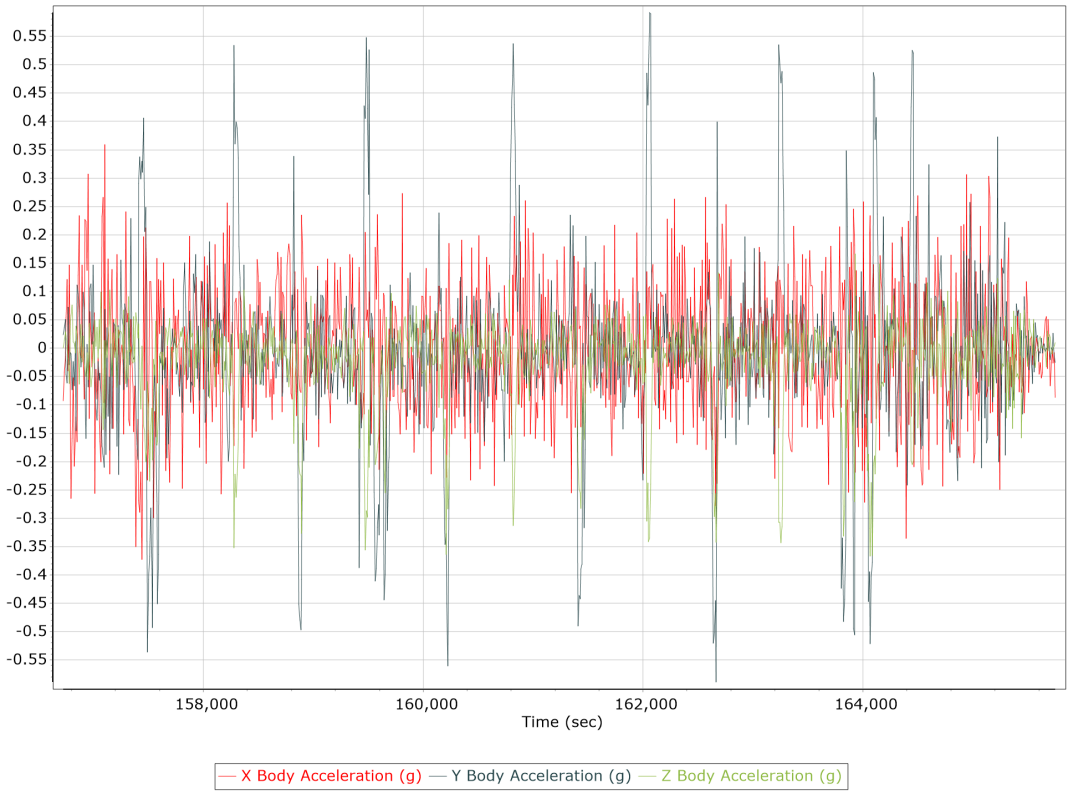
Total Speed



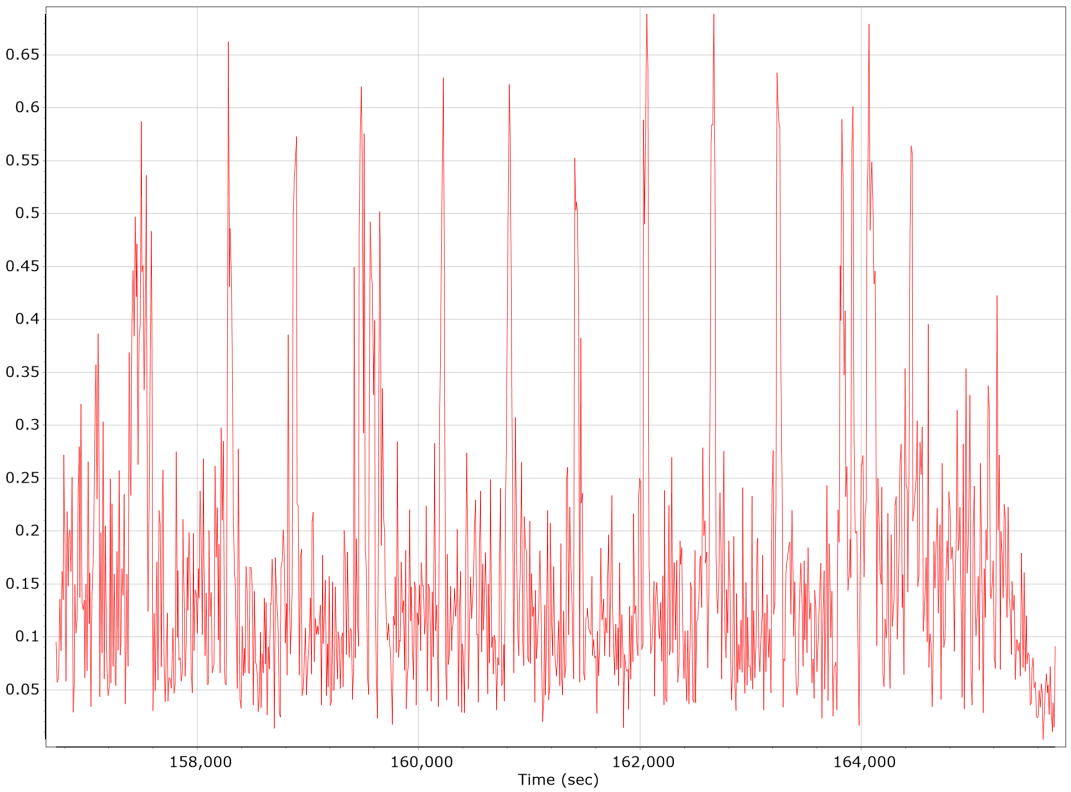
Ground Speed



Body Acceleration



Total Body Acceleration

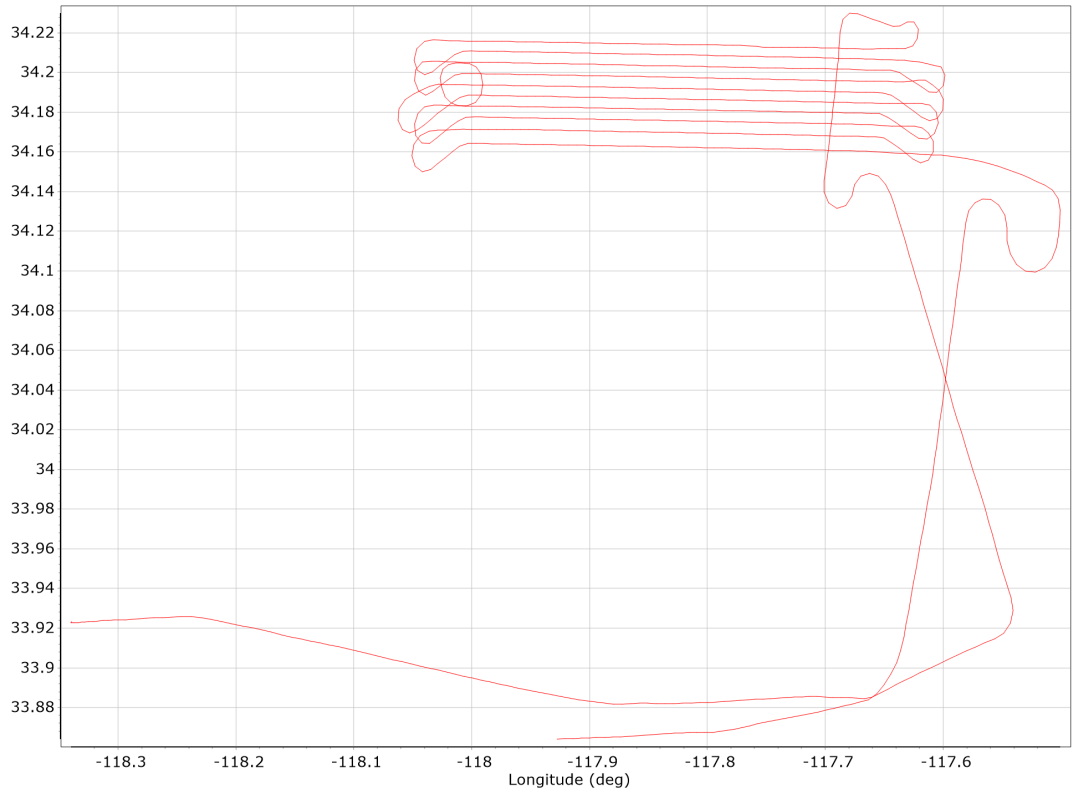


Body Angular Rate



Forward Processed Trajectory Information

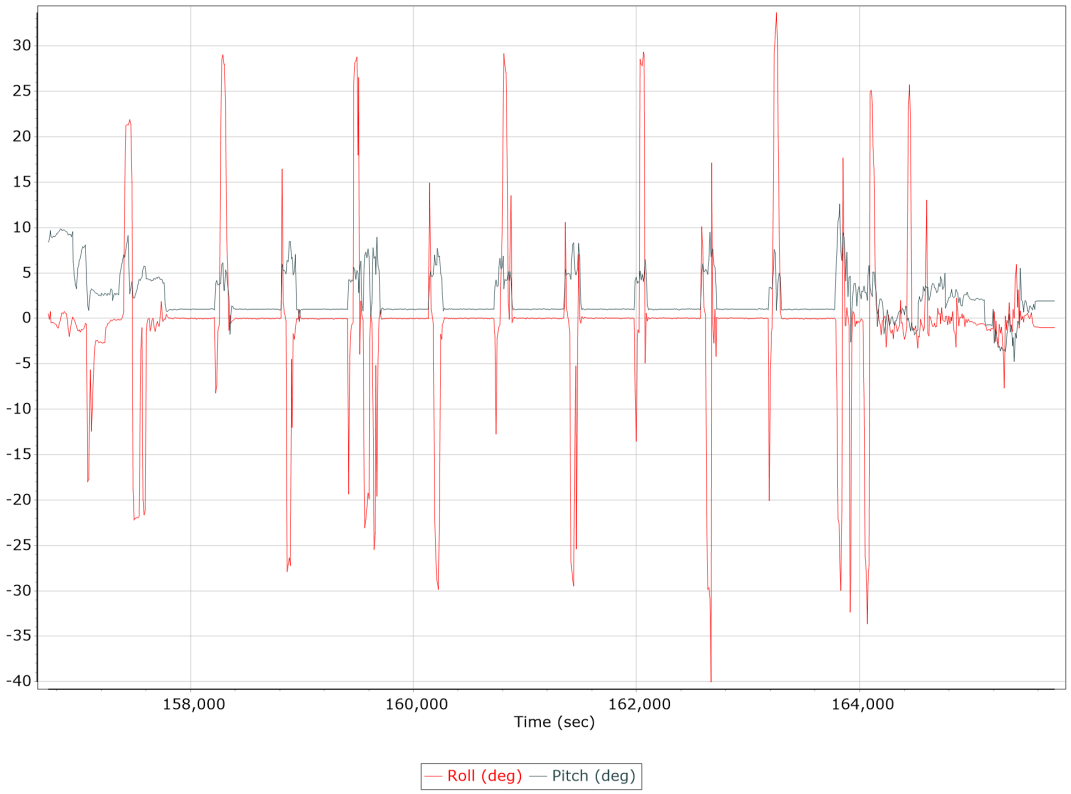
Top View



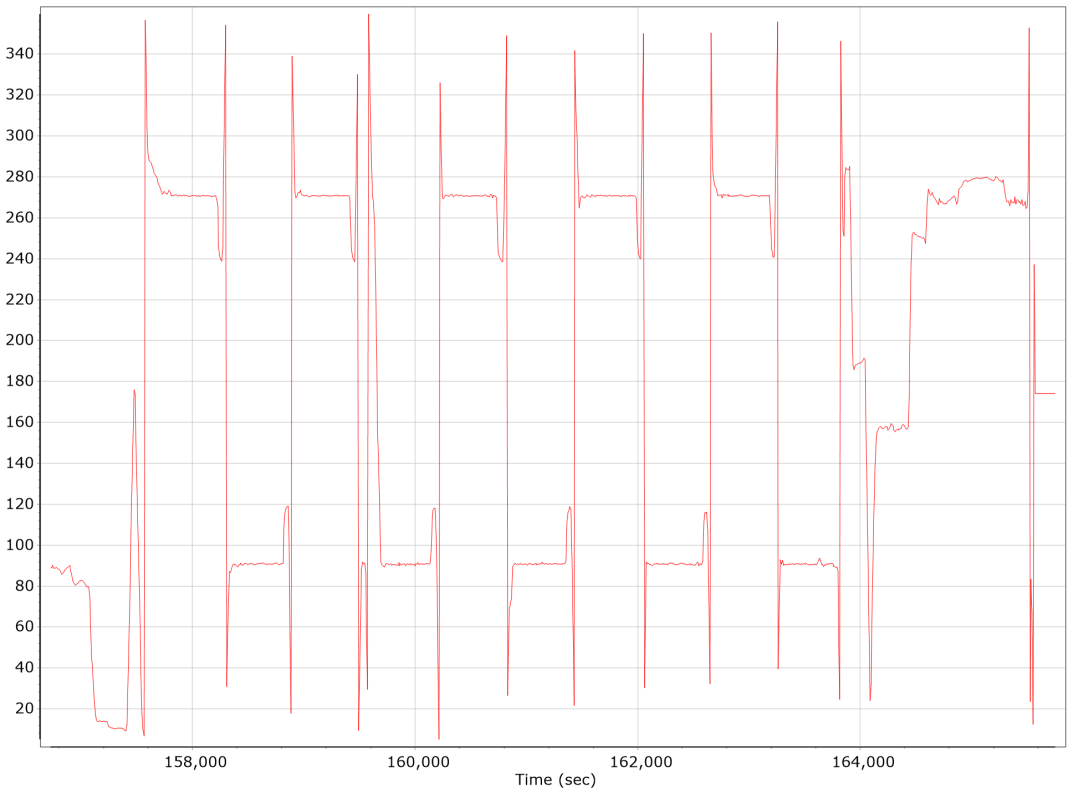
Altitude



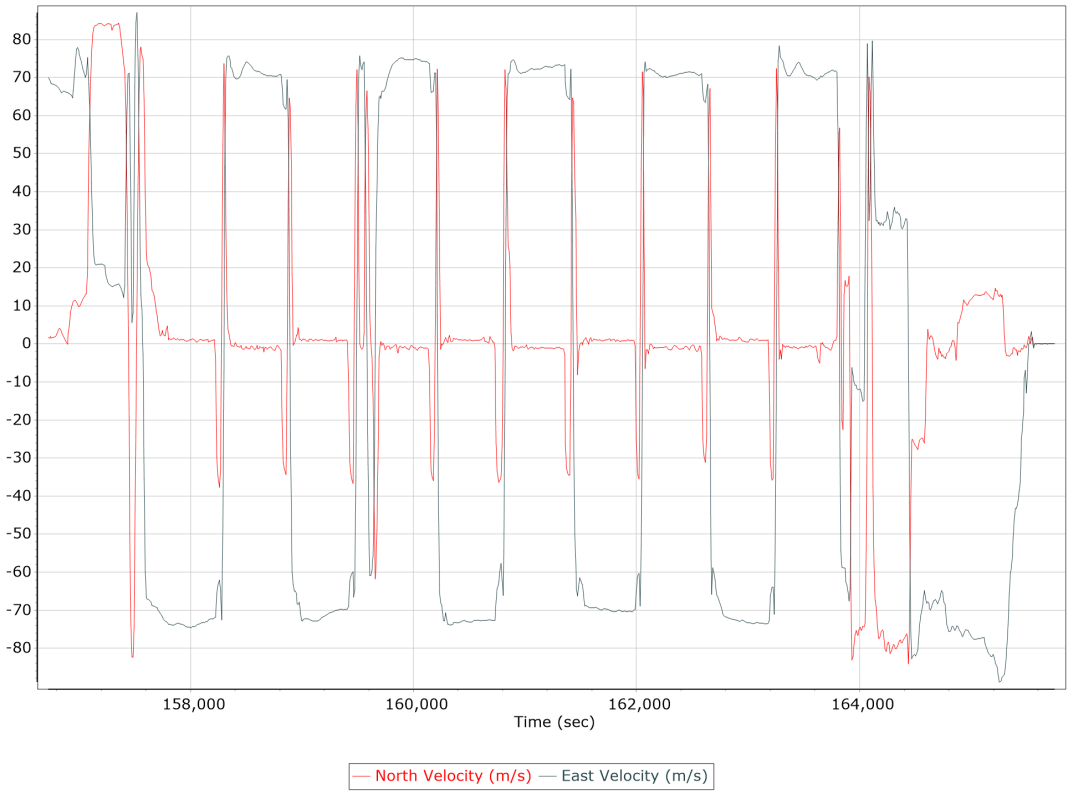
Roll/Pitch



Heading



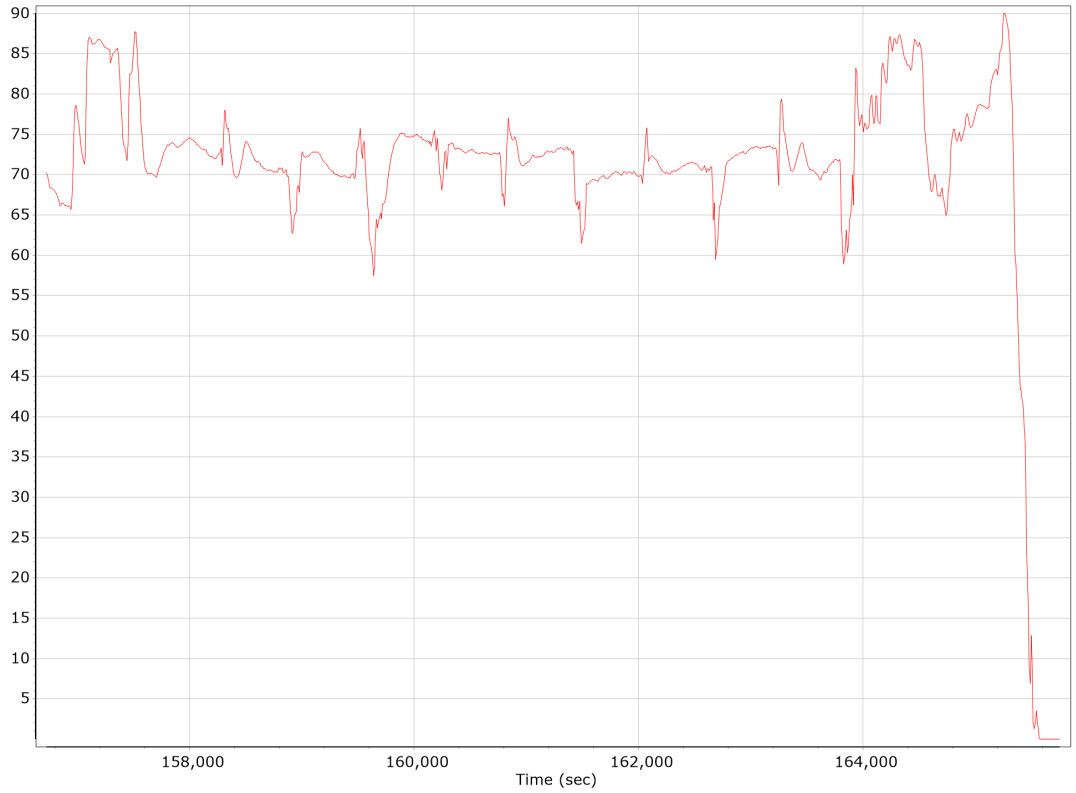
North/East Velocity



Down Velocity



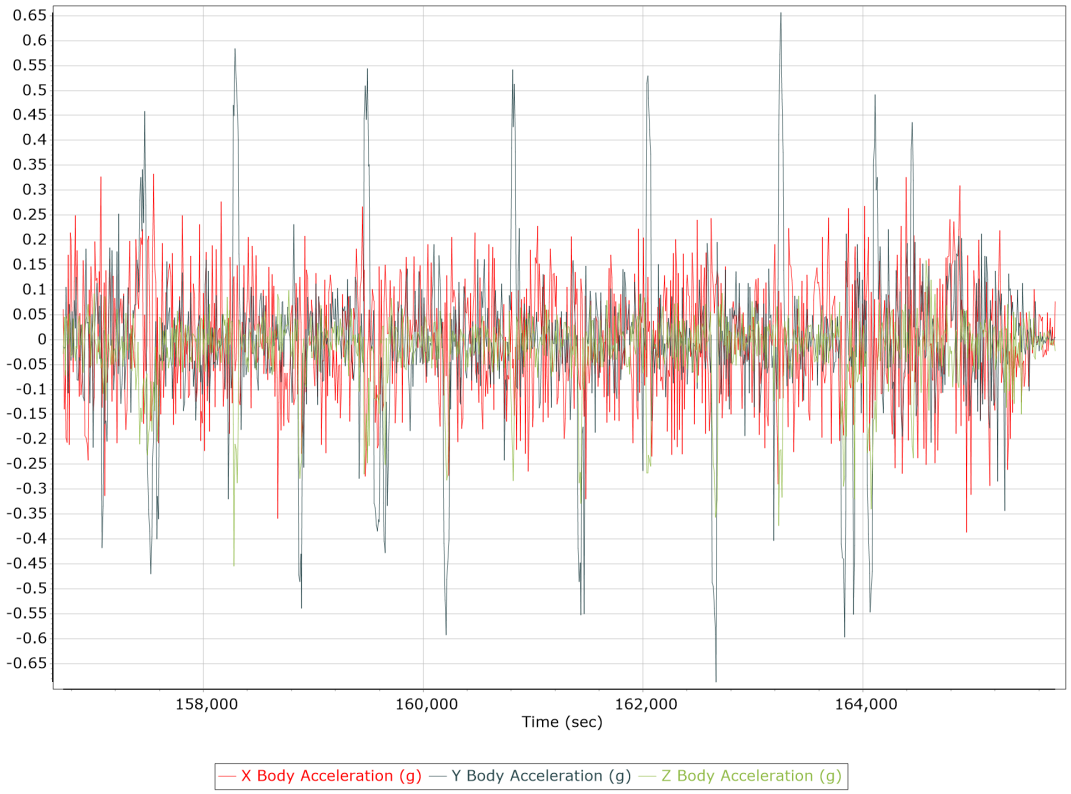
Total Speed



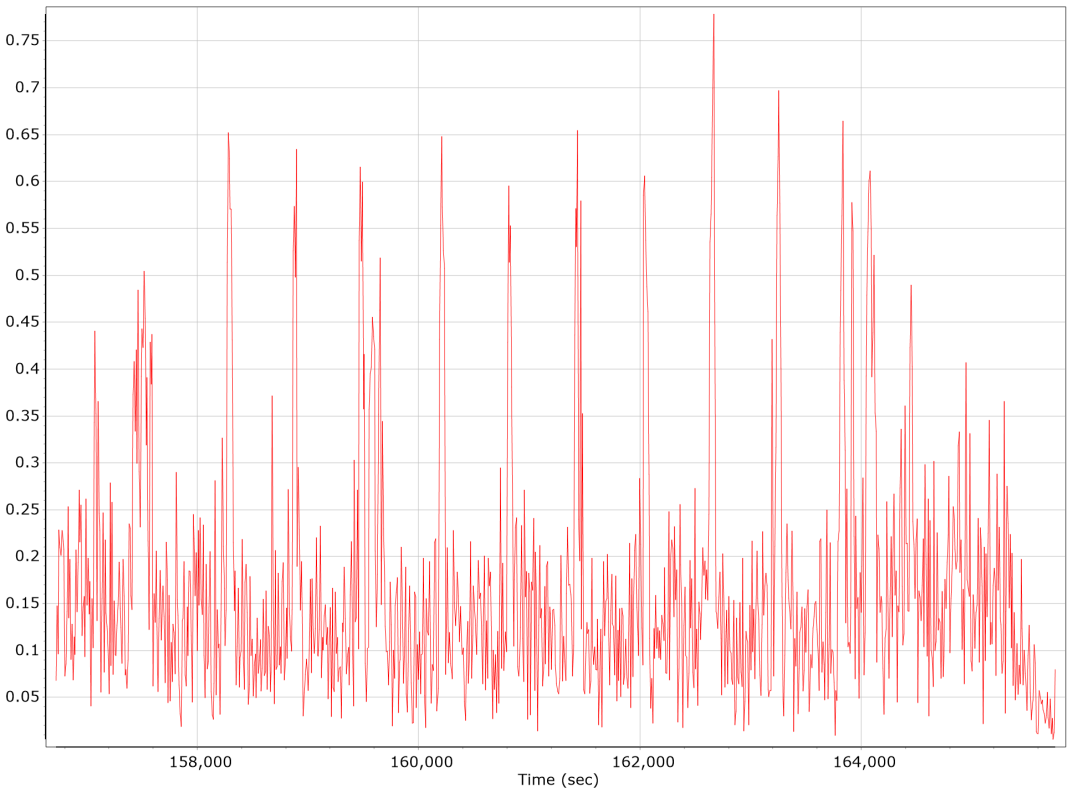
Ground Speed



Body Acceleration



Total Body Acceleration



Body Angular Rate

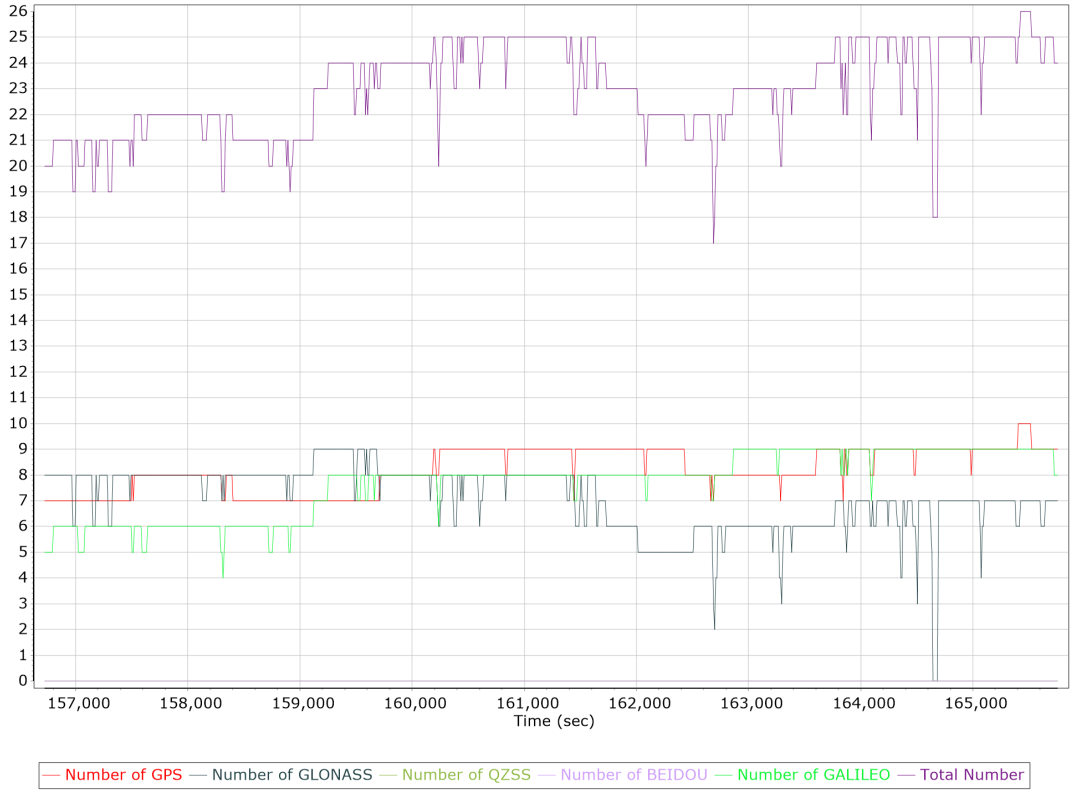


GNSS QC

GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	6	10	8
Number of GLONASS SV	0	9	7
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	4	9	8
Total number of SV	17	26	23
PDOP	1.00	1.83	1.17
QC Solution Gaps	0.00	0.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	9097.00	0.00	0.00
Percentage	100.00	0.00	0.00

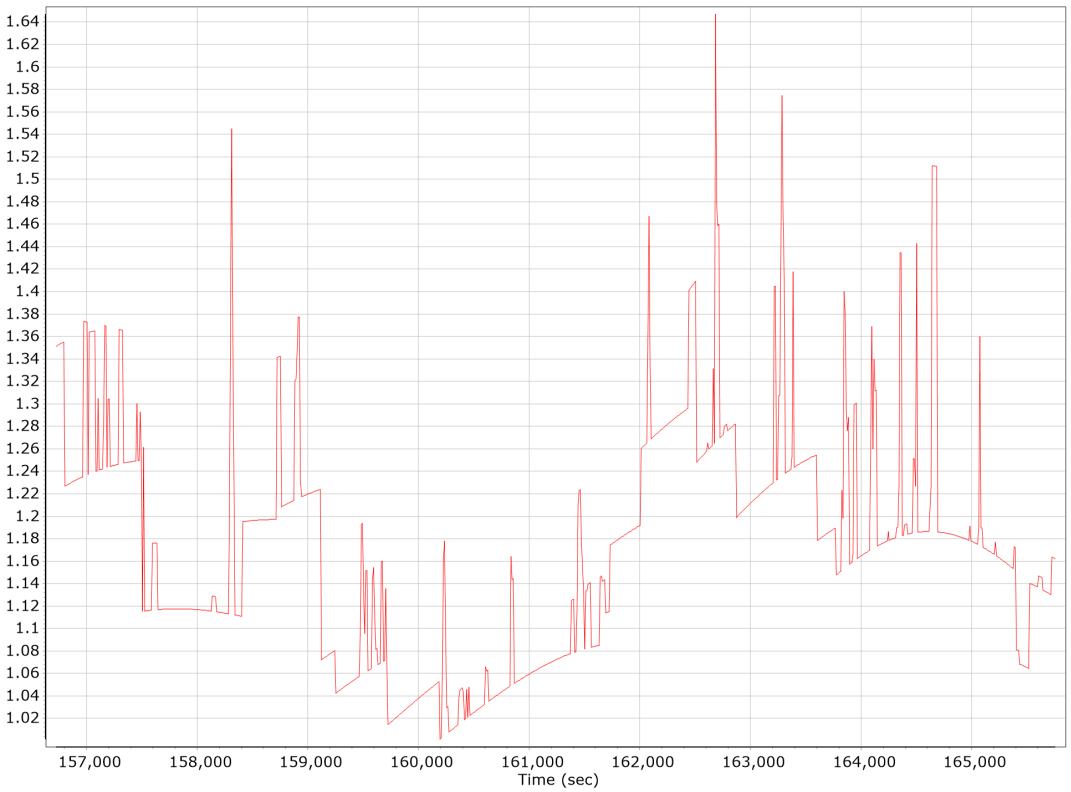
Num SVs in solution



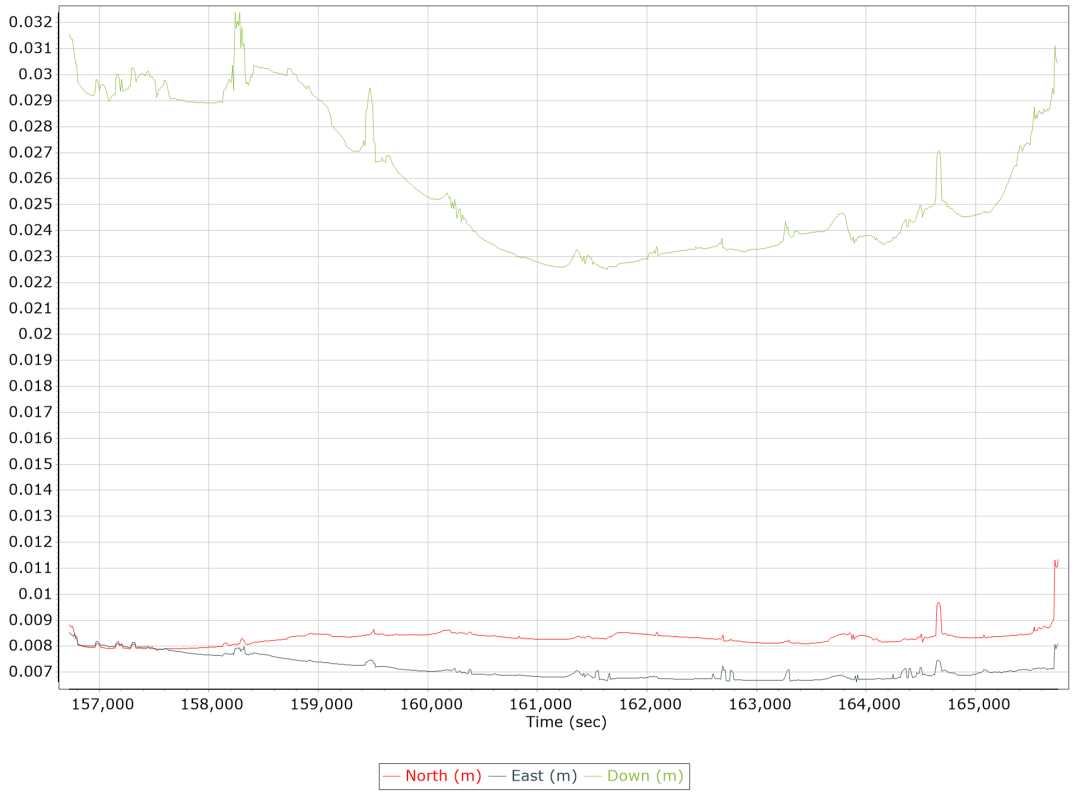
Forward/Reverse Separation



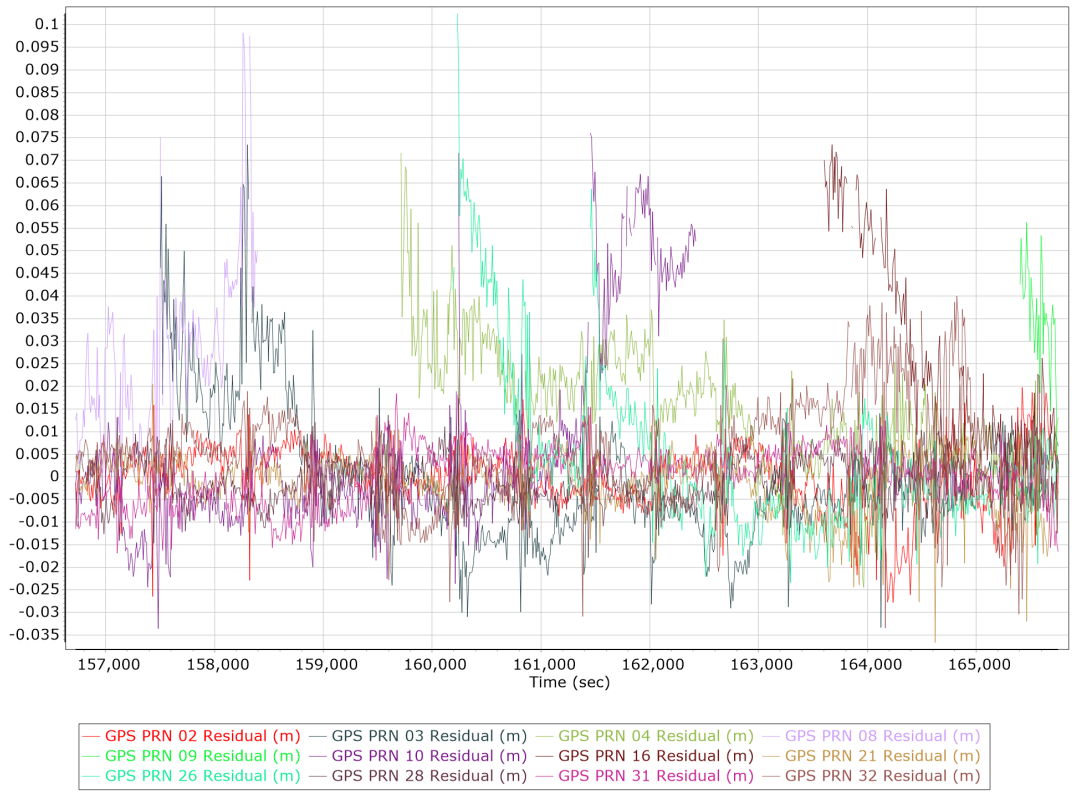
PDOP



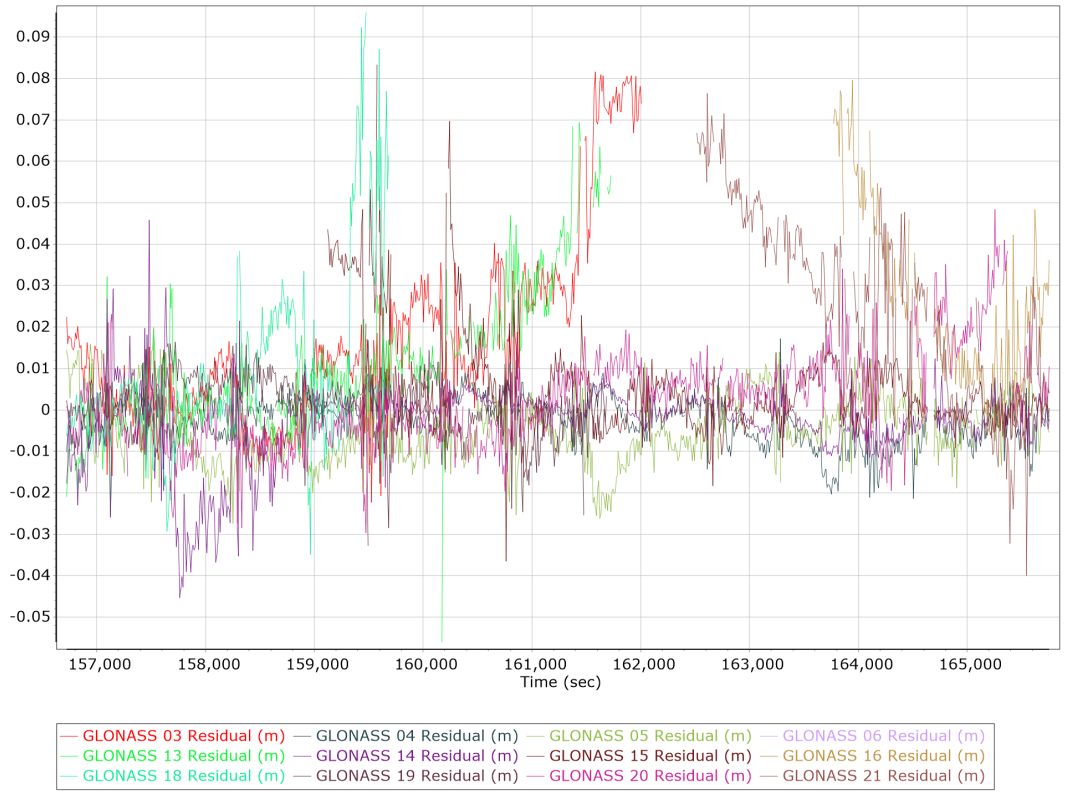
Estimated Position Accuracy



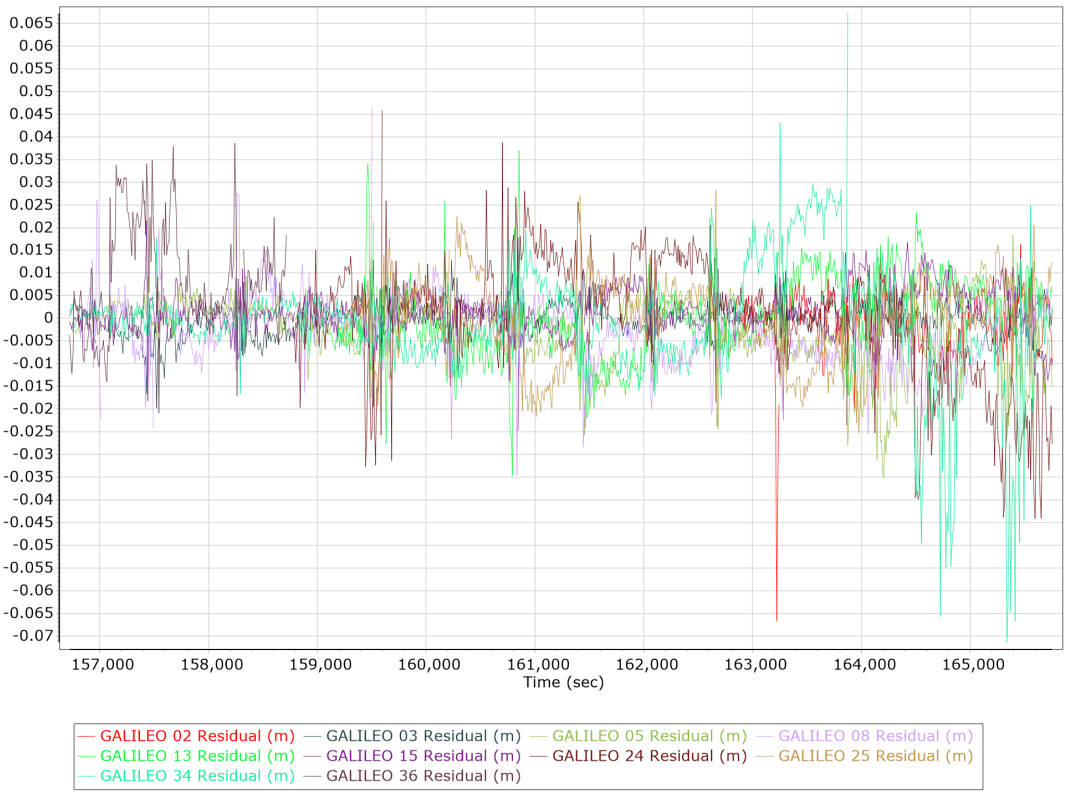
GPS Residuals



GLONASS Residuals



GALILEO Residuals



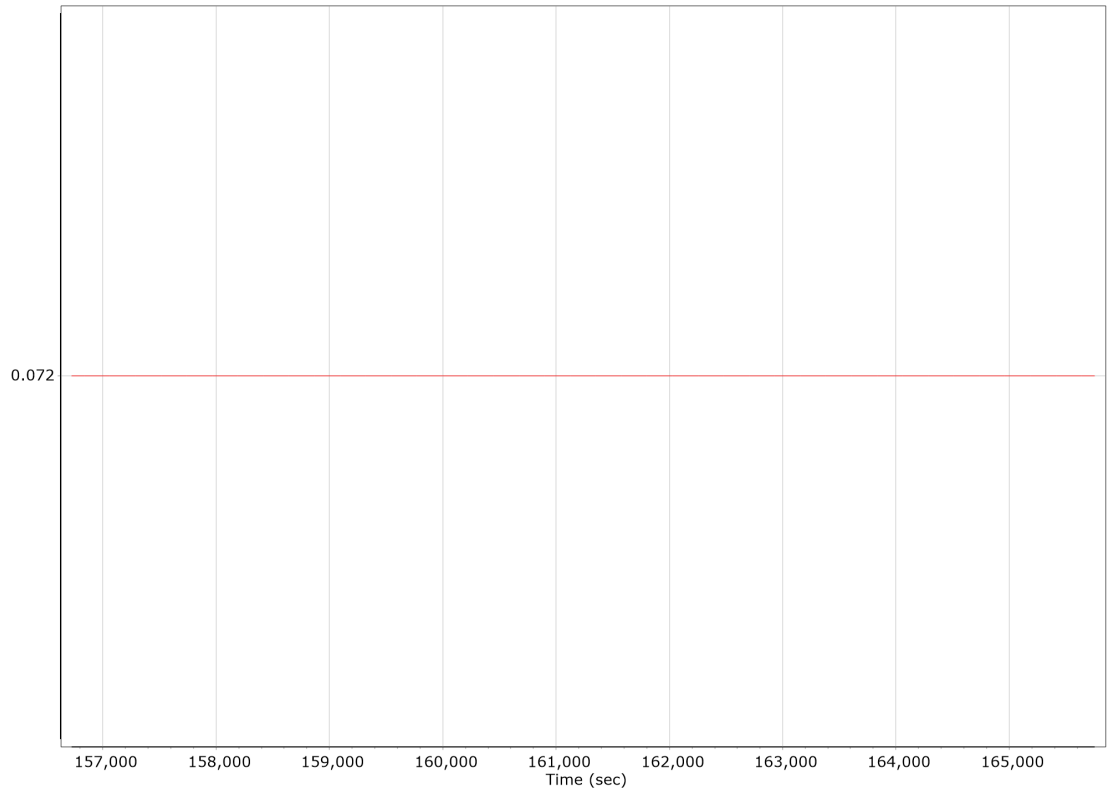
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	156640.000 (9/25/2023 7:30:40 PM)		
Processing end time	165757.000 (9/25/2023 10:02:37 PM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.072	0.090	-1.275
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

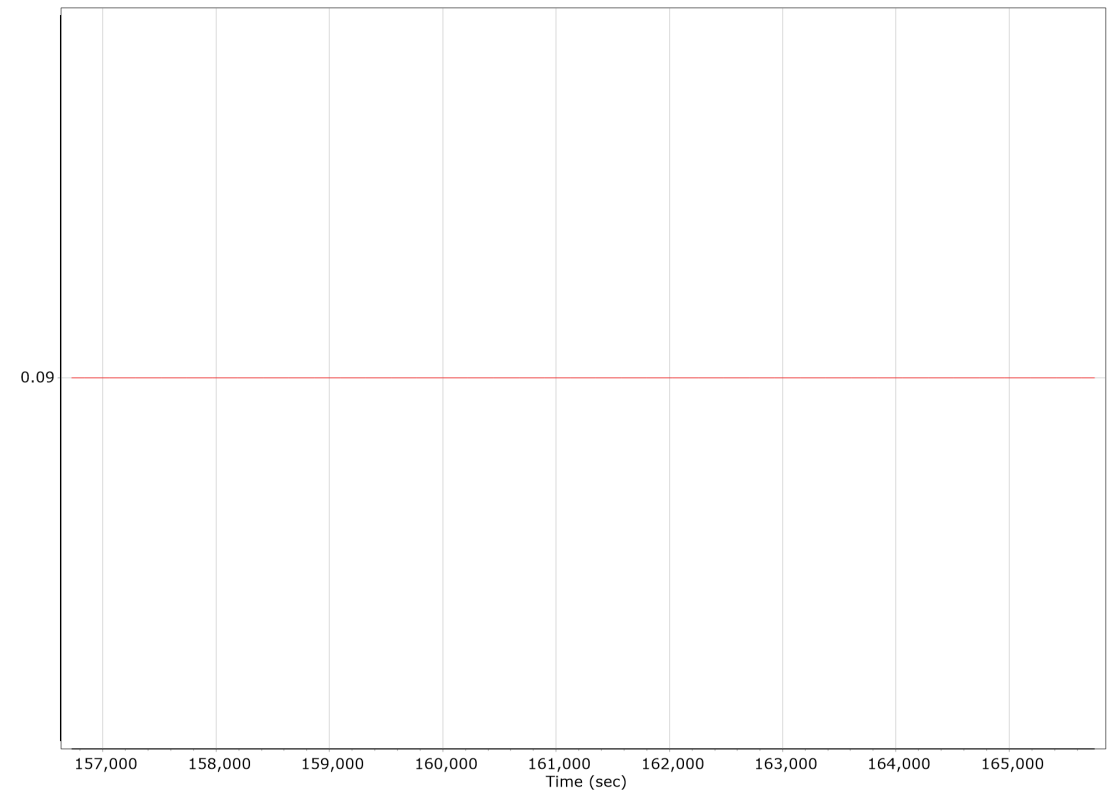
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

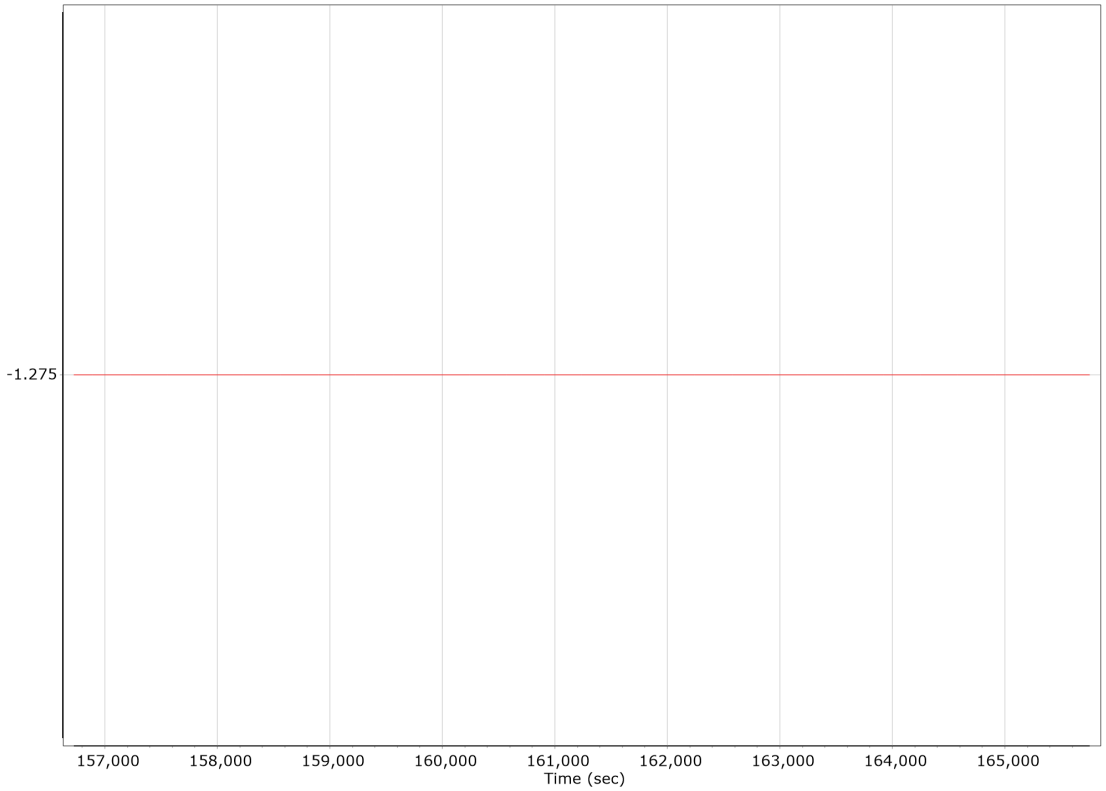
X Reference-Primary GNSS Lever Arm (m)



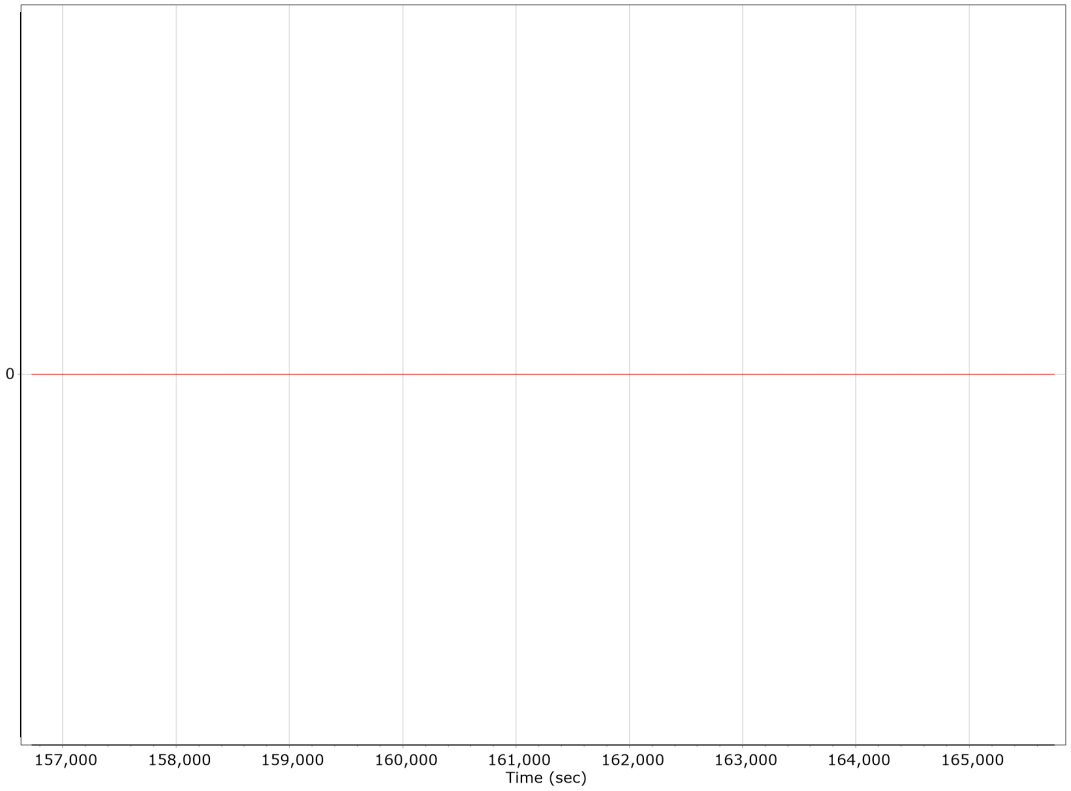
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



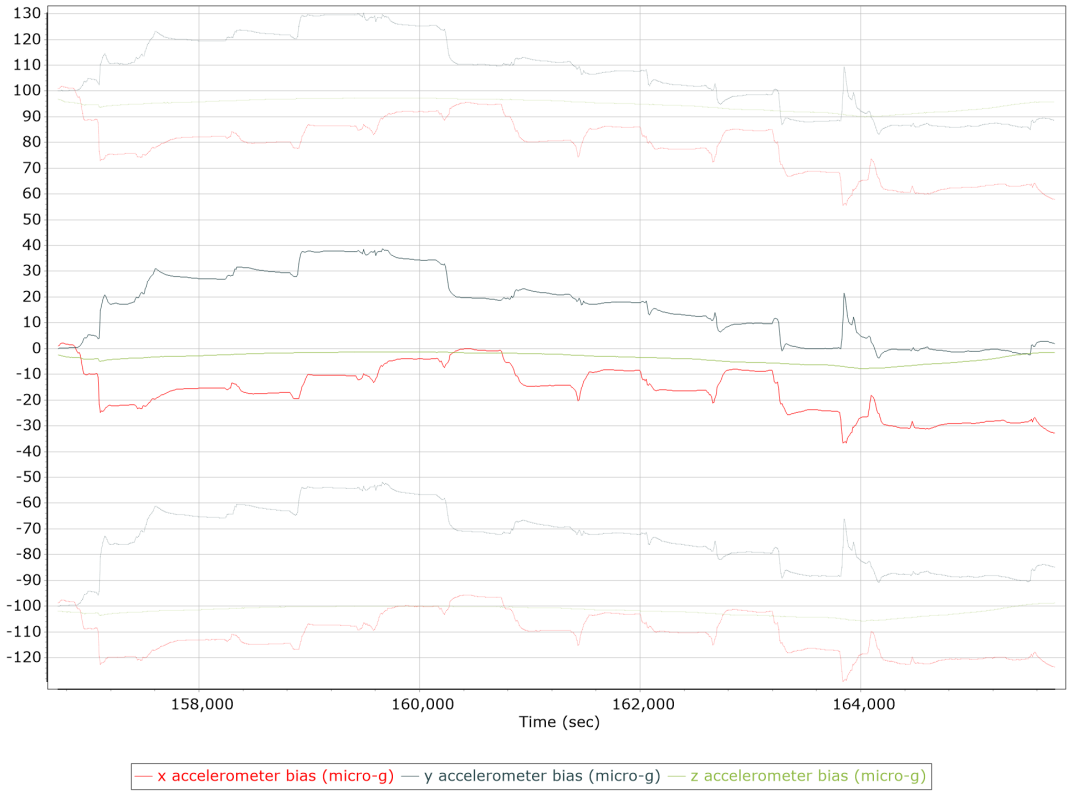
Reference-Primary GNSS Lever Arm Figure of Merit



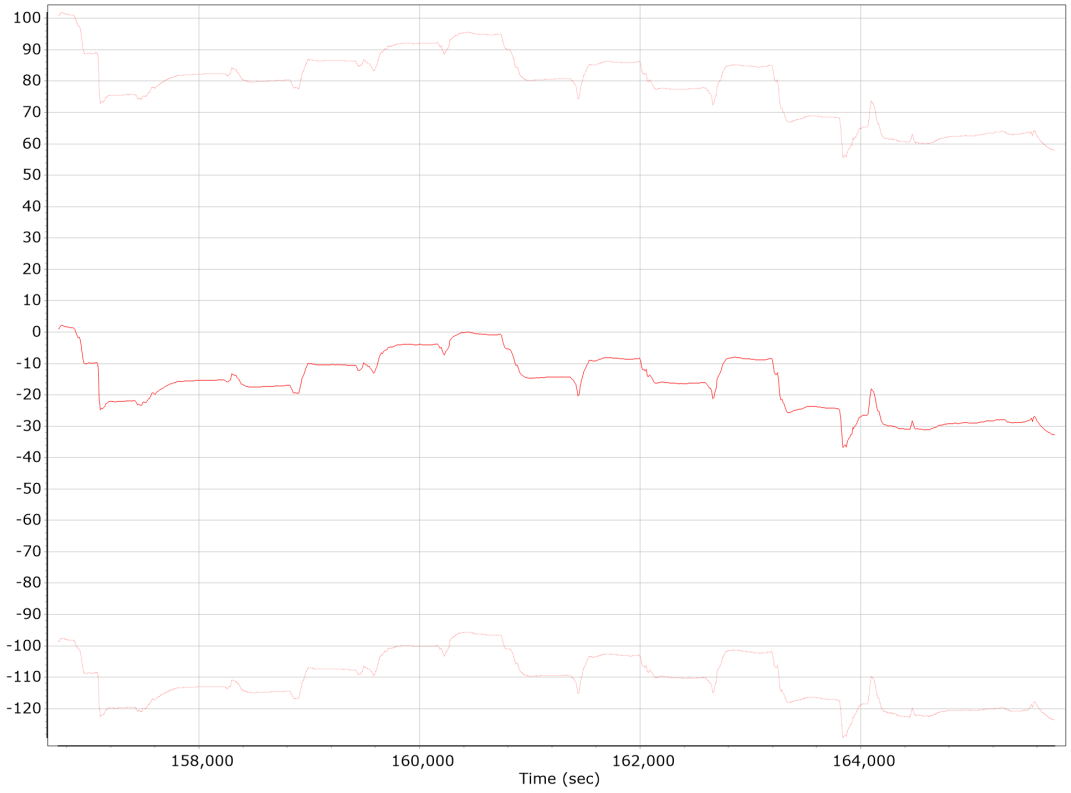
IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

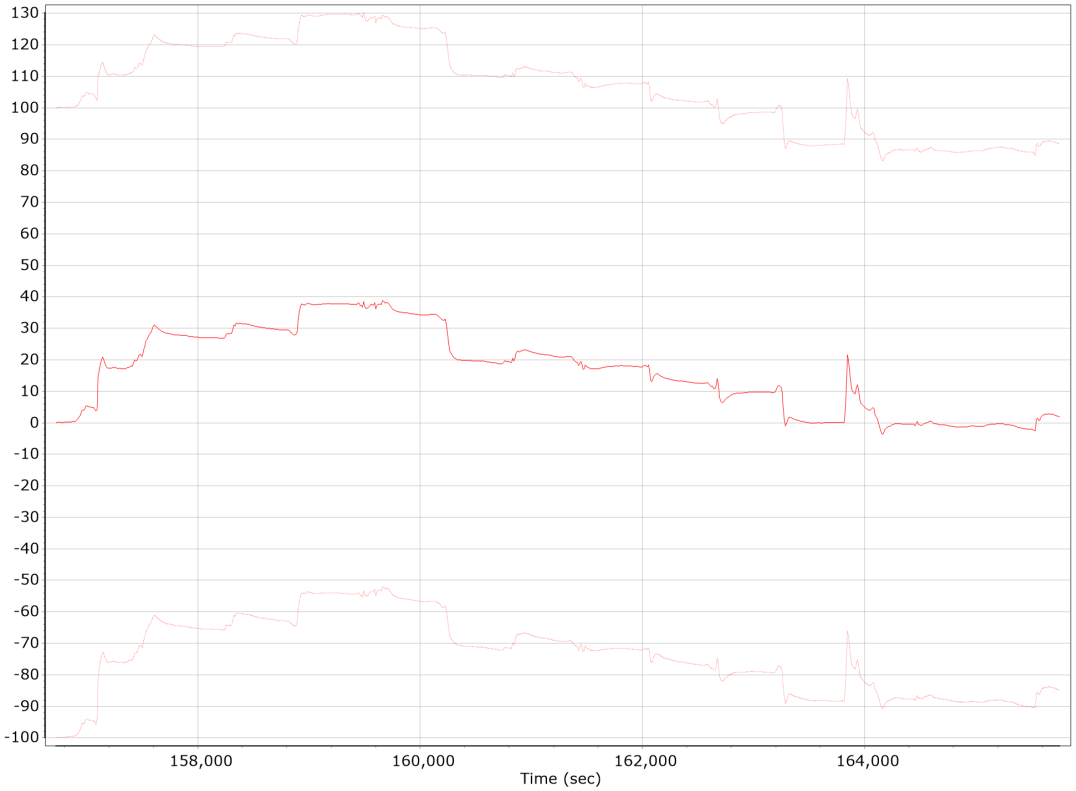
Accelerometer Bias (micro-g)



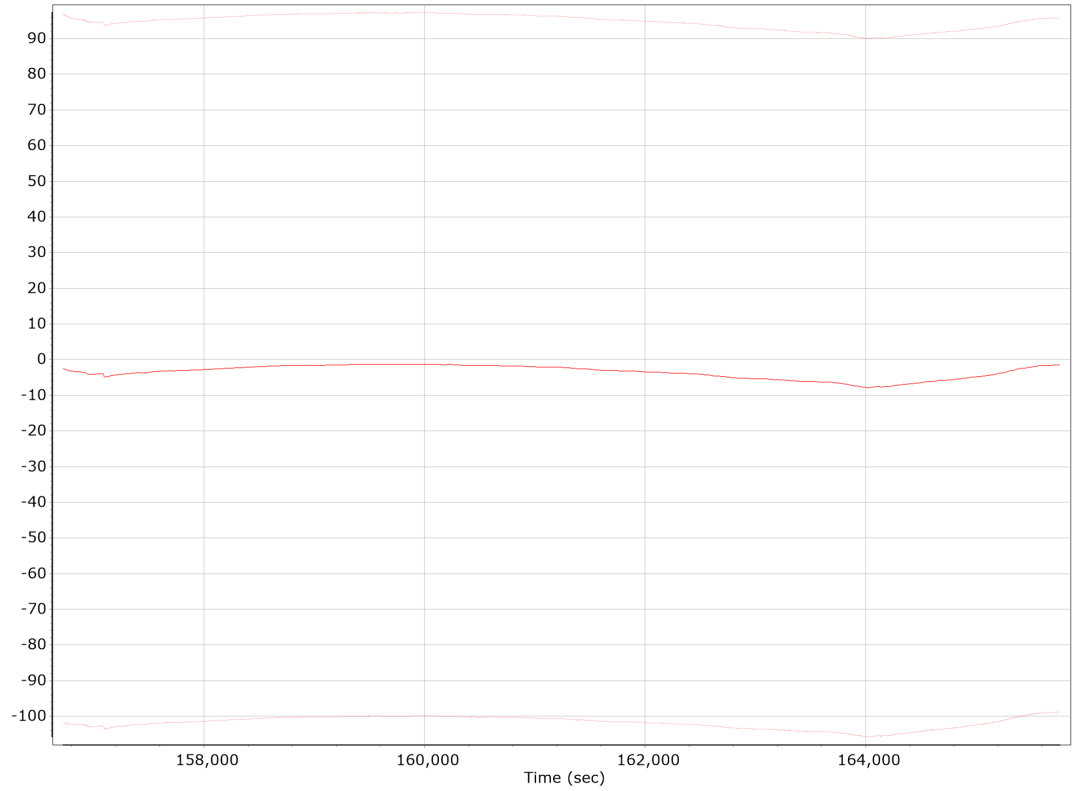
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



X Accelerometer Scale Error (ppm)



Y Accelerometer Scale Error (ppm)



Z Accelerometer Scale Error (ppm)



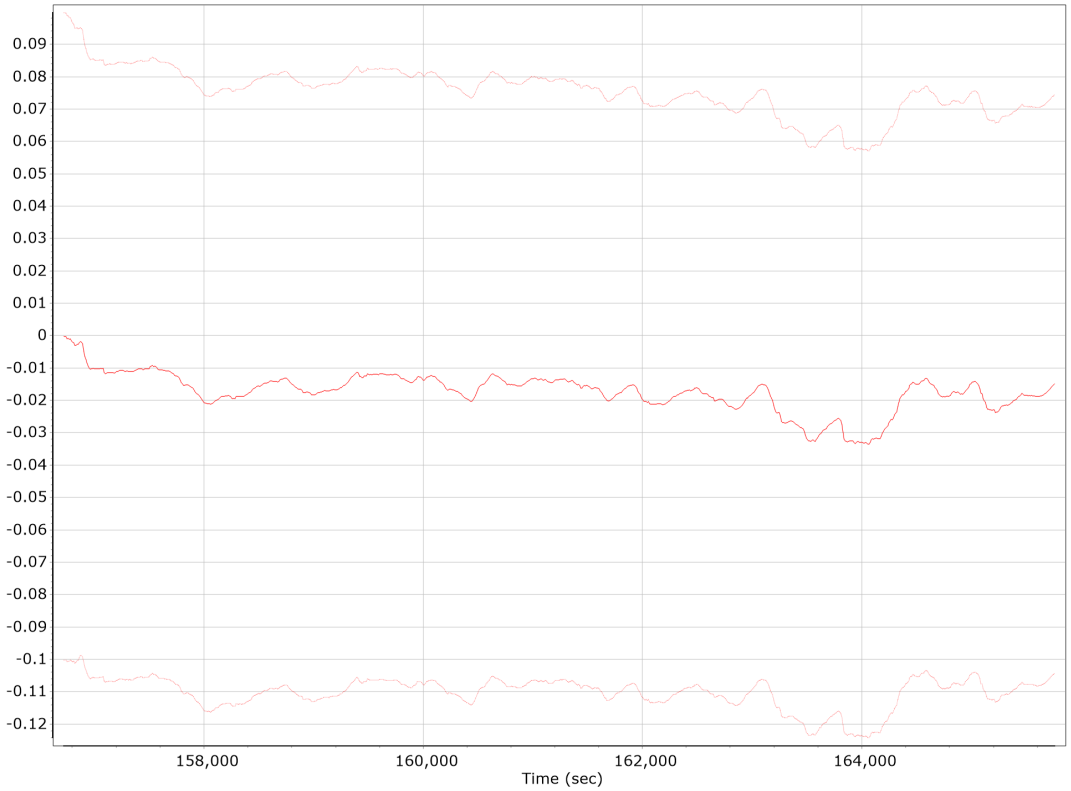
Gyro Bias (deg/h)



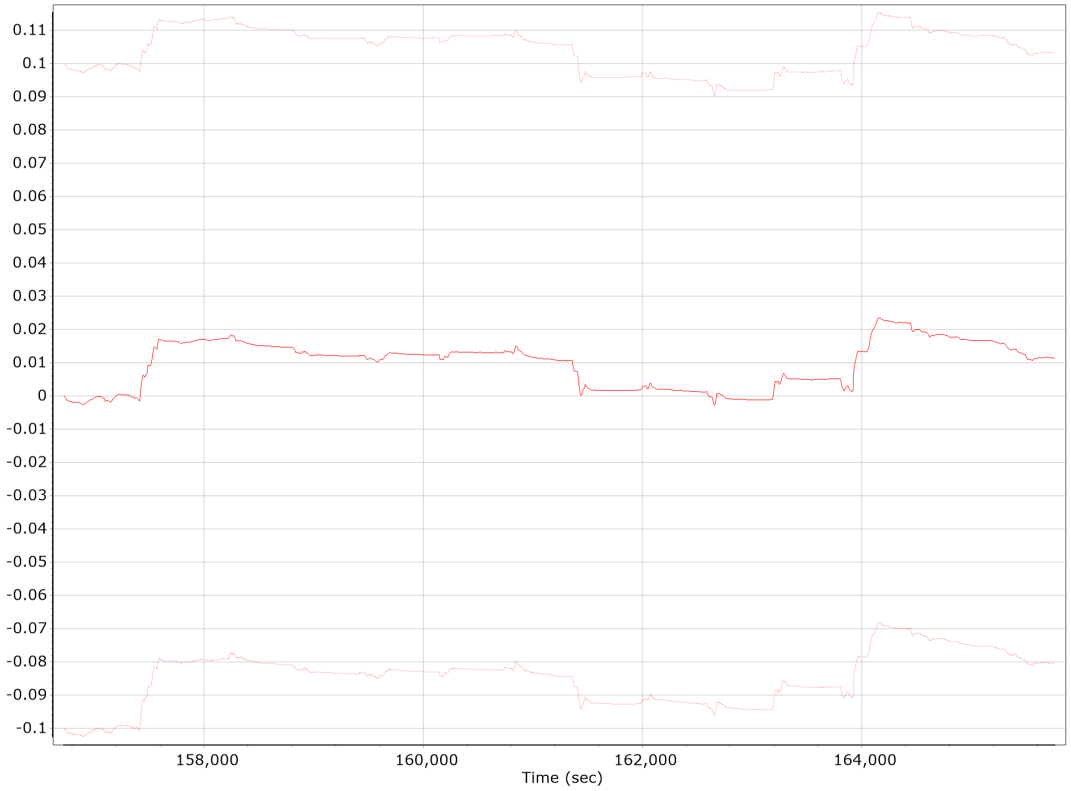
X Gyro Bias (deg/h)



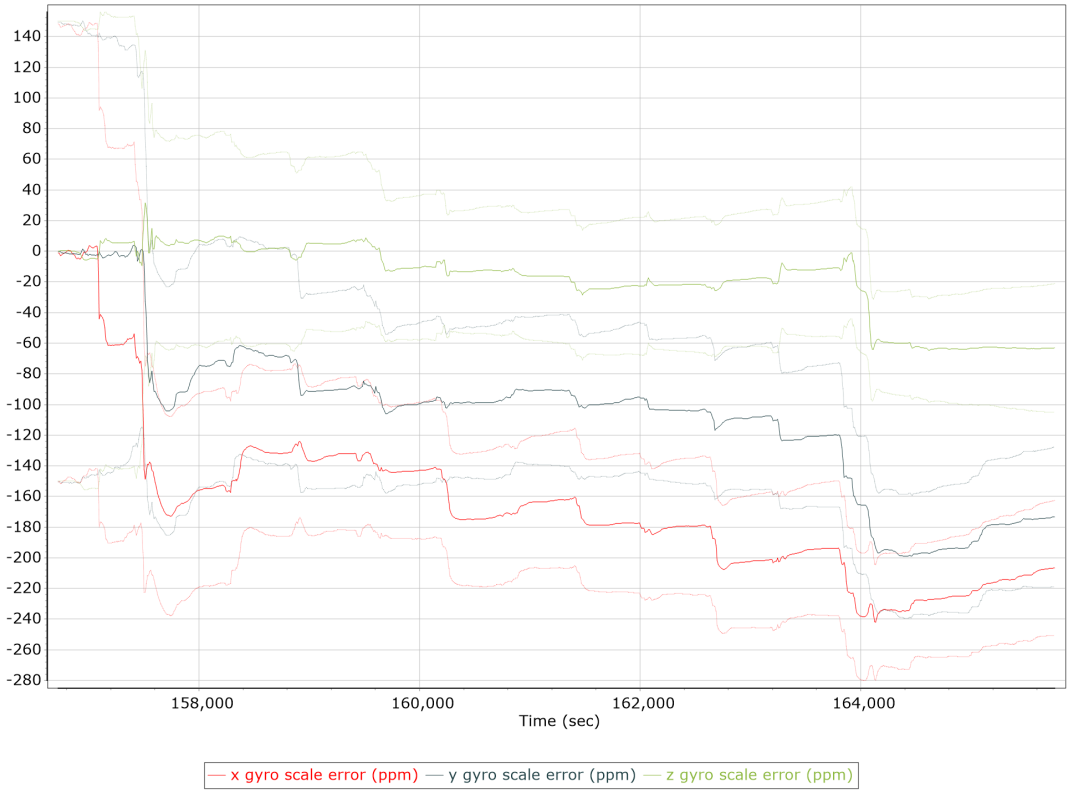
Y Gyro Bias (deg/h)



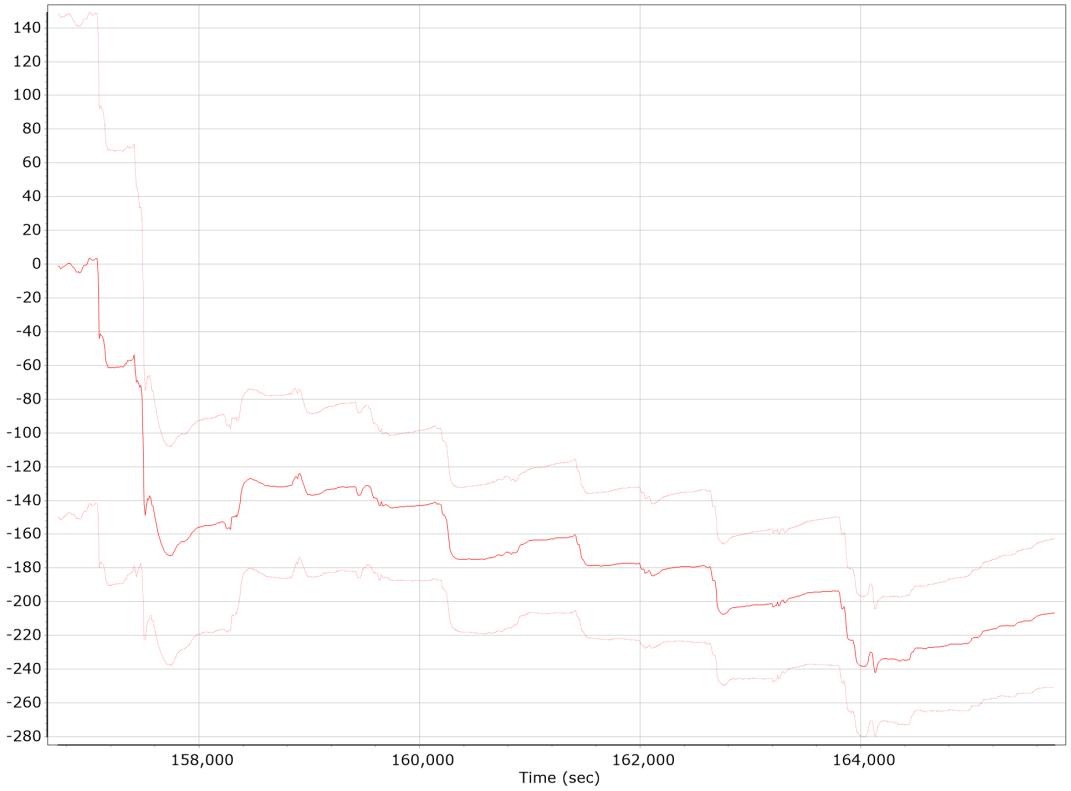
Z Gyro Bias (deg/h)



Gyro Scale Error (ppm)



X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)

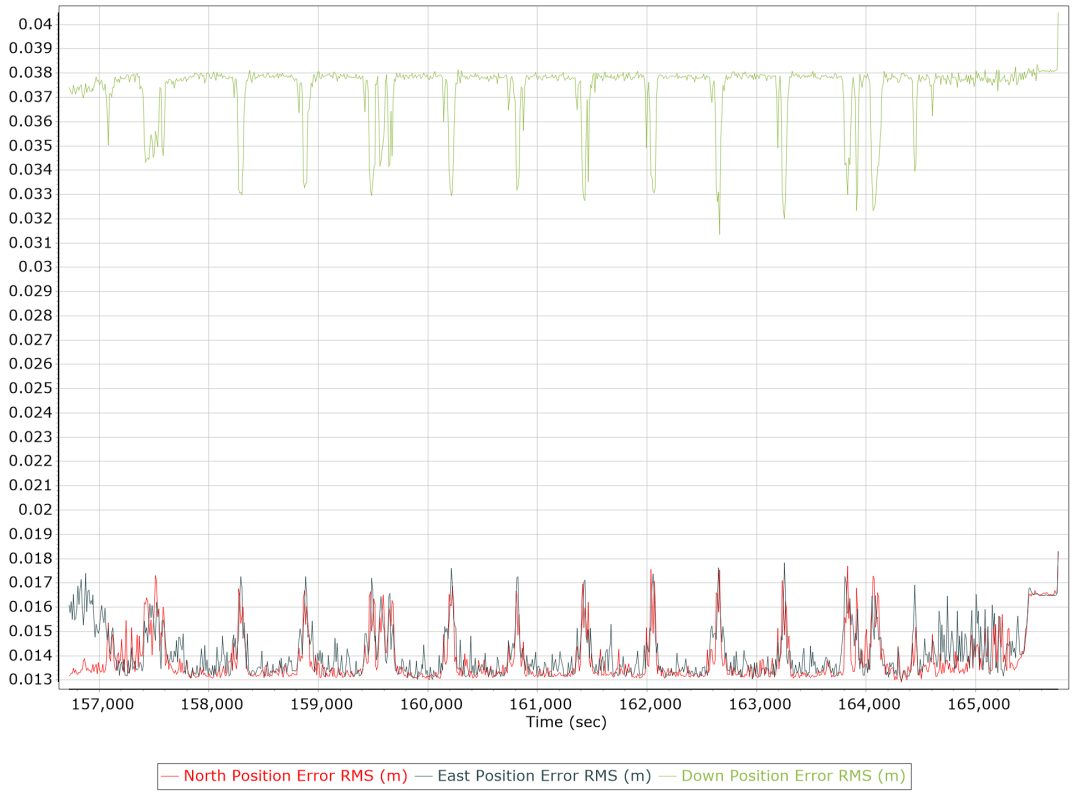


Z Gyro Scale Error (ppm)

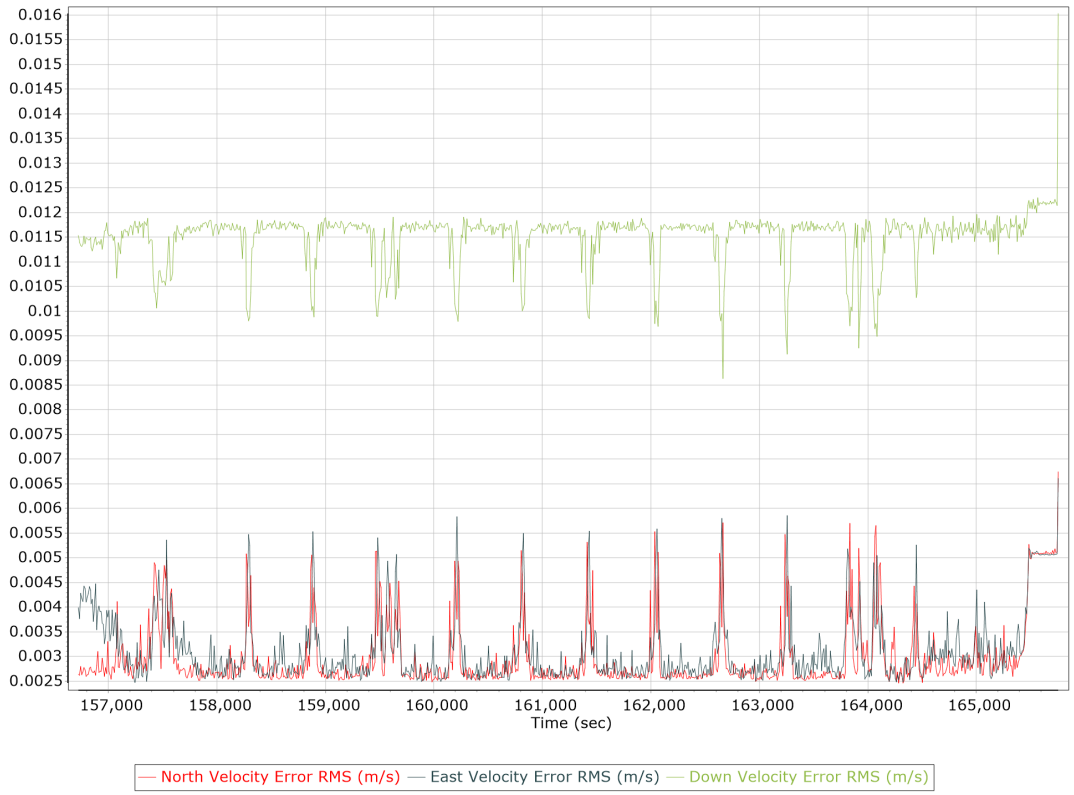


Smoothed Performance Metrics

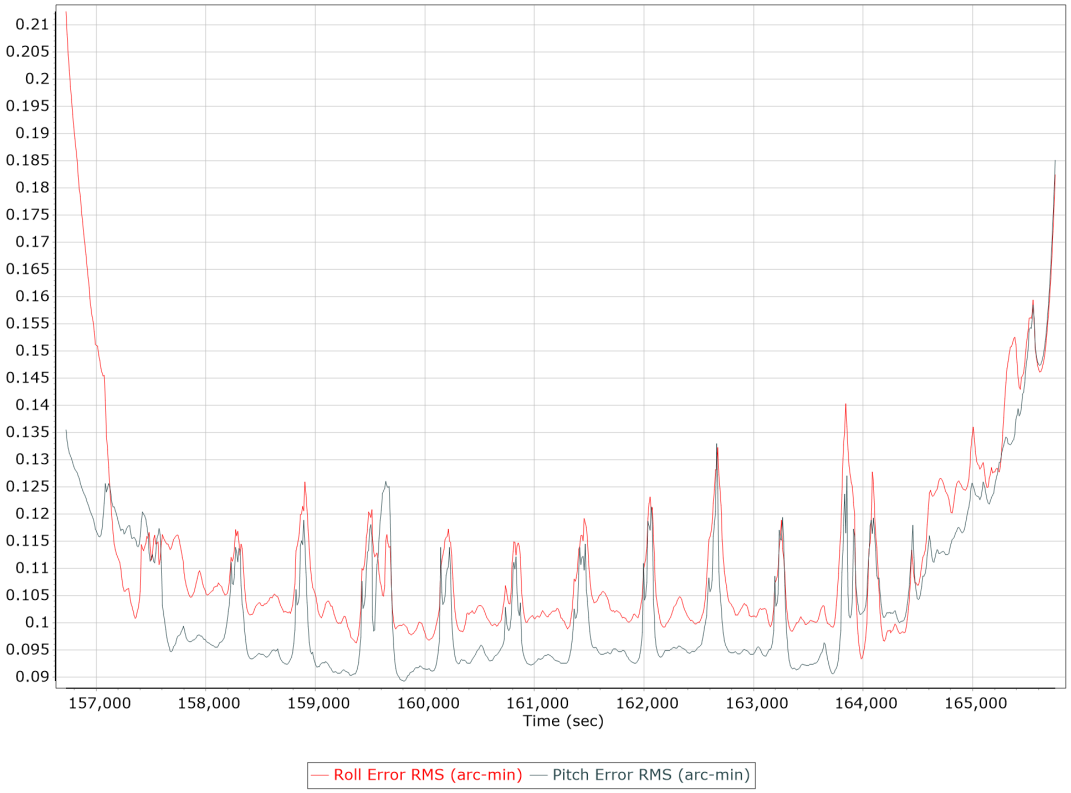
Position Error RMS (m)



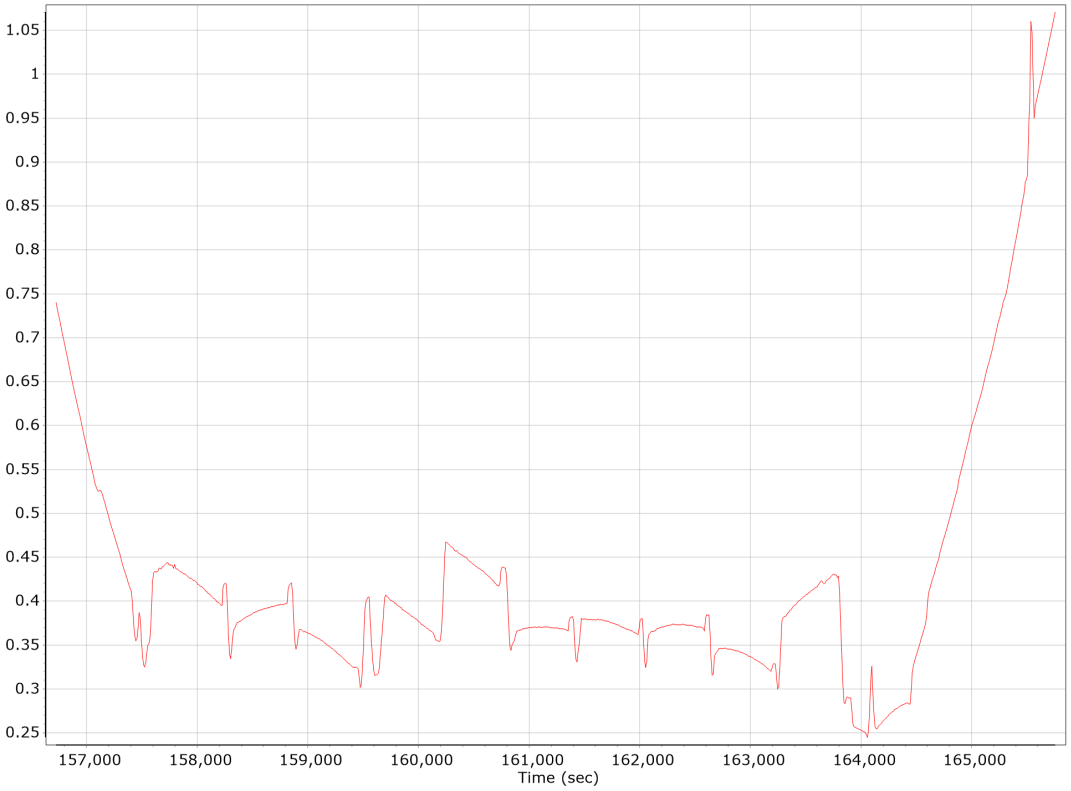
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)



Heading Error RMS (arc-min)

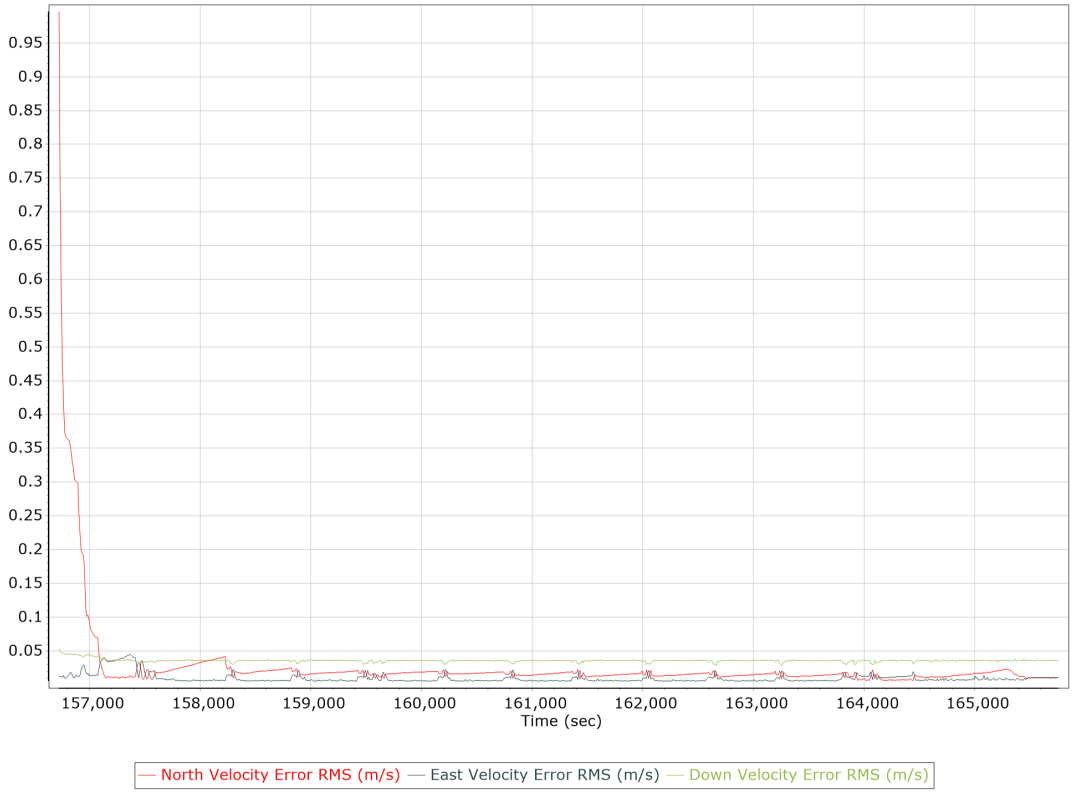


Forward Processed Performance Metrics

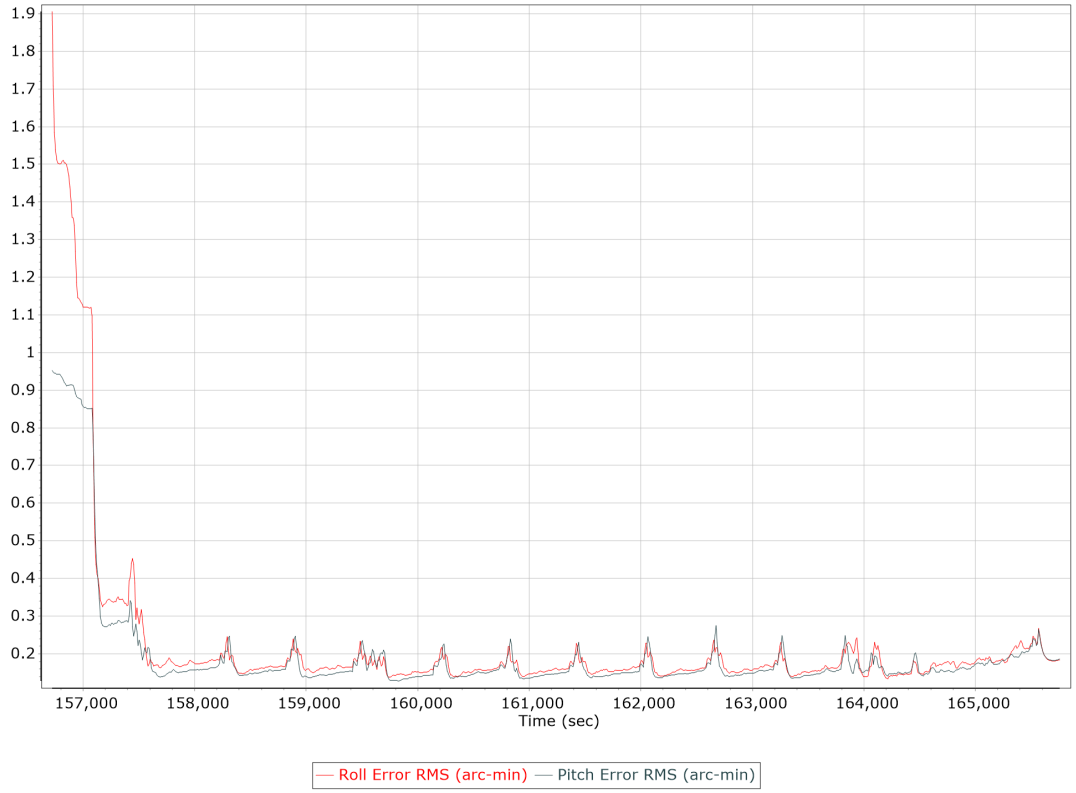
Position Error RMS (m)



Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

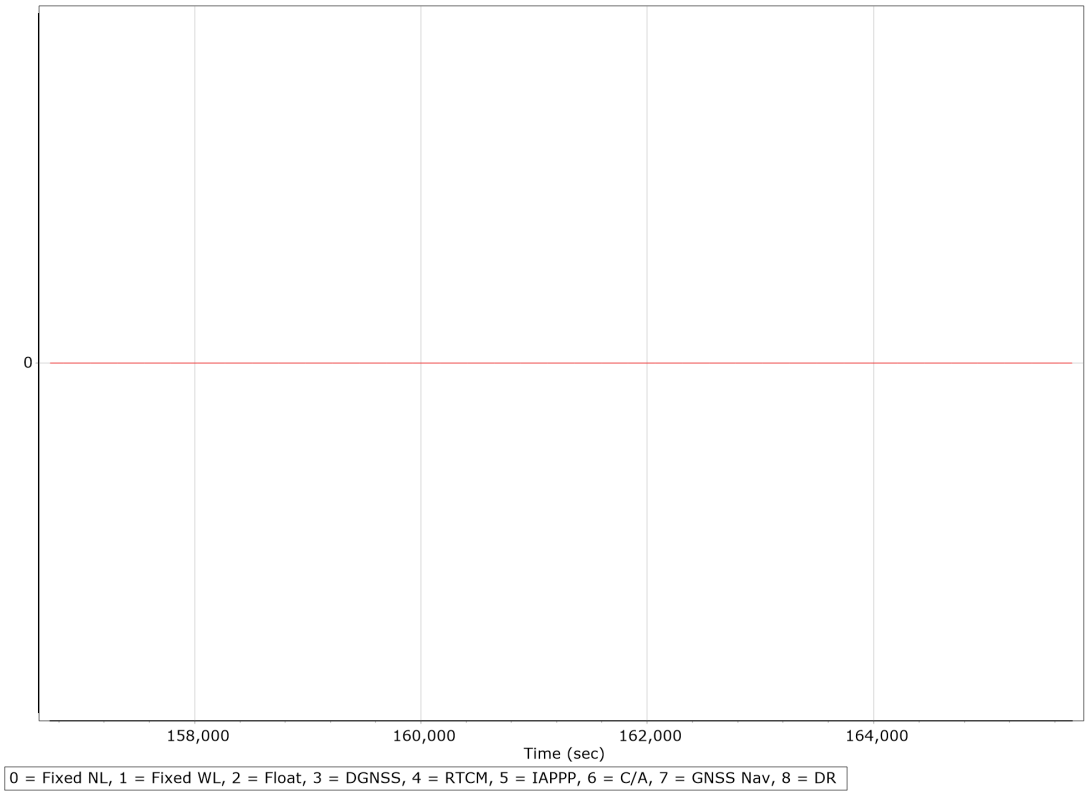


Heading Error RMS (arc-min)



Forward Processed Solution Status

Processing Mode

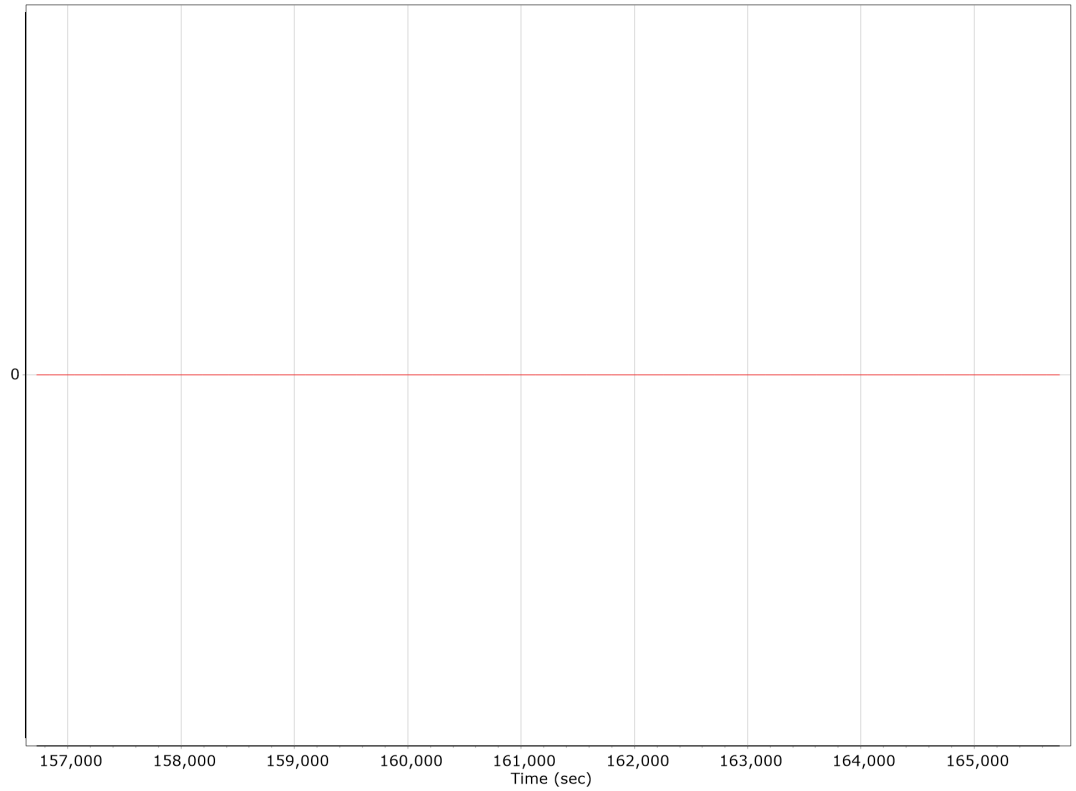


0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGNSS, 4 = RTCM, 5 = IAPPP, 6 = C/A, 7 = GNSS Nav, 8 = DR

Number of Satellites



Baseline Length



General Information

Mission Information

Project name	09252023A_4046
Processing date	2024-01-11 16:48:31
Mission date	2023-09-25 18:36:01
Mission duration	05:33:03.925
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N10762
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
230925_183542_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm2680.23g	GLONASS Broadcast Ephemeris
Ephm2680.23n	GPS Broadcast Ephemeris
Ephm2690.23g	GLONASS Broadcast Ephemeris
Ephm2690.23n	GPS Broadcast Ephemeris
IGS0OPSFIN_20232670000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232680000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232690000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232700000_01D_15M_ORB.SP3	GPS Precise Ephemeris

Output Files

Filename	File type
sbet_09252023A_4046.out	SBET Trajectory File

Rover Data Summary

First raw data file	230925_183542_INS-GPS_1.raw		
Last raw data file	230925_183542_INS-GPS_1.raw		
Start GPS week	2281		
Start time	153342.736 (9/25/2023 6:35:42 PM)		
End time	173326.661 (9/26/2023 12:08:46 AM)		
Start of fine alignment	153562.677 (9/25/2023 6:39:22 PM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	0.000	0.000	0.000
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

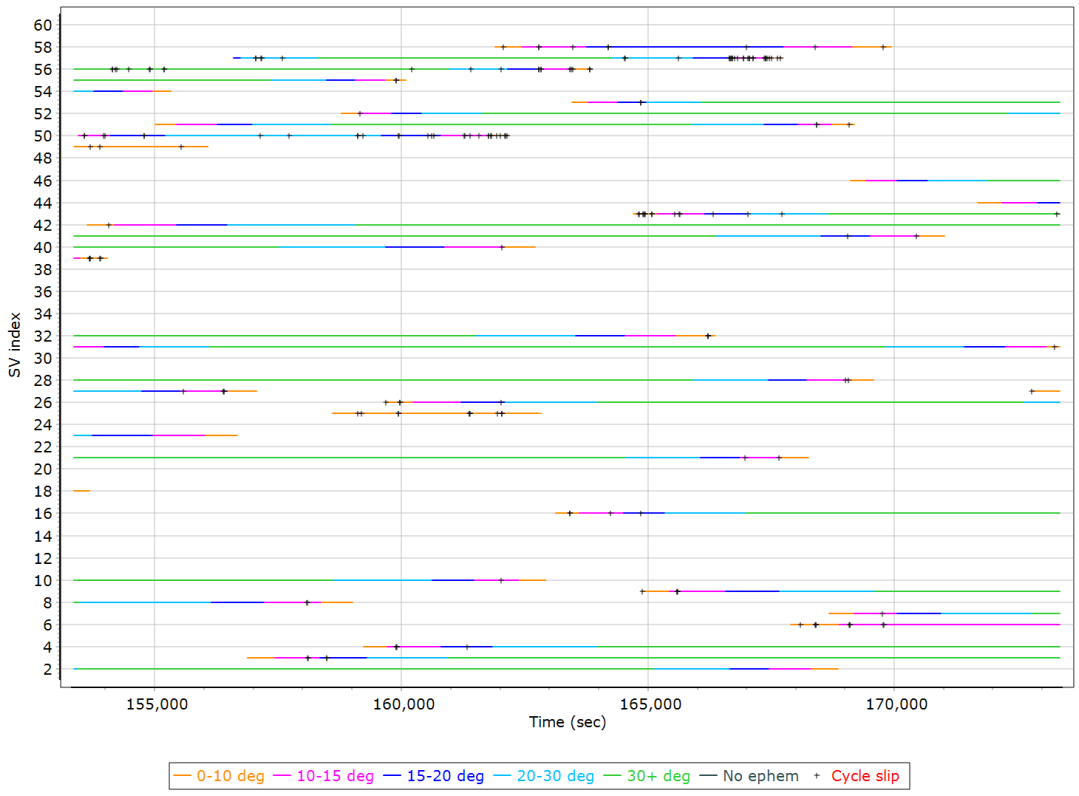
Rover Data QC

Raw IMU Import QC Summary

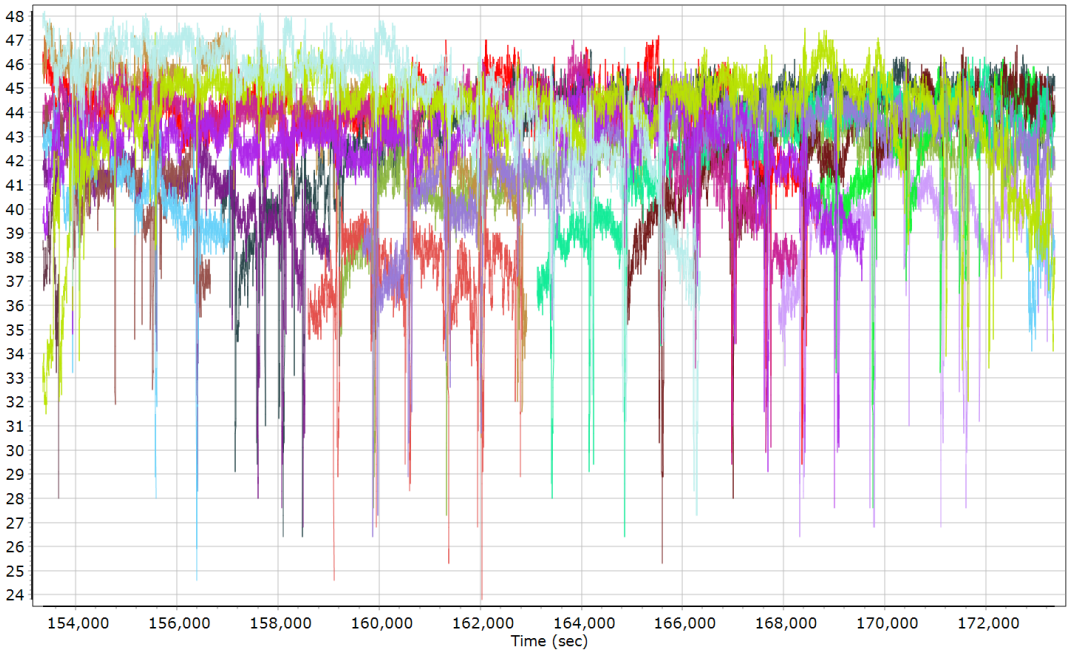
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_09252023A_4046.log
IMU Records Processed	3997941
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

GPS/GLONASS L1 Satellite Lock/Elevation

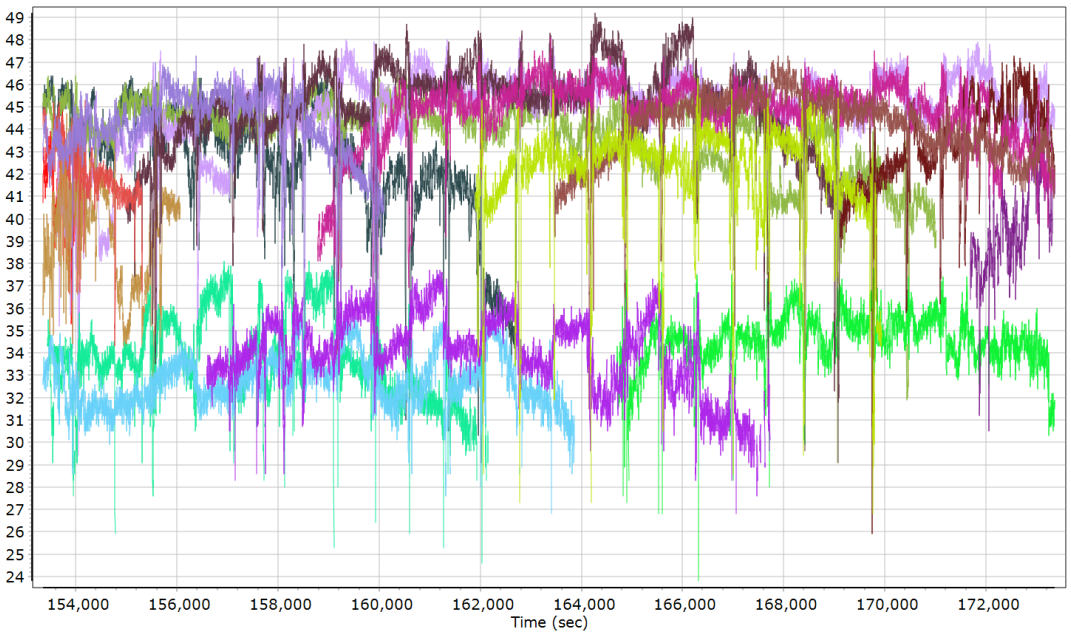


GPS L1 SNR



GPS PRN 02 L1 SNR (dB/Hz) GPS PRN 03 L1 SNR (dB/Hz) GPS PRN 04 L1 SNR (dB/Hz) GPS PRN 06 L1 SNR (dB/Hz)
GPS PRN 07 L1 SNR (dB/Hz) GPS PRN 08 L1 SNR (dB/Hz) GPS PRN 09 L1 SNR (dB/Hz) GPS PRN 10 L1 SNR (dB/Hz)
GPS PRN 16 L1 SNR (dB/Hz) GPS PRN 18 L1 SNR (dB/Hz) GPS PRN 21 L1 SNR (dB/Hz) GPS PRN 23 L1 SNR (dB/Hz)
GPS PRN 25 L1 SNR (dB/Hz) GPS PRN 26 L1 SNR (dB/Hz) GPS PRN 27 L1 SNR (dB/Hz) GPS PRN 28 L1 SNR (dB/Hz)
GPS PRN 31 L1 SNR (dB/Hz) GPS PRN 32 L1 SNR (dB/Hz)

GLONASS L1 SNR

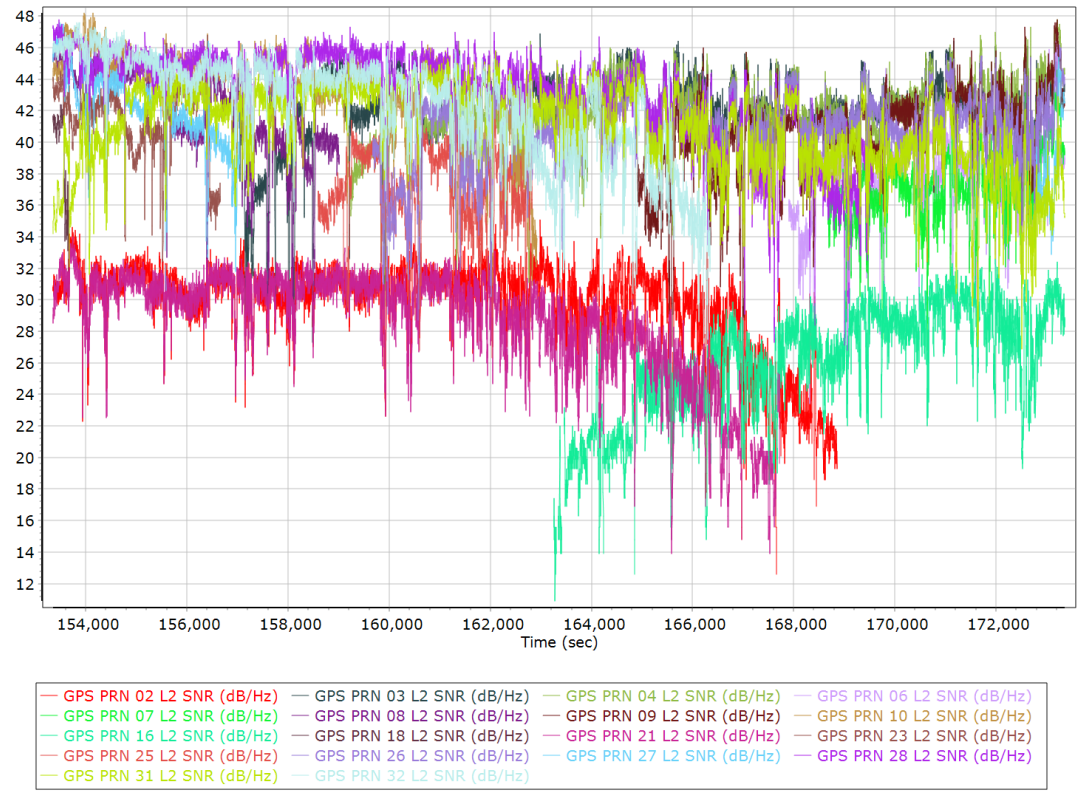


GLONASS 02 L1 SNR (dB/Hz) GLONASS 03 L1 SNR (dB/Hz) GLONASS 04 L1 SNR (dB/Hz)
GLONASS 05 L1 SNR (dB/Hz) GLONASS 06 L1 SNR (dB/Hz) GLONASS 07 L1 SNR (dB/Hz)
GLONASS 09 L1 SNR (dB/Hz) GLONASS 12 L1 SNR (dB/Hz) GLONASS 13 L1 SNR (dB/Hz)
GLONASS 14 L1 SNR (dB/Hz) GLONASS 15 L1 SNR (dB/Hz) GLONASS 16 L1 SNR (dB/Hz)
GLONASS 17 L1 SNR (dB/Hz) GLONASS 18 L1 SNR (dB/Hz) GLONASS 19 L1 SNR (dB/Hz)
GLONASS 20 L1 SNR (dB/Hz) GLONASS 21 L1 SNR (dB/Hz)

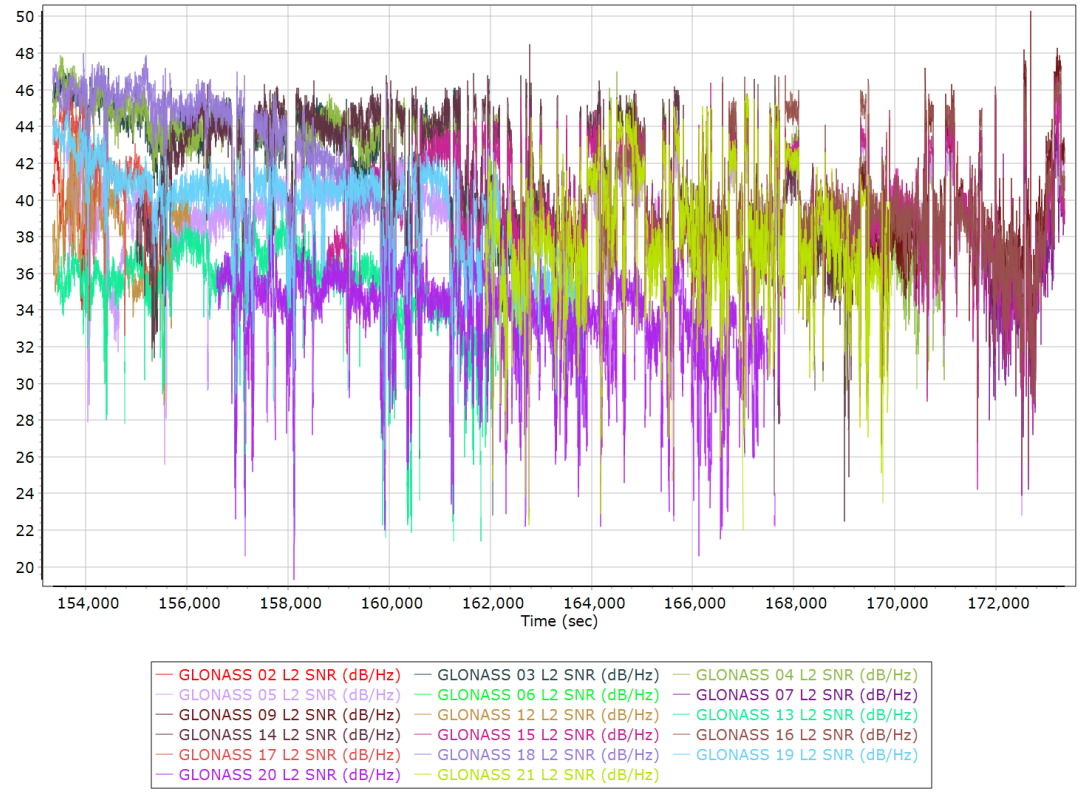
GPS/GLONASS L2 Satellite Lock/Elevation



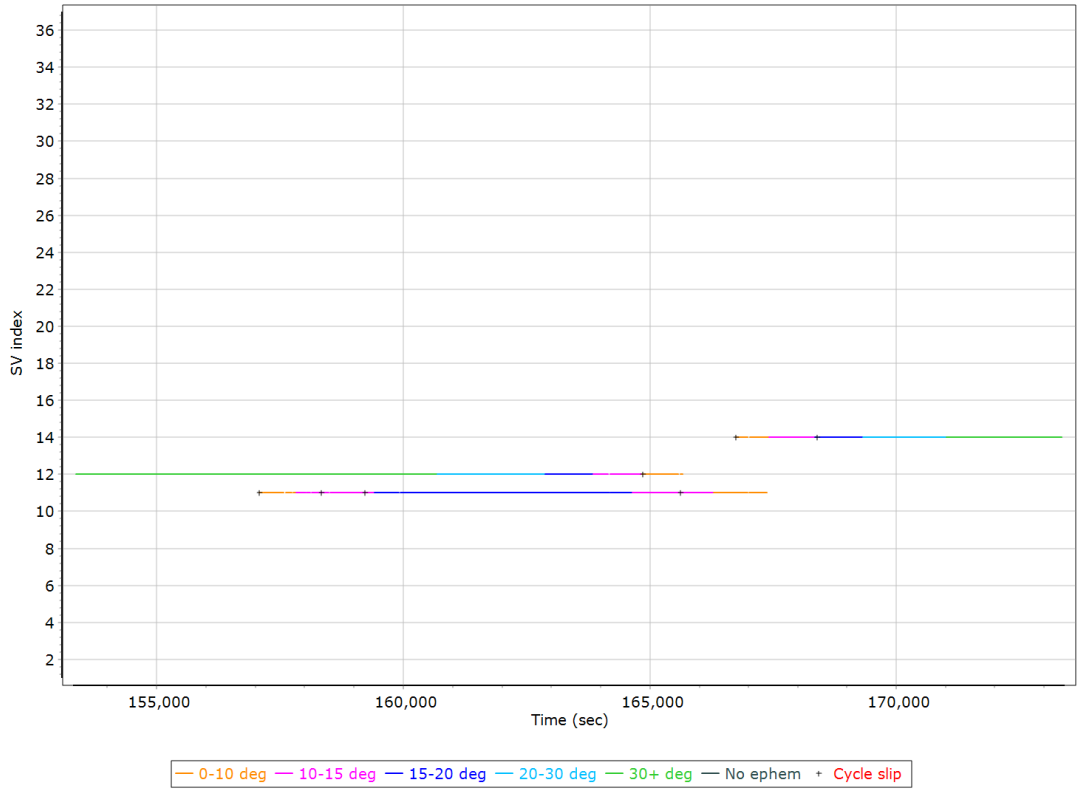
GPS L2 SNR



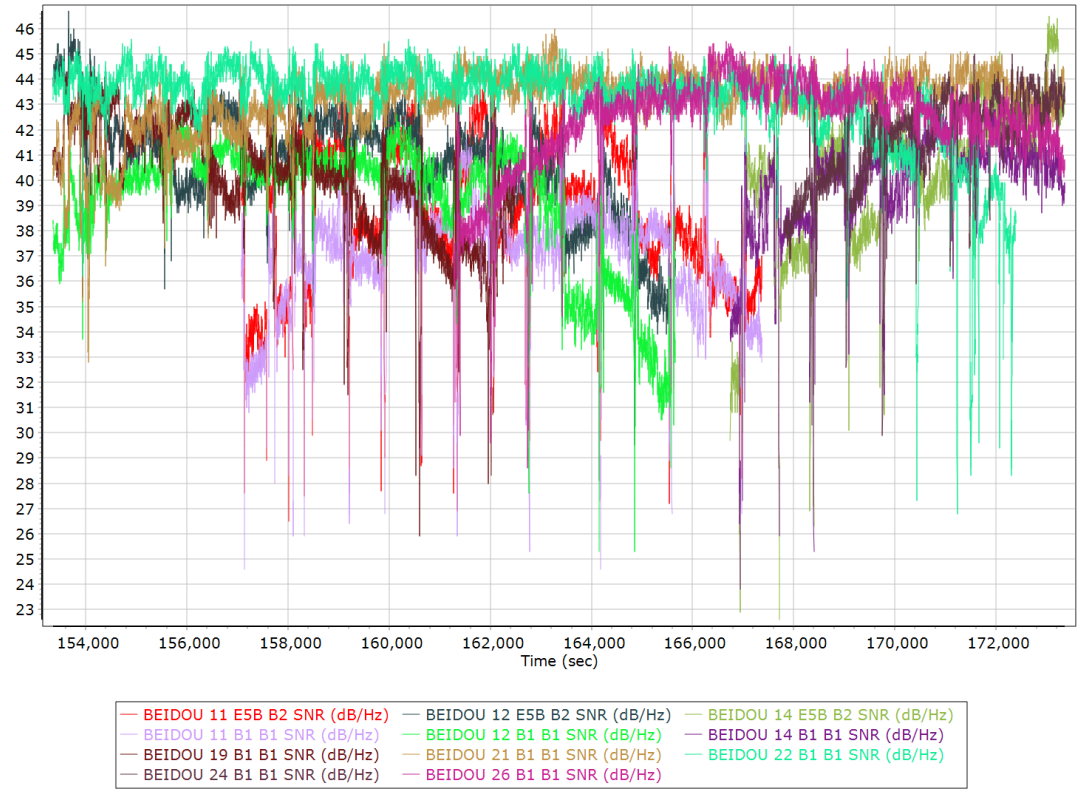
GLONASS L2 SNR



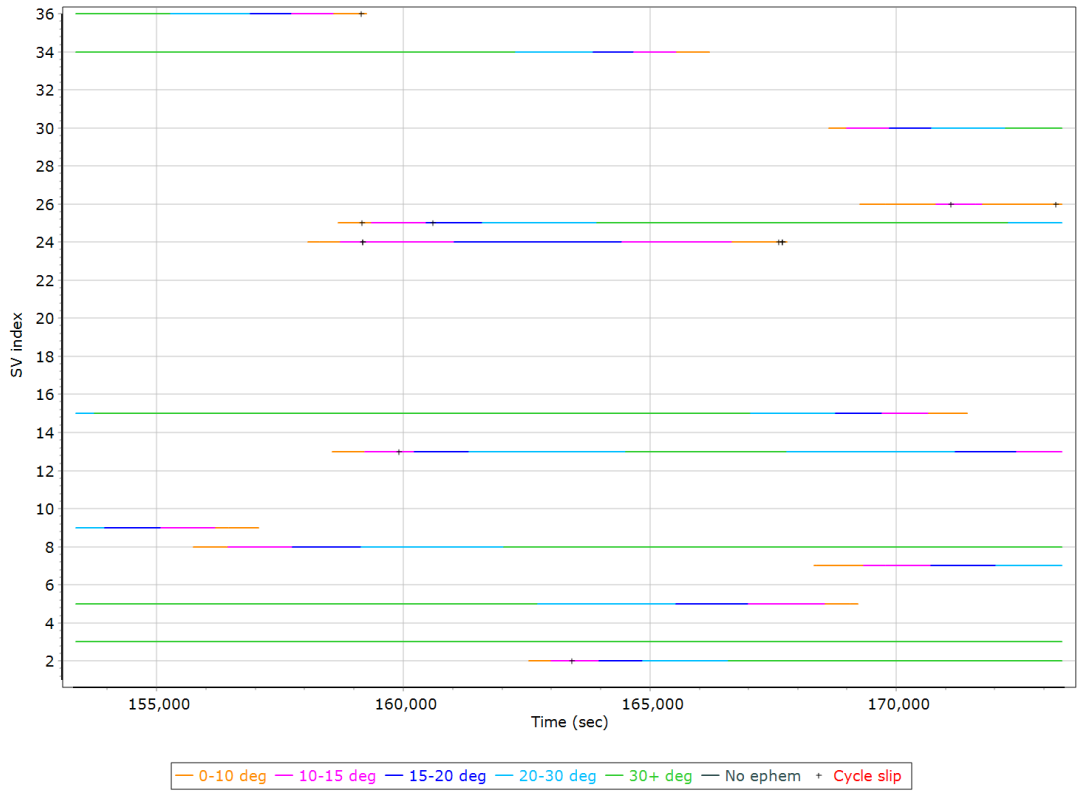
BEIDOU Satellite Lock/Elevation



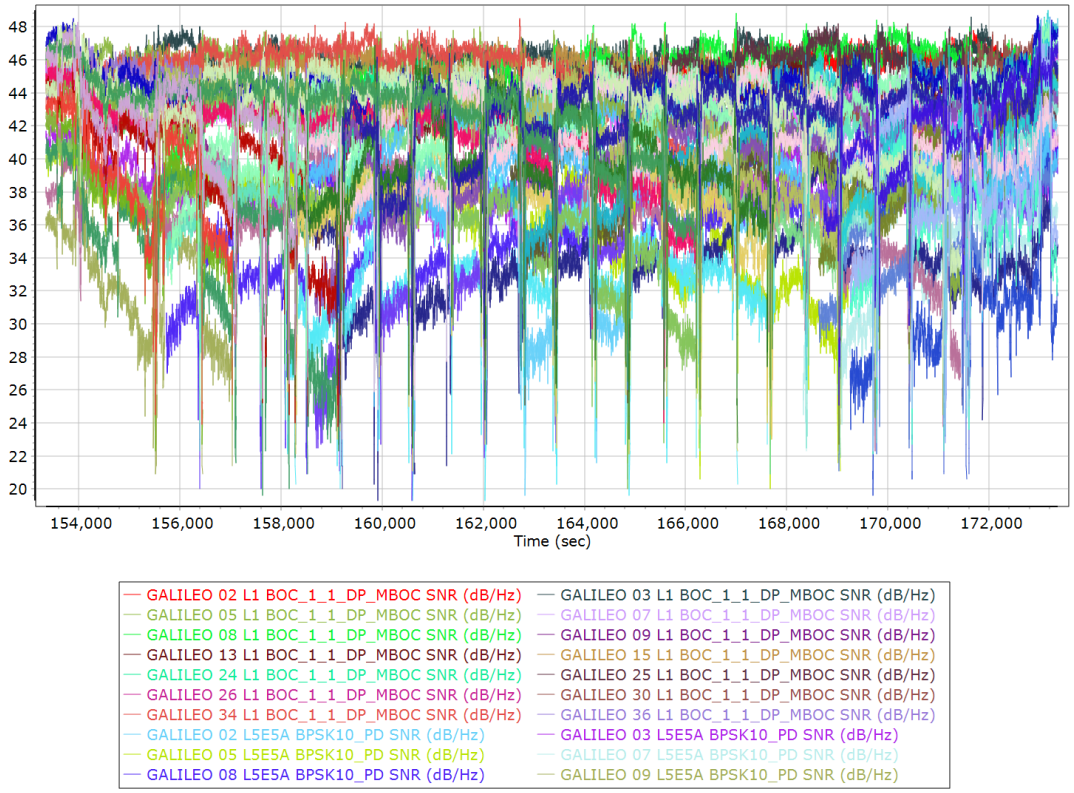
BEIDOU SNR



GALILEO Satellite Lock/Elevation

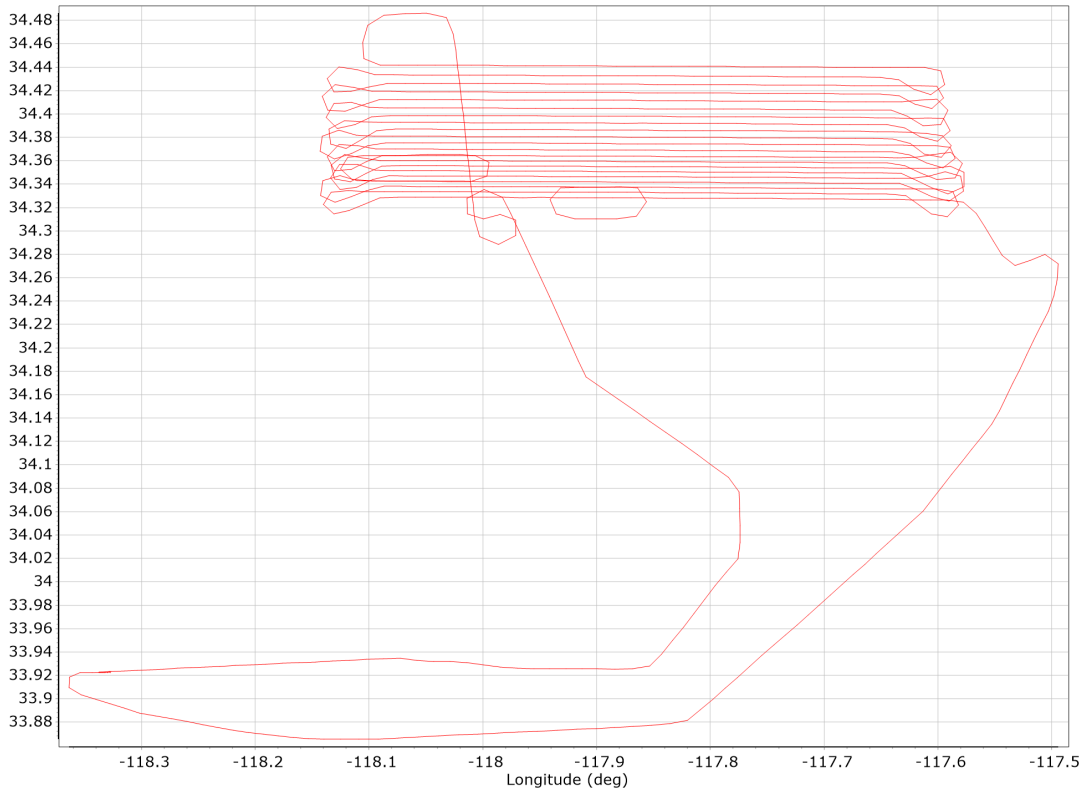


GALILEO SNR

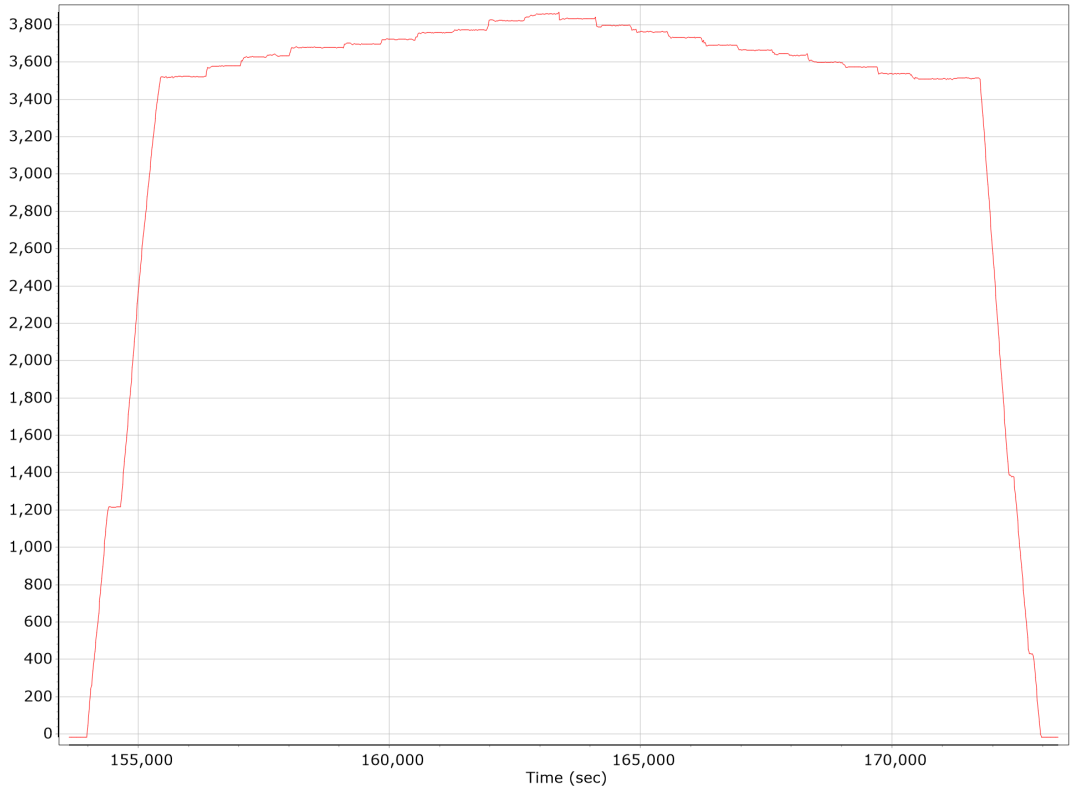

48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
154,000
156,000
158,000
160,000
162,000
164,000
166,000
168,000
170,000
172,000
Time (sec)
GALILEO 02 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 03 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 05 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 07 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 08 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 09 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 13 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 15 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 24 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 25 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 26 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 30 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 34 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 36 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 02 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 03 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 05 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 07 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 08 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 09 L5E5A BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

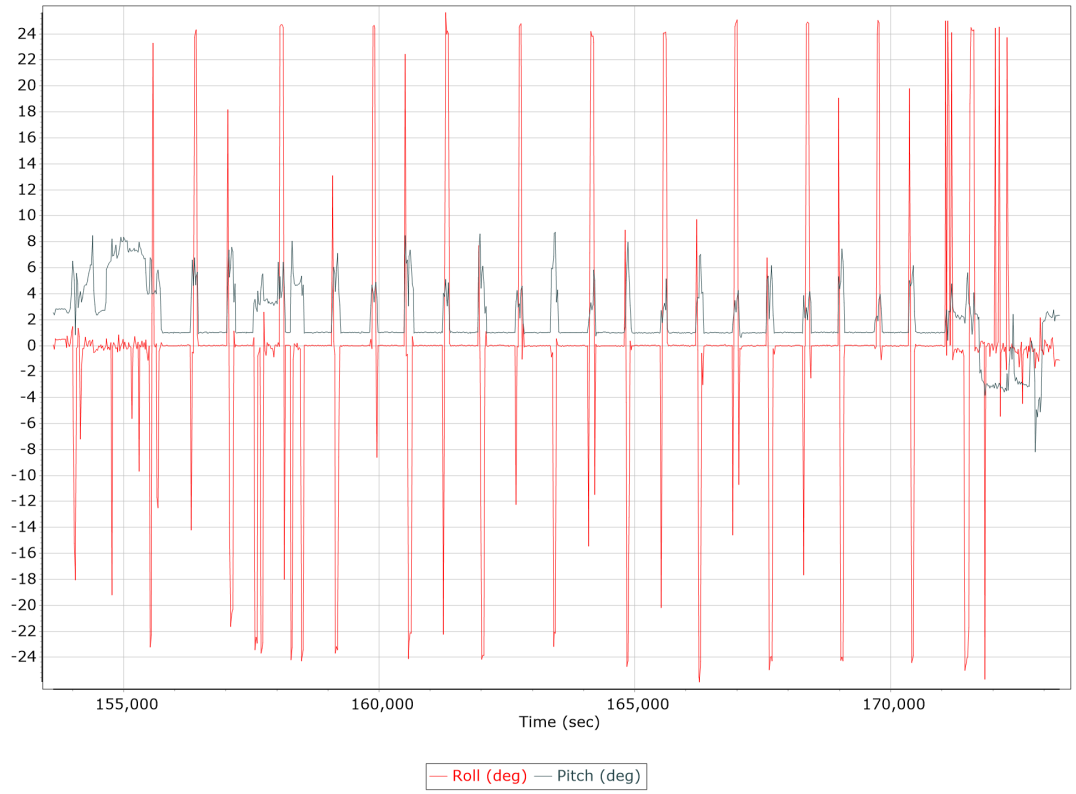
Top View



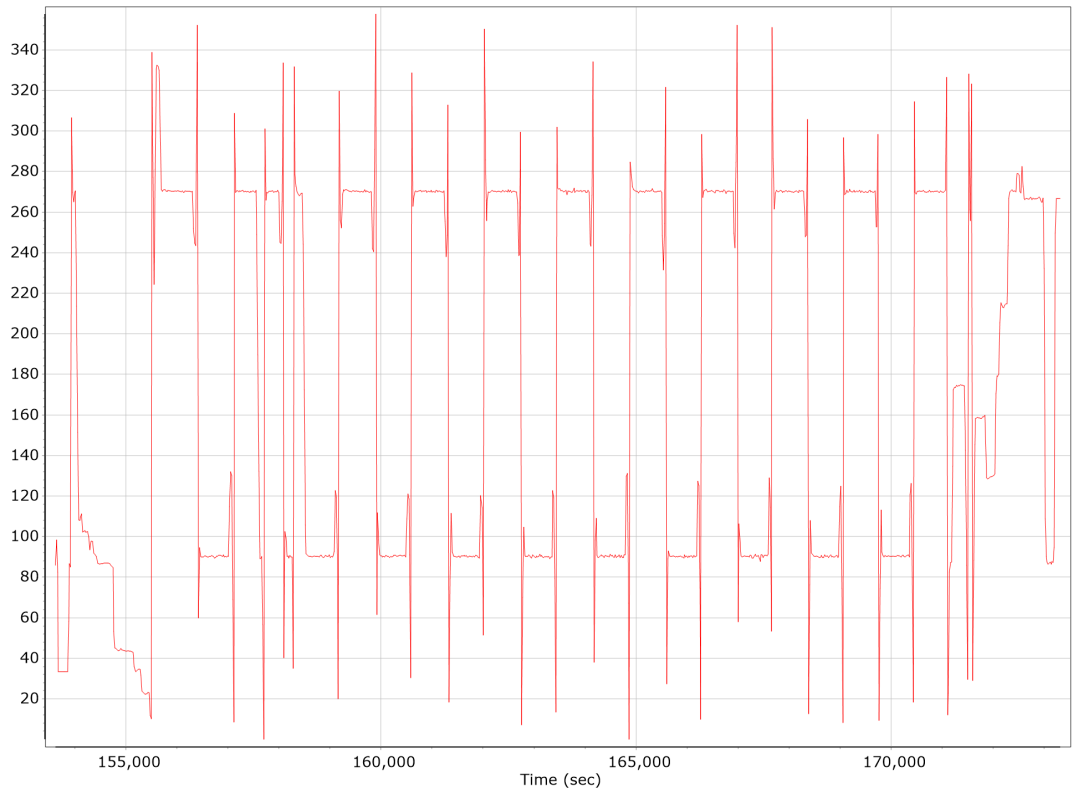
Altitude



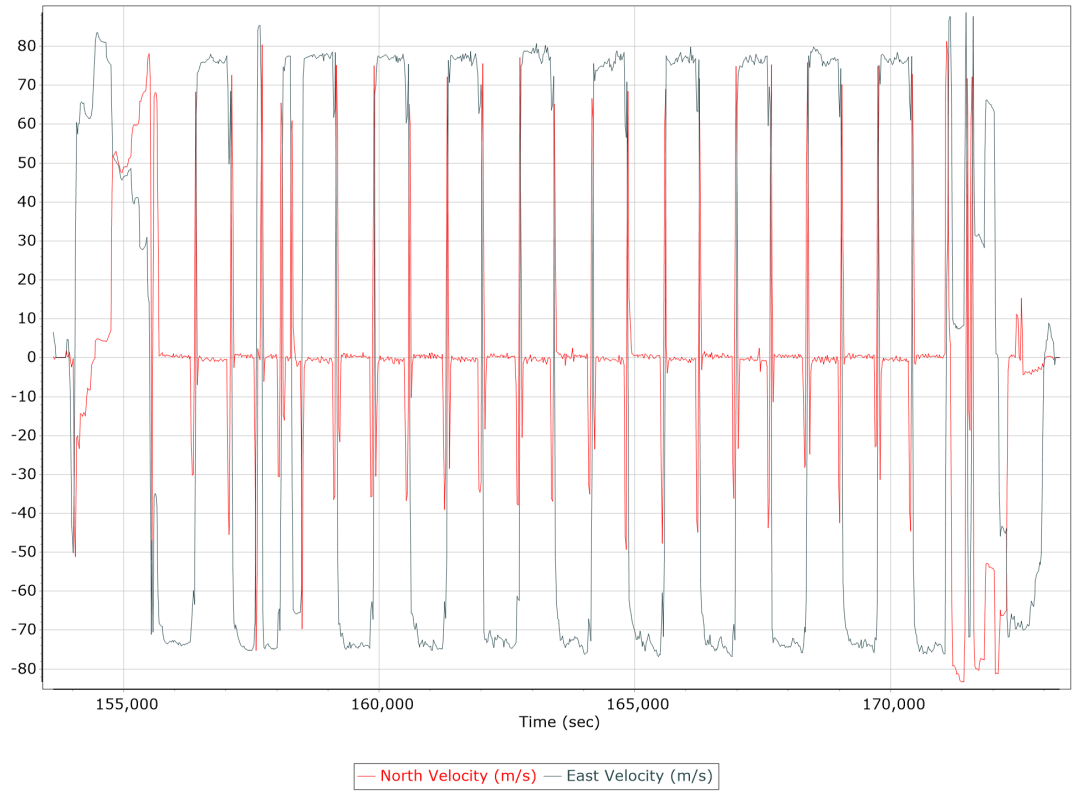
Roll/Pitch



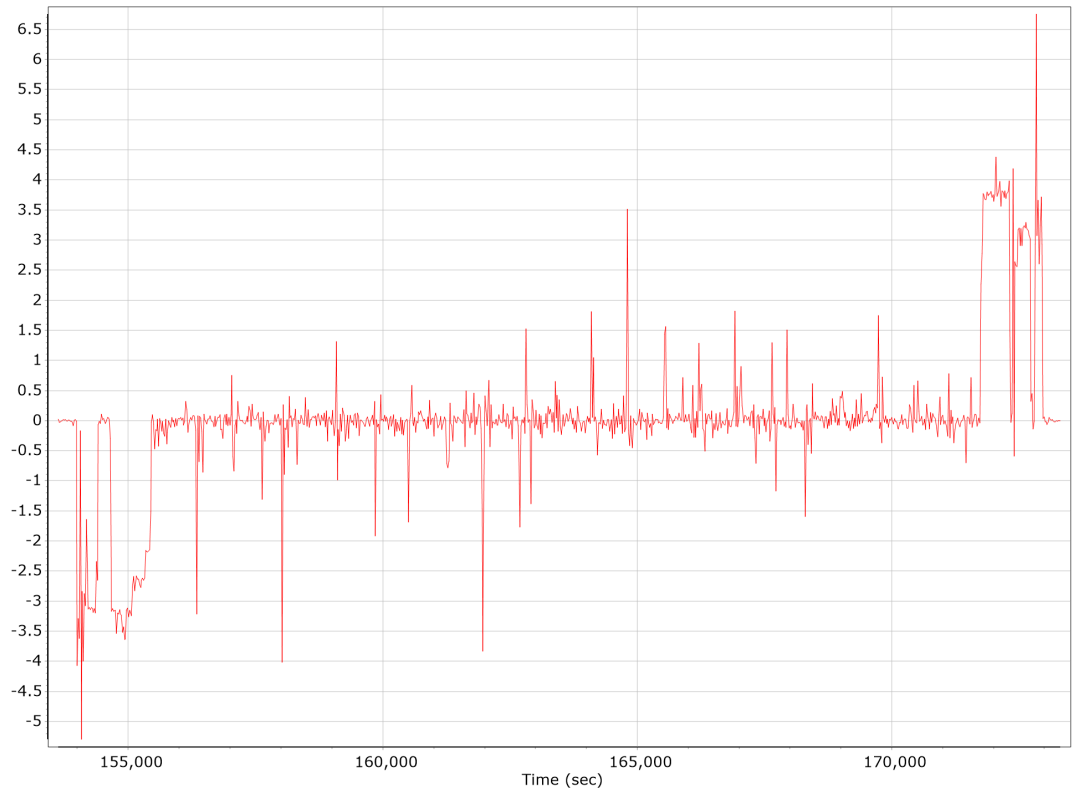
Heading



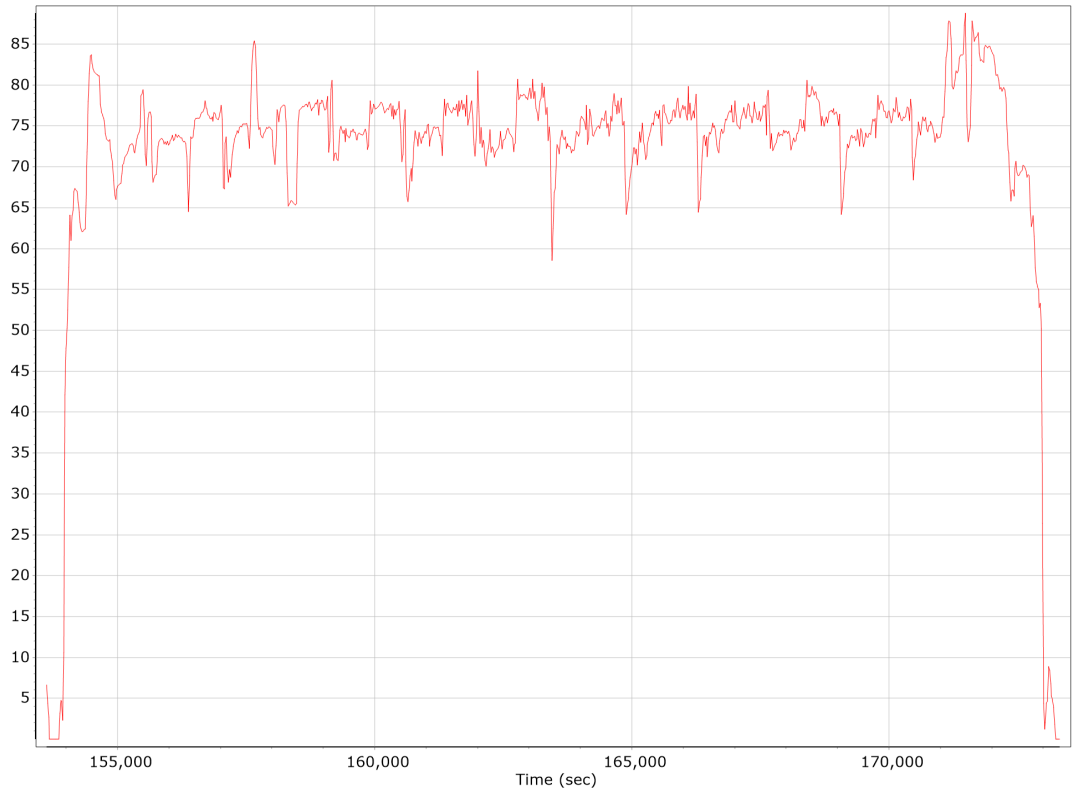
North/East Velocity



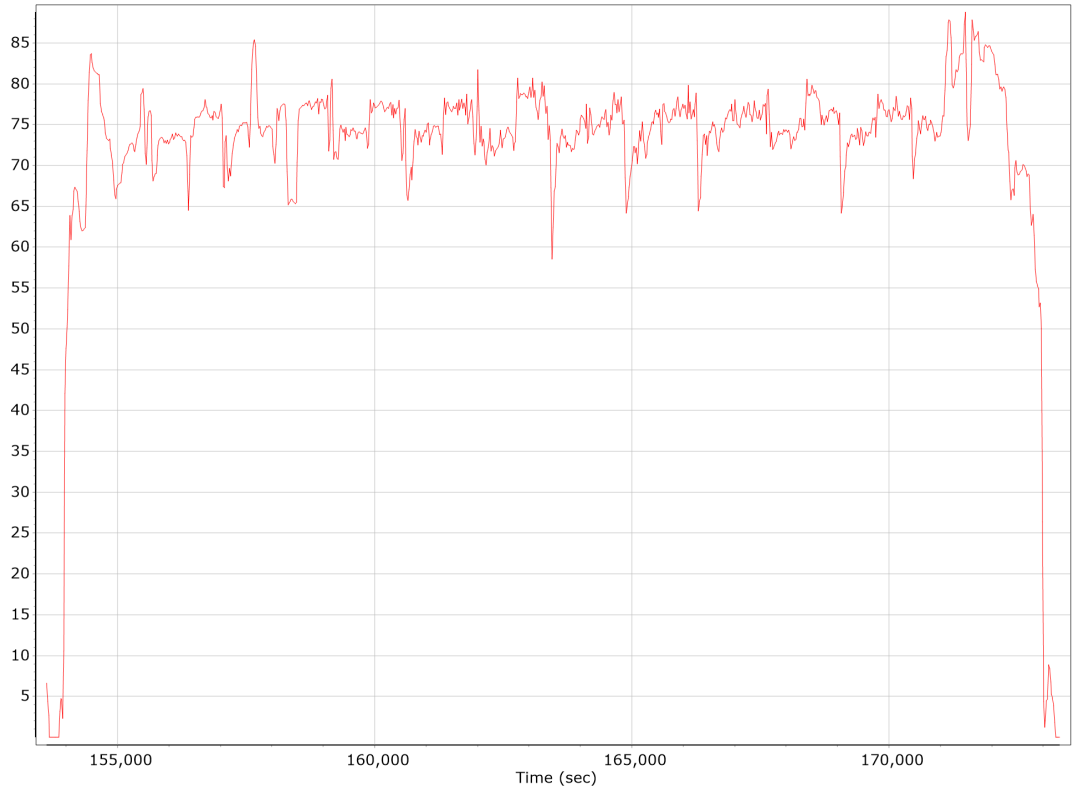
Down Velocity



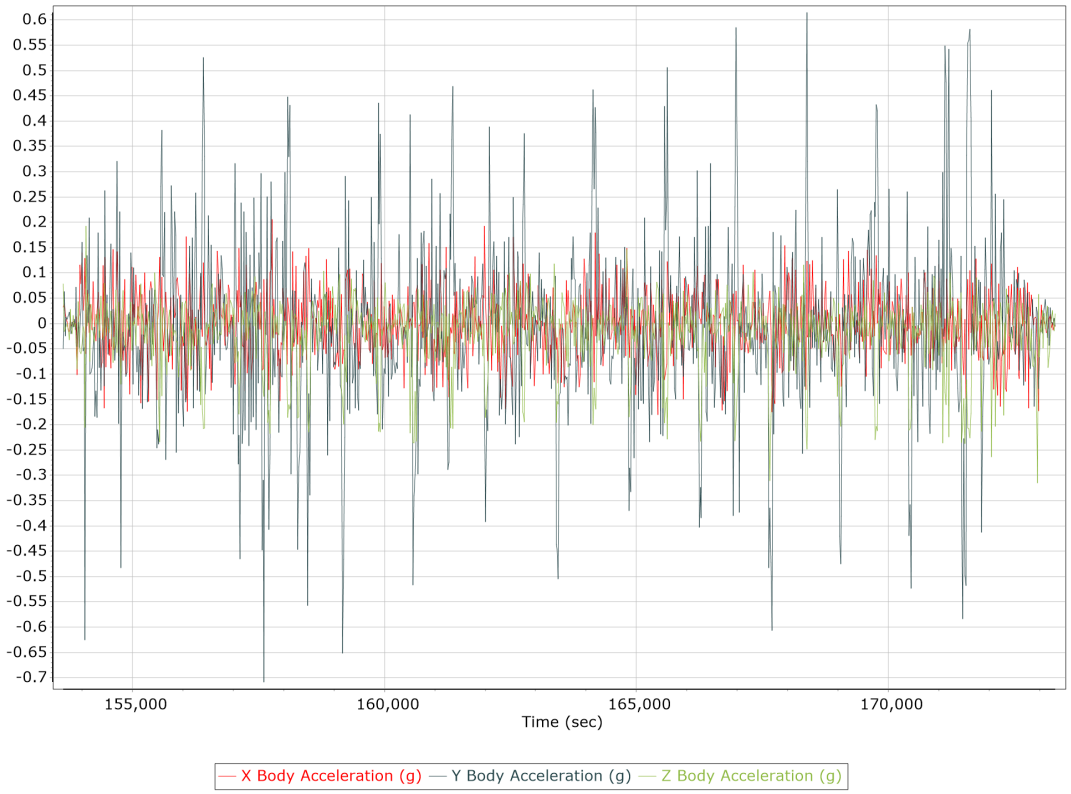
Total Speed



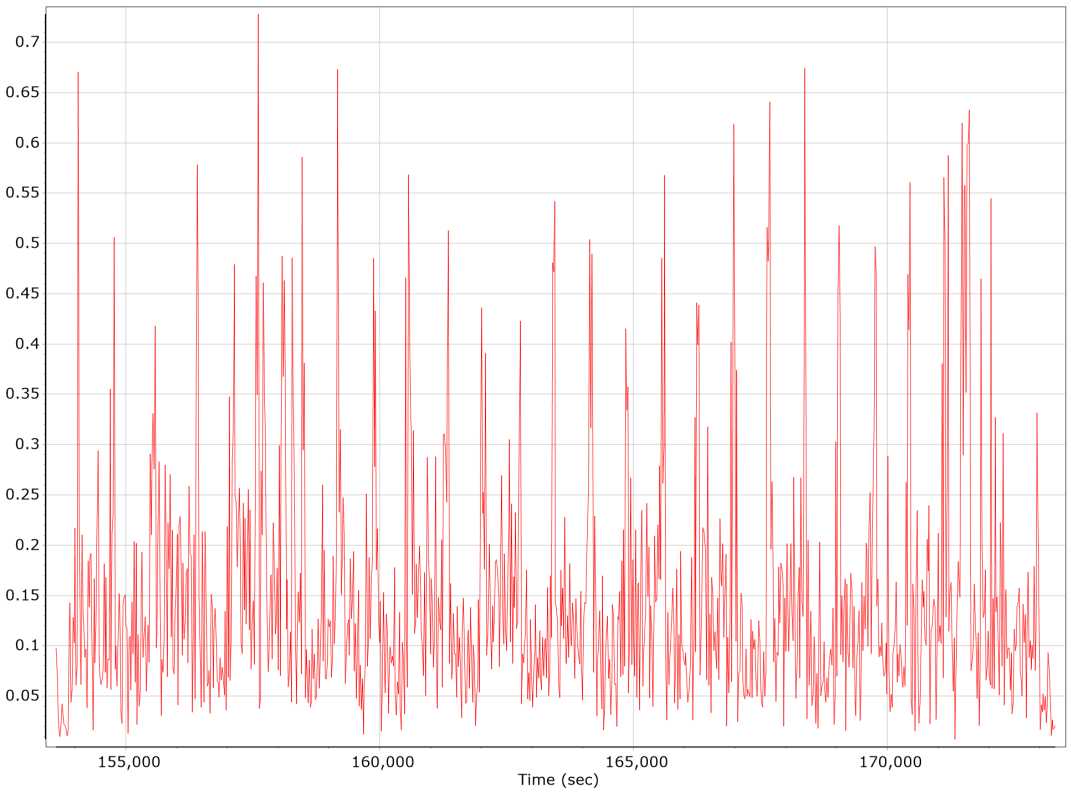
Ground Speed



Body Acceleration



Total Body Acceleration

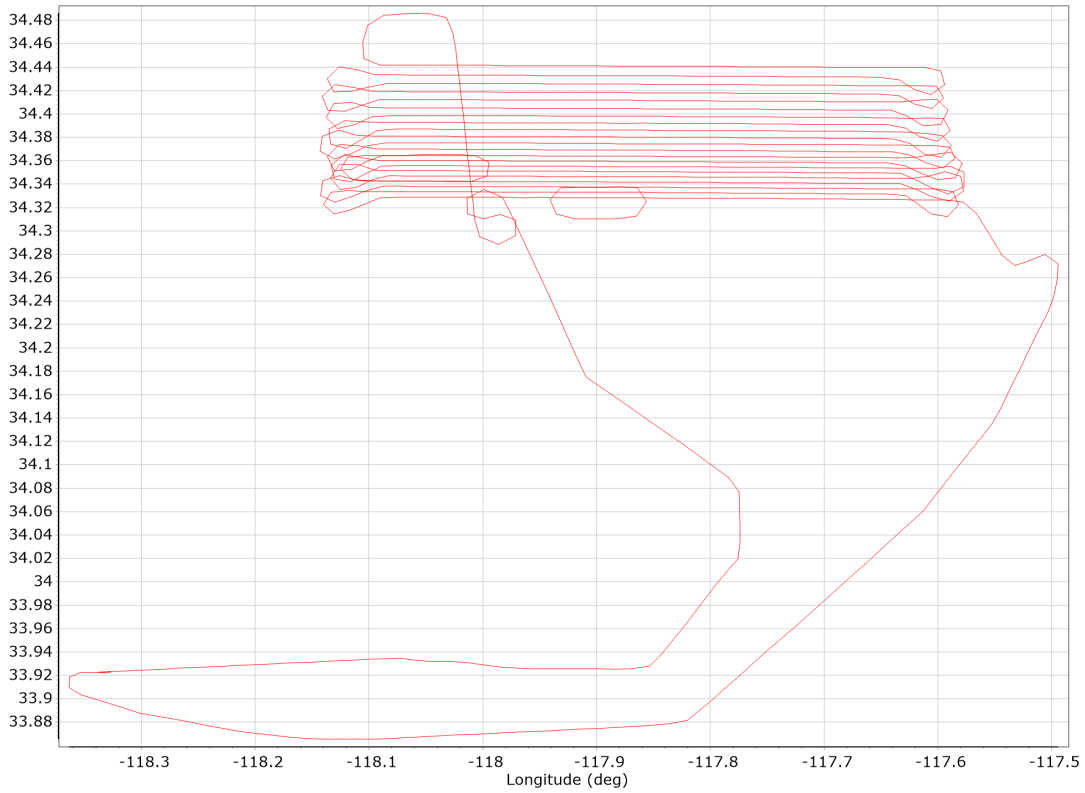


Body Angular Rate

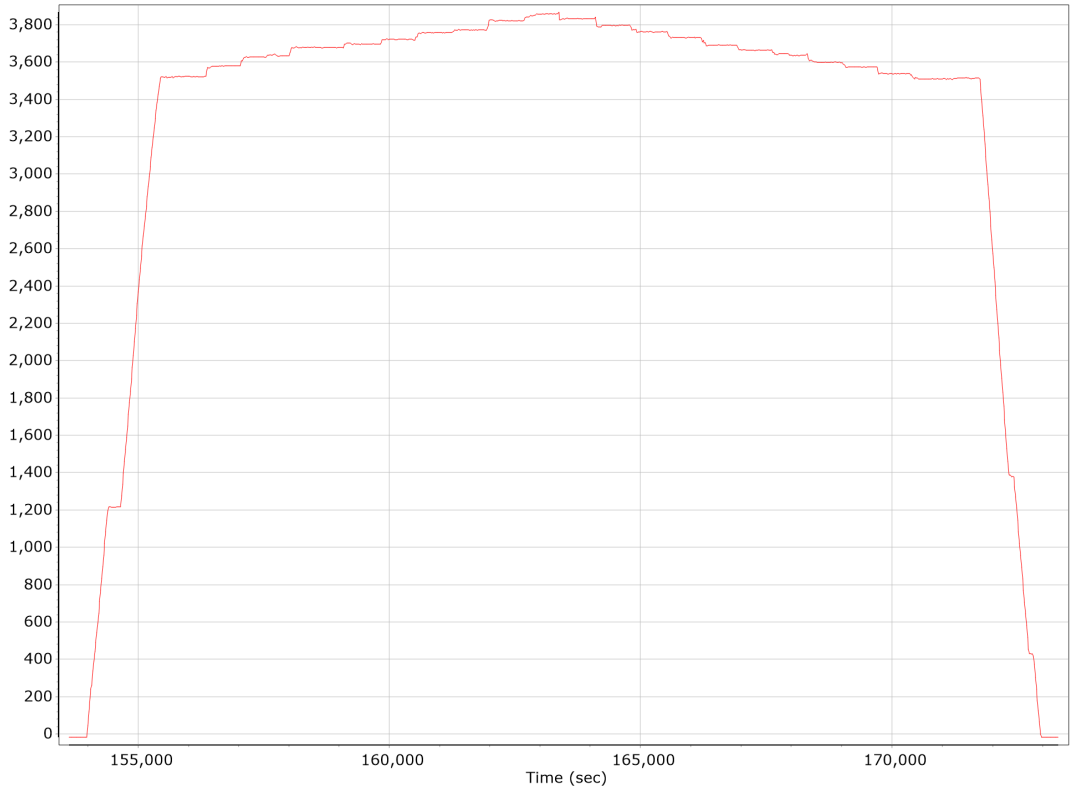


Forward Processed Trajectory Information

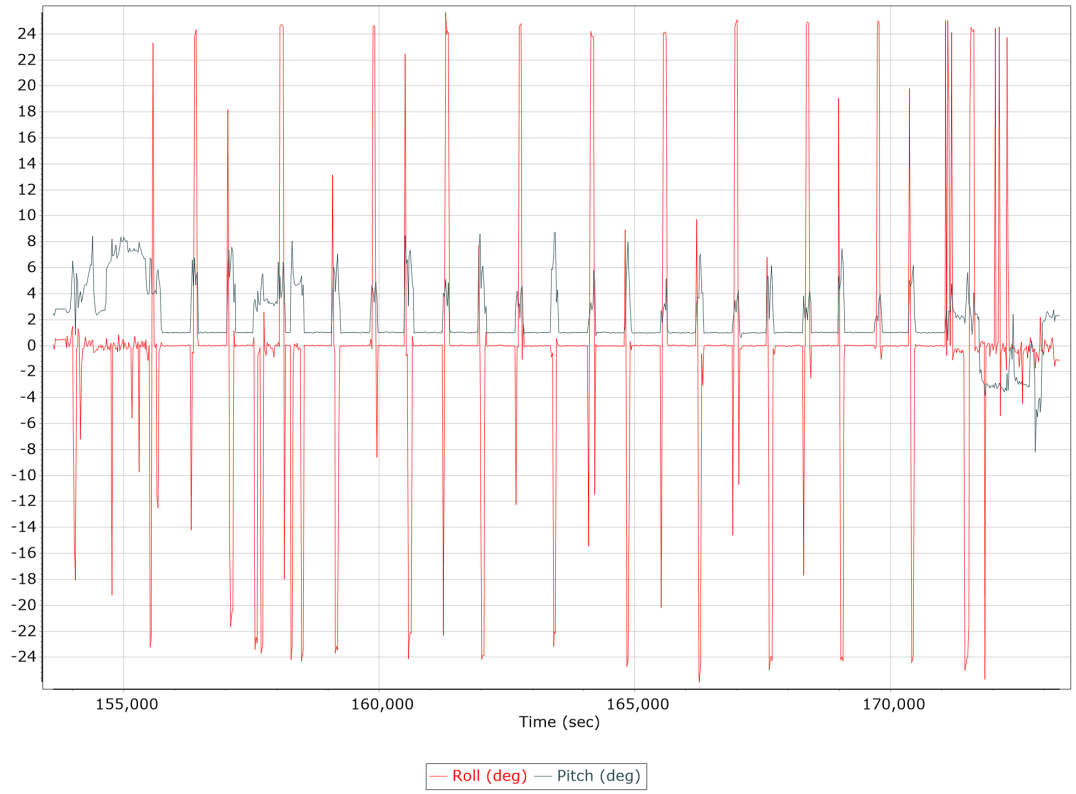
Top View



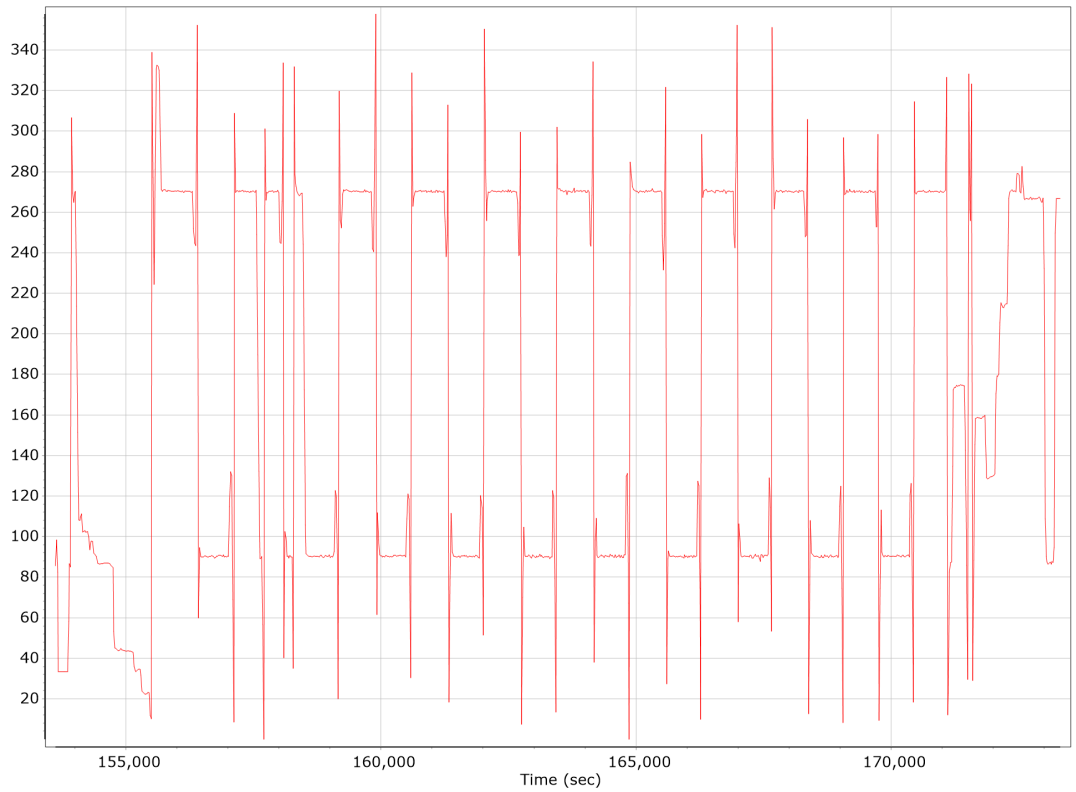
Altitude



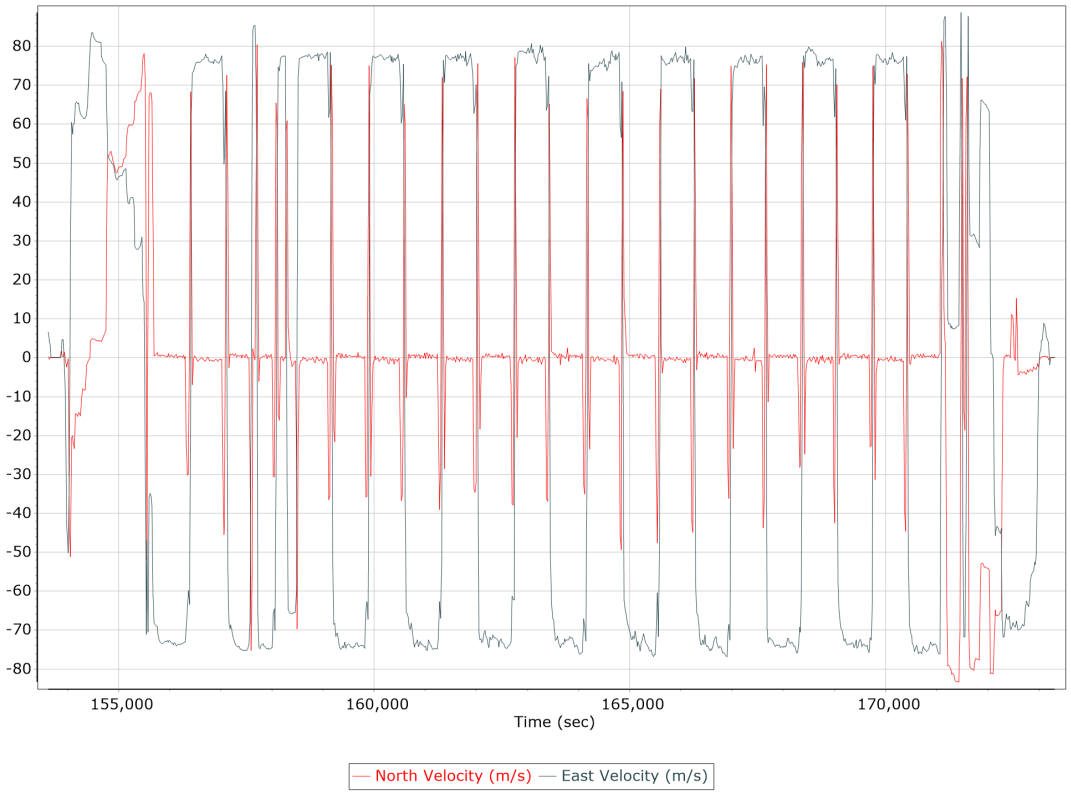
Roll/Pitch



Heading



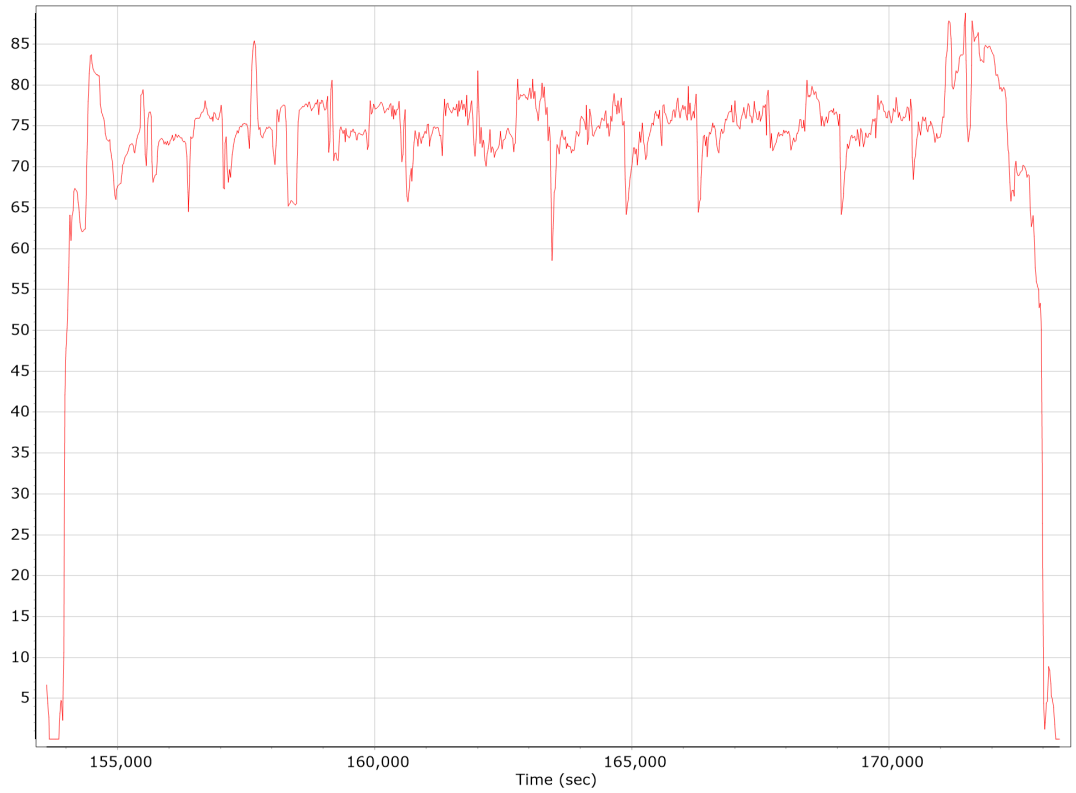
North/East Velocity



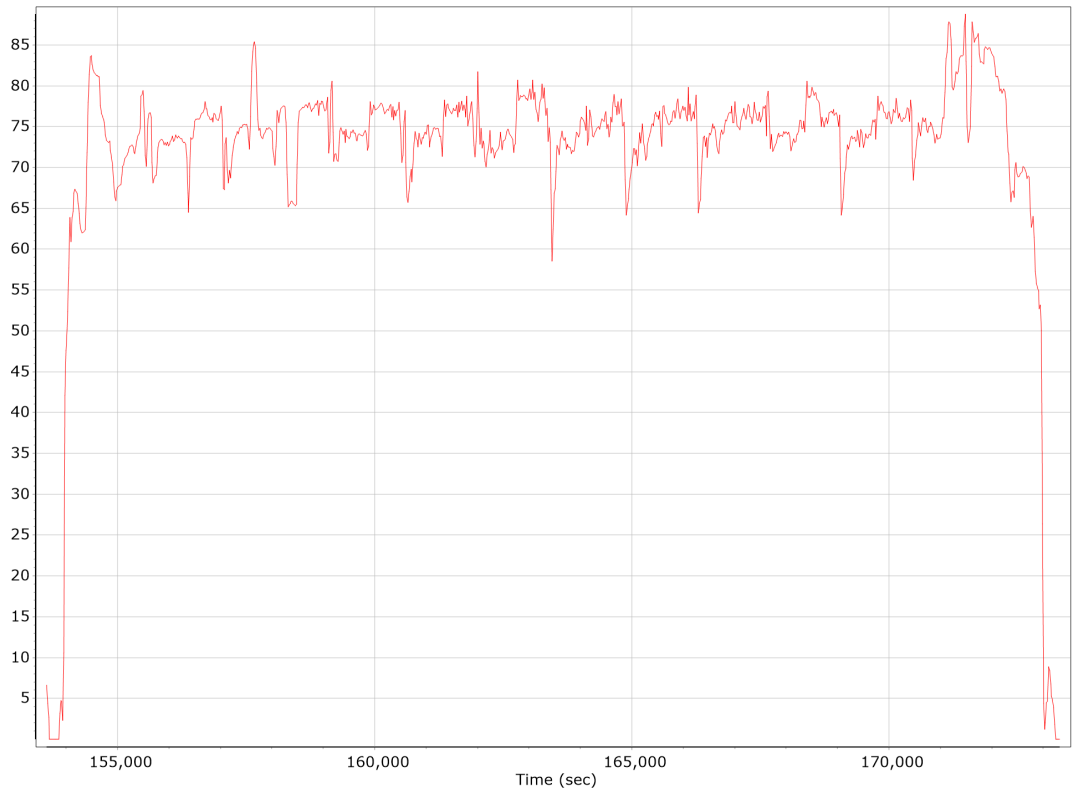
Down Velocity



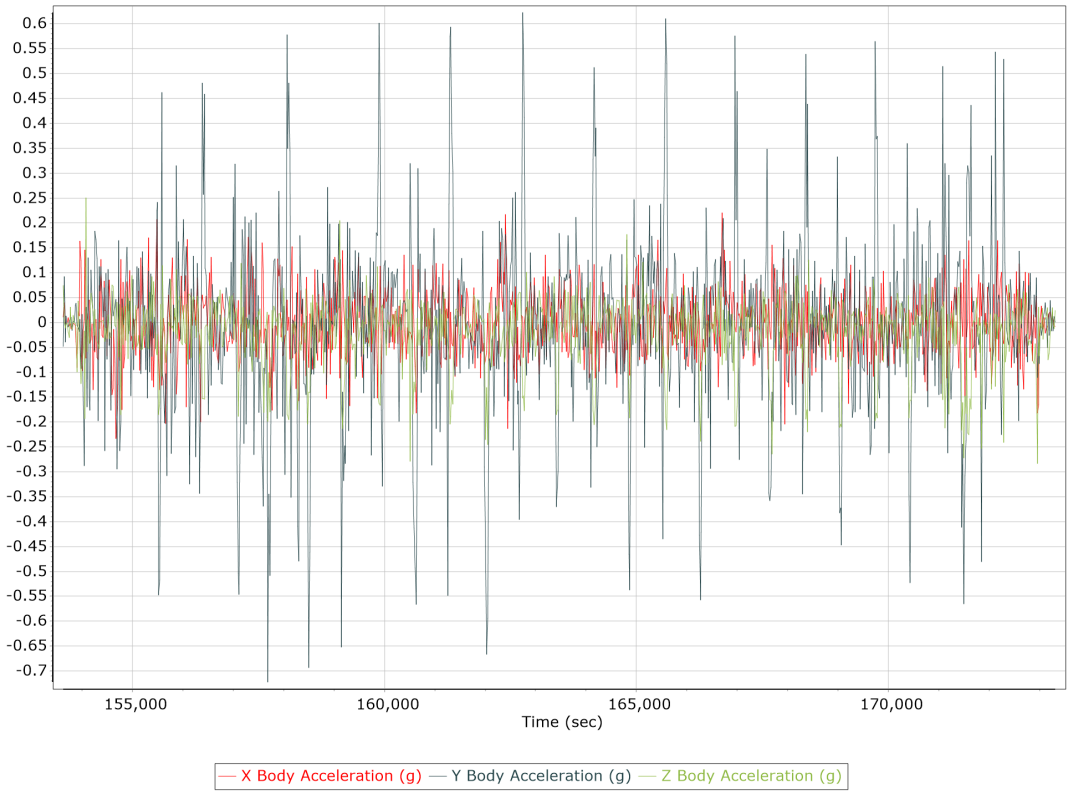
Total Speed



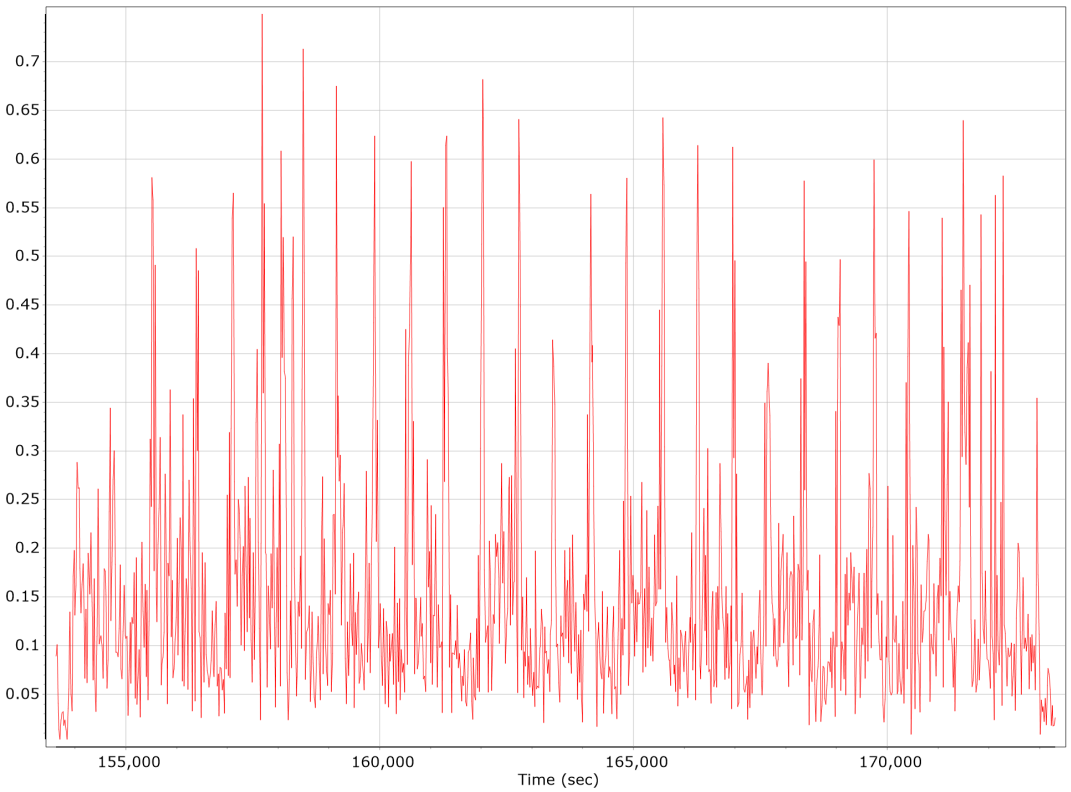
Ground Speed



Body Acceleration



Total Body Acceleration



Body Angular Rate



GNSS QC

GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	6	10	8
Number of GLONASS SV	3	9	6
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	5	9	7
Total number of SV	18	26	22
PDOP	1.01	1.53	1.18
QC Solution Gaps	0.00	0.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	19963.00	0.00	0.00
Percentage	100.00	0.00	0.00

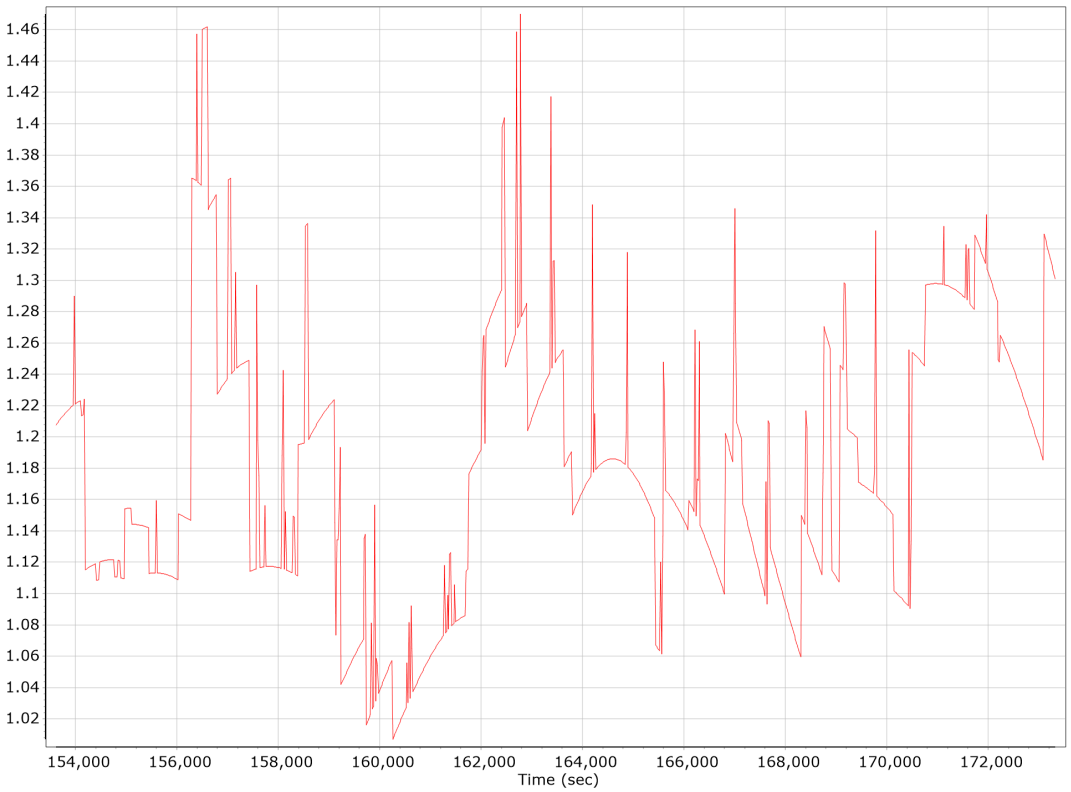
Num SVs in solution



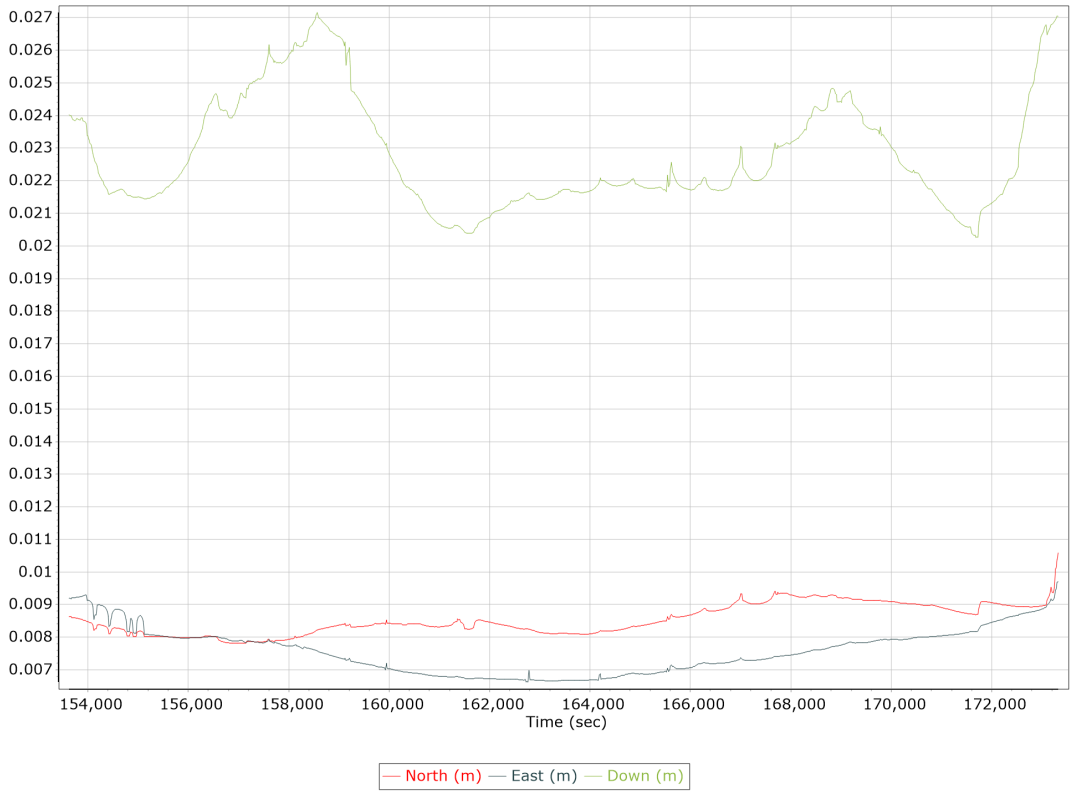
Forward/Reverse Separation



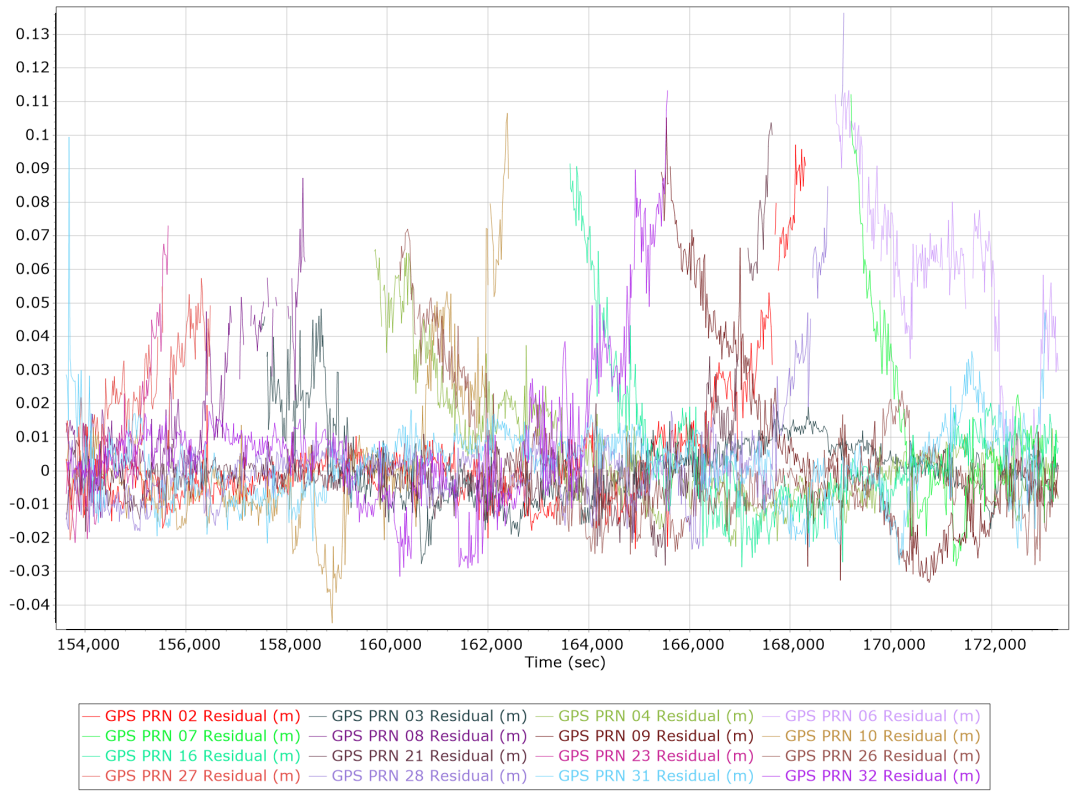
PDOP



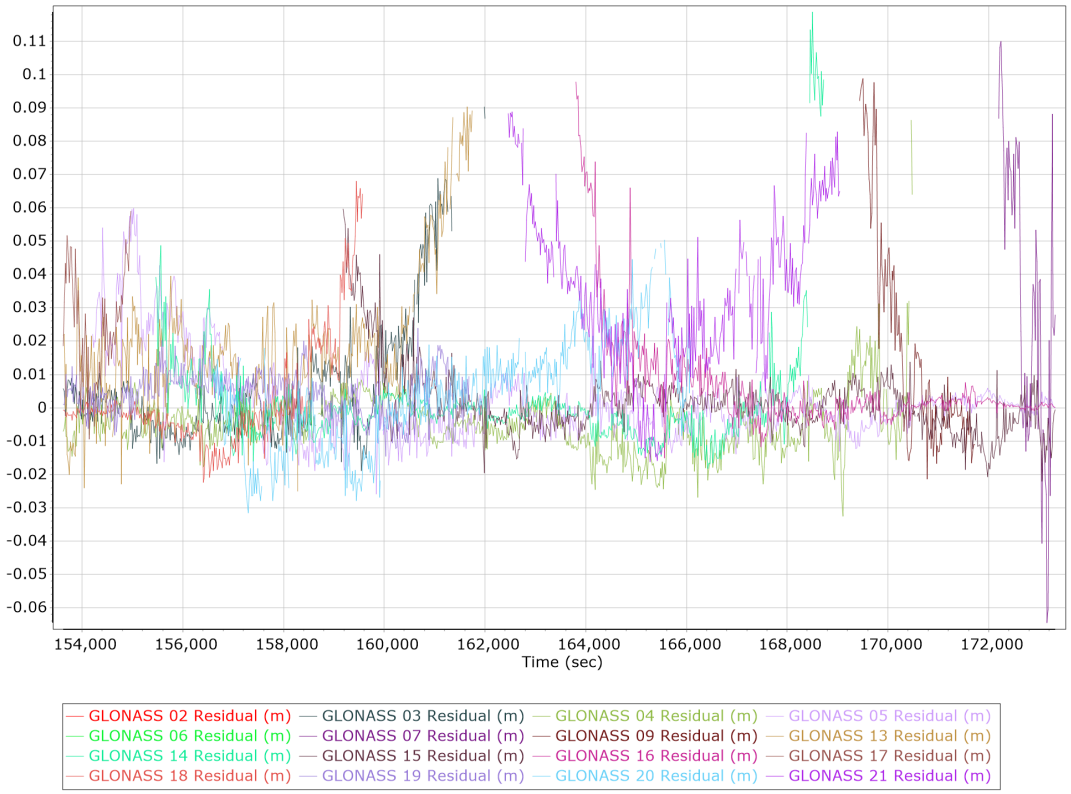
Estimated Position Accuracy



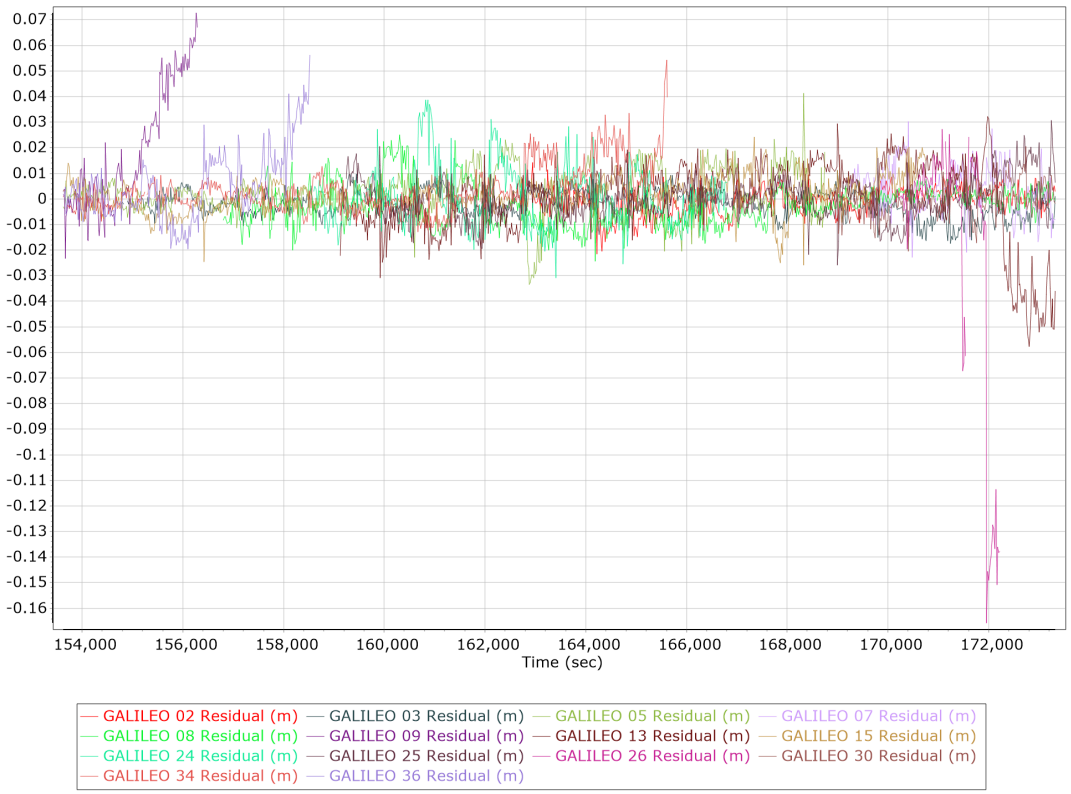
GPS Residuals



GLONASS Residuals



GALILEO Residuals



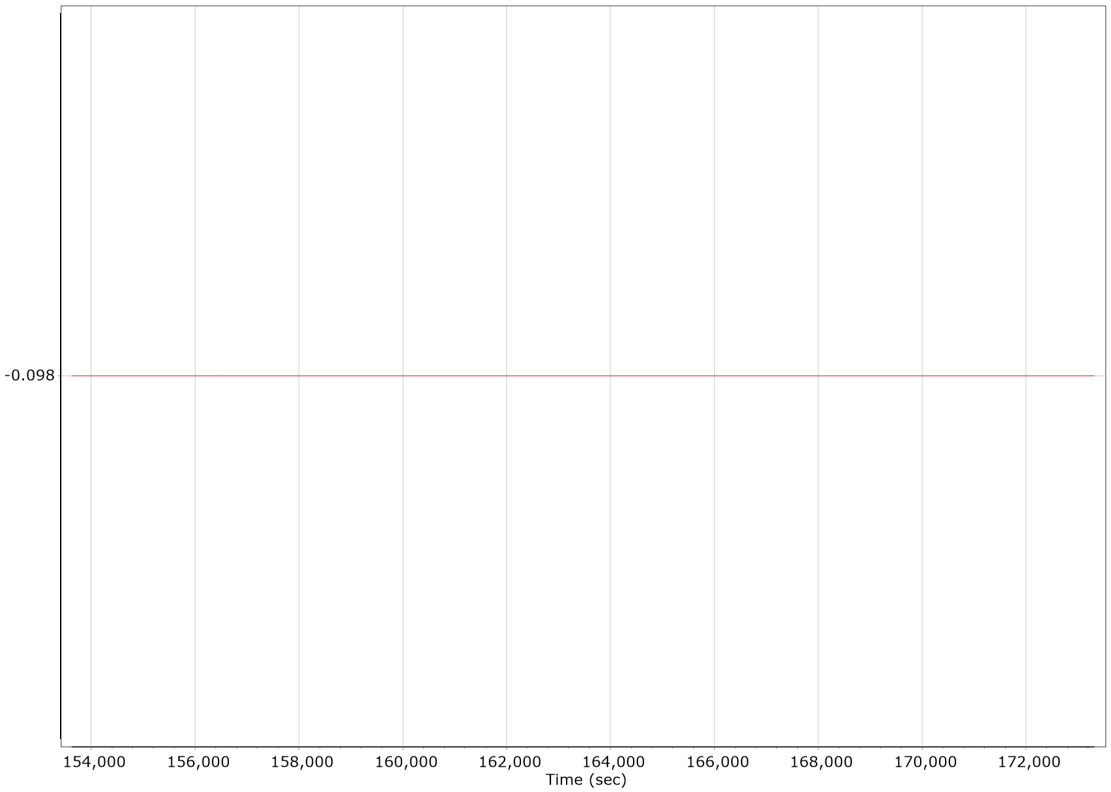
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	153343.000 (9/25/2023 6:35:43 PM)		
Processing end time	173336.000 (9/26/2023 12:08:56 AM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	-0.098	0.057	-1.221
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

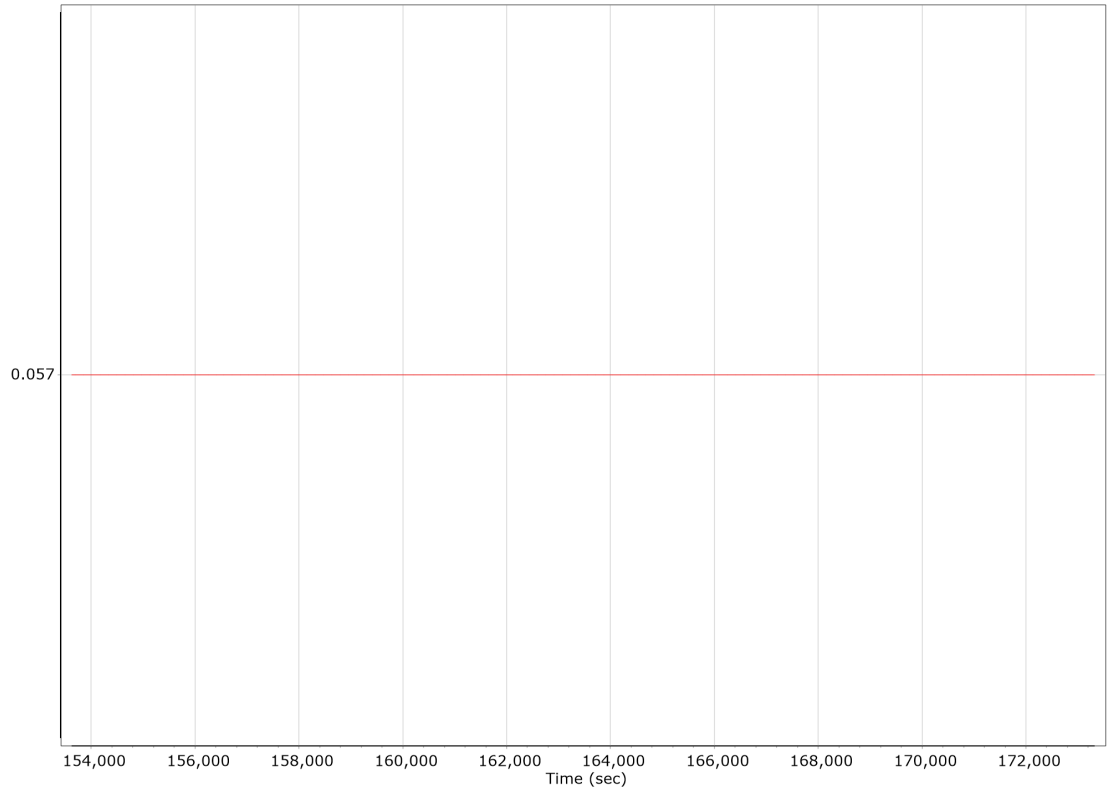
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

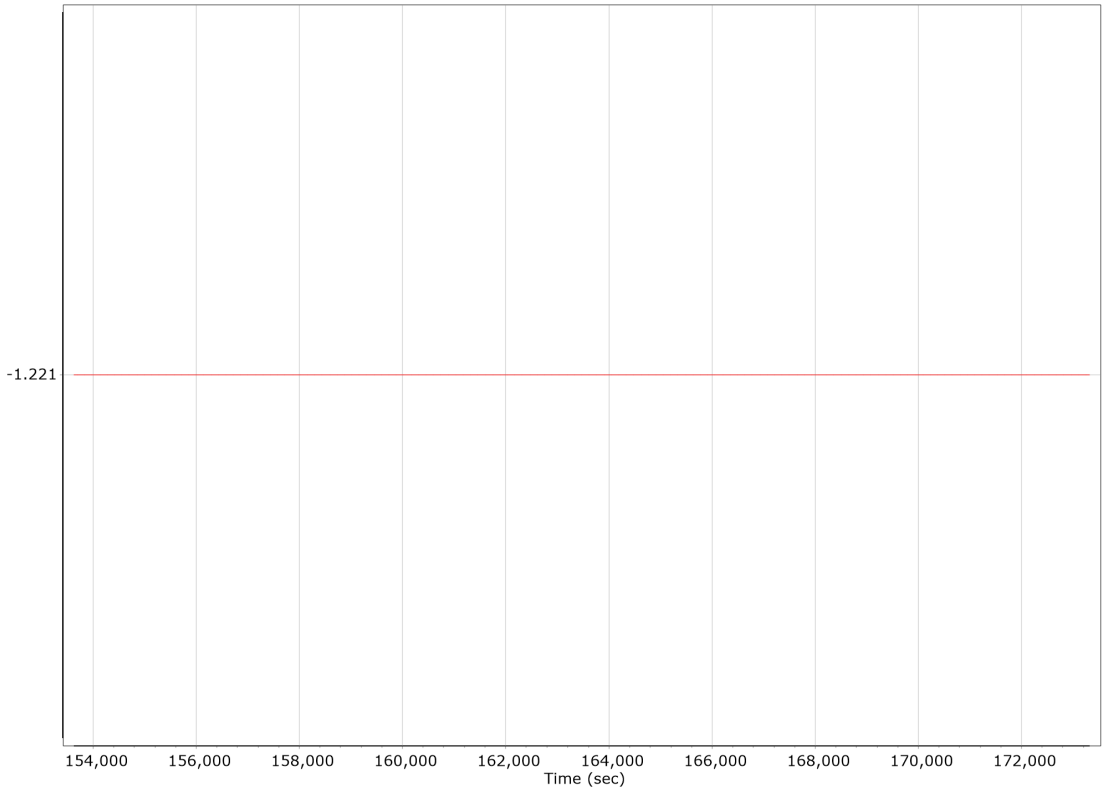
X Reference-Primary GNSS Lever Arm (m)



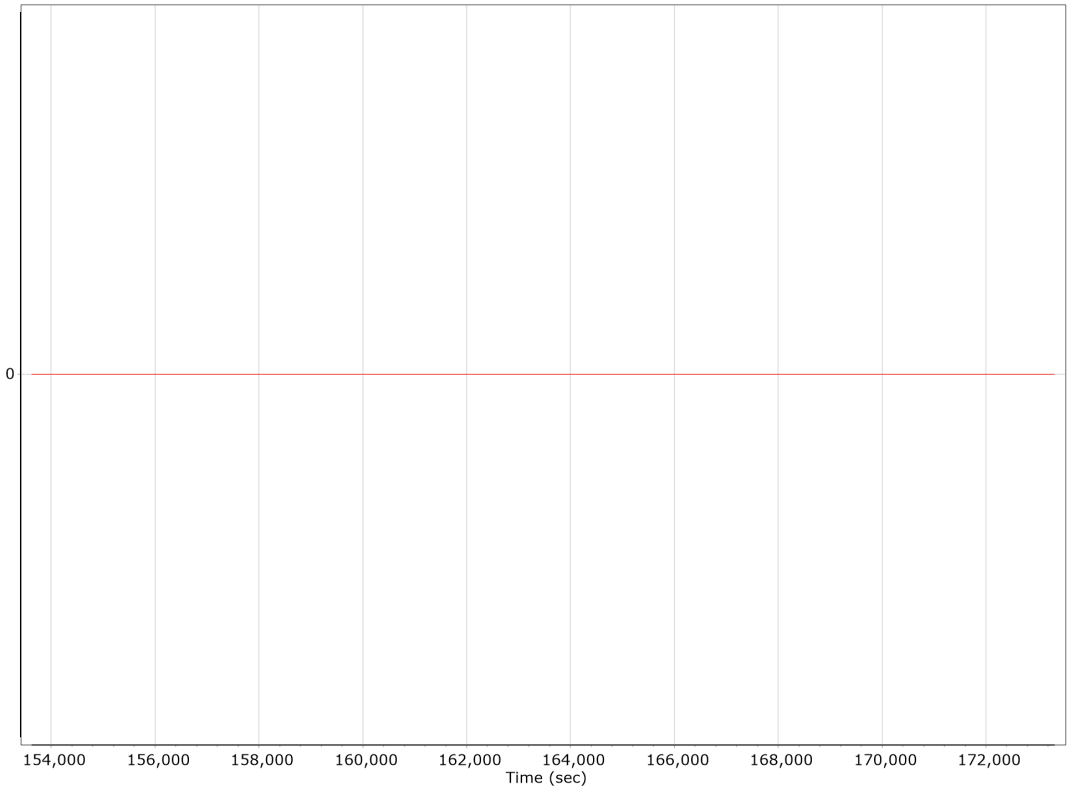
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



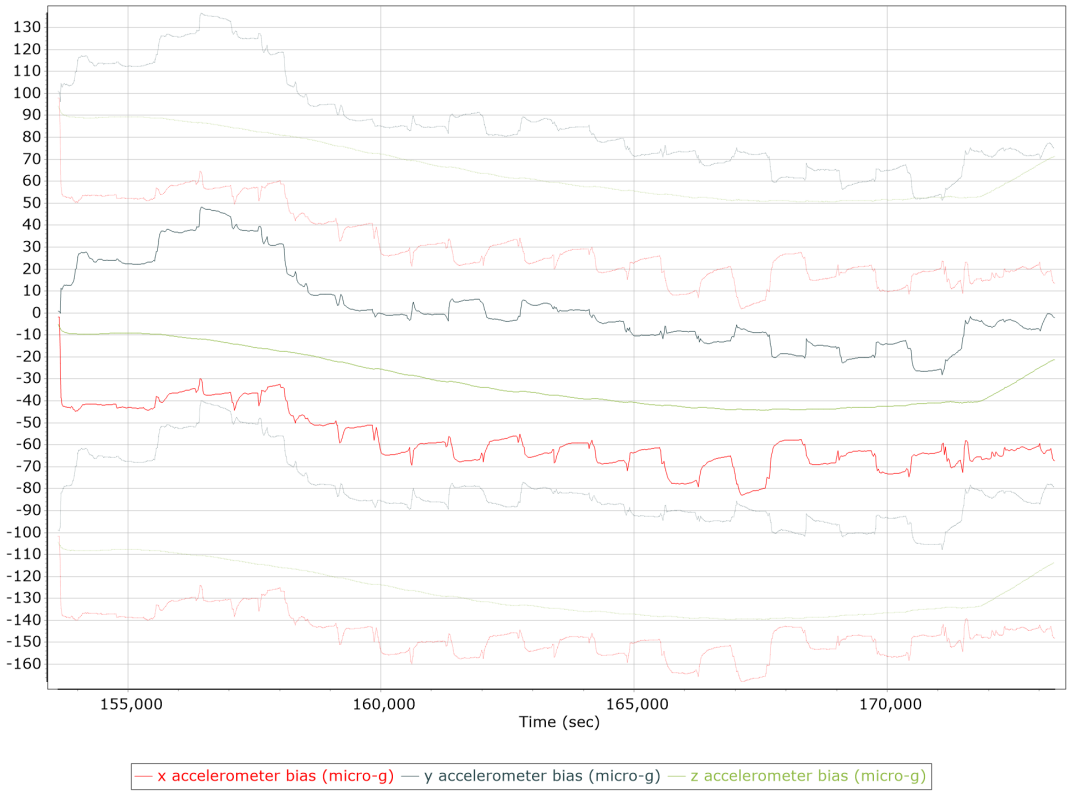
Reference-Primary GNSS Lever Arm Figure of Merit



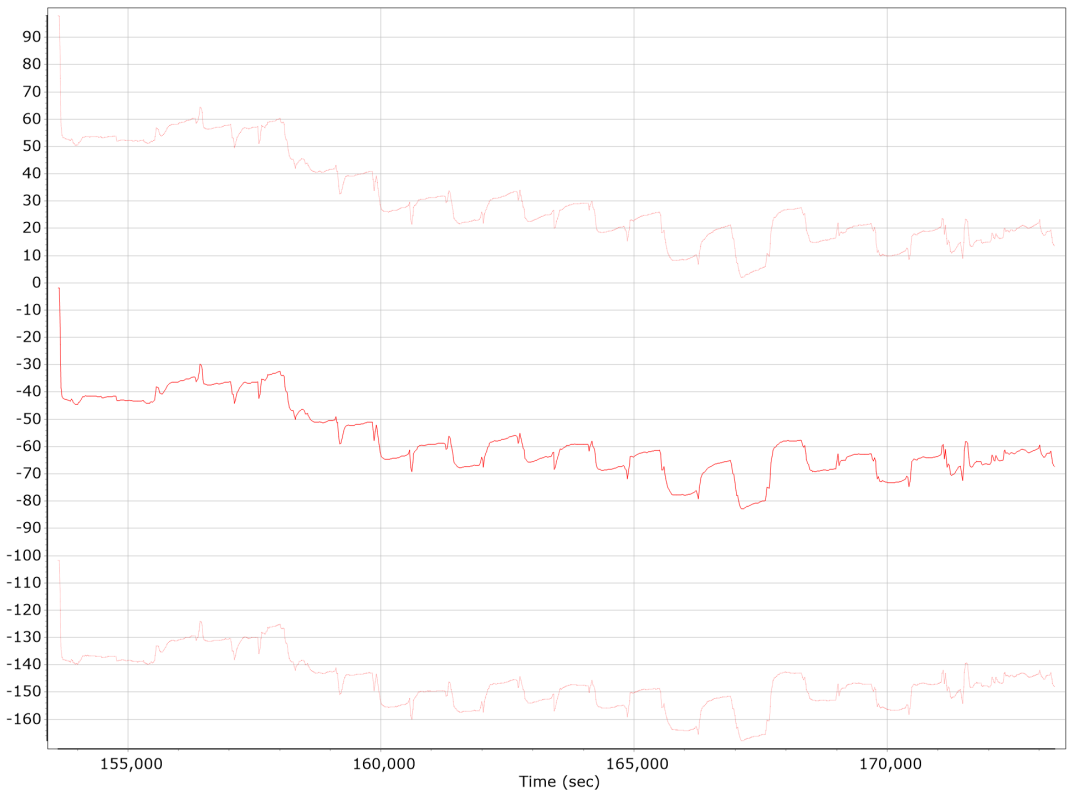
IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

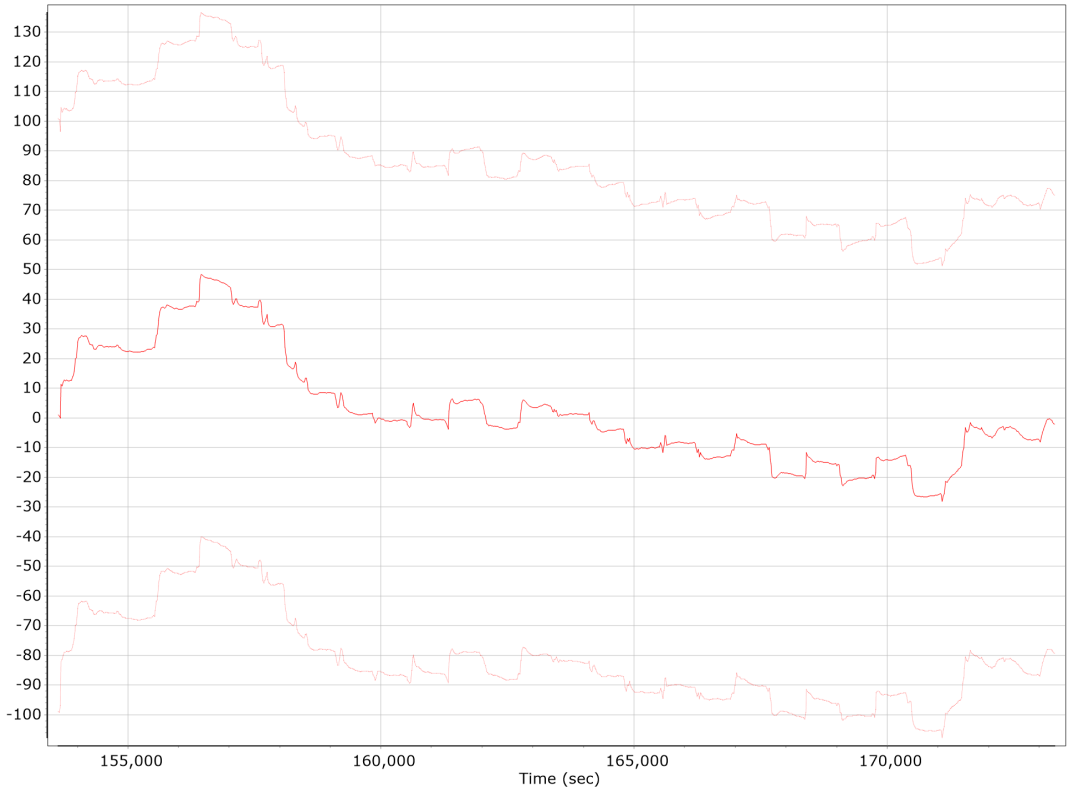
Accelerometer Bias (micro-g)



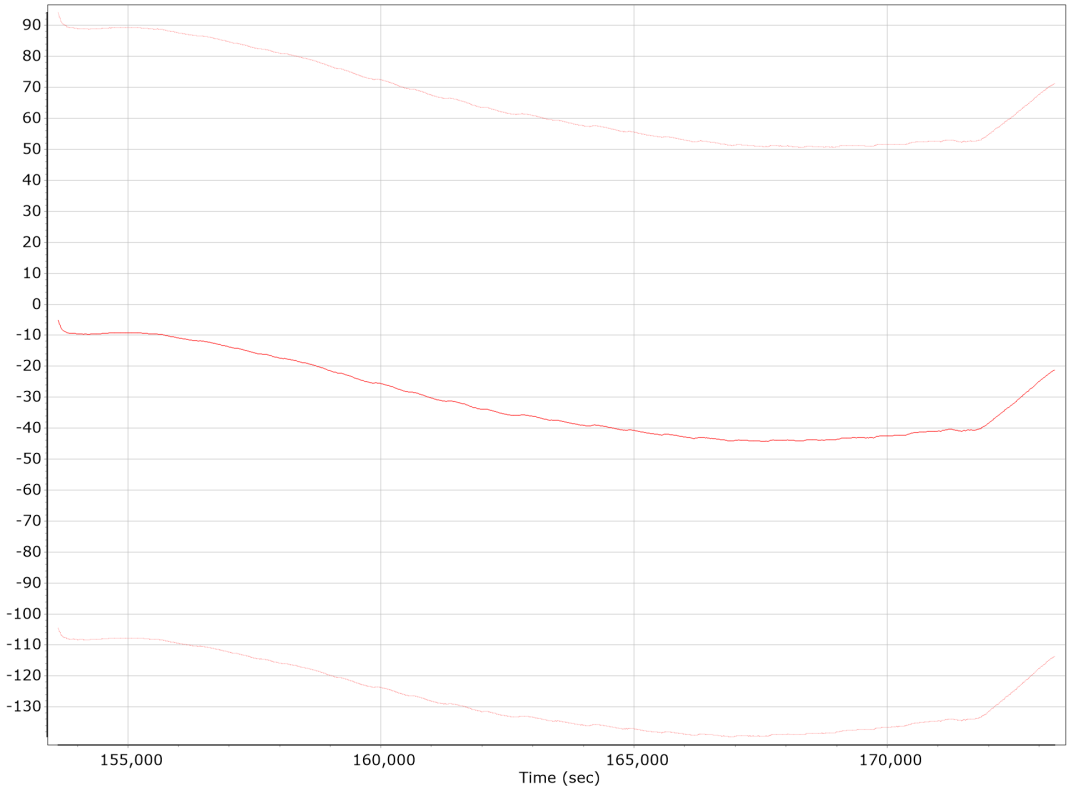
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



X Accelerometer Scale Error (ppm)



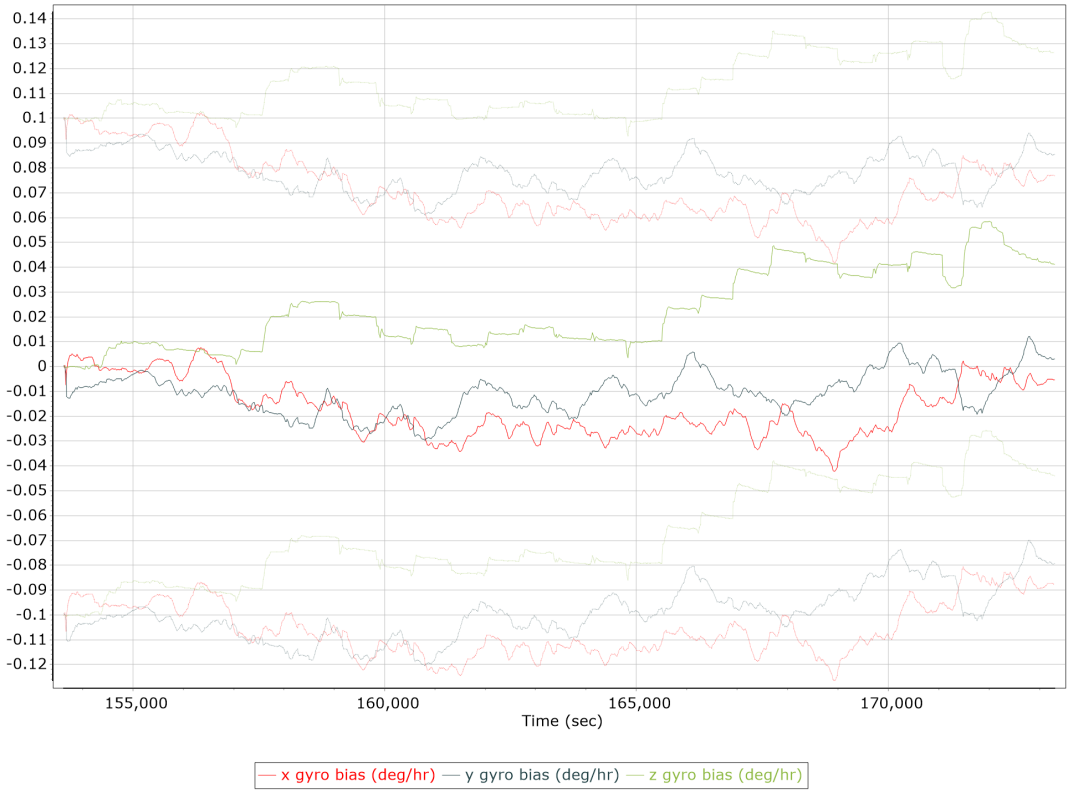
Y Accelerometer Scale Error (ppm)



Z Accelerometer Scale Error (ppm)



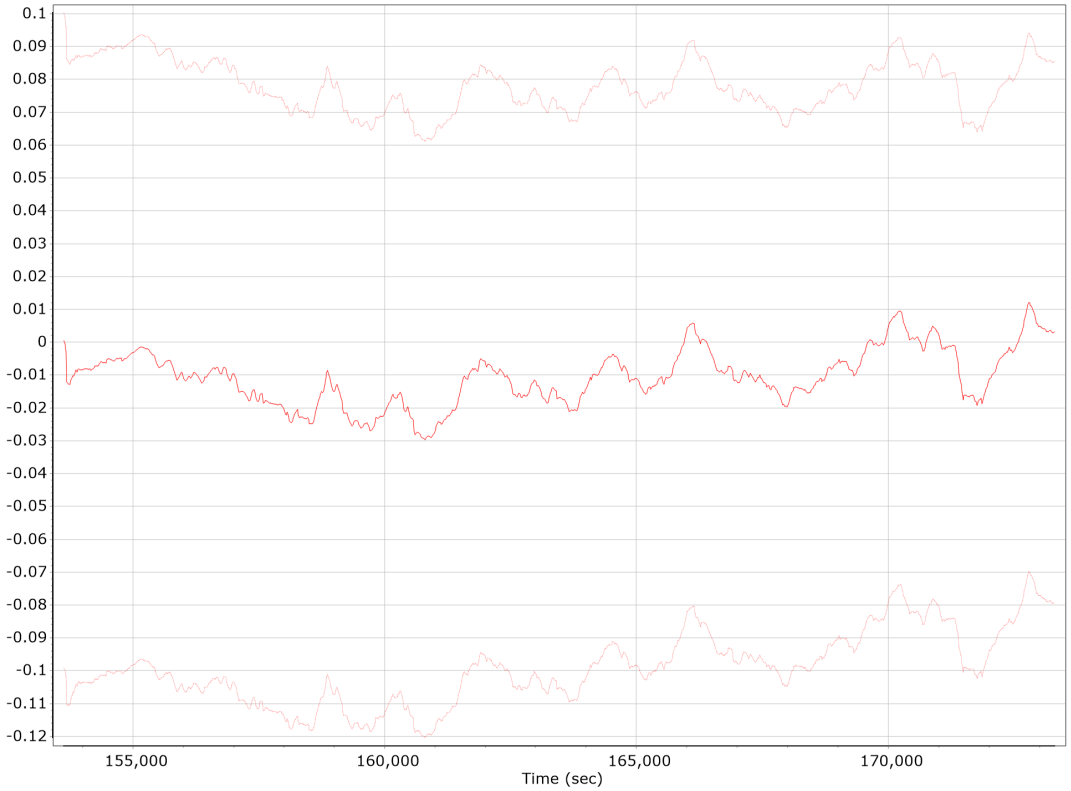
Gyro Bias (deg/h)



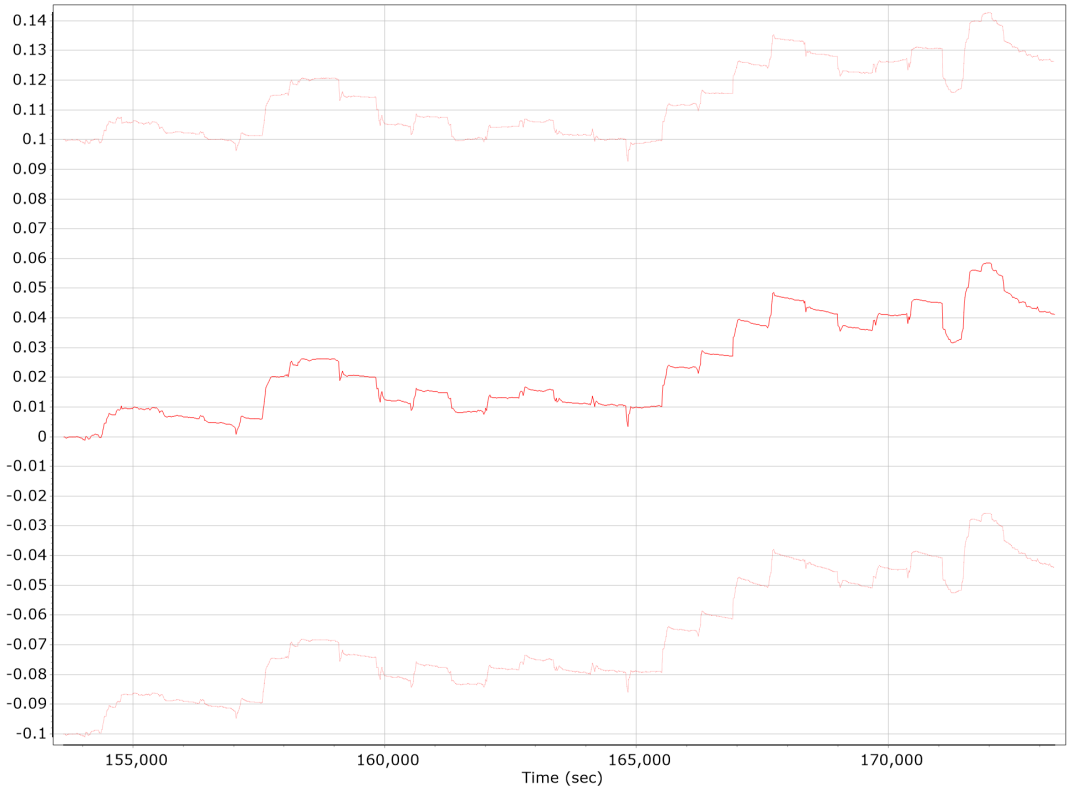
X Gyro Bias (deg/h)



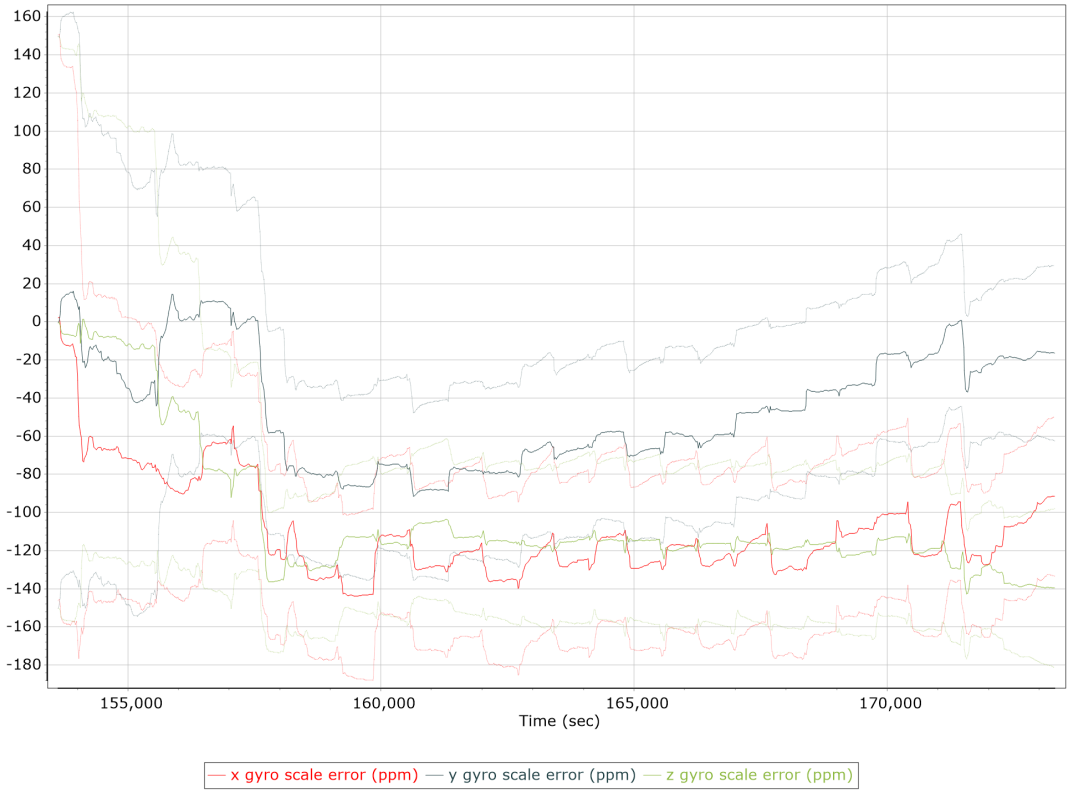
Y Gyro Bias (deg/h)



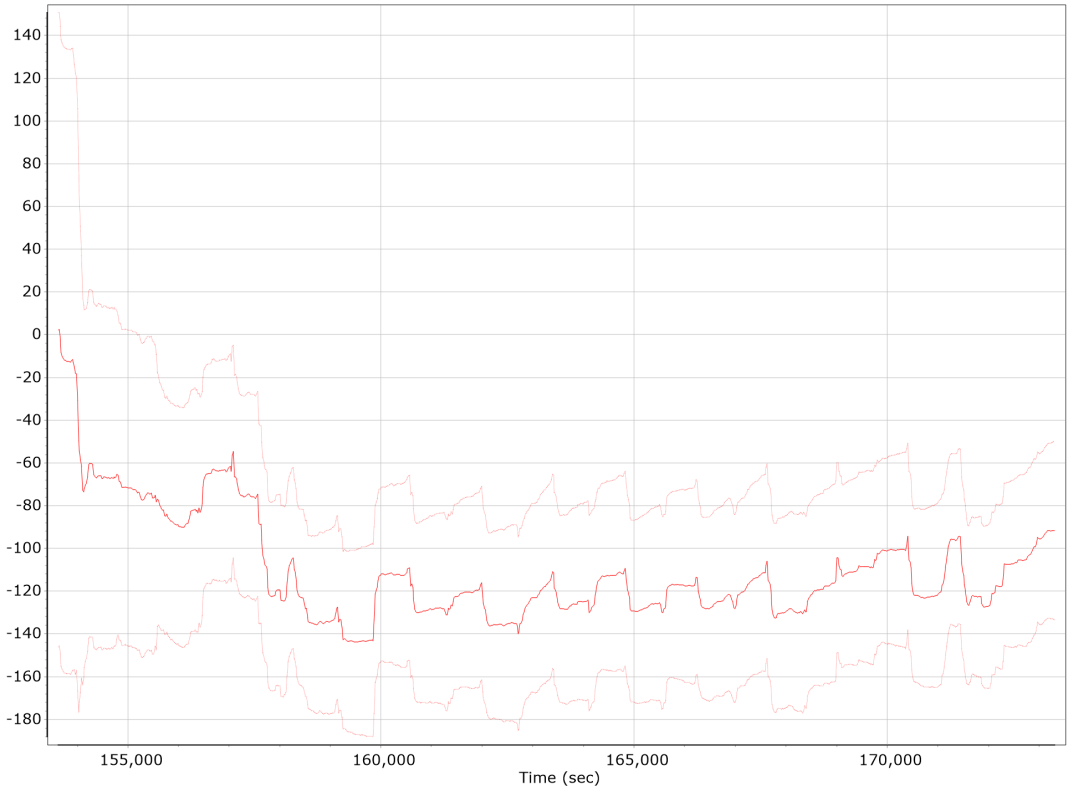
Z Gyro Bias (deg/h)



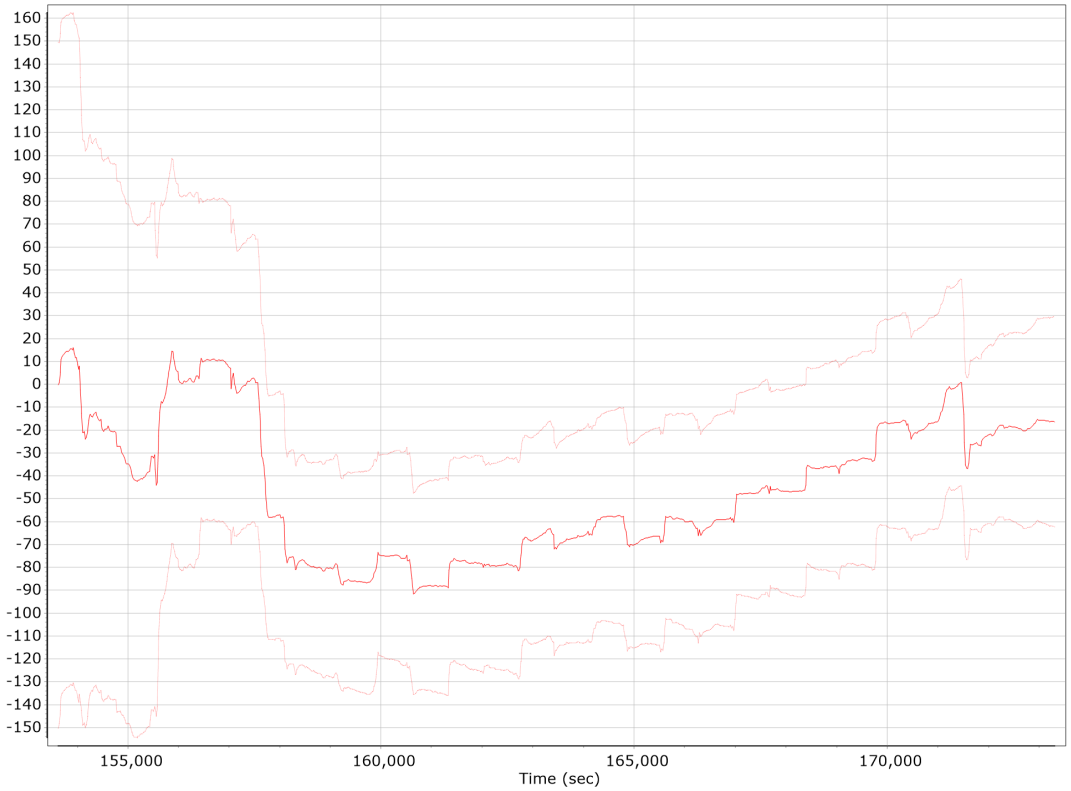
Gyro Scale Error (ppm)



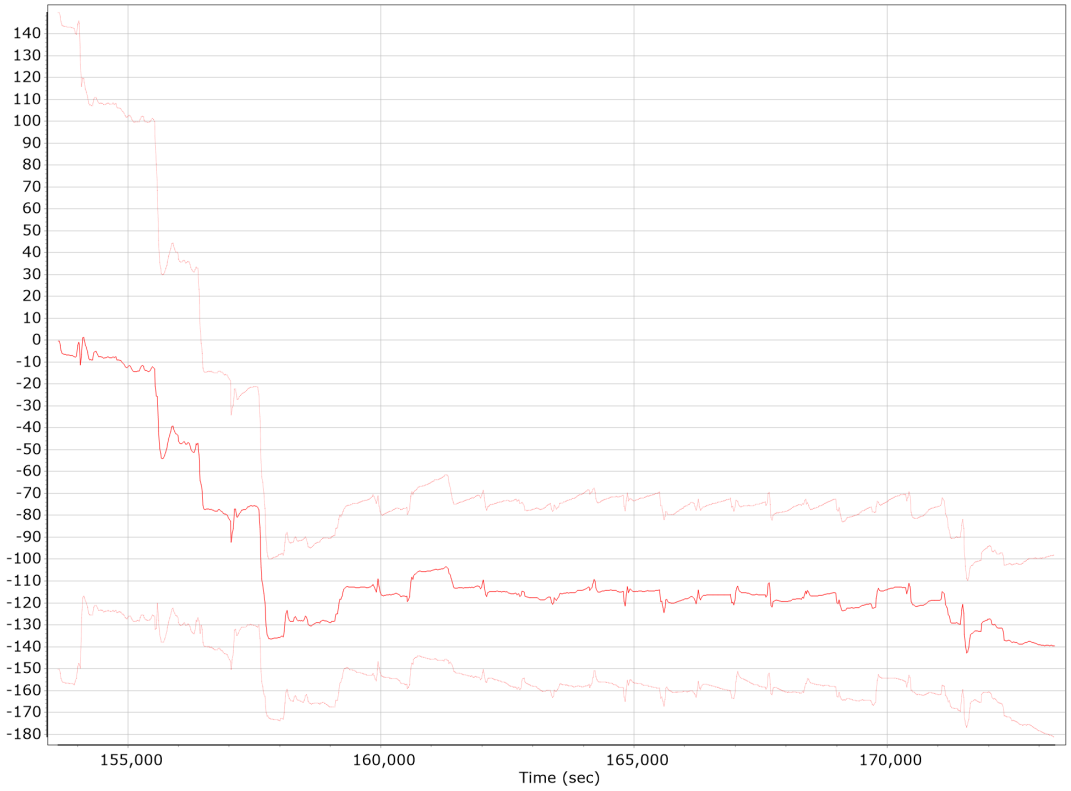
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)

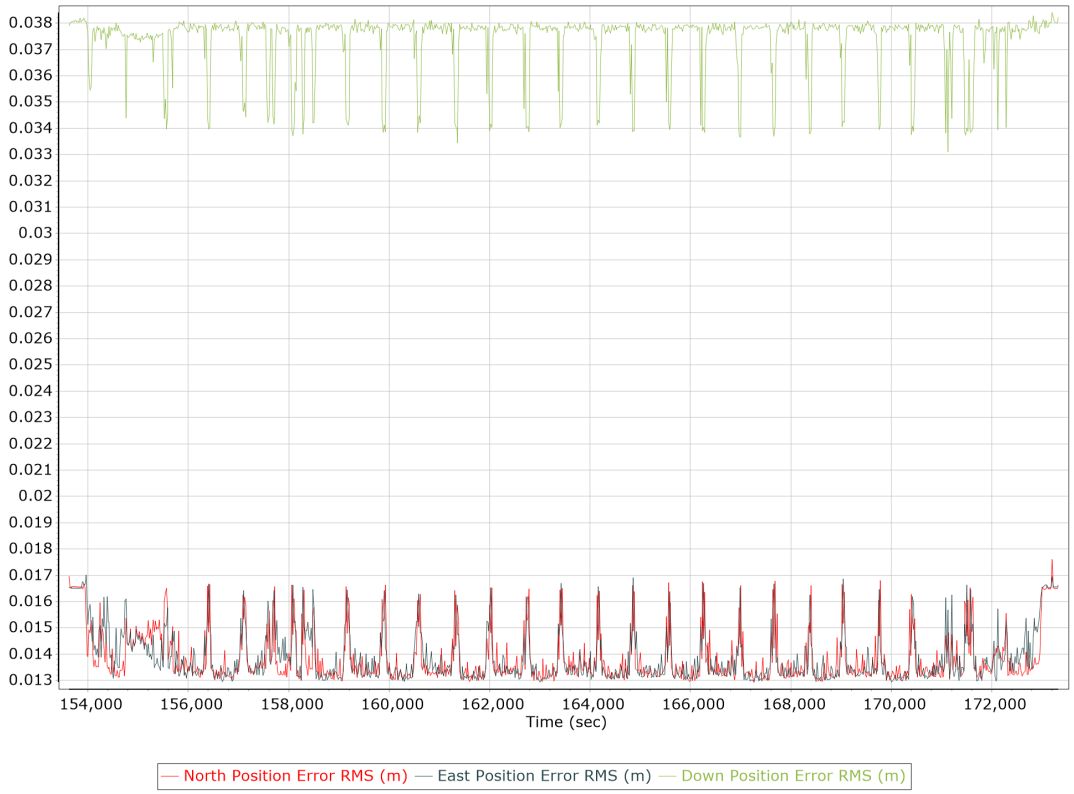


Z Gyro Scale Error (ppm)

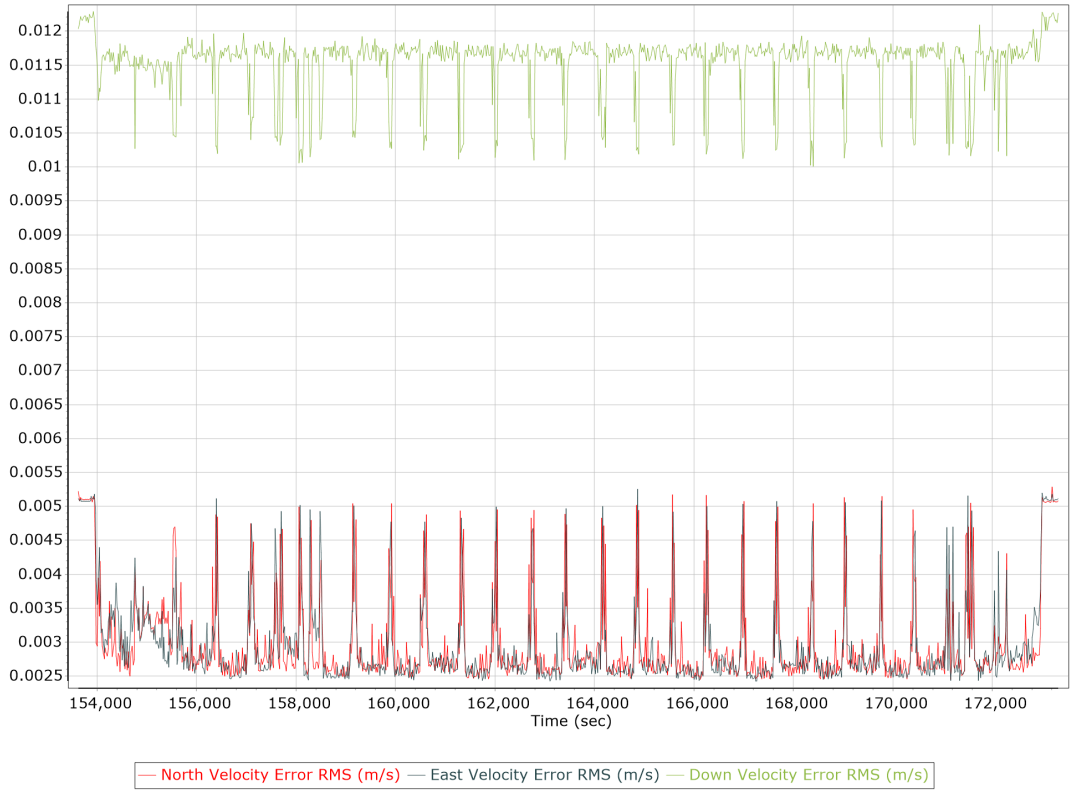


Smoothed Performance Metrics

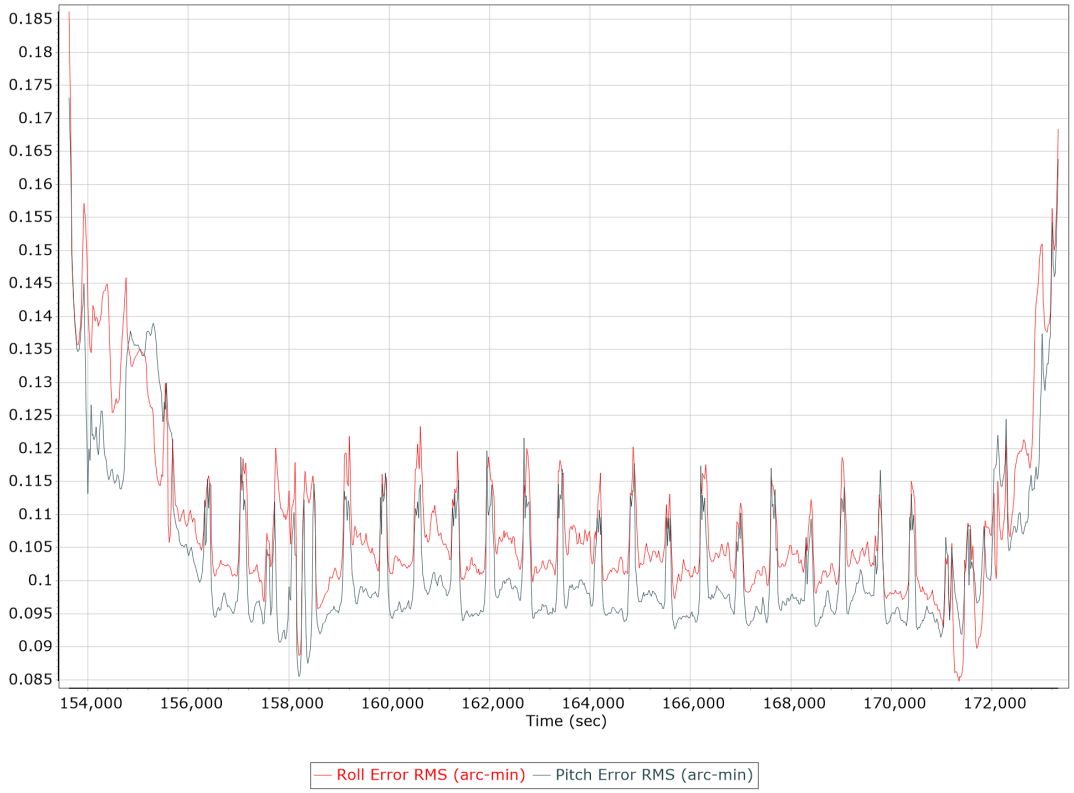
Position Error RMS (m)



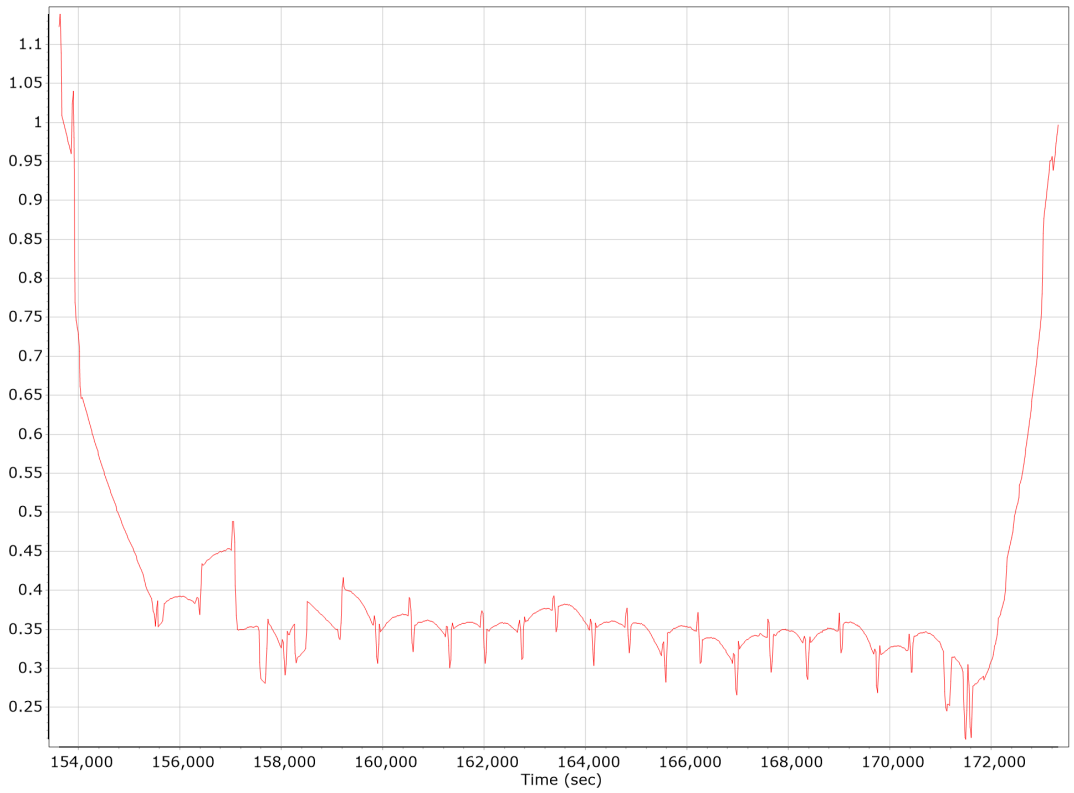
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

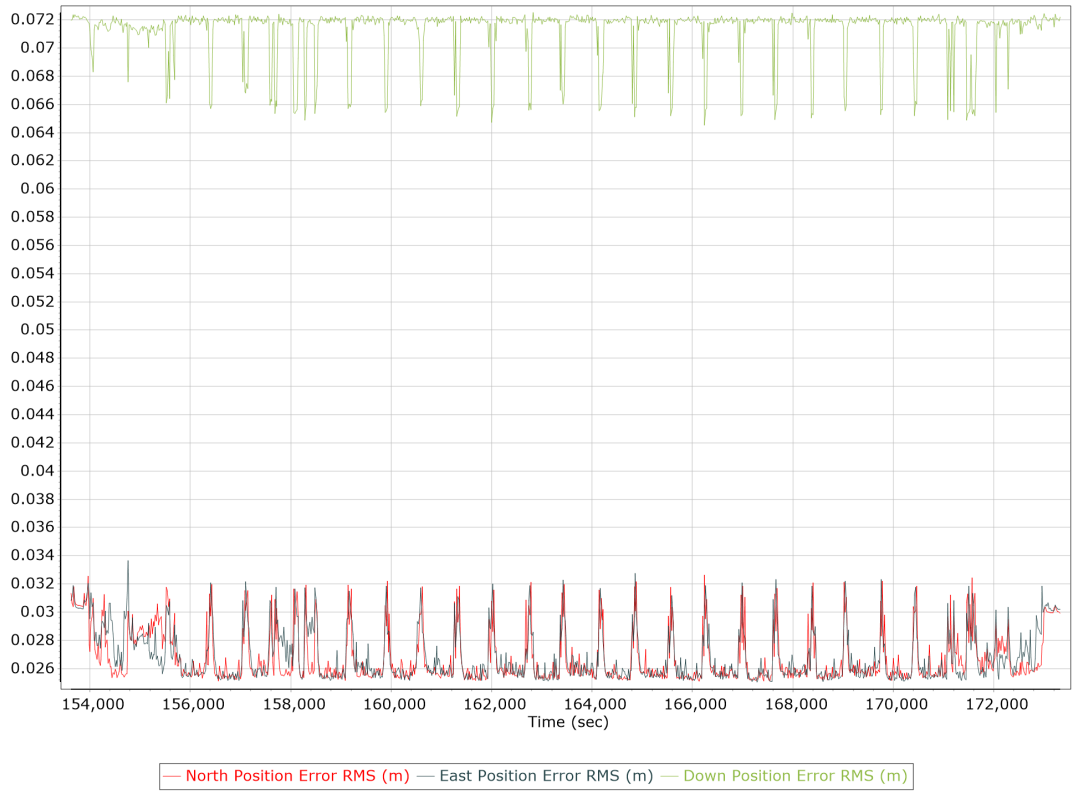


Heading Error RMS (arc-min)

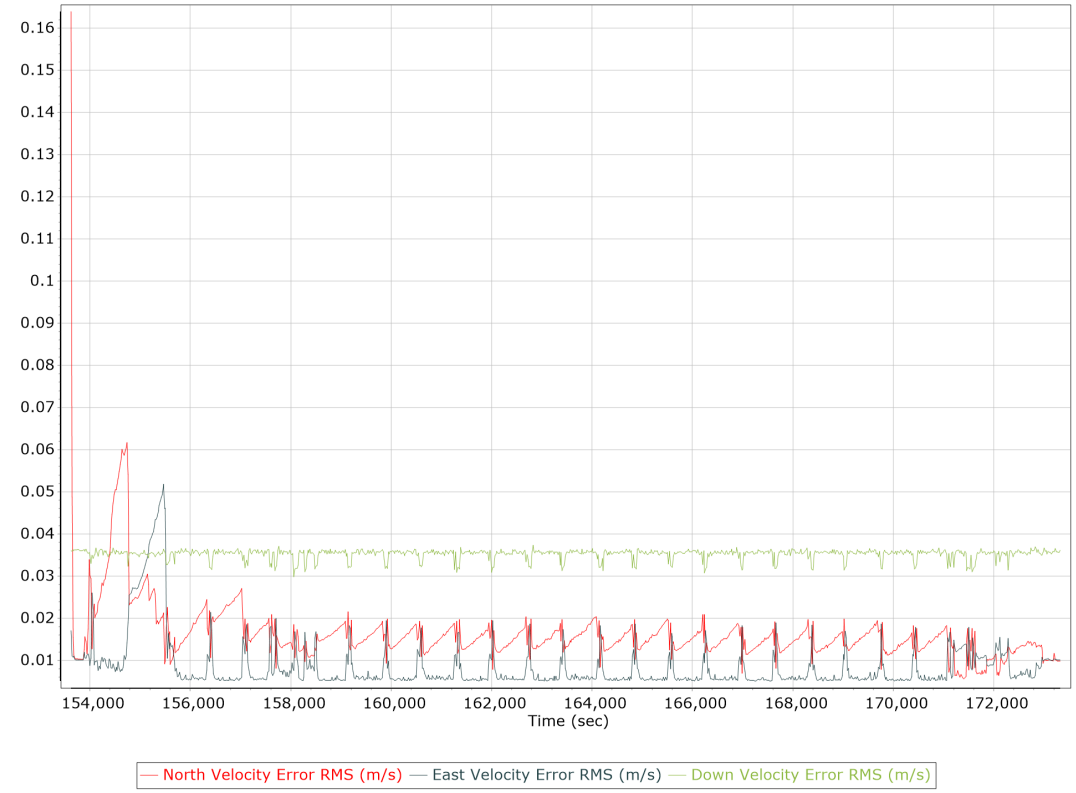


Forward Processed Performance Metrics

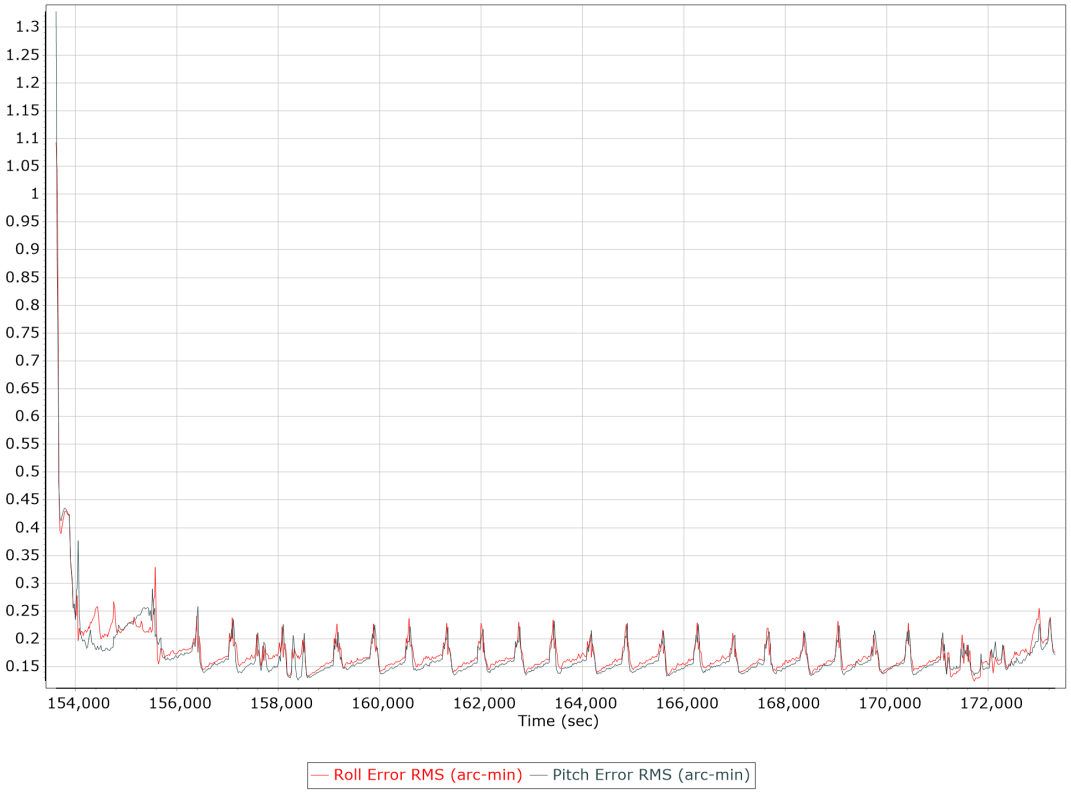
Position Error RMS (m)



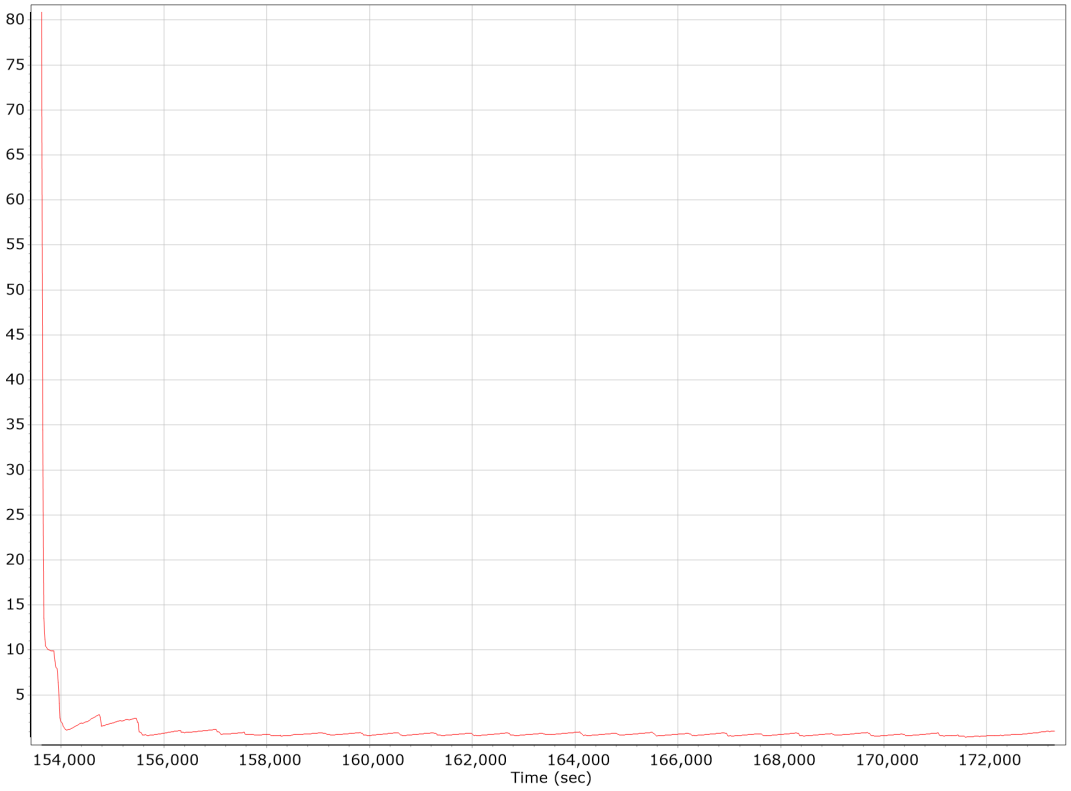
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

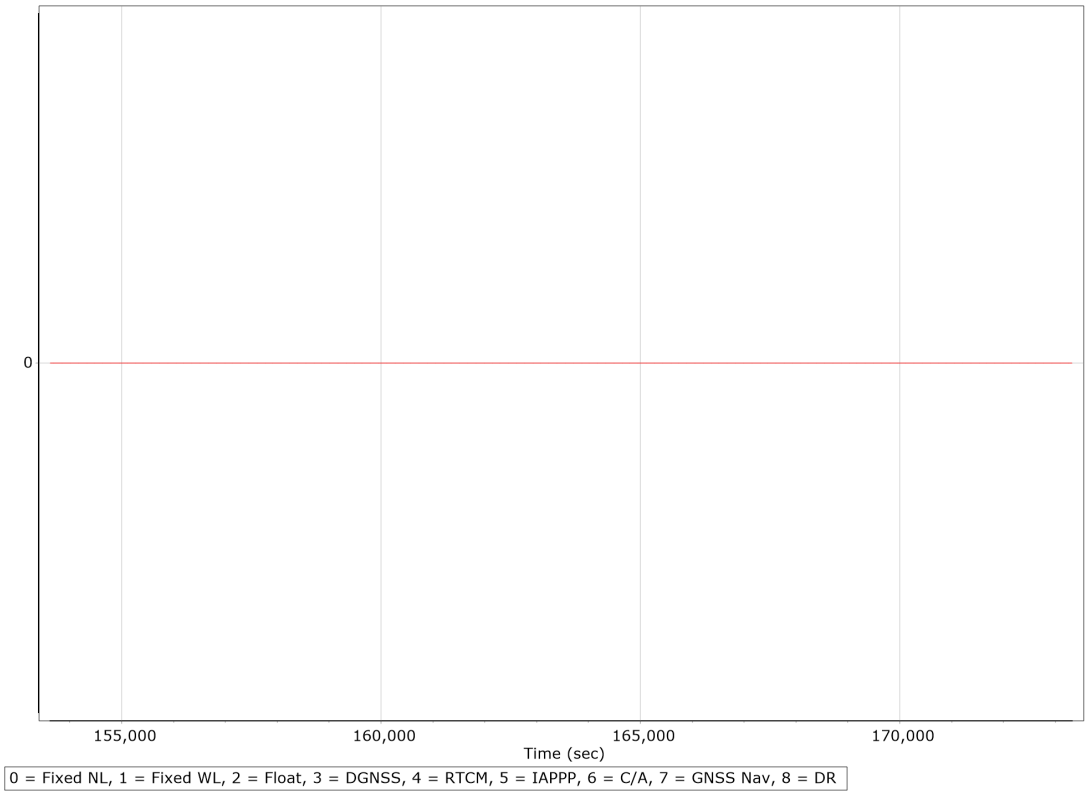


Heading Error RMS (arc-min)



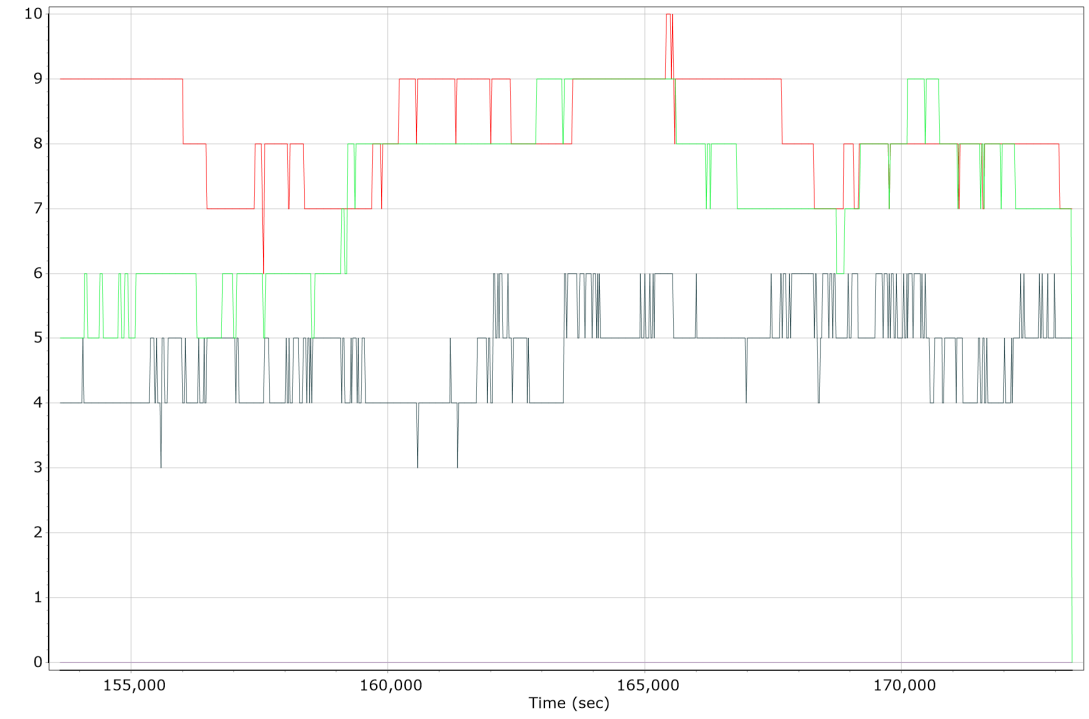
Forward Processed Solution Status

Processing Mode

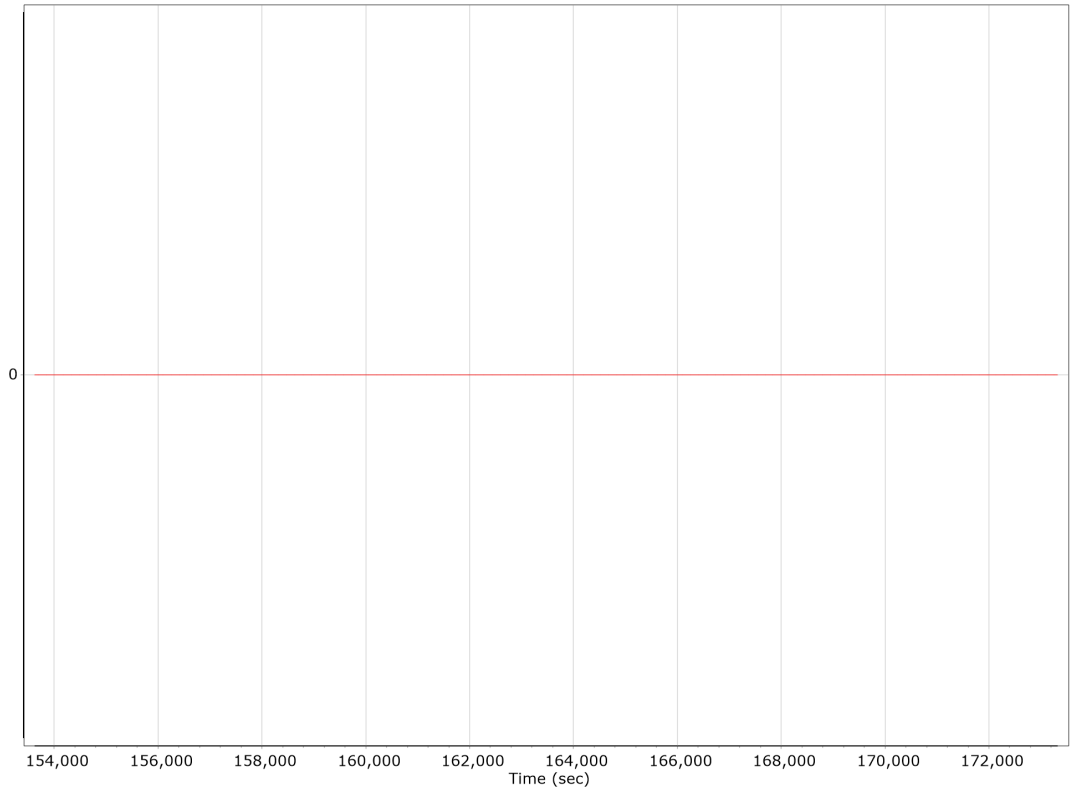


0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGNSS, 4 = RTCM, 5 = IAPPP, 6 = C/A, 7 = GNSS Nav, 8 = DR

Number of Satellites



Baseline Length



General Information

Mission Information

Project name	09252023B_4040
Processing date	2023-12-11 19:13:43
Mission date	2023-09-25 22:58:19
Mission duration	03:21:27.230
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N10451
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
230925_225800_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm2680.23g	GLONASS Broadcast Ephemeris
Ephm2680.23n	GPS Broadcast Ephemeris
Ephm2690.23g	GLONASS Broadcast Ephemeris
Ephm2690.23n	GPS Broadcast Ephemeris
IGS0OPSFIN_20232670000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232680000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232690000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232700000_01D_15M_ORB.SP3	GPS Precise Ephemeris

Output Files

Filename	File type
sbet_09252023B_4040.out	SBET Trajectory File

Rover Data Summary

First raw data file	230925_225800_INS-GPS_1.raw		
Last raw data file	230925_225800_INS-GPS_1.raw		
Start GPS week	2281		
Start time	169080.365 (9/25/2023 10:58:00 PM)		
End time	181167.595 (9/26/2023 2:19:27 AM)		
Start of fine alignment	169333.316 (9/25/2023 11:02:13 PM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.000	0.000	-0.900
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

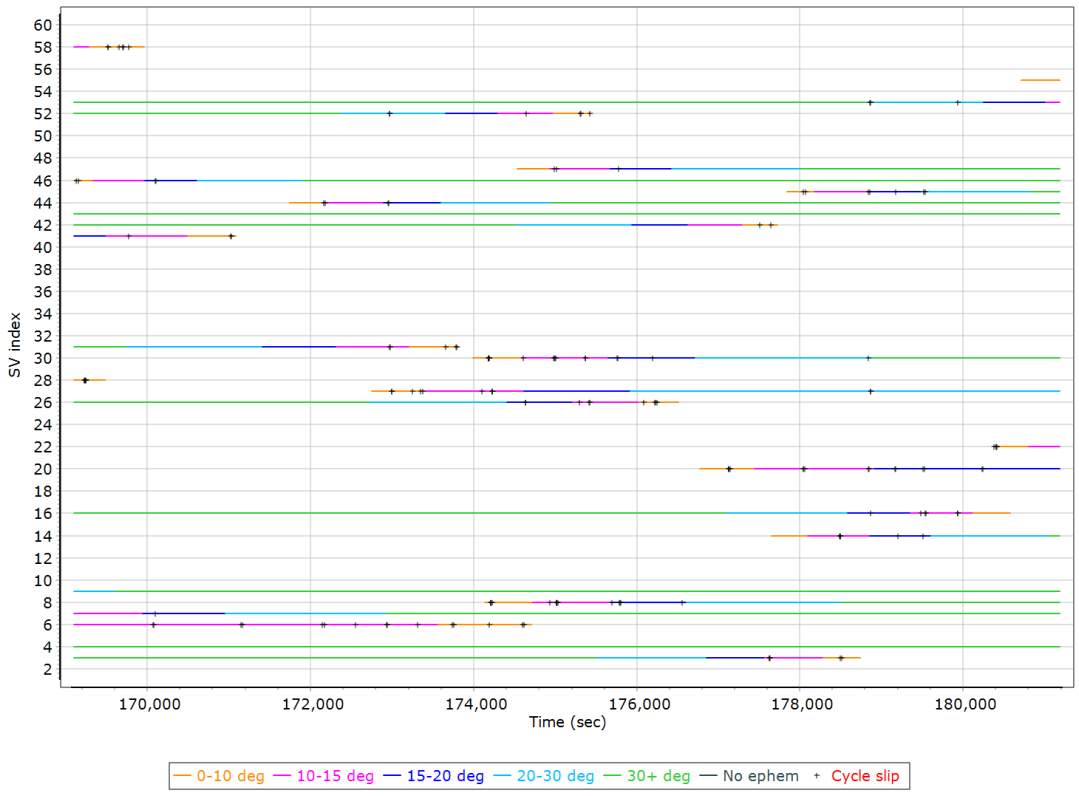
Rover Data QC

Raw IMU Import QC Summary

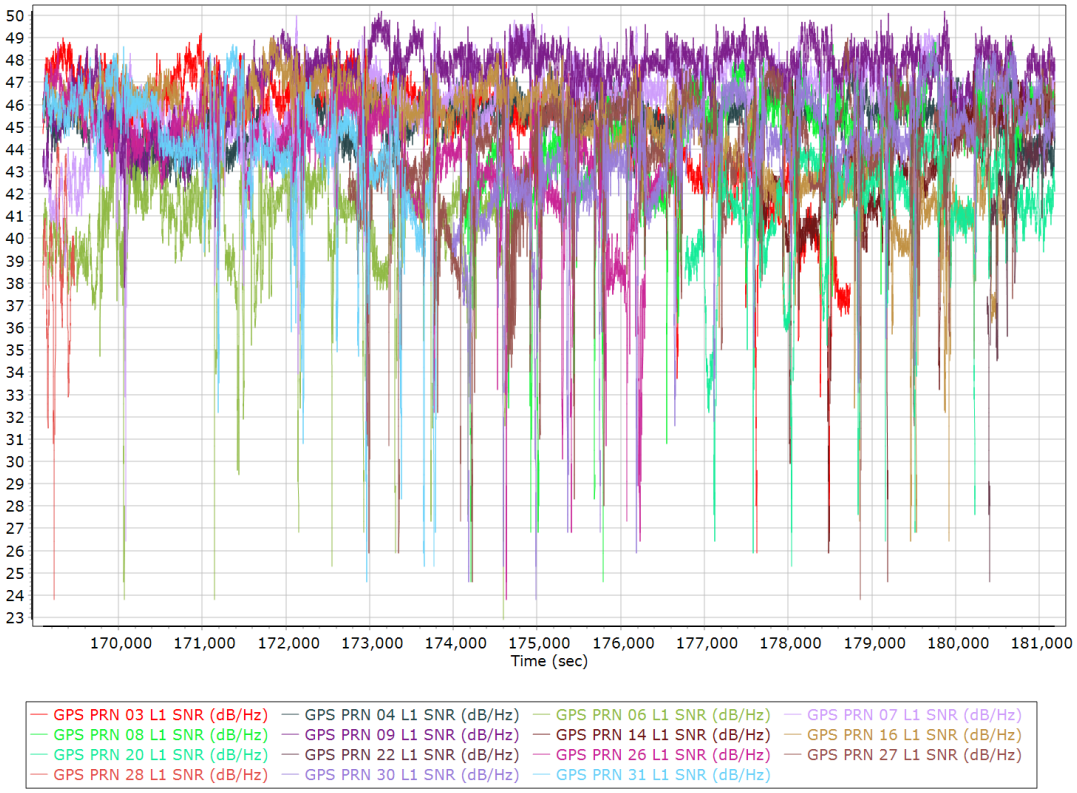
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_09252023B_4040.log
IMU Records Processed	2417129
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

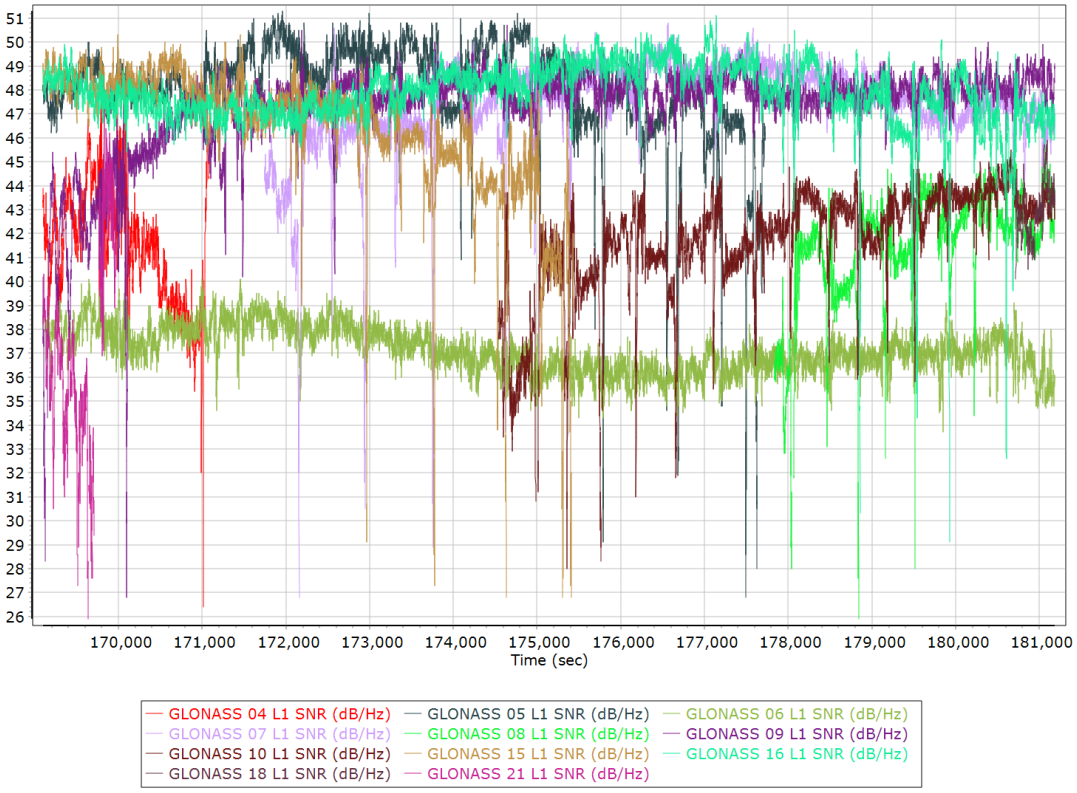
GPS/GLONASS L1 Satellite Lock/Elevation



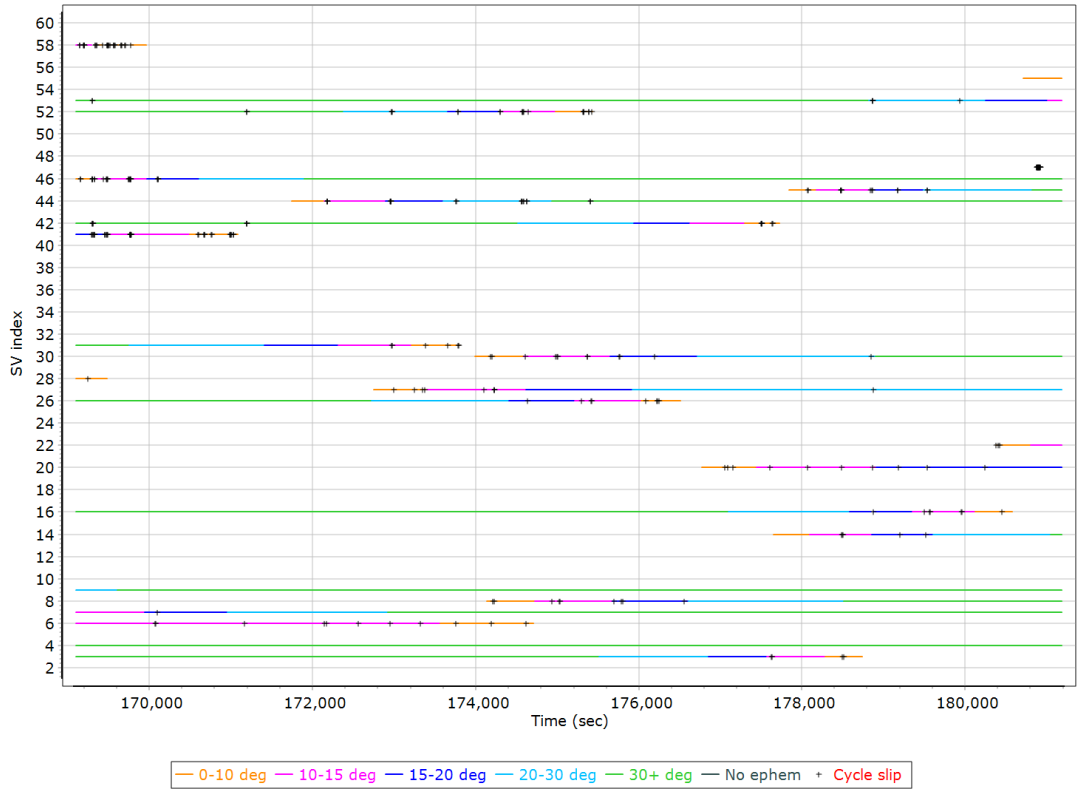
GPS L1 SNR



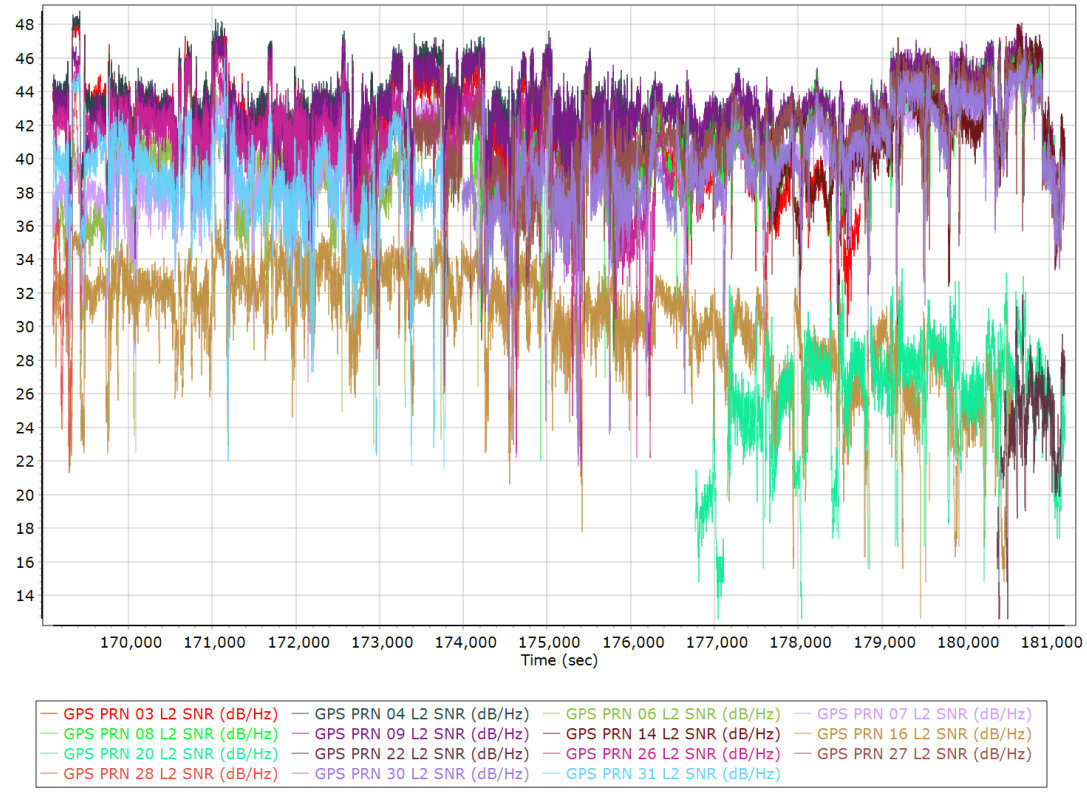
GLONASS L1 SNR



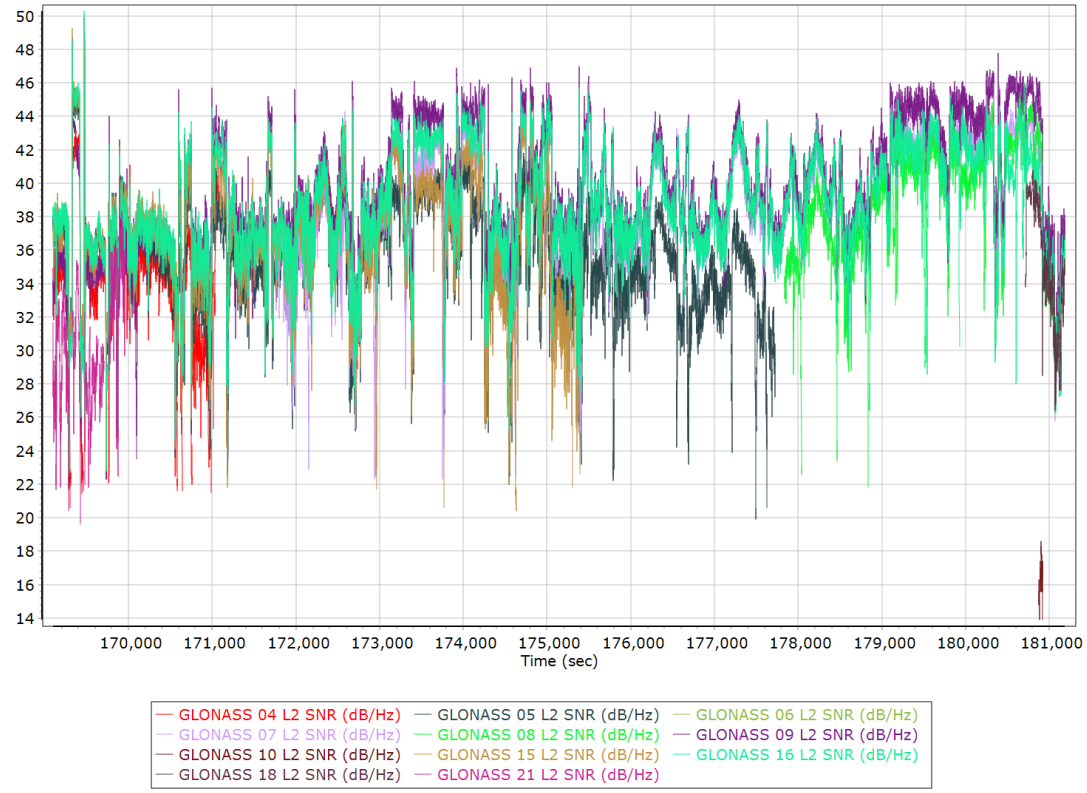
GPS/GLONASS L2 Satellite Lock/Elevation



GPS L2 SNR



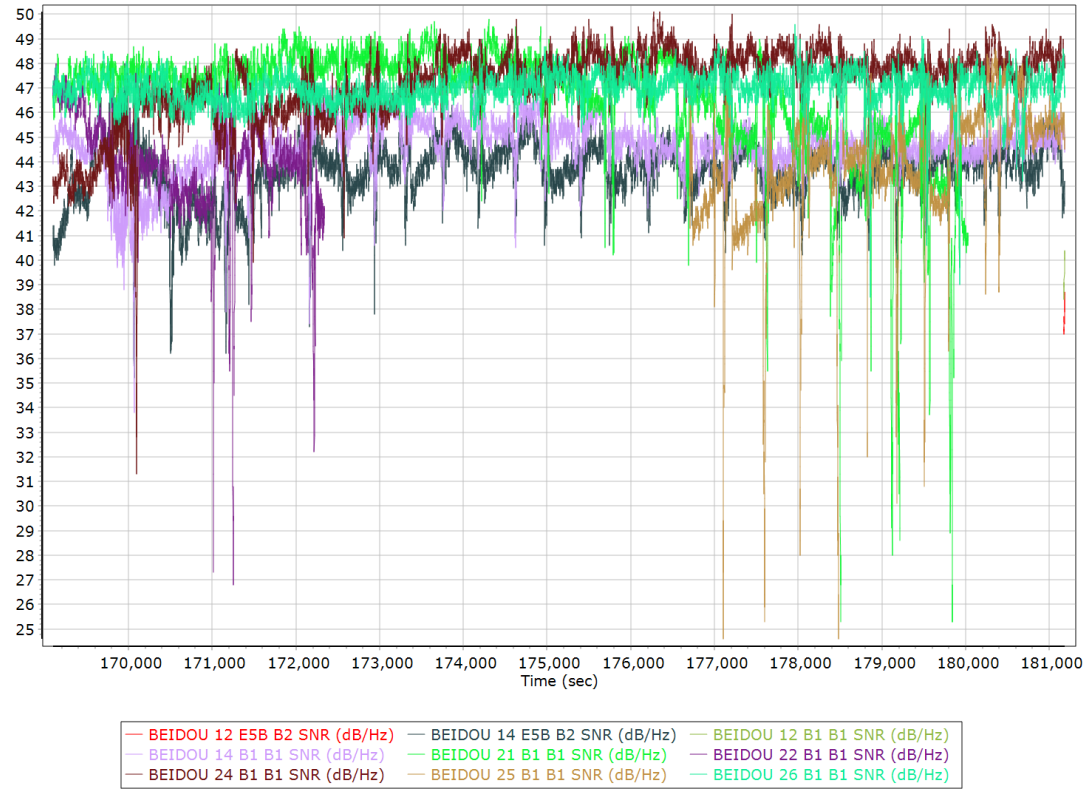
GLONASS L2 SNR



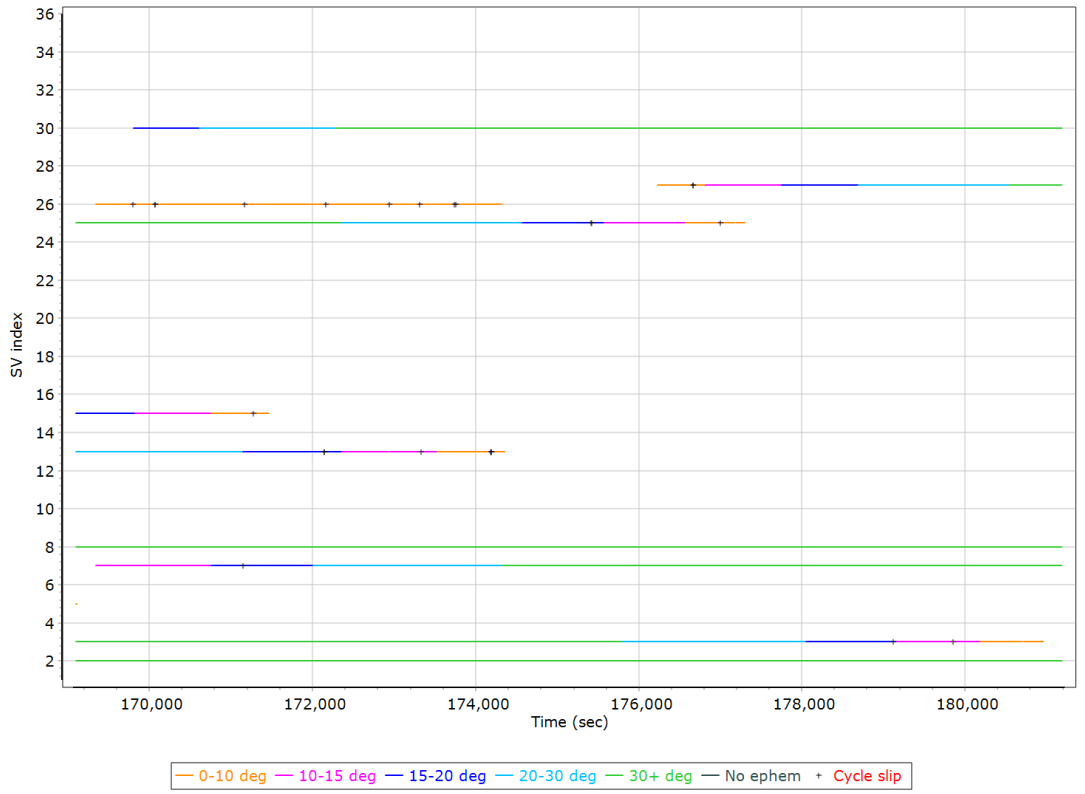
BEIDOU Satellite Lock/Elevation



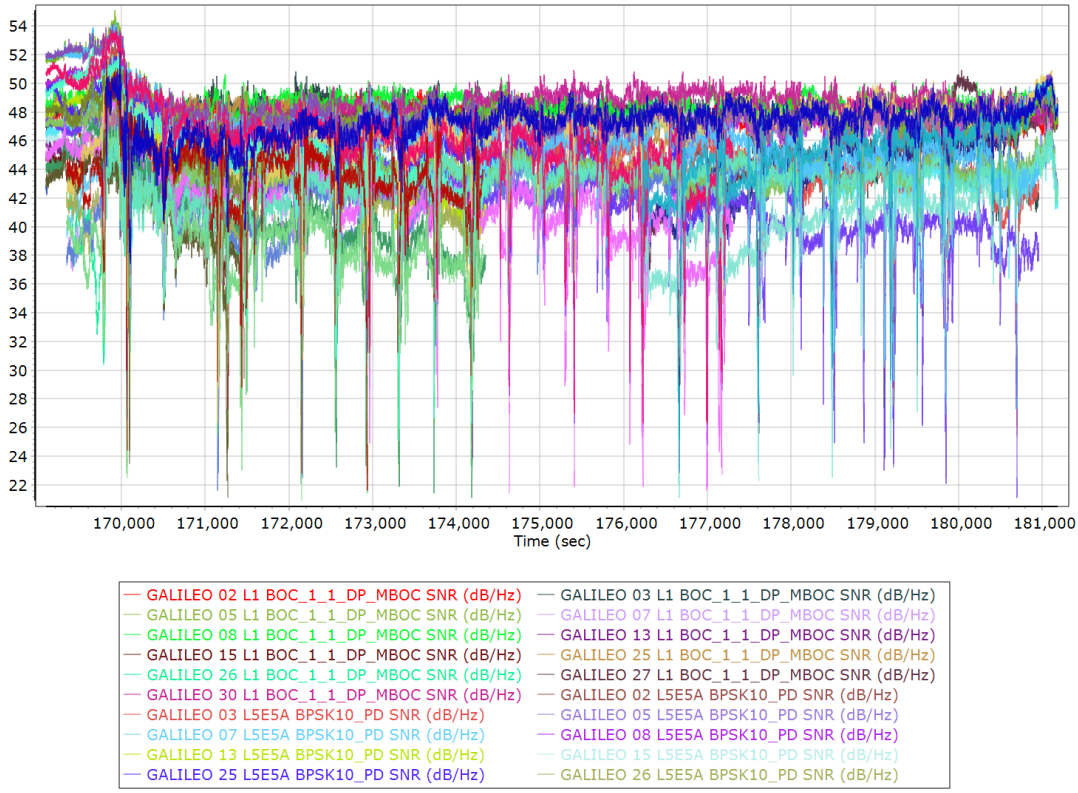
BEIDOU SNR



GALILEO Satellite Lock/Elevation

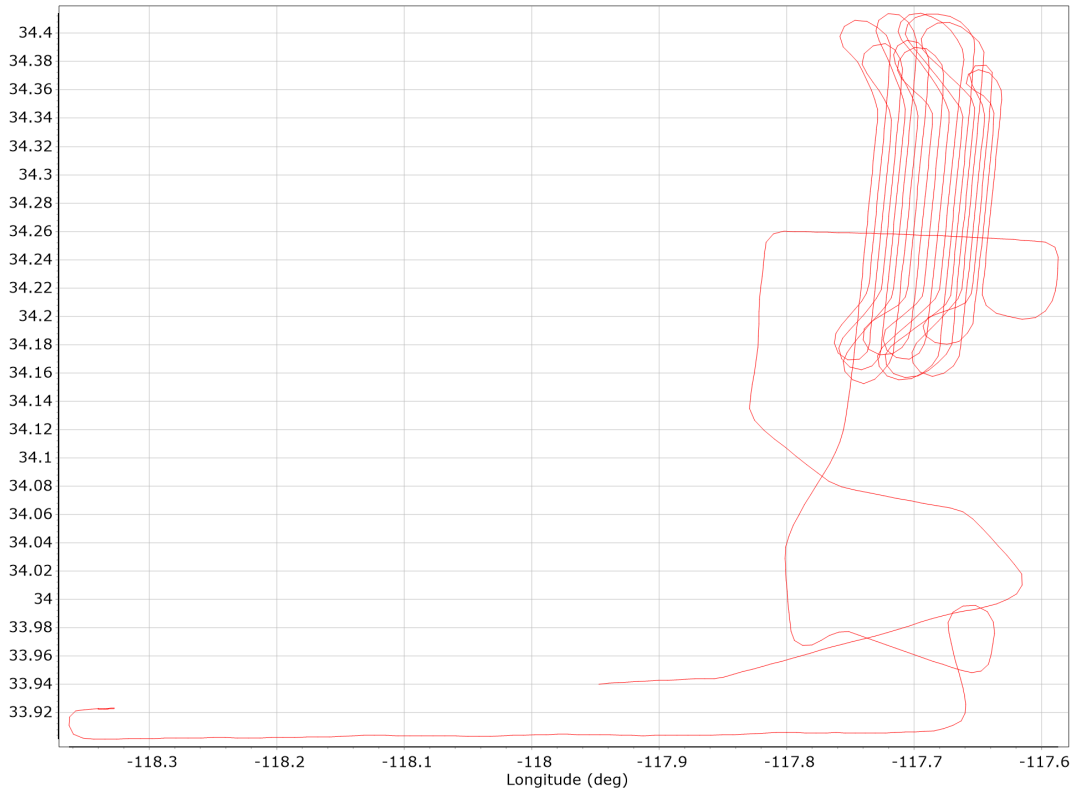


GALILEO SNR

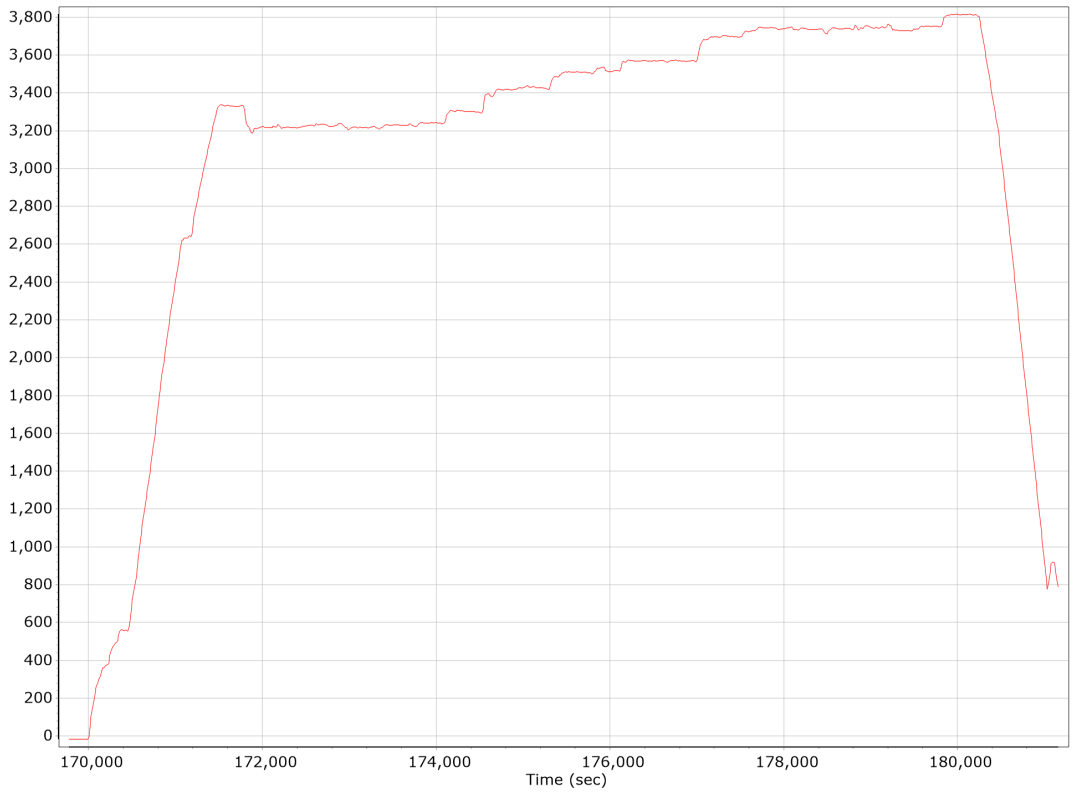

54
52
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172,000
173,000
174,000
175,000
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177,000
178,000
179,000
180,000
181,000
Time (sec)
GALILEO 02 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 03 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 05 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 07 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 08 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 13 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 15 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 25 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 26 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 27 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 30 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 02 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 03 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 05 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 07 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 08 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 13 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 15 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 25 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 26 L5E5A BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

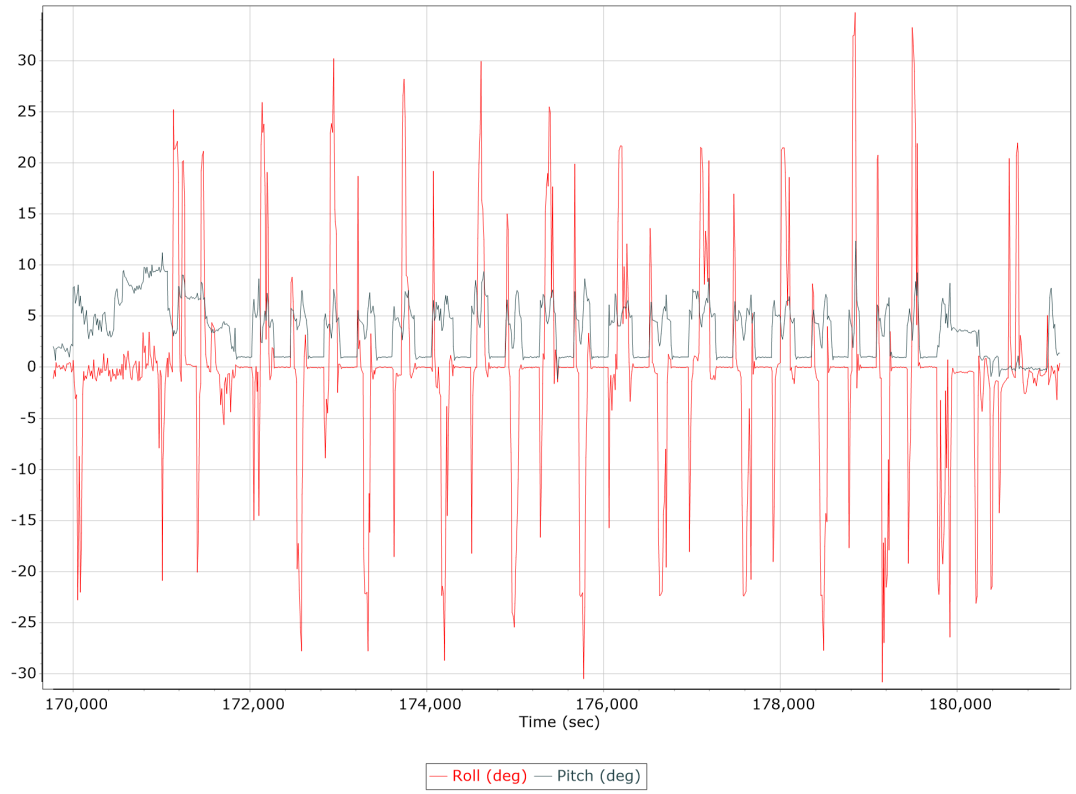
Top View



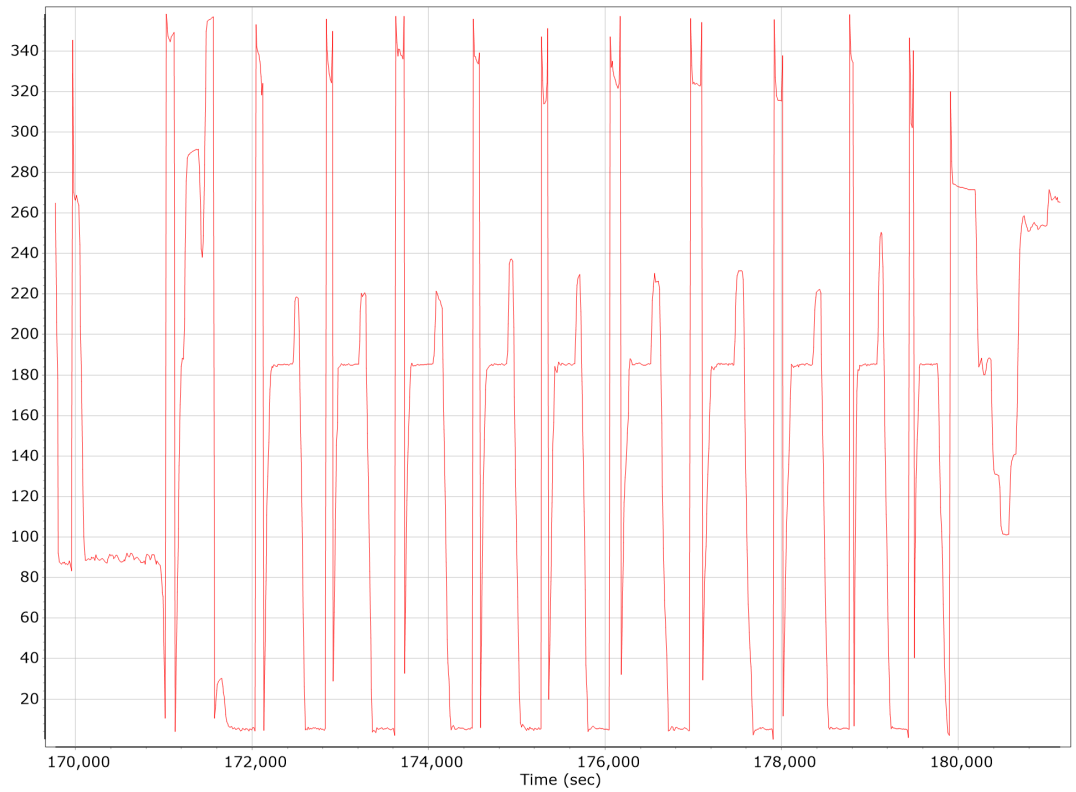
Altitude



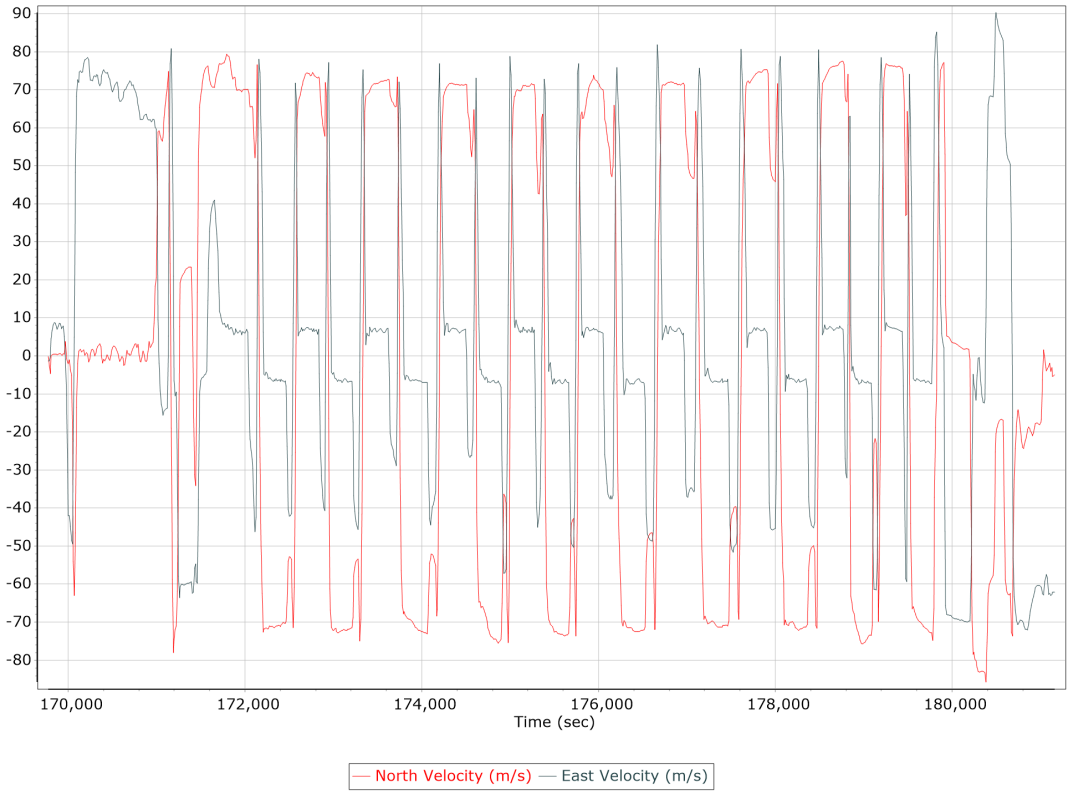
Roll/Pitch



Heading



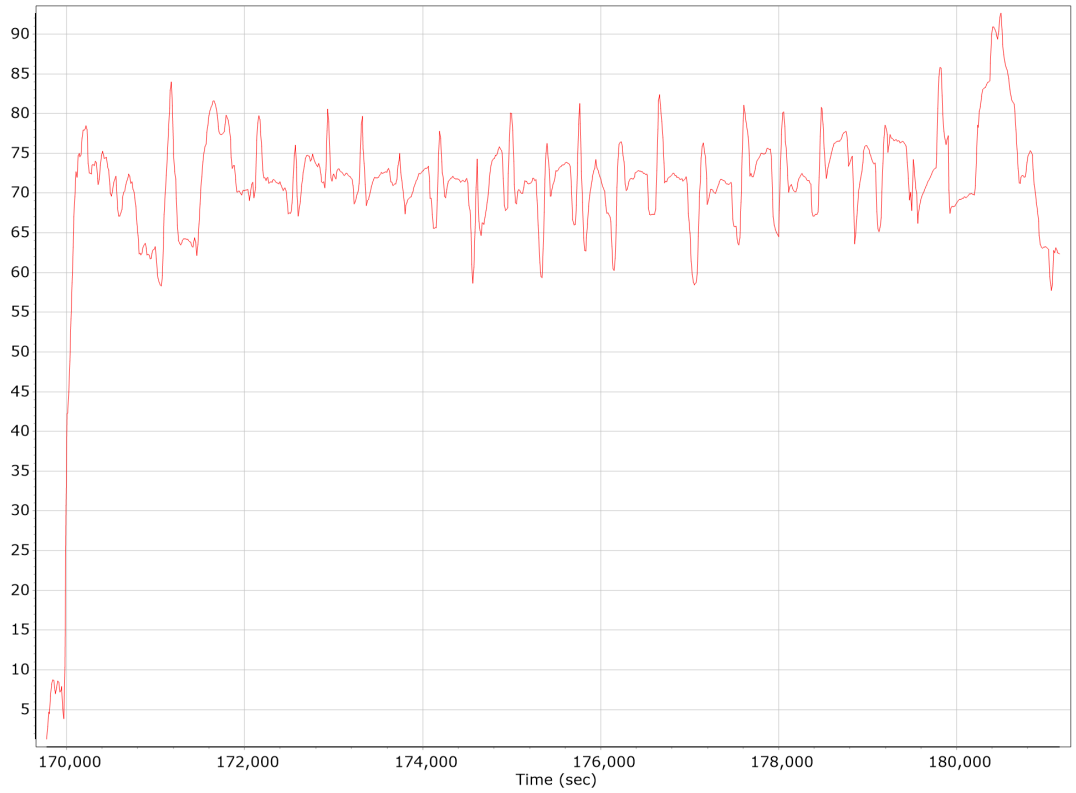
North/East Velocity



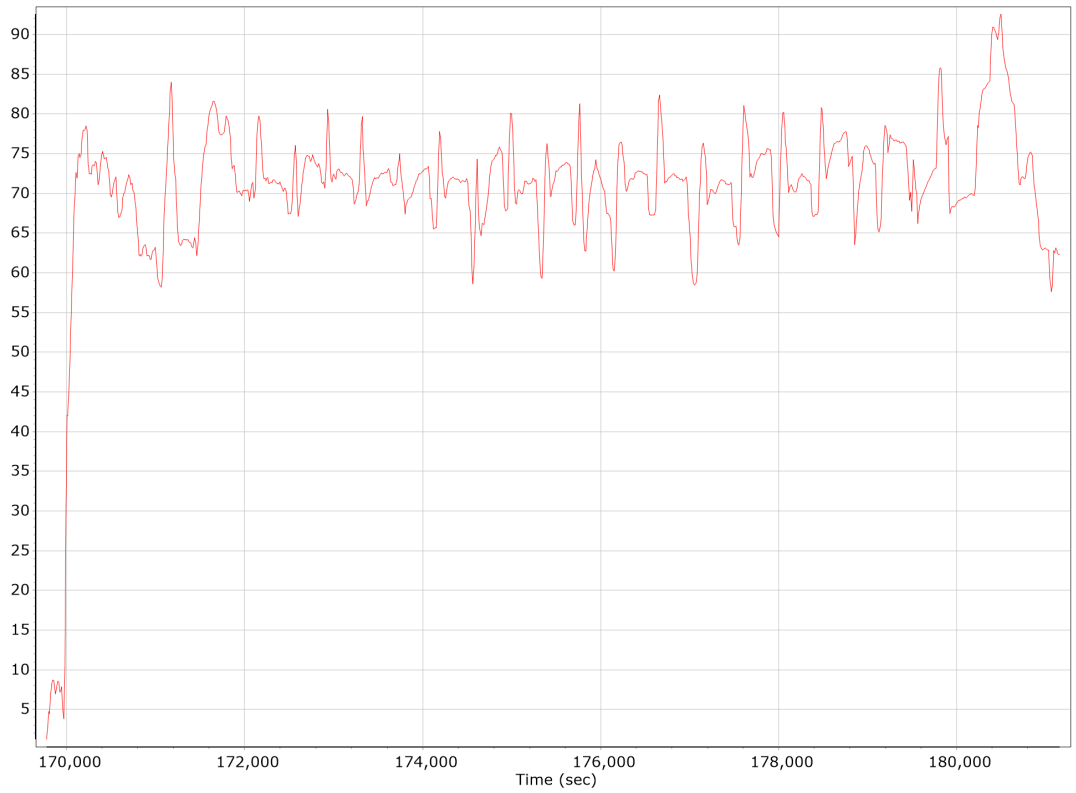
Down Velocity



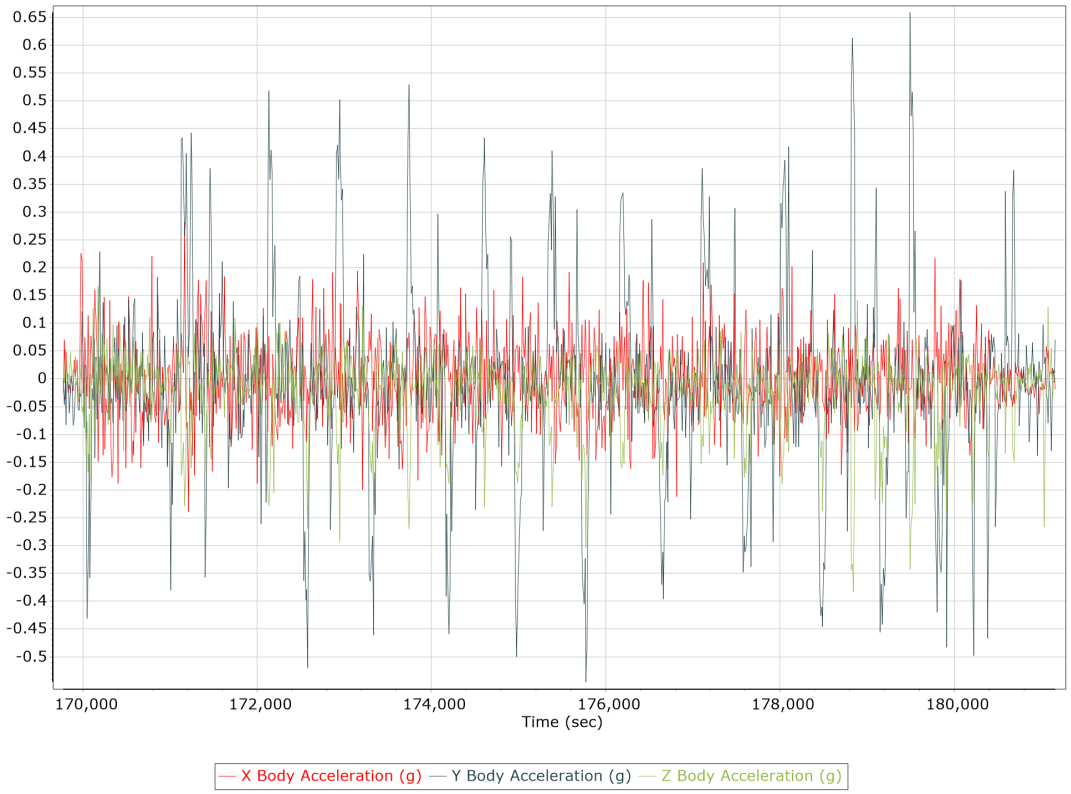
Total Speed



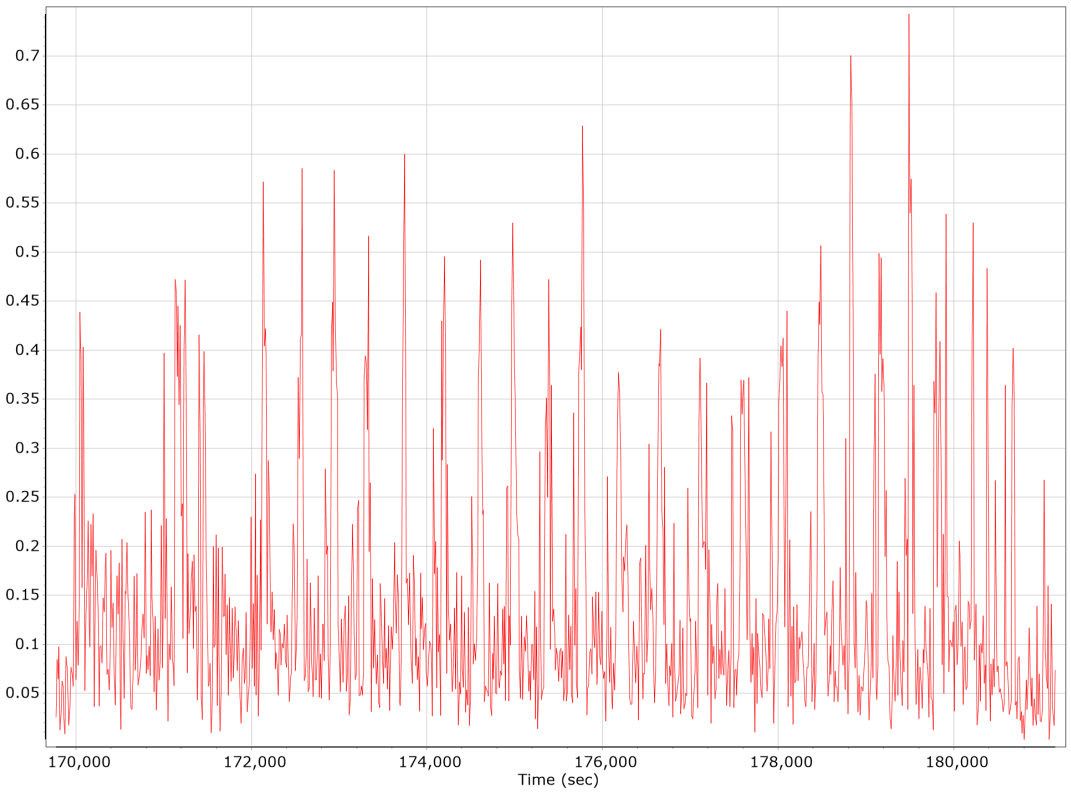
Ground Speed



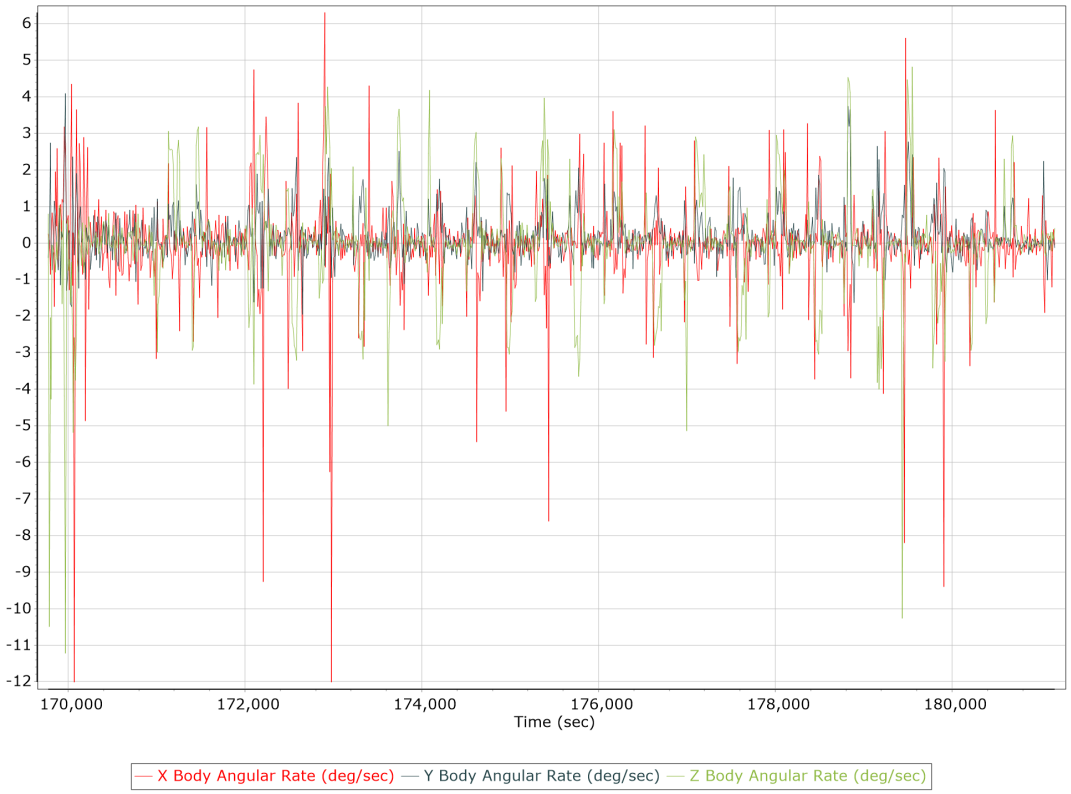
Body Acceleration



Total Body Acceleration

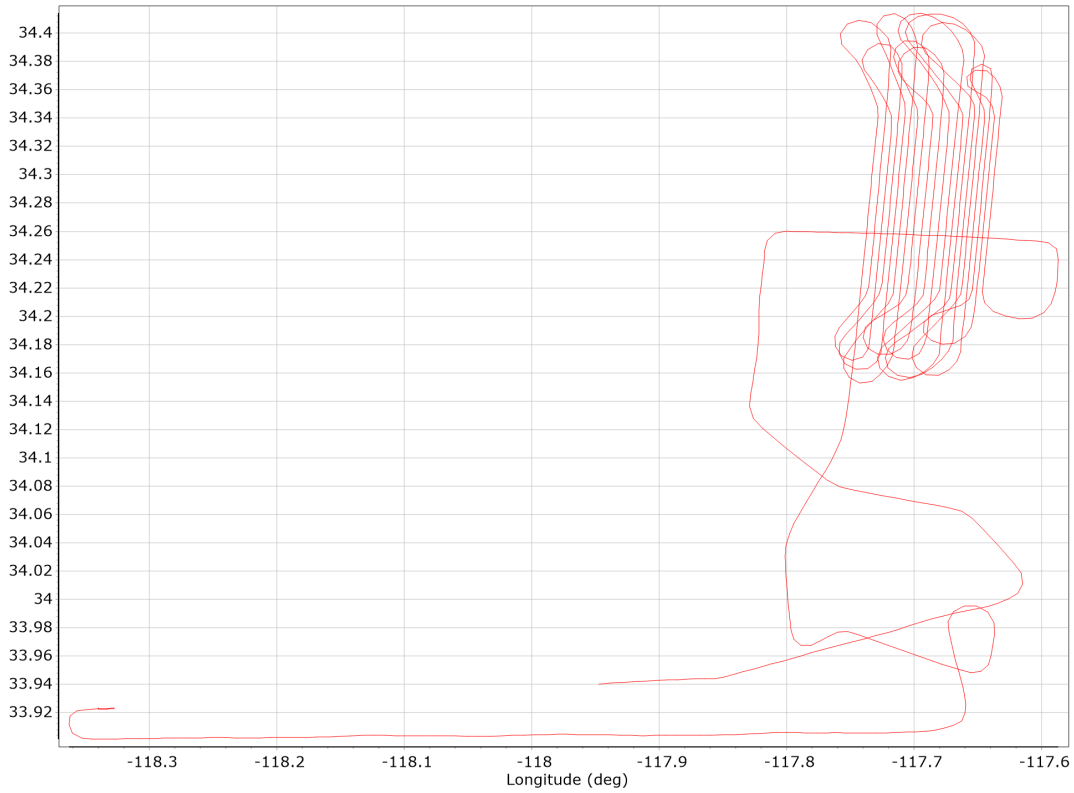


Body Angular Rate

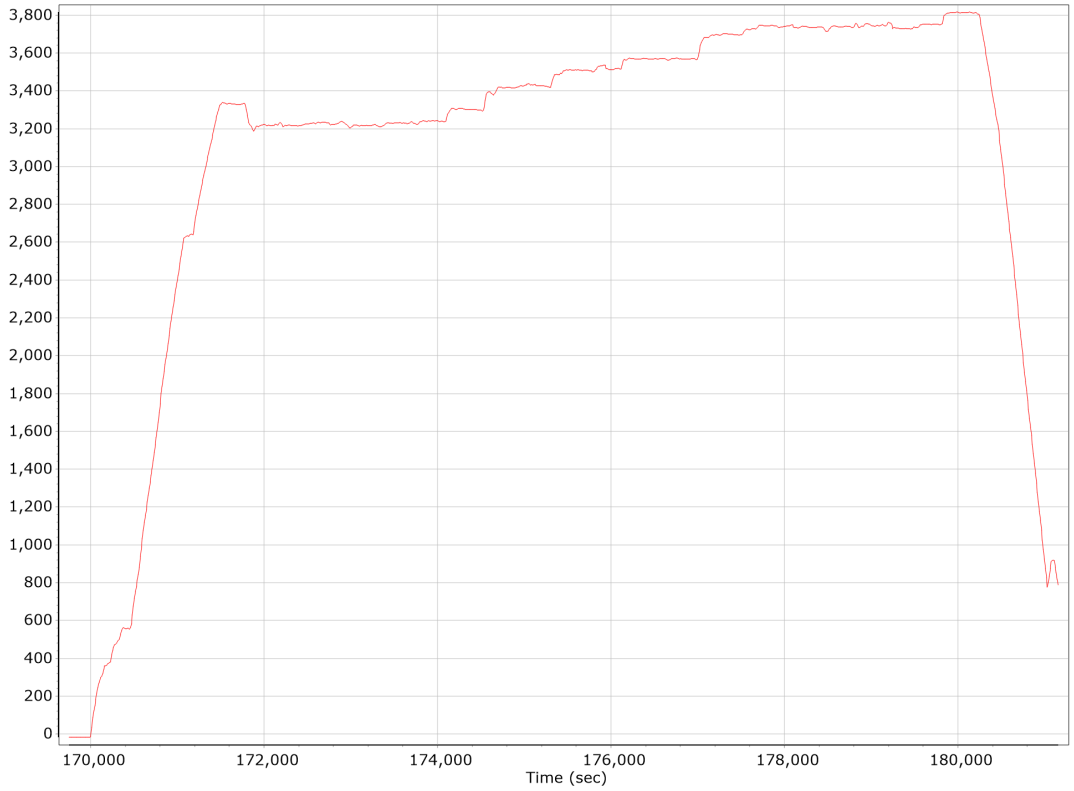


Forward Processed Trajectory Information

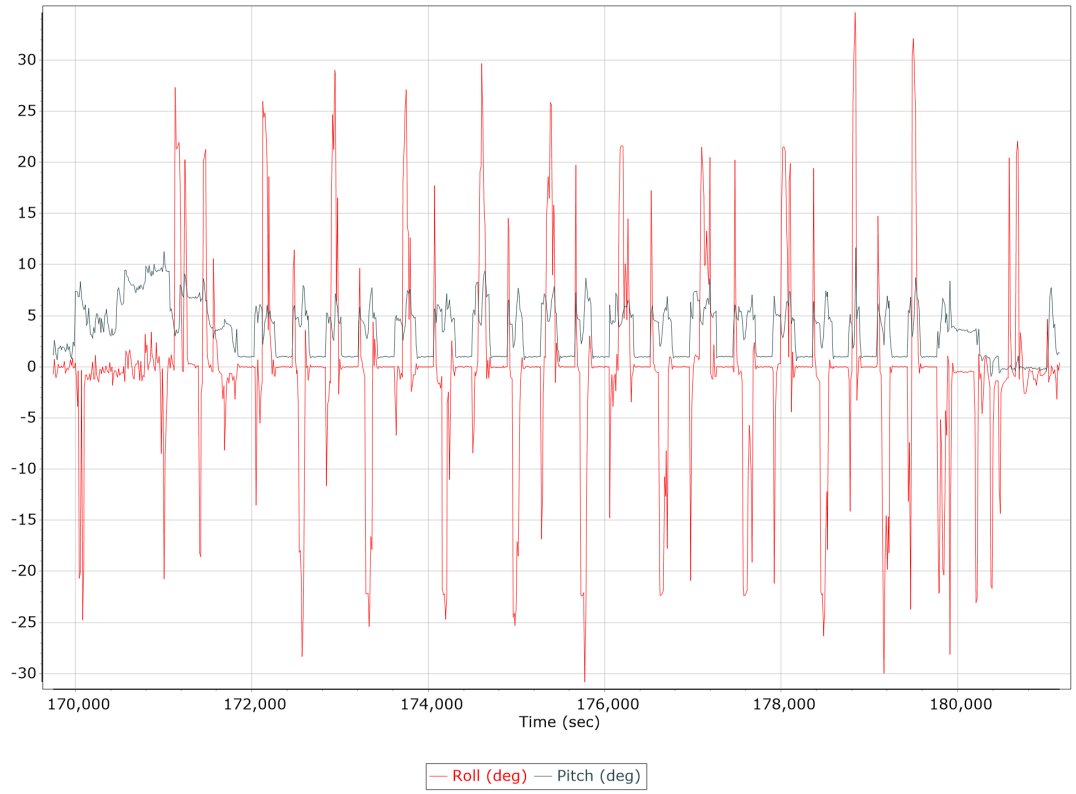
Top View



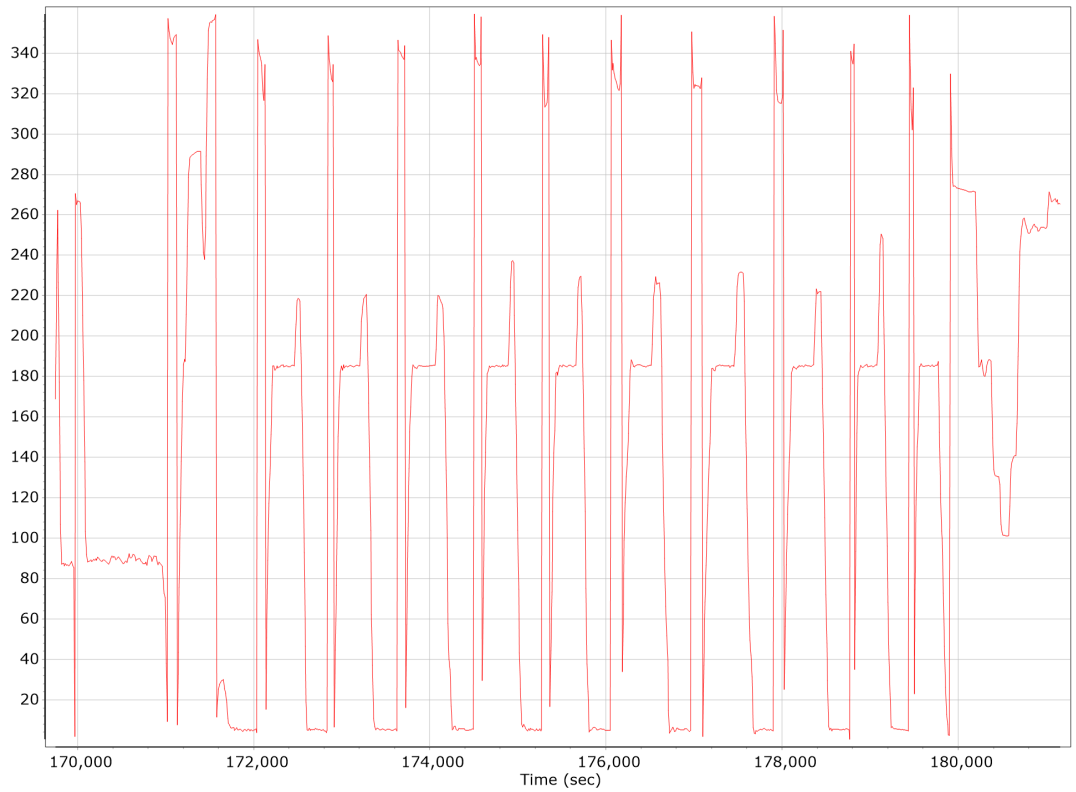
Altitude



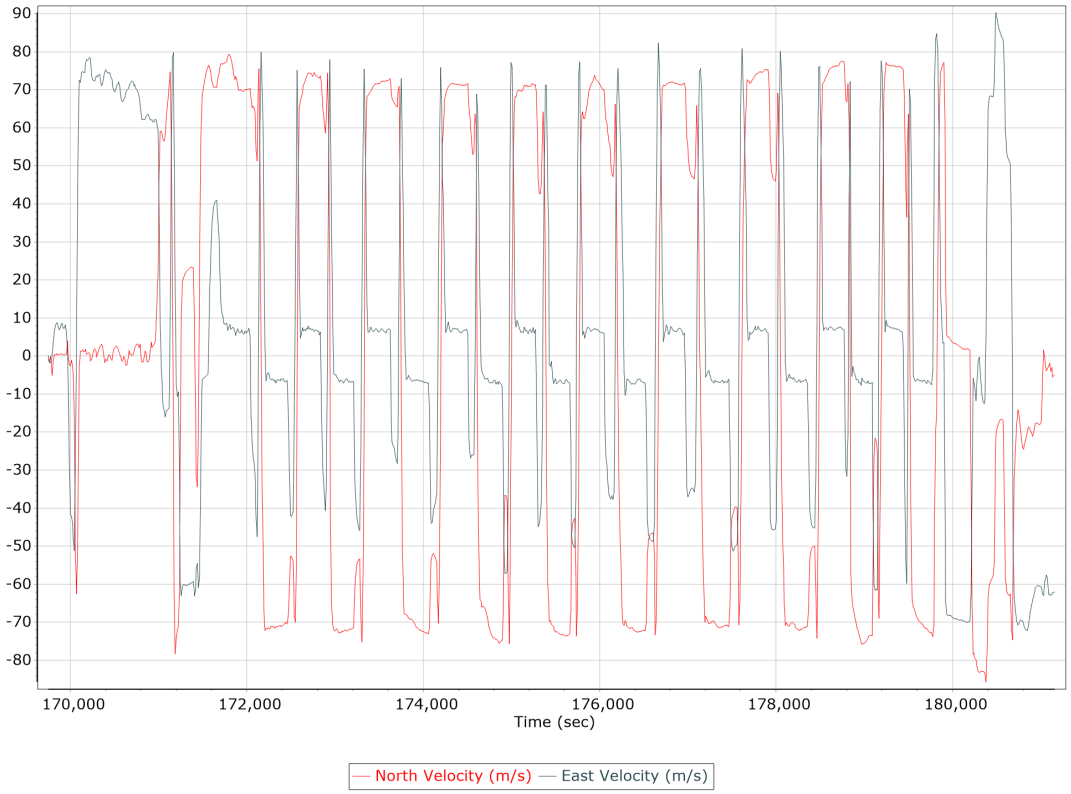
Roll/Pitch



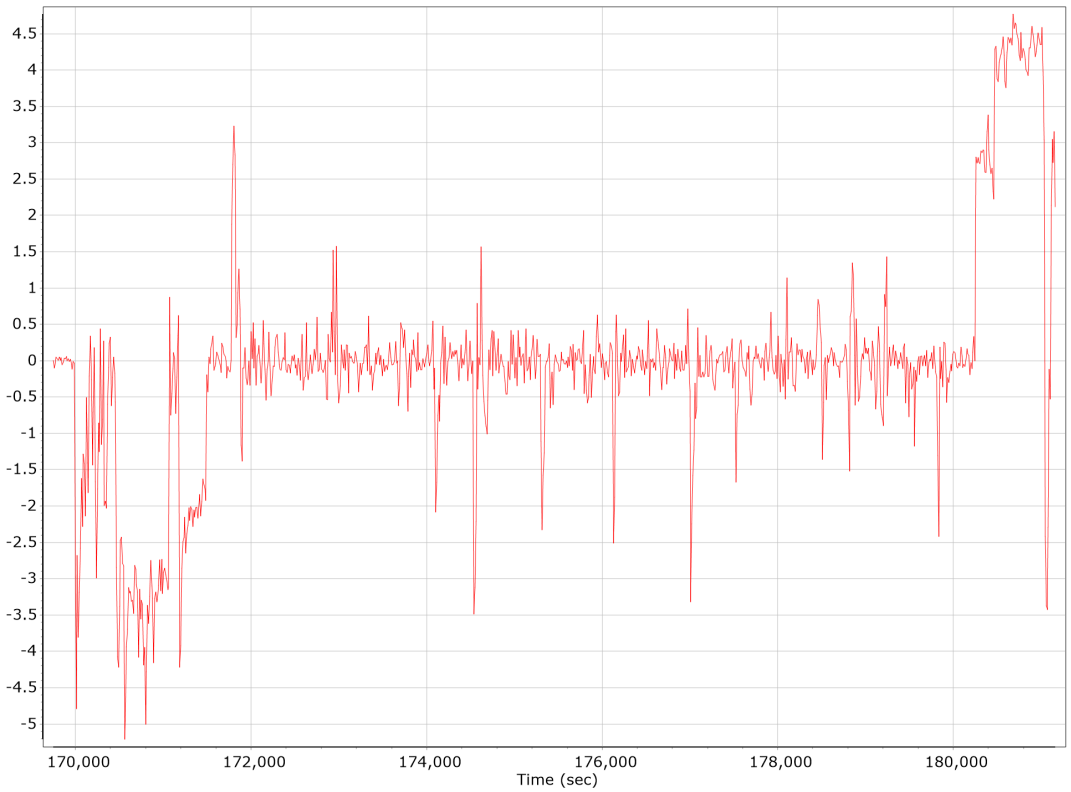
Heading



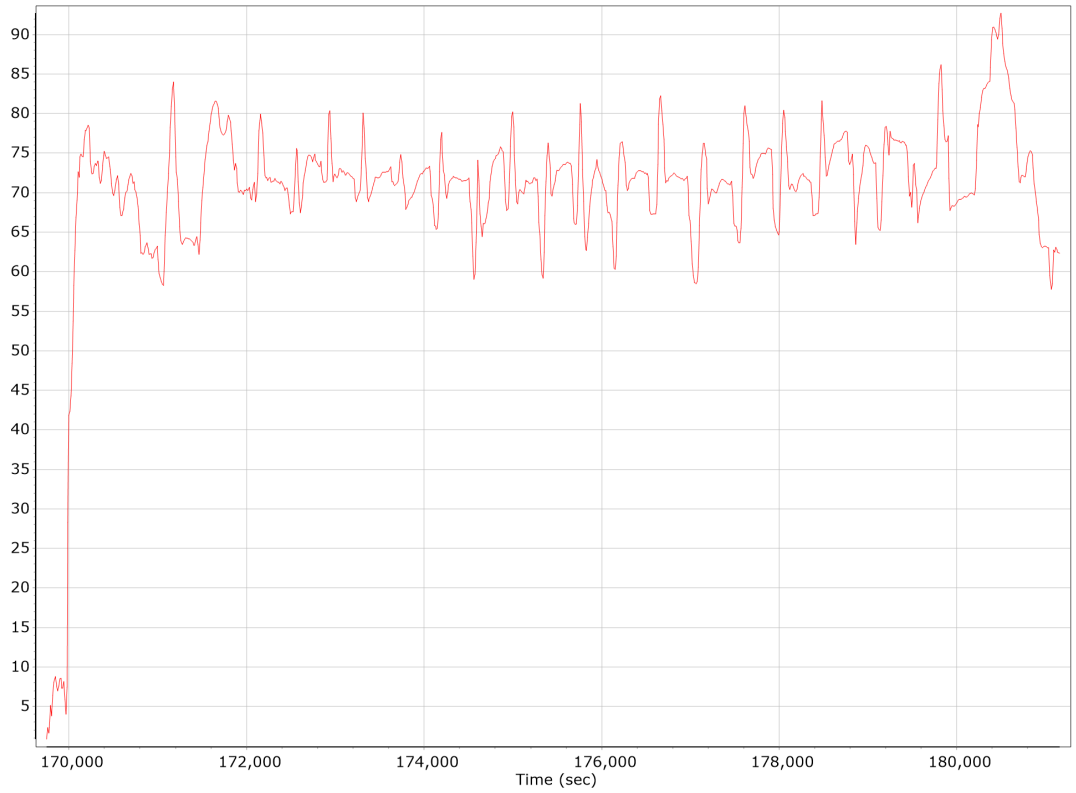
North/East Velocity



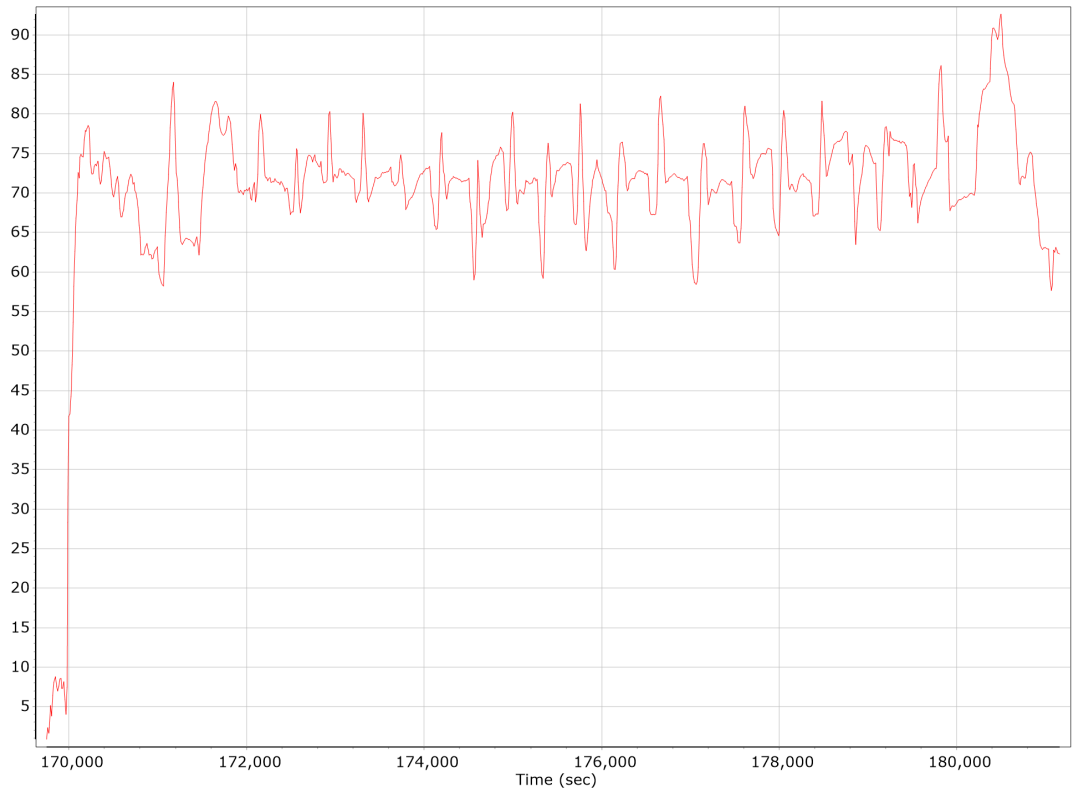
Down Velocity



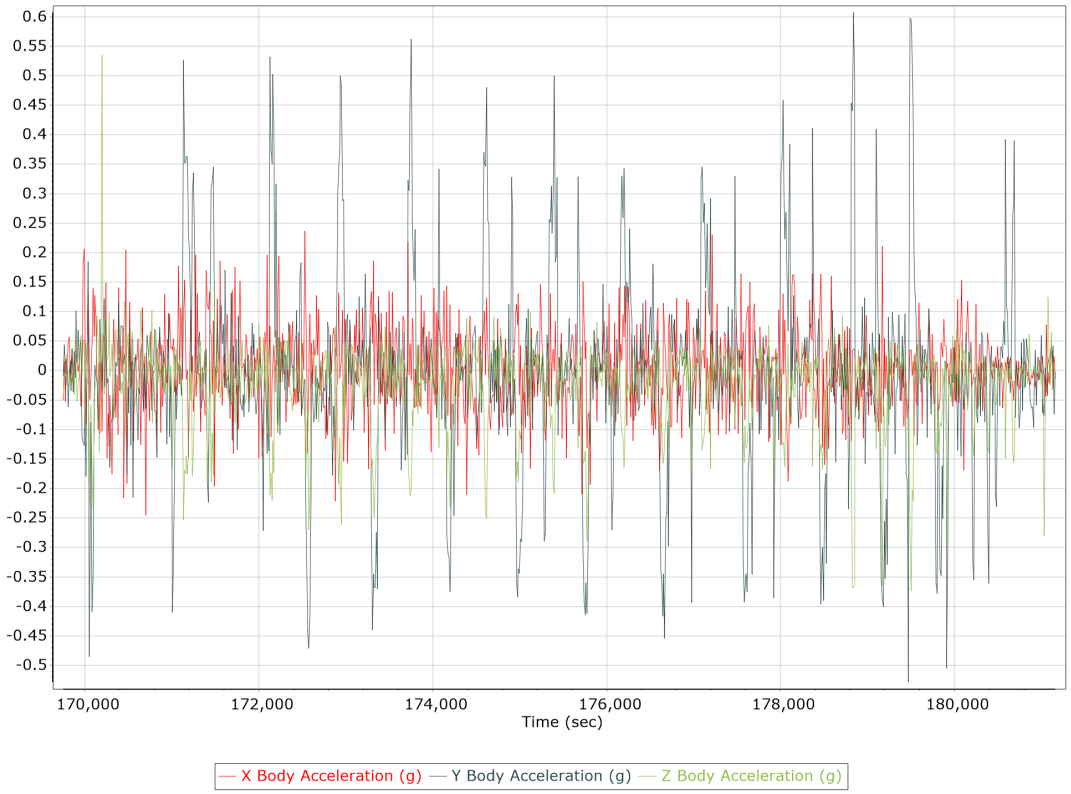
Total Speed



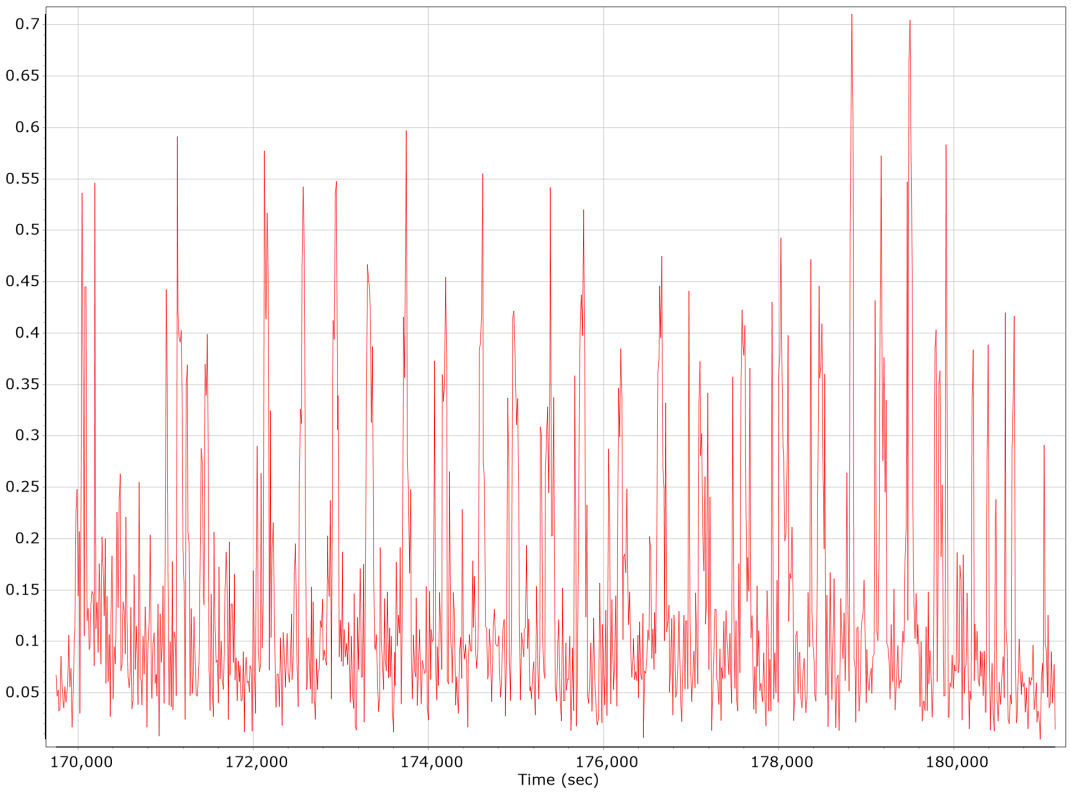
Ground Speed



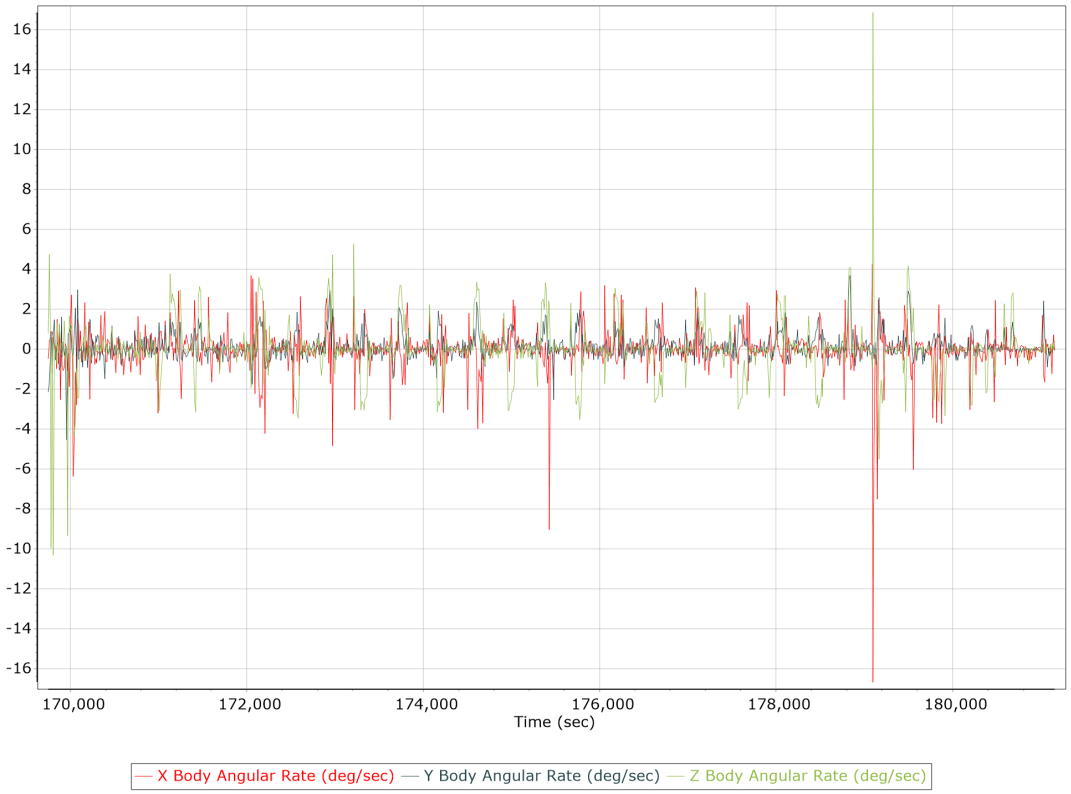
Body Acceleration



Total Body Acceleration



Body Angular Rate



GNSS QC

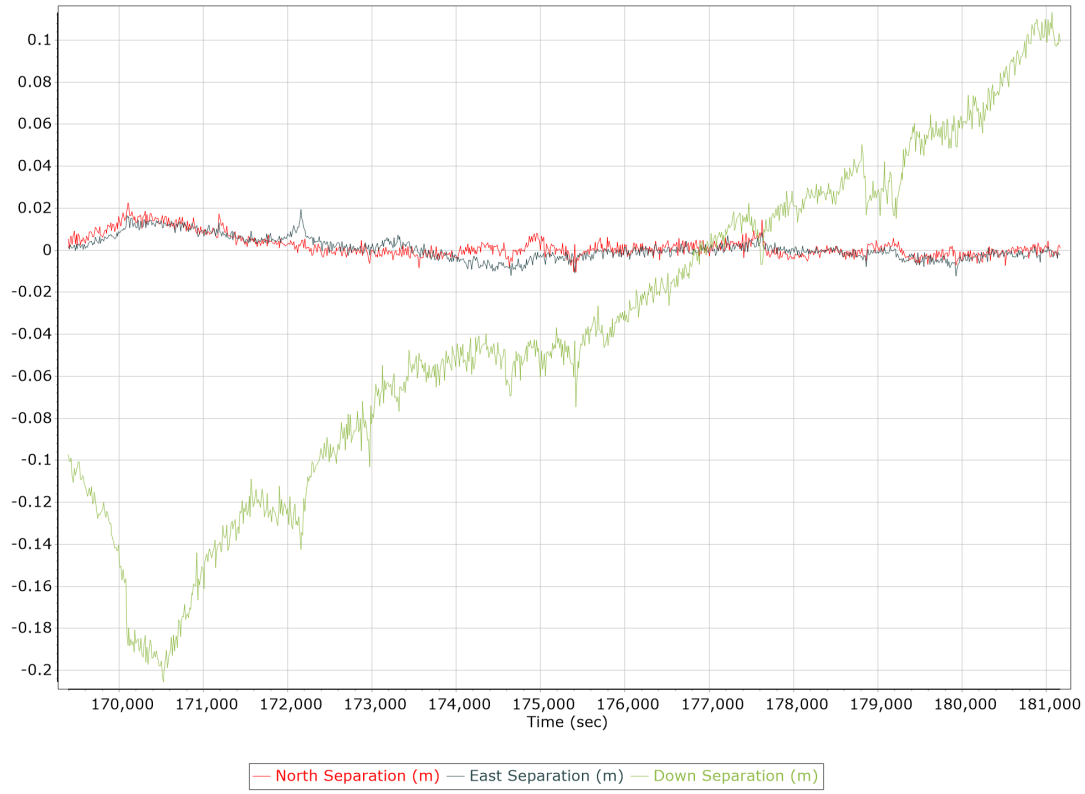
GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	6	10	8
Number of GLONASS SV	1	5	4
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	5	9	7
Total number of SV	14	22	19
PDOP	1.06	1.83	1.23
QC Solution Gaps	0.00	0.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	12055.00	0.00	0.00
Percentage	100.00	0.00	0.00

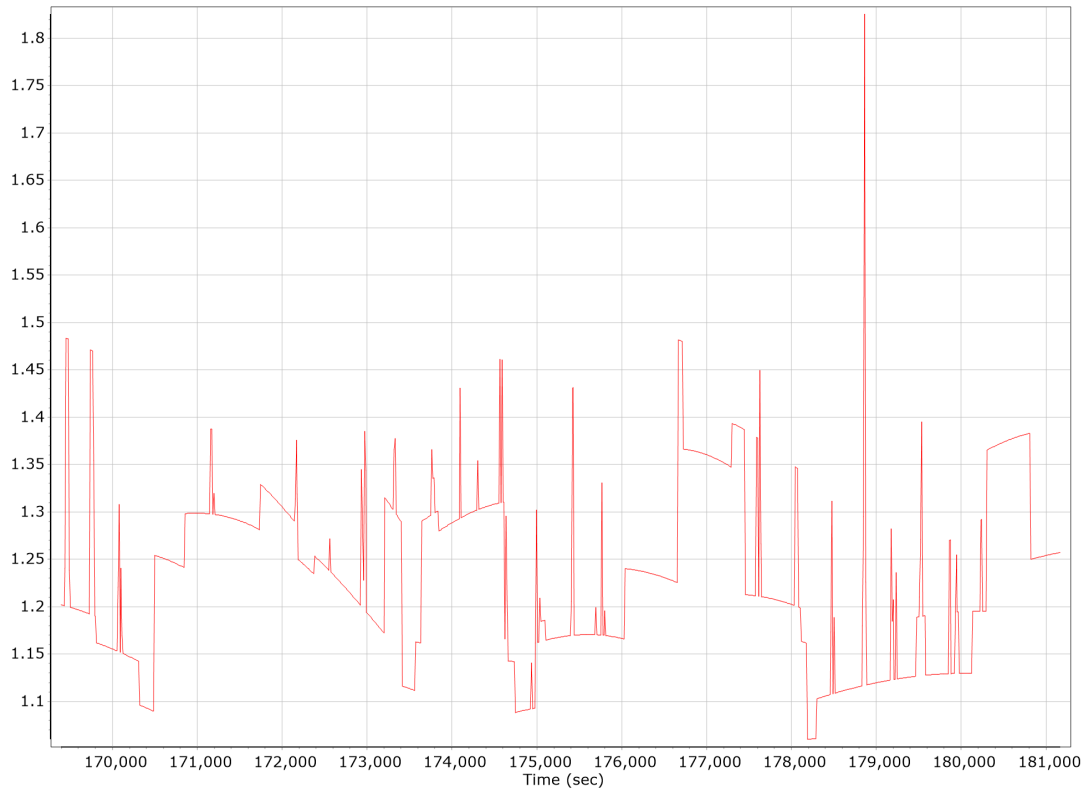
Num SVs in solution



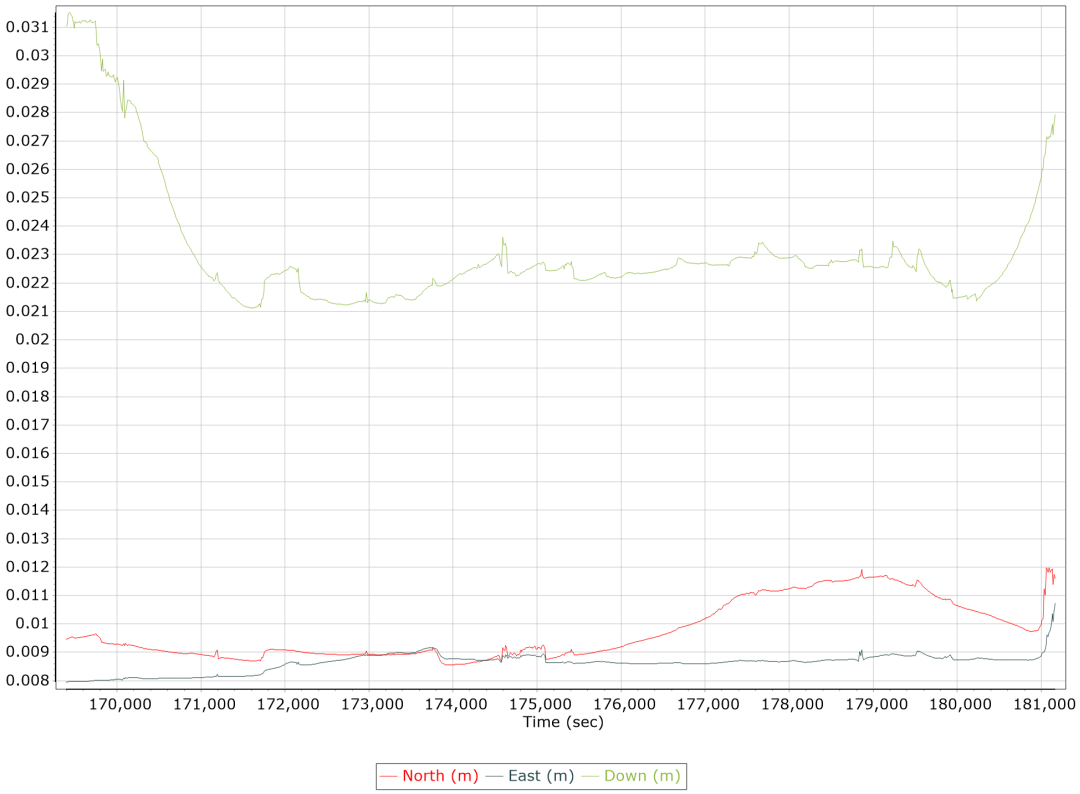
Forward/Reverse Separation



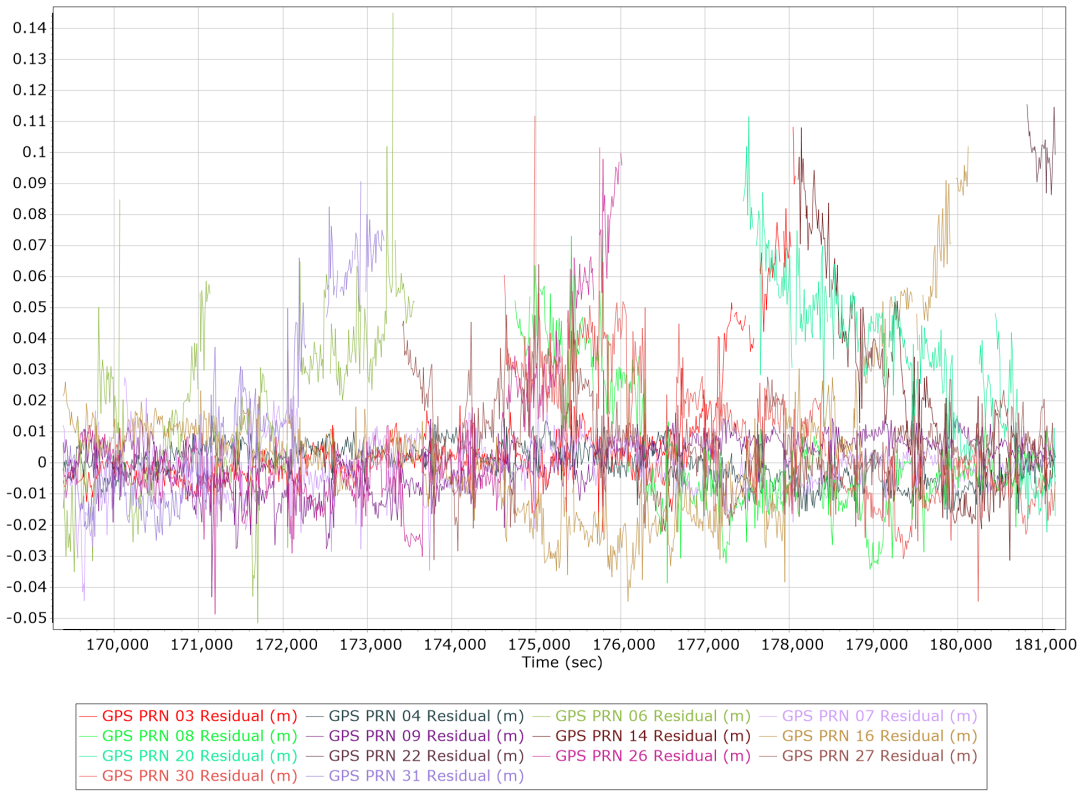
PDOP



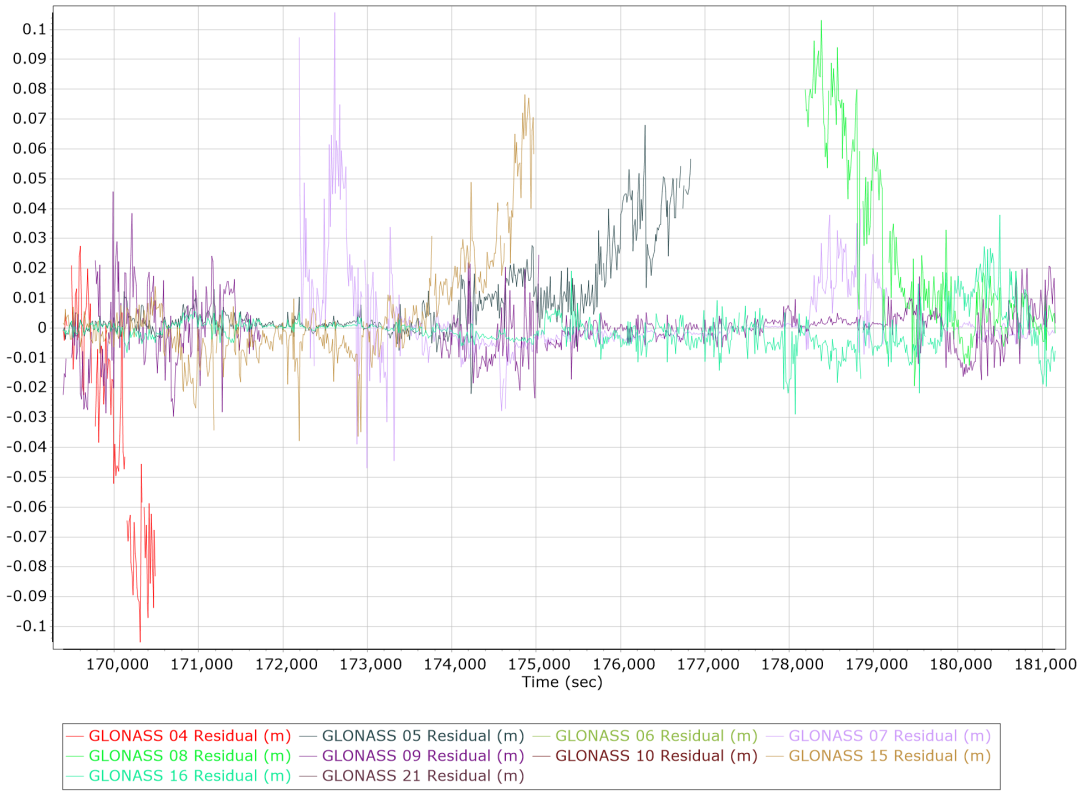
Estimated Position Accuracy



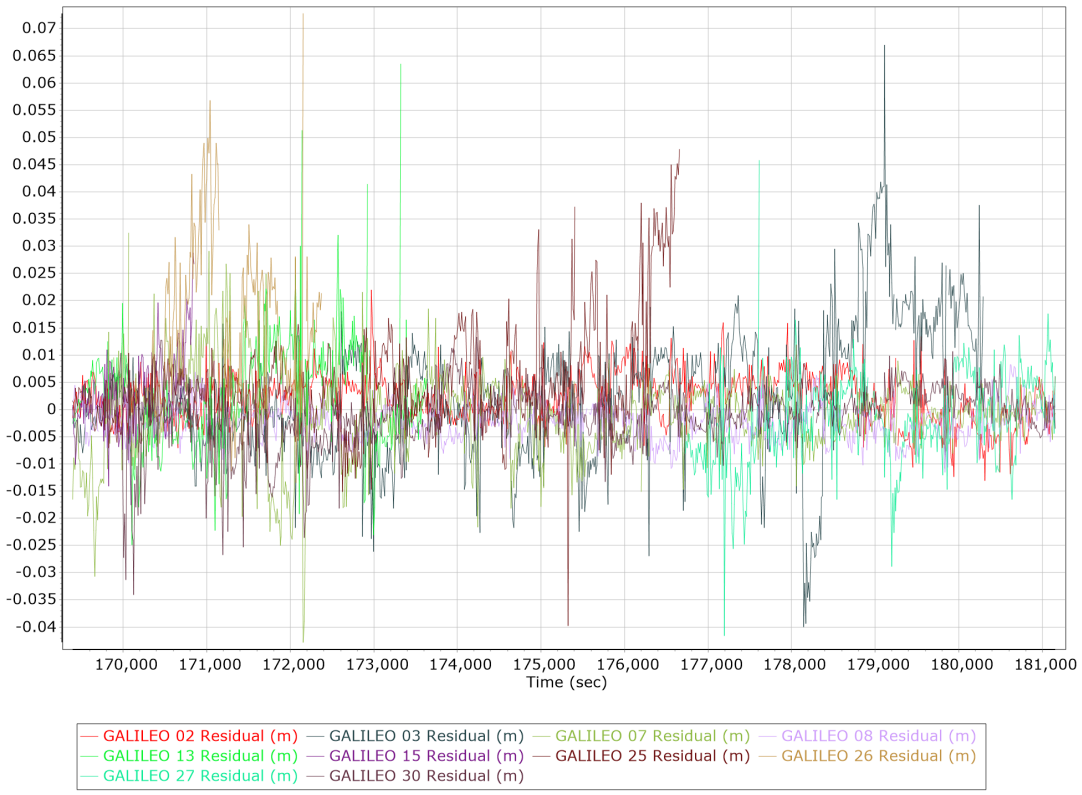
GPS Residuals



GLONASS Residuals



GALILEO Residuals



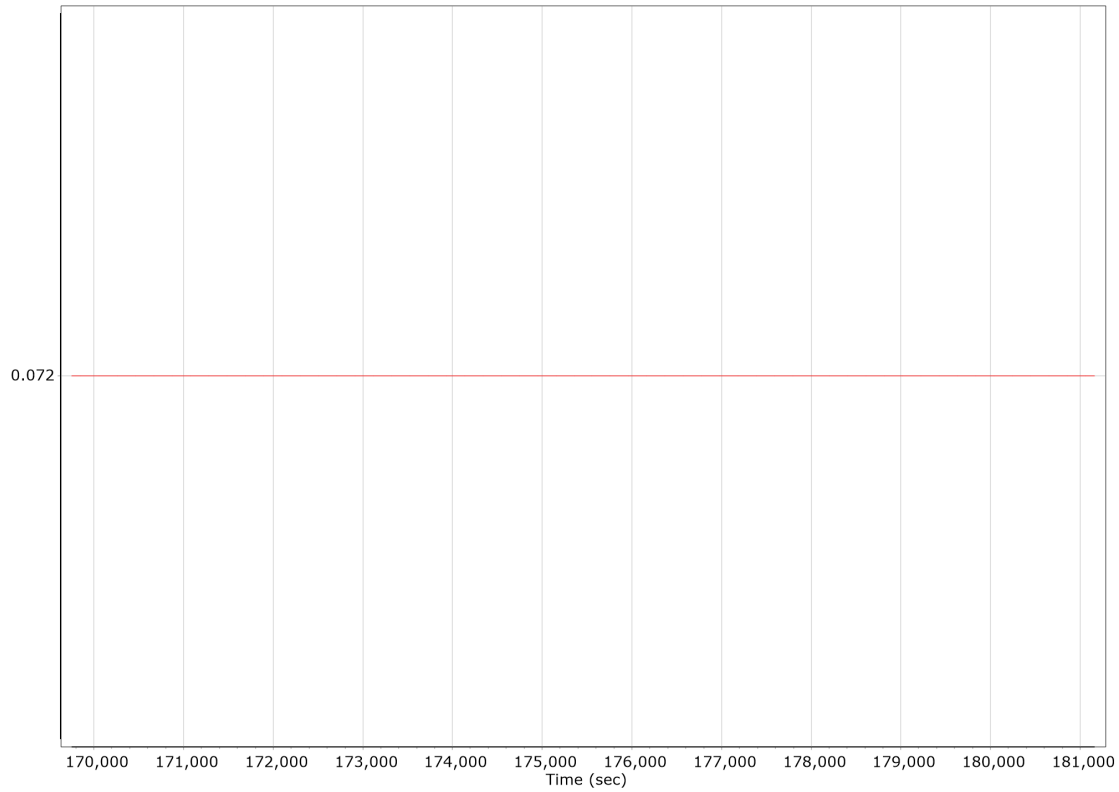
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	169081.000 (9/25/2023 10:58:01 PM)		
Processing end time	181167.000 (9/26/2023 2:19:27 AM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.072	0.090	-1.275
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

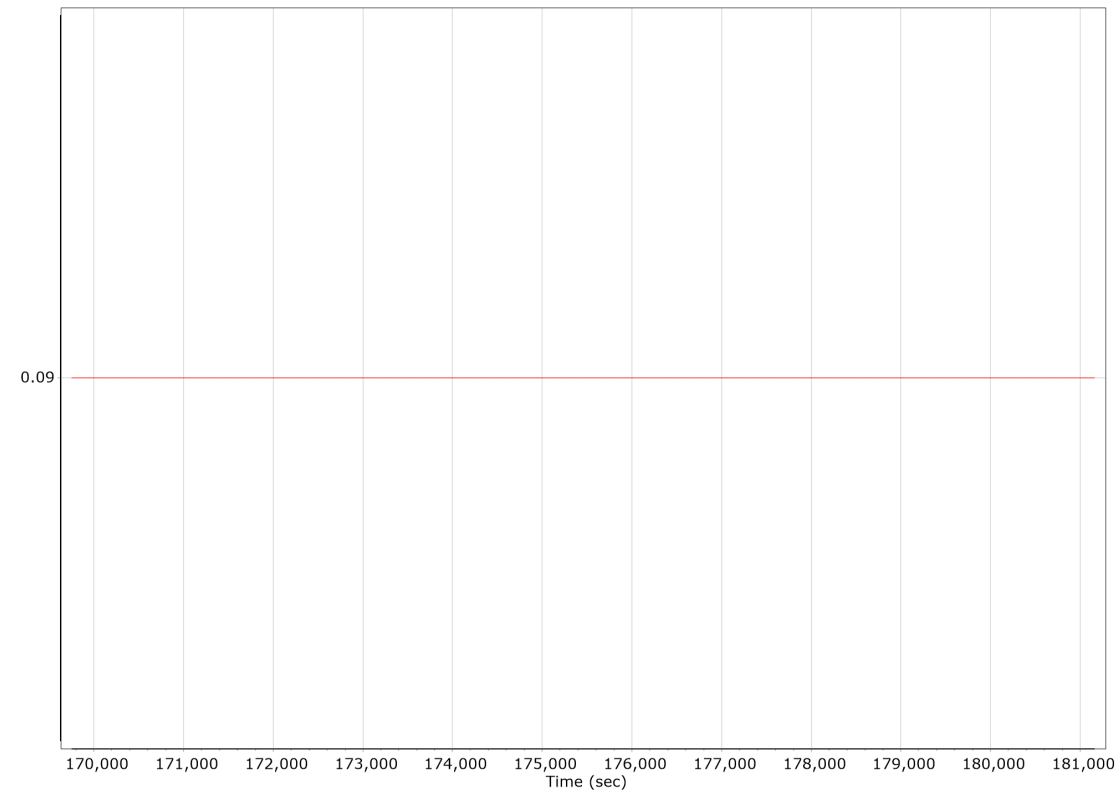
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

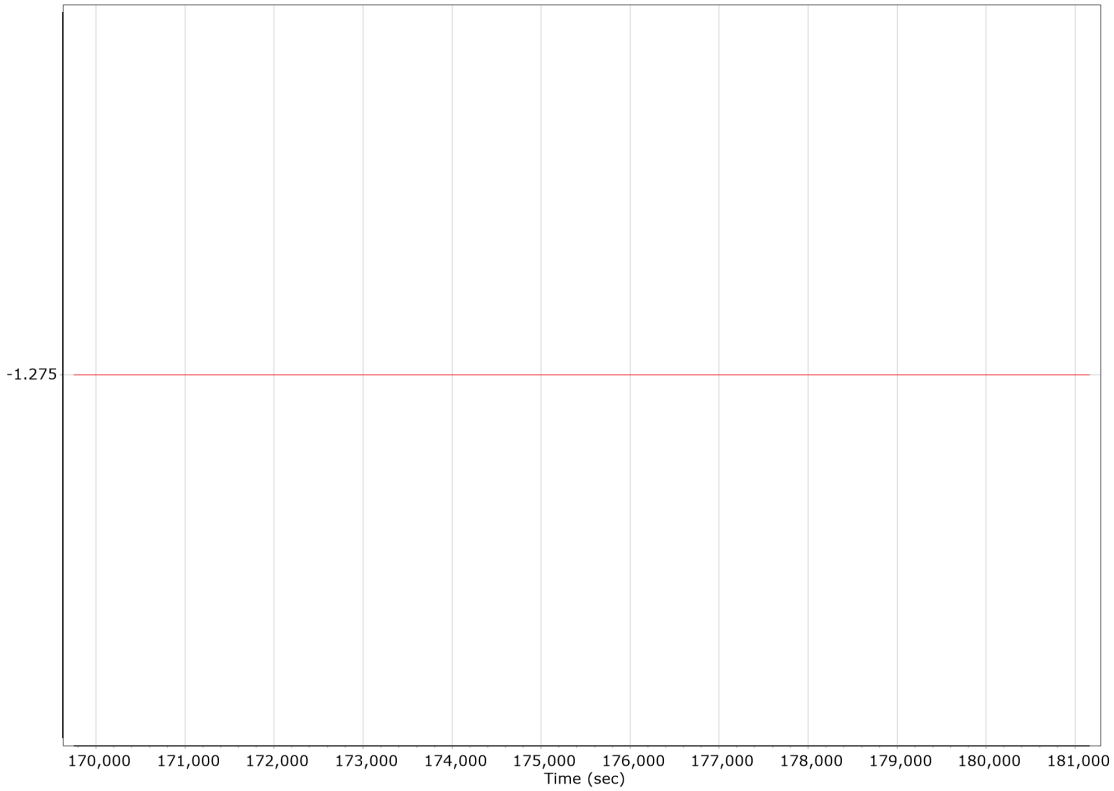
X Reference-Primary GNSS Lever Arm (m)



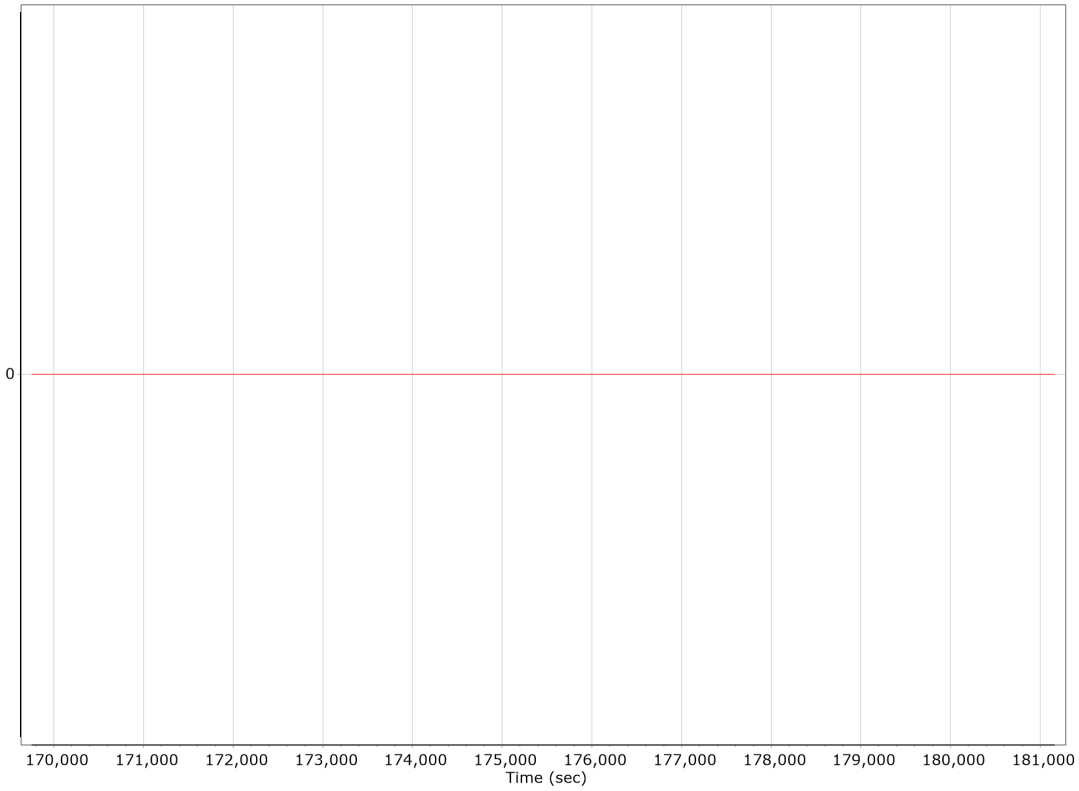
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



Reference-Primary GNSS Lever Arm Figure of Merit



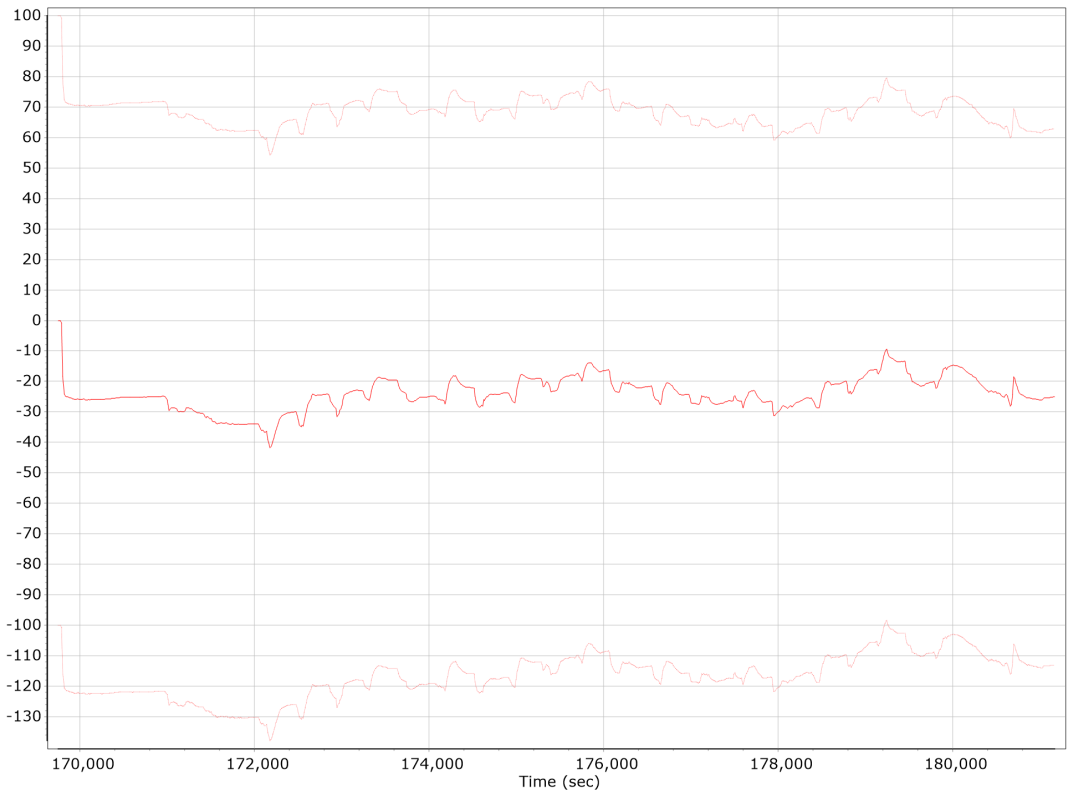
IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

Accelerometer Bias (micro-g)



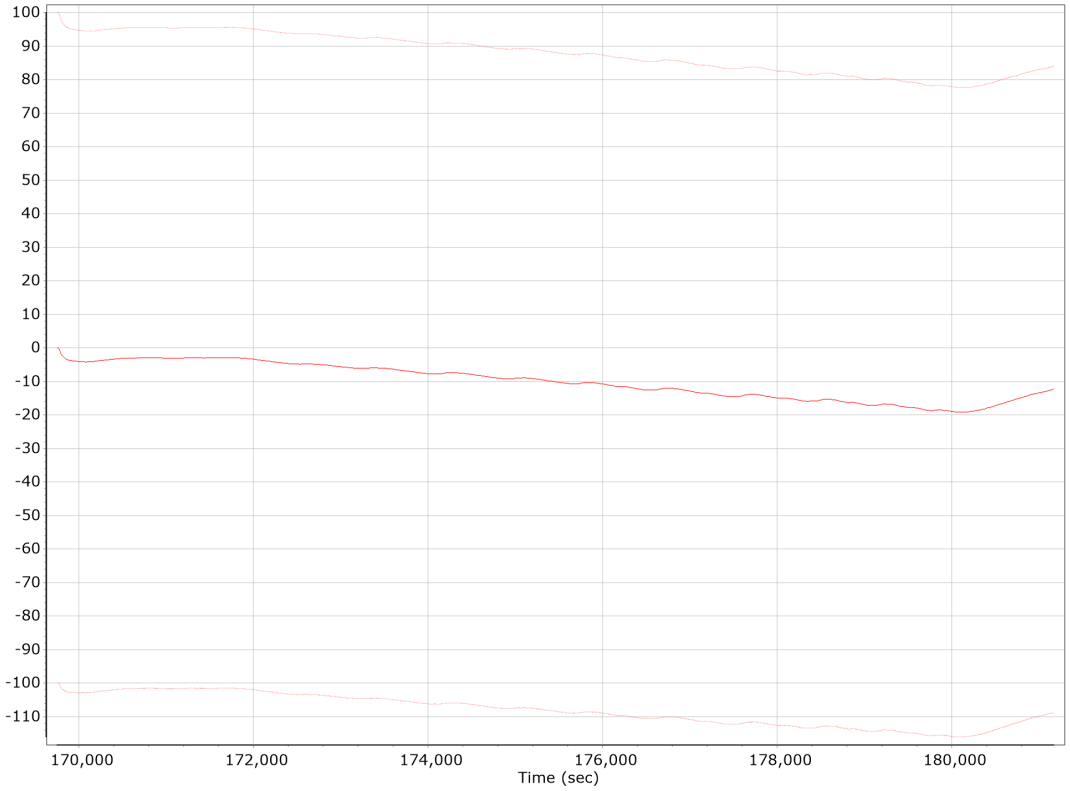
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



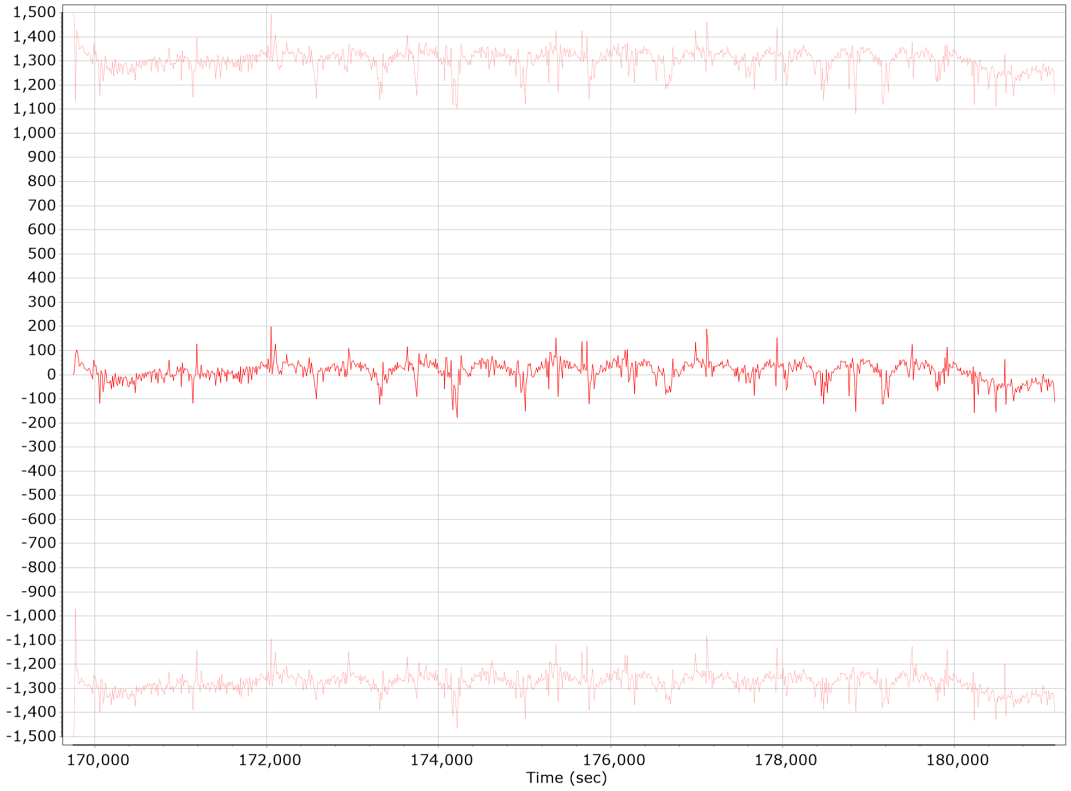
X Accelerometer Scale Error (ppm)



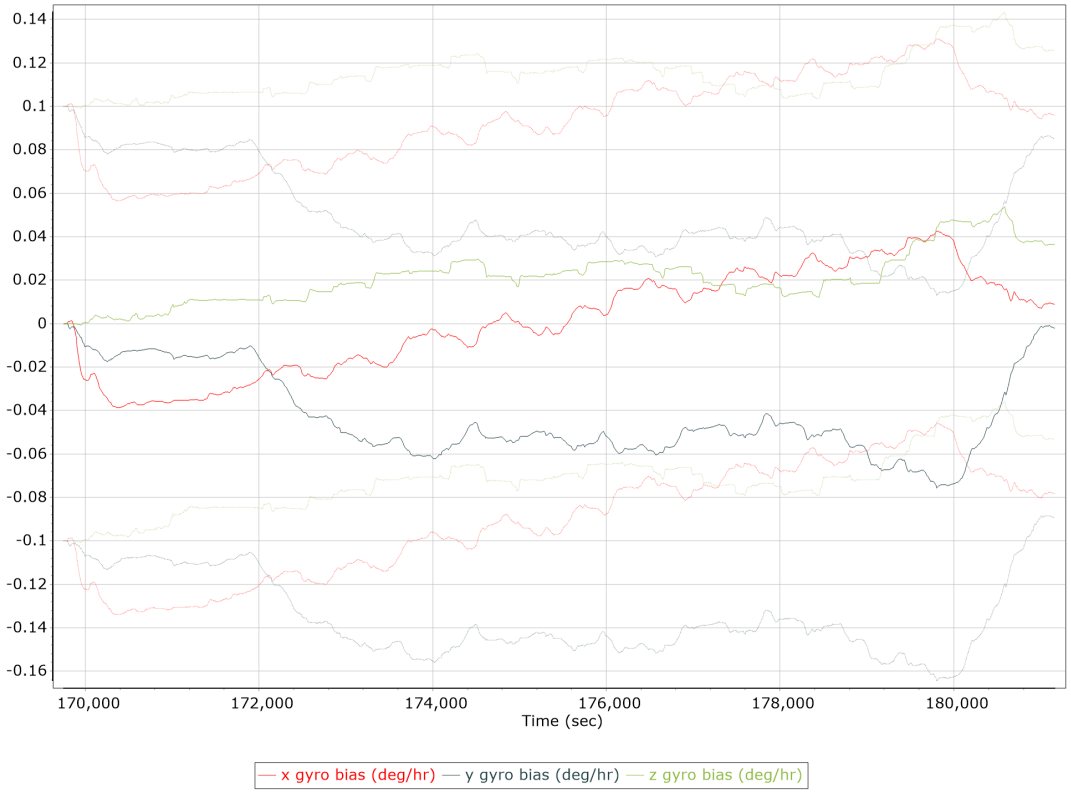
Y Accelerometer Scale Error (ppm)



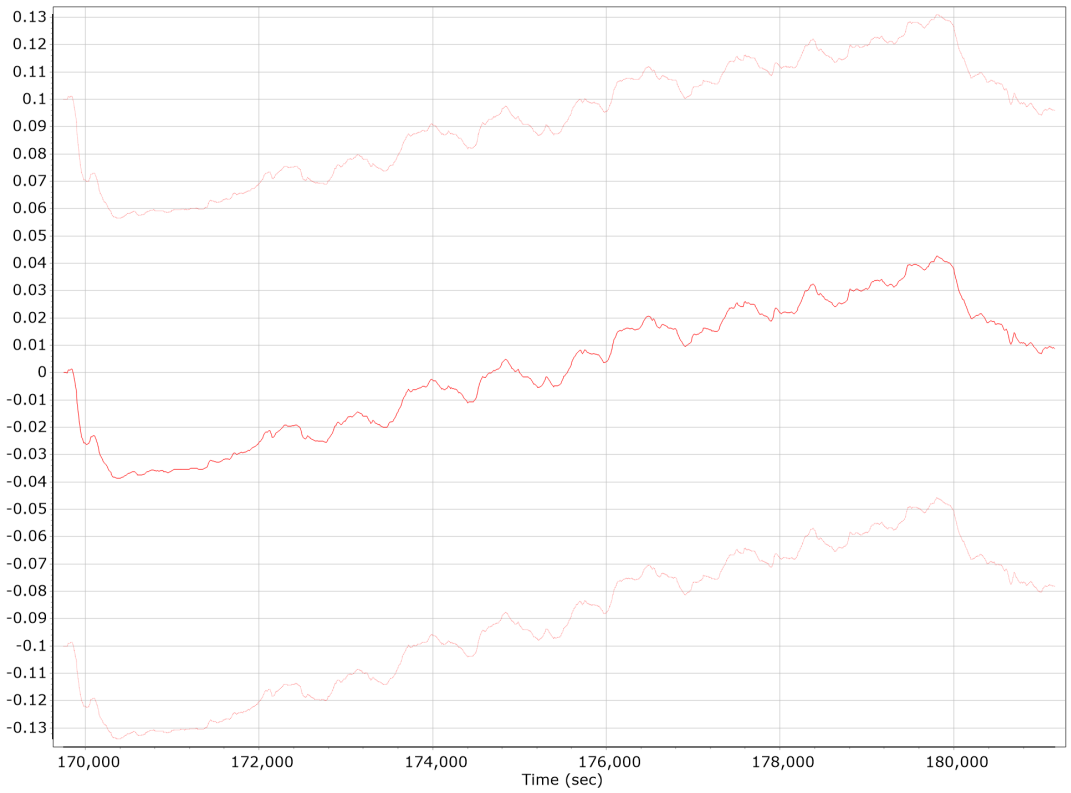
Z Accelerometer Scale Error (ppm)



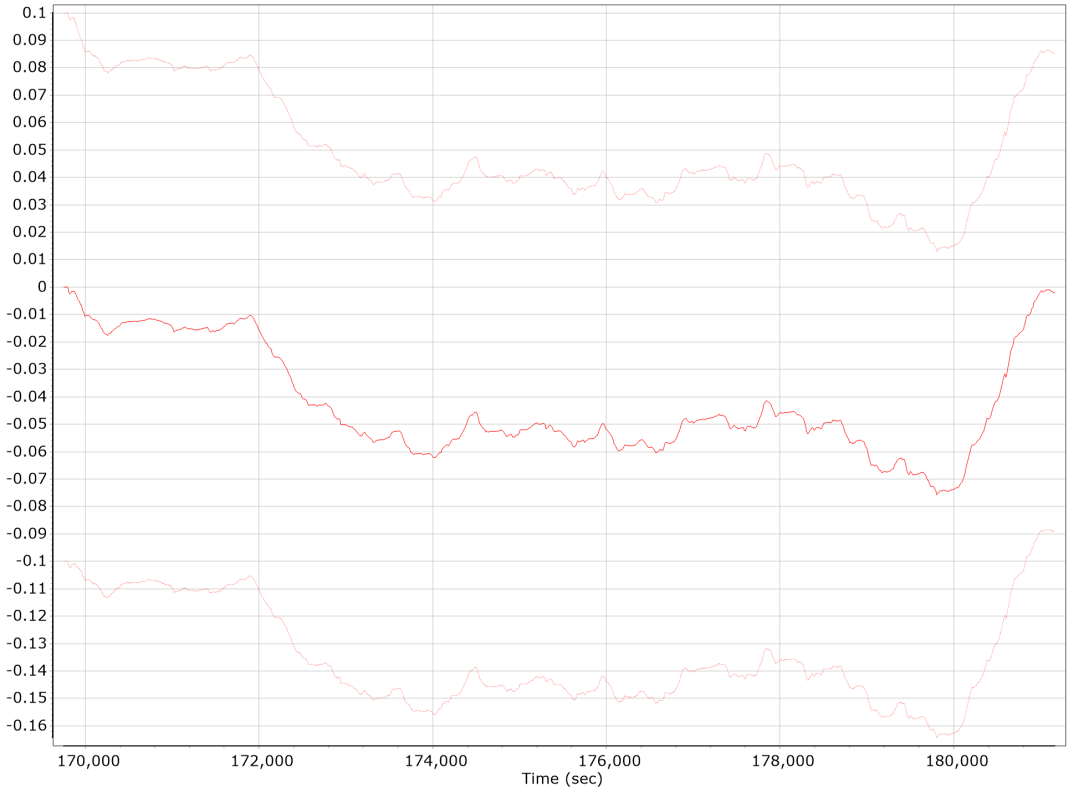
Gyro Bias (deg/h)



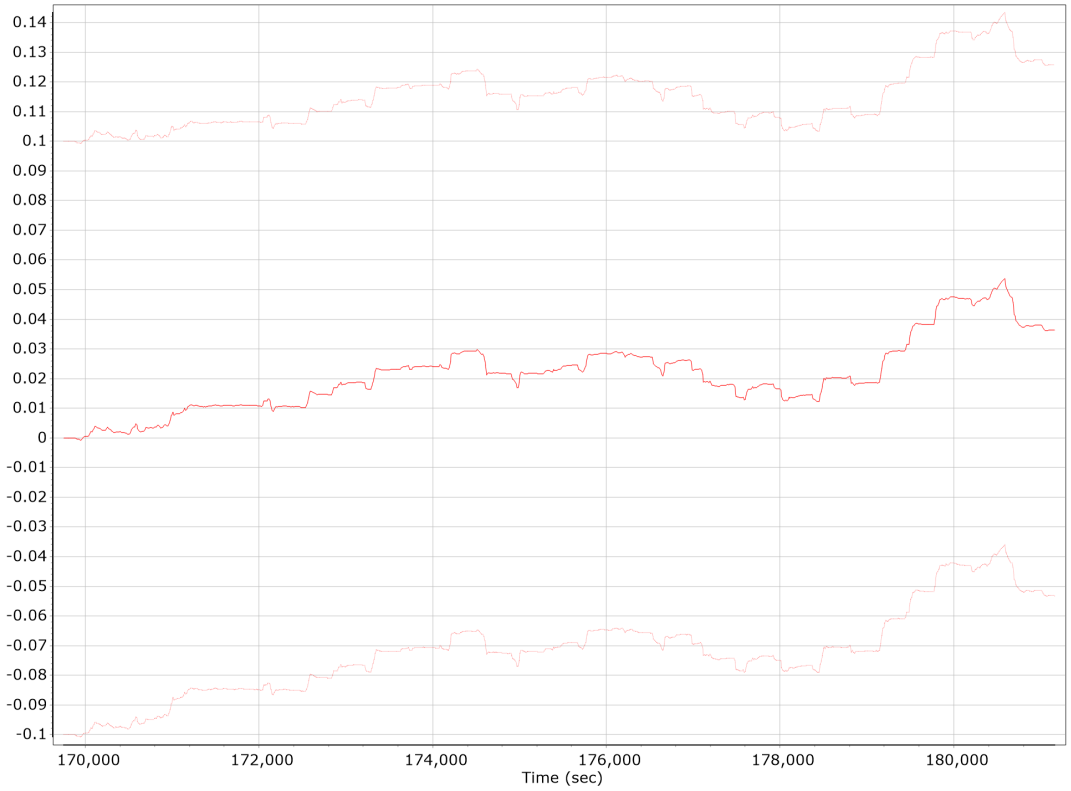
X Gyro Bias (deg/h)



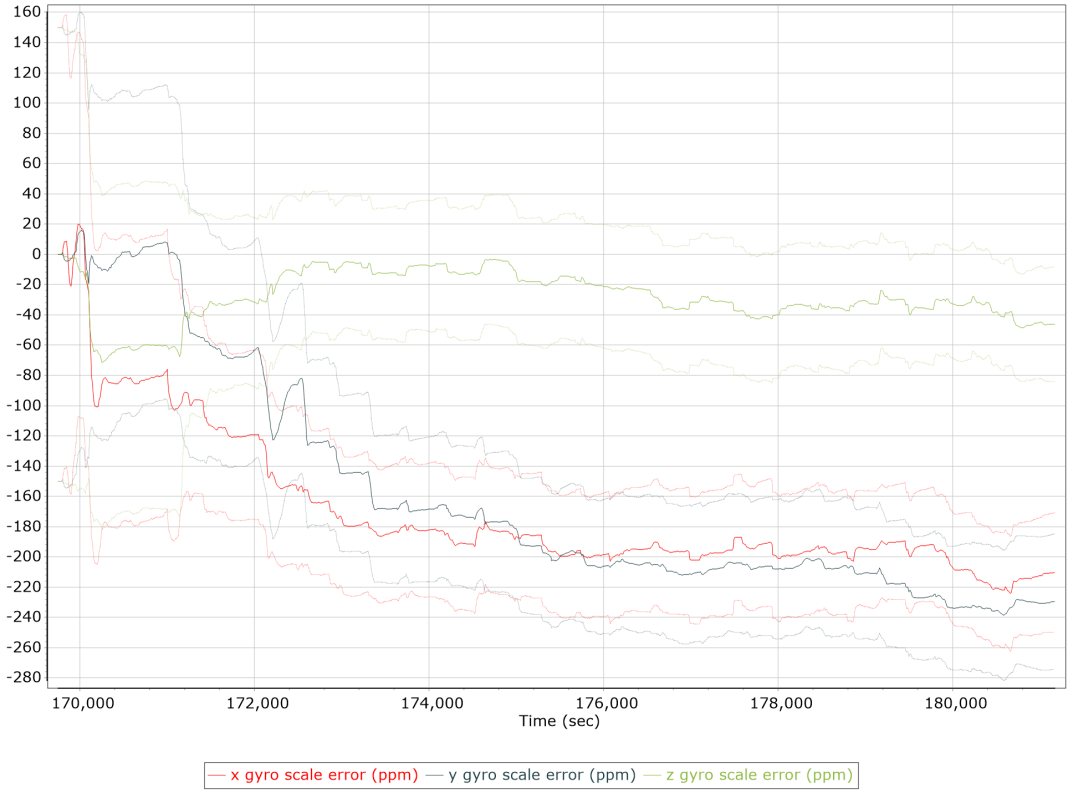
Y Gyro Bias (deg/h)



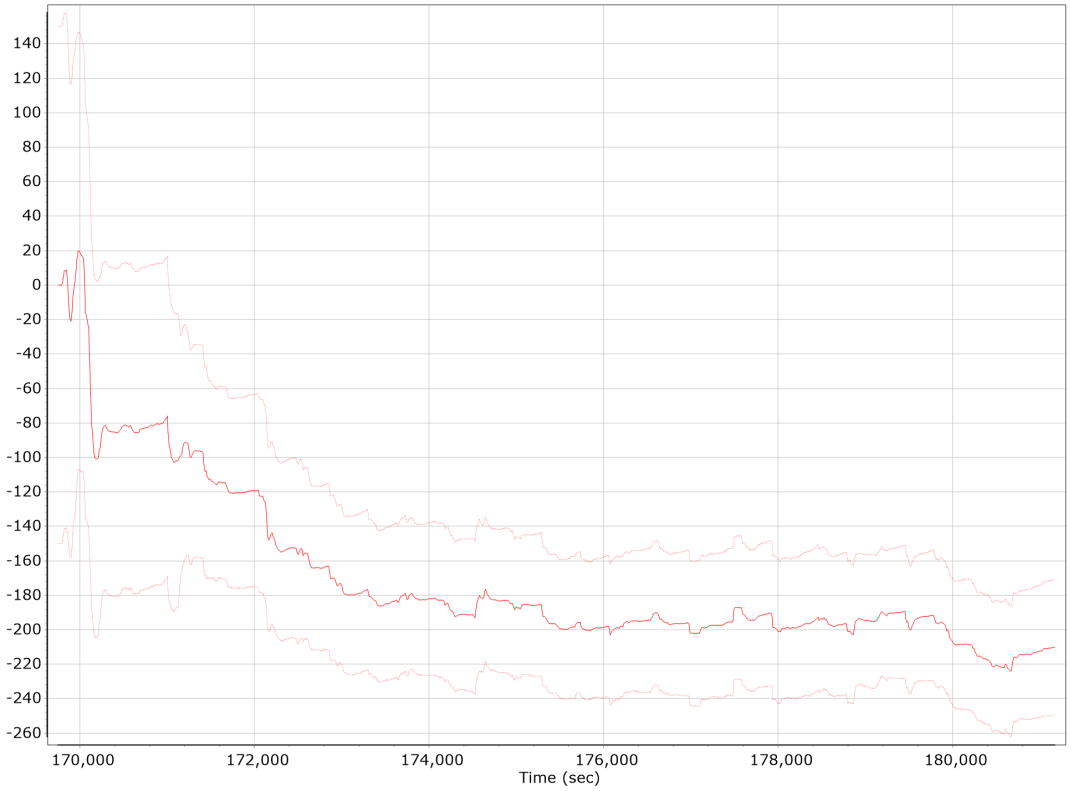
Z Gyro Bias (deg/h)



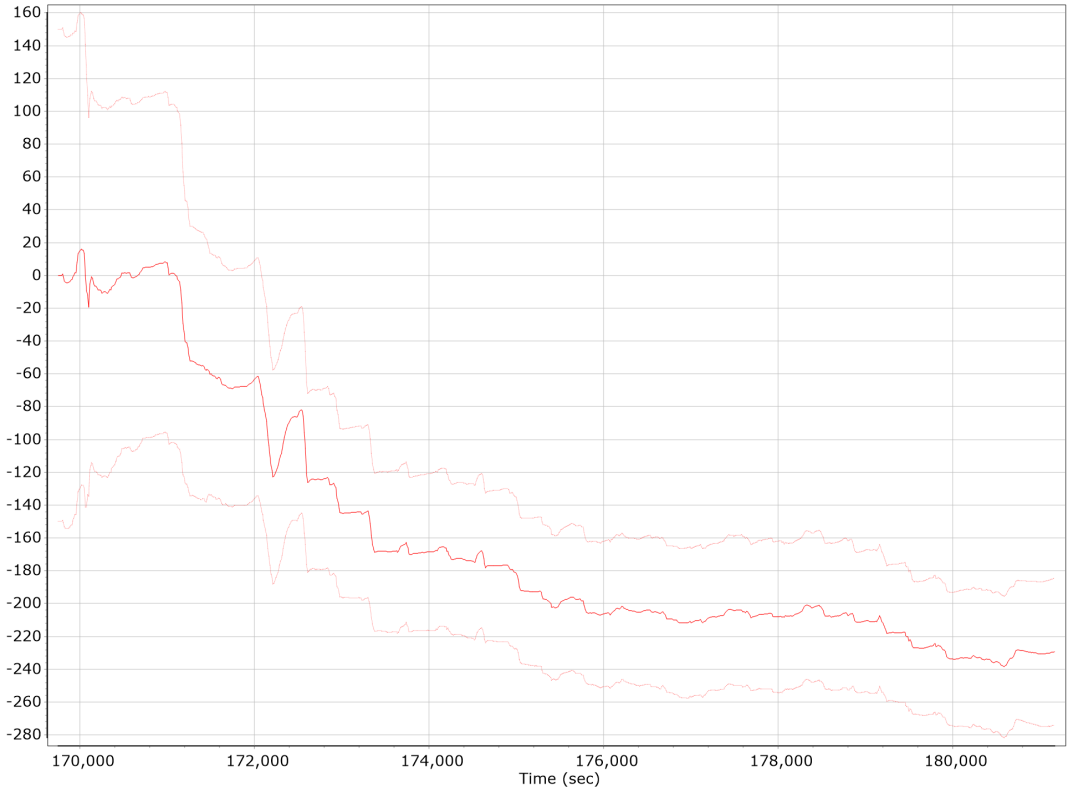
Gyro Scale Error (ppm)



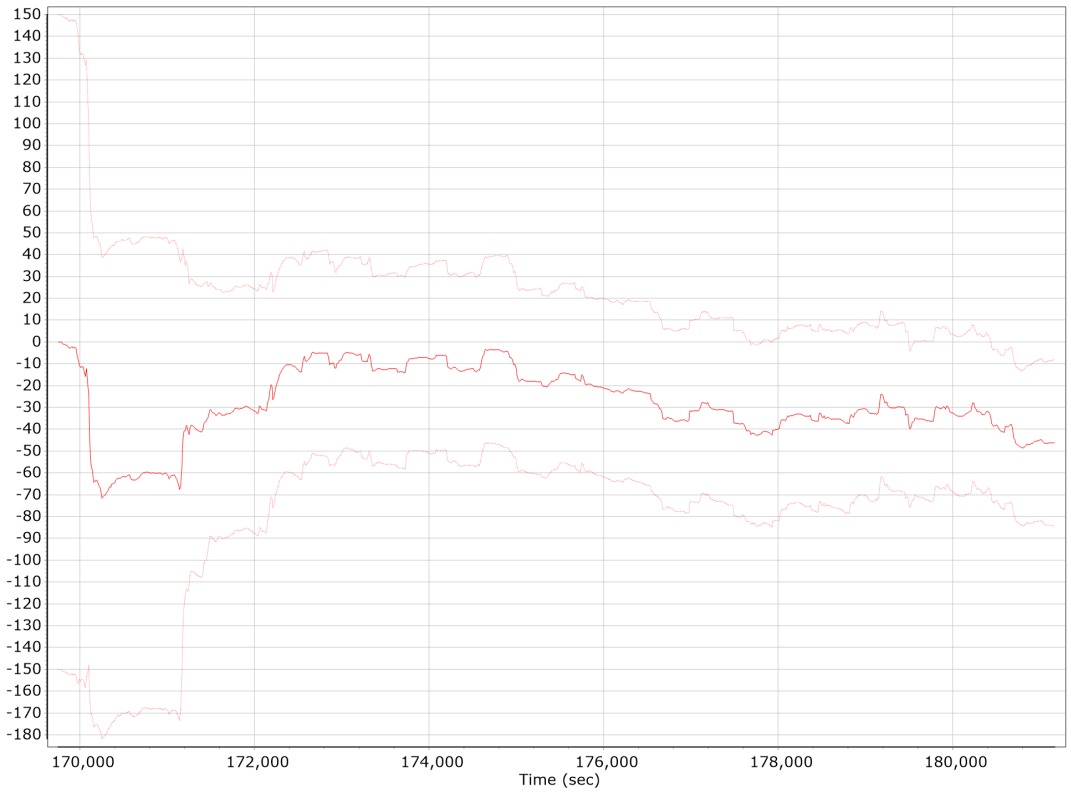
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)

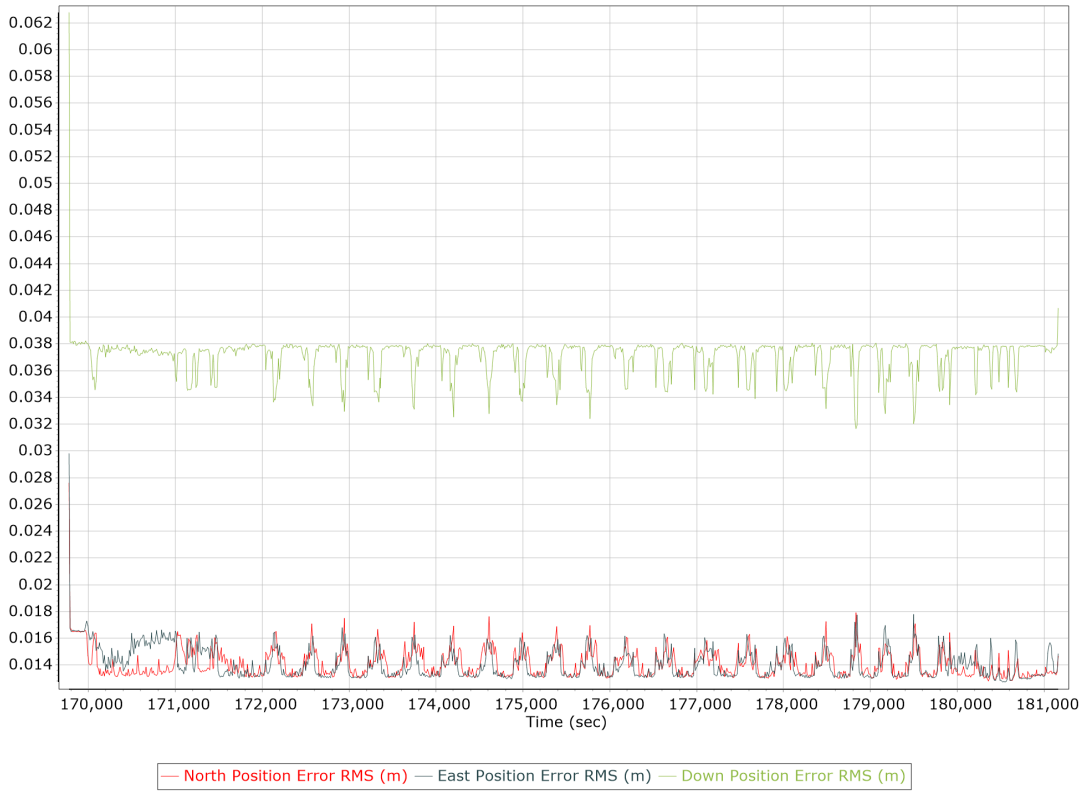


Z Gyro Scale Error (ppm)

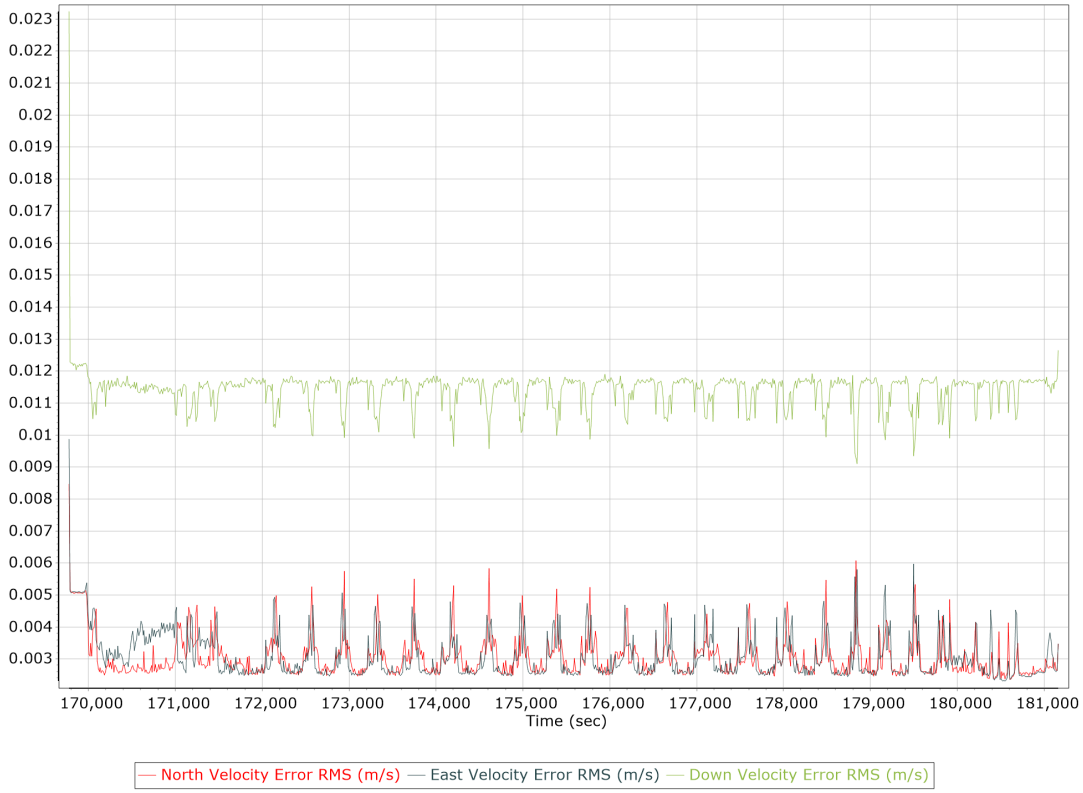


Smoothed Performance Metrics

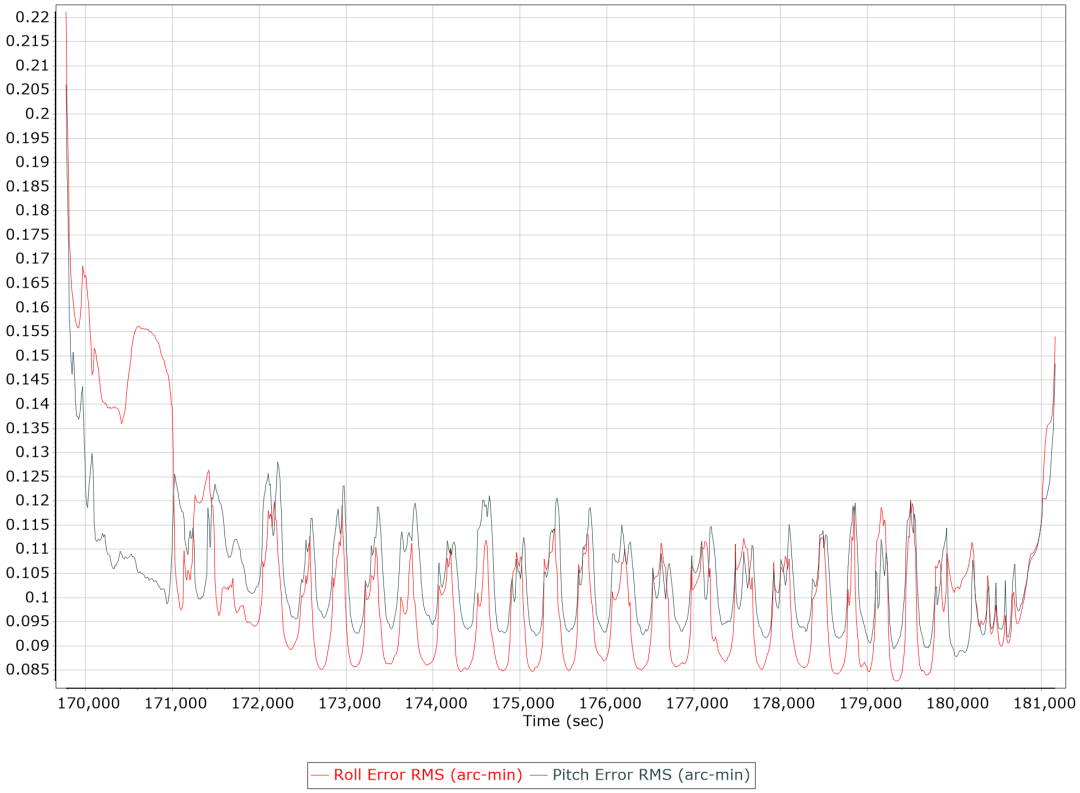
Position Error RMS (m)



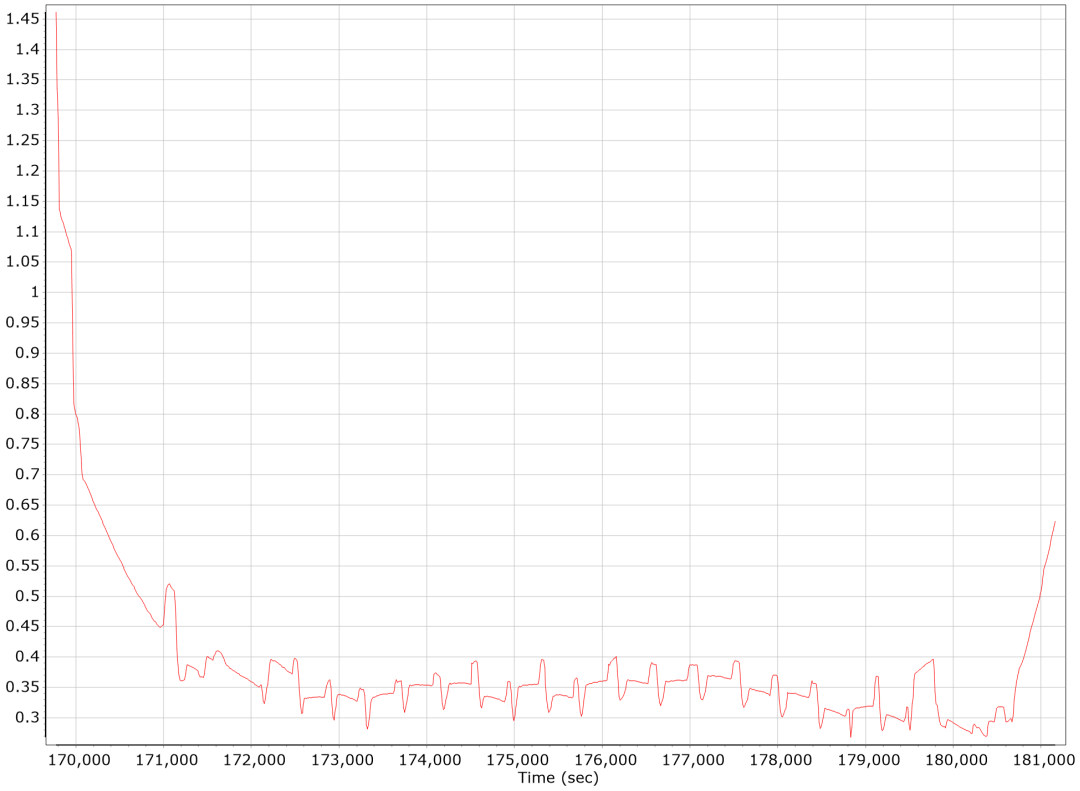
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)



Heading Error RMS (arc-min)



Forward Processed Performance Metrics

Position Error RMS (m)



Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

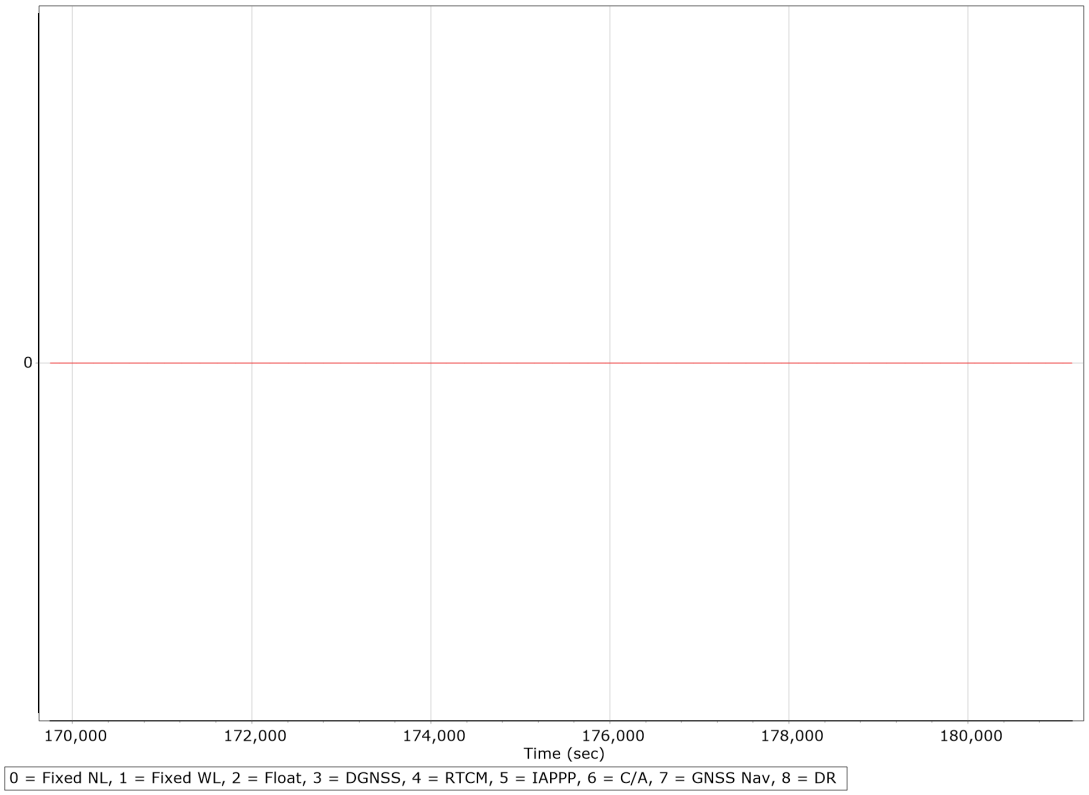


Heading Error RMS (arc-min)



Forward Processed Solution Status

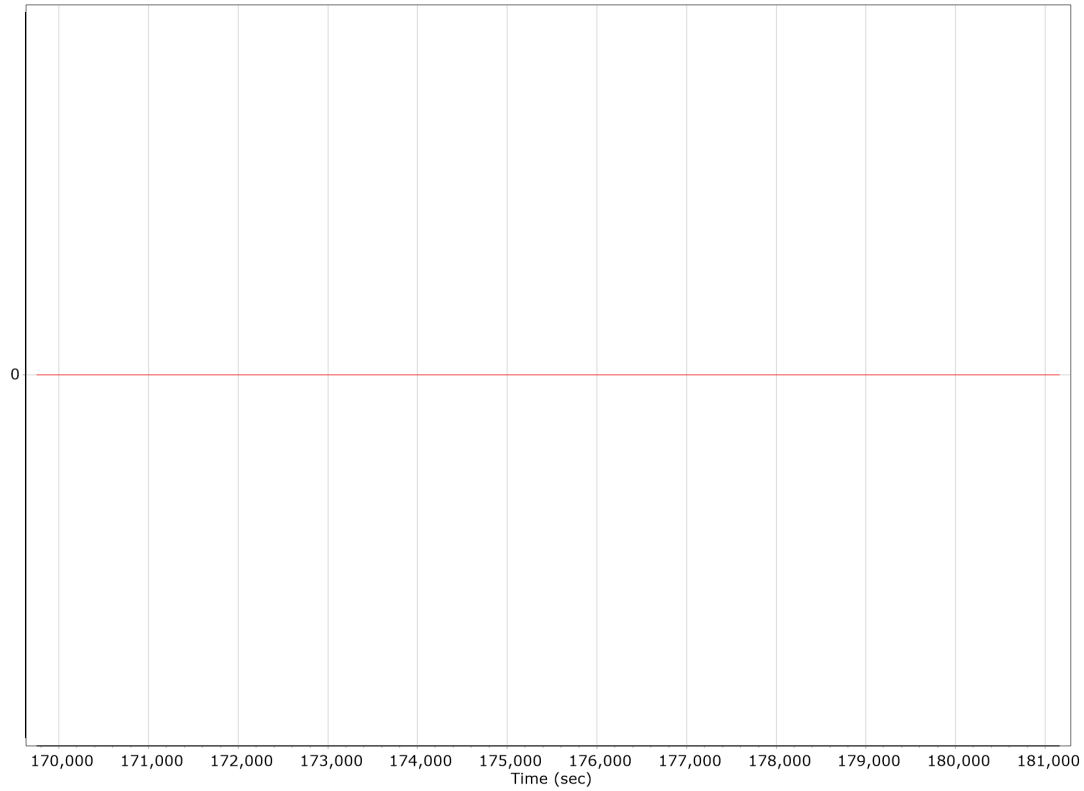
Processing Mode



Number of Satellites



Baseline Length



General Information

Mission Information

Project name	09262023A_4040
Processing date	2024-01-10 20:27:46
Mission date	2023-09-26 16:10:09
Mission duration	02:03:01.310
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N10451
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
230926_160950_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm2690.23g	GLONASS Broadcast Ephemeris
Ephm2690.23n	GPS Broadcast Ephemeris
IGS0OPSFIN_20232680000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232690000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232700000_01D_15M_ORB.SP3	GPS Precise Ephemeris

Output Files

Filename	File type
sbet_09262023A_4040.out	SBET Trajectory File

Rover Data Summary

First raw data file	230926_160950_INS-GPS_1.raw		
Last raw data file	230926_160950_INS-GPS_1.raw		
Start GPS week	2281		
Start time	230990.677 (9/26/2023 4:09:50 PM)		
End time	238371.987 (9/26/2023 6:12:51 PM)		
Start of fine alignment	231158.815 (9/26/2023 4:12:38 PM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.000	0.000	-0.900
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

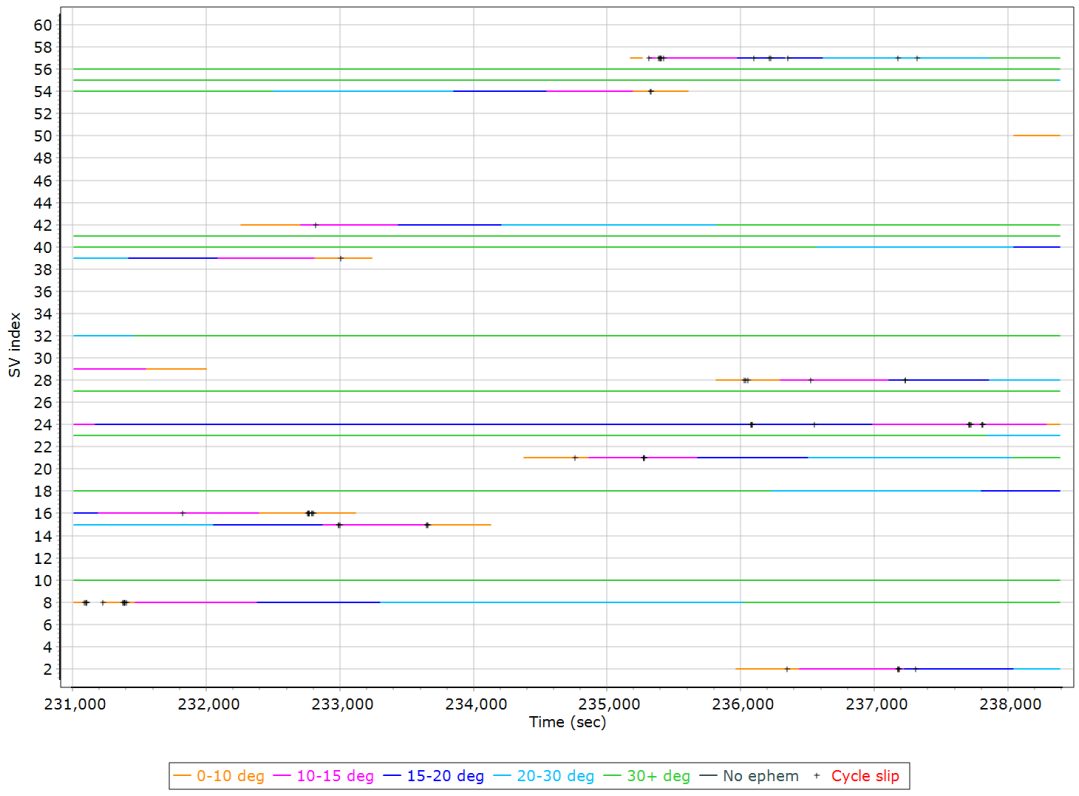
Rover Data QC

Raw IMU Import QC Summary

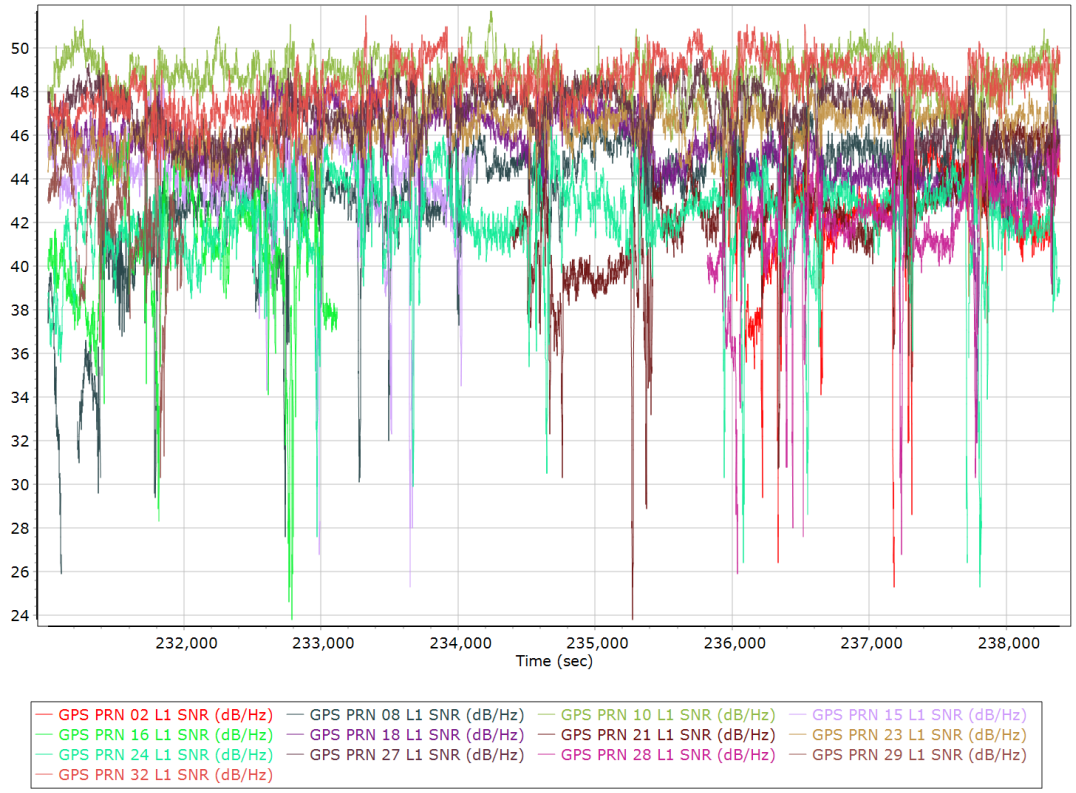
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_09262023A_4040.log
IMU Records Processed	1476109
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

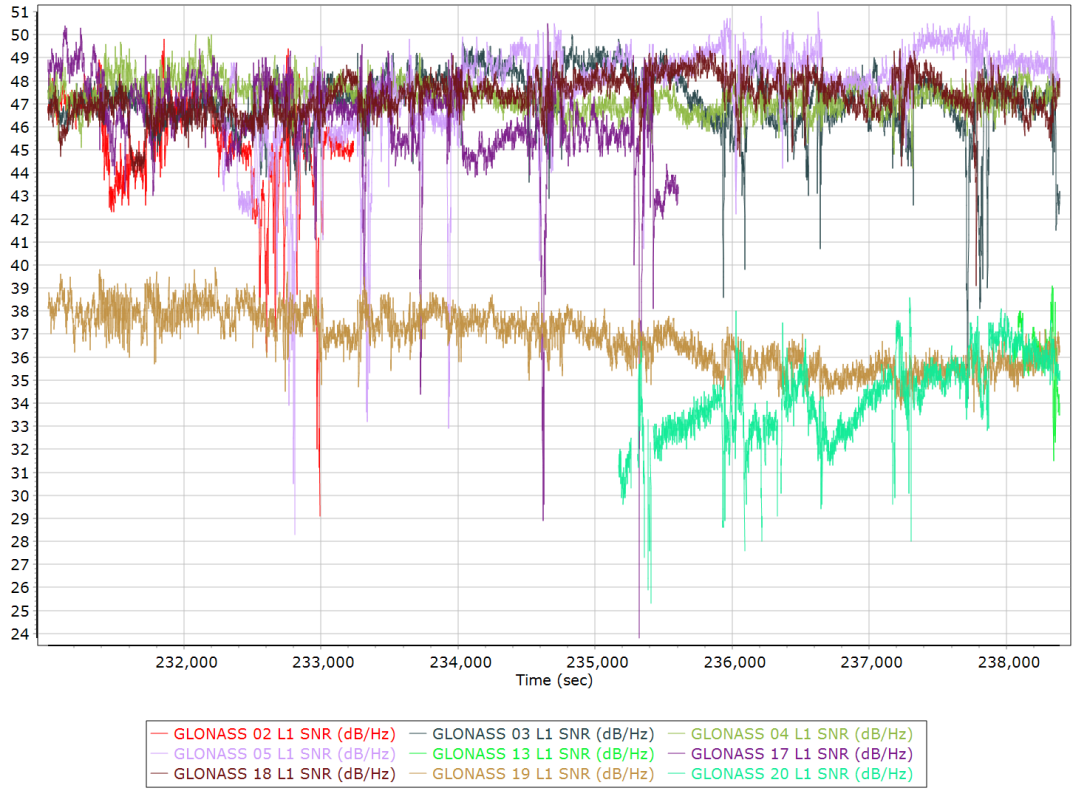
GPS/GLONASS L1 Satellite Lock/Elevation



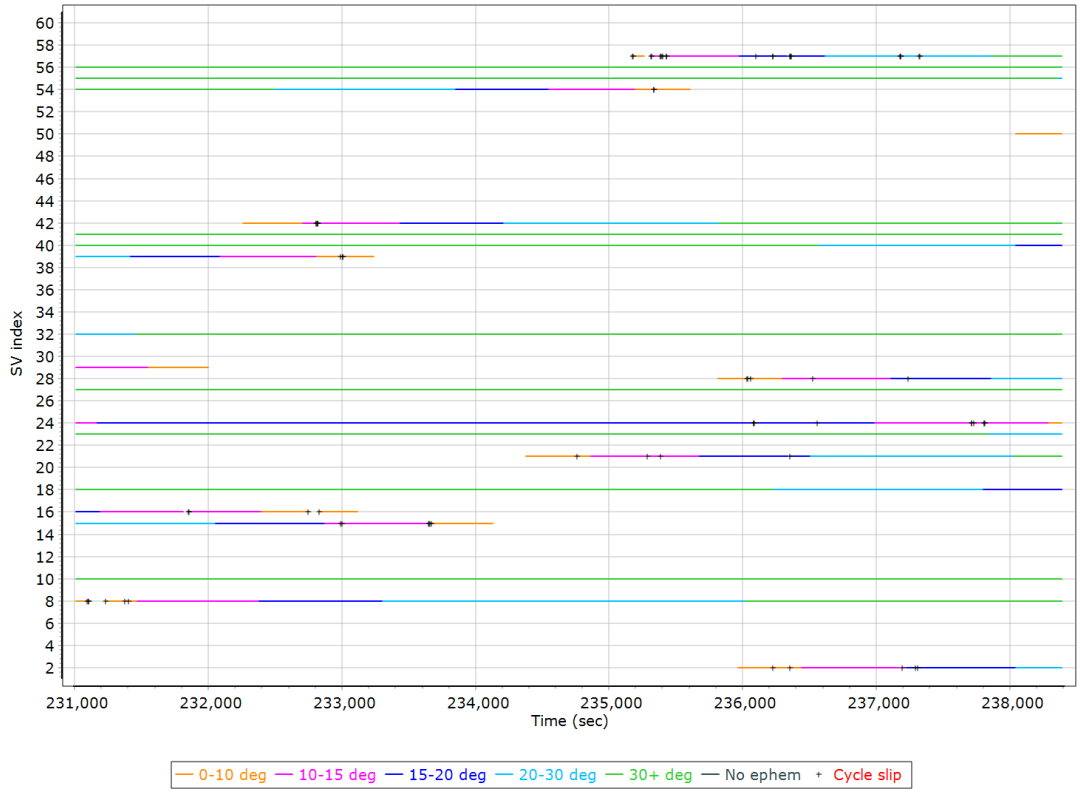
GPS L1 SNR



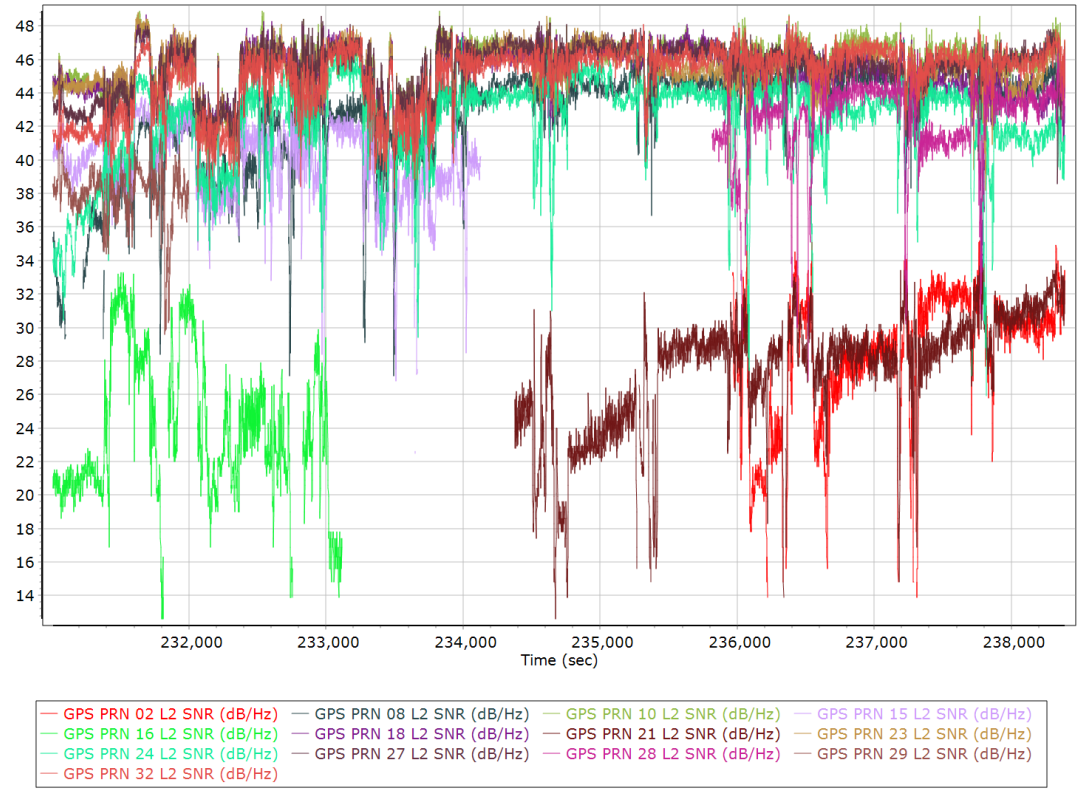
GLONASS L1 SNR



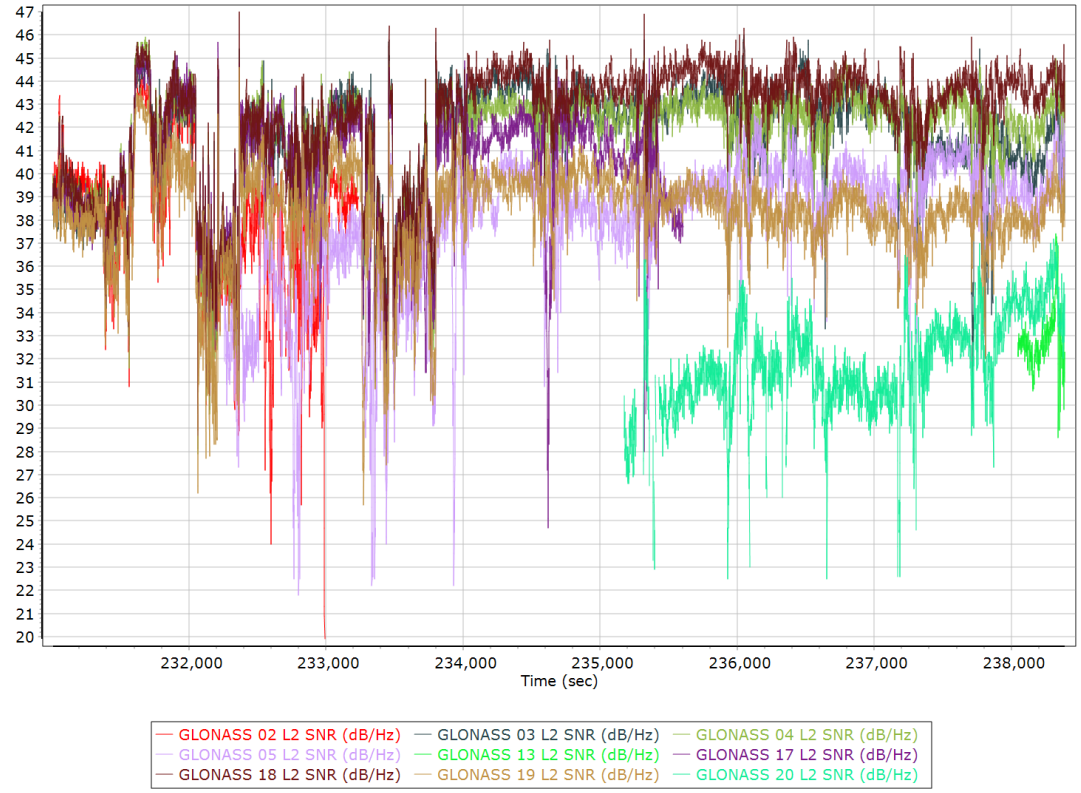
GPS/GLONASS L2 Satellite Lock/Elevation



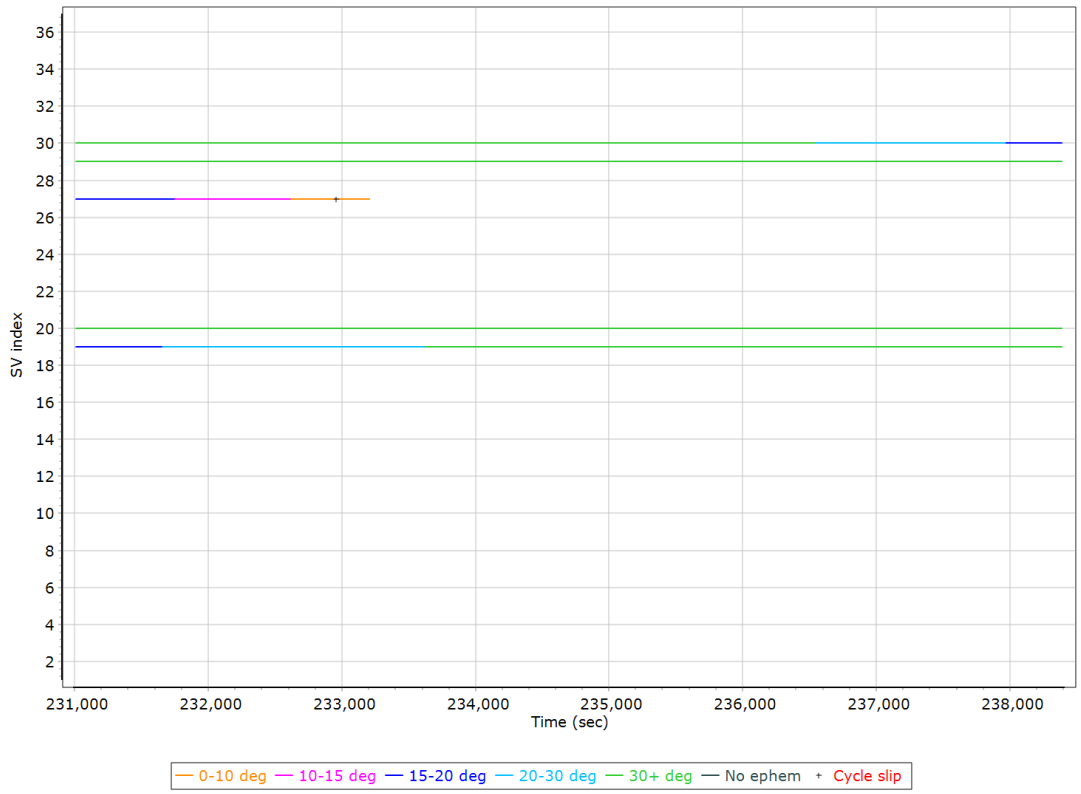
GPS L2 SNR



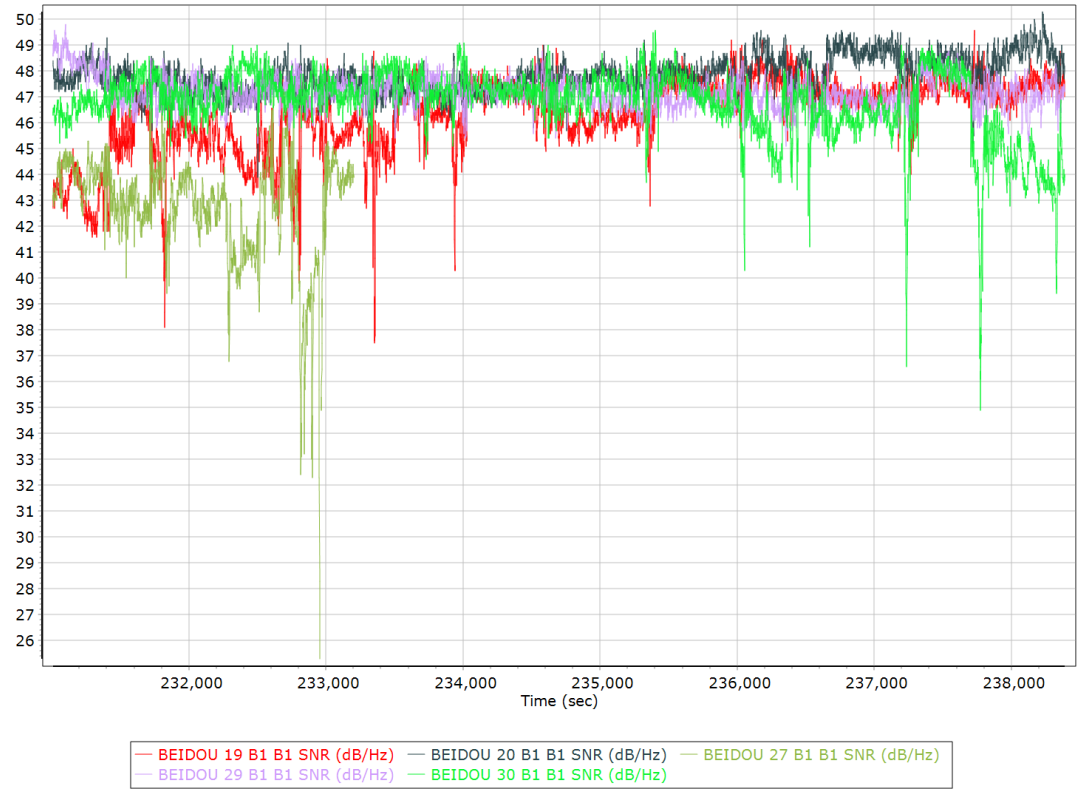
GLONASS L2 SNR



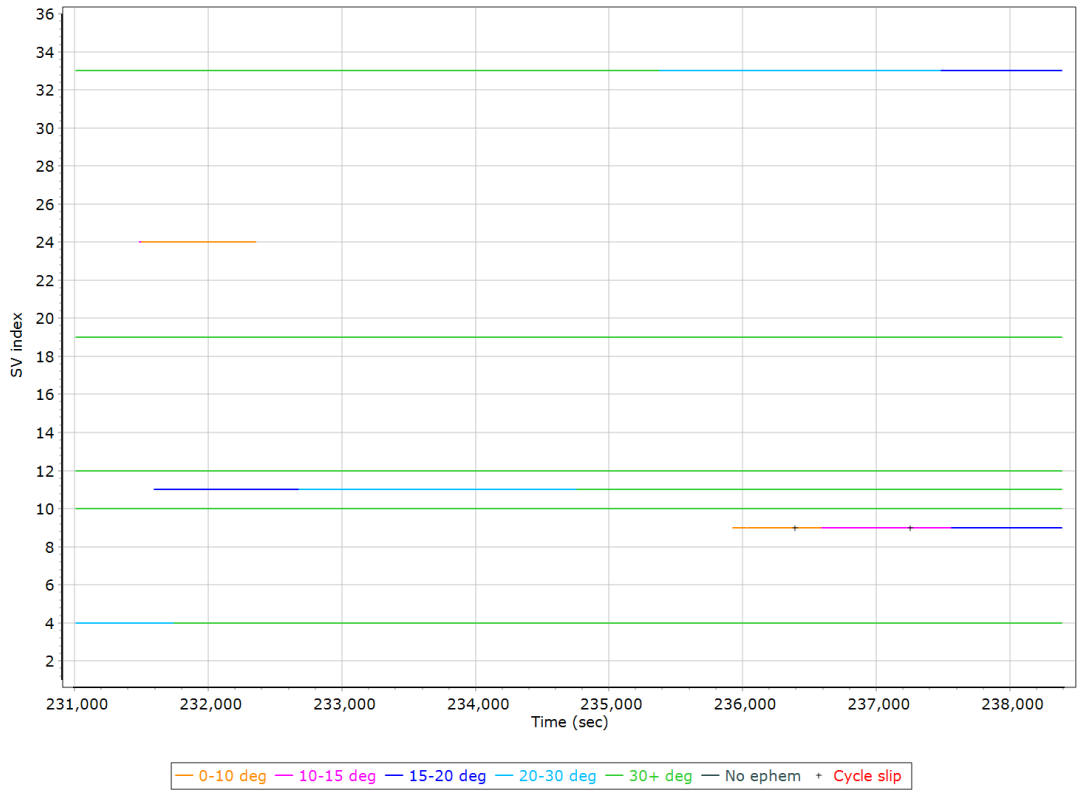
BEIDOU Satellite Lock/Elevation



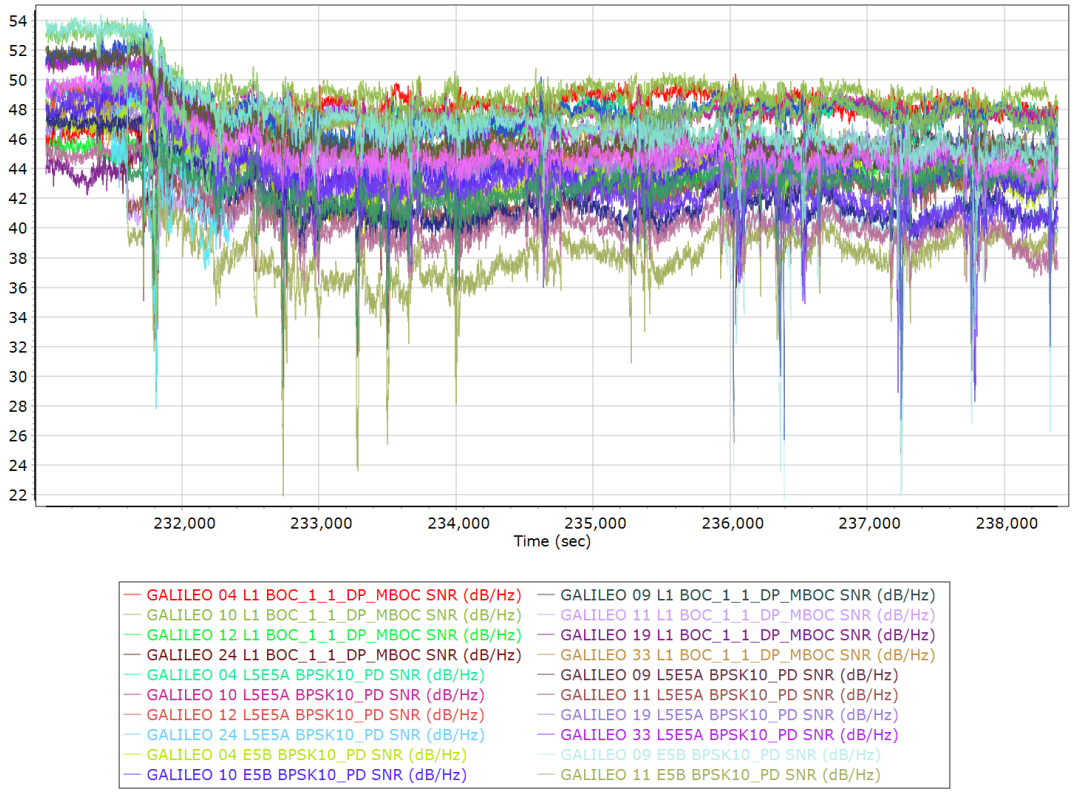
BEIDOU SNR



GALILEO Satellite Lock/Elevation

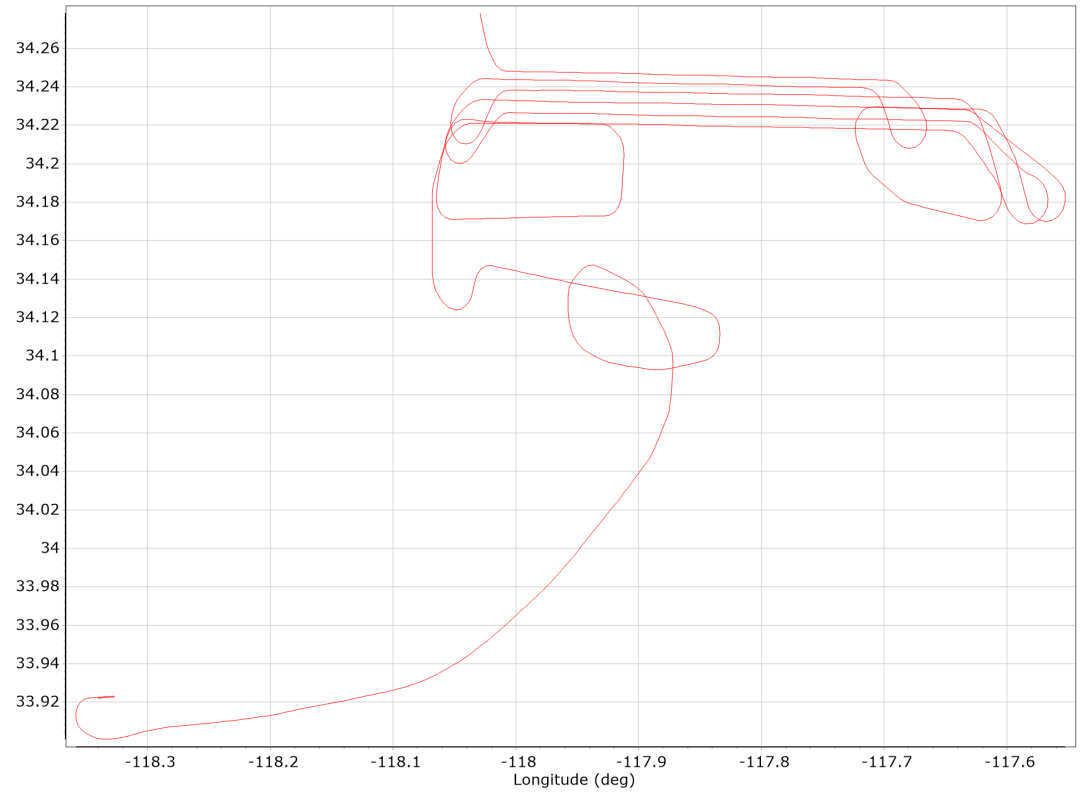


GALILEO SNR

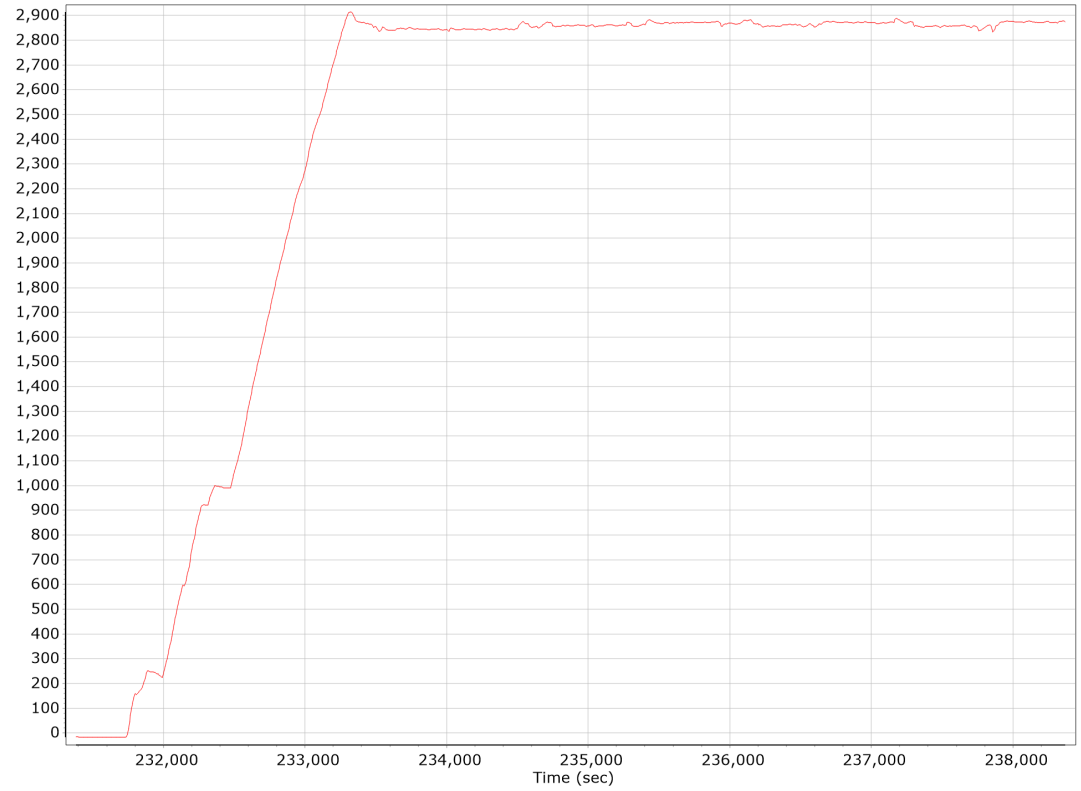

54
52
50
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46
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42
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38
36
34
32
30
28
26
24
22
232,000
233,000
234,000
235,000
236,000
237,000
238,000
Time (sec)
GALILEO 04 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 09 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 10 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 11 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 12 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 19 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 24 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 33 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 04 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 09 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 10 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 11 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 12 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 19 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 24 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 33 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 04 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 09 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 10 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 11 E5B BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

Top View



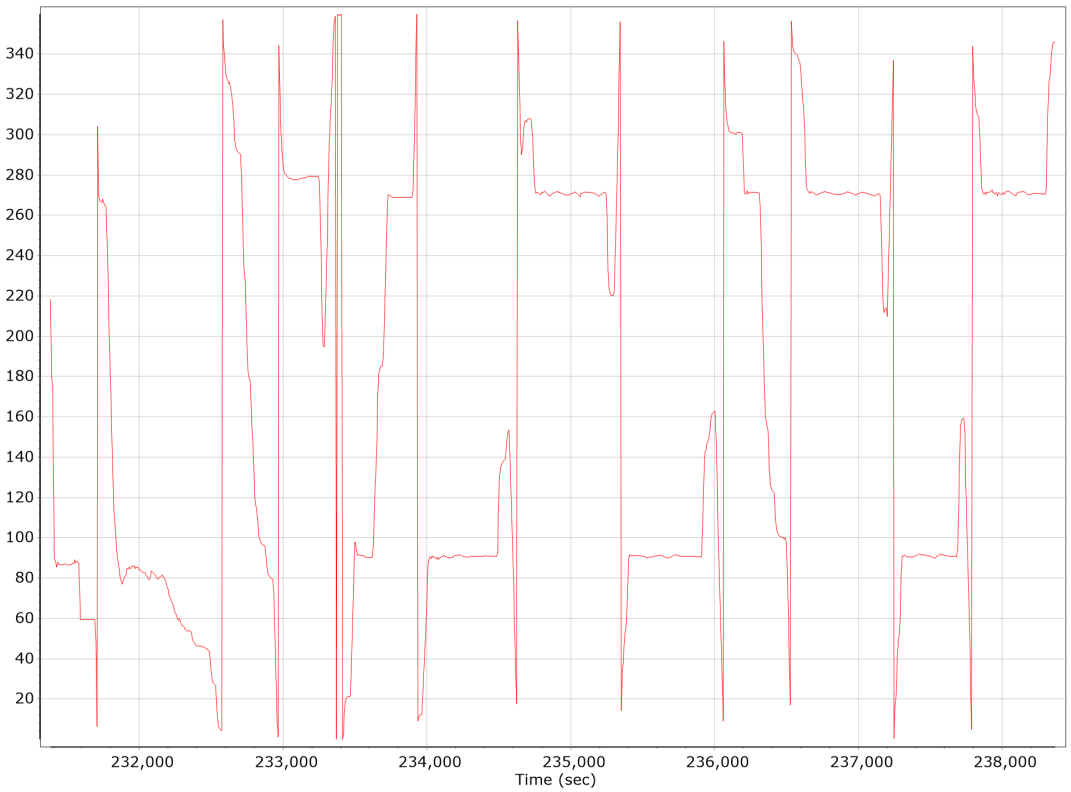
Altitude



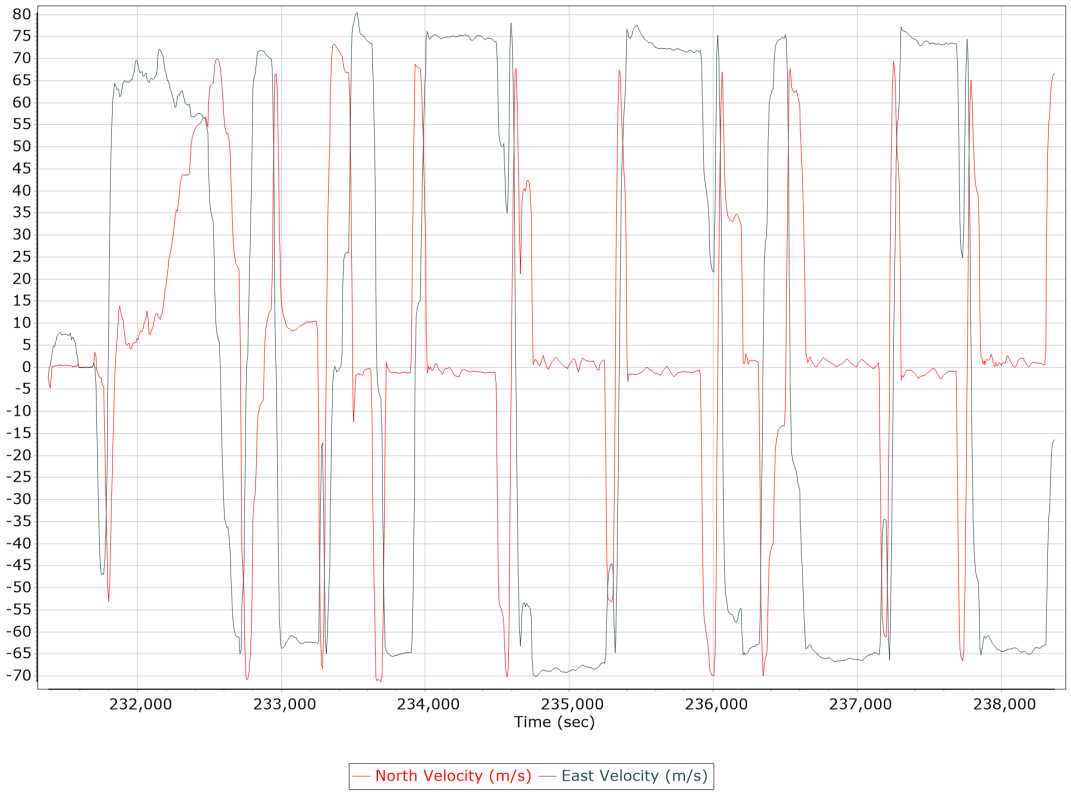
Roll/Pitch



Heading



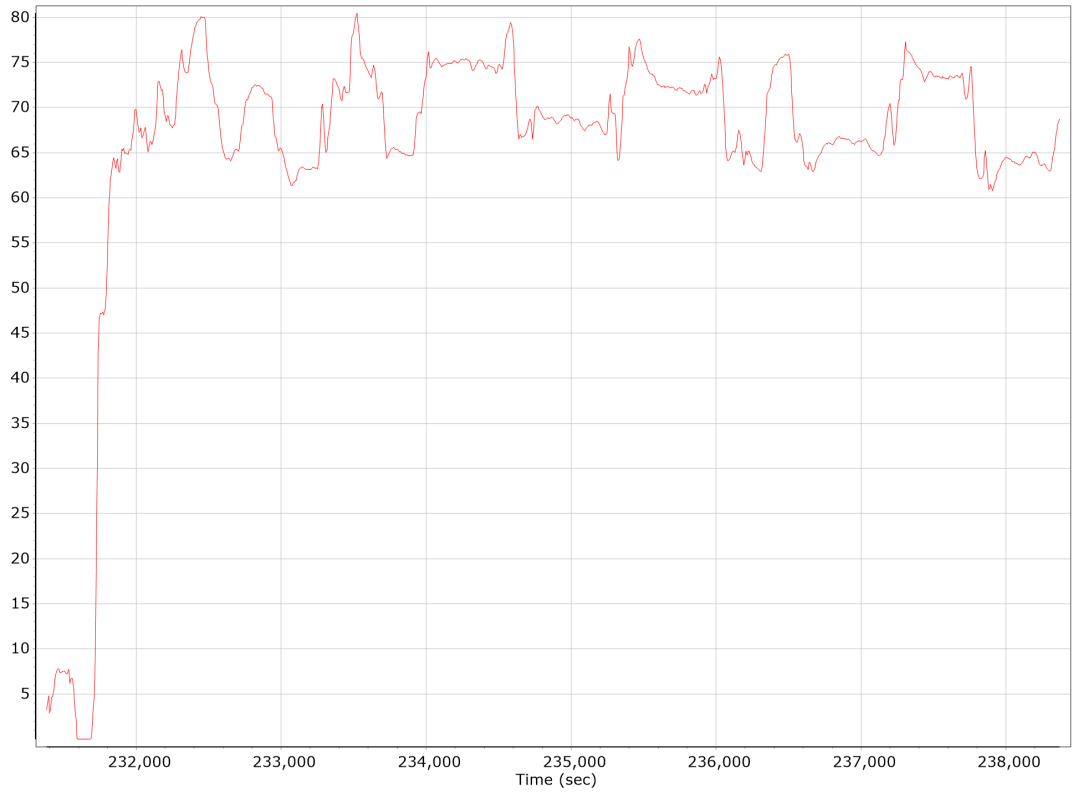
North/East Velocity



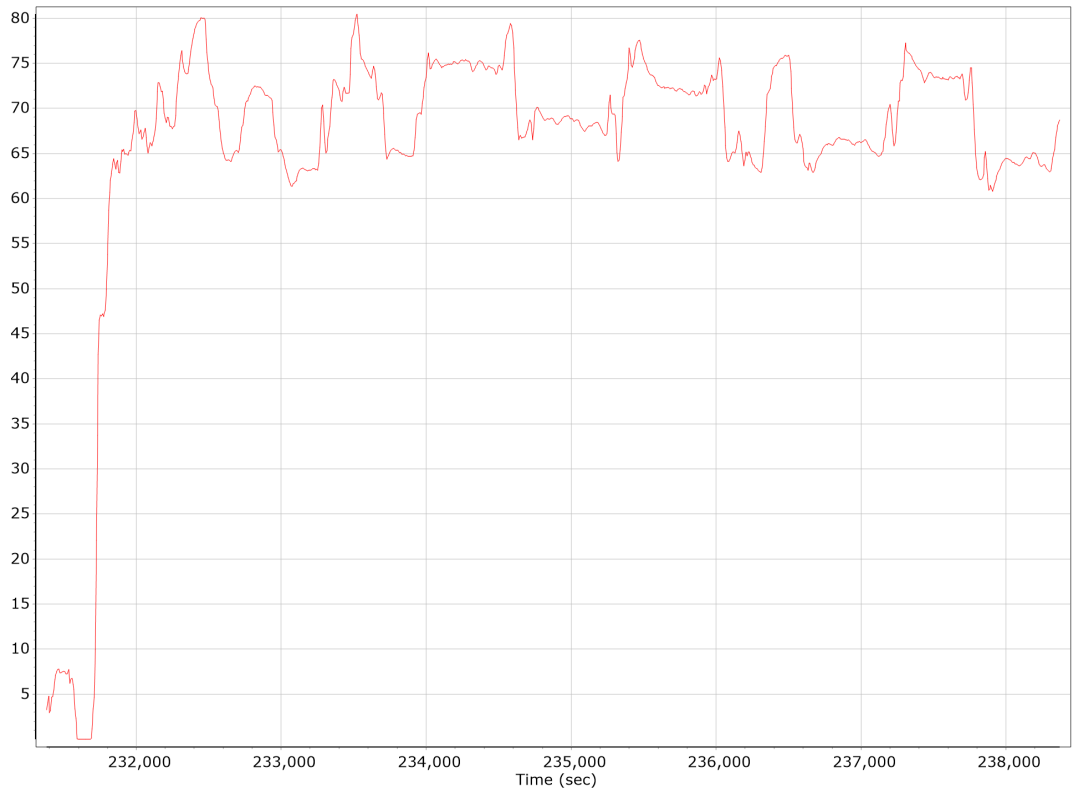
Down Velocity



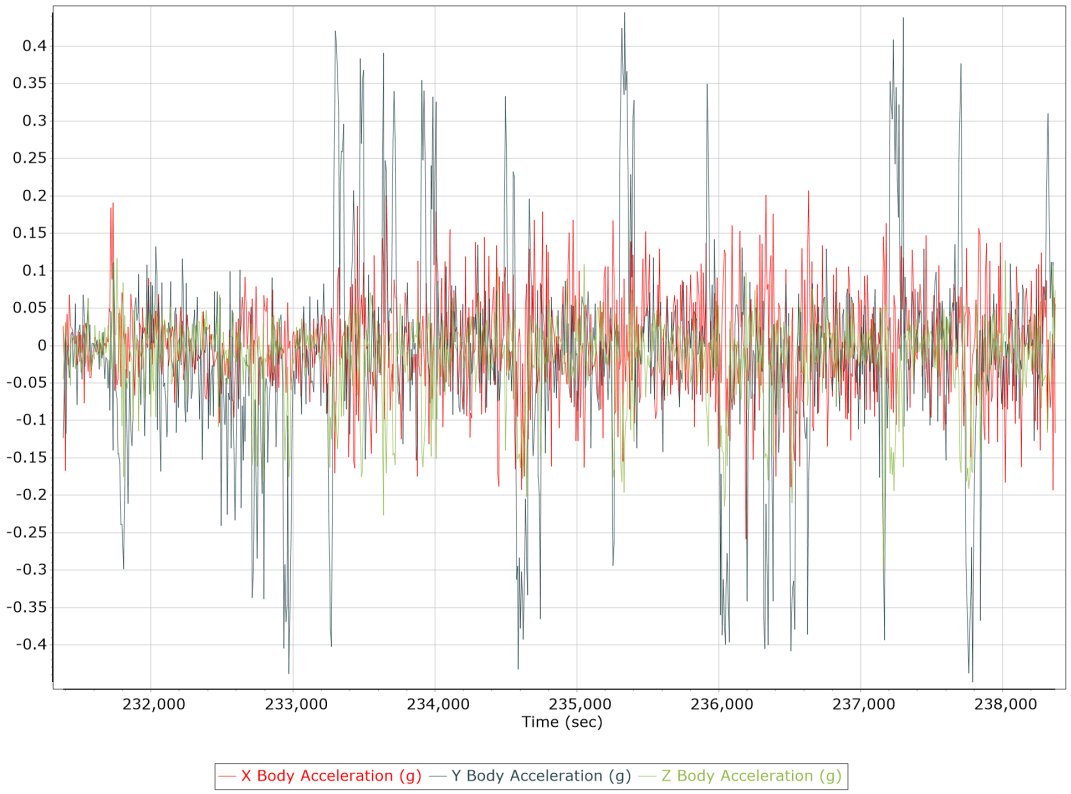
Total Speed



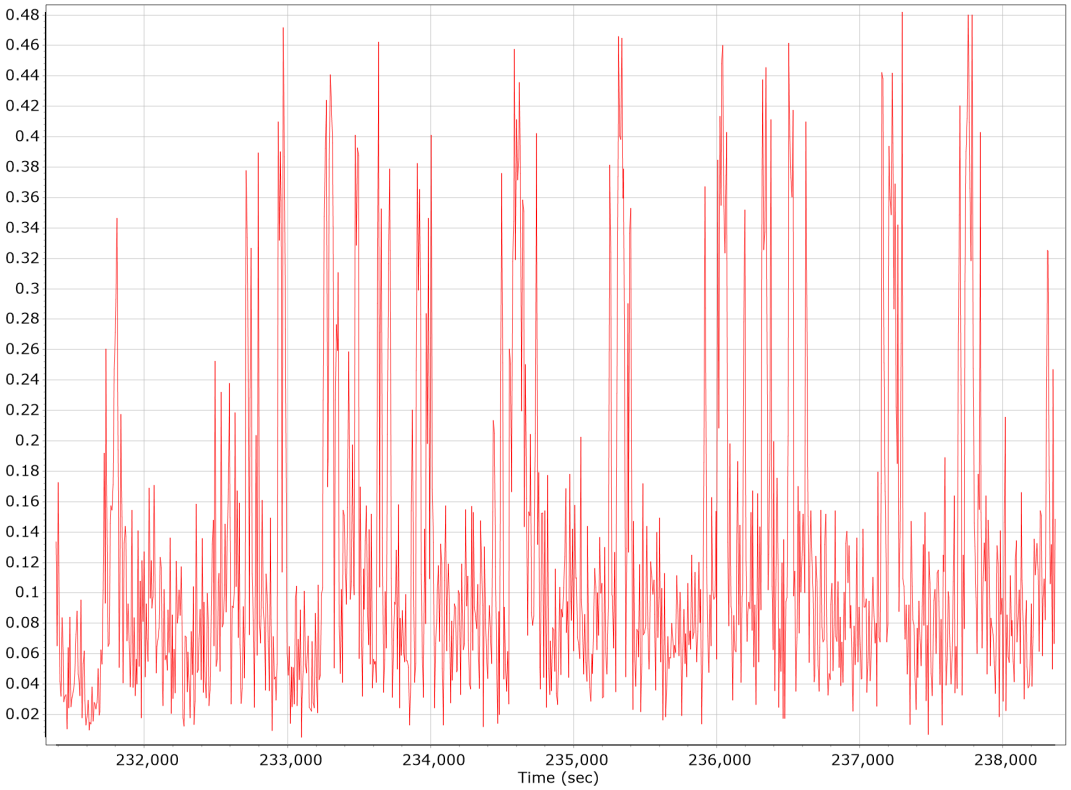
Ground Speed



Body Acceleration



Total Body Acceleration

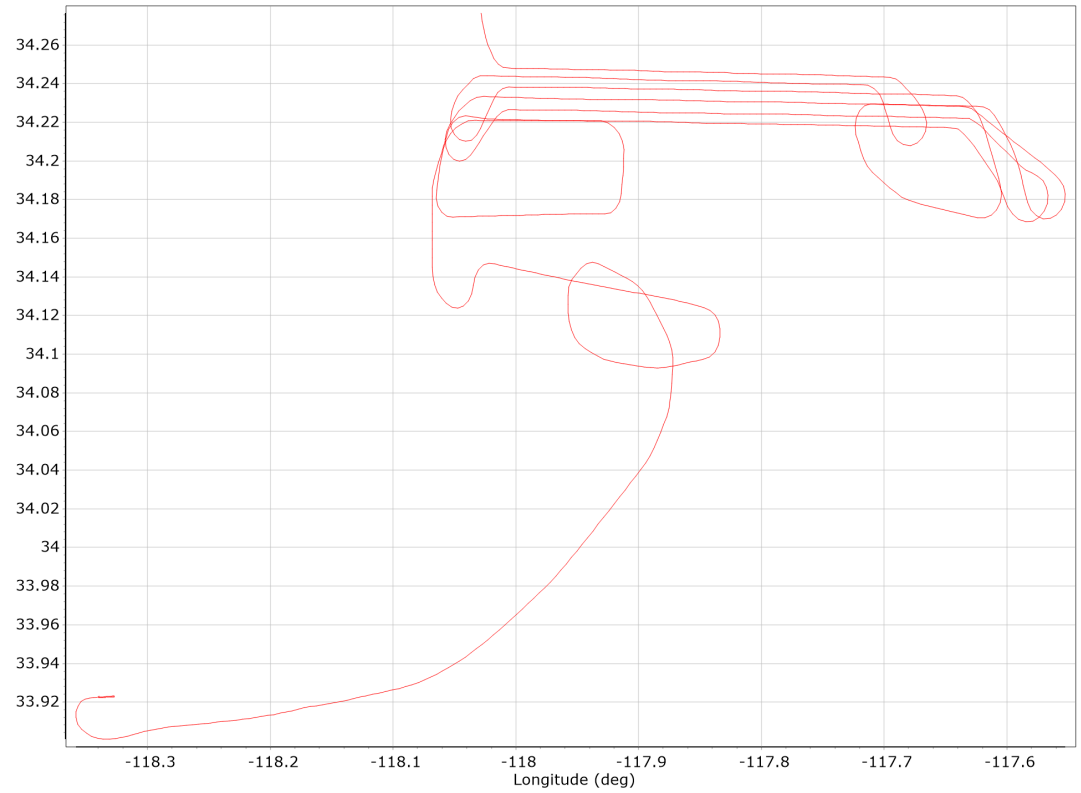


Body Angular Rate

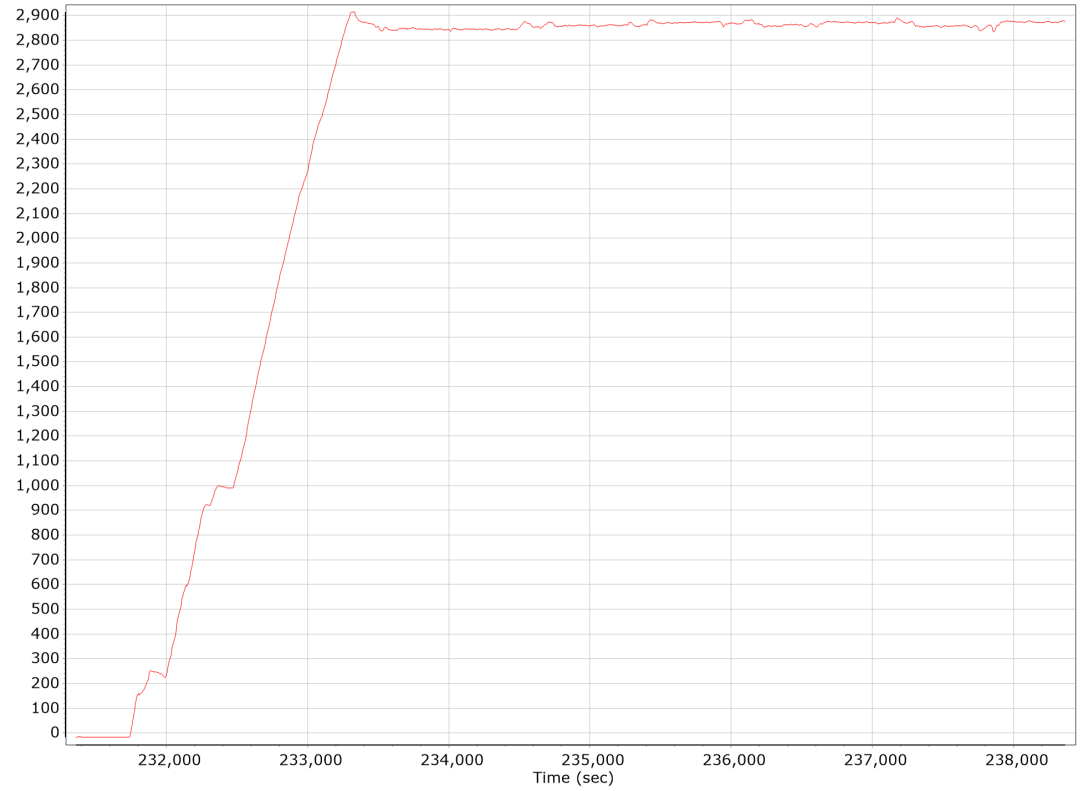


Forward Processed Trajectory Information

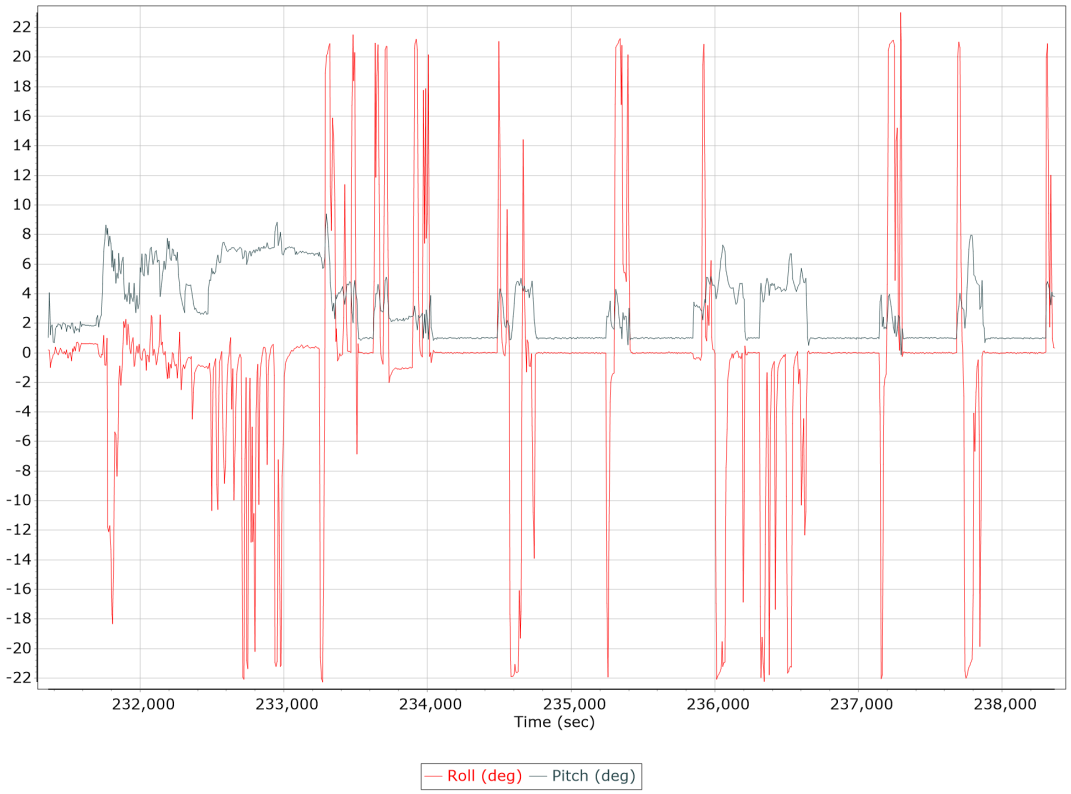
Top View



Altitude



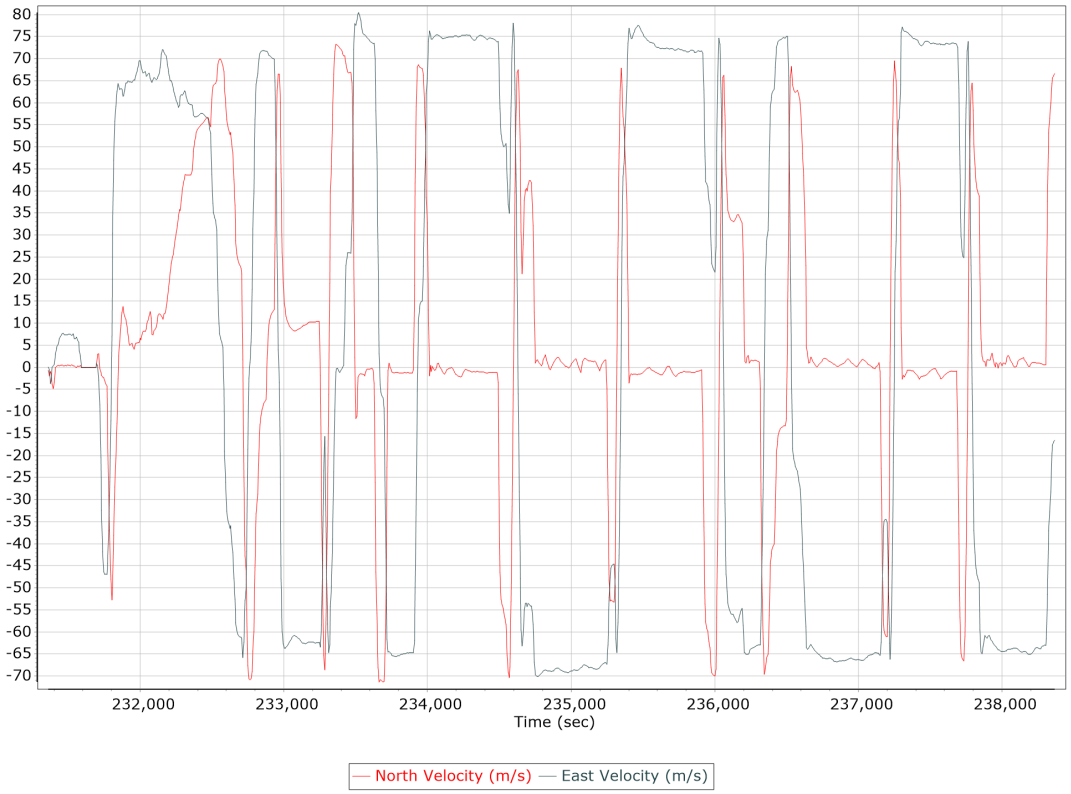
Roll/Pitch



Heading



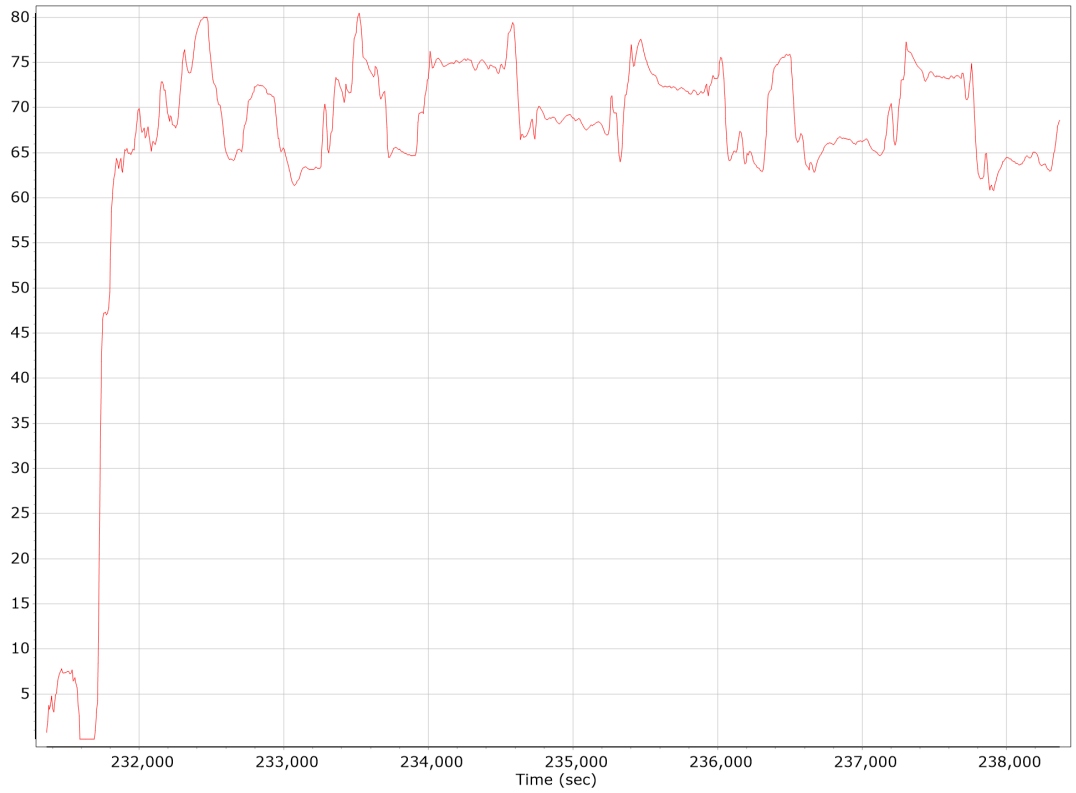
North/East Velocity



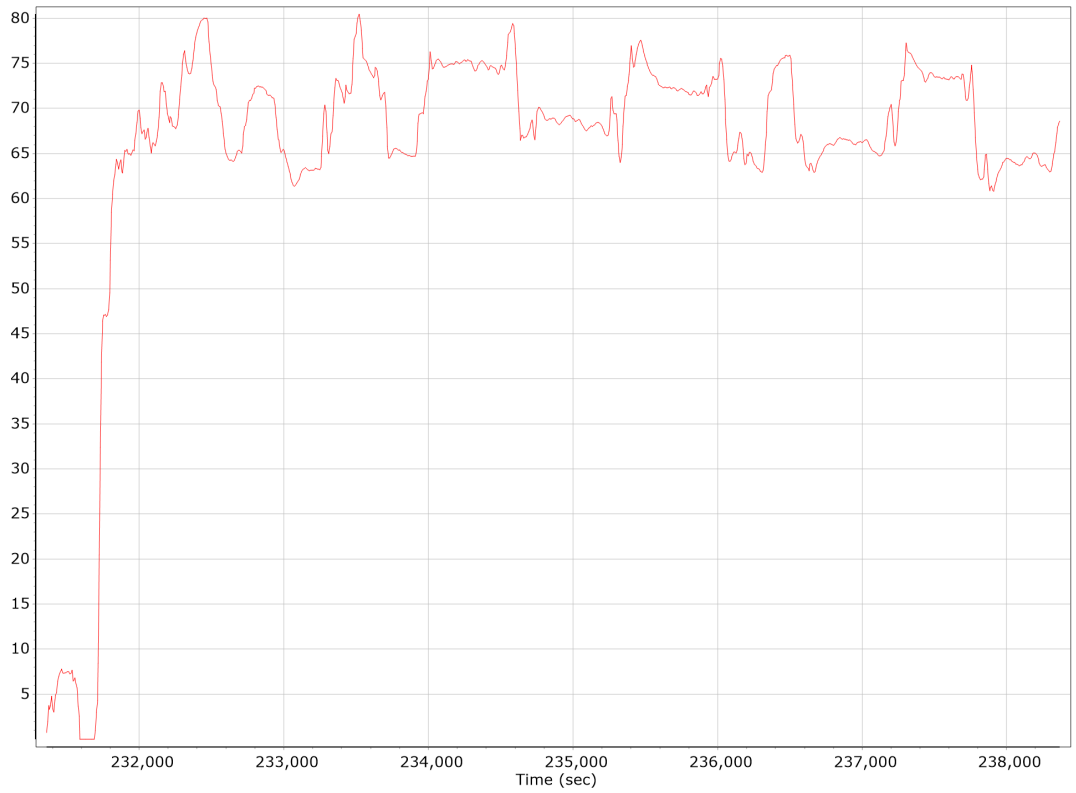
Down Velocity



Total Speed



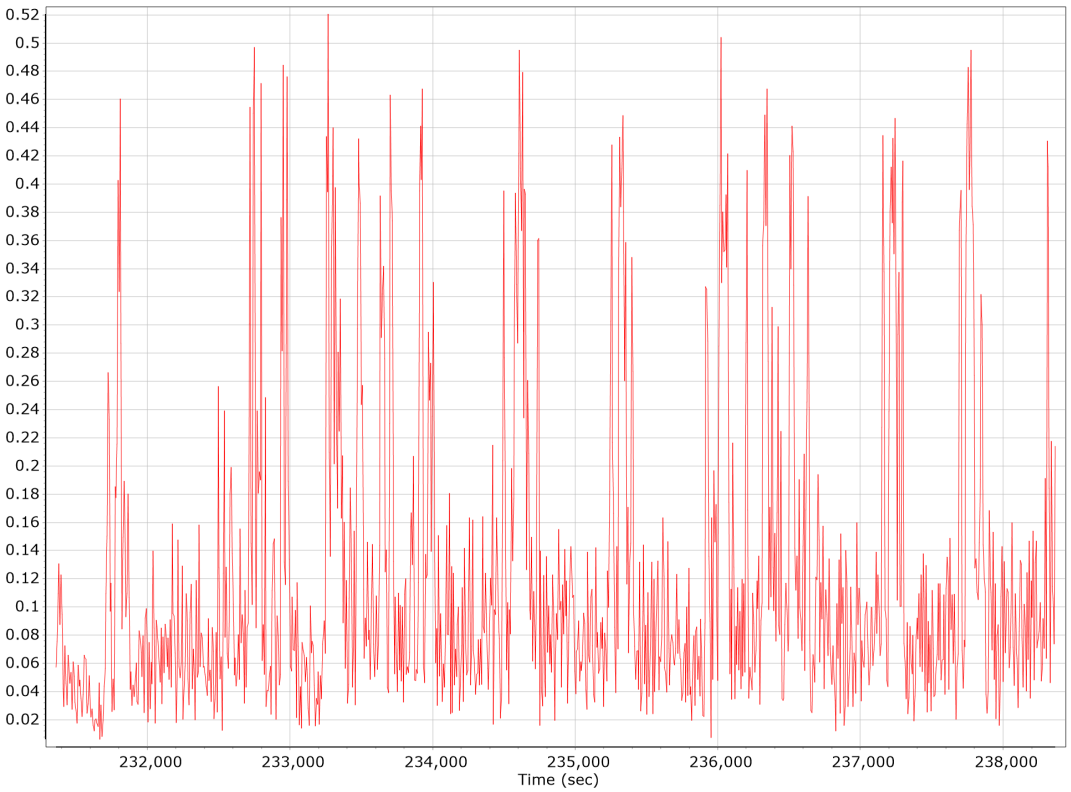
Ground Speed



Body Acceleration



Total Body Acceleration



Body Angular Rate

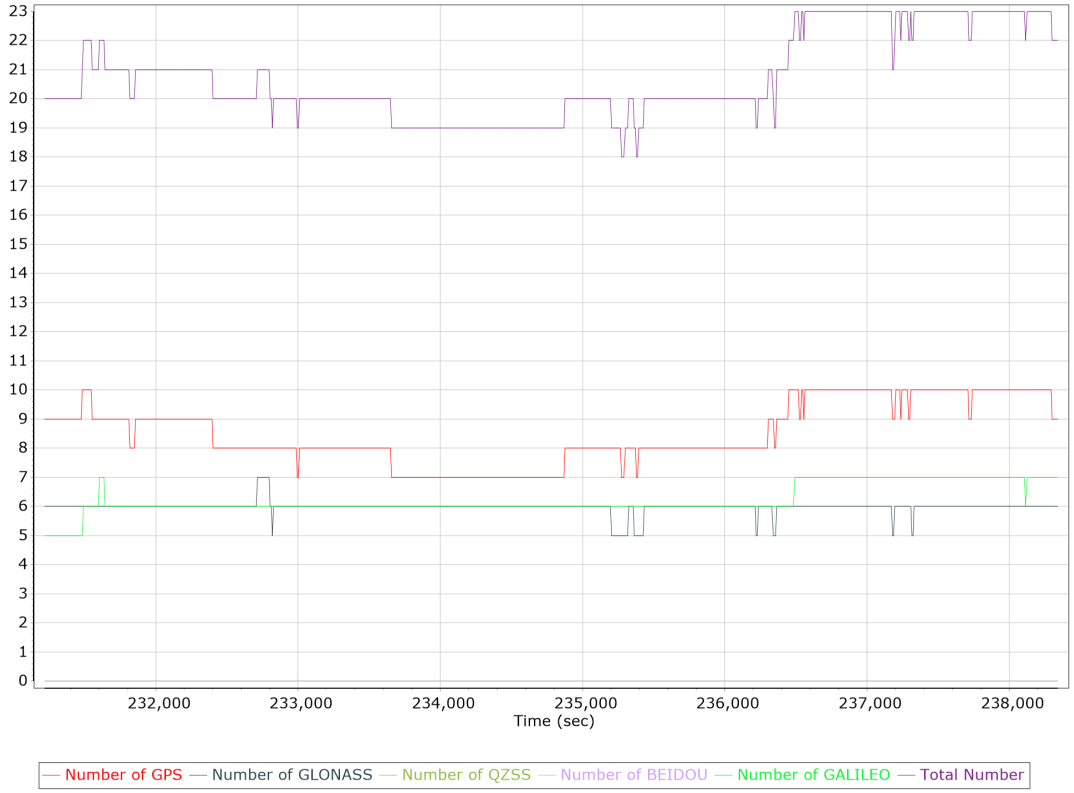


GNSS QC

GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	7	10	9
Number of GLONASS SV	5	7	6
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	5	7	6
Total number of SV	18	23	21
PDOP	1.00	1.47	1.17
QC Solution Gaps	0.00	0.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	7333.00	0.00	0.00
Percentage	100.00	0.00	0.00

Num SVs in solution



Forward/Reverse Separation



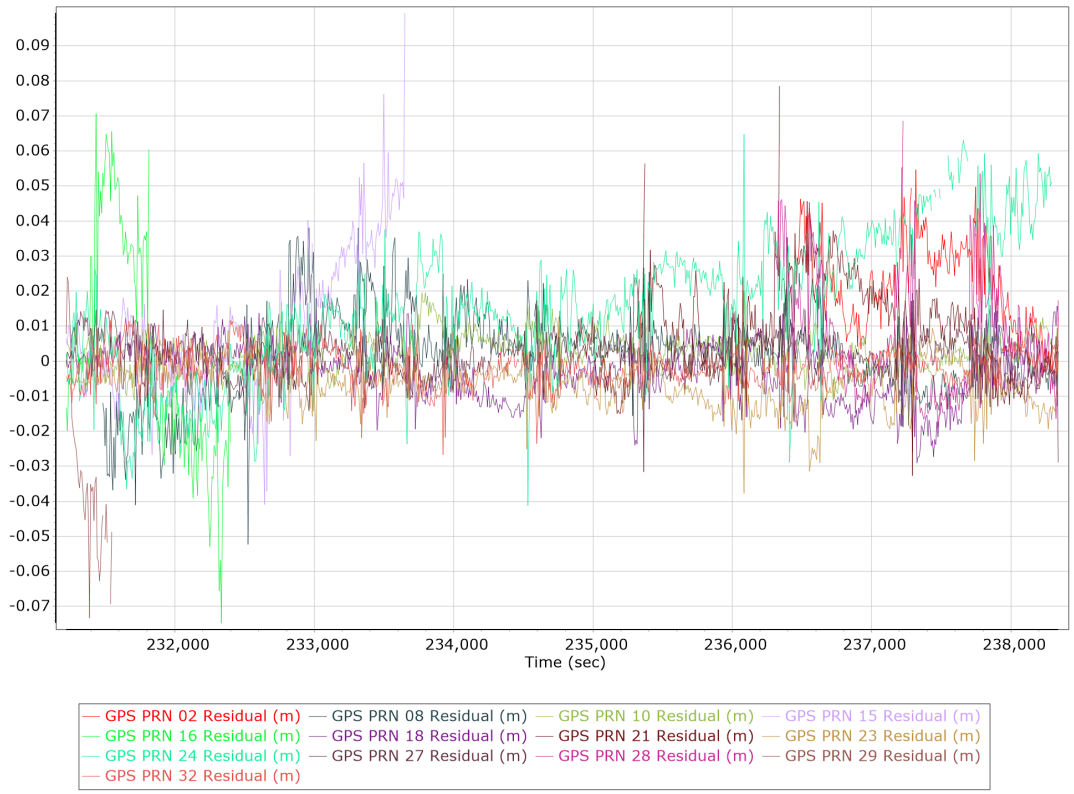
PDOP



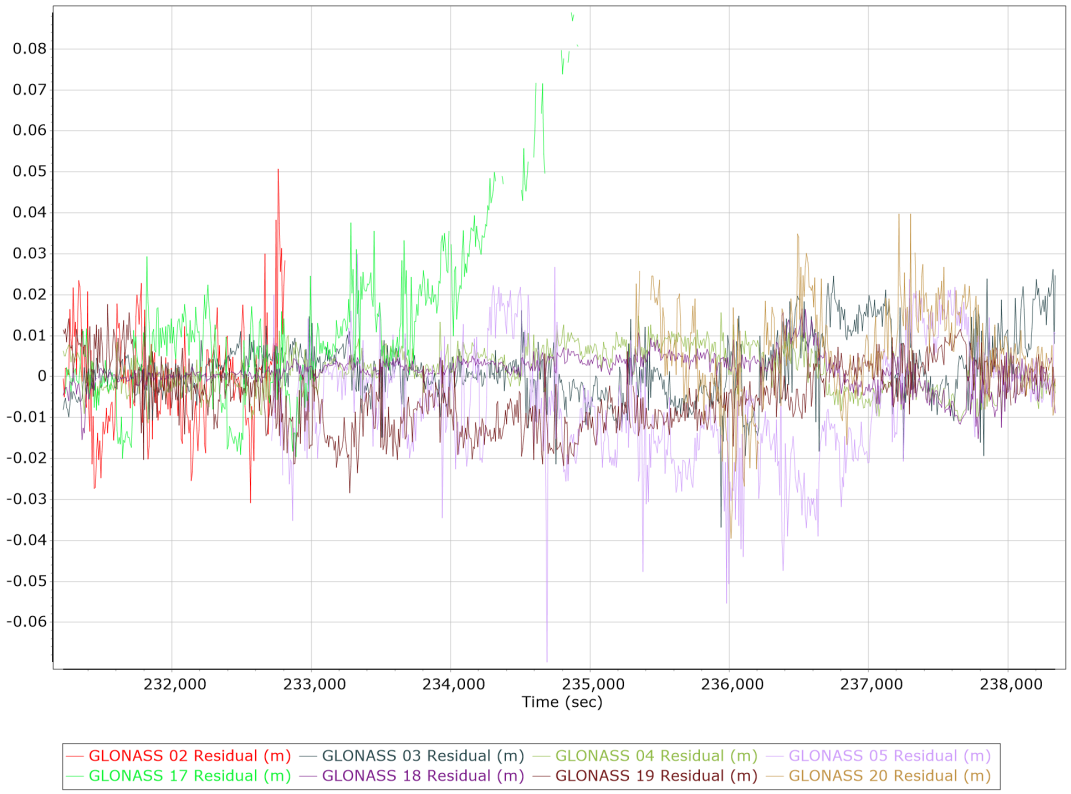
Estimated Position Accuracy



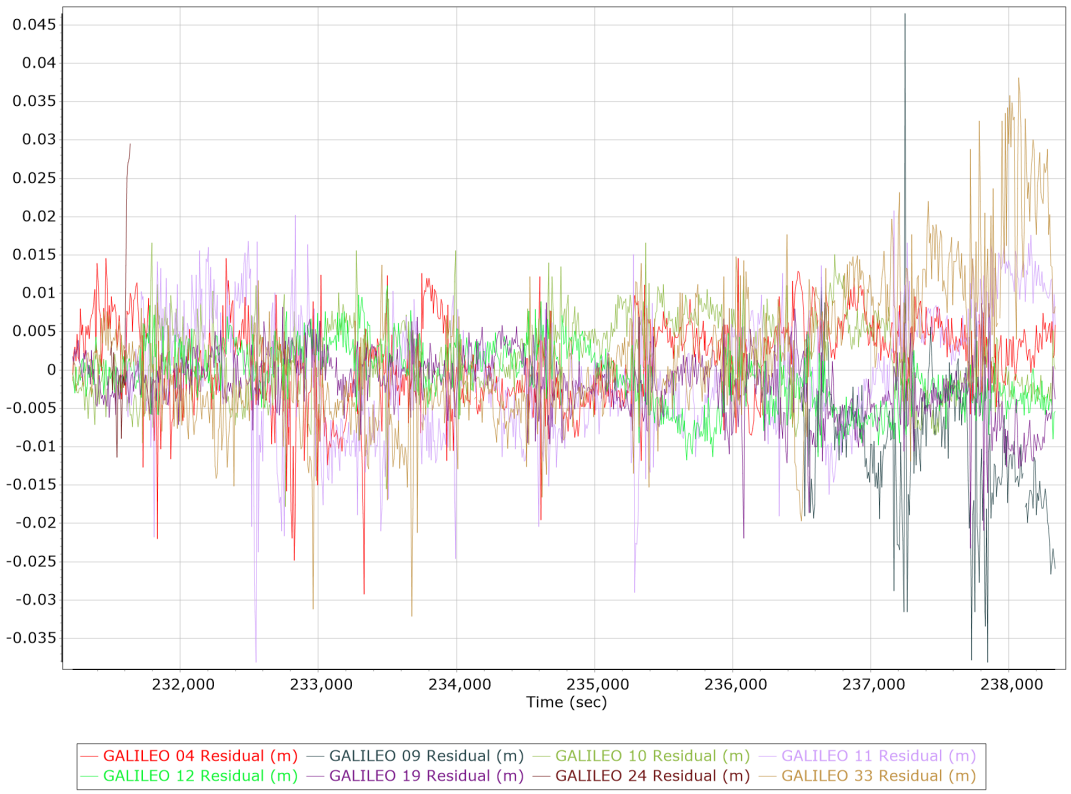
GPS Residuals



GLONASS Residuals



GALILEO Residuals



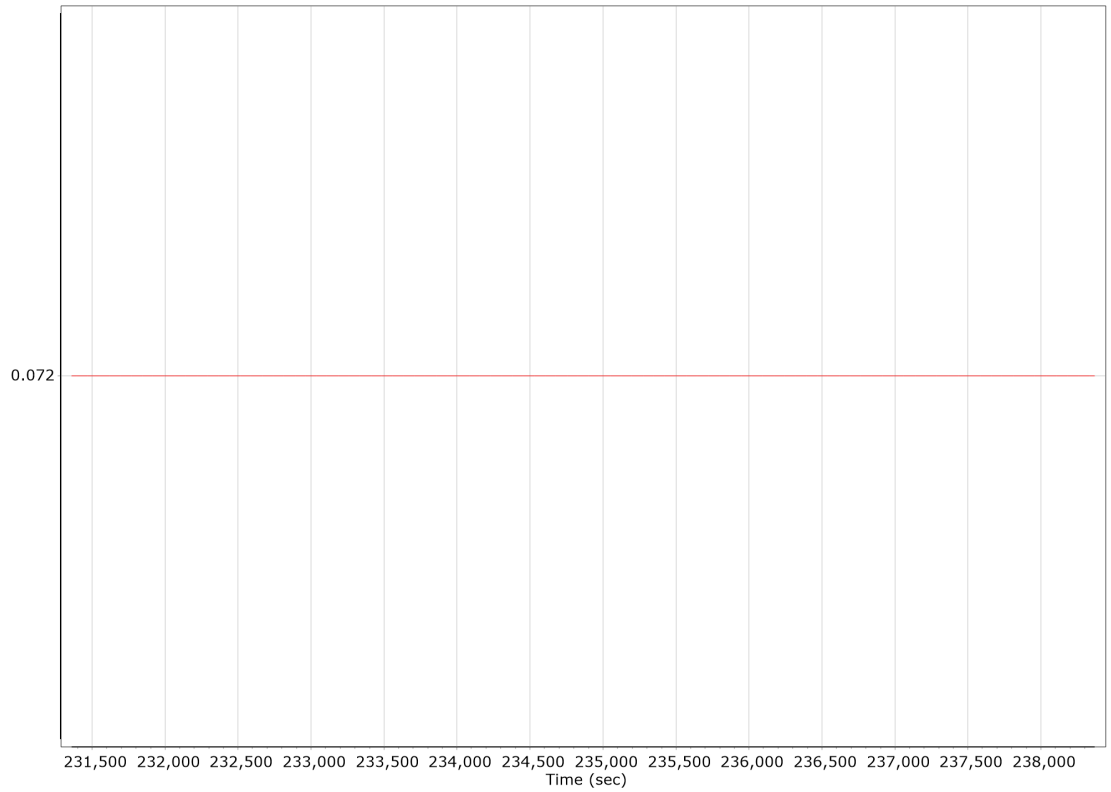
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	230991.000 (9/26/2023 4:09:51 PM)		
Processing end time	238372.000 (9/26/2023 6:12:52 PM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.072	0.090	-1.275
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

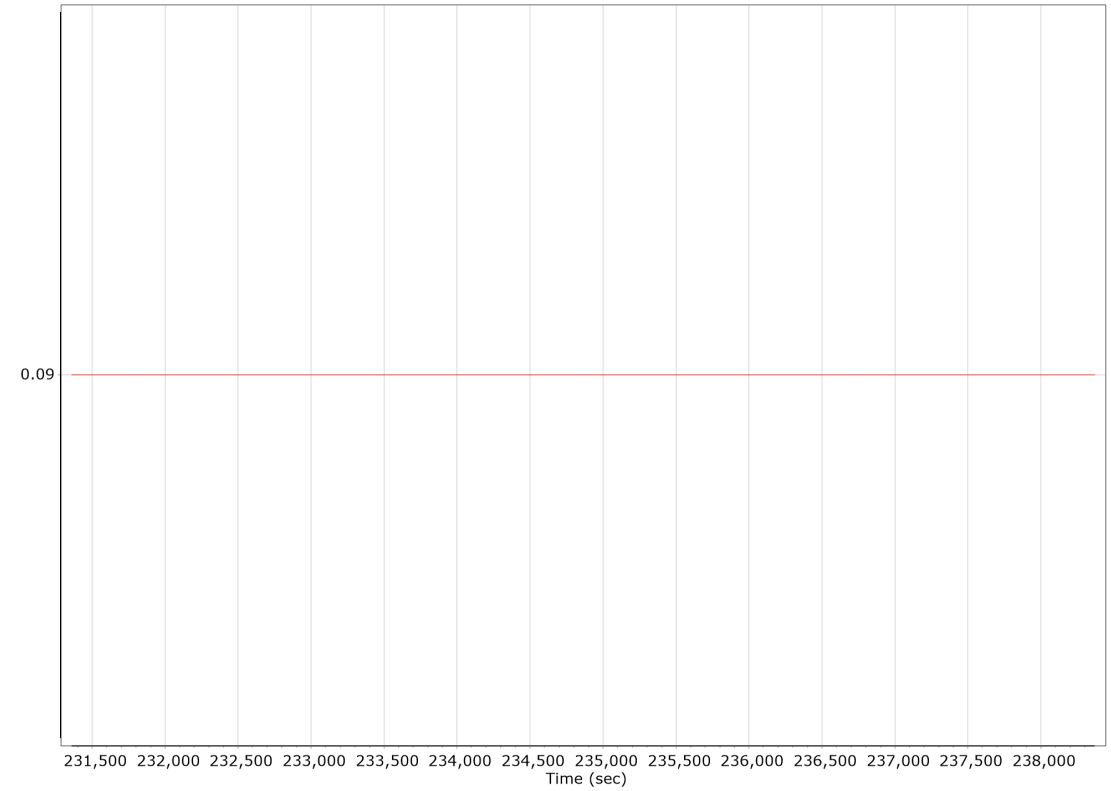
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

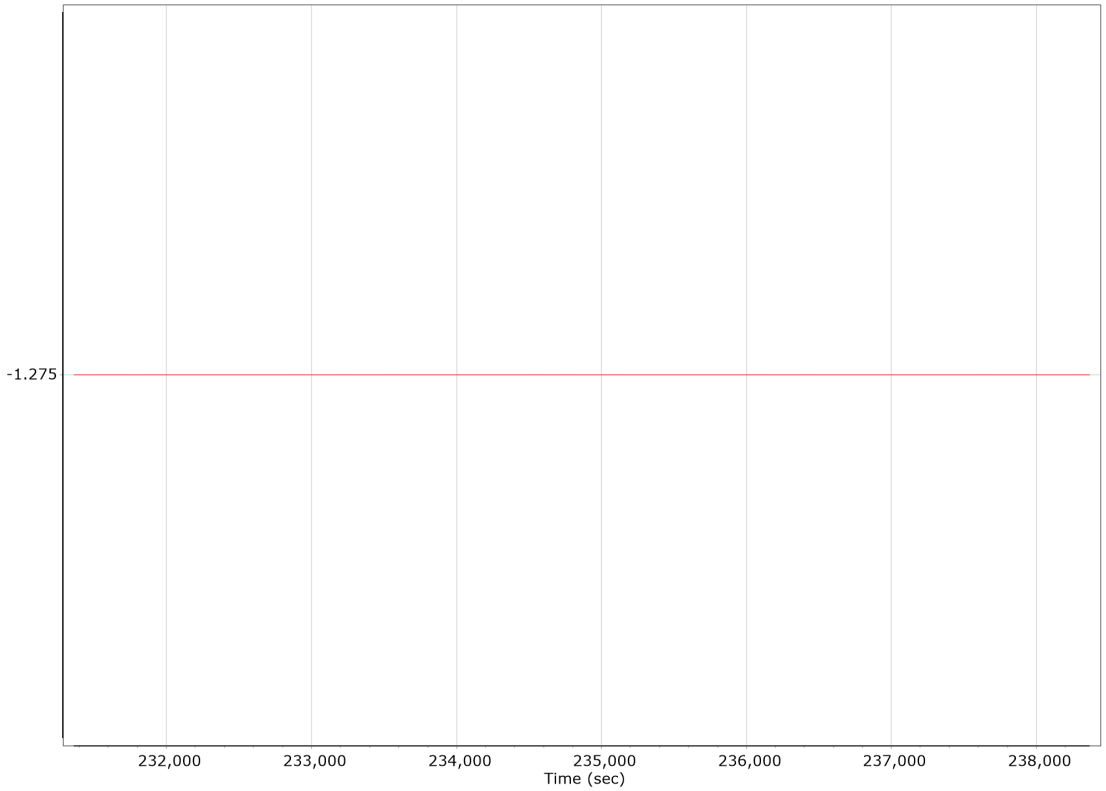
X Reference-Primary GNSS Lever Arm (m)



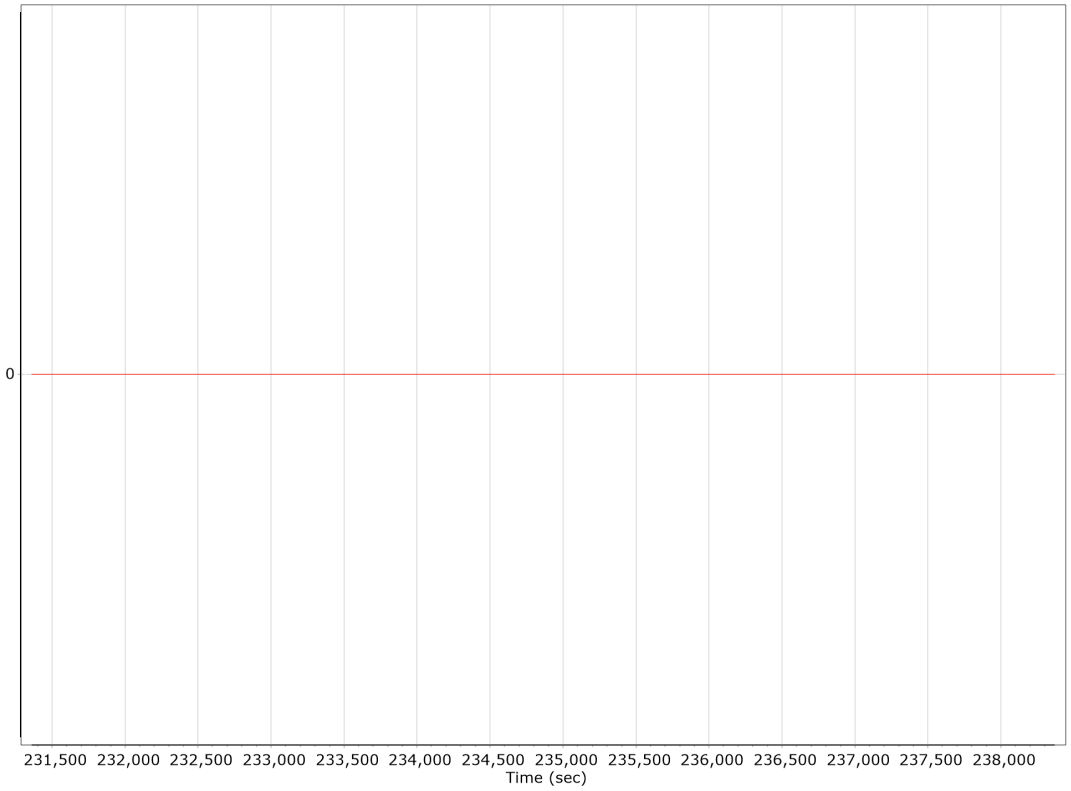
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



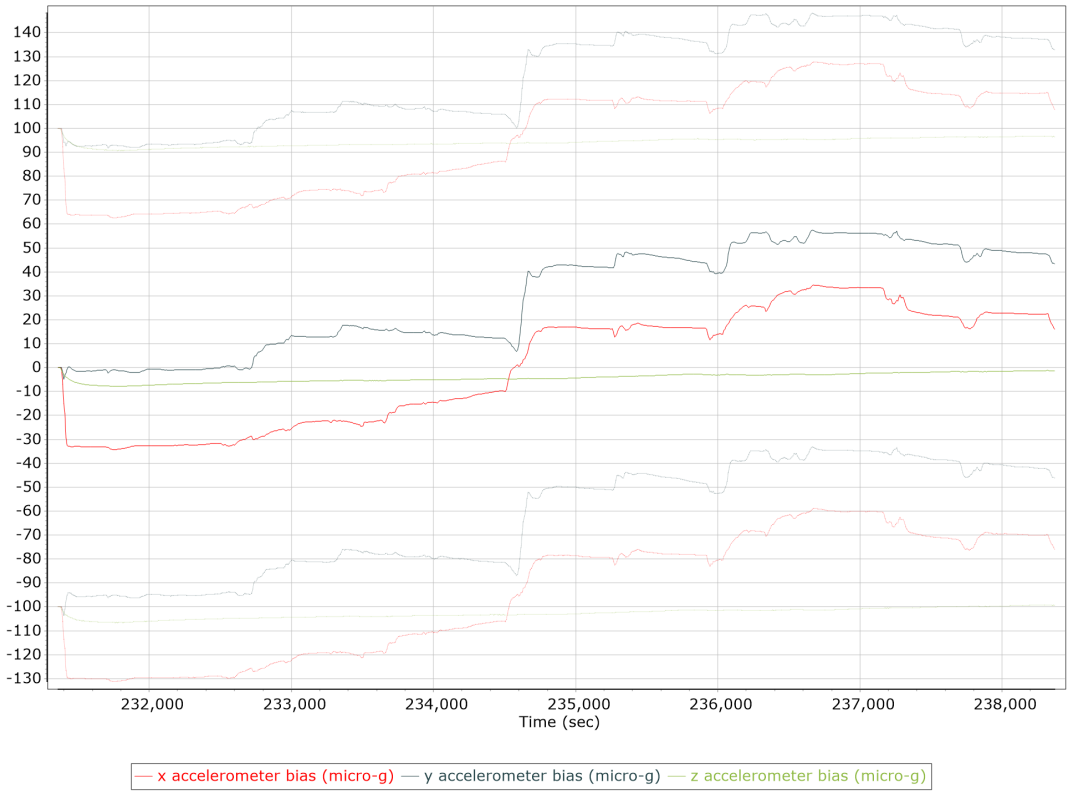
Reference-Primary GNSS Lever Arm Figure of Merit



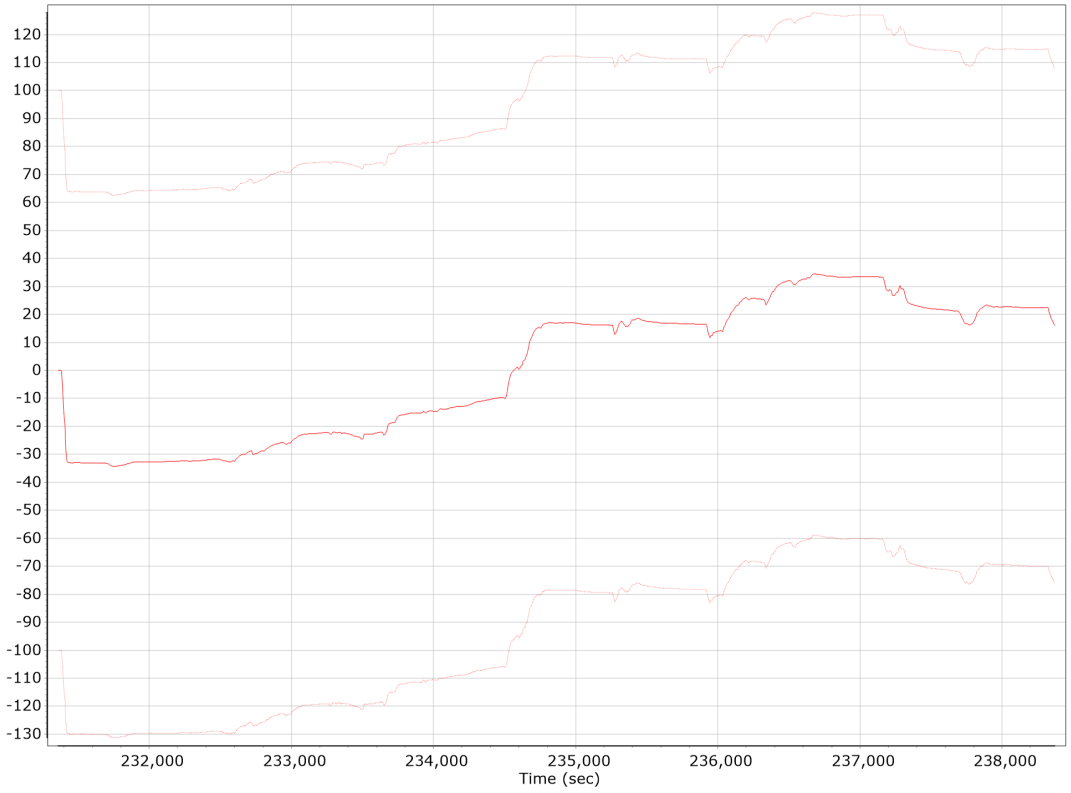
IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

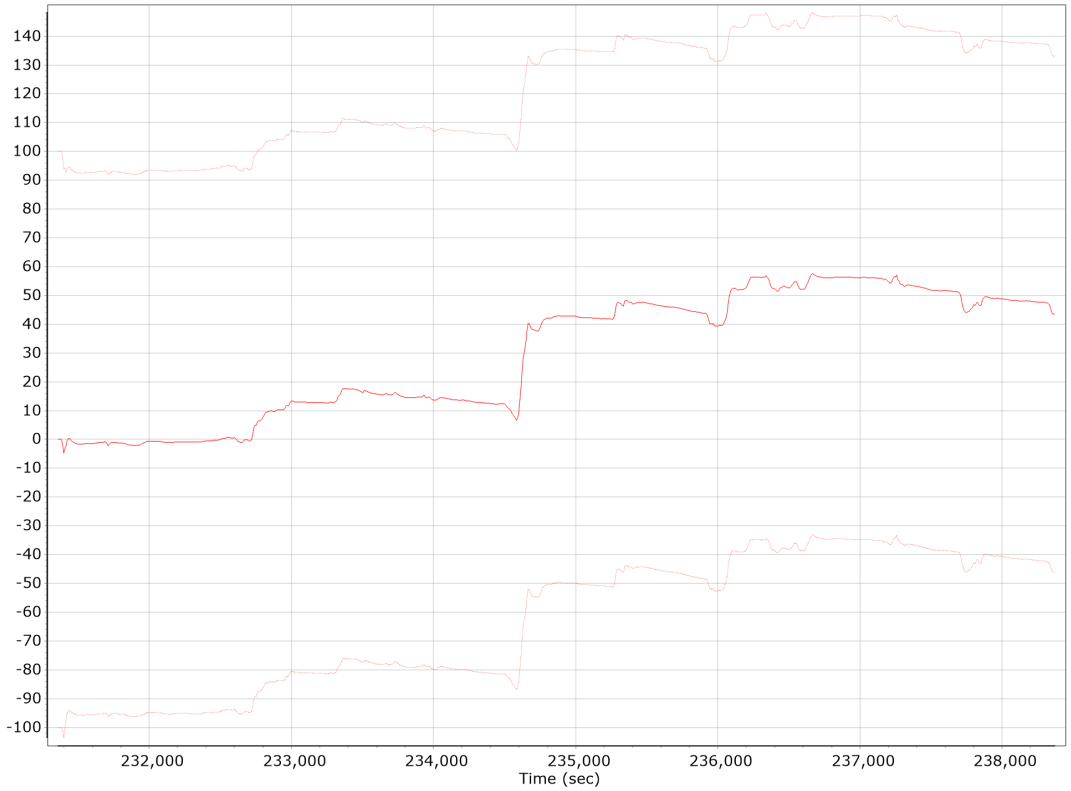
Accelerometer Bias (micro-g)



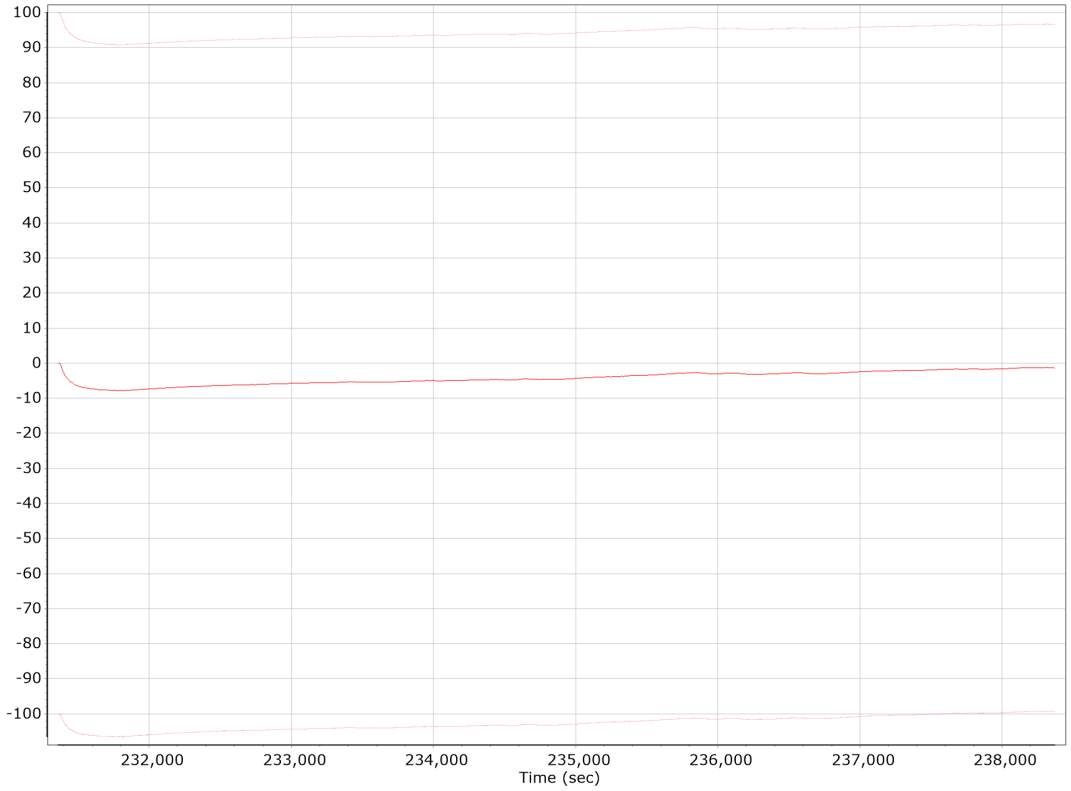
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



X Accelerometer Scale Error (ppm)



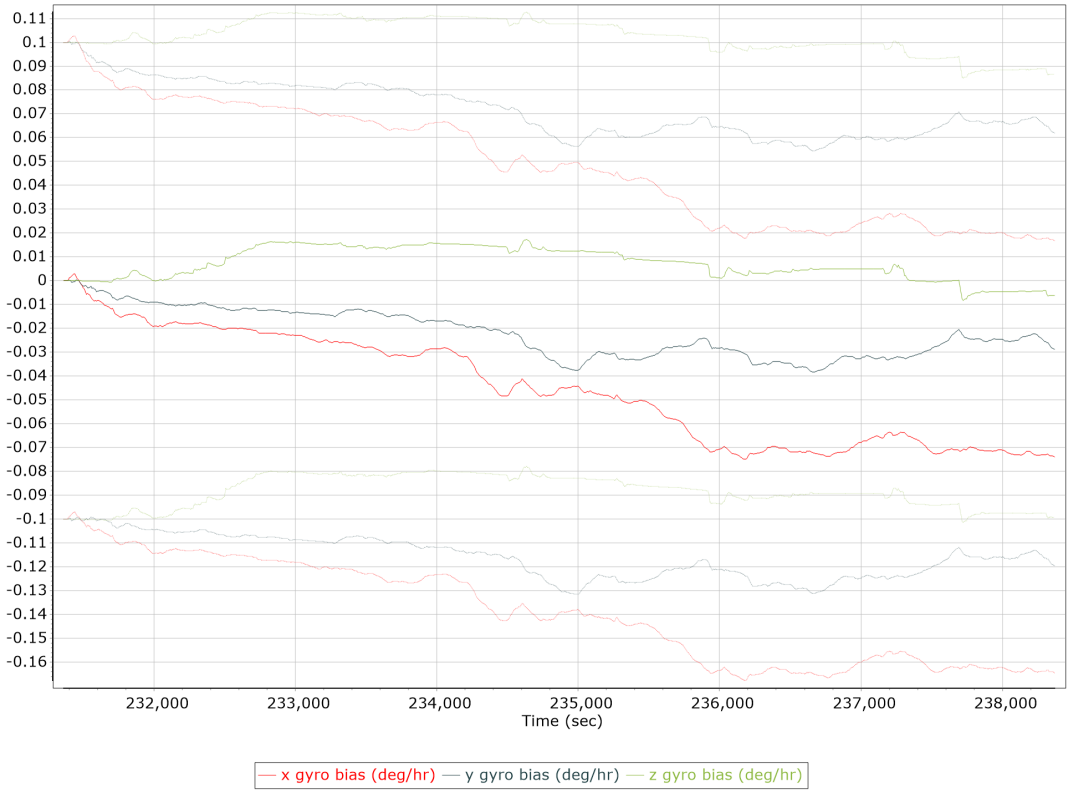
Y Accelerometer Scale Error (ppm)



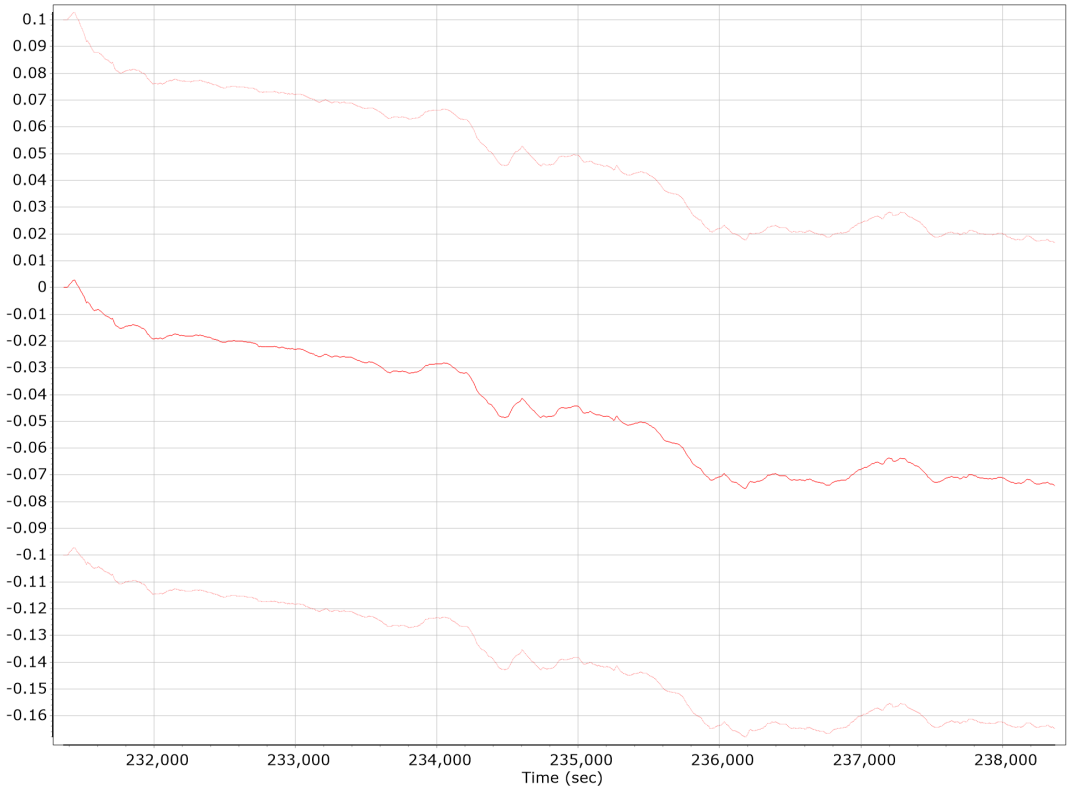
Z Accelerometer Scale Error (ppm)



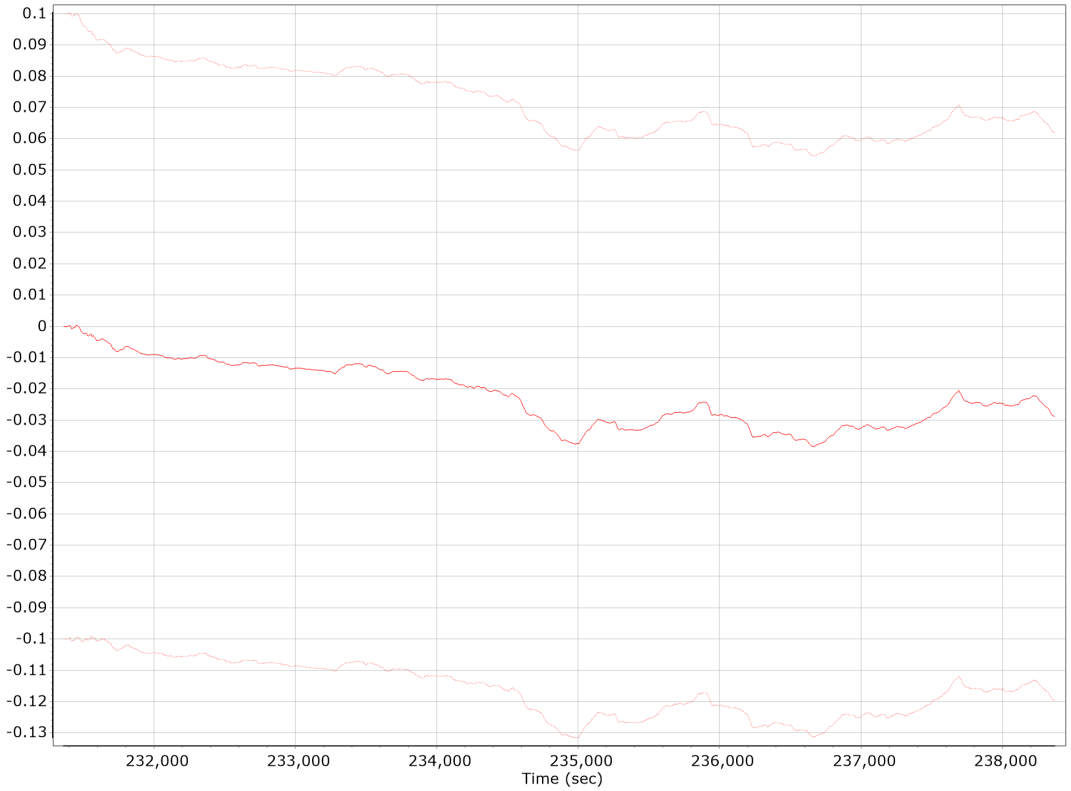
Gyro Bias (deg/h)



X Gyro Bias (deg/h)



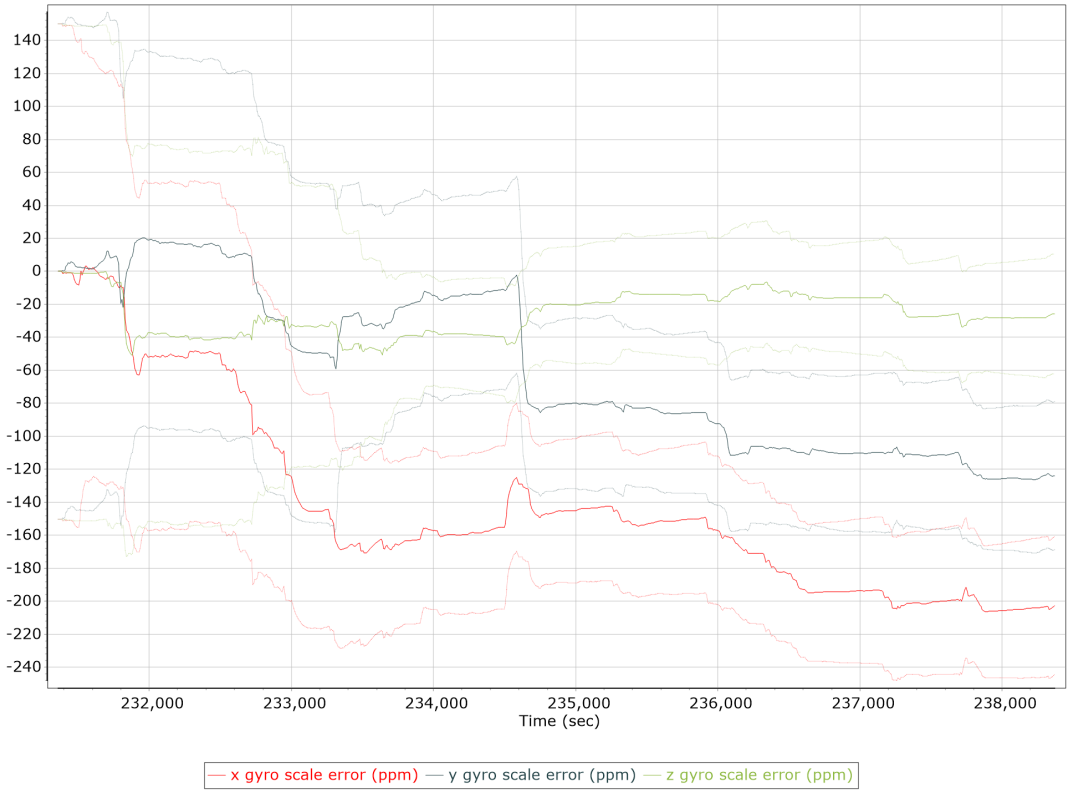
Y Gyro Bias (deg/h)



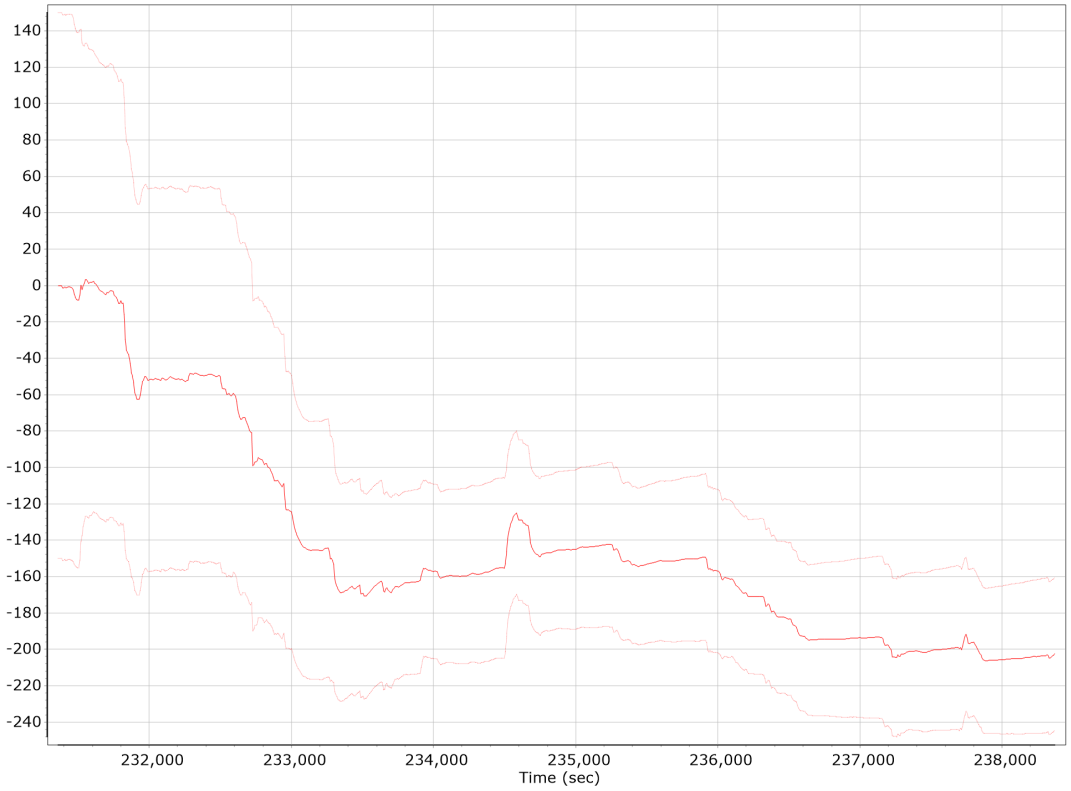
Z Gyro Bias (deg/h)



Gyro Scale Error (ppm)



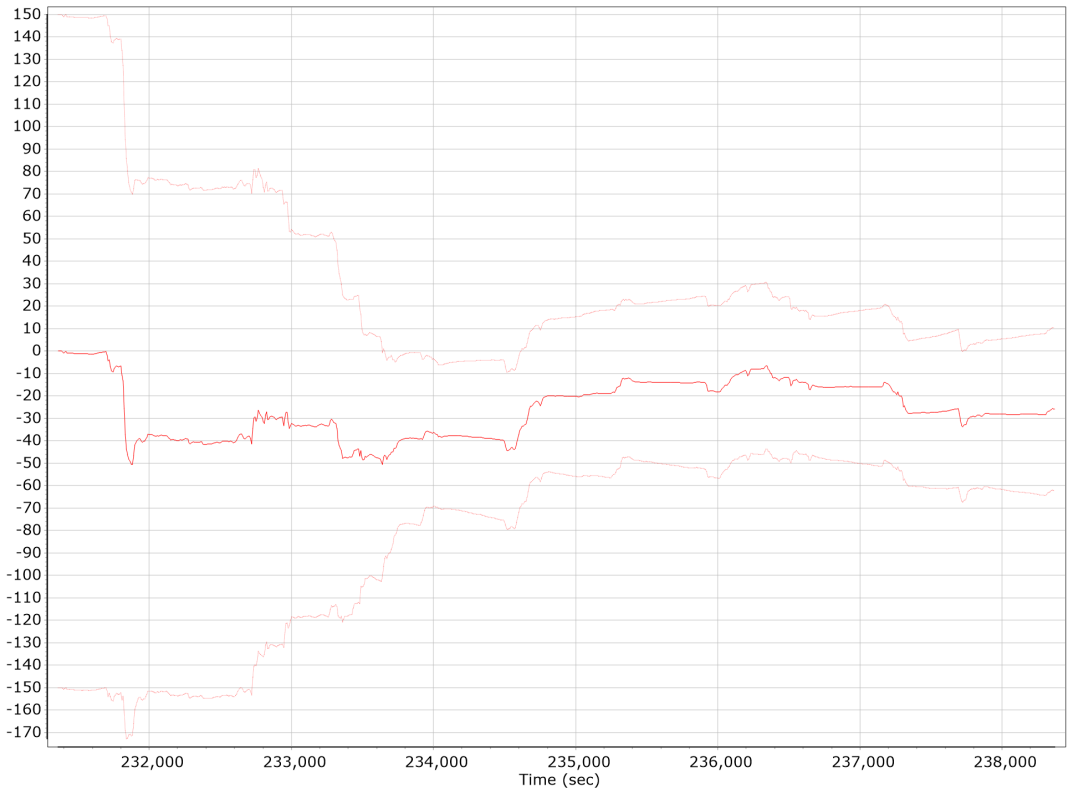
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)

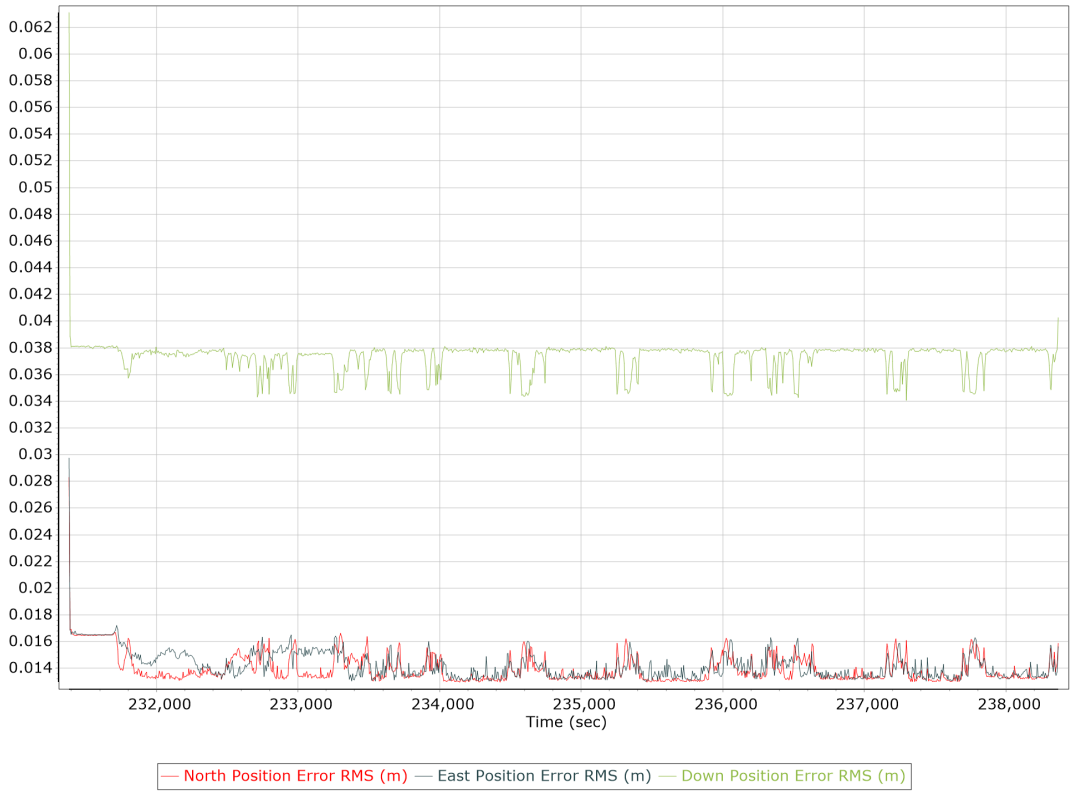


Z Gyro Scale Error (ppm)

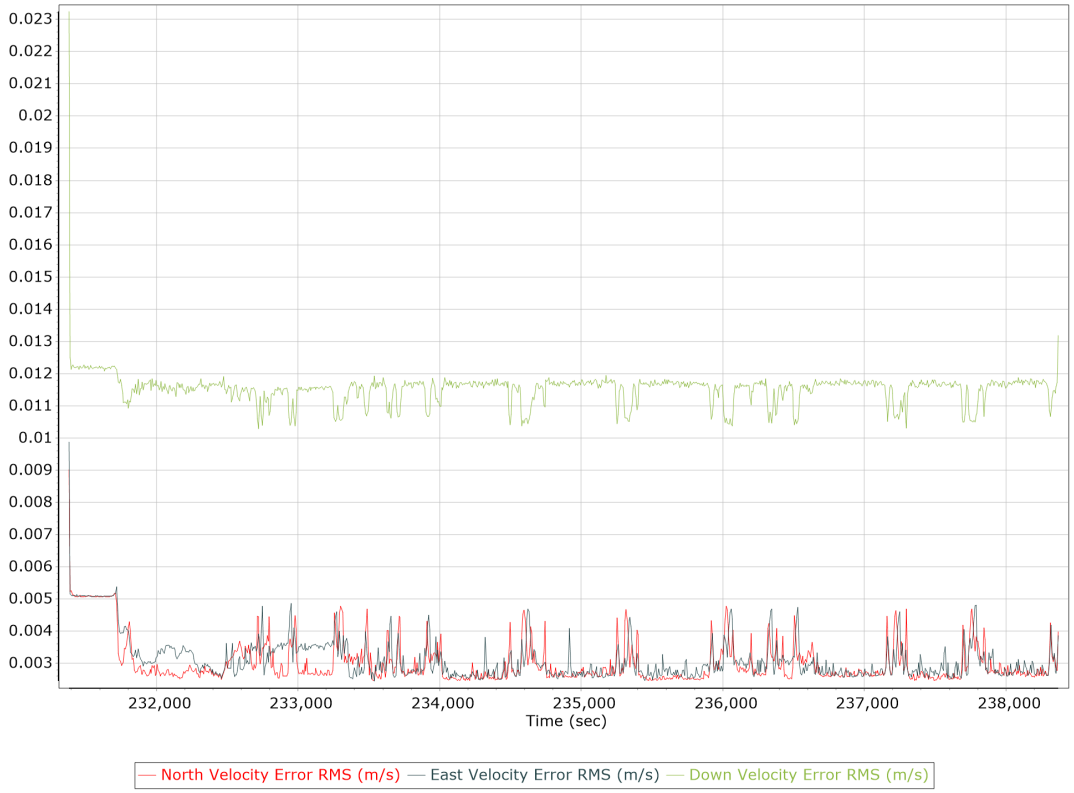


Smoothed Performance Metrics

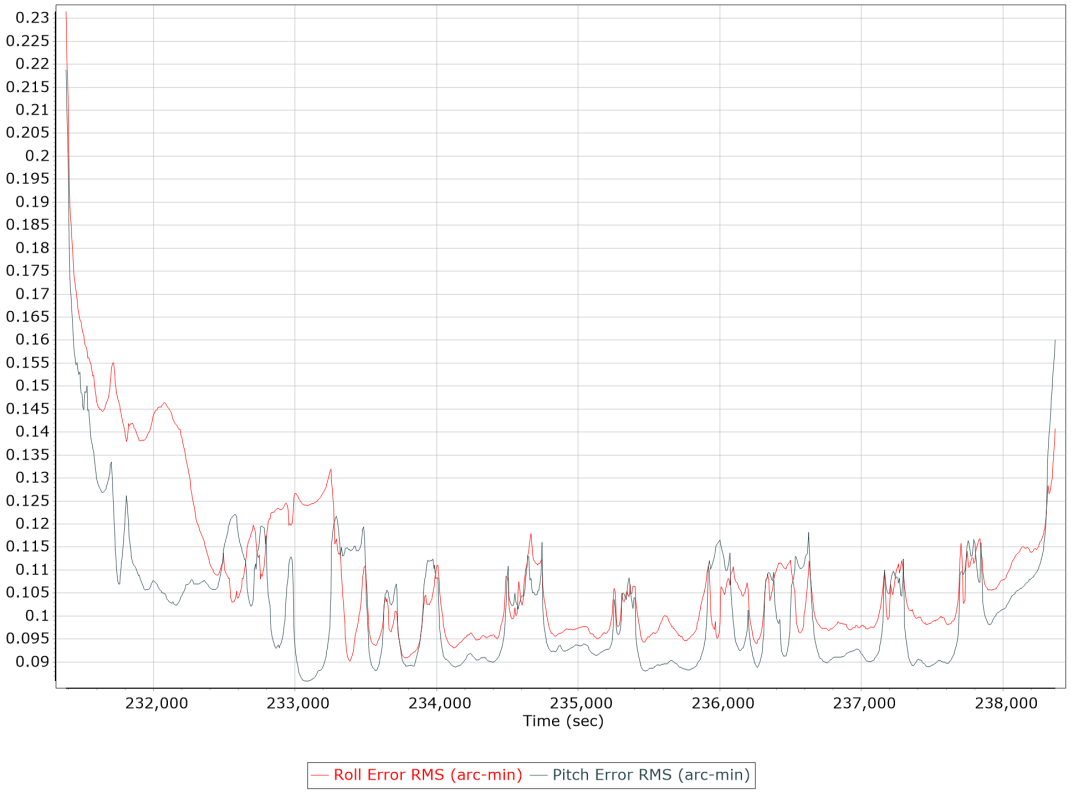
Position Error RMS (m)



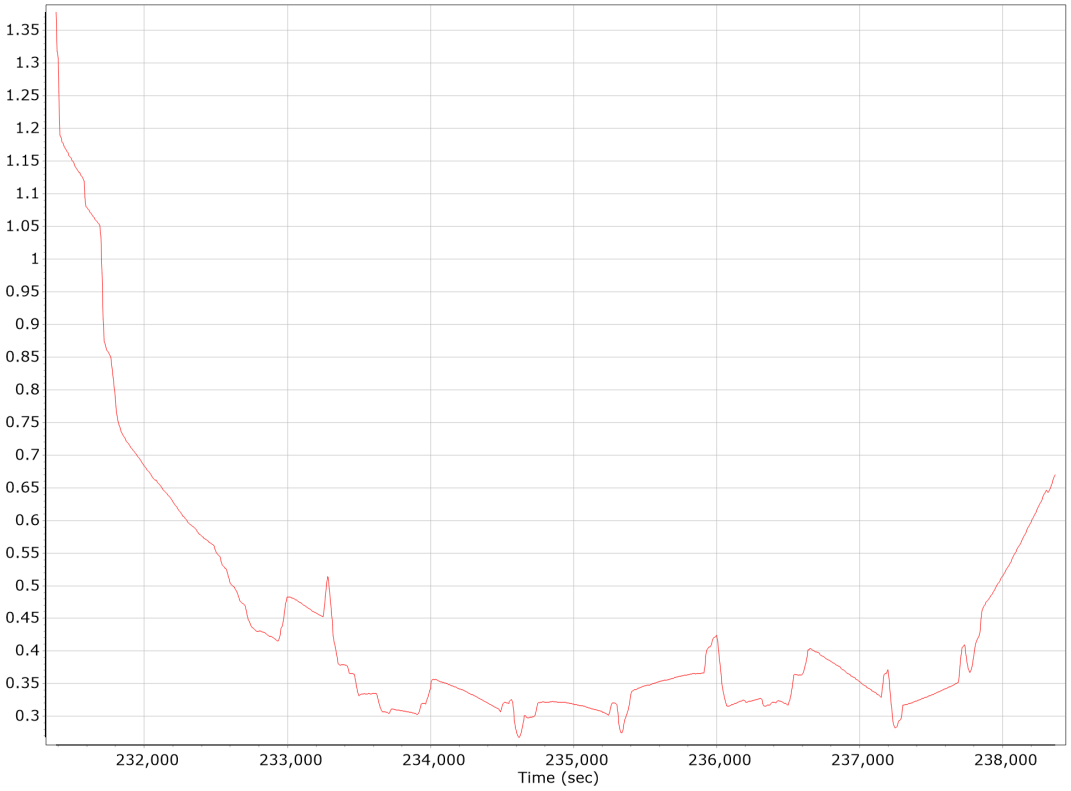
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)



Heading Error RMS (arc-min)

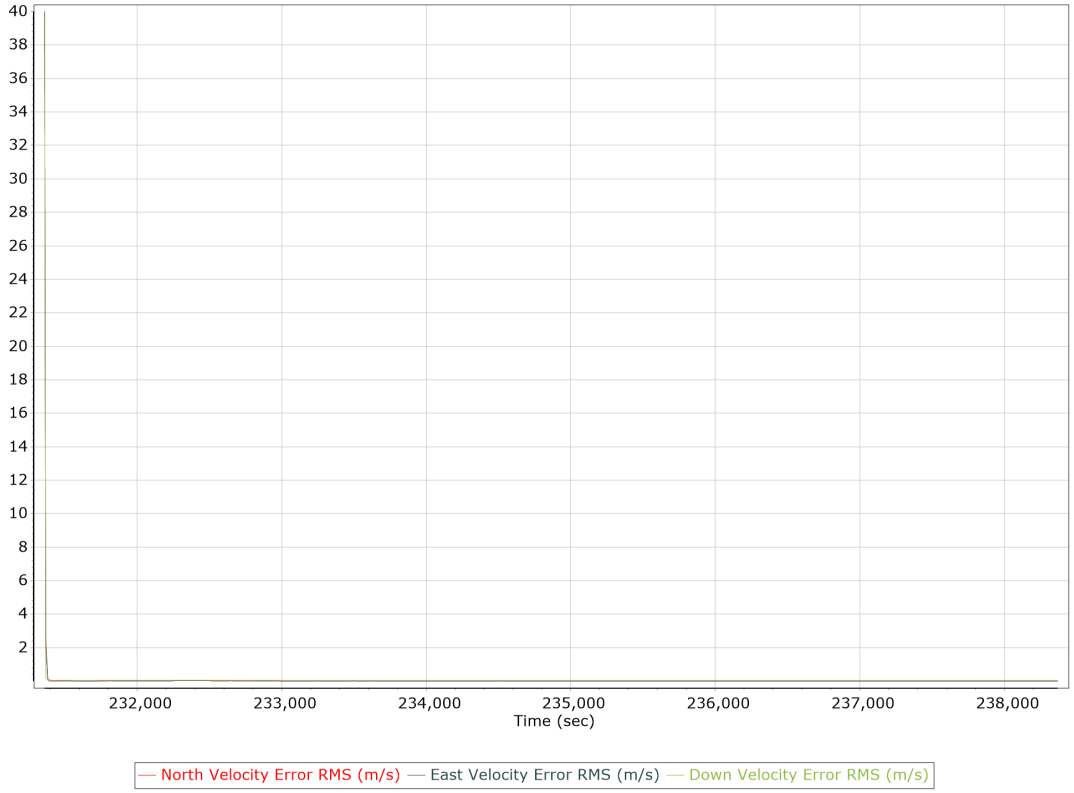


Forward Processed Performance Metrics

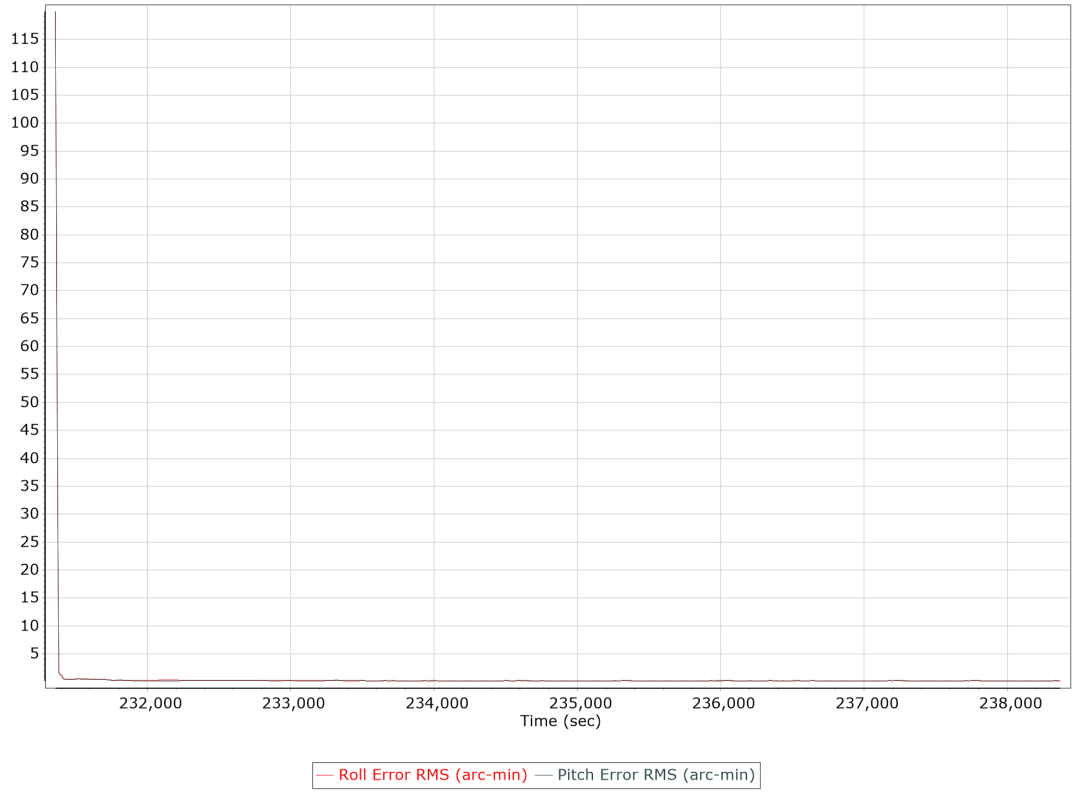
Position Error RMS (m)



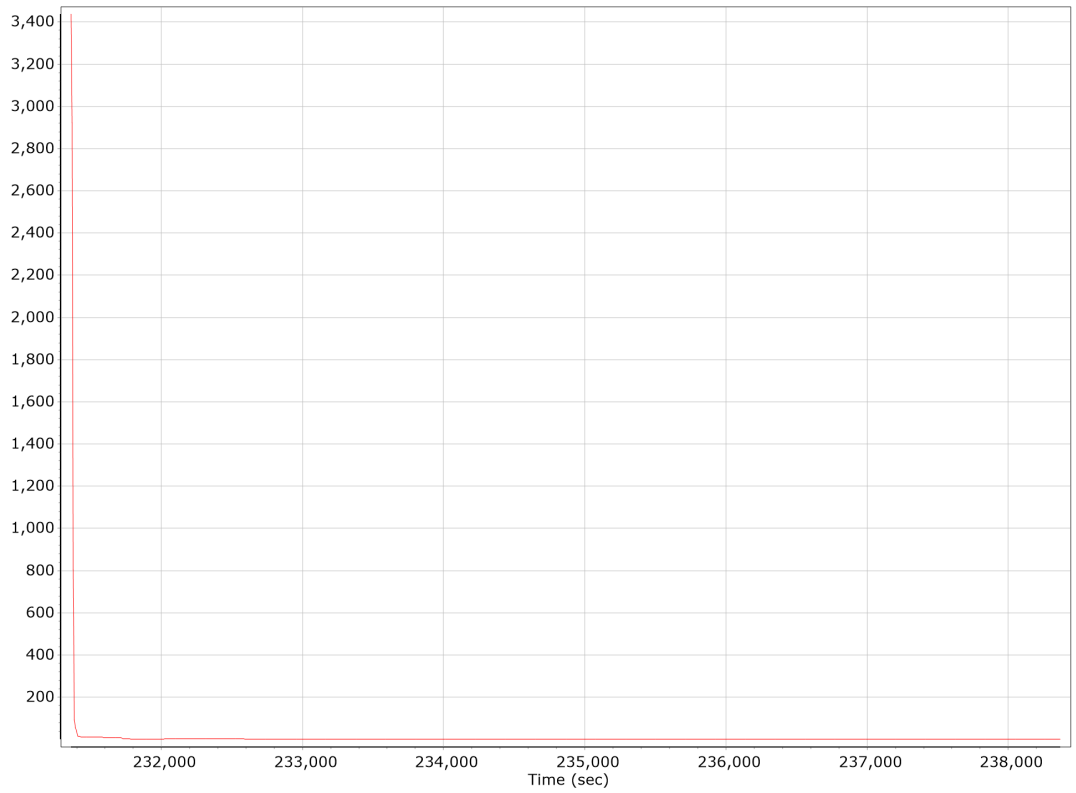
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

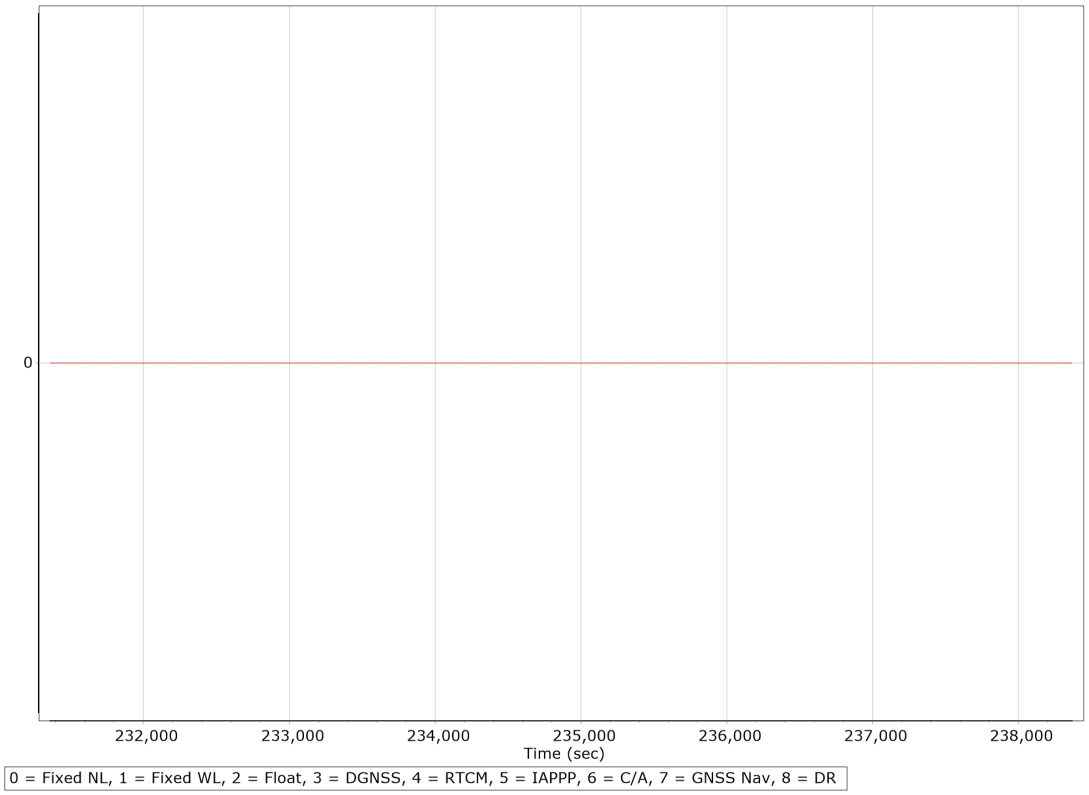


Heading Error RMS (arc-min)



Forward Processed Solution Status

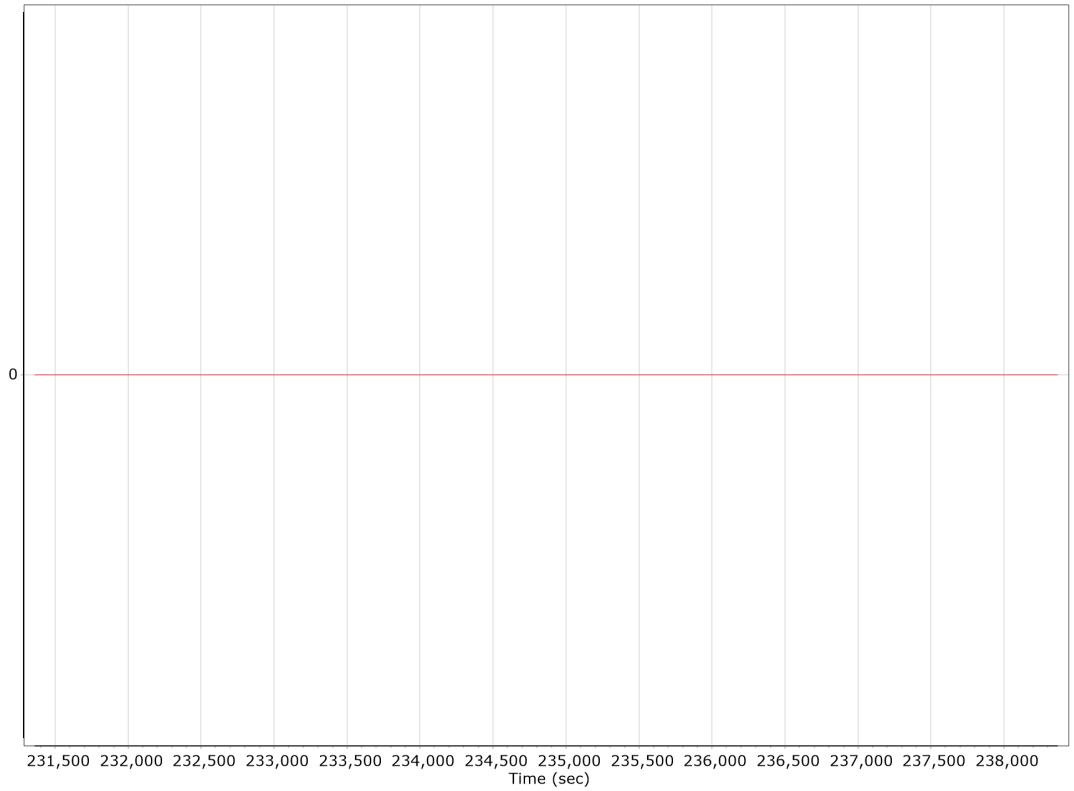
Processing Mode



Number of Satellites



Baseline Length



General Information

Mission Information

Project name	09262023A_4046
Processing date	2024-01-11 17:37:34
Mission date	2023-09-26 15:43:43
Mission duration	05:39:13.991
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N10762
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
230926_154324_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm2690.23g	GLONASS Broadcast Ephemeris
Ephm2690.23n	GPS Broadcast Ephemeris
IGS0OPSFIN_20232680000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232690000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232700000_01D_15M_ORB.SP3	GPS Precise Ephemeris

Output Files

Filename	File type
sbet_09262023A_4046.out	SBET Trajectory File

Rover Data Summary

First raw data file	230926_154324_INS-GPS_1.raw		
Last raw data file	230926_154324_INS-GPS_1.raw		
Start GPS week	2281		
Start time	229405.003 (9/26/2023 3:43:25 PM)		
End time	249758.994 (9/26/2023 9:22:38 PM)		
Start of fine alignment	229600.534 (9/26/2023 3:46:40 PM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	0.000	0.000	0.000
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

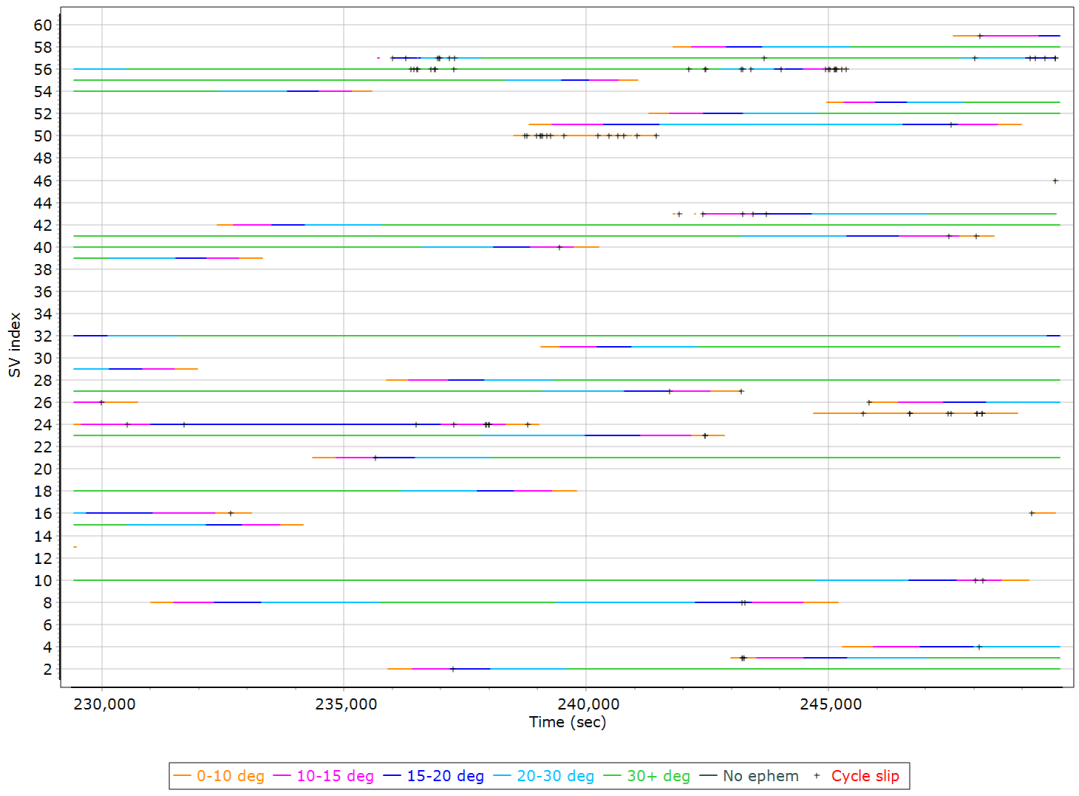
Rover Data QC

Raw IMU Import QC Summary

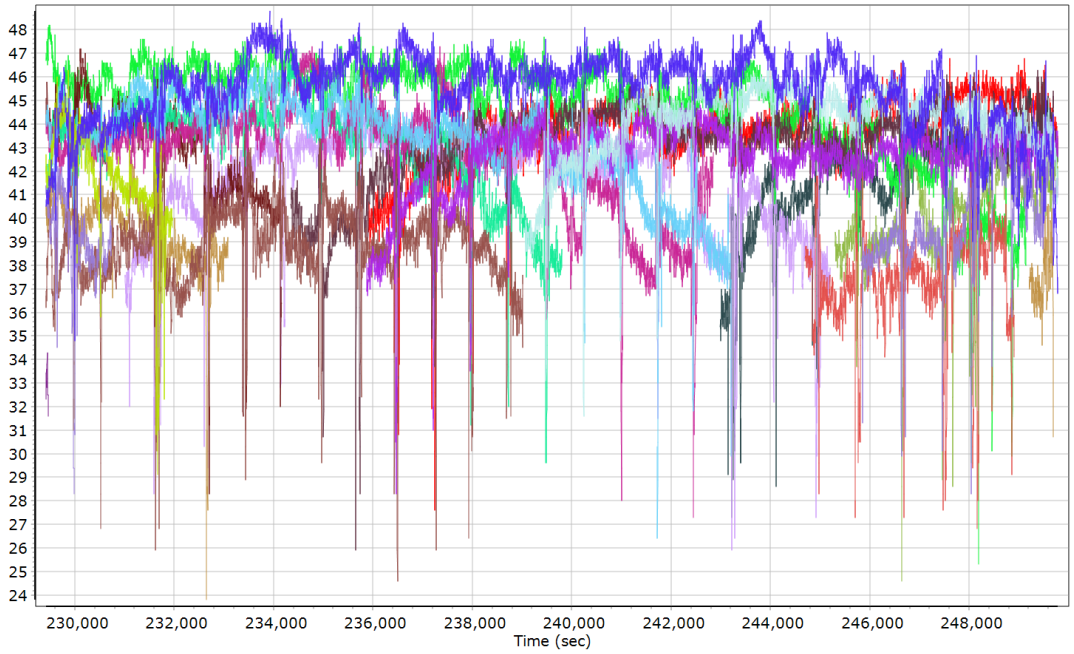
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_09262023A_4046.log
IMU Records Processed	4070658
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

GPS/GLONASS L1 Satellite Lock/Elevation

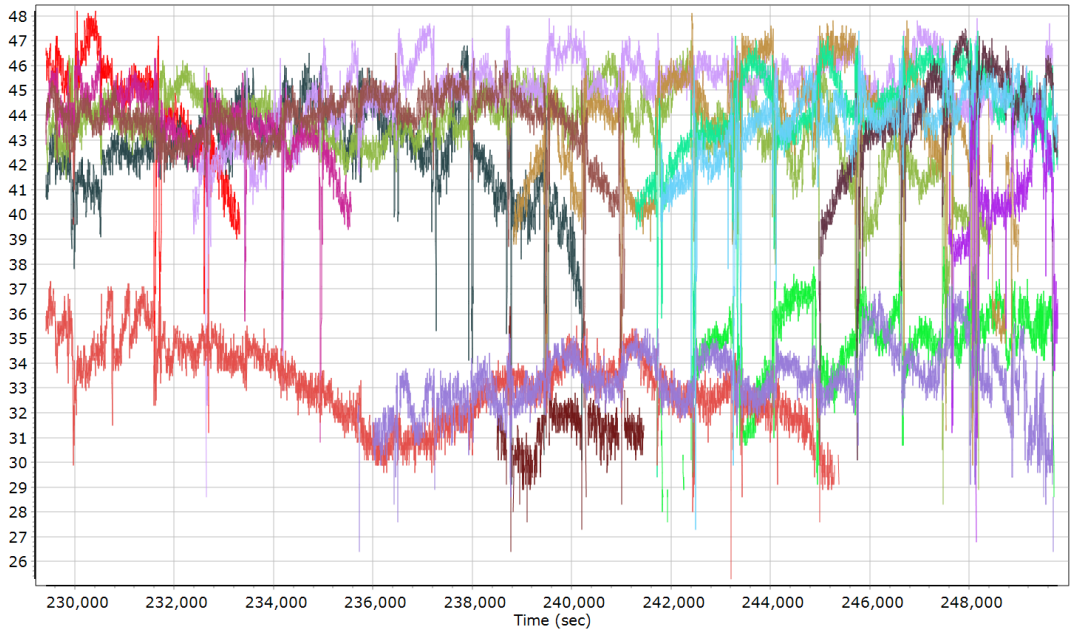


GPS L1 SNR



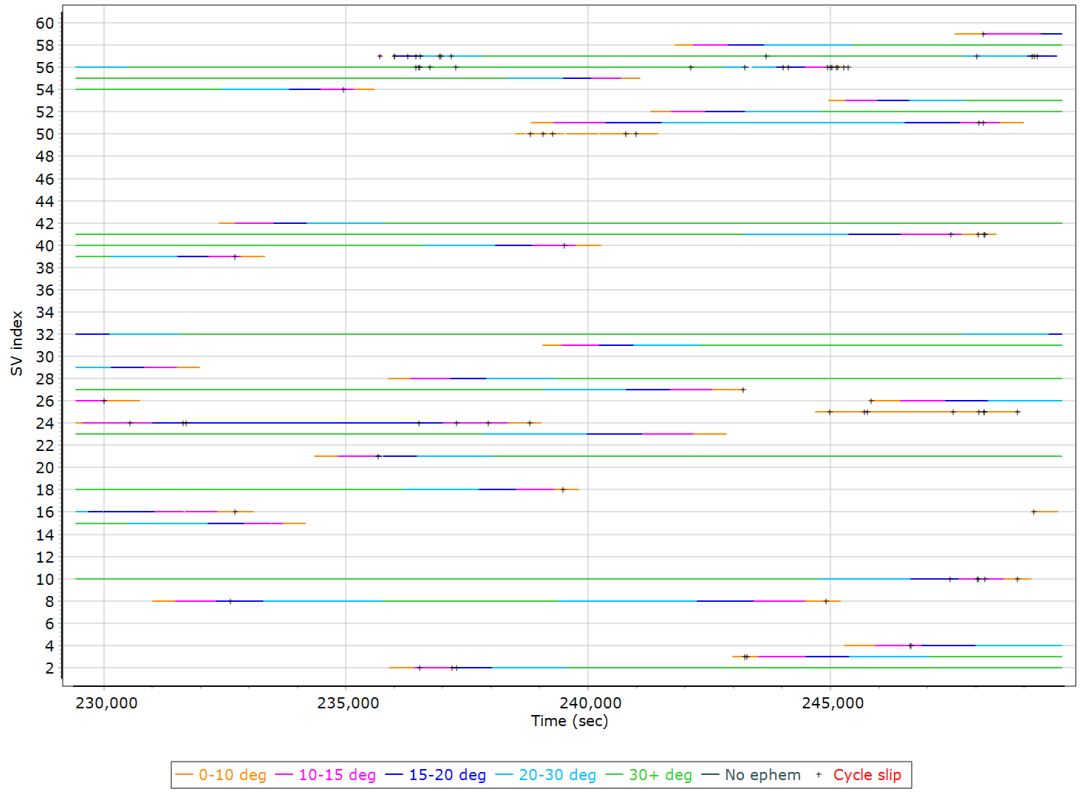
GPS PRN 02 L1 SNR (dB/Hz) GPS PRN 03 L1 SNR (dB/Hz) GPS PRN 04 L1 SNR (dB/Hz) GPS PRN 08 L1 SNR (dB/Hz)
GPS PRN 10 L1 SNR (dB/Hz) GPS PRN 13 L1 SNR (dB/Hz) GPS PRN 15 L1 SNR (dB/Hz) GPS PRN 16 L1 SNR (dB/Hz)
GPS PRN 18 L1 SNR (dB/Hz) GPS PRN 21 L1 SNR (dB/Hz) GPS PRN 23 L1 SNR (dB/Hz) GPS PRN 24 L1 SNR (dB/Hz)
GPS PRN 25 L1 SNR (dB/Hz) GPS PRN 26 L1 SNR (dB/Hz) GPS PRN 27 L1 SNR (dB/Hz) GPS PRN 28 L1 SNR (dB/Hz)
GPS PRN 29 L1 SNR (dB/Hz) GPS PRN 31 L1 SNR (dB/Hz) GPS PRN 32 L1 SNR (dB/Hz)

GLONASS L1 SNR

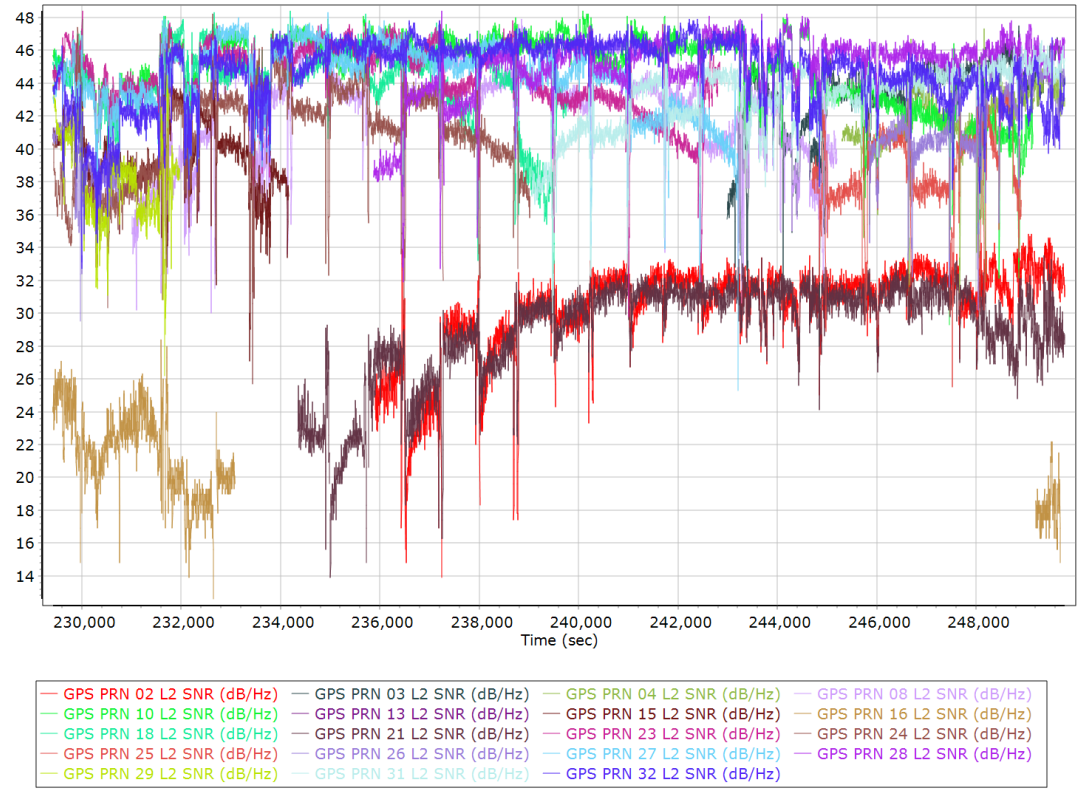


GLONASS 02 L1 SNR (dB/Hz) GLONASS 03 L1 SNR (dB/Hz) GLONASS 04 L1 SNR (dB/Hz)
GLONASS 05 L1 SNR (dB/Hz) GLONASS 06 L1 SNR (dB/Hz) GLONASS 09 L1 SNR (dB/Hz)
GLONASS 13 L1 SNR (dB/Hz) GLONASS 14 L1 SNR (dB/Hz) GLONASS 15 L1 SNR (dB/Hz)
GLONASS 16 L1 SNR (dB/Hz) GLONASS 17 L1 SNR (dB/Hz) GLONASS 18 L1 SNR (dB/Hz)
GLONASS 19 L1 SNR (dB/Hz) GLONASS 20 L1 SNR (dB/Hz) GLONASS 21 L1 SNR (dB/Hz)
GLONASS 22 L1 SNR (dB/Hz)

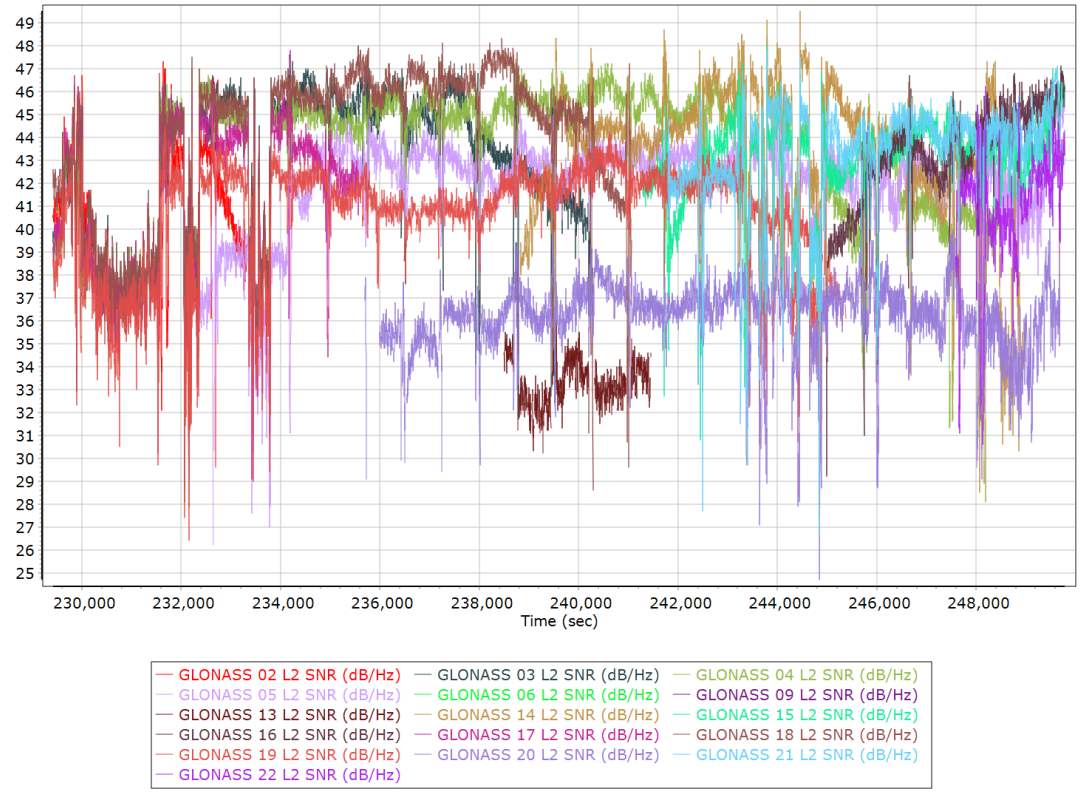
GPS/GLONASS L2 Satellite Lock/Elevation



GPS L2 SNR



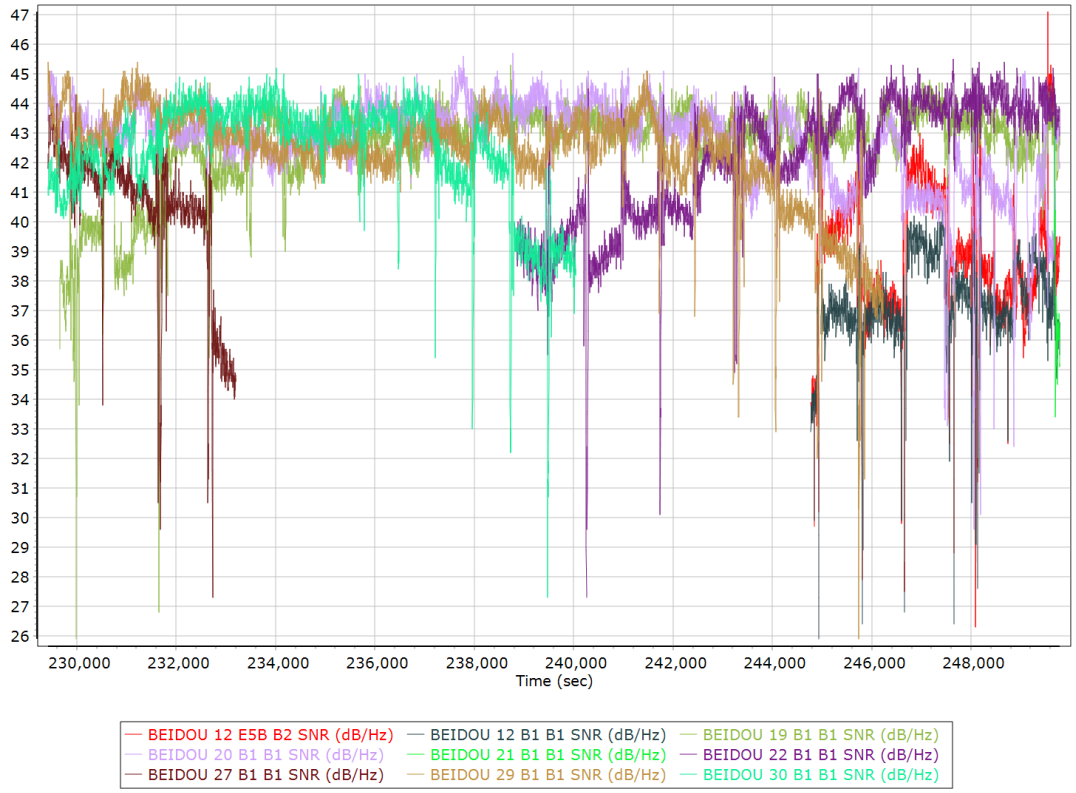
GLONASS L2 SNR



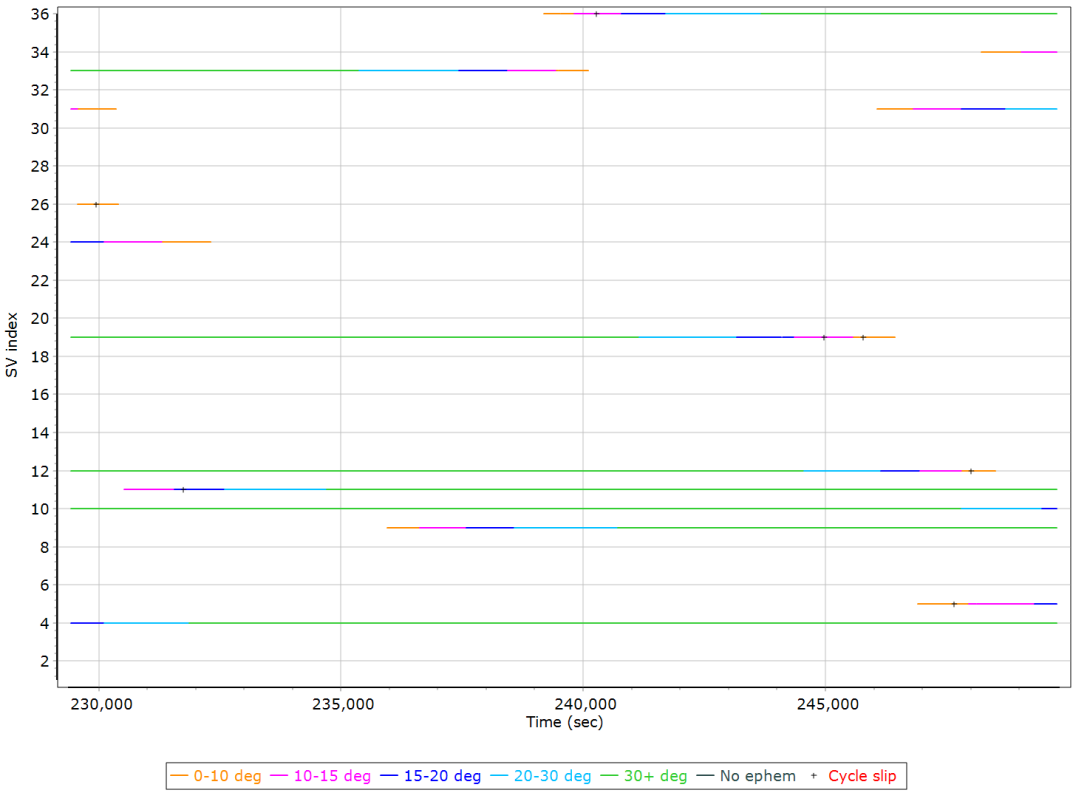
BEIDOU Satellite Lock/Elevation



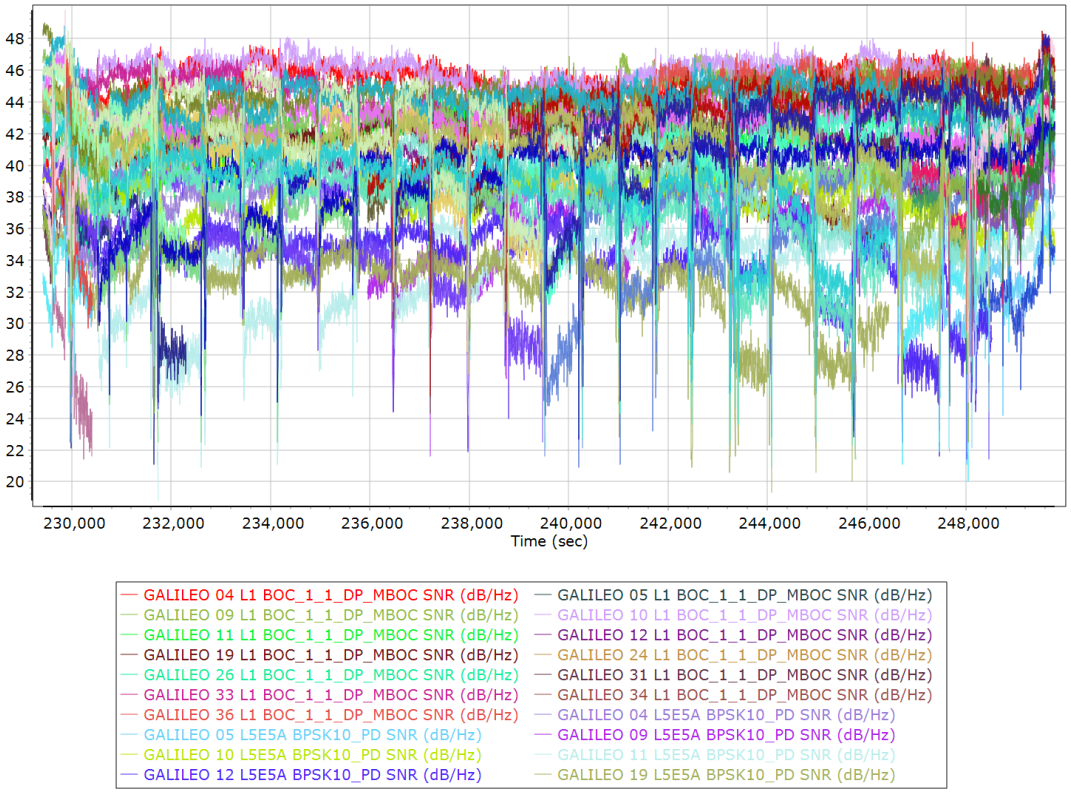
BEIDOU SNR



GALILEO Satellite Lock/Elevation

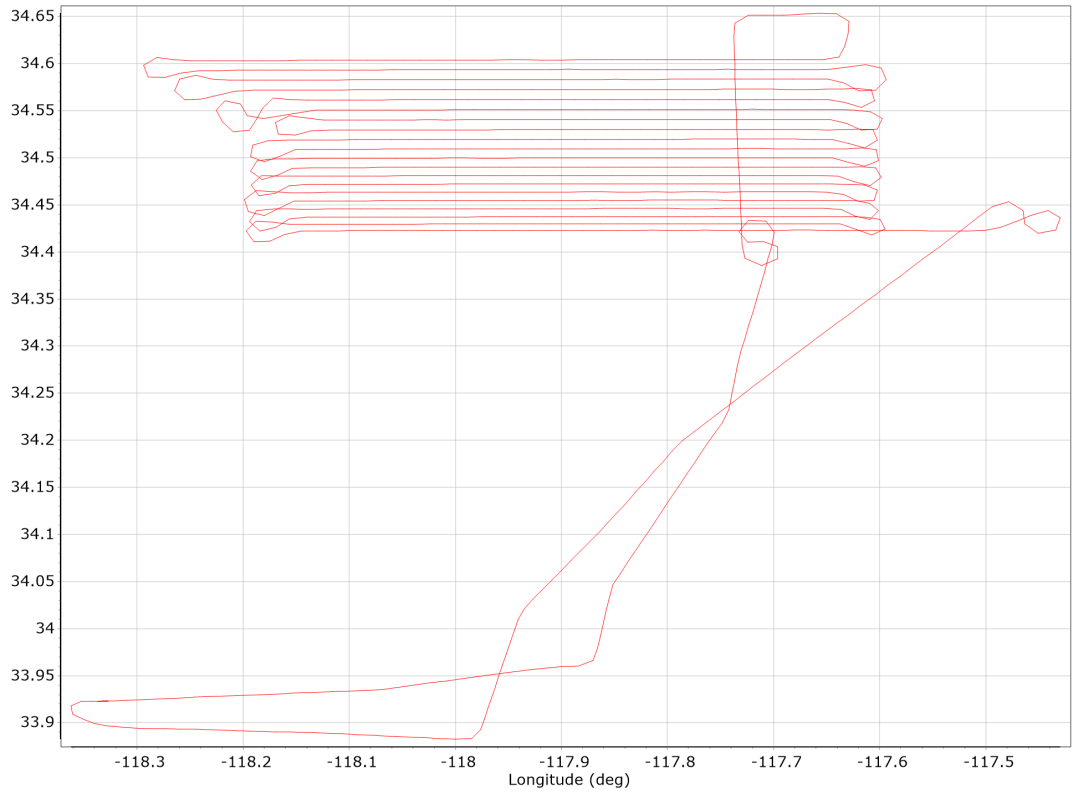


GALILEO SNR

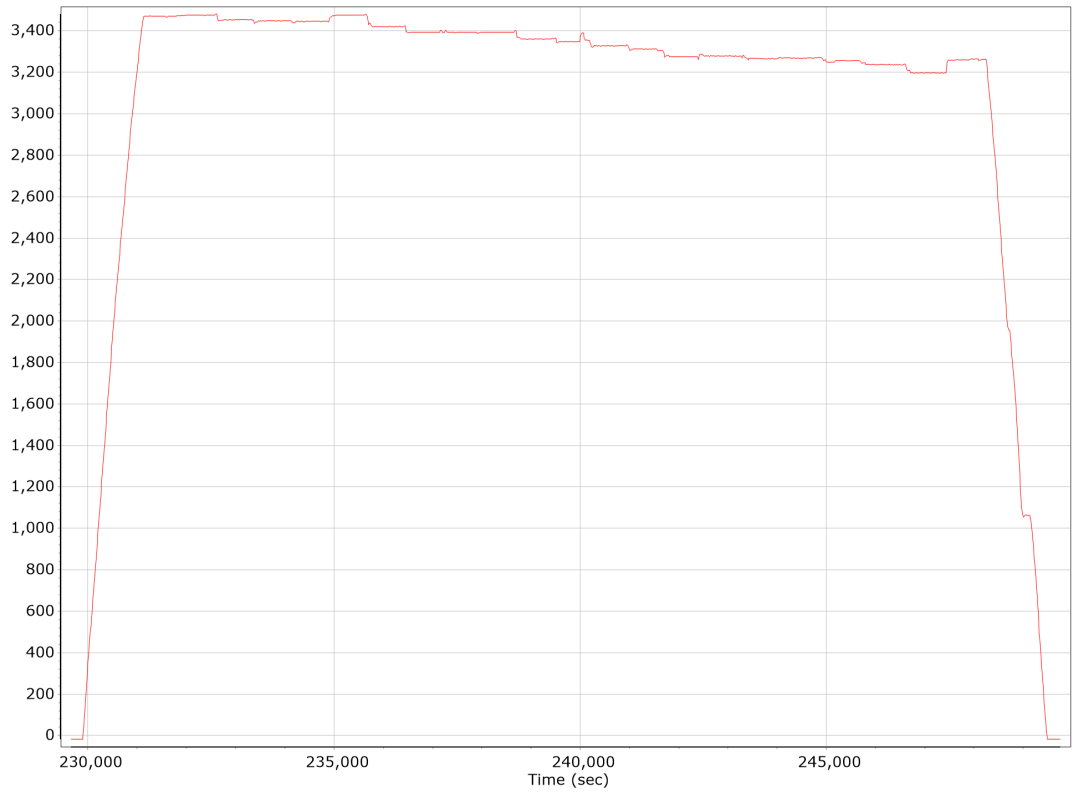

48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
230,000
232,000
234,000
236,000
238,000
240,000
242,000
244,000
246,000
248,000
Time (sec)
GALILEO 04 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 05 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 09 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 10 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 11 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 12 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 19 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 24 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 26 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 31 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 33 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 34 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 36 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 04 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 05 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 09 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 10 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 11 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 12 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 19 L5E5A BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

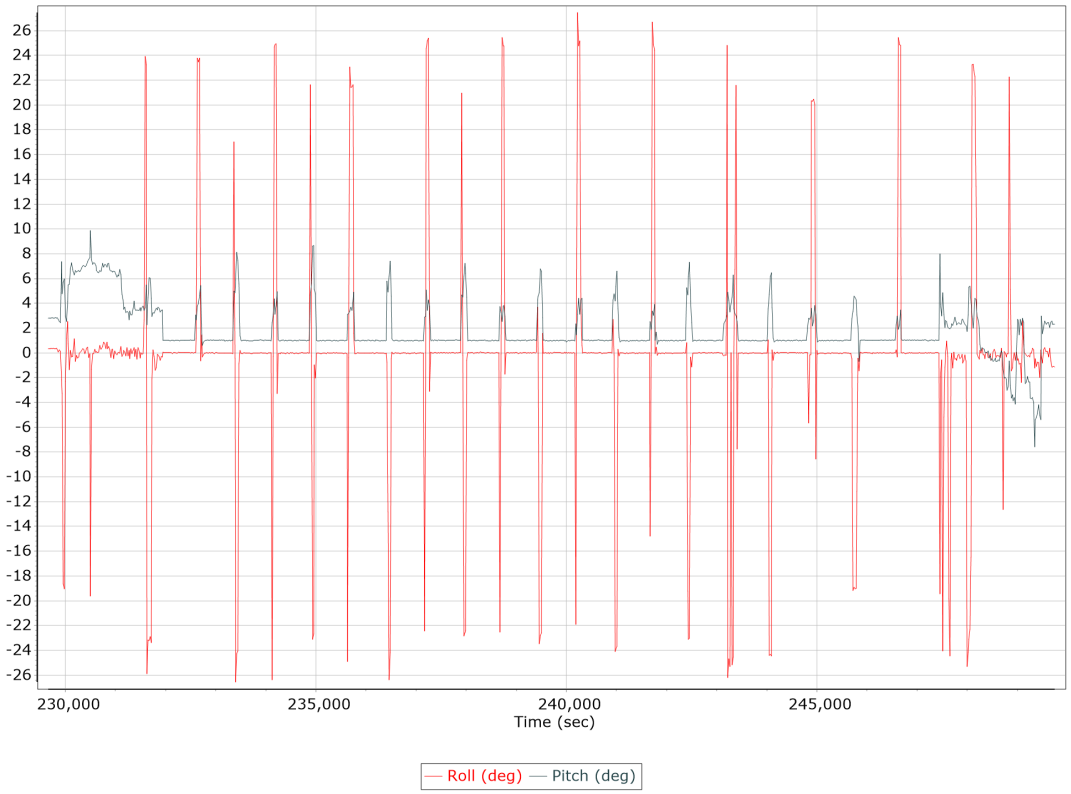
Top View



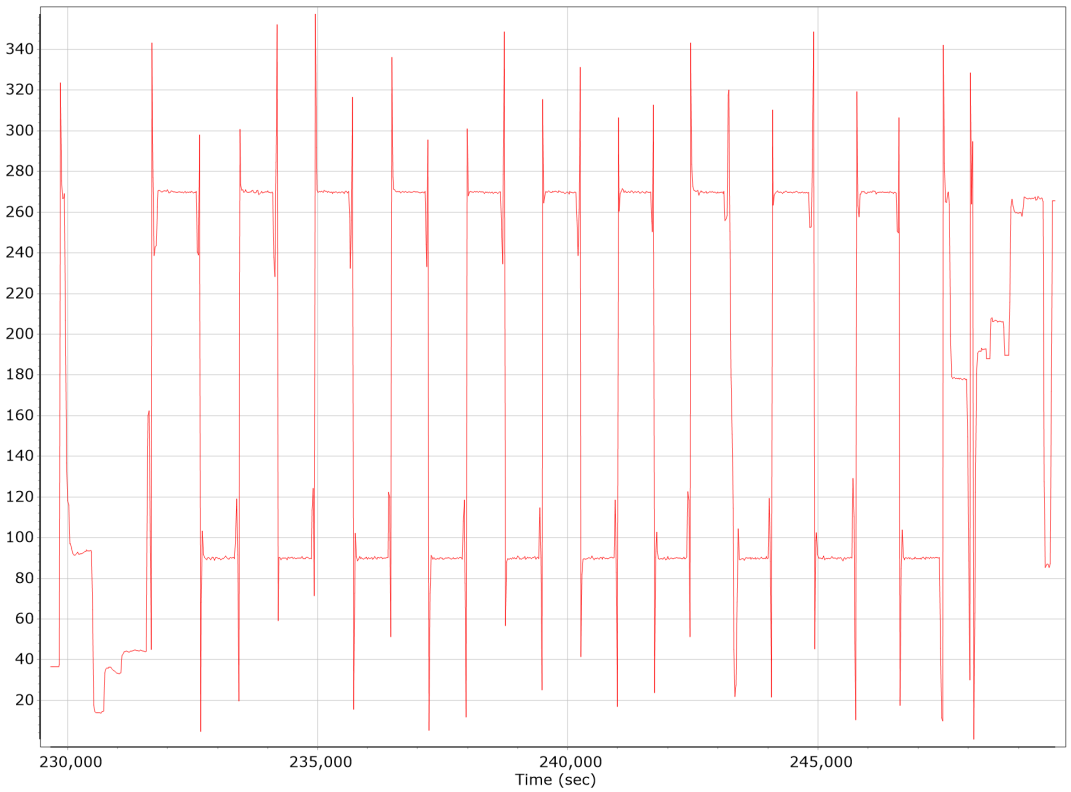
Altitude



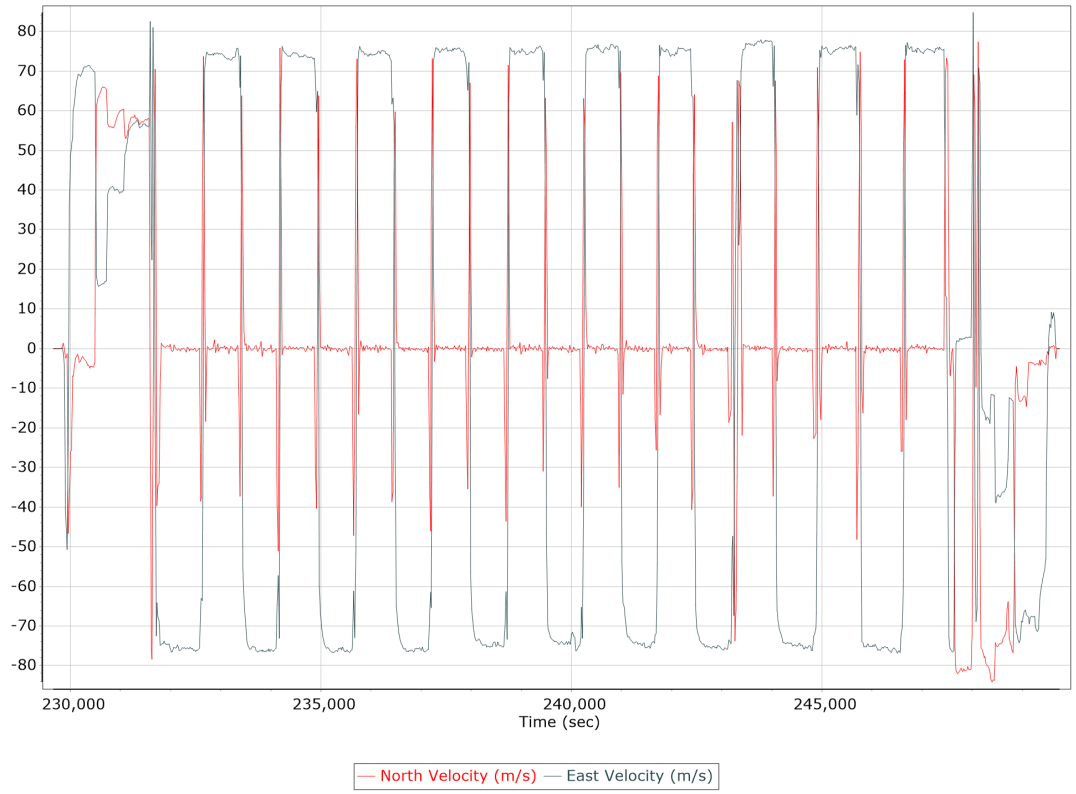
Roll/Pitch



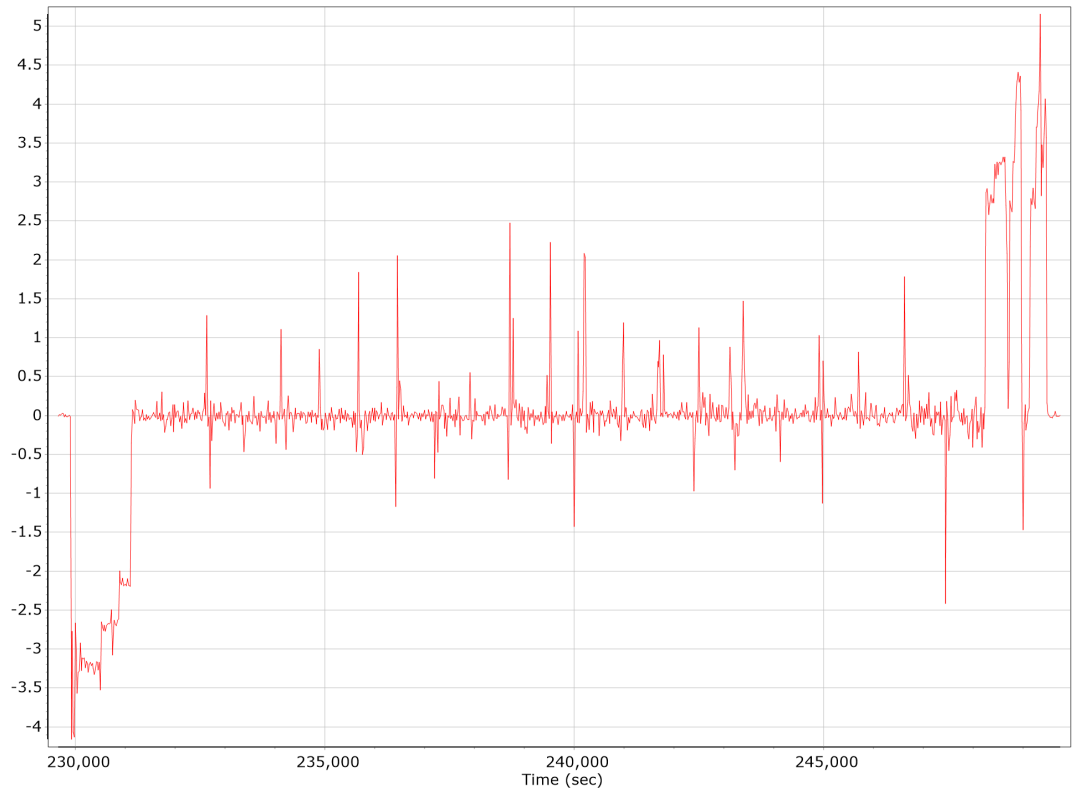
Heading



North/East Velocity



Down Velocity



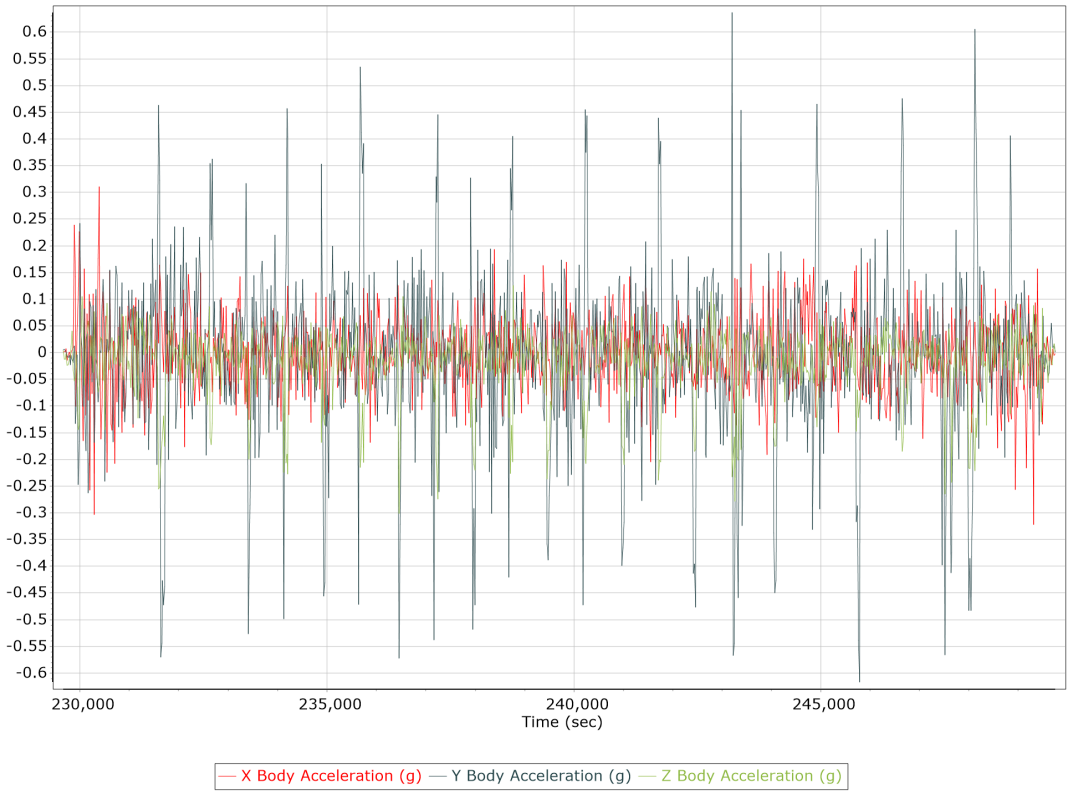
Total Speed



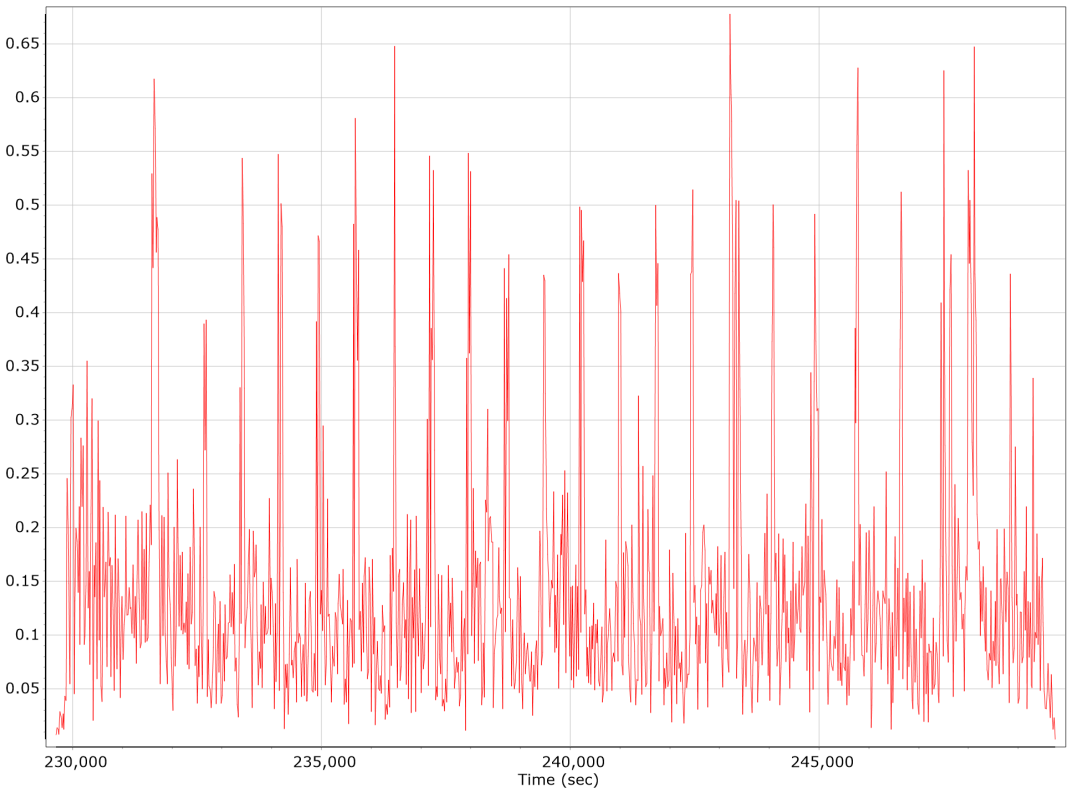
Ground Speed



Body Acceleration



Total Body Acceleration

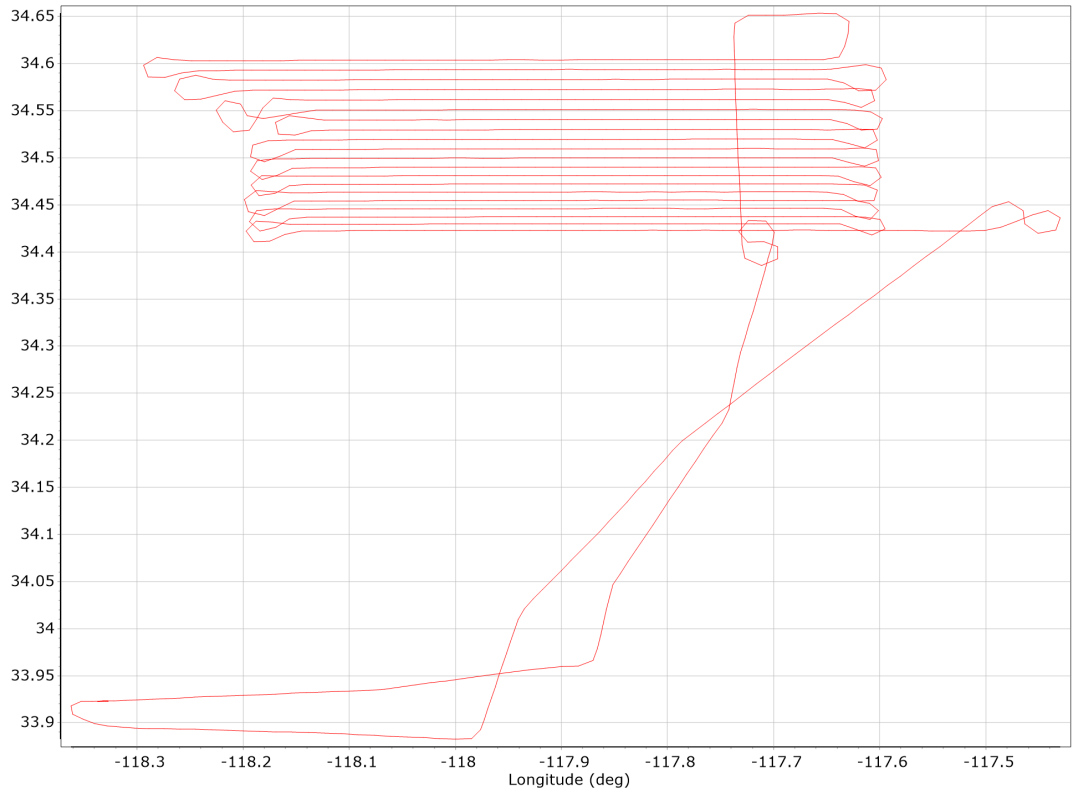


Body Angular Rate

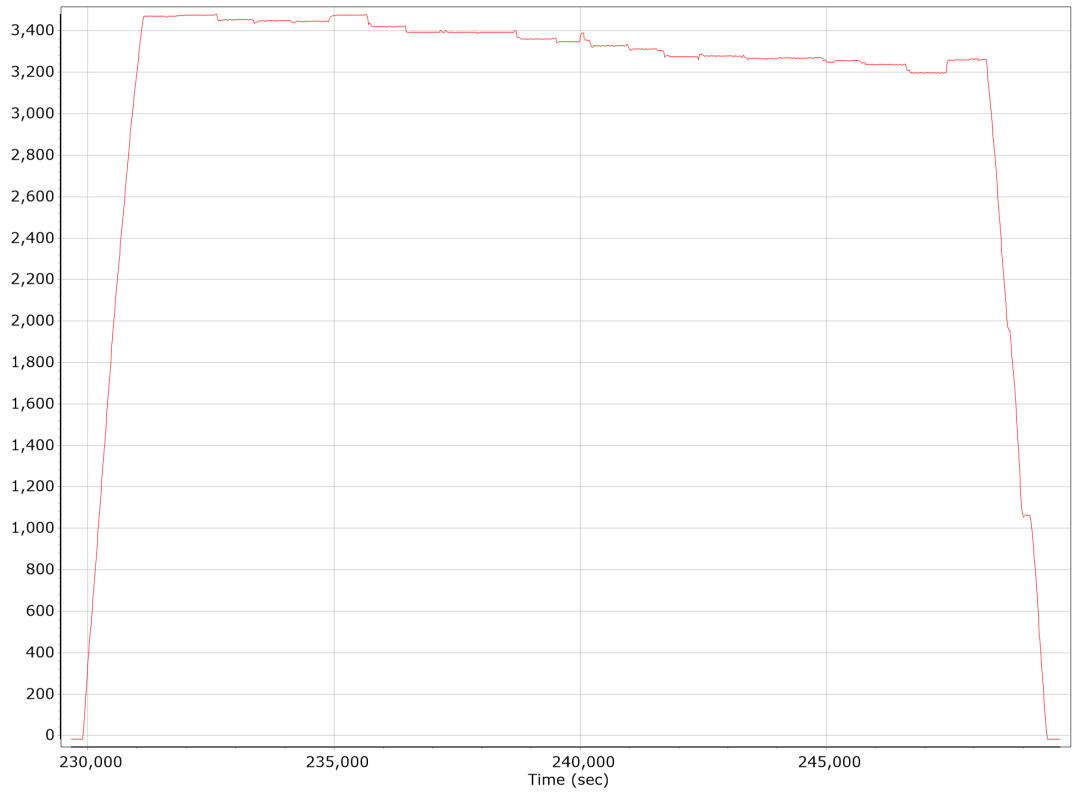


Forward Processed Trajectory Information

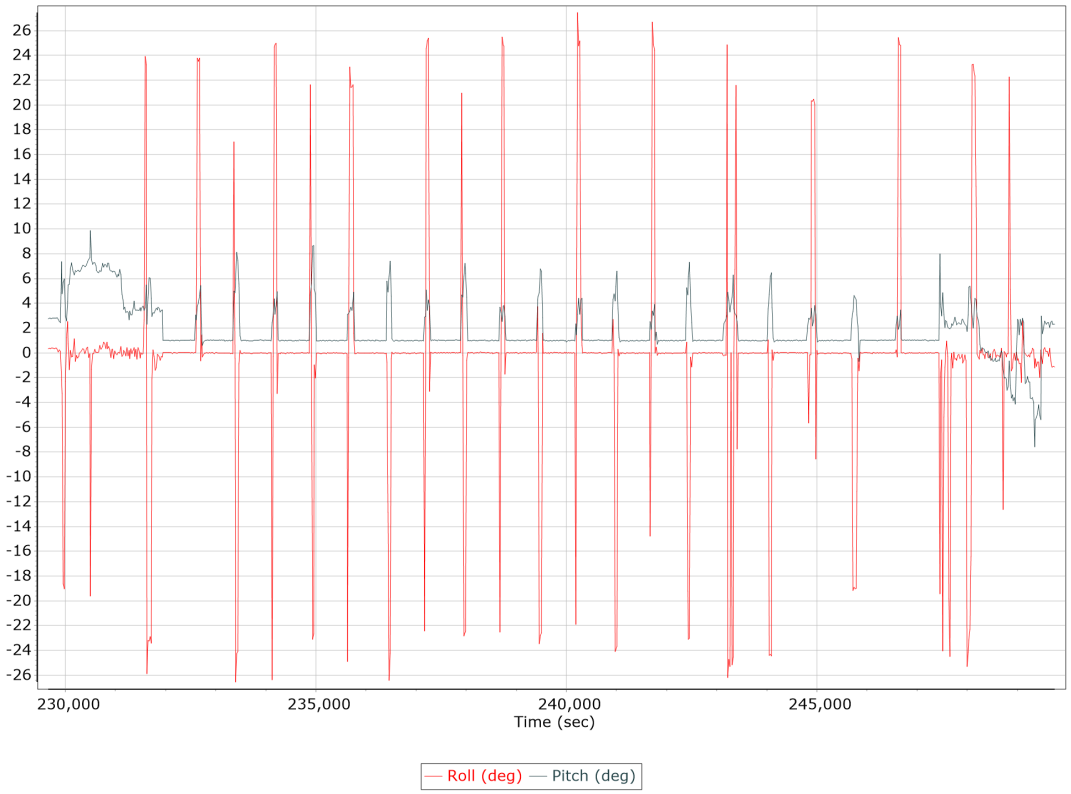
Top View



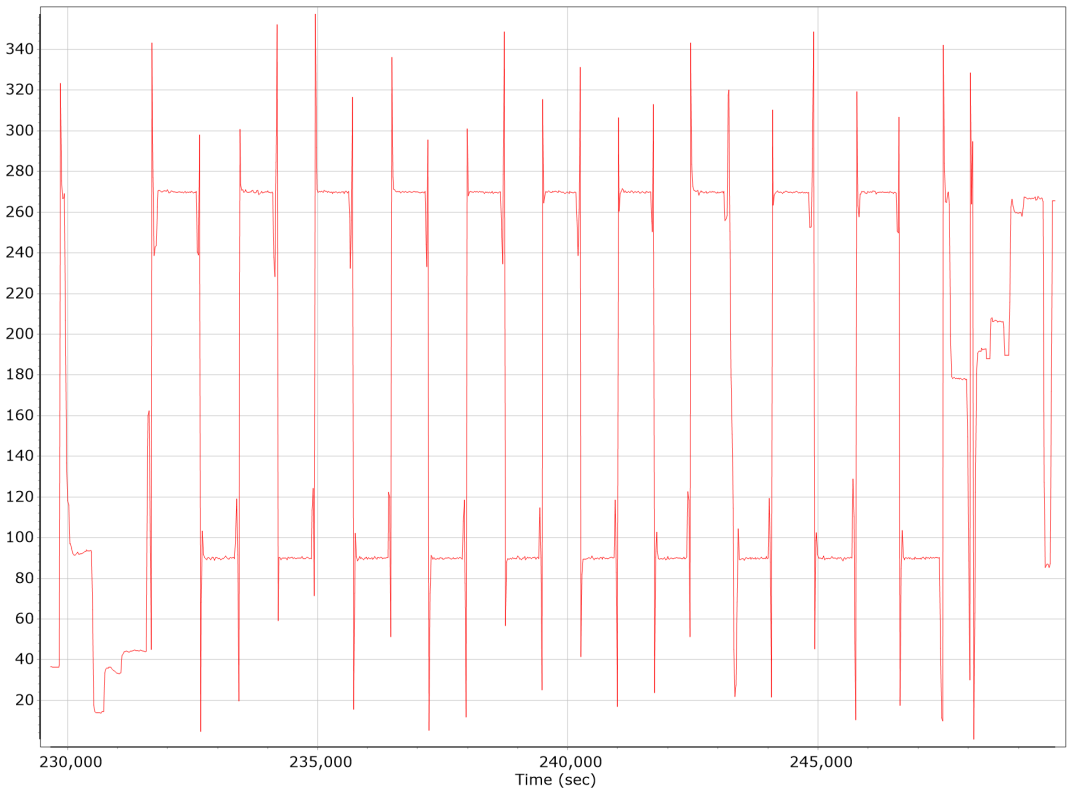
Altitude



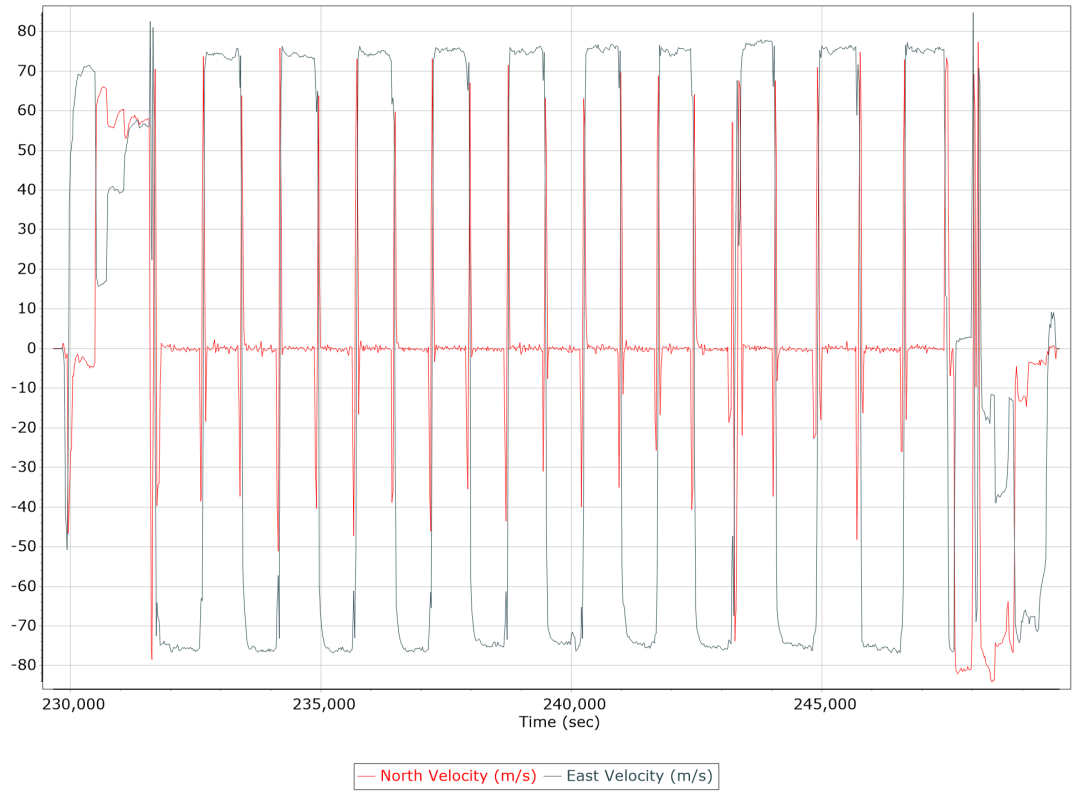
Roll/Pitch



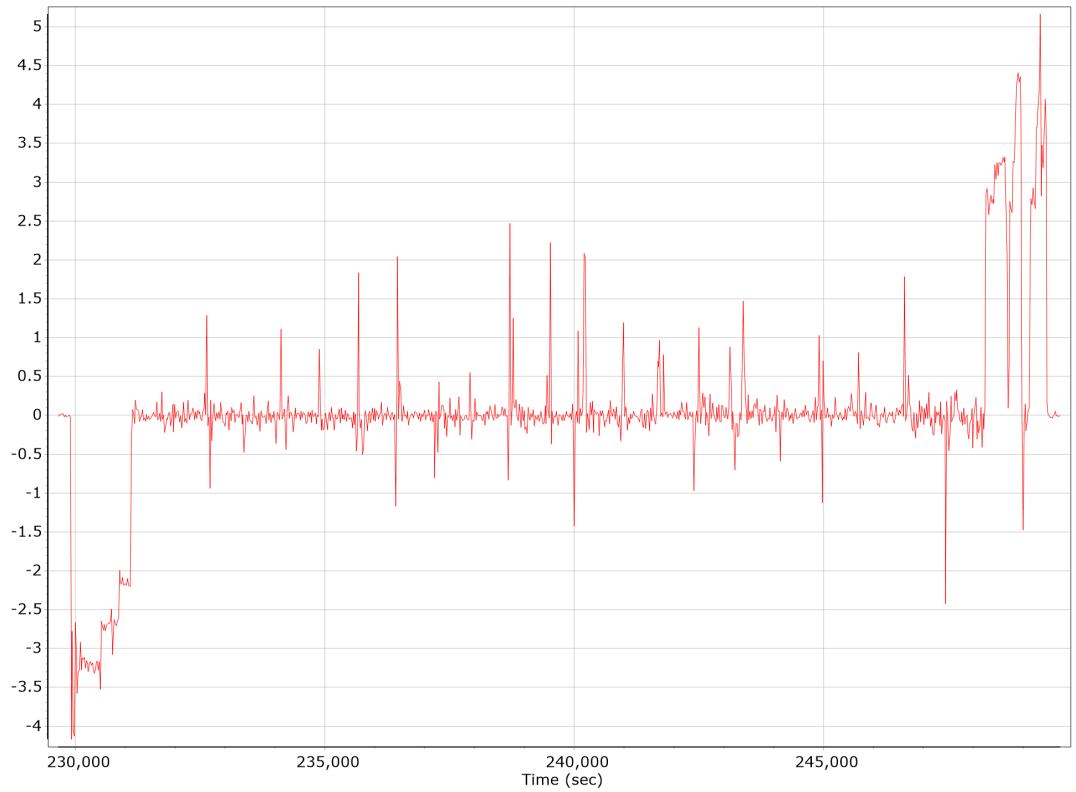
Heading



North/East Velocity



Down Velocity



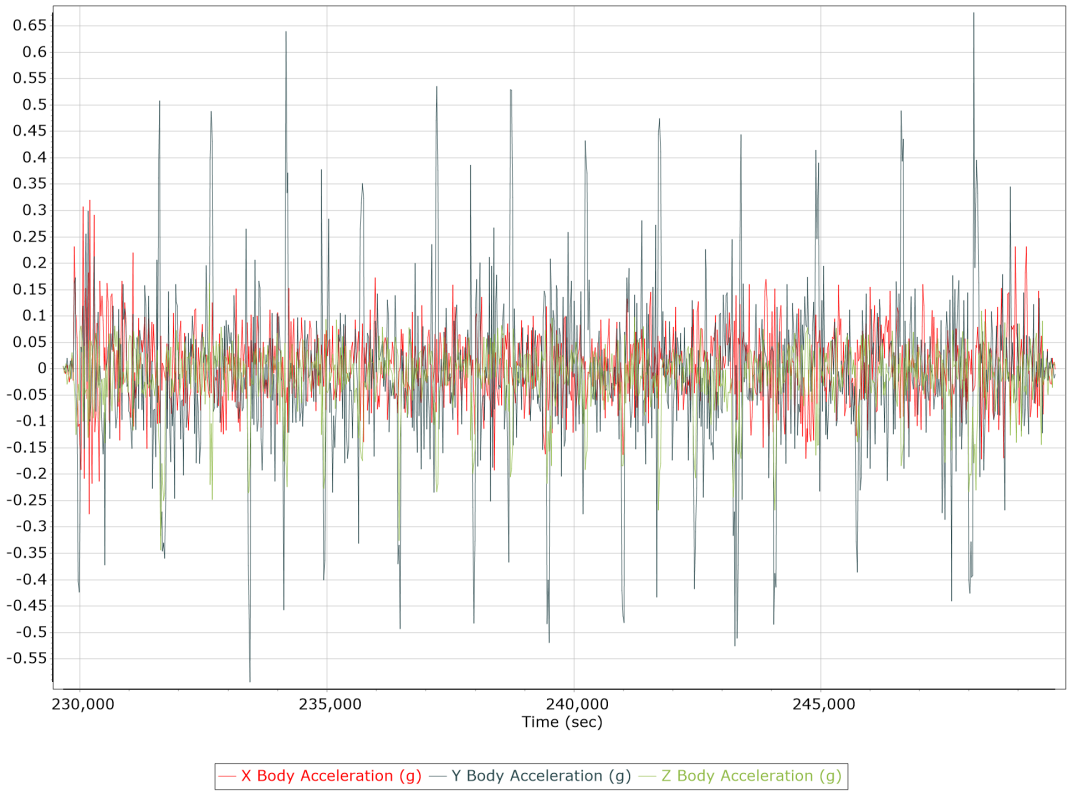
Total Speed



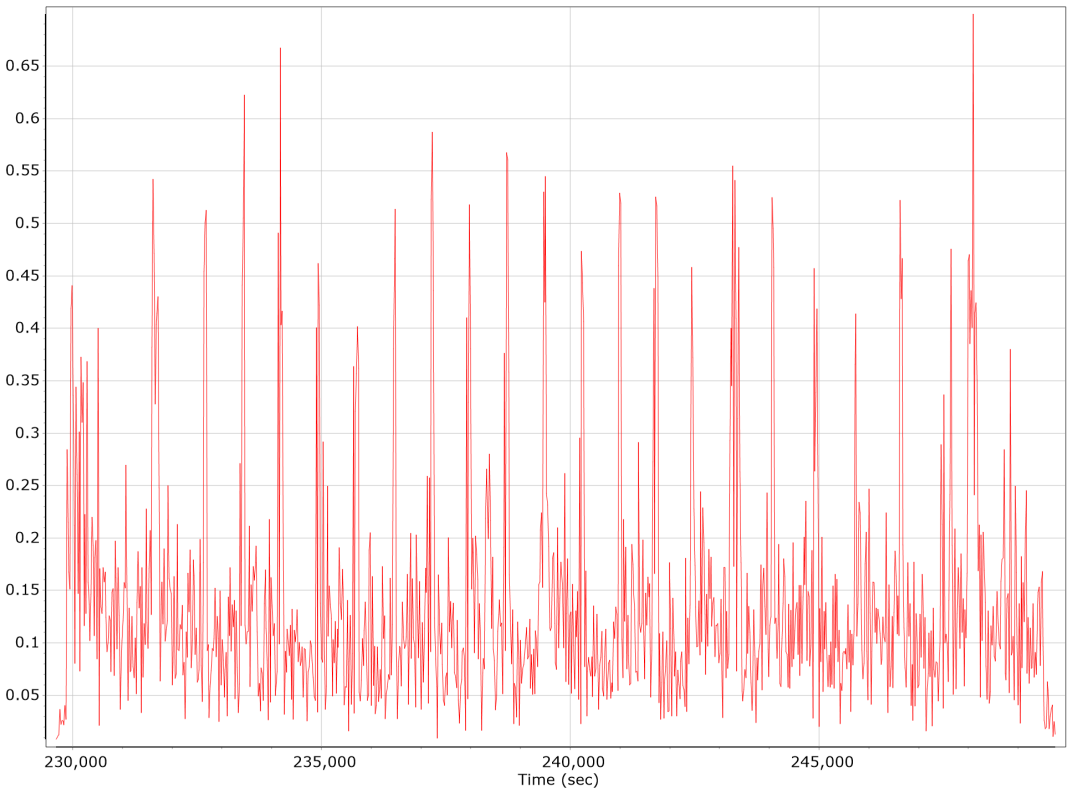
Ground Speed



Body Acceleration



Total Body Acceleration



Body Angular Rate

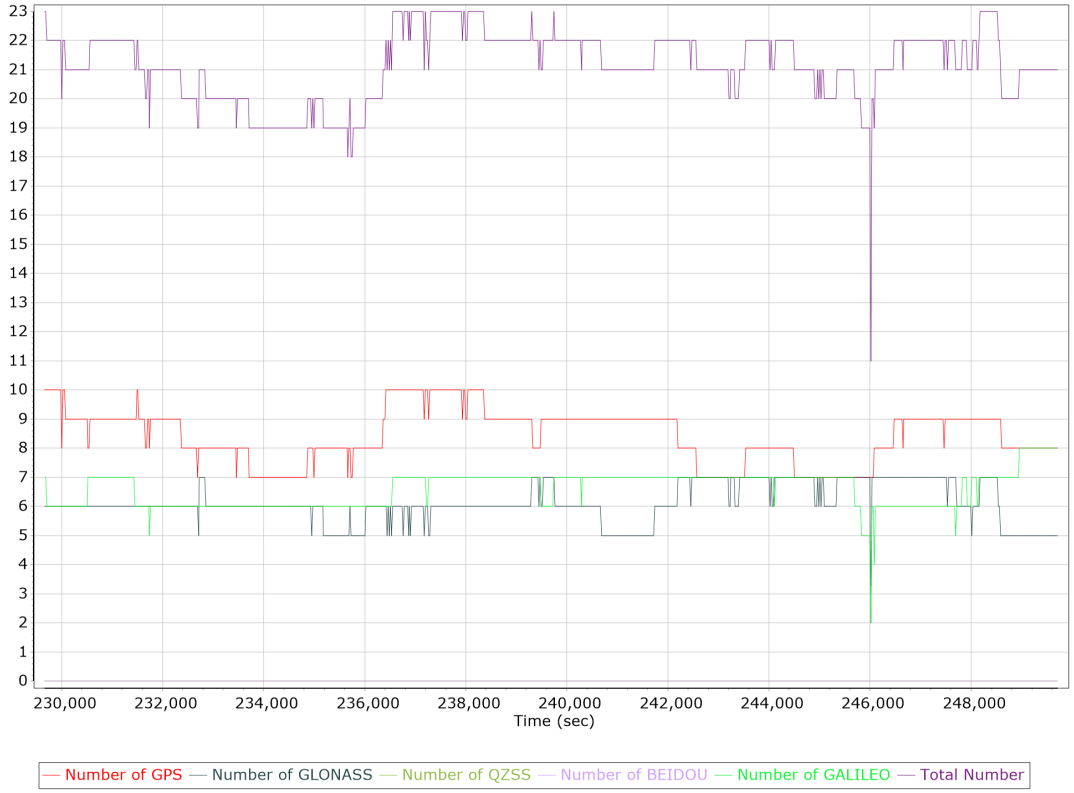


GNSS QC

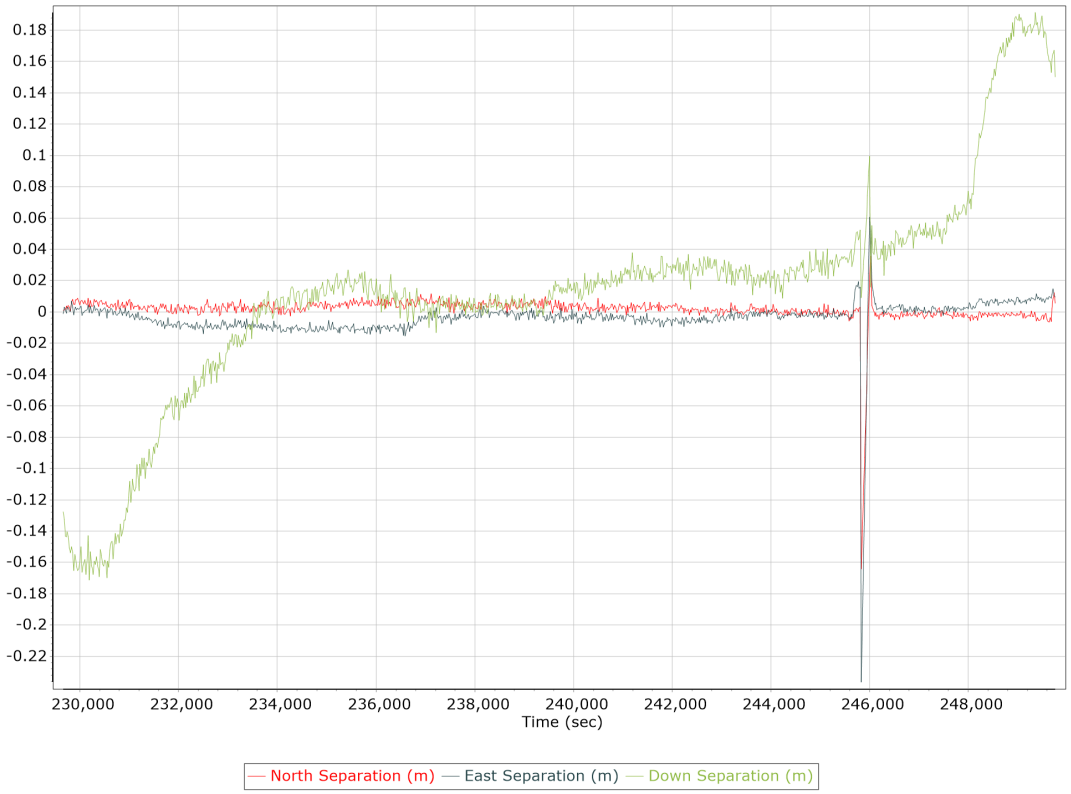
GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	6	10	8
Number of GLONASS SV	0	7	6
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	2	8	7
Total number of SV	9	23	21
PDOP	1.00	2.02	1.18
QC Solution Gaps	0.00	0.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	20304.00	0.00	0.00
Percentage	100.00	0.00	0.00

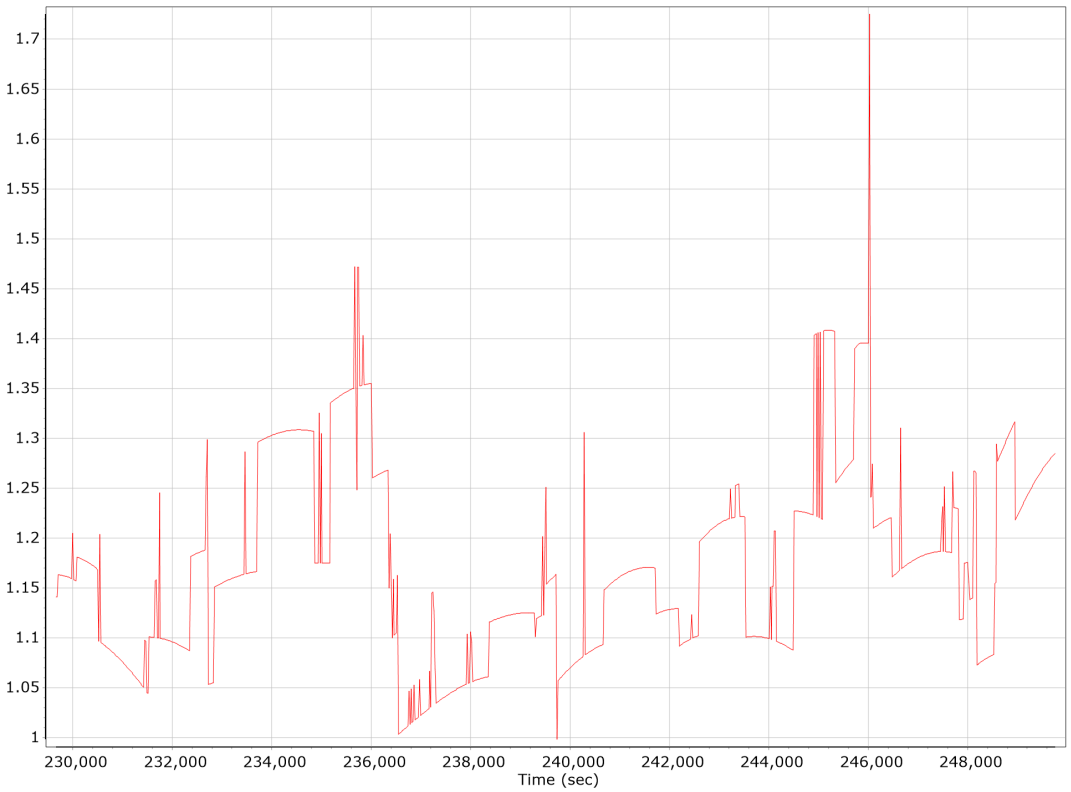
Num SVs in solution



Forward/Reverse Separation



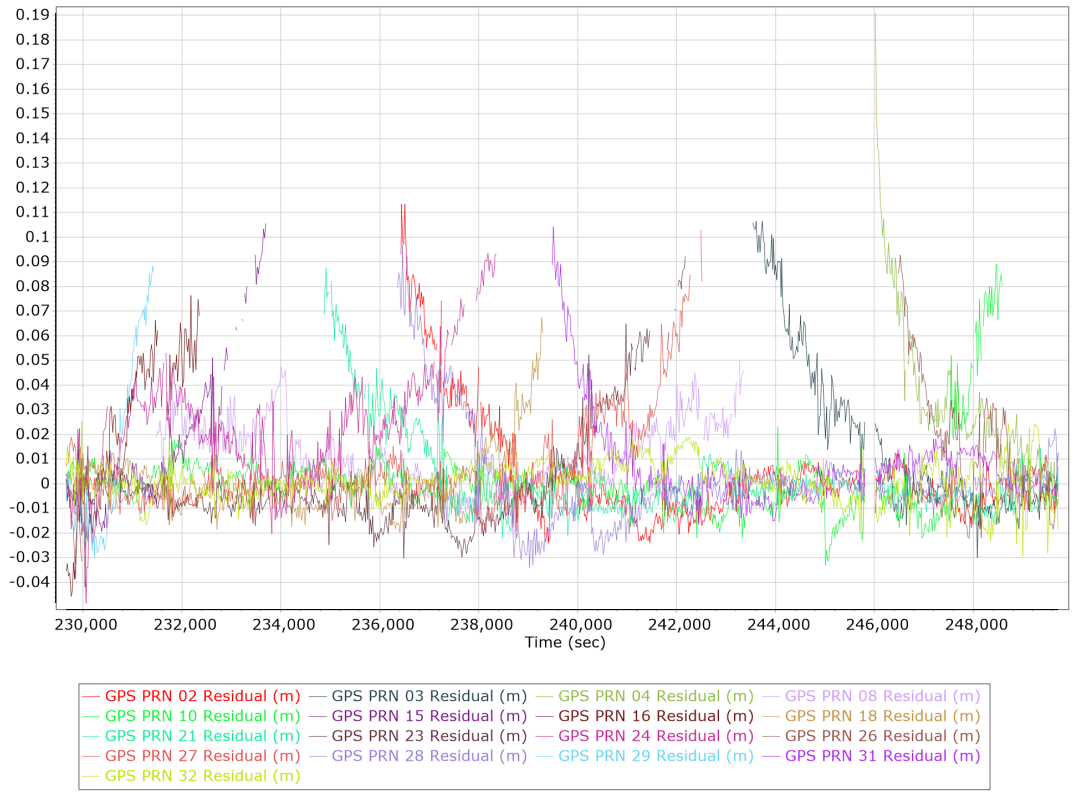
PDOP



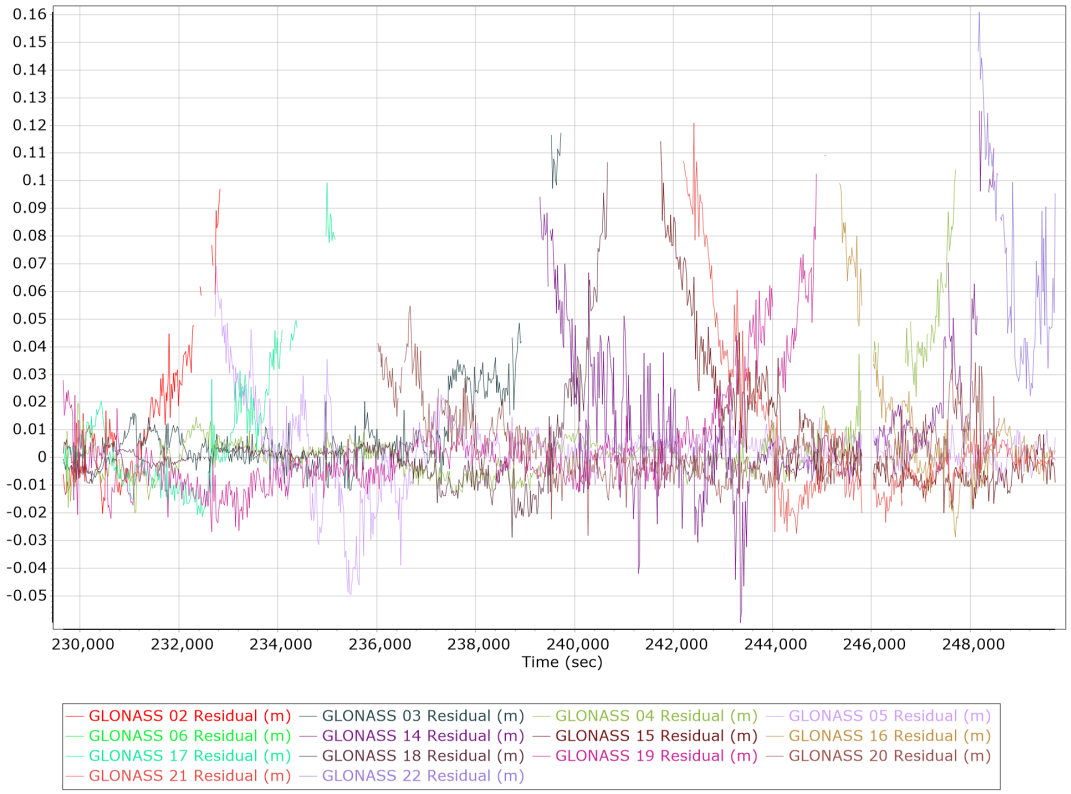
Estimated Position Accuracy



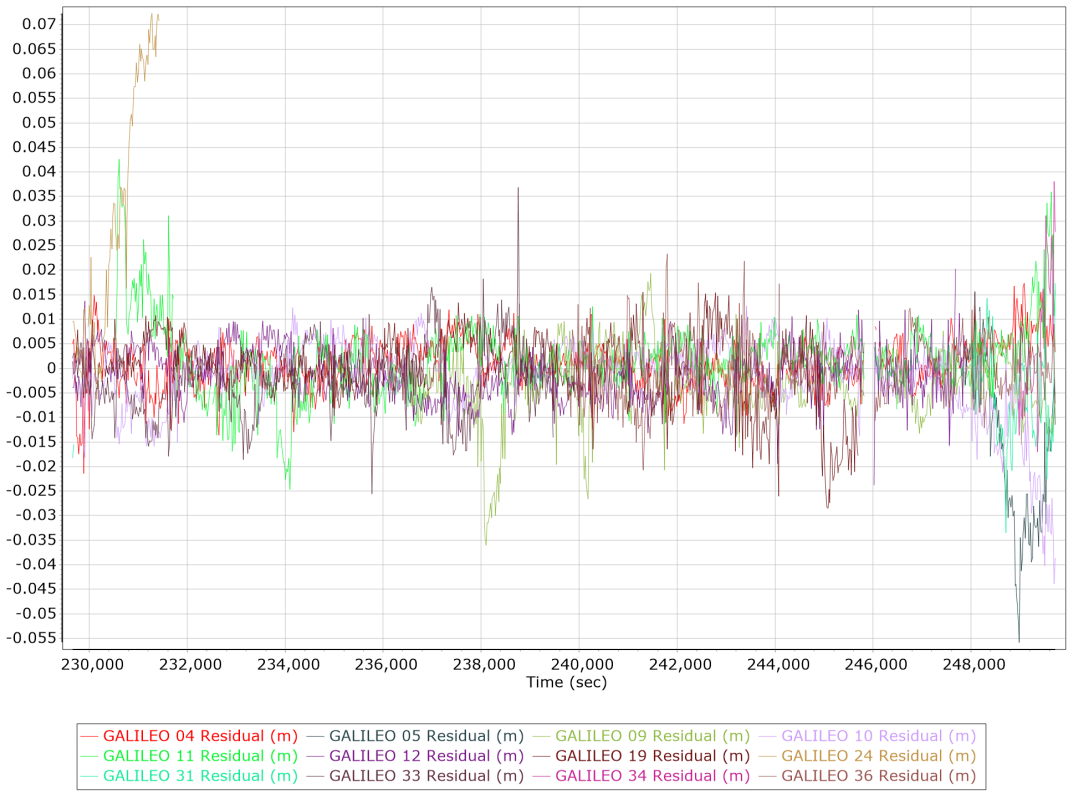
GPS Residuals



GLONASS Residuals



GALILEO Residuals



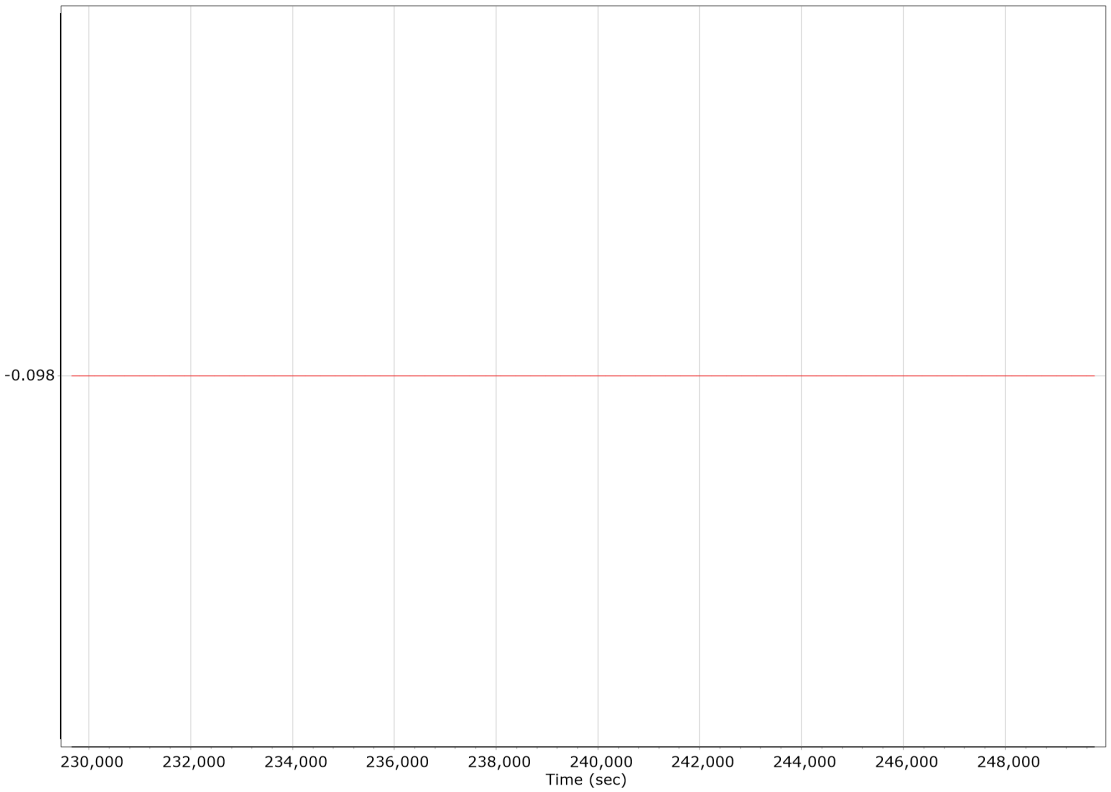
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	229405.000 (9/26/2023 3:43:25 PM)		
Processing end time	249762.000 (9/26/2023 9:22:42 PM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	-0.098	0.057	-1.221
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

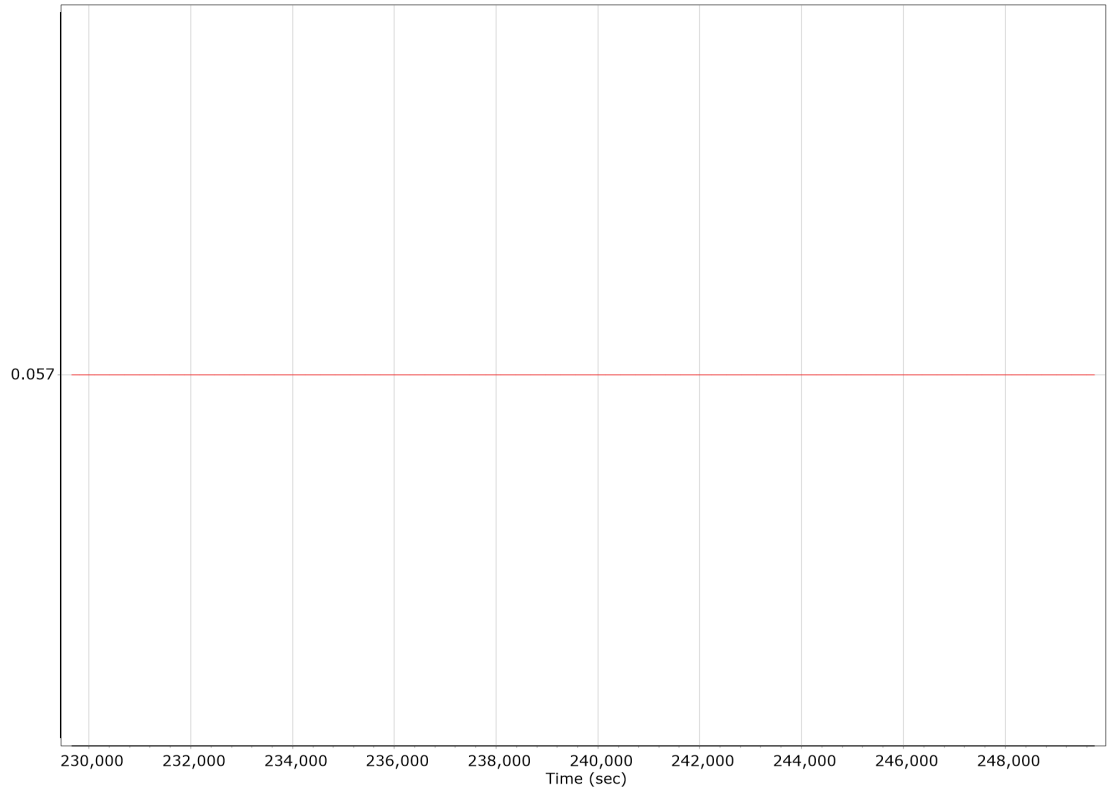
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

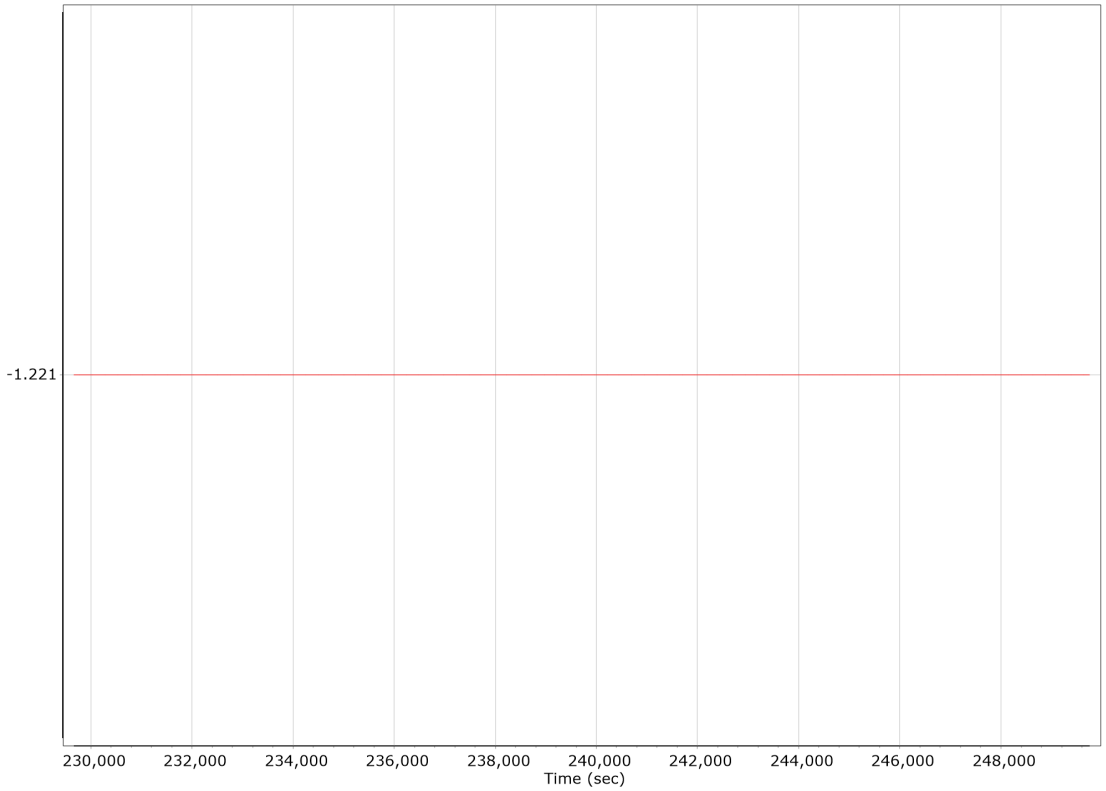
X Reference-Primary GNSS Lever Arm (m)



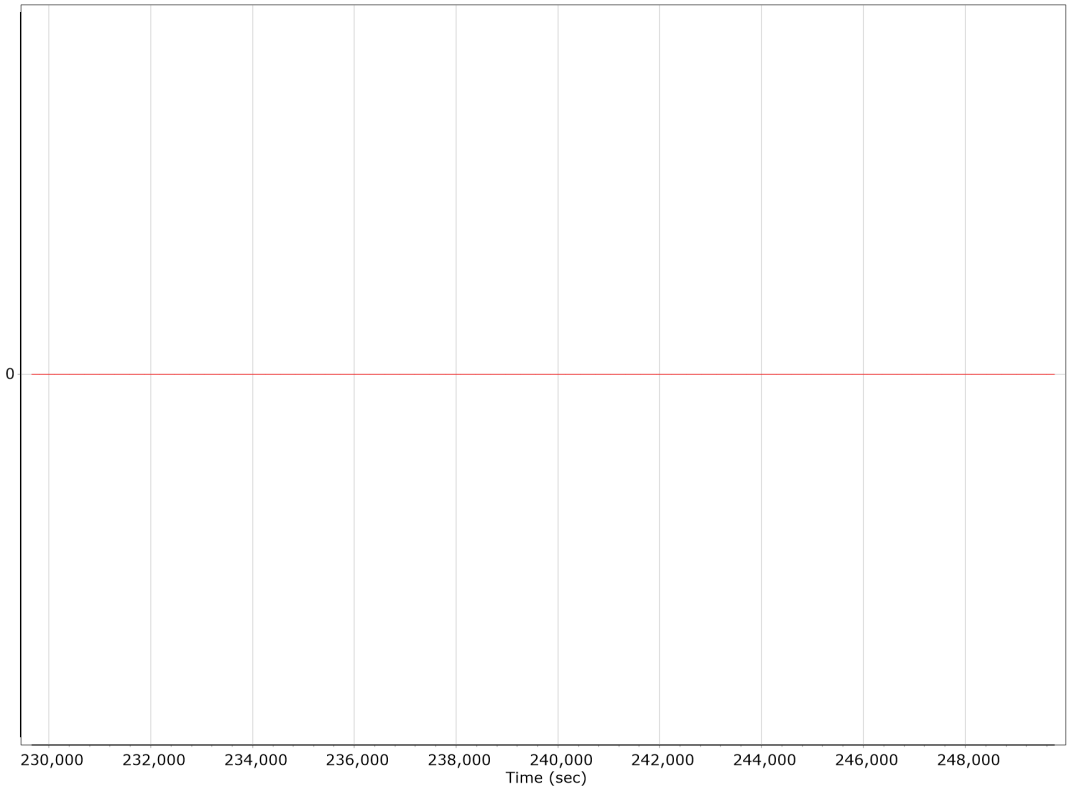
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



Reference-Primary GNSS Lever Arm Figure of Merit



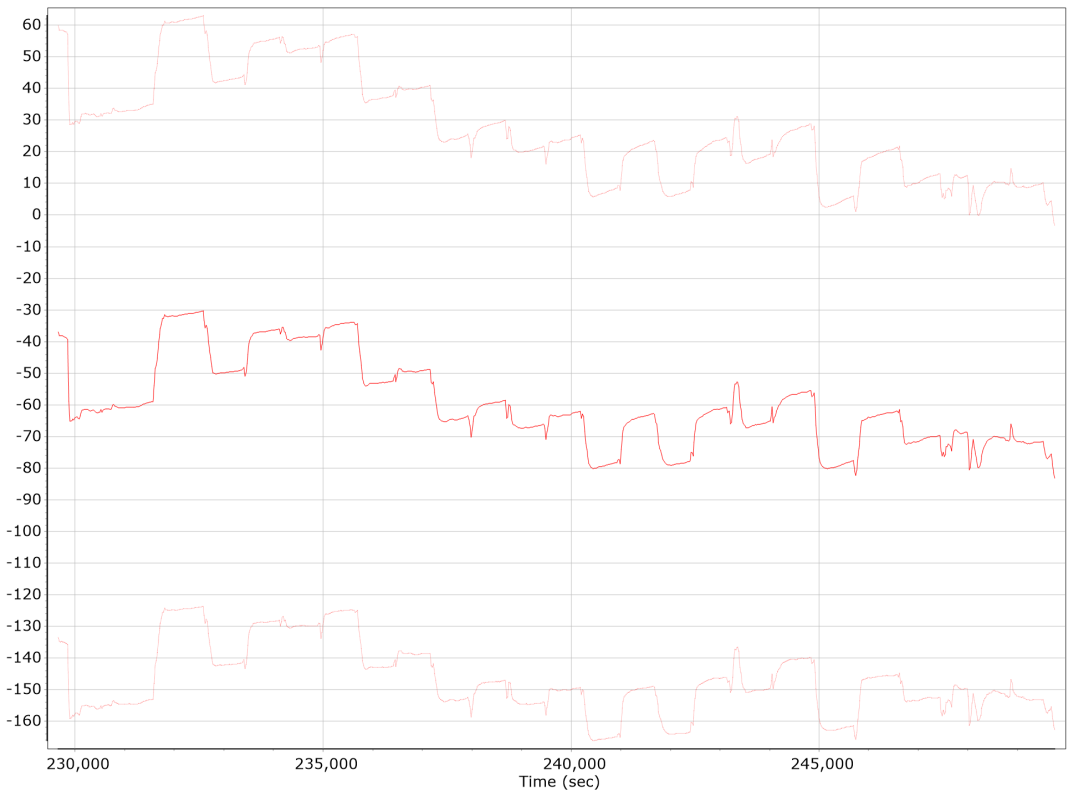
IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

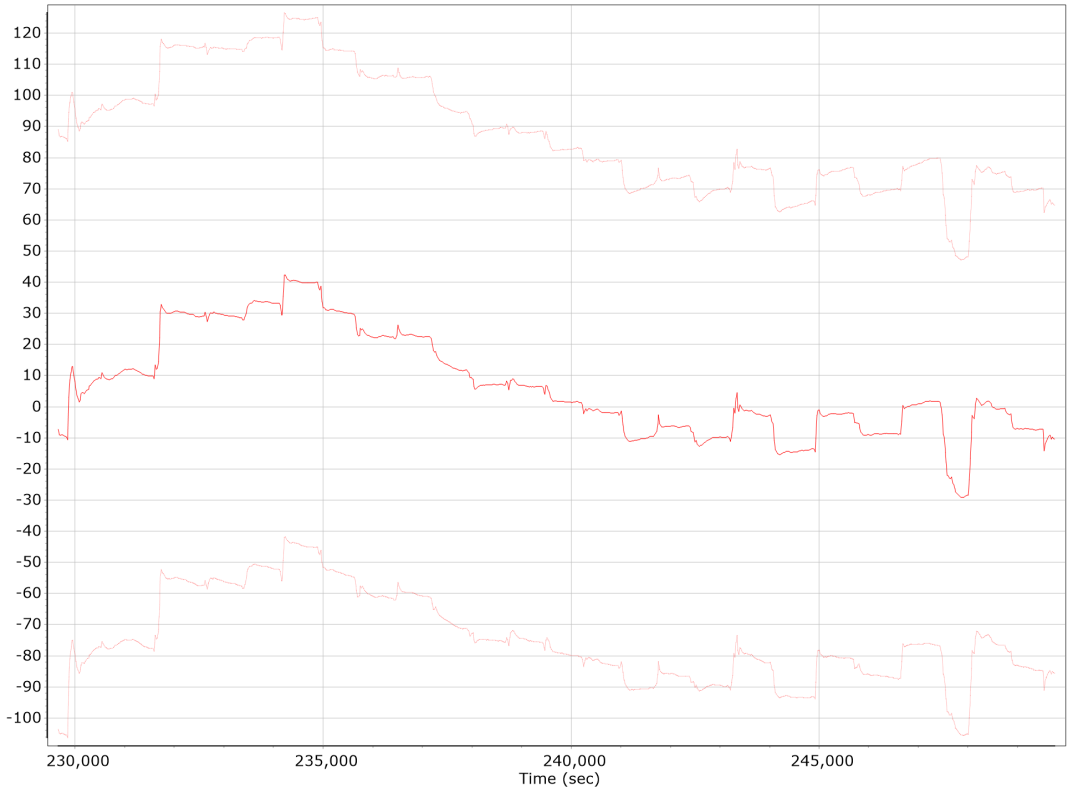
Accelerometer Bias (micro-g)



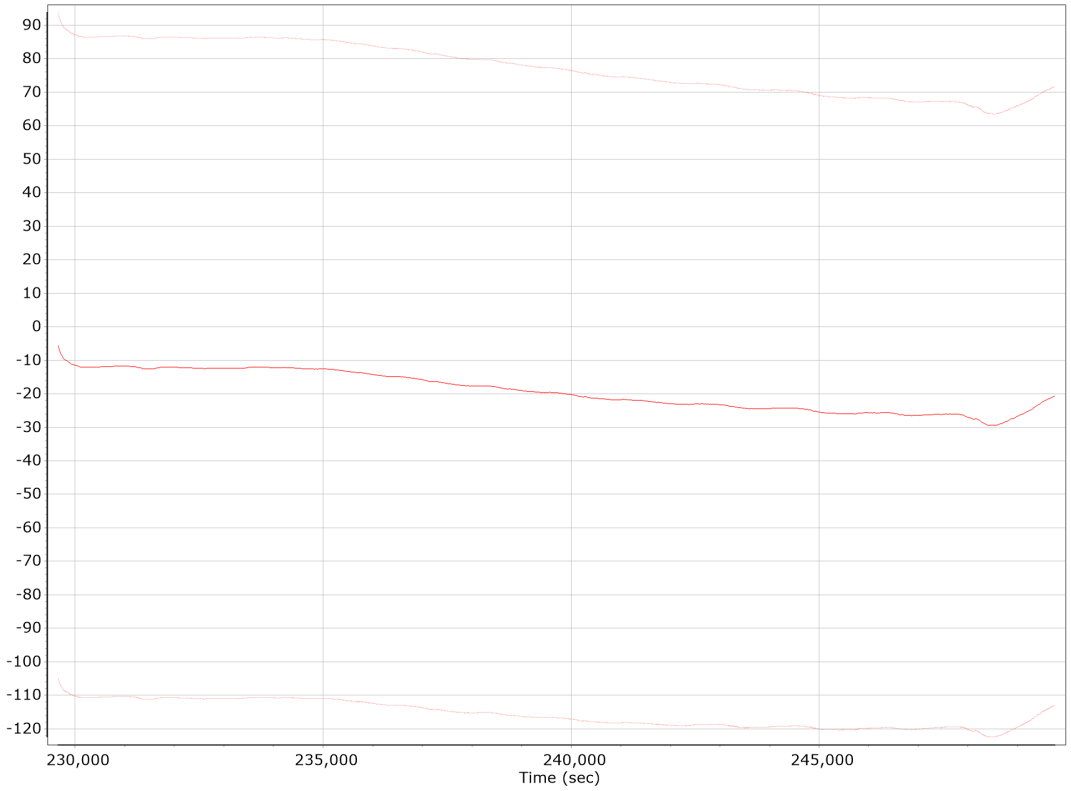
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



X Accelerometer Scale Error (ppm)



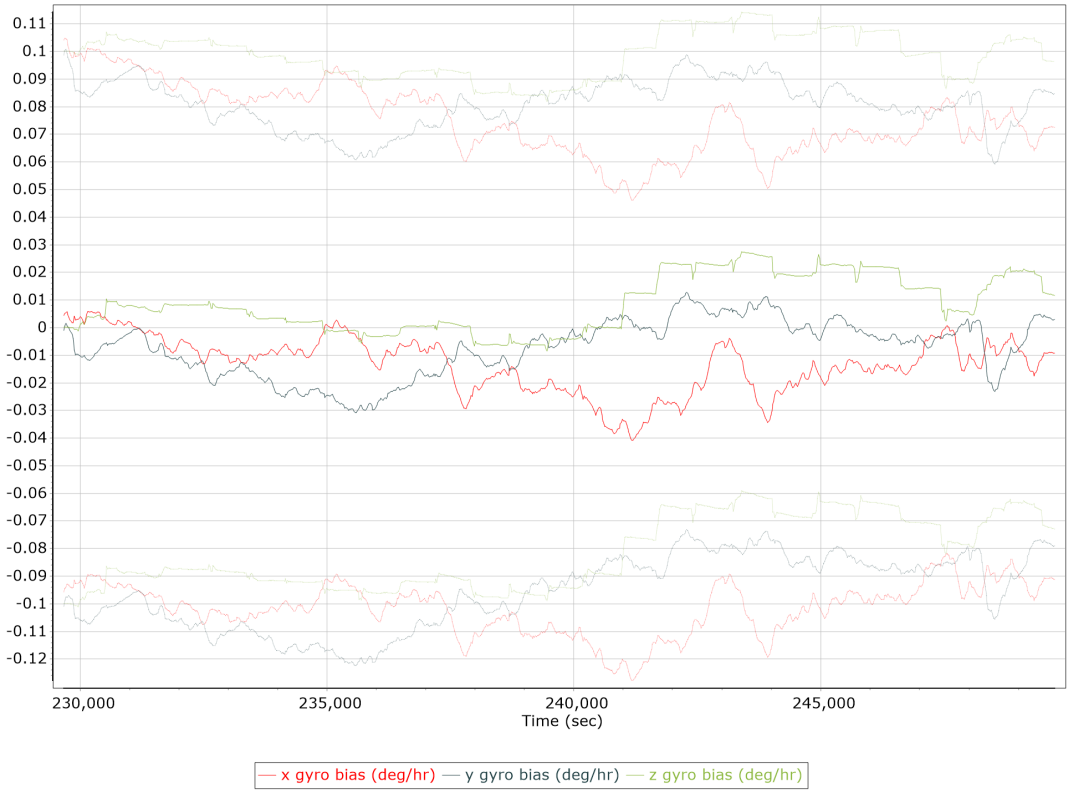
Y Accelerometer Scale Error (ppm)



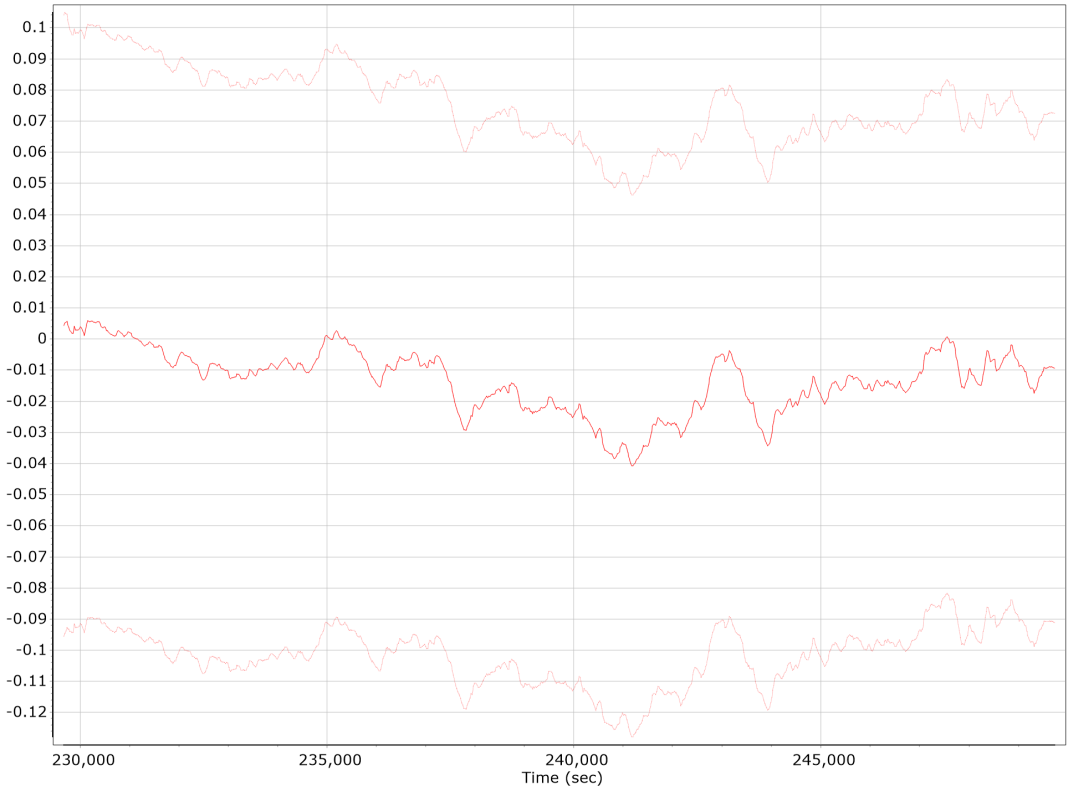
Z Accelerometer Scale Error (ppm)



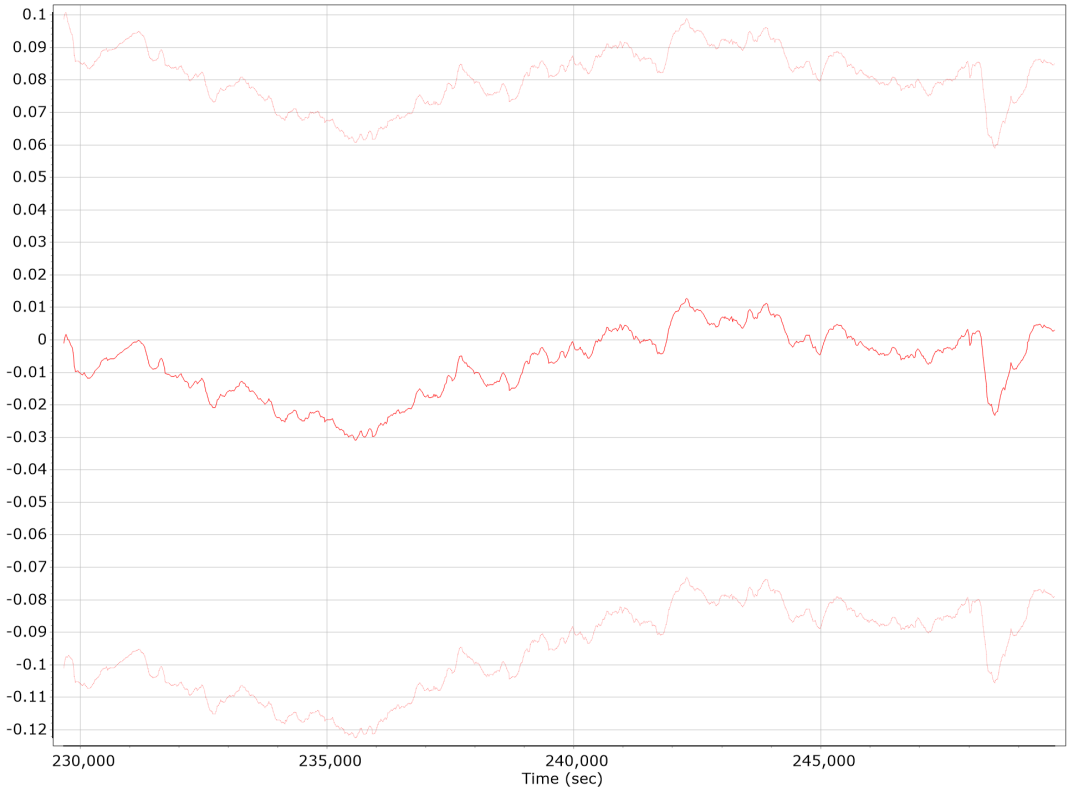
Gyro Bias (deg/h)



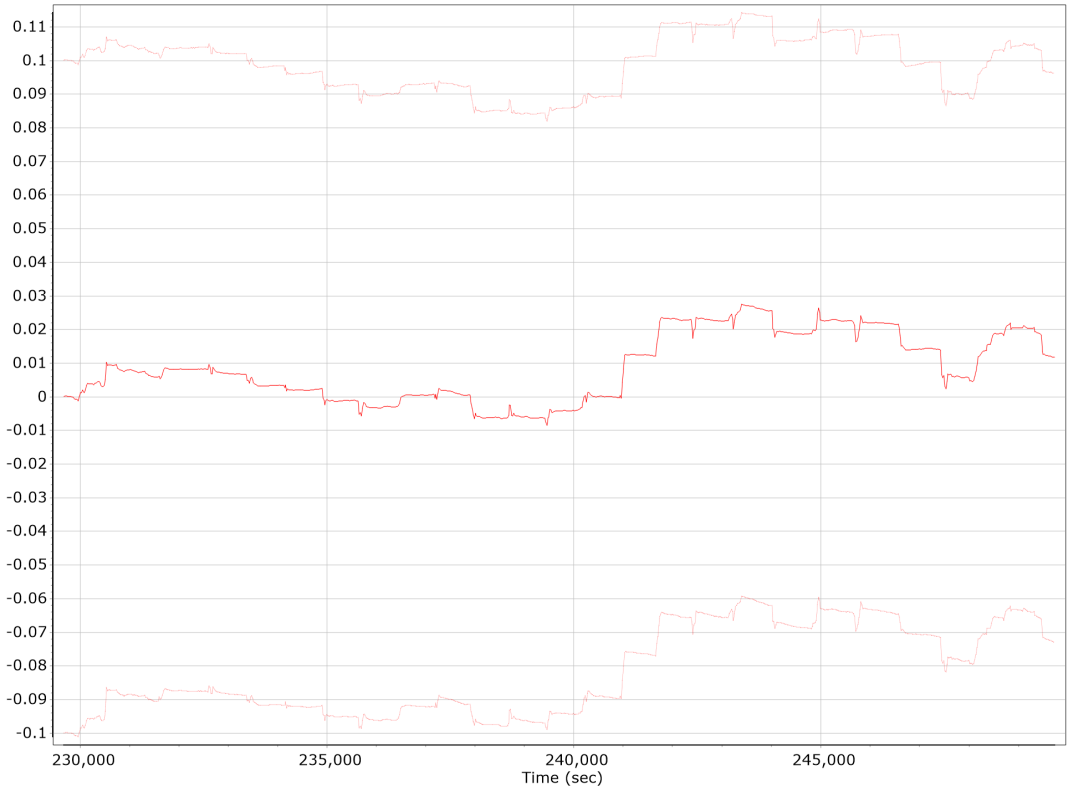
X Gyro Bias (deg/h)



Y Gyro Bias (deg/h)



Z Gyro Bias (deg/h)



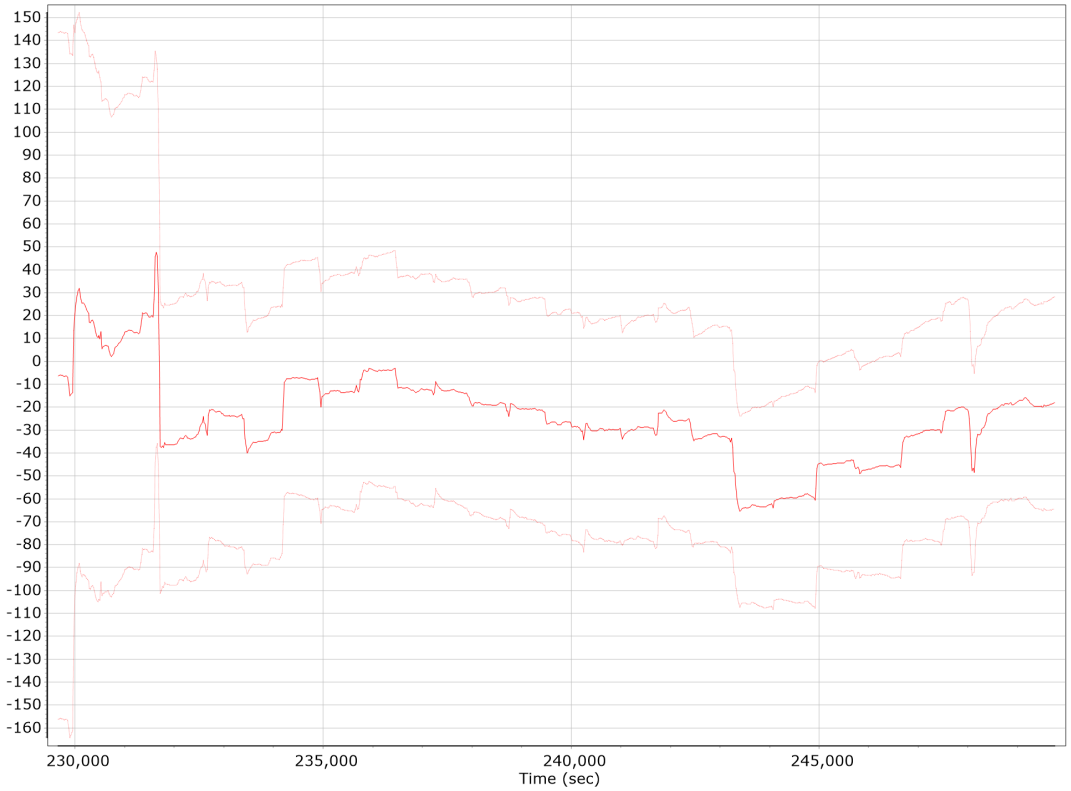
Gyro Scale Error (ppm)



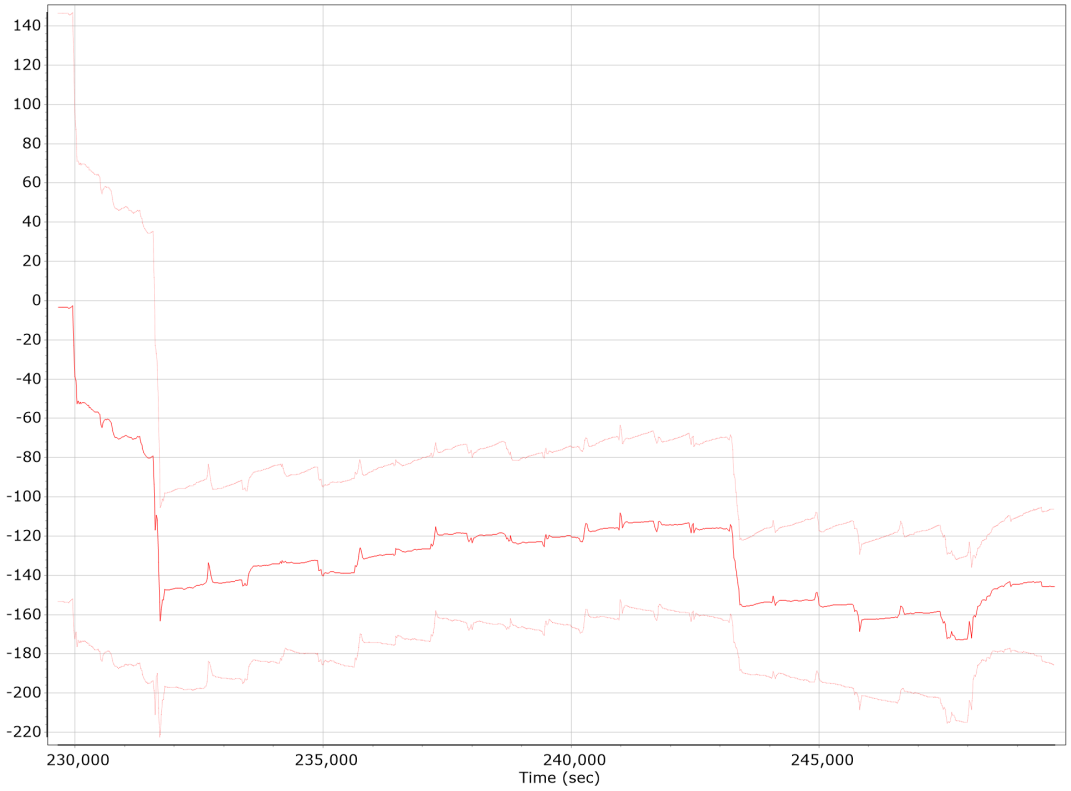
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)

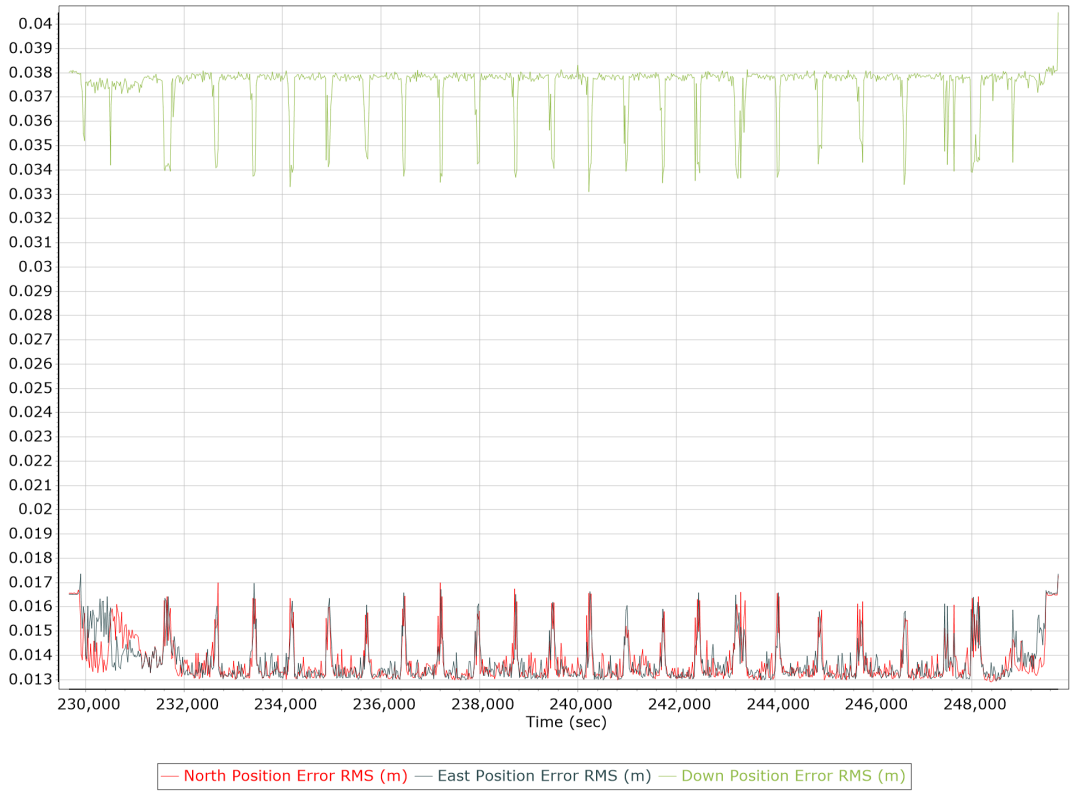


Z Gyro Scale Error (ppm)

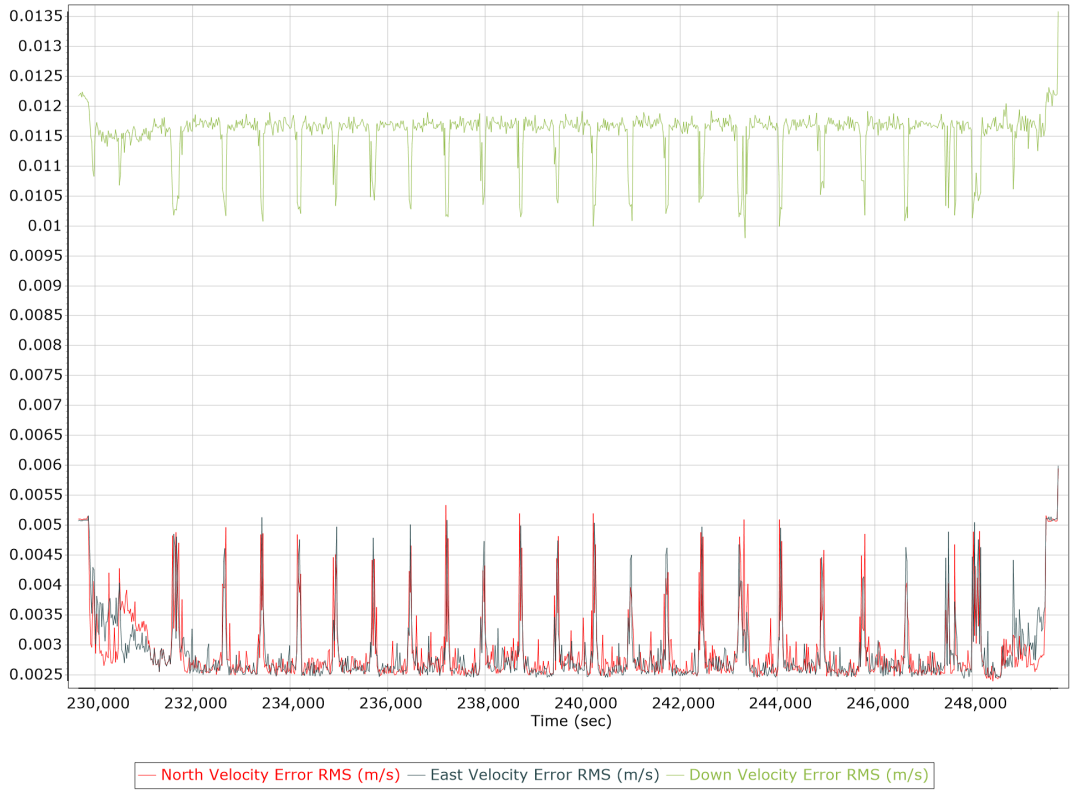


Smoothed Performance Metrics

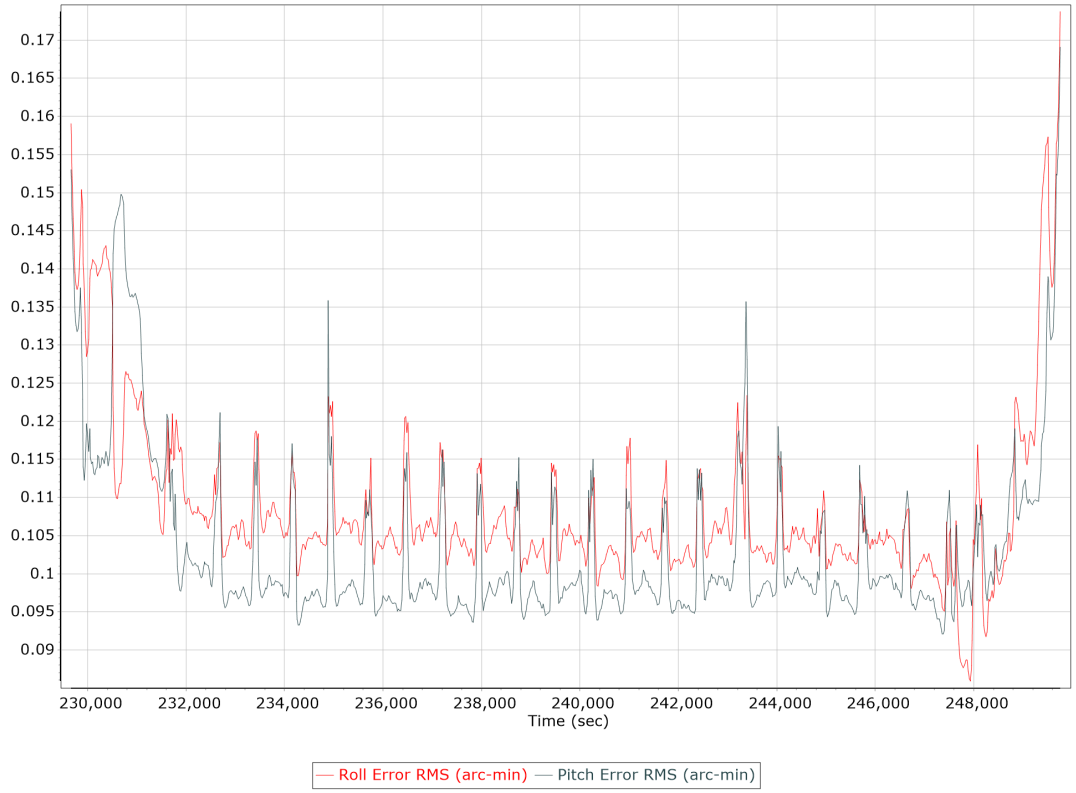
Position Error RMS (m)



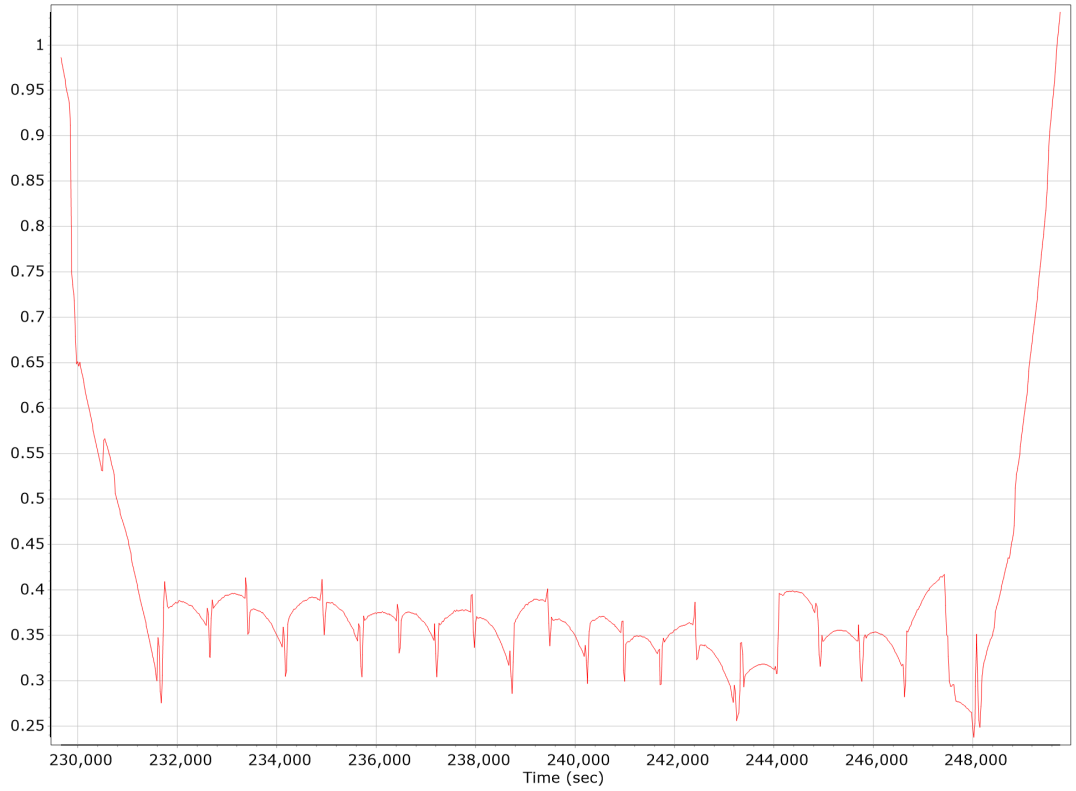
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

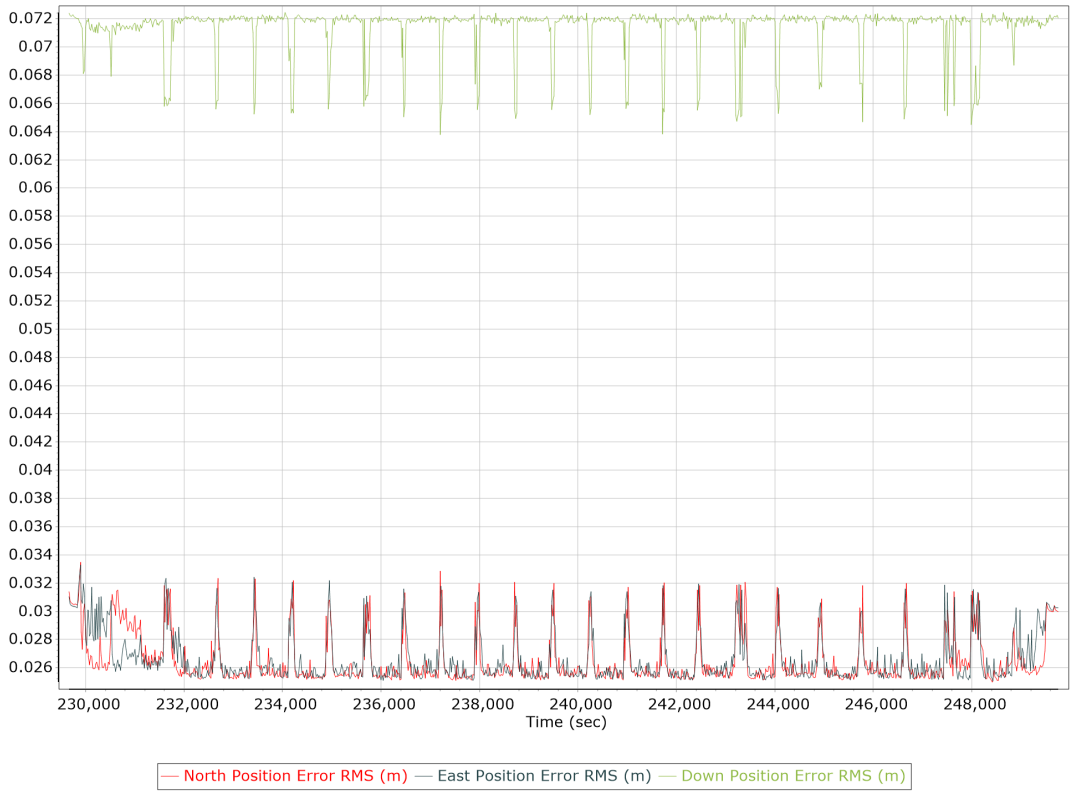


Heading Error RMS (arc-min)

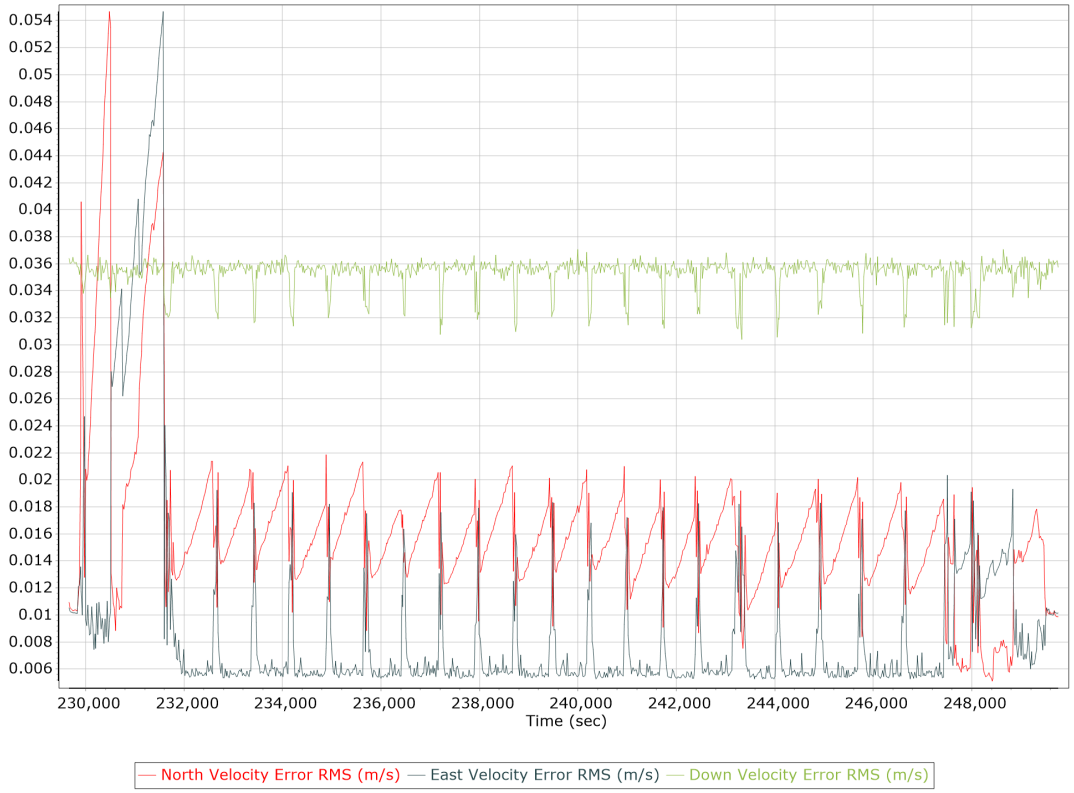


Forward Processed Performance Metrics

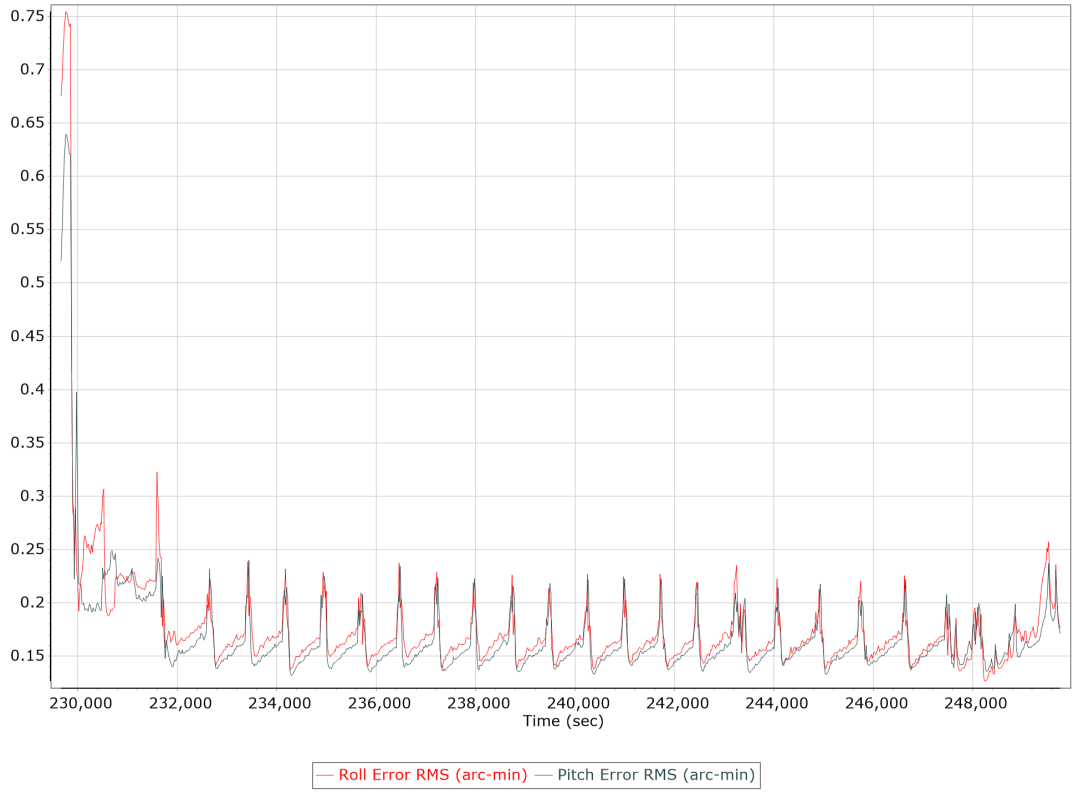
Position Error RMS (m)



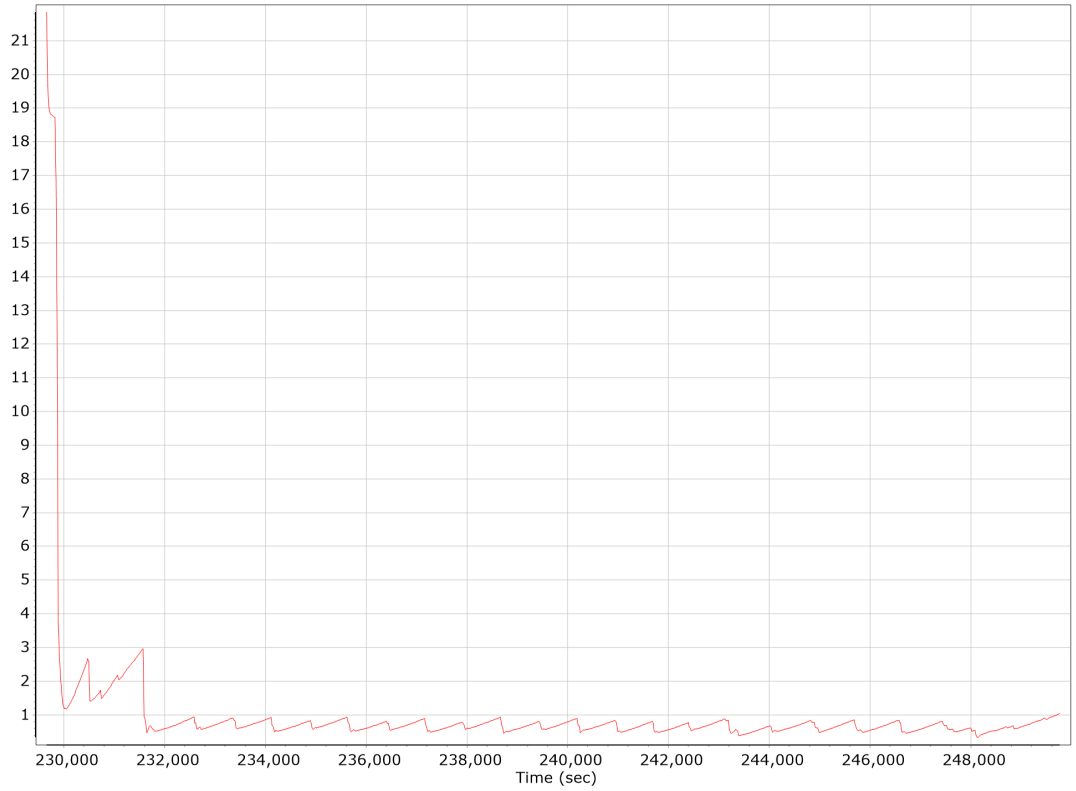
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

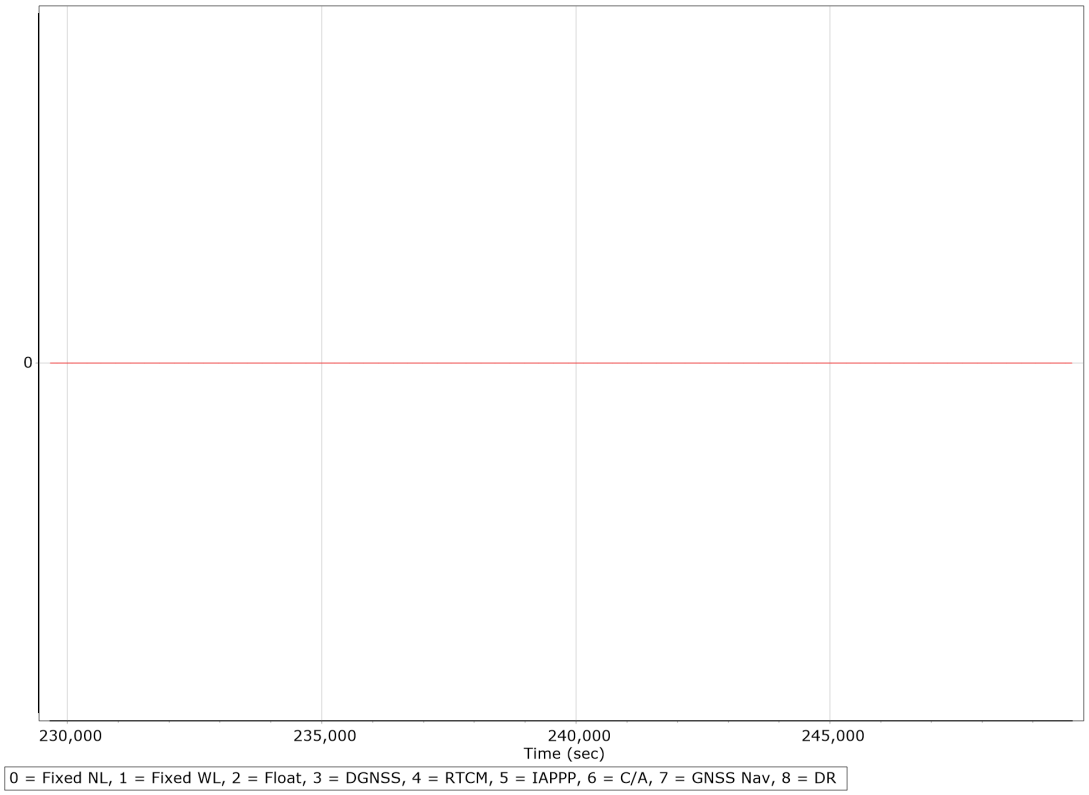


Heading Error RMS (arc-min)

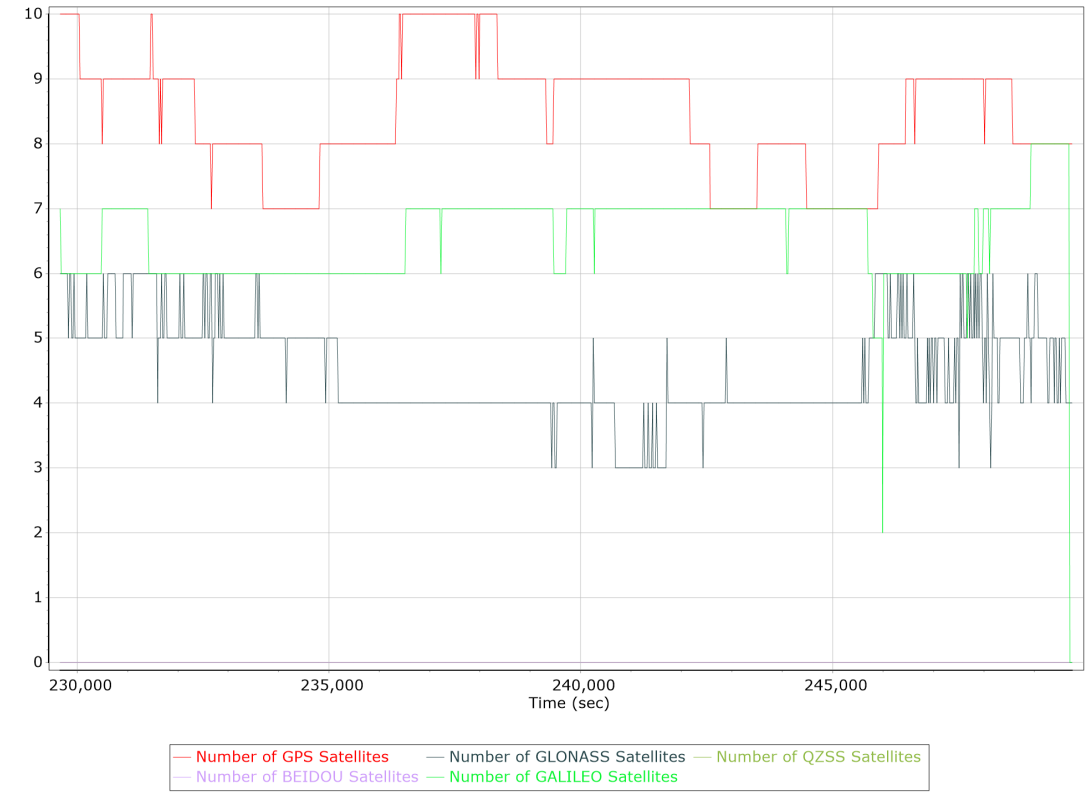


Forward Processed Solution Status

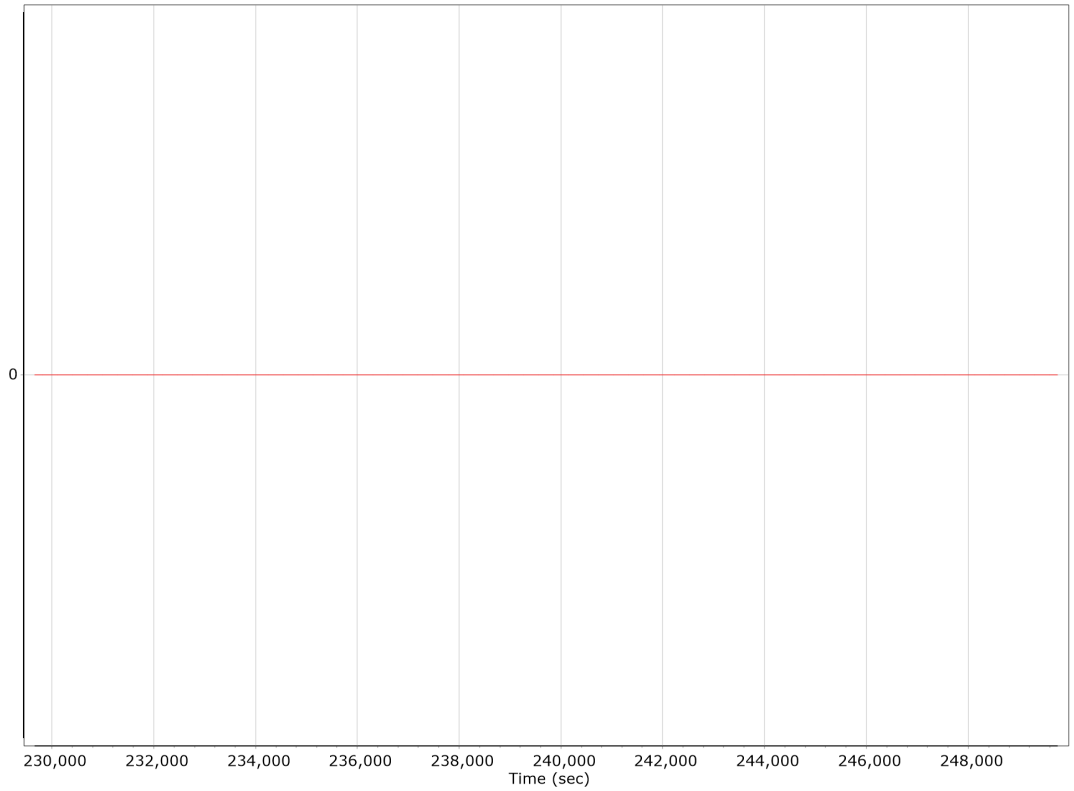
Processing Mode



Number of Satellites



Baseline Length



General Information

Mission Information

Project name	09262023B_4040
Processing date	2024-01-10 20:50:51
Mission date	2023-09-26 18:30:11
Mission duration	00:57:41.637
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N10451
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
230926_182953_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm2690.23g	GLONASS Broadcast Ephemeris
Ephm2690.23n	GPS Broadcast Ephemeris
IGS0OPSFIN_20232680000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232690000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232700000_01D_15M_ORB.SP3	GPS Precise Ephemeris

Output Files

Filename	File type
sbet_09262023B_4040.out	SBET Trajectory File

Rover Data Summary

First raw data file	230926_182953_INS-GPS_1.raw		
Last raw data file	230926_182953_INS-GPS_1.raw		
Start GPS week	2281		
Start time	239392.479 (9/26/2023 6:29:52 PM)		
End time	242854.116 (9/26/2023 7:27:34 PM)		
Start of fine alignment	239416.189 (9/26/2023 6:30:16 PM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.000	0.000	-0.900
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

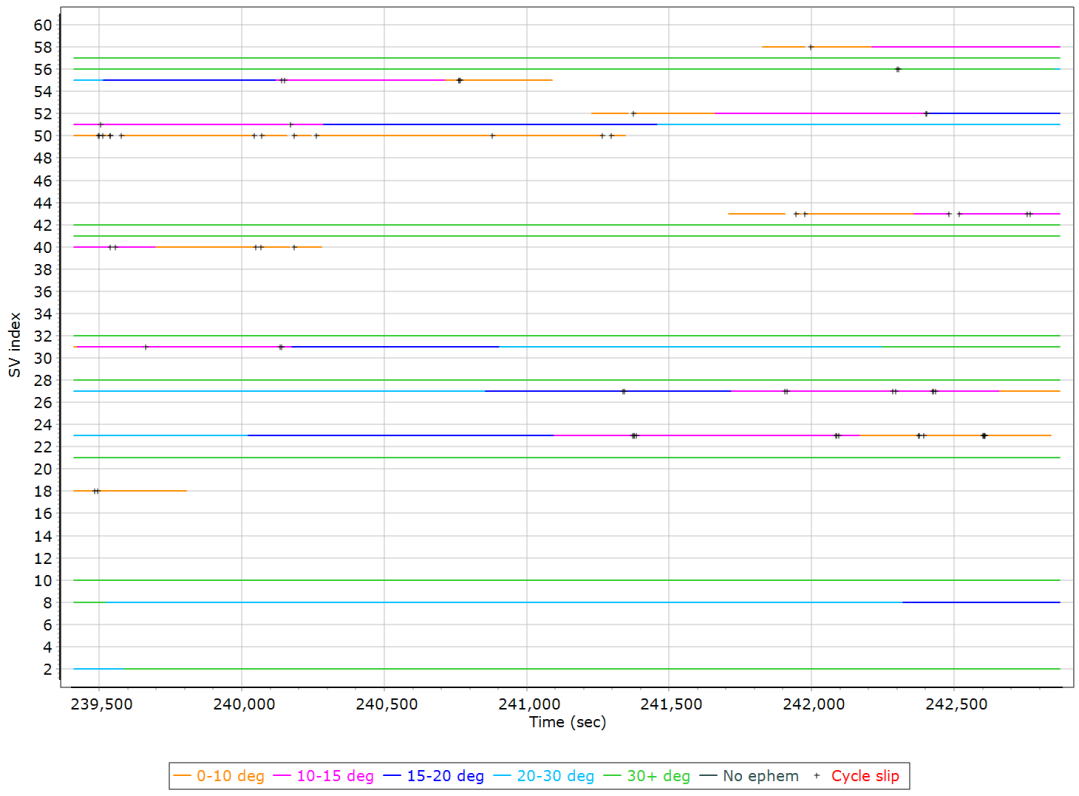
Rover Data QC

Raw IMU Import QC Summary

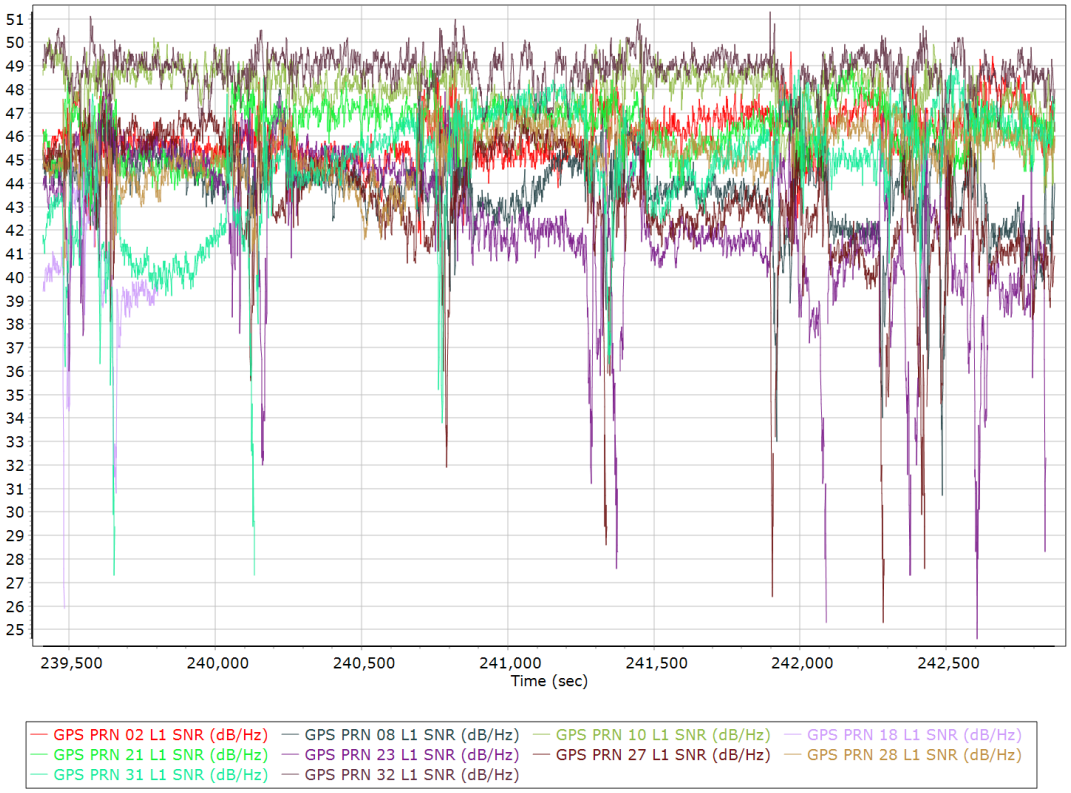
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_09262023B_4040.log
IMU Records Processed	692207
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

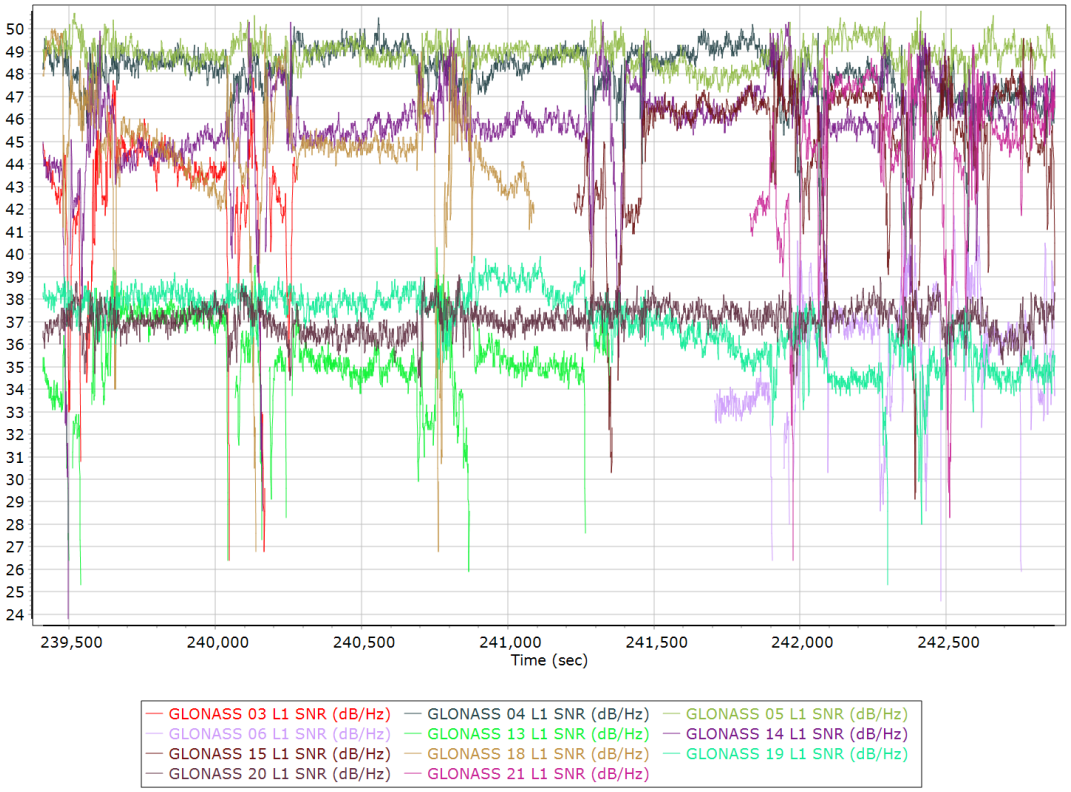
GPS/GLONASS L1 Satellite Lock/Elevation



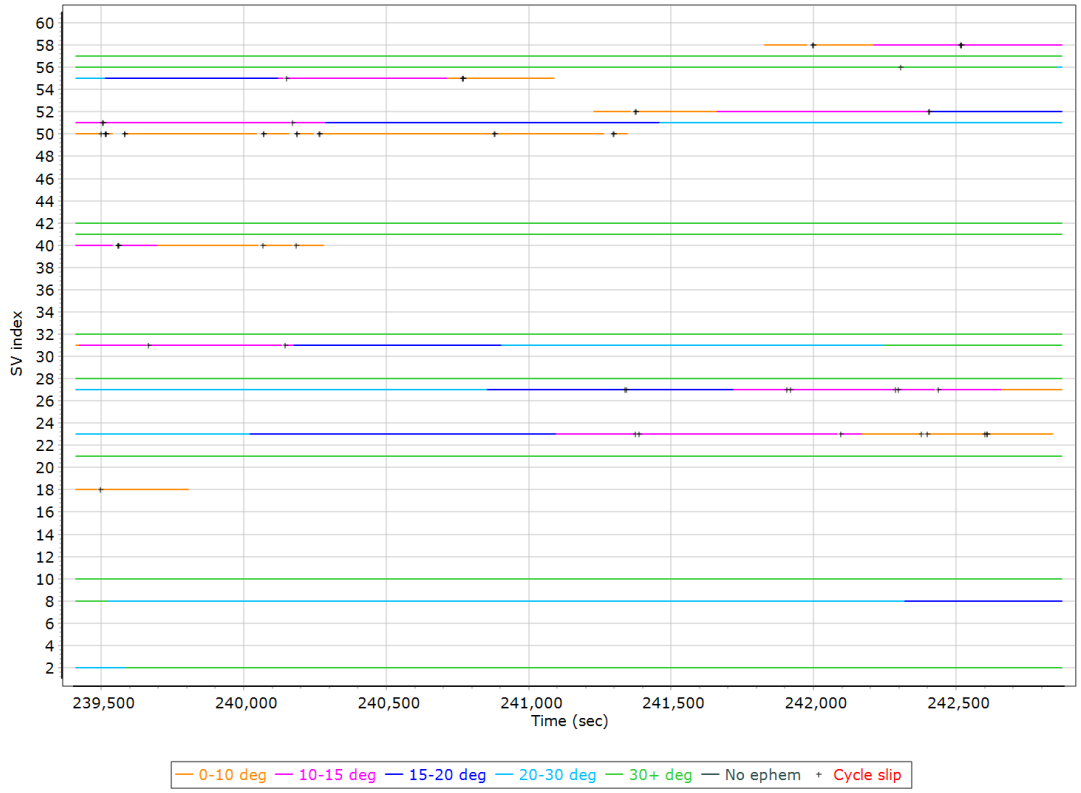
GPS L1 SNR



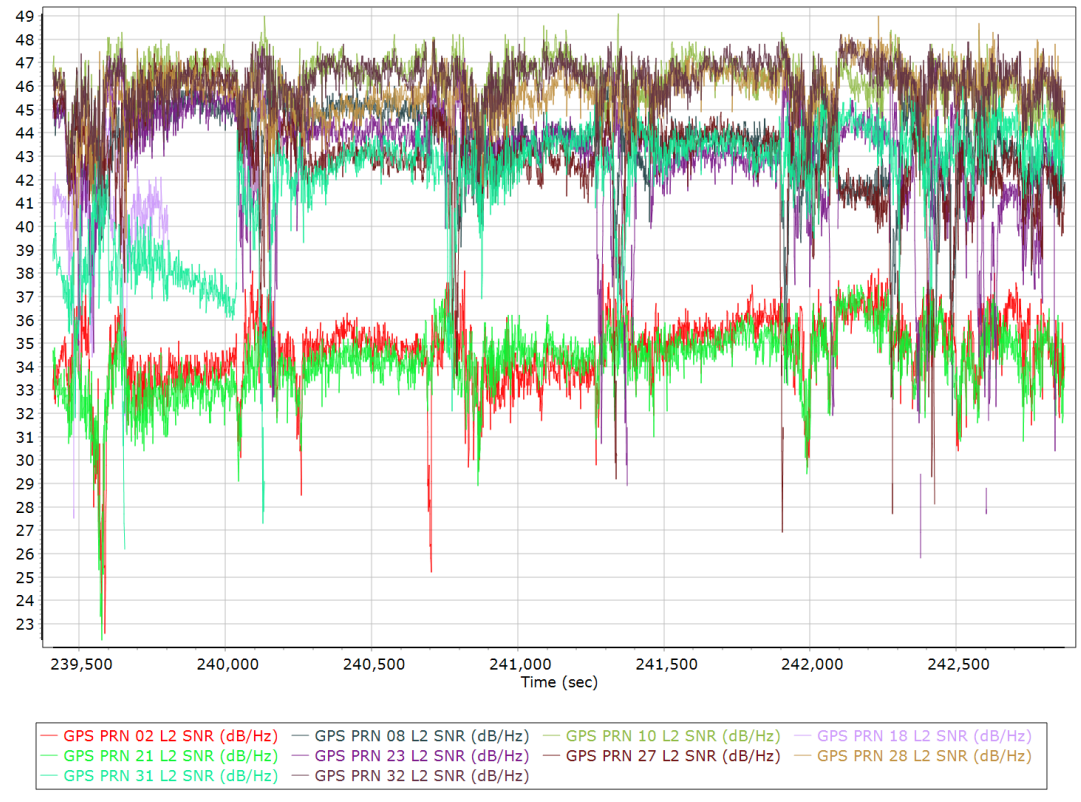
GLONASS L1 SNR



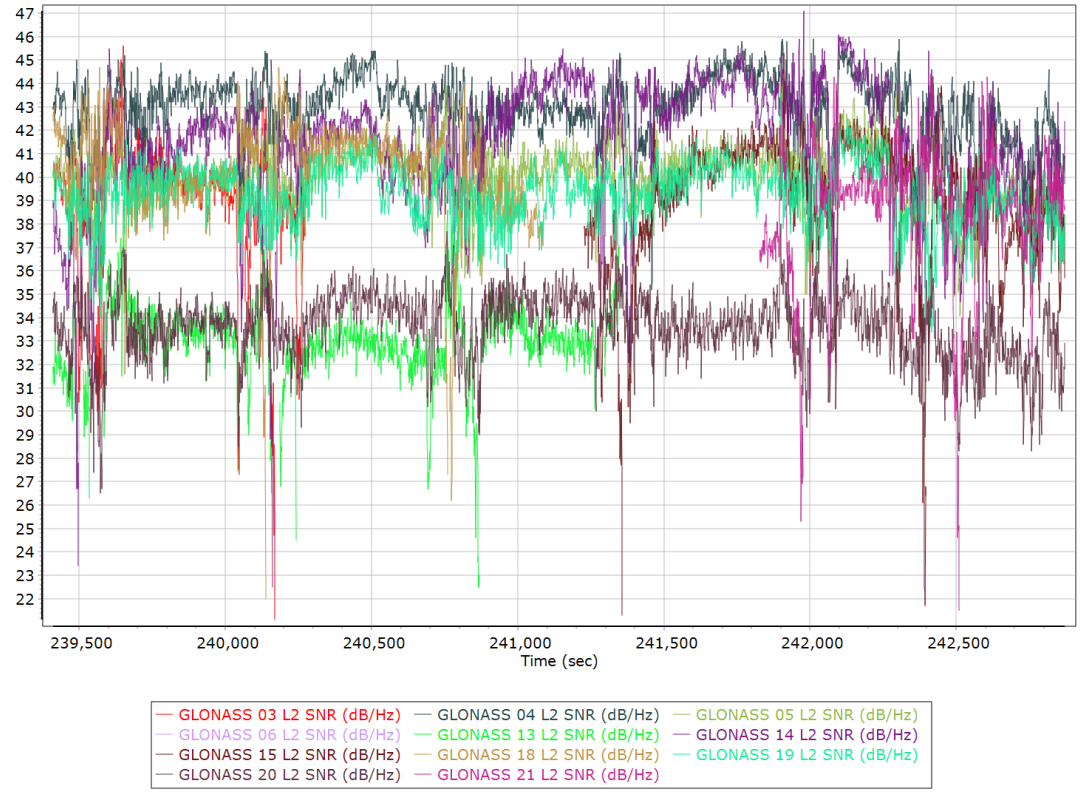
GPS/GLONASS L2 Satellite Lock/Elevation



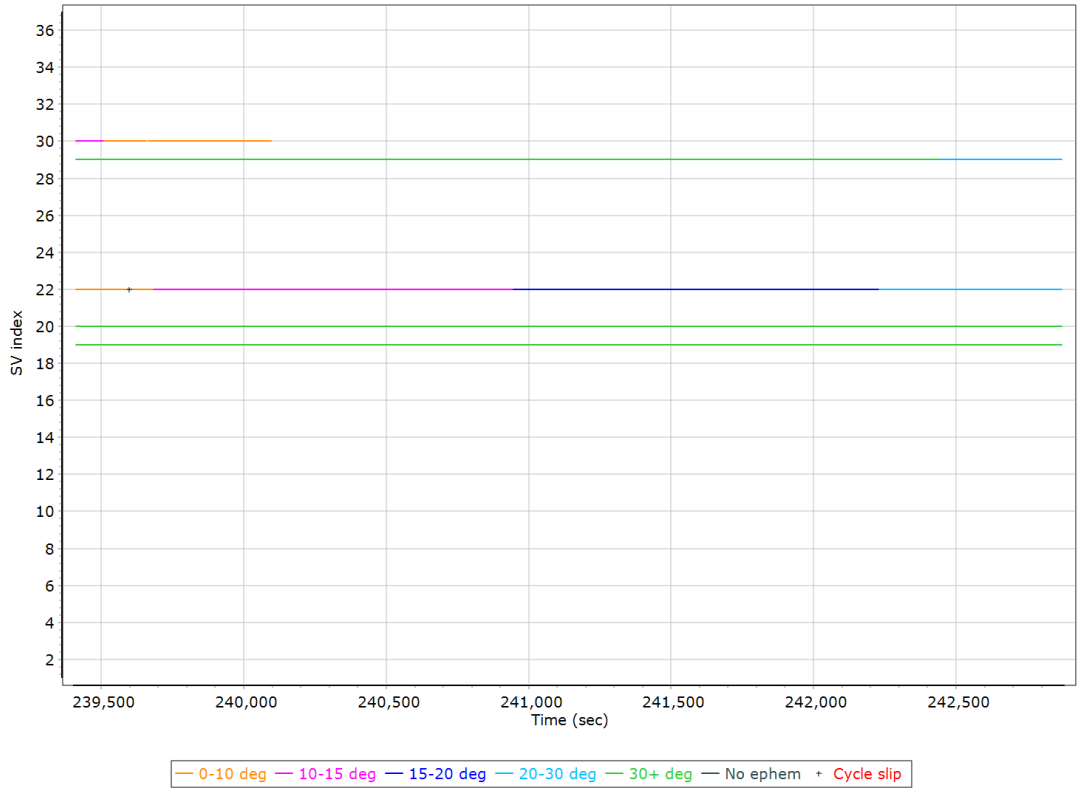
GPS L2 SNR



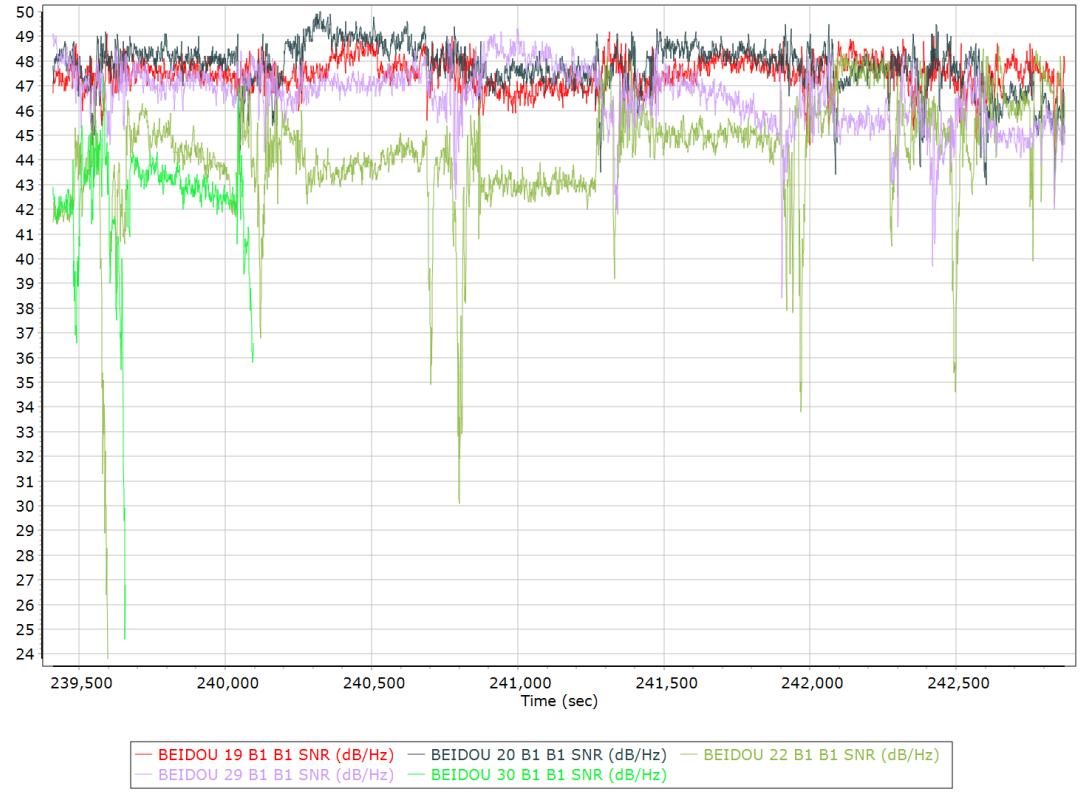
GLONASS L2 SNR



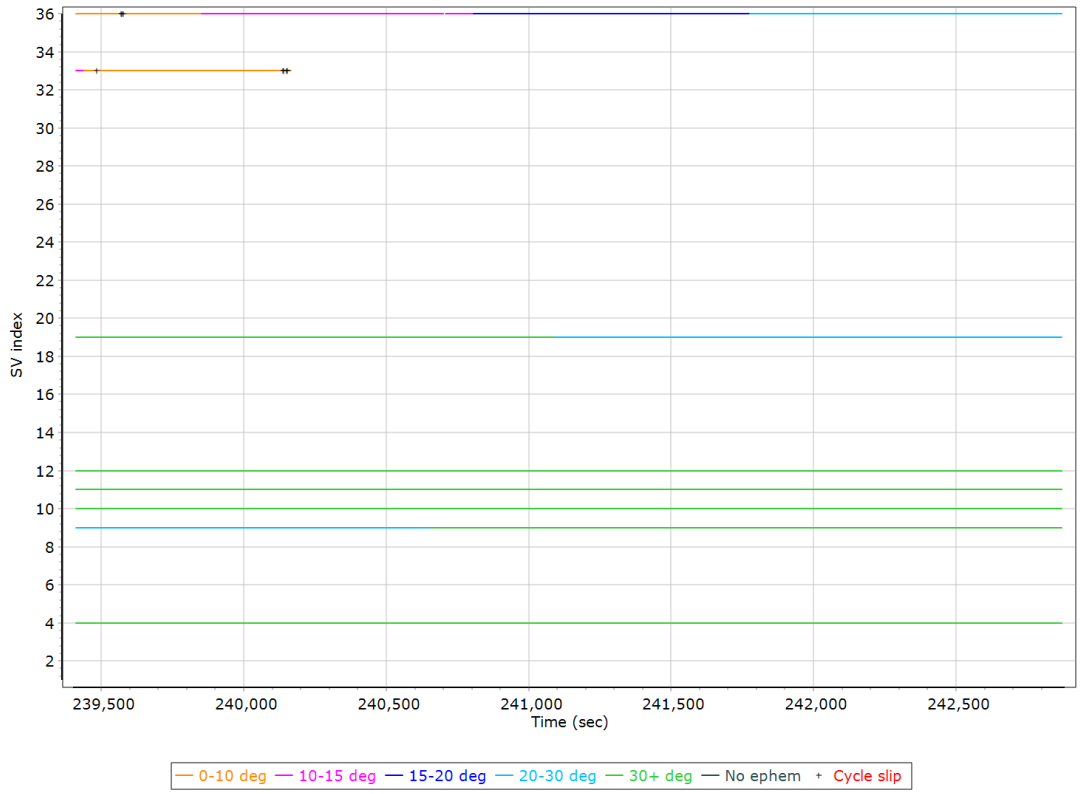
BEIDOU Satellite Lock/Elevation



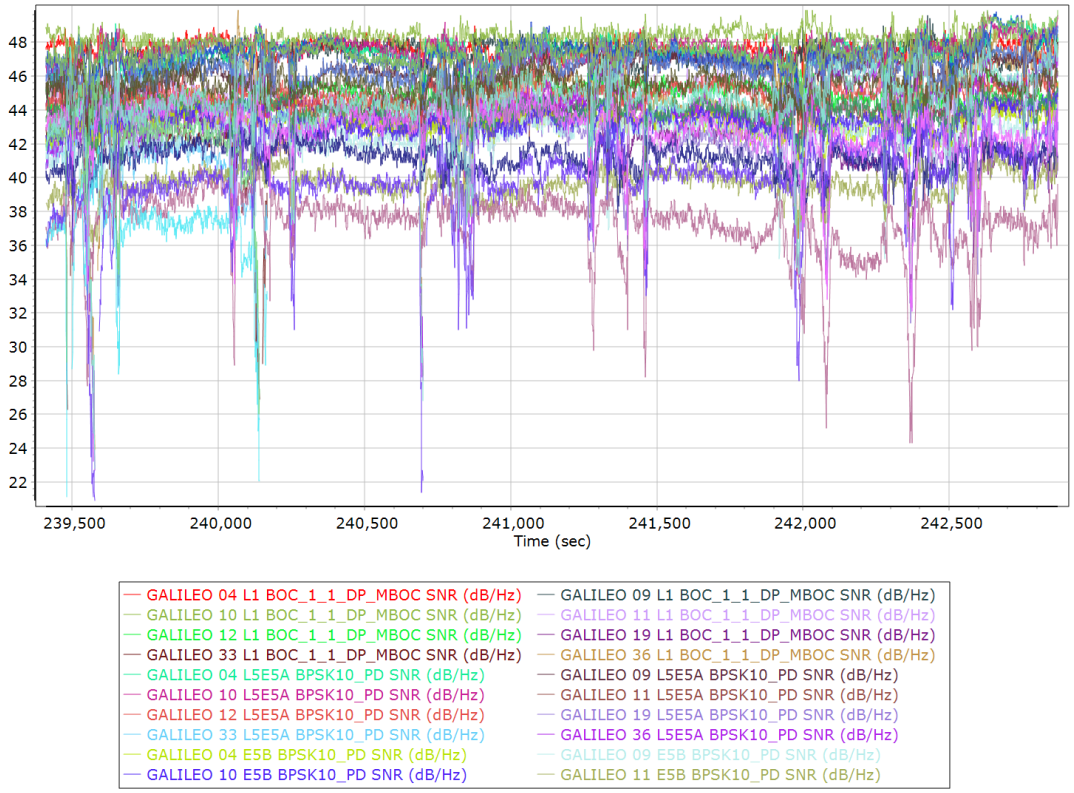
BEIDOU SNR



GALILEO Satellite Lock/Elevation



GALILEO SNR

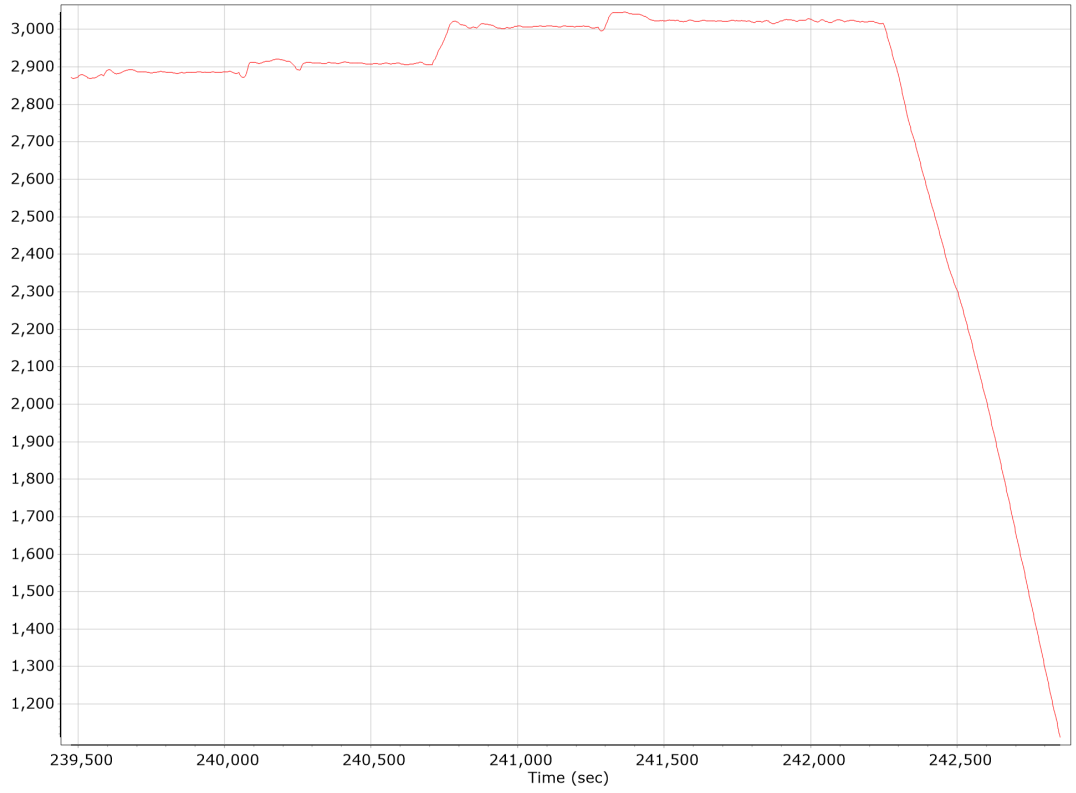

48
46
44
42
40
38
36
34
32
30
28
26
24
22
239,500
240,000
240,500
241,000
241,500
242,000
242,500
Time (sec)
GALILEO 04 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 09 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 10 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 11 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 12 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 19 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 33 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 36 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 04 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 09 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 10 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 11 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 12 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 19 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 33 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 36 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 04 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 09 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 10 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 11 E5B BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

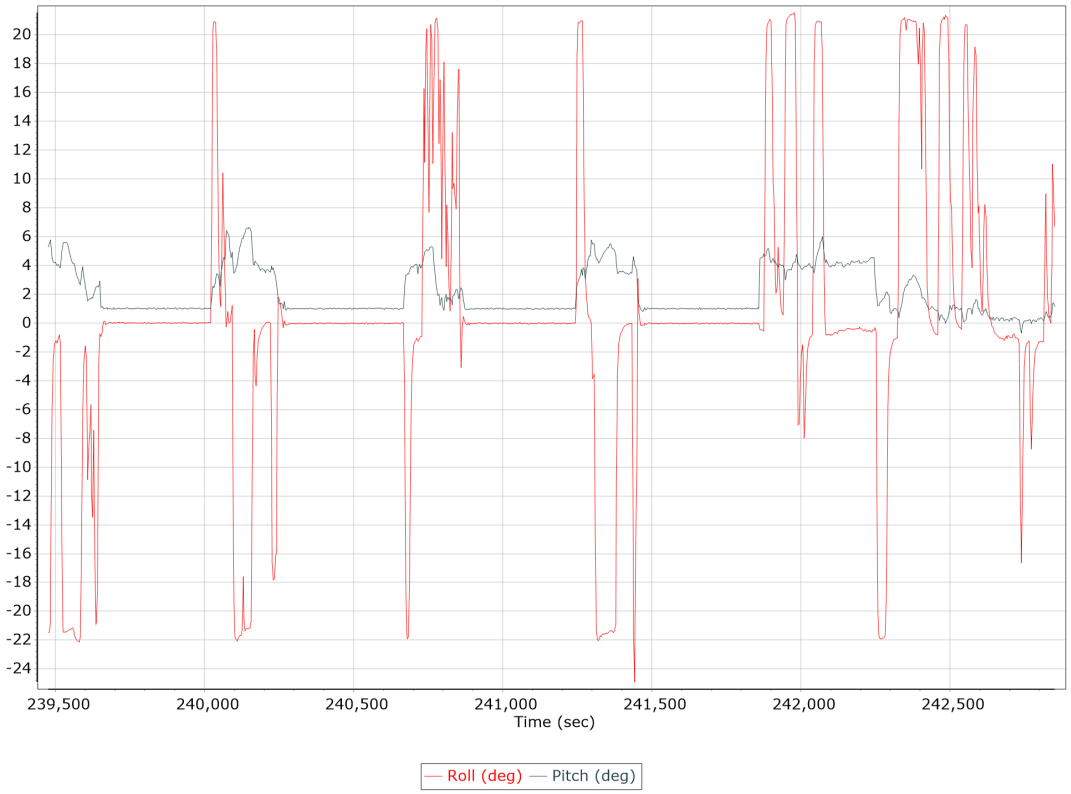
Top View



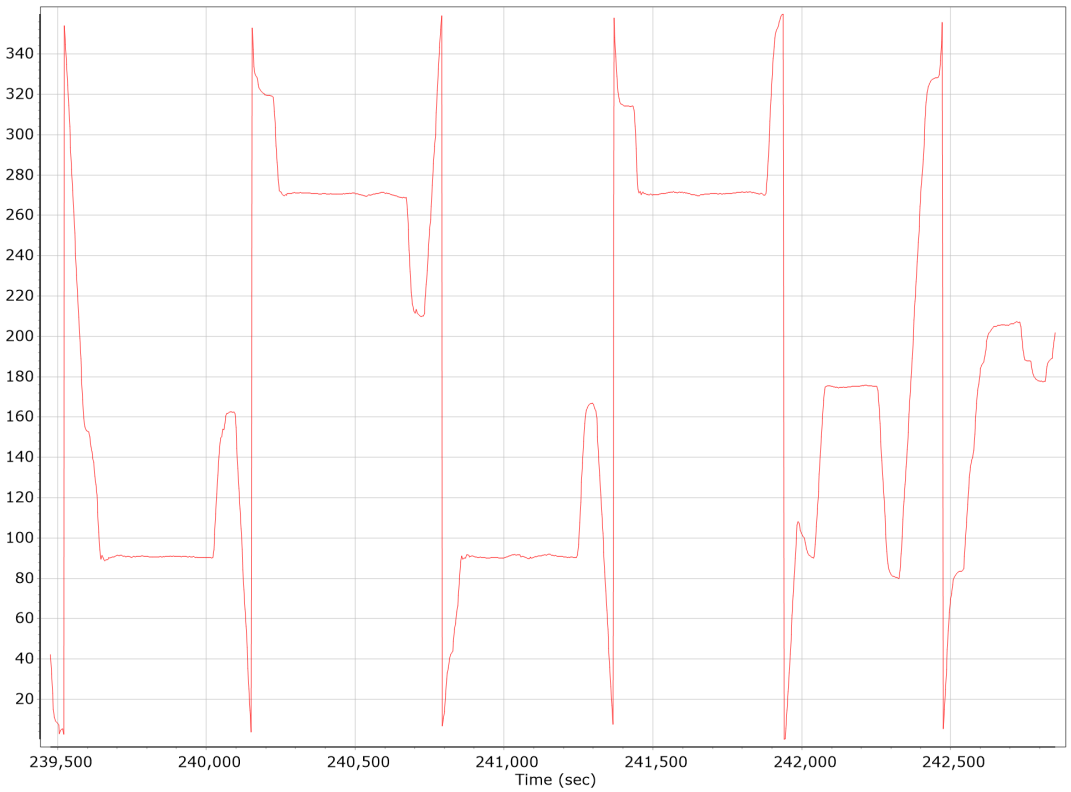
Altitude



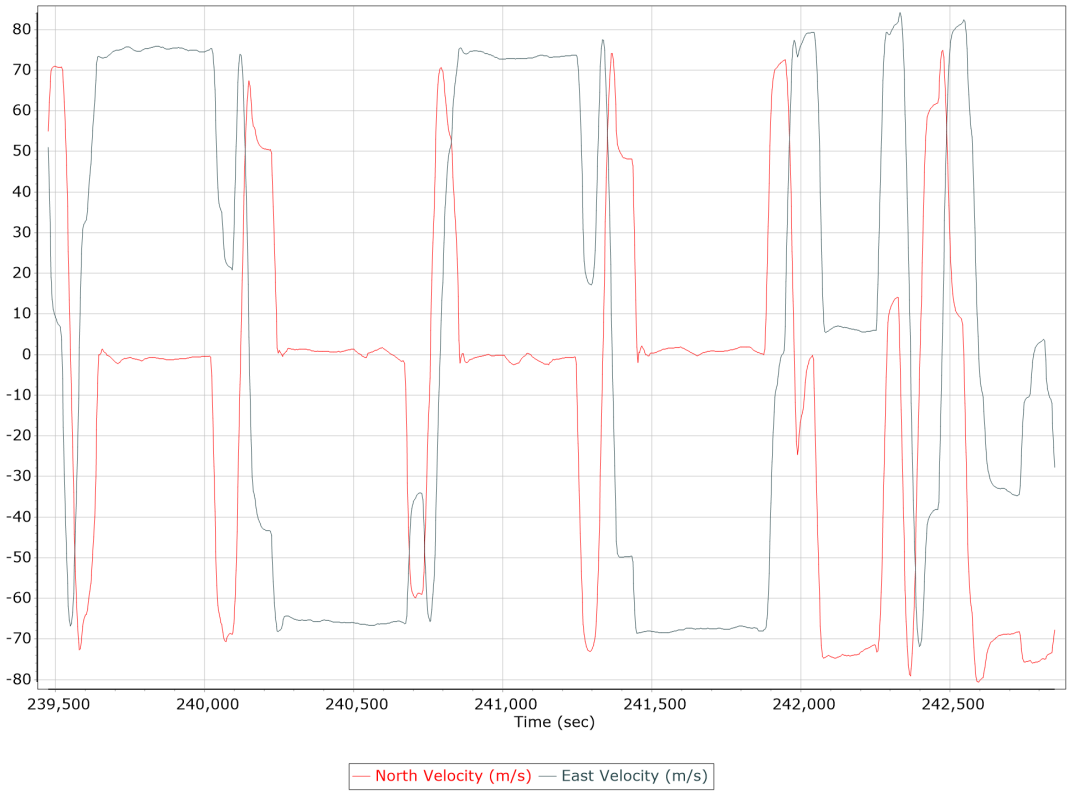
Roll/Pitch



Heading



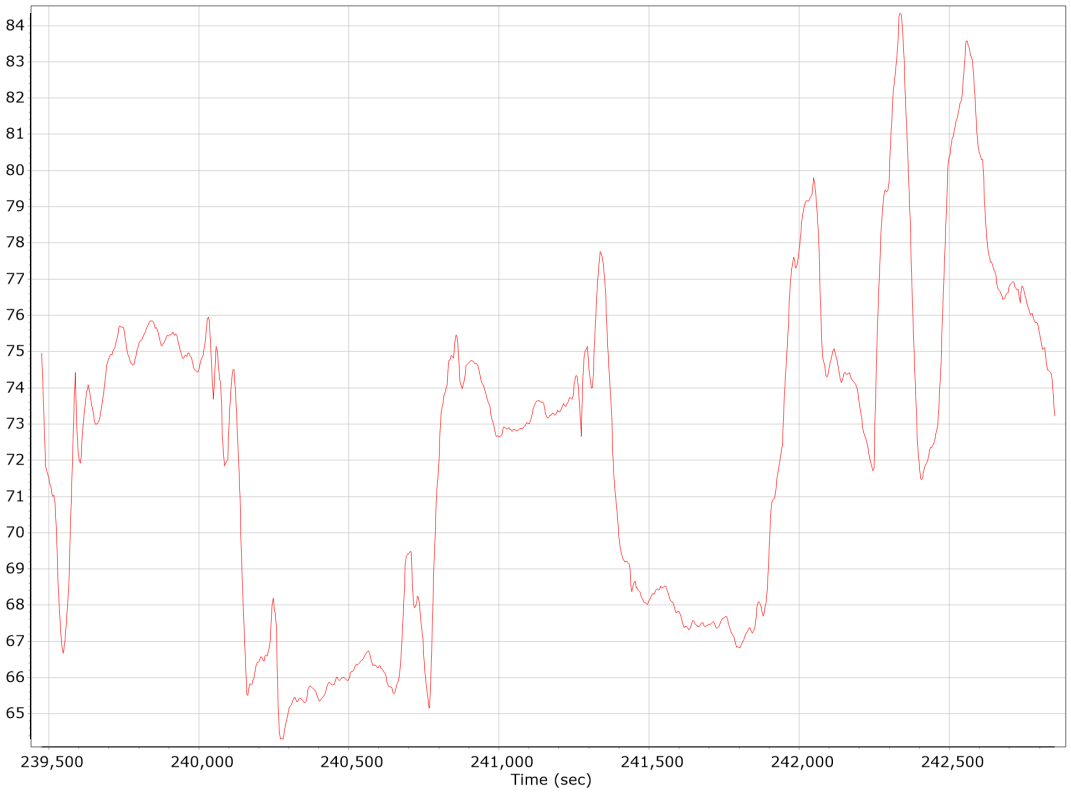
North/East Velocity



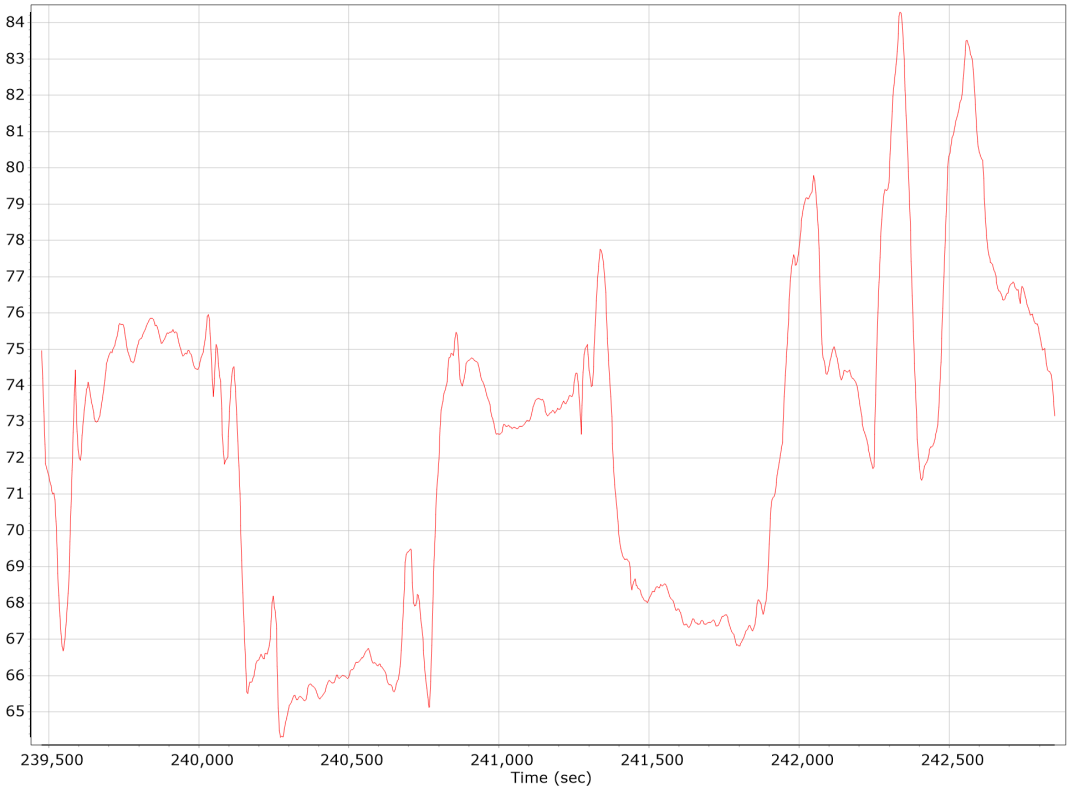
Down Velocity



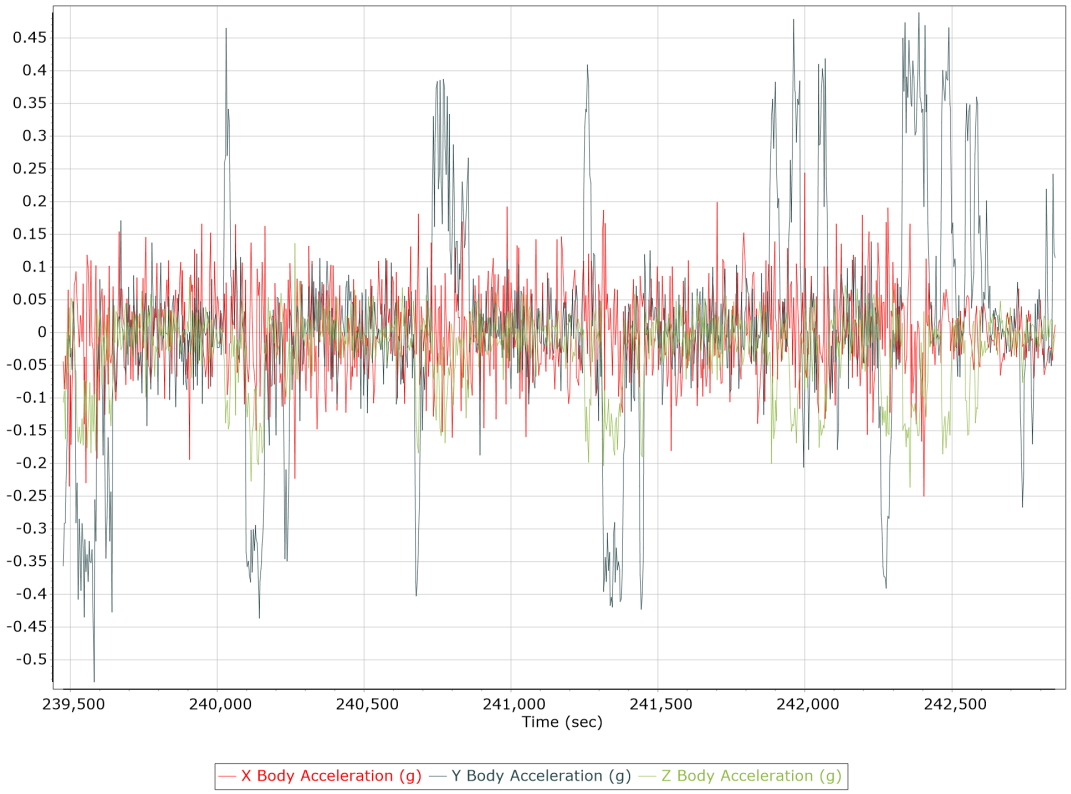
Total Speed



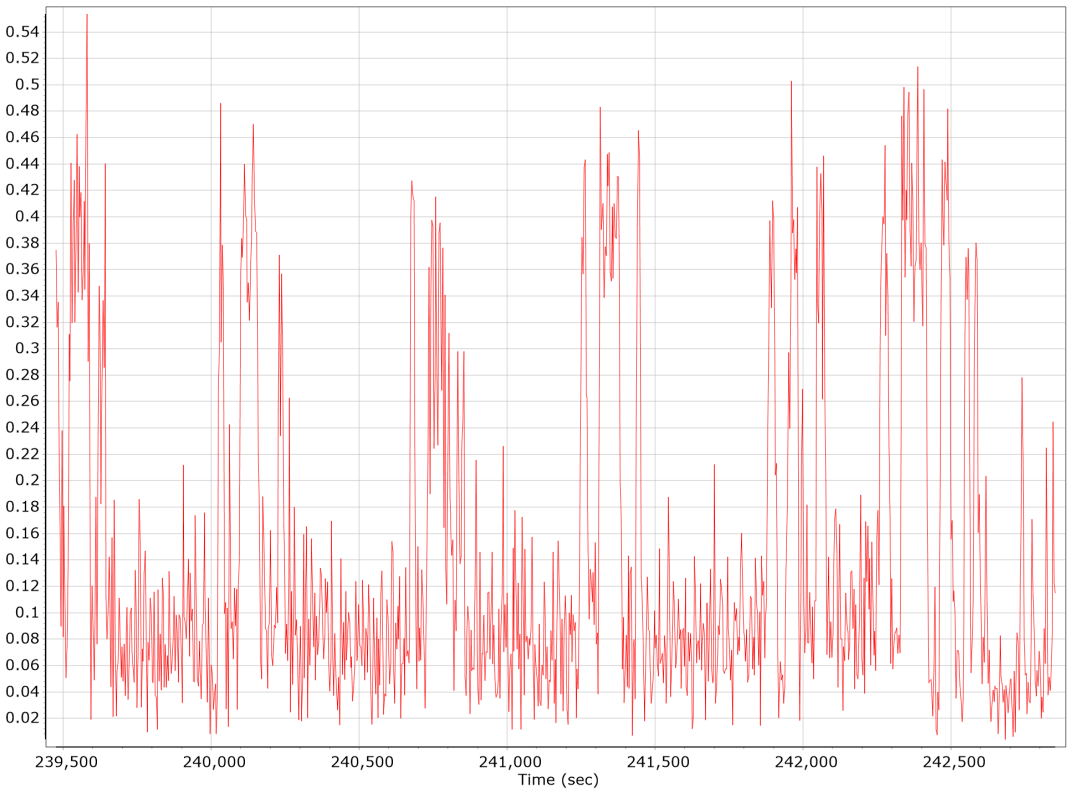
Ground Speed



Body Acceleration



Total Body Acceleration



Body Angular Rate

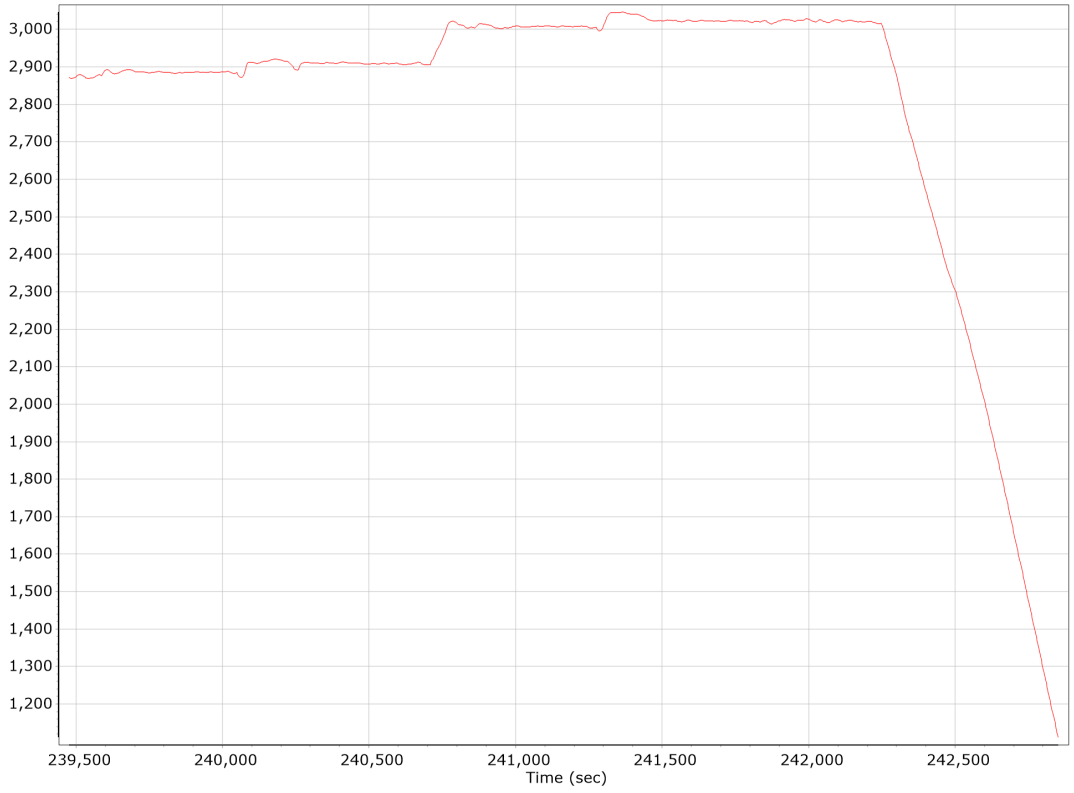


Forward Processed Trajectory Information

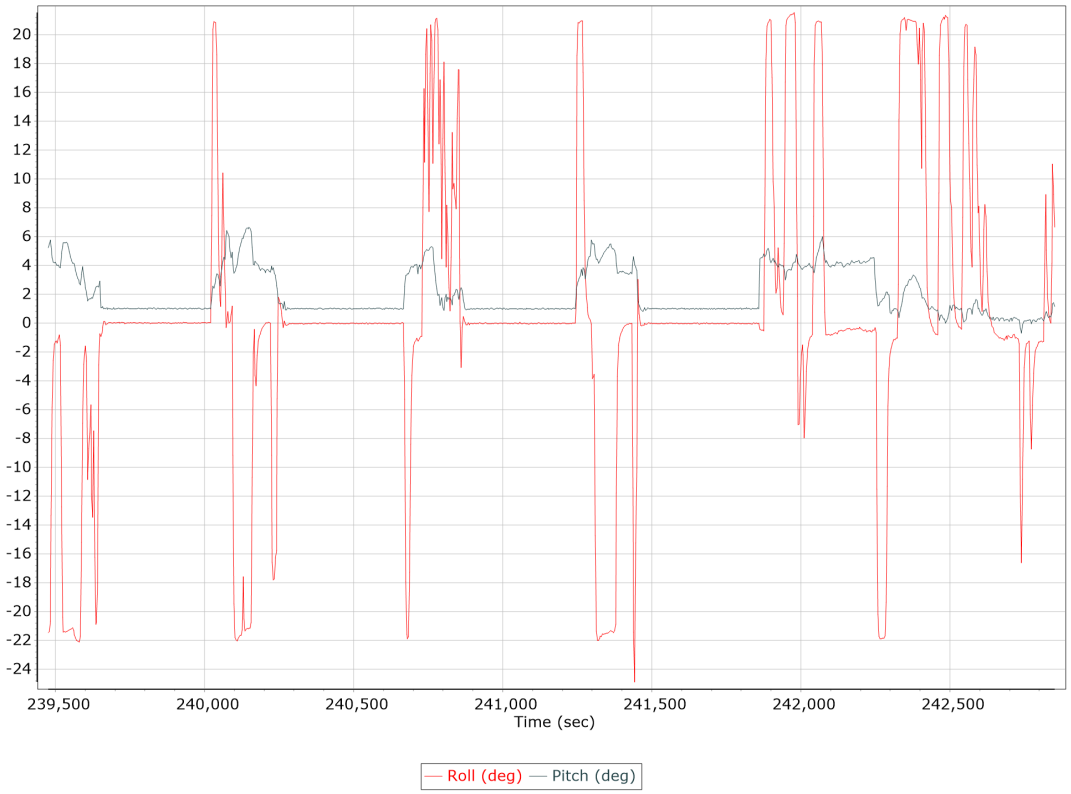
Top View



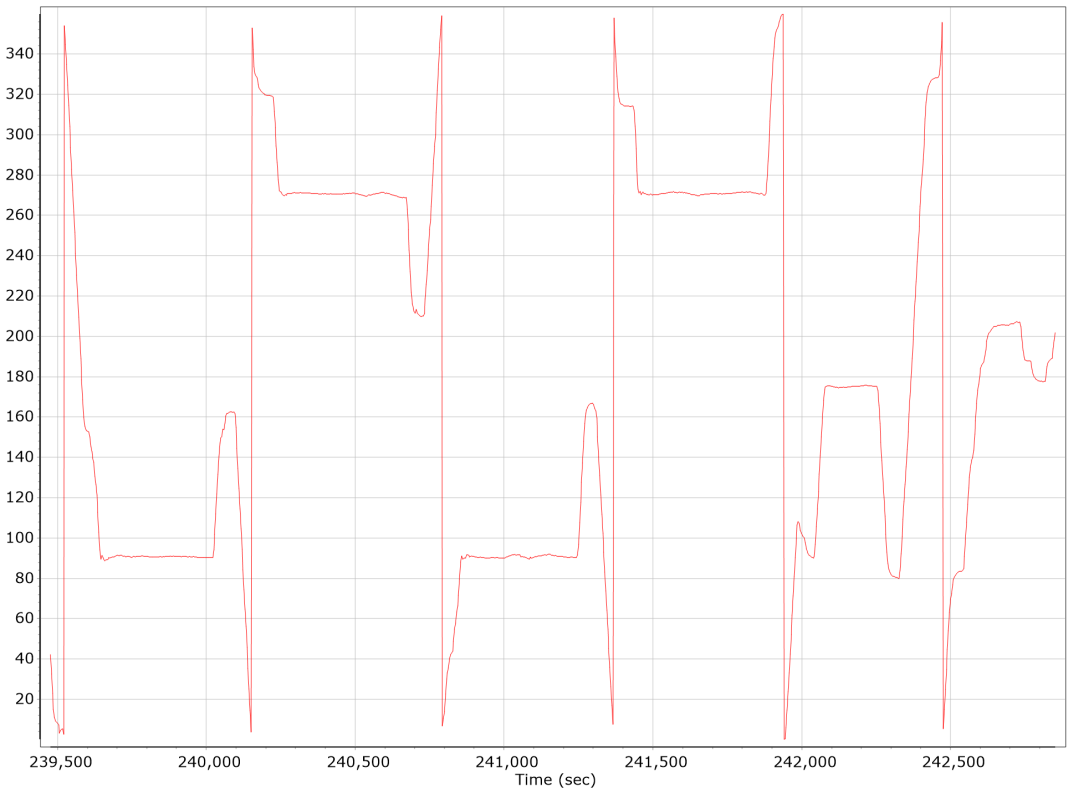
Altitude



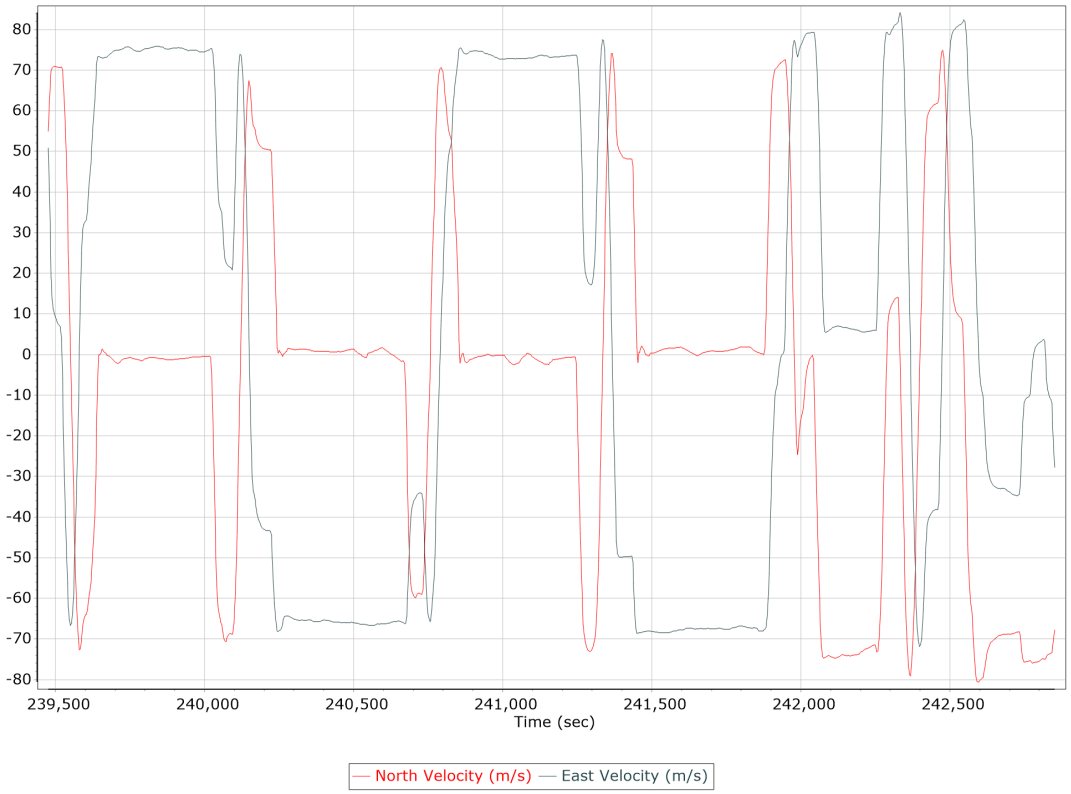
Roll/Pitch



Heading



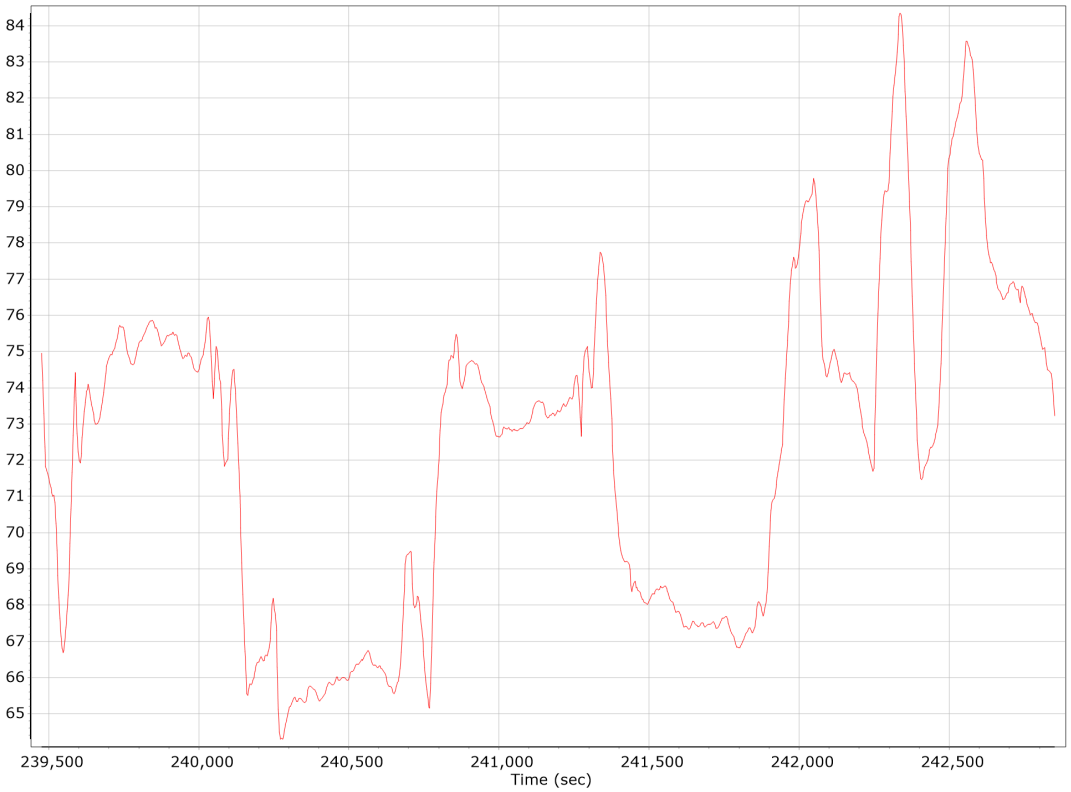
North/East Velocity



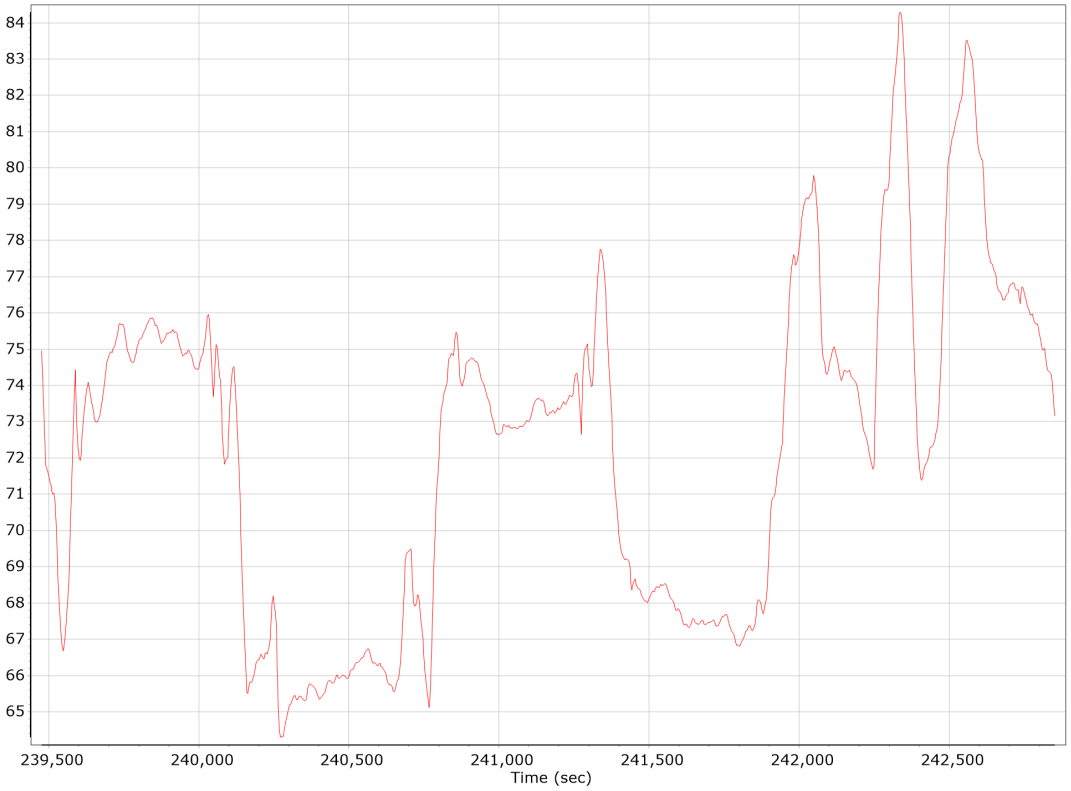
Down Velocity



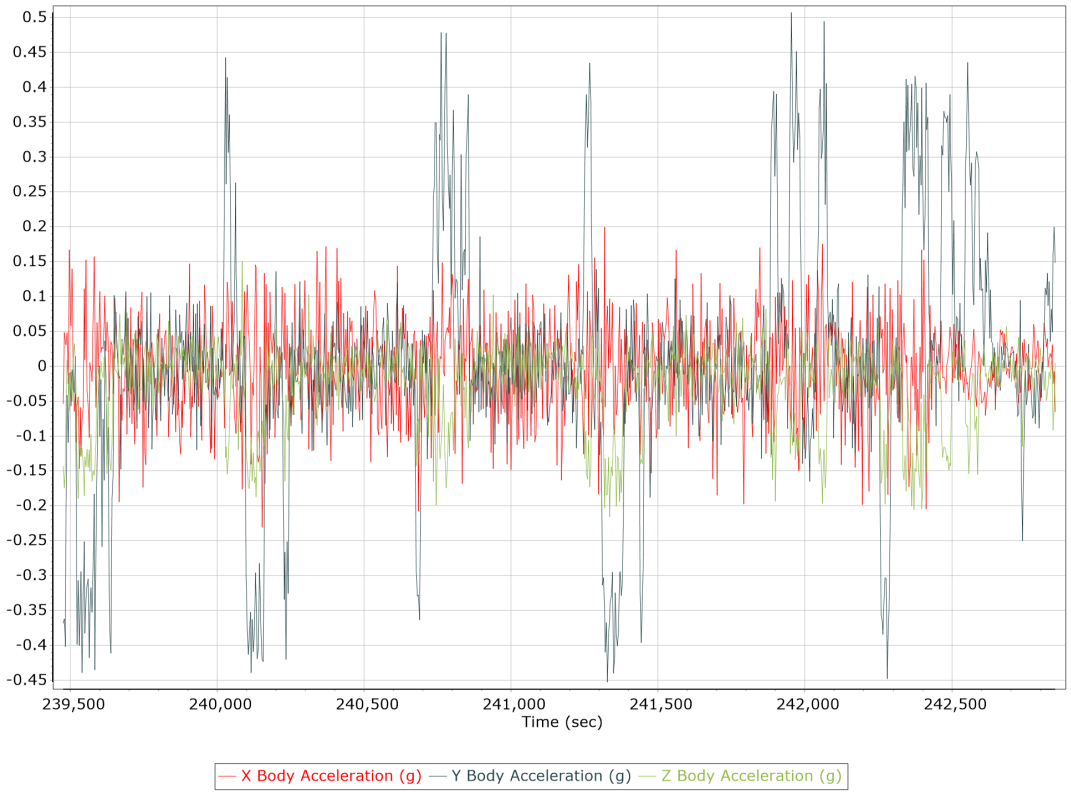
Total Speed



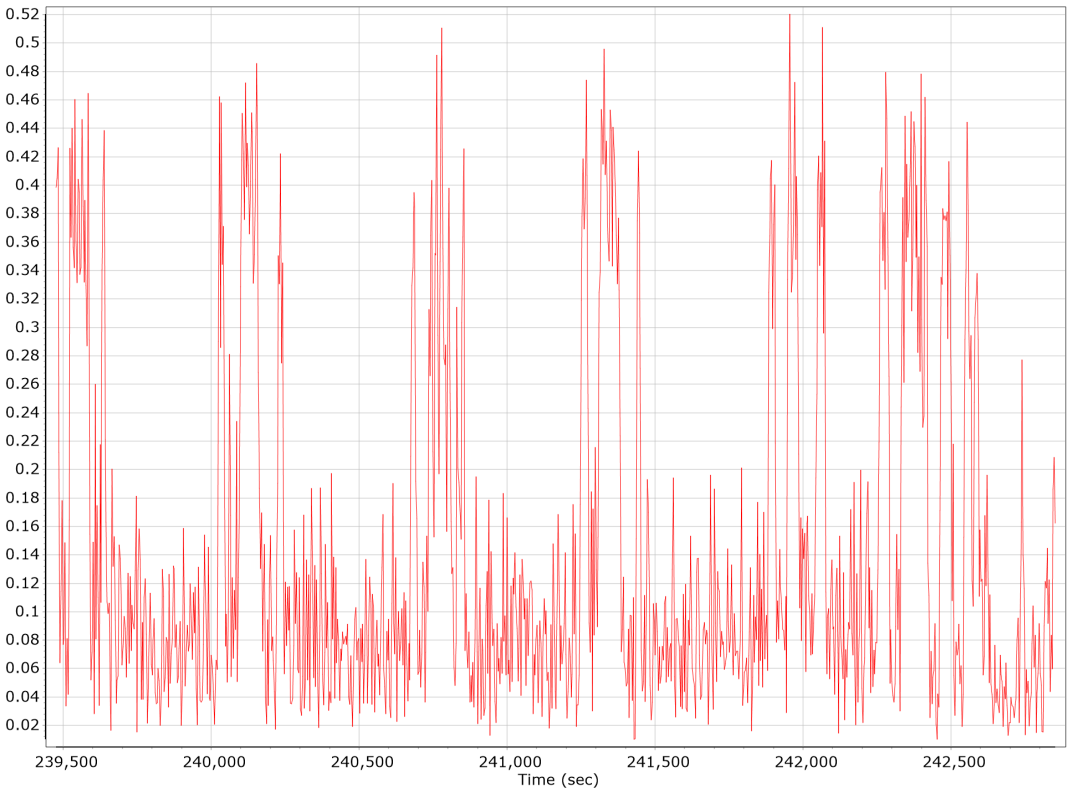
Ground Speed



Body Acceleration



Total Body Acceleration



Body Angular Rate



GNSS QC

GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	7	9	9
Number of GLONASS SV	5	7	6
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	6	7	7
Total number of SV	20	23	22
PDOP	1.06	1.37	1.13
QC Solution Gaps	0.00	0.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	3408.00	0.00	0.00
Percentage	100.00	0.00	0.00

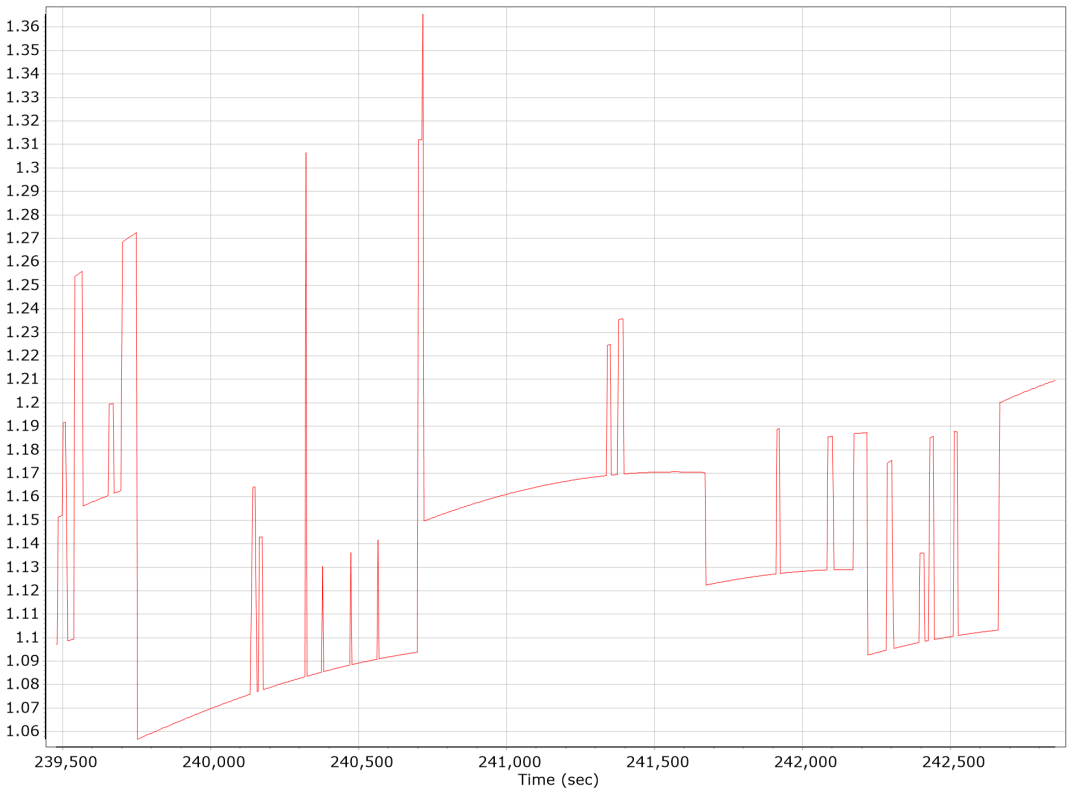
Num SVs in solution



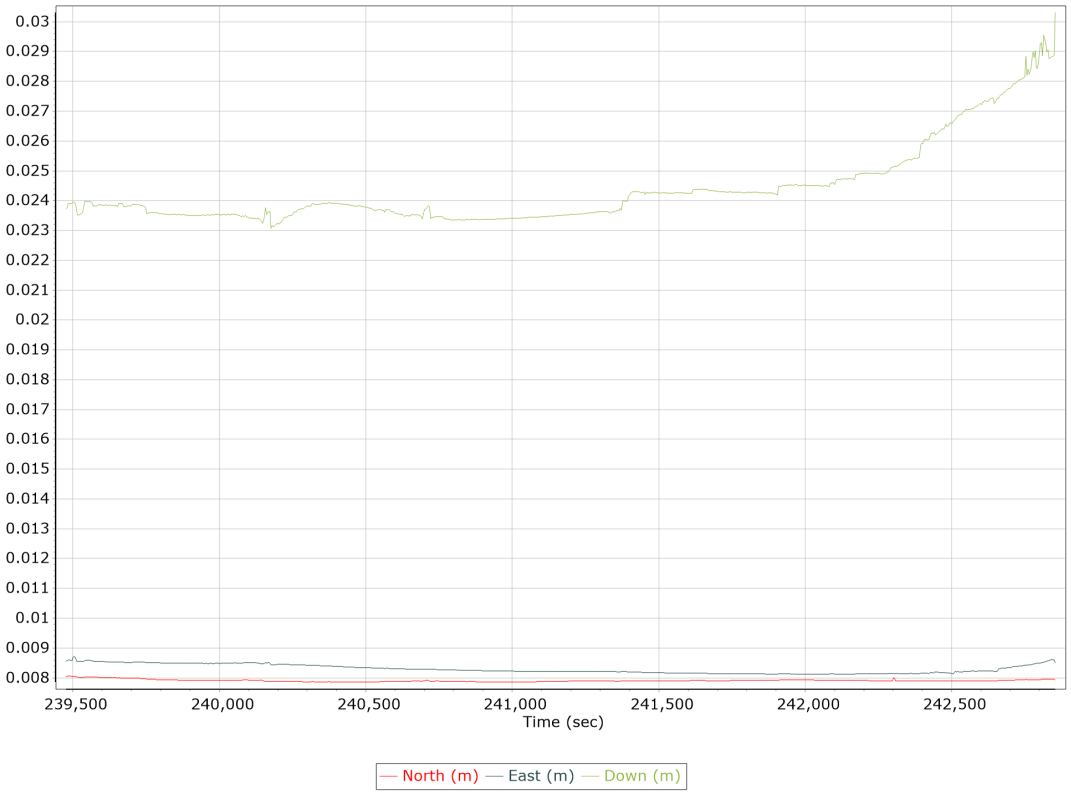
Forward/Reverse Separation



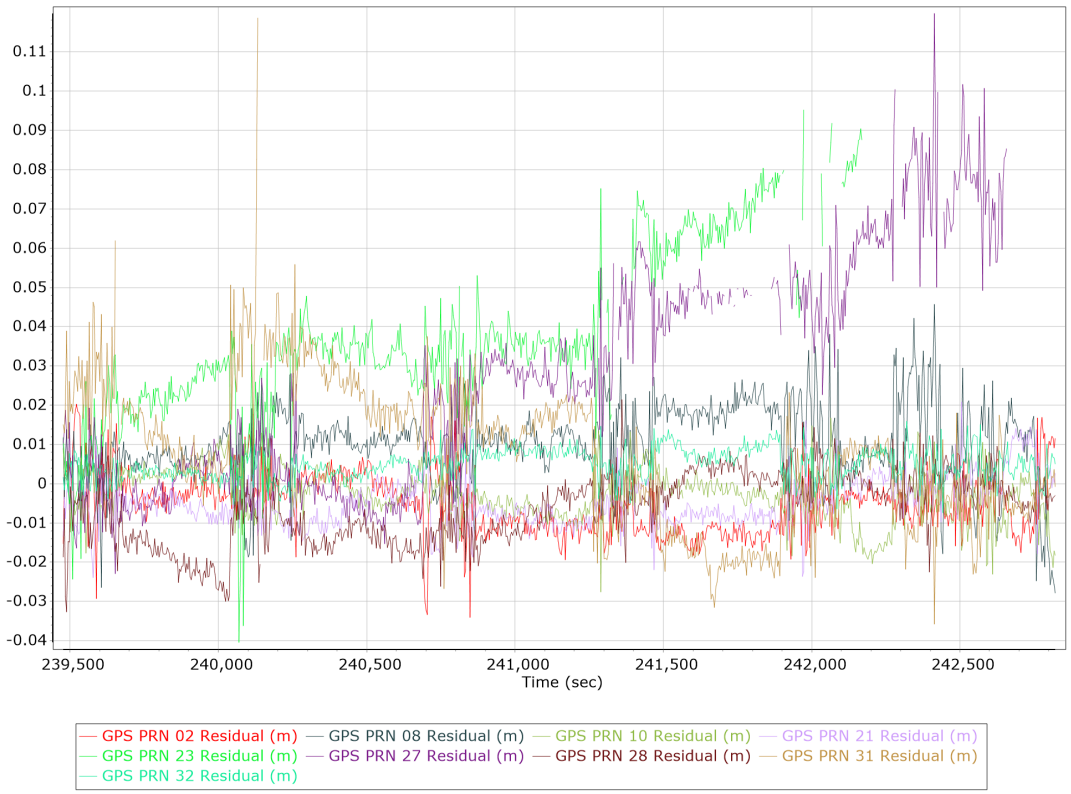
PDOP



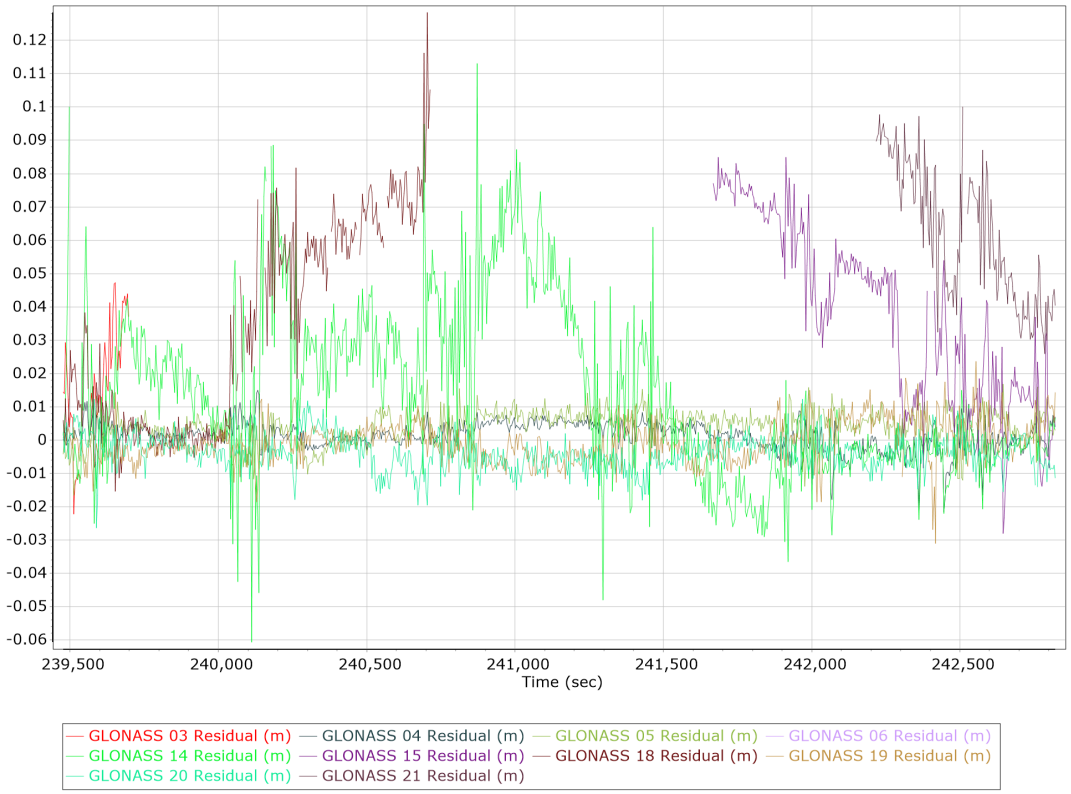
Estimated Position Accuracy



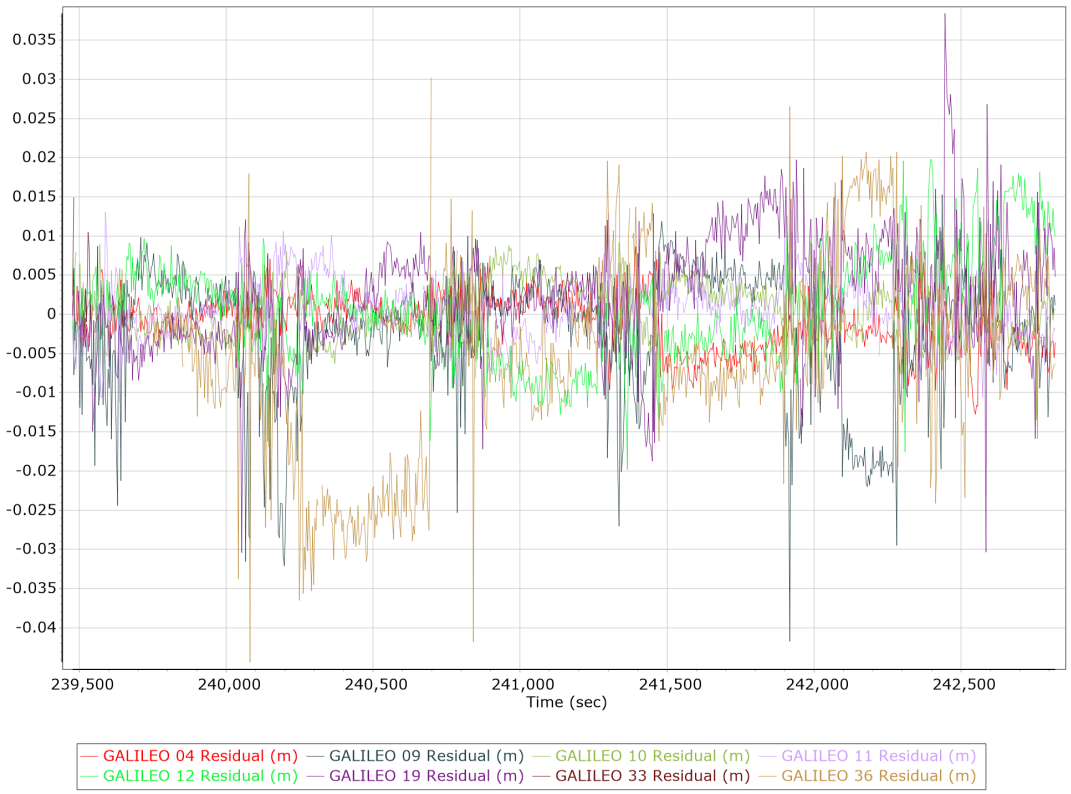
GPS Residuals



GLONASS Residuals



GALILEO Residuals



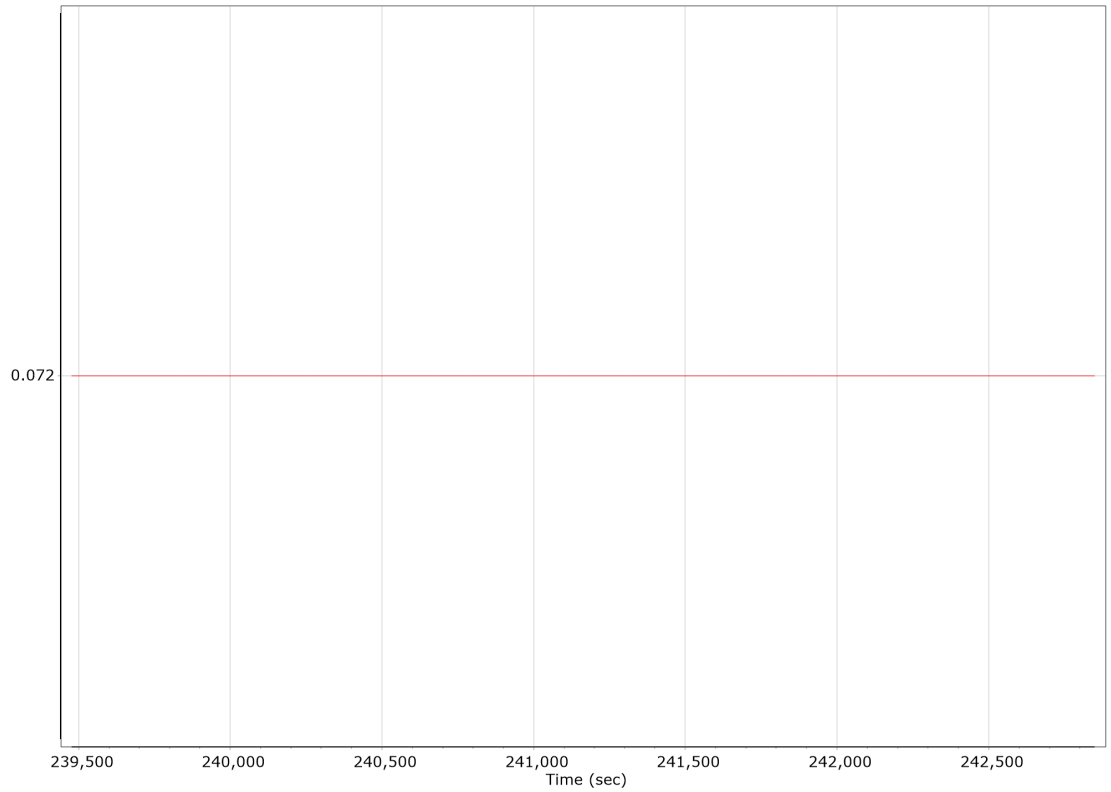
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	239393.000 (9/26/2023 6:29:53 PM)		
Processing end time	242853.000 (9/26/2023 7:27:33 PM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.072	0.090	-1.275
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

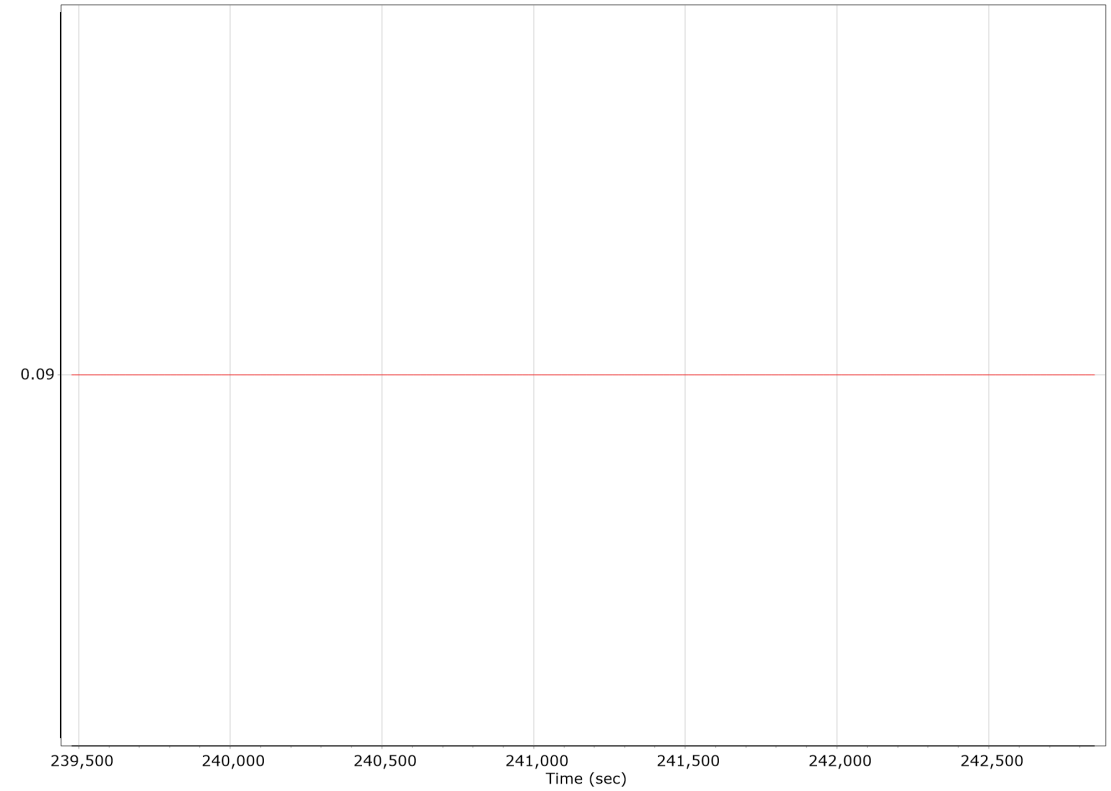
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

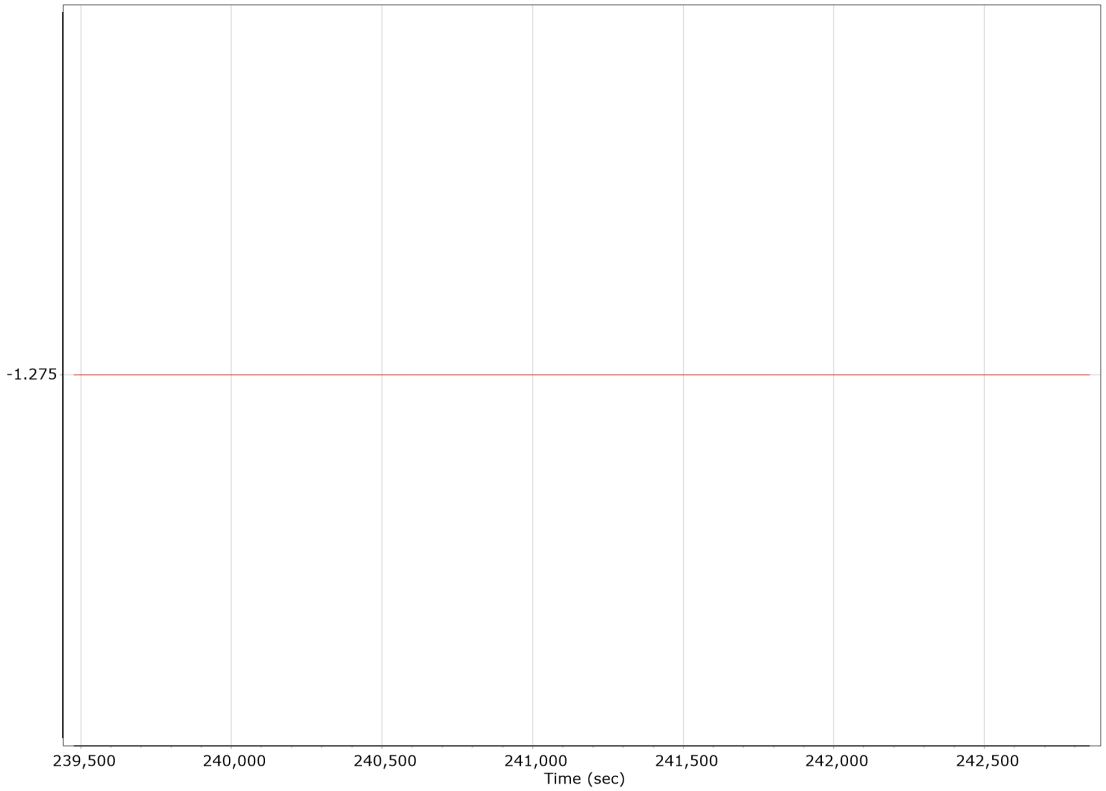
X Reference-Primary GNSS Lever Arm (m)



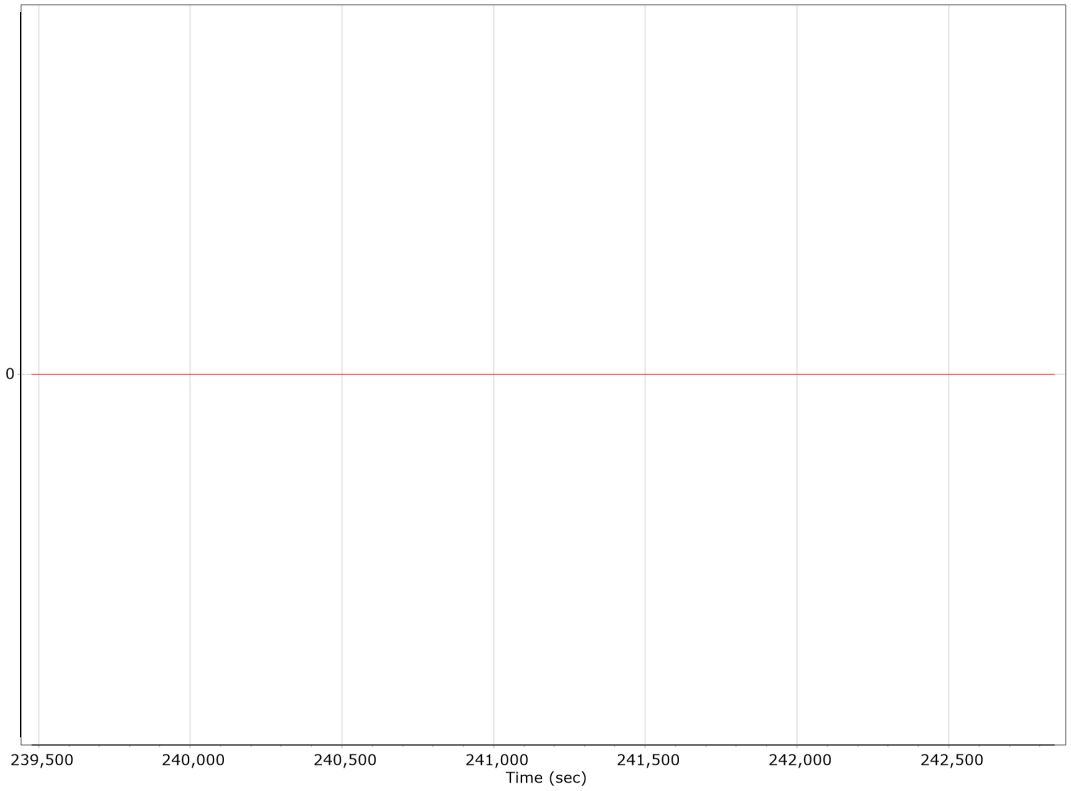
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



Reference-Primary GNSS Lever Arm Figure of Merit



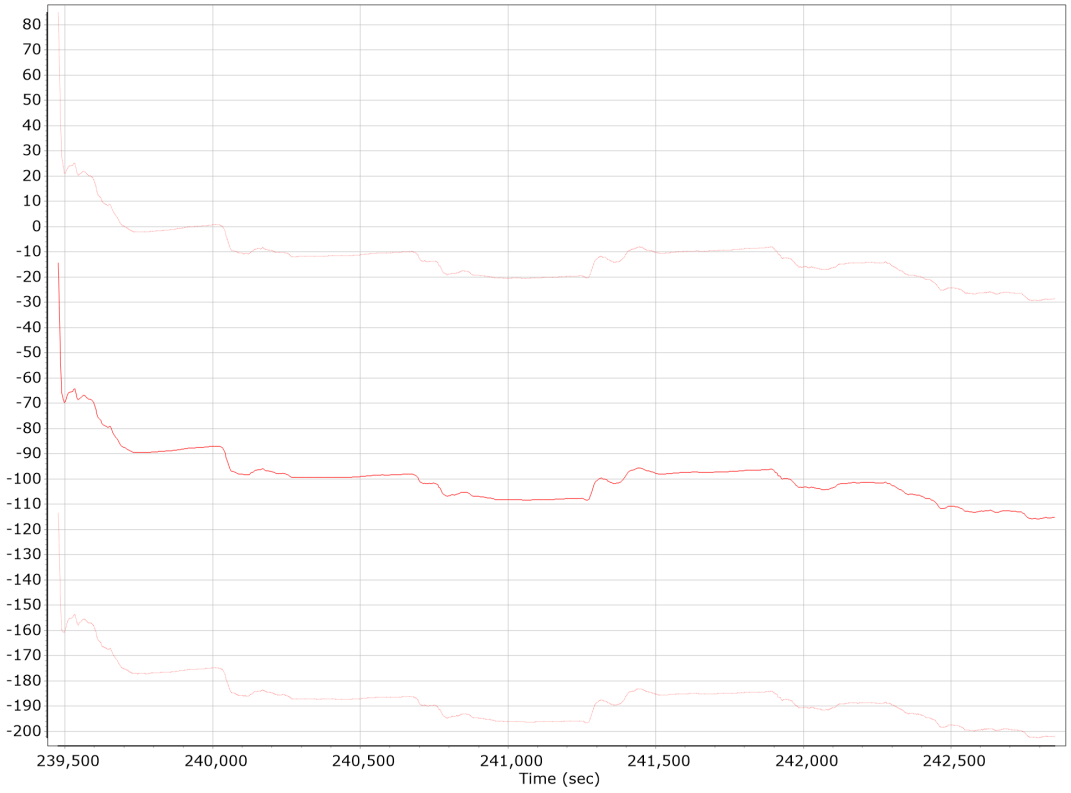
IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

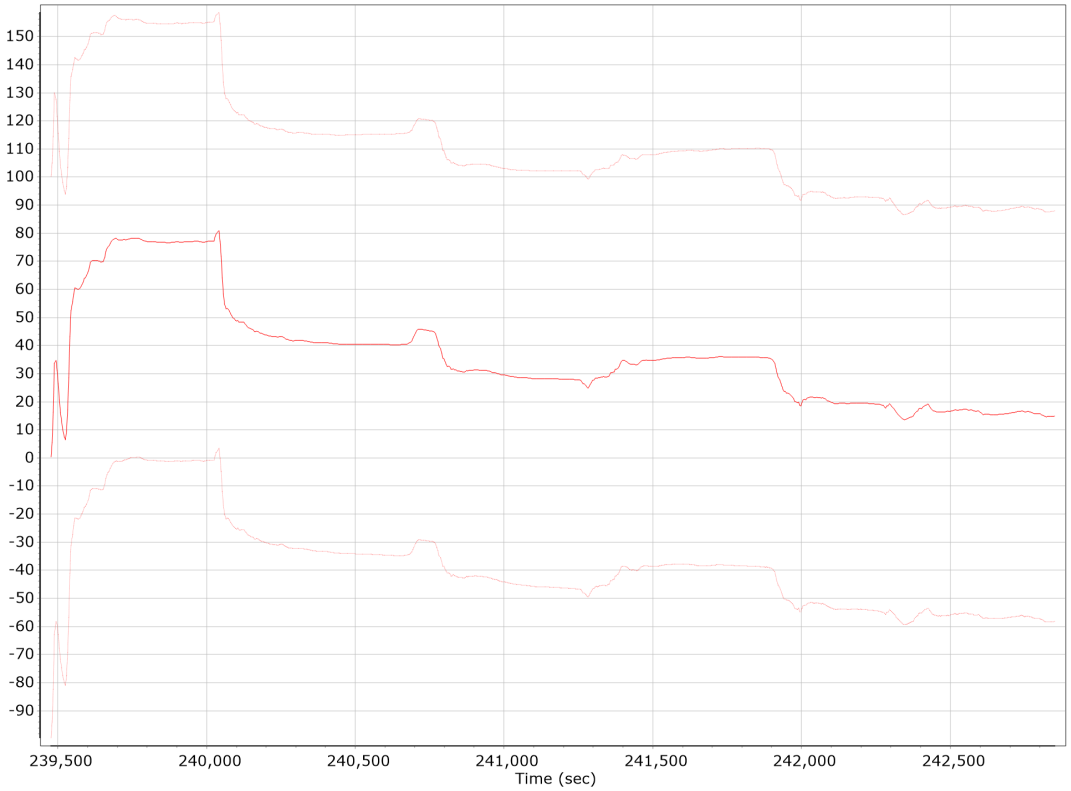
Accelerometer Bias (micro-g)



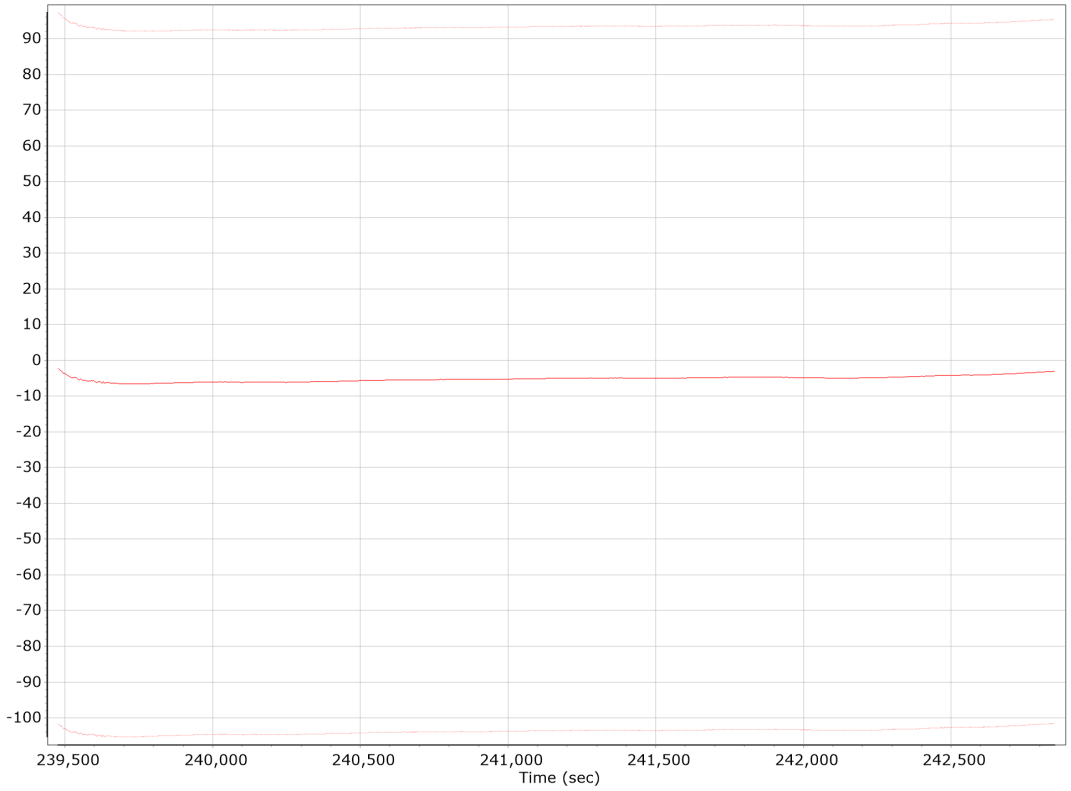
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



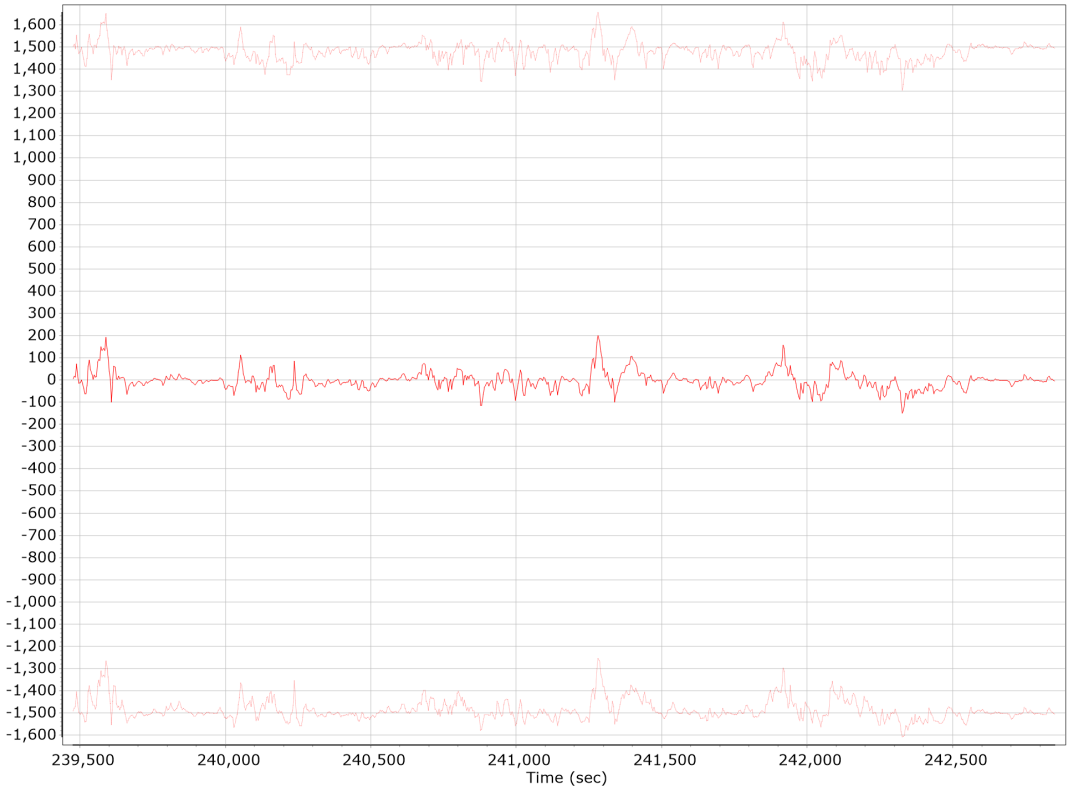
Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



X Accelerometer Scale Error (ppm)



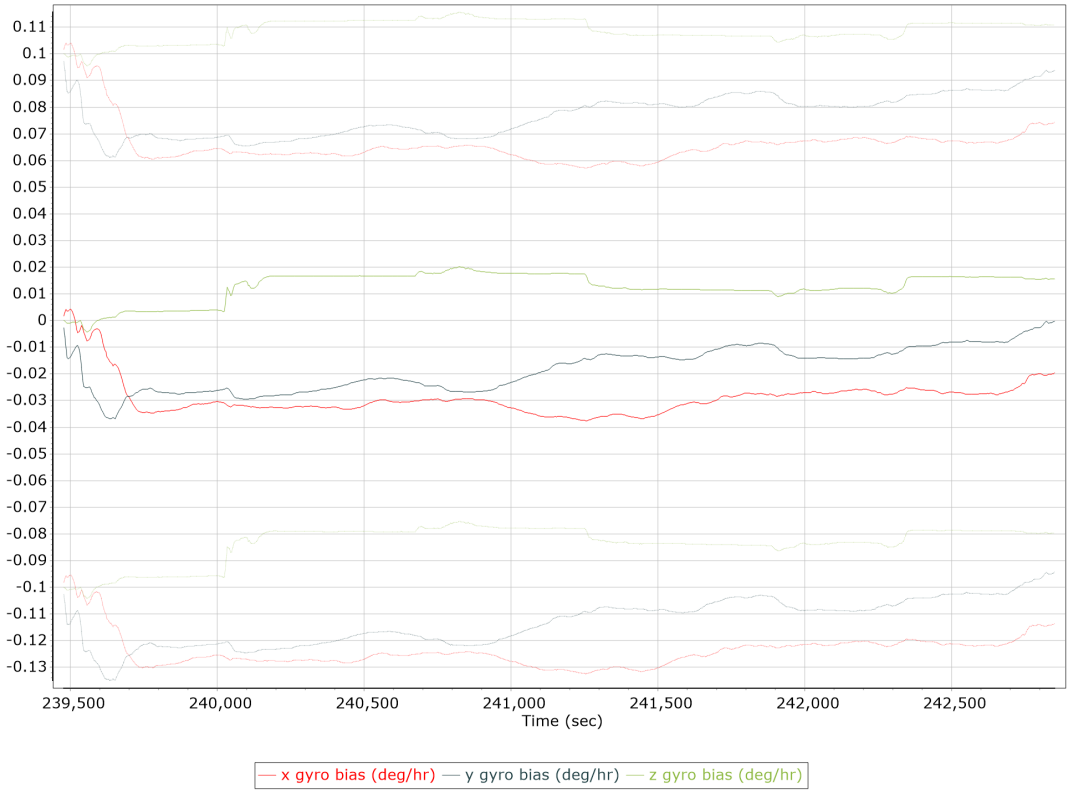
Y Accelerometer Scale Error (ppm)



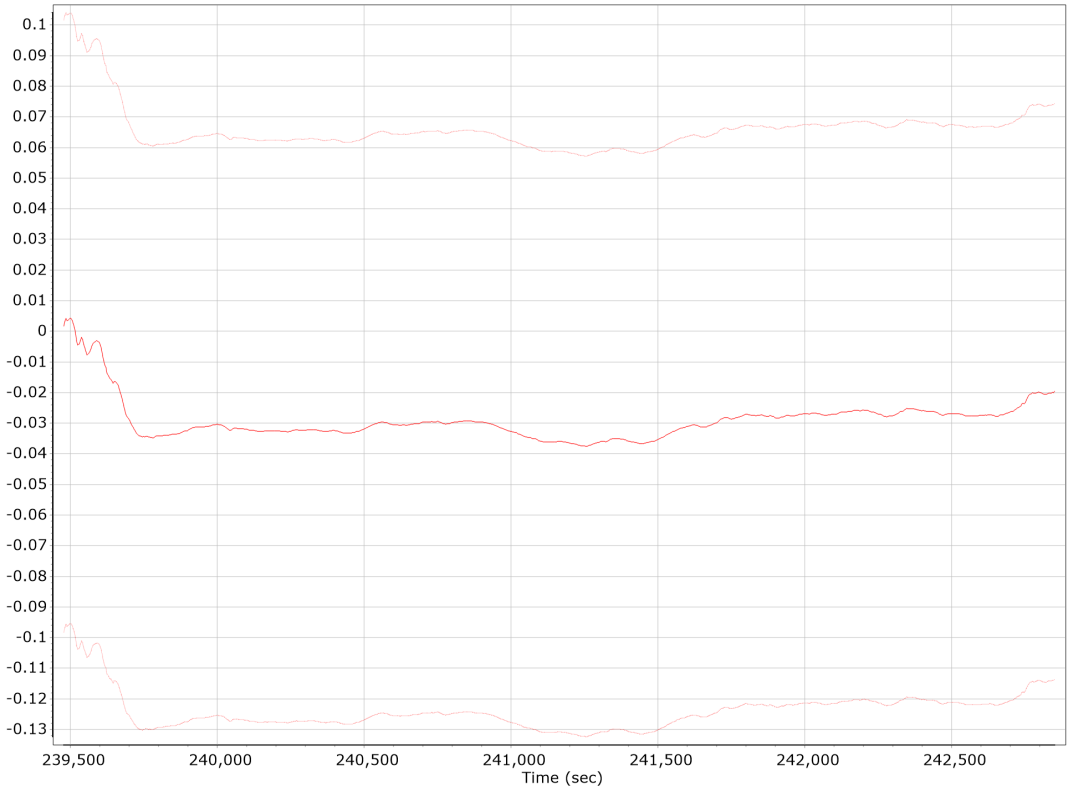
Z Accelerometer Scale Error (ppm)



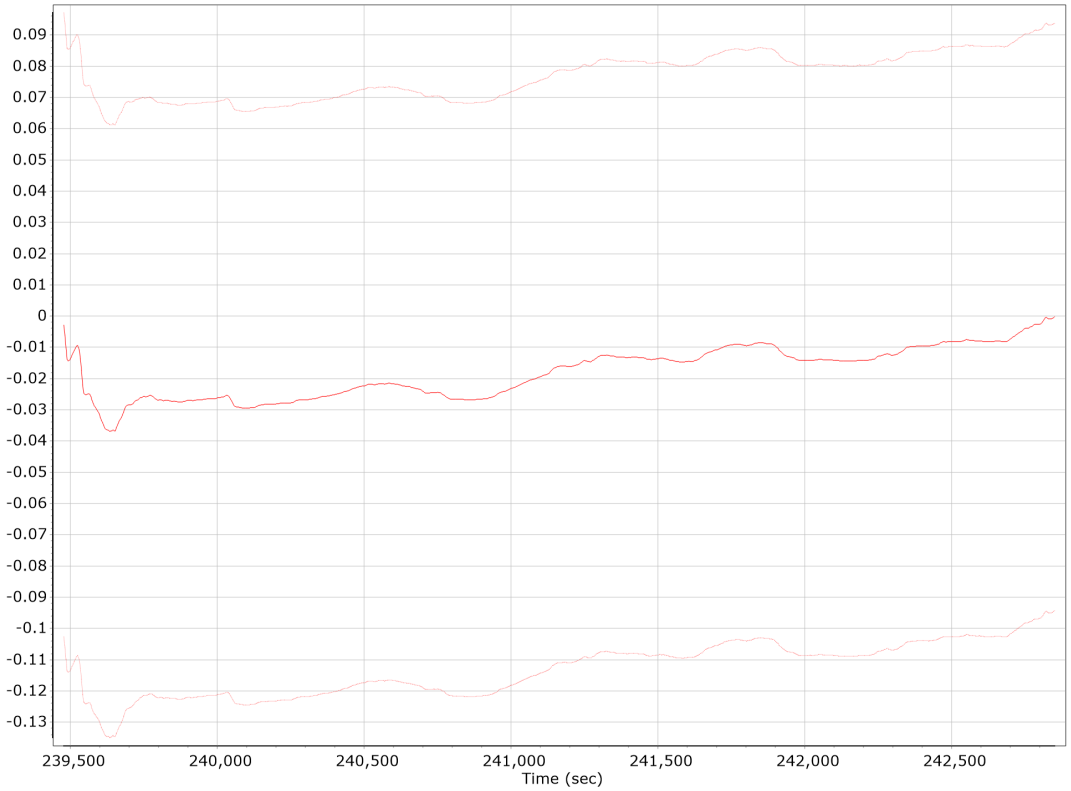
Gyro Bias (deg/h)



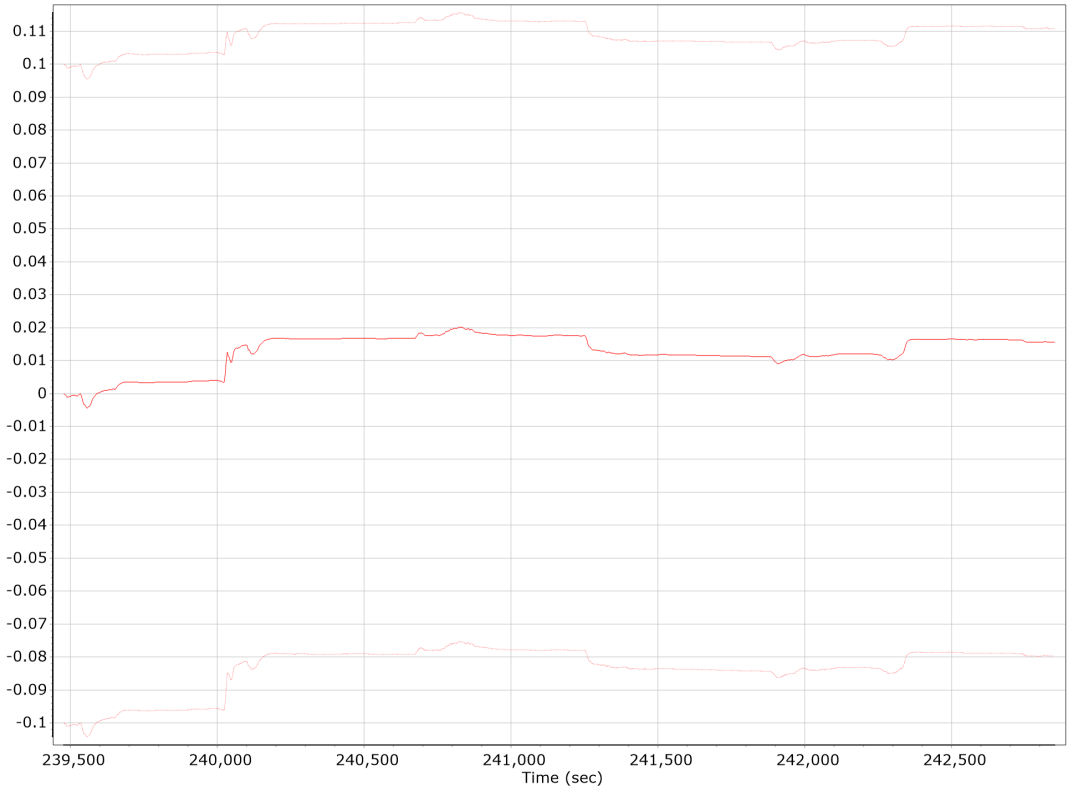
X Gyro Bias (deg/h)



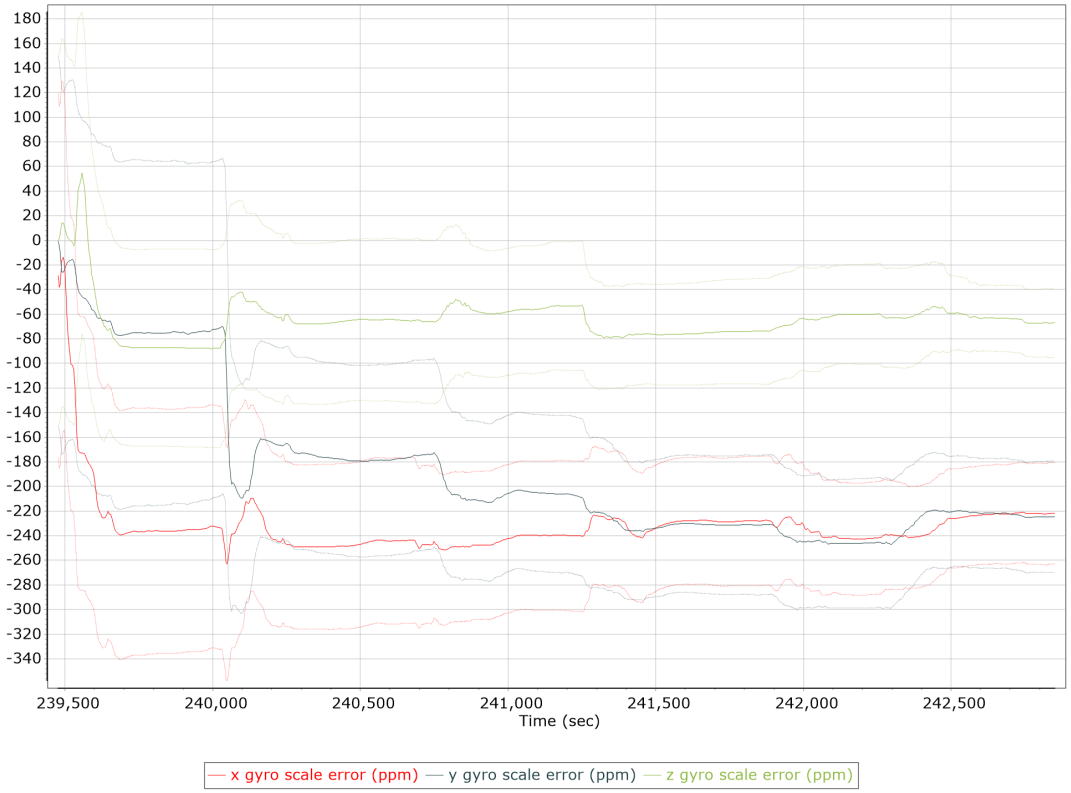
Y Gyro Bias (deg/h)



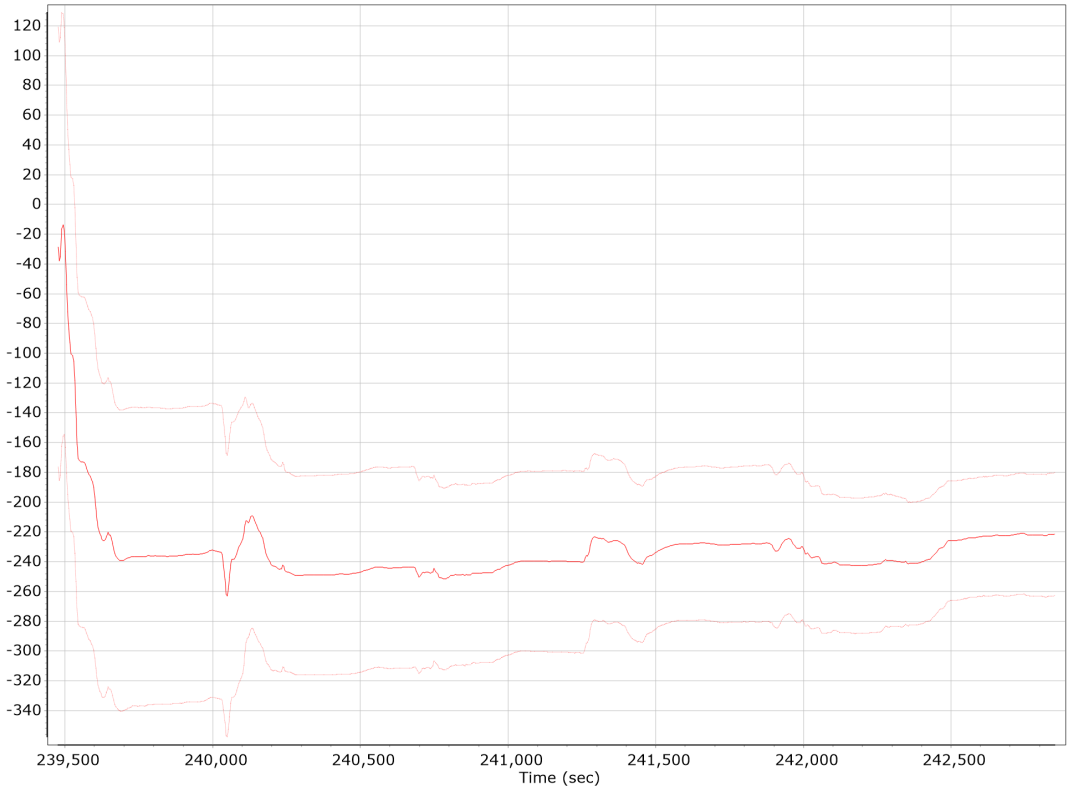
Z Gyro Bias (deg/h)



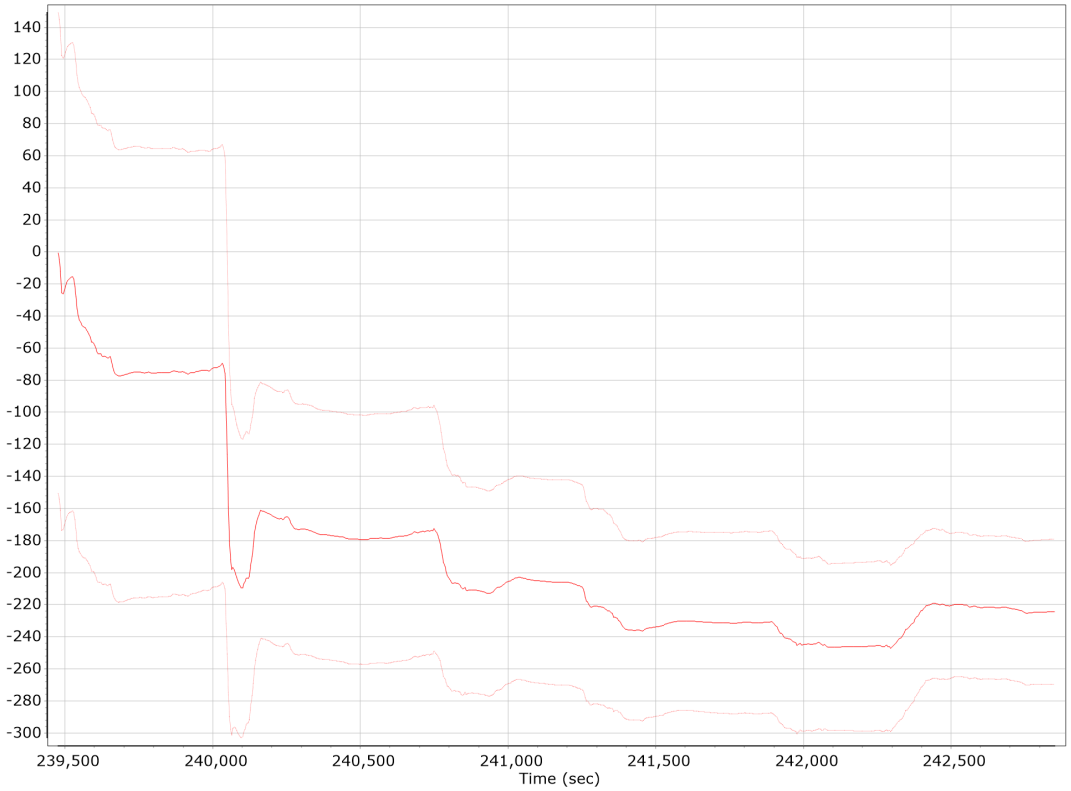
Gyro Scale Error (ppm)



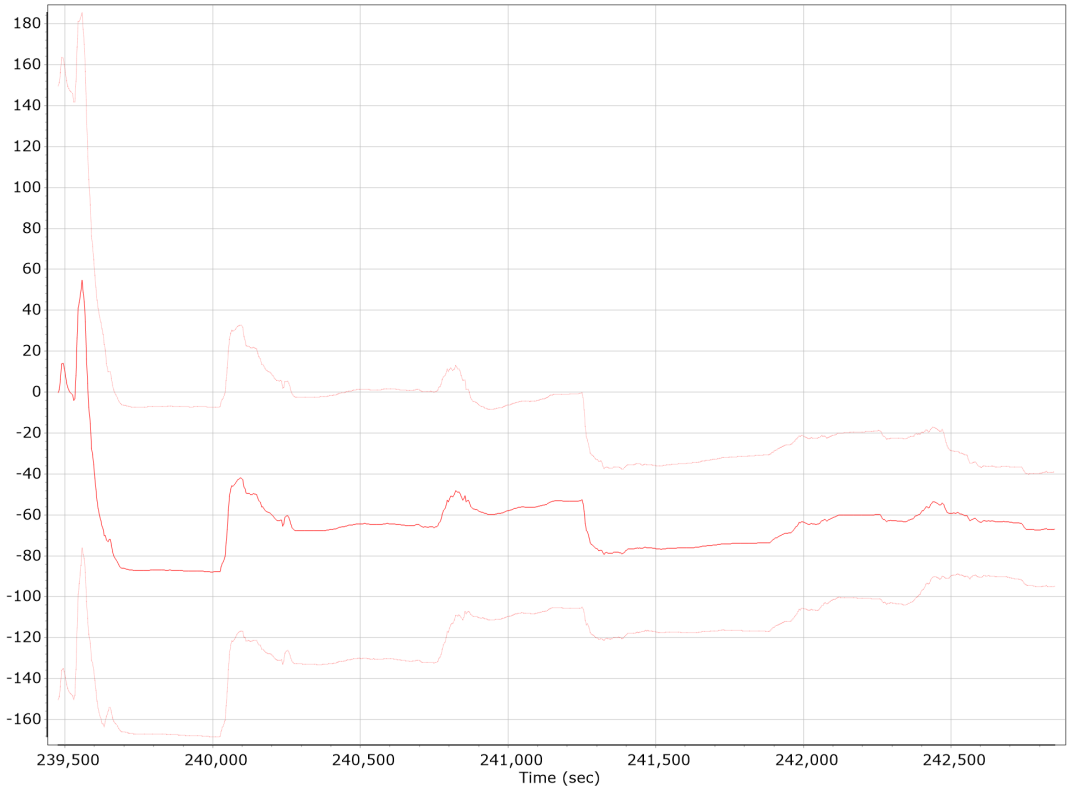
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)

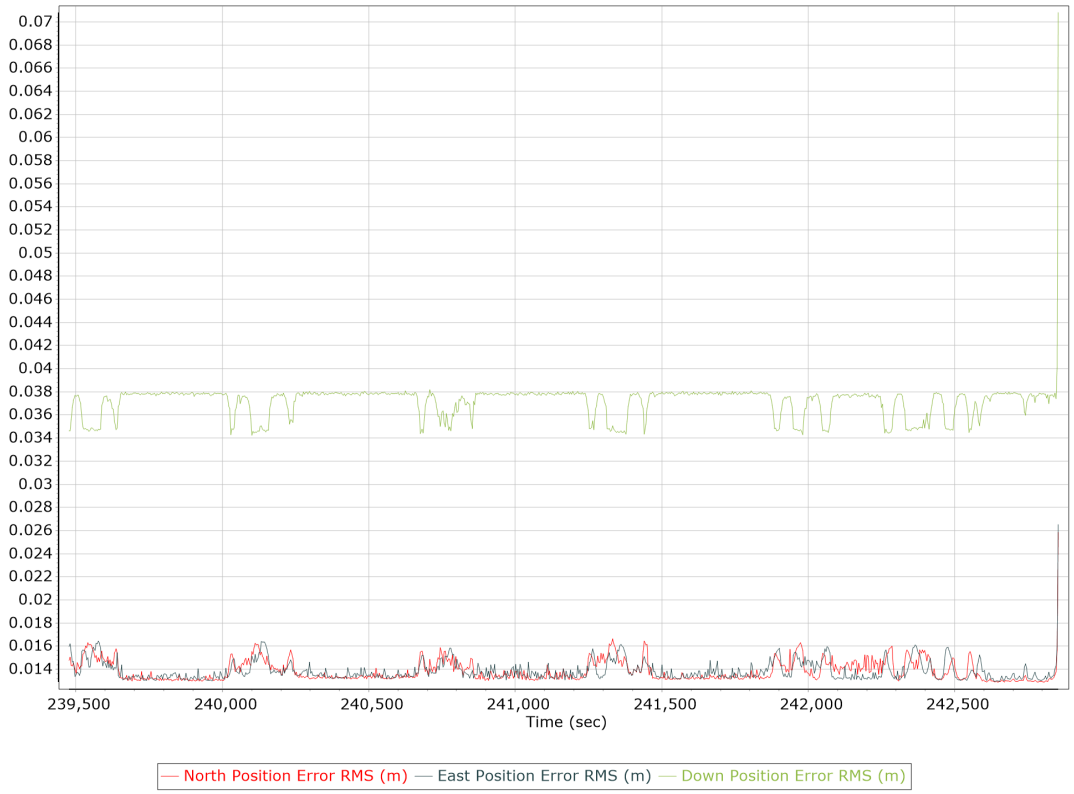


Z Gyro Scale Error (ppm)

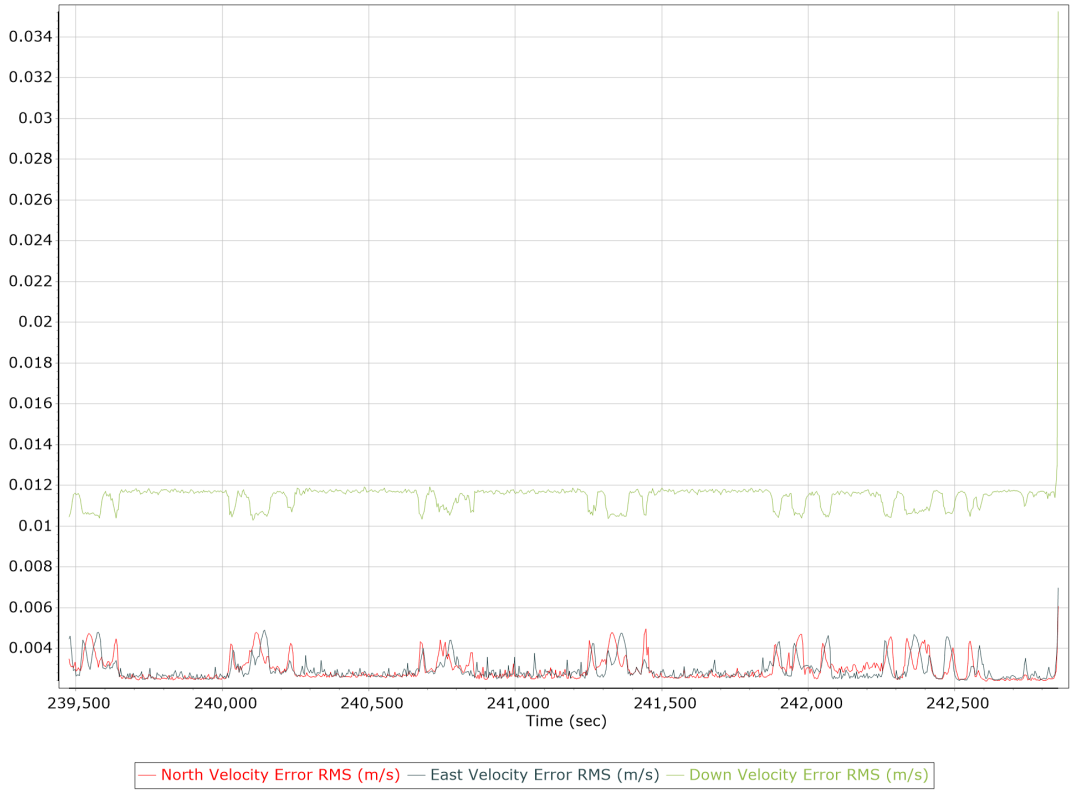


Smoothed Performance Metrics

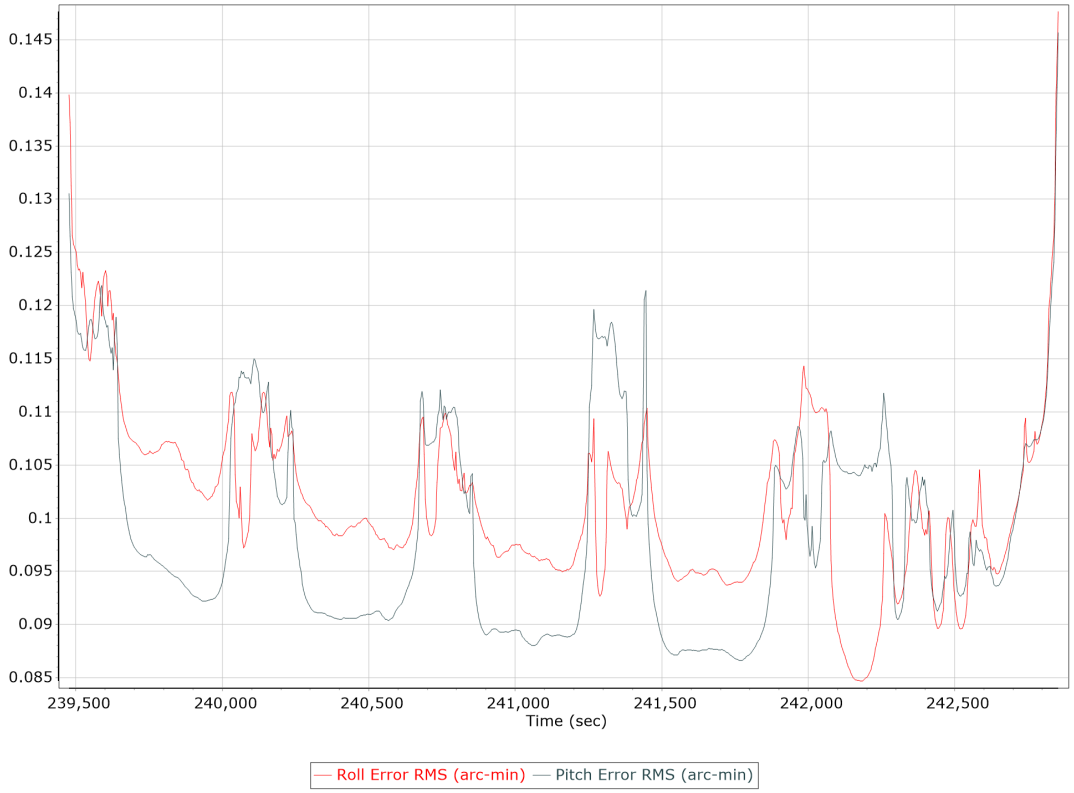
Position Error RMS (m)



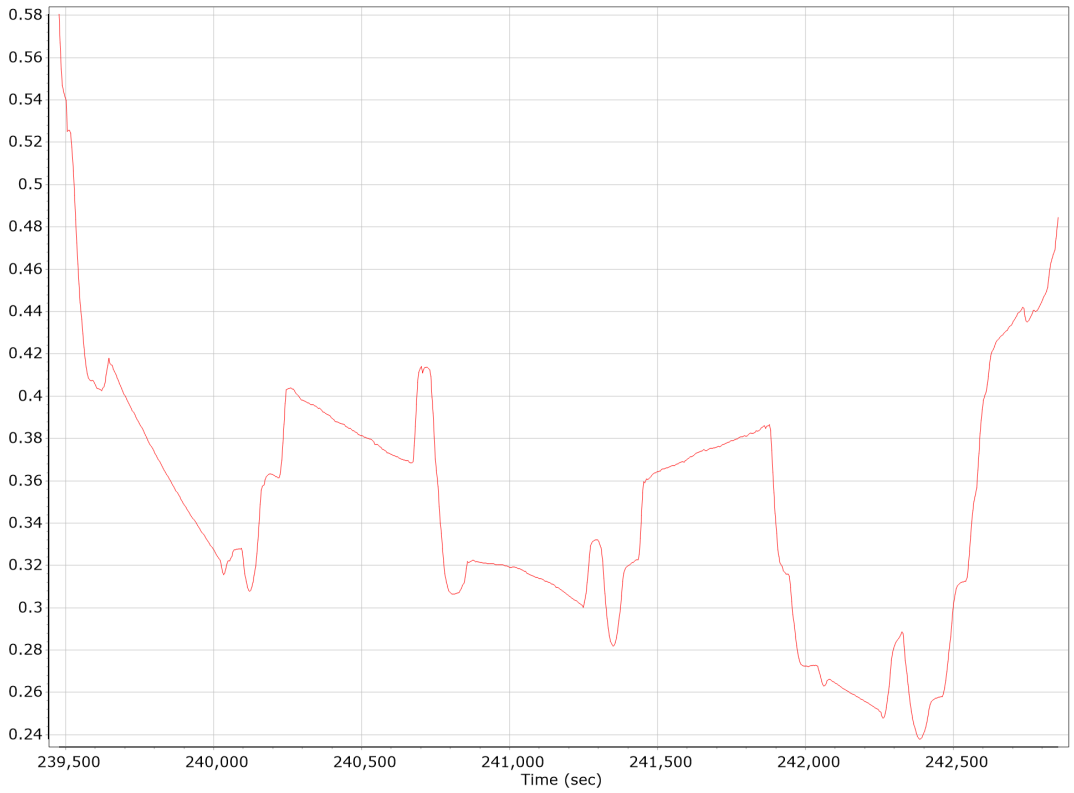
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

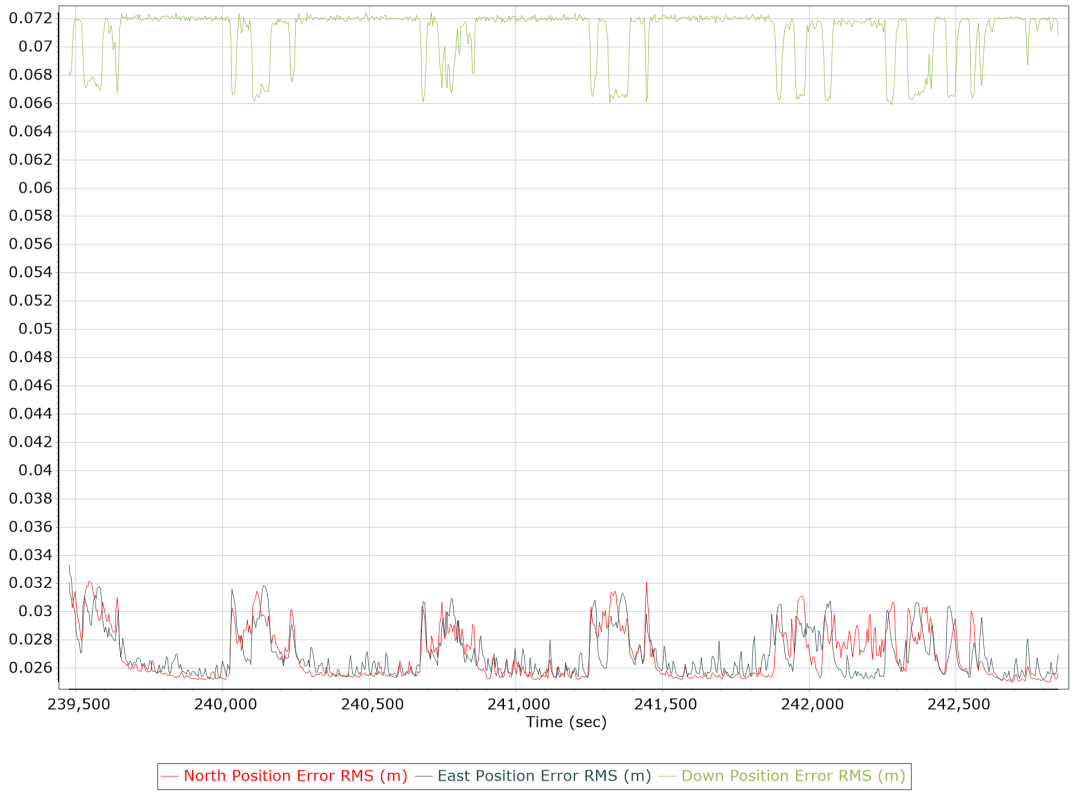


Heading Error RMS (arc-min)

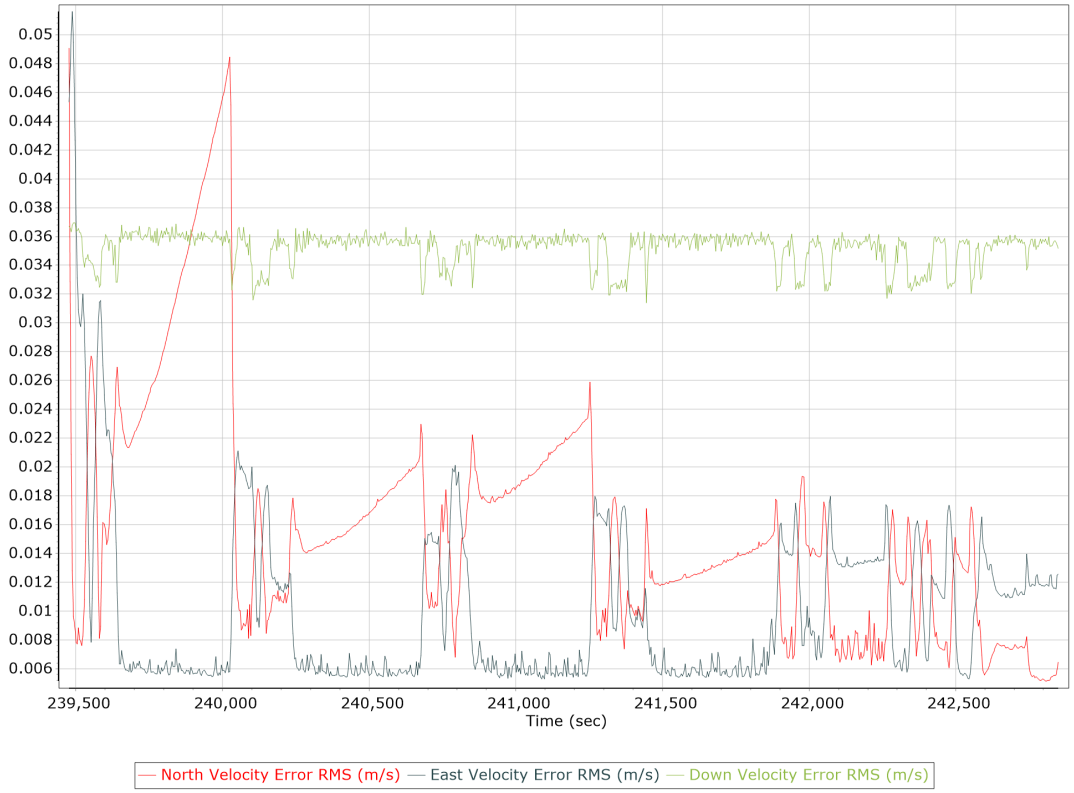


Forward Processed Performance Metrics

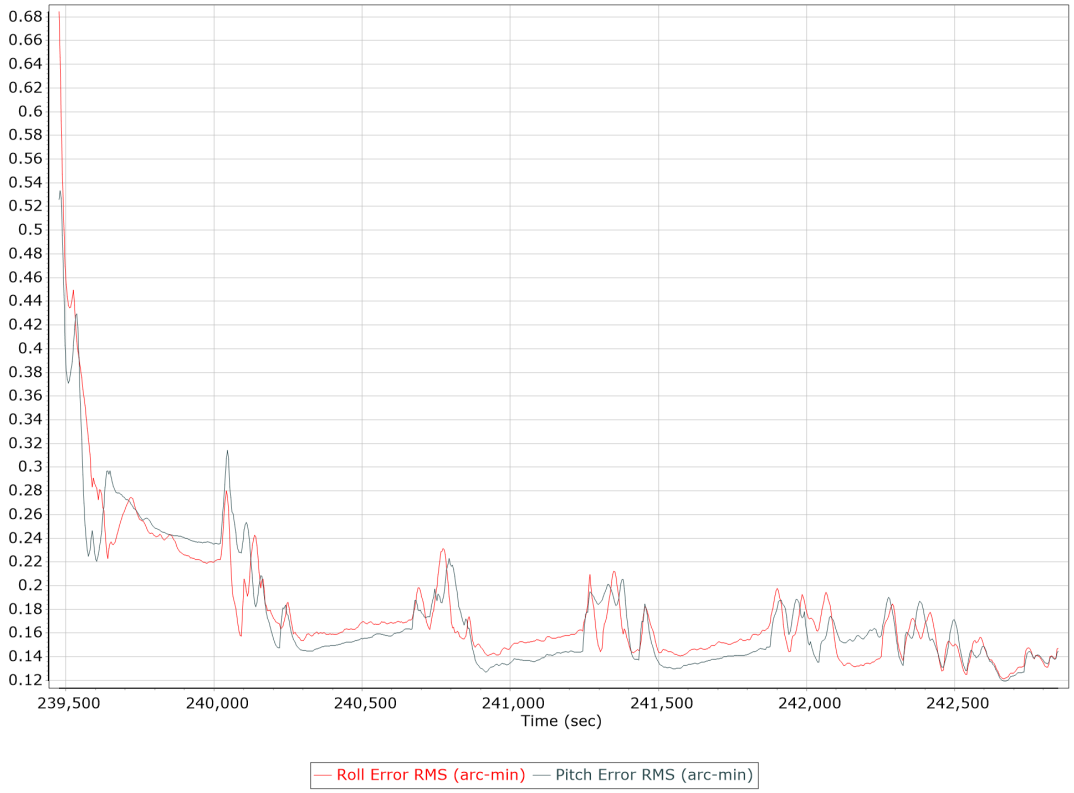
Position Error RMS (m)



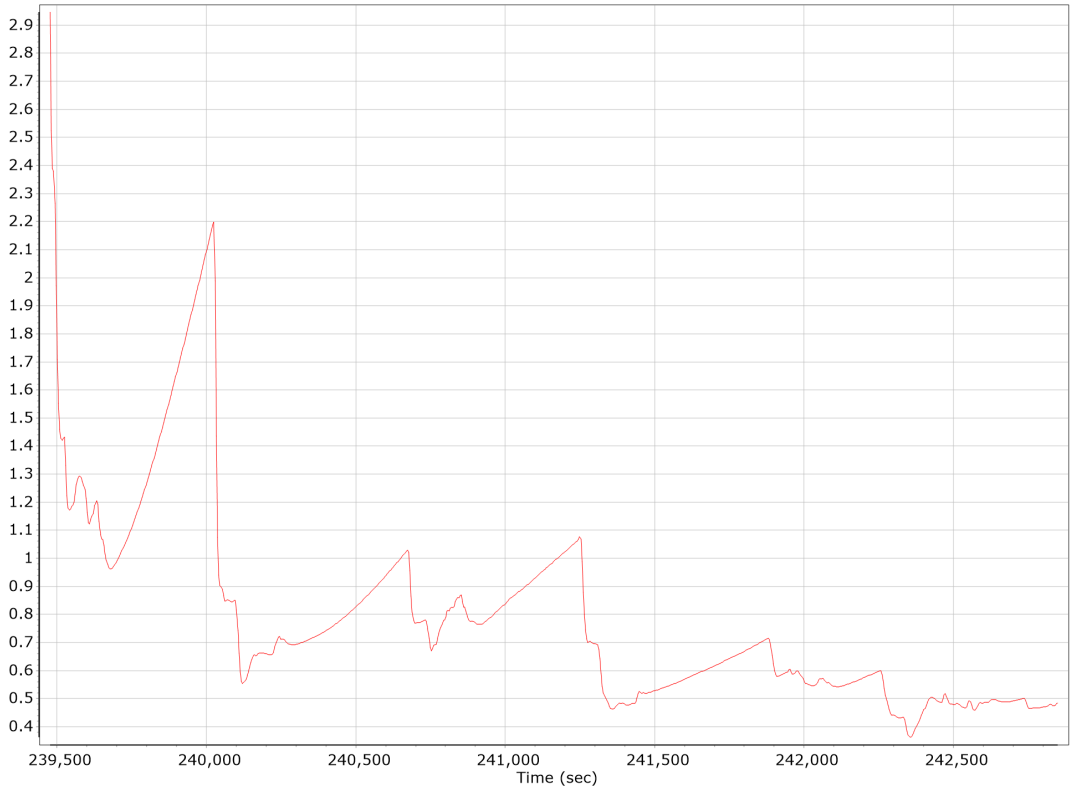
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

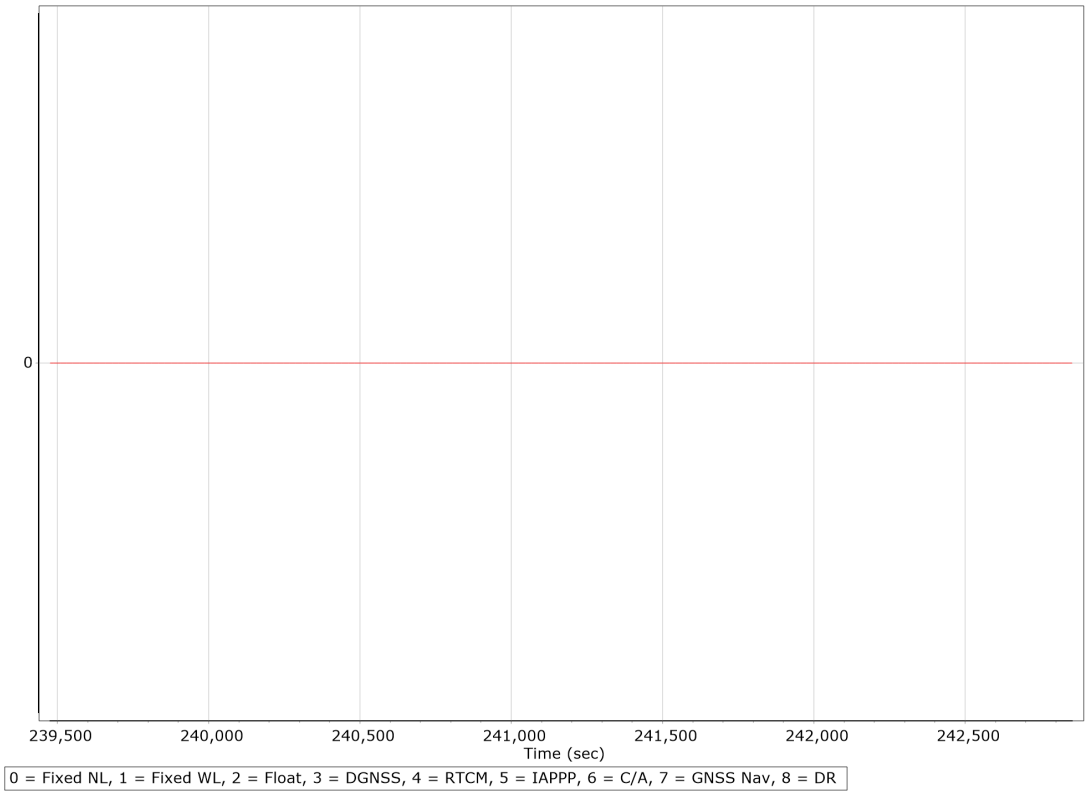


Heading Error RMS (arc-min)

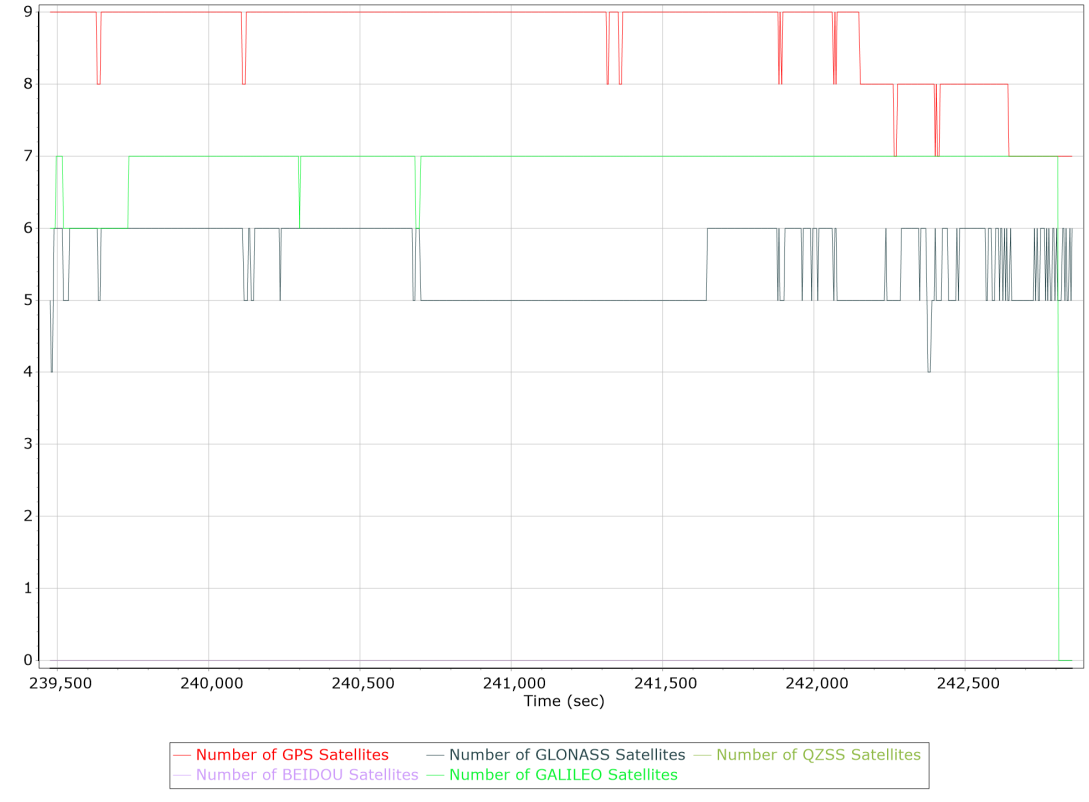


Forward Processed Solution Status

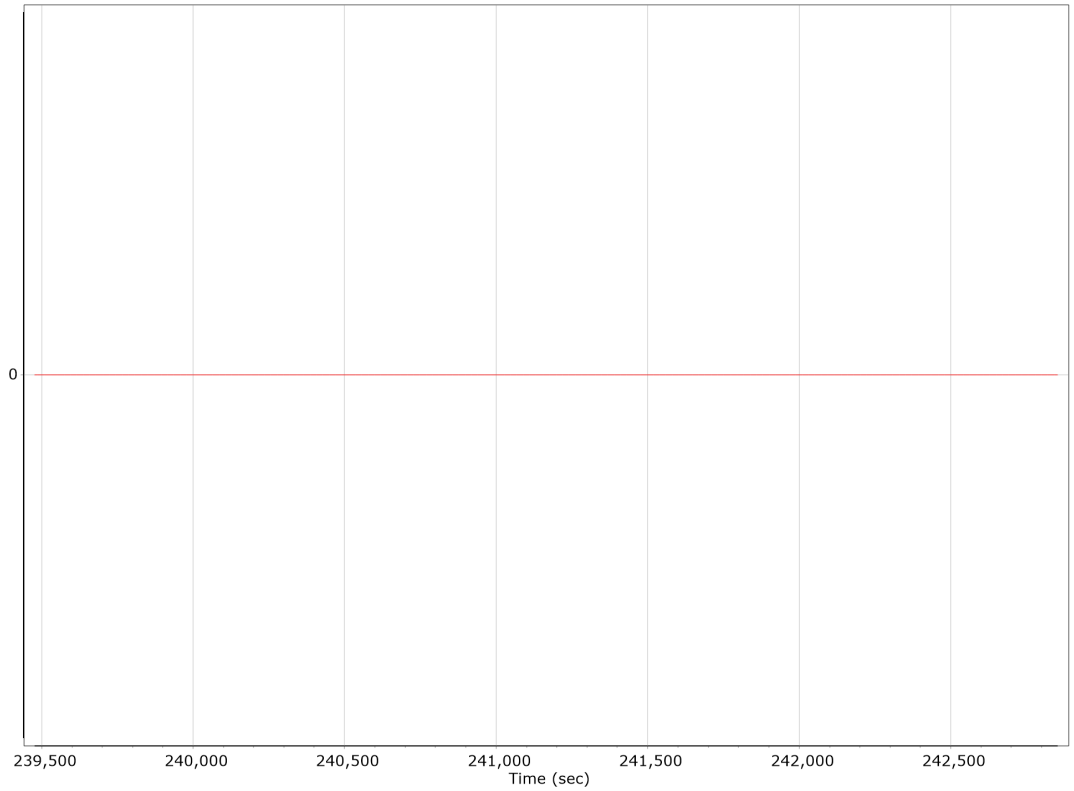
Processing Mode



Number of Satellites



Baseline Length



General Information

Mission Information

Project name	09262023C_4040
Processing date	2023-12-11 19:53:35
Mission date	2023-09-26 21:53:09
Mission duration	03:16:14.670
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N10451
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
230926_215250_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm2690.23g	GLONASS Broadcast Ephemeris
Ephm2690.23n	GPS Broadcast Ephemeris
Ephm2700.23g	GLONASS Broadcast Ephemeris
Ephm2700.23n	GPS Broadcast Ephemeris
IGS0OPSFIN_20232680000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232690000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232700000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232710000_01D_15M_ORB.SP3	GPS Precise Ephemeris

Output Files

Filename	File type
sbet_09262023C_4040.out	SBET Trajectory File

Rover Data Summary

First raw data file	230926_215250_INS-GPS_1.raw		
Last raw data file	230926_215250_INS-GPS_1.raw		
Start GPS week	2281		
Start time	251570.927 (9/26/2023 9:52:50 PM)		
End time	265574.507 (9/27/2023 1:46:14 AM)		
Start of fine alignment	253793.240 (9/26/2023 10:29:53 PM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.000	0.000	-0.900
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

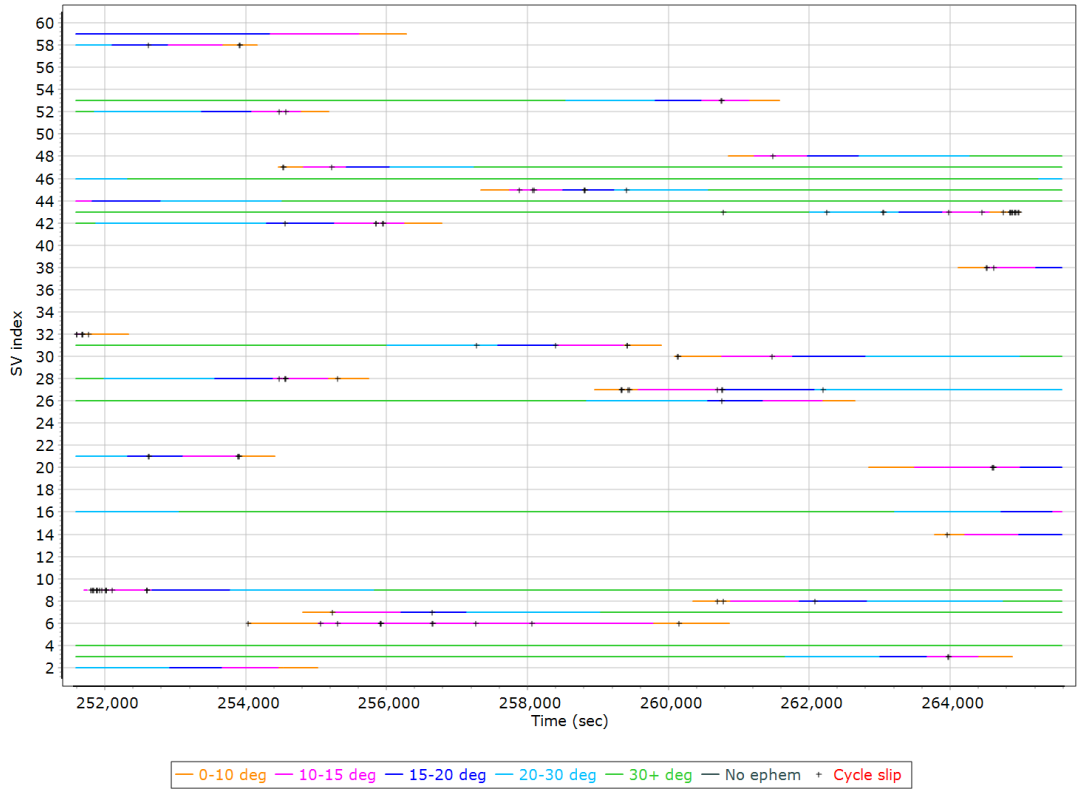
Rover Data QC

Raw IMU Import QC Summary

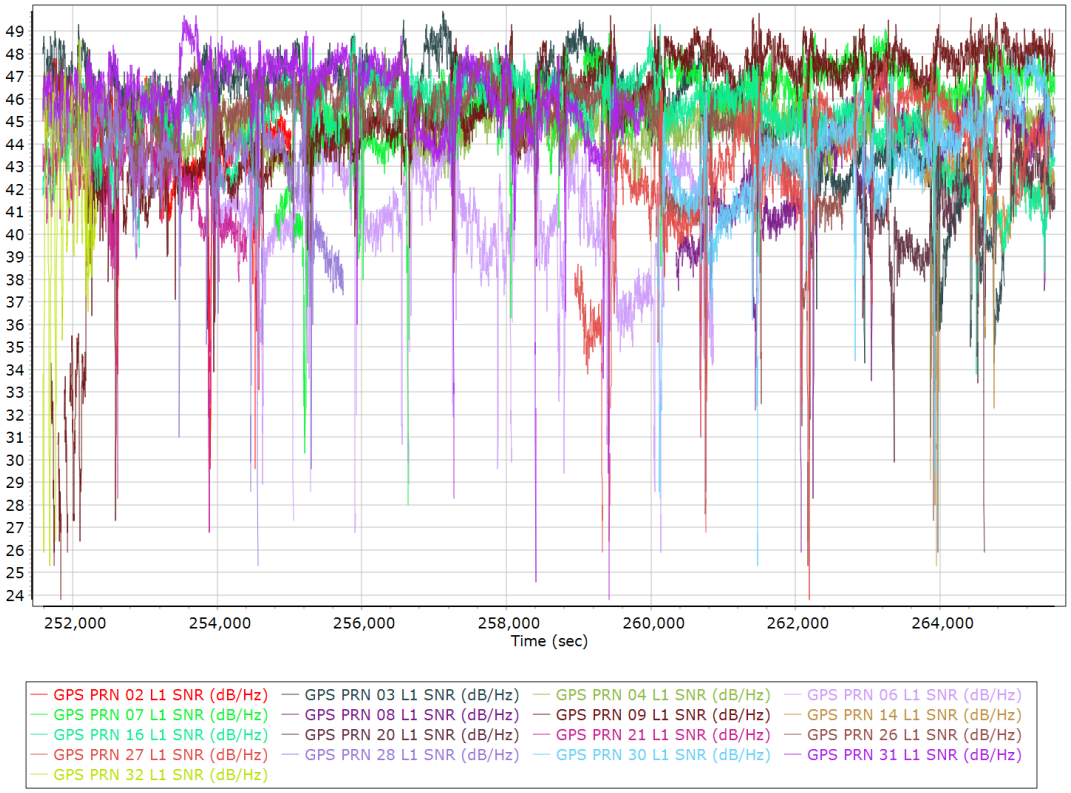
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_09262023C_4040.log
IMU Records Processed	2797463
Termination Status	Warnings
IMU Anomalies	1
IMU Failure Messages	
253053.836 : WARNING : Gap of 14.0076 seconds in CHECKDT input data	

Primary Observables & Satellite Data

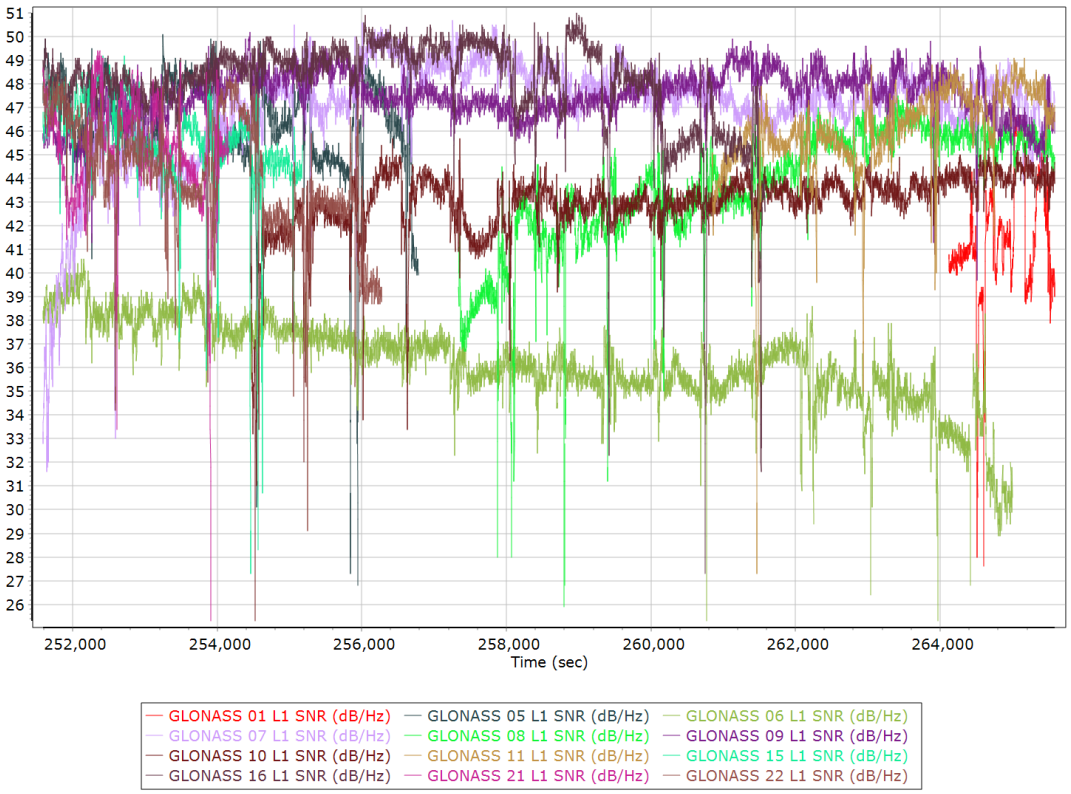
GPS/GLONASS L1 Satellite Lock/Elevation



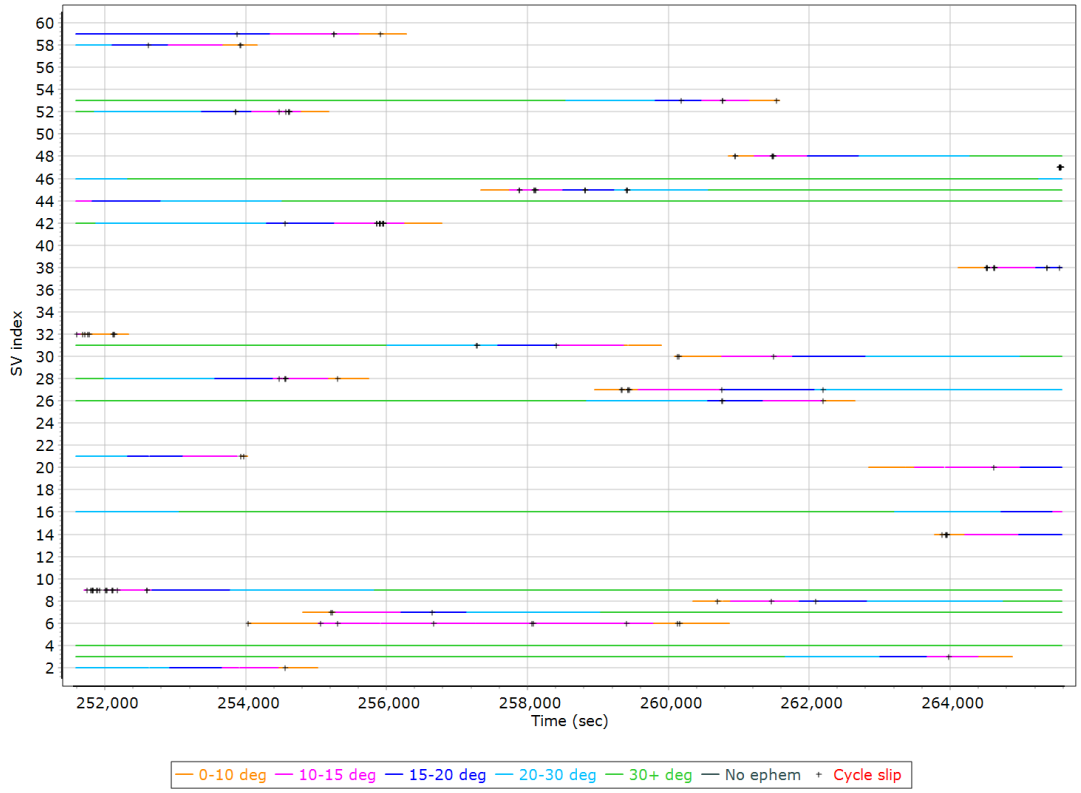
GPS L1 SNR



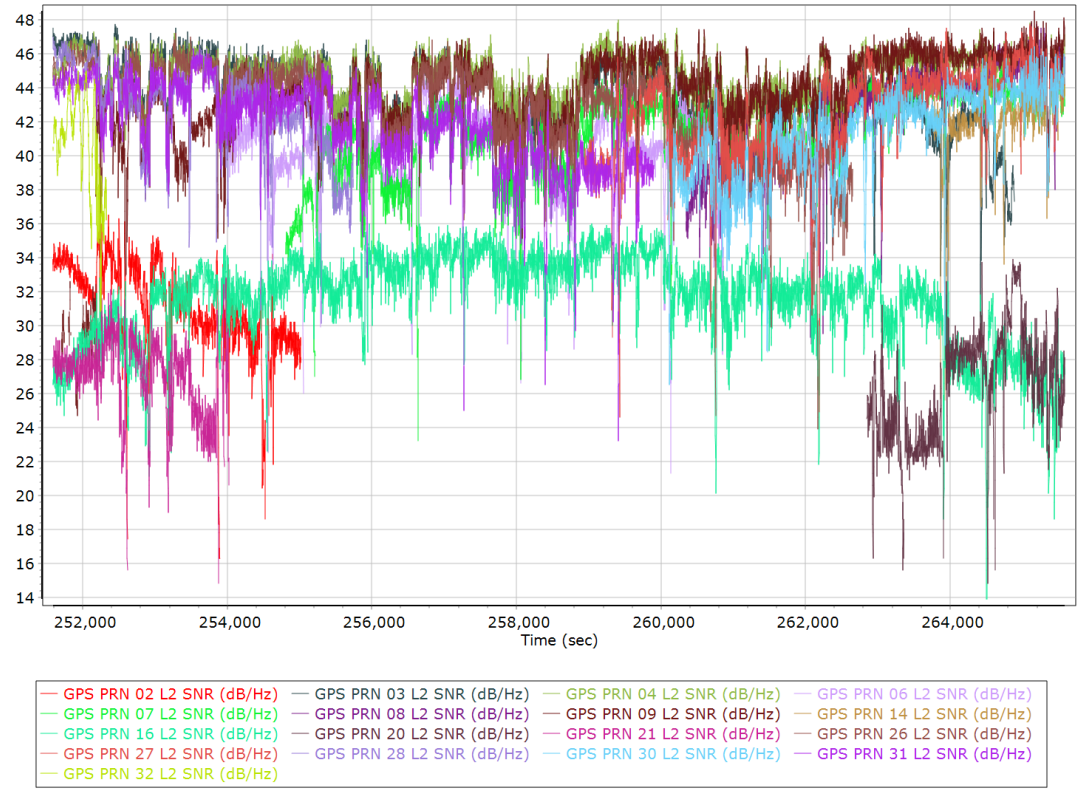
GLONASS L1 SNR



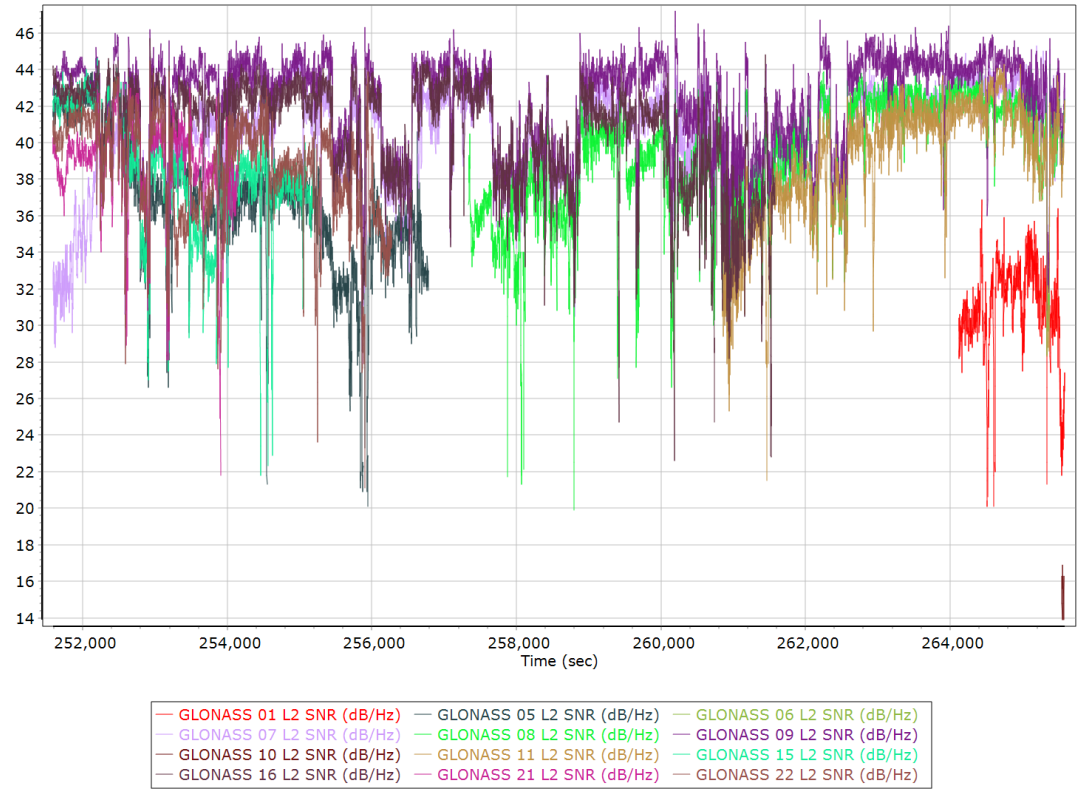
GPS/GLONASS L2 Satellite Lock/Elevation



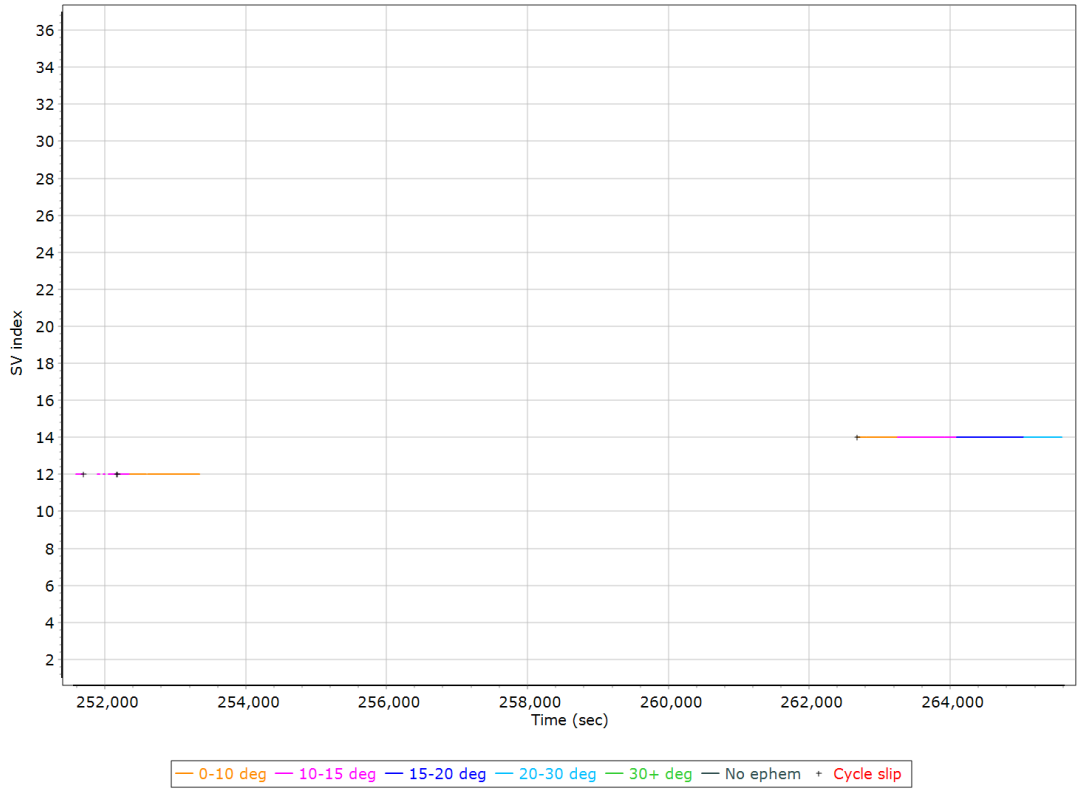
GPS L2 SNR



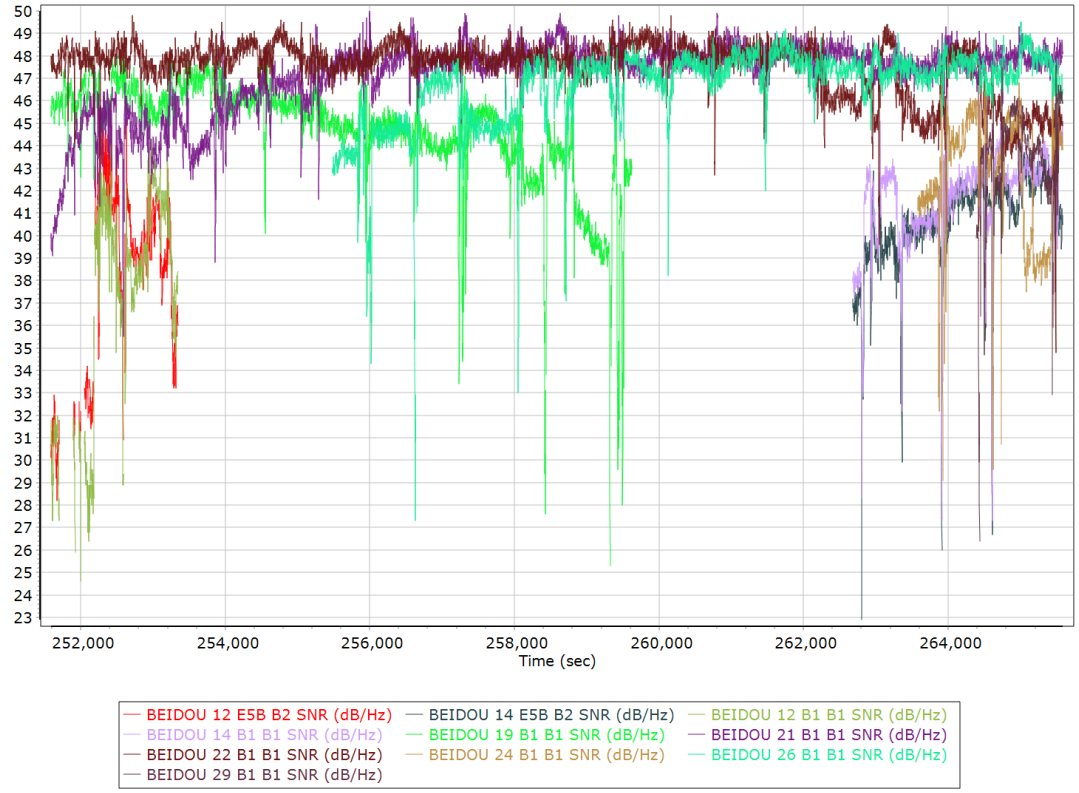
GLONASS L2 SNR



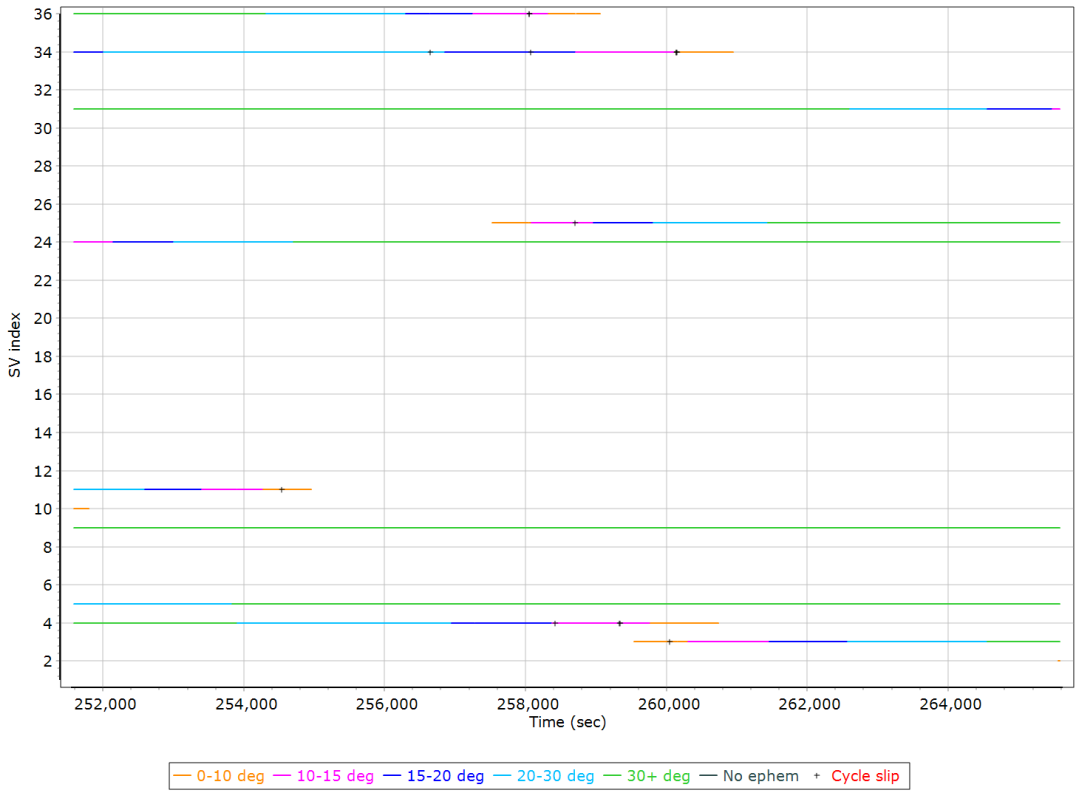
BEIDOU Satellite Lock/Elevation



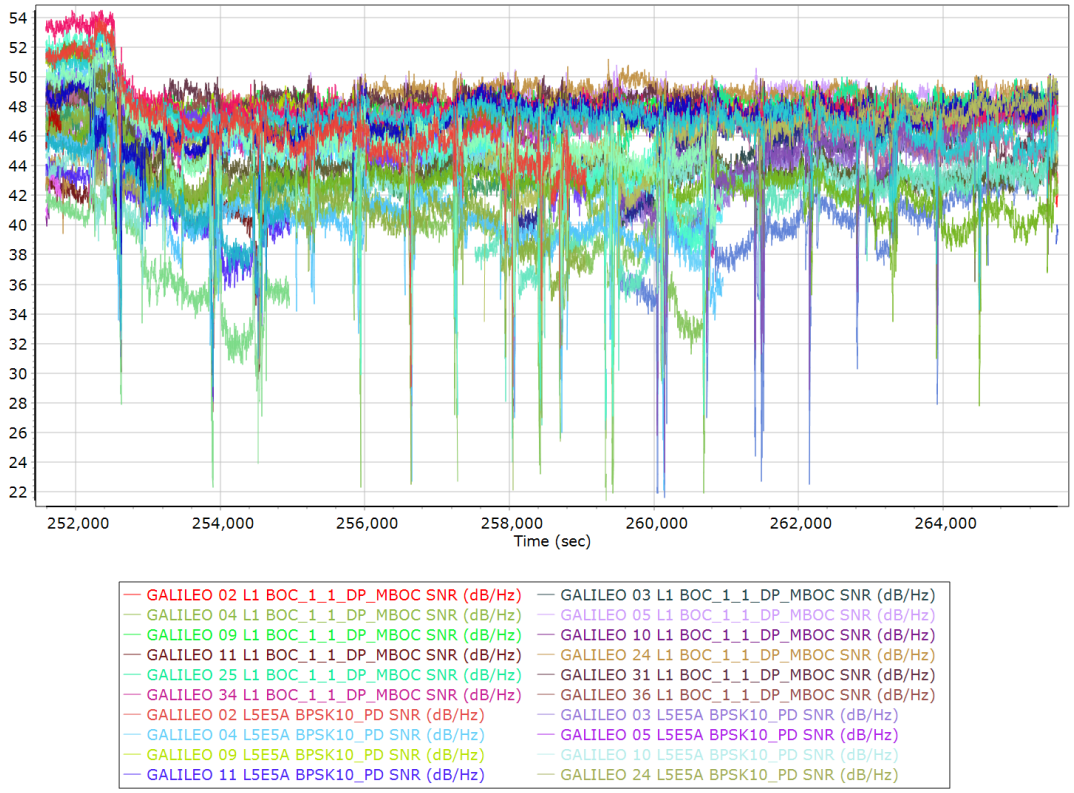
BEIDOU SNR



GALILEO Satellite Lock/Elevation

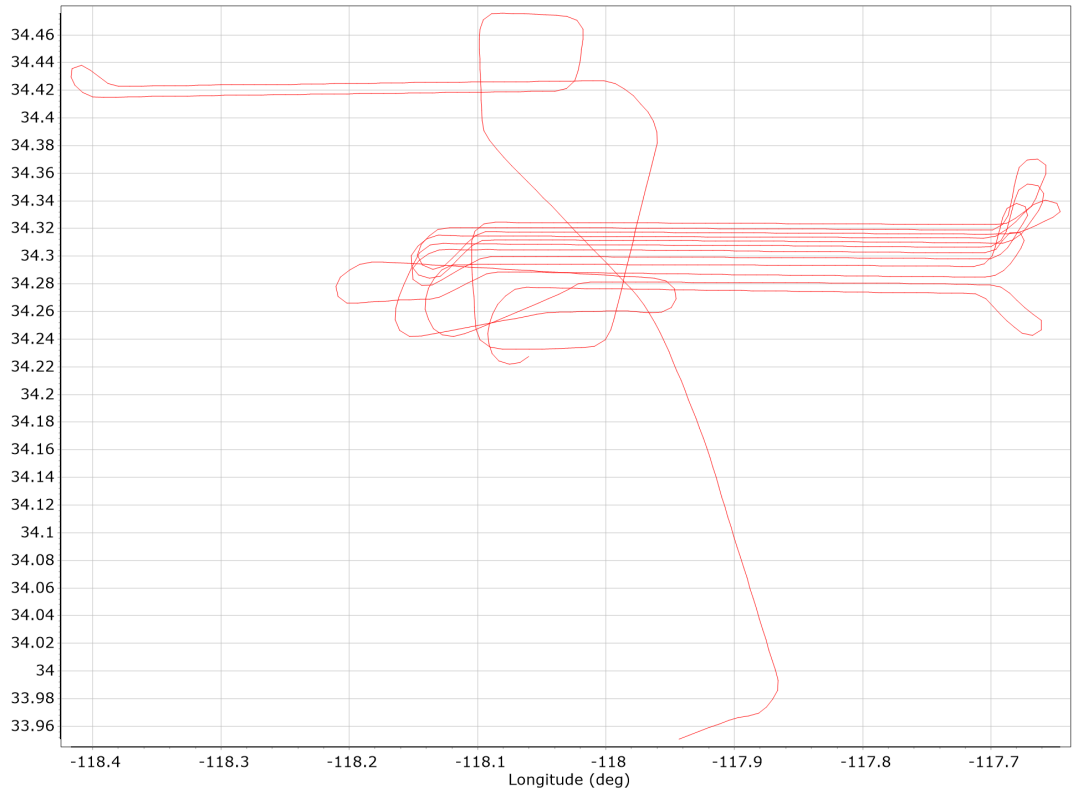


GALILEO SNR

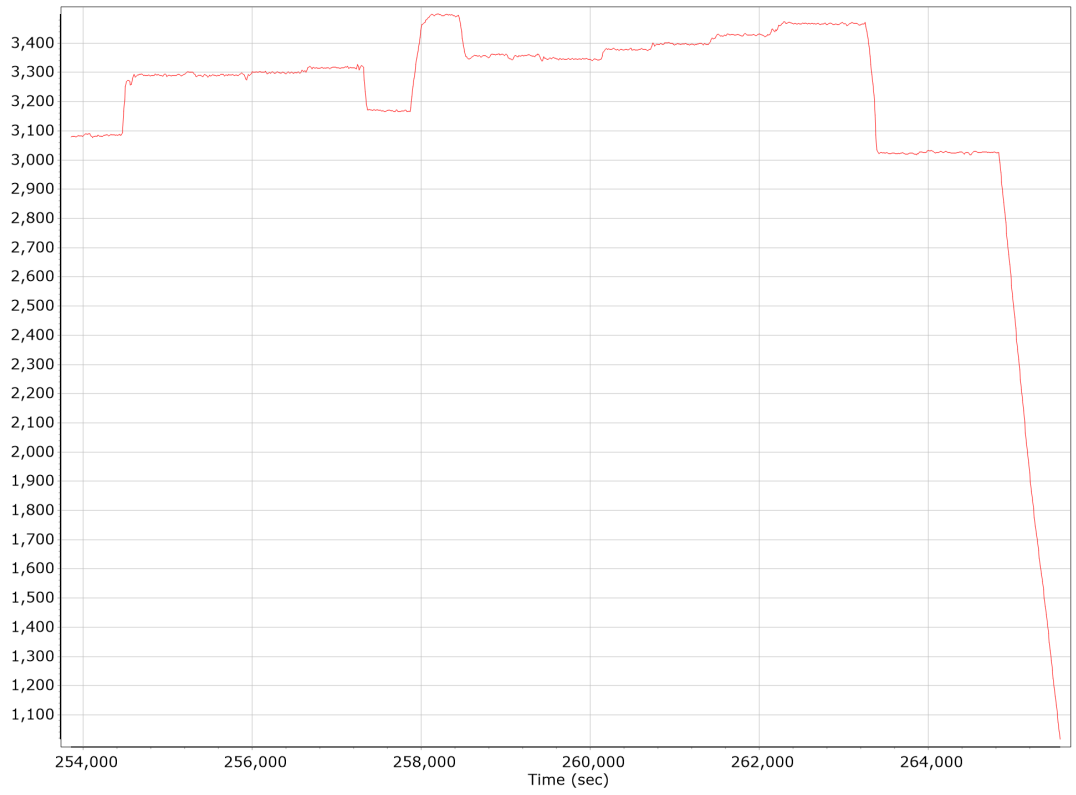

54
52
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36
34
32
30
28
26
24
22
252,000
254,000
256,000
258,000
260,000
262,000
264,000
Time (sec)
GALILEO 02 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 03 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 04 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 05 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 09 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 10 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 11 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 24 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 25 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 31 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 34 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 36 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 02 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 03 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 04 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 05 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 09 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 10 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 11 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 24 L5E5A BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

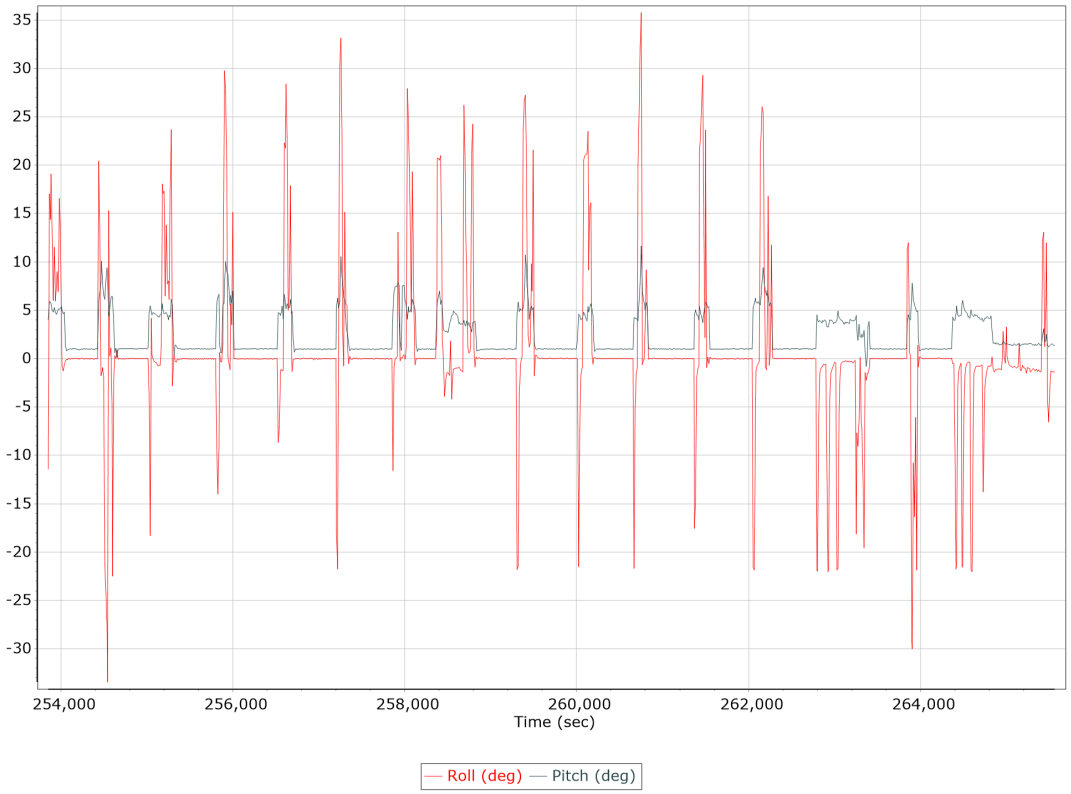
Top View



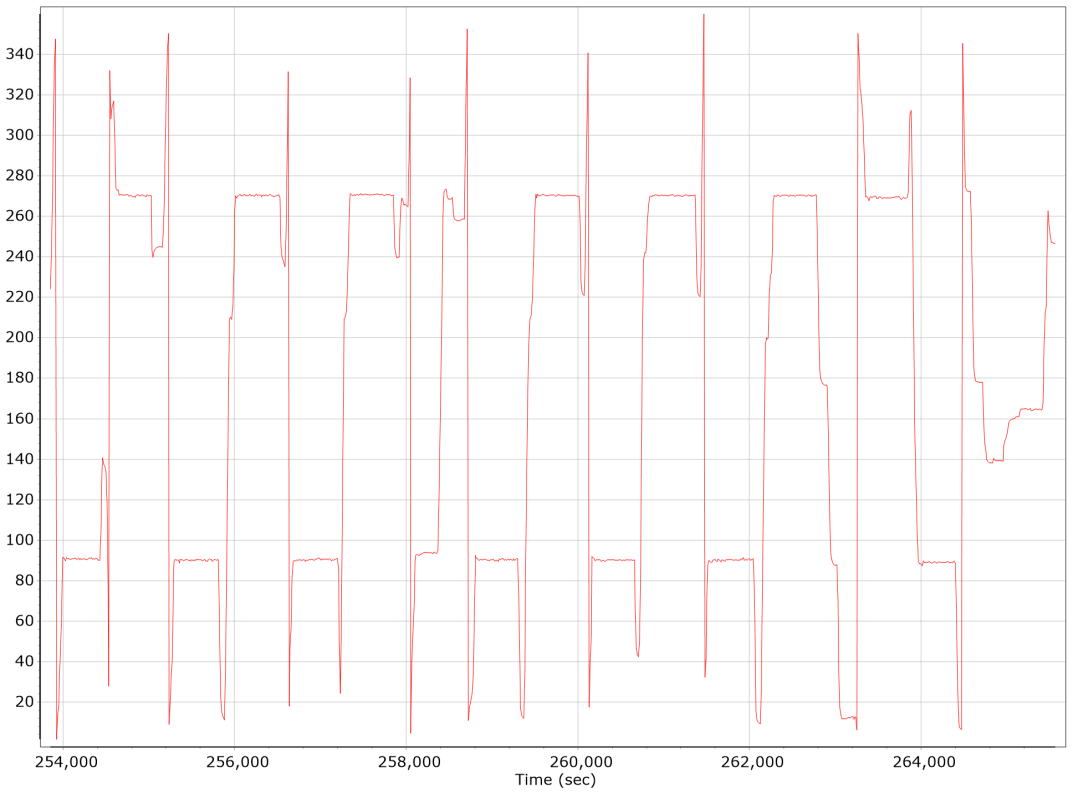
Altitude



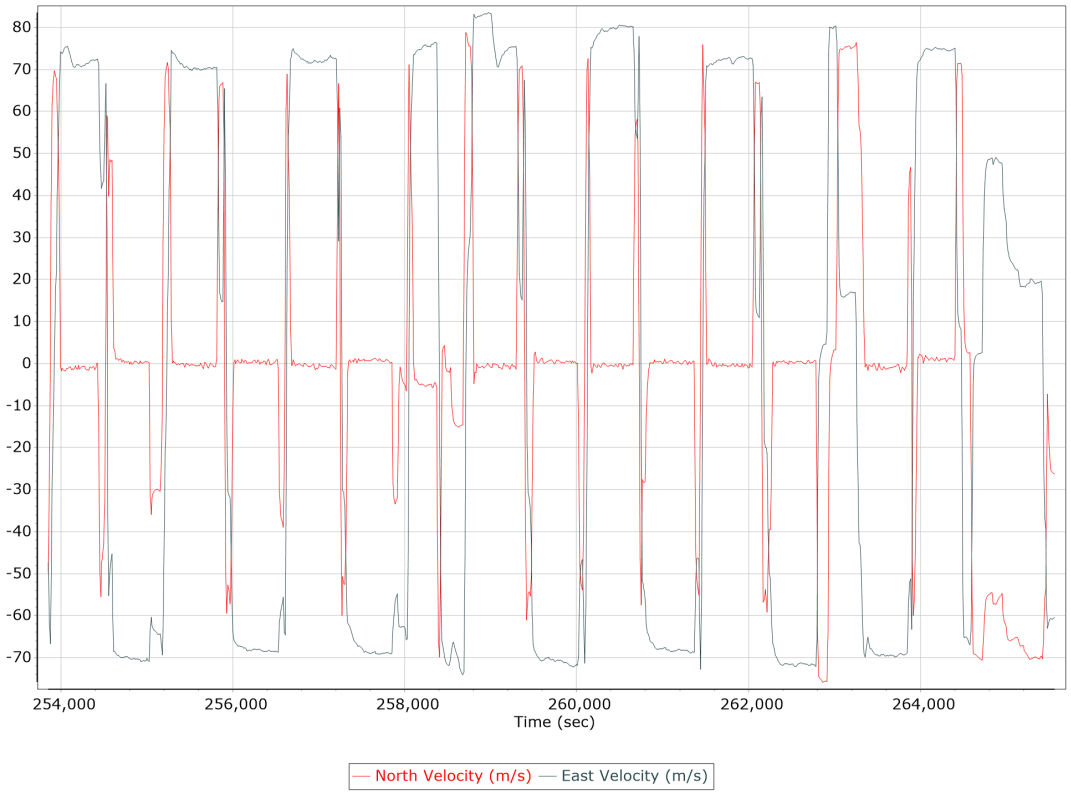
Roll/Pitch



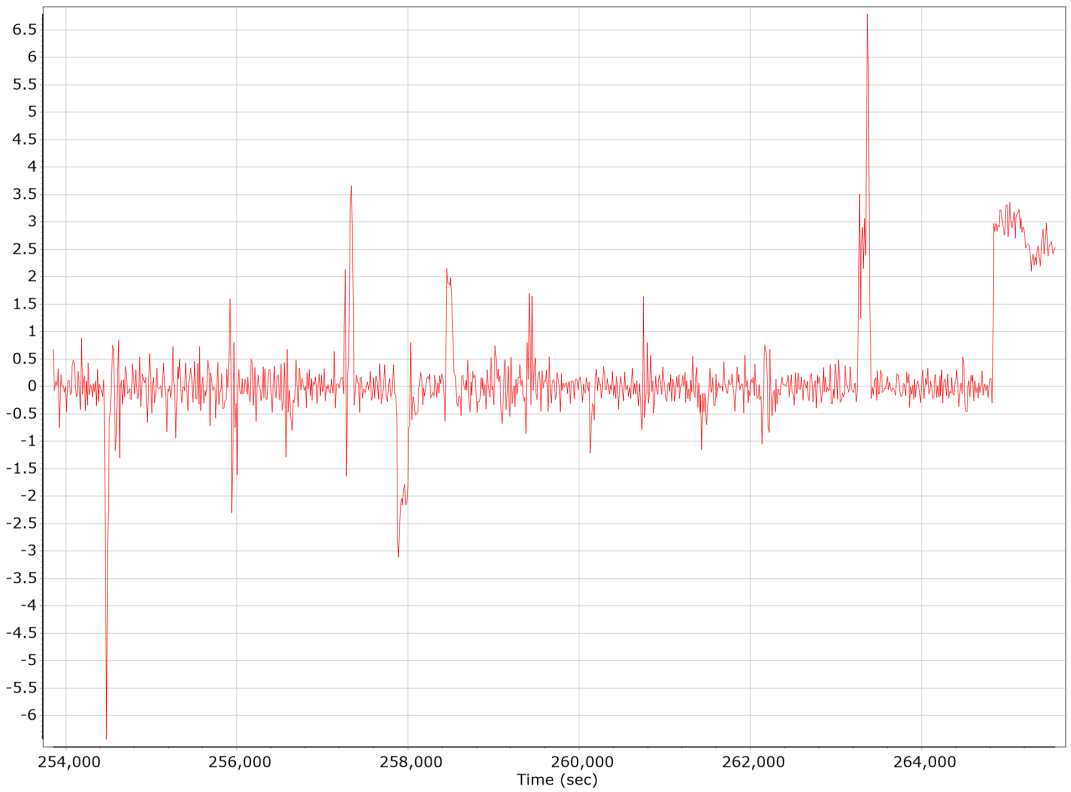
Heading



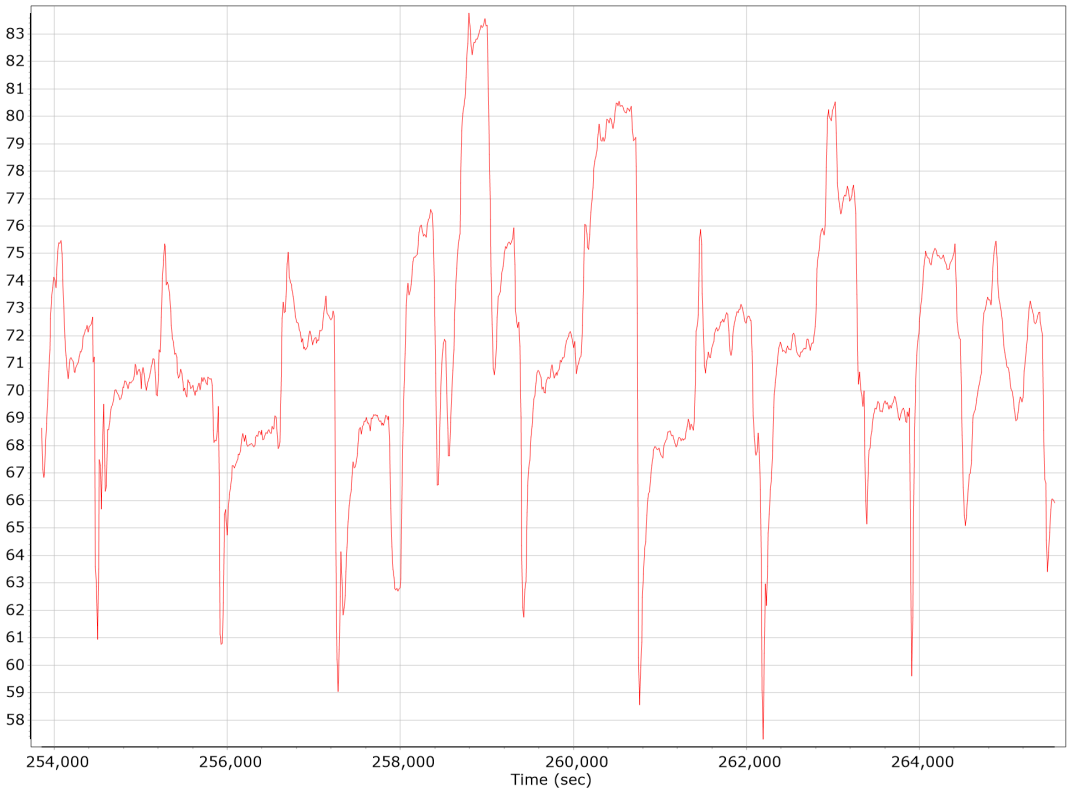
North/East Velocity



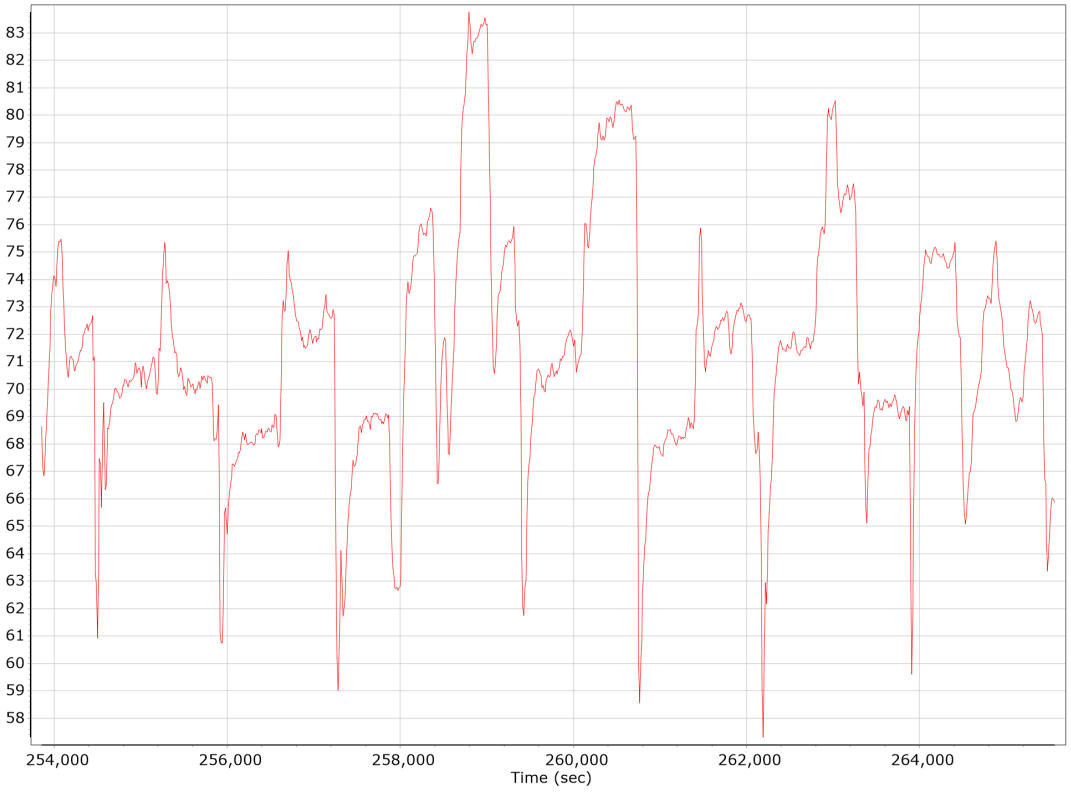
Down Velocity



Total Speed



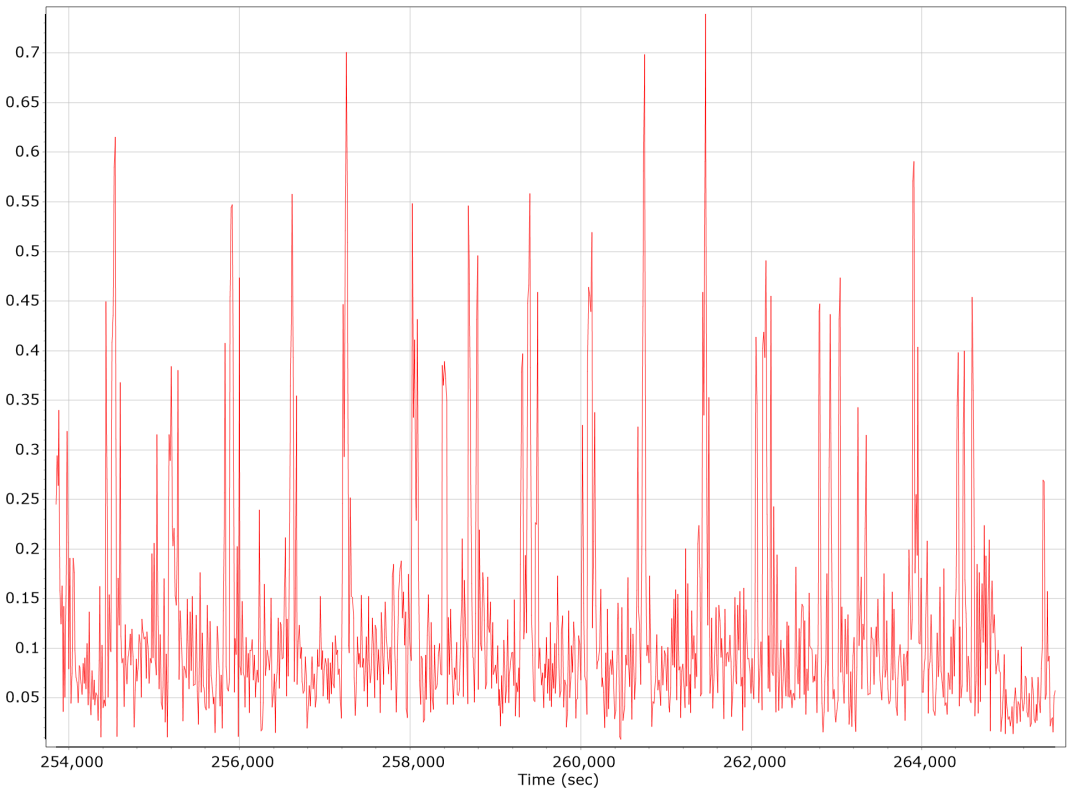
Ground Speed



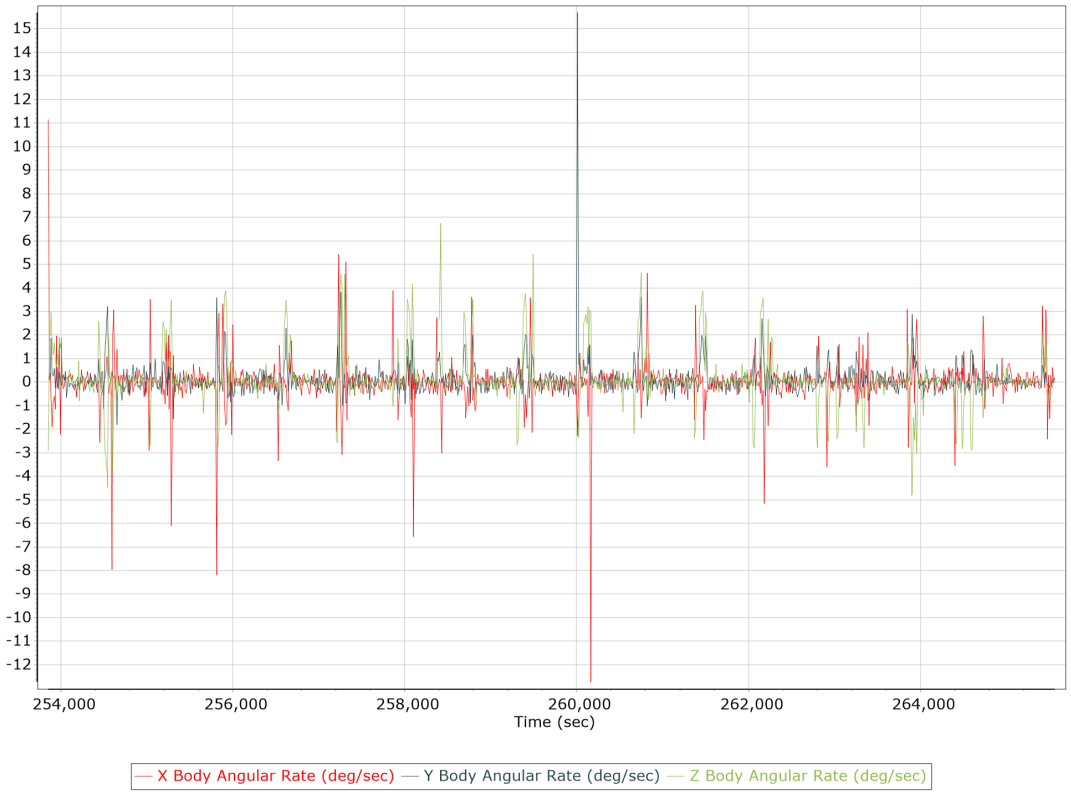
Body Acceleration



Total Body Acceleration

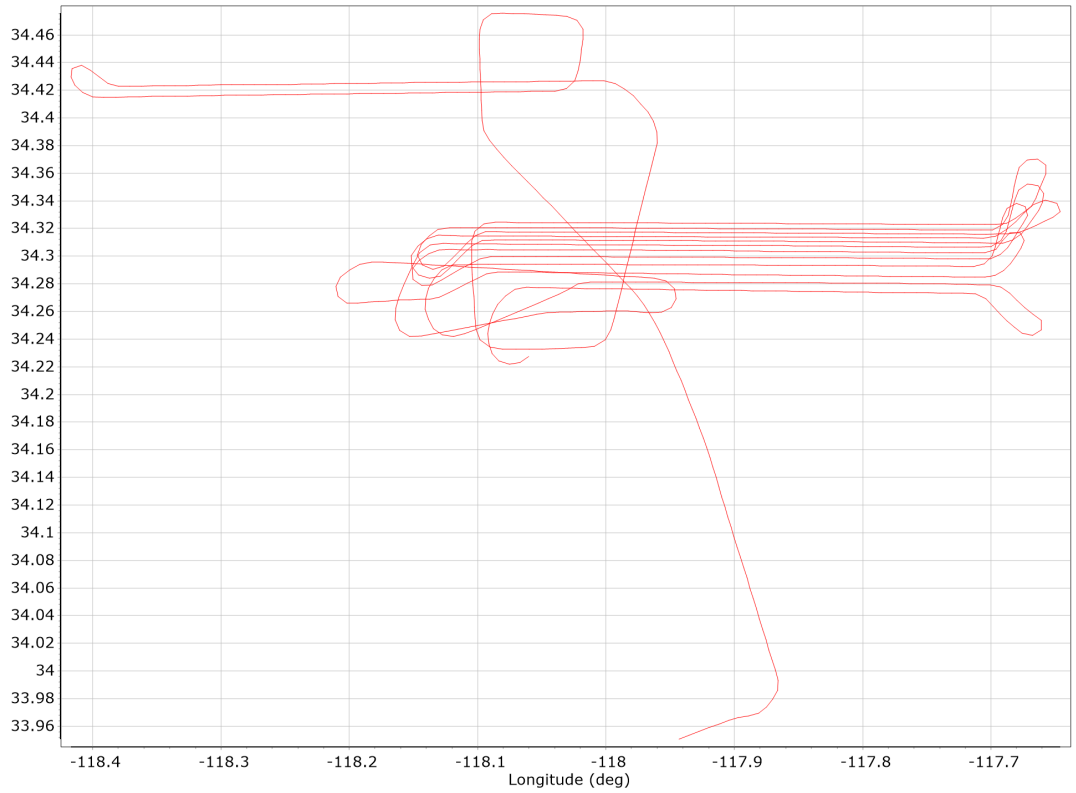


Body Angular Rate

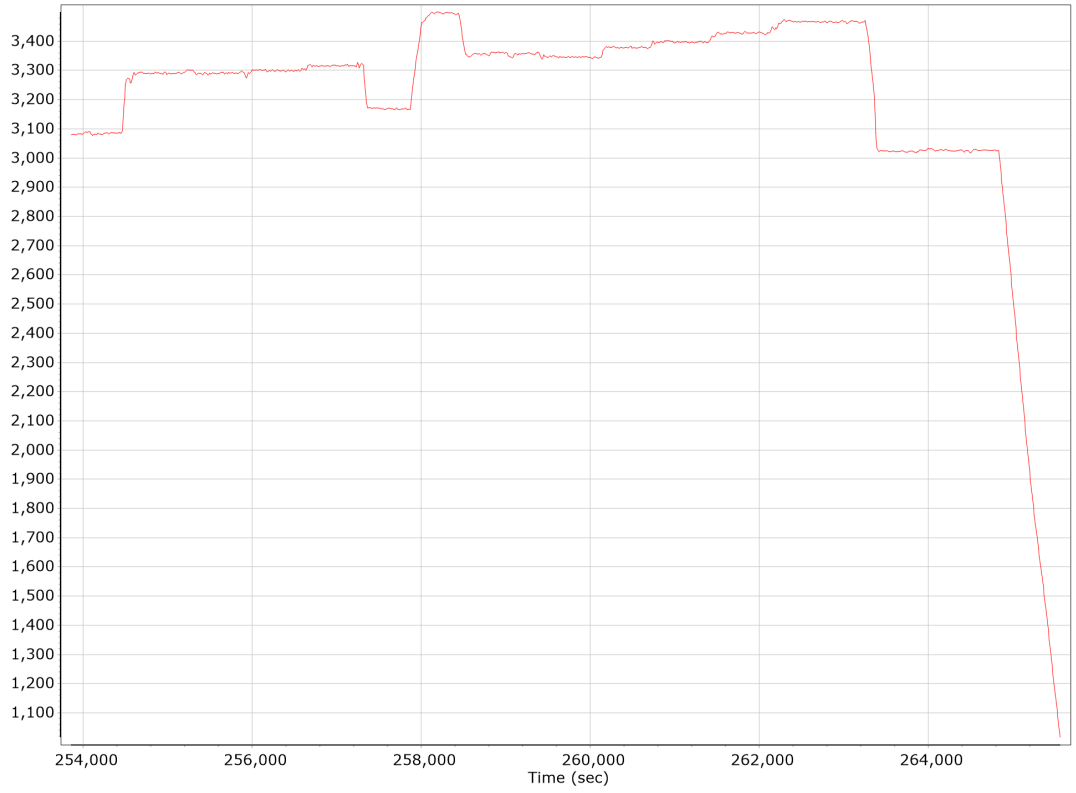


Forward Processed Trajectory Information

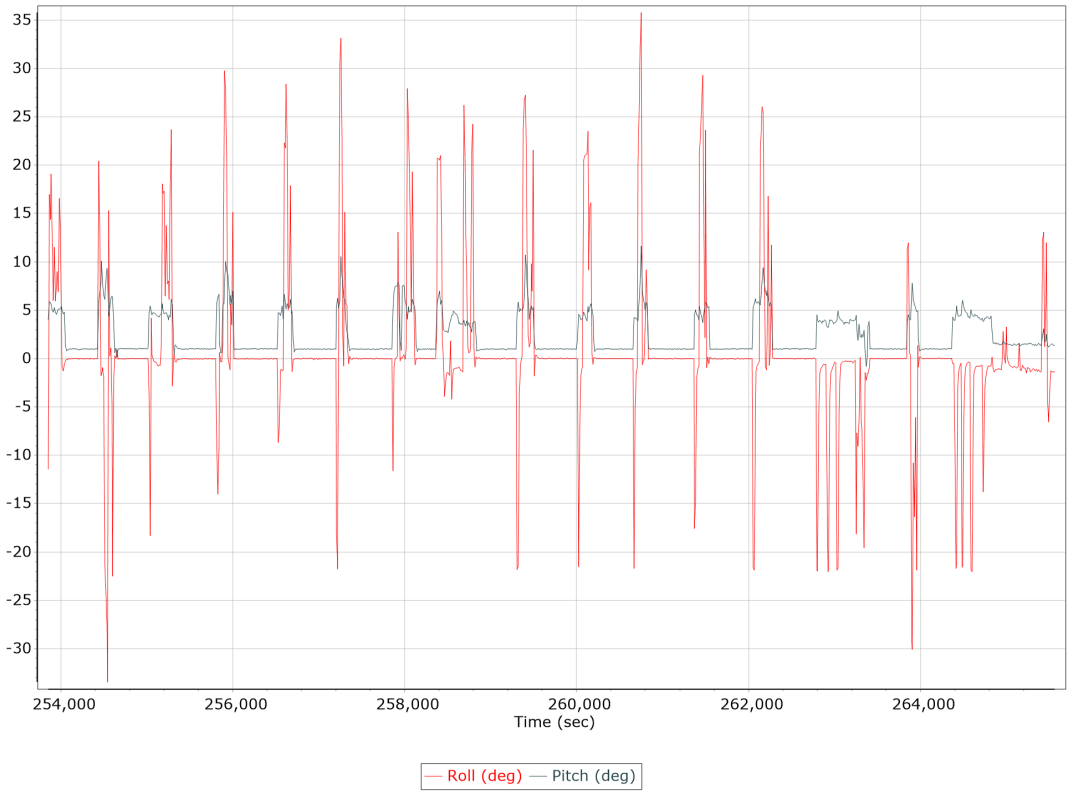
Top View



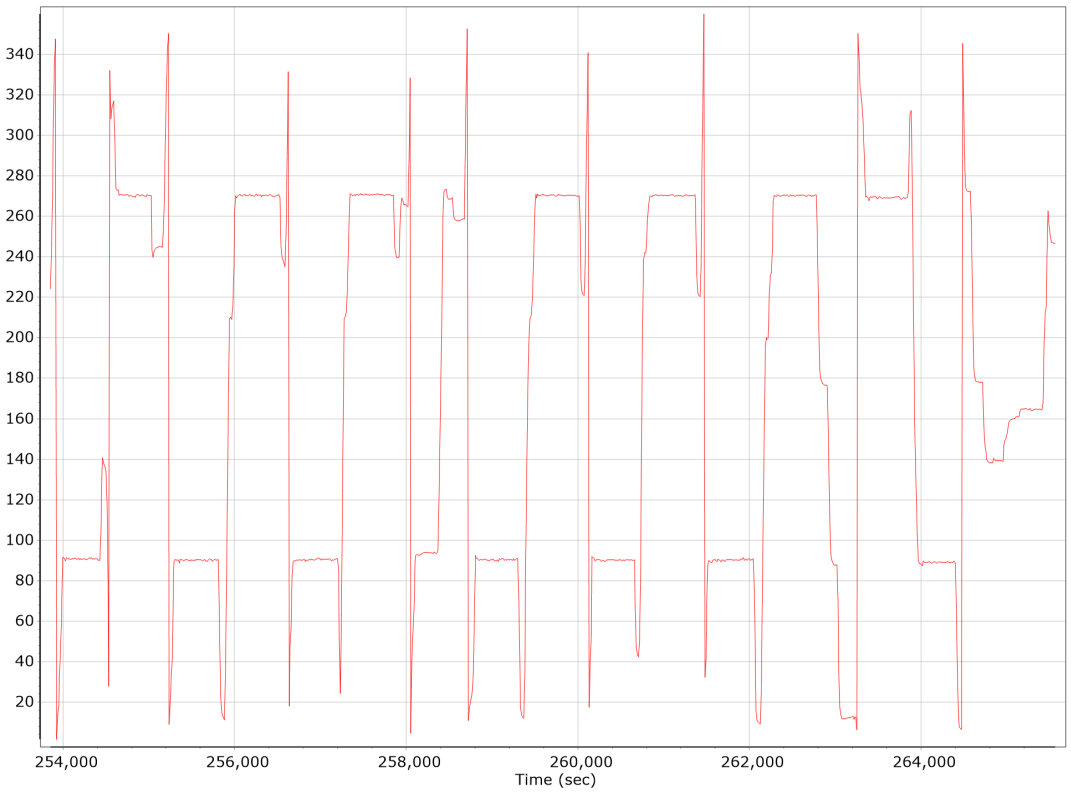
Altitude



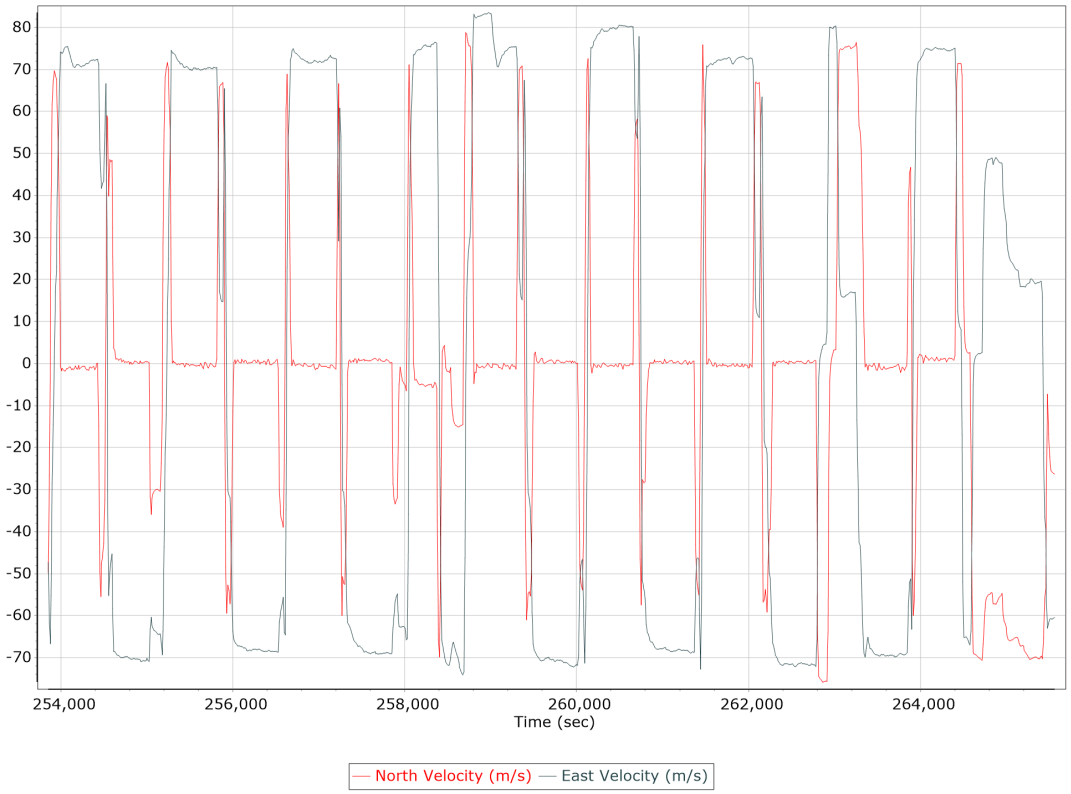
Roll/Pitch



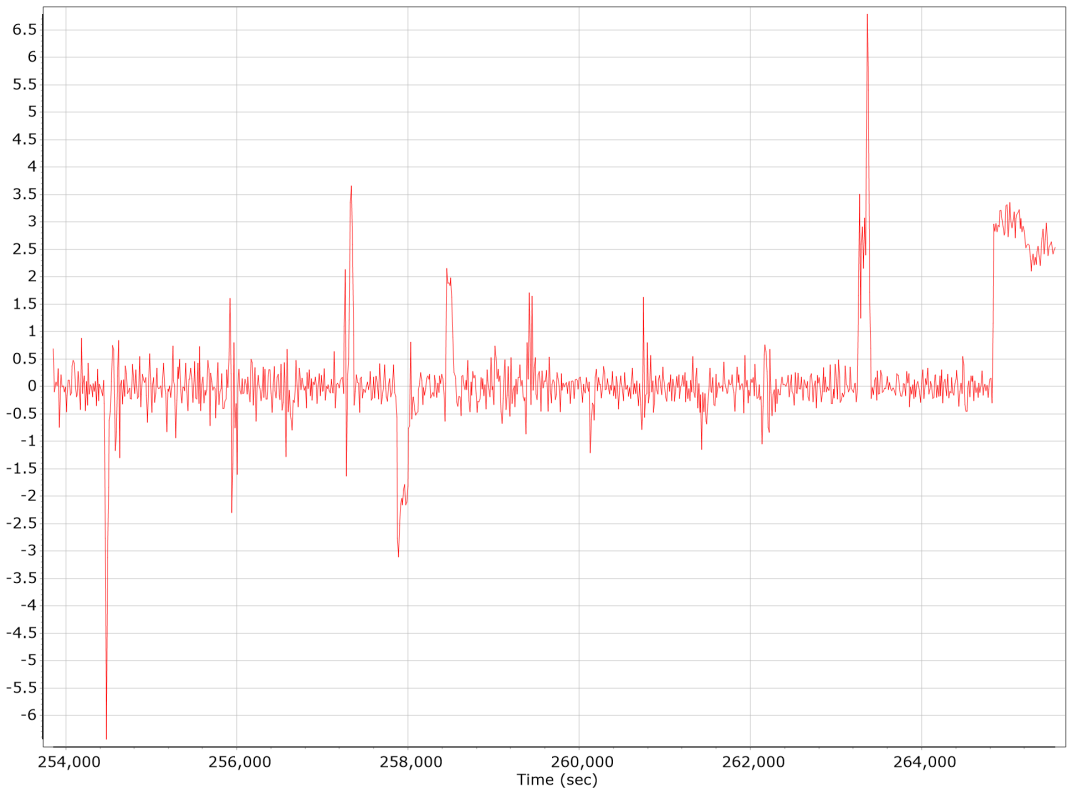
Heading



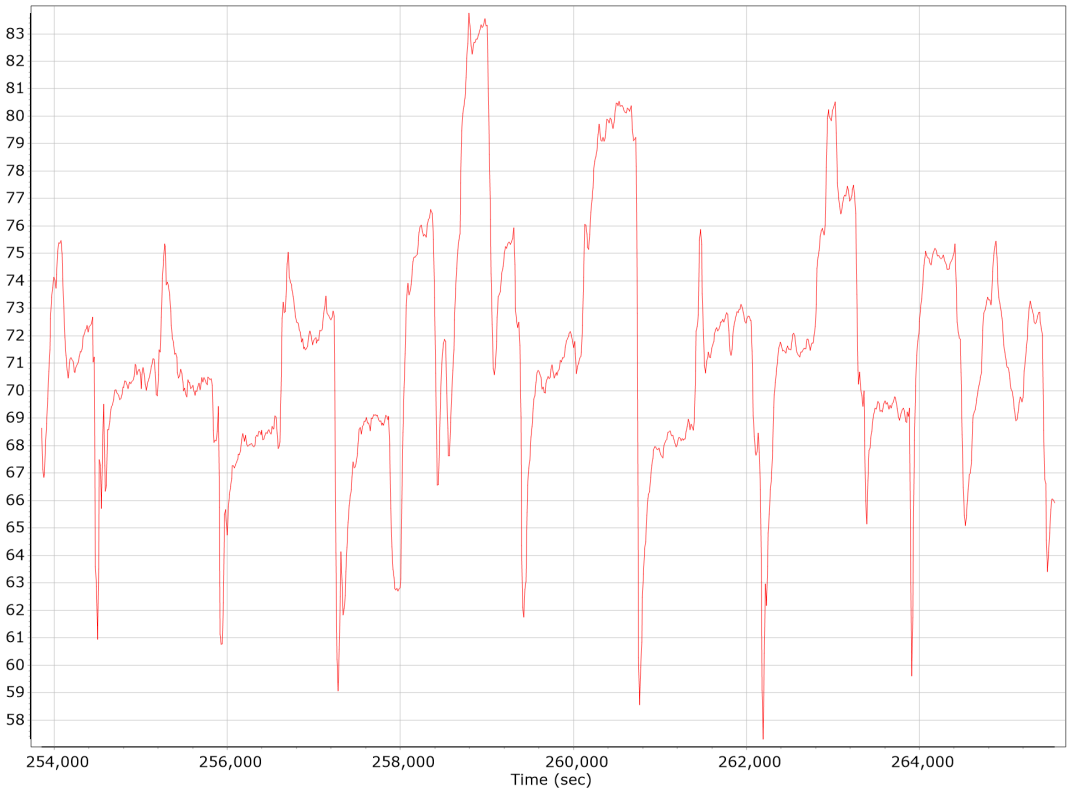
North/East Velocity



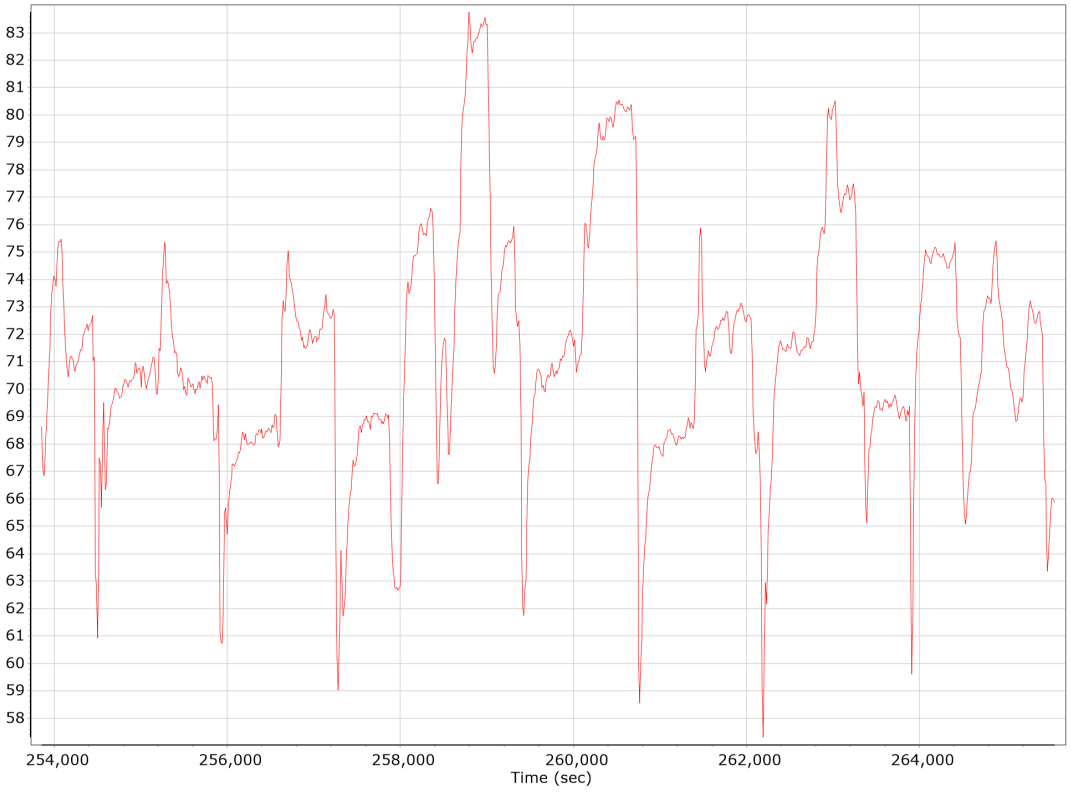
Down Velocity



Total Speed



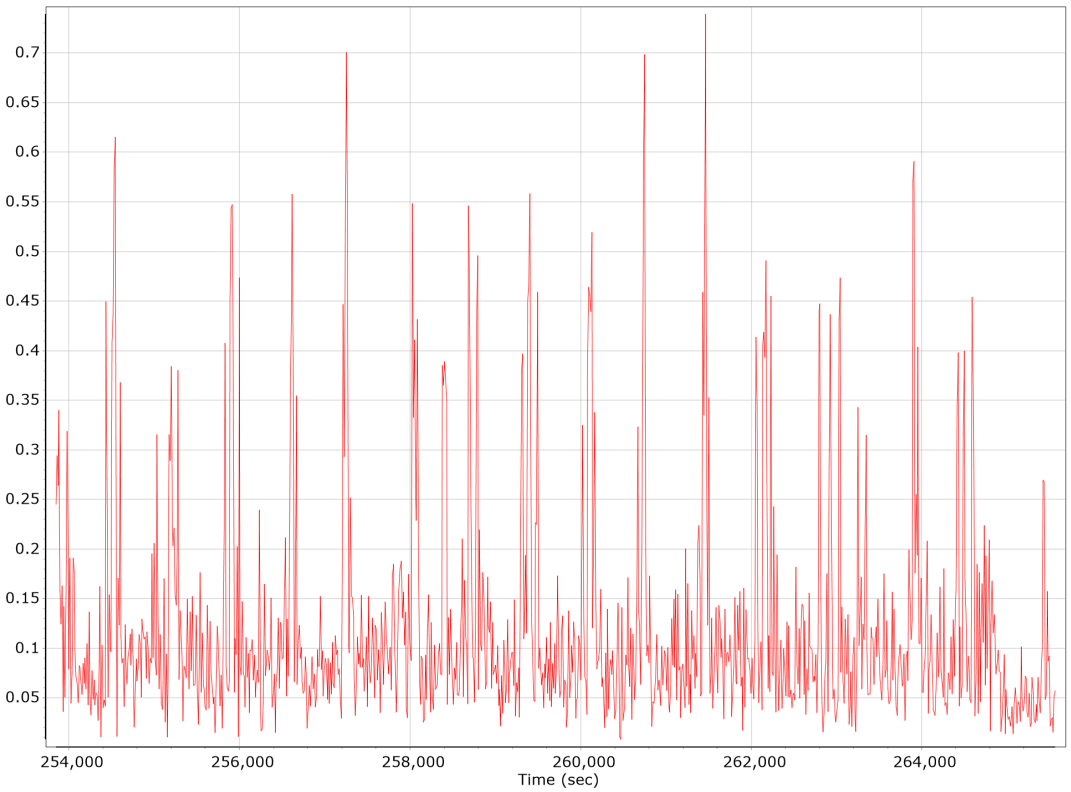
Ground Speed



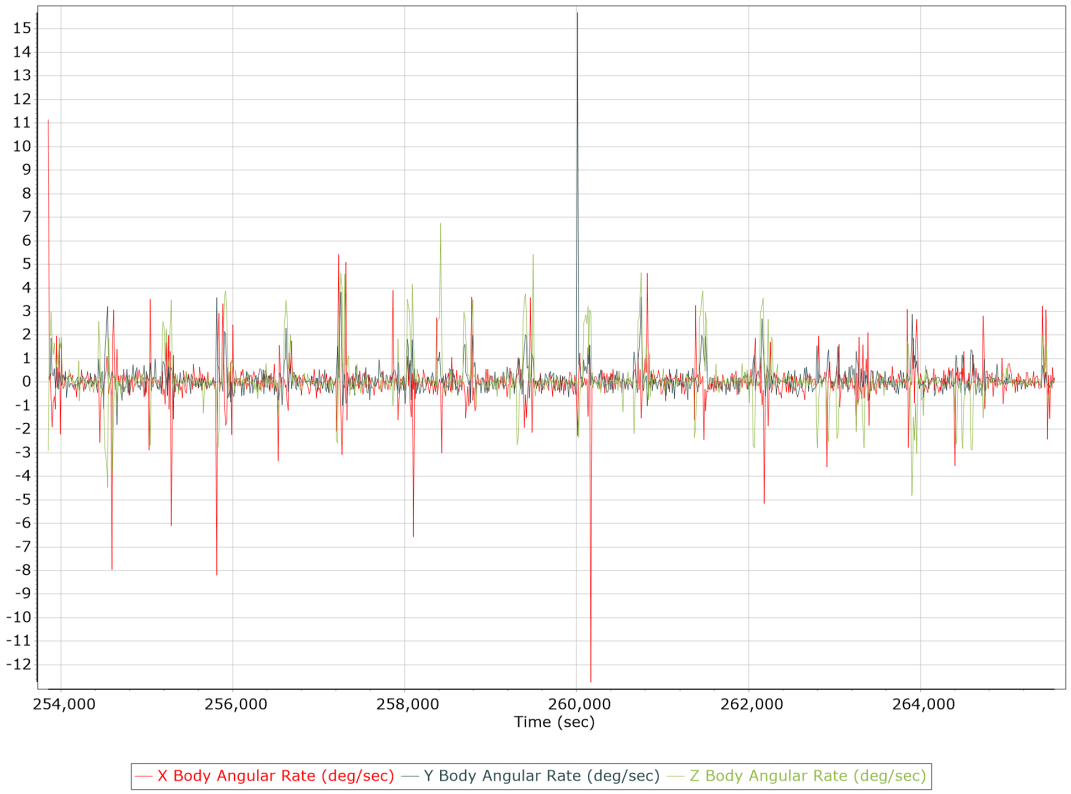
Body Acceleration



Total Body Acceleration



Body Angular Rate

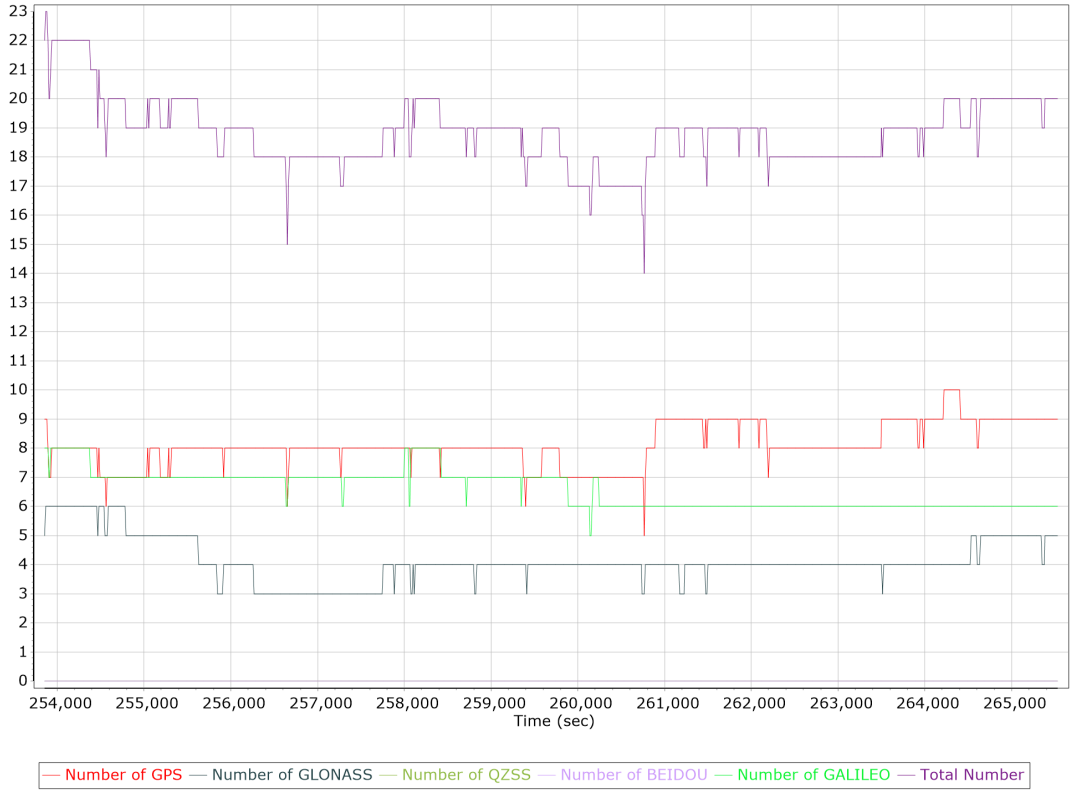


GNSS QC

GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	5	10	8
Number of GLONASS SV	3	7	5
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	5	8	7
Total number of SV	14	24	20
PDOP	1.06	1.85	1.21
QC Solution Gaps	19.00	19.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	13927.00	0.00	19.00
Percentage	99.86	0.00	0.14

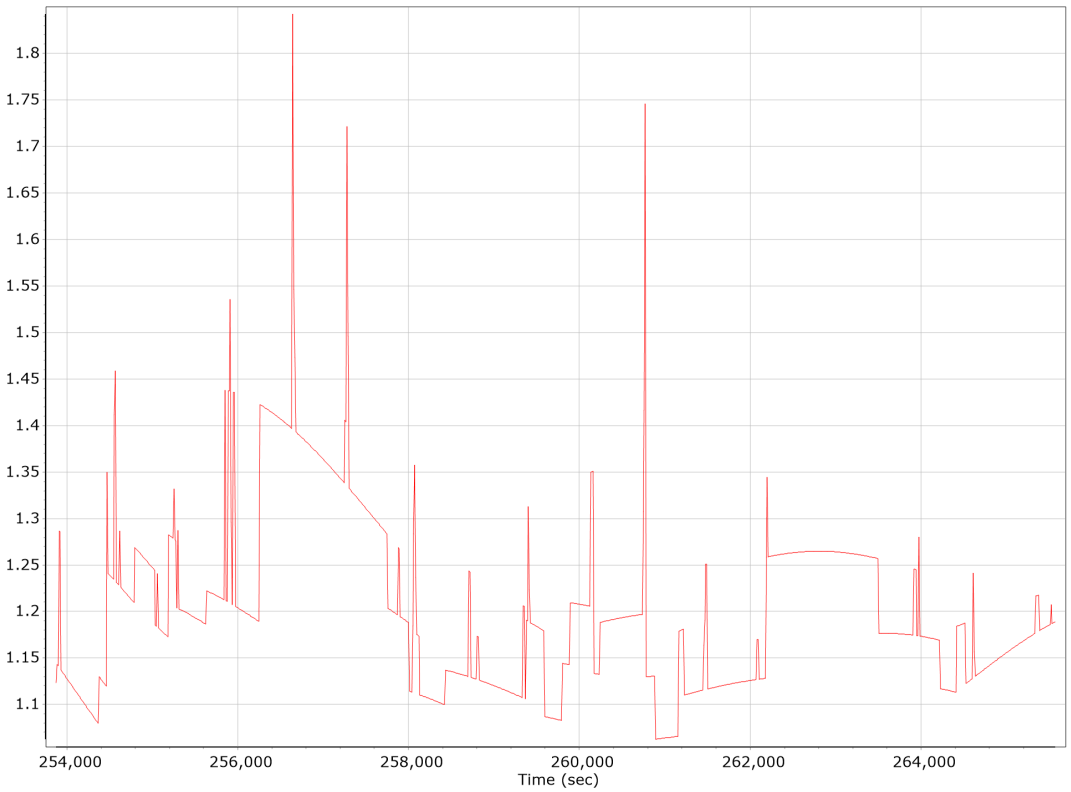
Num SVs in solution



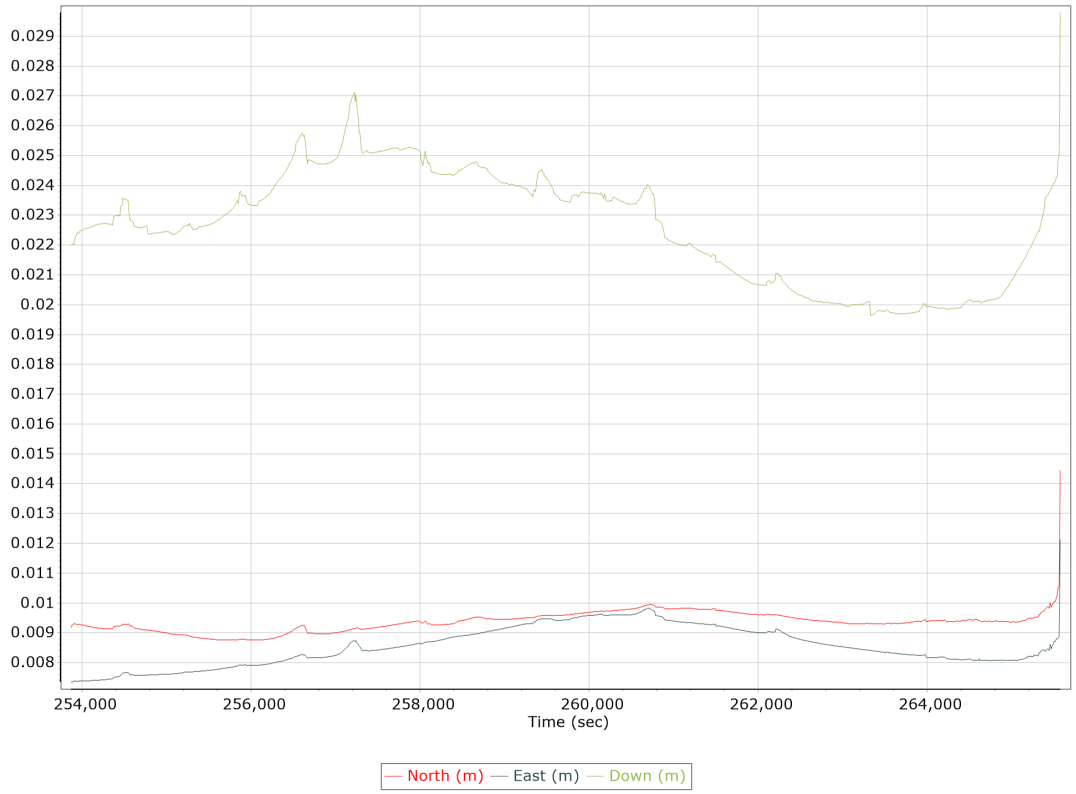
Forward/Reverse Separation



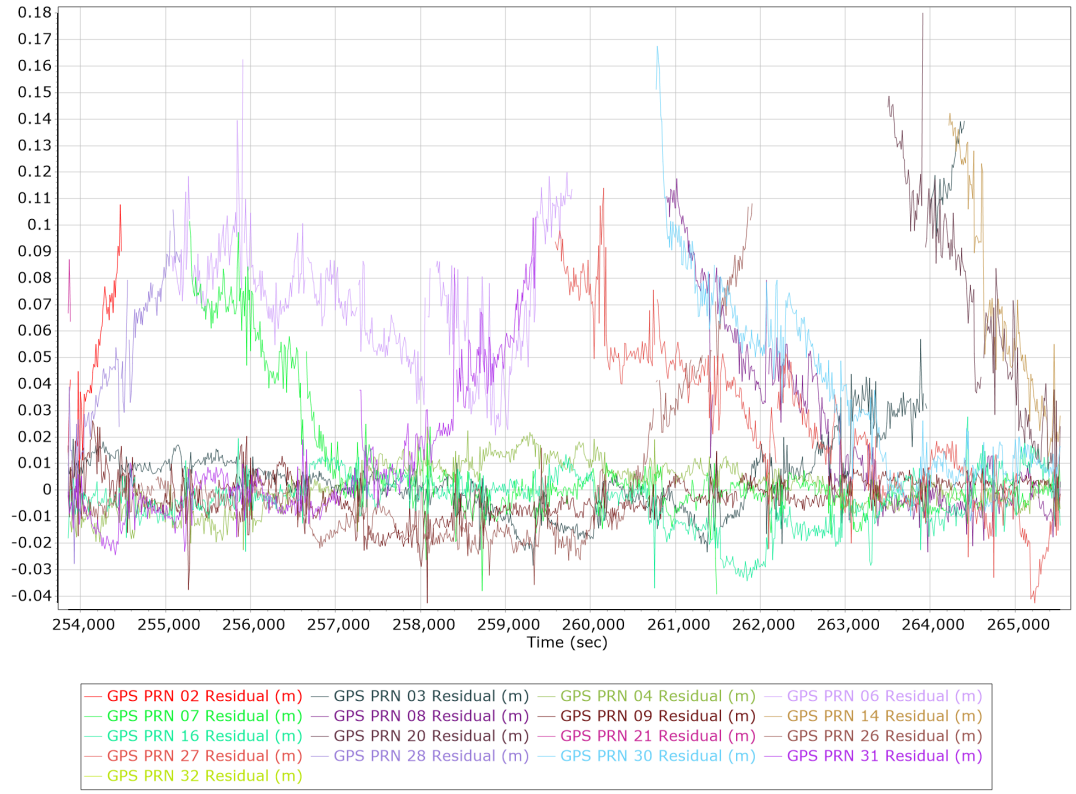
PDOP



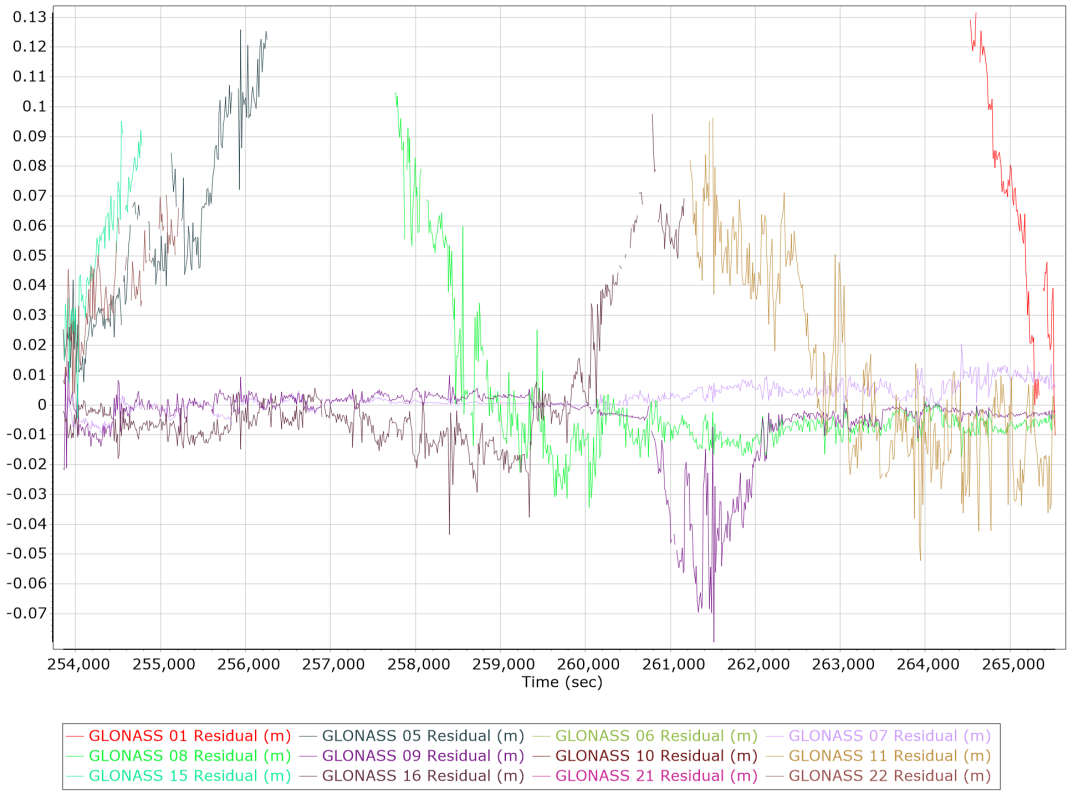
Estimated Position Accuracy



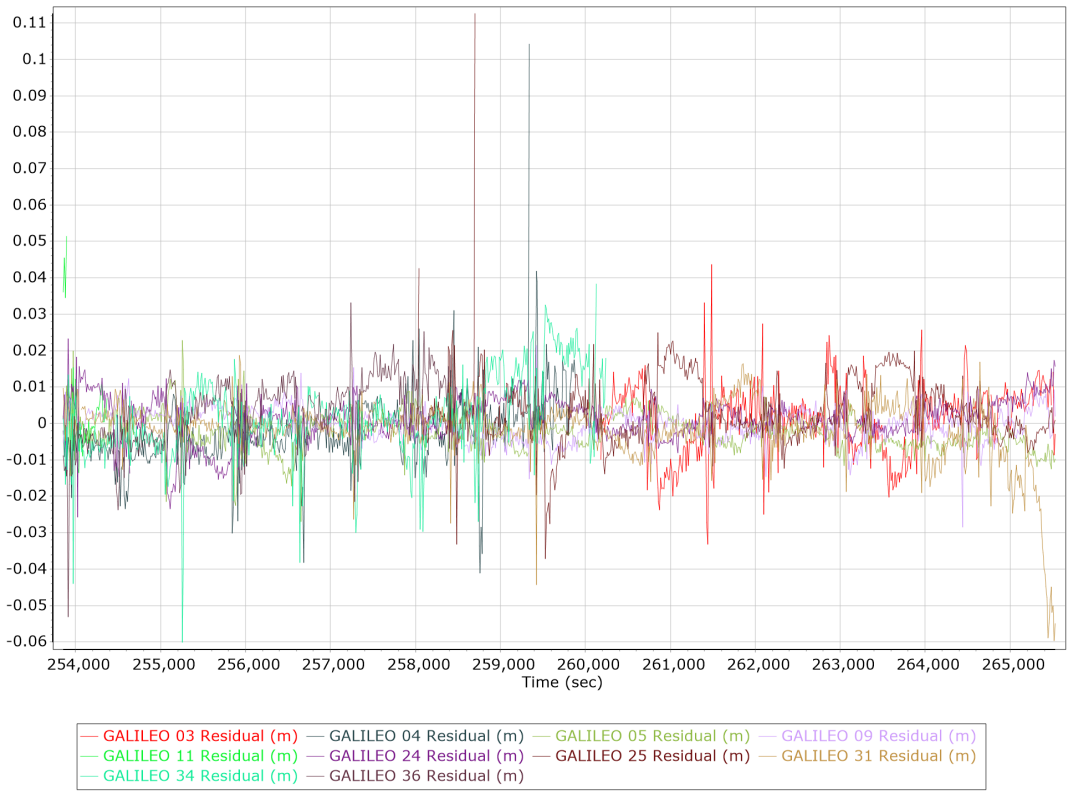
GPS Residuals



GLONASS Residuals



GALILEO Residuals



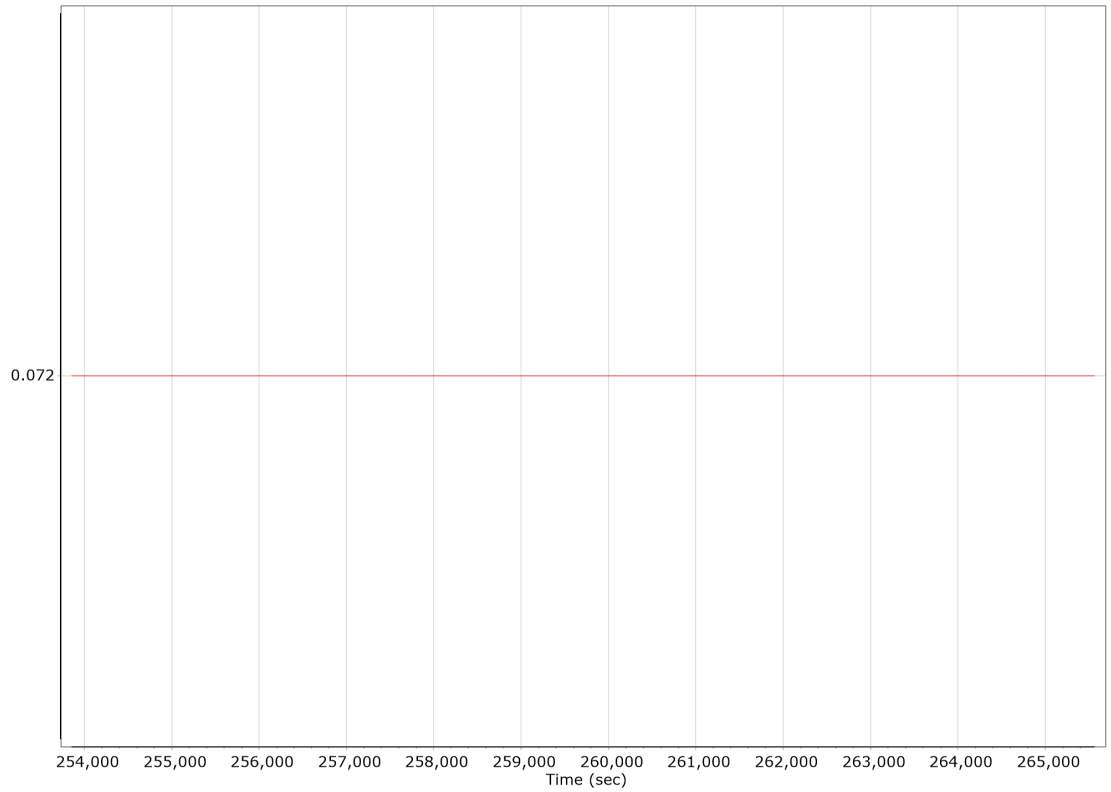
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	253792.330 (9/26/2023 10:29:52 PM)		
Processing end time	265567.000 (9/27/2023 1:46:07 AM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.072	0.090	-1.275
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

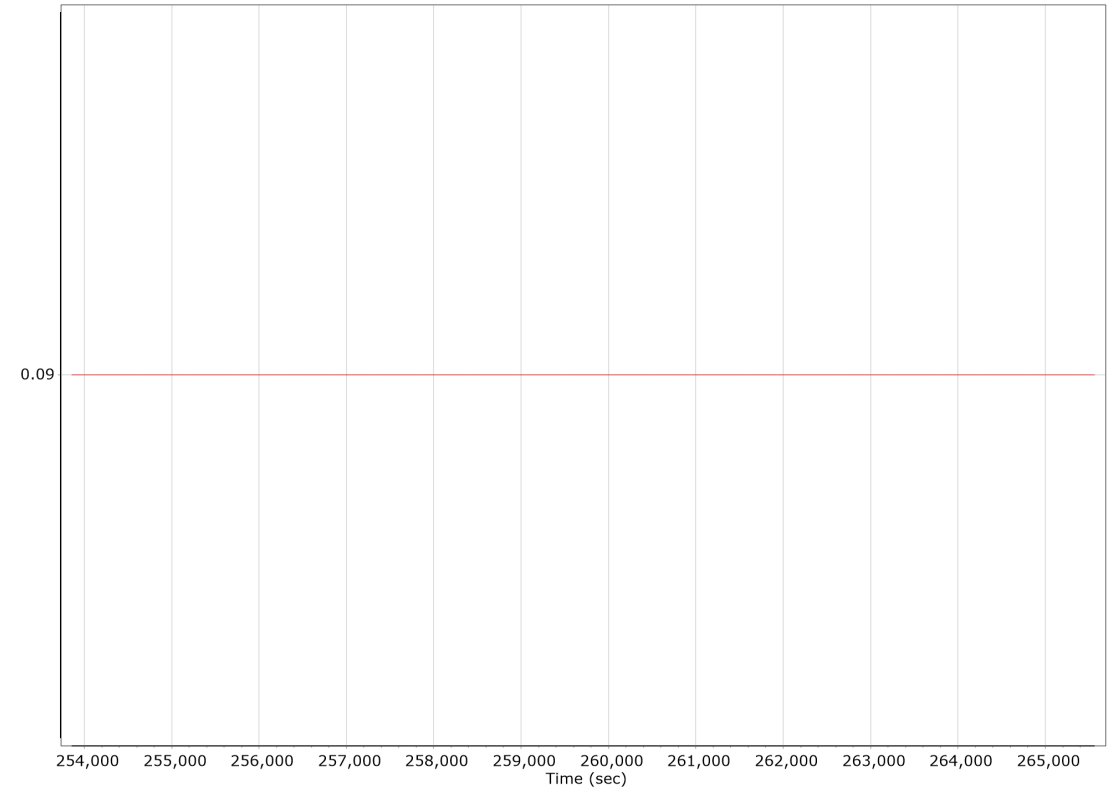
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

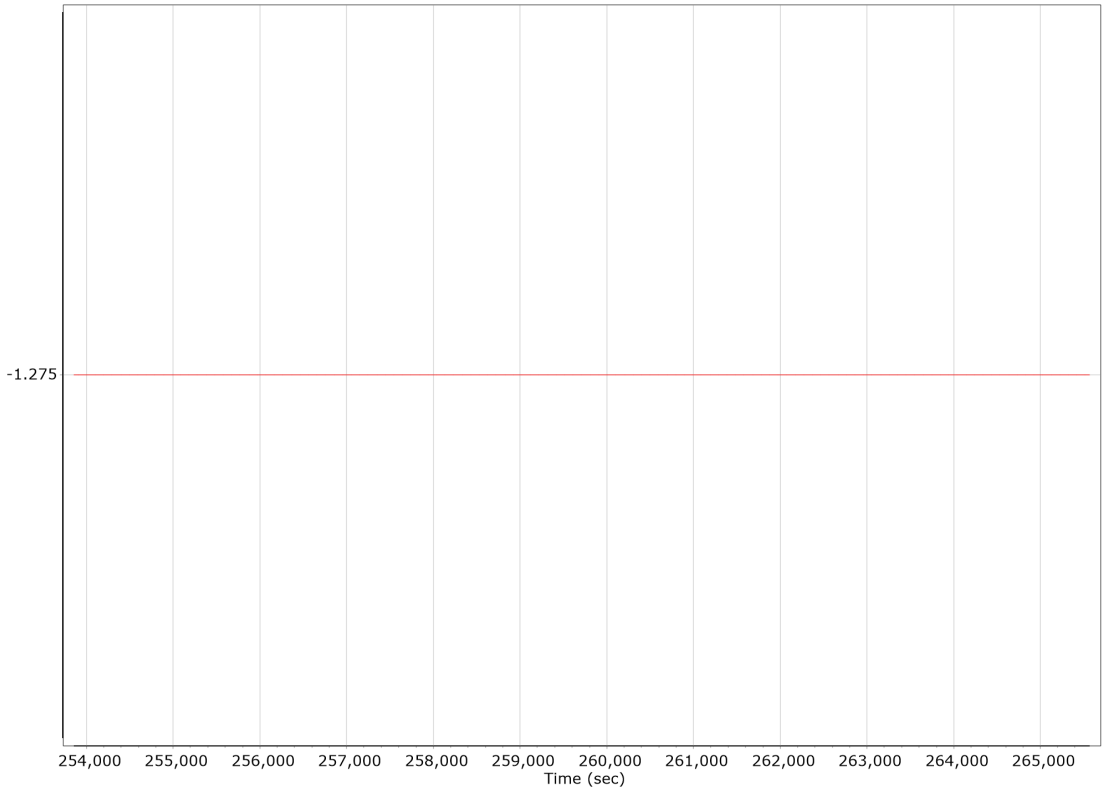
X Reference-Primary GNSS Lever Arm (m)



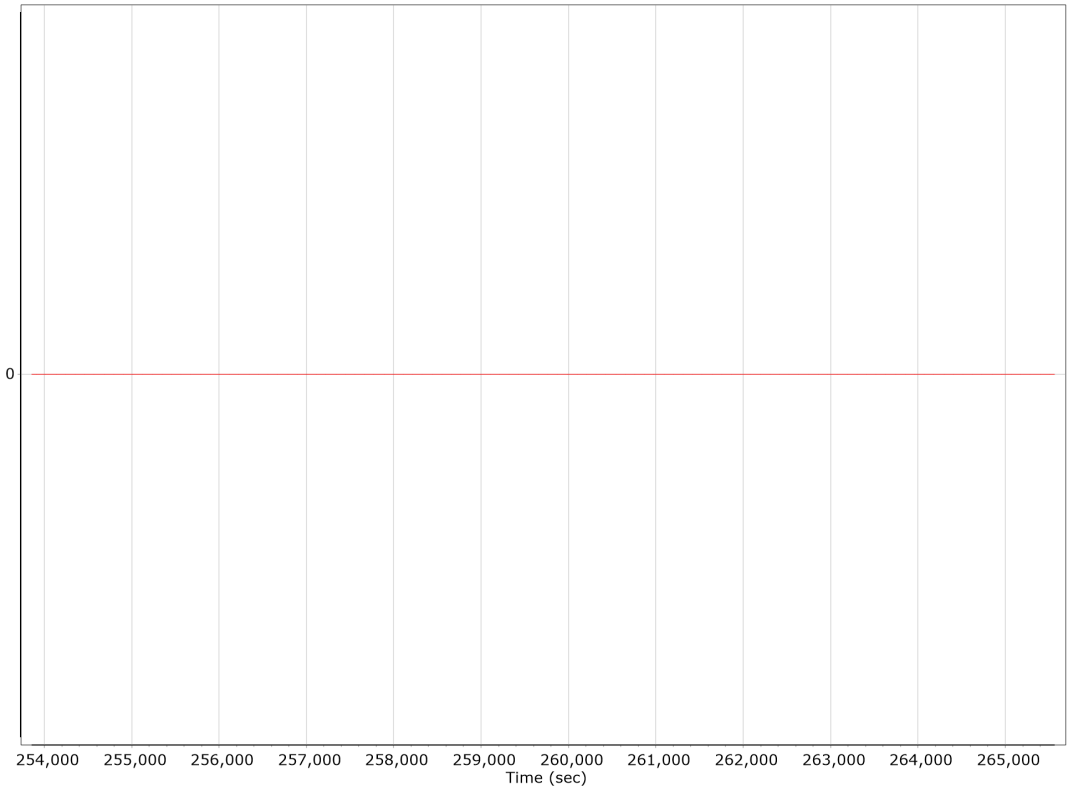
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



Reference-Primary GNSS Lever Arm Figure of Merit



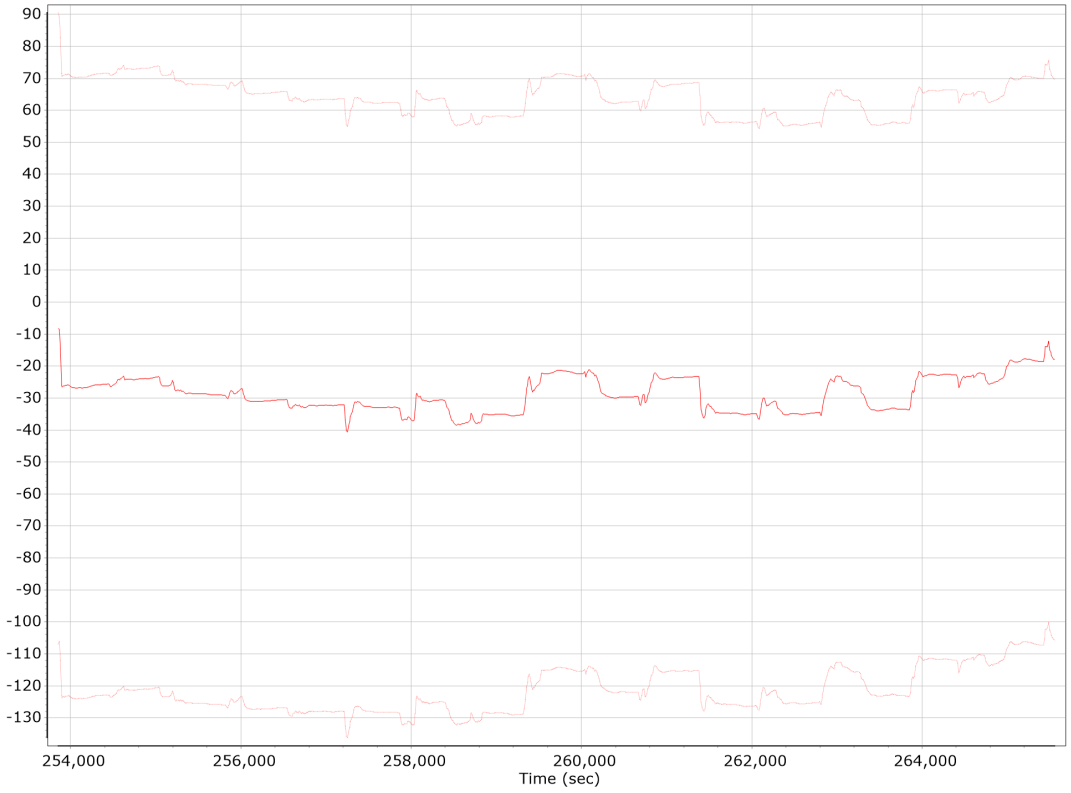
IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

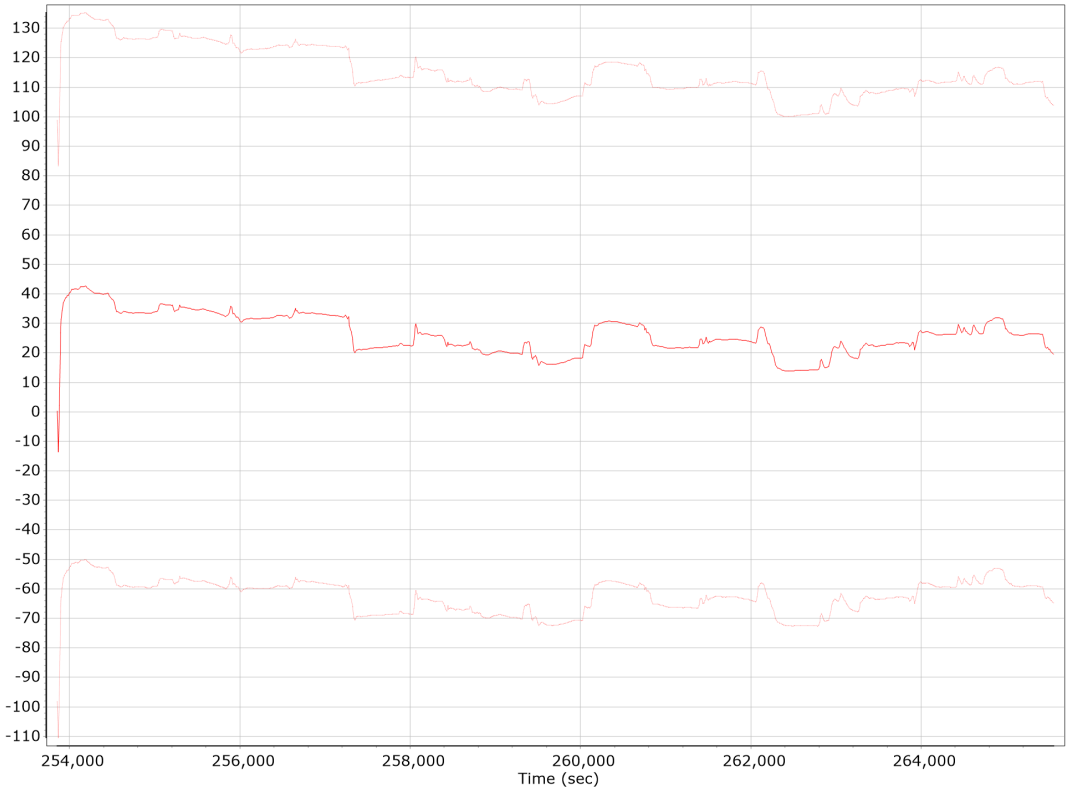
Accelerometer Bias (micro-g)



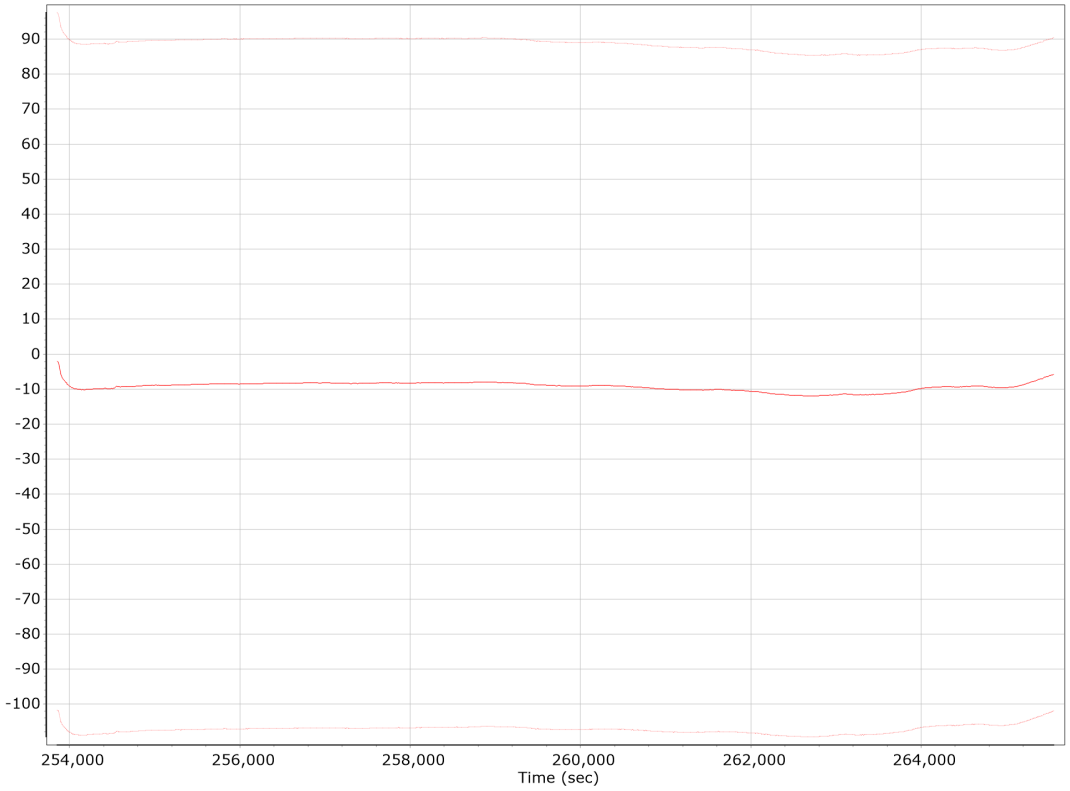
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



X Accelerometer Scale Error (ppm)



Y Accelerometer Scale Error (ppm)



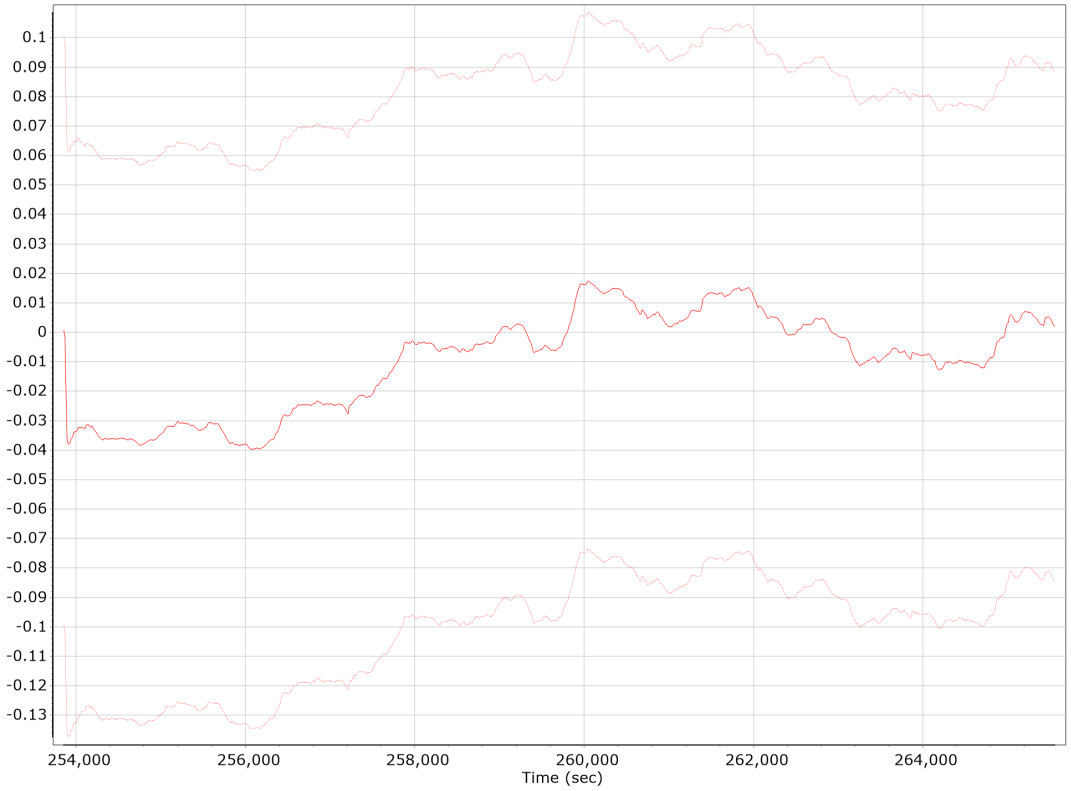
Z Accelerometer Scale Error (ppm)



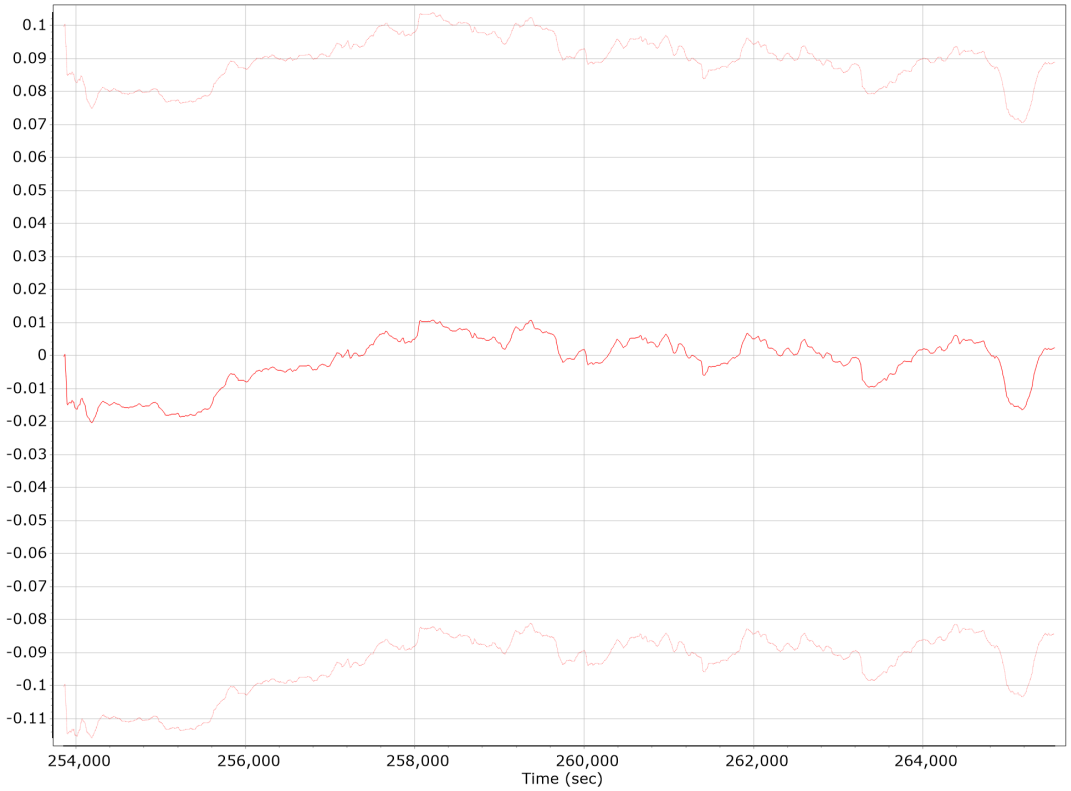
Gyro Bias (deg/h)



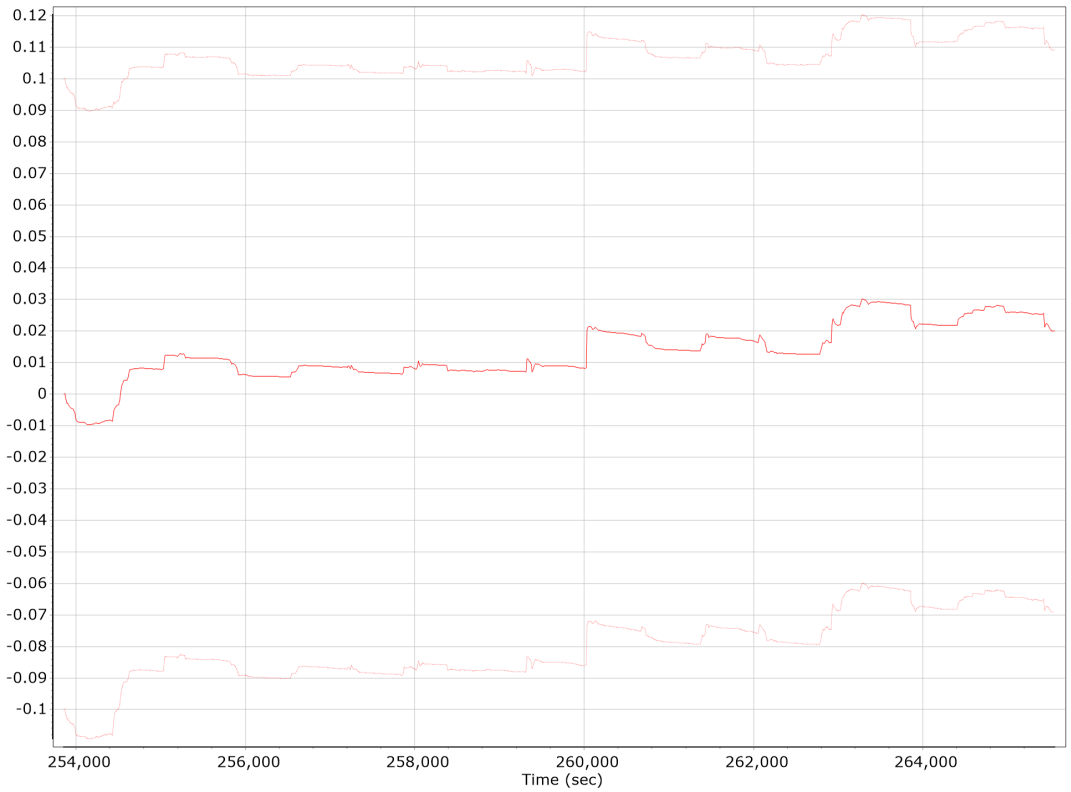
X Gyro Bias (deg/h)



Y Gyro Bias (deg/h)



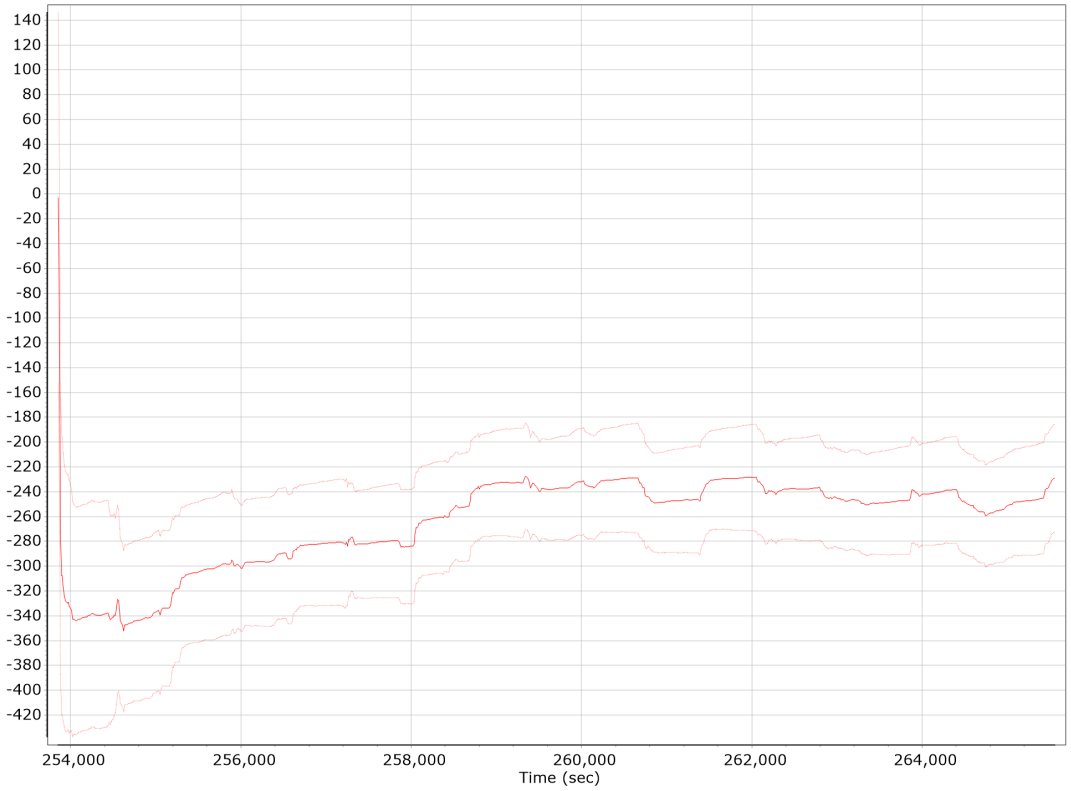
Z Gyro Bias (deg/h)



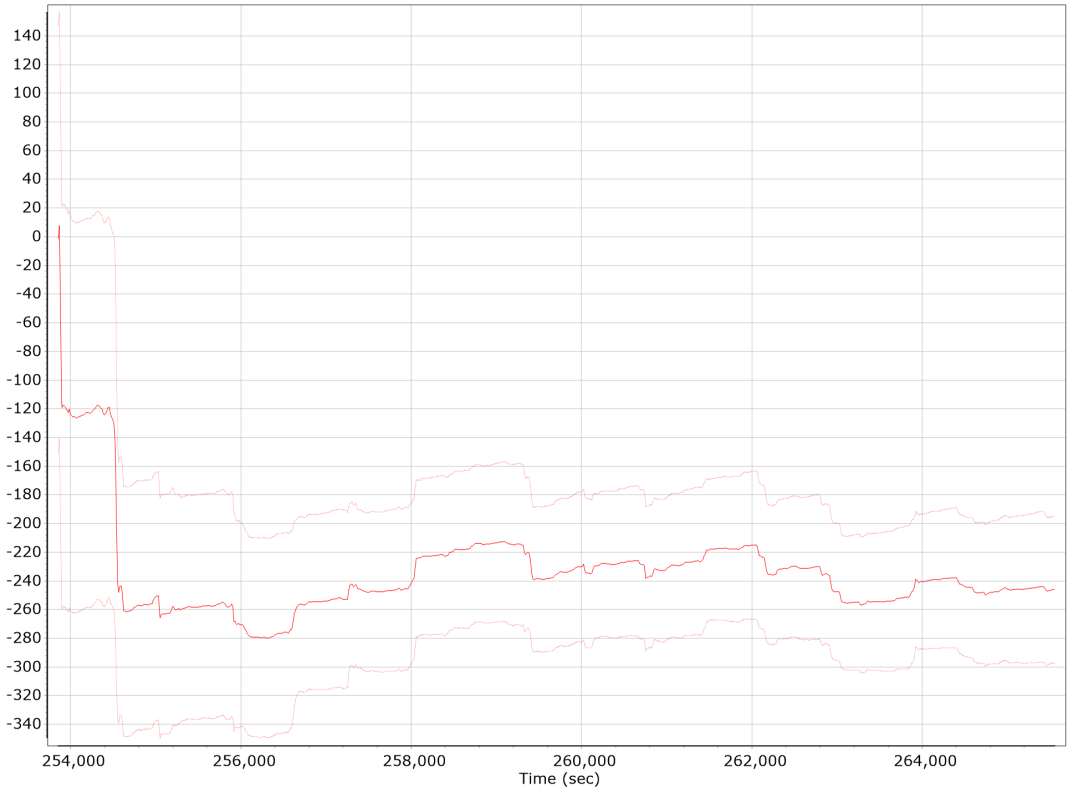
Gyro Scale Error (ppm)



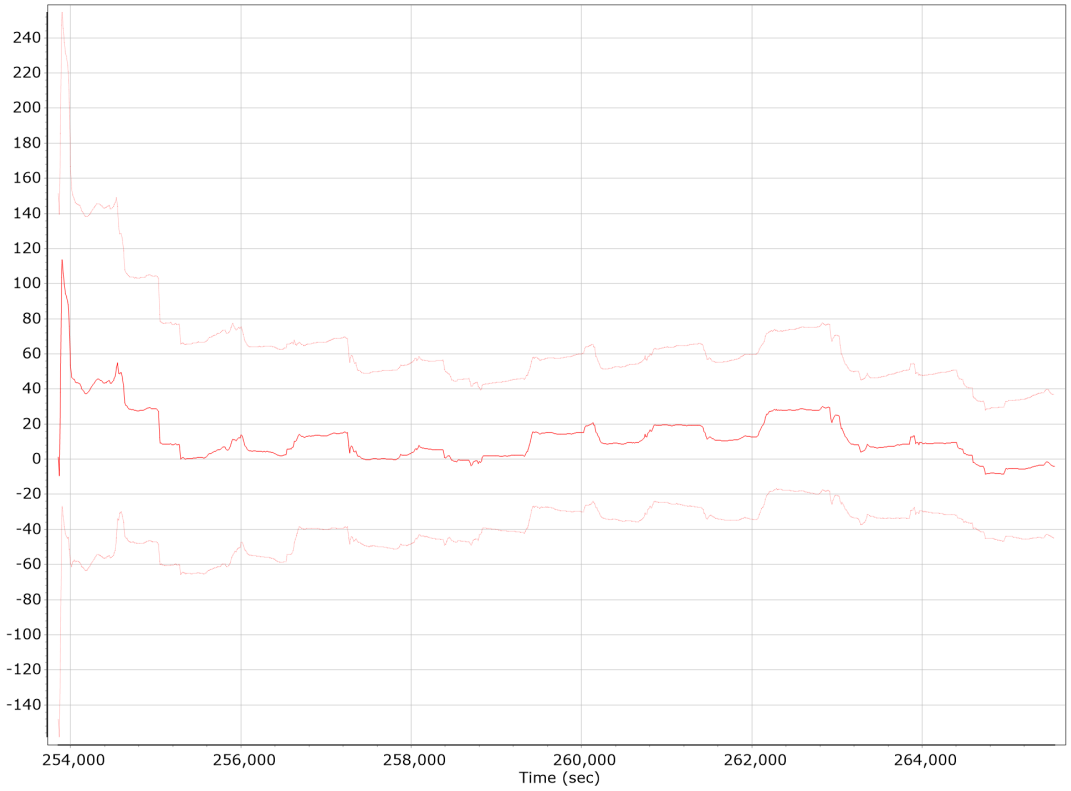
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)

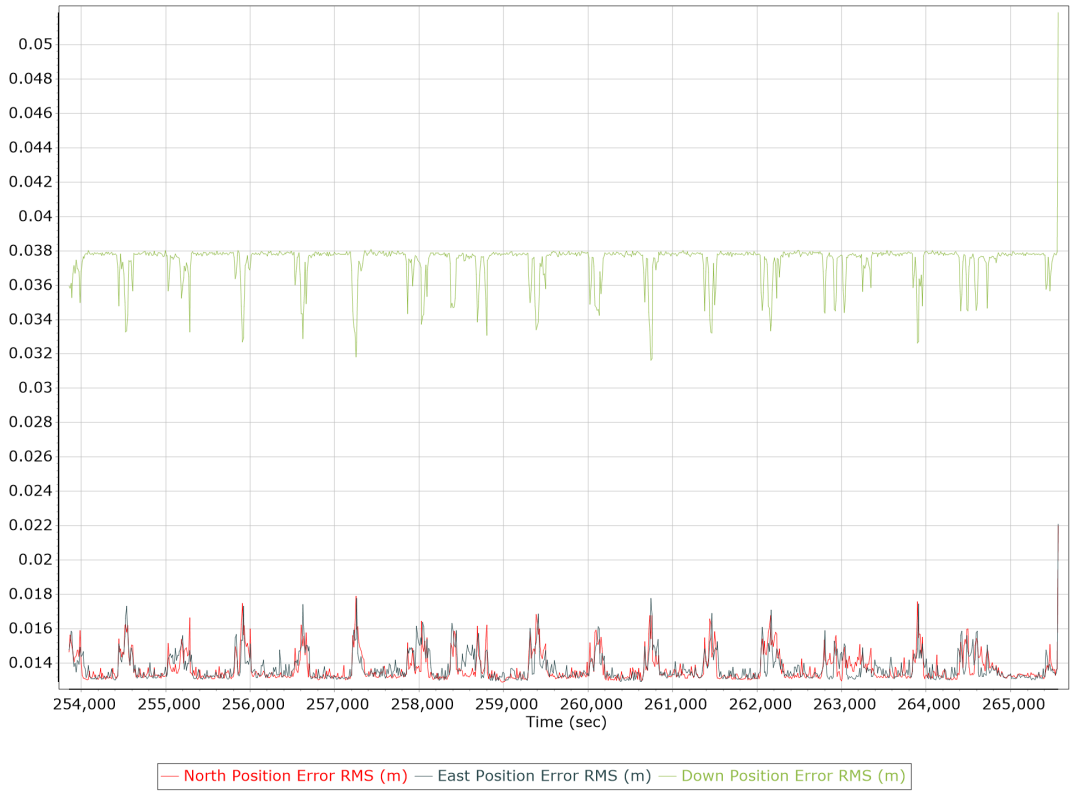


Z Gyro Scale Error (ppm)

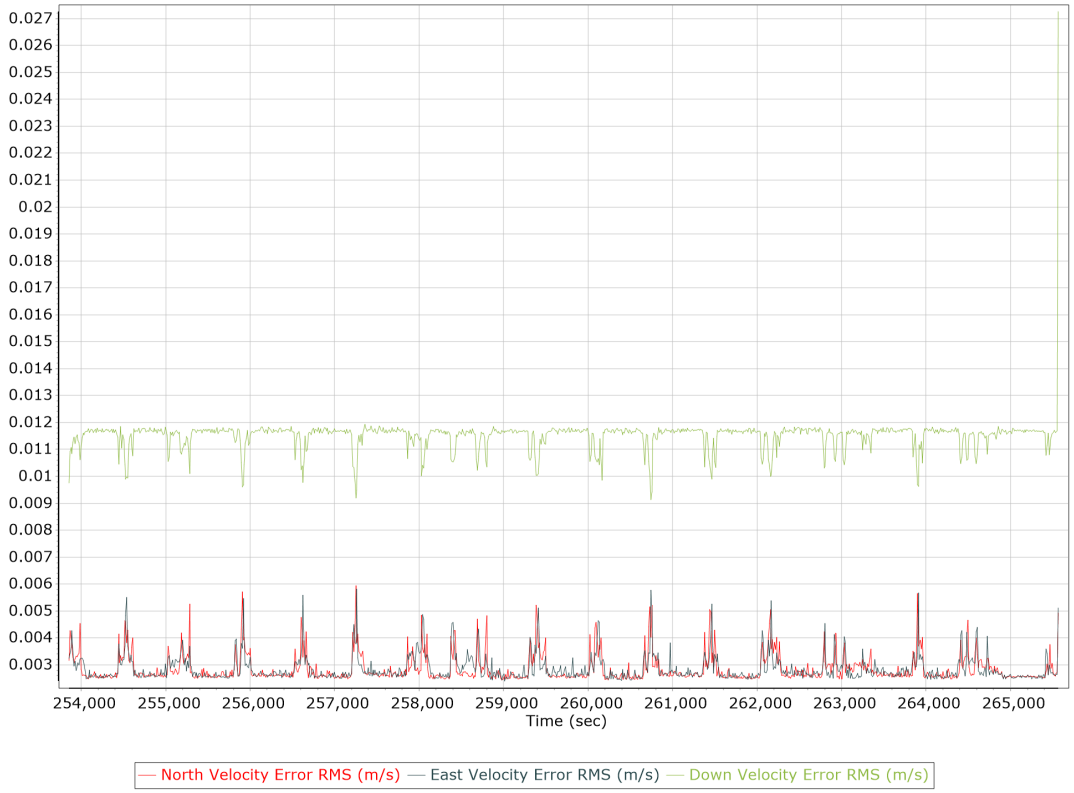


Smoothed Performance Metrics

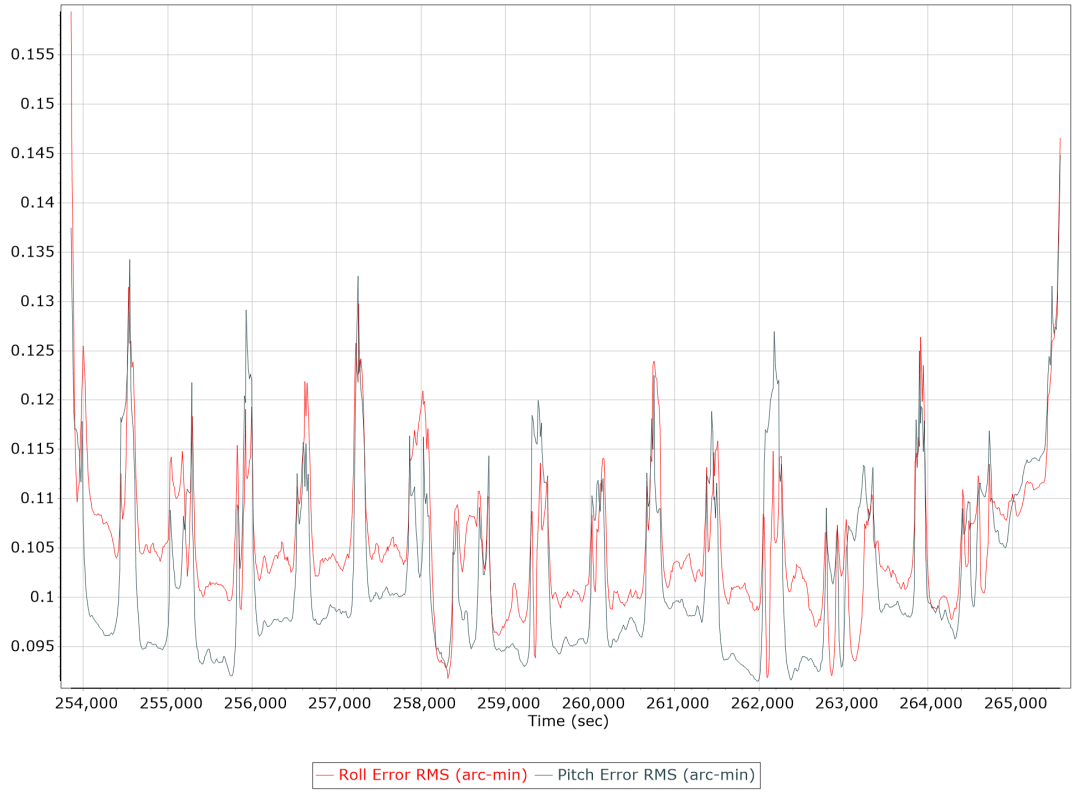
Position Error RMS (m)



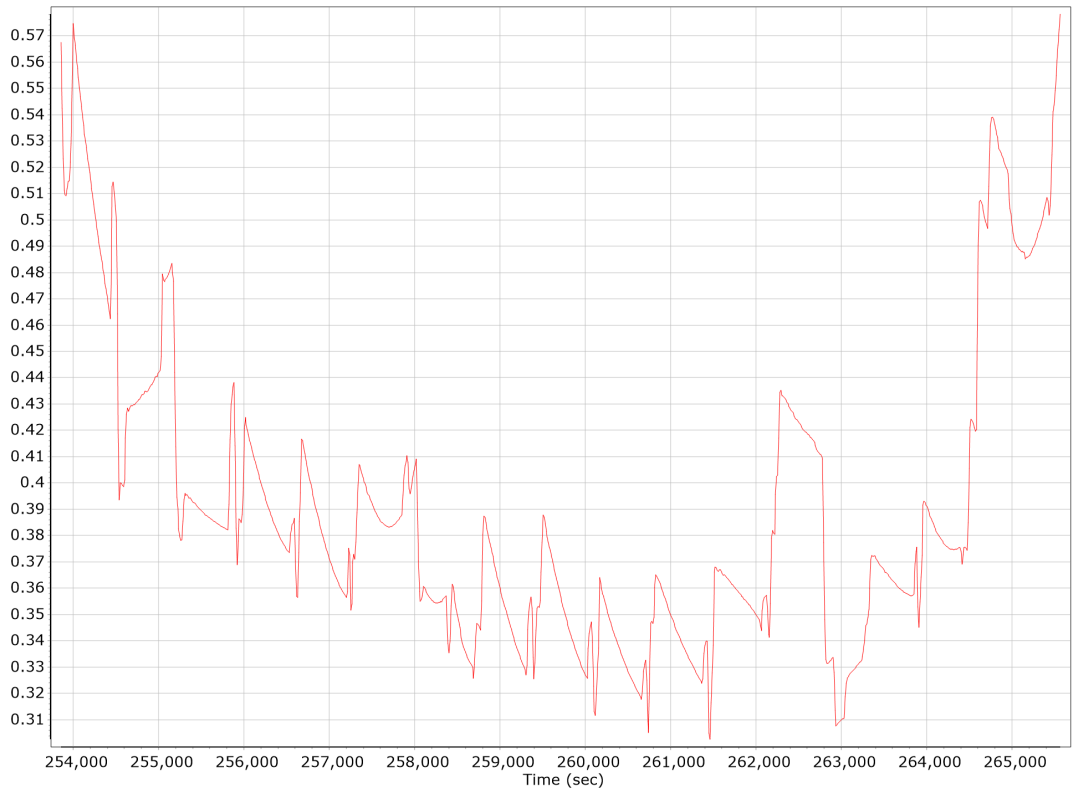
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)



Heading Error RMS (arc-min)



Forward Processed Performance Metrics

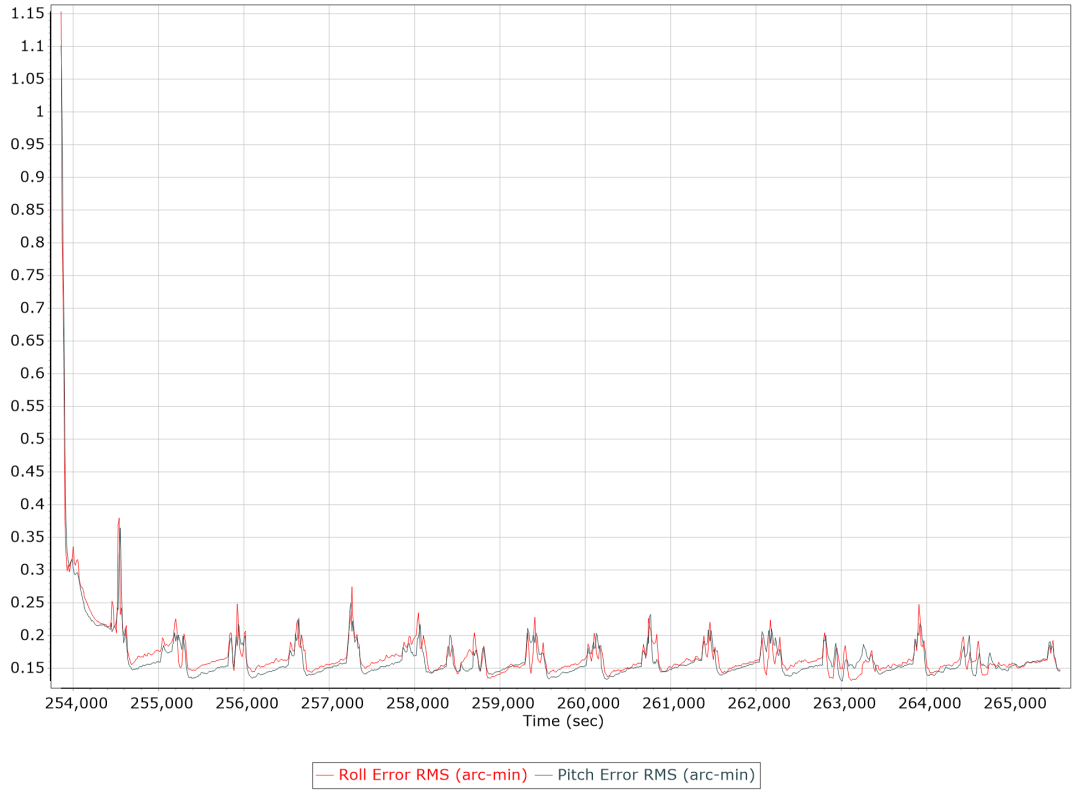
Position Error RMS (m)



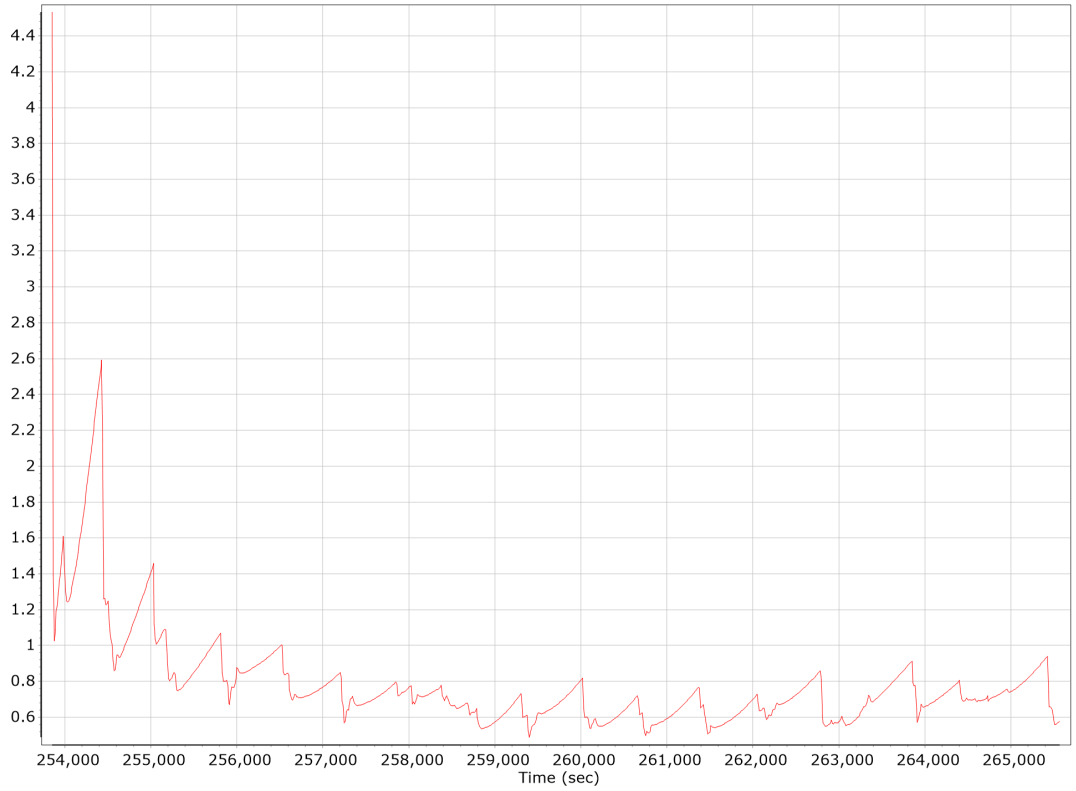
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

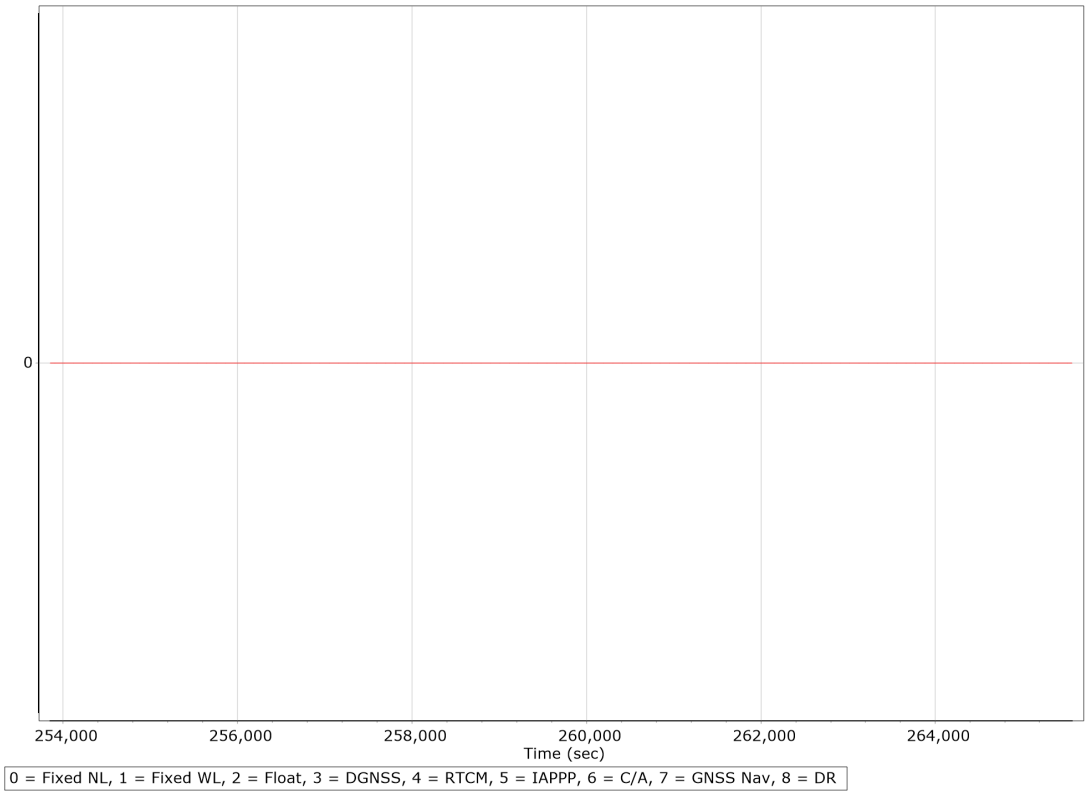


Heading Error RMS (arc-min)



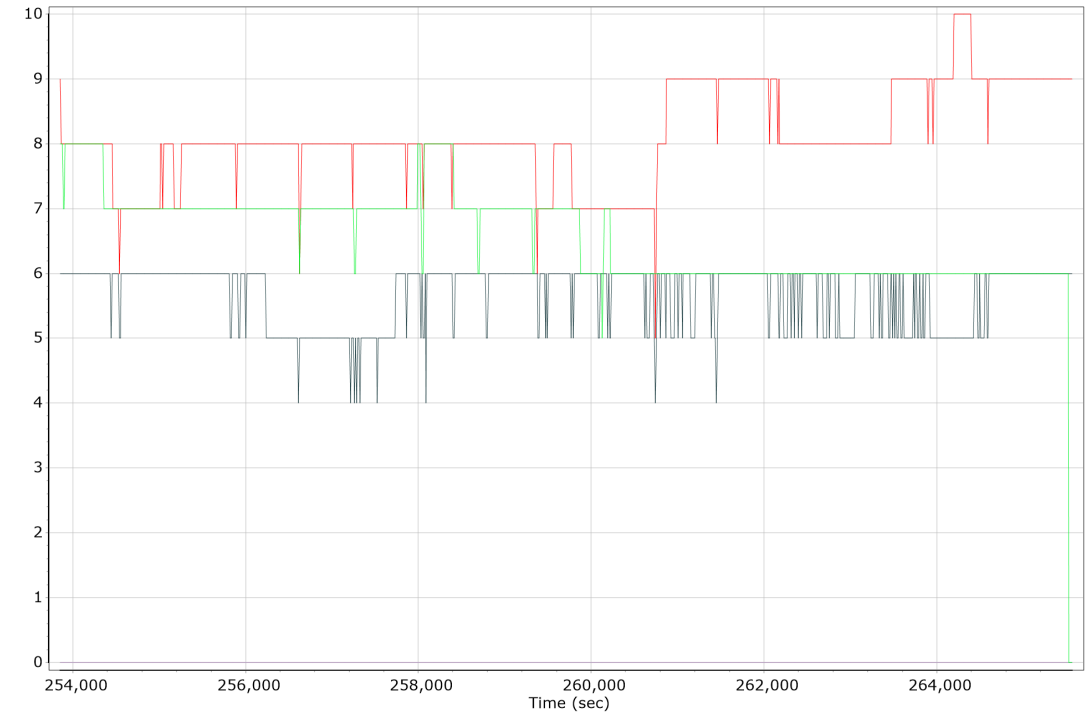
Forward Processed Solution Status

Processing Mode

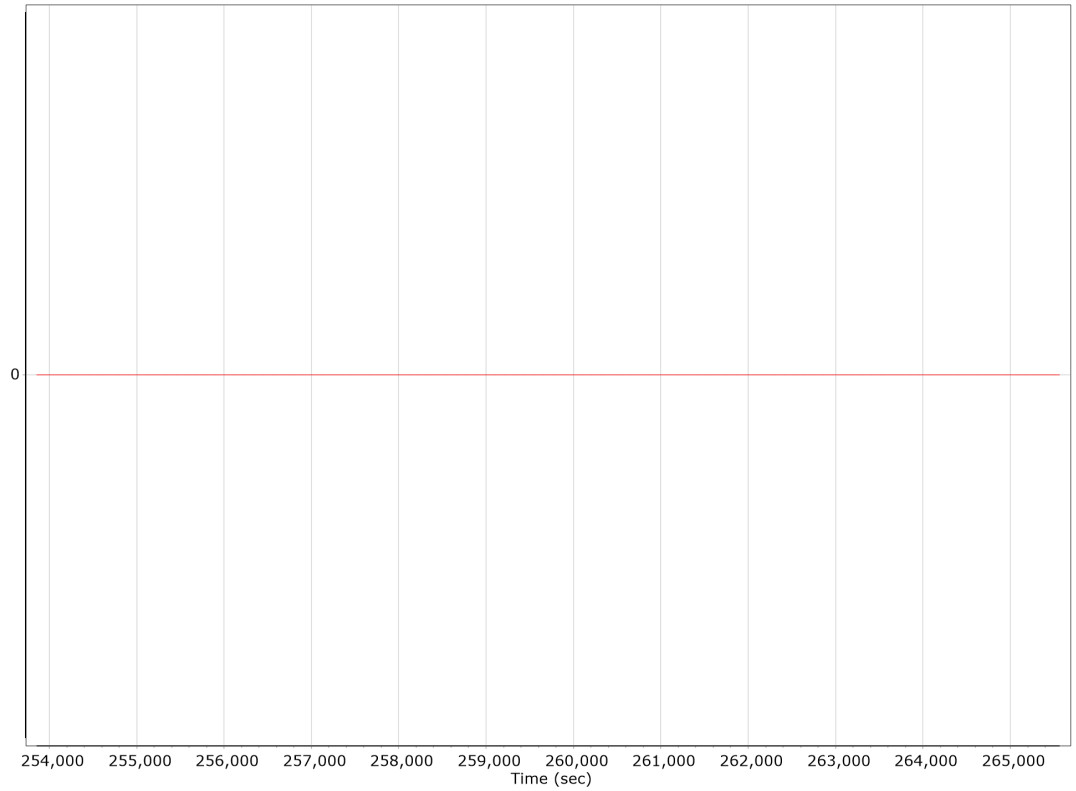


0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGNSS, 4 = RTCM, 5 = IAPPP, 6 = C/A, 7 = GNSS Nav, 8 = DR

Number of Satellites



Baseline Length



General Information

Mission Information

Project name	09272023A_4040
Processing date	2024-01-11 15:32:22
Mission date	2023-09-27 17:58:45
Mission duration	03:11:04.087
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N10451
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
230927_175826_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm2700.23g	GLONASS Broadcast Ephemeris
Ephm2700.23n	GPS Broadcast Ephemeris
IGS0OPSFIN_20232690000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232700000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232710000_01D_15M_ORB.SP3	GPS Precise Ephemeris

Output Files

Filename	File type
sbet_09272023A_4040.out	SBET Trajectory File

Rover Data Summary

First raw data file	230927_175826_INS-GPS_1.raw		
Last raw data file	230927_175826_INS-GPS_1.raw		
Start GPS week	2281		
Start time	323906.672 (9/27/2023 5:58:26 PM)		
End time	335370.759 (9/27/2023 9:09:30 PM)		
Start of fine alignment	324155.226 (9/27/2023 6:02:35 PM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.000	0.000	-0.900
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

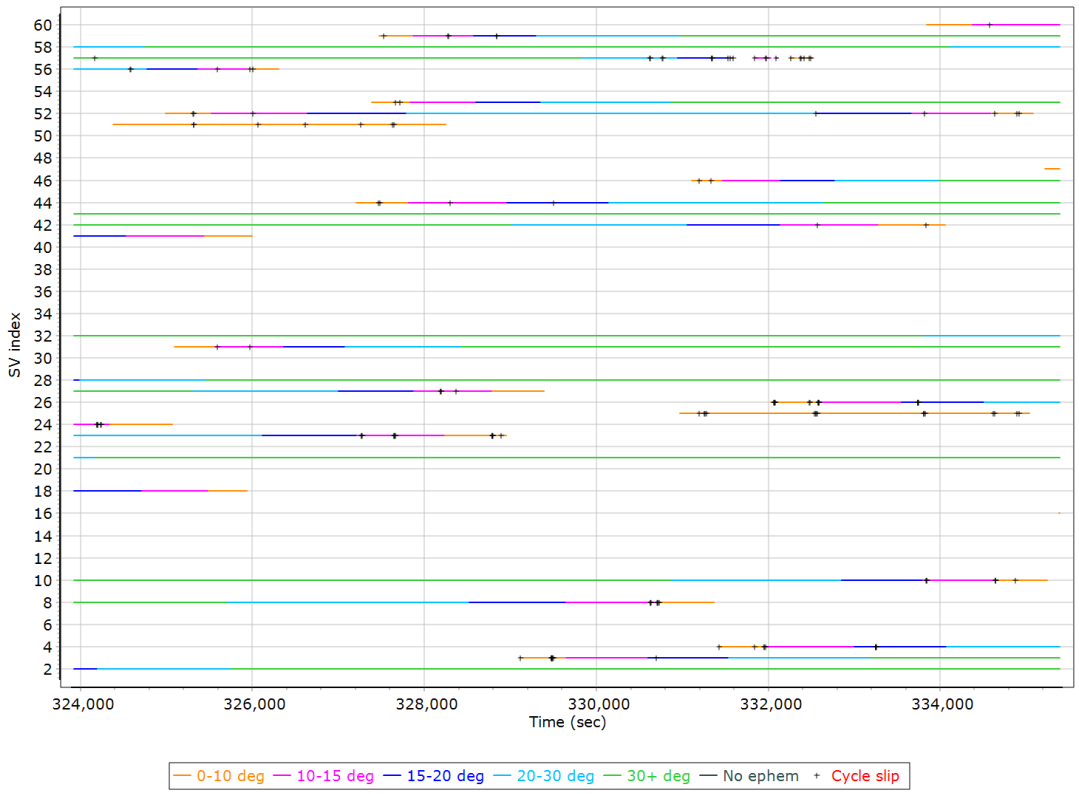
Rover Data QC

Raw IMU Import QC Summary

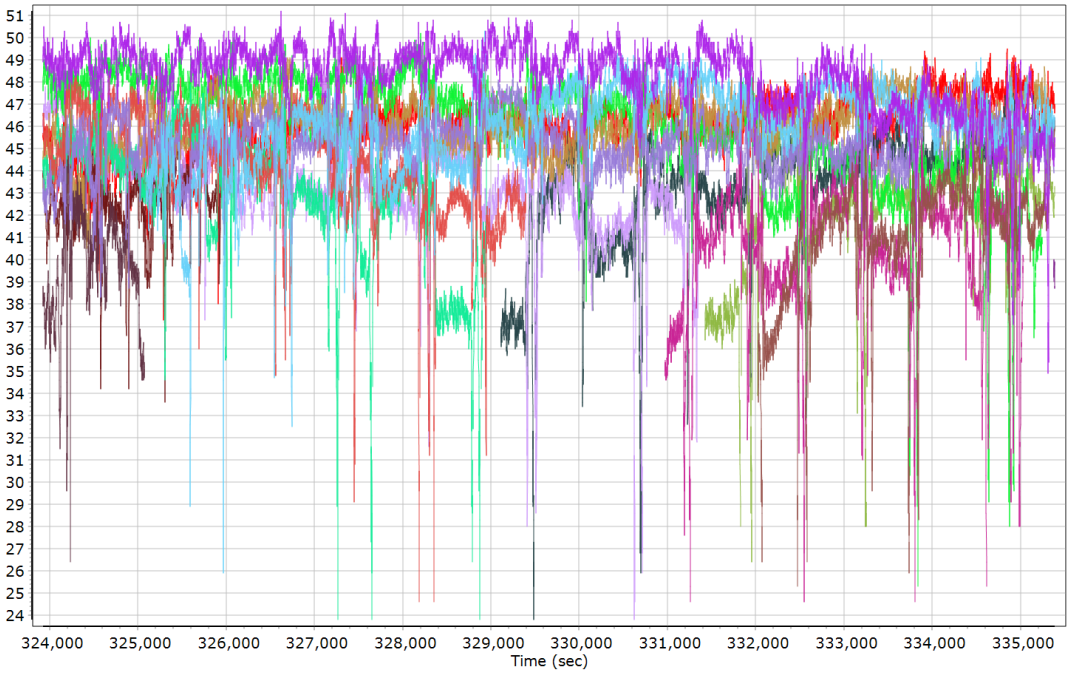
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_09272023A_4040.log
IMU Records Processed	2292547
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

GPS/GLONASS L1 Satellite Lock/Elevation

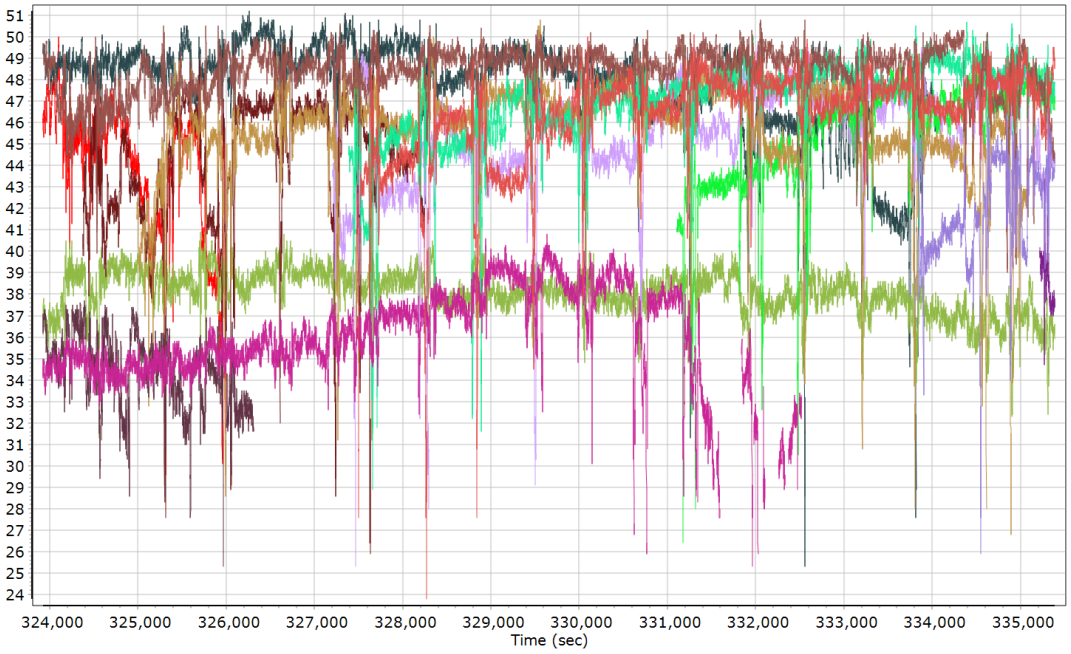


GPS L1 SNR



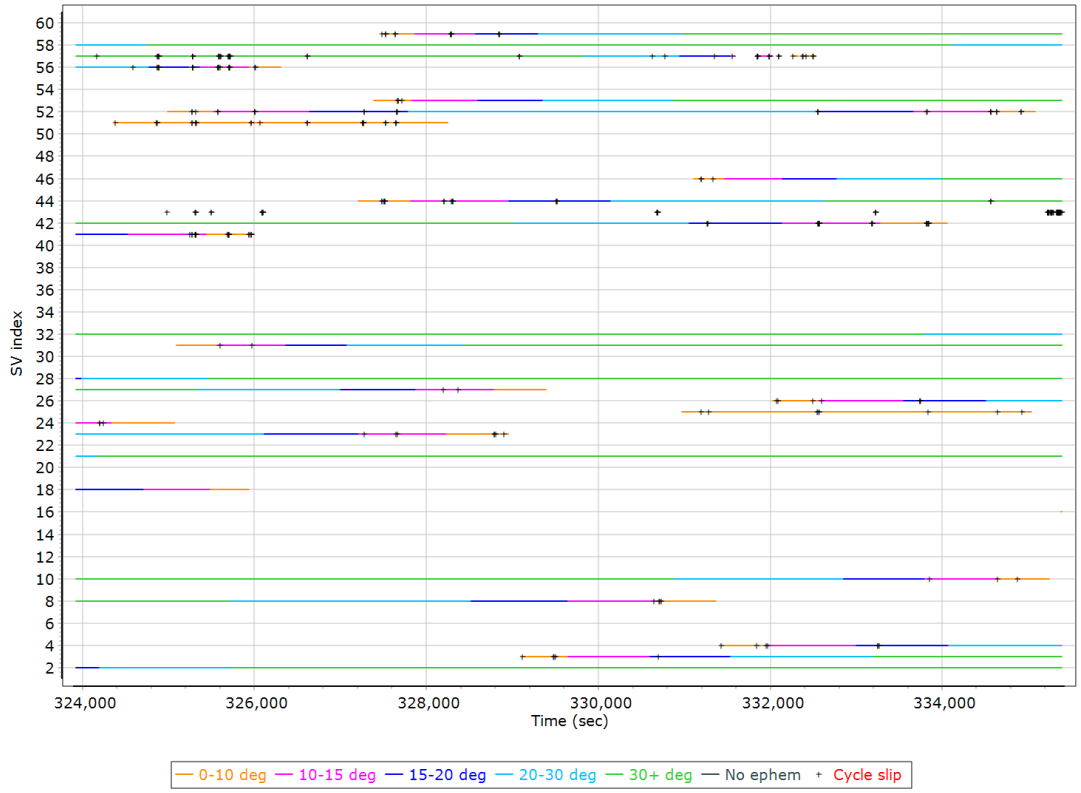
GPS PRN 02 L1 SNR (dB/Hz) GPS PRN 03 L1 SNR (dB/Hz) GPS PRN 04 L1 SNR (dB/Hz) GPS PRN 08 L1 SNR (dB/Hz)
GPS PRN 10 L1 SNR (dB/Hz) GPS PRN 16 L1 SNR (dB/Hz) GPS PRN 18 L1 SNR (dB/Hz) GPS PRN 21 L1 SNR (dB/Hz)
GPS PRN 23 L1 SNR (dB/Hz) GPS PRN 24 L1 SNR (dB/Hz) GPS PRN 25 L1 SNR (dB/Hz) GPS PRN 26 L1 SNR (dB/Hz)
GPS PRN 27 L1 SNR (dB/Hz) GPS PRN 28 L1 SNR (dB/Hz) GPS PRN 31 L1 SNR (dB/Hz) GPS PRN 32 L1 SNR (dB/Hz)

GLONASS L1 SNR

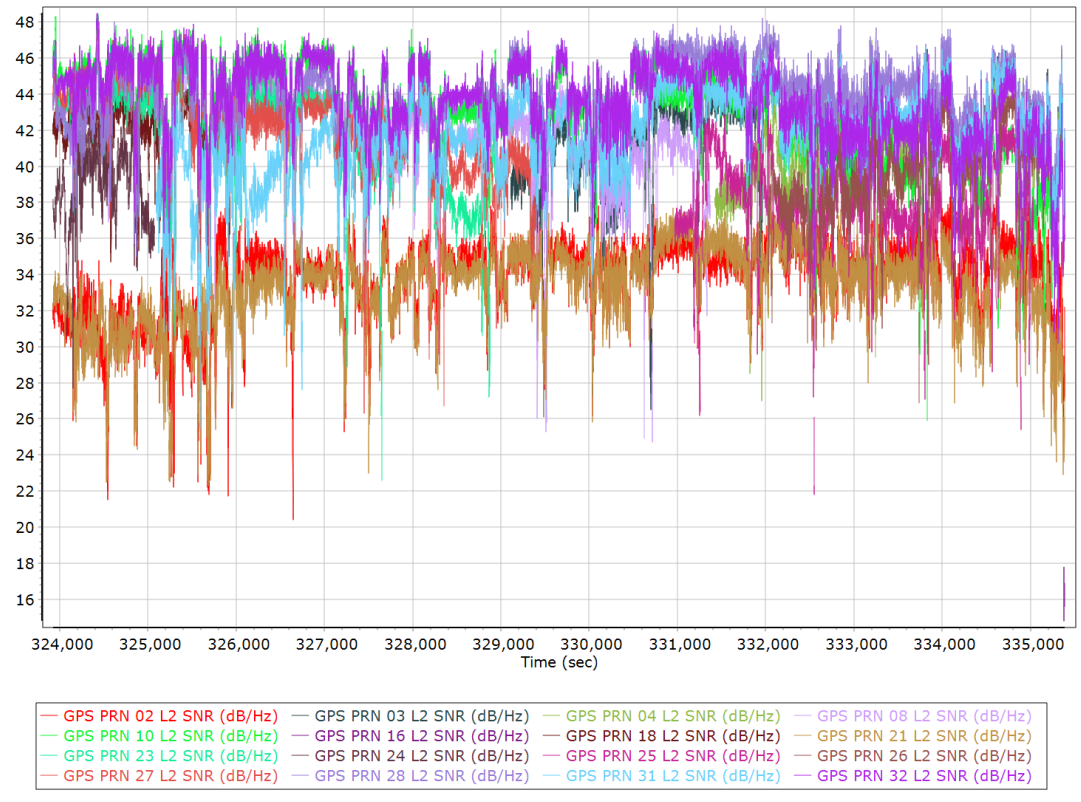


GLONASS 04 L1 SNR (dB/Hz) GLONASS 05 L1 SNR (dB/Hz) GLONASS 06 L1 SNR (dB/Hz)
GLONASS 07 L1 SNR (dB/Hz) GLONASS 09 L1 SNR (dB/Hz) GLONASS 10 L1 SNR (dB/Hz)
GLONASS 14 L1 SNR (dB/Hz) GLONASS 15 L1 SNR (dB/Hz) GLONASS 16 L1 SNR (dB/Hz)
GLONASS 19 L1 SNR (dB/Hz) GLONASS 20 L1 SNR (dB/Hz) GLONASS 21 L1 SNR (dB/Hz)
GLONASS 22 L1 SNR (dB/Hz) GLONASS 23 L1 SNR (dB/Hz)

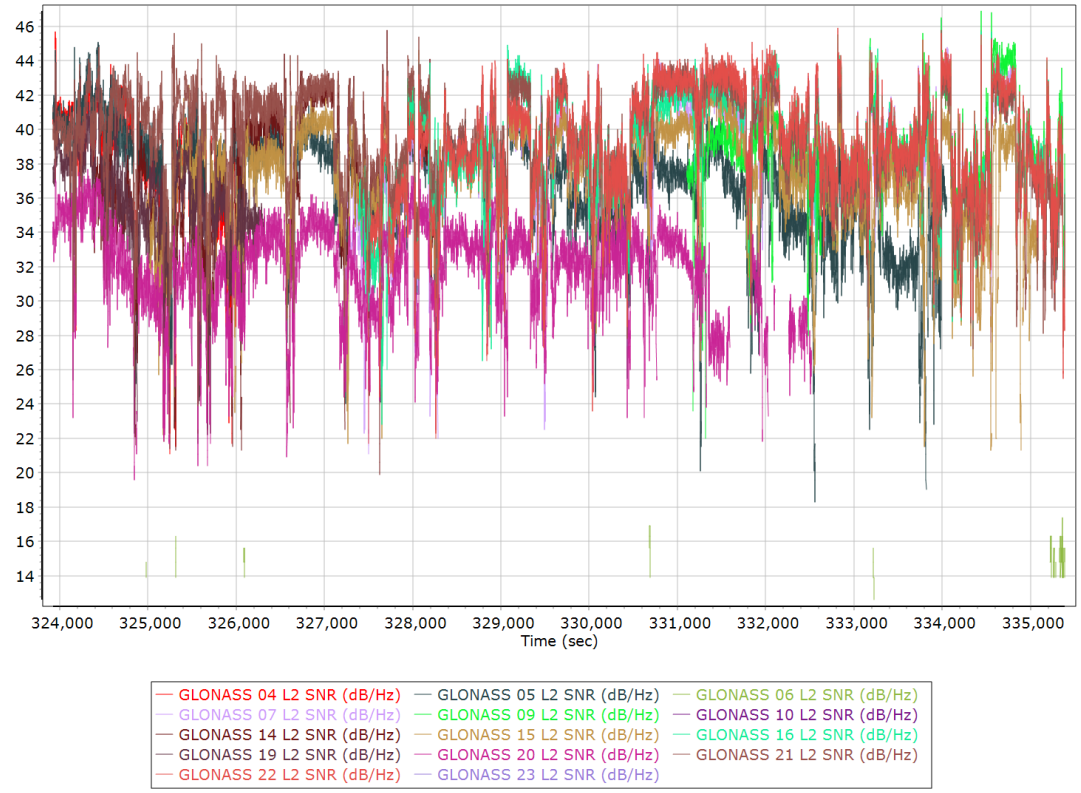
GPS/GLONASS L2 Satellite Lock/Elevation



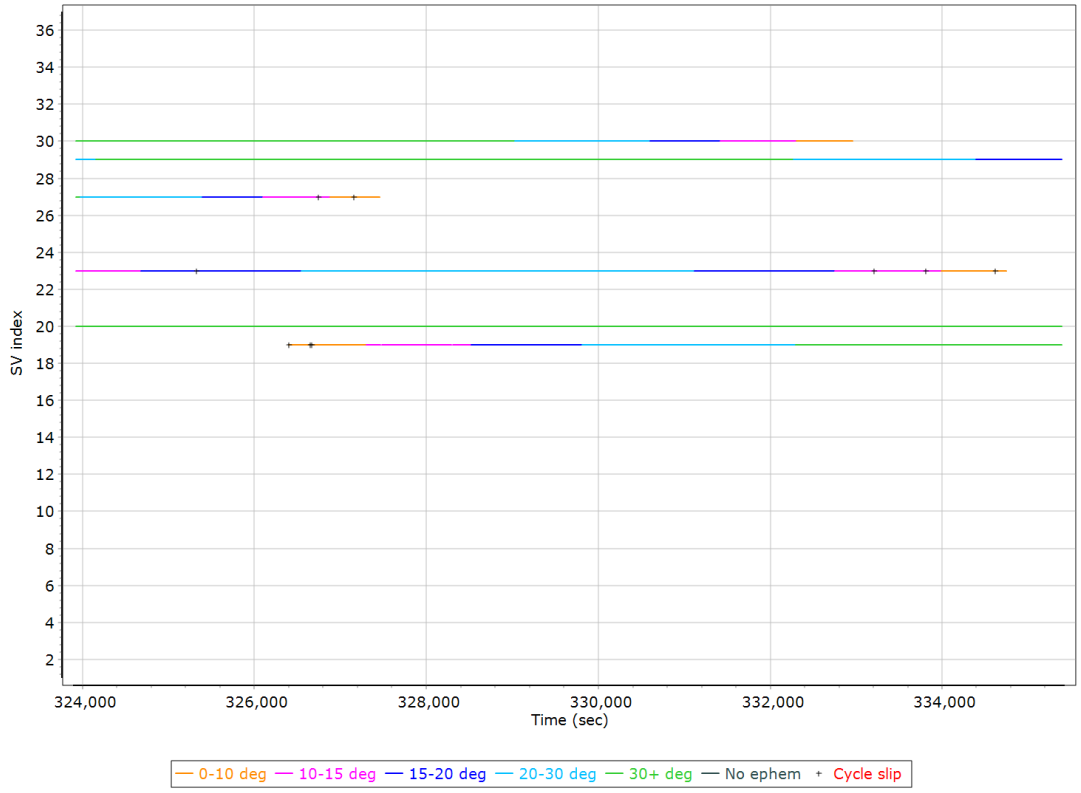
GPS L2 SNR



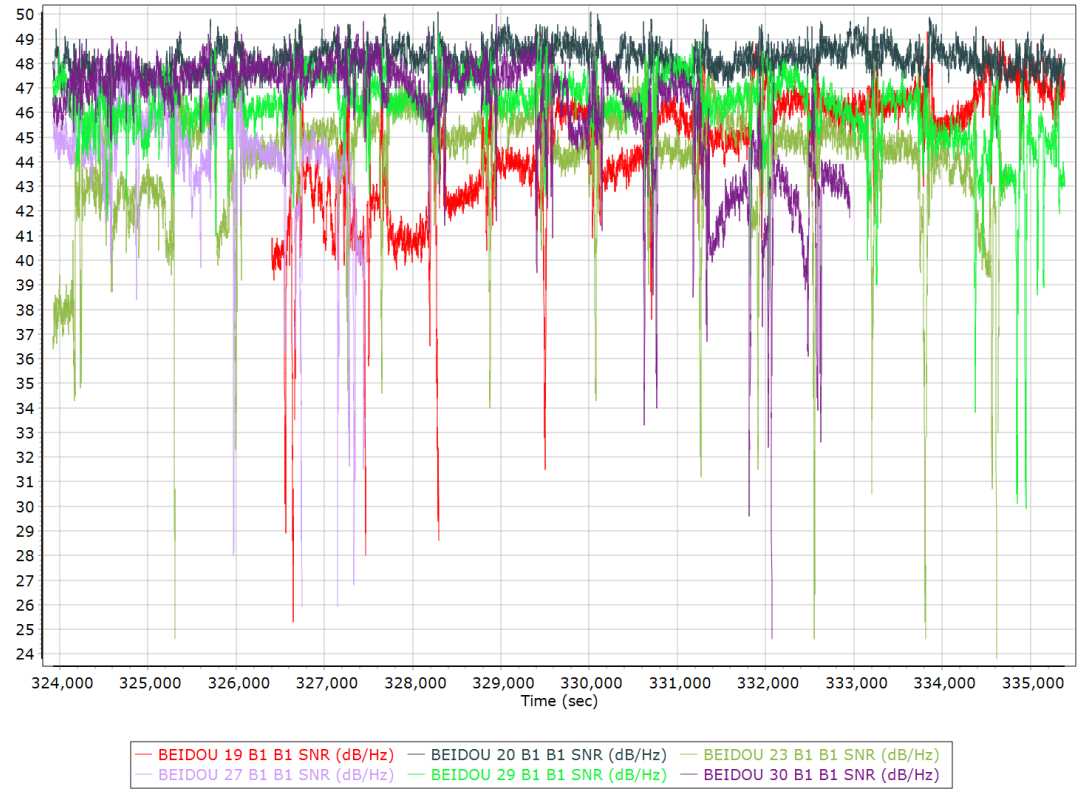
GLONASS L2 SNR



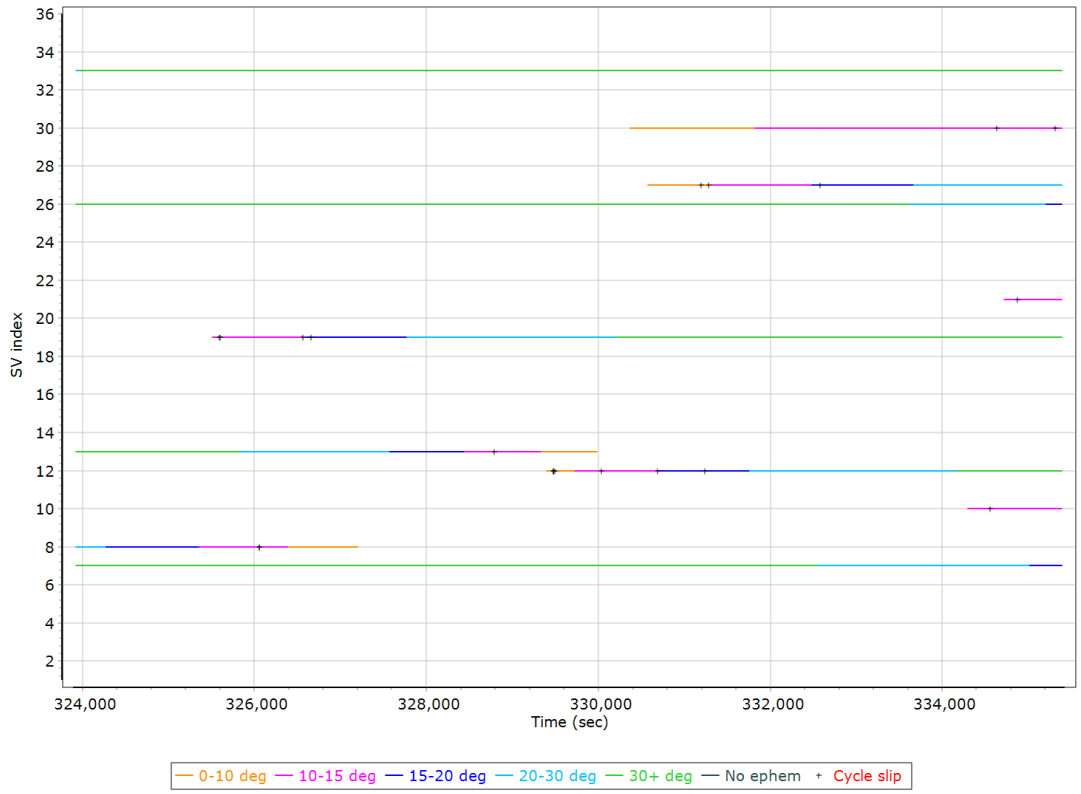
BEIDOU Satellite Lock/Elevation



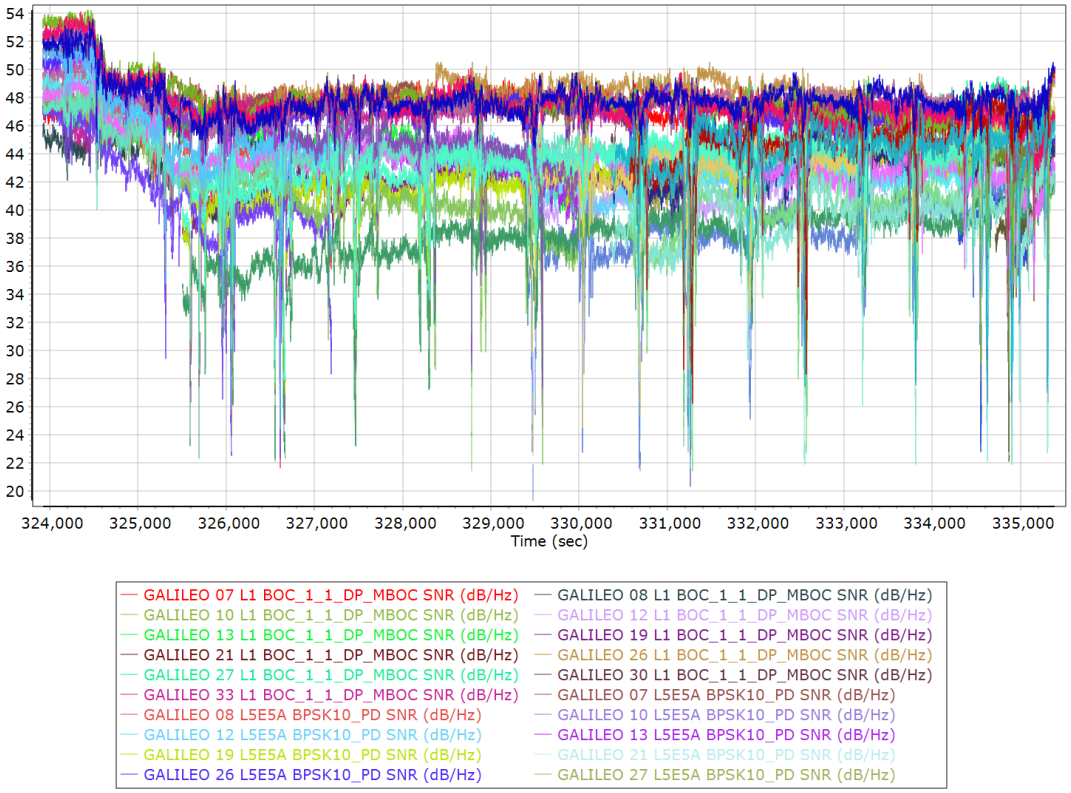
BEIDOU SNR



GALILEO Satellite Lock/Elevation

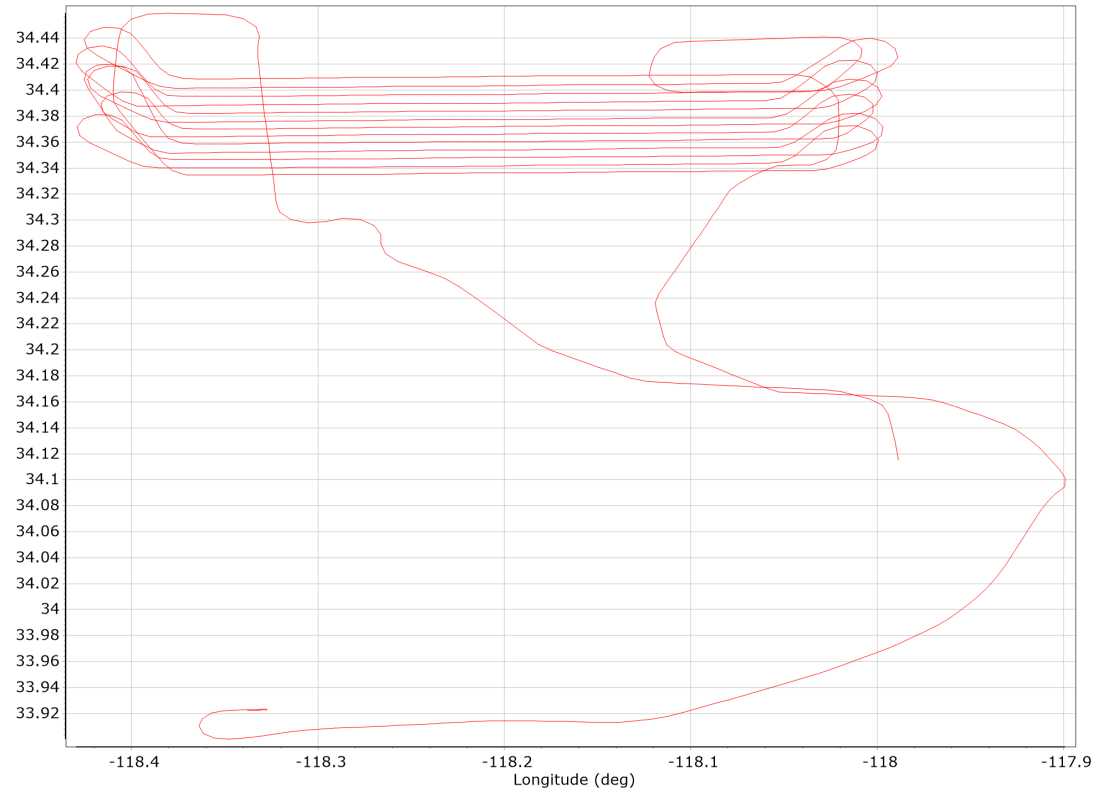


GALILEO SNR

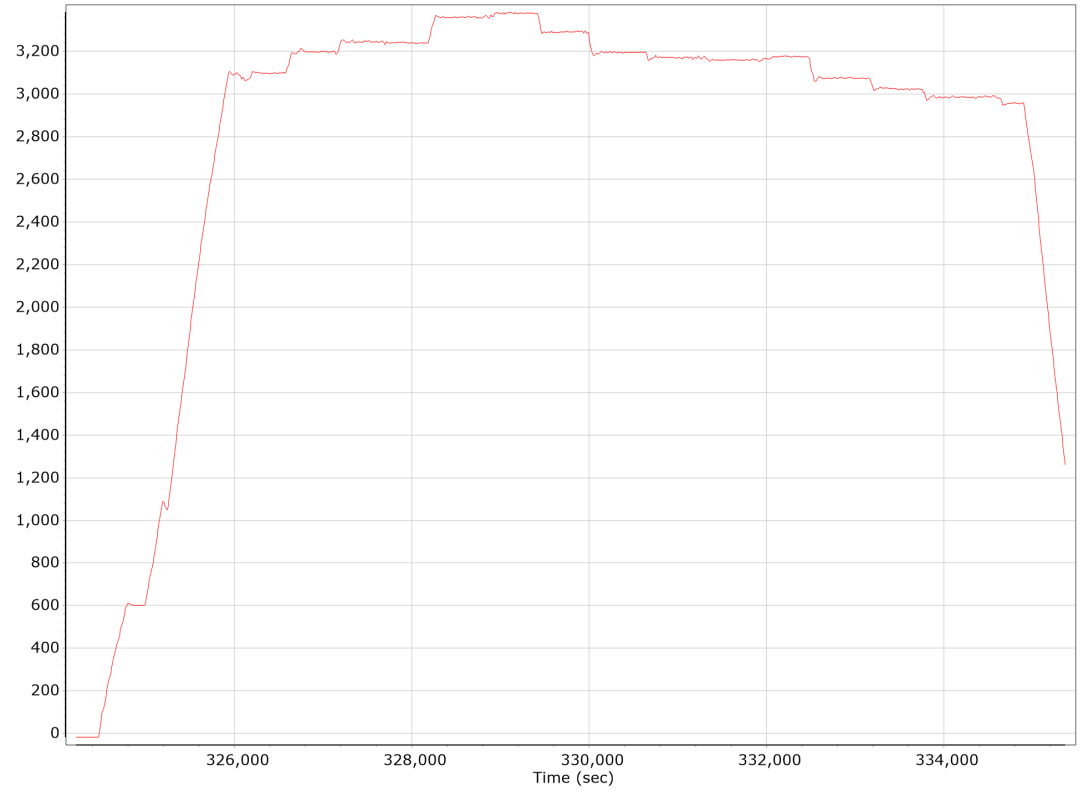

54
52
50
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44
42
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38
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26
24
22
20
324,000
325,000
326,000
327,000
328,000
329,000
330,000
331,000
332,000
333,000
334,000
335,000
Time (sec)
GALILEO 07 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 08 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 10 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 12 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 13 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 19 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 21 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 26 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 27 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 30 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 33 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 07 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 08 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 10 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 12 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 13 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 19 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 21 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 26 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 27 L5E5A BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

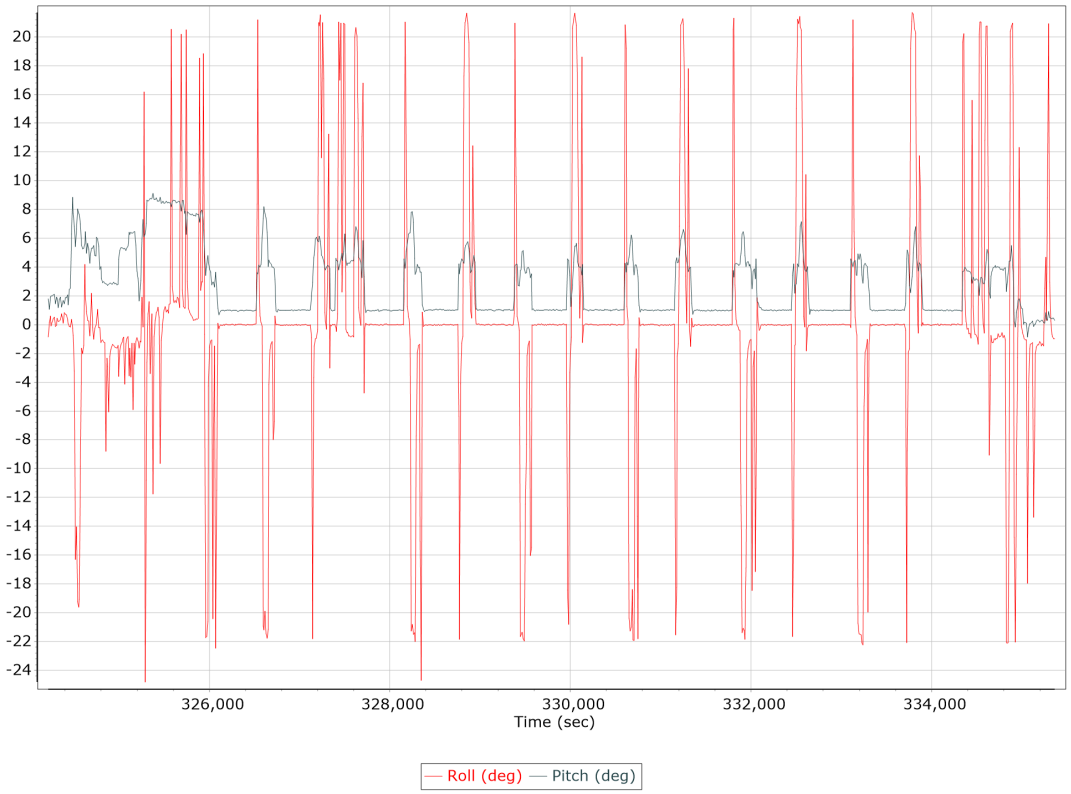
Top View



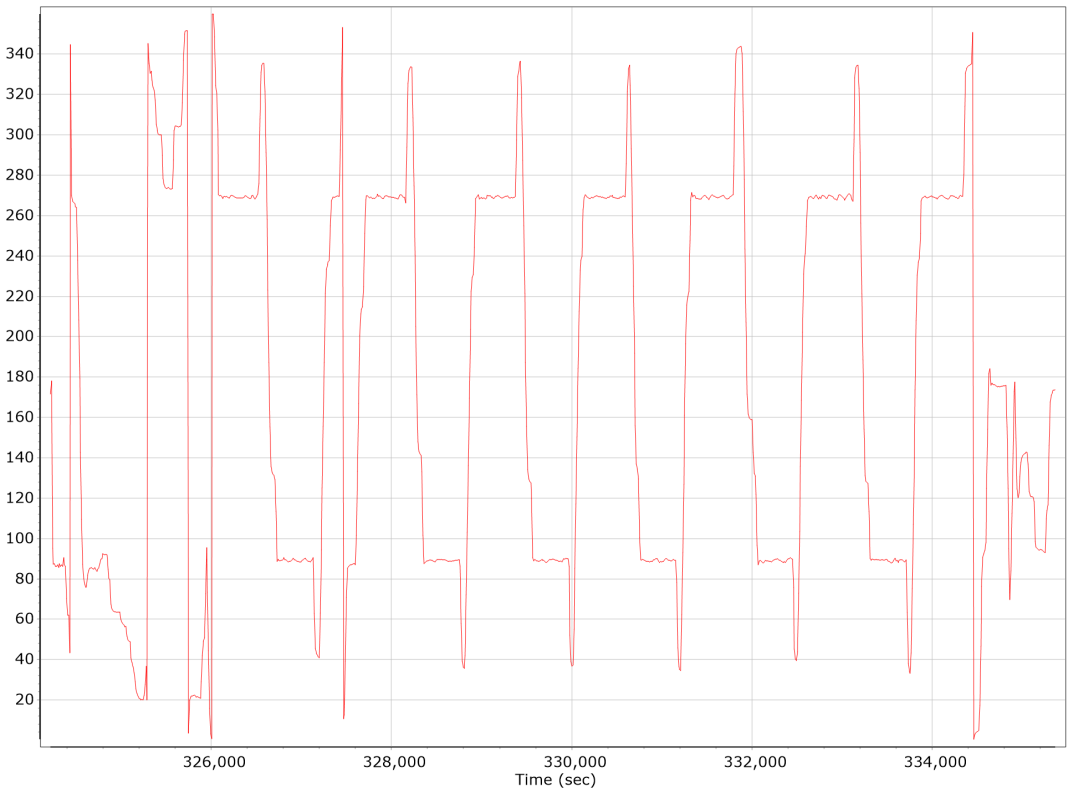
Altitude



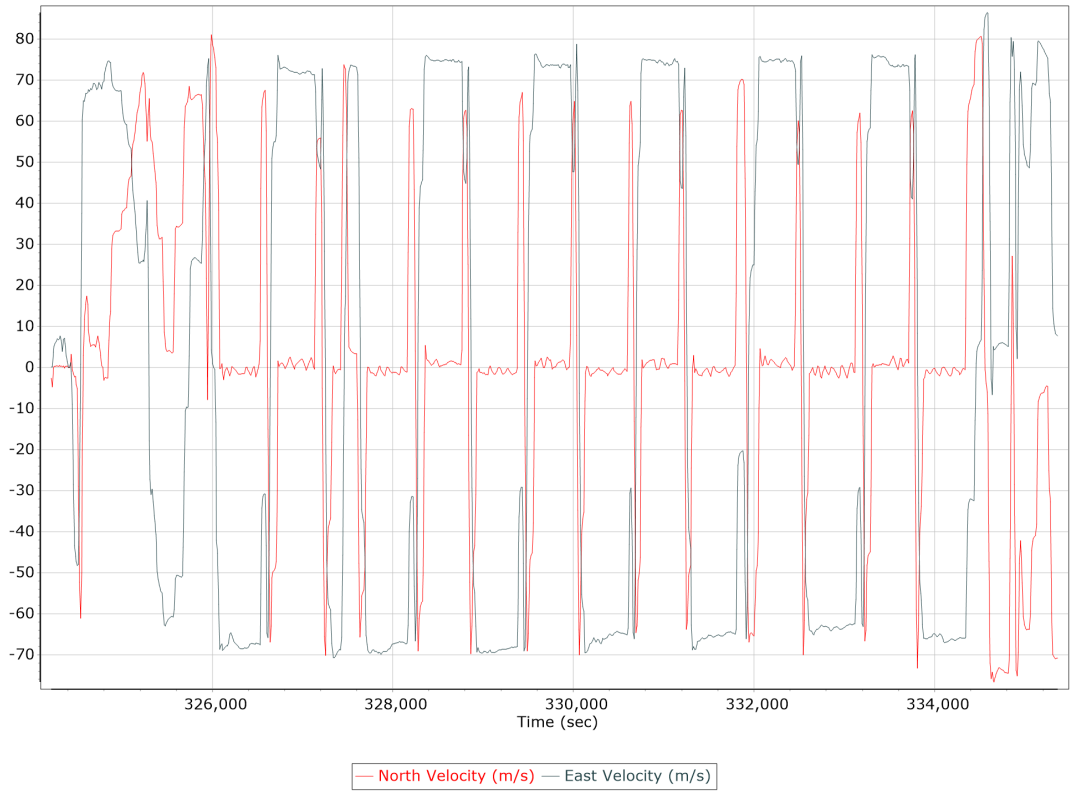
Roll/Pitch



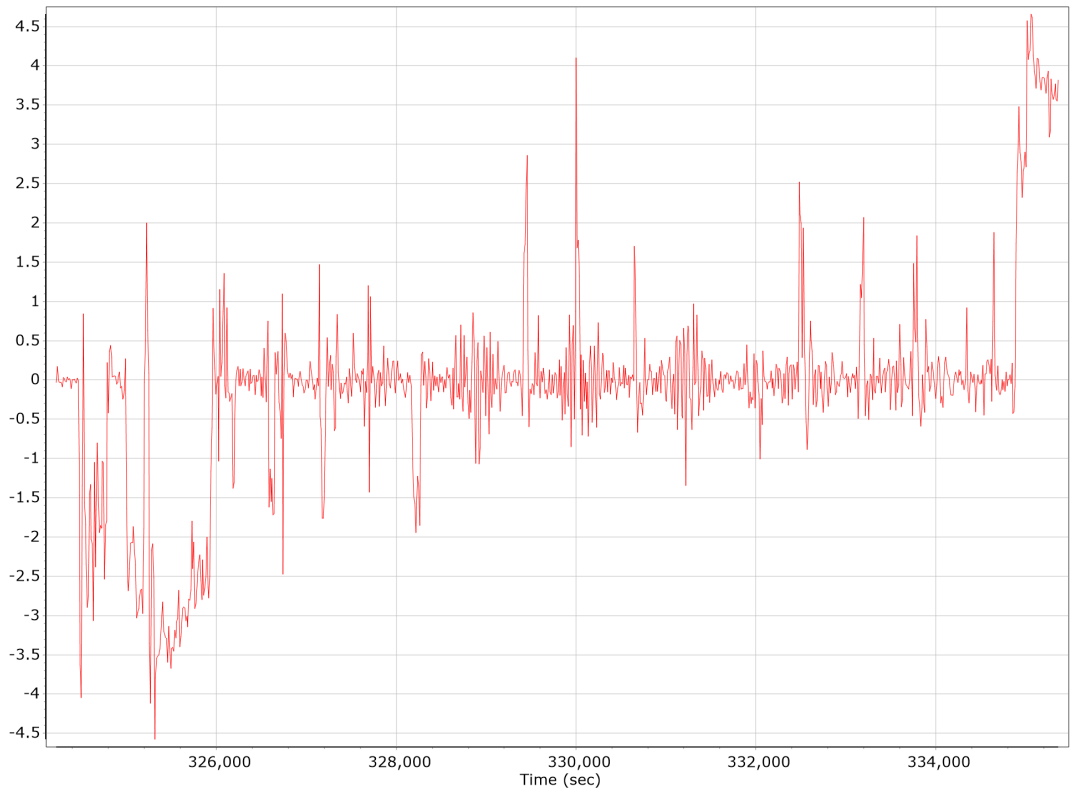
Heading



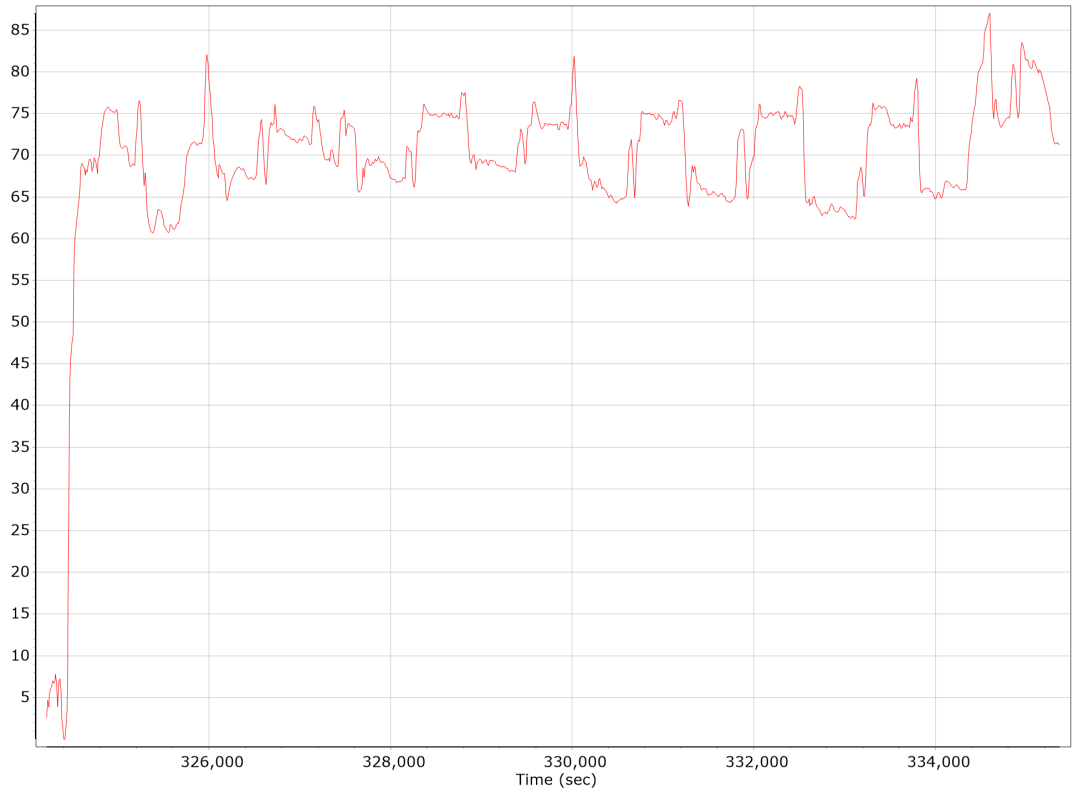
North/East Velocity



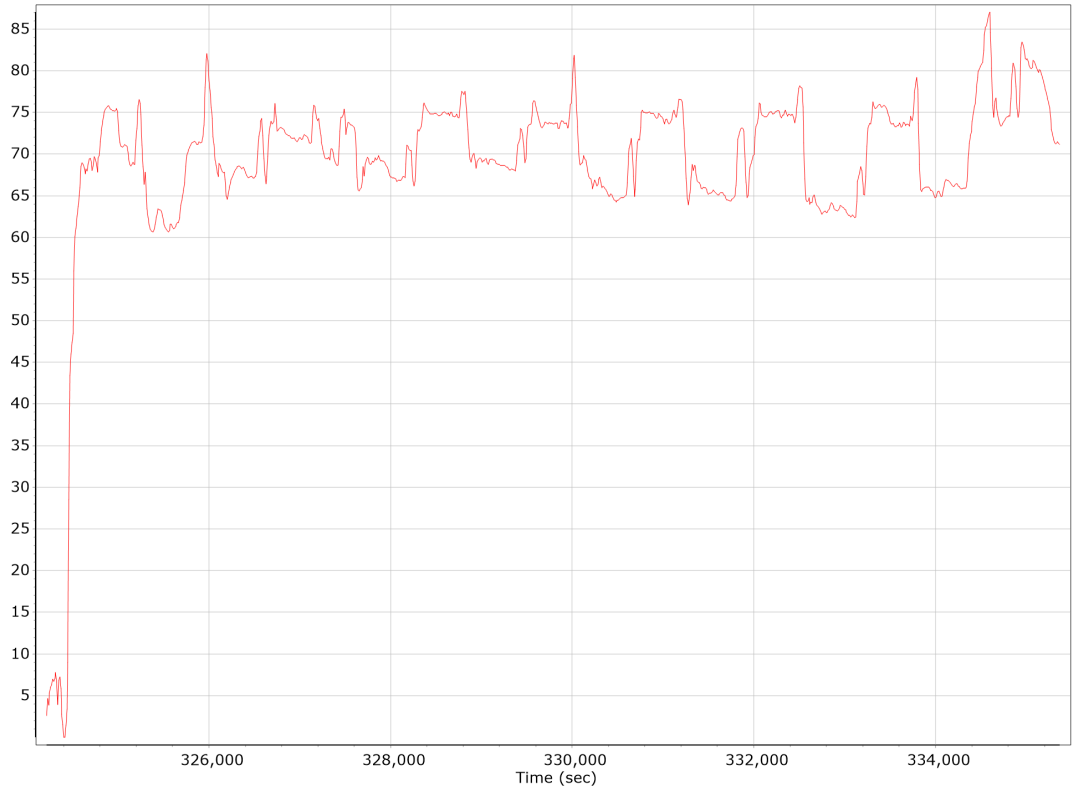
Down Velocity



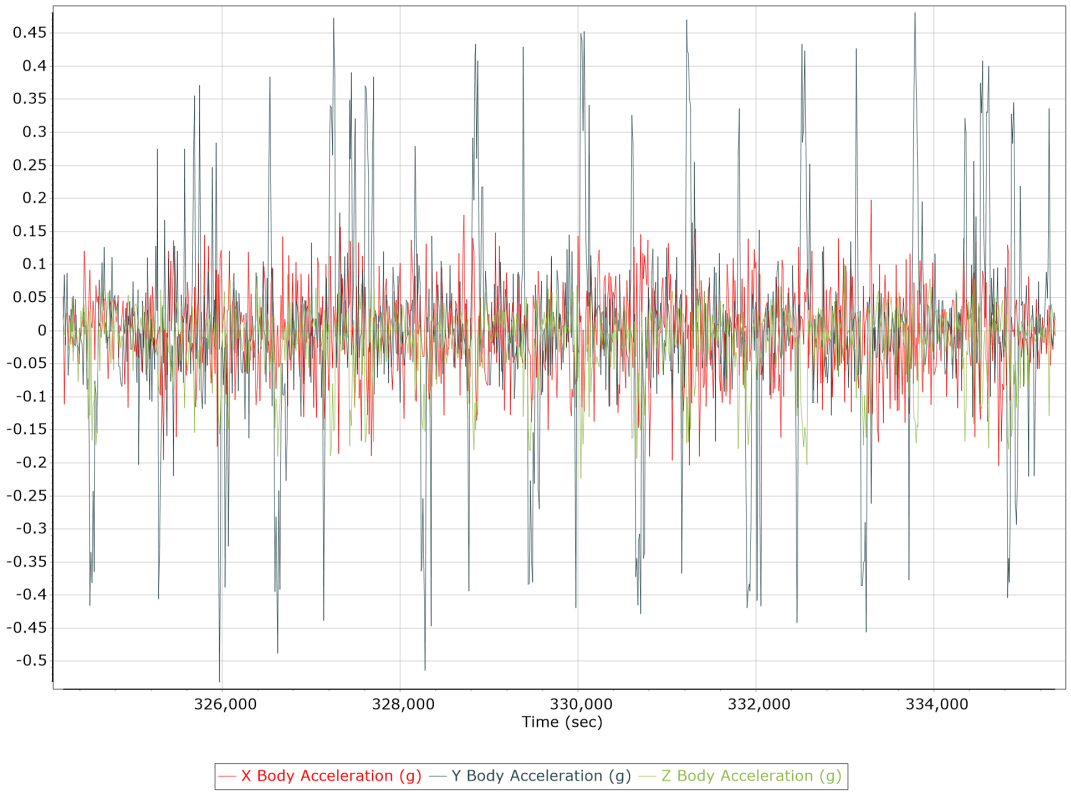
Total Speed



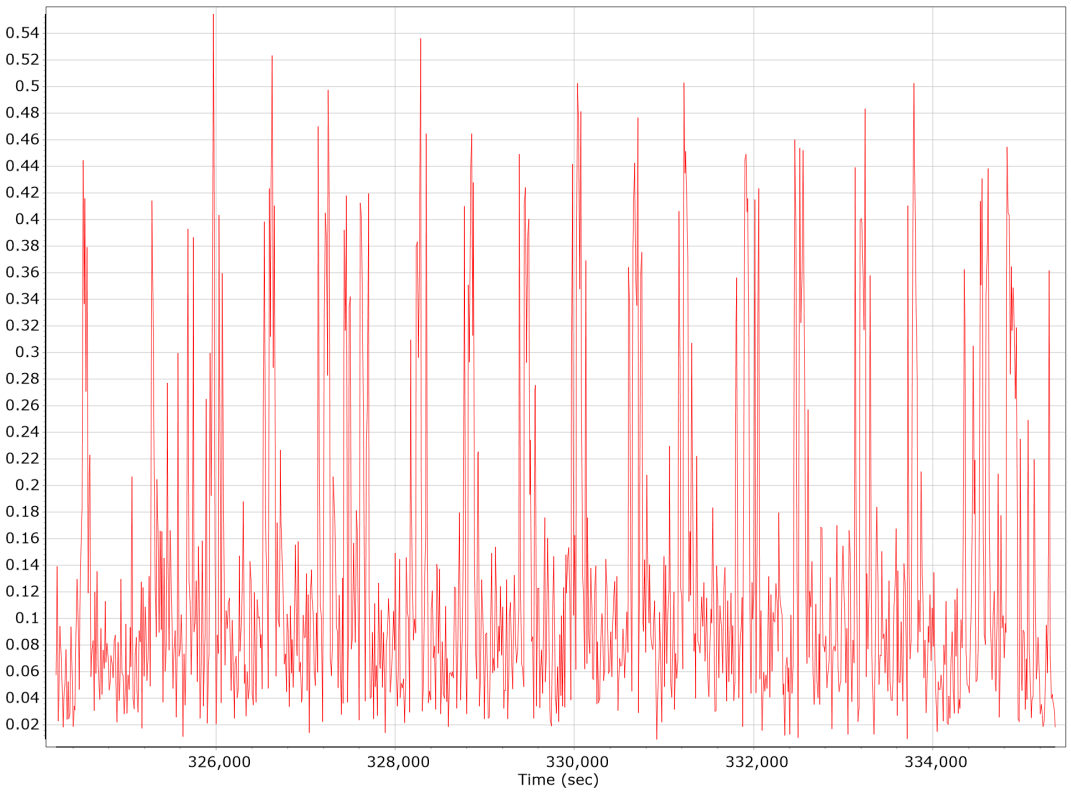
Ground Speed



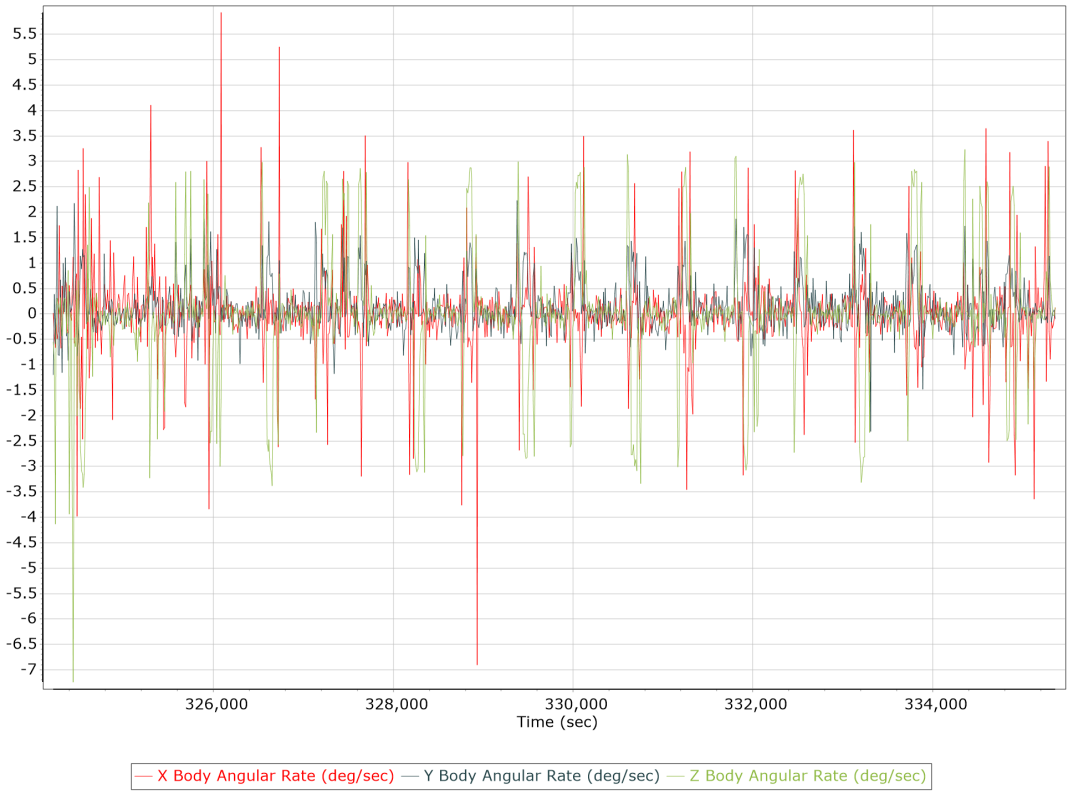
Body Acceleration



Total Body Acceleration

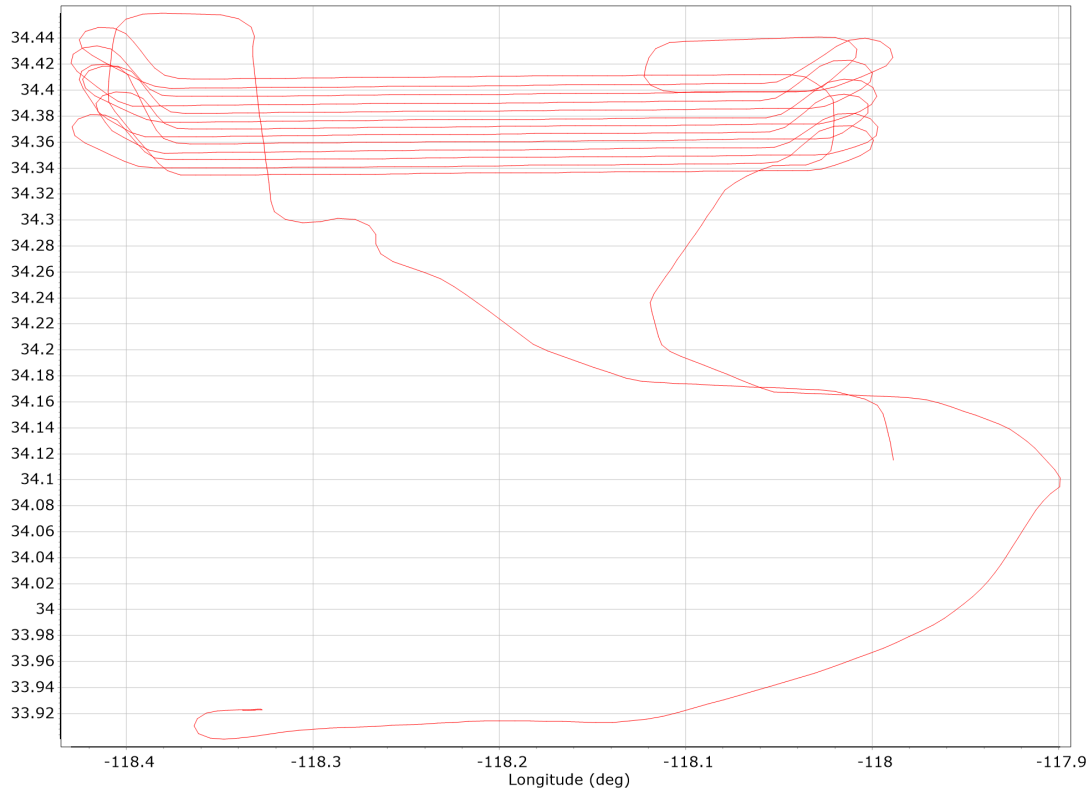


Body Angular Rate

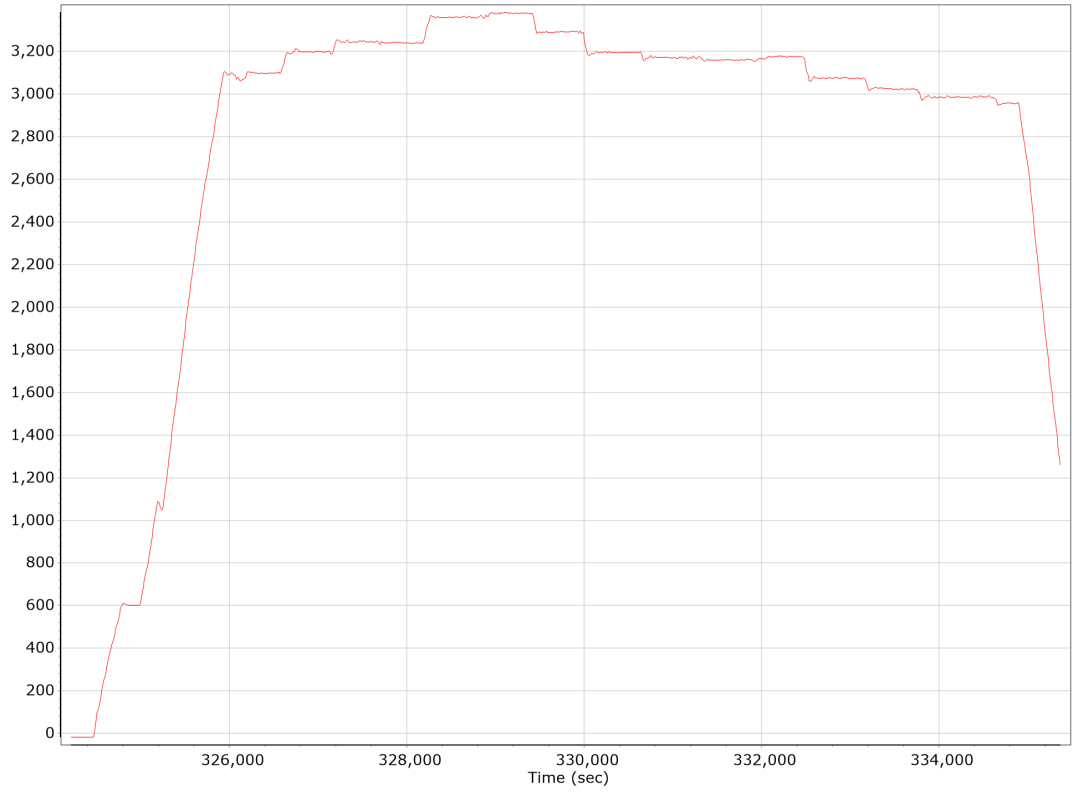


Forward Processed Trajectory Information

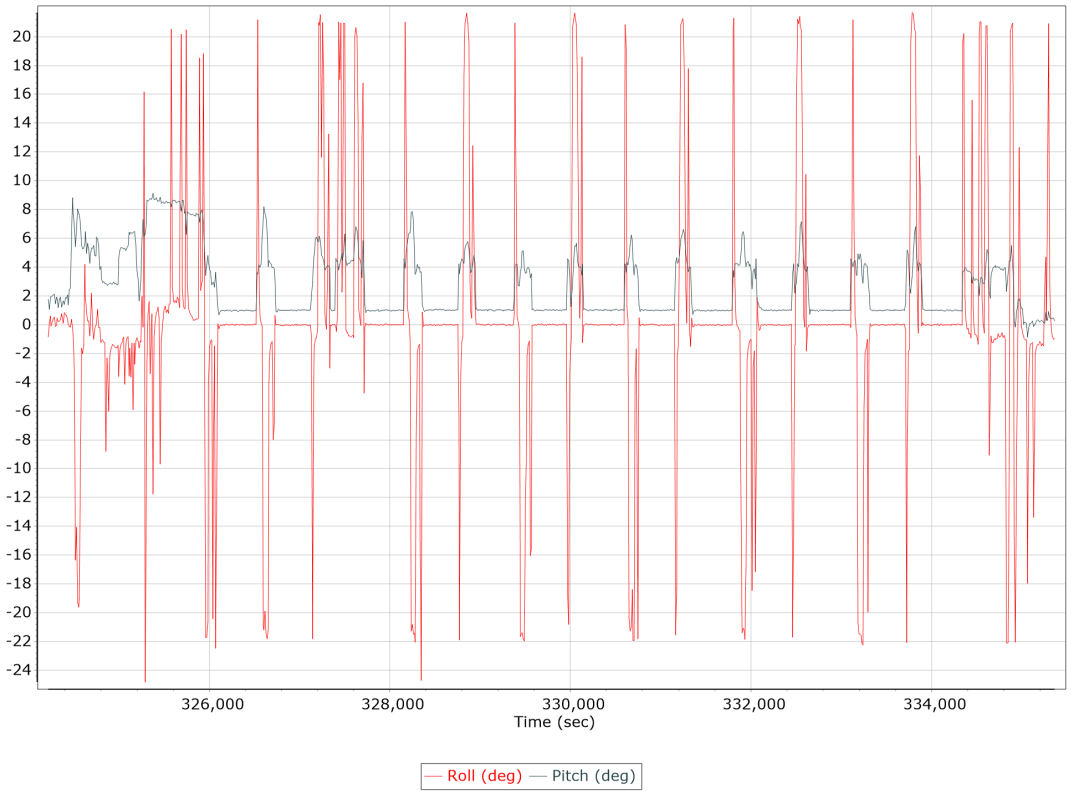
Top View



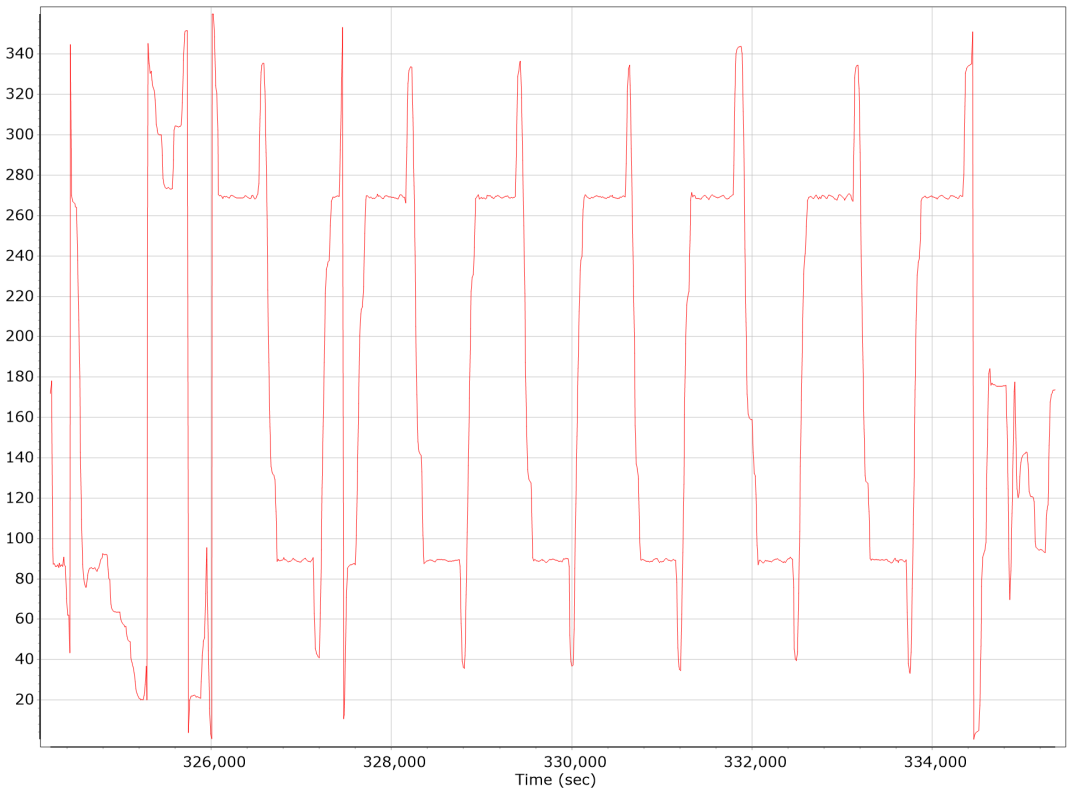
Altitude



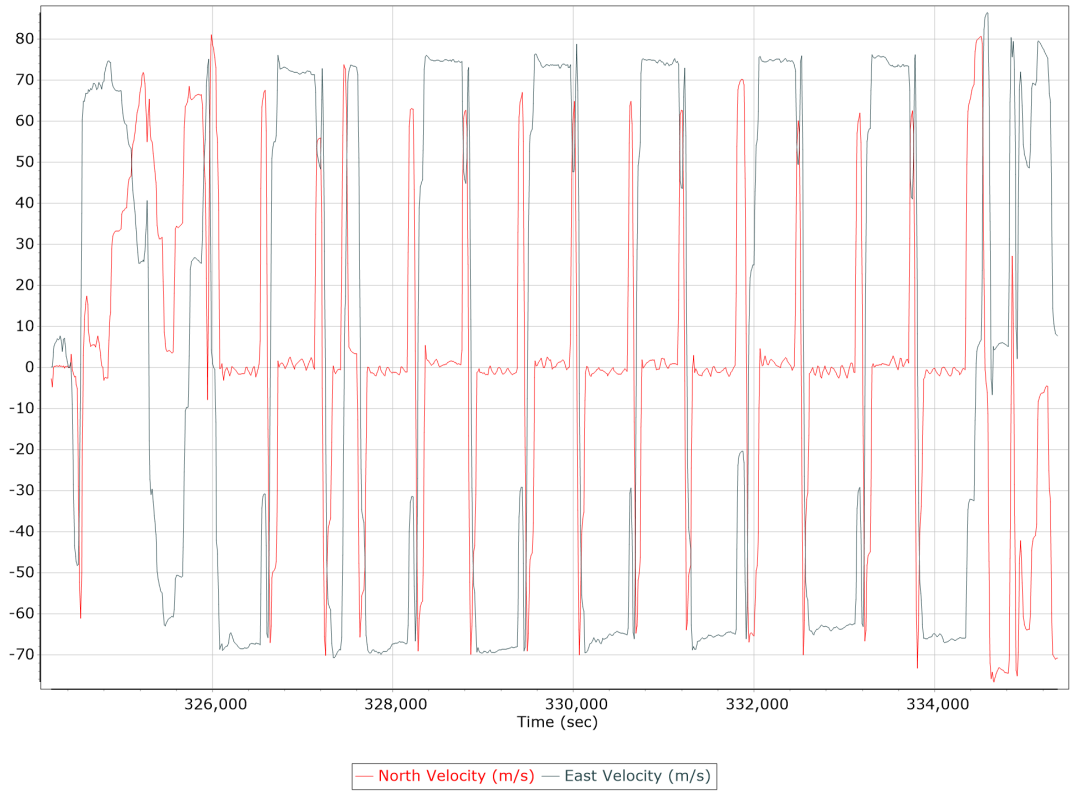
Roll/Pitch



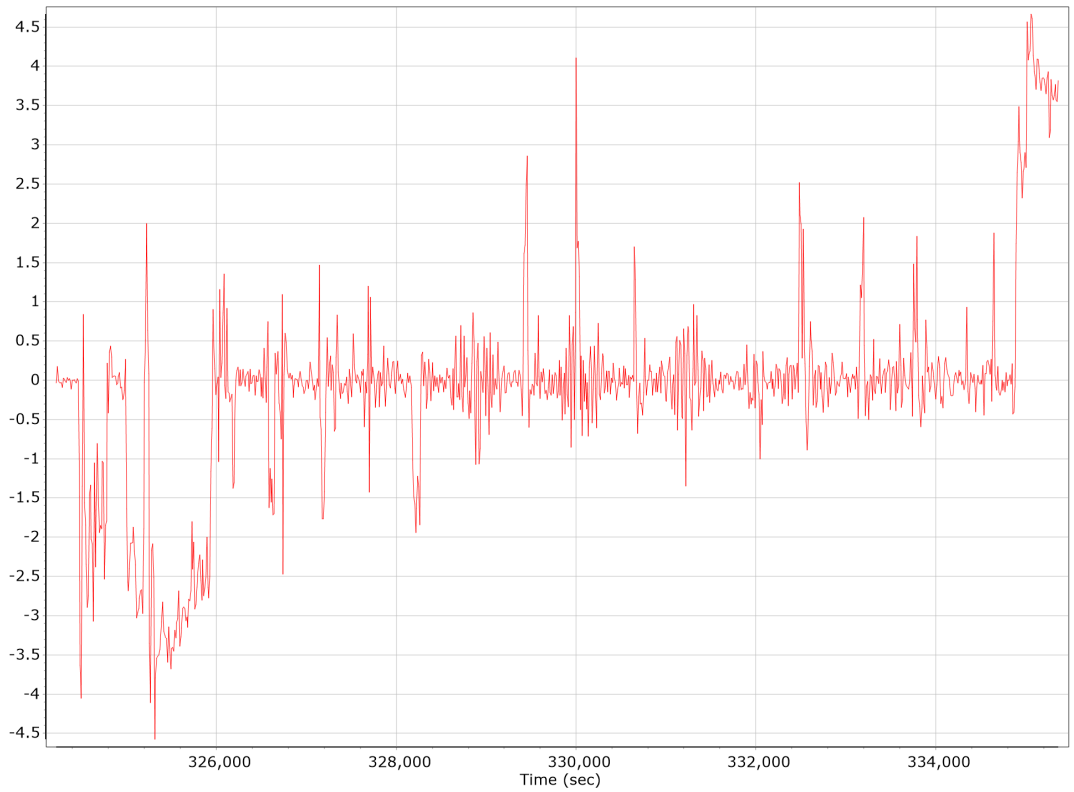
Heading



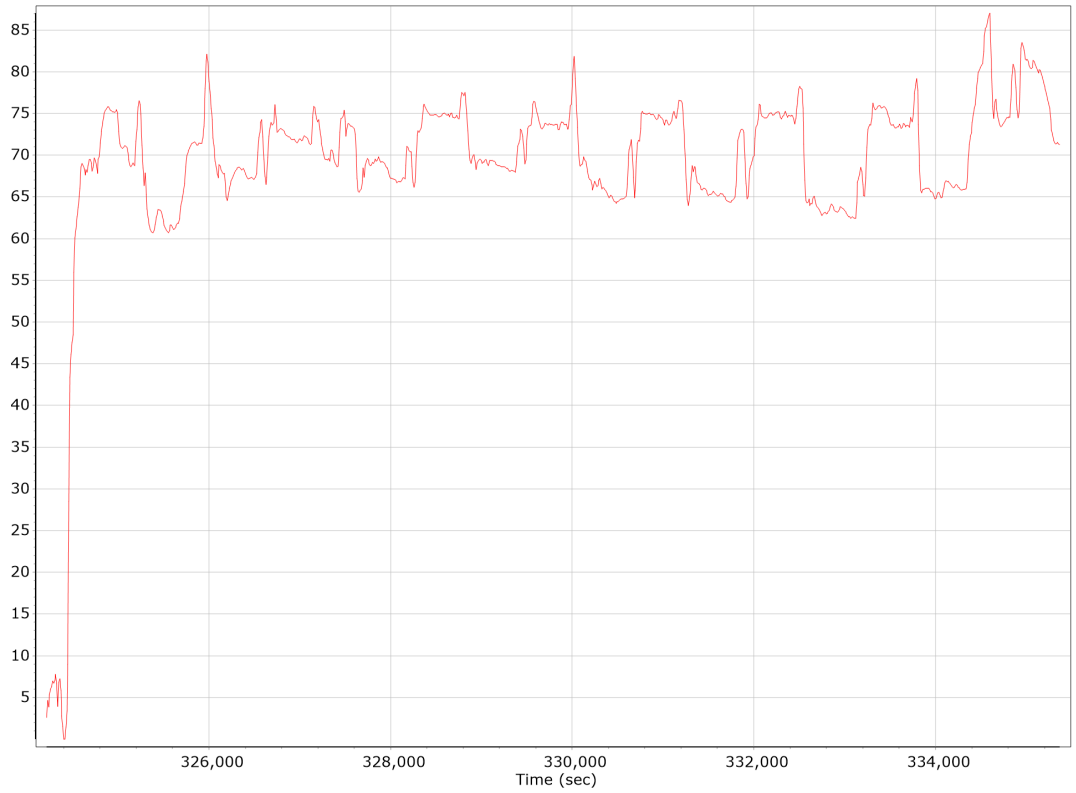
North/East Velocity



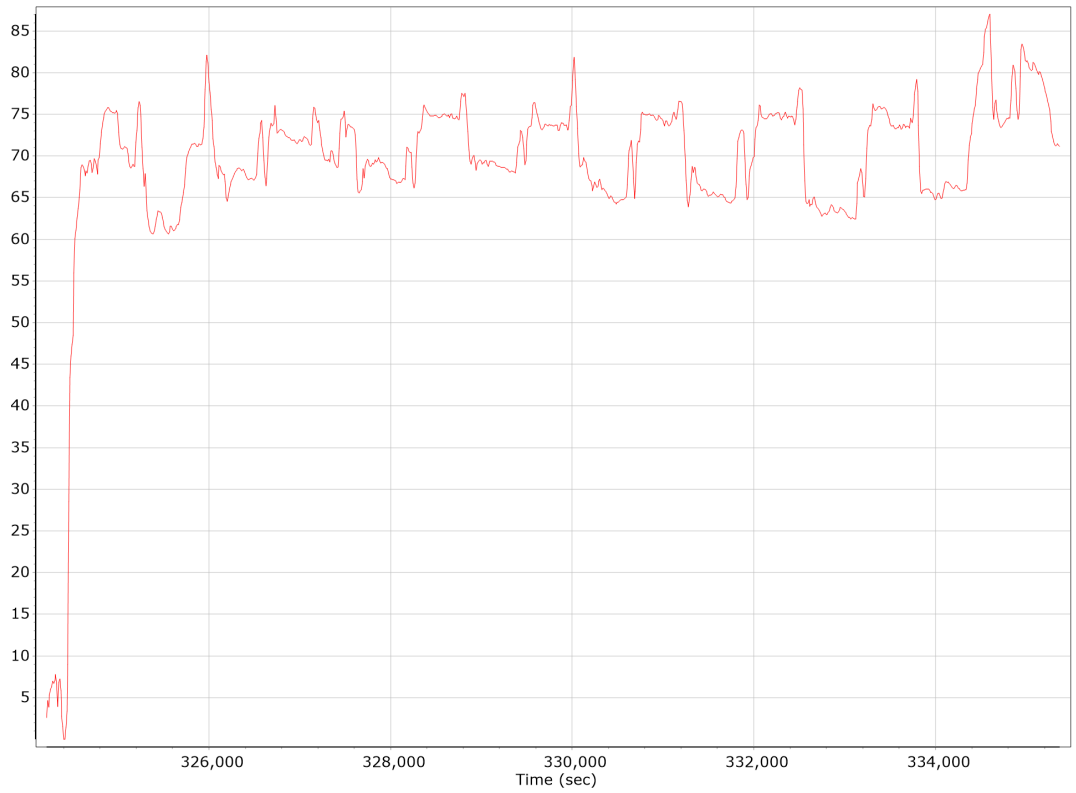
Down Velocity



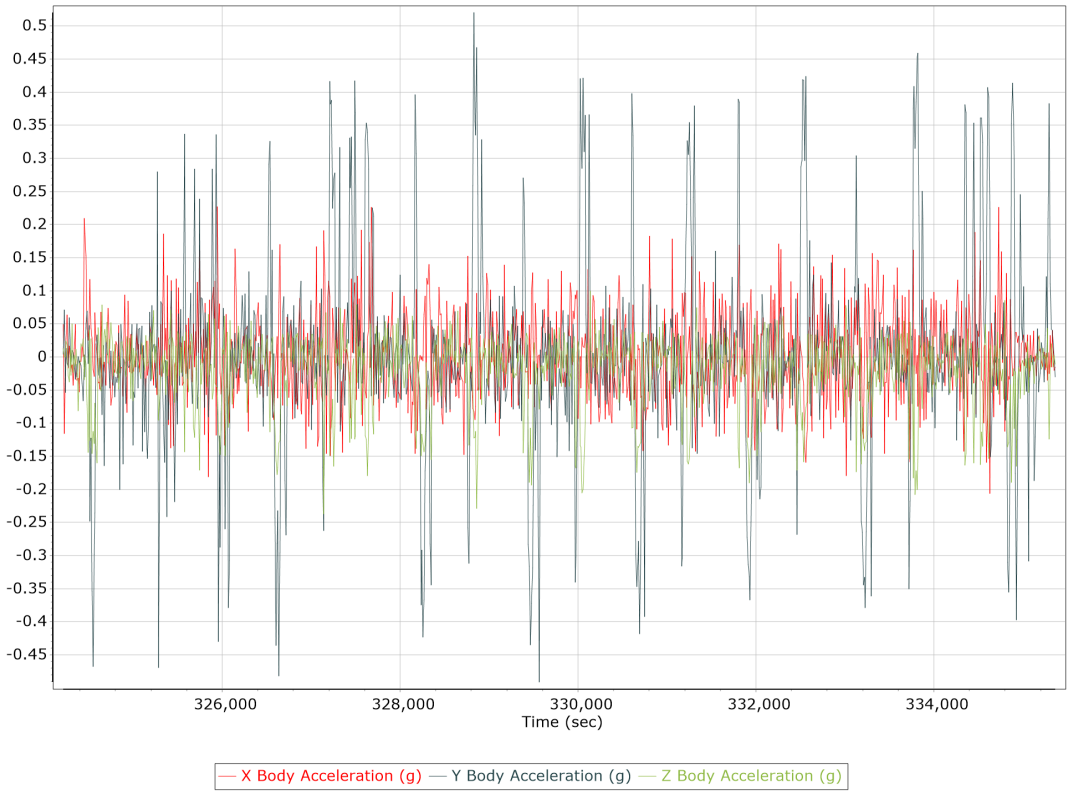
Total Speed



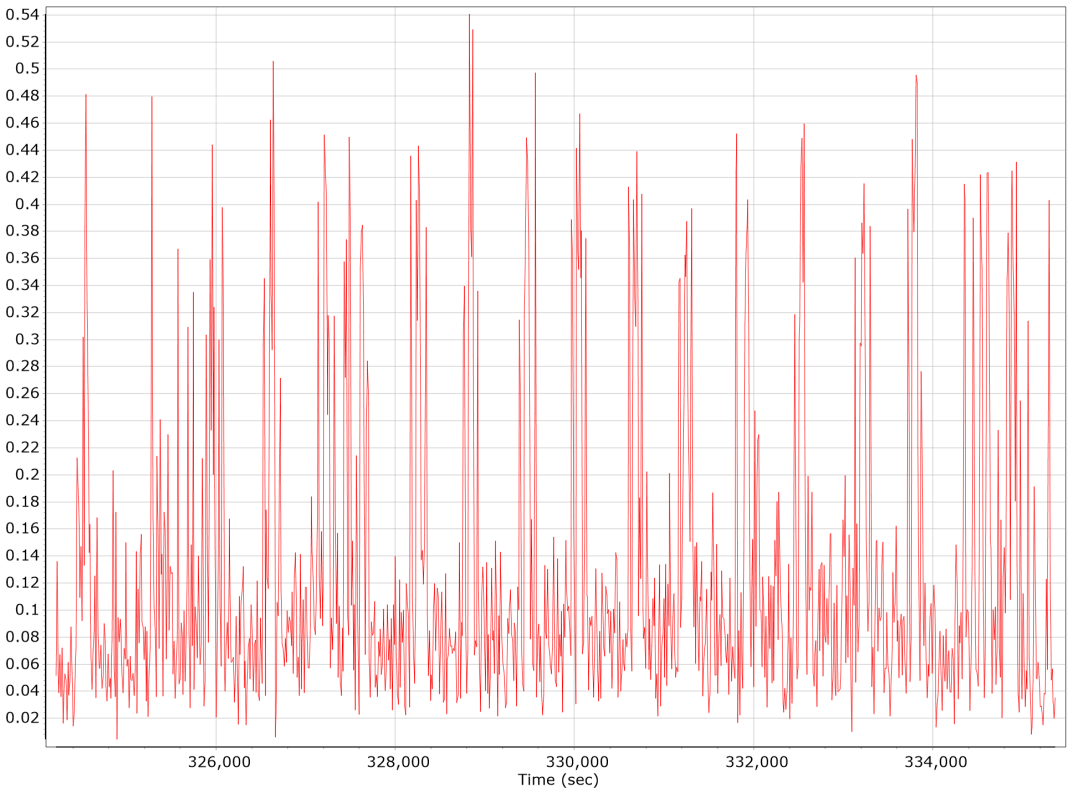
Ground Speed



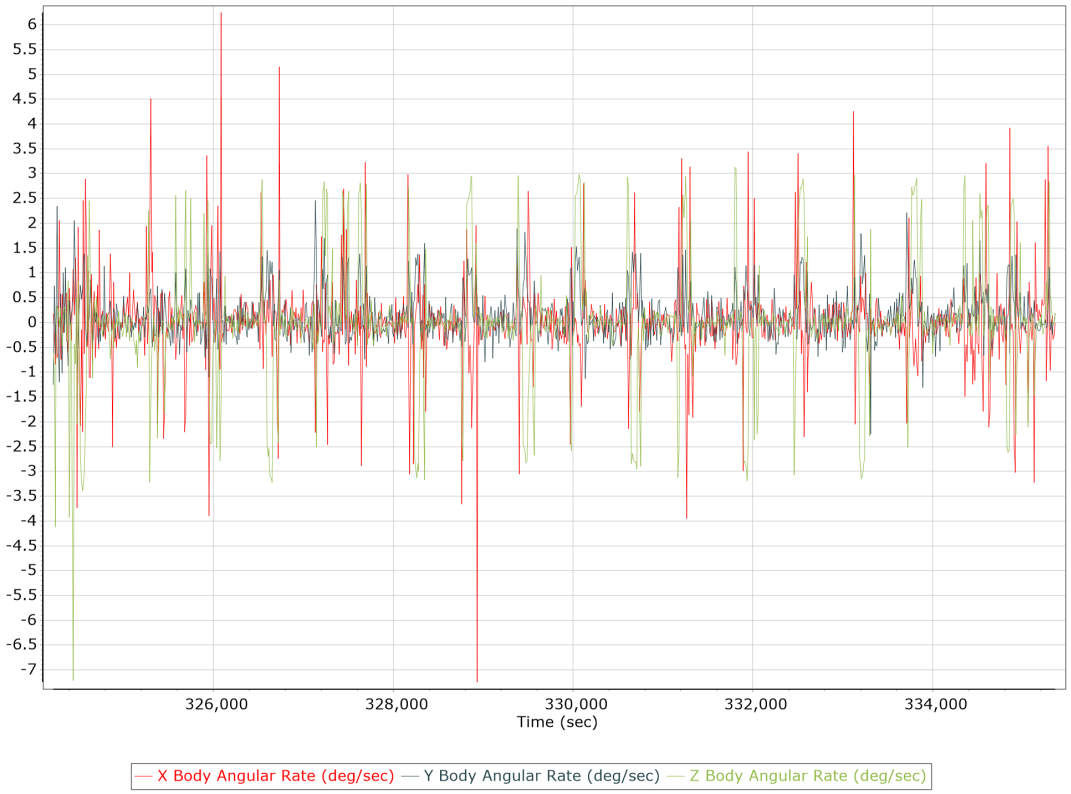
Body Acceleration



Total Body Acceleration



Body Angular Rate

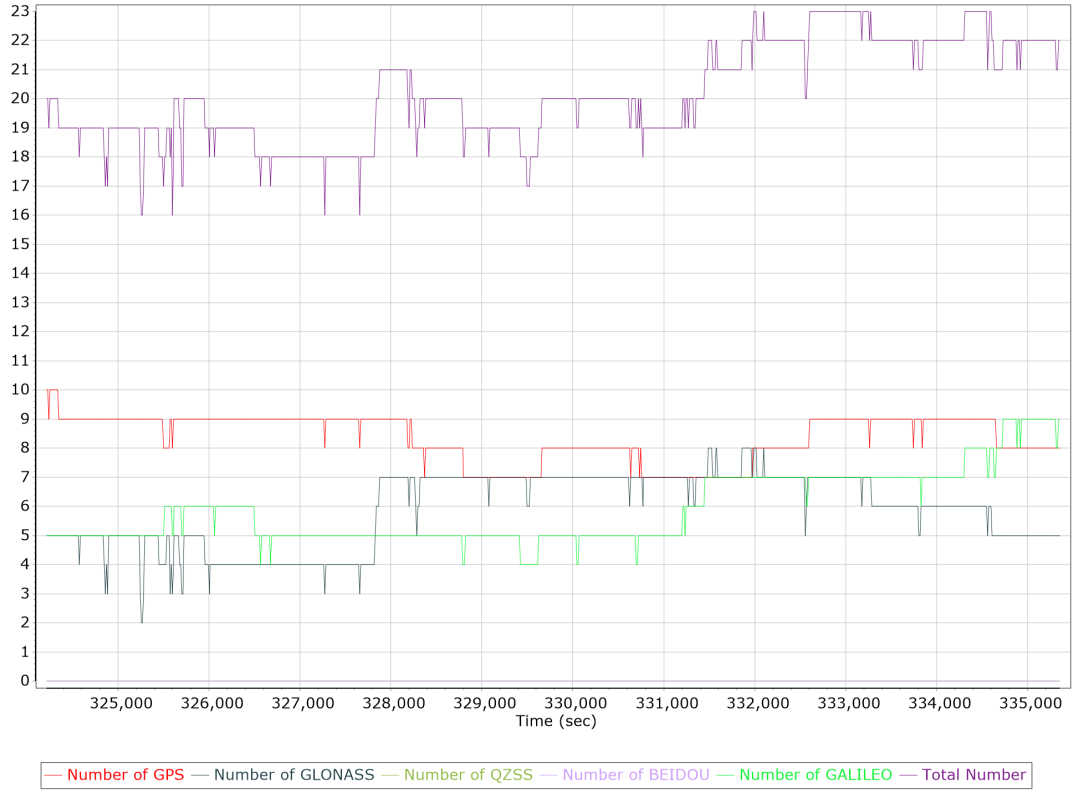


GNSS QC

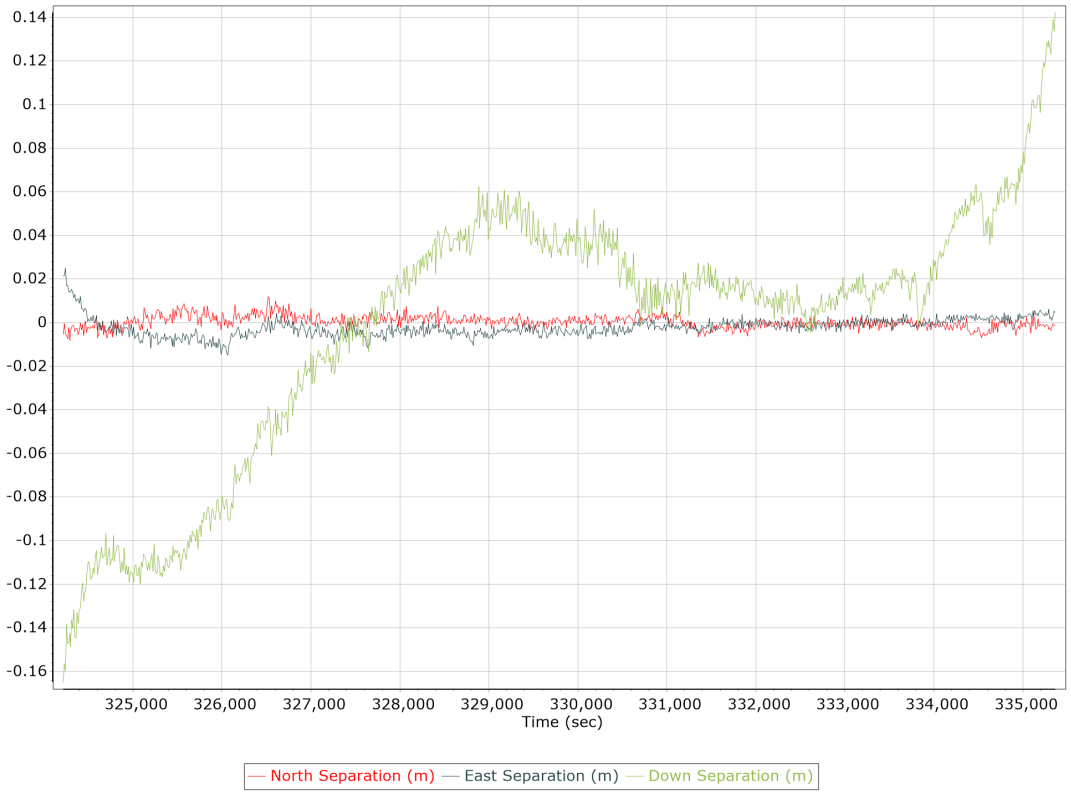
GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	7	10	8
Number of GLONASS SV	2	8	6
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	4	9	6
Total number of SV	16	23	20
PDOP	1.08	1.76	1.26
QC Solution Gaps	0.00	0.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	11429.00	0.00	0.00
Percentage	100.00	0.00	0.00

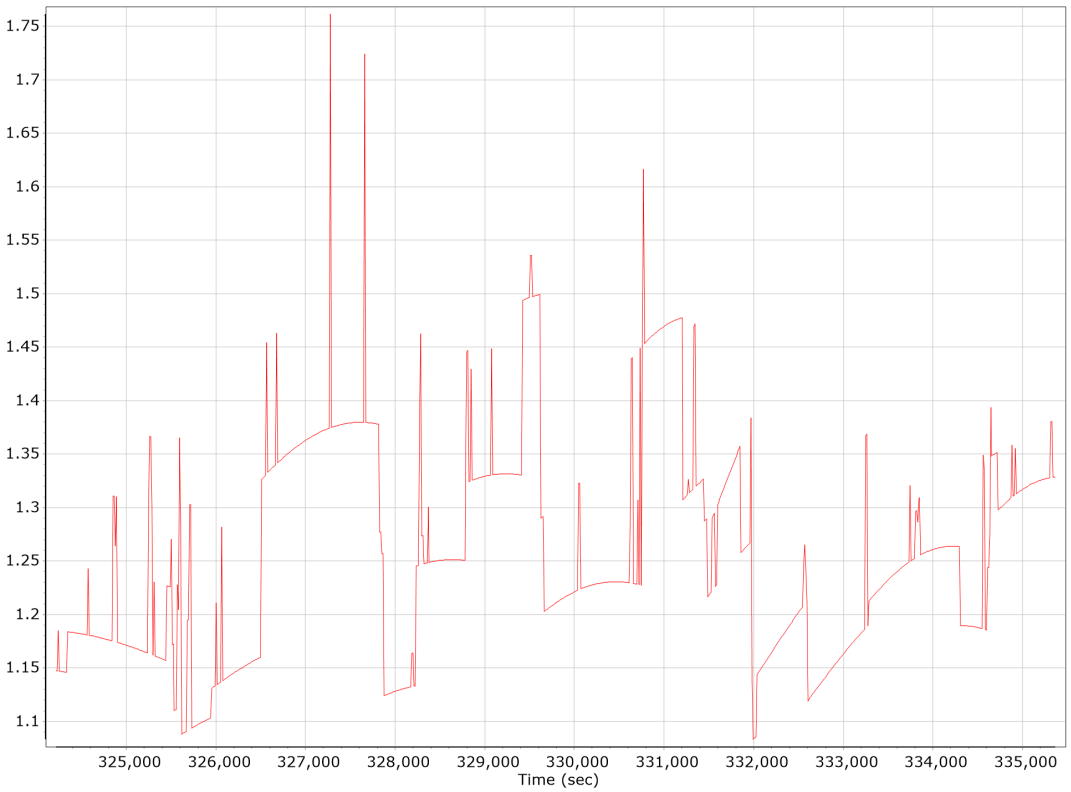
Num SVs in solution



Forward/Reverse Separation



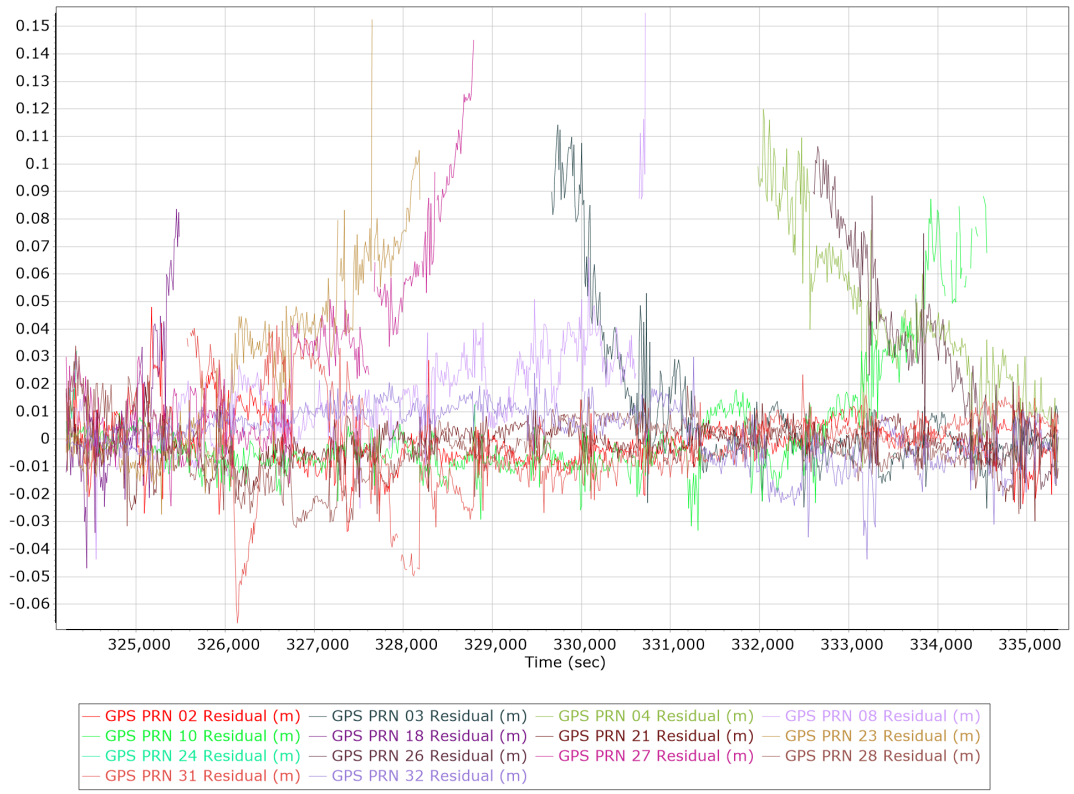
PDOP



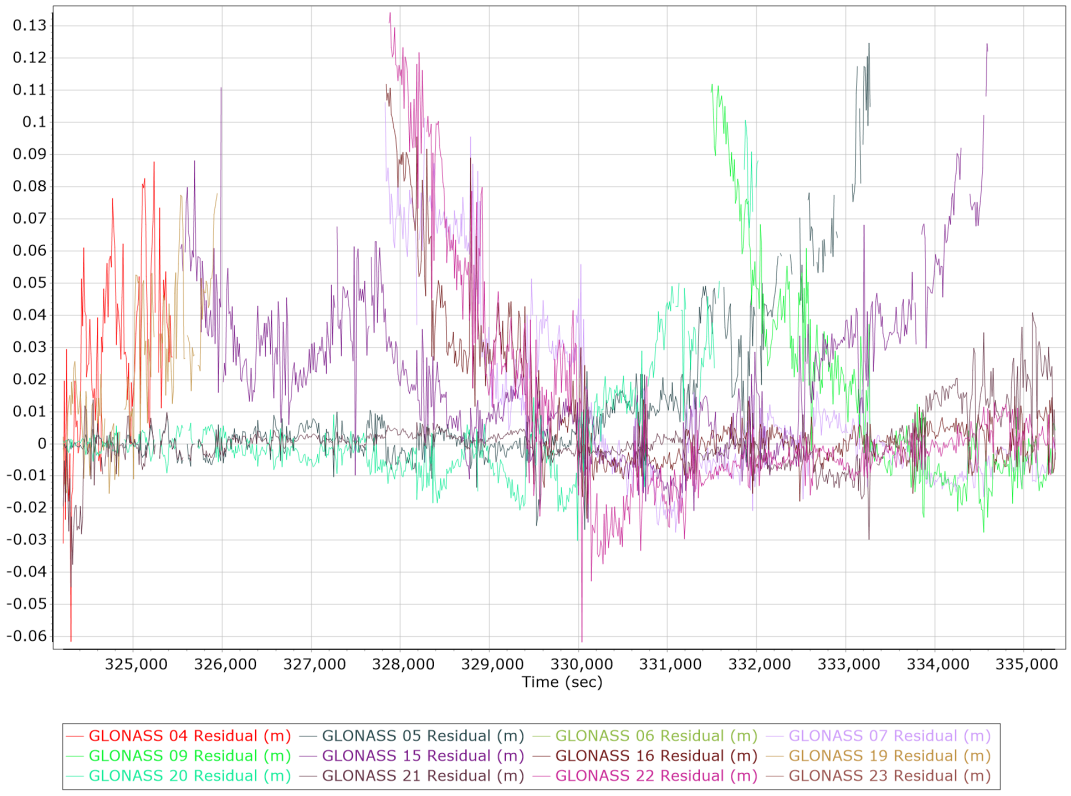
Estimated Position Accuracy



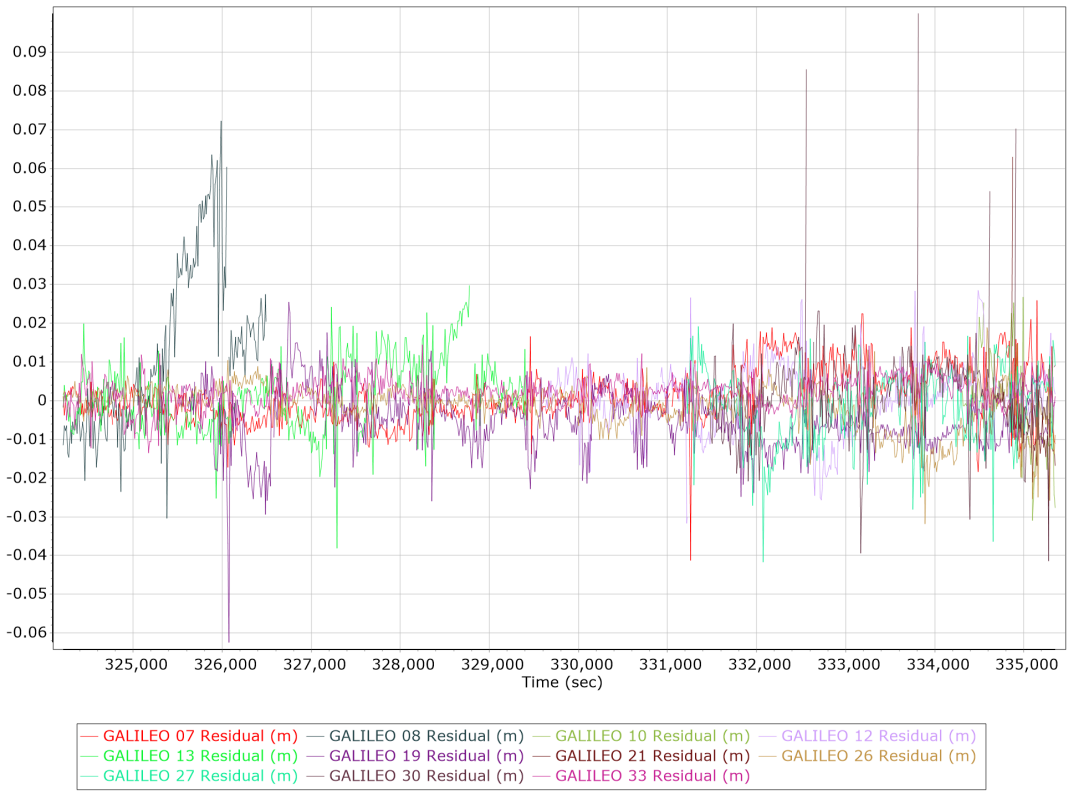
GPS Residuals



GLONASS Residuals



GALILEO Residuals



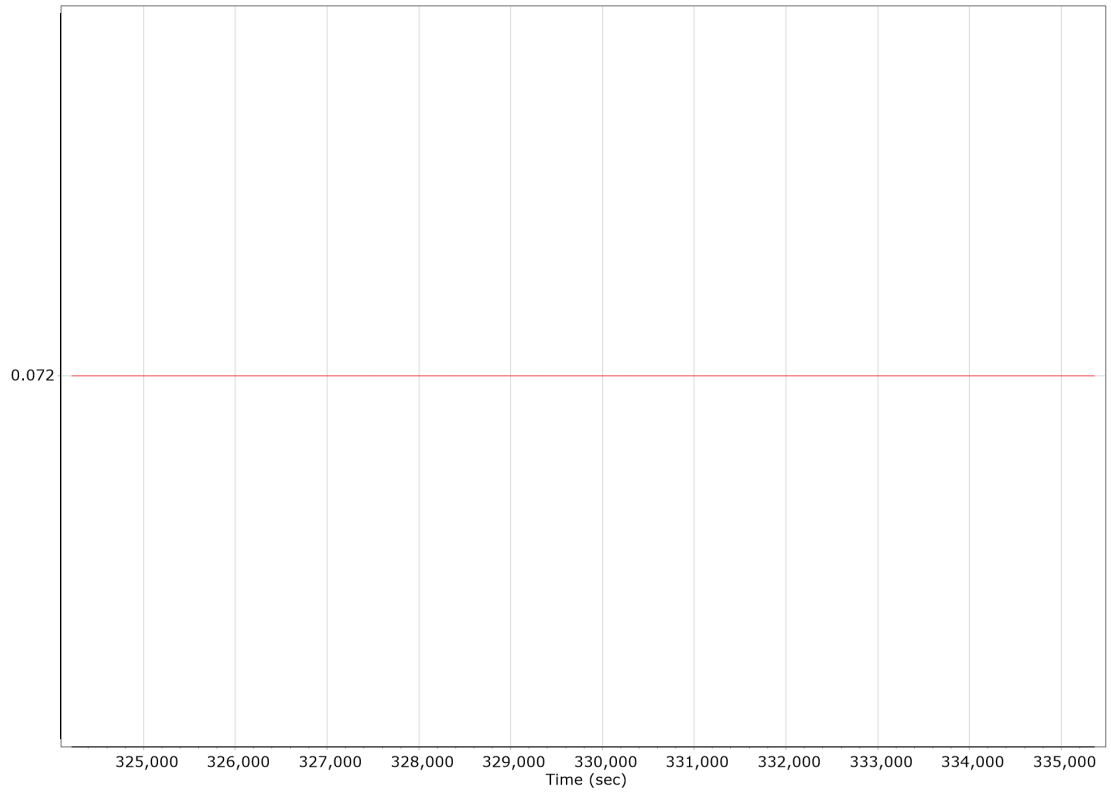
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	323907.000 (9/27/2023 5:58:27 PM)		
Processing end time	335371.000 (9/27/2023 9:09:31 PM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.072	0.090	-1.275
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

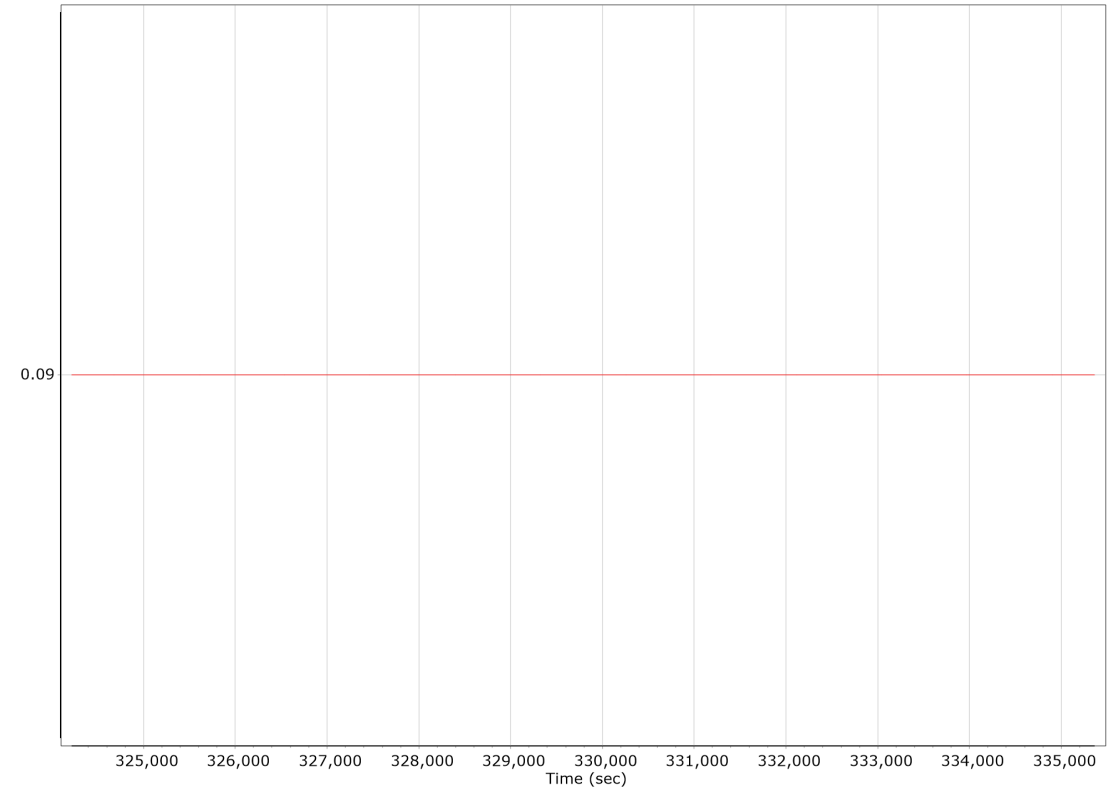
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

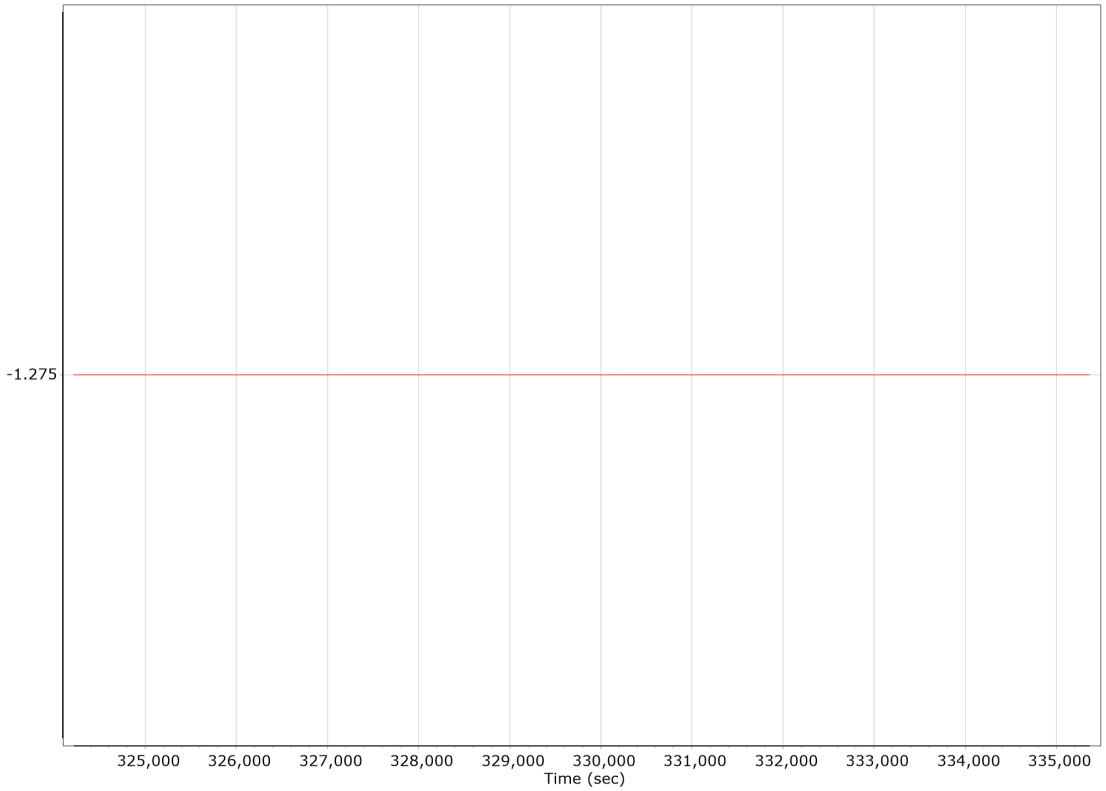
X Reference-Primary GNSS Lever Arm (m)



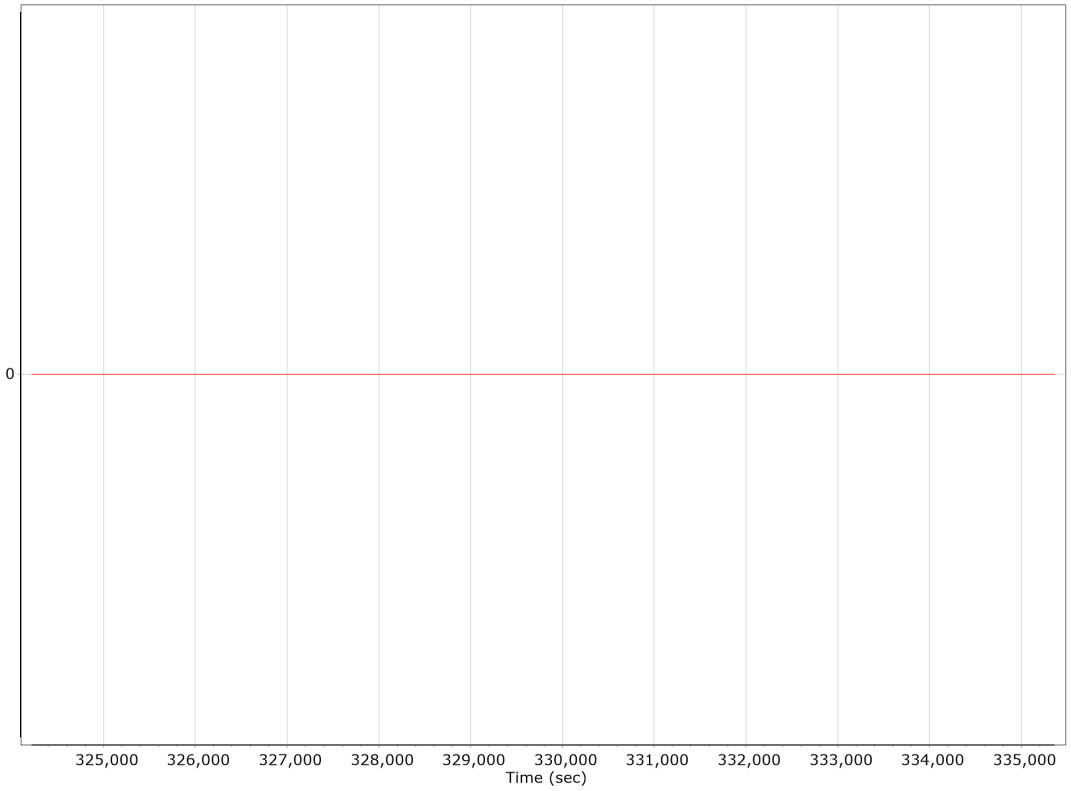
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



Reference-Primary GNSS Lever Arm Figure of Merit



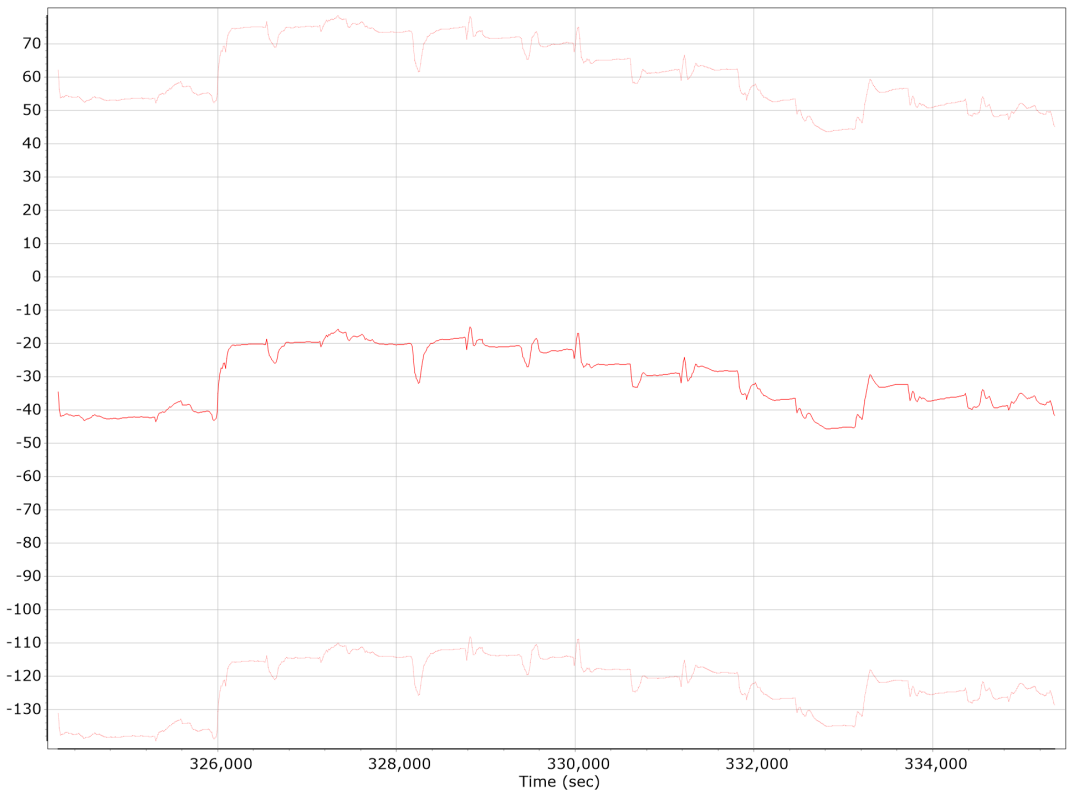
IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

Accelerometer Bias (micro-g)



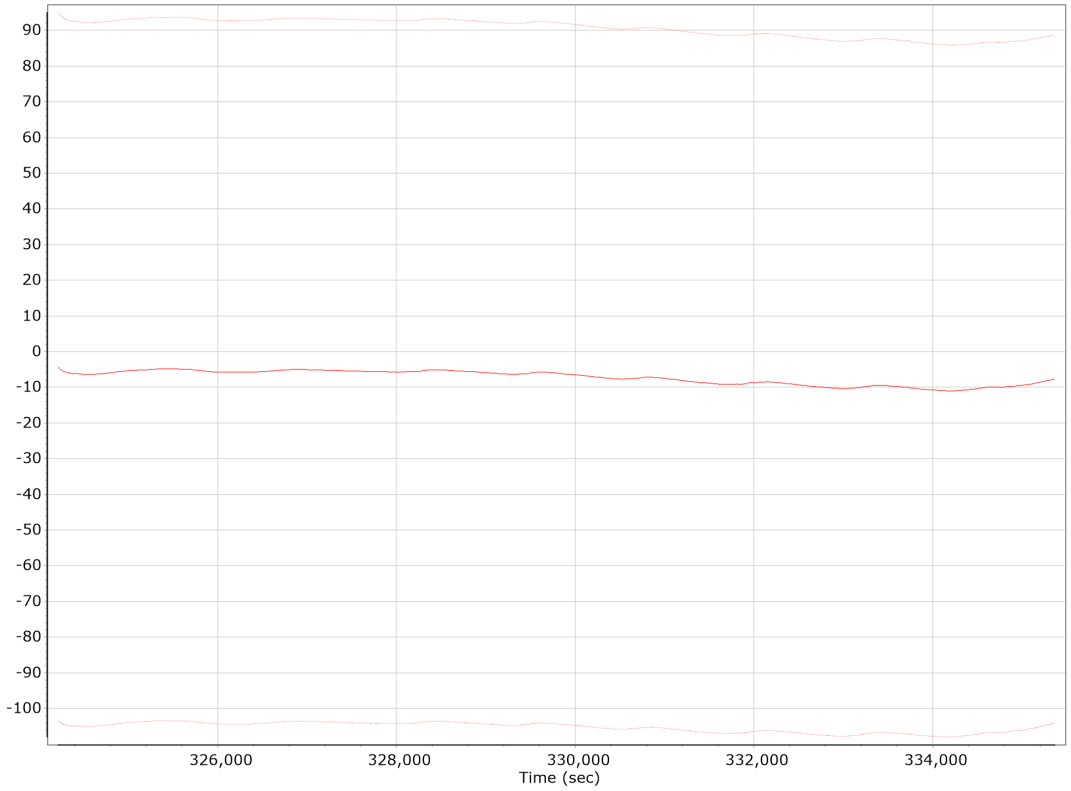
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



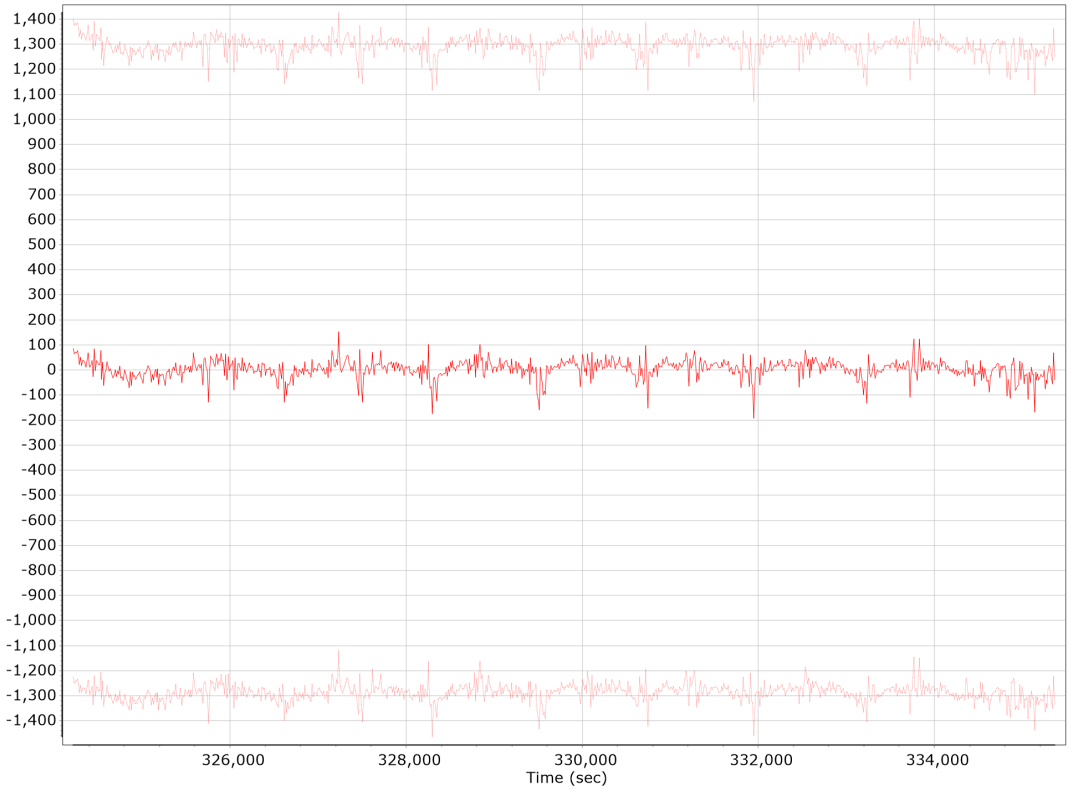
X Accelerometer Scale Error (ppm)



Y Accelerometer Scale Error (ppm)



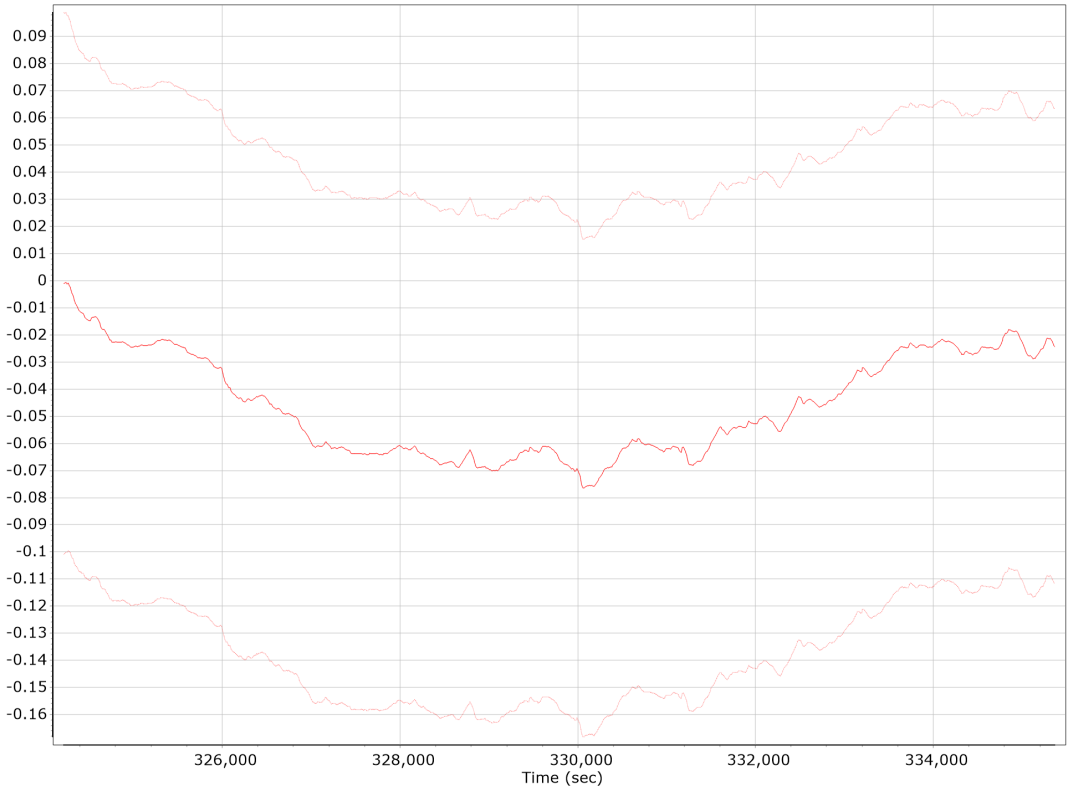
Z Accelerometer Scale Error (ppm)



Gyro Bias (deg/h)



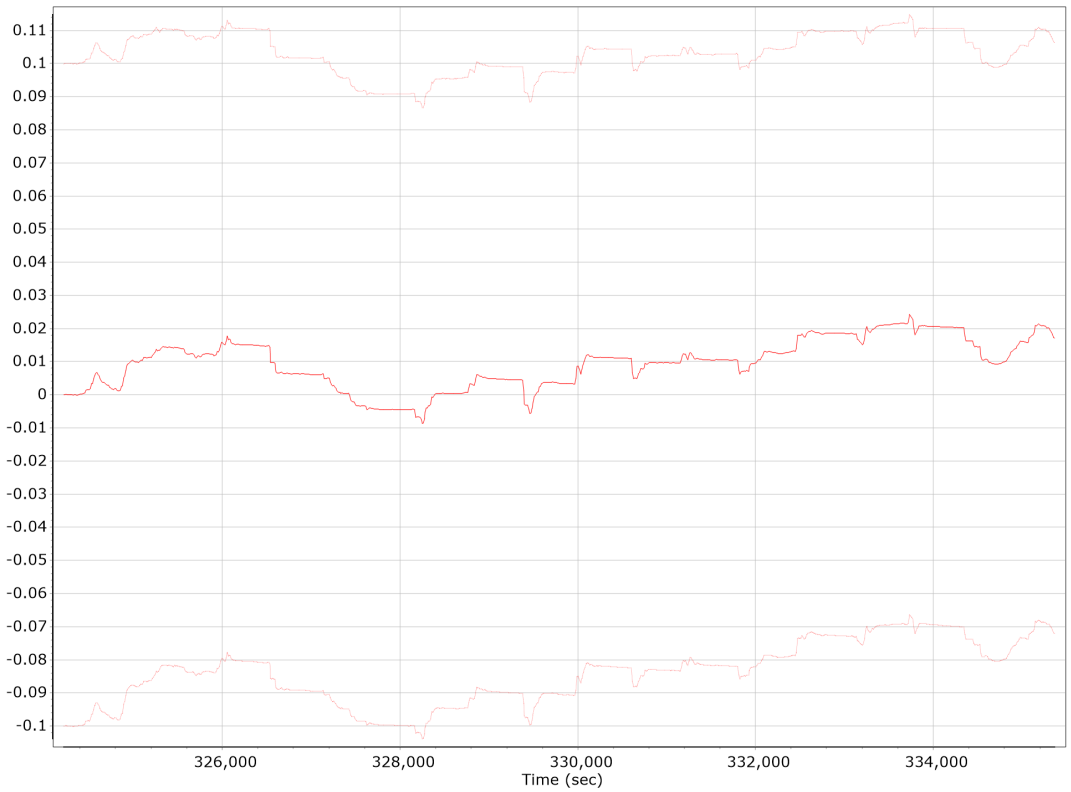
X Gyro Bias (deg/h)



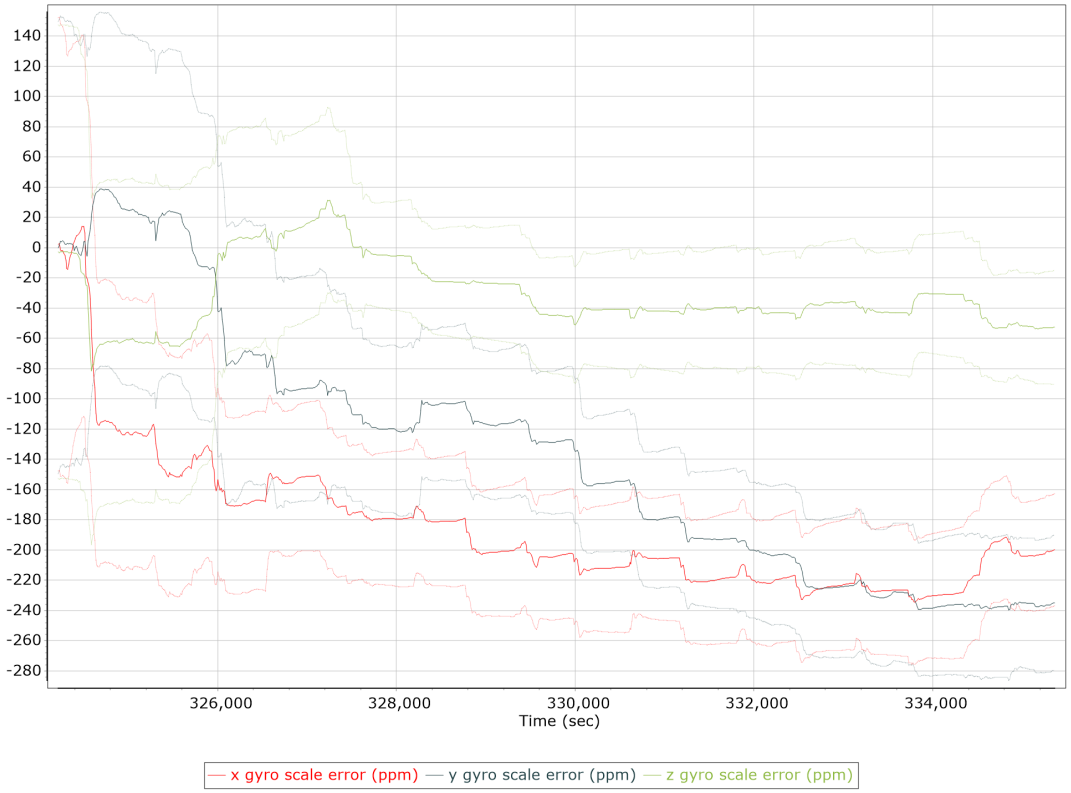
Y Gyro Bias (deg/h)



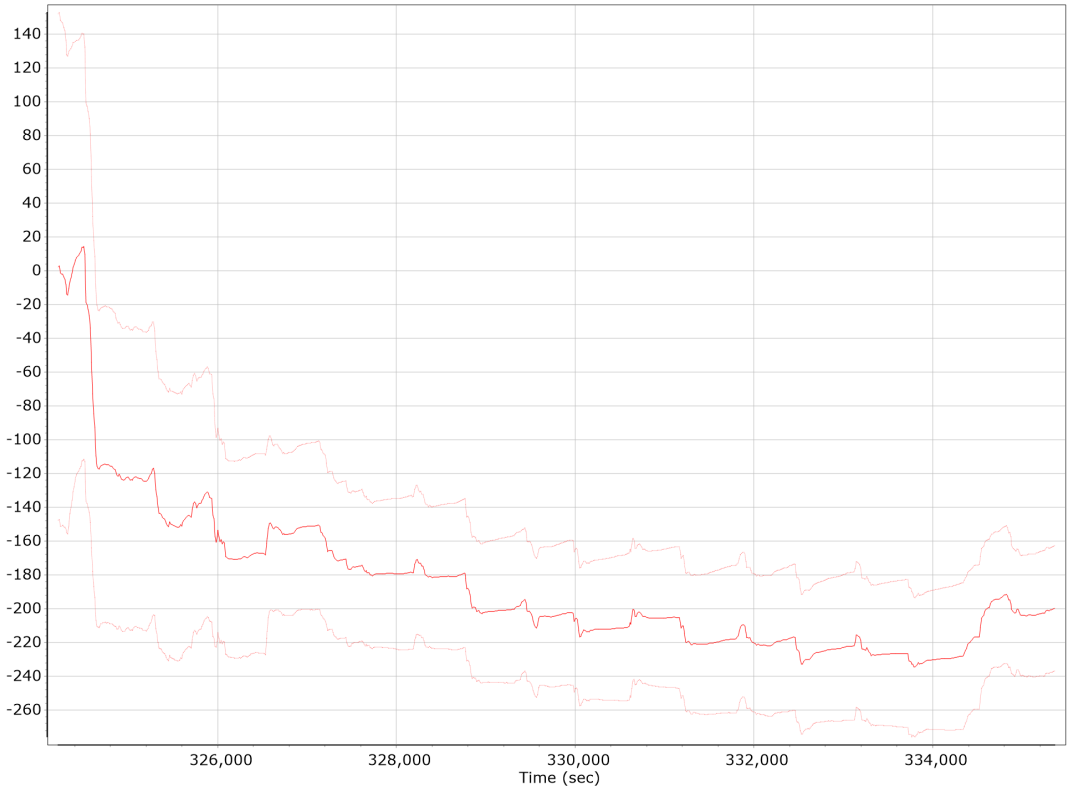
Z Gyro Bias (deg/h)



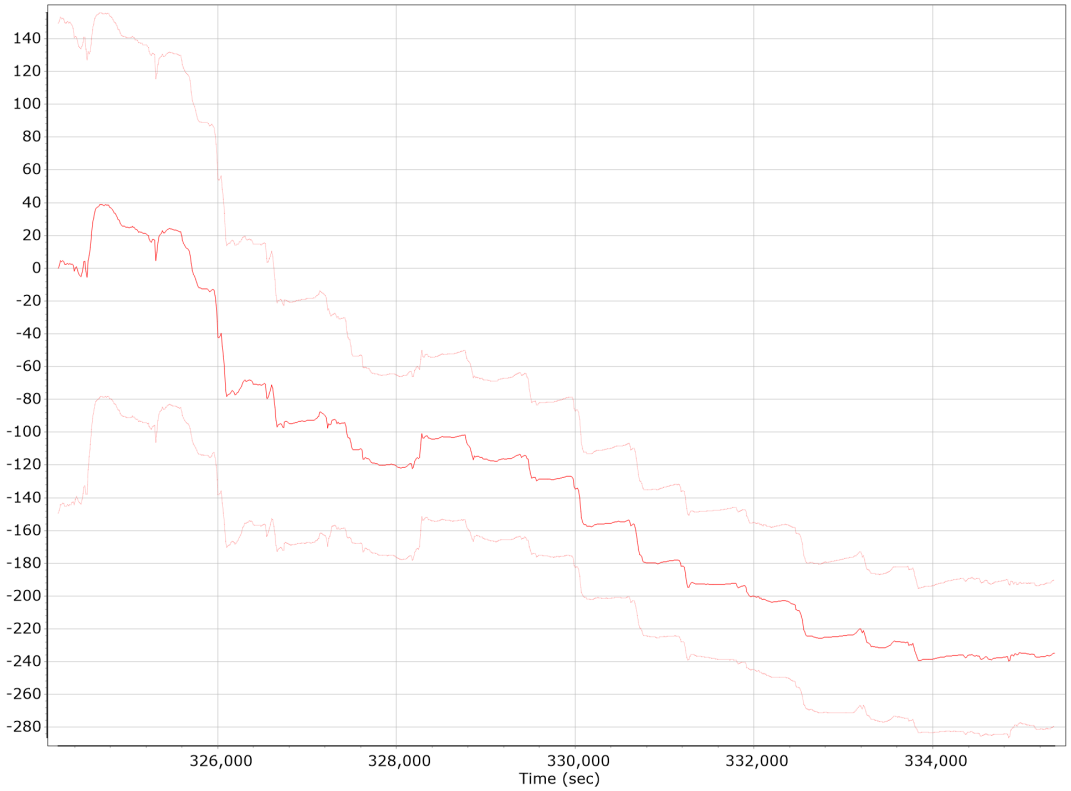
Gyro Scale Error (ppm)



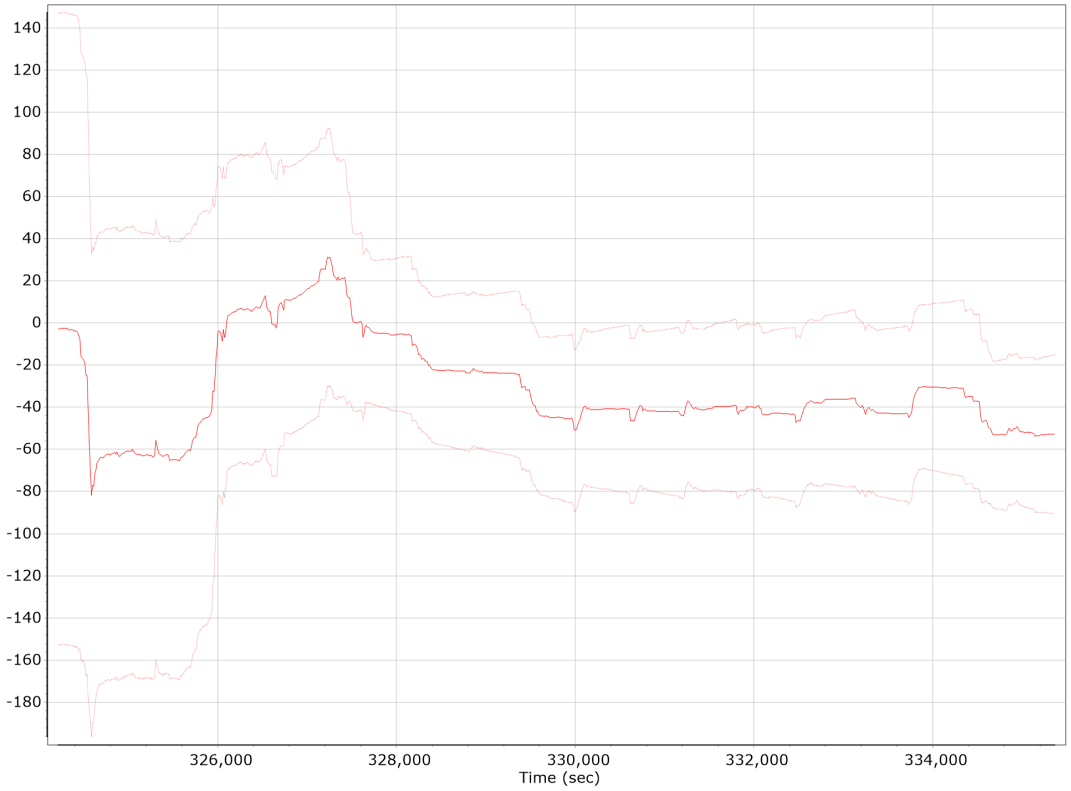
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)

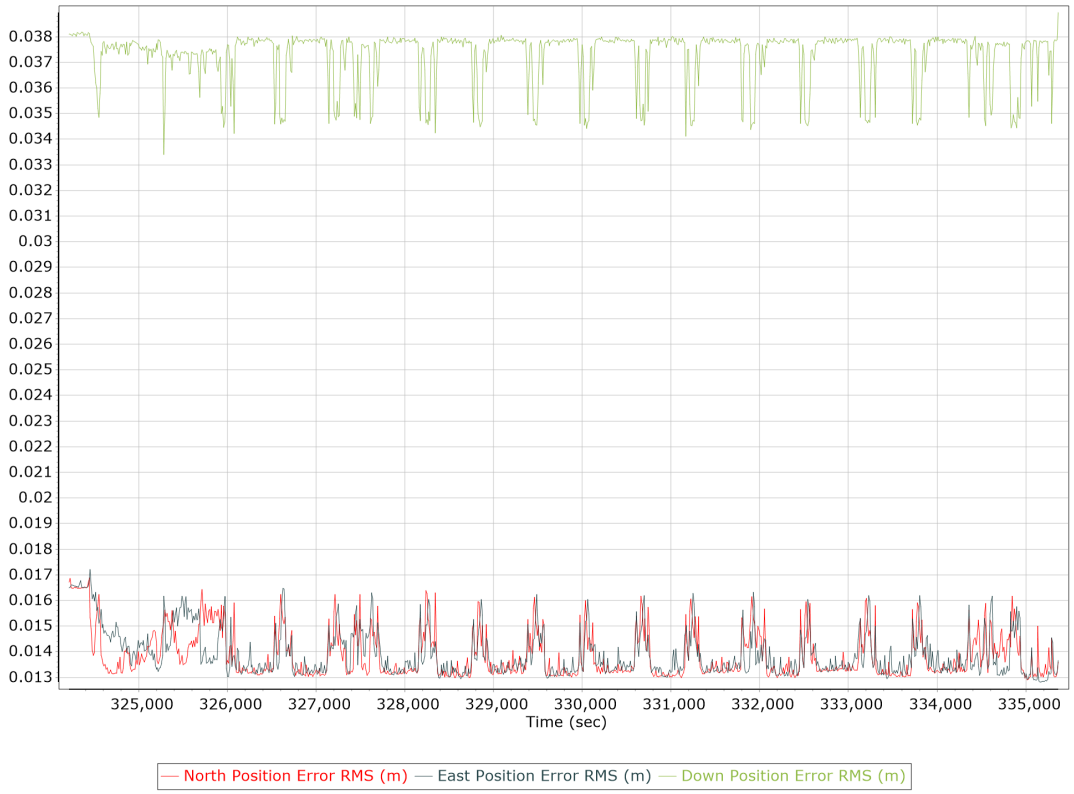


Z Gyro Scale Error (ppm)

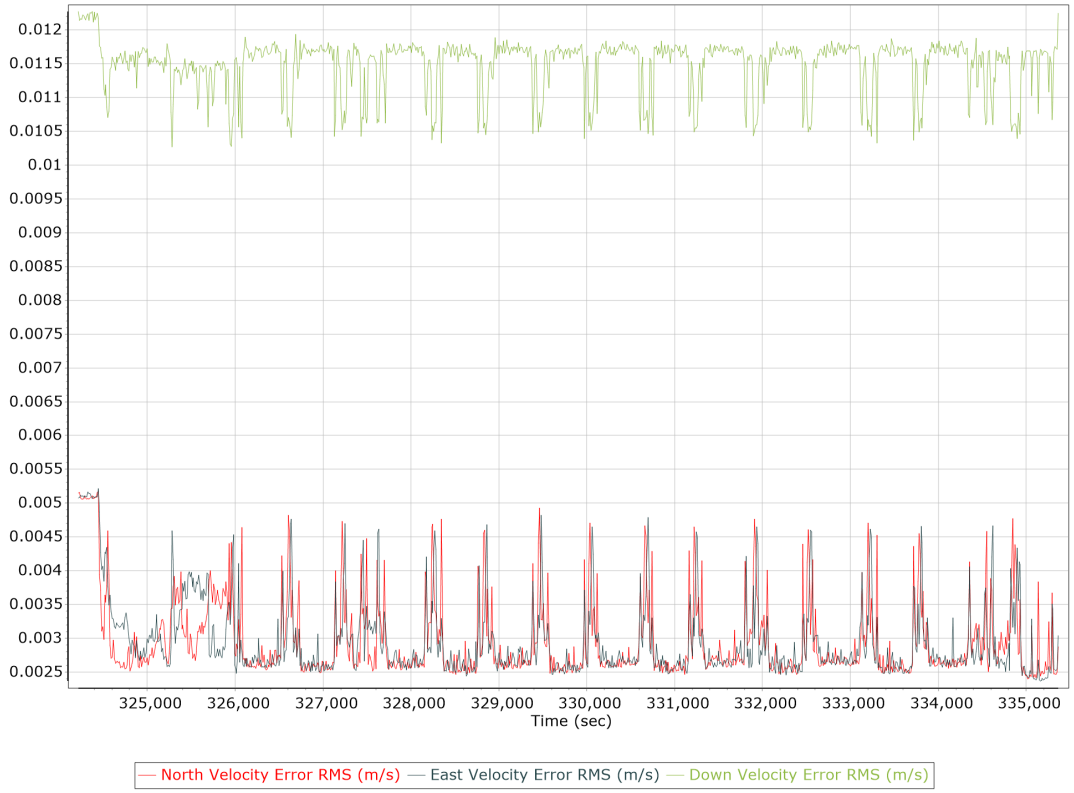


Smoothed Performance Metrics

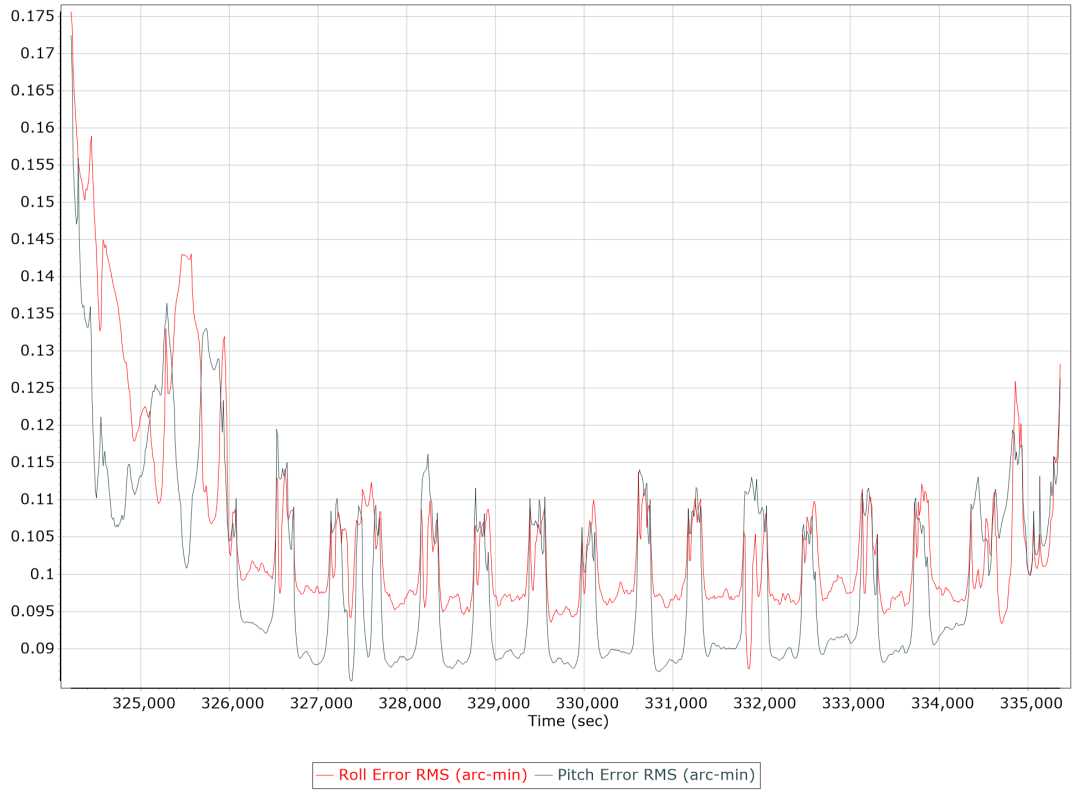
Position Error RMS (m)



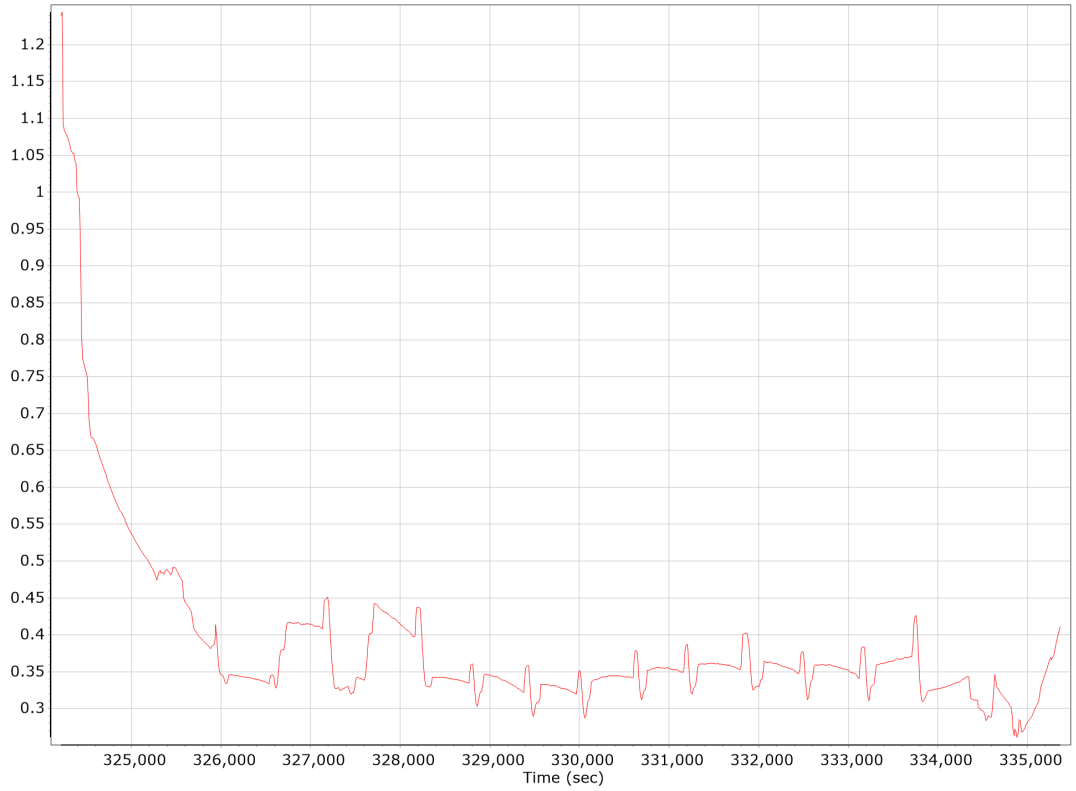
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

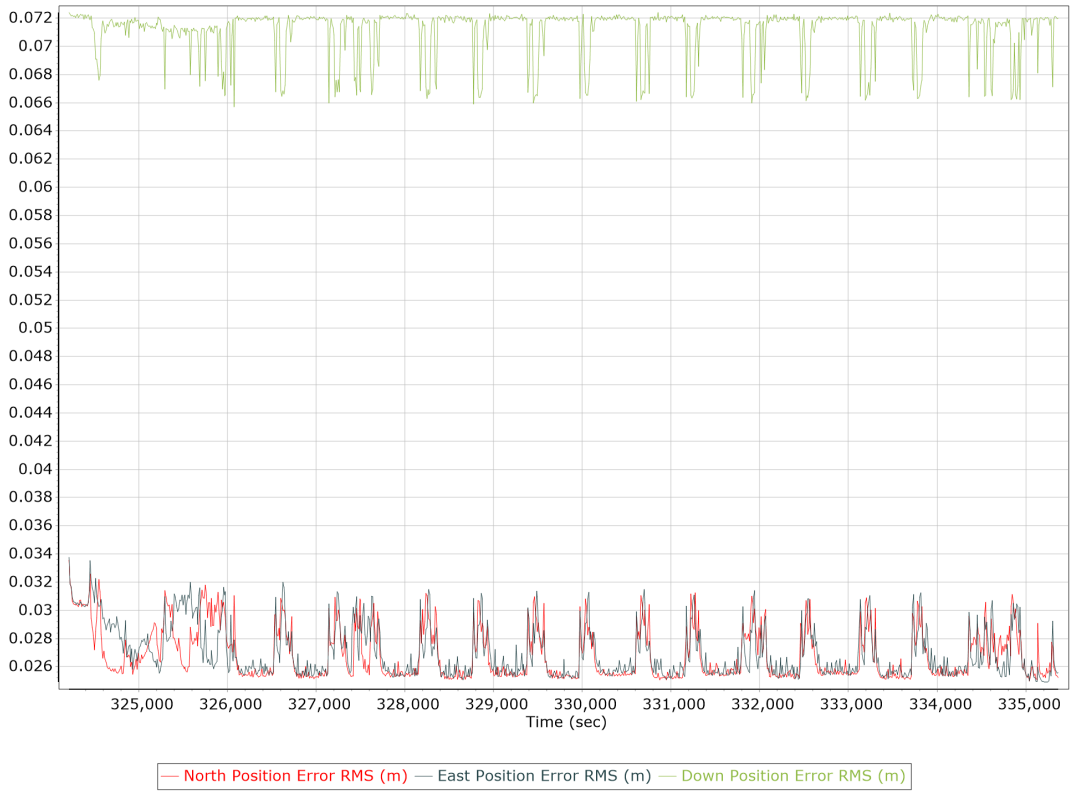


Heading Error RMS (arc-min)

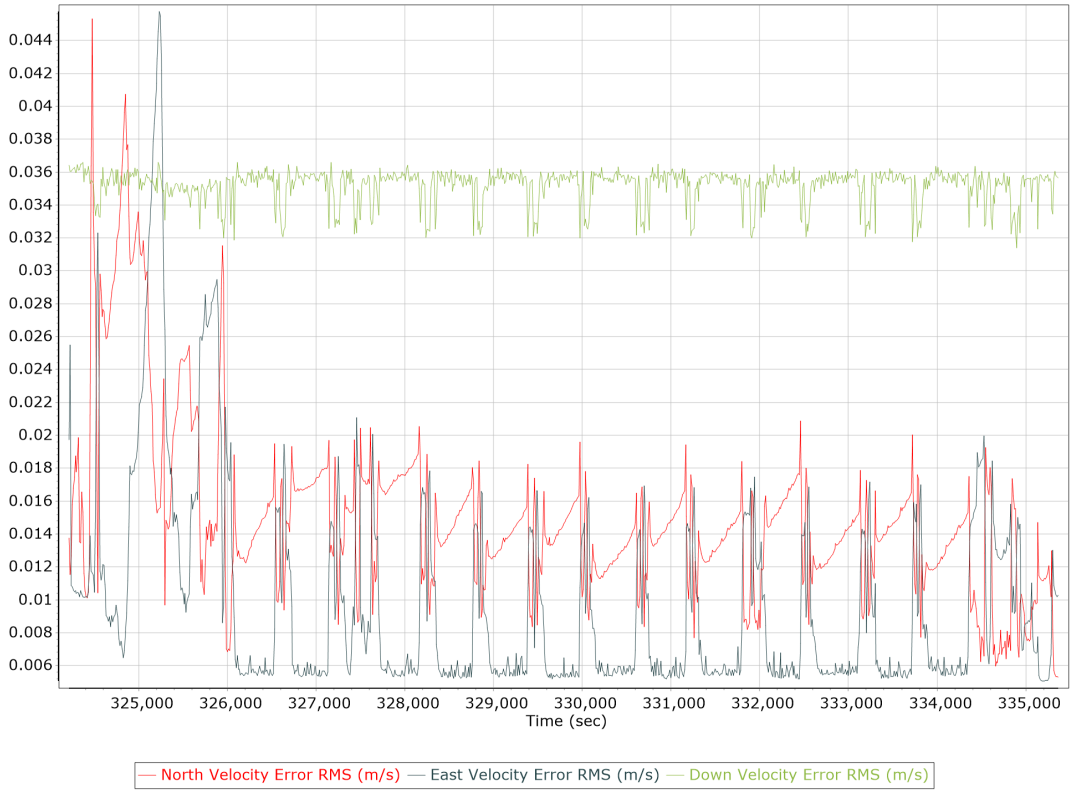


Forward Processed Performance Metrics

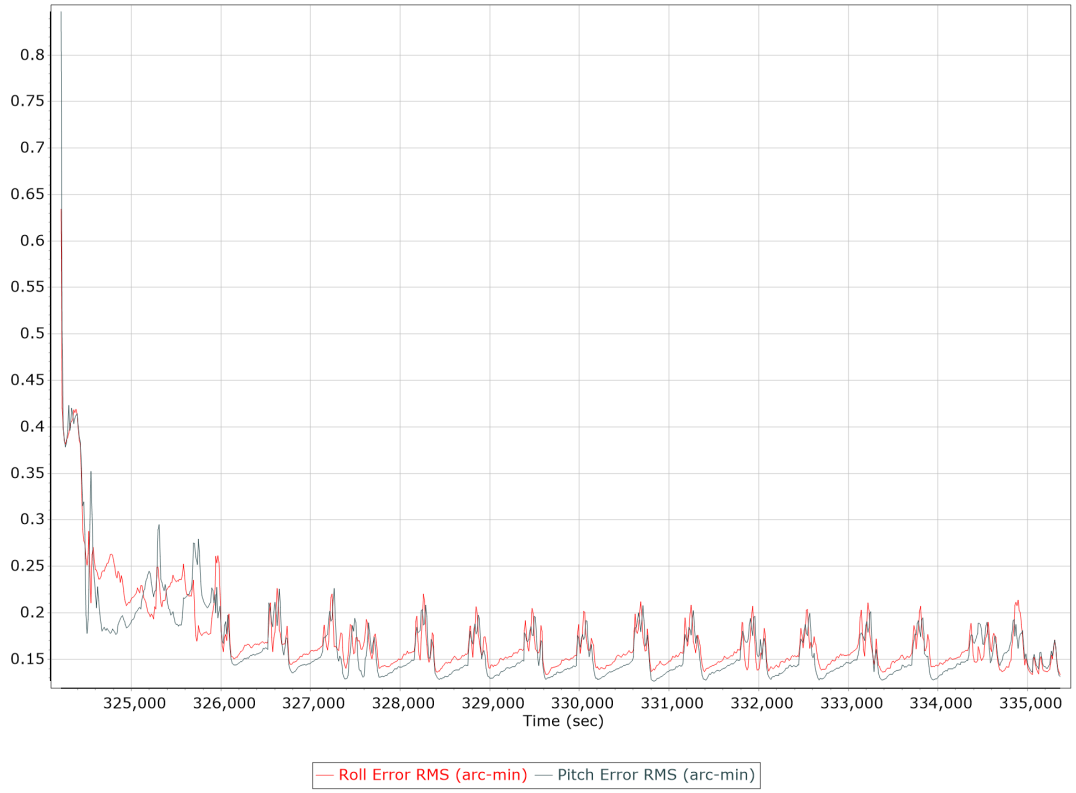
Position Error RMS (m)



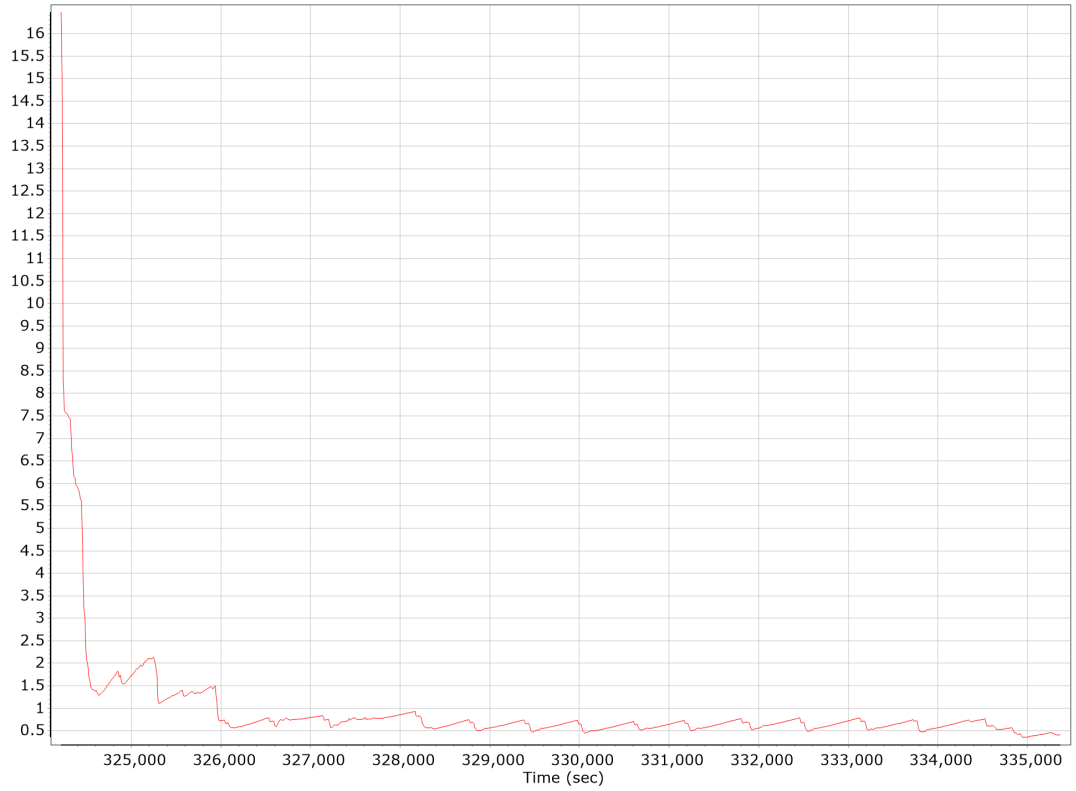
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

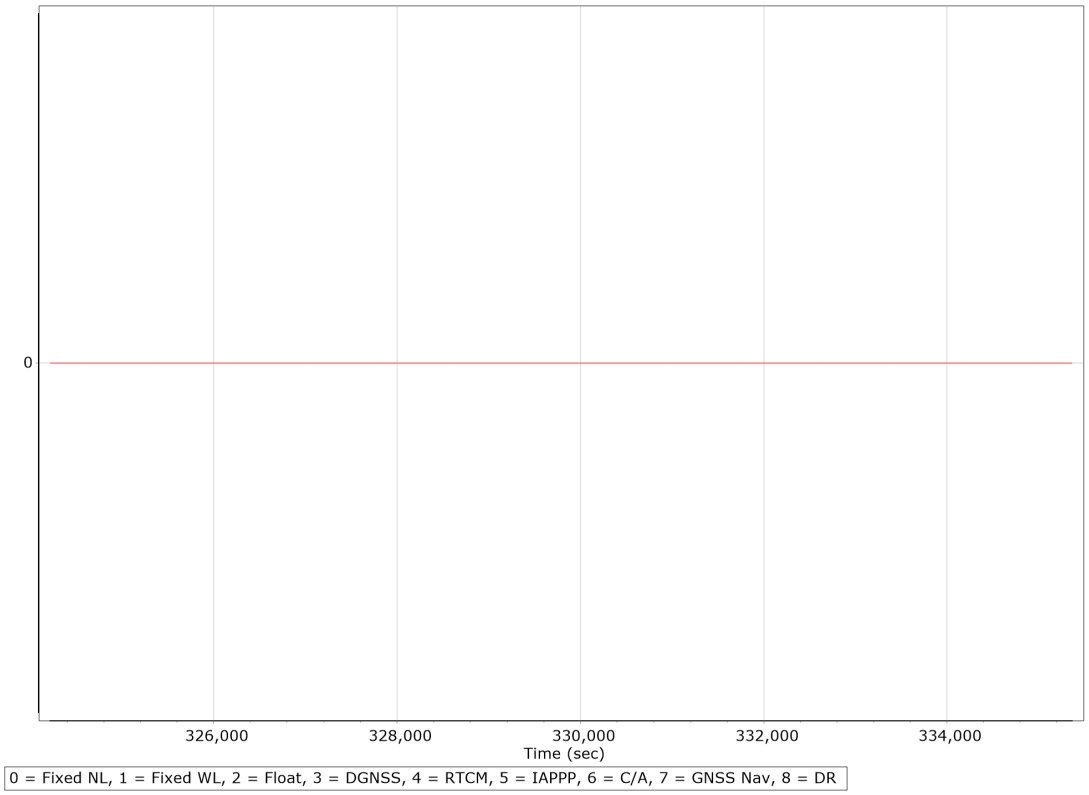


Heading Error RMS (arc-min)



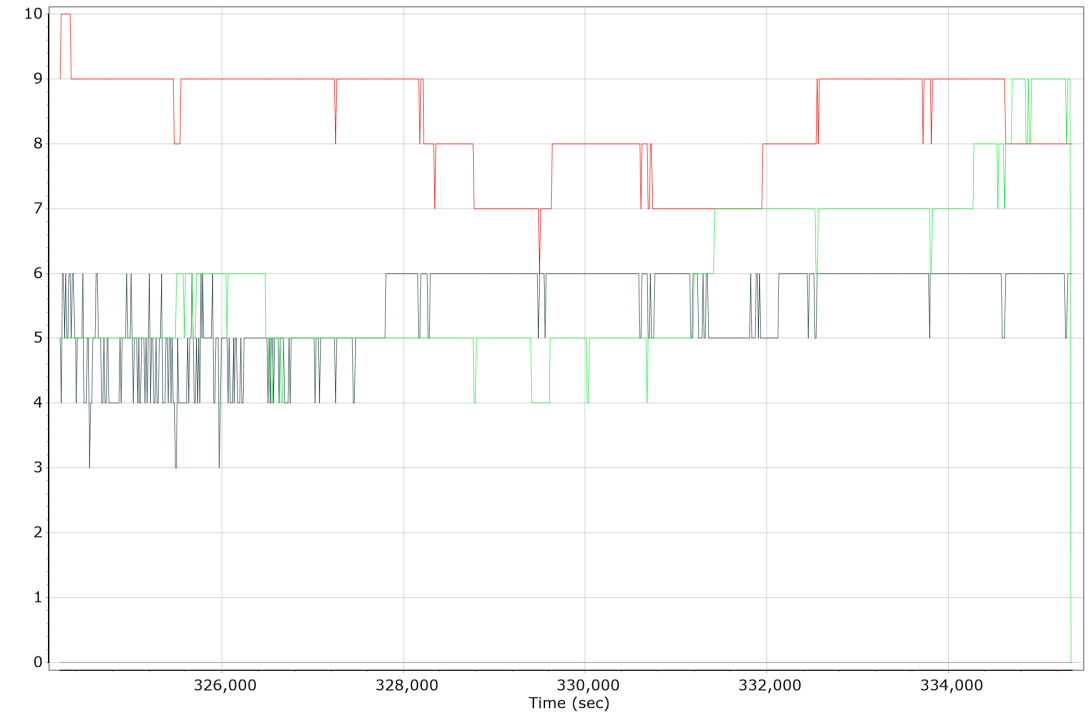
Forward Processed Solution Status

Processing Mode

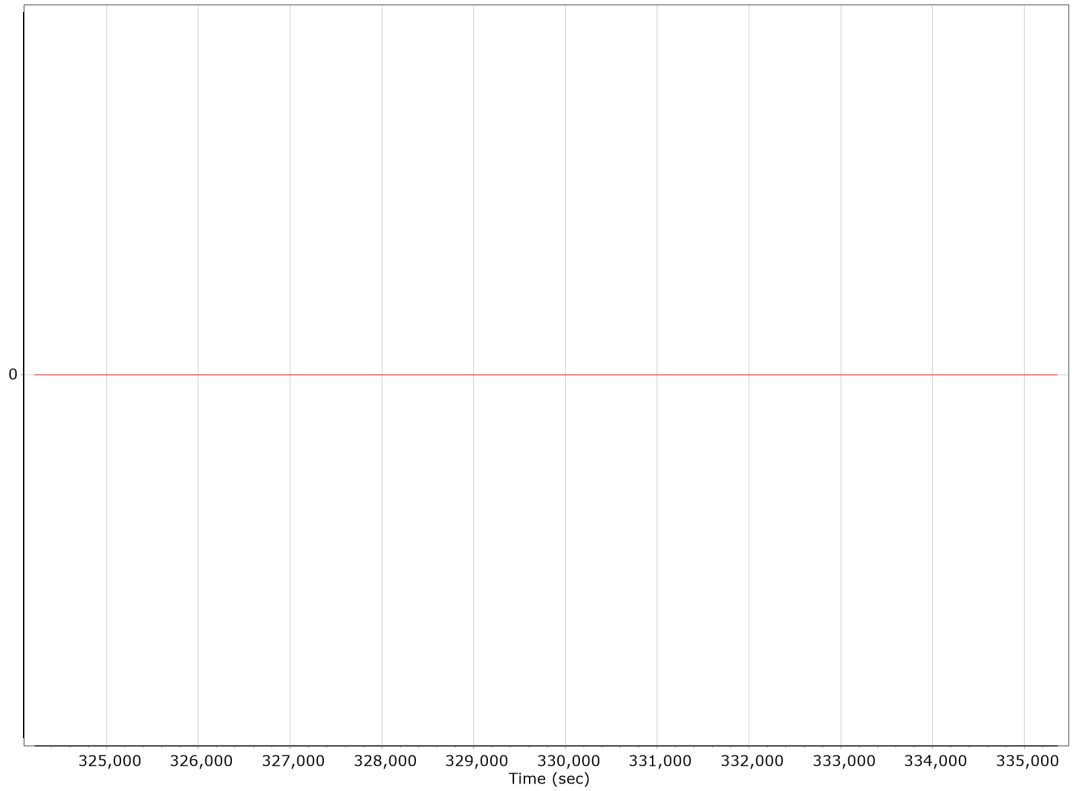


0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGNSS, 4 = RTCM, 5 = IAPPP, 6 = C/A, 7 = GNSS Nav, 8 = DR

Number of Satellites



Baseline Length



General Information

Mission Information

Project name	09272023A_4046
Processing date	2024-01-11 18:30:39
Mission date	2023-09-27 17:27:02
Mission duration	05:13:53.711
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N10762
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
230927_172643_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm2700.23g	GLONASS Broadcast Ephemeris
Ephm2700.23n	GPS Broadcast Ephemeris
IGS0OPSFIN_20232690000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232700000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232710000_01D_15M_ORB.SP3	GPS Precise Ephemeris

Output Files

Filename	File type
sbet_09272023A_4046.out	SBET Trajectory File

Rover Data Summary

First raw data file	230927_172643_INS-GPS_1.raw		
Last raw data file	230927_172643_INS-GPS_1.raw		
Start GPS week	2281		
Start time	322003.542 (9/27/2023 5:26:43 PM)		
End time	340837.253 (9/27/2023 10:40:37 PM)		
Start of fine alignment	322312.594 (9/27/2023 5:31:52 PM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	0.000	0.000	0.000
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

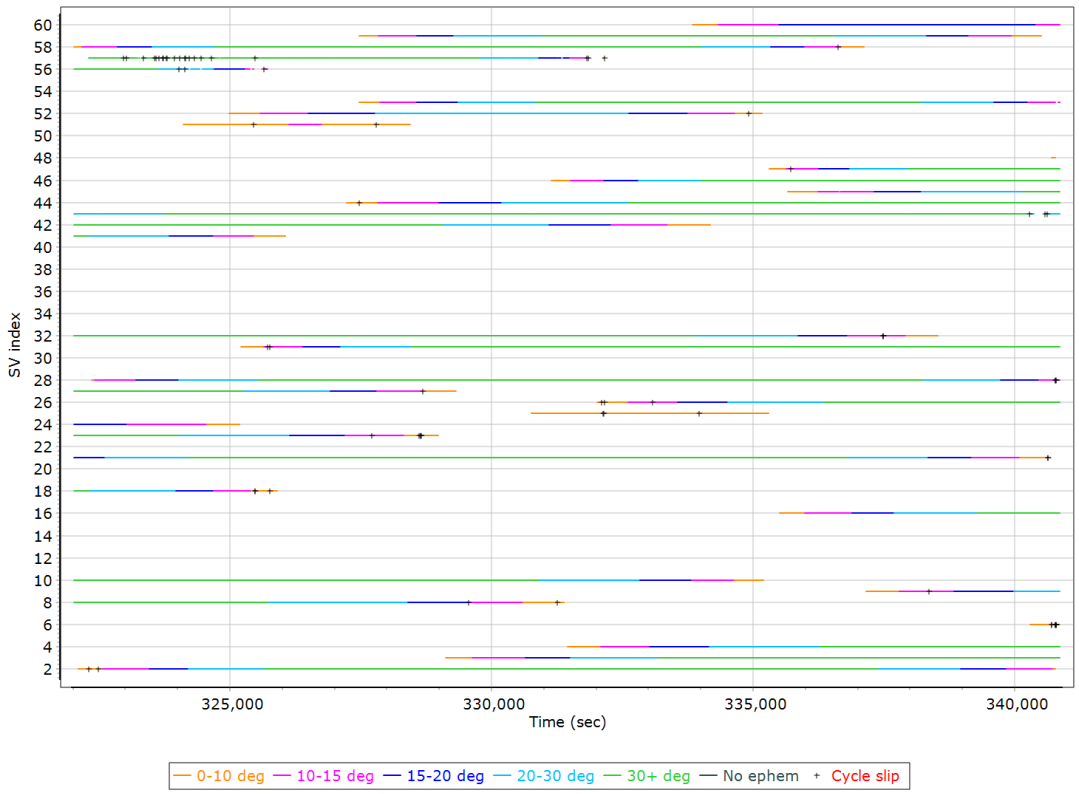
Rover Data QC

Raw IMU Import QC Summary

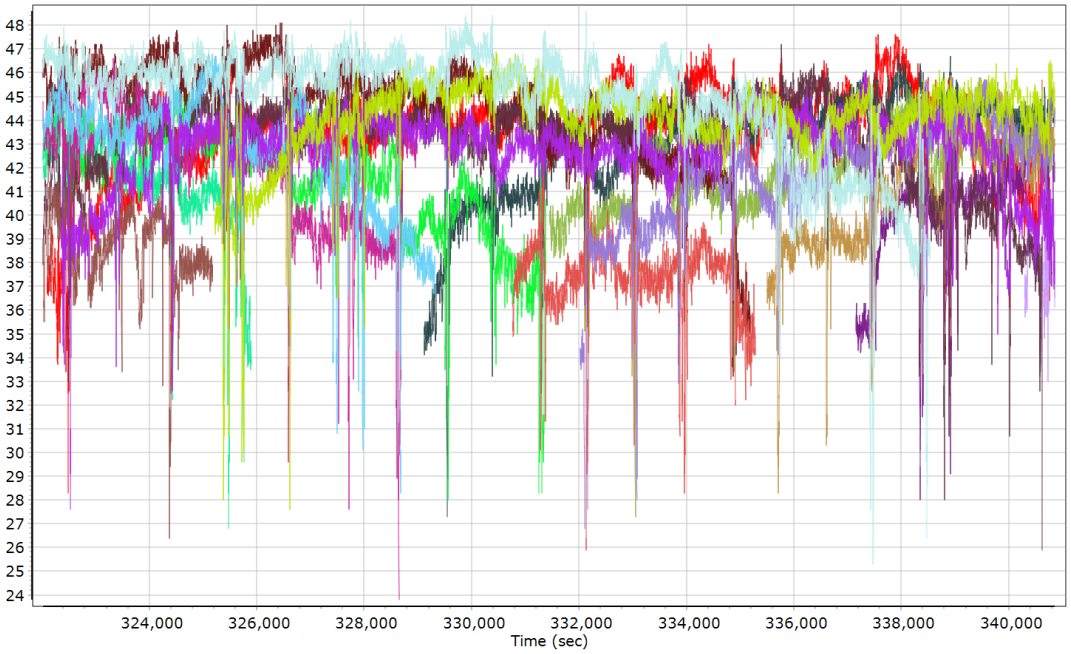
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_09272023A_4046.log
IMU Records Processed	3766642
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

GPS/GLONASS L1 Satellite Lock/Elevation

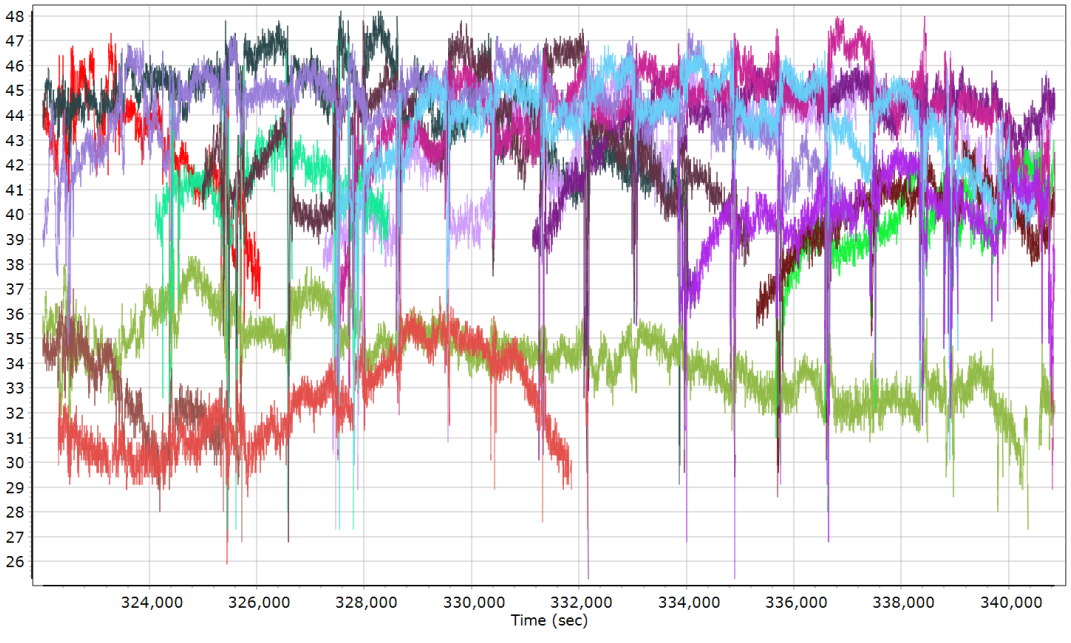


GPS L1 SNR



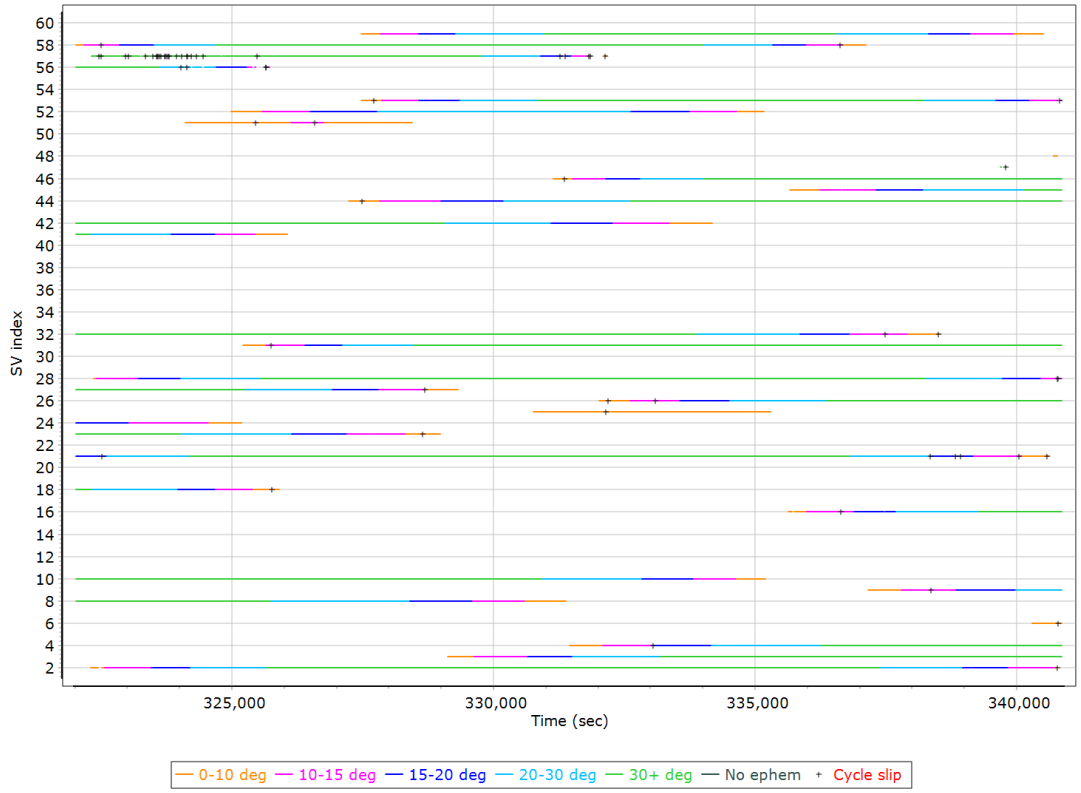
GPS PRN 02 L1 SNR (dB/Hz) GPS PRN 03 L1 SNR (dB/Hz) GPS PRN 04 L1 SNR (dB/Hz) GPS PRN 06 L1 SNR (dB/Hz)
GPS PRN 08 L1 SNR (dB/Hz) GPS PRN 09 L1 SNR (dB/Hz) GPS PRN 10 L1 SNR (dB/Hz) GPS PRN 16 L1 SNR (dB/Hz)
GPS PRN 18 L1 SNR (dB/Hz) GPS PRN 21 L1 SNR (dB/Hz) GPS PRN 23 L1 SNR (dB/Hz) GPS PRN 24 L1 SNR (dB/Hz)
GPS PRN 25 L1 SNR (dB/Hz) GPS PRN 26 L1 SNR (dB/Hz) GPS PRN 27 L1 SNR (dB/Hz) GPS PRN 28 L1 SNR (dB/Hz)
GPS PRN 31 L1 SNR (dB/Hz) GPS PRN 32 L1 SNR (dB/Hz)

GLONASS L1 SNR

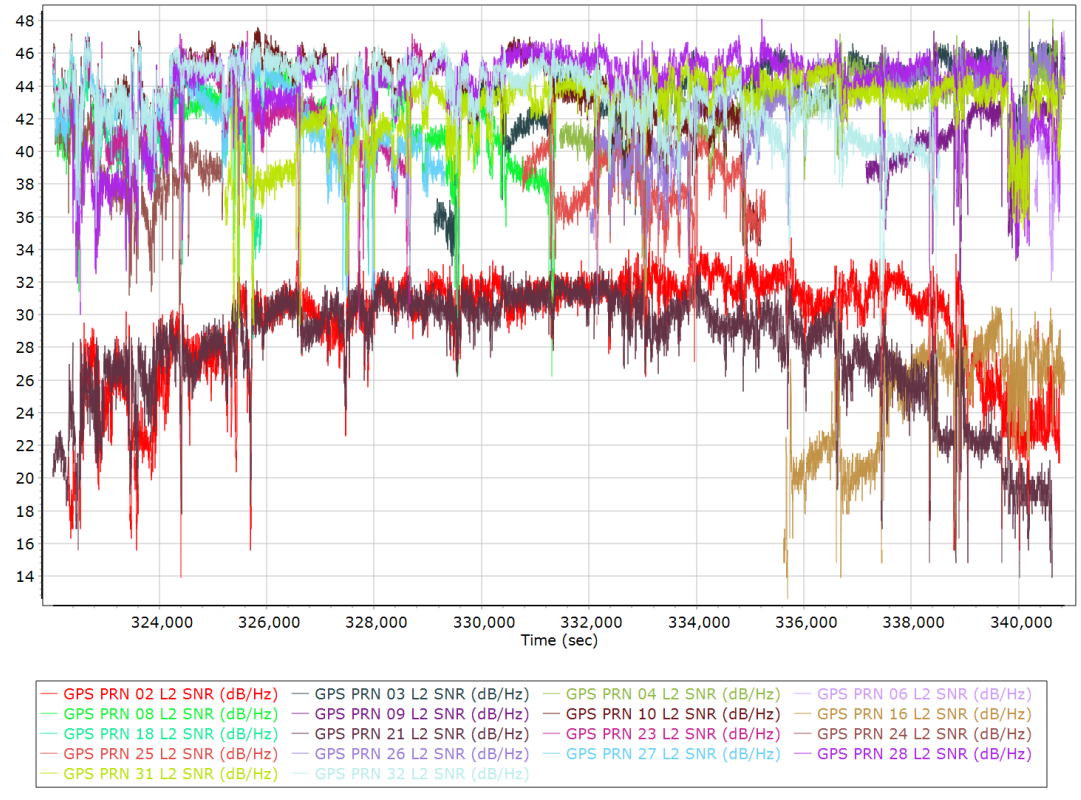


GLONASS 04 L1 SNR (dB/Hz) GLONASS 05 L1 SNR (dB/Hz) GLONASS 06 L1 SNR (dB/Hz)
GLONASS 07 L1 SNR (dB/Hz) GLONASS 08 L1 SNR (dB/Hz) GLONASS 09 L1 SNR (dB/Hz)
GLONASS 10 L1 SNR (dB/Hz) GLONASS 11 L1 SNR (dB/Hz) GLONASS 14 L1 SNR (dB/Hz)
GLONASS 15 L1 SNR (dB/Hz) GLONASS 16 L1 SNR (dB/Hz) GLONASS 19 L1 SNR (dB/Hz)
GLONASS 20 L1 SNR (dB/Hz) GLONASS 21 L1 SNR (dB/Hz) GLONASS 22 L1 SNR (dB/Hz)
GLONASS 23 L1 SNR (dB/Hz)

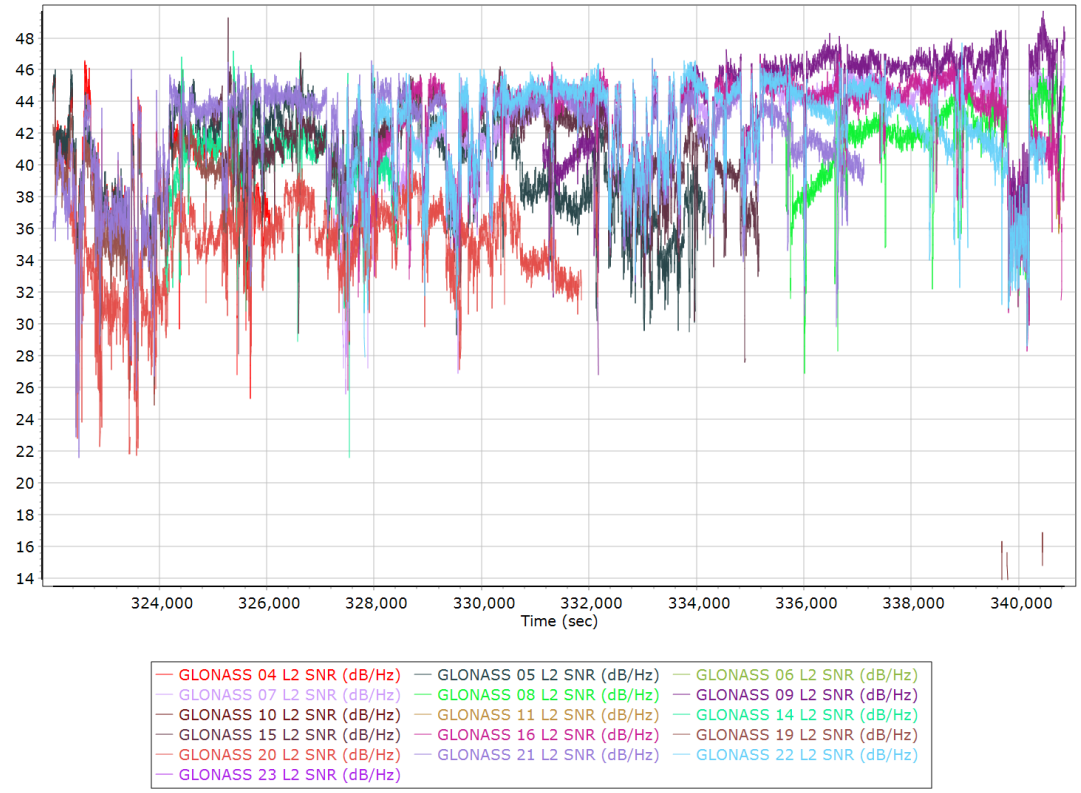
GPS/GLONASS L2 Satellite Lock/Elevation



GPS L2 SNR



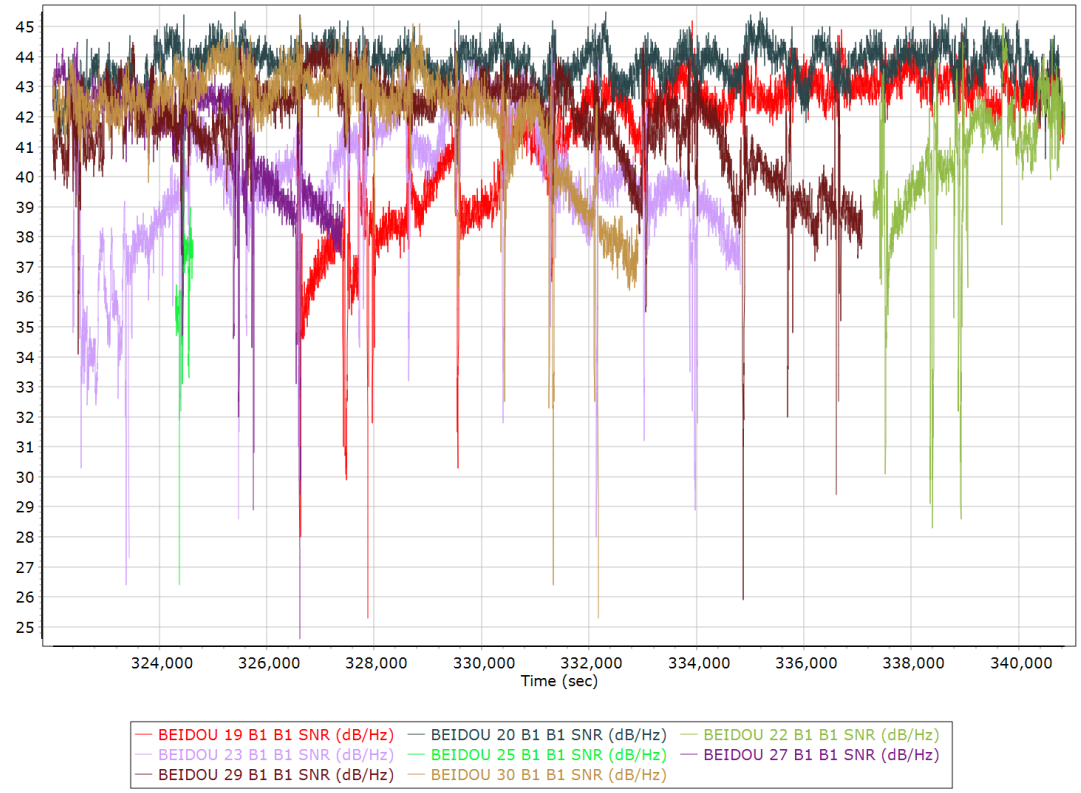
GLONASS L2 SNR



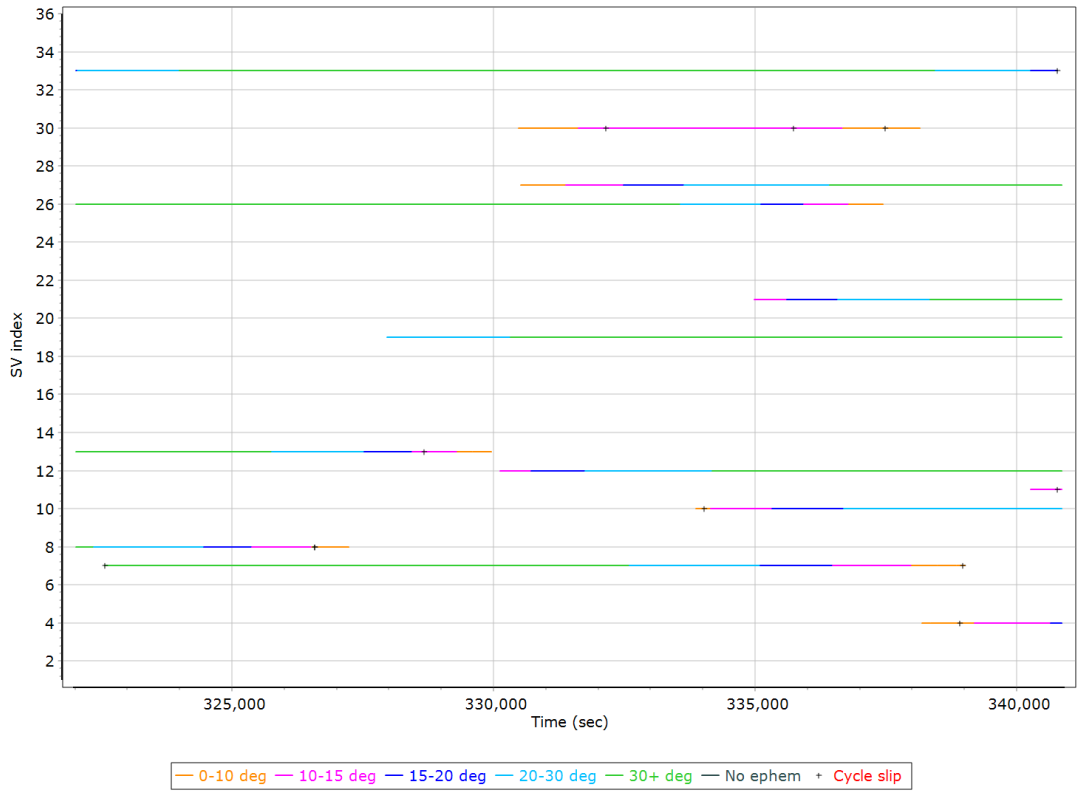
BEIDOU Satellite Lock/Elevation



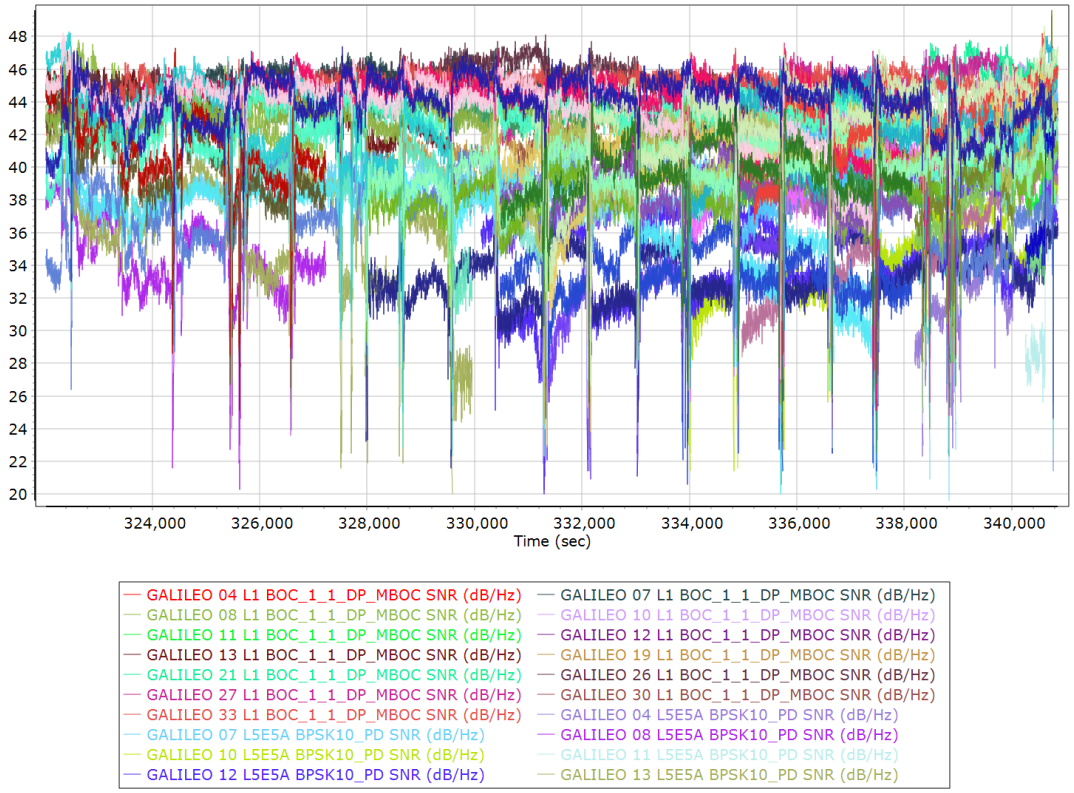
BEIDOU SNR



GALILEO Satellite Lock/Elevation

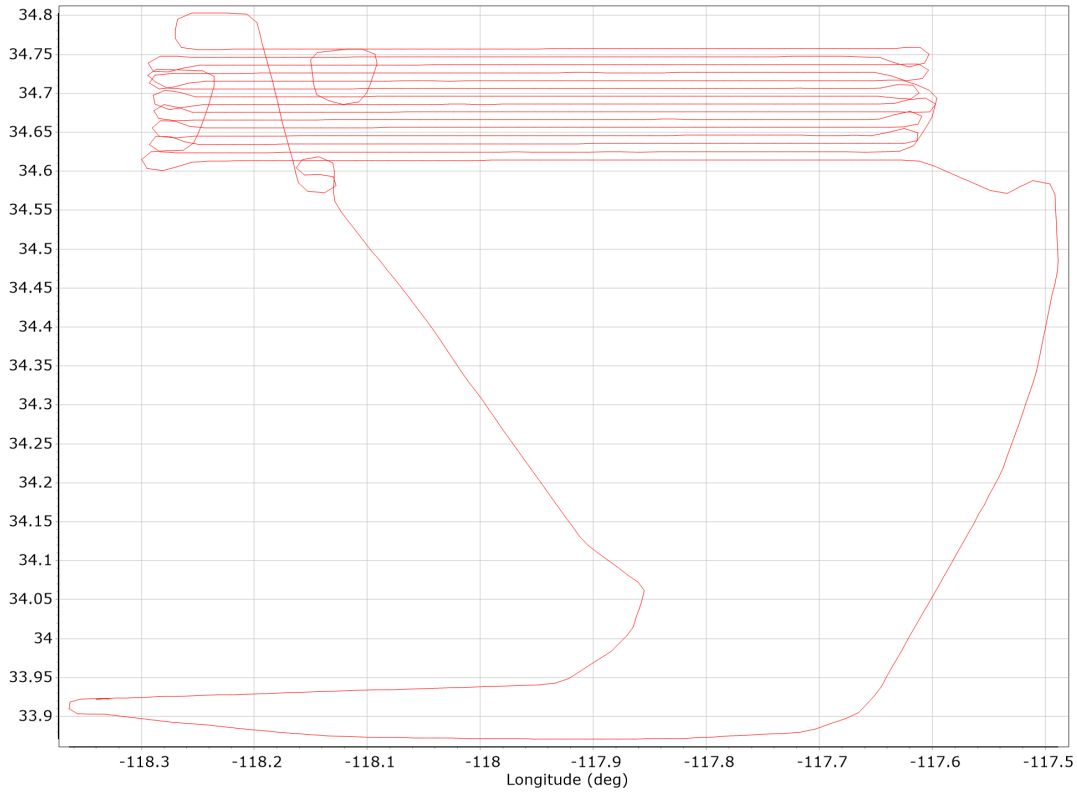


GALILEO SNR

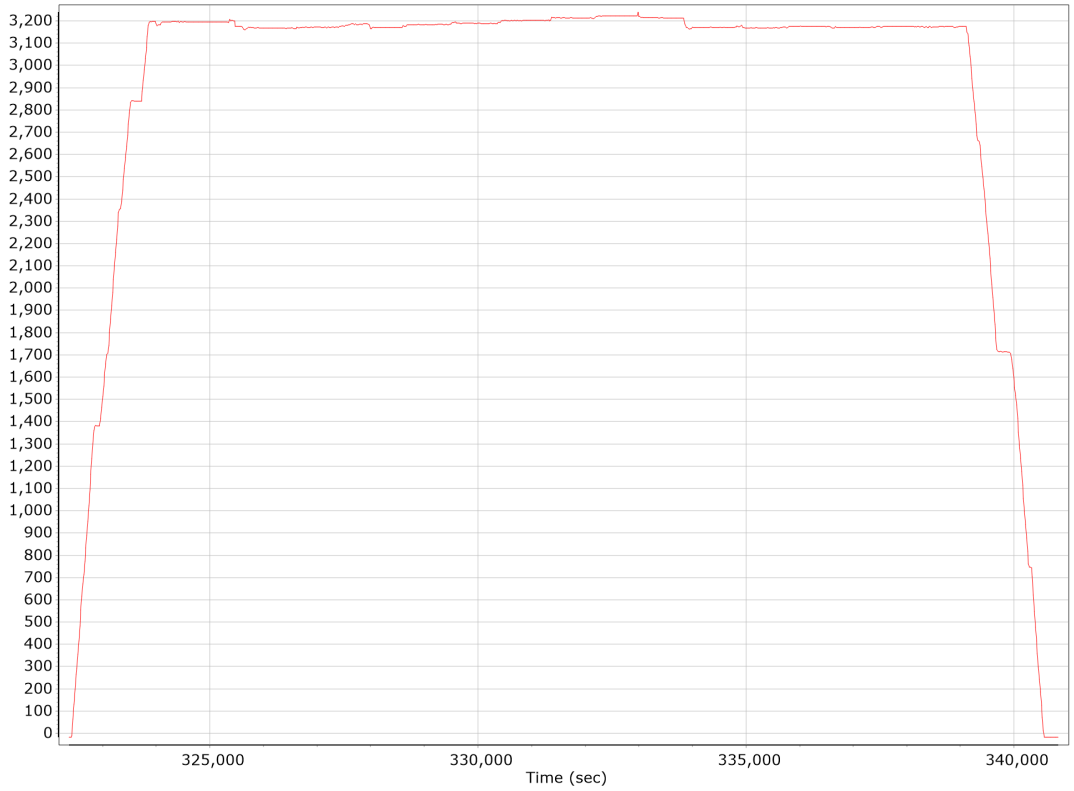

48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
324,000
326,000
328,000
330,000
332,000
334,000
336,000
338,000
340,000
Time (sec)
GALILEO 04 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 07 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 08 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 10 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 11 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 12 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 13 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 19 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 21 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 26 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 27 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 30 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 33 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 04 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 07 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 08 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 10 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 11 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 12 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 13 L5E5A BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

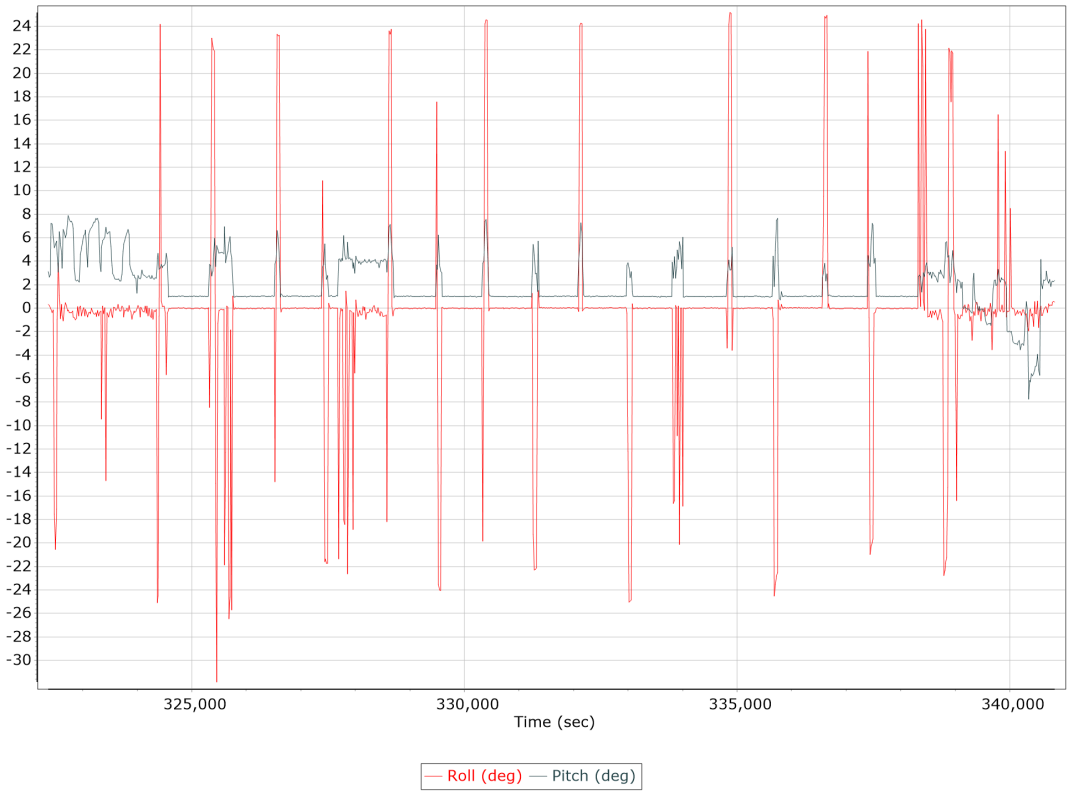
Top View



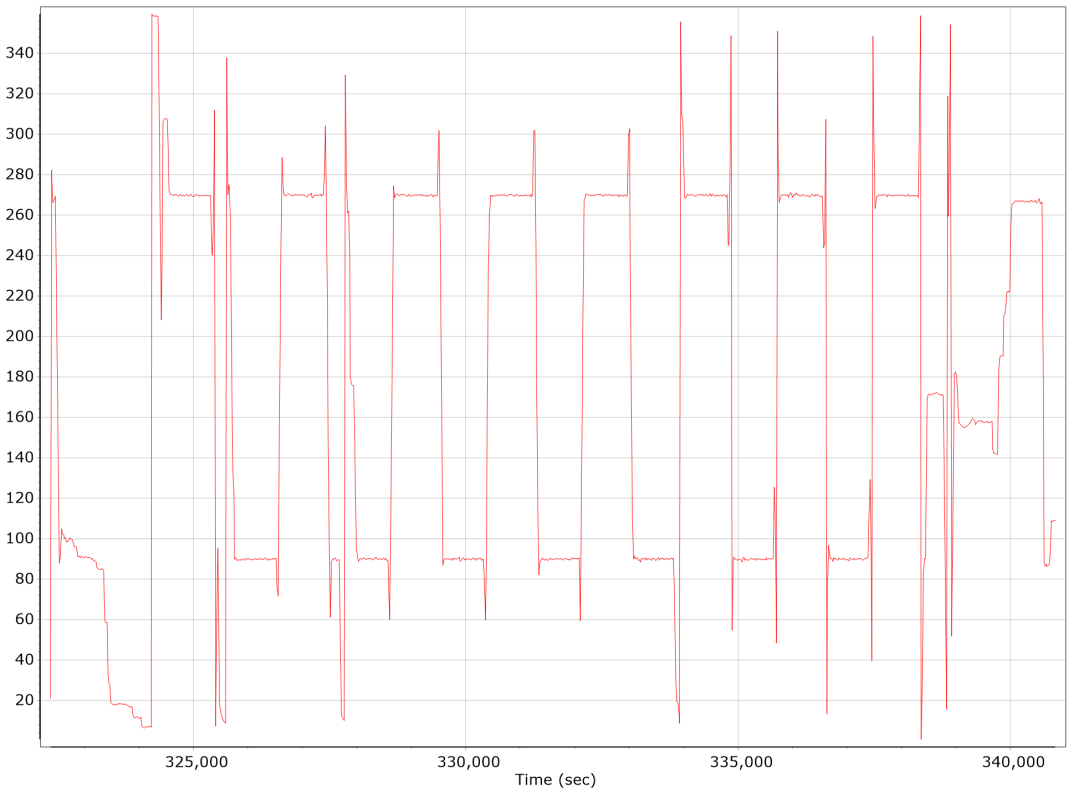
Altitude



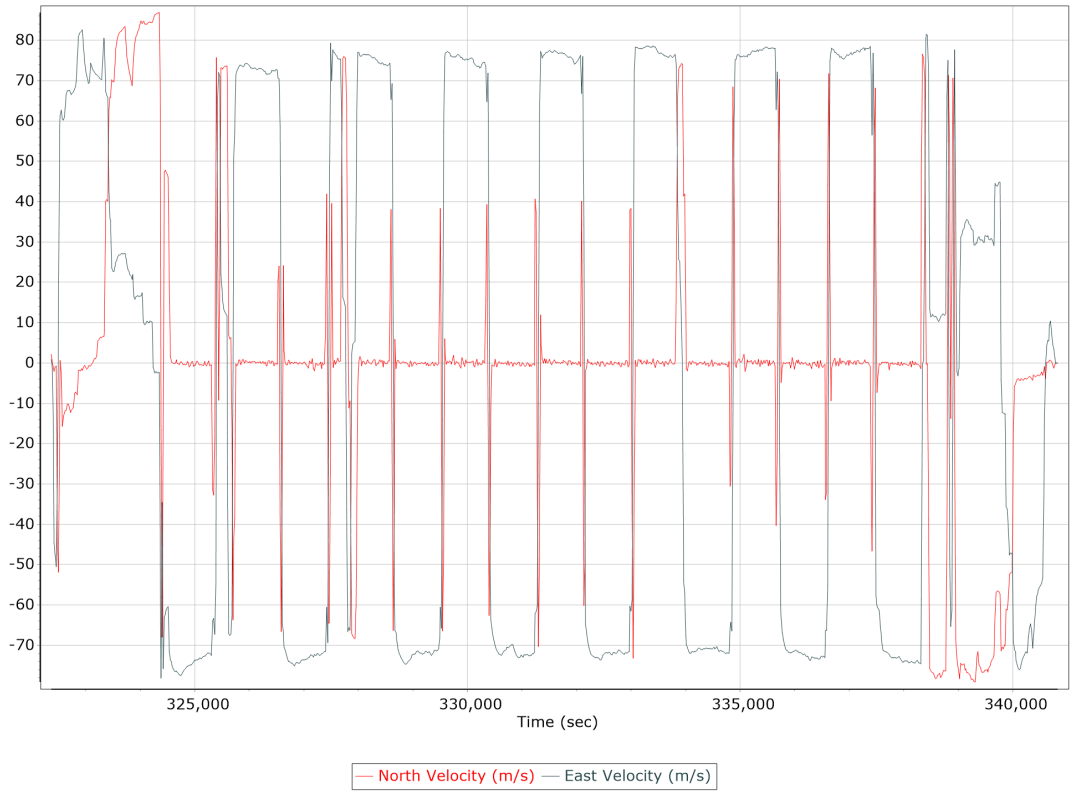
Roll/Pitch



Heading



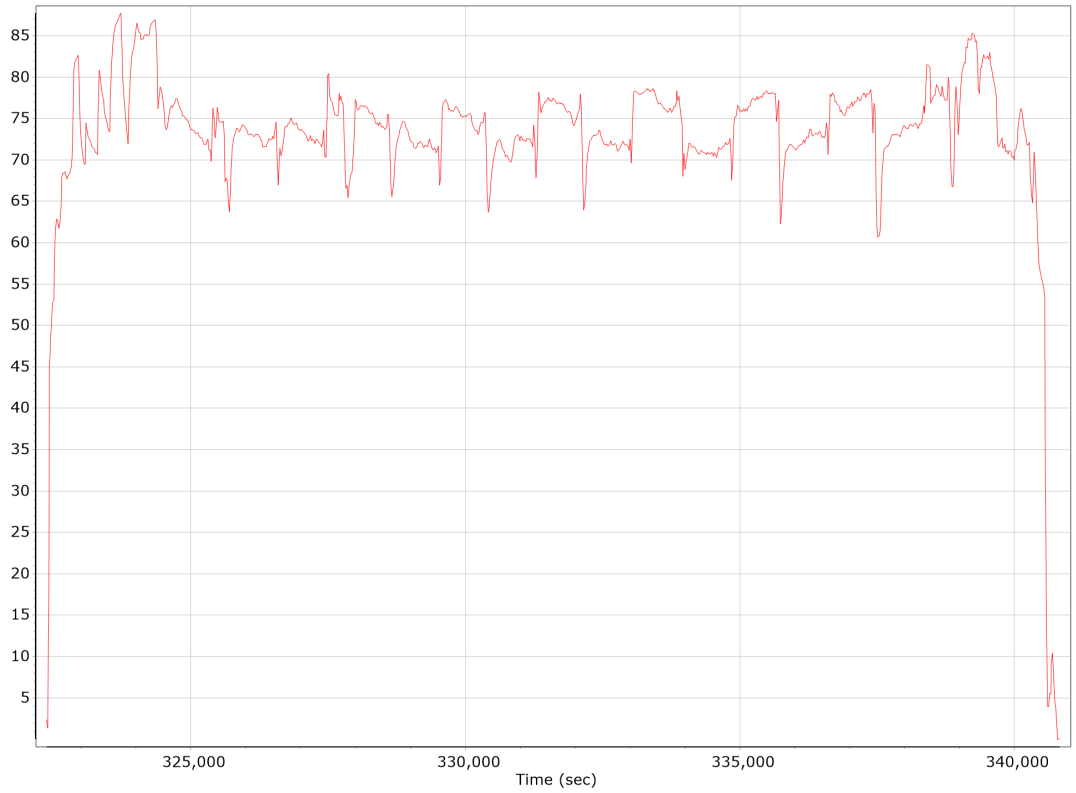
North/East Velocity



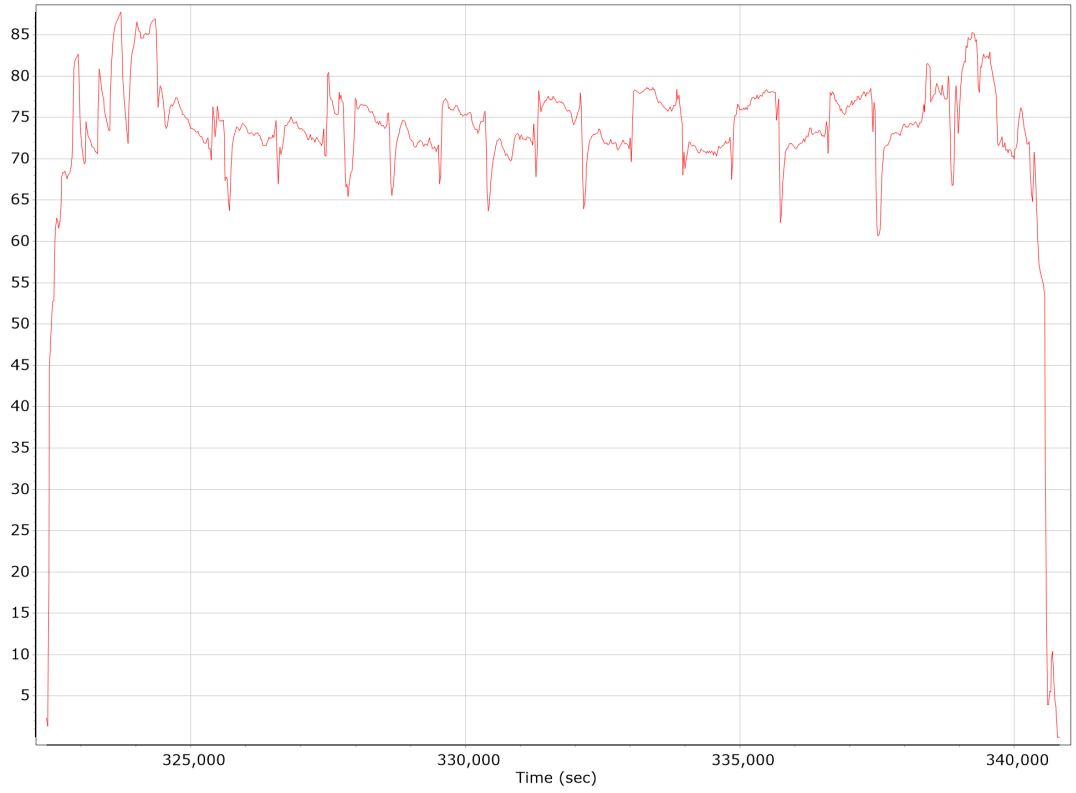
Down Velocity



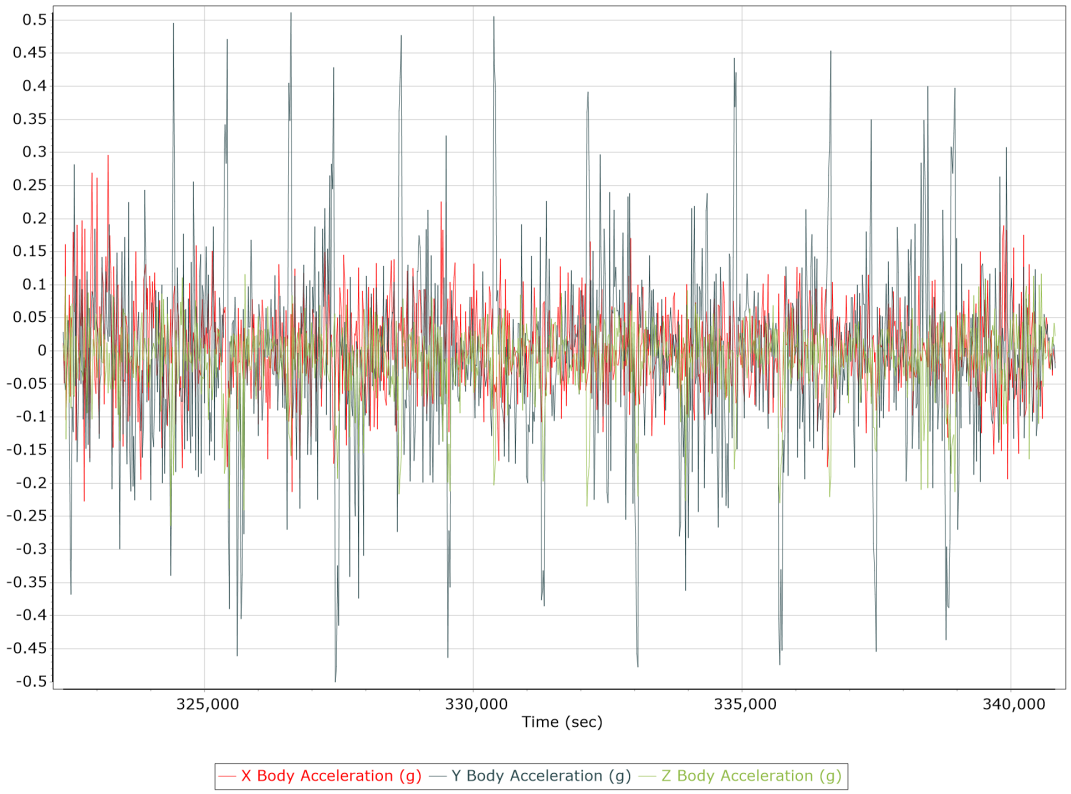
Total Speed



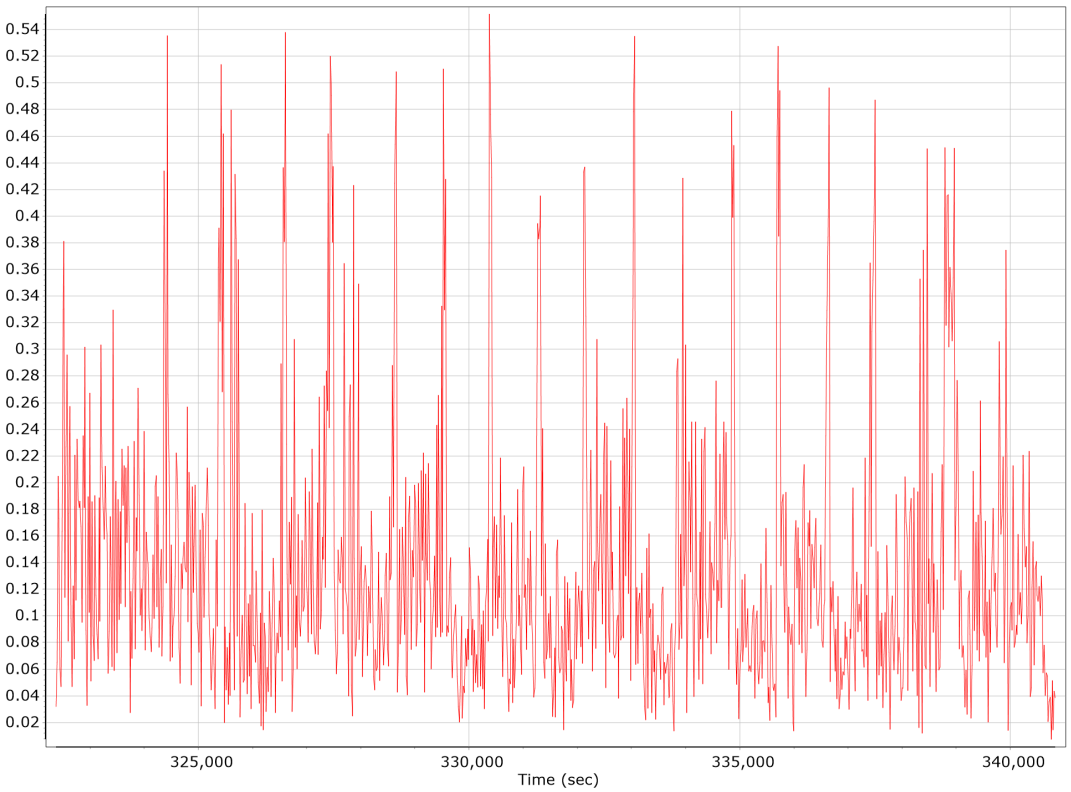
Ground Speed



Body Acceleration



Total Body Acceleration

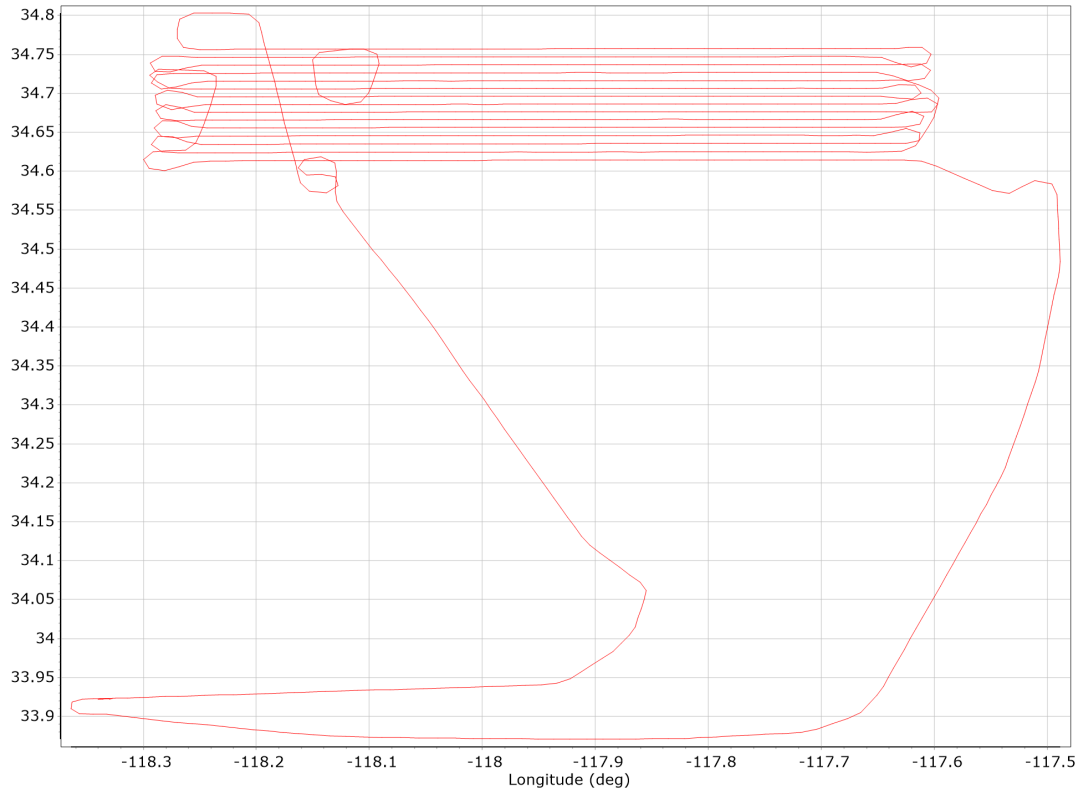


Body Angular Rate

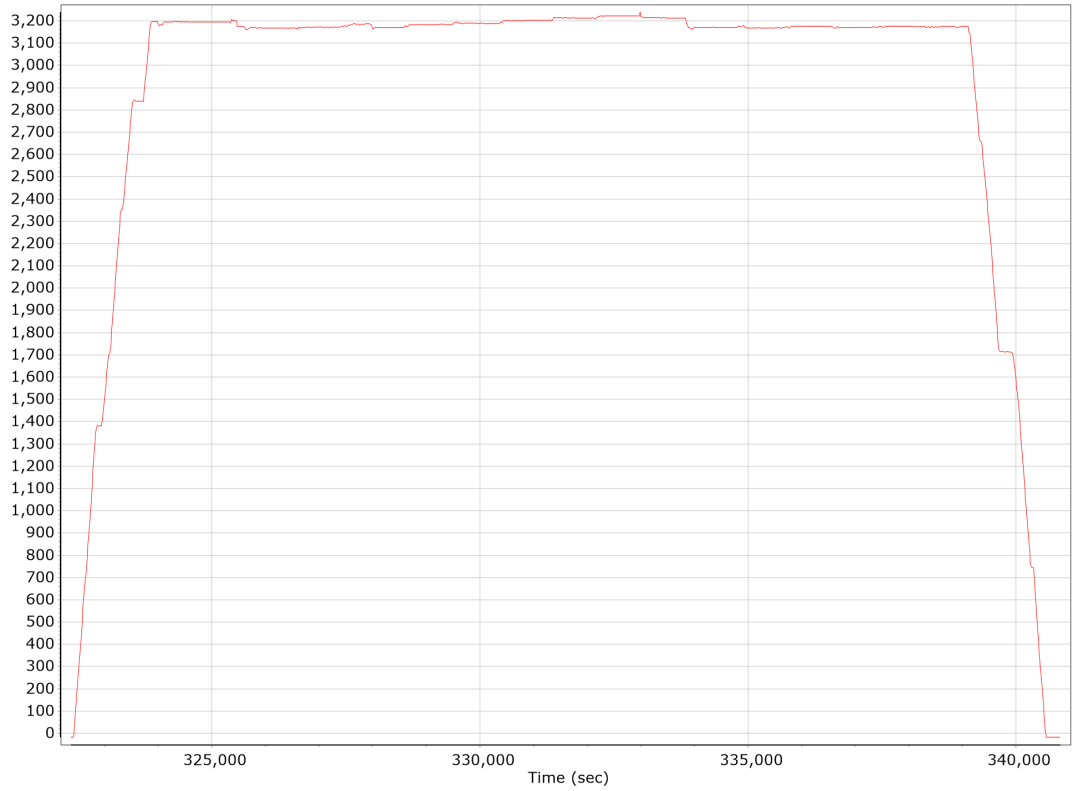


Forward Processed Trajectory Information

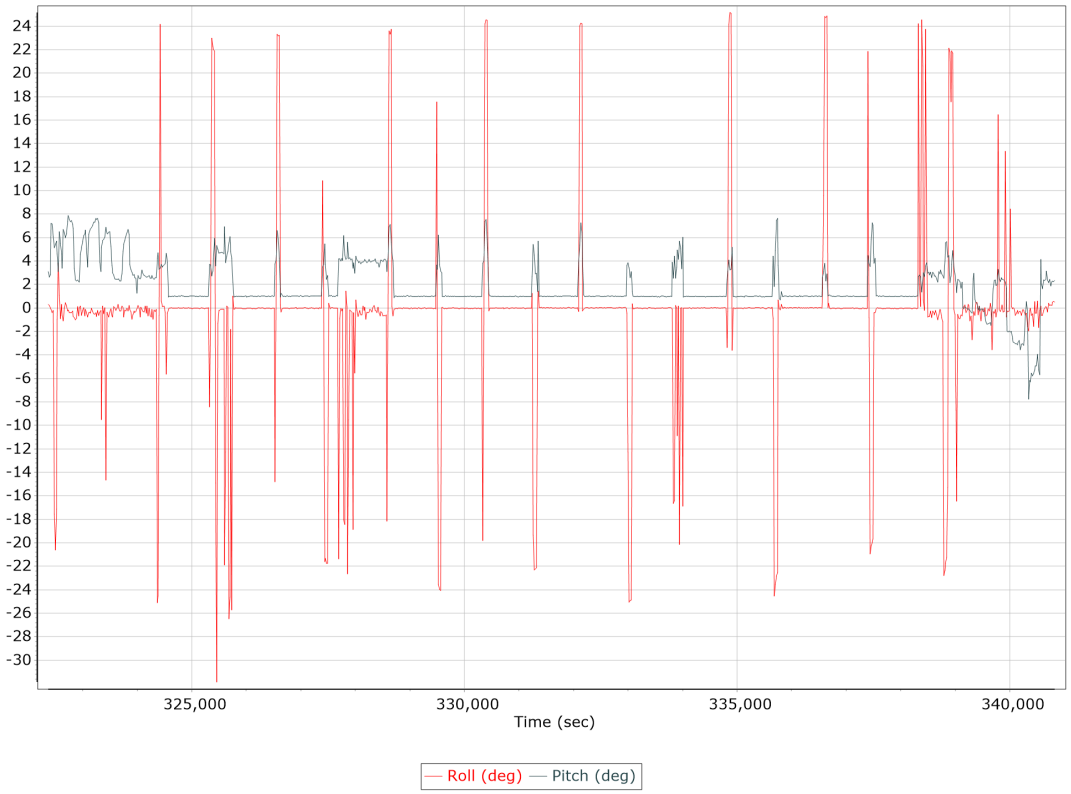
Top View



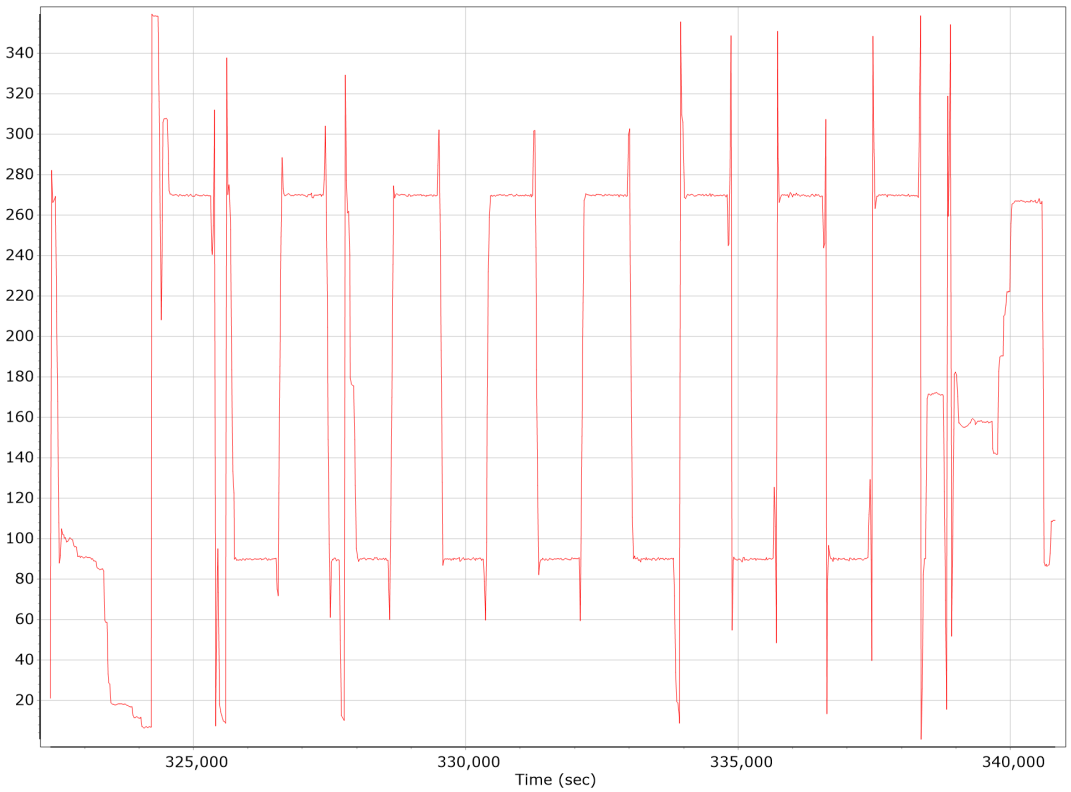
Altitude



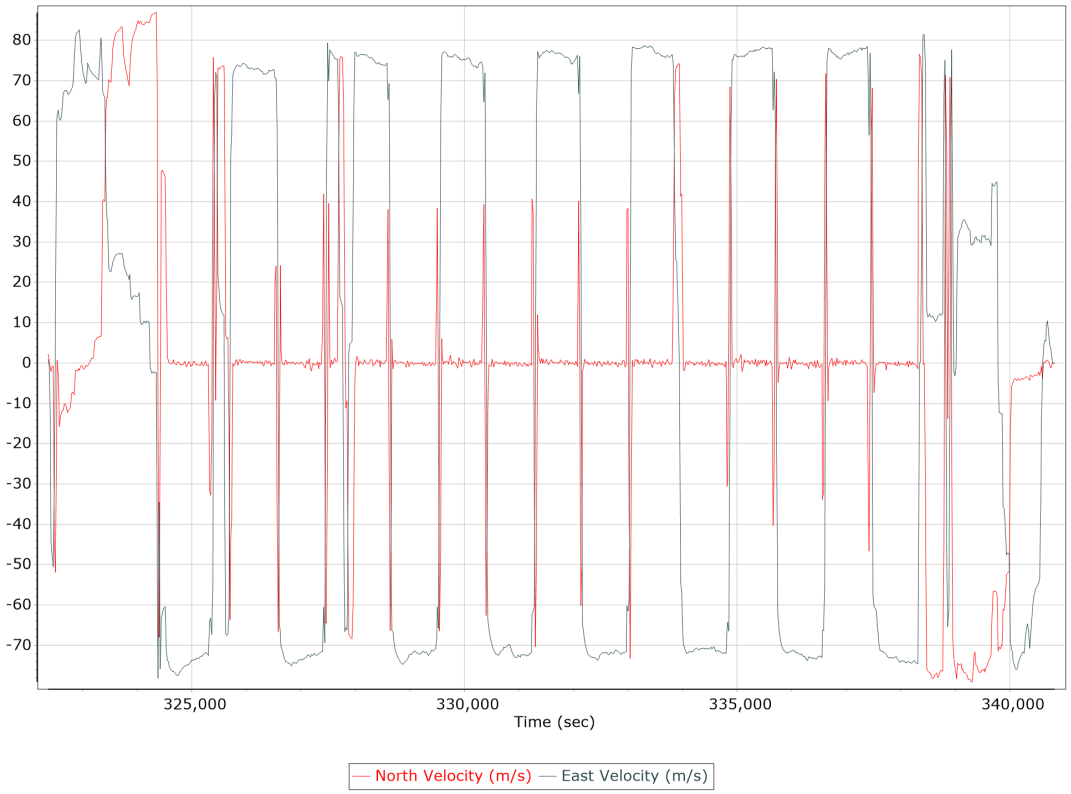
Roll/Pitch



Heading



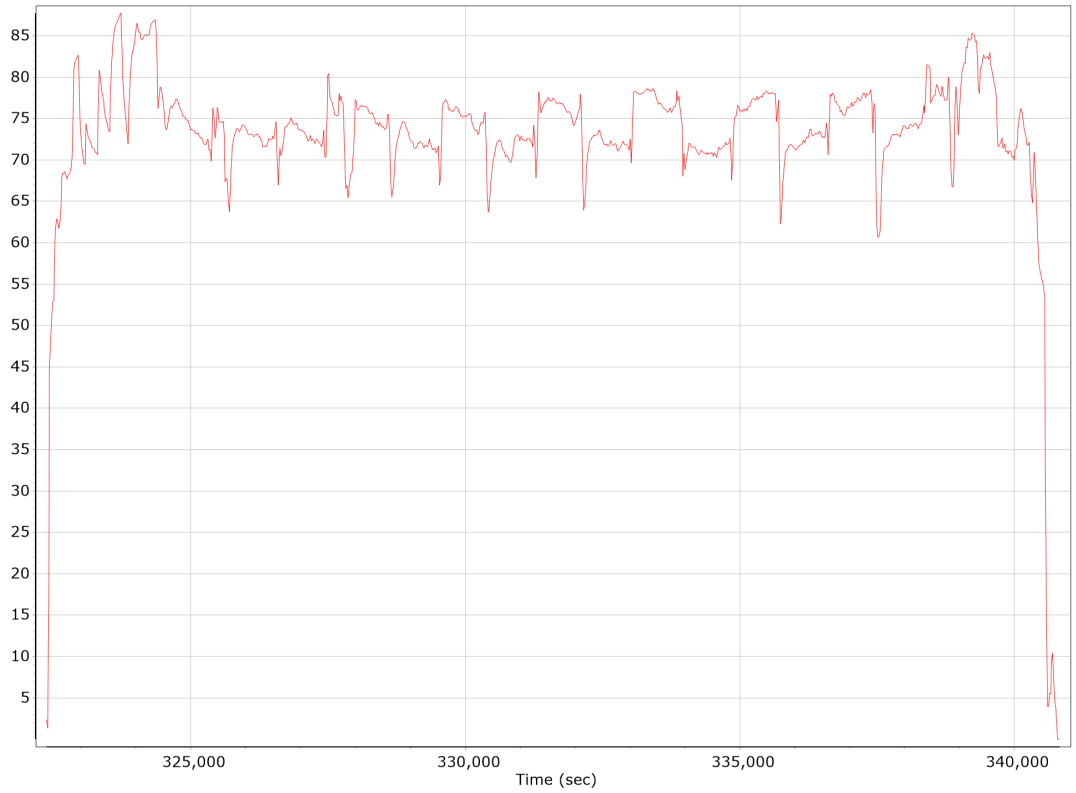
North/East Velocity



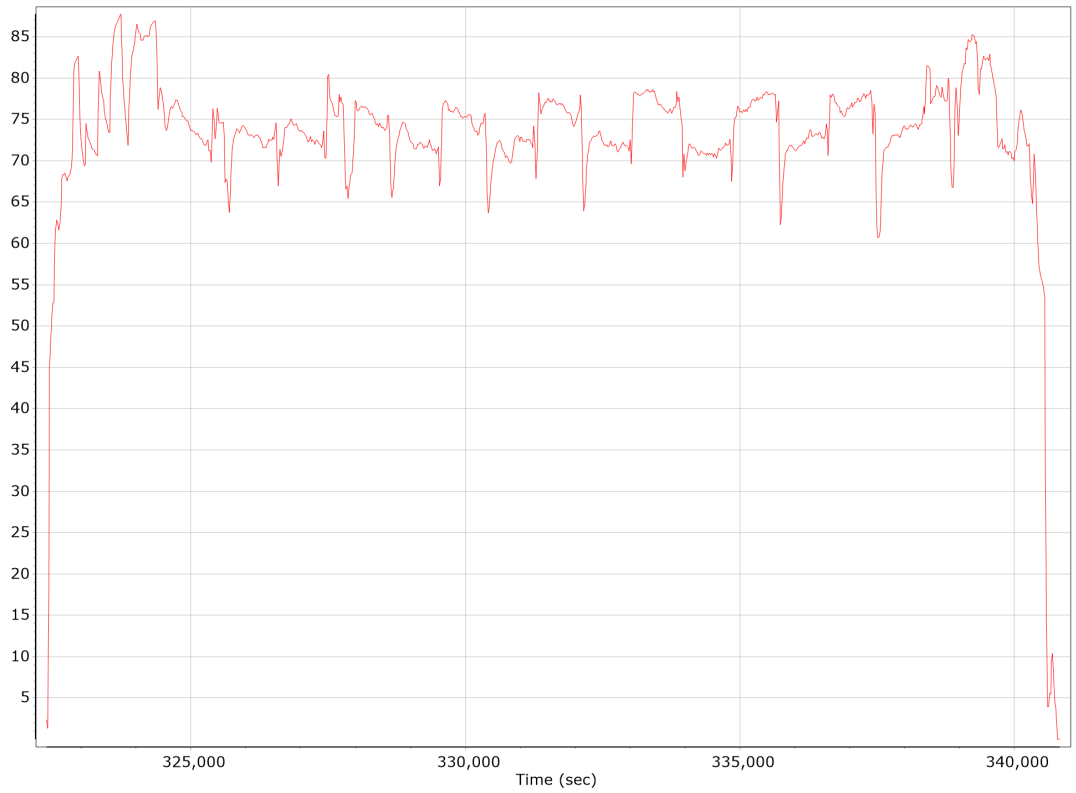
Down Velocity



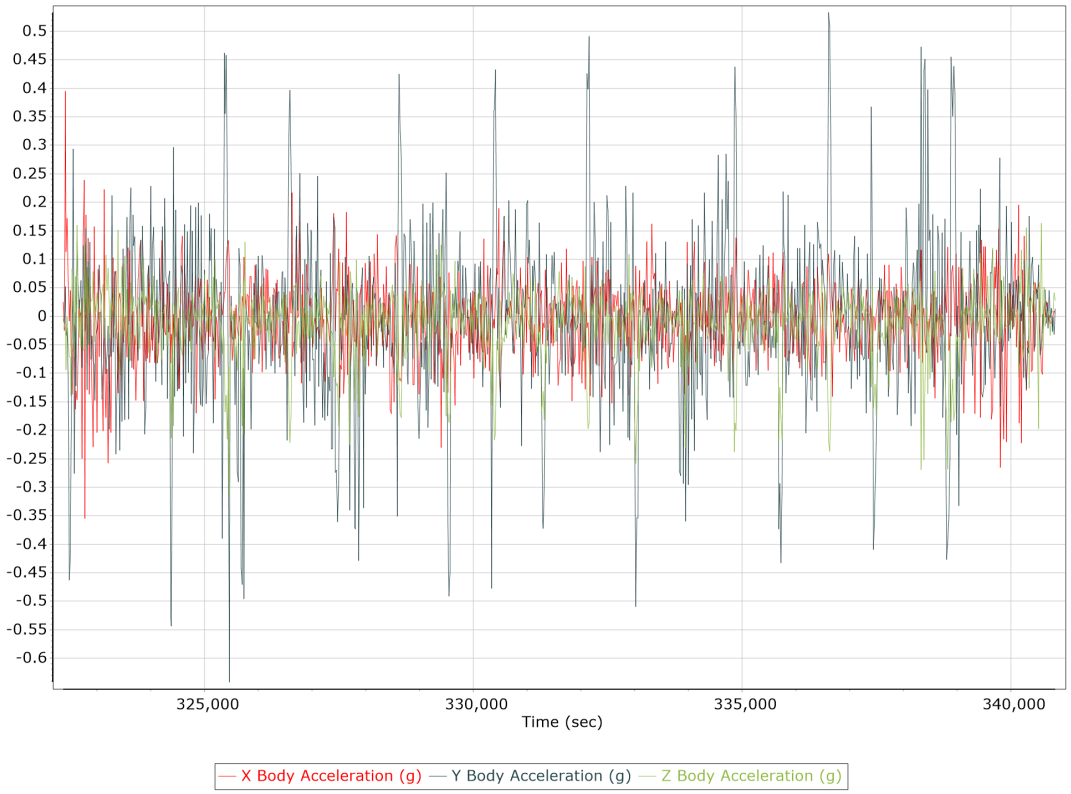
Total Speed



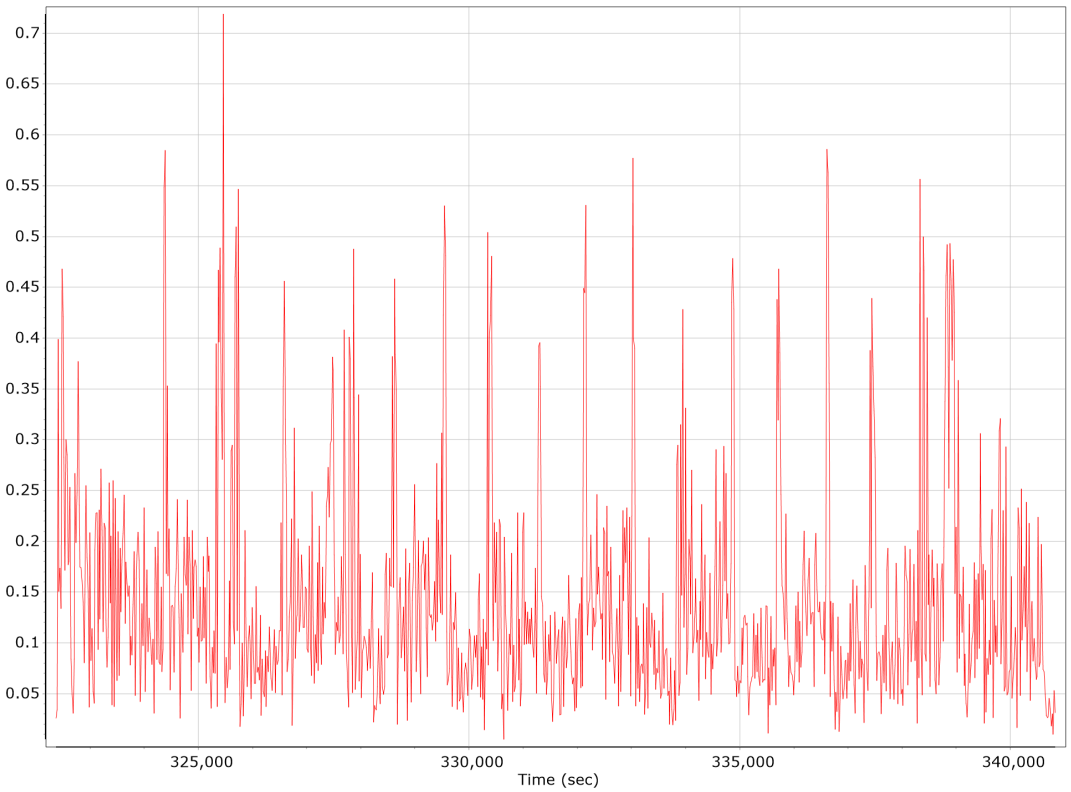
Ground Speed



Body Acceleration



Total Body Acceleration



Body Angular Rate

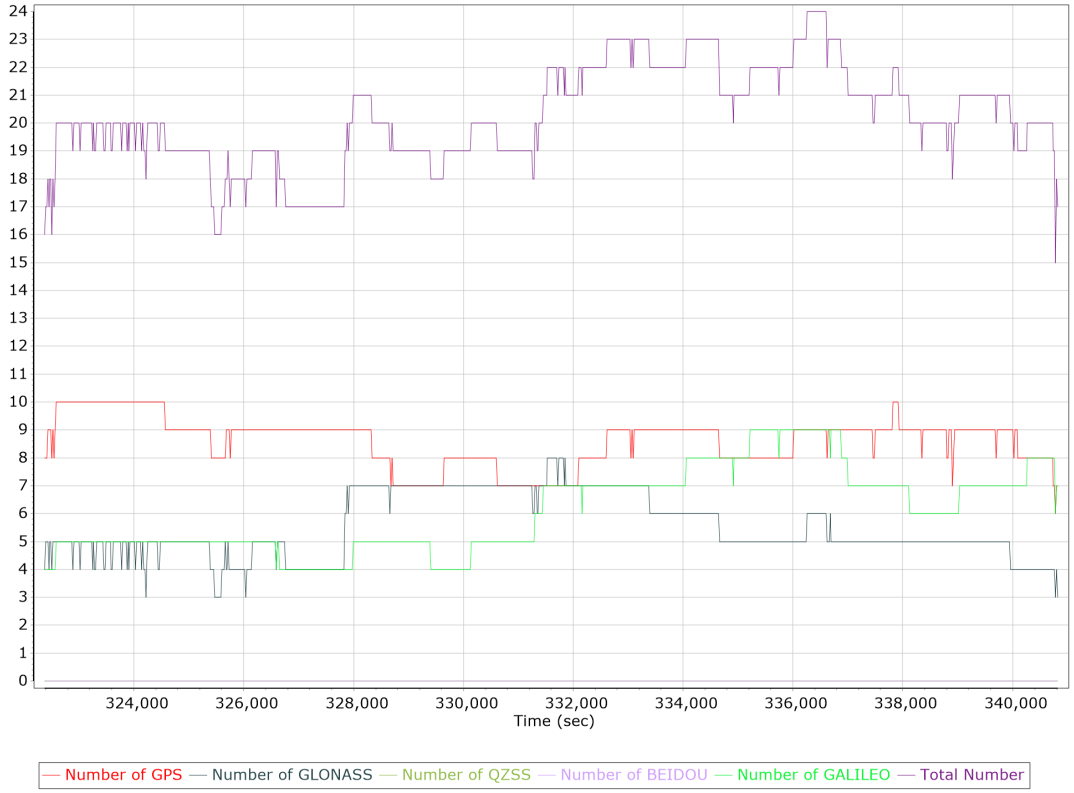


GNSS QC

GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	6	10	9
Number of GLONASS SV	2	8	5
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	4	9	6
Total number of SV	15	24	20
PDOP	1.11	1.93	1.27
QC Solution Gaps	0.00	0.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	18825.00	0.00	0.00
Percentage	100.00	0.00	0.00

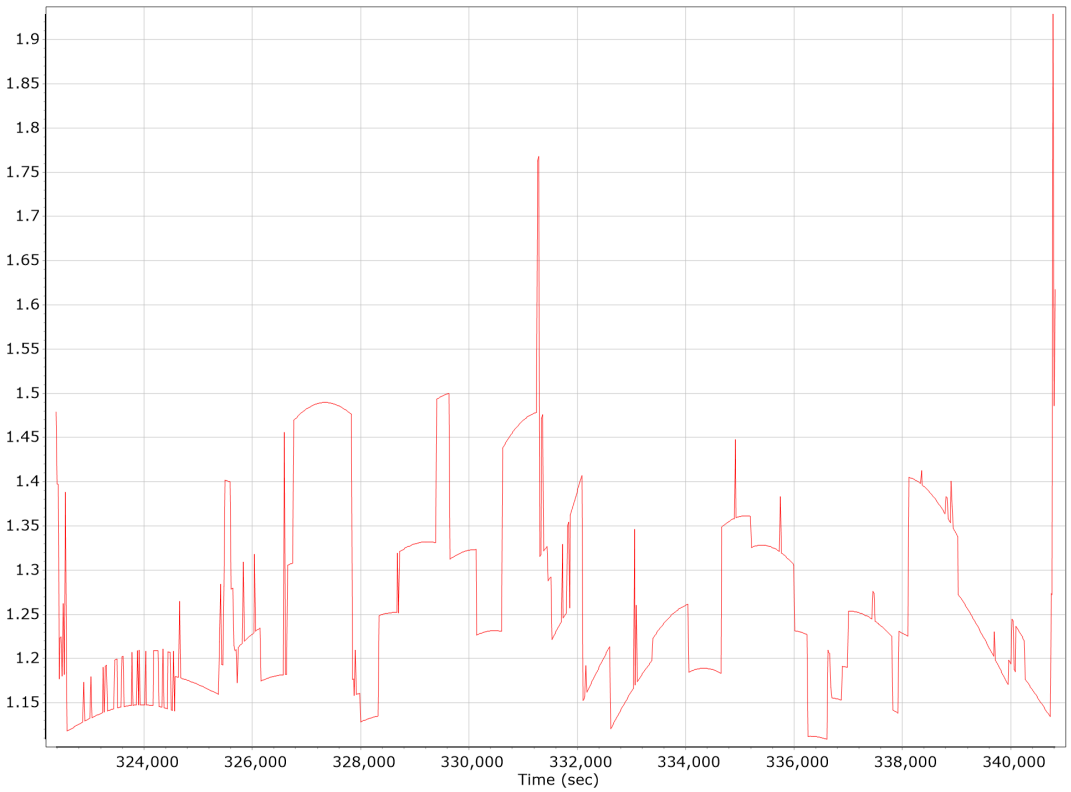
Num SVs in solution



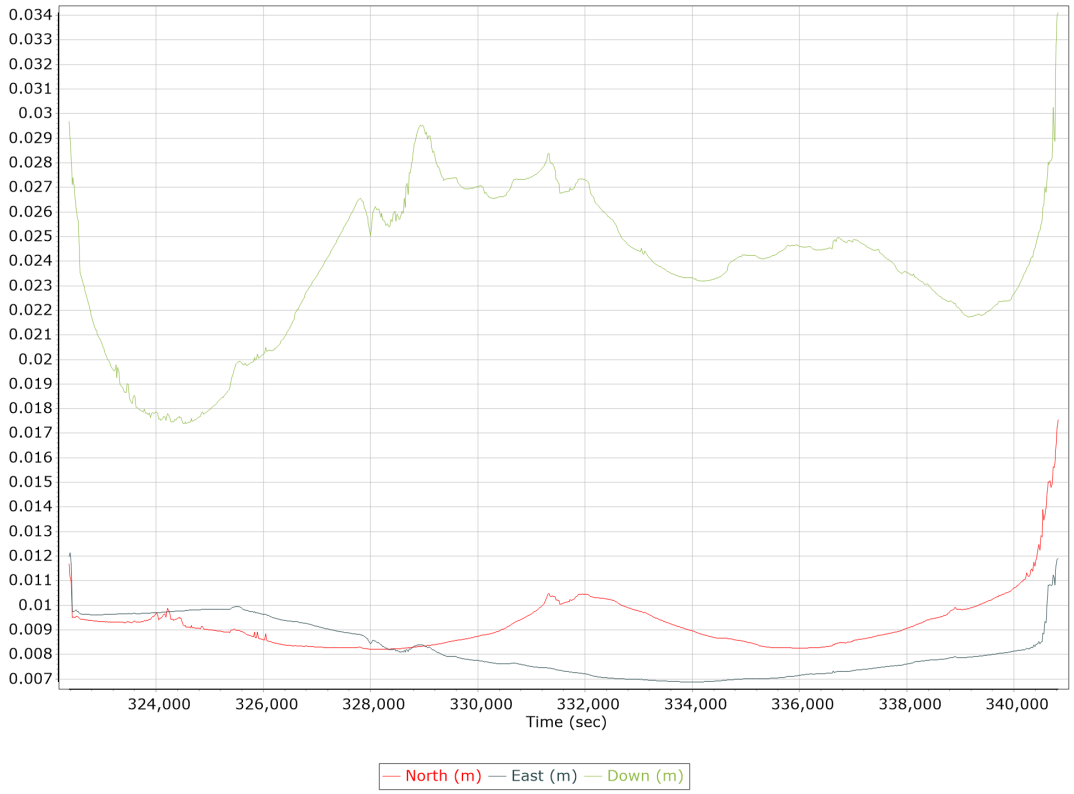
Forward/Reverse Separation



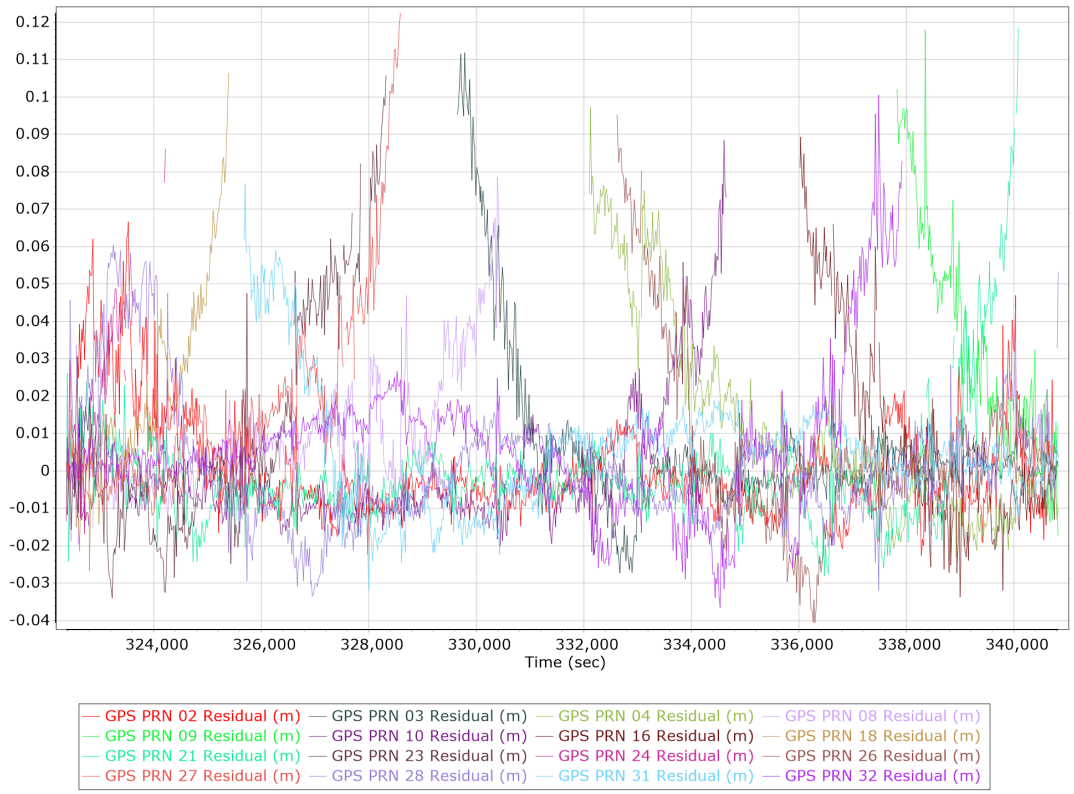
PDOP



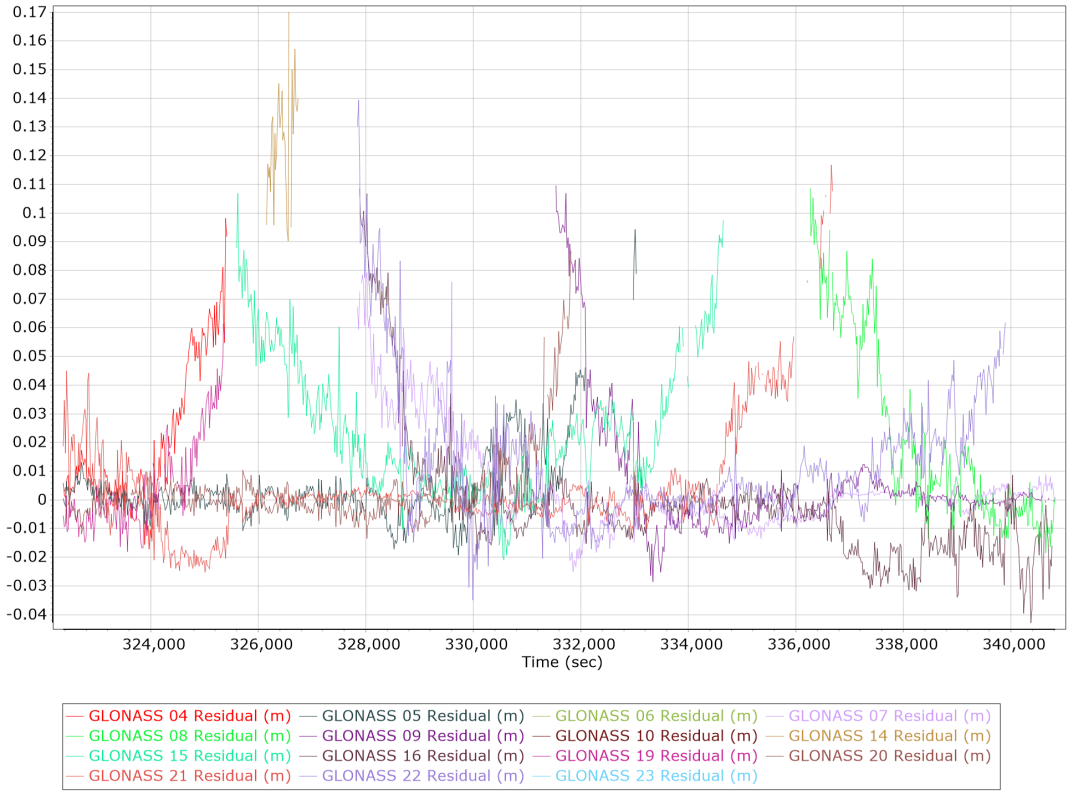
Estimated Position Accuracy



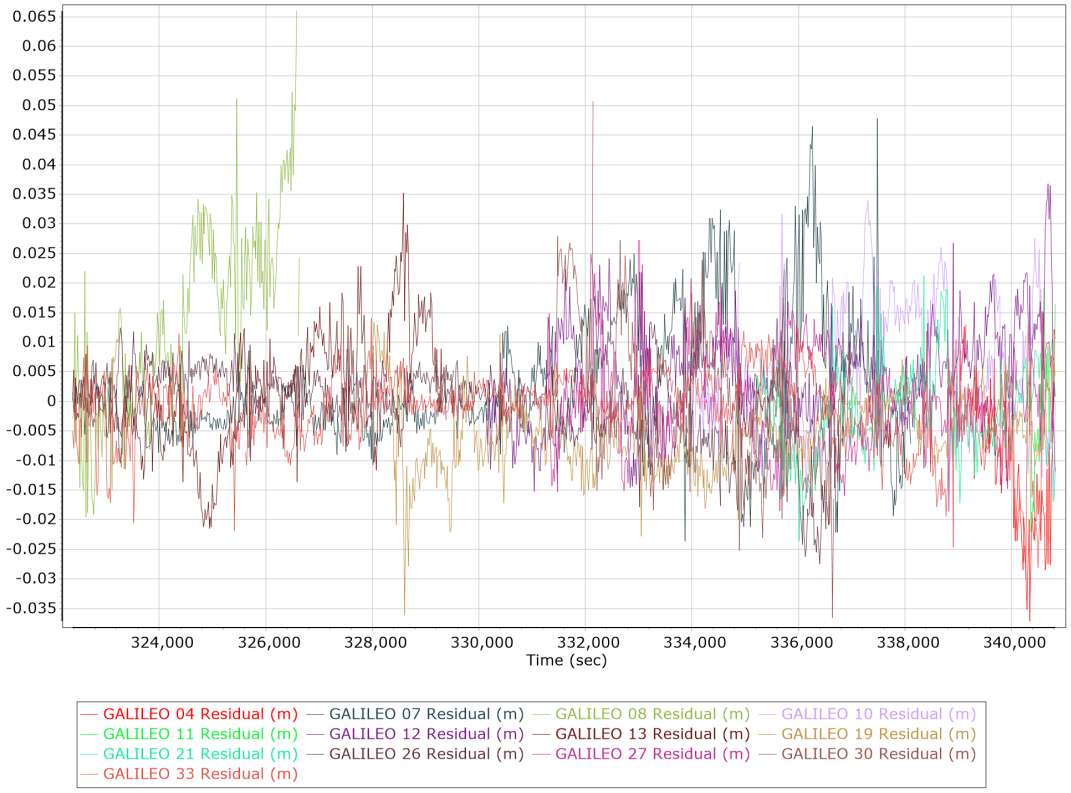
GPS Residuals



GLONASS Residuals



GALILEO Residuals



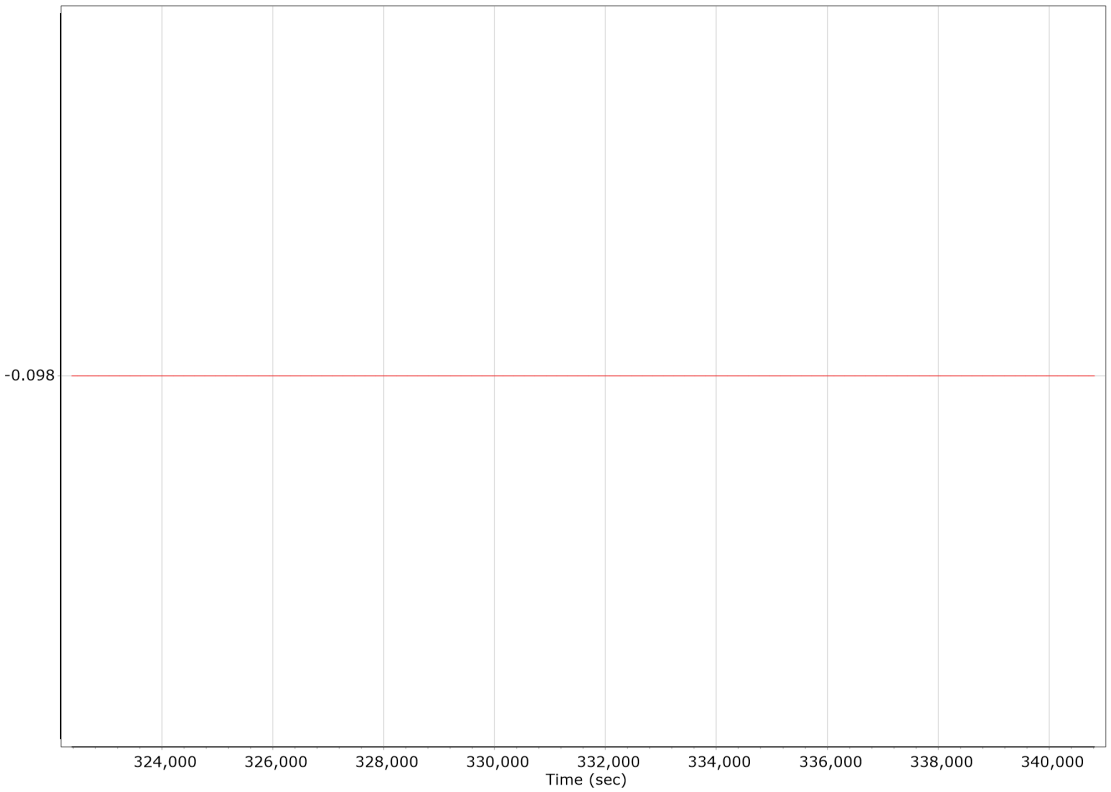
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	322004.000 (9/27/2023 5:26:44 PM)		
Processing end time	340840.000 (9/27/2023 10:40:40 PM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	-0.098	0.057	-1.221
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

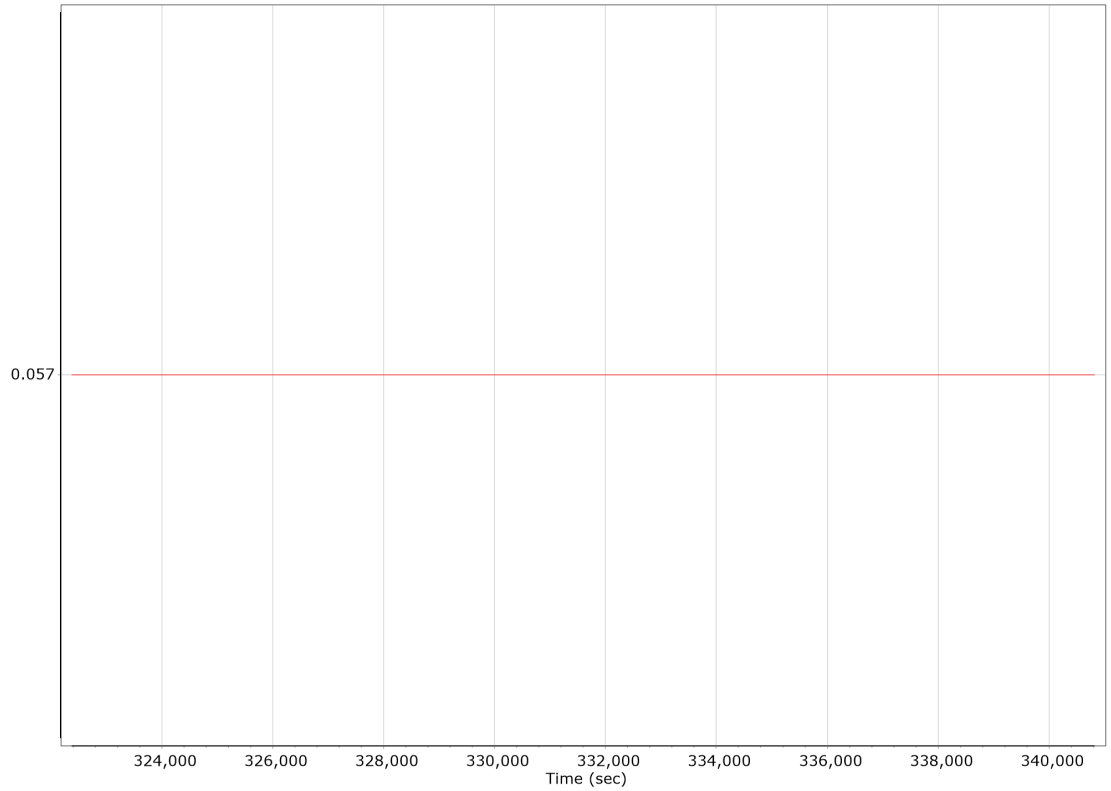
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

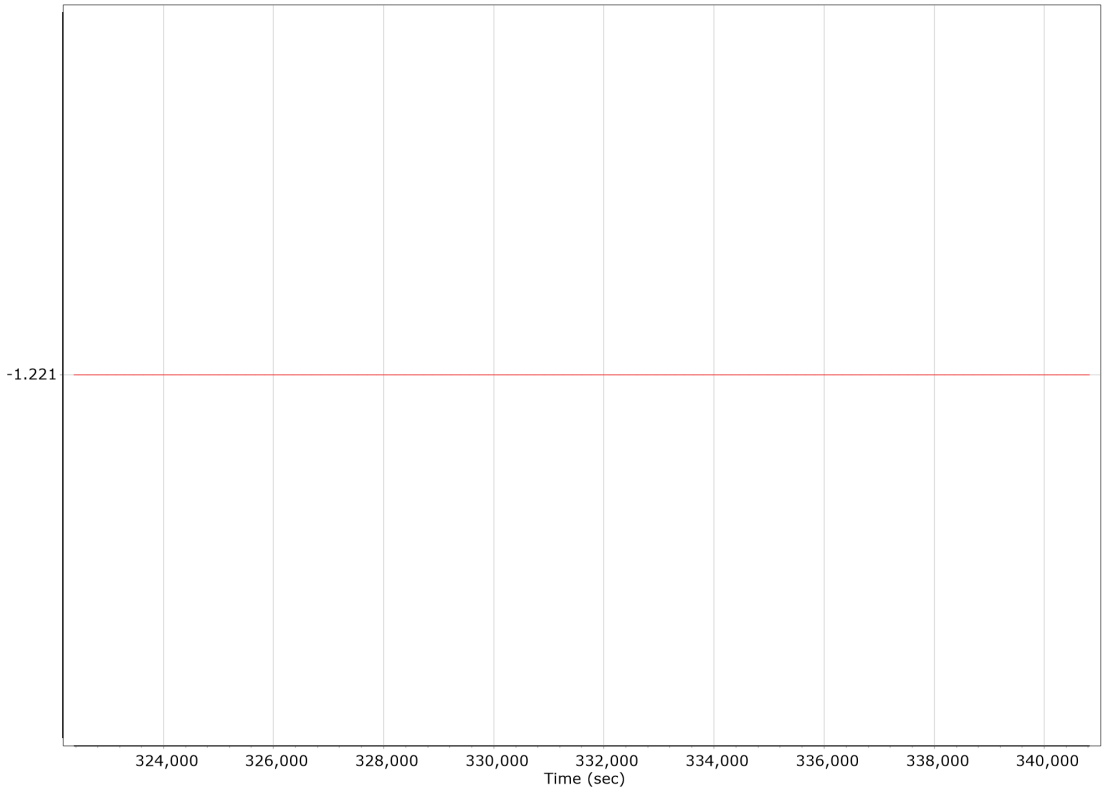
X Reference-Primary GNSS Lever Arm (m)



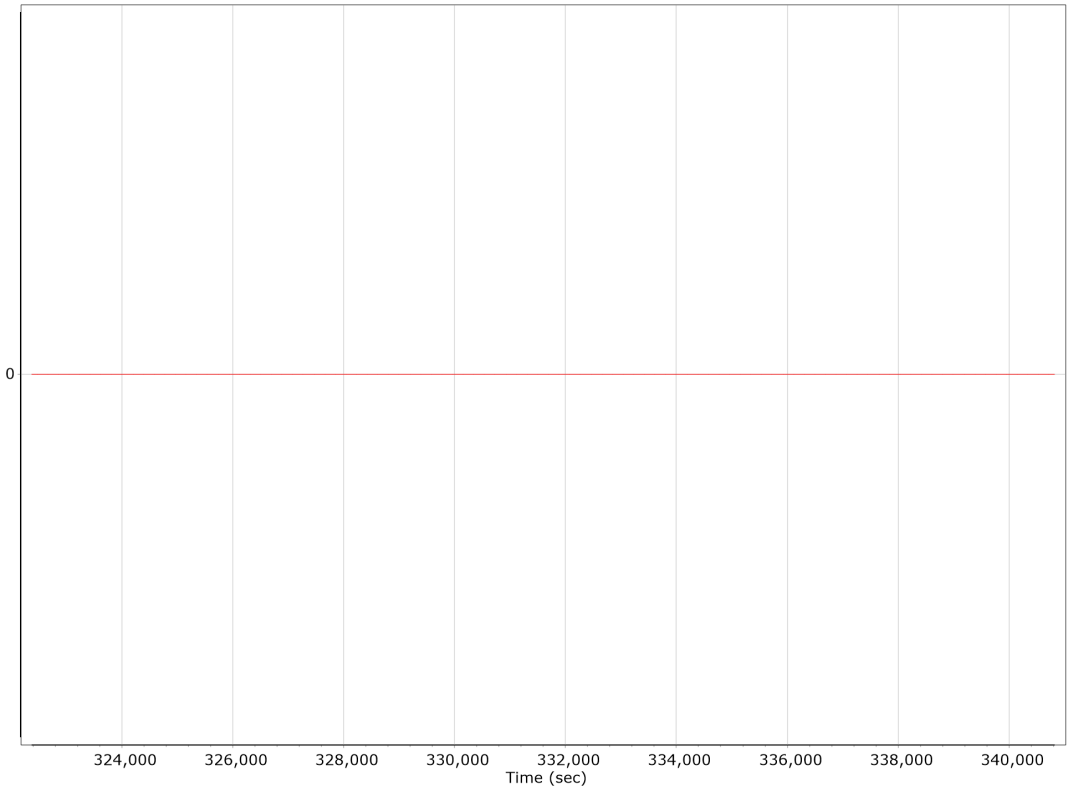
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



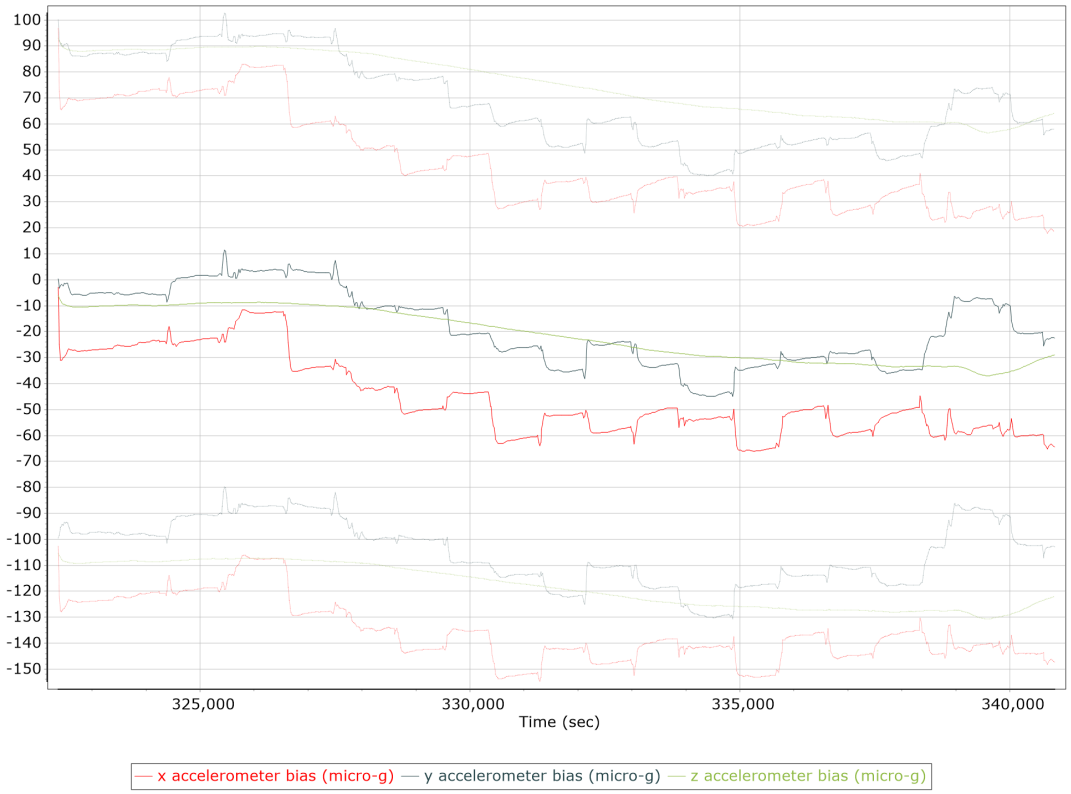
Reference-Primary GNSS Lever Arm Figure of Merit



IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

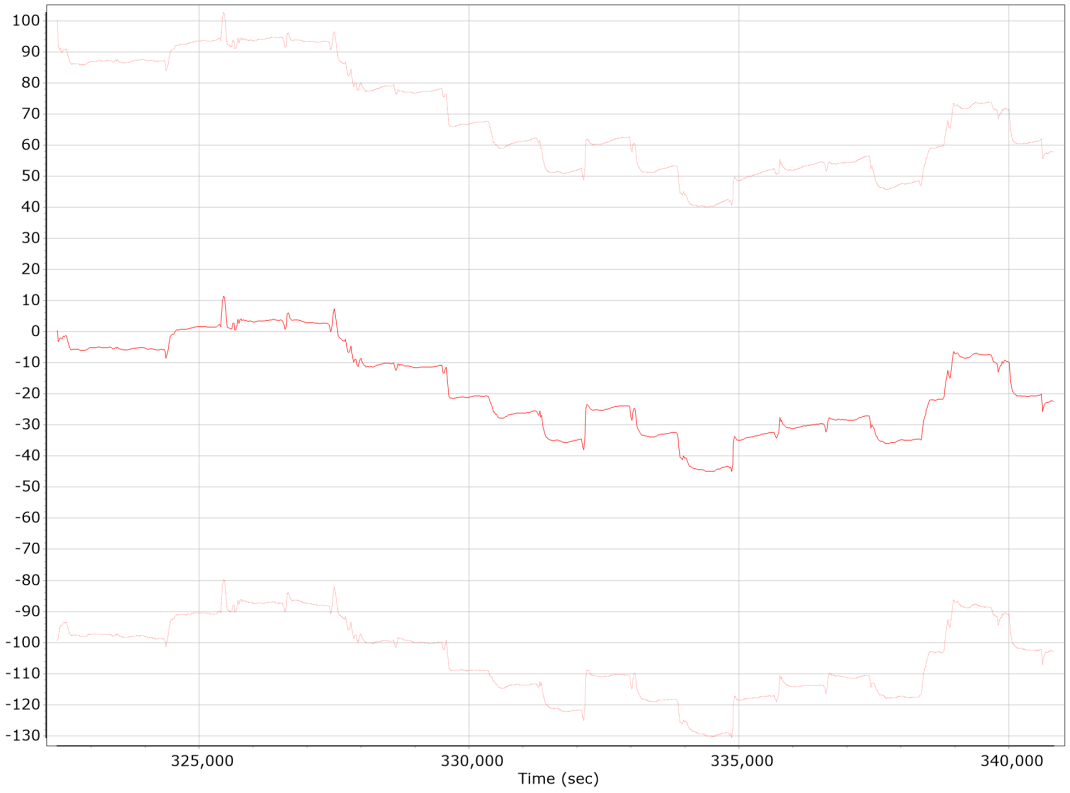
Accelerometer Bias (micro-g)



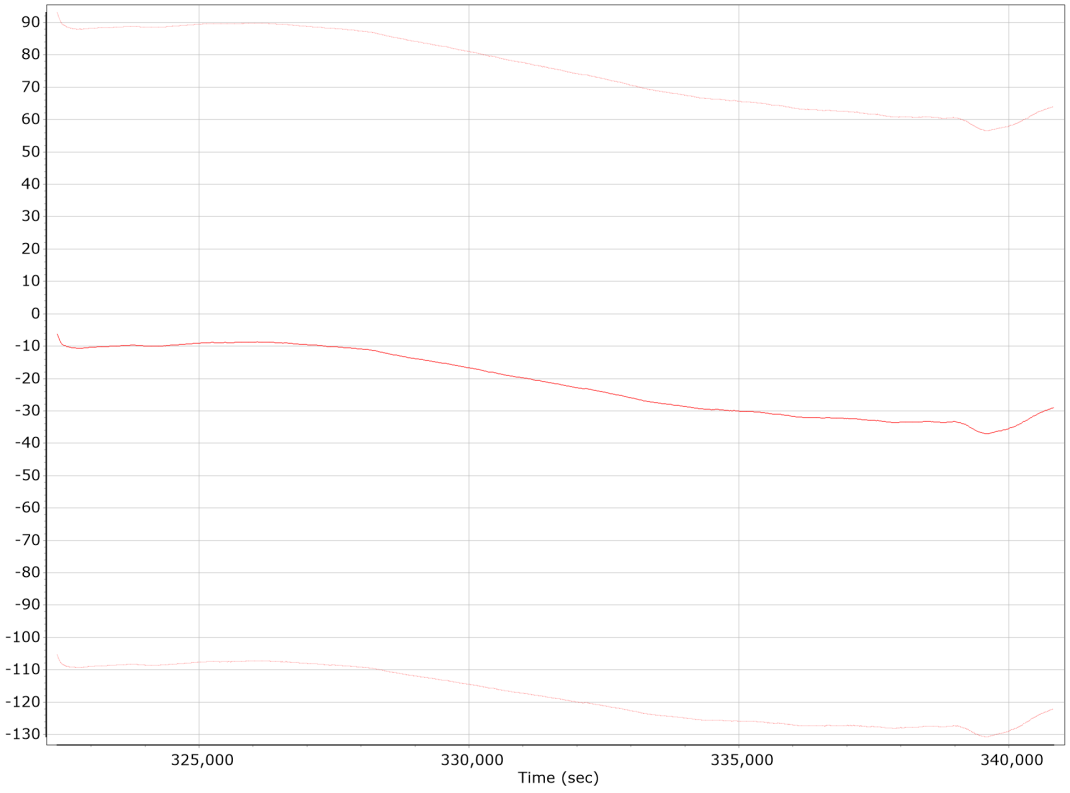
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



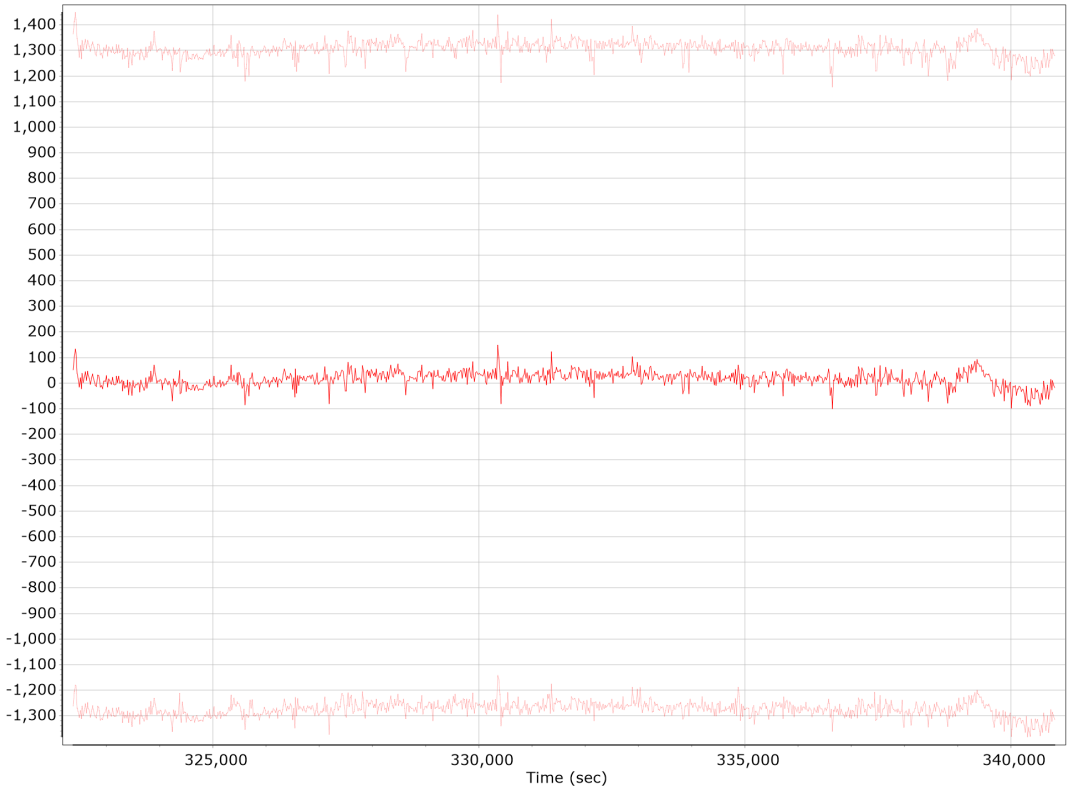
X Accelerometer Scale Error (ppm)



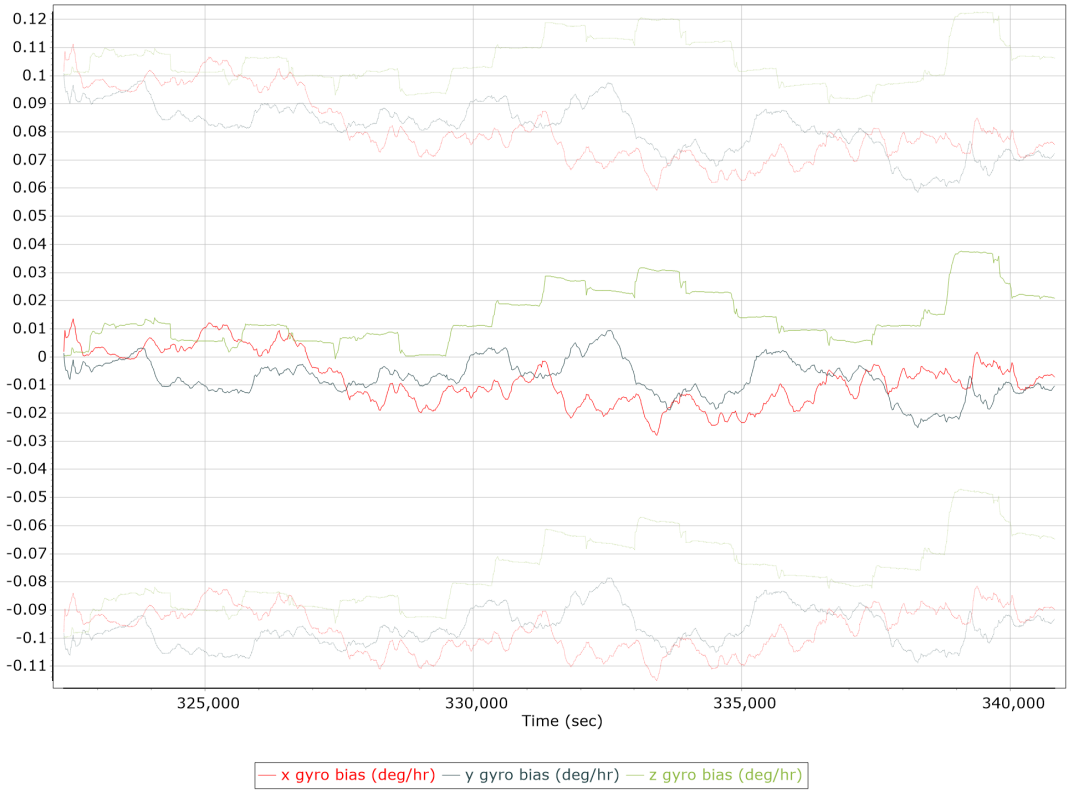
Y Accelerometer Scale Error (ppm)



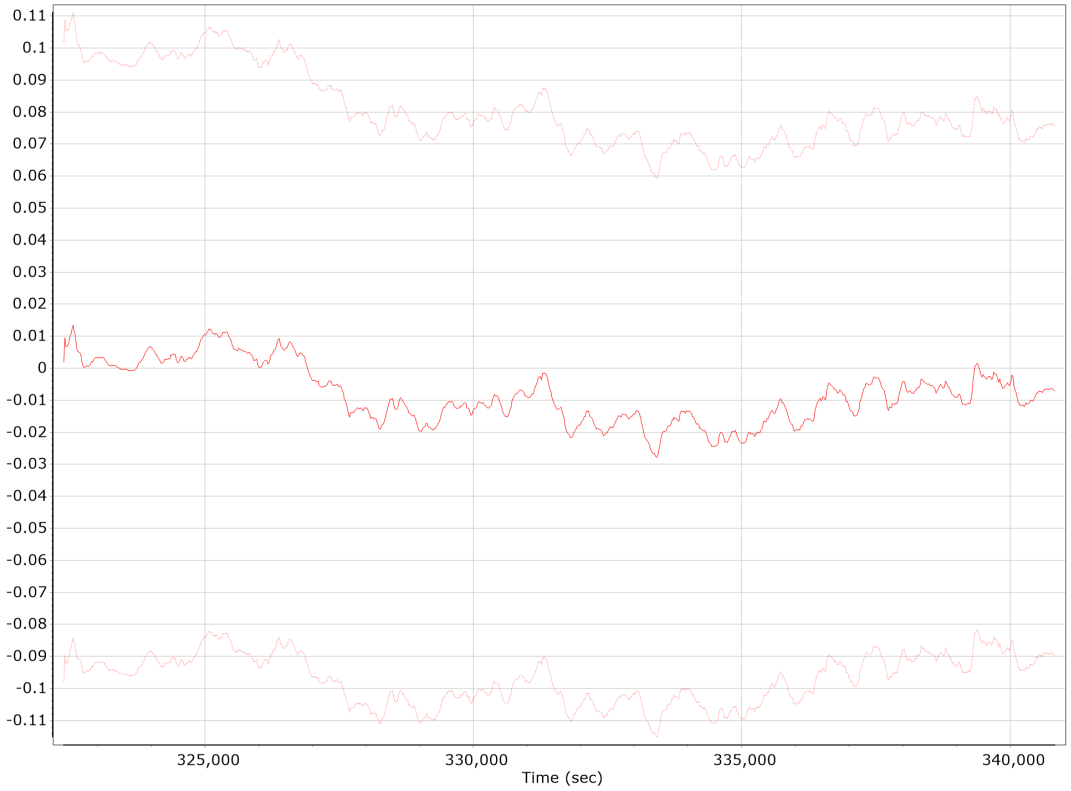
Z Accelerometer Scale Error (ppm)



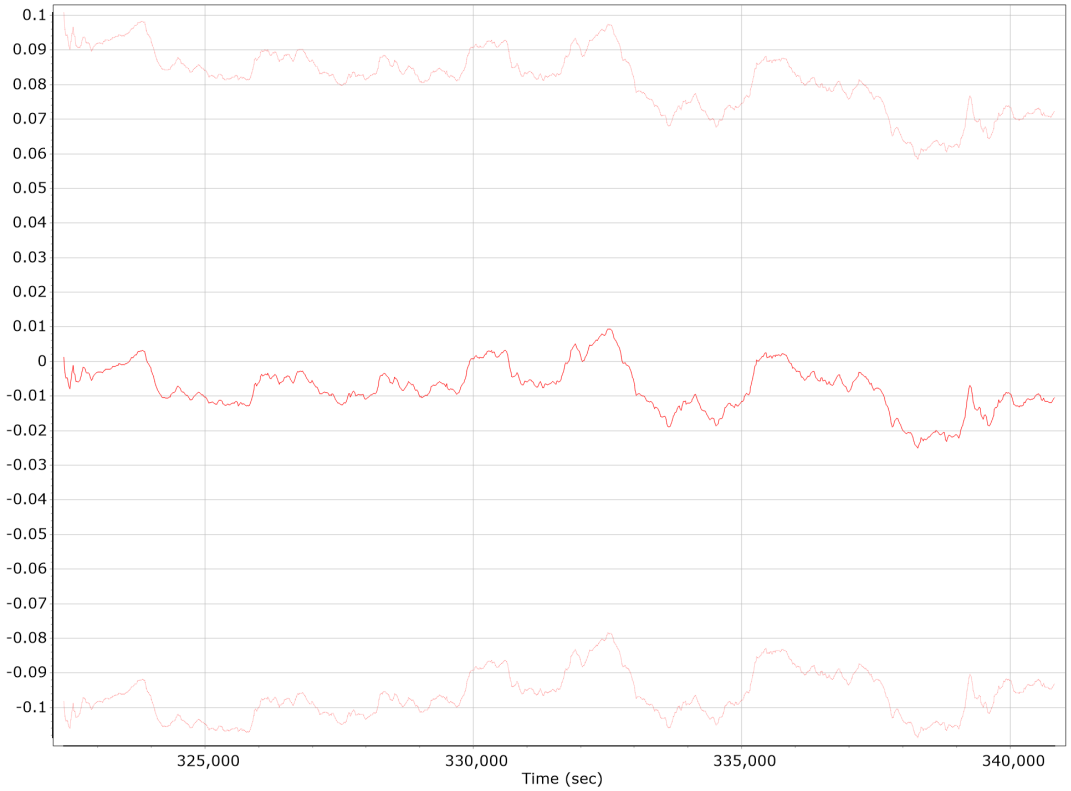
Gyro Bias (deg/h)



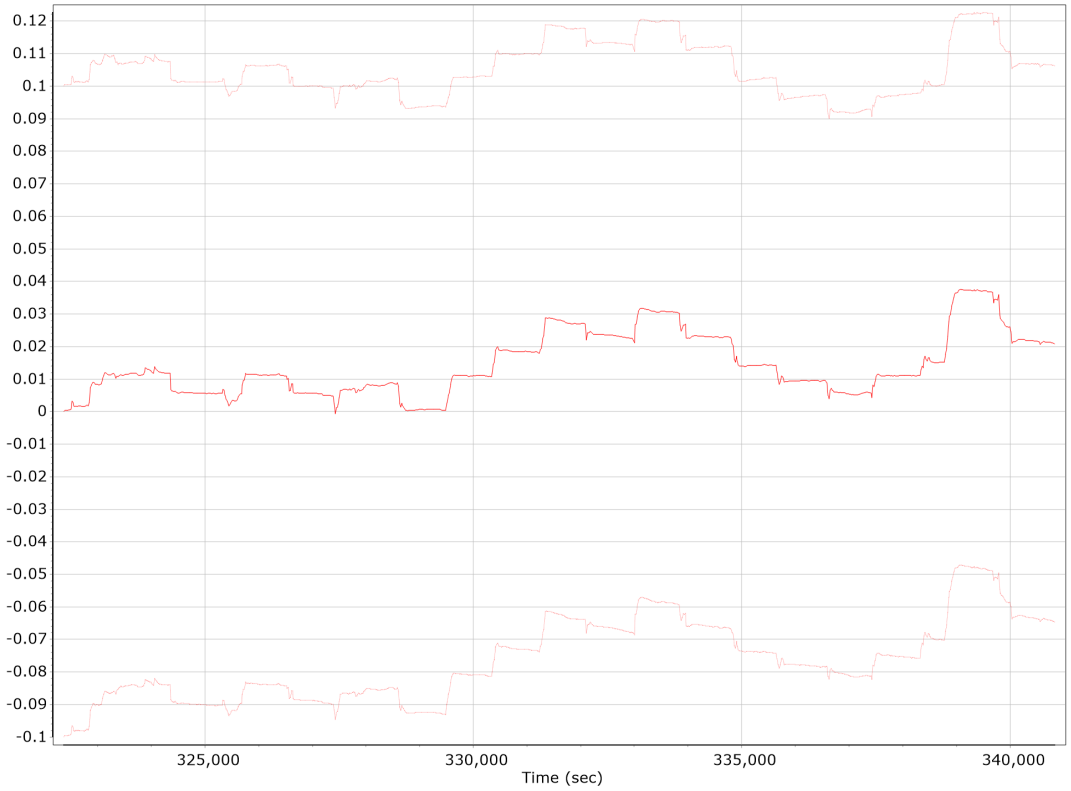
X Gyro Bias (deg/h)



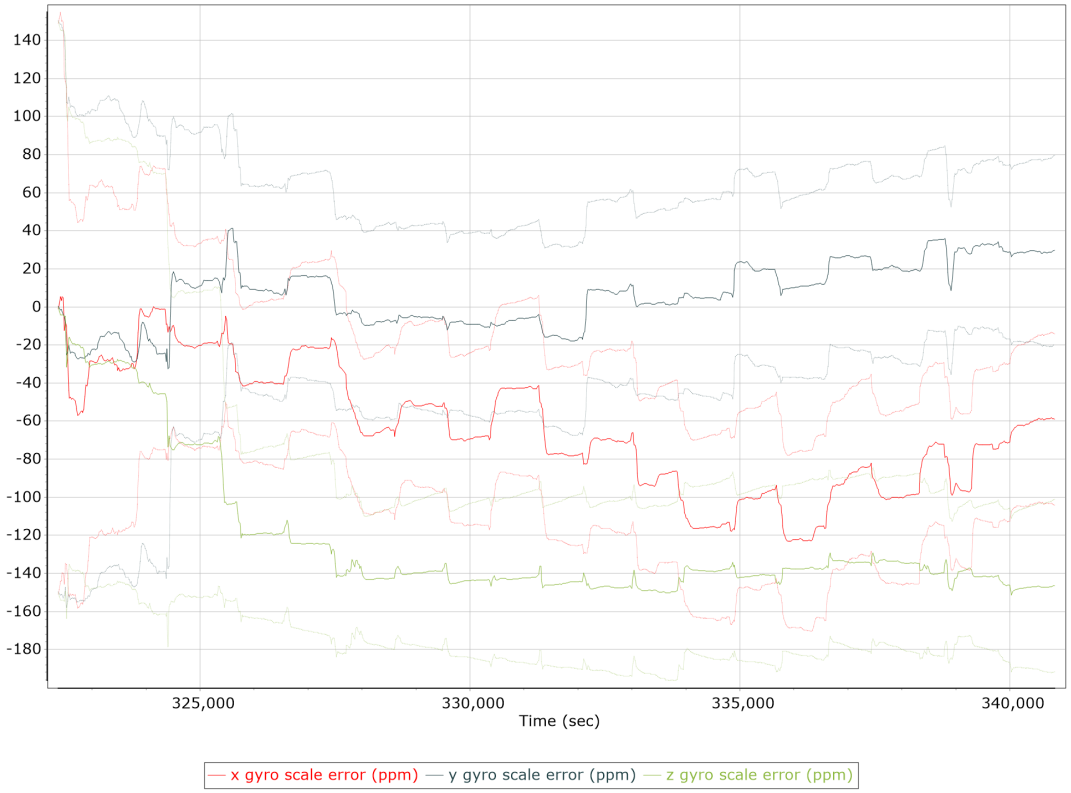
Y Gyro Bias (deg/h)



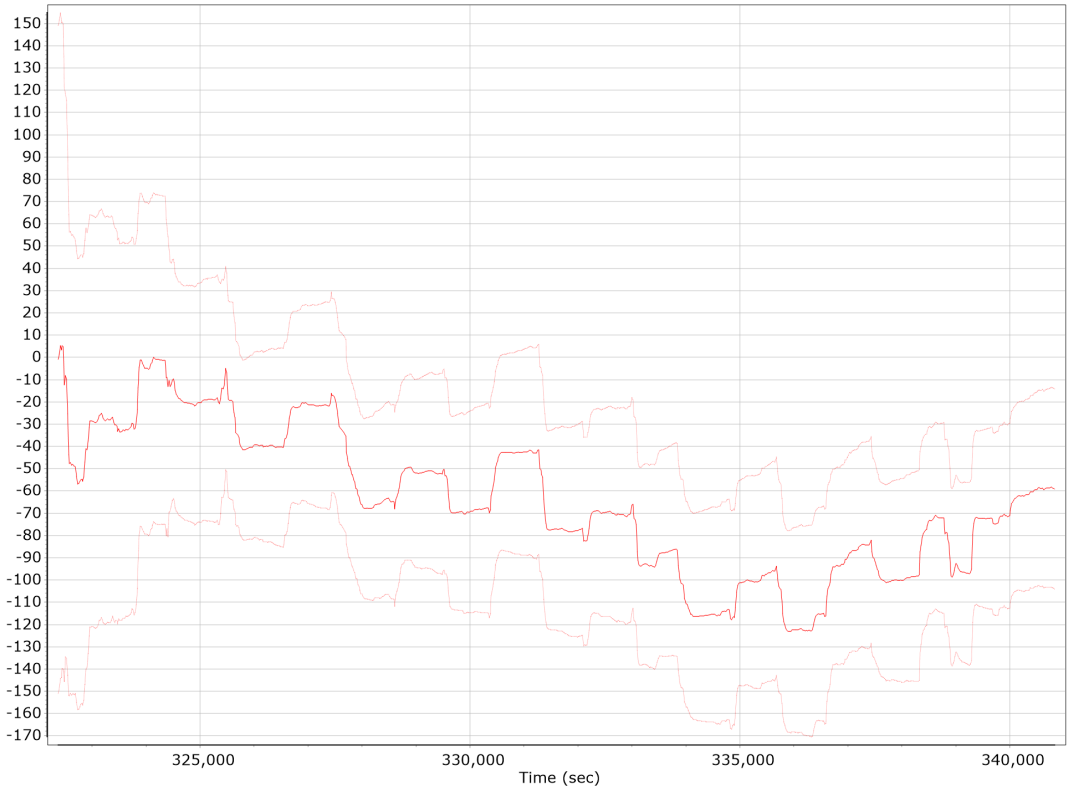
Z Gyro Bias (deg/h)



Gyro Scale Error (ppm)



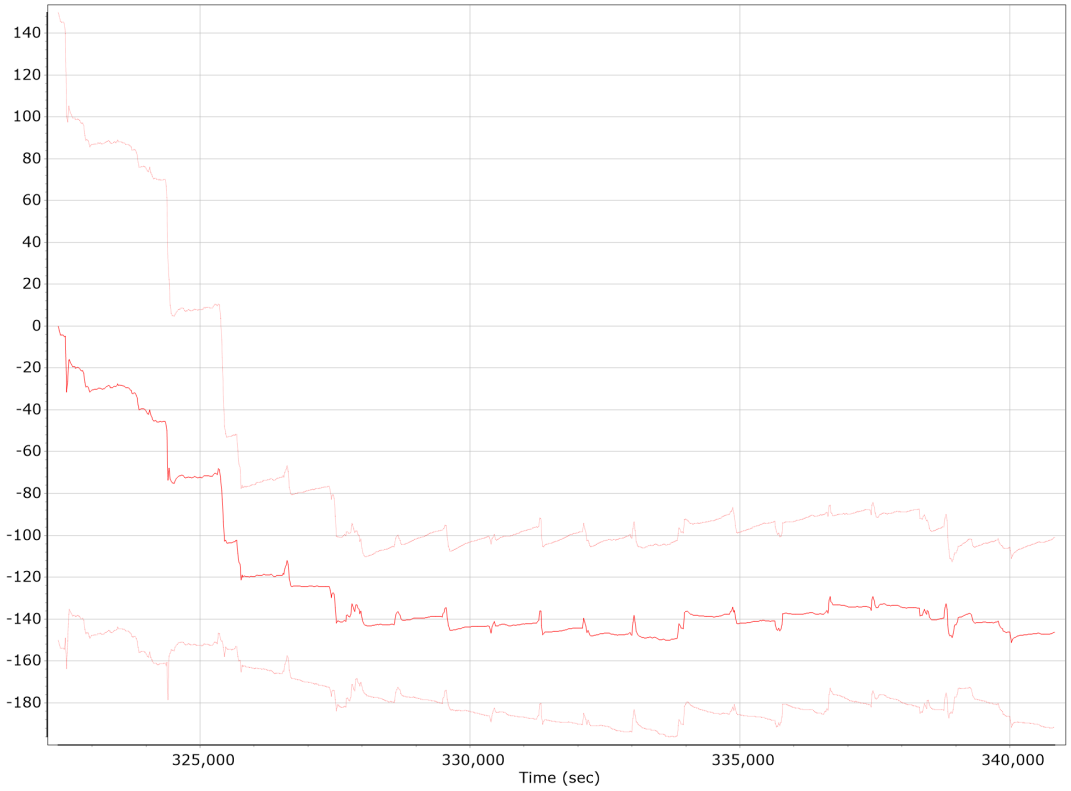
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)



Z Gyro Scale Error (ppm)

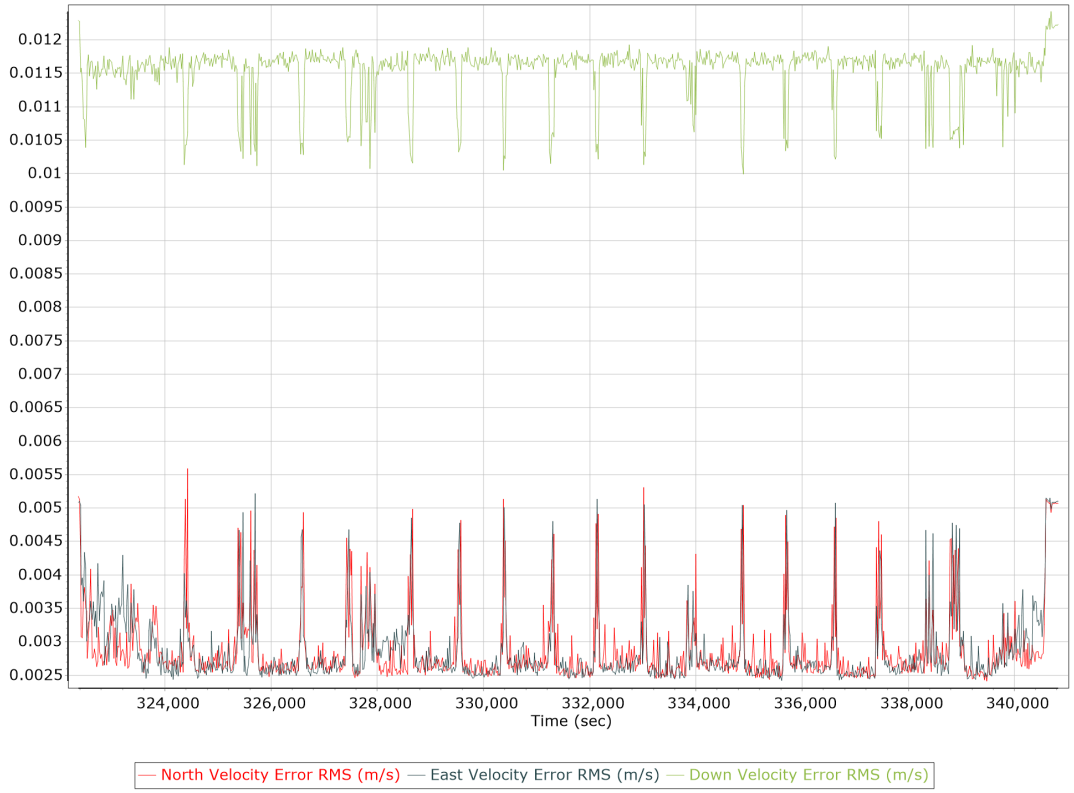


Smoothed Performance Metrics

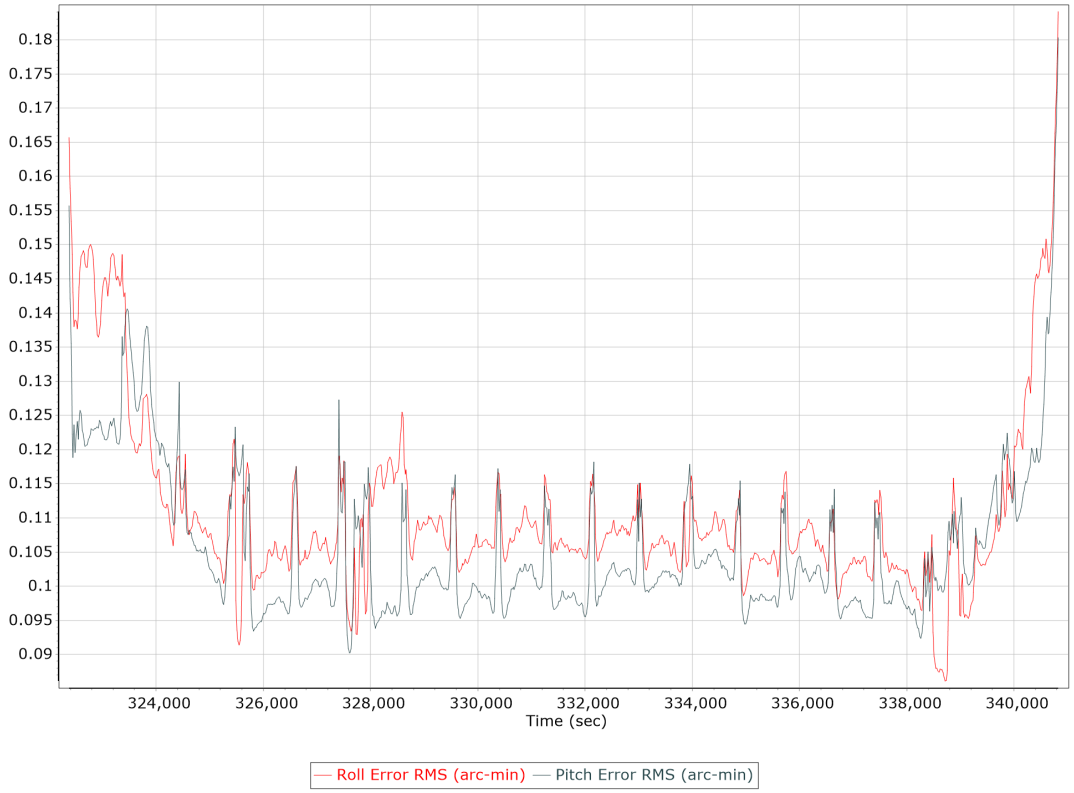
Position Error RMS (m)



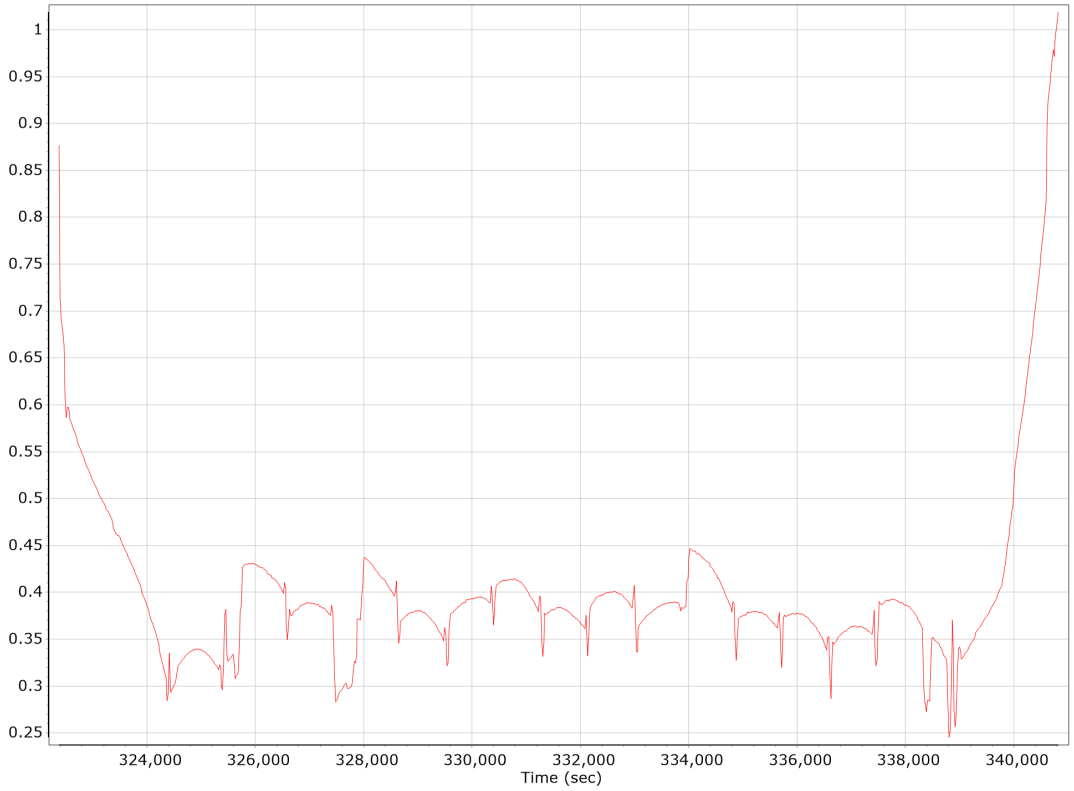
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)



Heading Error RMS (arc-min)

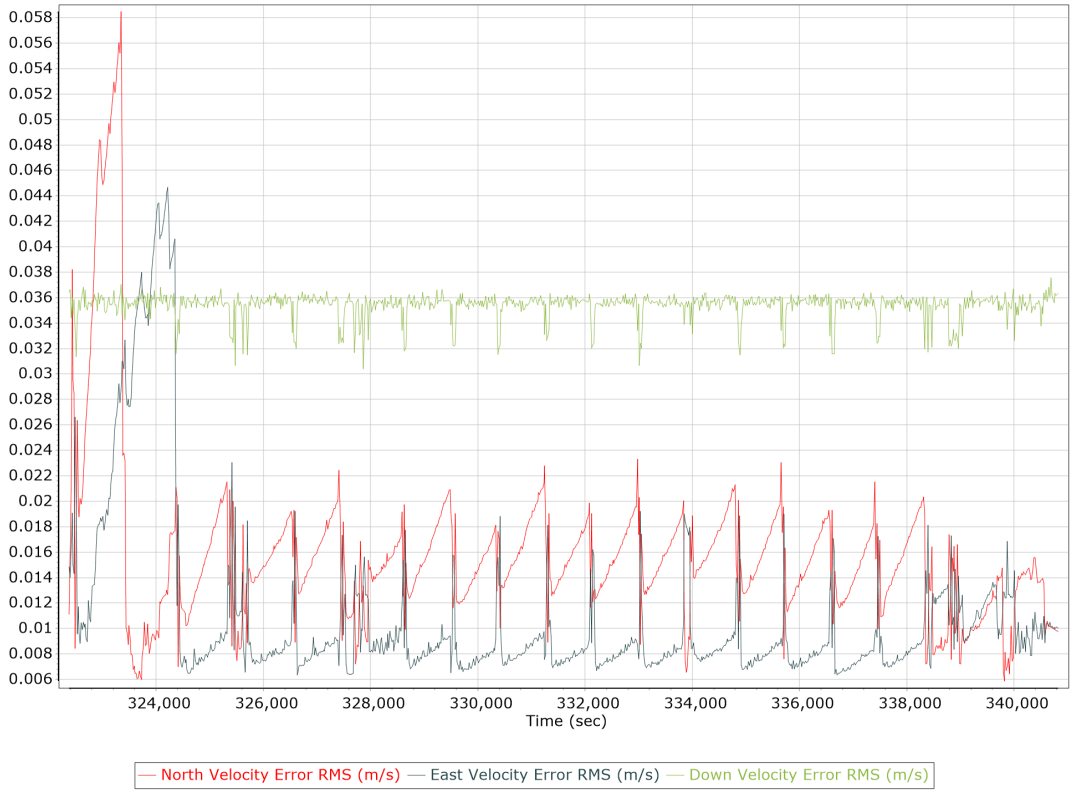


Forward Processed Performance Metrics

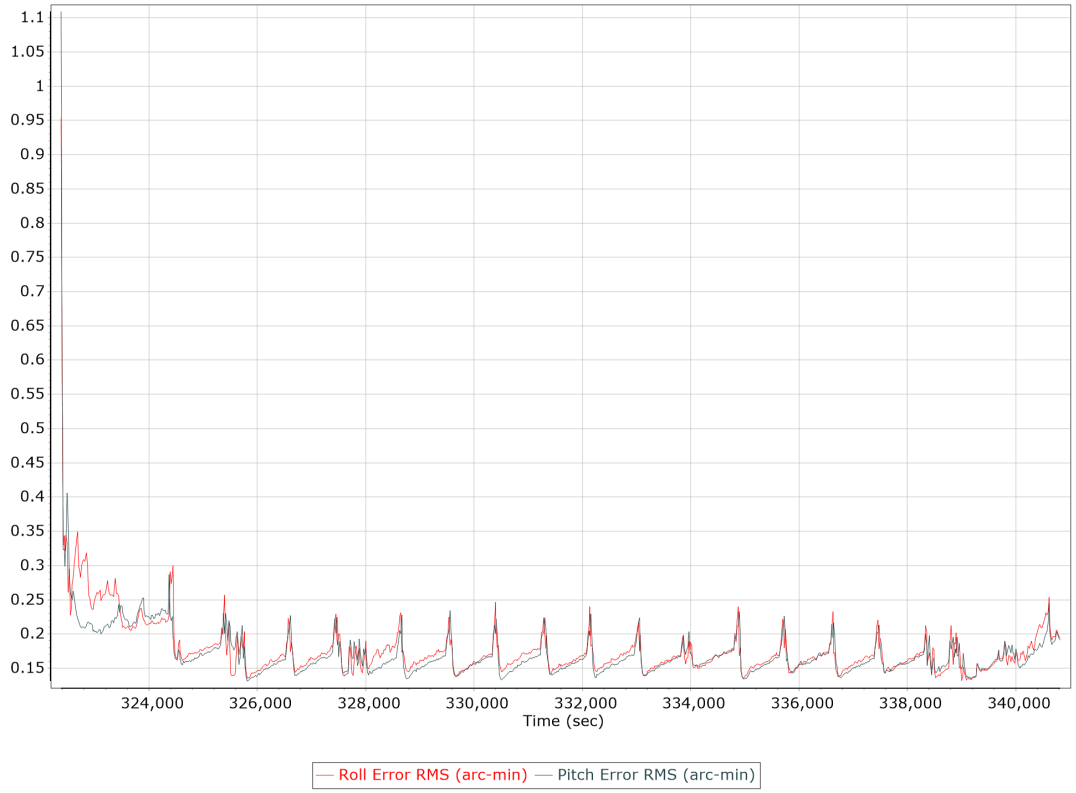
Position Error RMS (m)



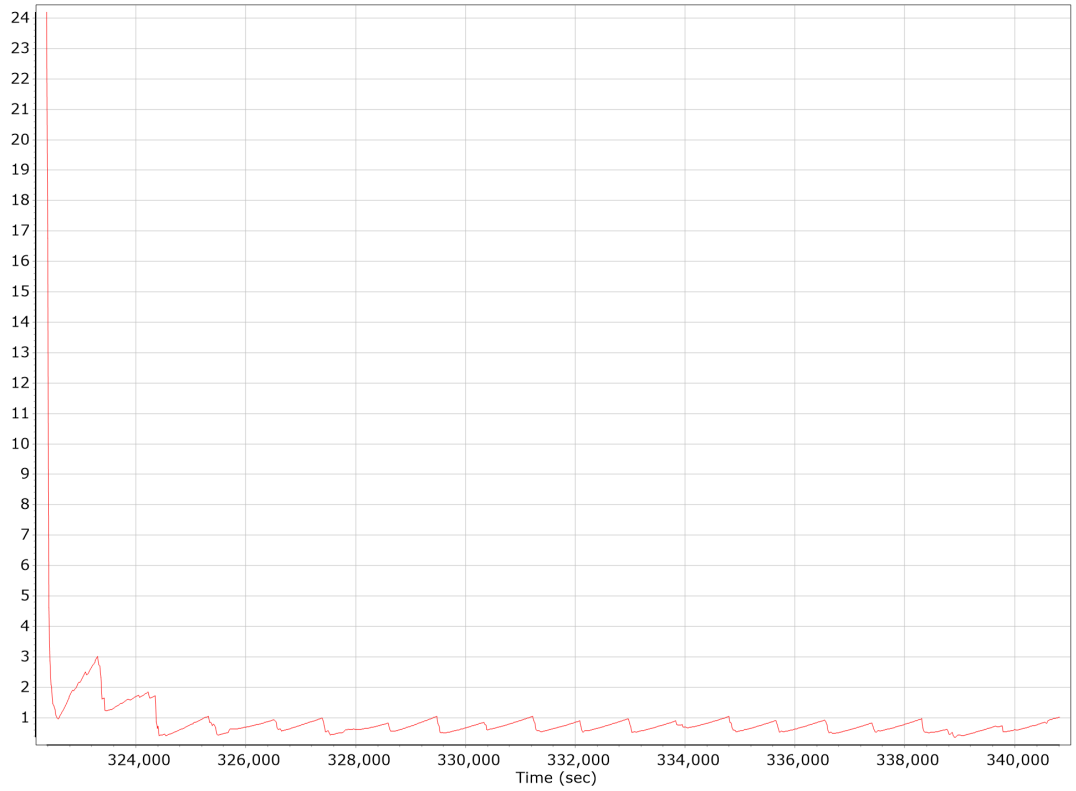
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

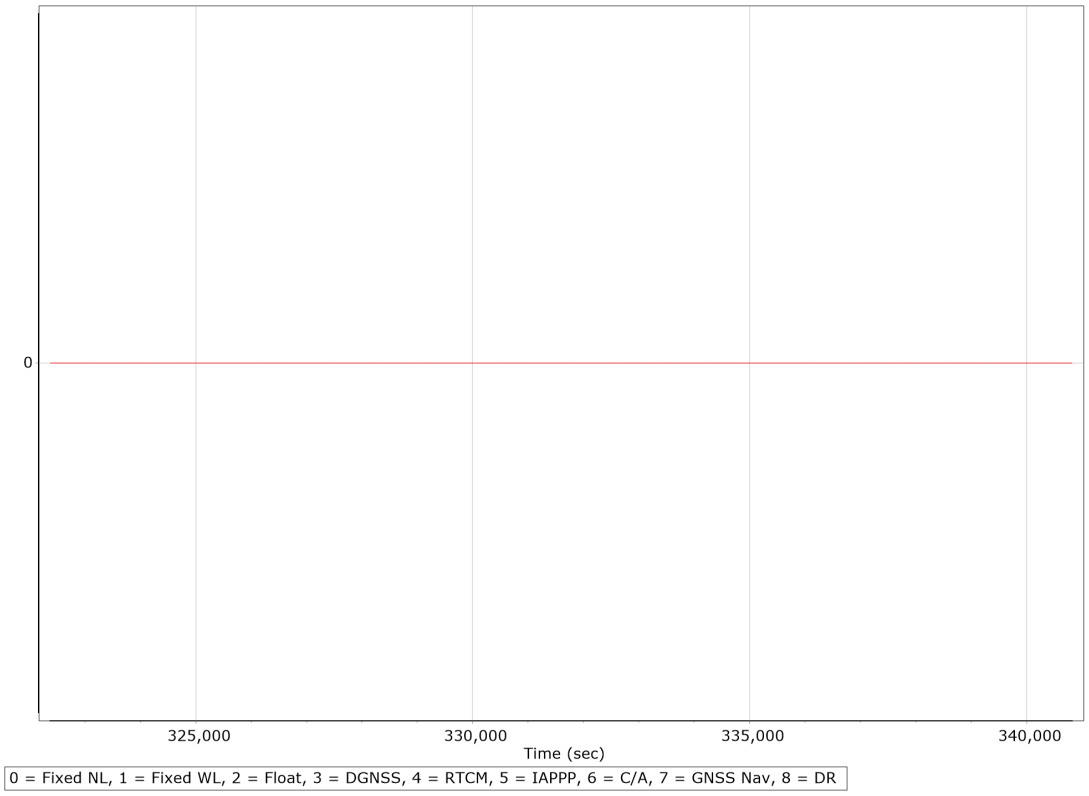


Heading Error RMS (arc-min)



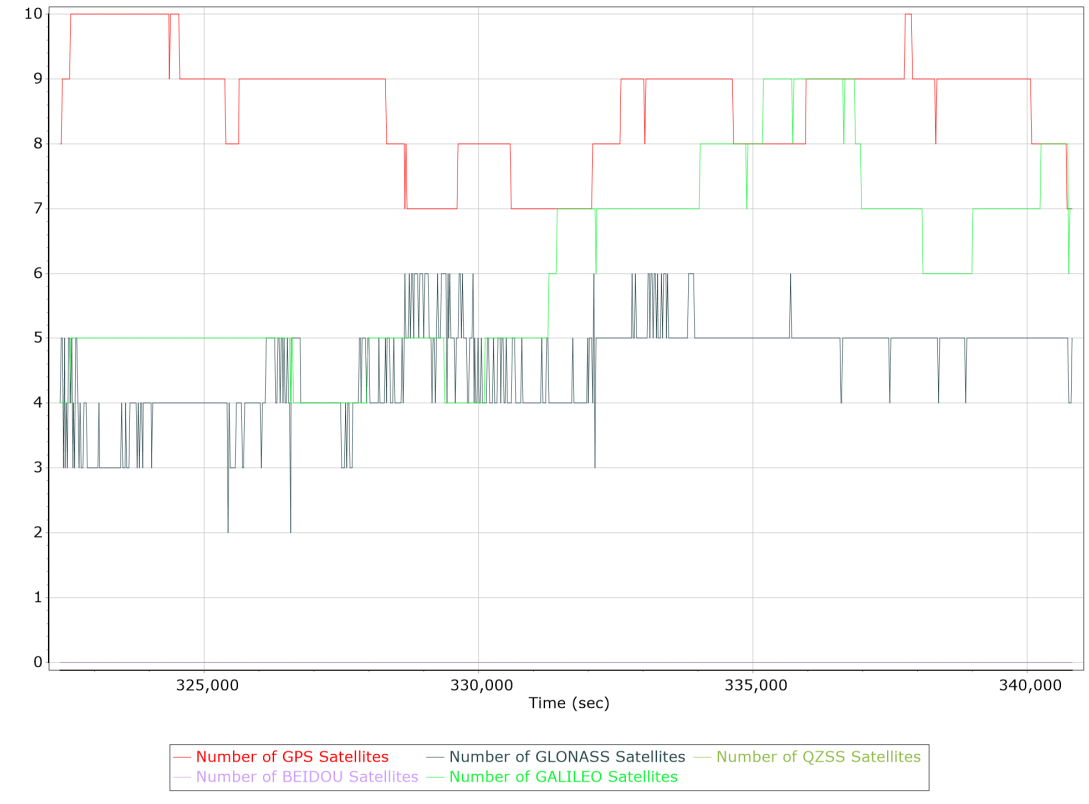
Forward Processed Solution Status

Processing Mode

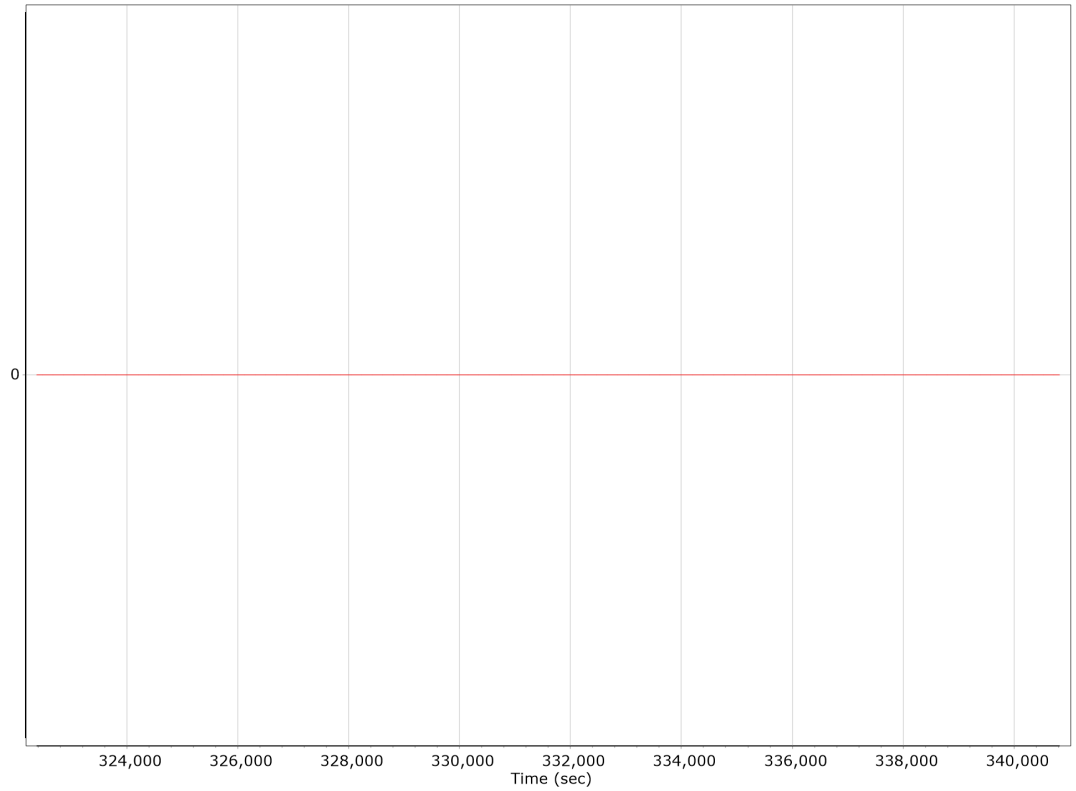


0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGNSS, 4 = RTCM, 5 = IAPPP, 6 = C/A, 7 = GNSS Nav, 8 = DR

Number of Satellites



Baseline Length



General Information

Mission Information

Project name	09272023B_4040
Processing date	2023-12-11 20:30:19
Mission date	2023-09-27 23:05:43
Mission duration	01:18:43.862
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N10451
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
230927_230524_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm2700.23g	GLONASS Broadcast Ephemeris
Ephm2700.23n	GPS Broadcast Ephemeris
Ephm2710.23g	GLONASS Broadcast Ephemeris
Ephm2710.23n	GPS Broadcast Ephemeris
IGS0OPSFIN_20232690000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232700000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232710000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232720000_01D_15M_ORB.SP3	GPS Precise Ephemeris

Output Files

Filename	File type
sbet_09272023B_4040.out	SBET Trajectory File

Rover Data Summary

First raw data file	230927_230524_INS-GPS_1.raw		
Last raw data file	230927_230524_INS-GPS_1.raw		
Start GPS week	2281		
Start time	342324.319 (9/27/2023 11:05:24 PM)		
End time	347048.181 (9/28/2023 12:24:08 AM)		
Start of fine alignment	342513.058 (9/27/2023 11:08:33 PM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.000	0.000	-0.900
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

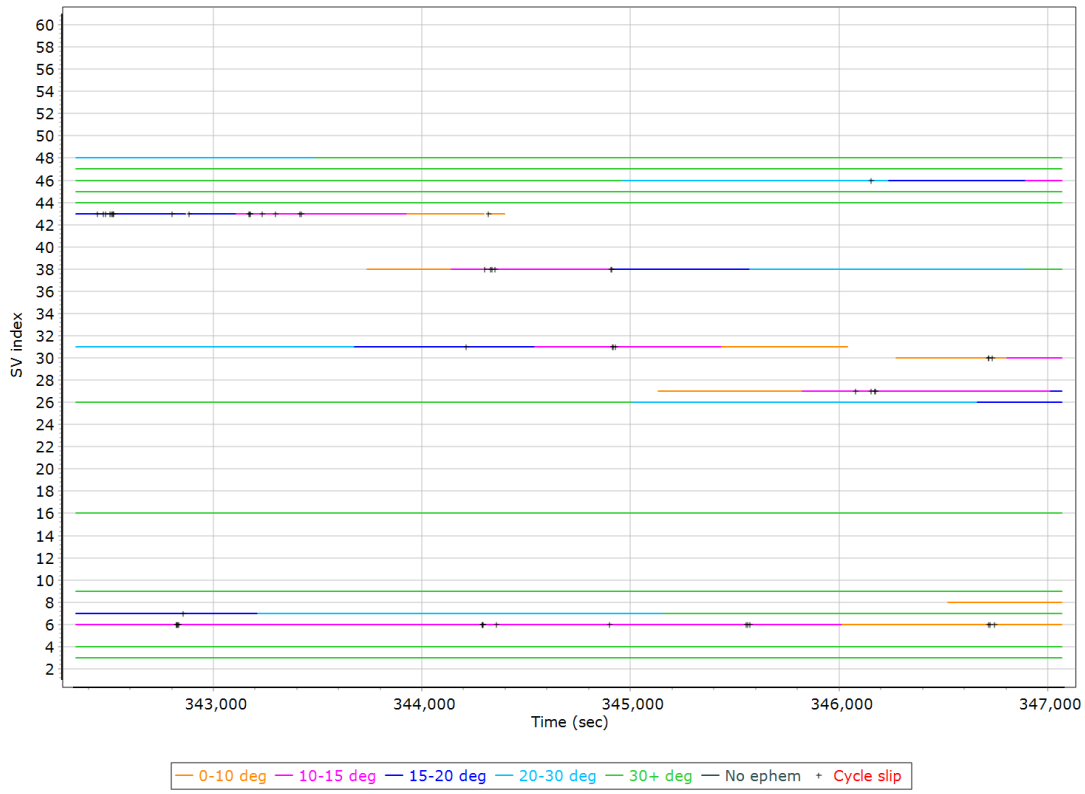
Rover Data QC

Raw IMU Import QC Summary

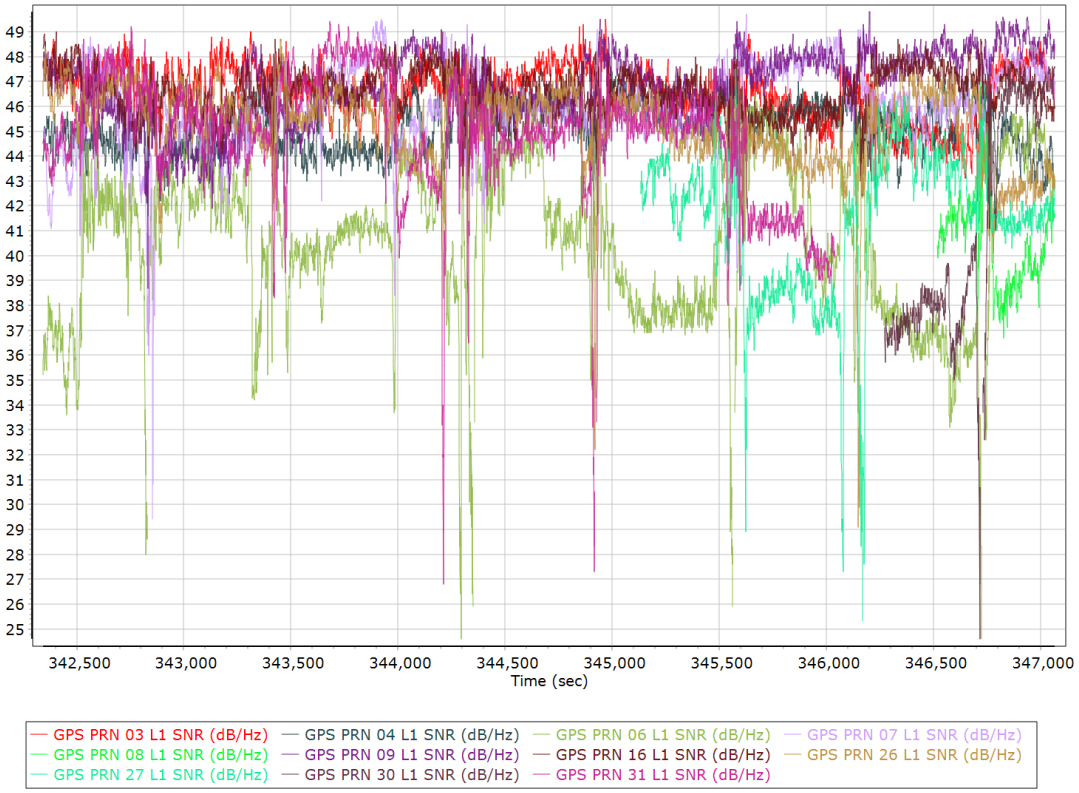
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_09272023B_4040.log
IMU Records Processed	944795
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

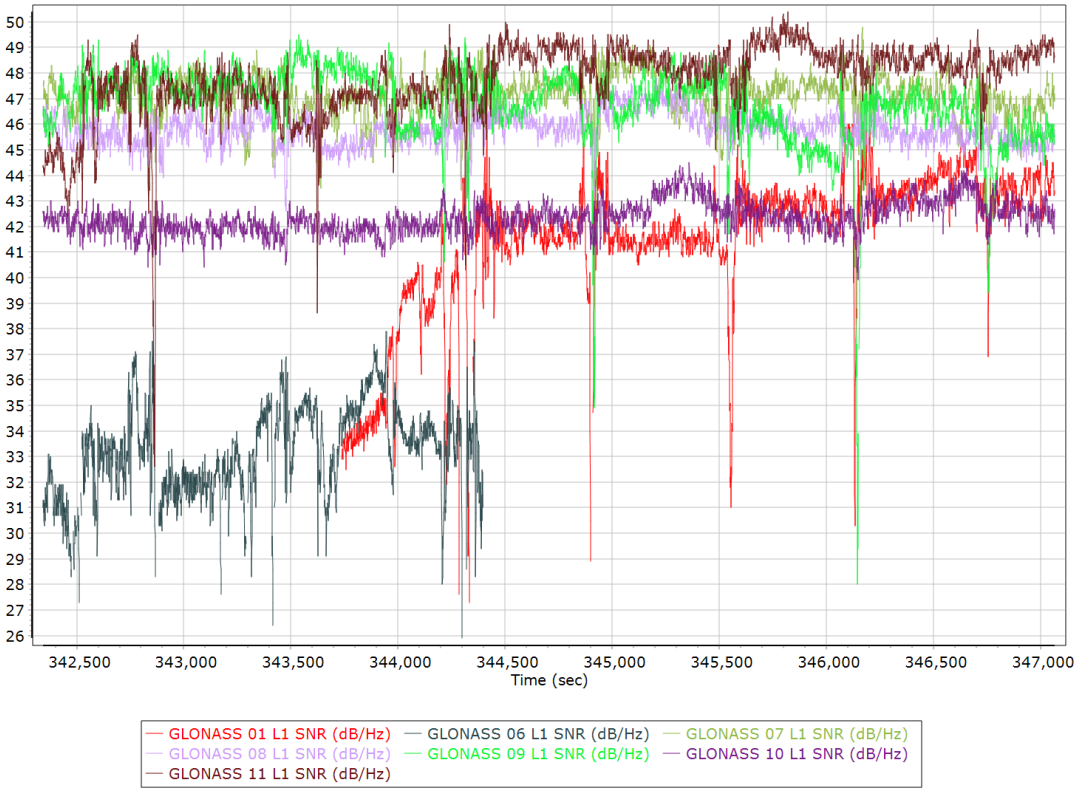
GPS/GLONASS L1 Satellite Lock/Elevation



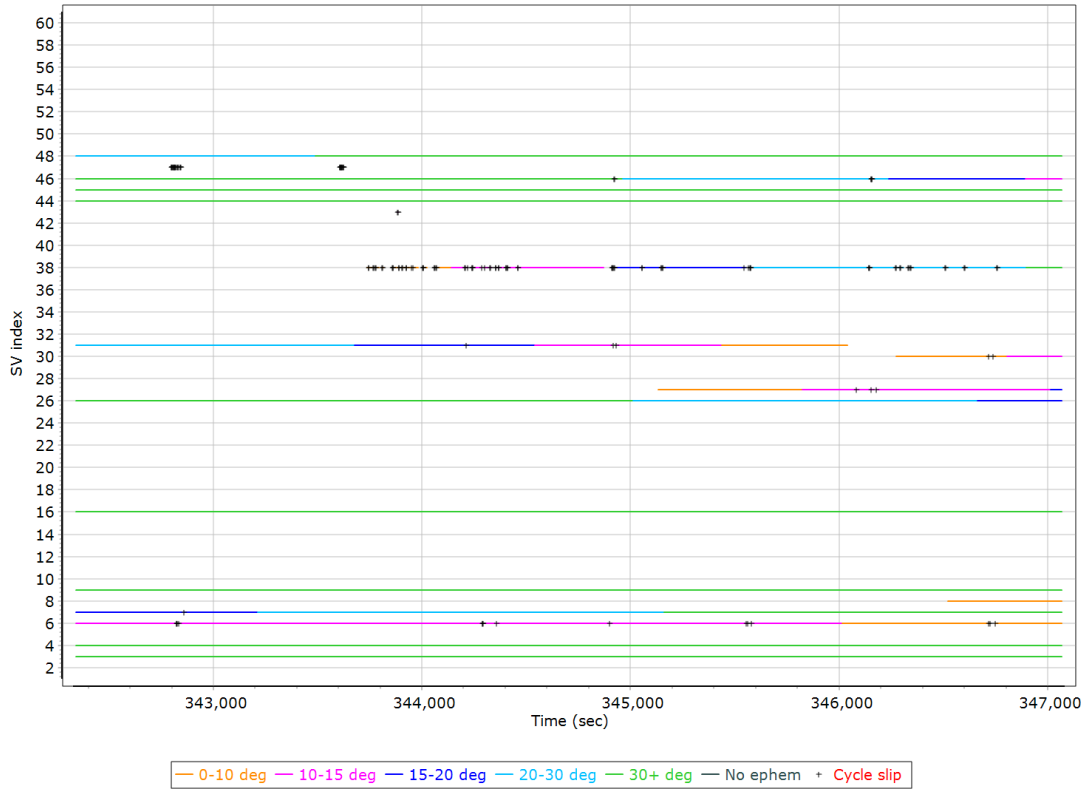
GPS L1 SNR



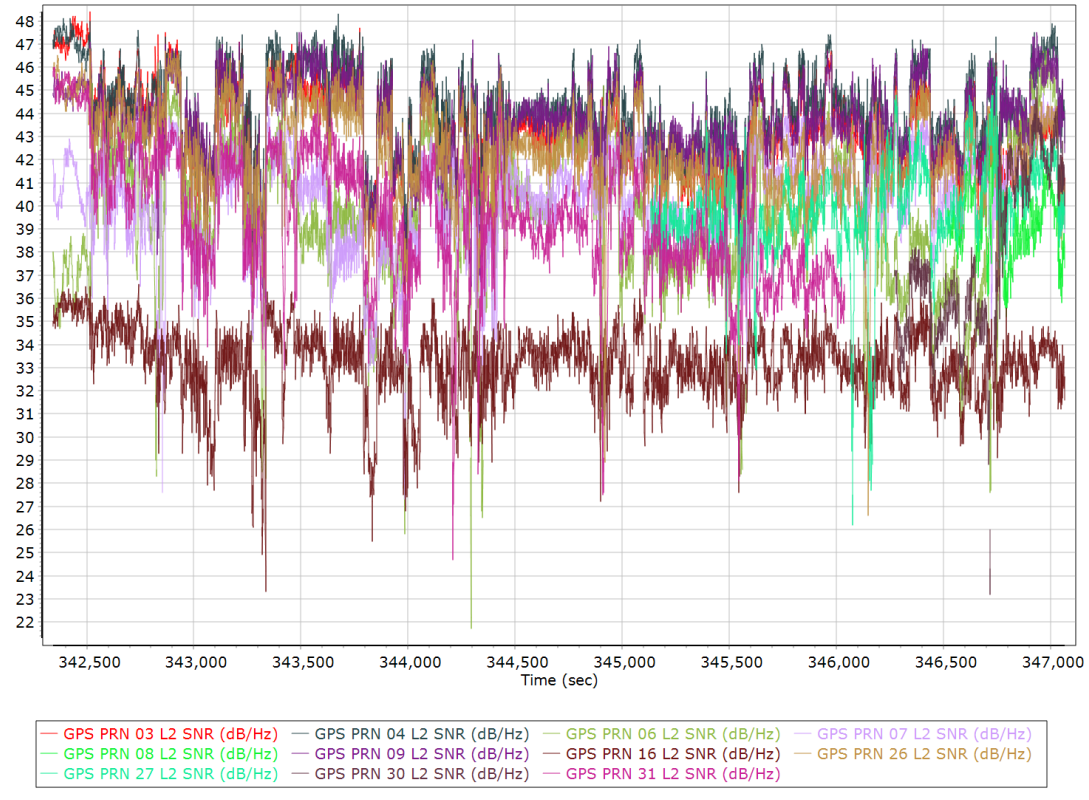
GLONASS L1 SNR



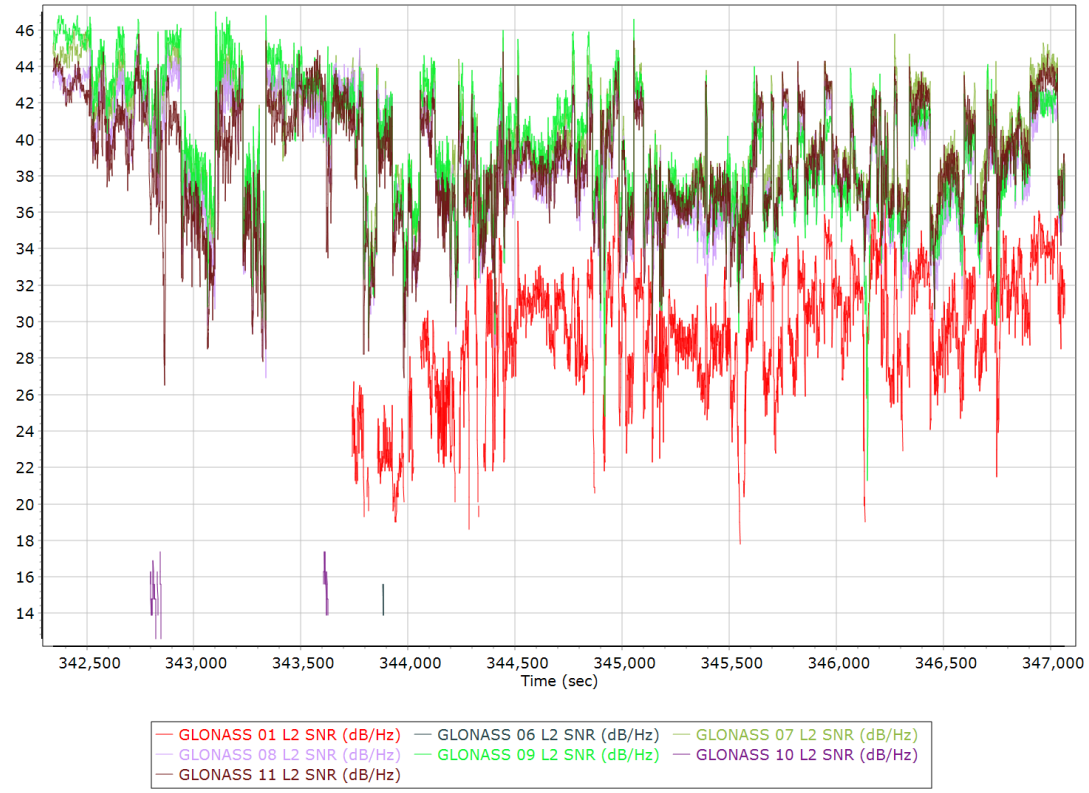
GPS/GLONASS L2 Satellite Lock/Elevation



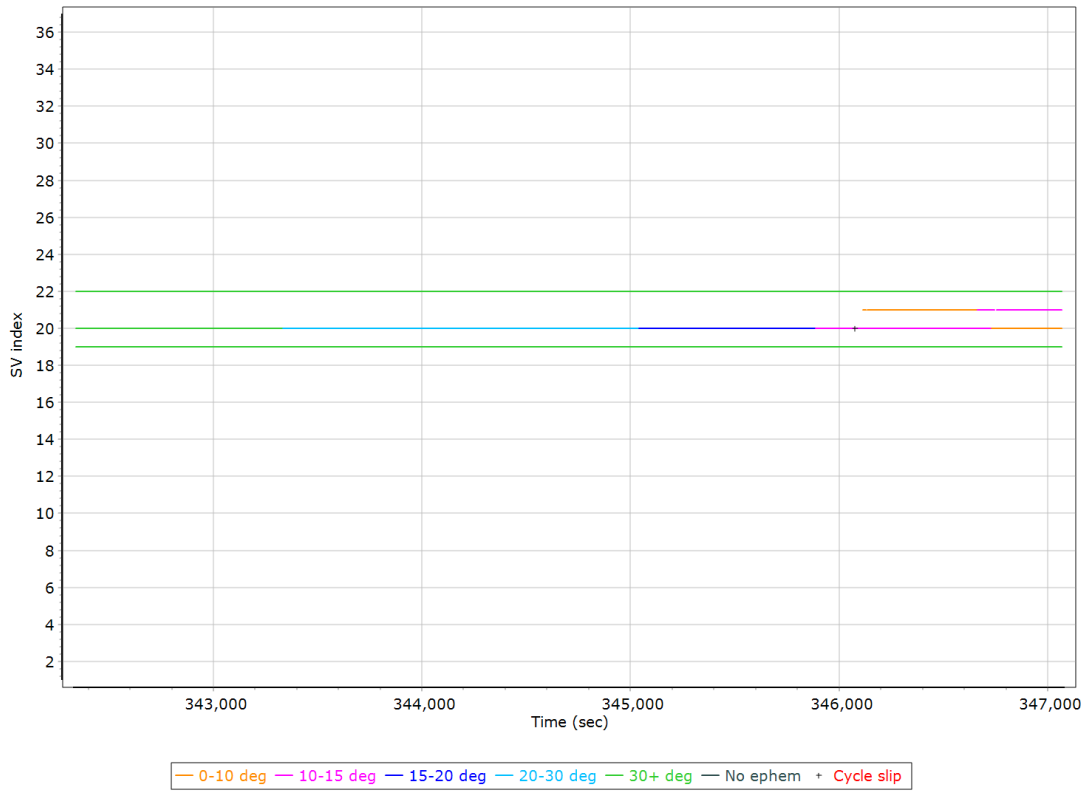
GPS L2 SNR



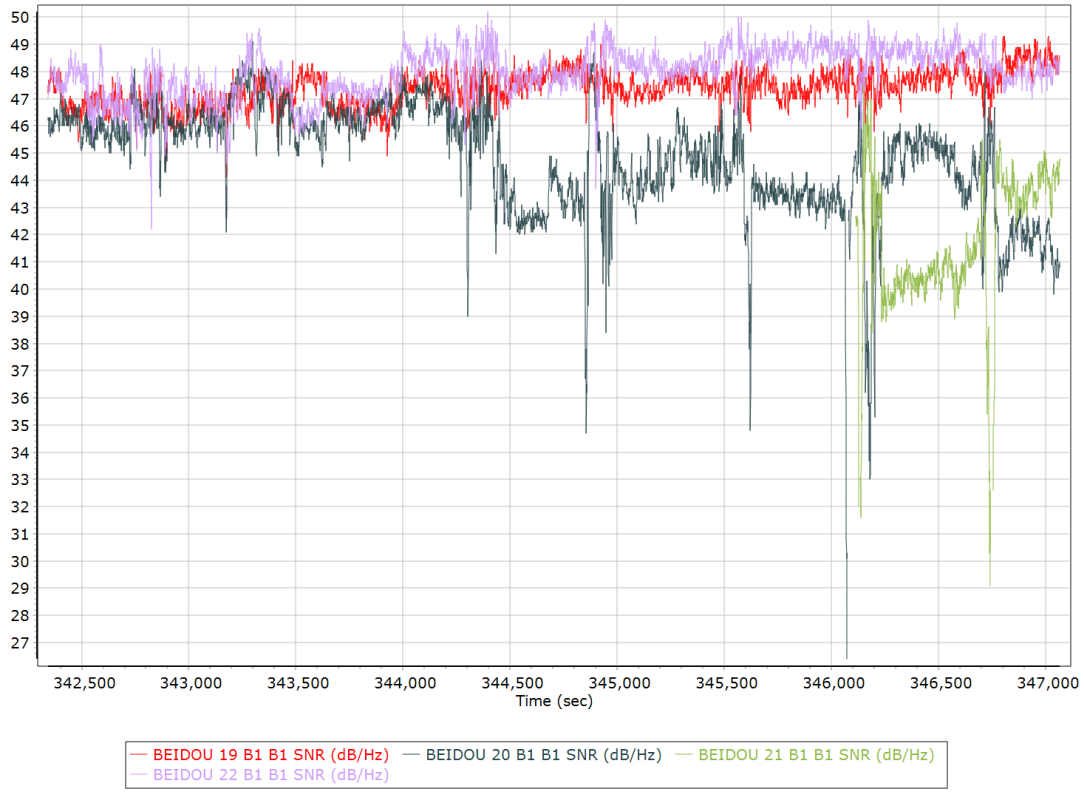
GLONASS L2 SNR



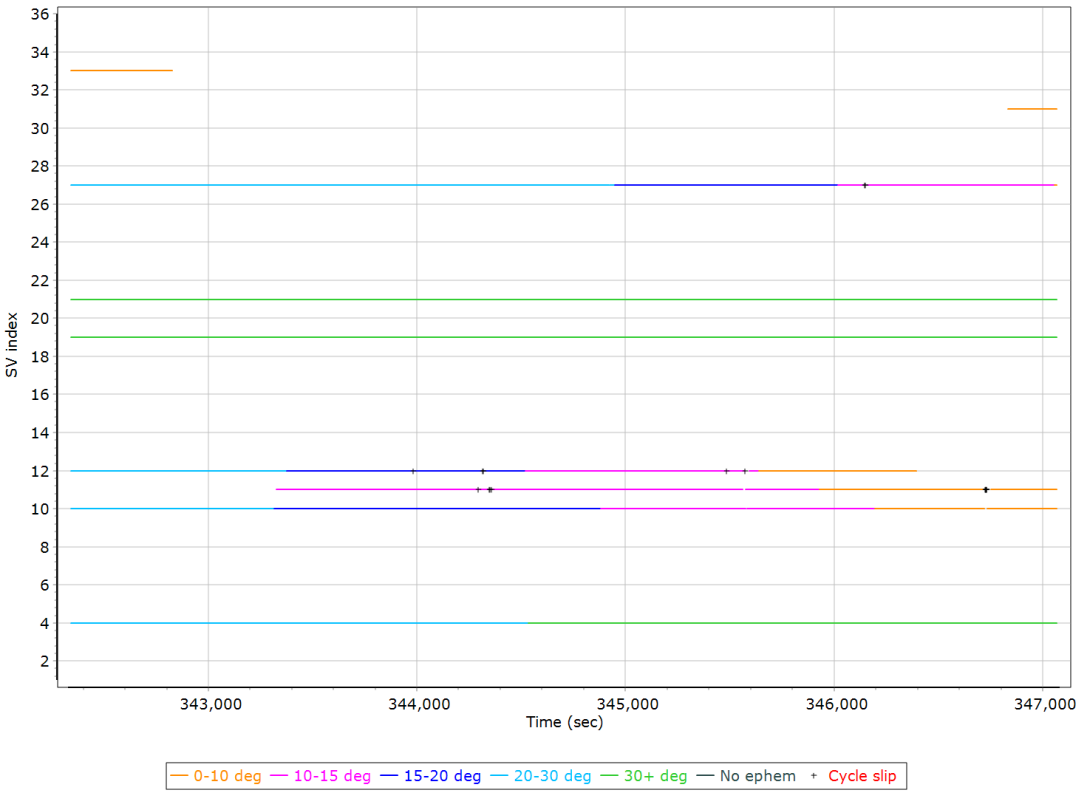
BEIDOU Satellite Lock/Elevation



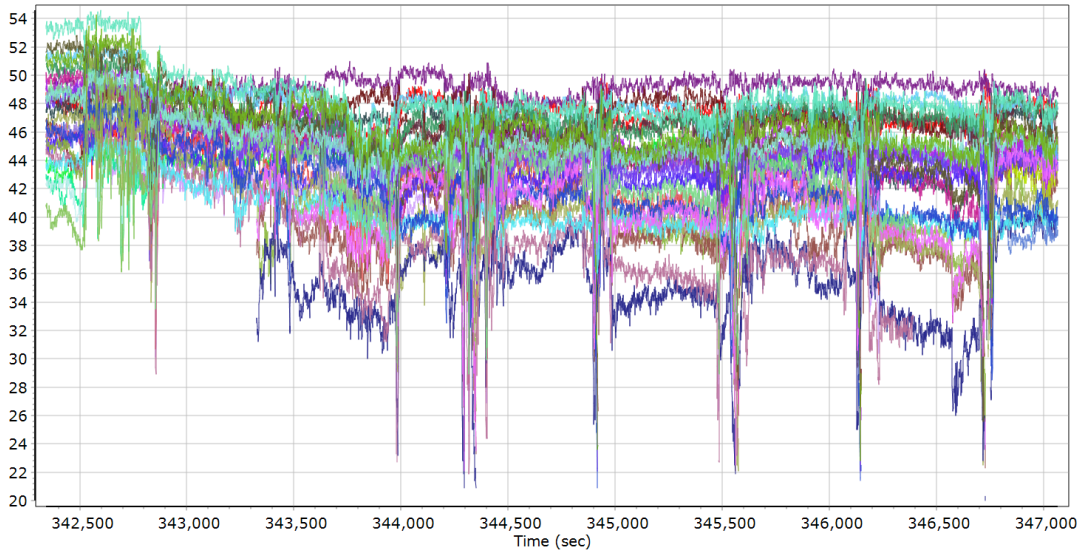
BEIDOU SNR

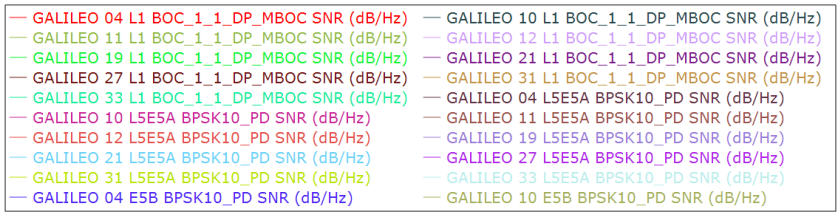


GALILEO Satellite Lock/Elevation



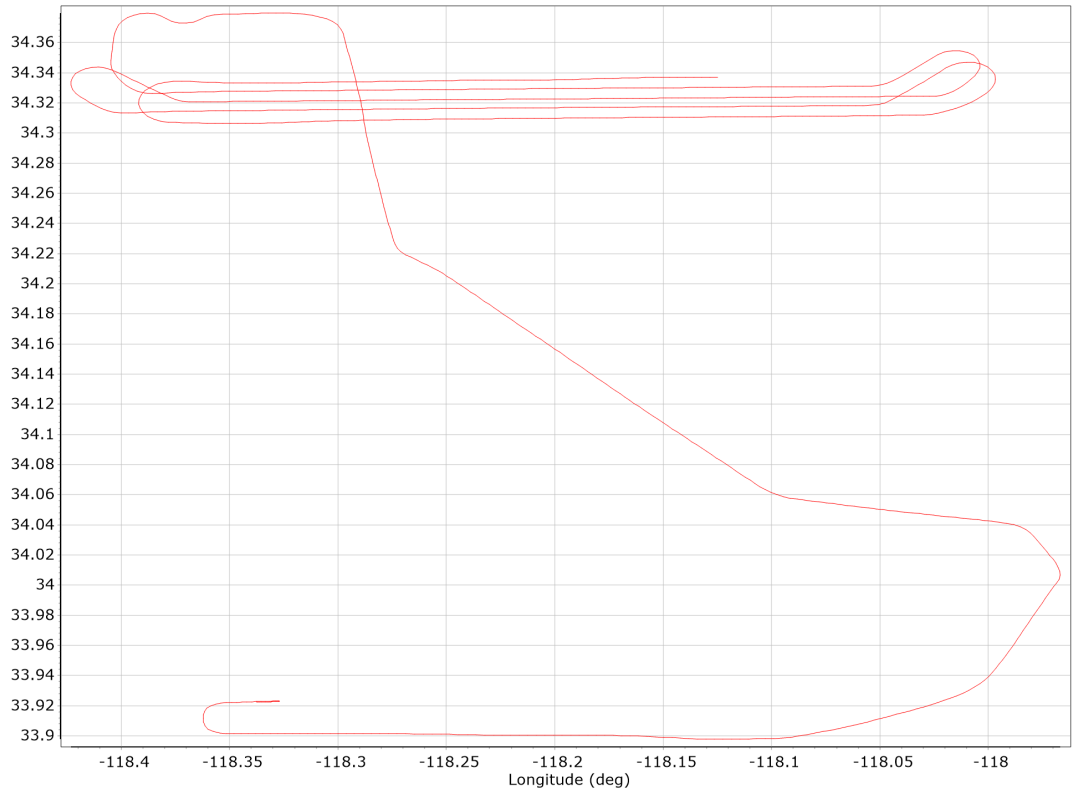
GALILEO SNR


54
52
50
48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
342,500
343,000
343,500
344,000
344,500
345,000
345,500
346,000
346,500
347,000
Time (sec)

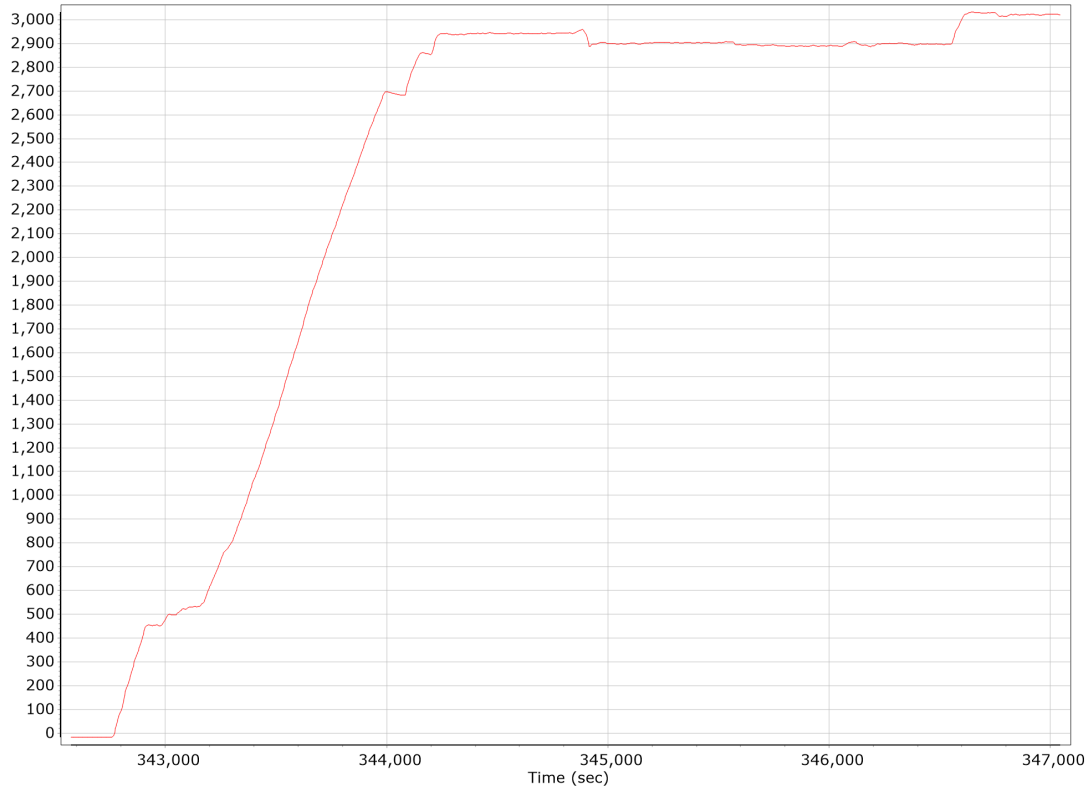

GALILEO 04 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 10 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 11 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 12 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 19 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 21 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 27 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 31 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 33 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 04 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 10 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 11 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 12 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 19 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 21 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 27 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 31 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 33 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 04 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 10 E5B BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

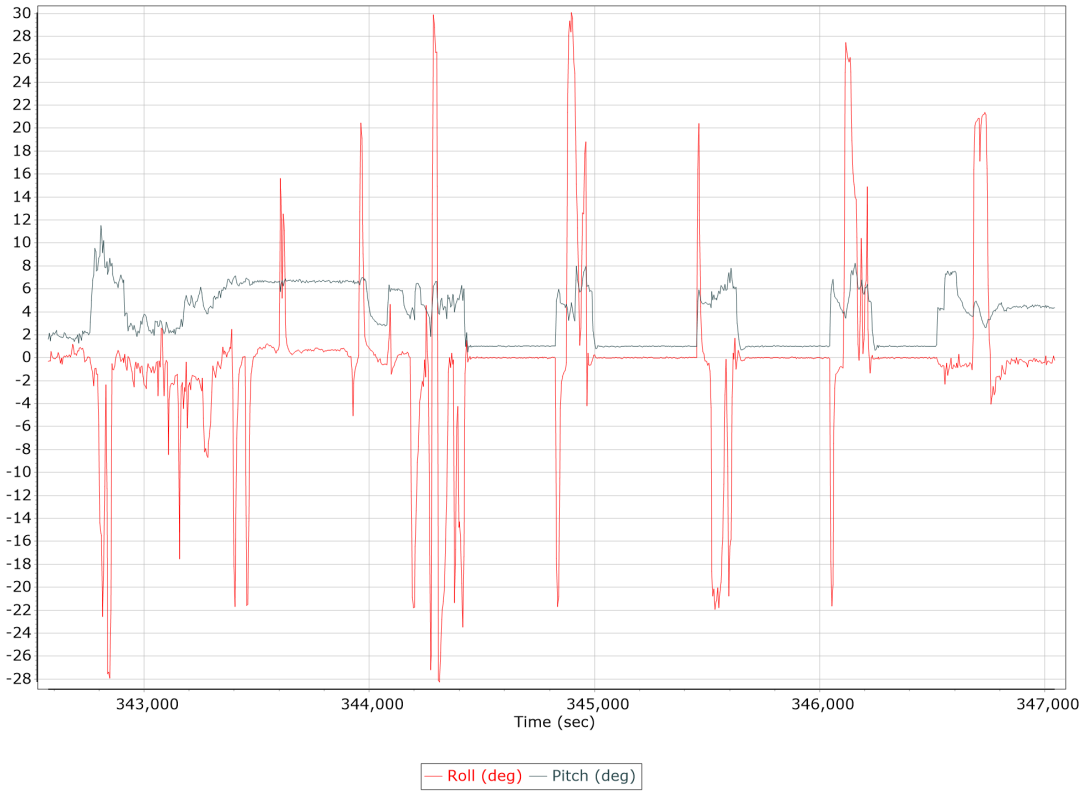
Top View



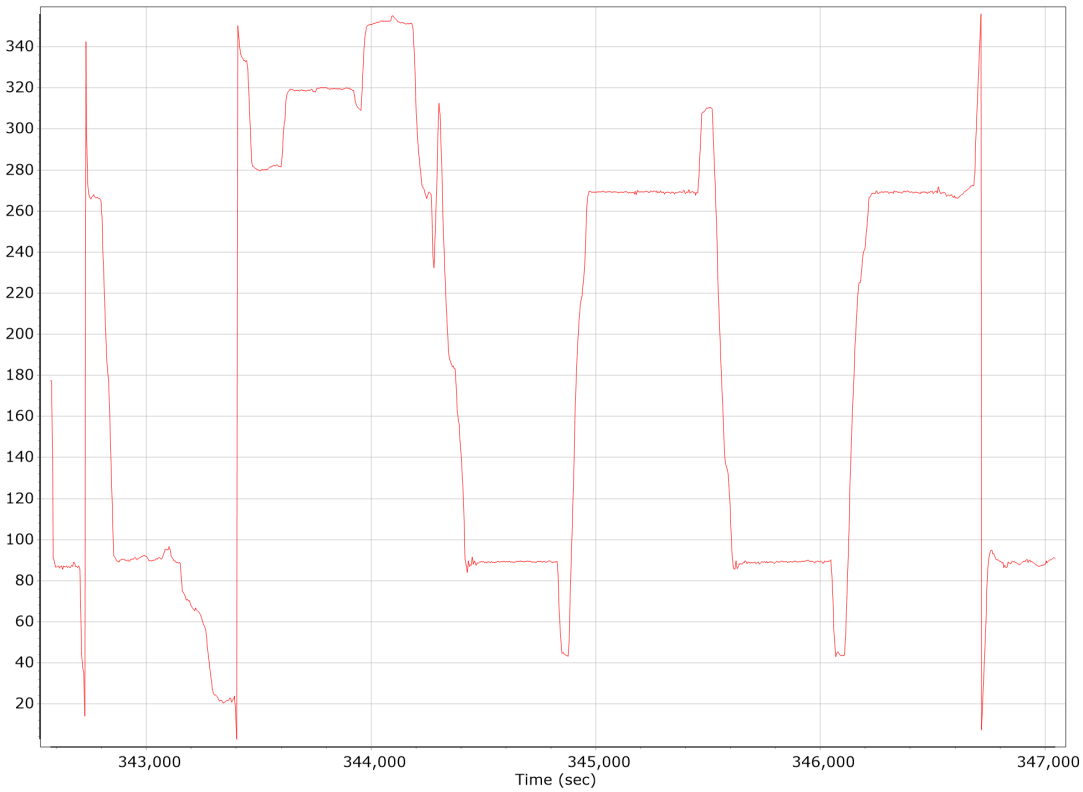
Altitude



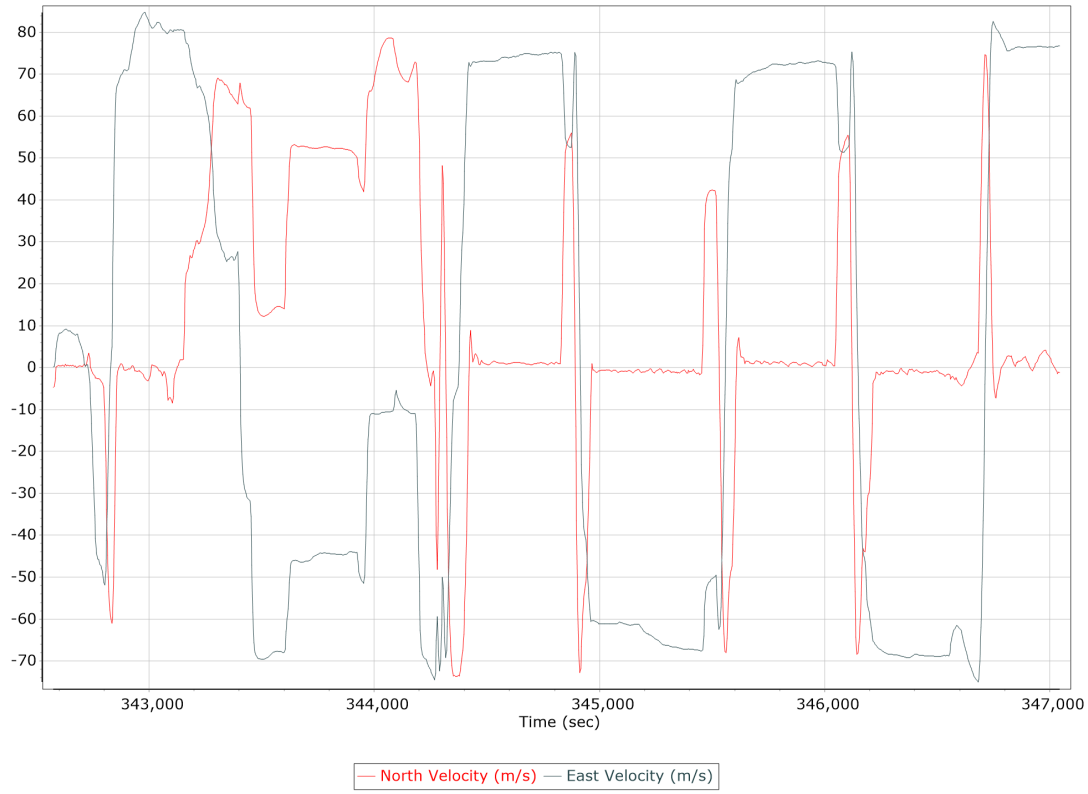
Roll/Pitch



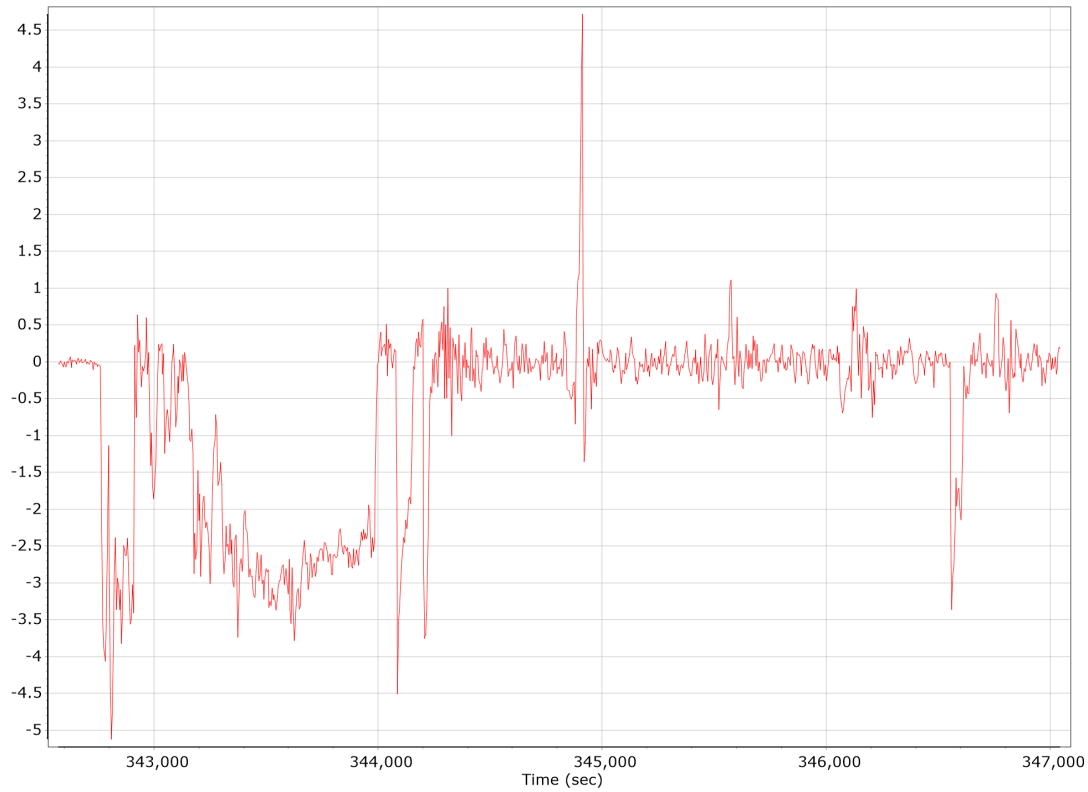
Heading



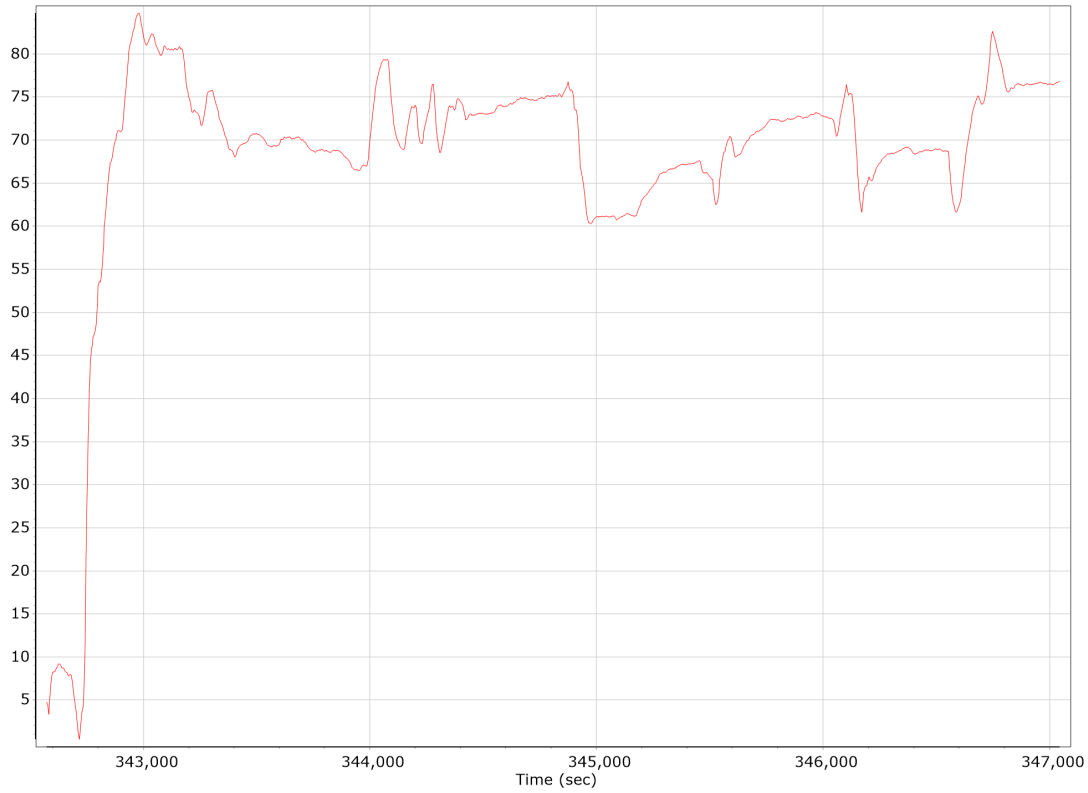
North/East Velocity



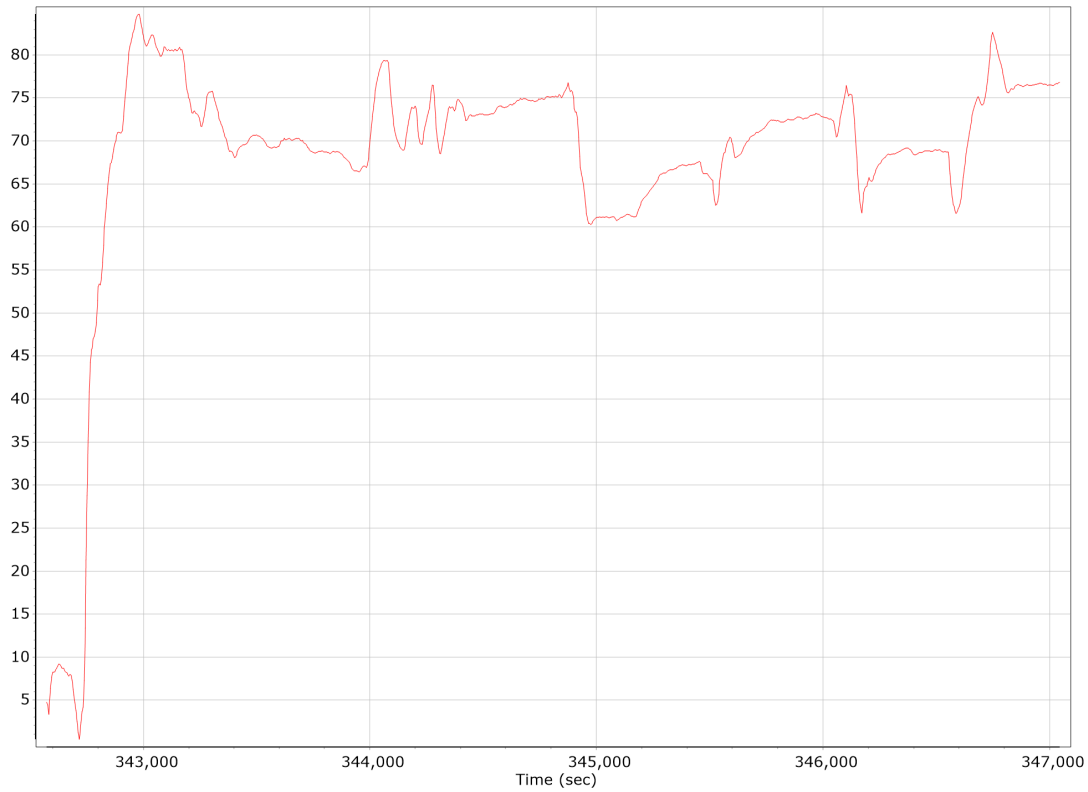
Down Velocity



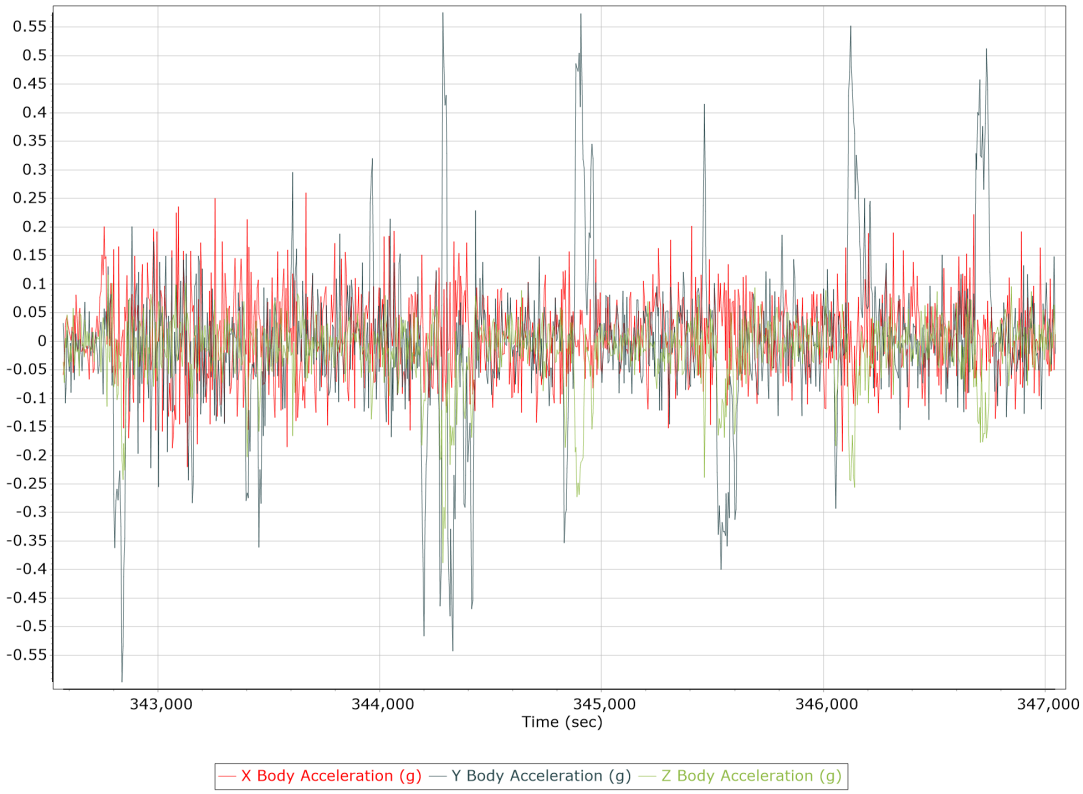
Total Speed



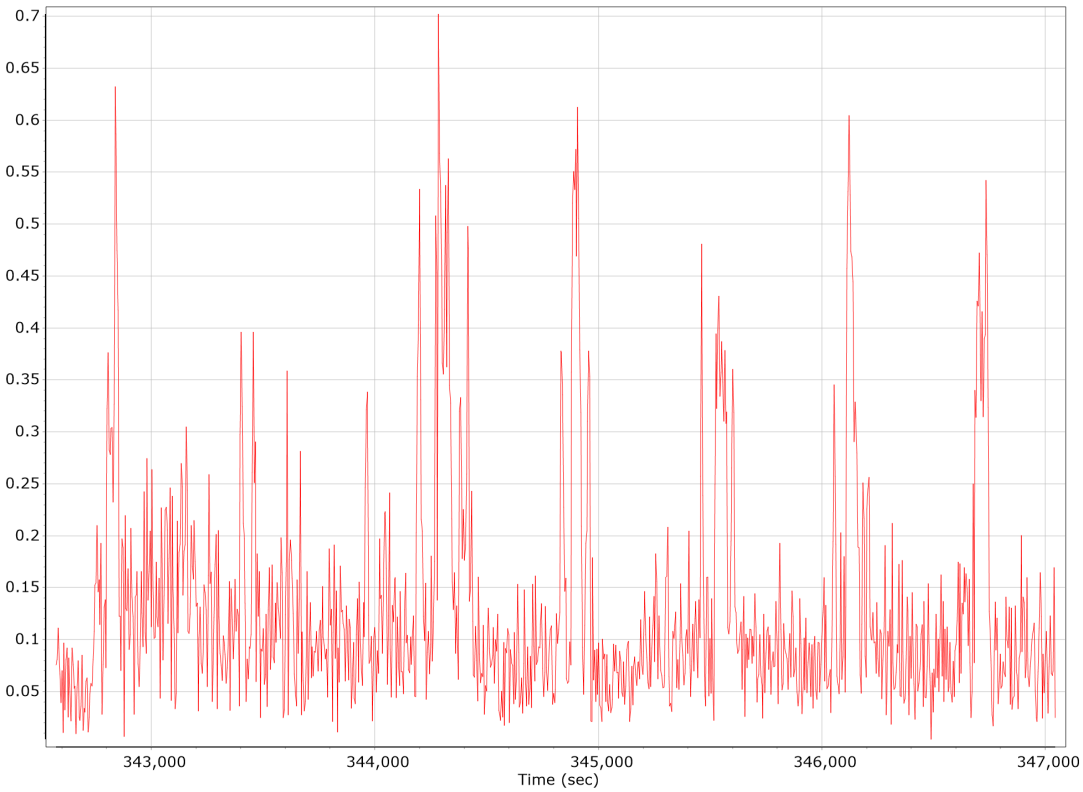
Ground Speed



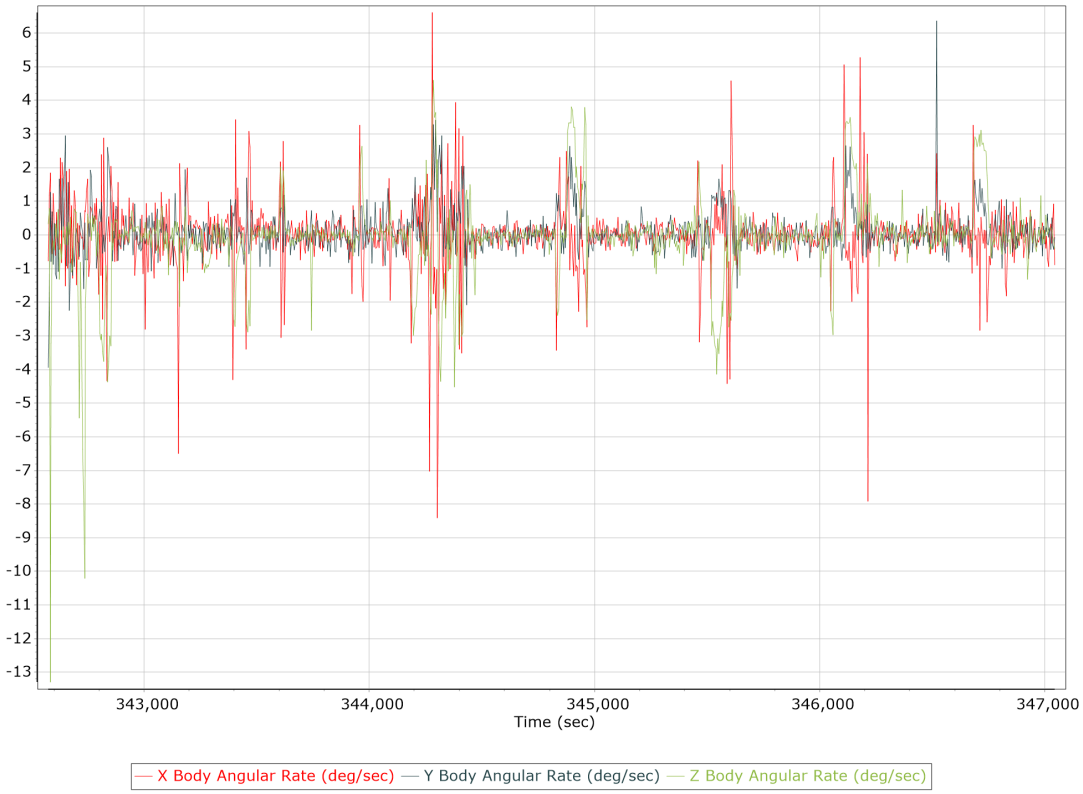
Body Acceleration



Total Body Acceleration

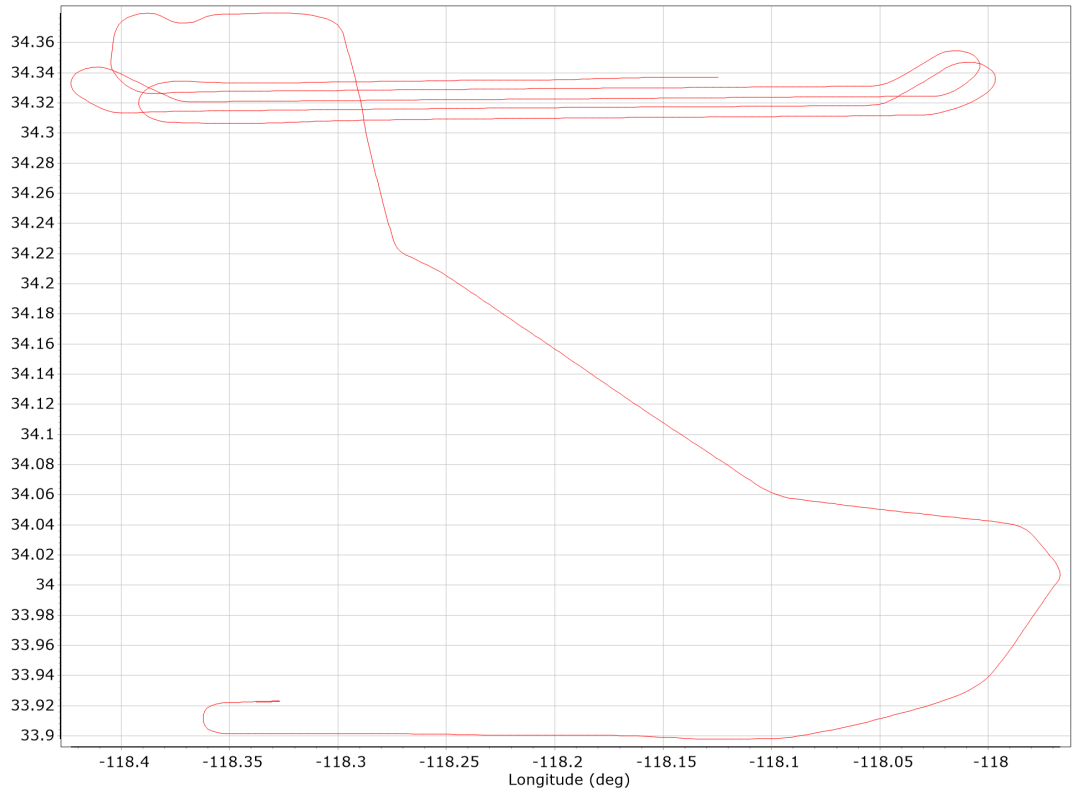


Body Angular Rate

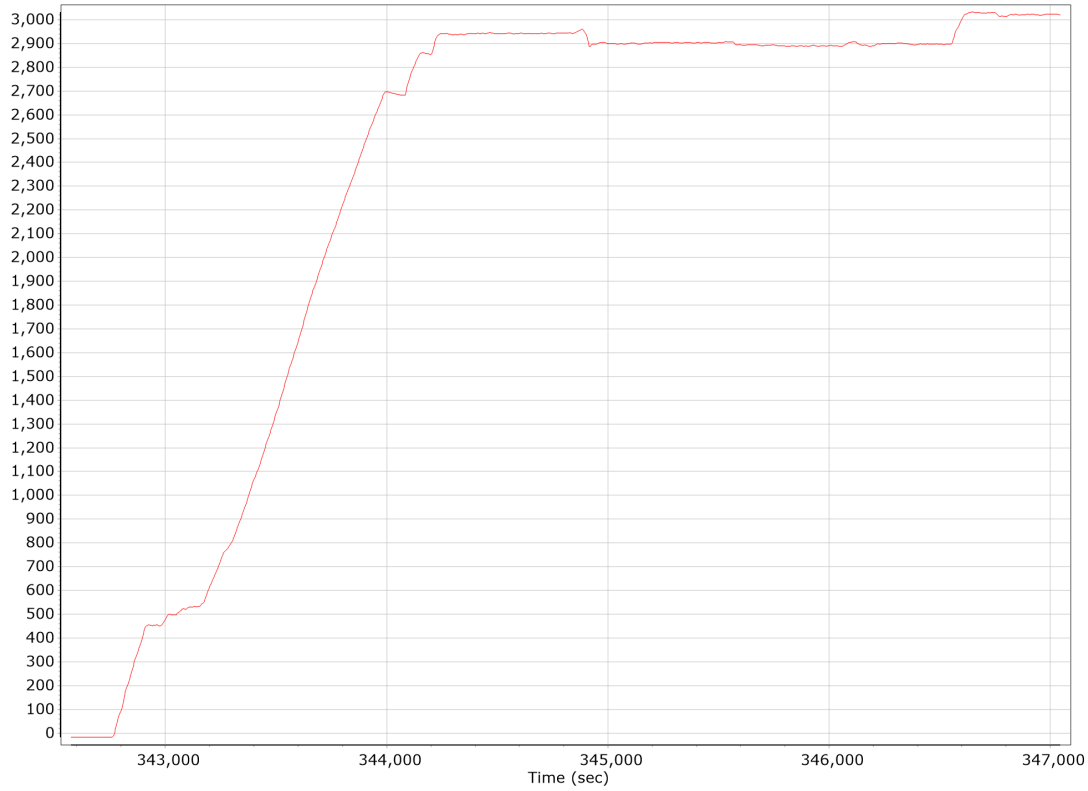


Forward Processed Trajectory Information

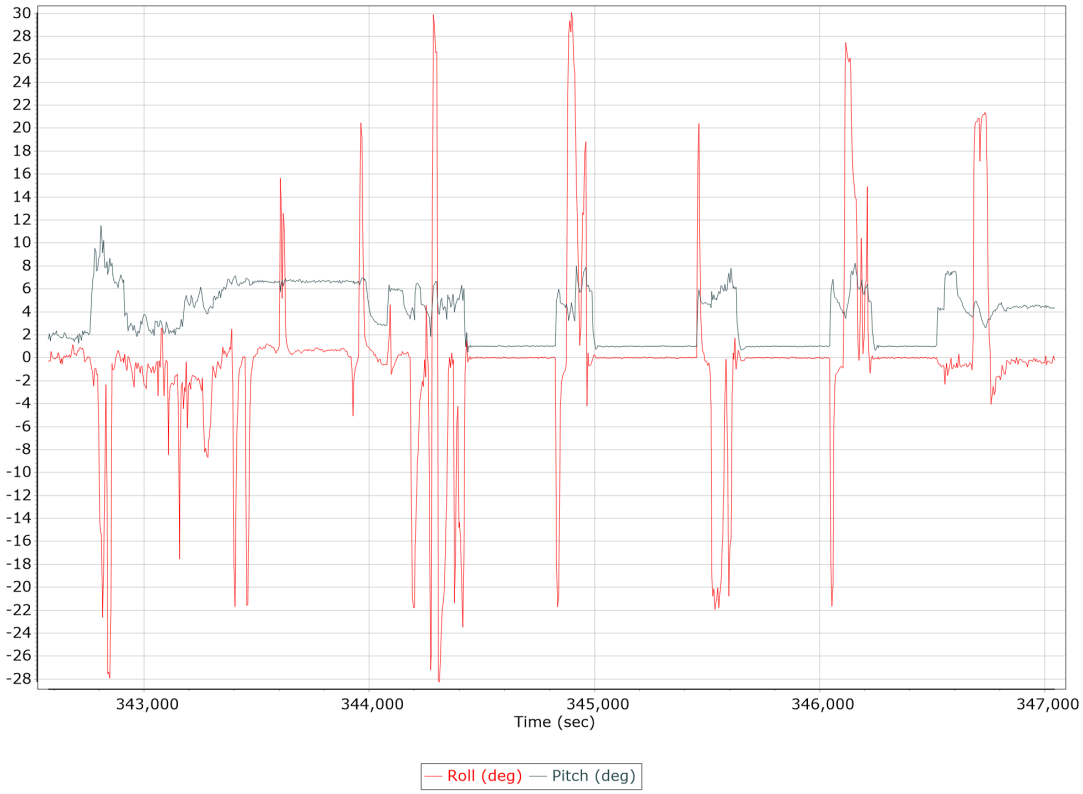
Top View



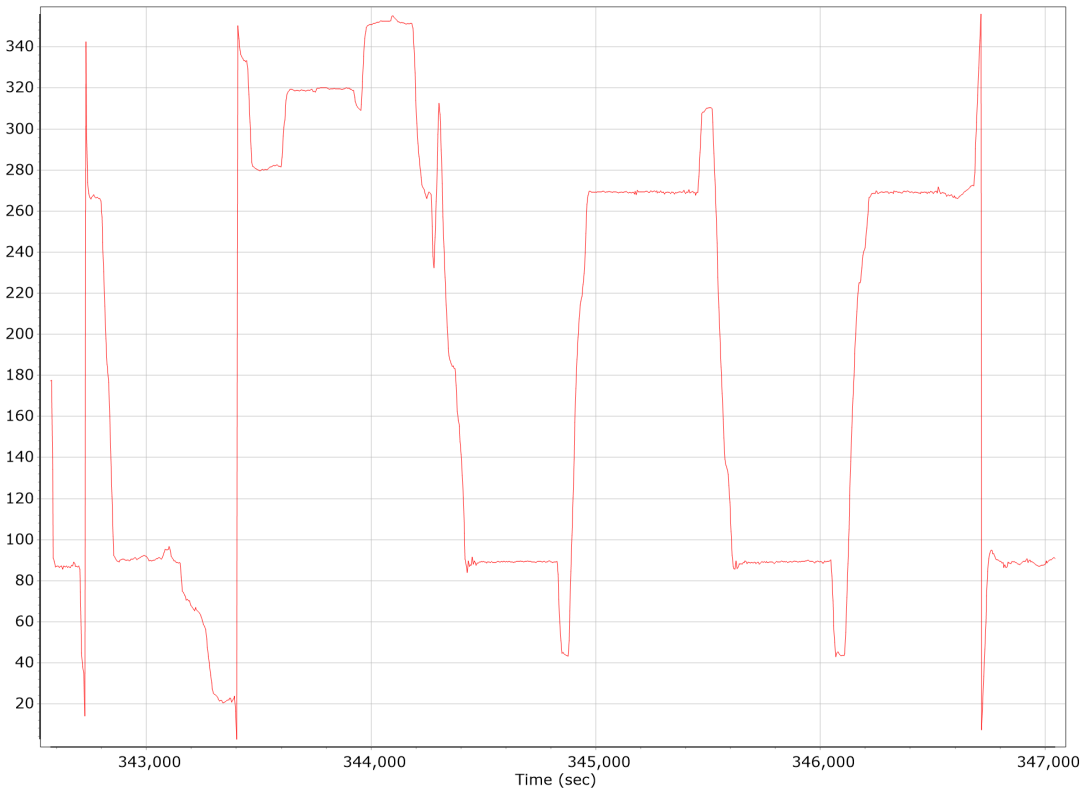
Altitude



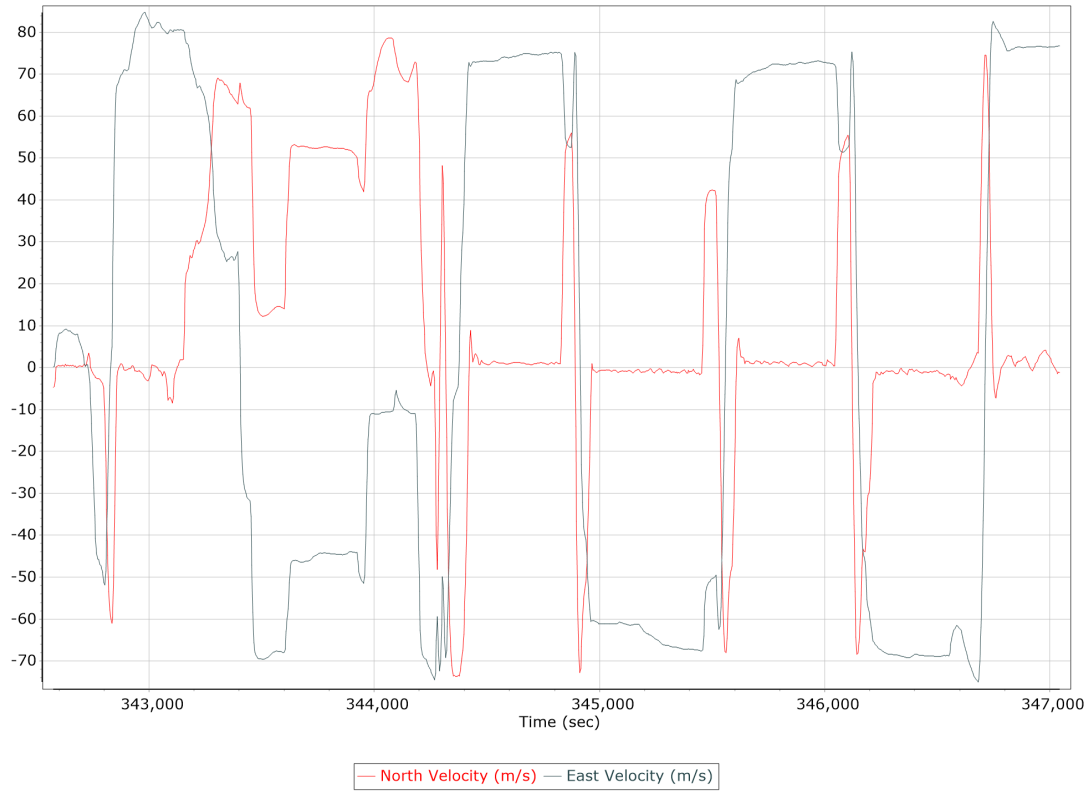
Roll/Pitch



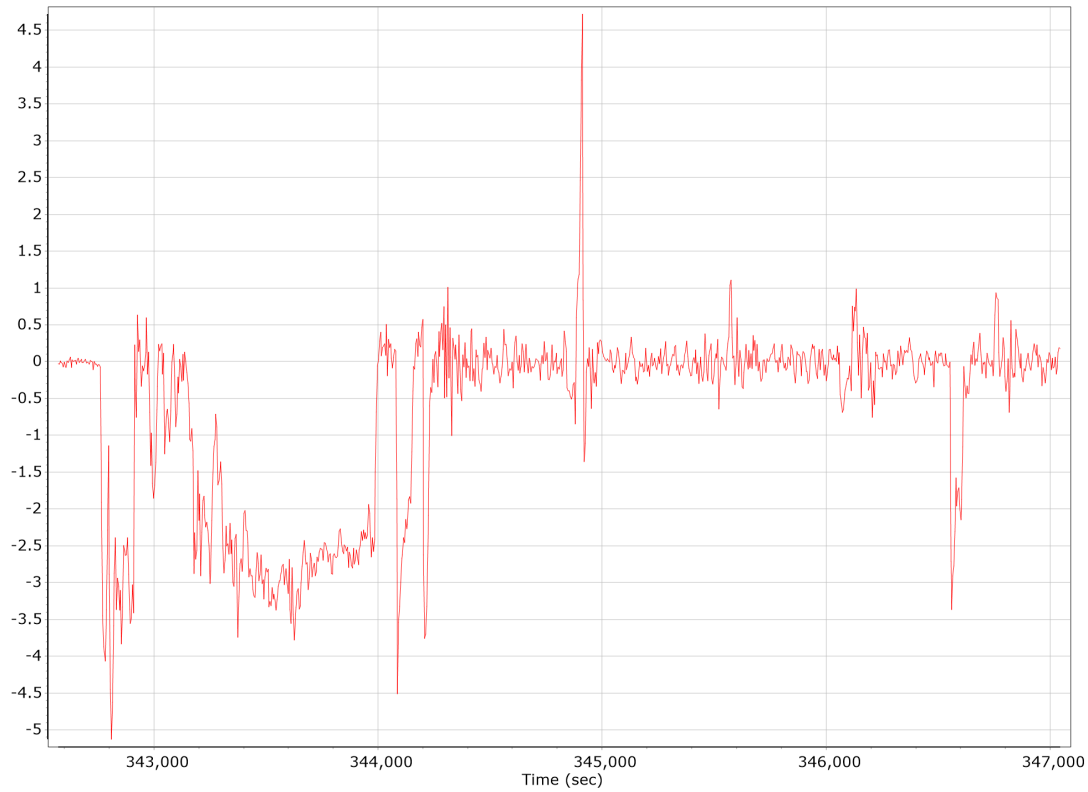
Heading



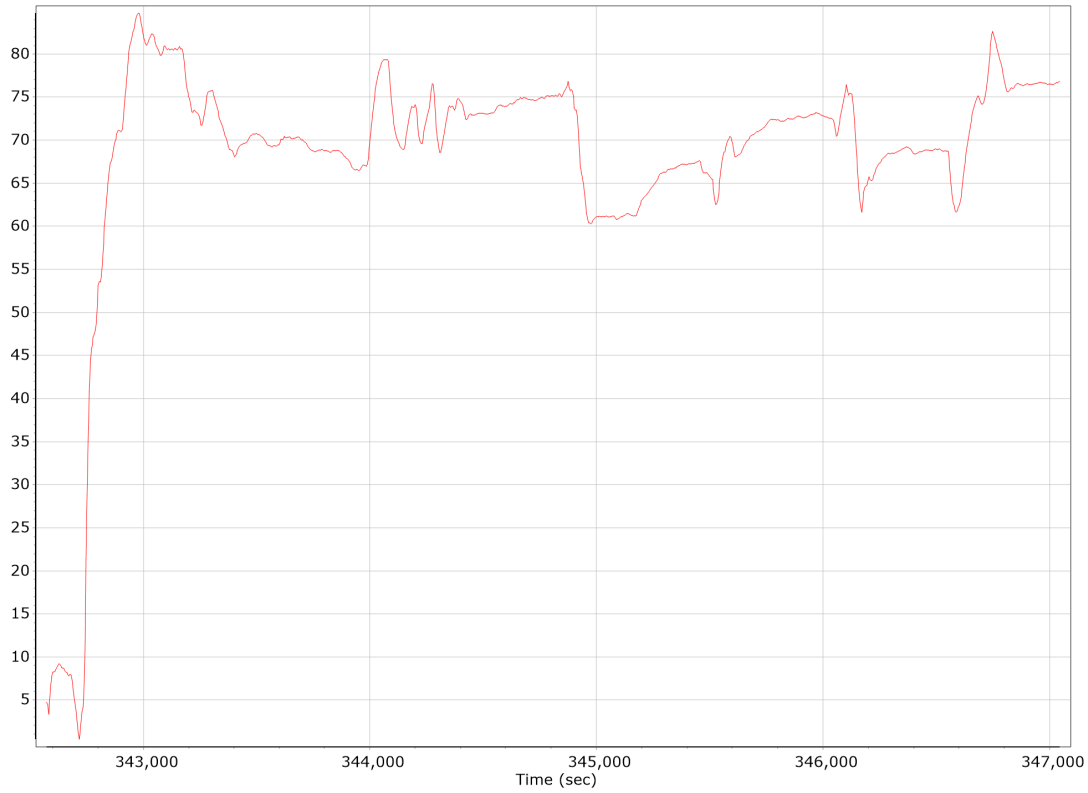
North/East Velocity



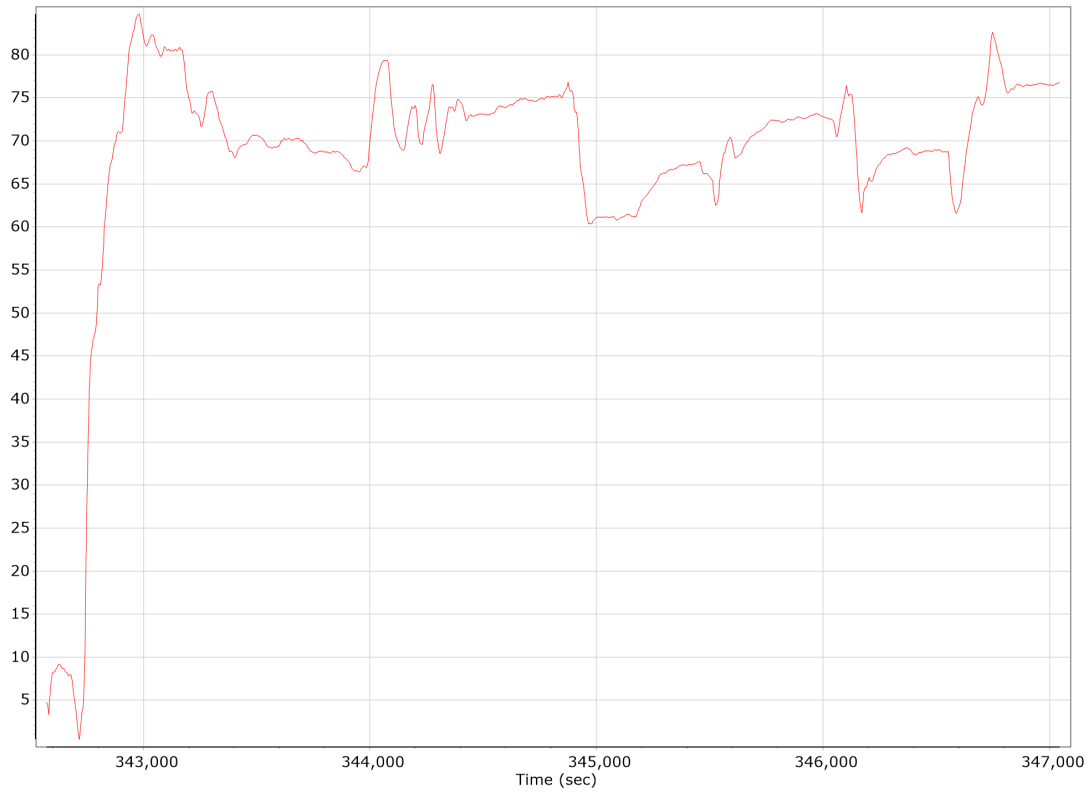
Down Velocity



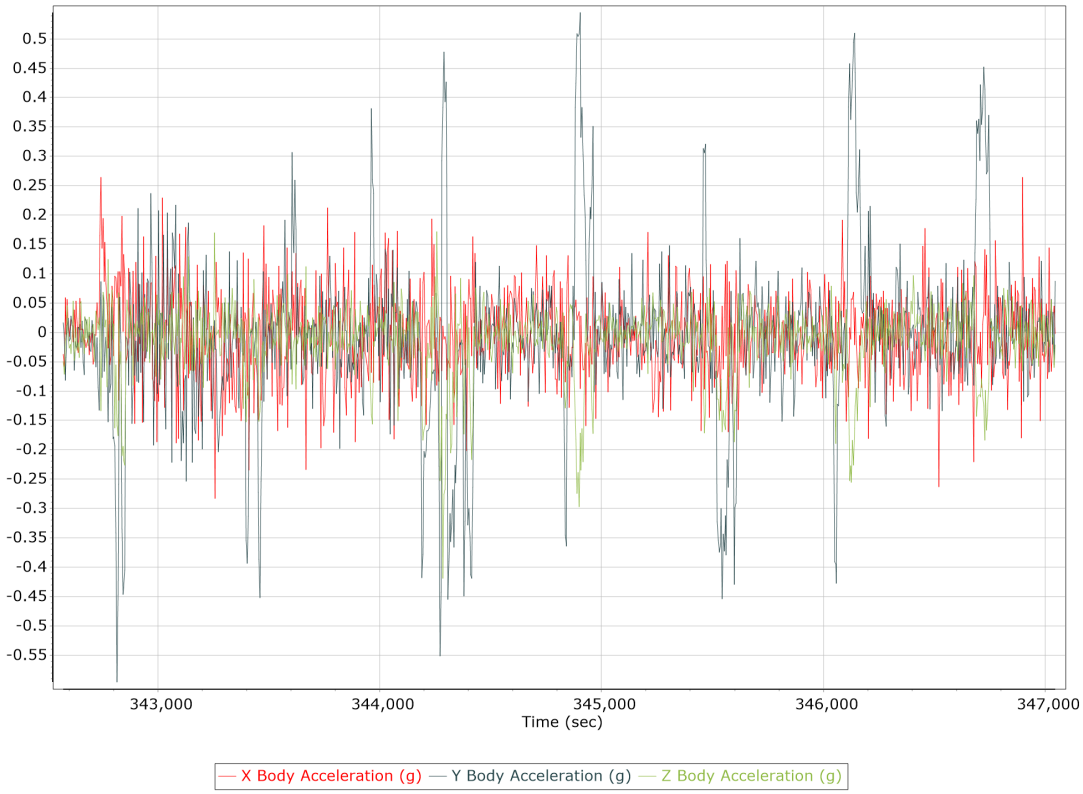
Total Speed



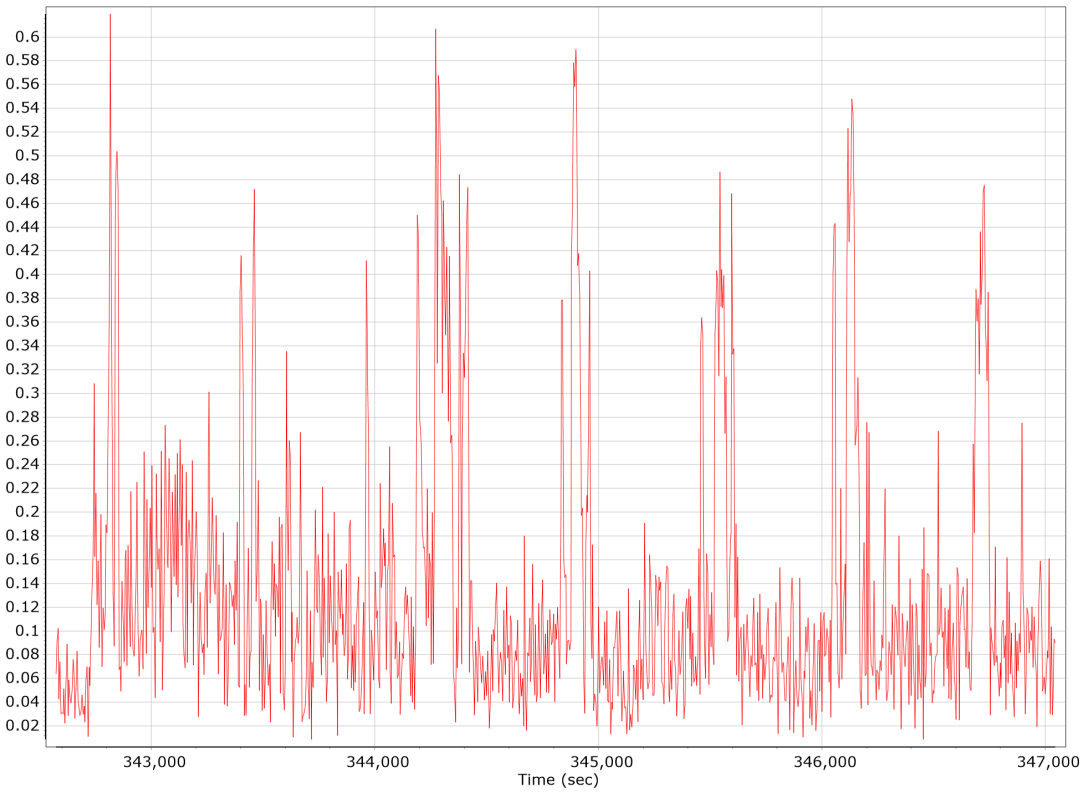
Ground Speed



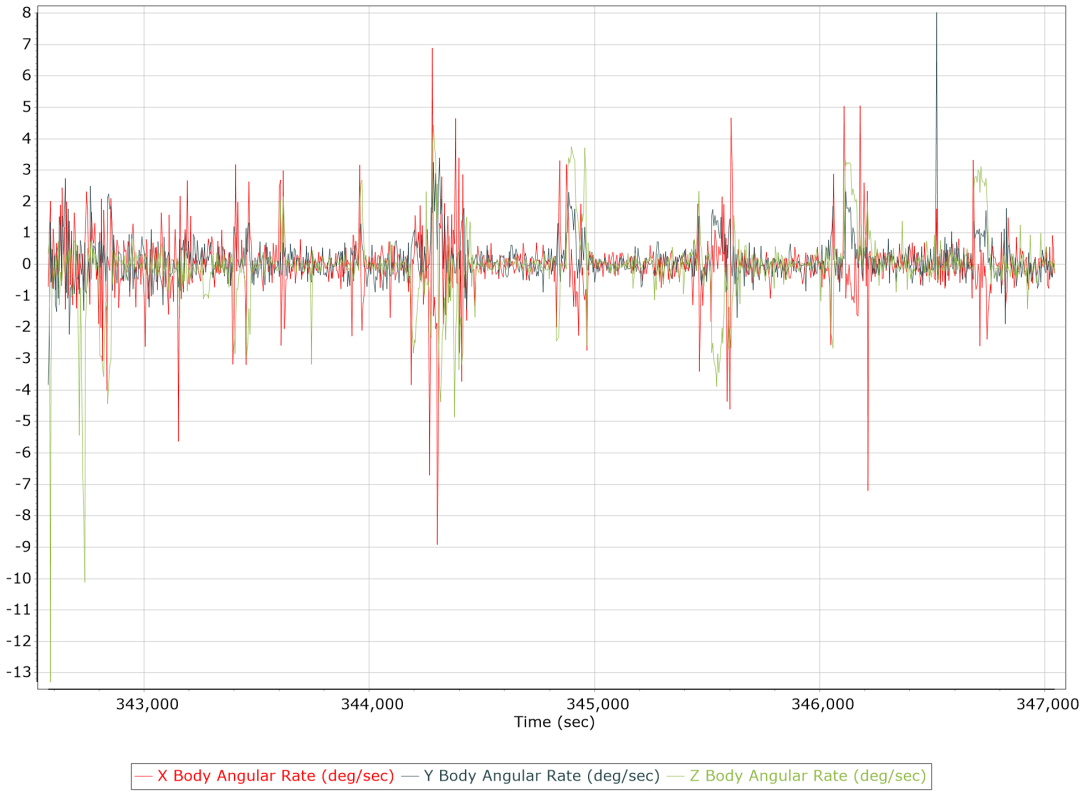
Body Acceleration



Total Body Acceleration



Body Angular Rate



GNSS QC

GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	6	8	8
Number of GLONASS SV	3	5	5
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	4	7	6
Total number of SV	14	20	18
PDOP	1.11	1.74	1.33
QC Solution Gaps	0.00	0.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	4716.00	0.00	0.00
Percentage	100.00	0.00	0.00

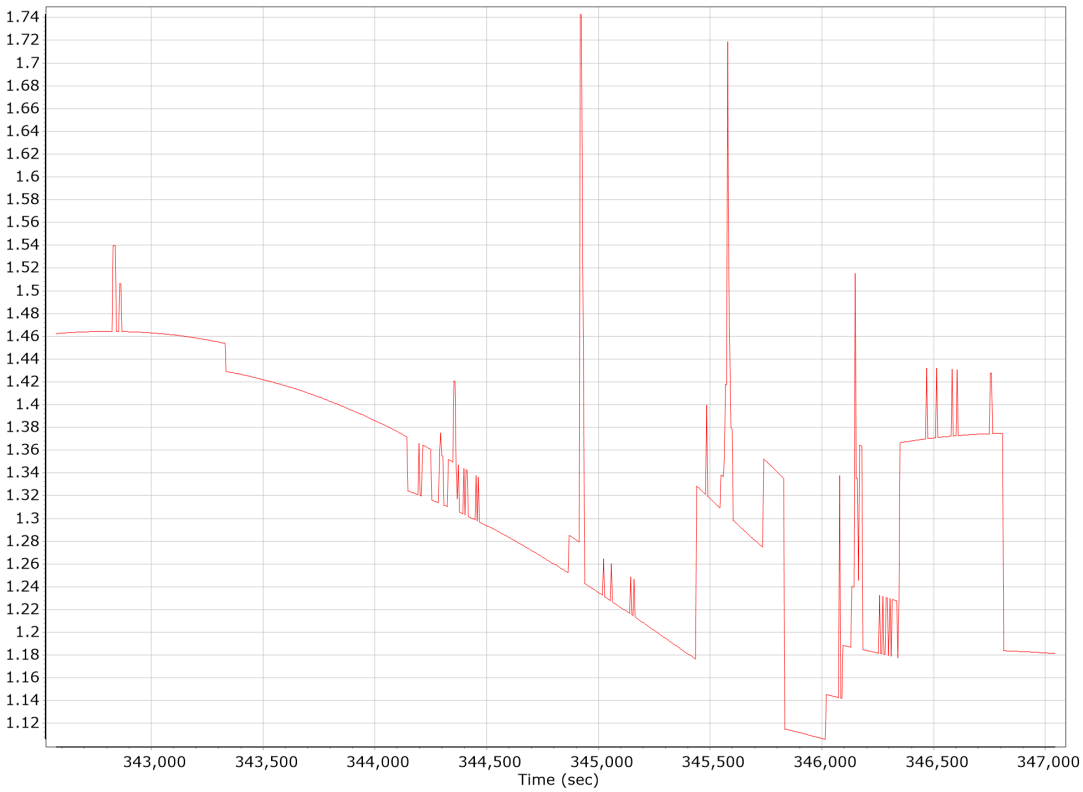
Num SVs in solution



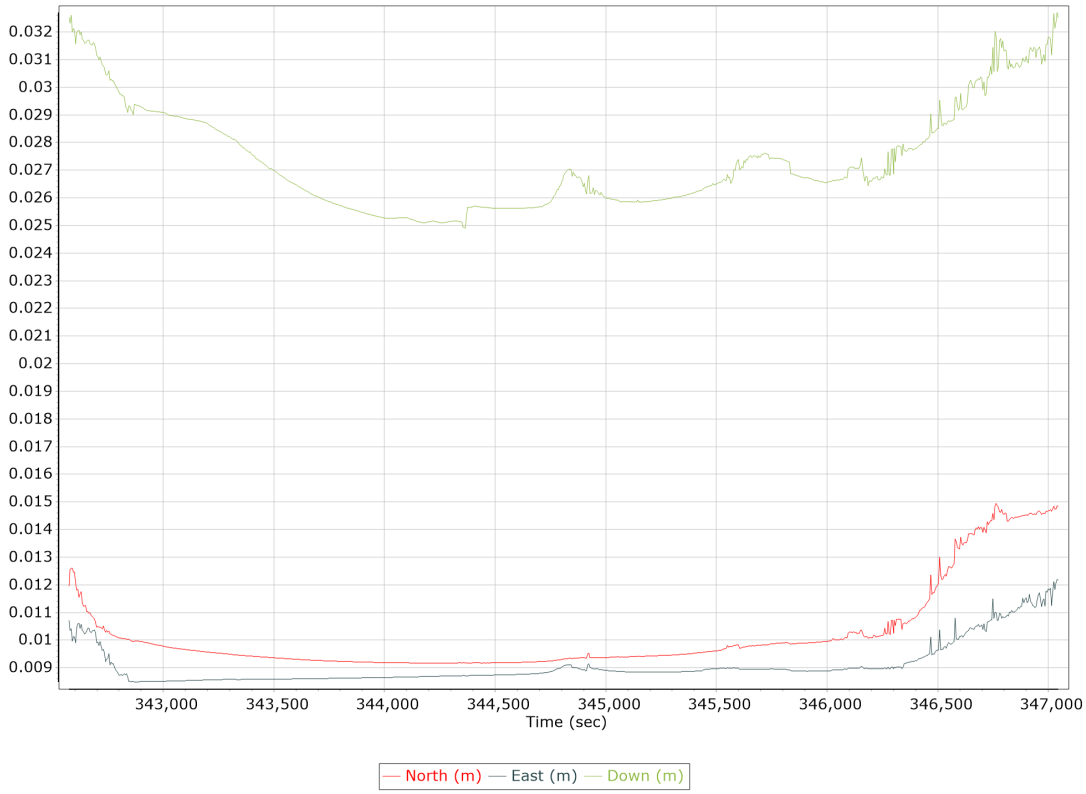
Forward/Reverse Separation



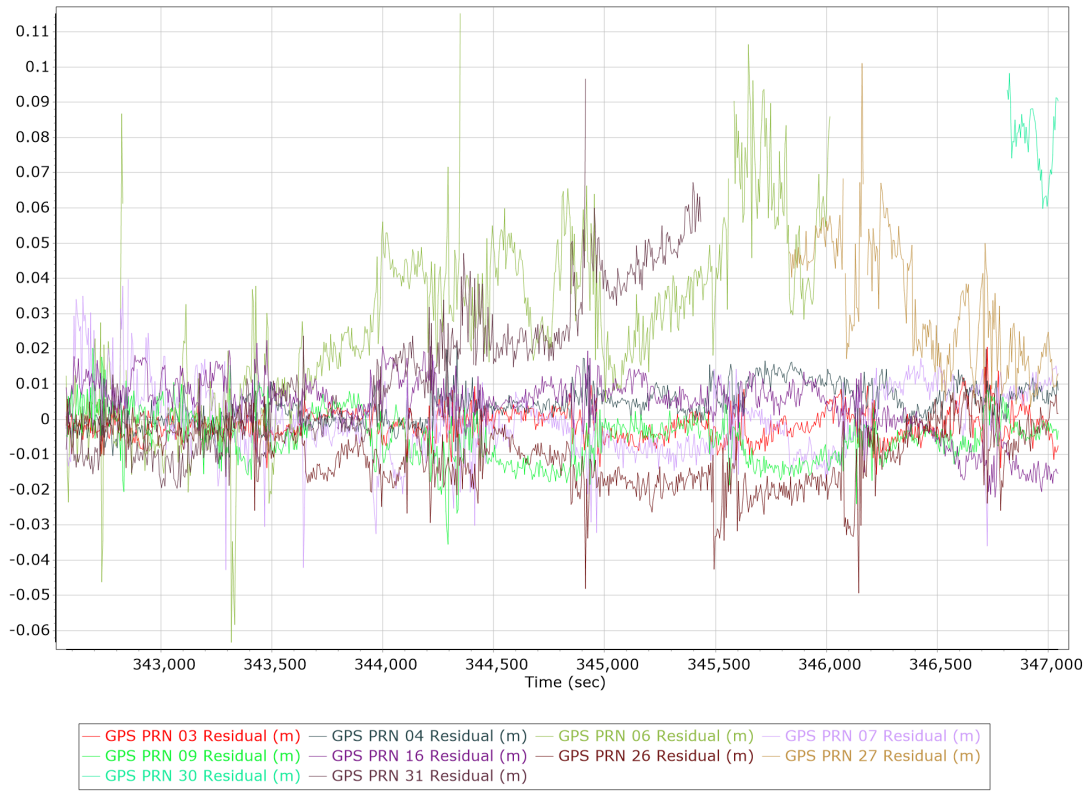
PDOP



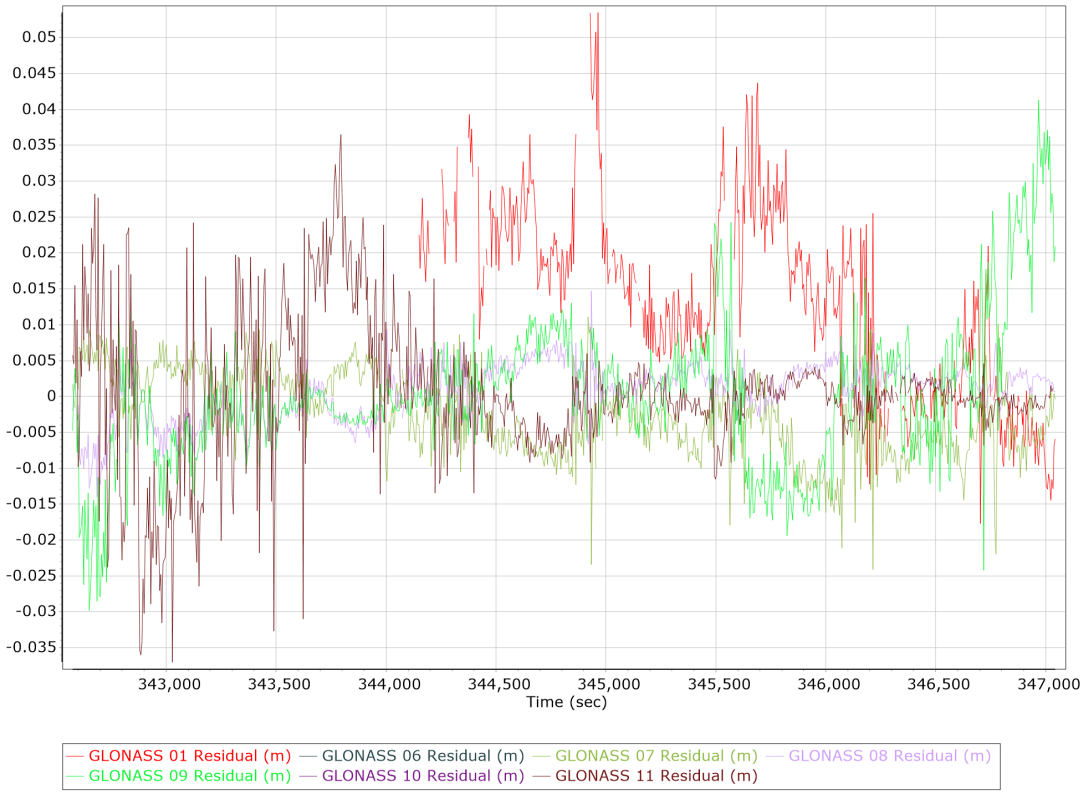
Estimated Position Accuracy



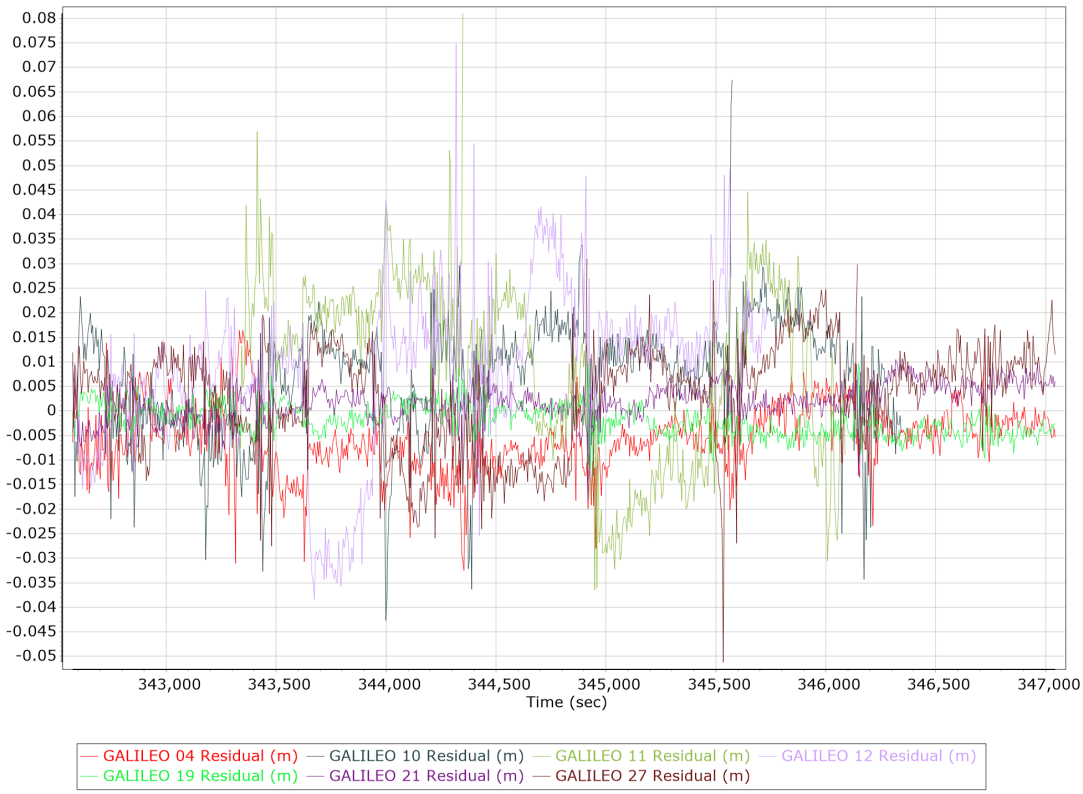
GPS Residuals



GLONASS Residuals



GALILEO Residuals



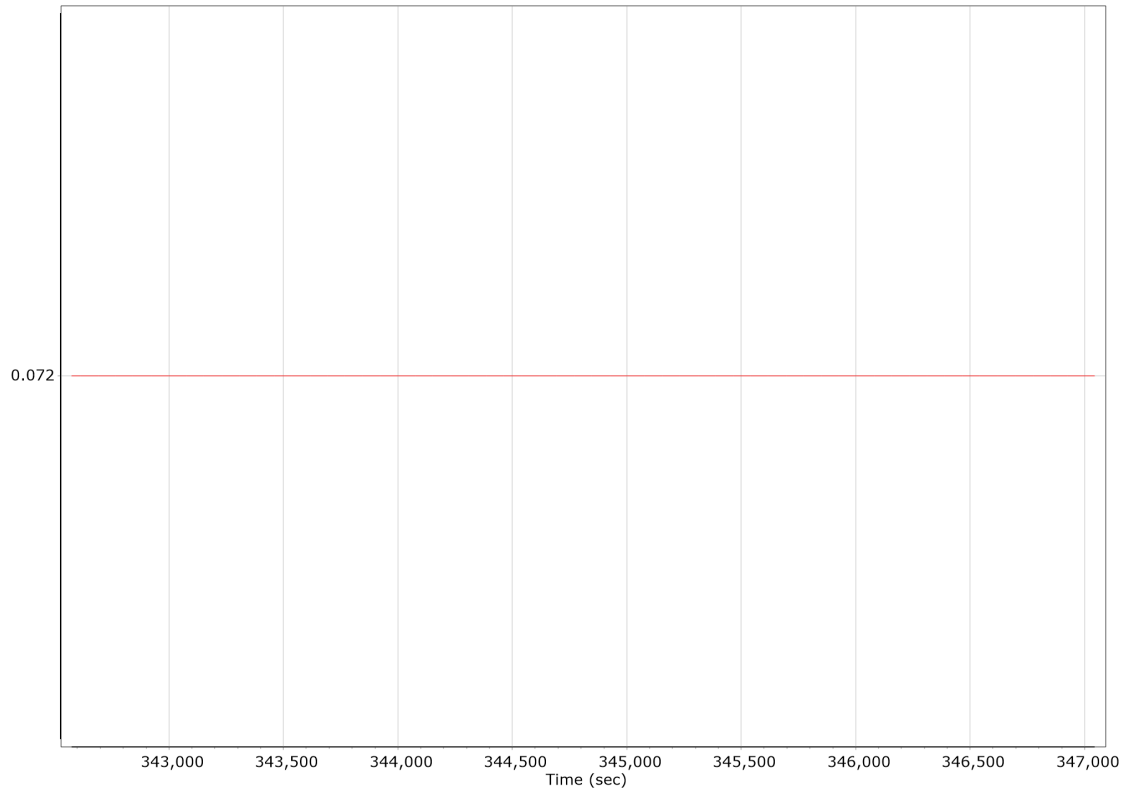
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	342325.000 (9/27/2023 11:05:25 PM)		
Processing end time	347048.000 (9/28/2023 12:24:08 AM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.072	0.090	-1.275
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

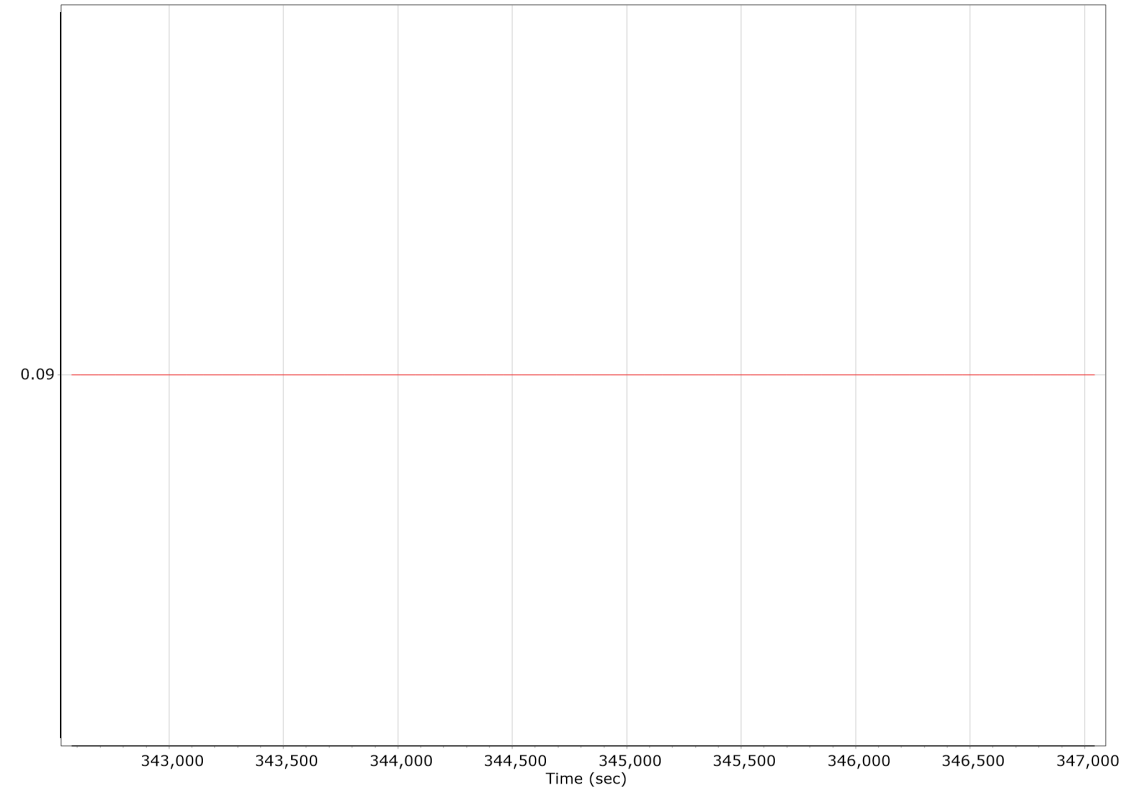
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

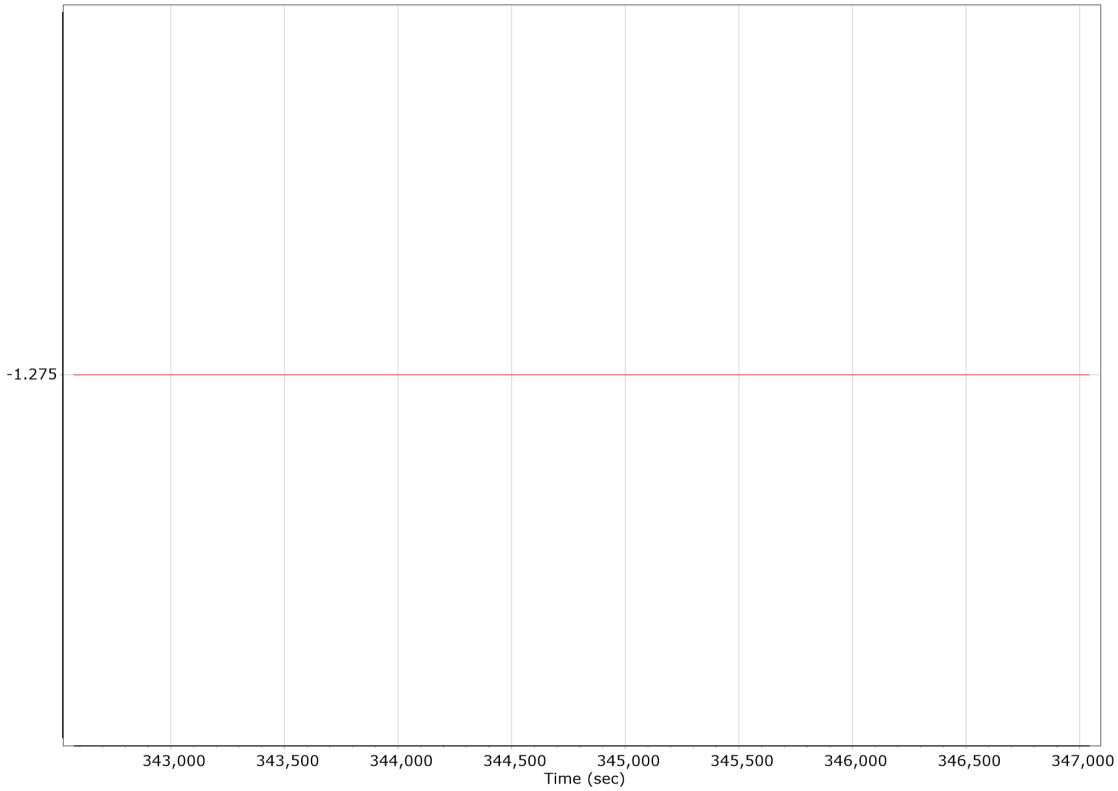
X Reference-Primary GNSS Lever Arm (m)



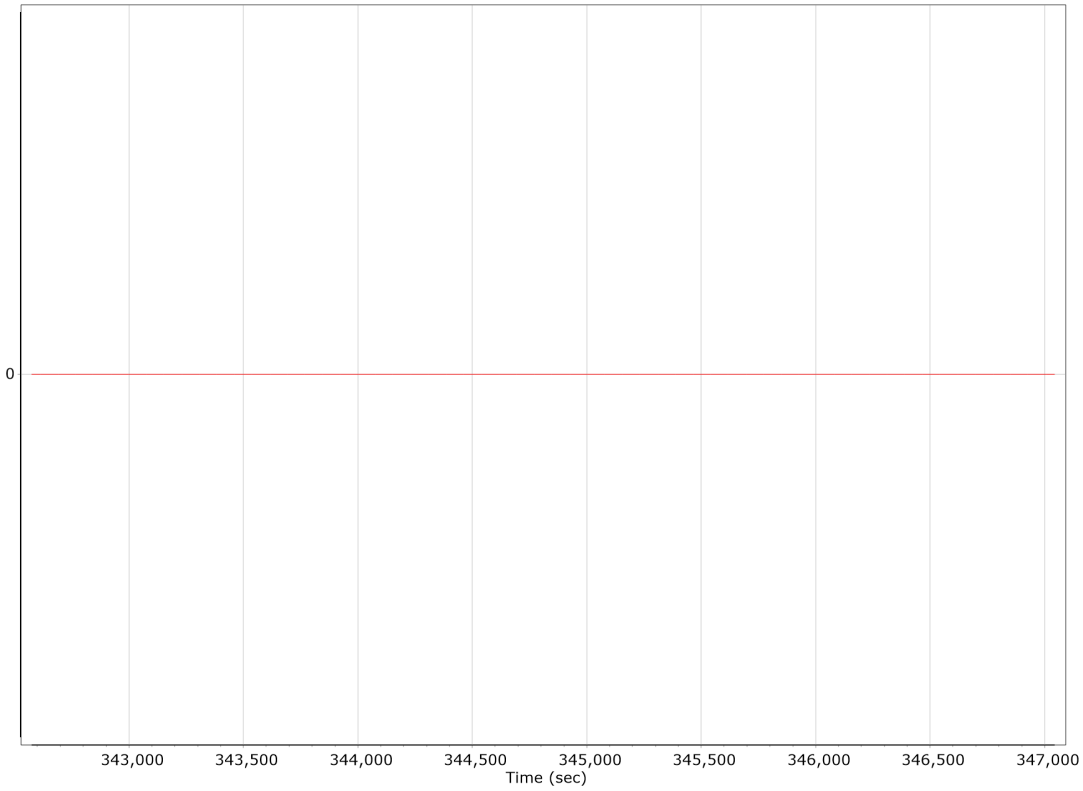
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



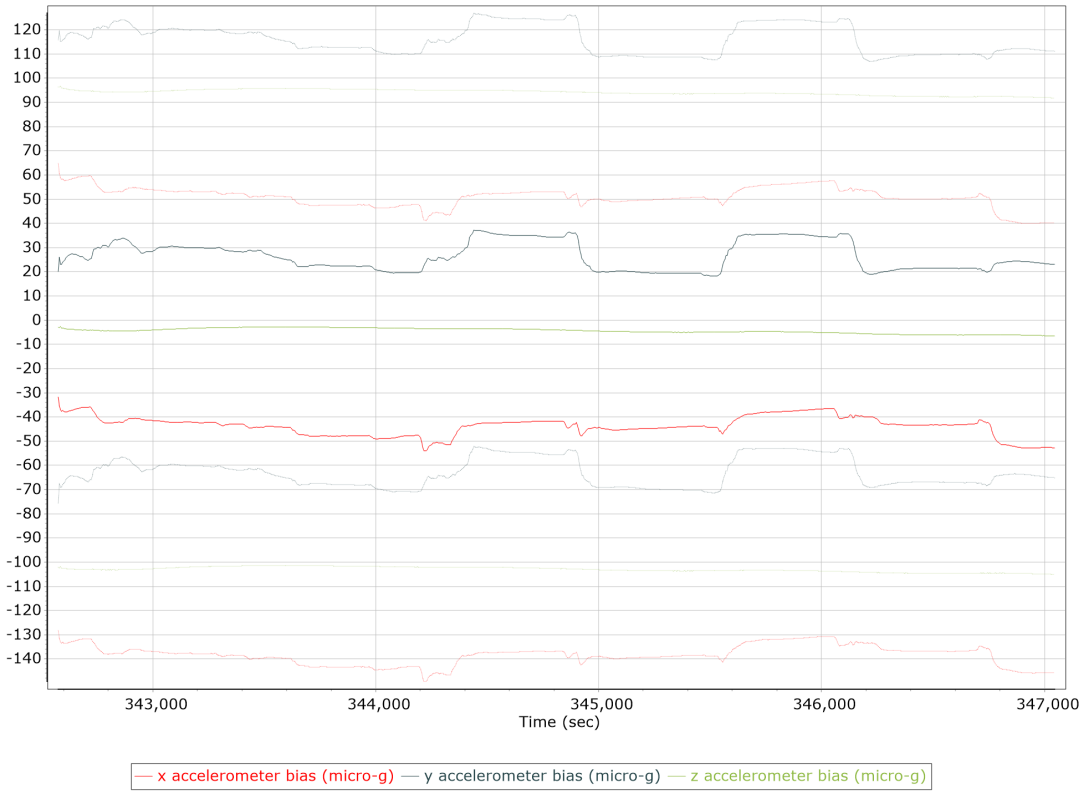
Reference-Primary GNSS Lever Arm Figure of Merit



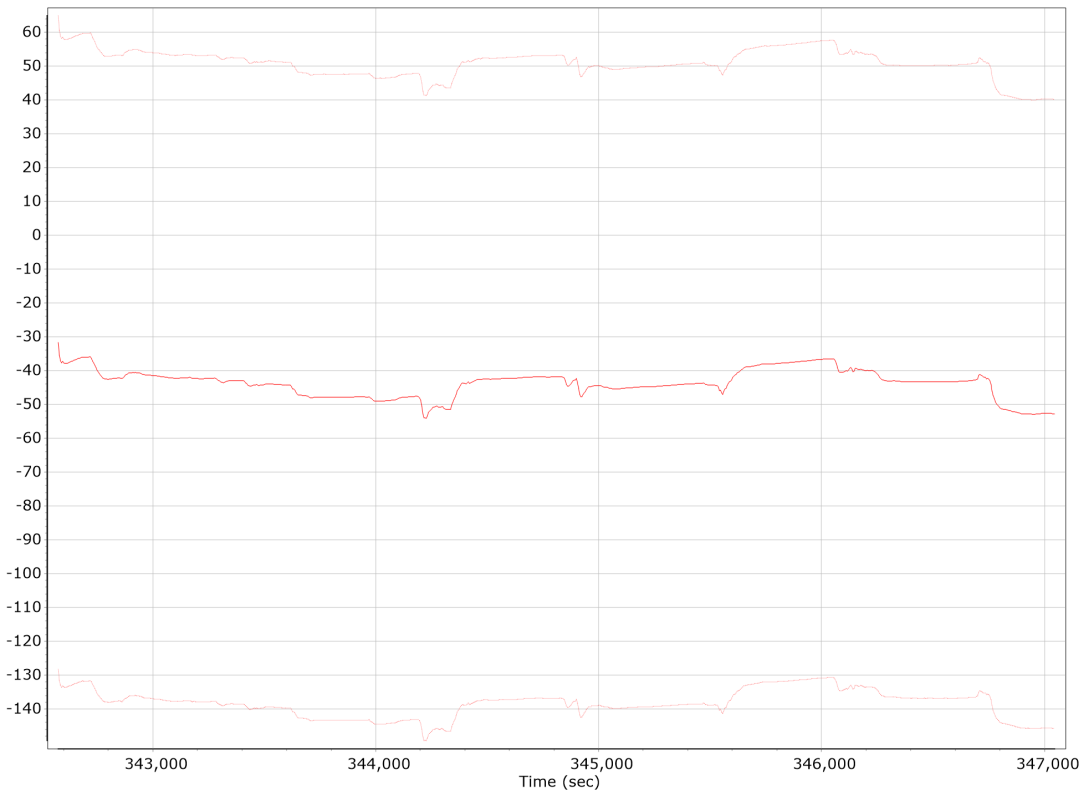
IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

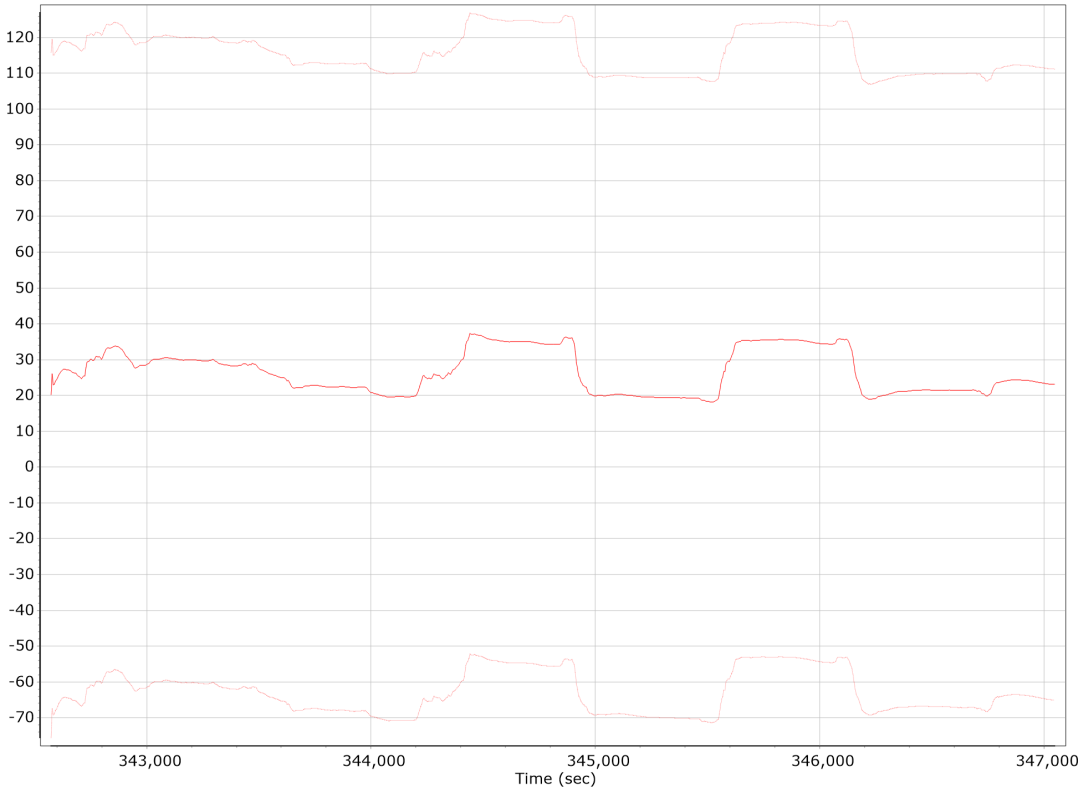
Accelerometer Bias (micro-g)



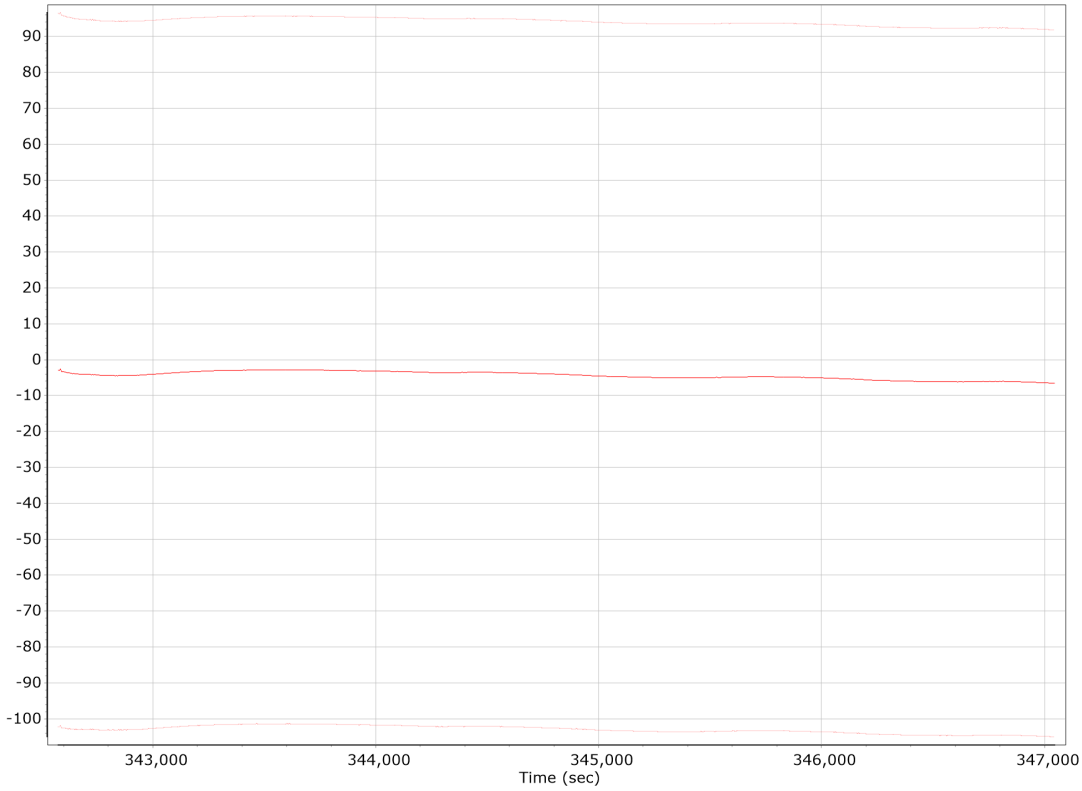
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



X Accelerometer Scale Error (ppm)



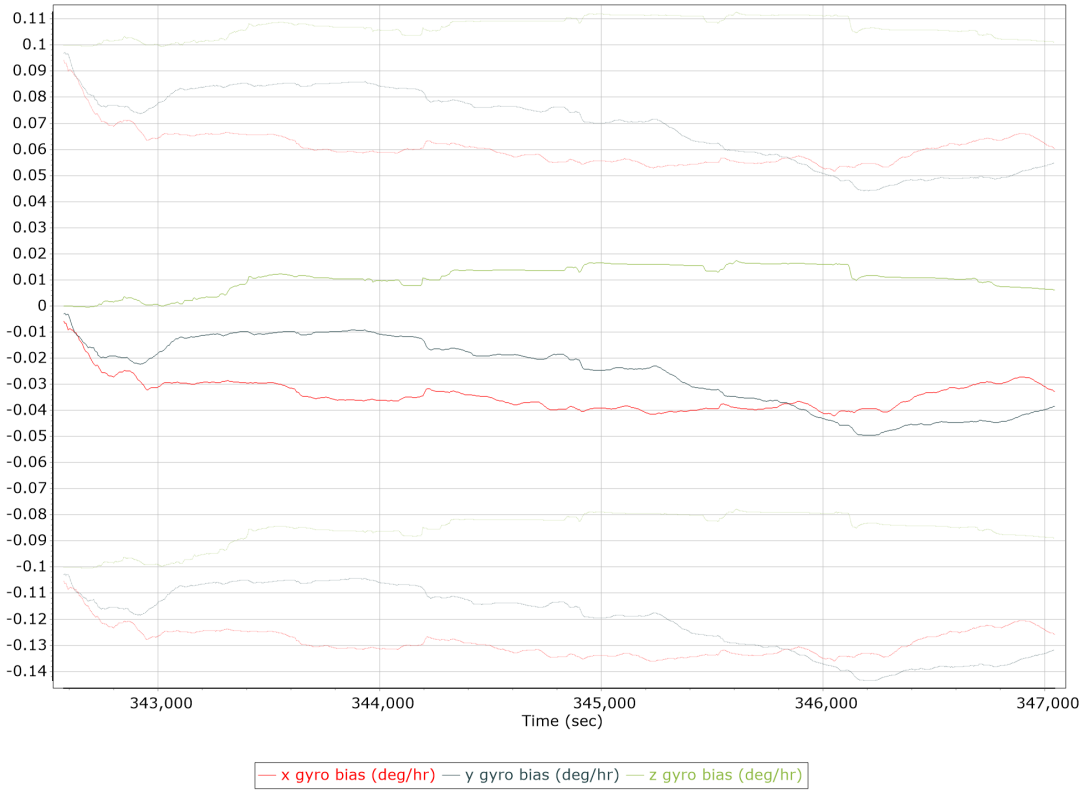
Y Accelerometer Scale Error (ppm)



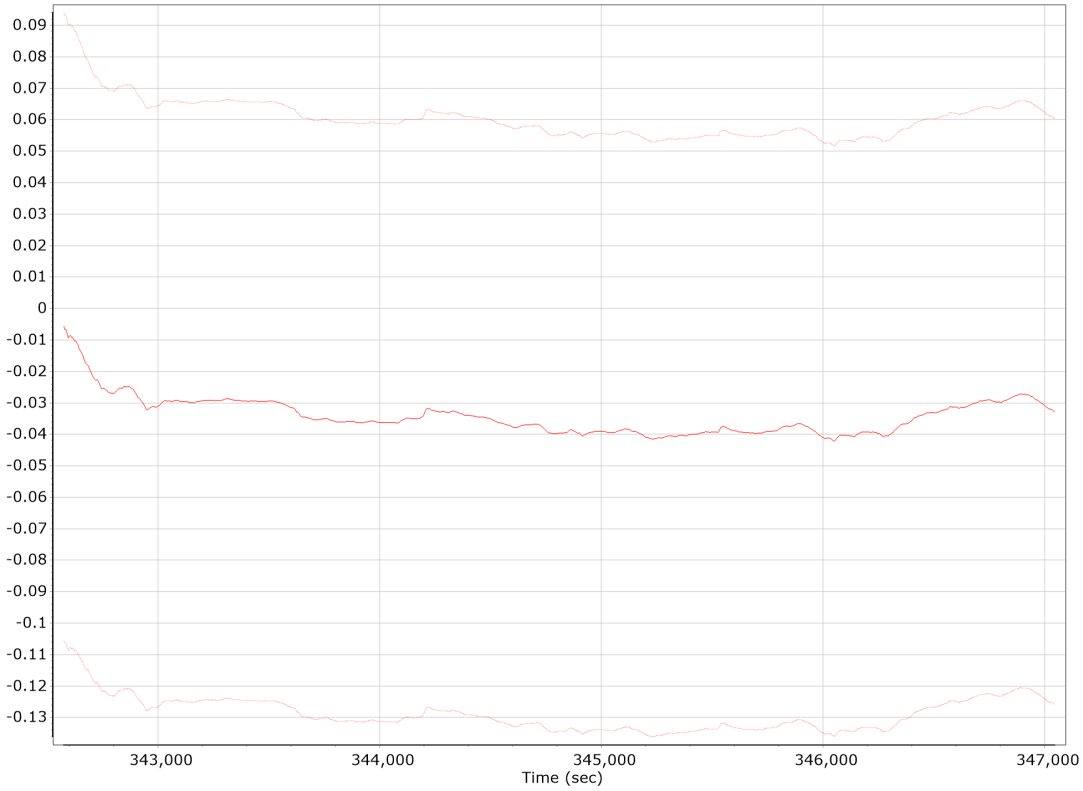
Z Accelerometer Scale Error (ppm)



Gyro Bias (deg/h)



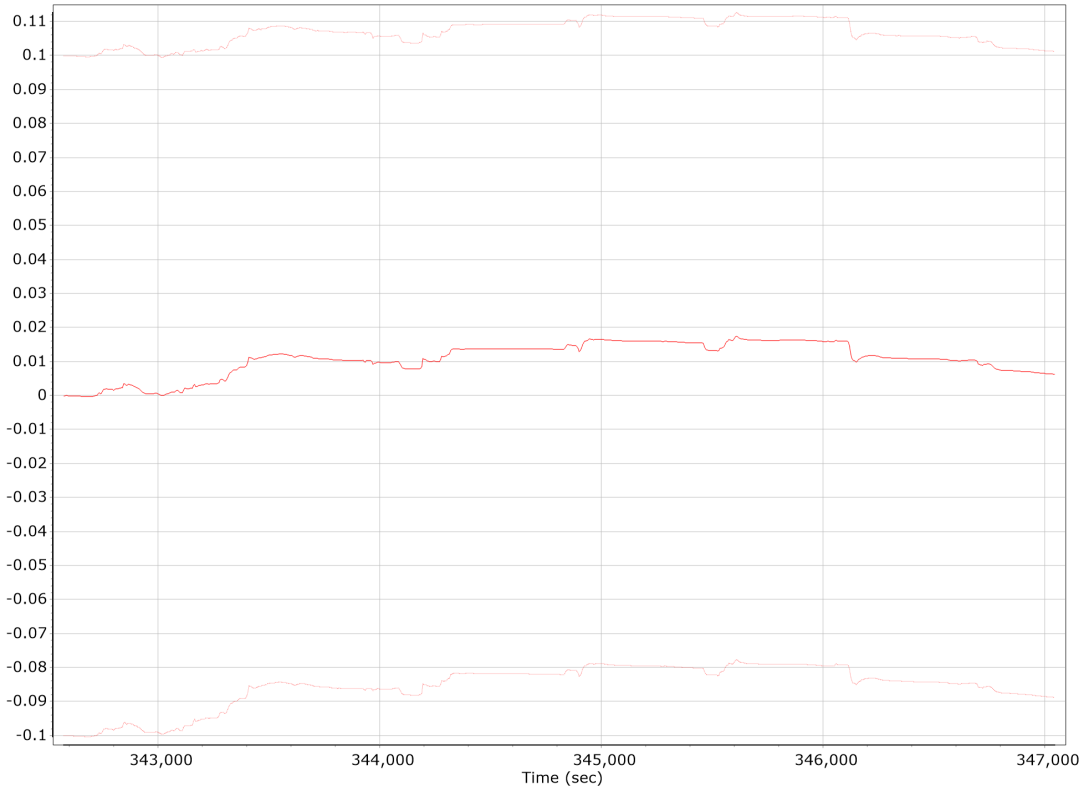
X Gyro Bias (deg/h)



Y Gyro Bias (deg/h)



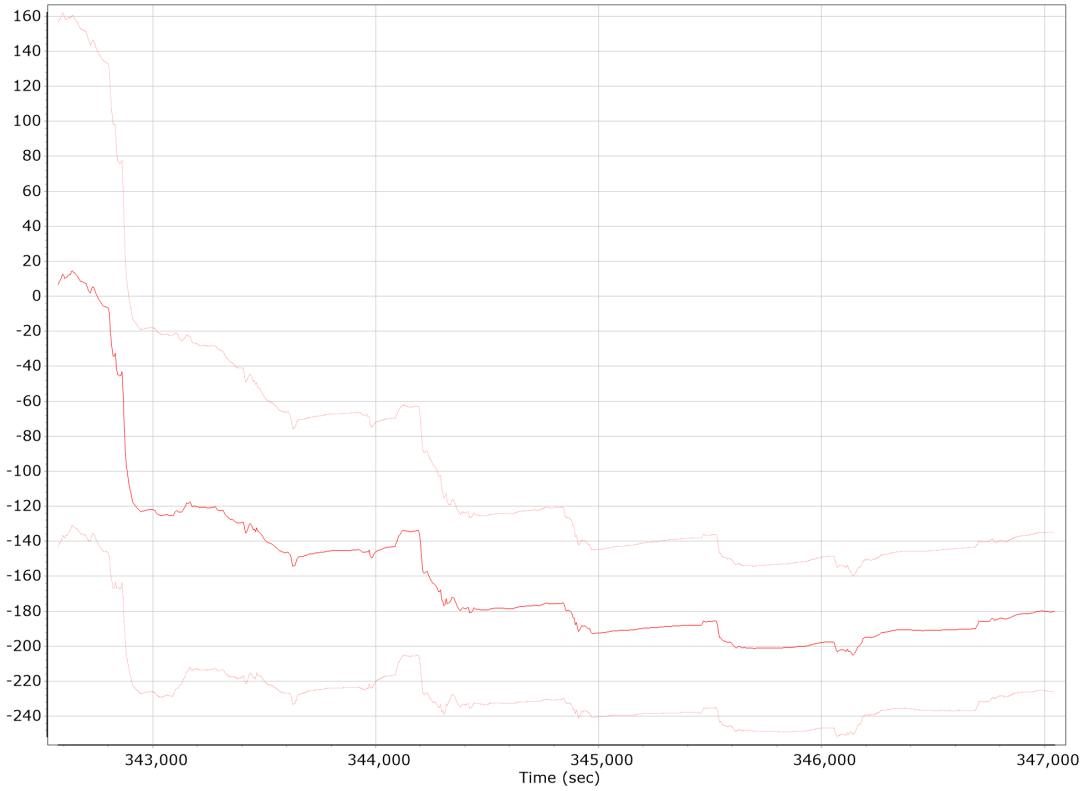
Z Gyro Bias (deg/h)



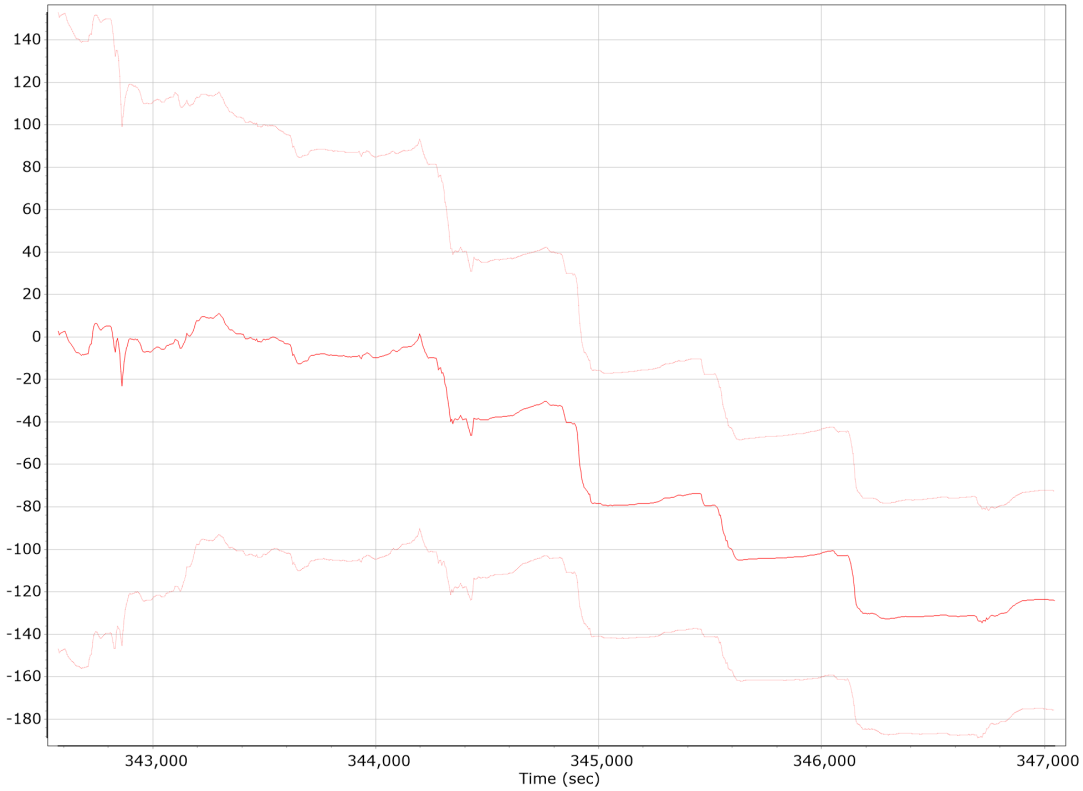
Gyro Scale Error (ppm)



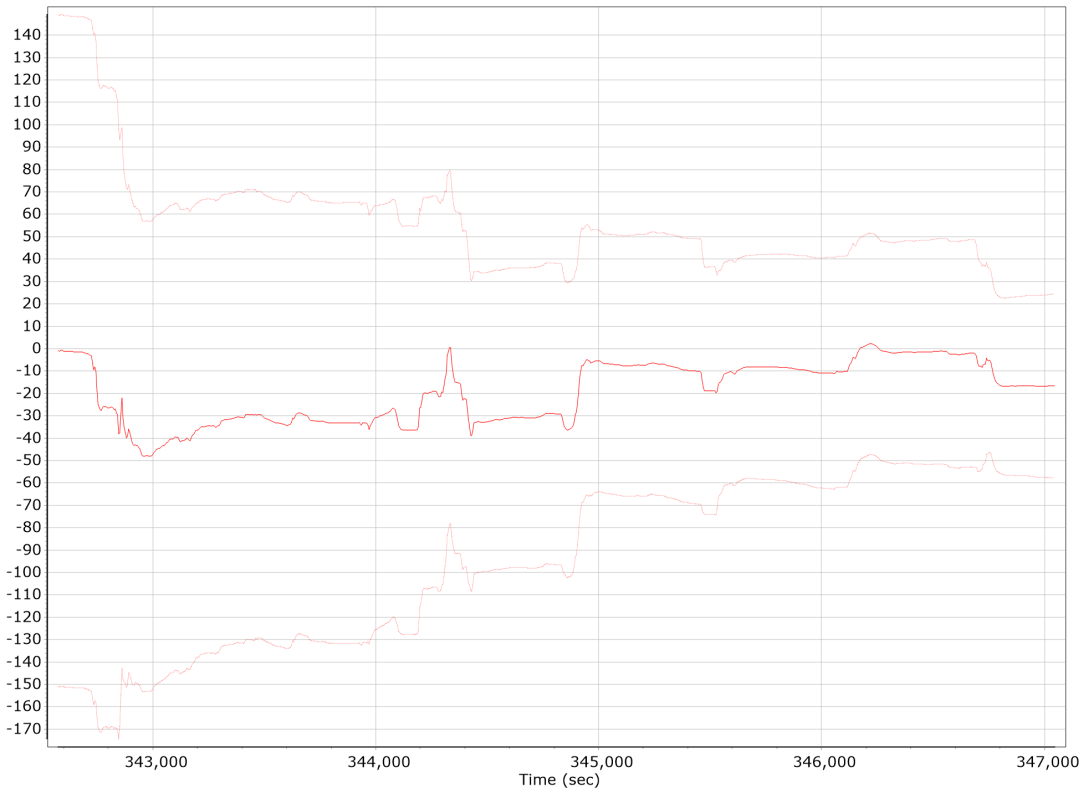
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)

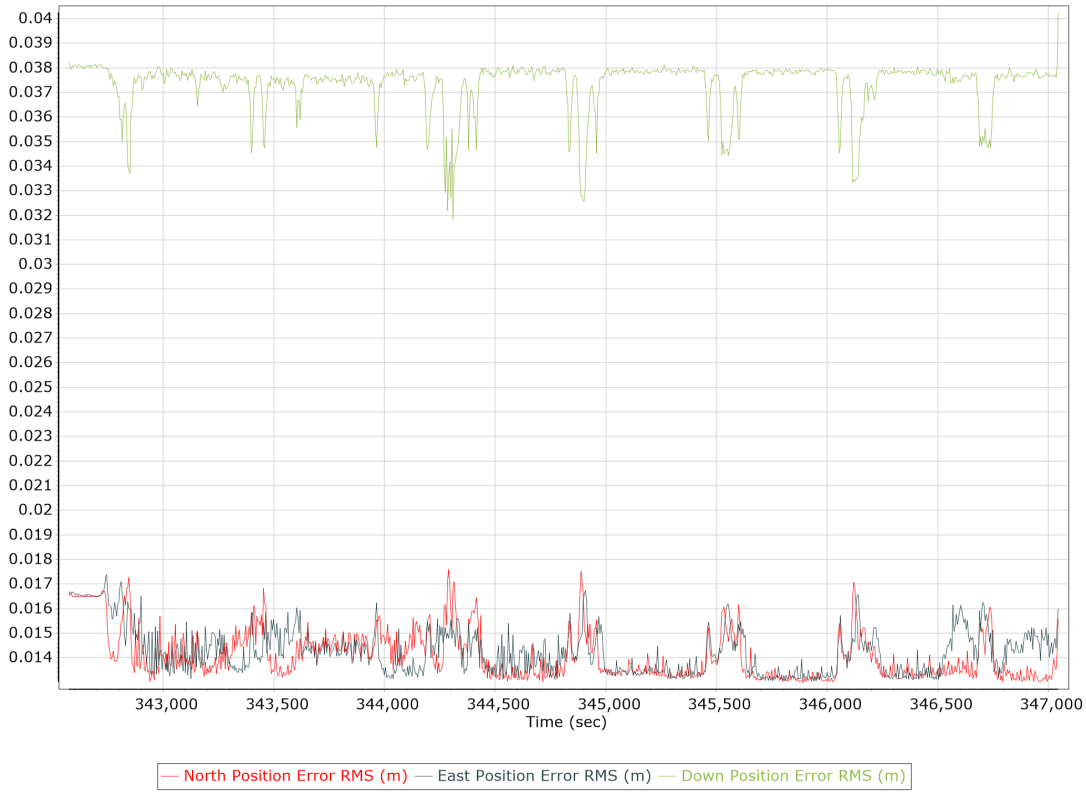


Z Gyro Scale Error (ppm)

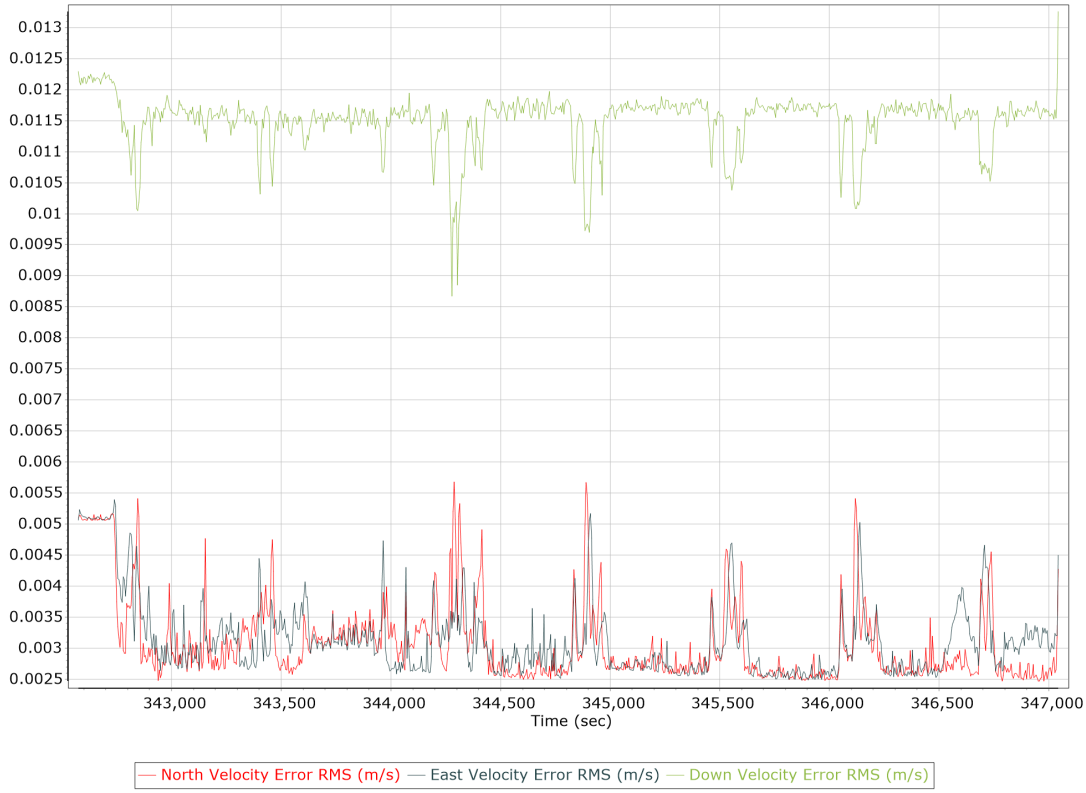


Smoothed Performance Metrics

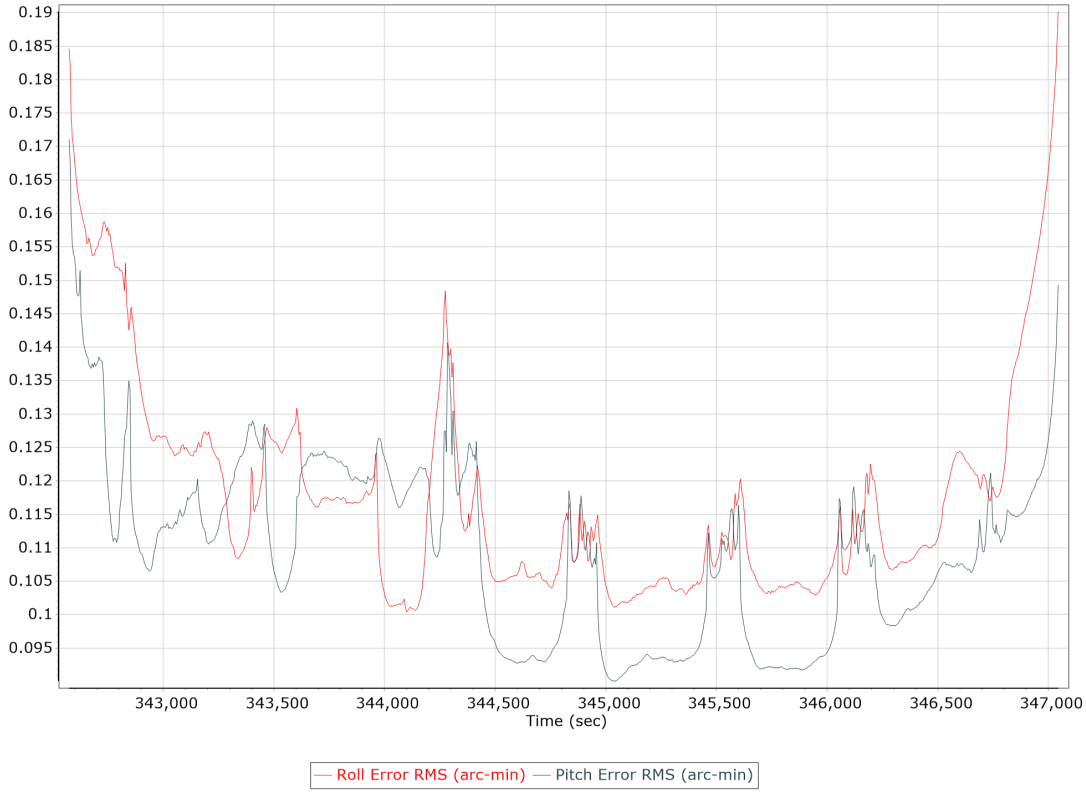
Position Error RMS (m)



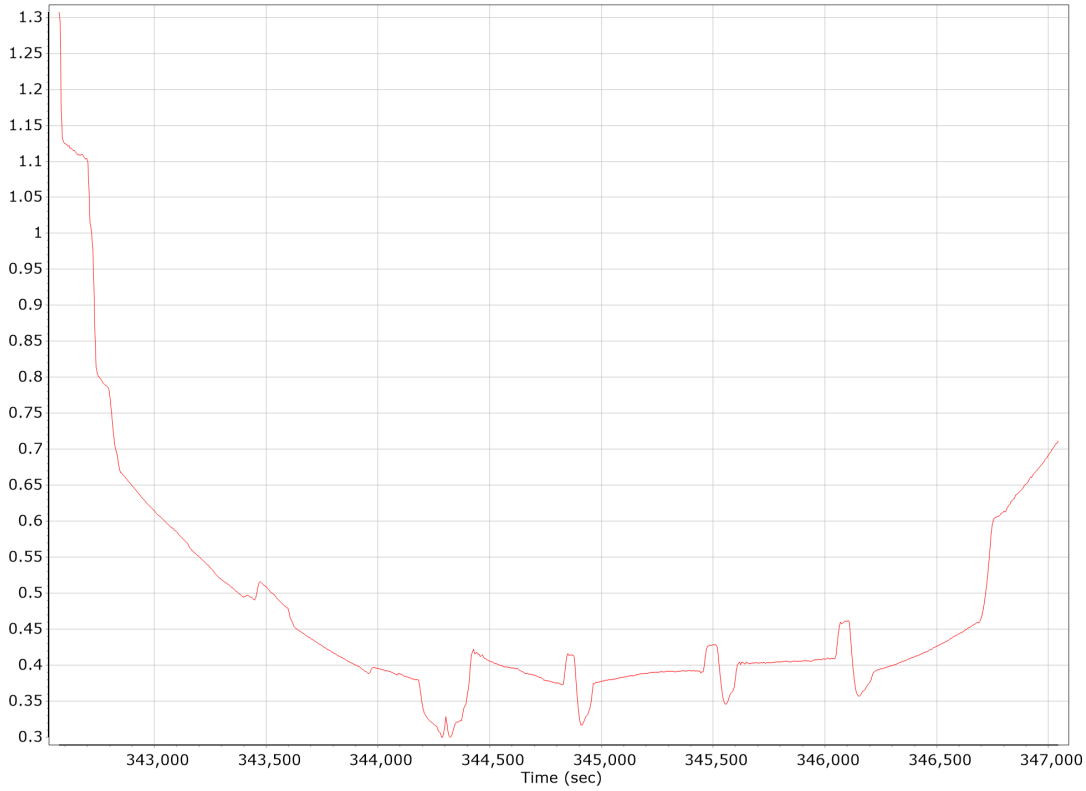
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

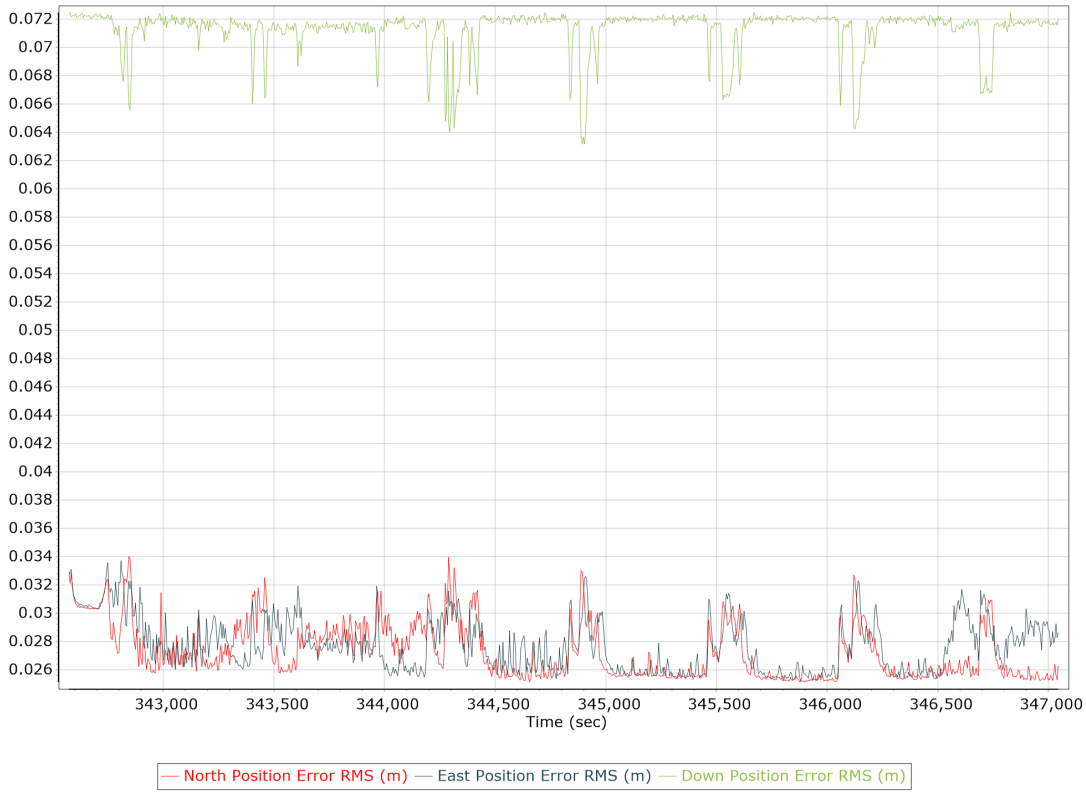


Heading Error RMS (arc-min)

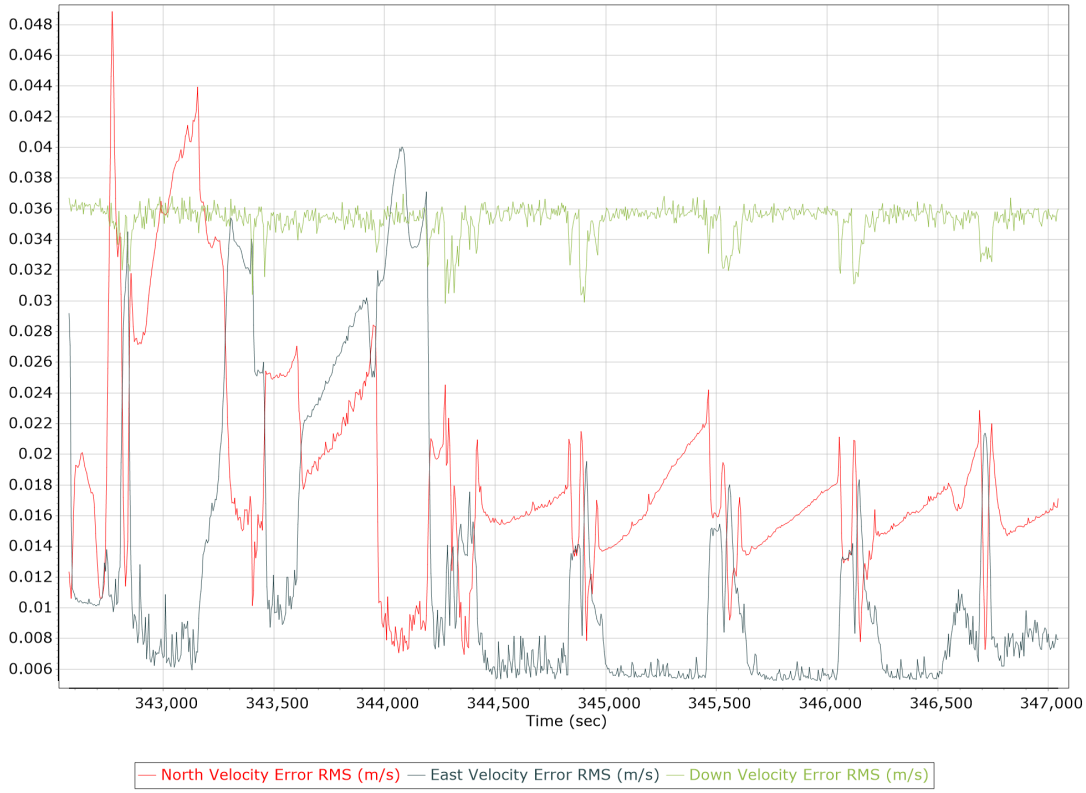


Forward Processed Performance Metrics

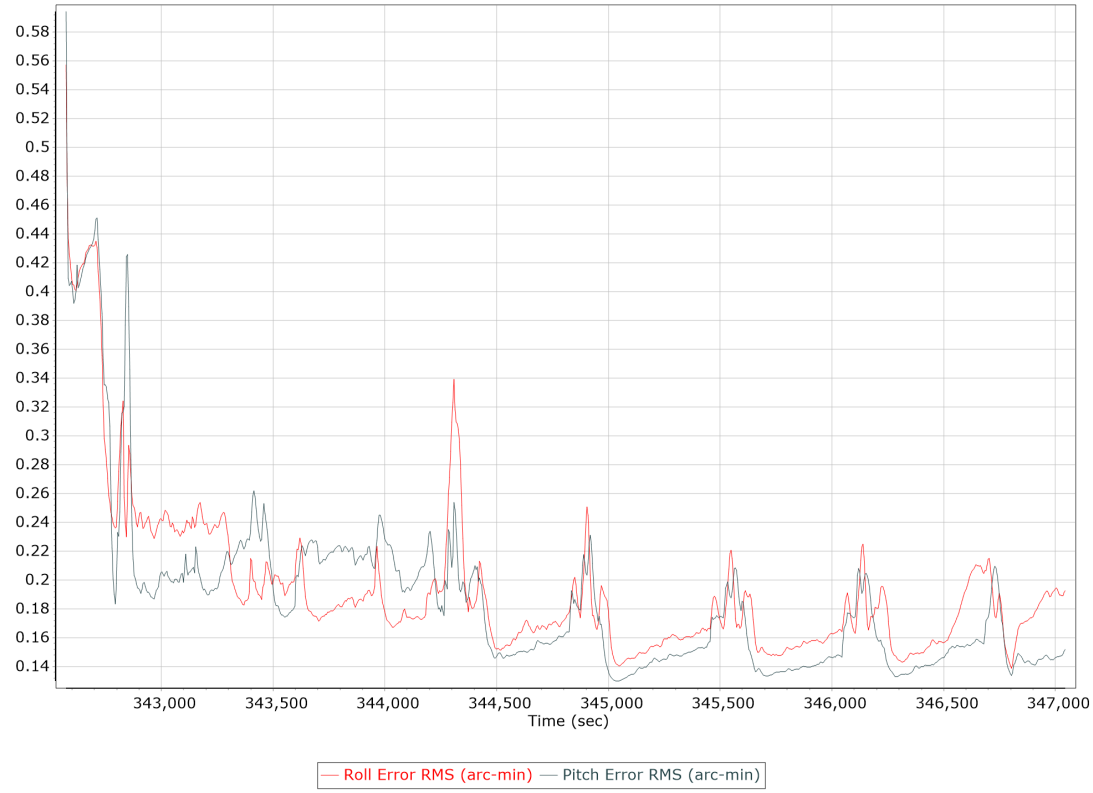
Position Error RMS (m)



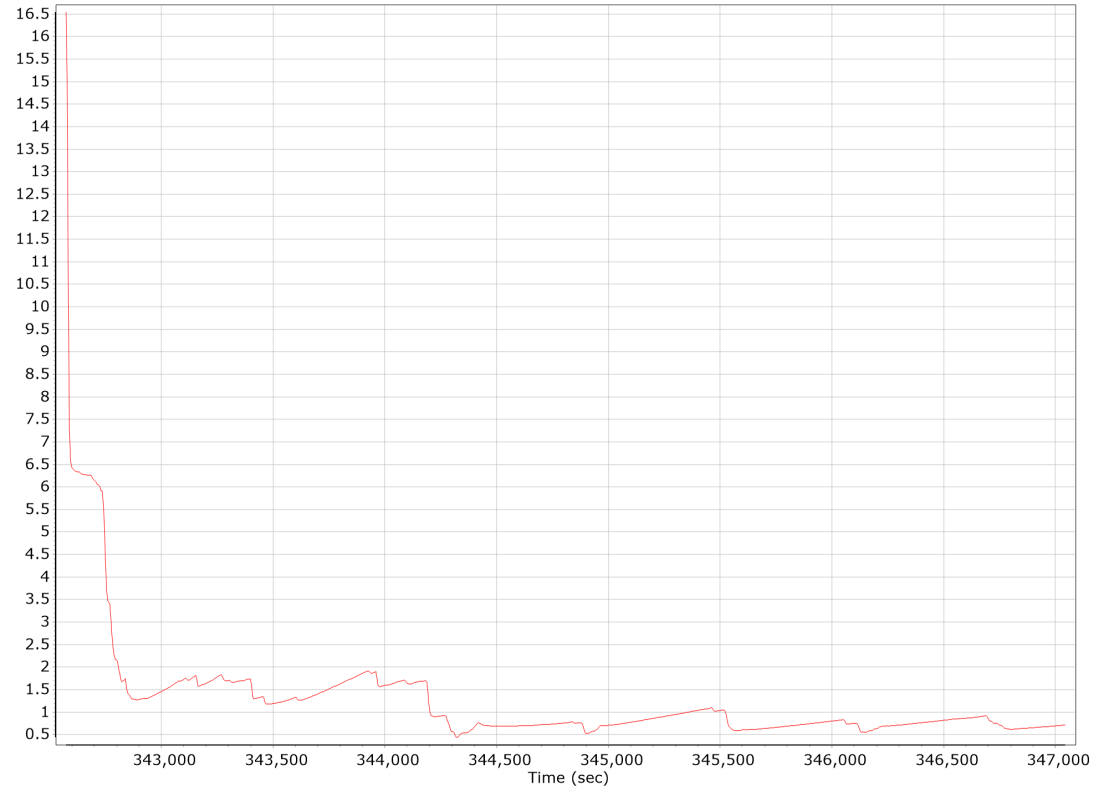
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

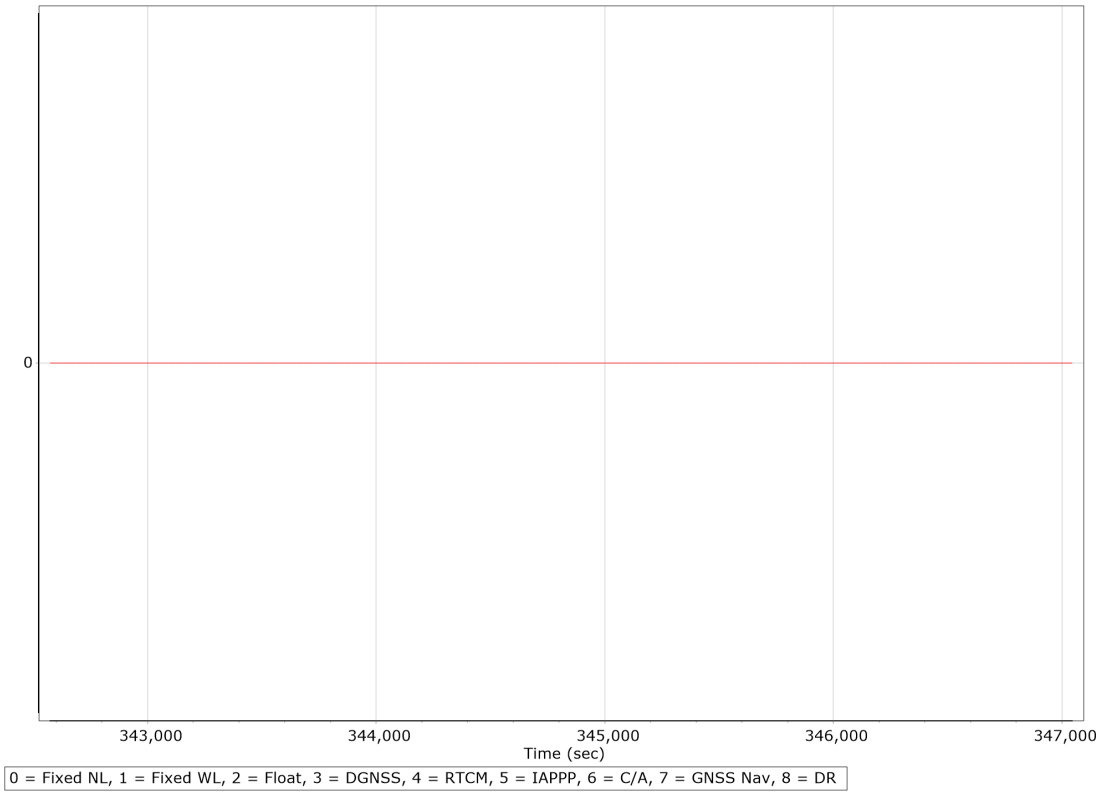


Heading Error RMS (arc-min)



Forward Processed Solution Status

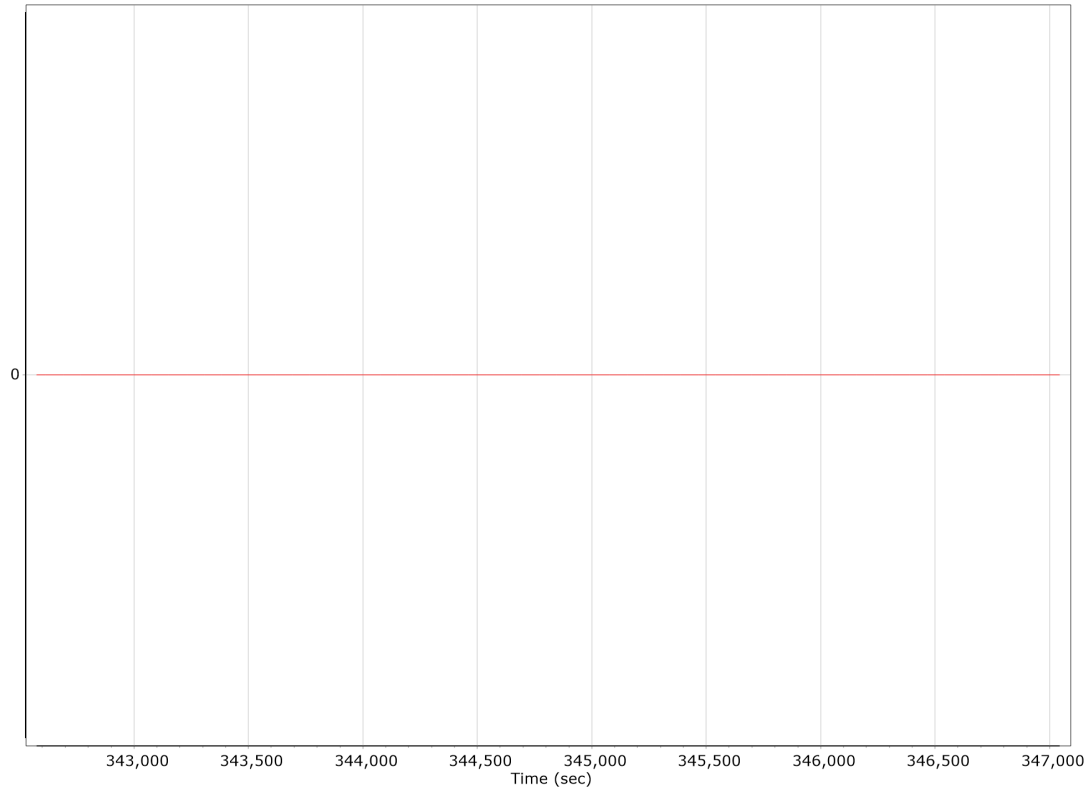
Processing Mode



Number of Satellites



Baseline Length



General Information

Mission Information

Project name	09272023C_4040
Processing date	2023-12-11 20:45:16
Mission date	2023-09-28 00:31:05
Mission duration	01:12:09.800
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N10451
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
230928_003046_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm2710.23g	GLONASS Broadcast Ephemeris
Ephm2710.23n	GPS Broadcast Ephemeris
IGS0OPSFIN_20232700000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232710000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232720000_01D_15M_ORB.SP3	GPS Precise Ephemeris

Output Files

Filename	File type
sbet_09272023C_4040.out	SBET Trajectory File

Rover Data Summary

First raw data file	230928_003046_INS-GPS_1.raw		
Last raw data file	230928_003046_INS-GPS_1.raw		
Start GPS week	2281		
Start time	347446.237 (9/28/2023 12:30:46 AM)		
End time	351776.037 (9/28/2023 1:42:56 AM)		
Start of fine alignment	347561.768 (9/28/2023 12:32:41 AM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.000	0.000	-0.900
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

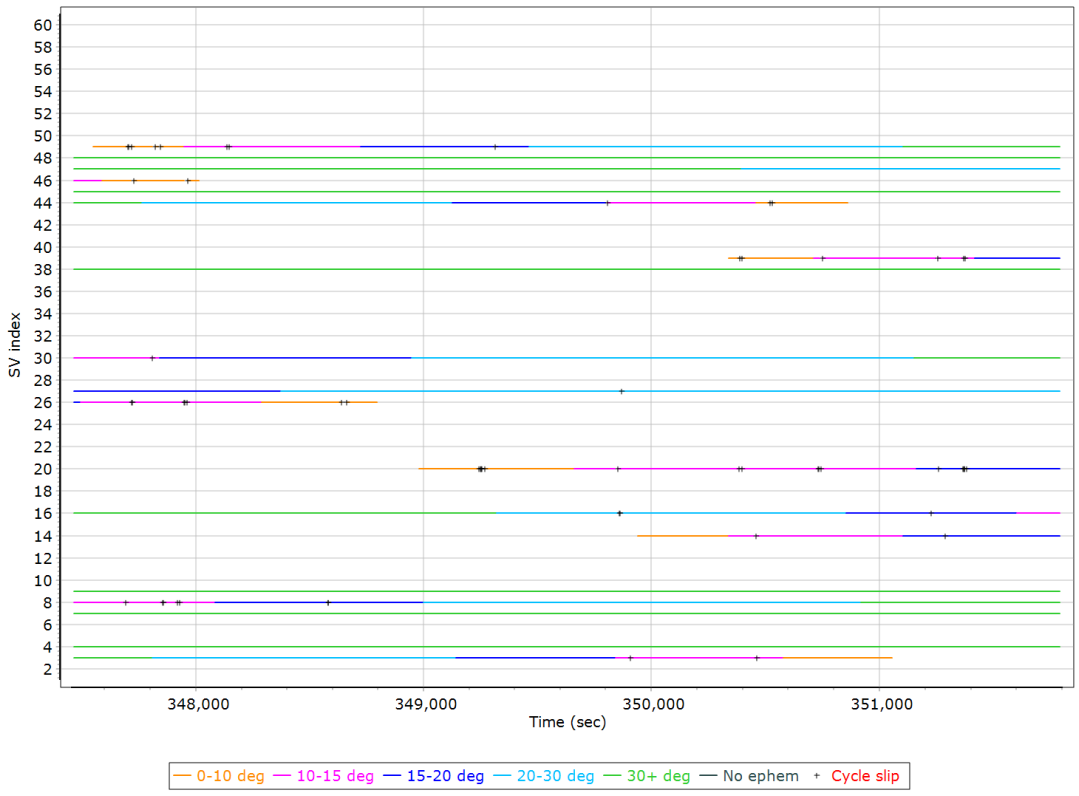
Rover Data QC

Raw IMU Import QC Summary

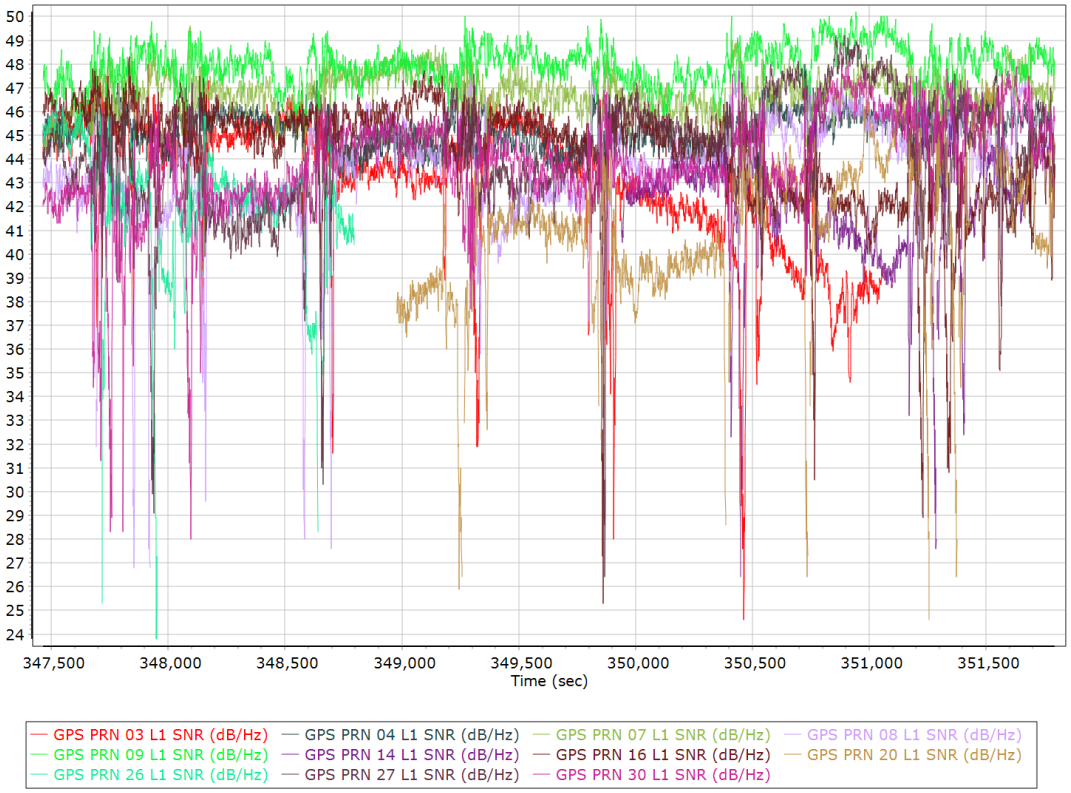
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_09272023C_4040.log
IMU Records Processed	865817
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

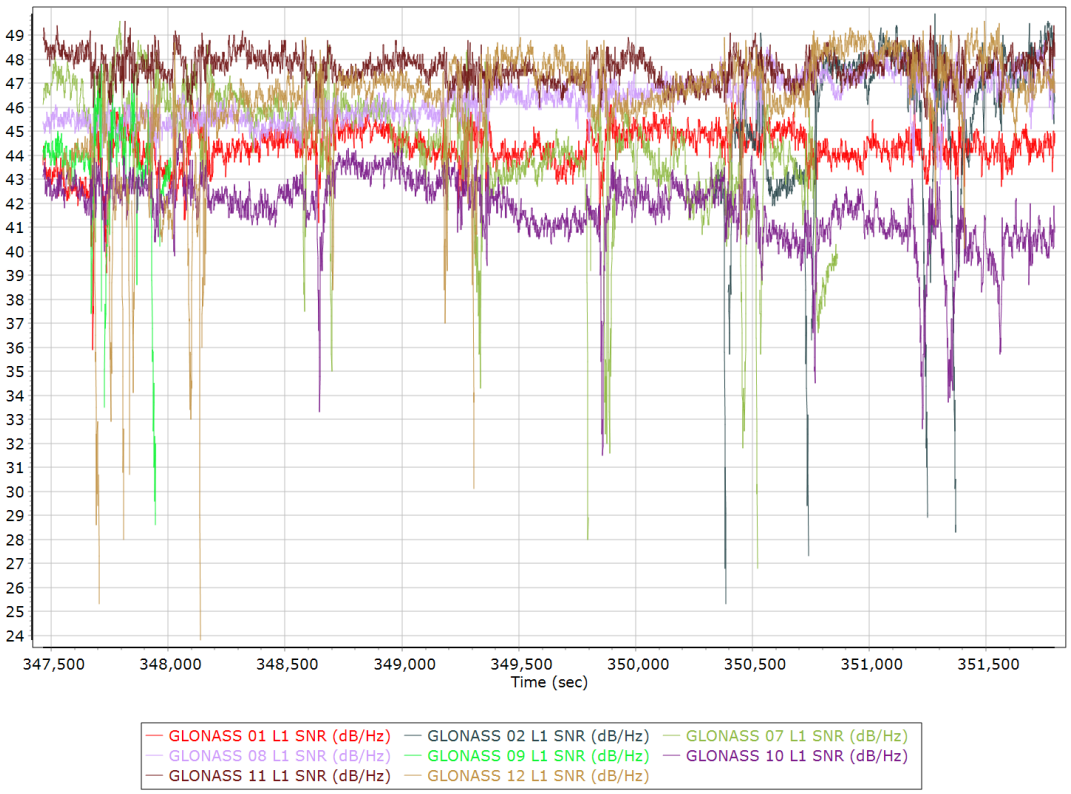
GPS/GLONASS L1 Satellite Lock/Elevation



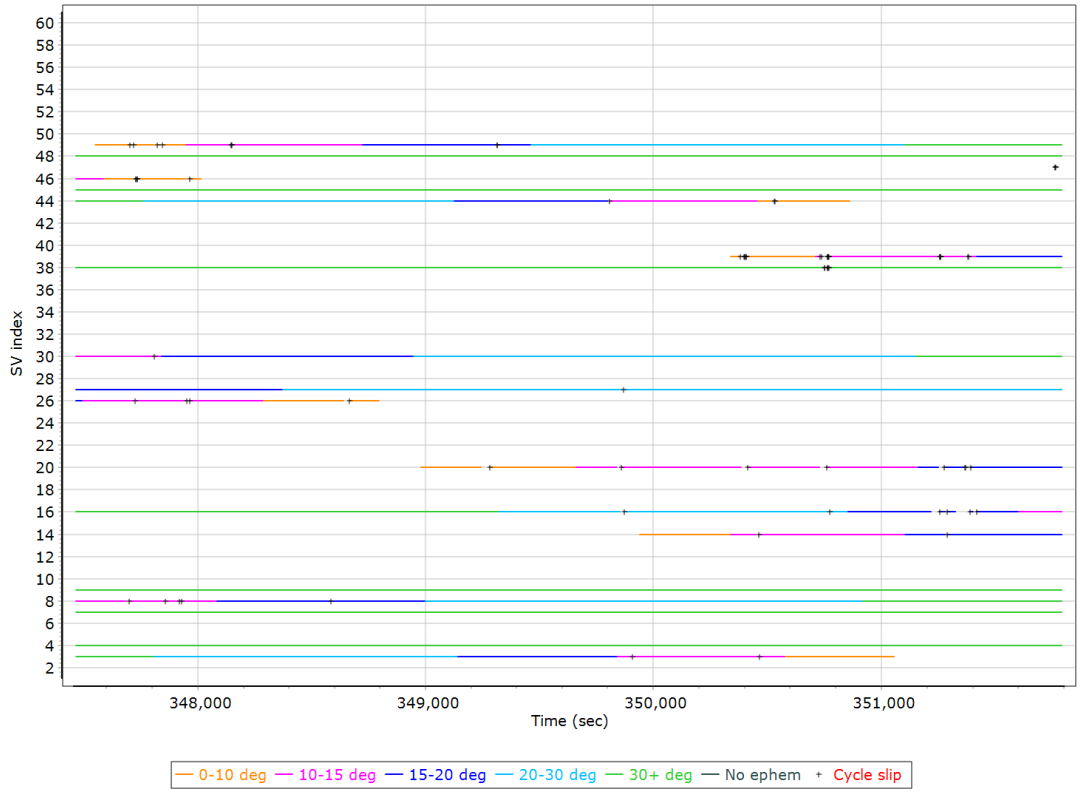
GPS L1 SNR



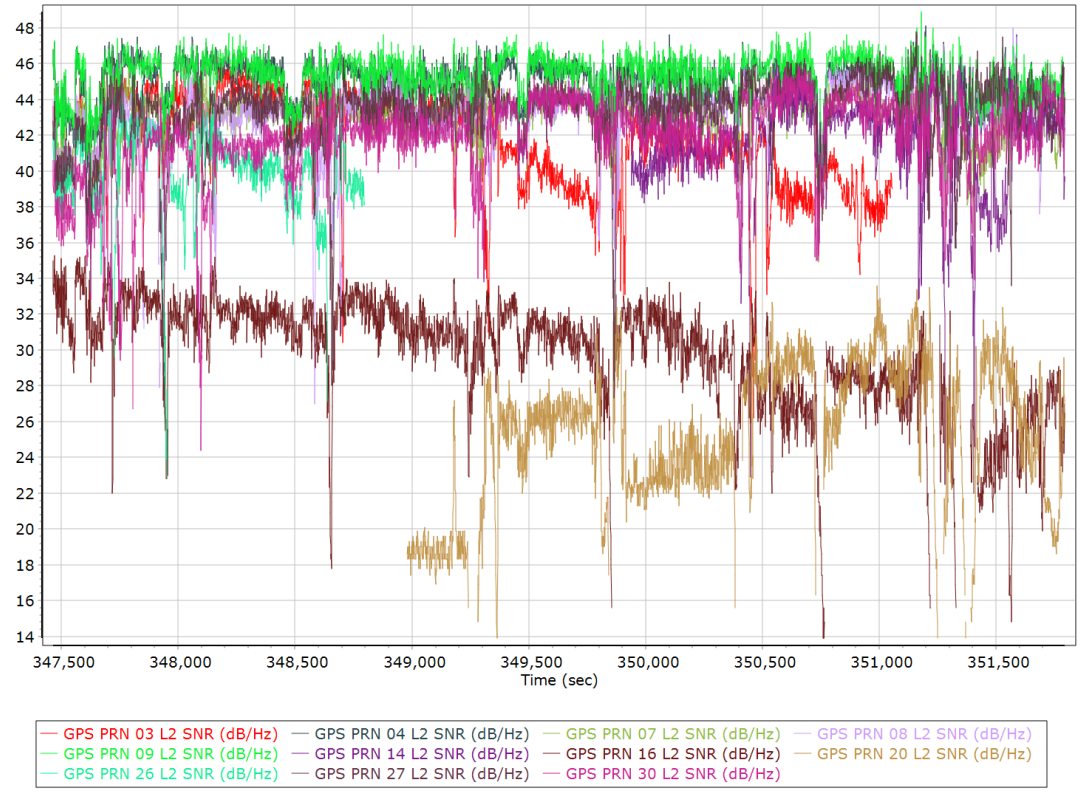
GLONASS L1 SNR



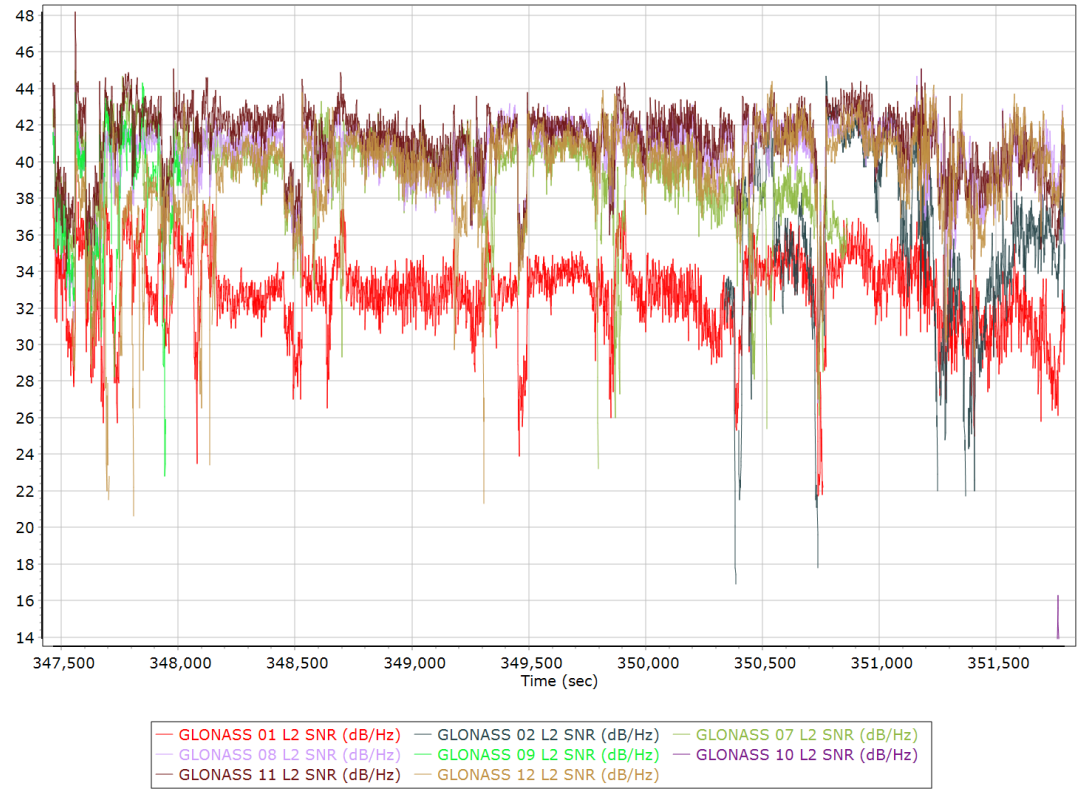
GPS/GLONASS L2 Satellite Lock/Elevation



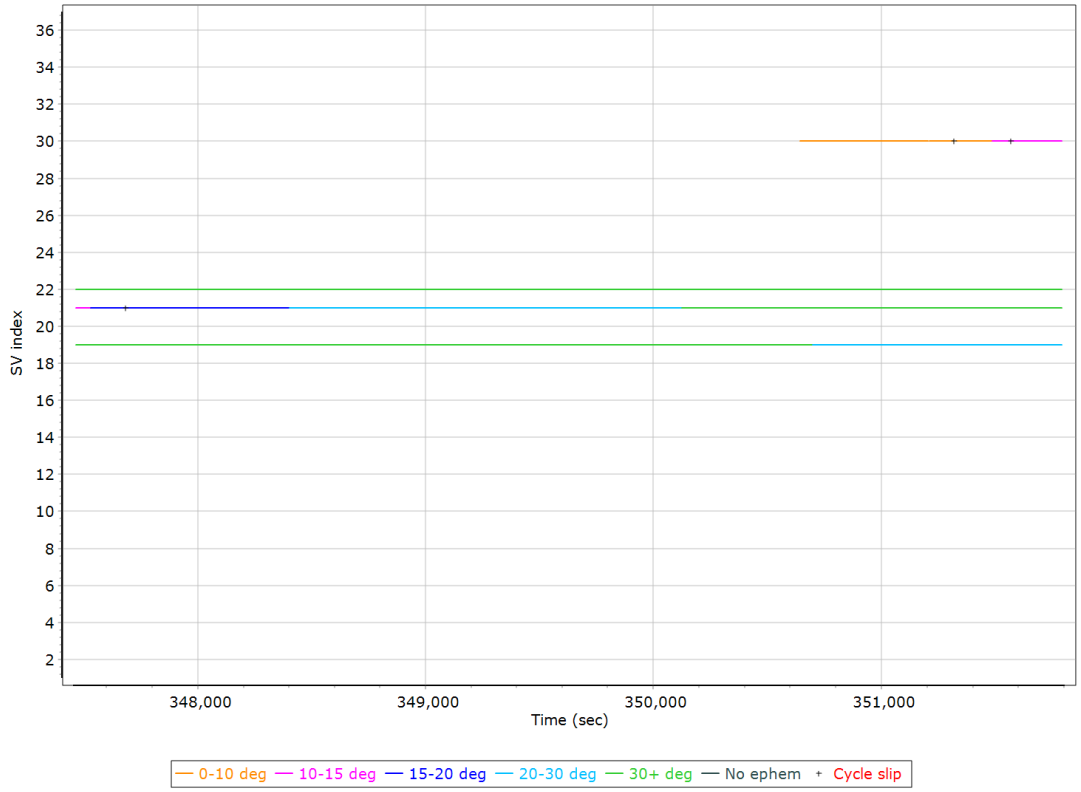
GPS L2 SNR



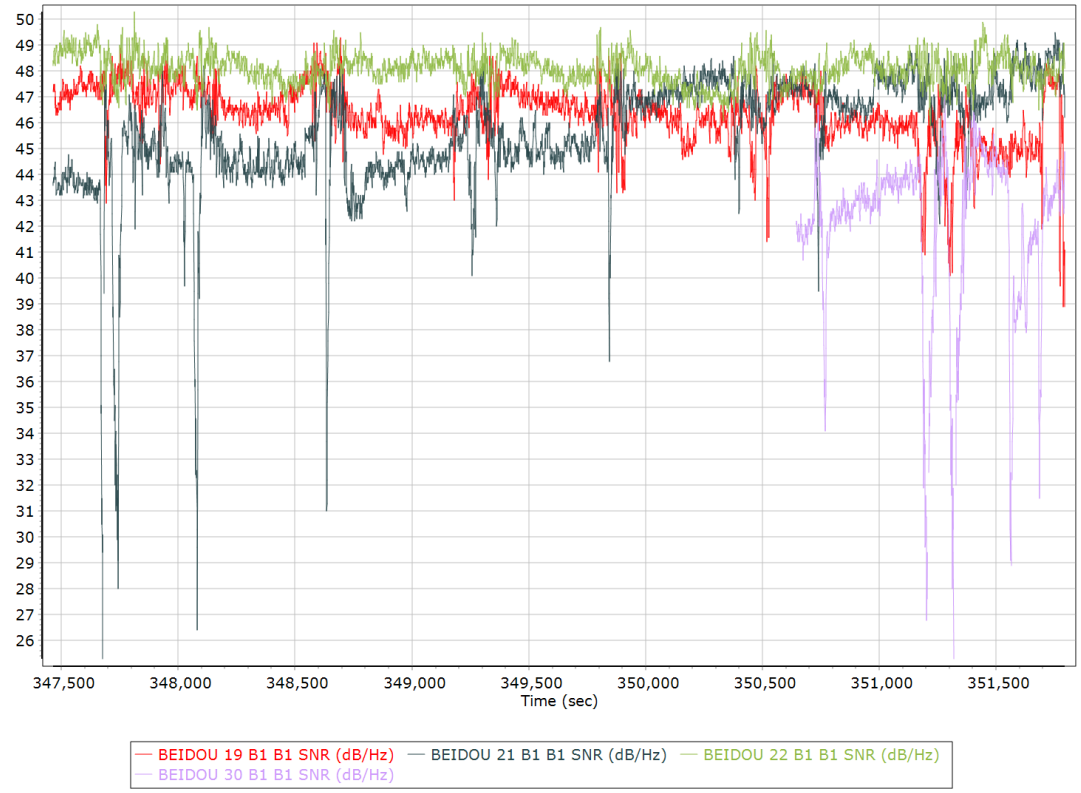
GLONASS L2 SNR



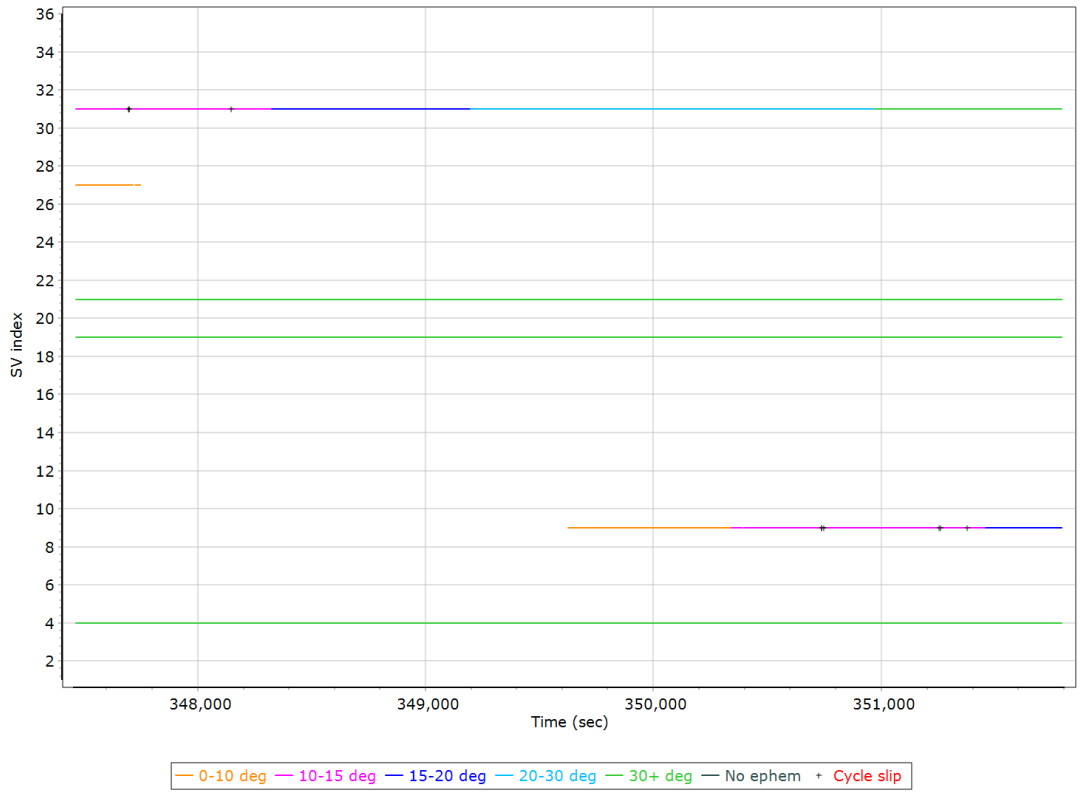
BEIDOU Satellite Lock/Elevation



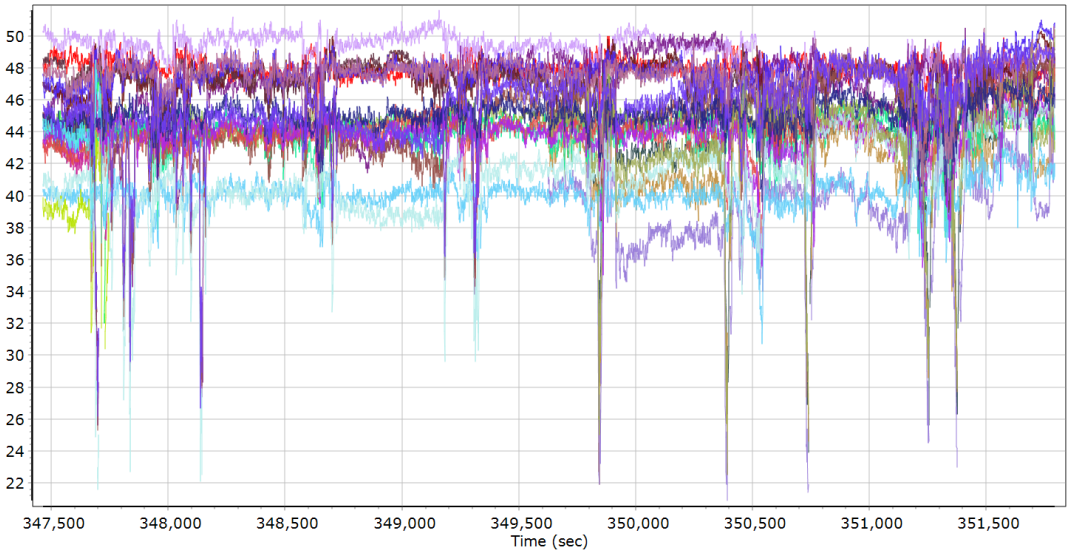
BEIDOU SNR



GALILEO Satellite Lock/Elevation



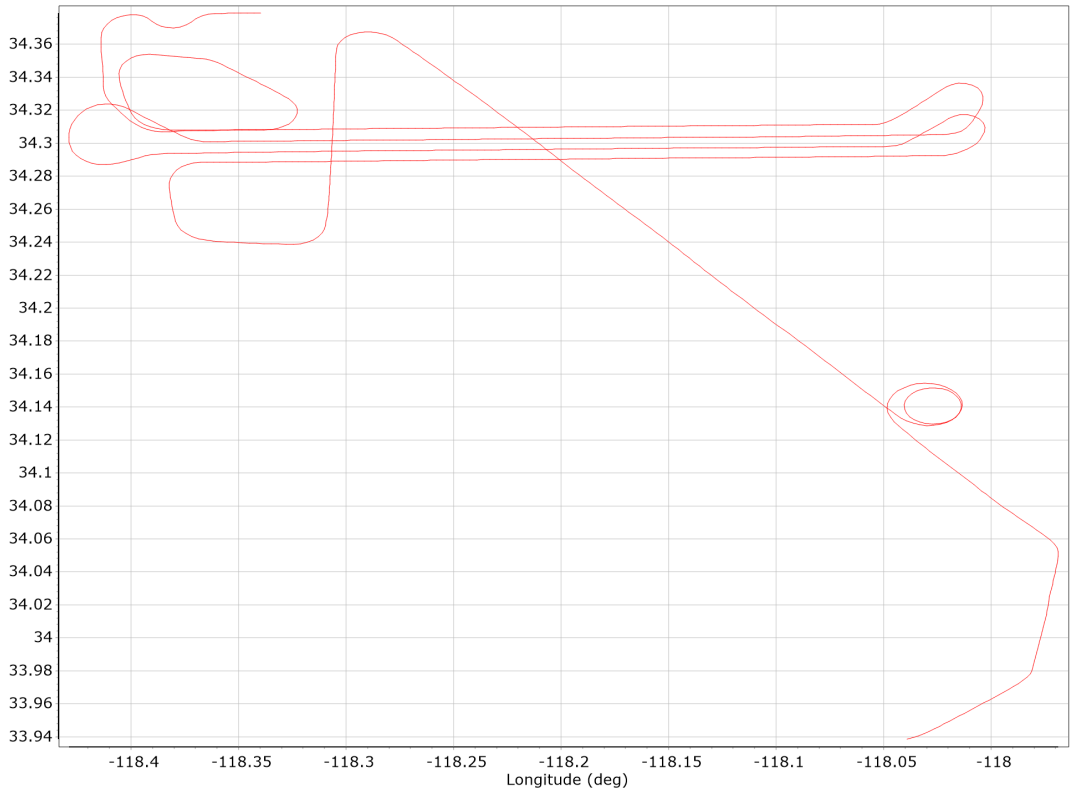
GALILEO SNR



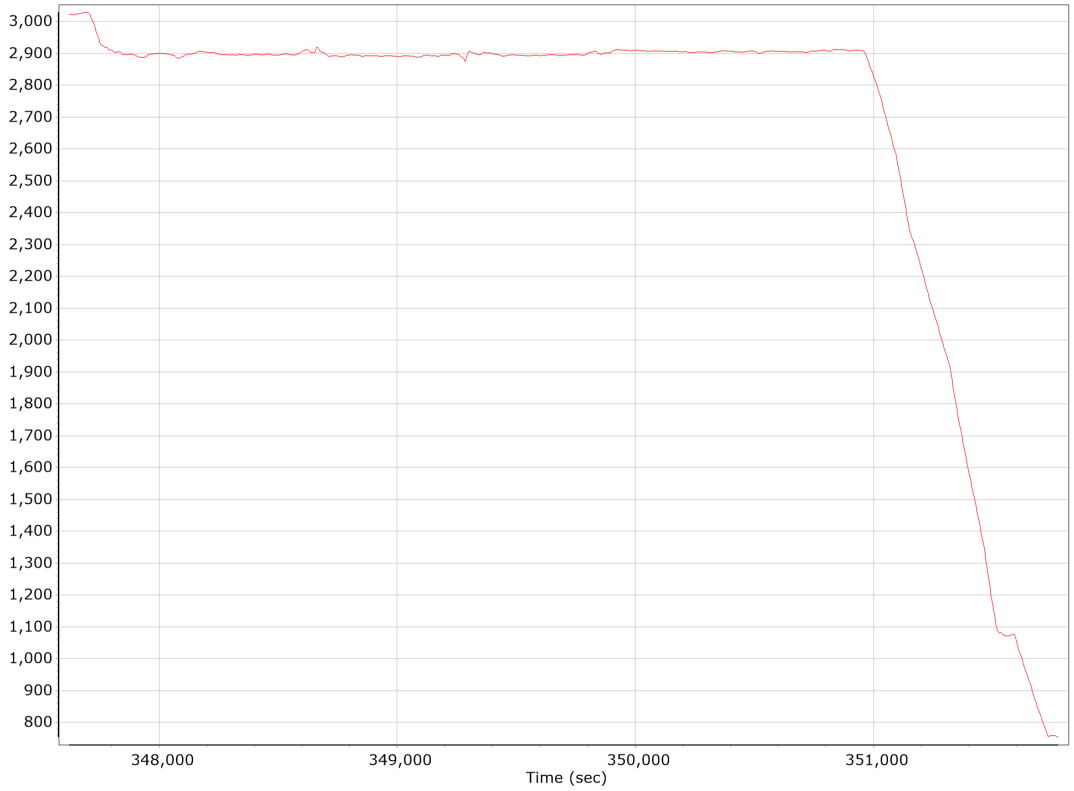
GALILEO 04 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 09 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 19 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 21 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 27 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 31 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 04 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 09 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 19 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 21 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 27 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 31 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 04 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 09 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 19 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 21 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 27 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 31 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 04 E5ABCentre AltBOCCompPD SNR (dB/Hz)
GALILEO 09 E5ABCentre AltBOCCompPD SNR (dB/Hz)

Smoothed Trajectory Information

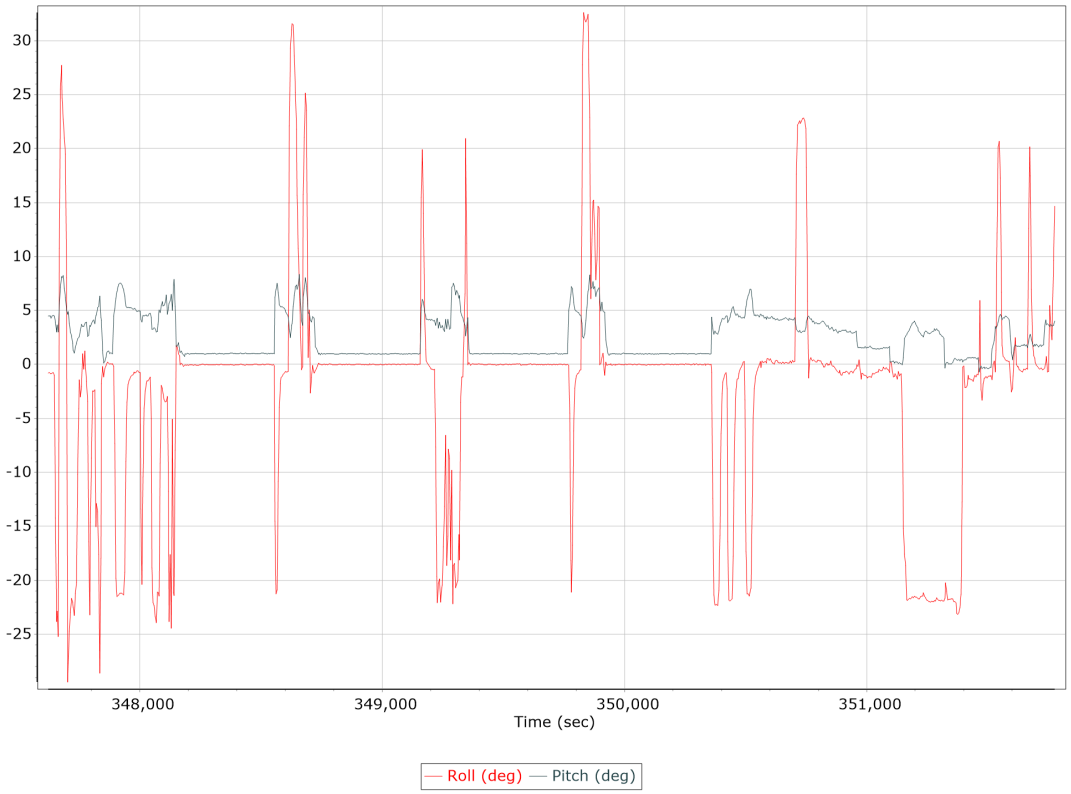
Top View



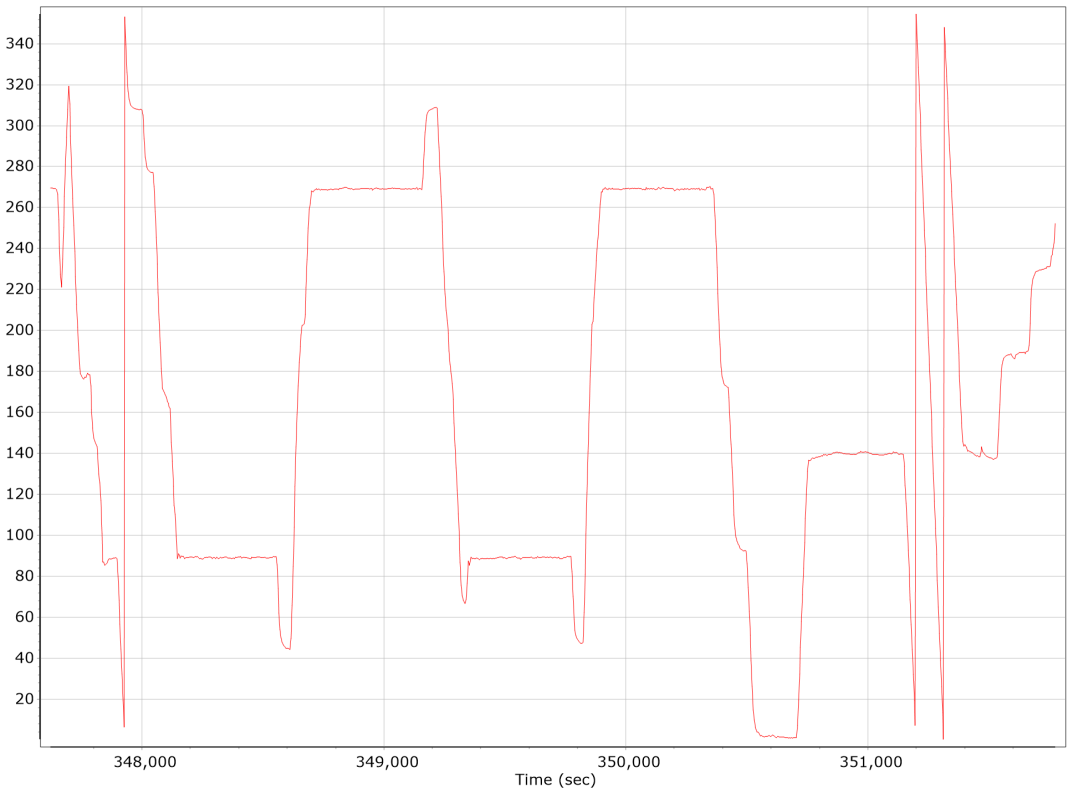
Altitude



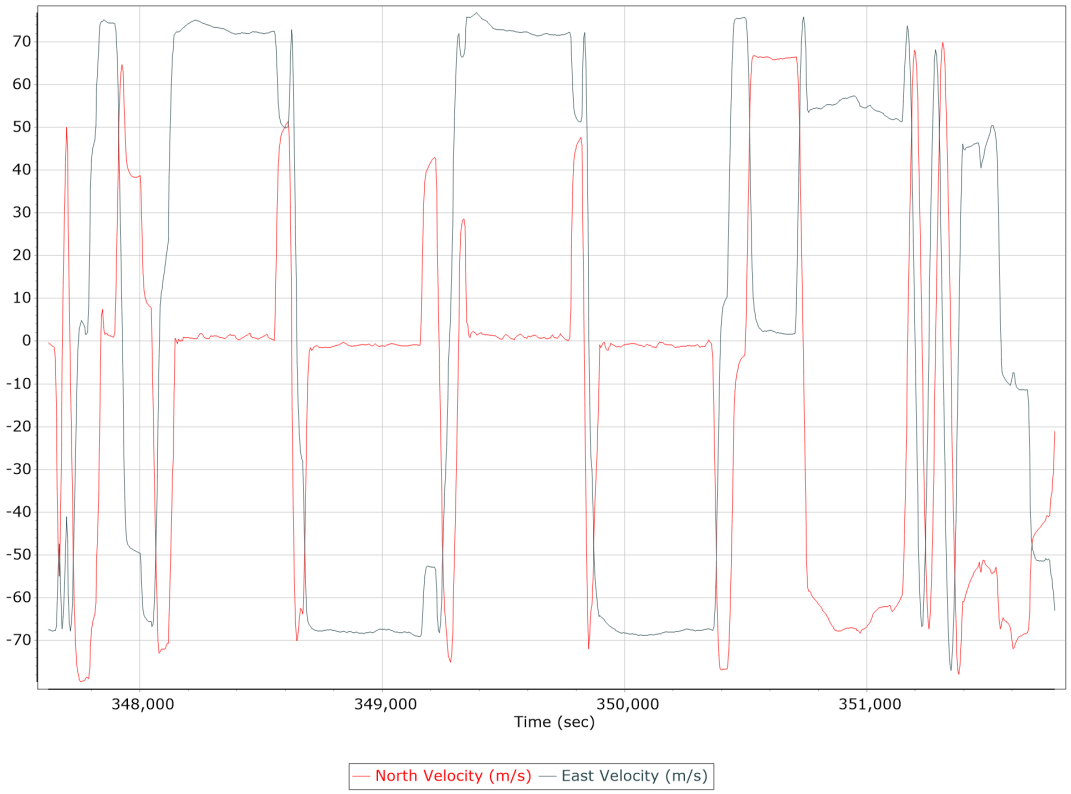
Roll/Pitch



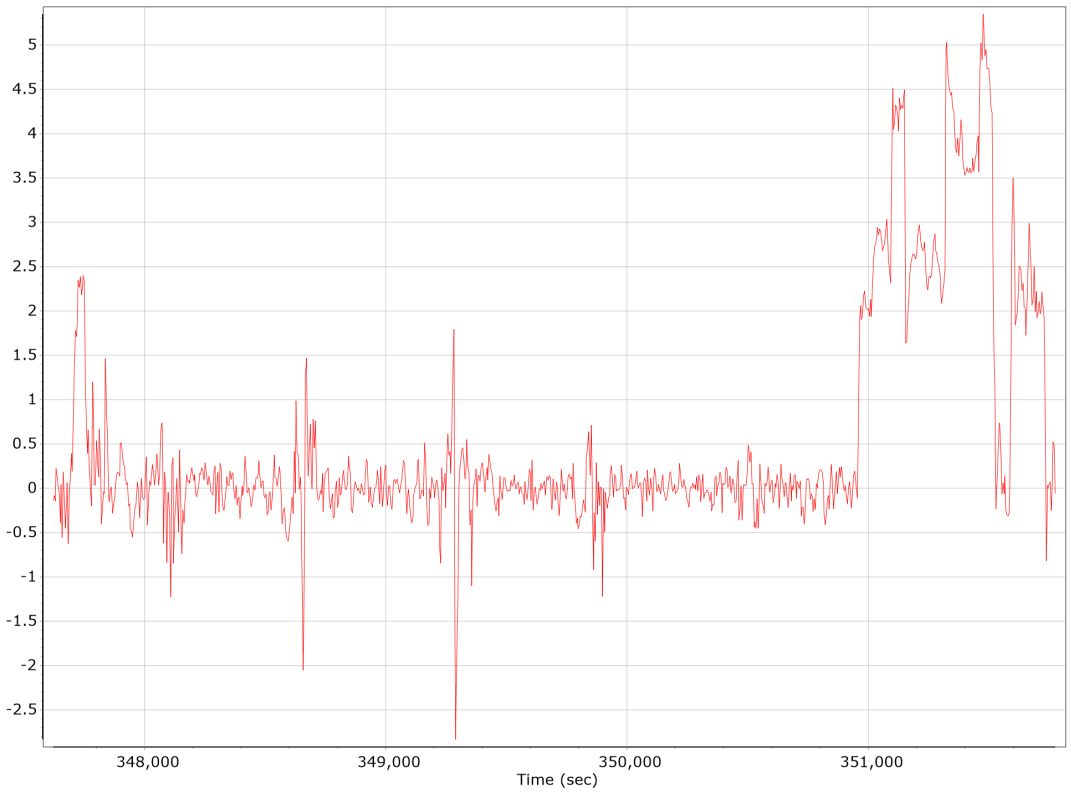
Heading



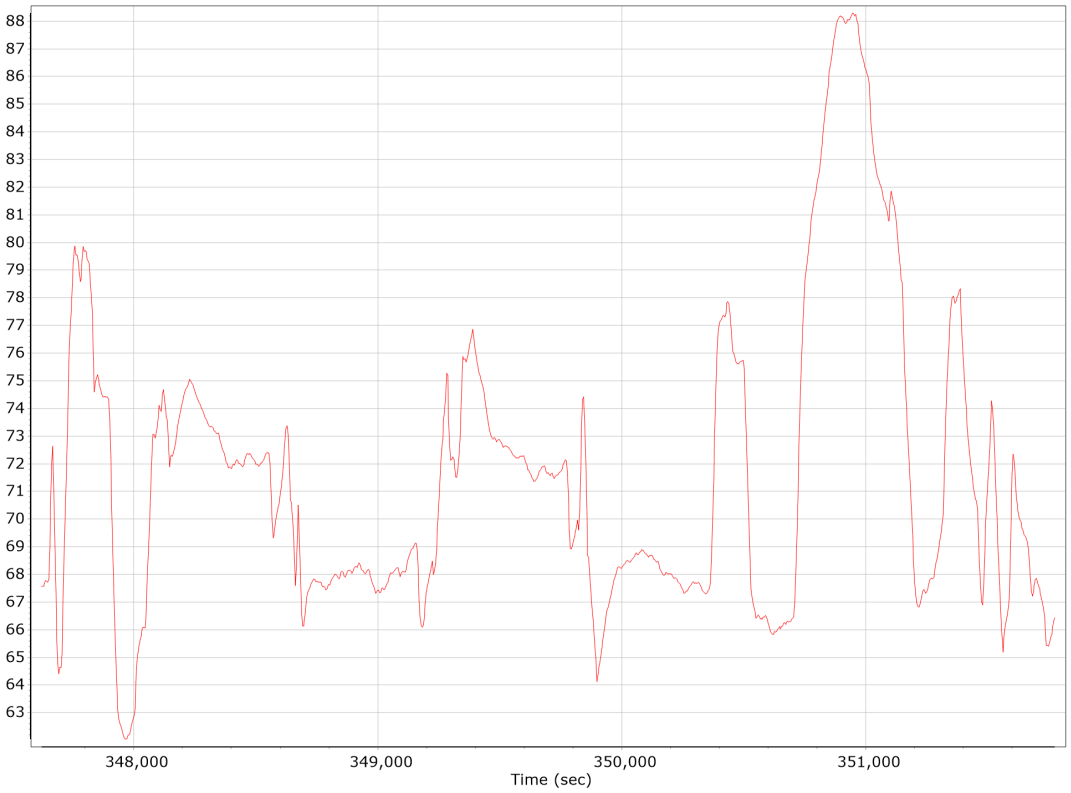
North/East Velocity



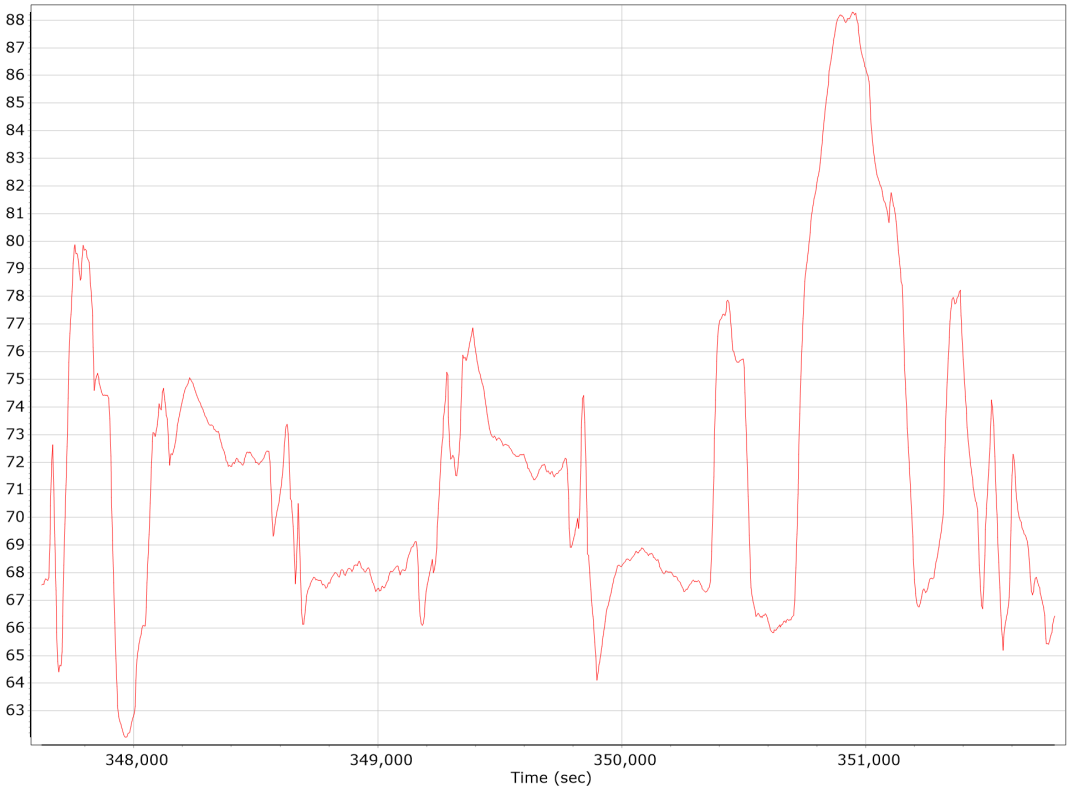
Down Velocity



Total Speed



Ground Speed



Body Acceleration



Total Body Acceleration

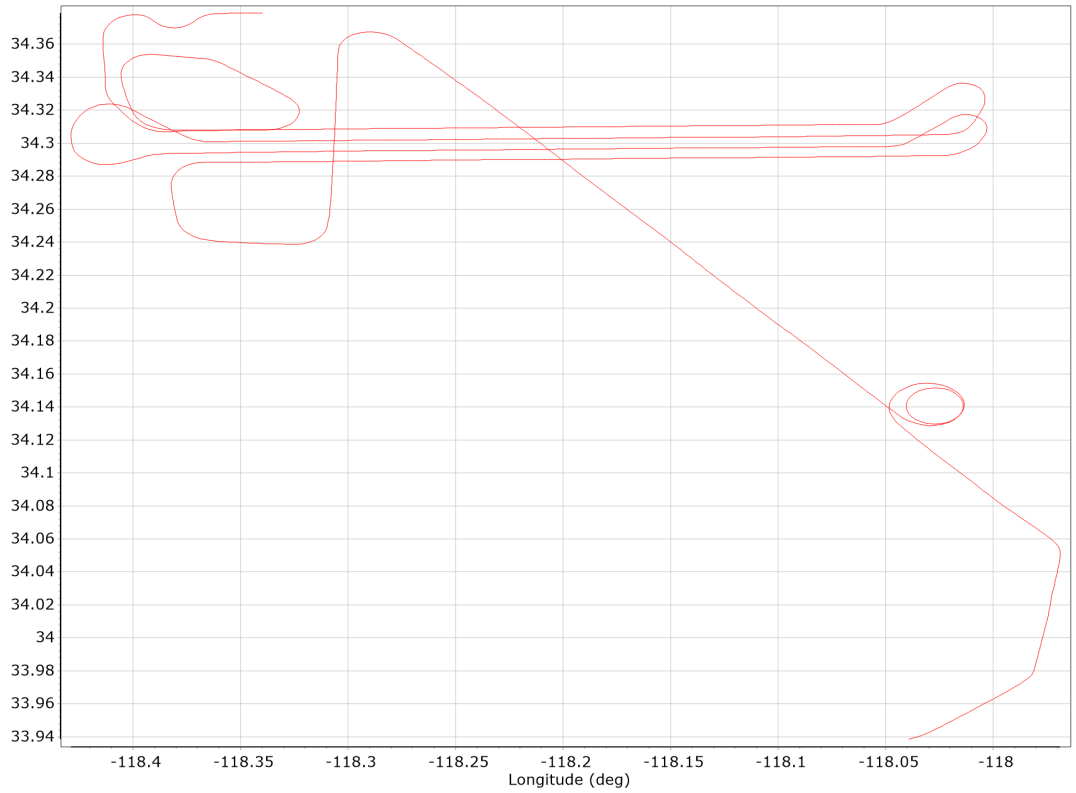


Body Angular Rate

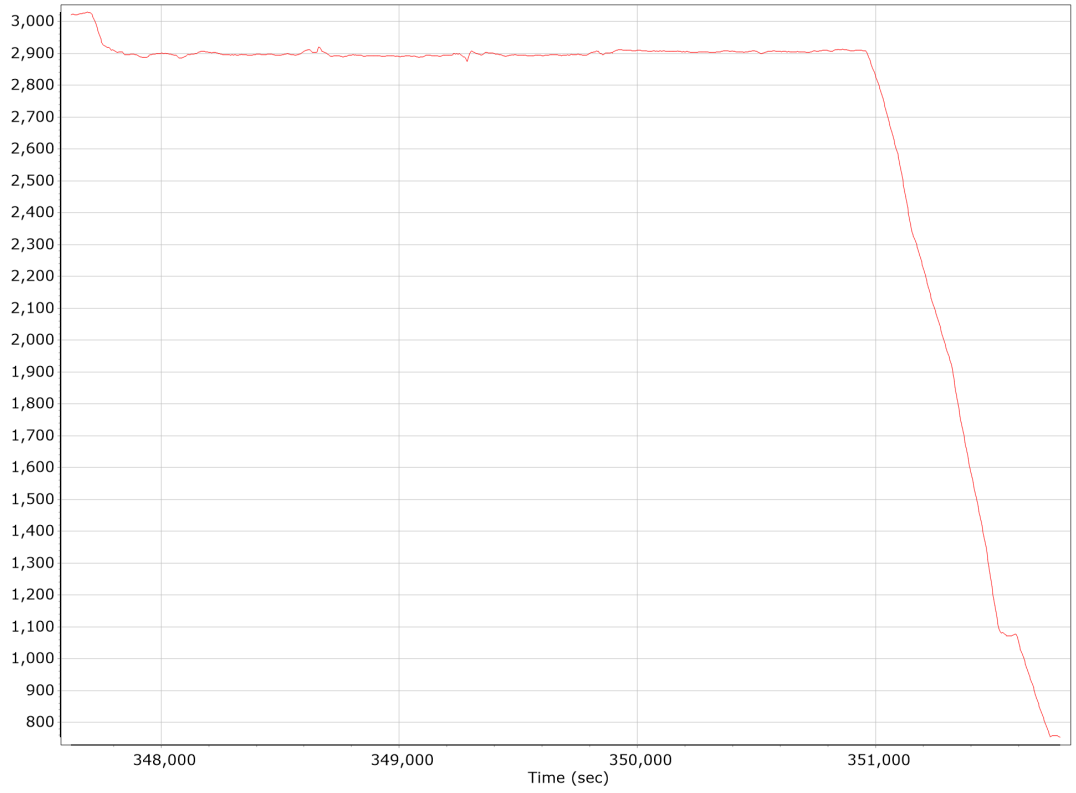


Forward Processed Trajectory Information

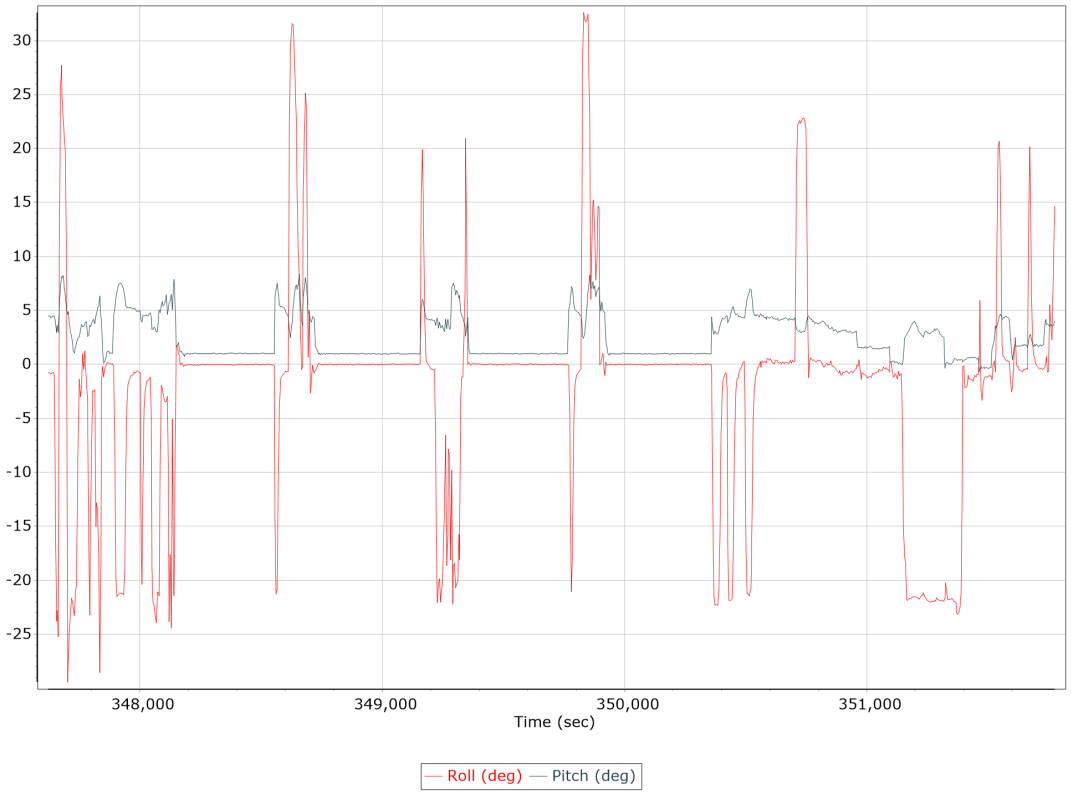
Top View



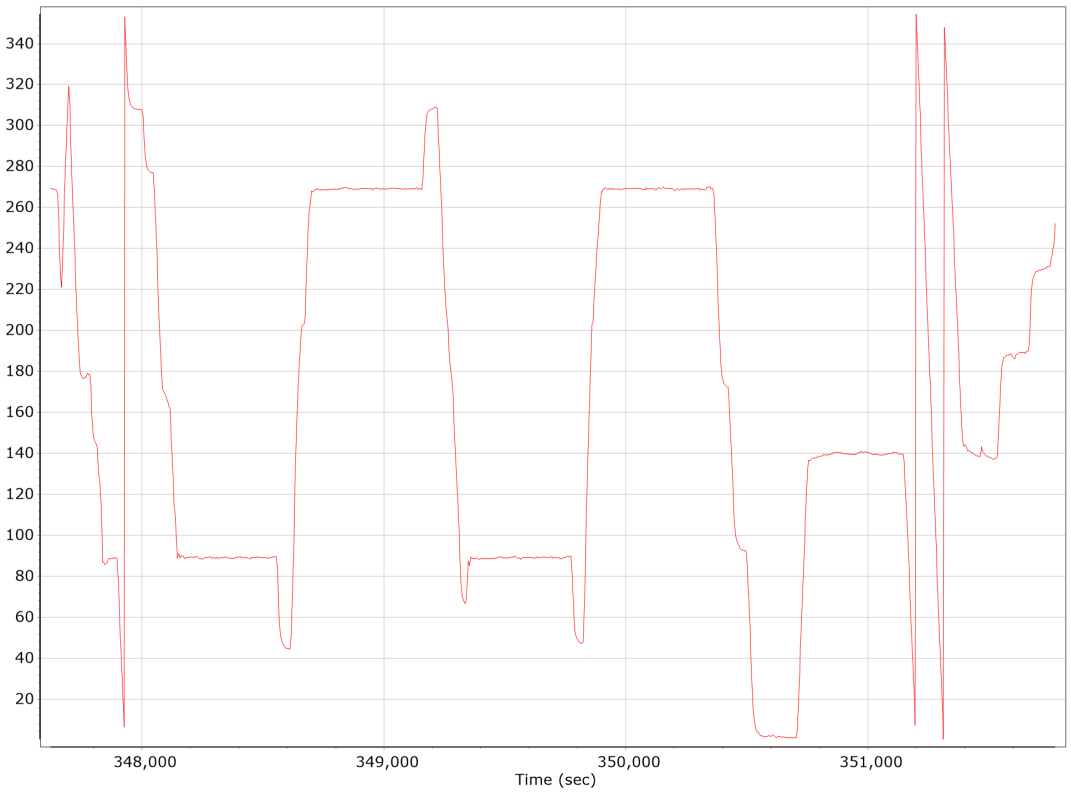
Altitude



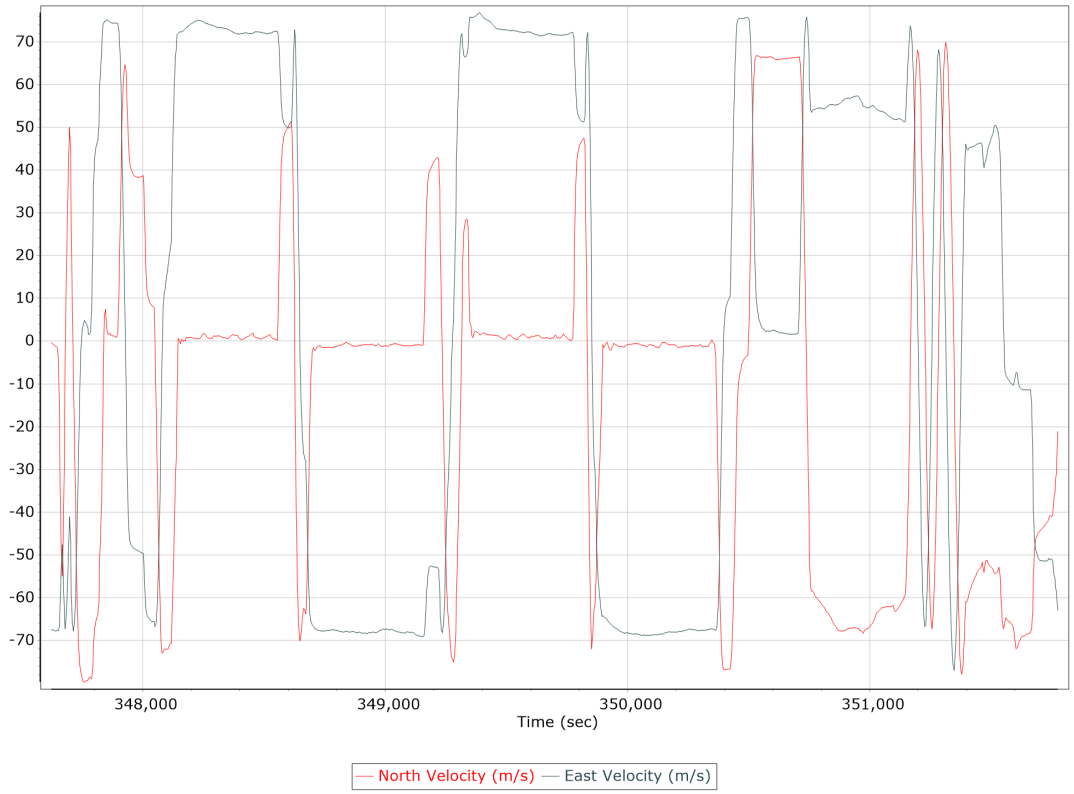
Roll/Pitch



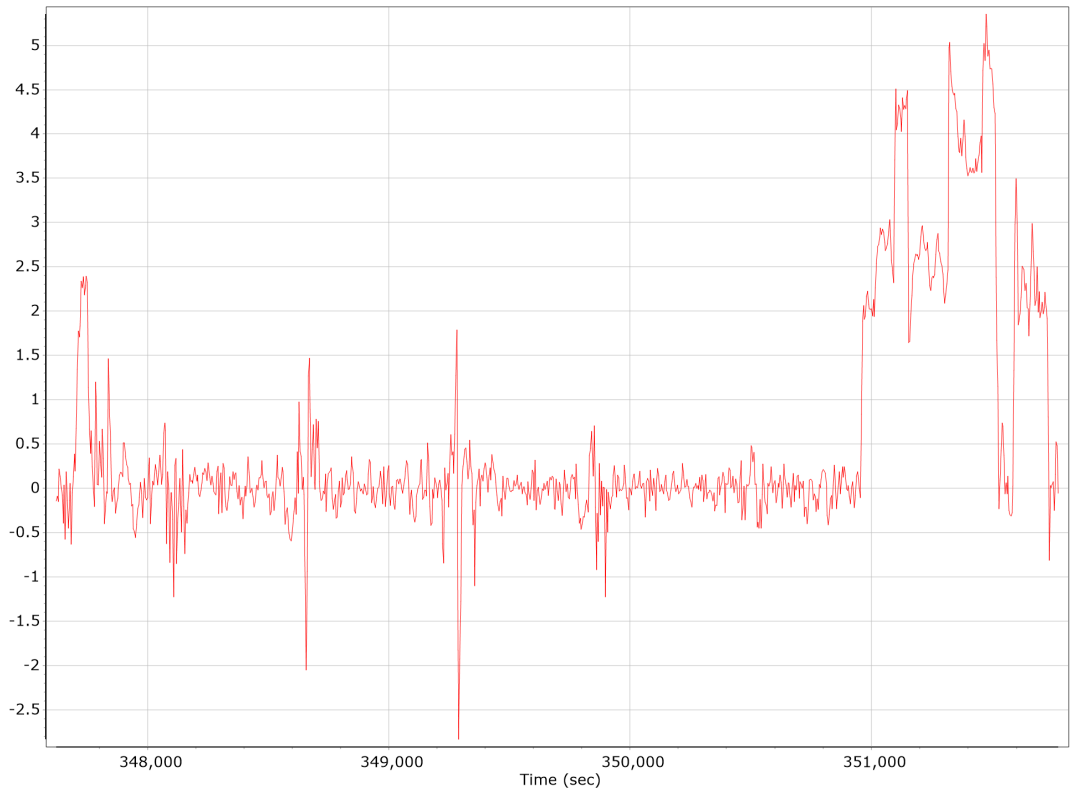
Heading



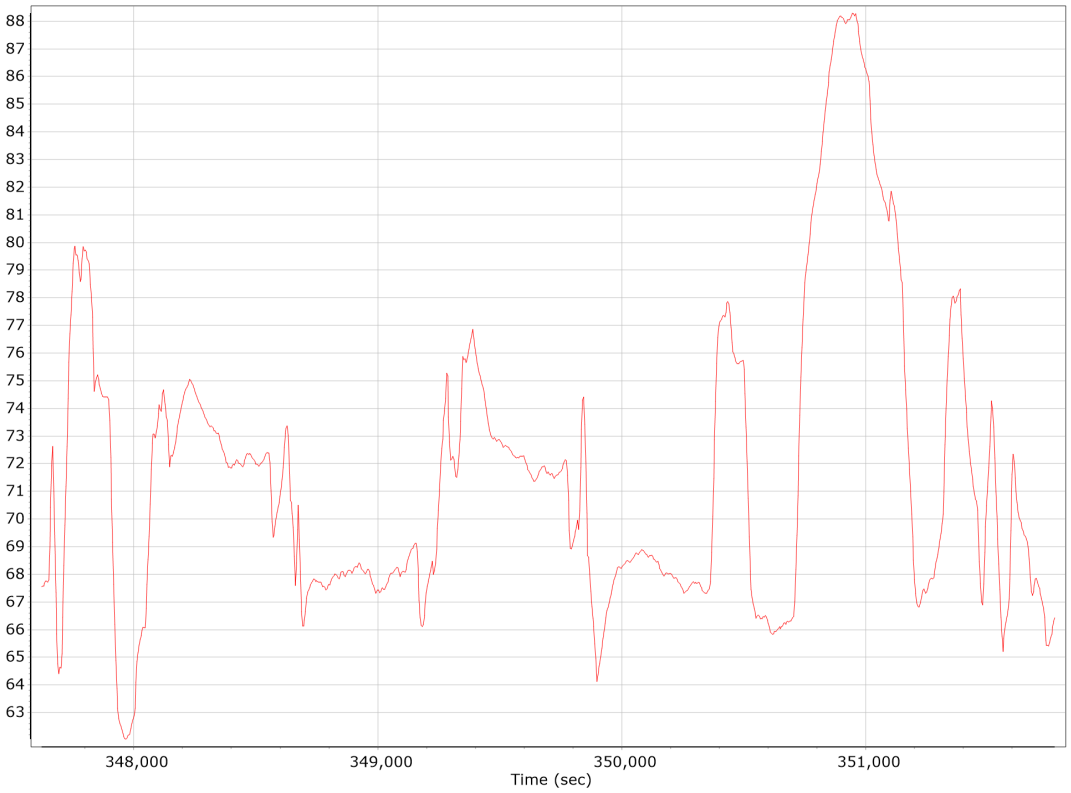
North/East Velocity



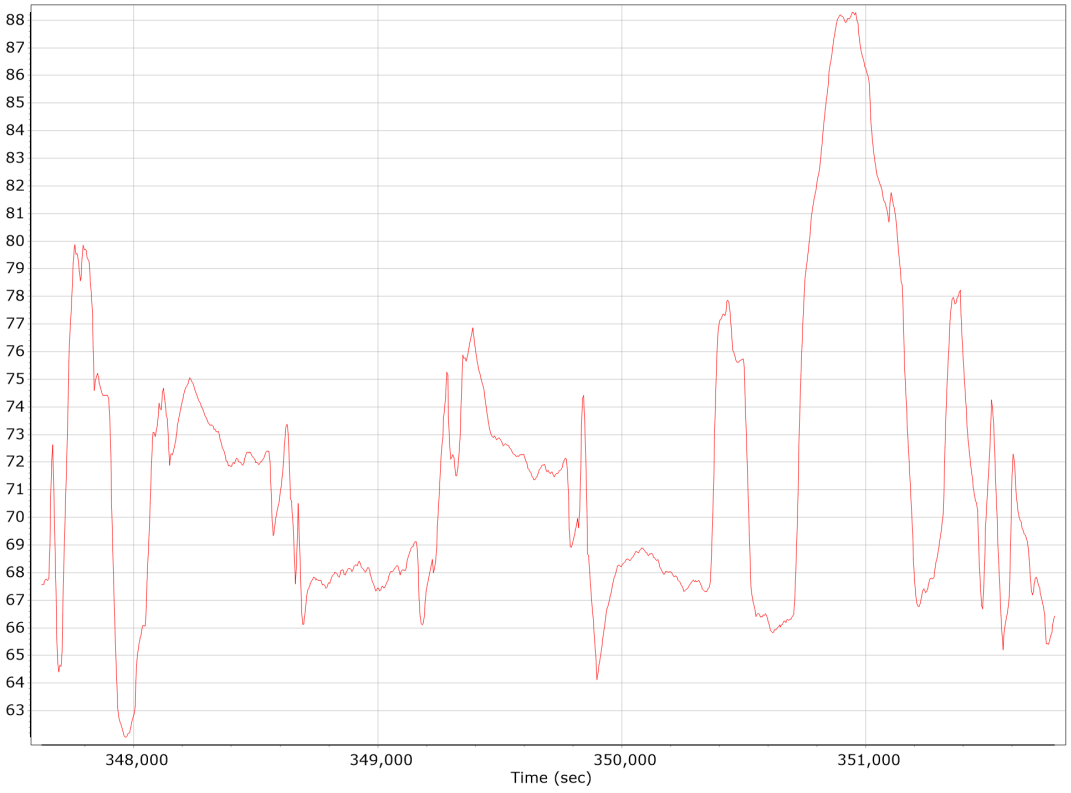
Down Velocity



Total Speed



Ground Speed



Body Acceleration



Total Body Acceleration



Body Angular Rate

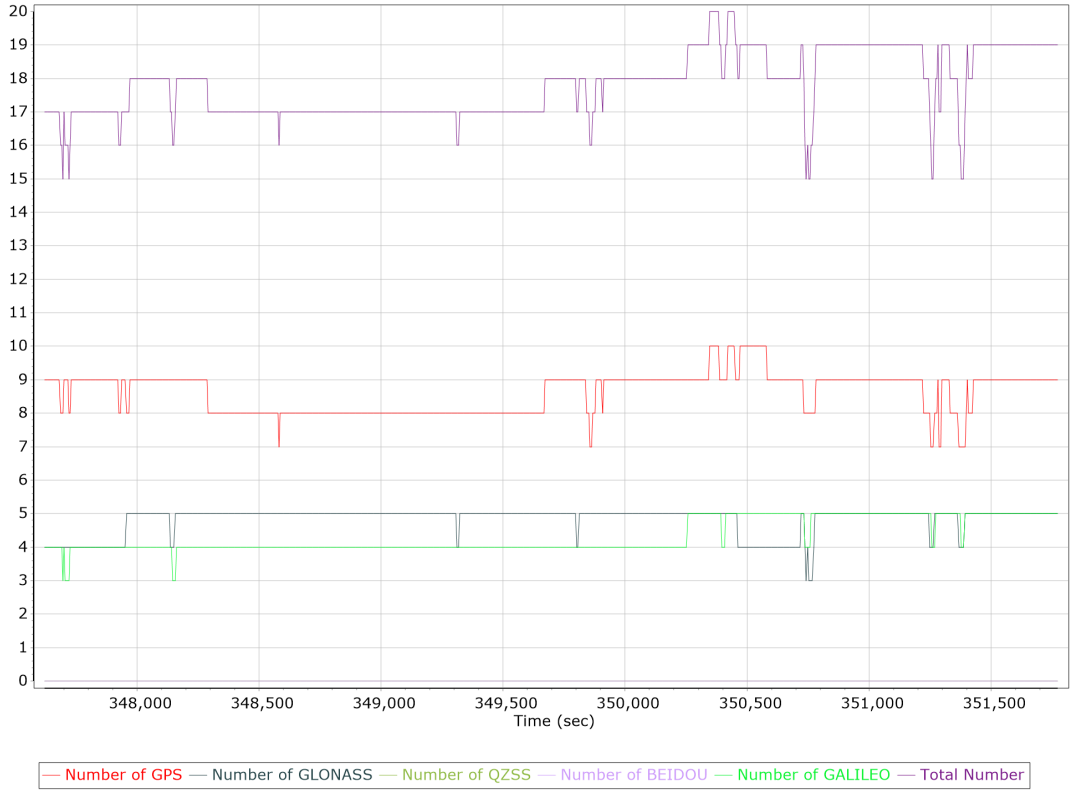


GNSS QC

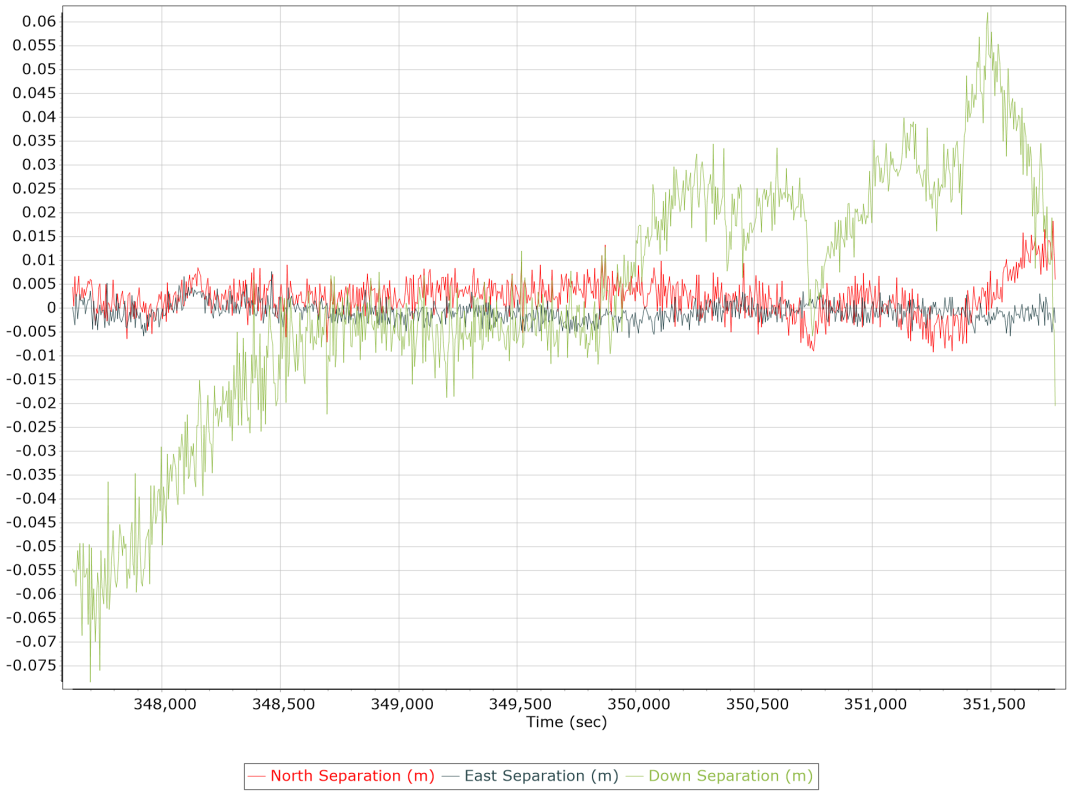
GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	7	10	9
Number of GLONASS SV	3	5	5
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	3	5	4
Total number of SV	15	20	18
PDOP	1.08	1.73	1.31
QC Solution Gaps	0.00	0.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	4318.00	0.00	0.00
Percentage	100.00	0.00	0.00

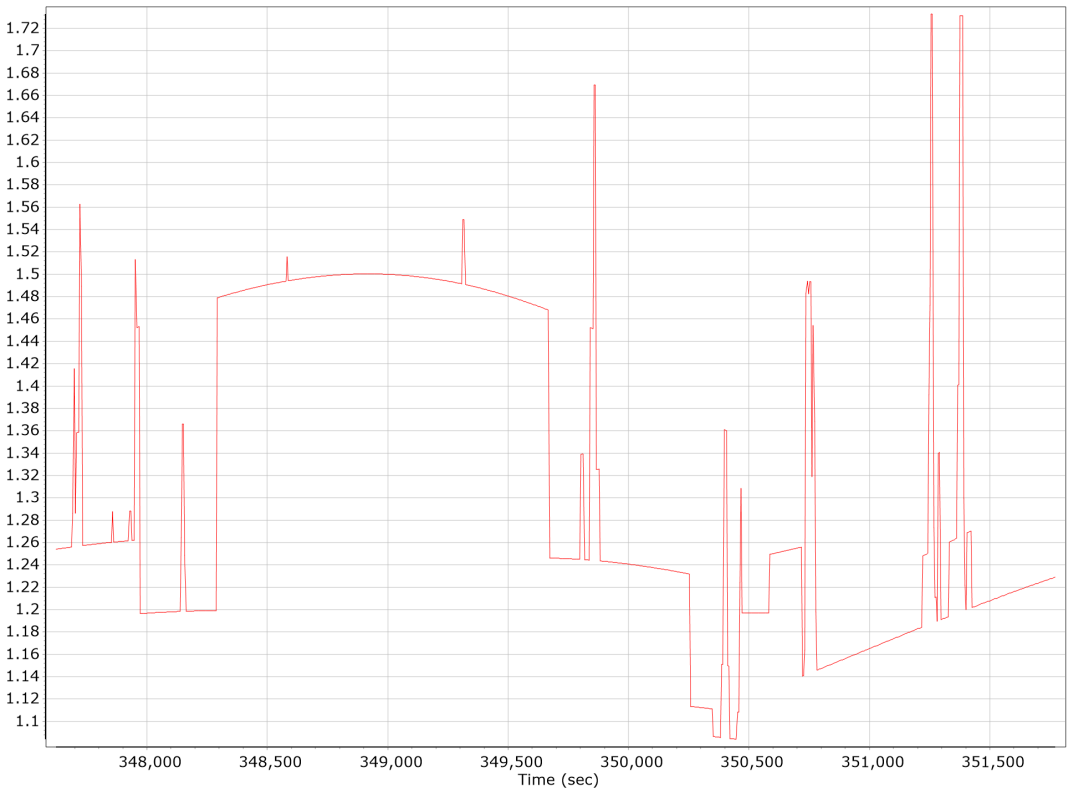
Num SVs in solution



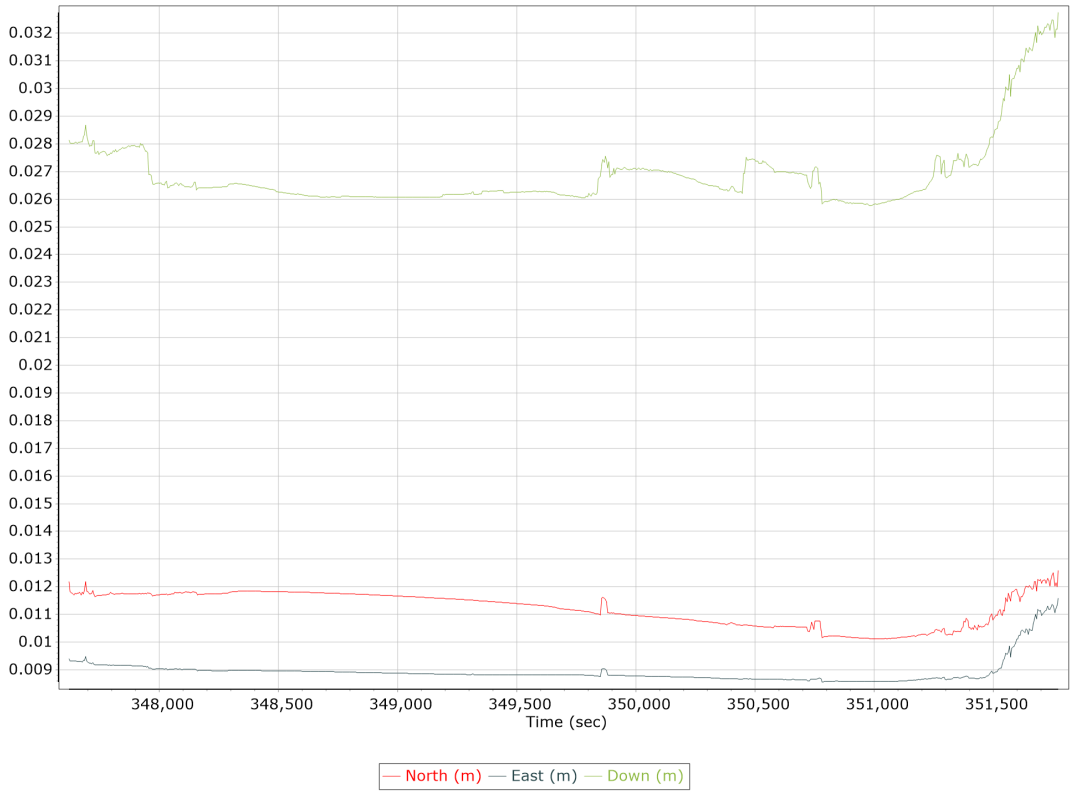
Forward/Reverse Separation



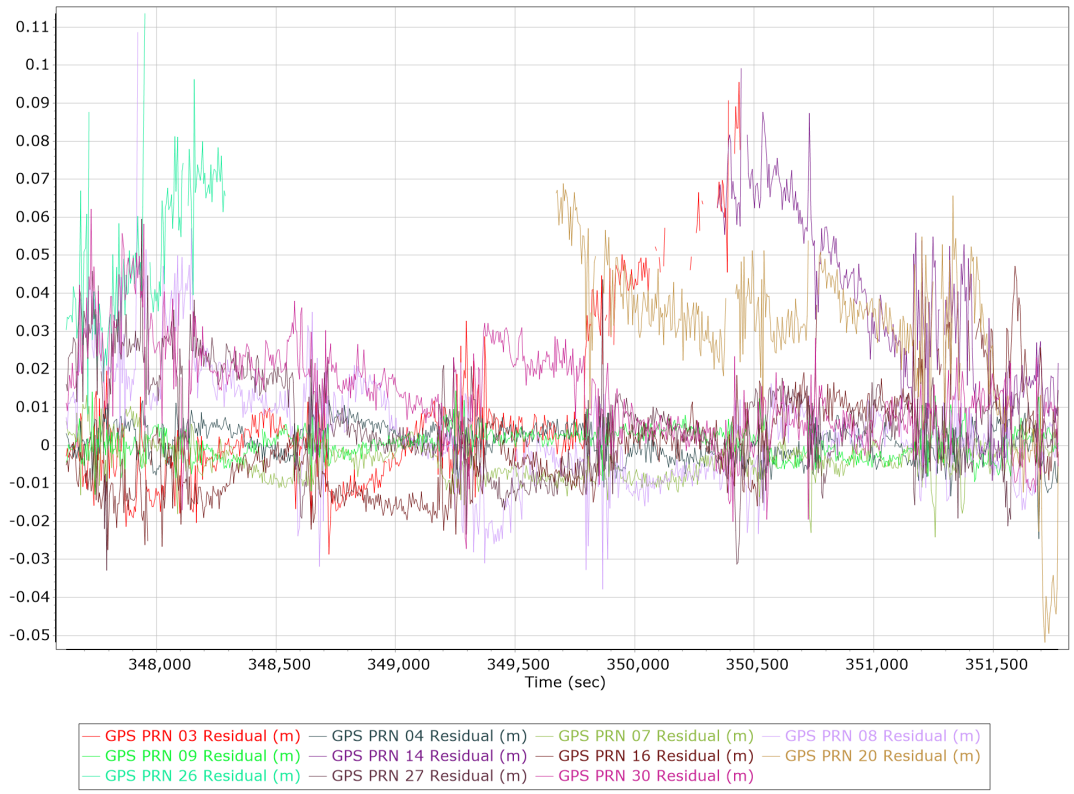
PDOP



Estimated Position Accuracy



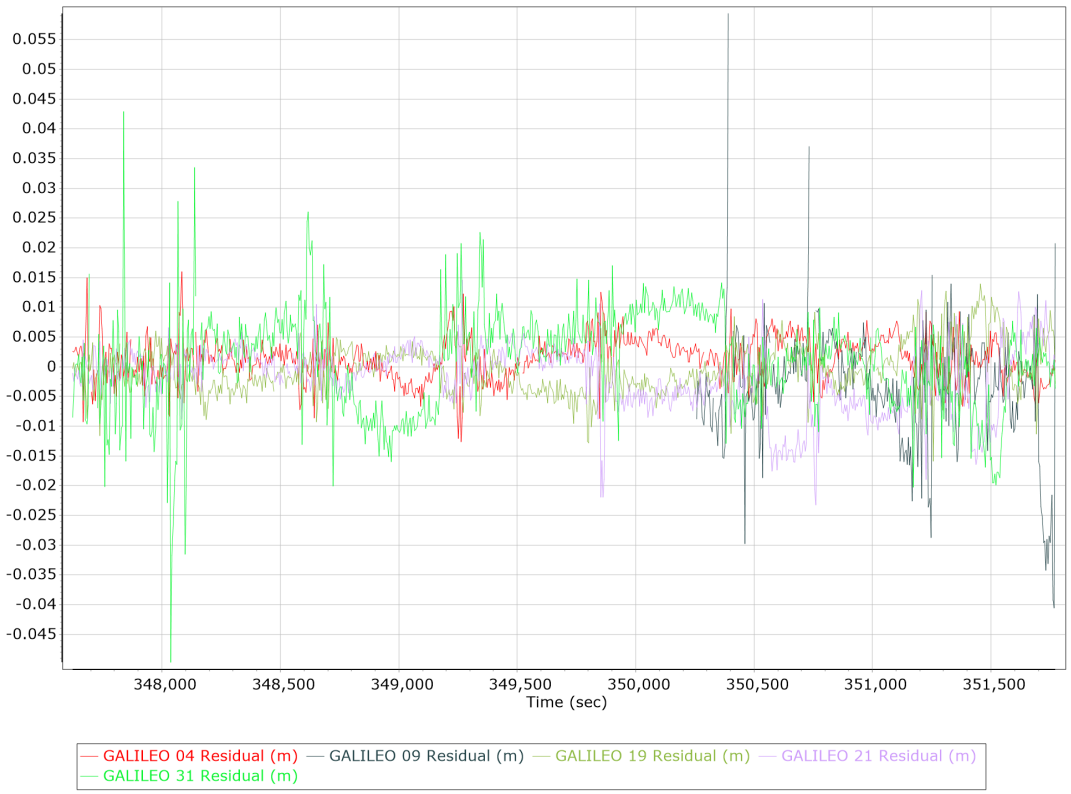
GPS Residuals



GLONASS Residuals



GALILEO Residuals



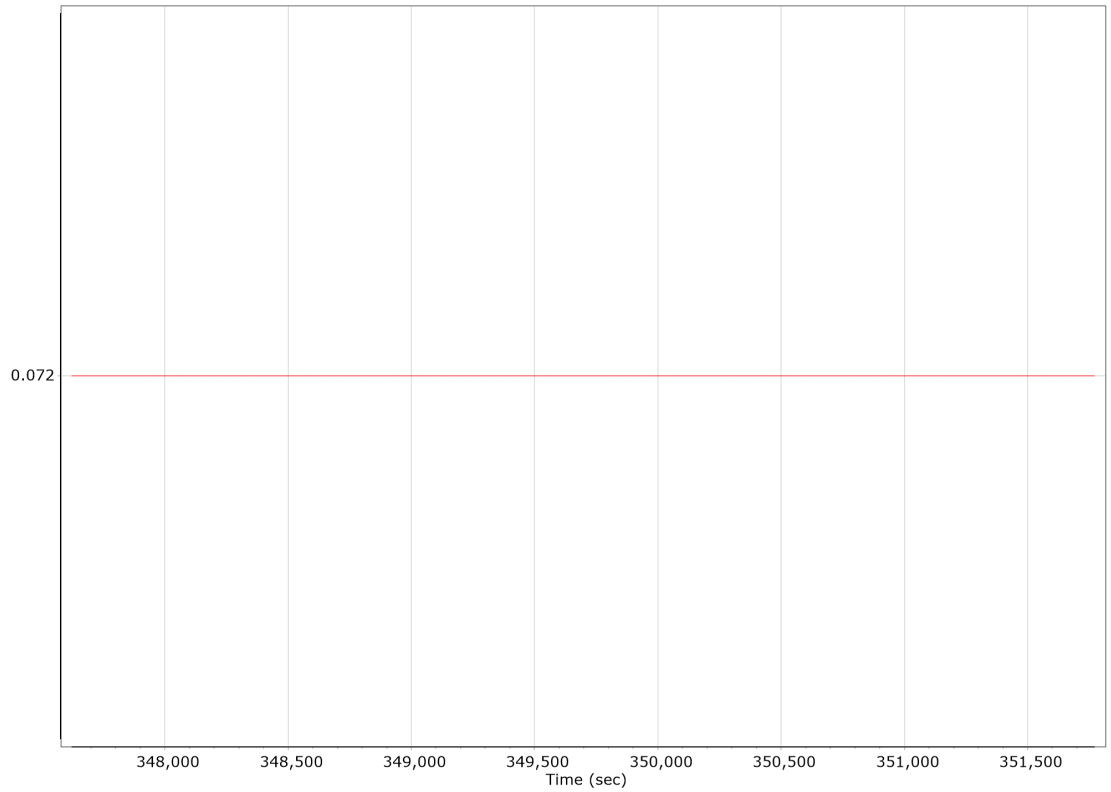
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	347447.000 (9/28/2023 12:30:47 AM)		
Processing end time	351775.000 (9/28/2023 1:42:55 AM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.072	0.090	-1.275
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

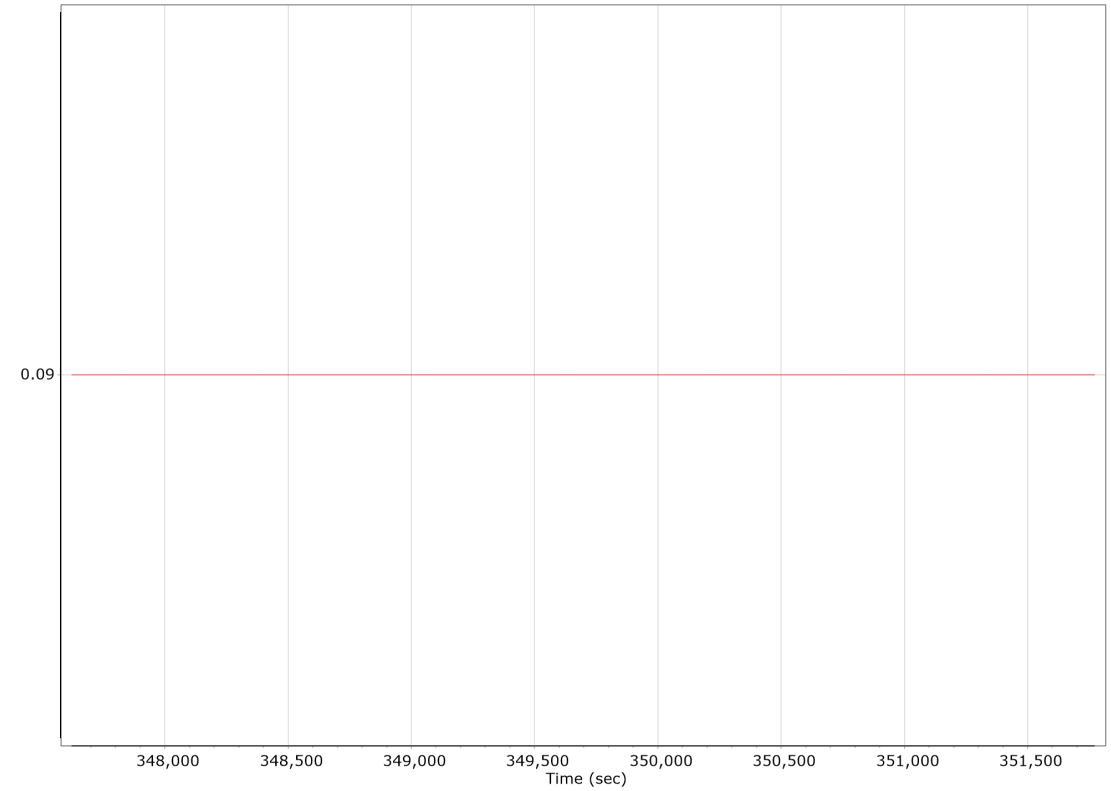
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

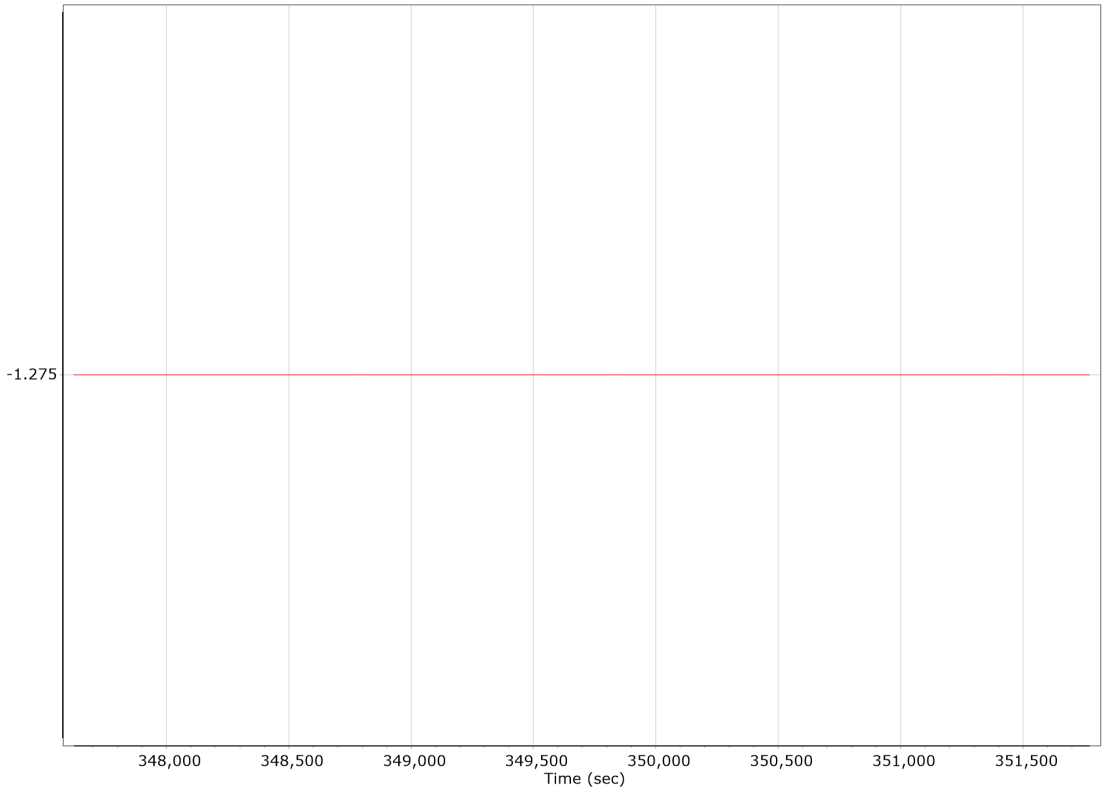
X Reference-Primary GNSS Lever Arm (m)



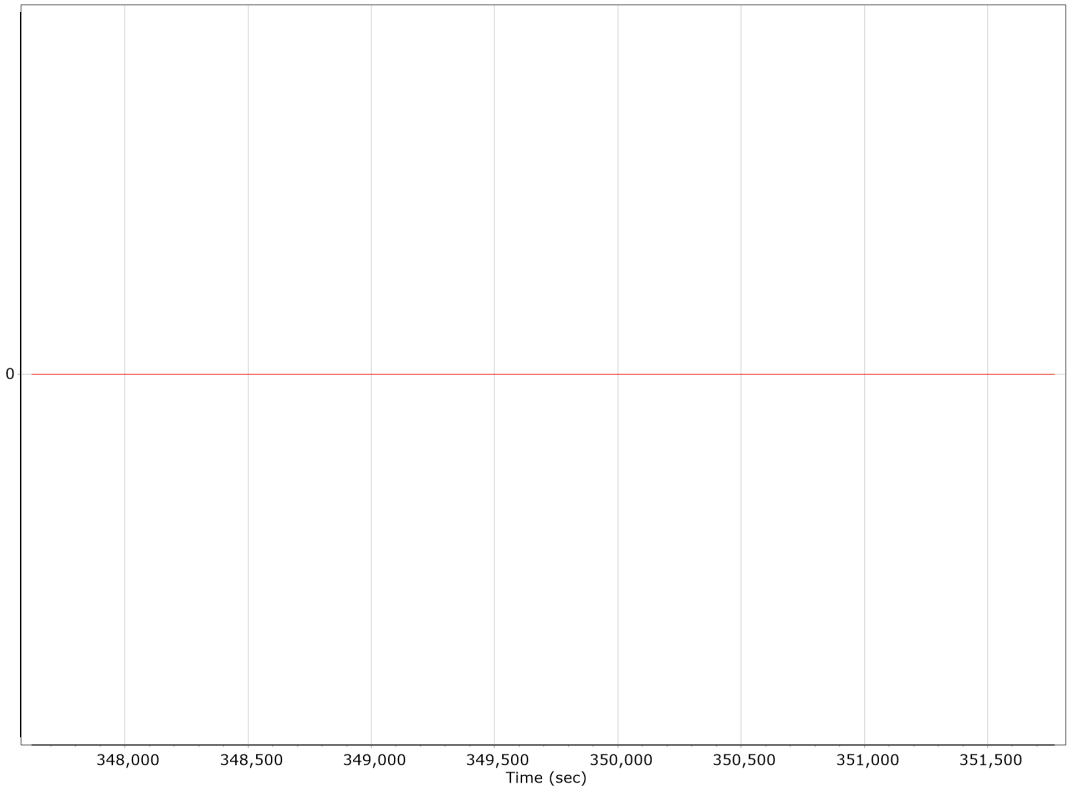
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



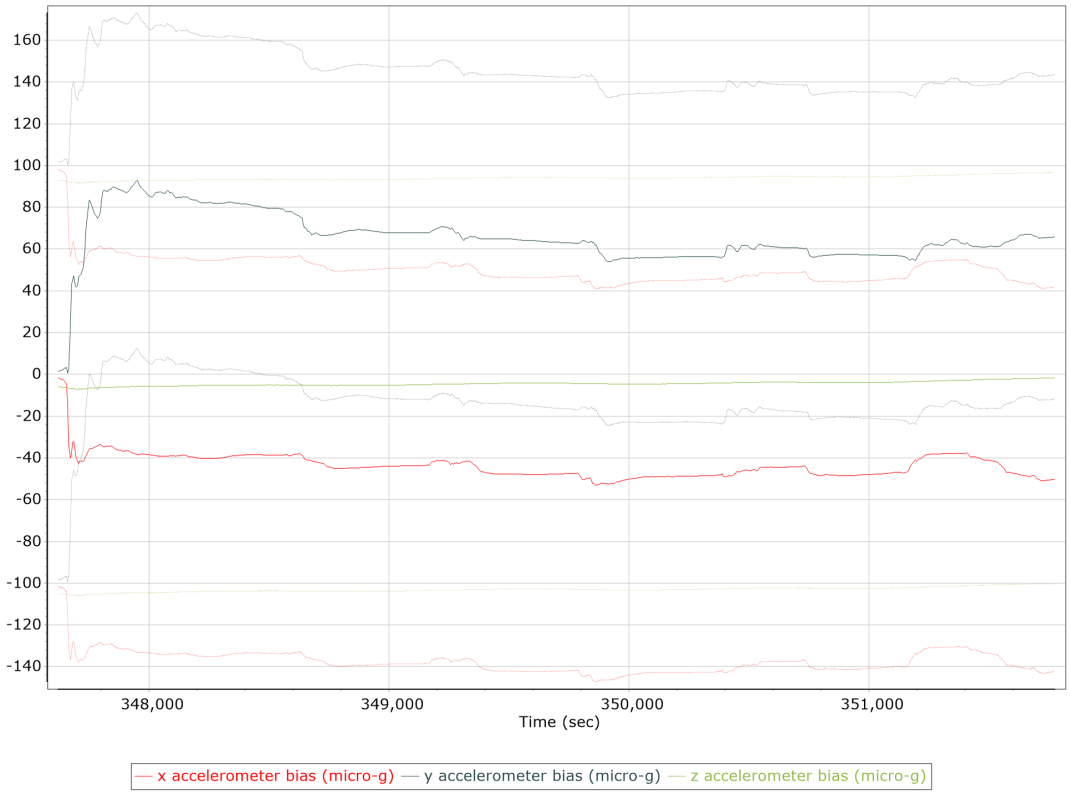
Reference-Primary GNSS Lever Arm Figure of Merit



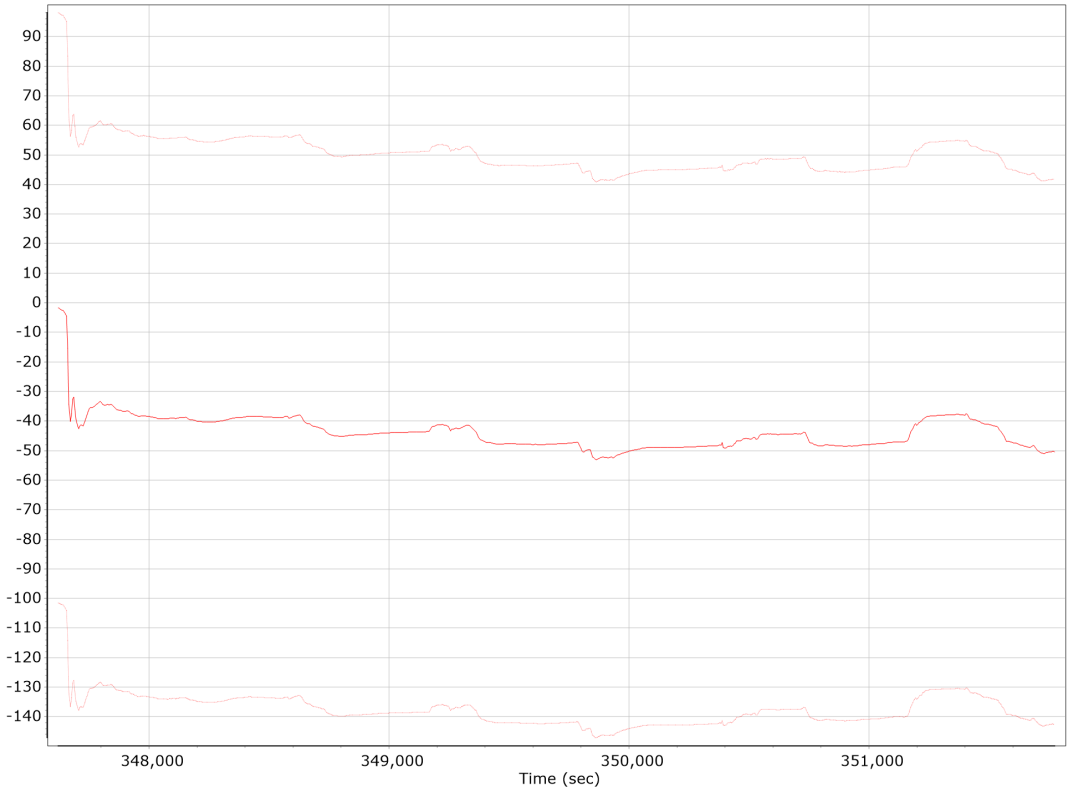
IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

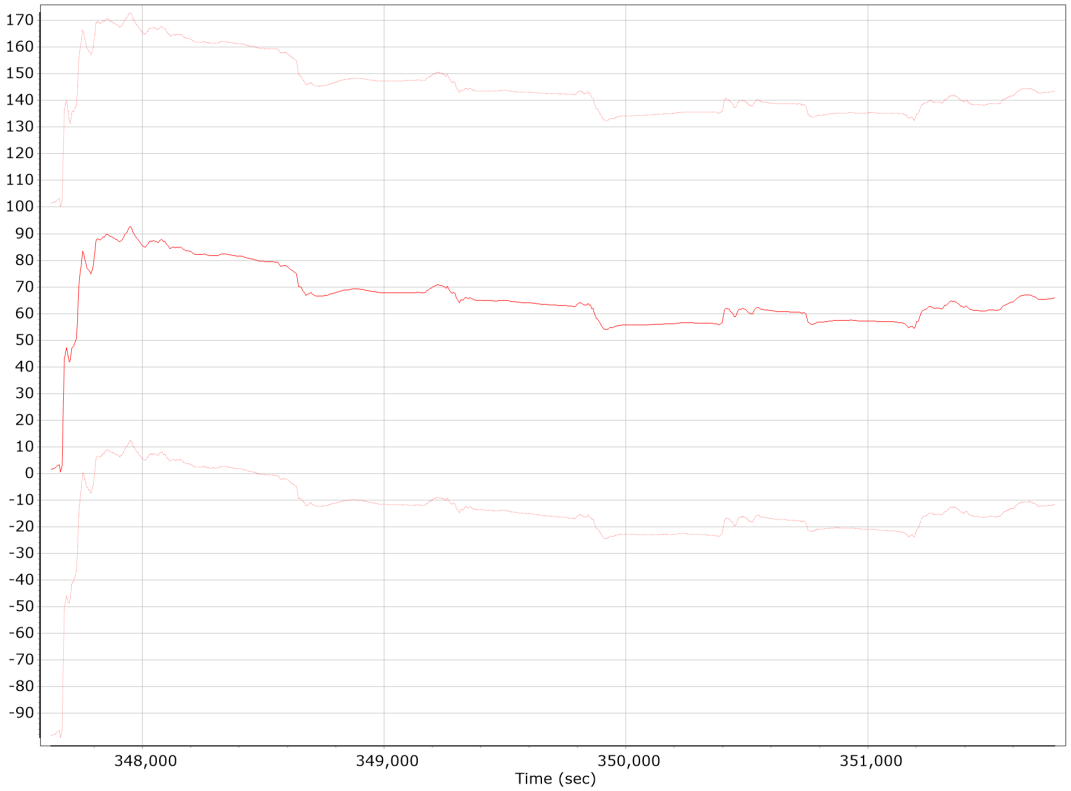
Accelerometer Bias (micro-g)



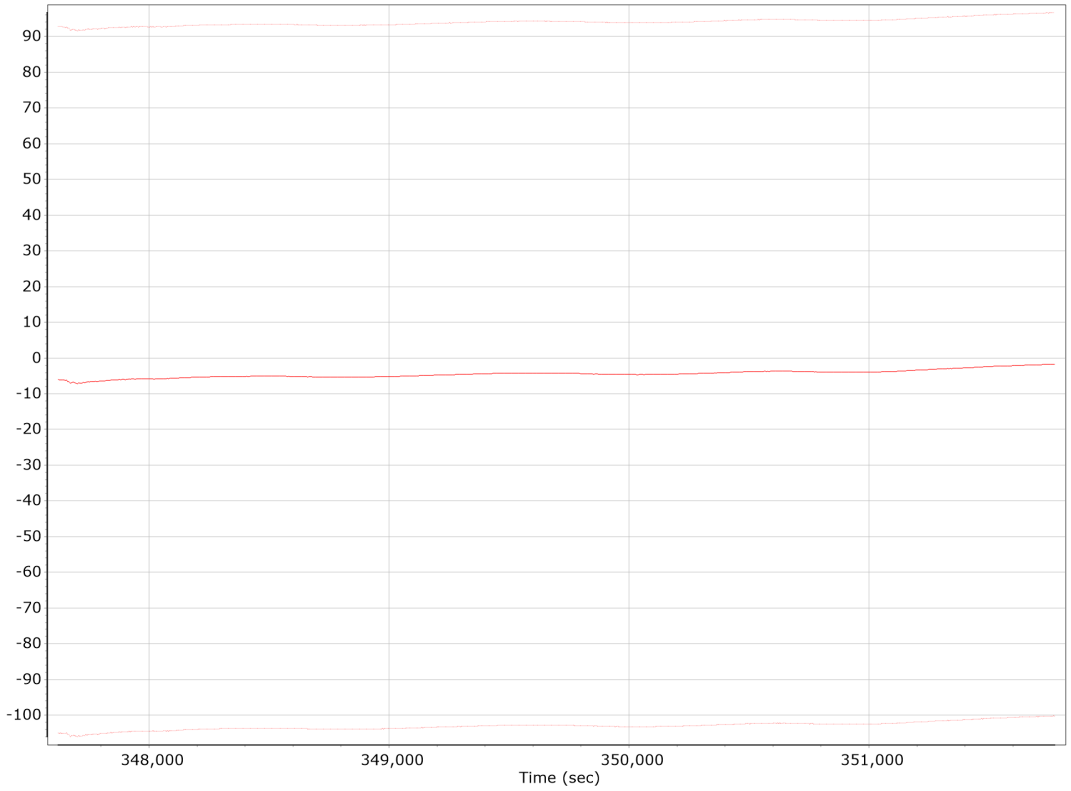
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



X Accelerometer Scale Error (ppm)



Y Accelerometer Scale Error (ppm)



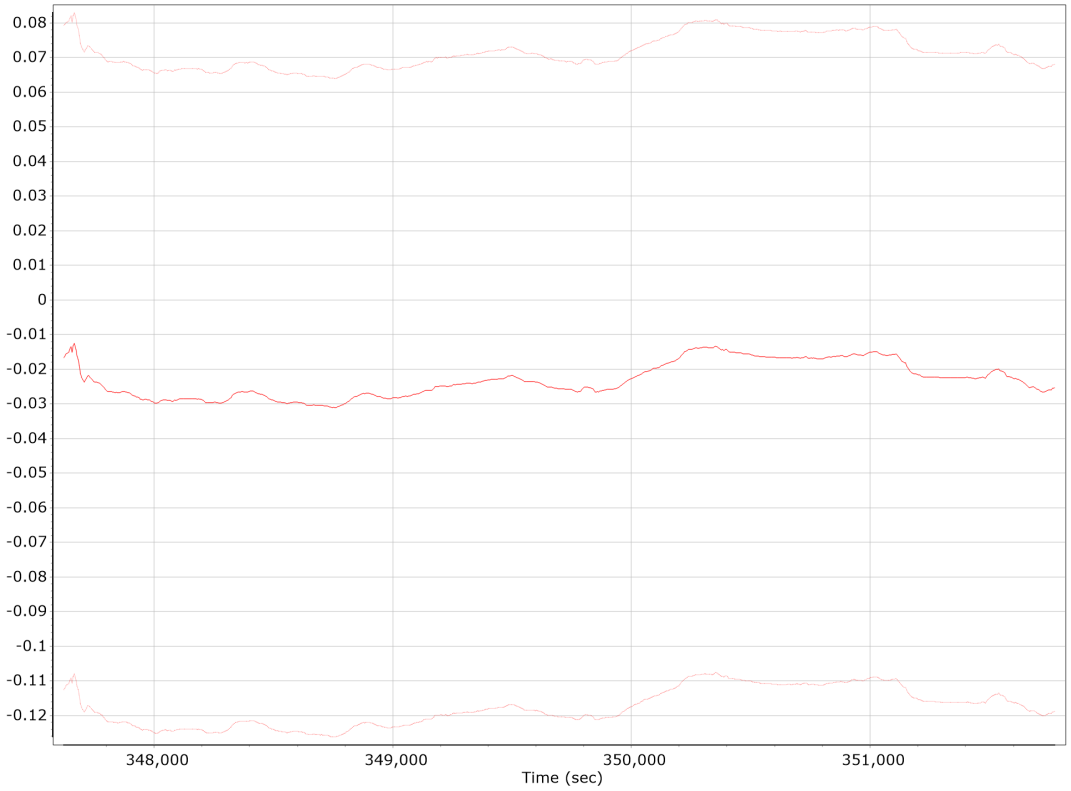
Z Accelerometer Scale Error (ppm)



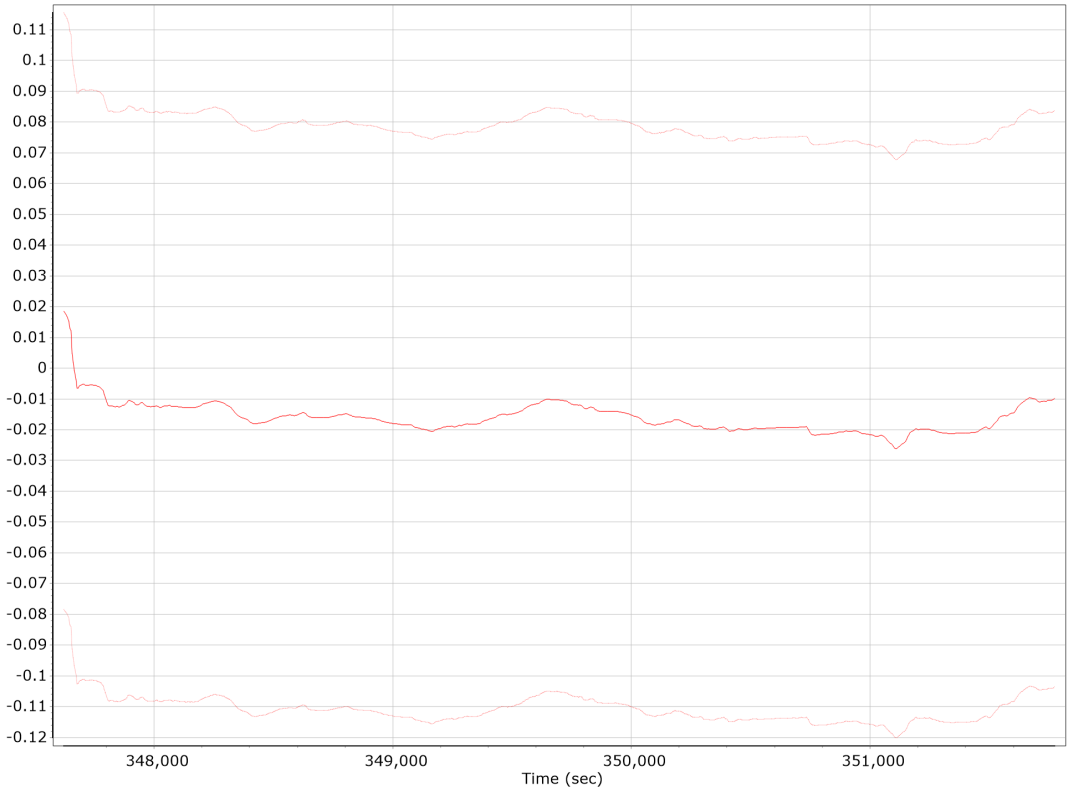
Gyro Bias (deg/h)



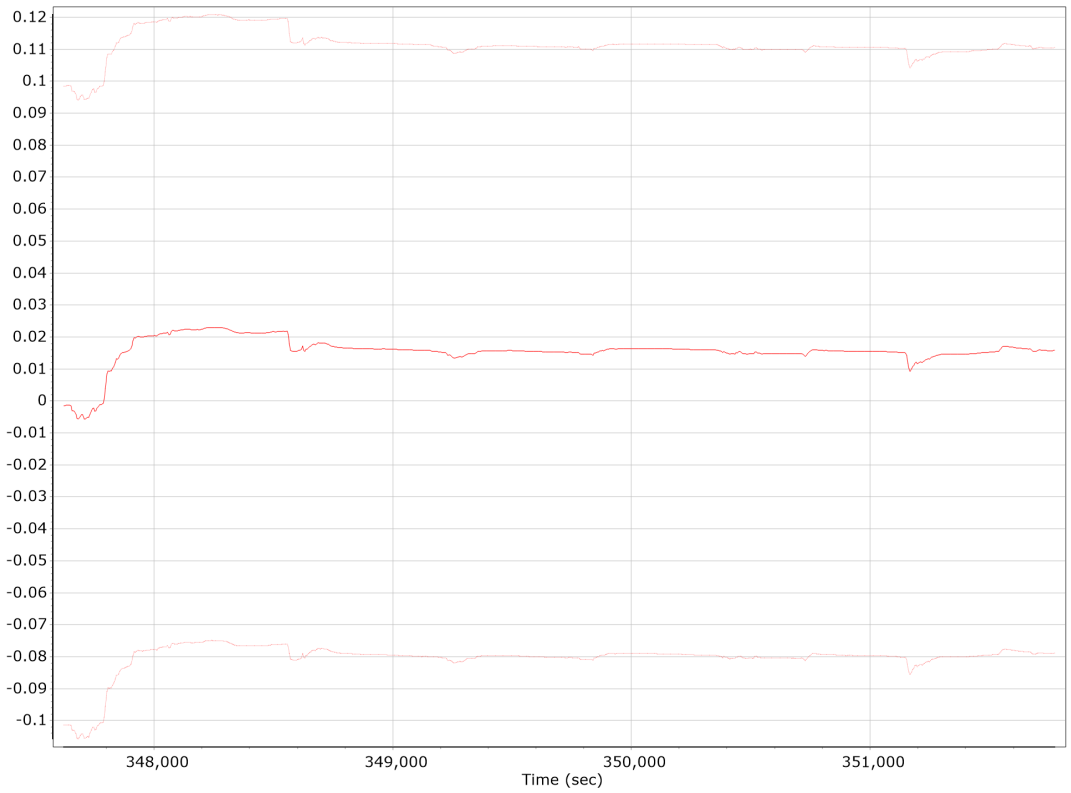
X Gyro Bias (deg/h)



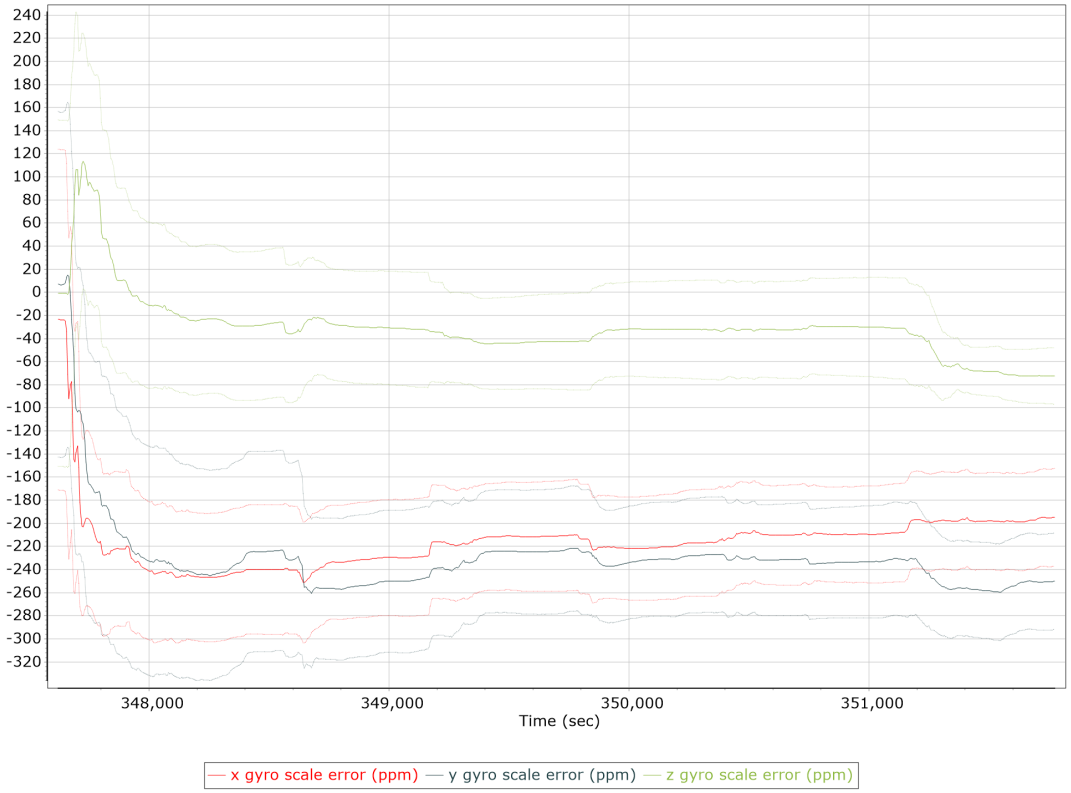
Y Gyro Bias (deg/h)



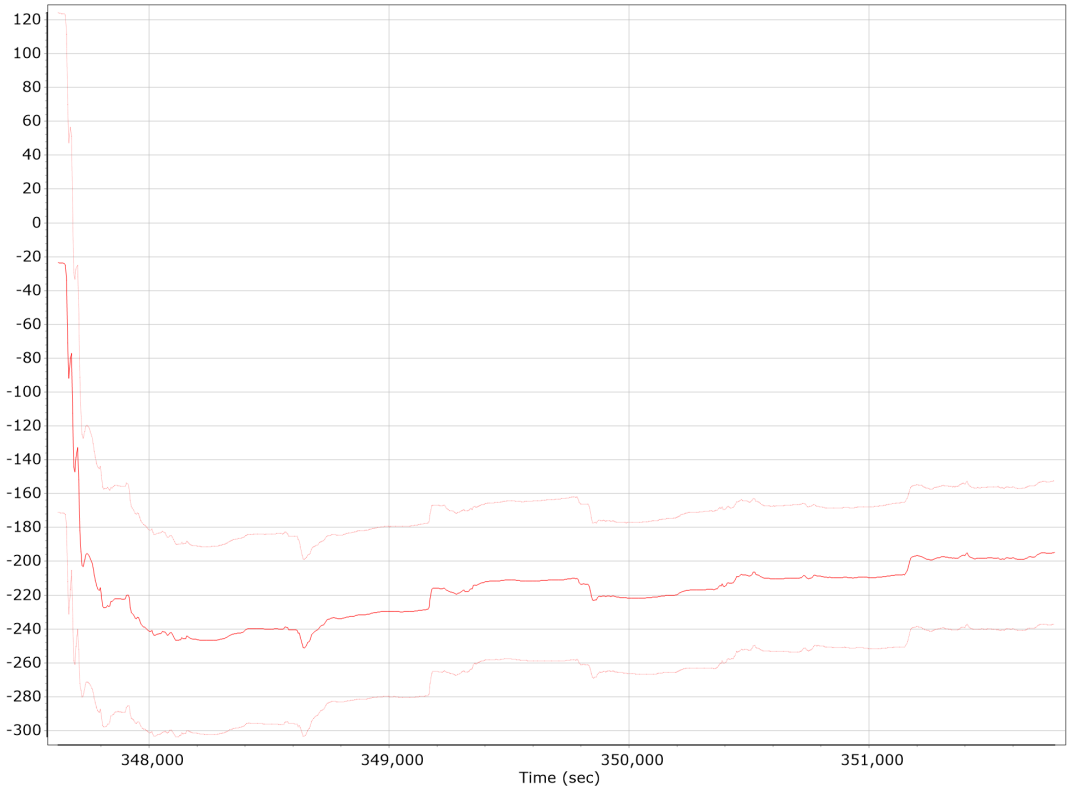
Z Gyro Bias (deg/h)



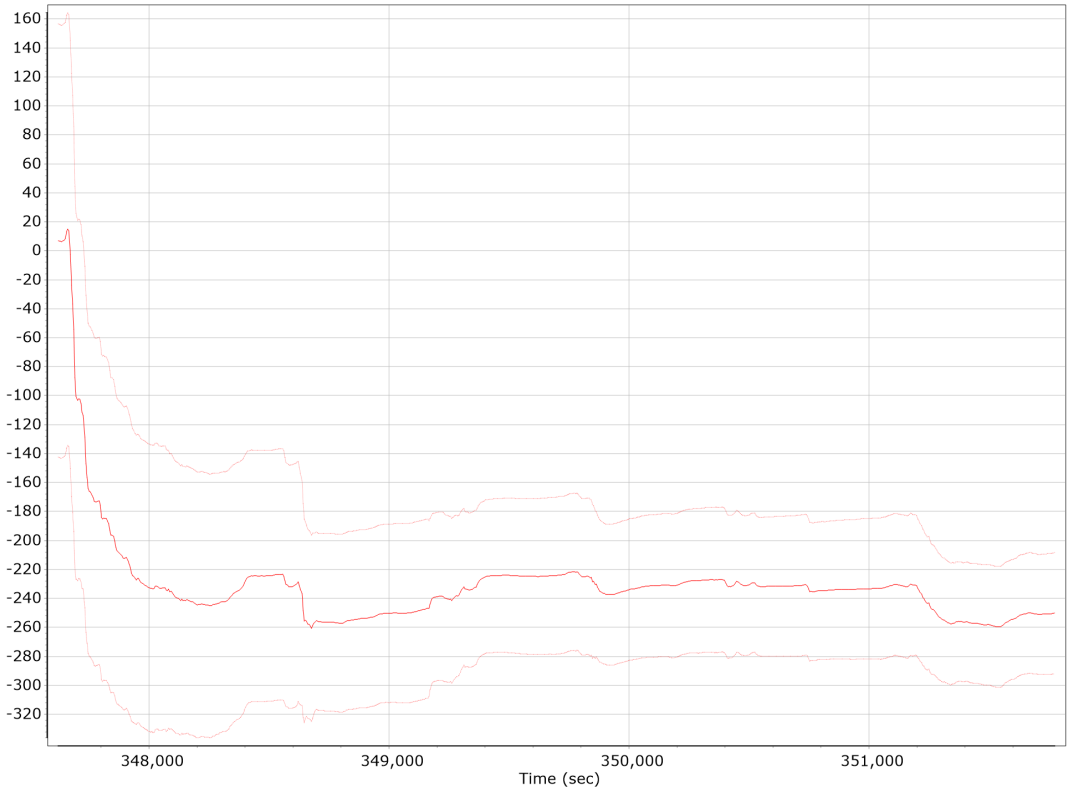
Gyro Scale Error (ppm)



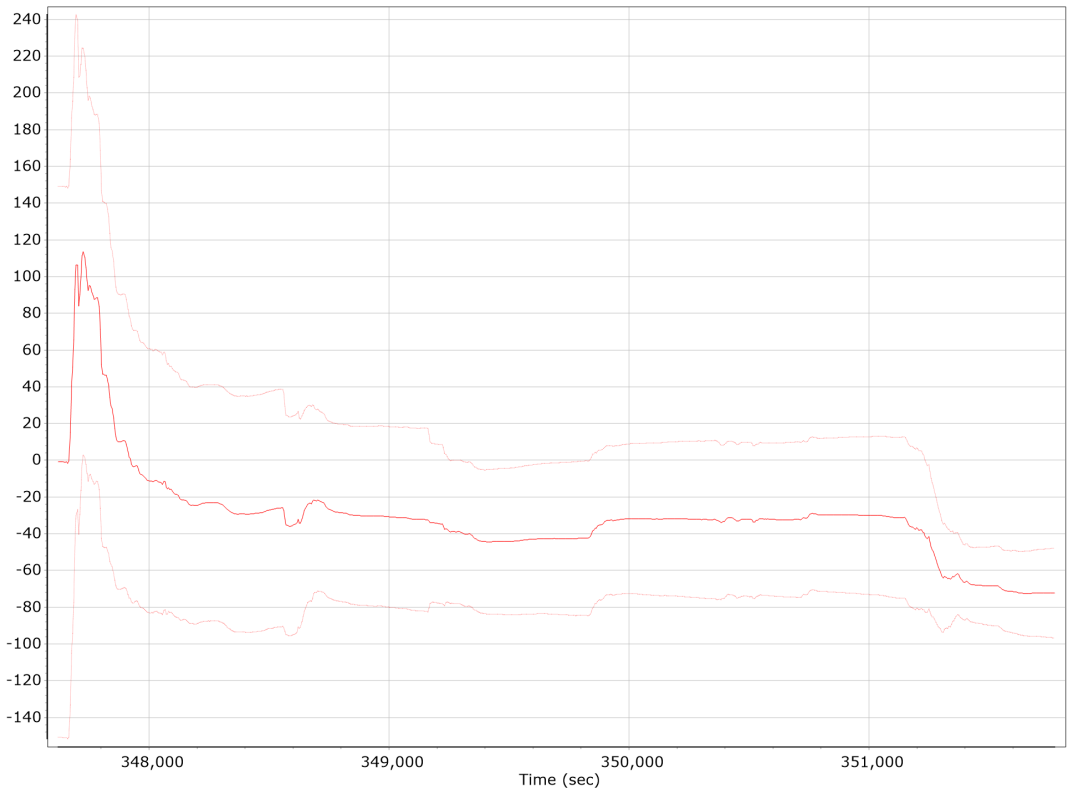
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)

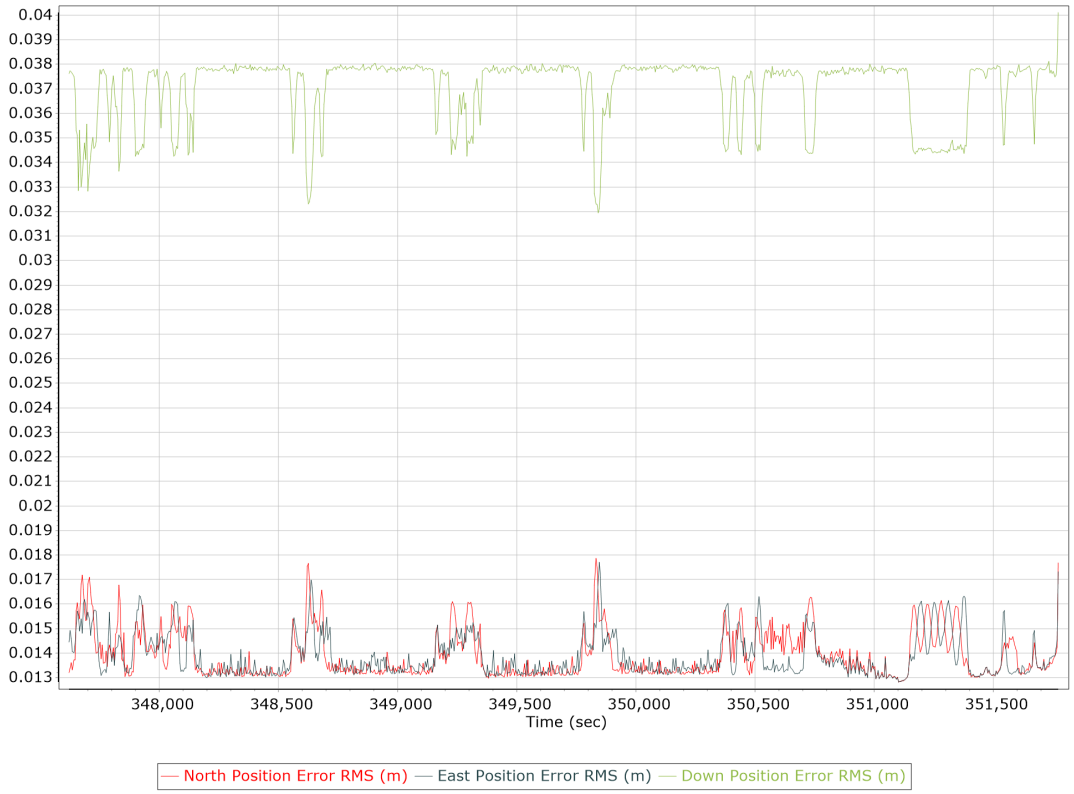


Z Gyro Scale Error (ppm)

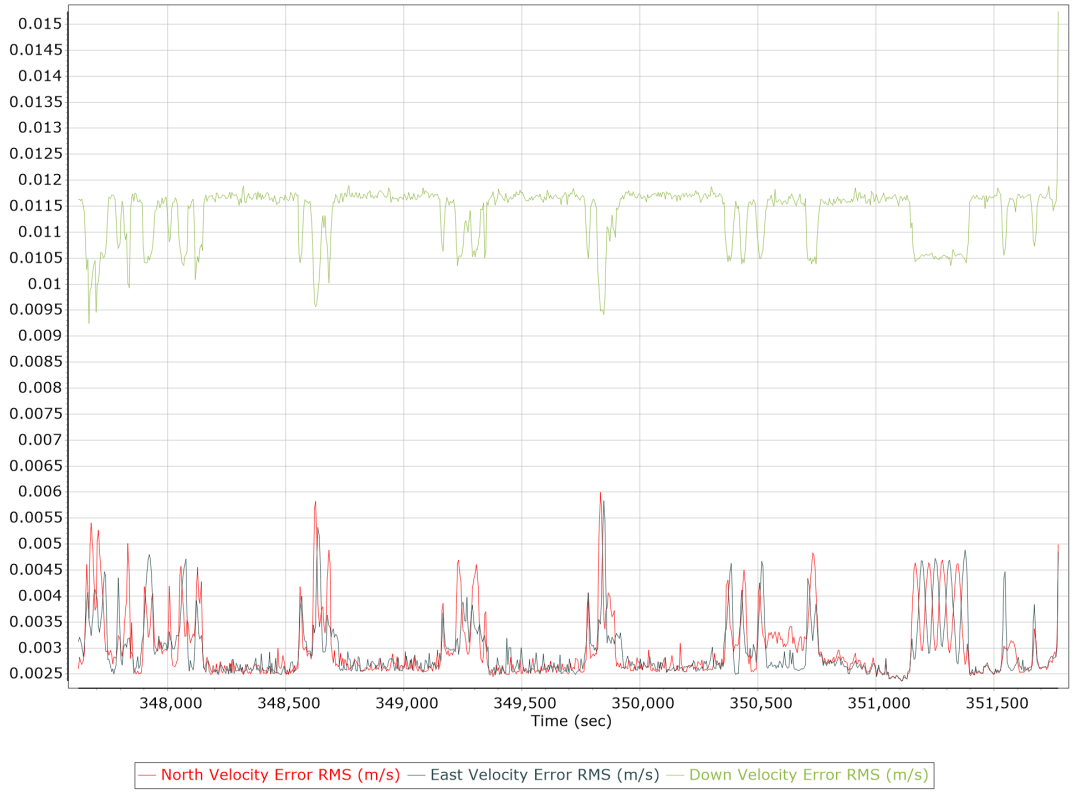


Smoothed Performance Metrics

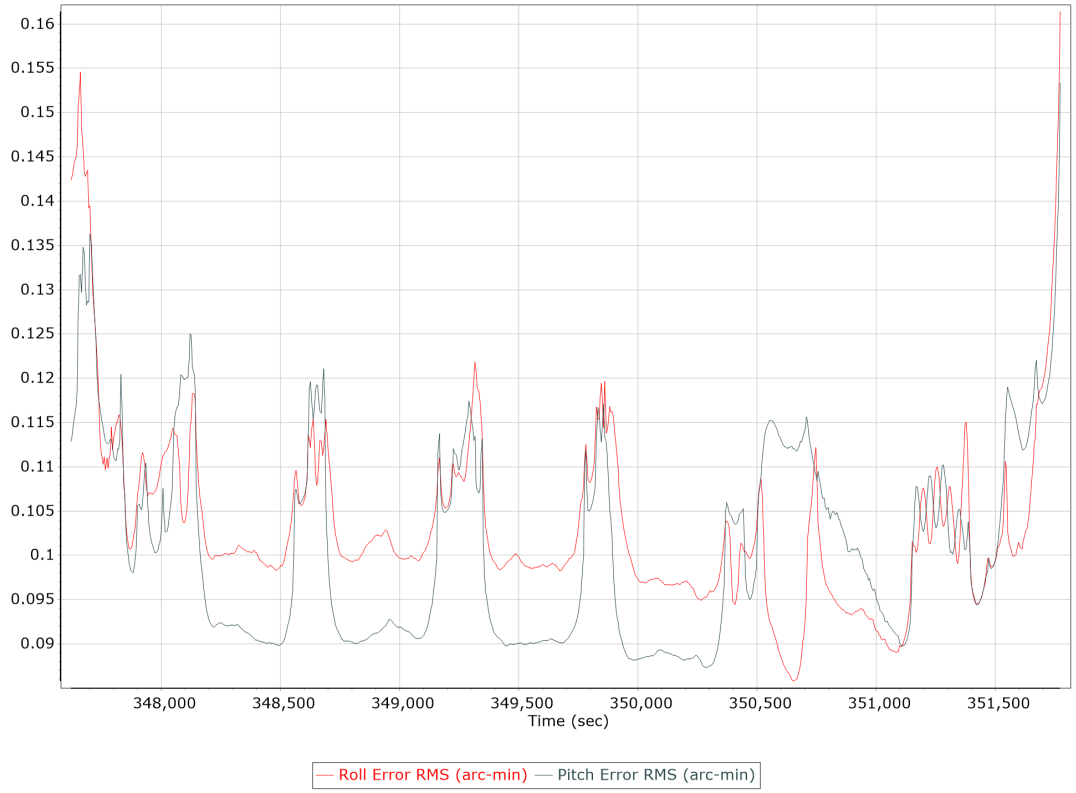
Position Error RMS (m)



Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

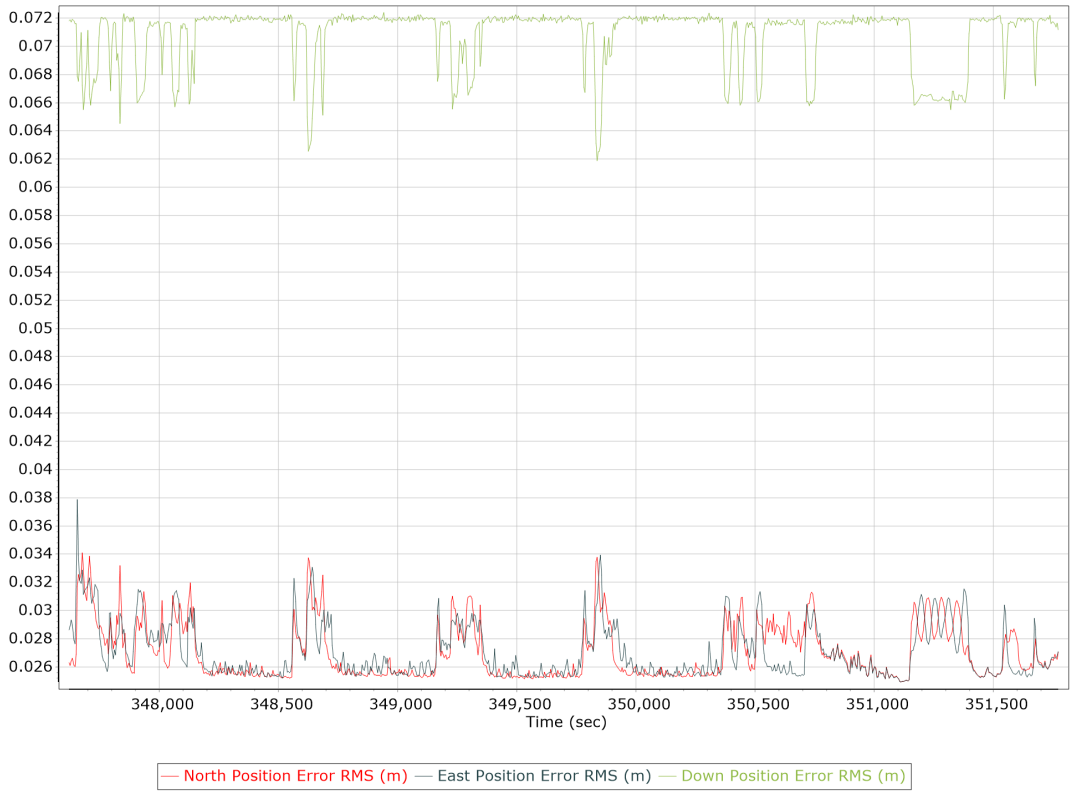


Heading Error RMS (arc-min)

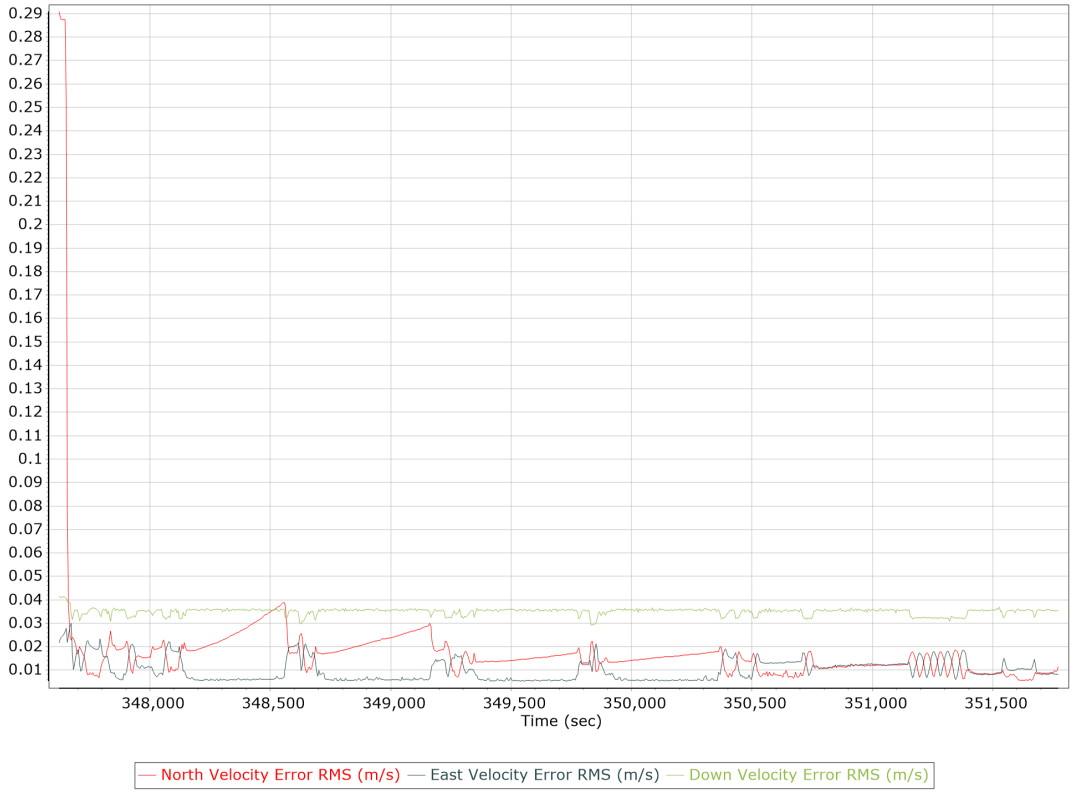


Forward Processed Performance Metrics

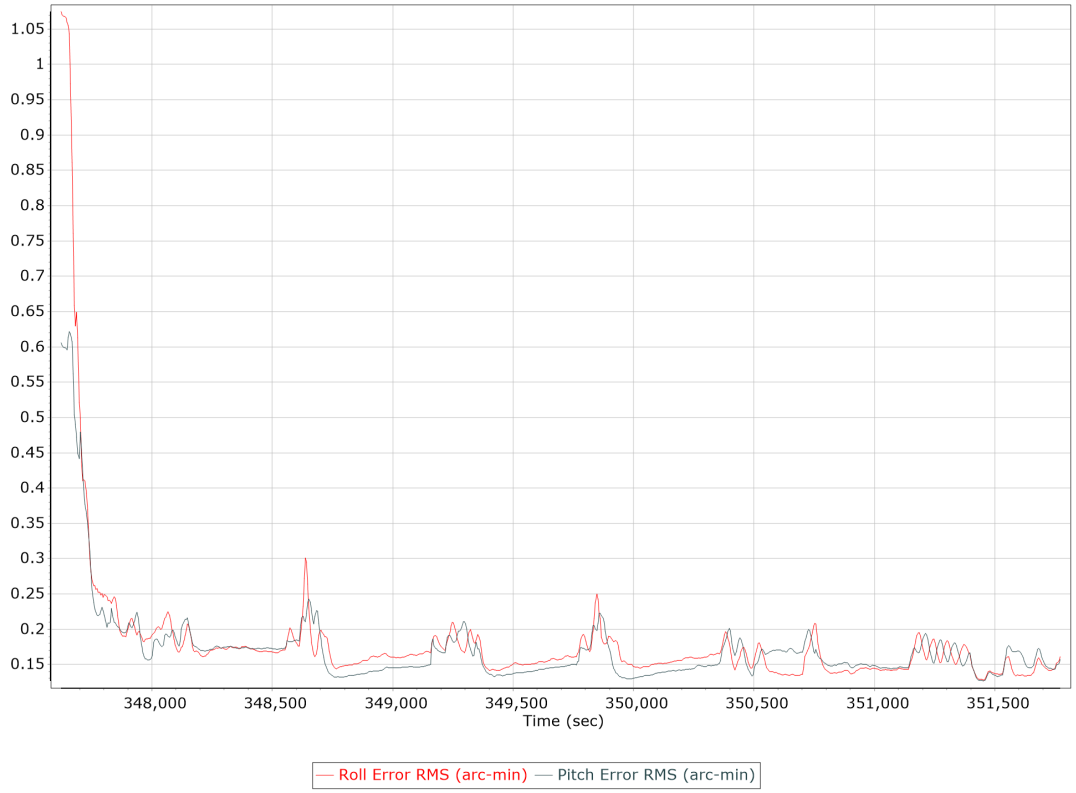
Position Error RMS (m)



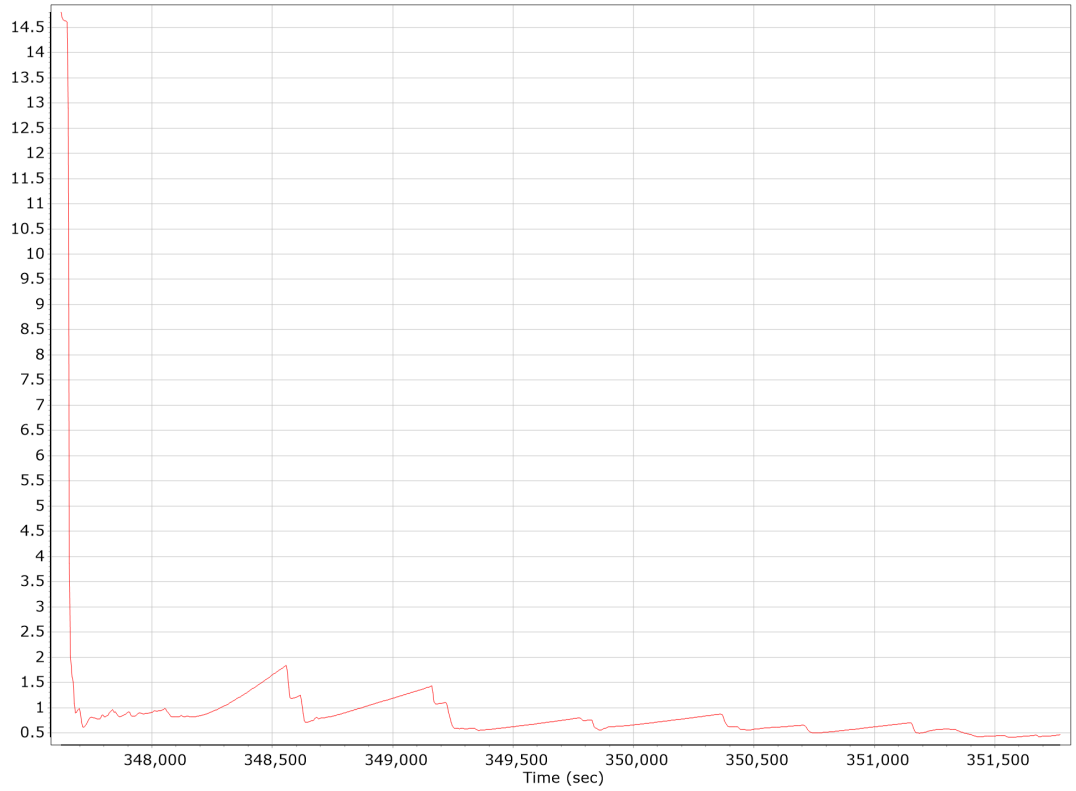
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

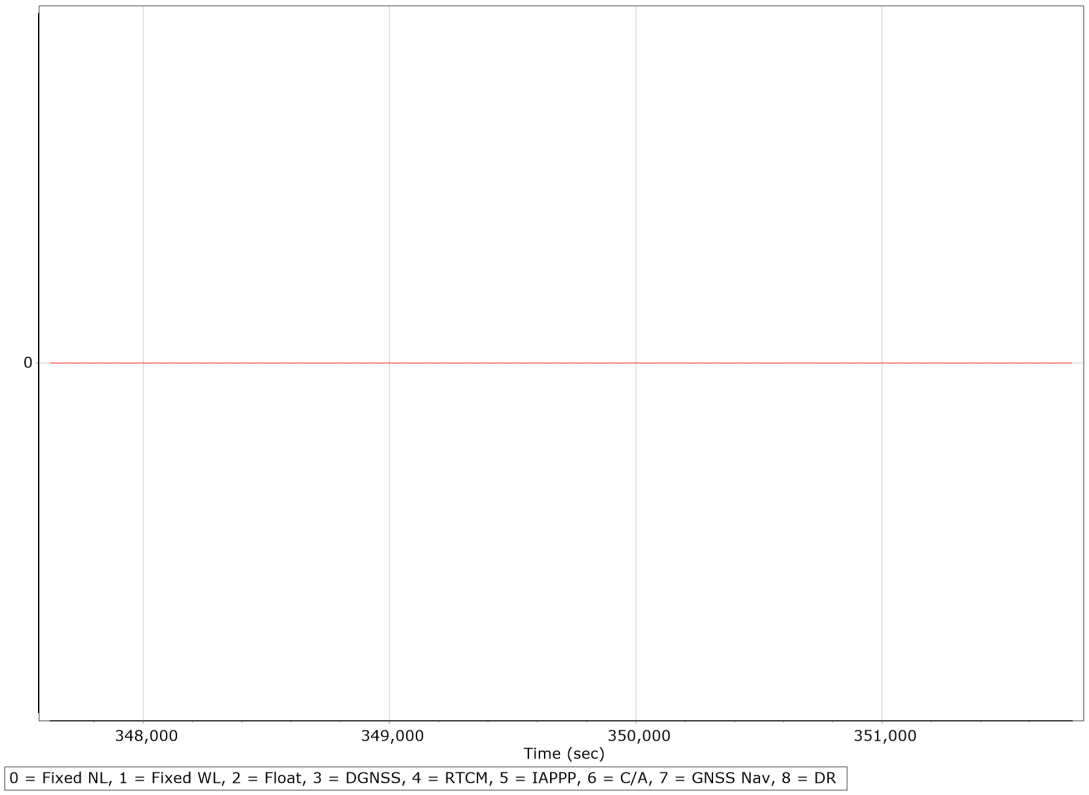


Heading Error RMS (arc-min)



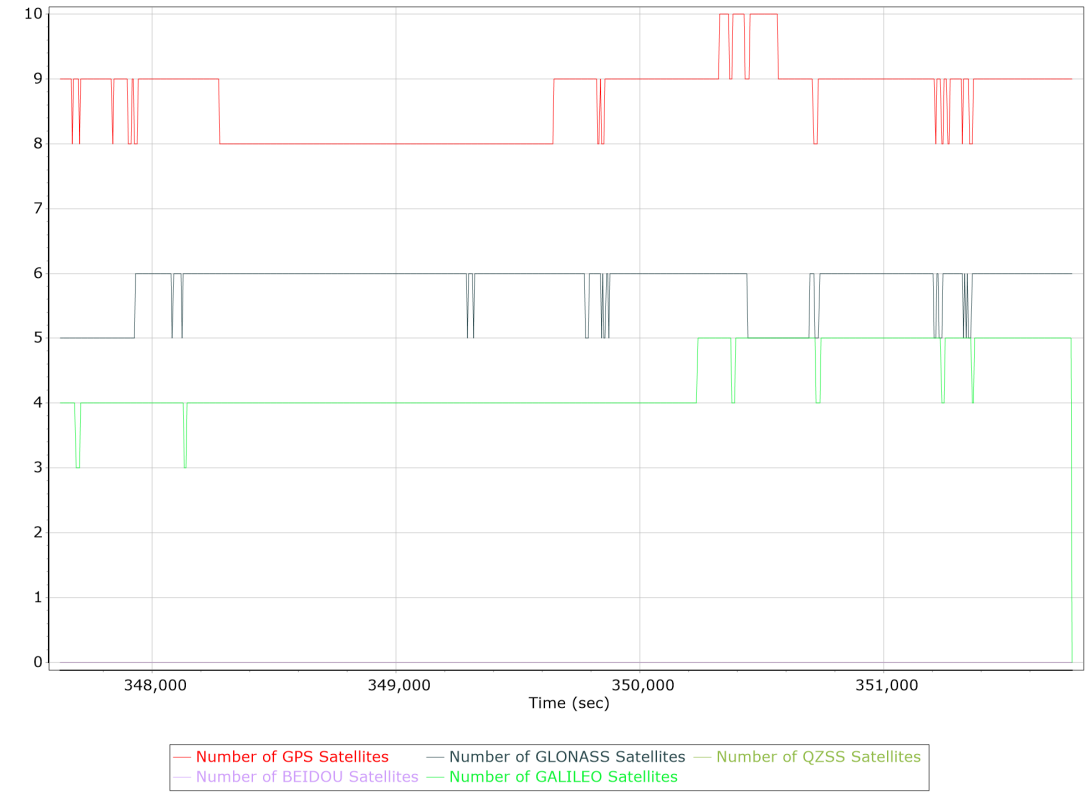
Forward Processed Solution Status

Processing Mode

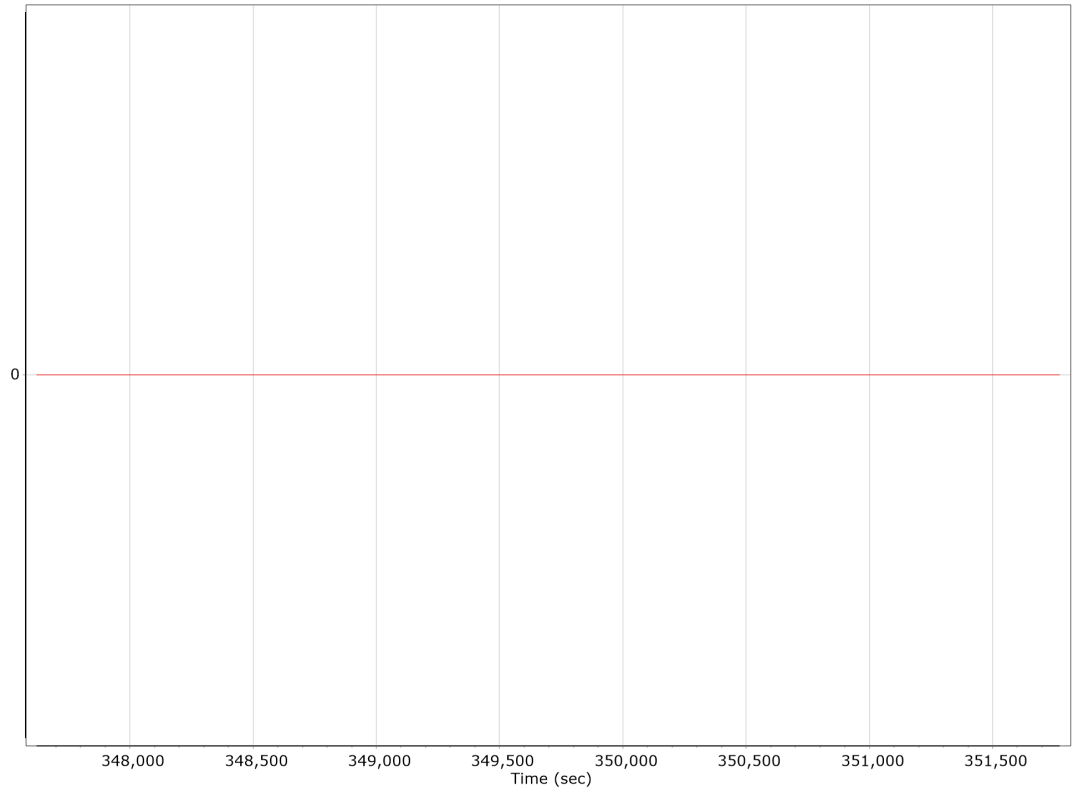


0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGNSS, 4 = RTCM, 5 = IAPPP, 6 = C/A, 7 = GNSS Nav, 8 = DR

Number of Satellites



Baseline Length



General Information

Mission Information

Project name	09282023A_4040
Processing date	2023-12-11 21:00:10
Mission date	2023-09-28 21:57:53
Mission duration	00:55:04.596
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N10451
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
230928_215734_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm2710.23g	GLONASS Broadcast Ephemeris
Ephm2710.23n	GPS Broadcast Ephemeris
IGS0OPSFIN_20232700000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232710000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232720000_01D_15M_ORB.SP3	GPS Precise Ephemeris

Output Files

Filename	File type
sbet_09282023A_4040.out	SBET Trajectory File

Rover Data Summary

First raw data file	230928_215734_INS-GPS_1.raw		
Last raw data file	230928_215734_INS-GPS_1.raw		
Start GPS week	2281		
Start time	424654.309 (9/28/2023 9:57:34 PM)		
End time	427958.905 (9/28/2023 10:52:38 PM)		
Start of fine alignment	424920.867 (9/28/2023 10:02:00 PM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.000	0.000	-0.900
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

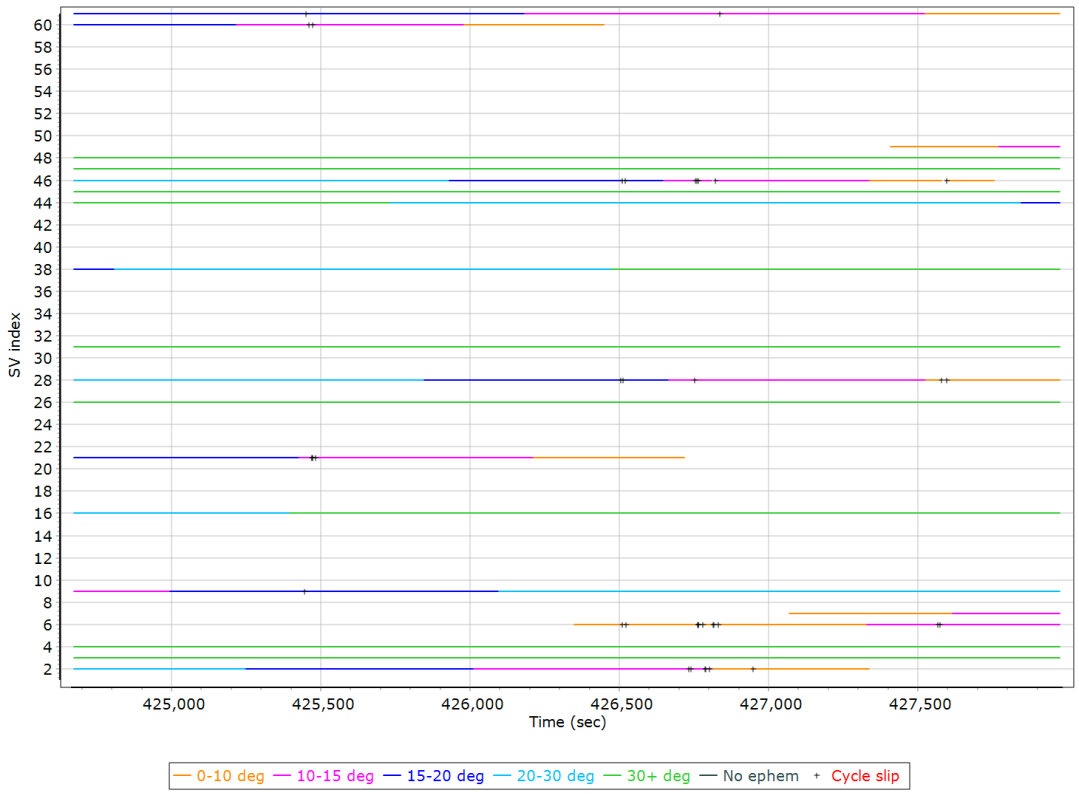
Rover Data QC

Raw IMU Import QC Summary

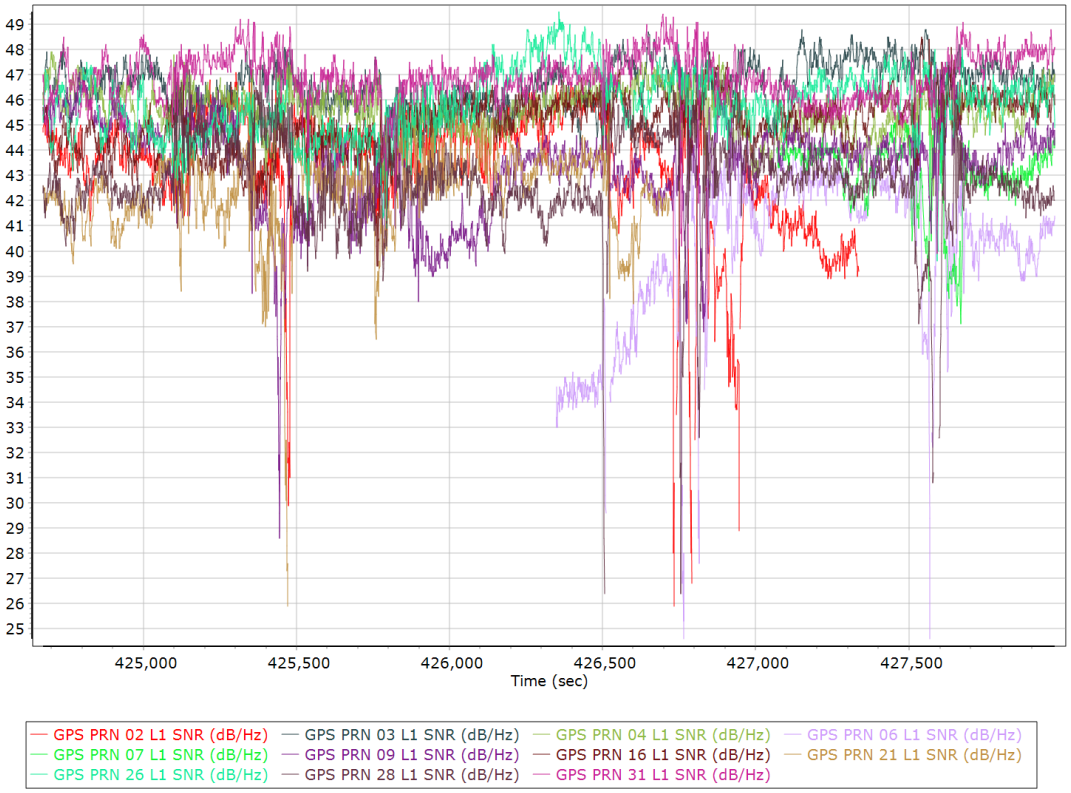
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_09282023A_4040.log
IMU Records Processed	660835
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

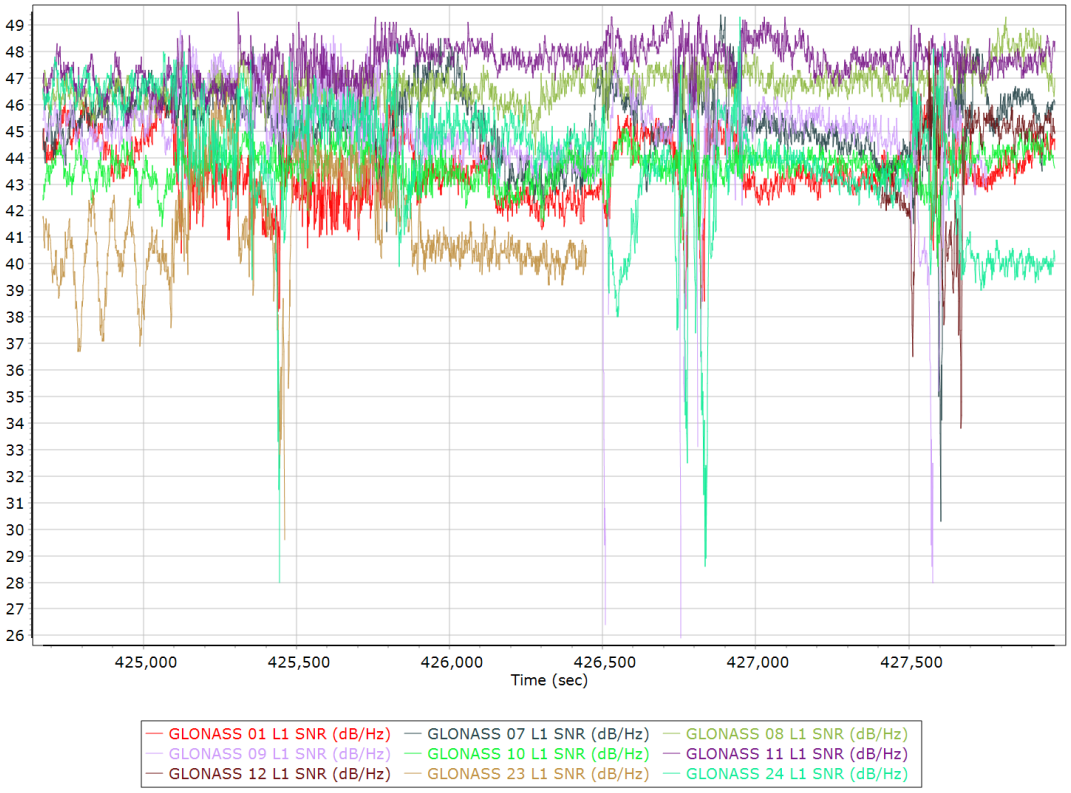
GPS/GLONASS L1 Satellite Lock/Elevation



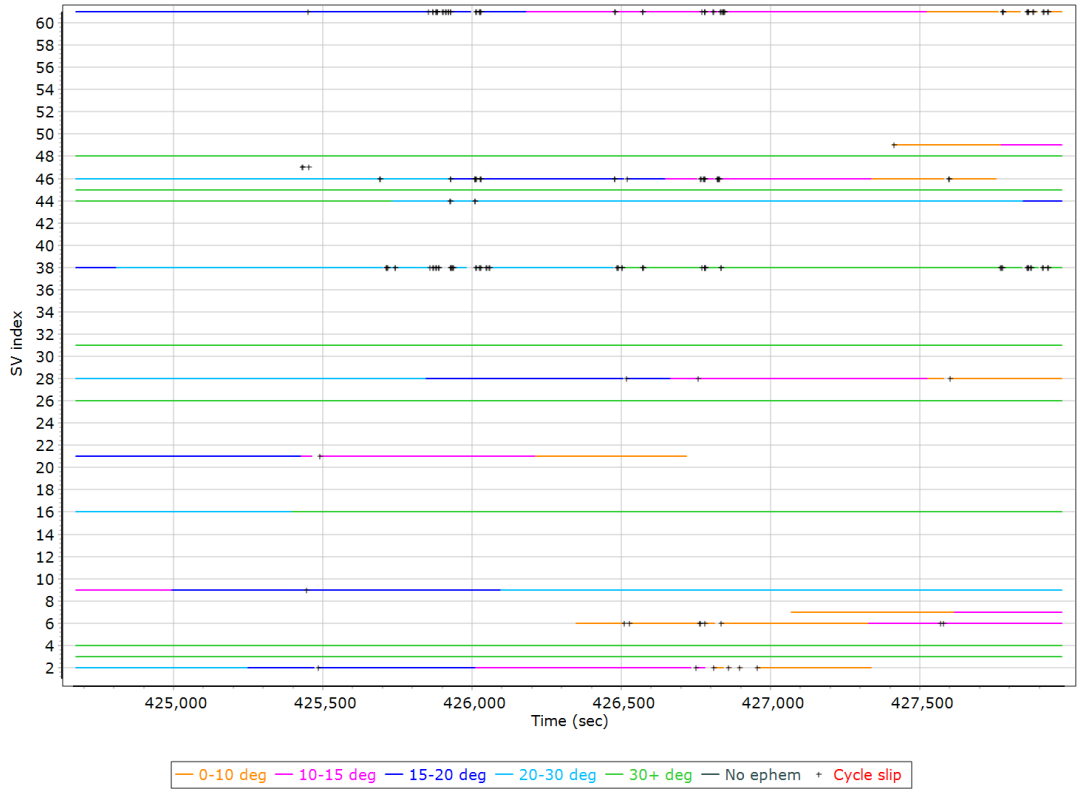
GPS L1 SNR



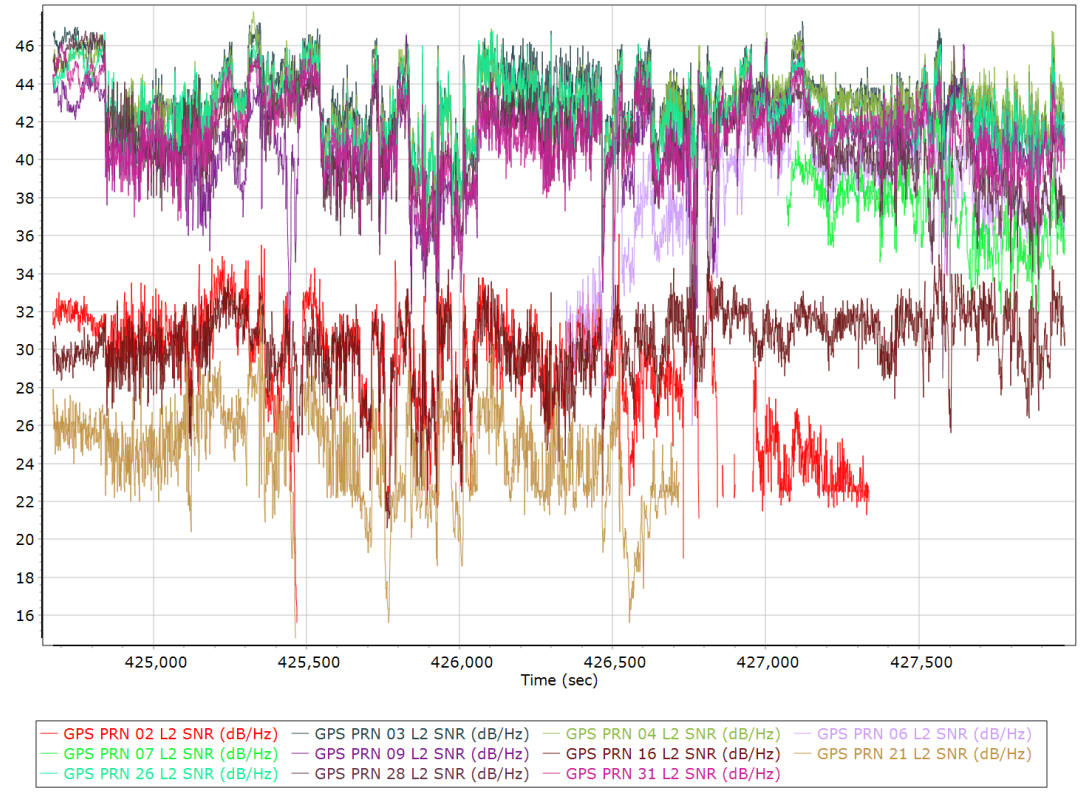
GLONASS L1 SNR



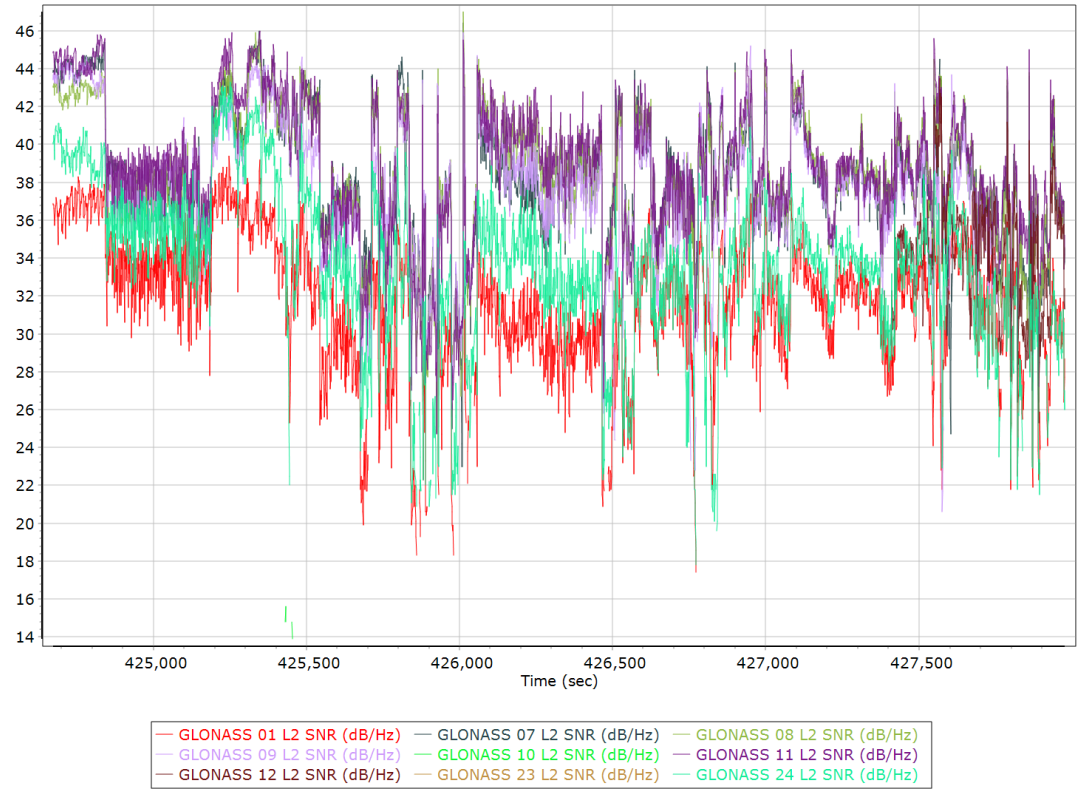
GPS/GLONASS L2 Satellite Lock/Elevation



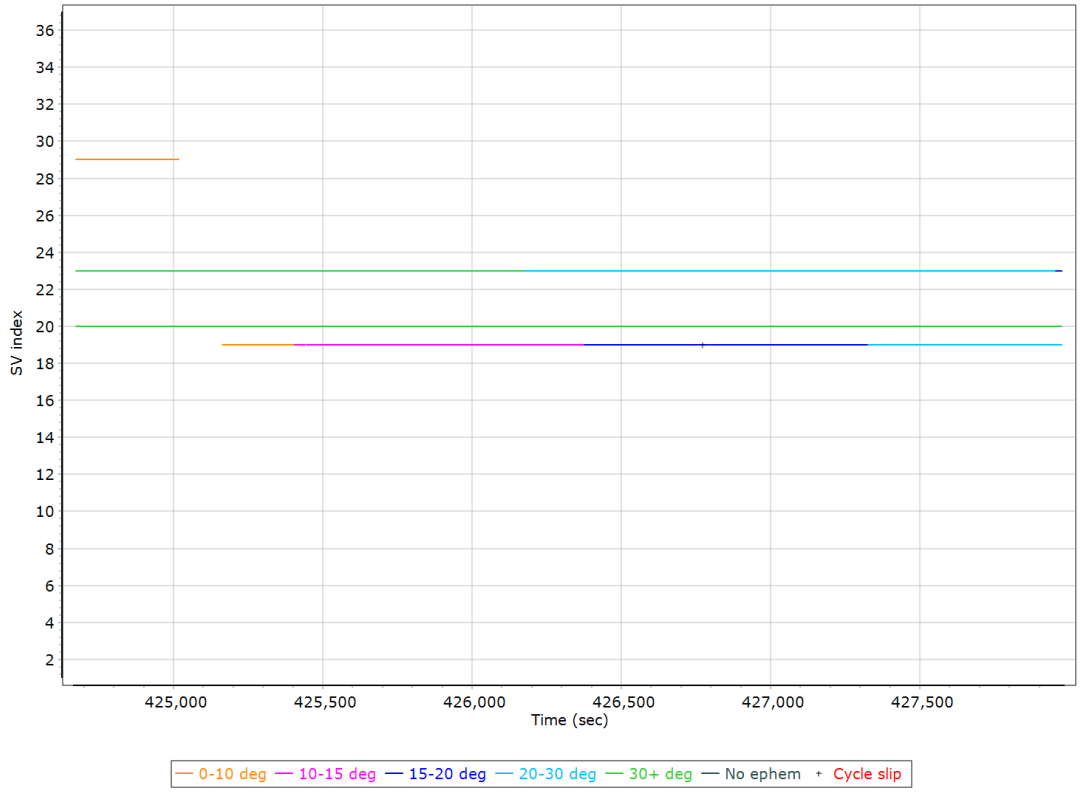
GPS L2 SNR



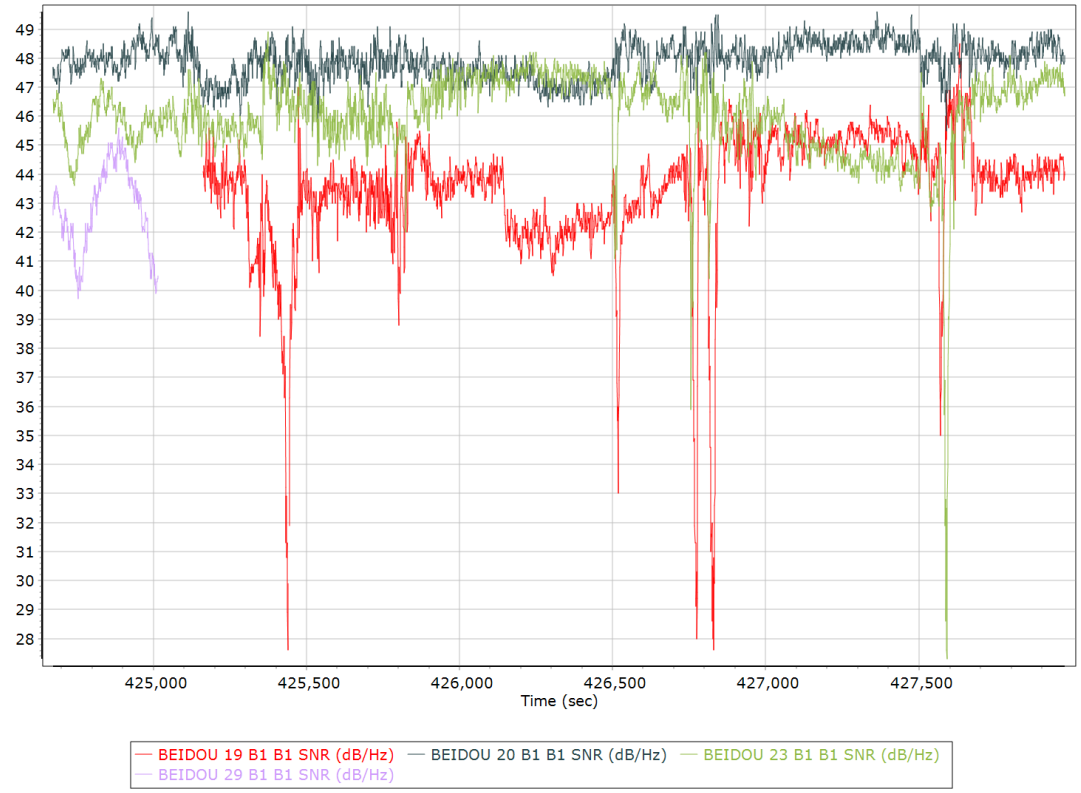
GLONASS L2 SNR



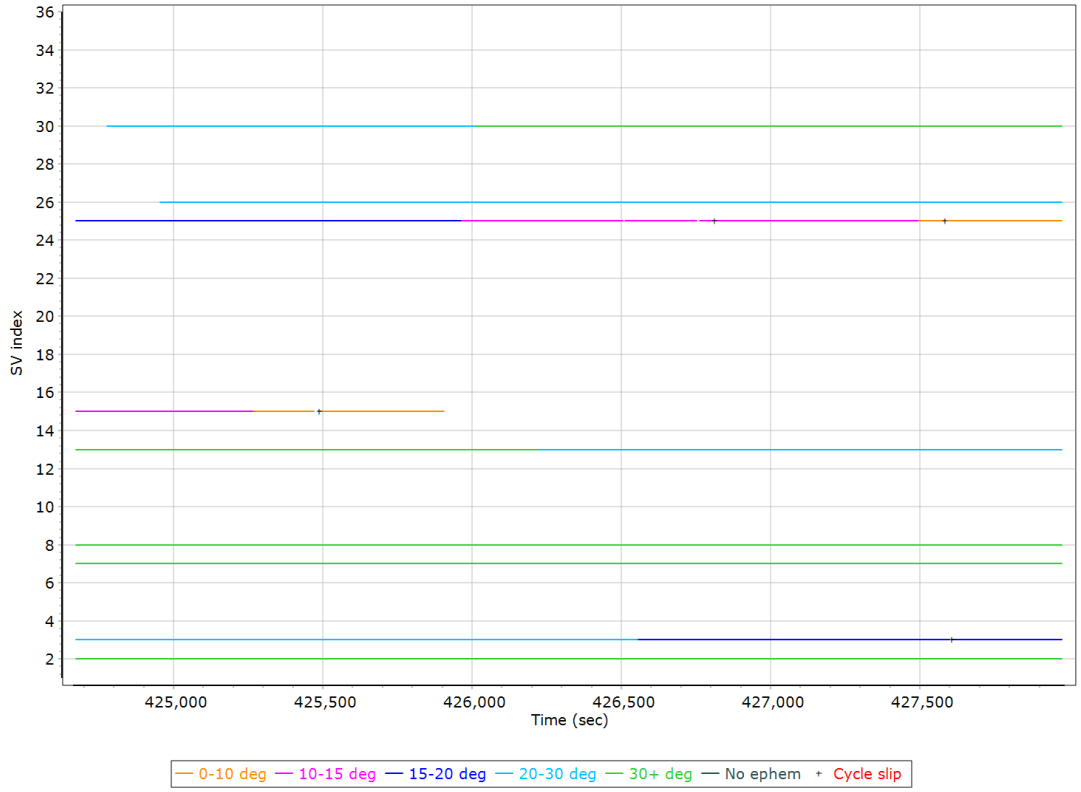
BEIDOU Satellite Lock/Elevation



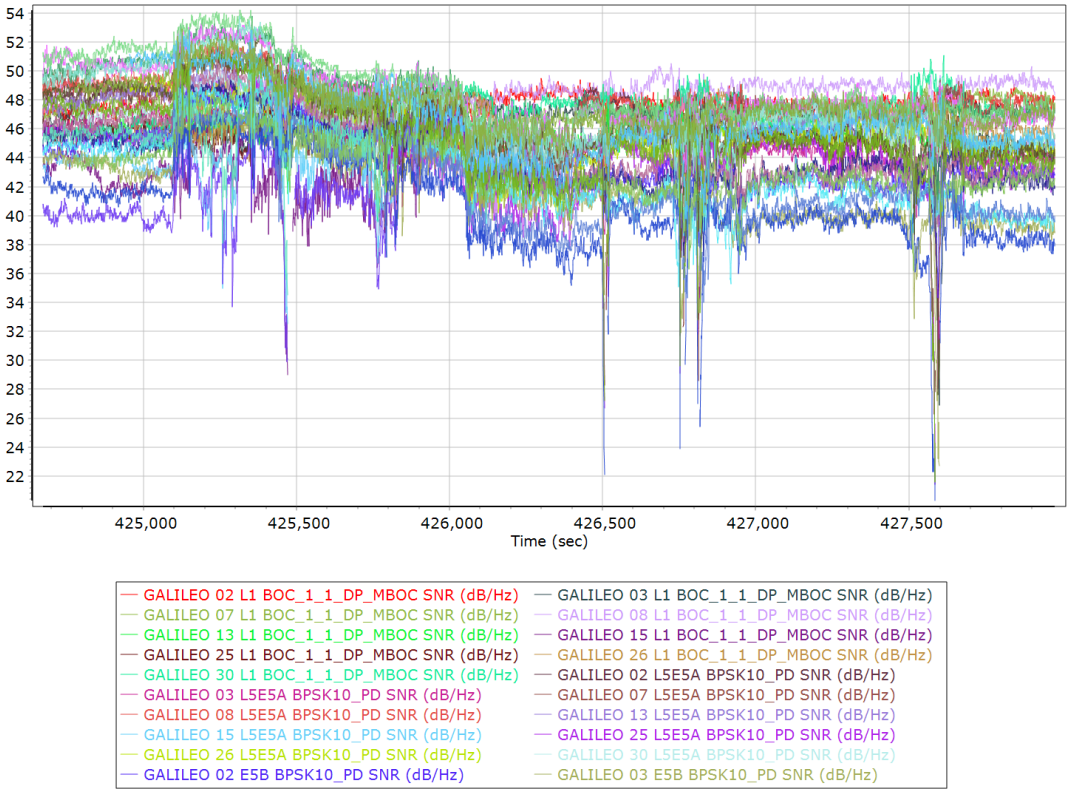
BEIDOU SNR



GALILEO Satellite Lock/Elevation

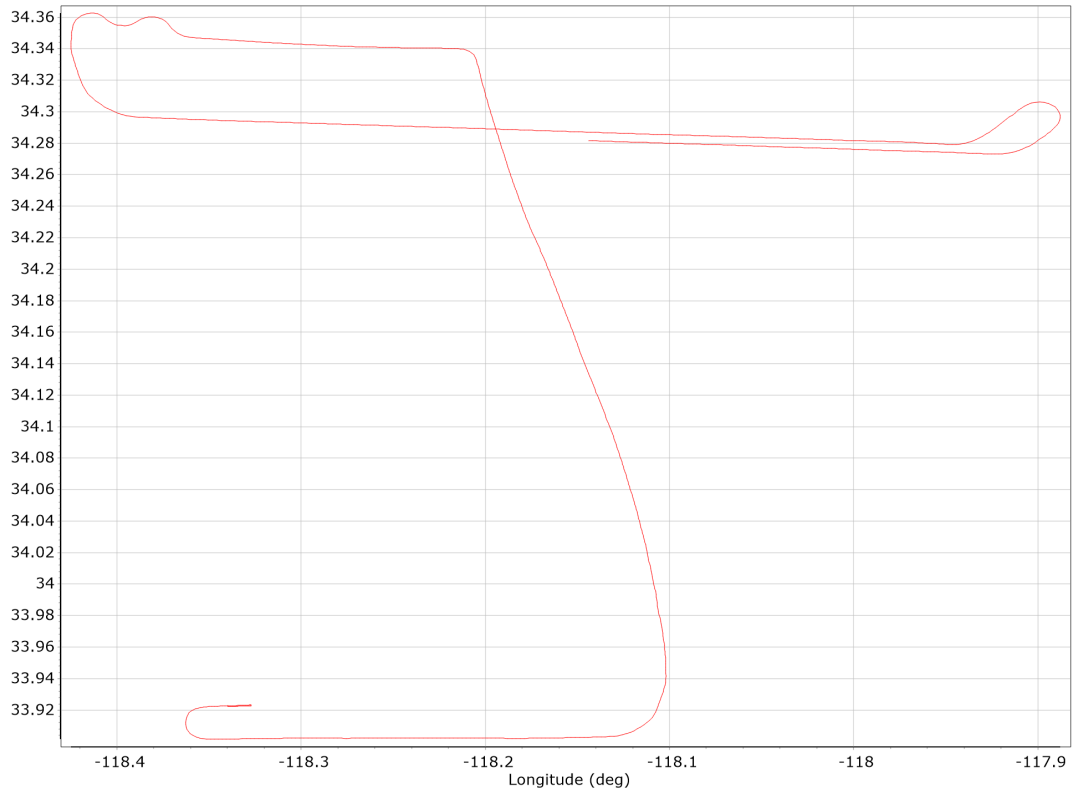


GALILEO SNR

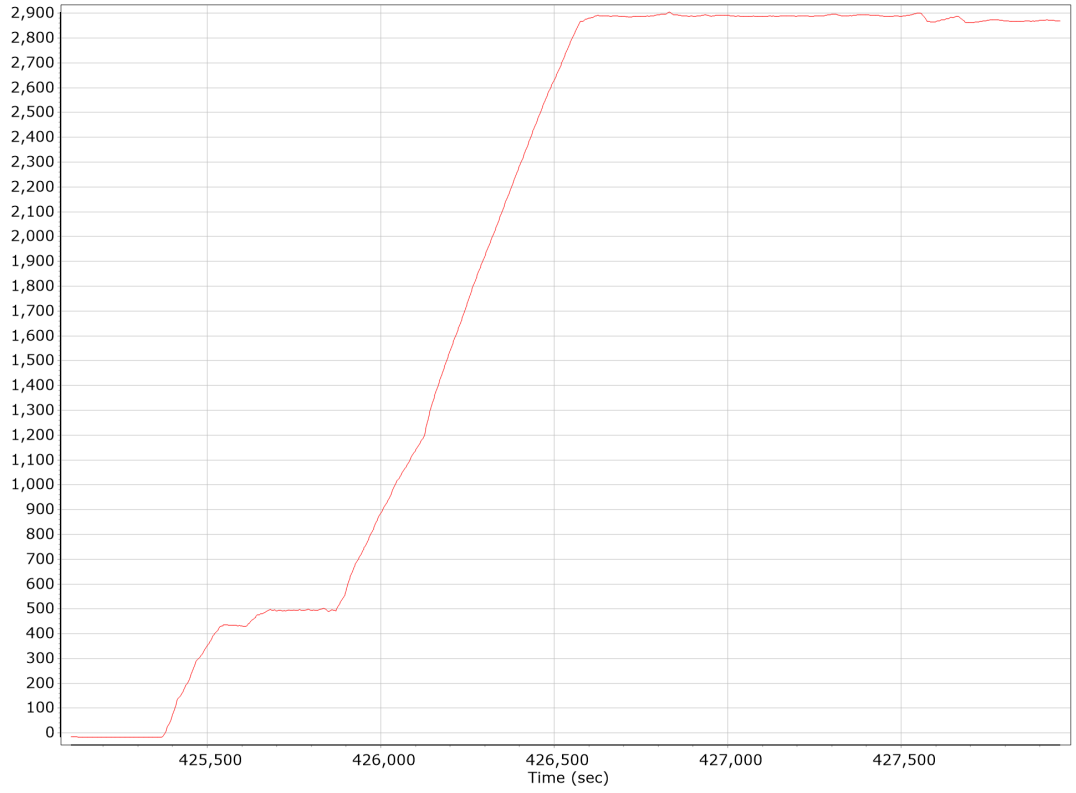

54
52
50
48
46
44
42
40
38
36
34
32
30
28
26
24
22
425,000
425,500
426,000
426,500
427,000
427,500
Time (sec)
GALILEO 02 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 03 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 07 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 08 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 13 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 15 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 25 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 26 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 30 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 02 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 03 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 07 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 08 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 13 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 15 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 25 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 26 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 30 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 02 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 03 E5B BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

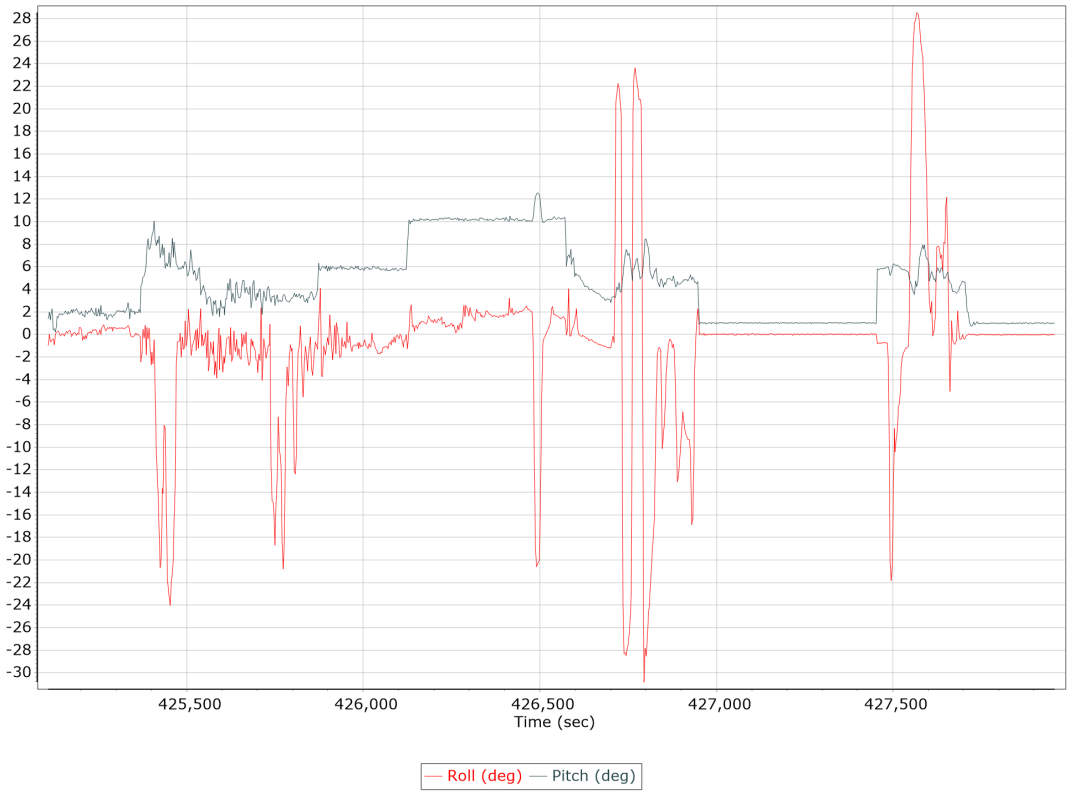
Top View



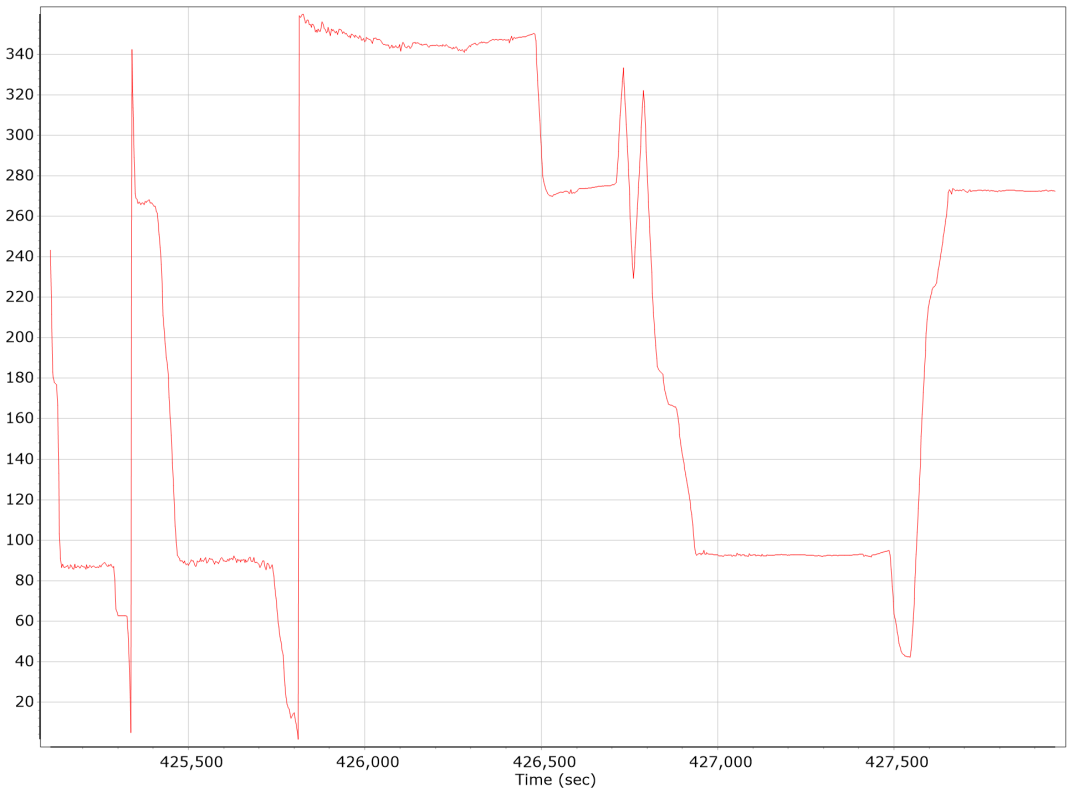
Altitude



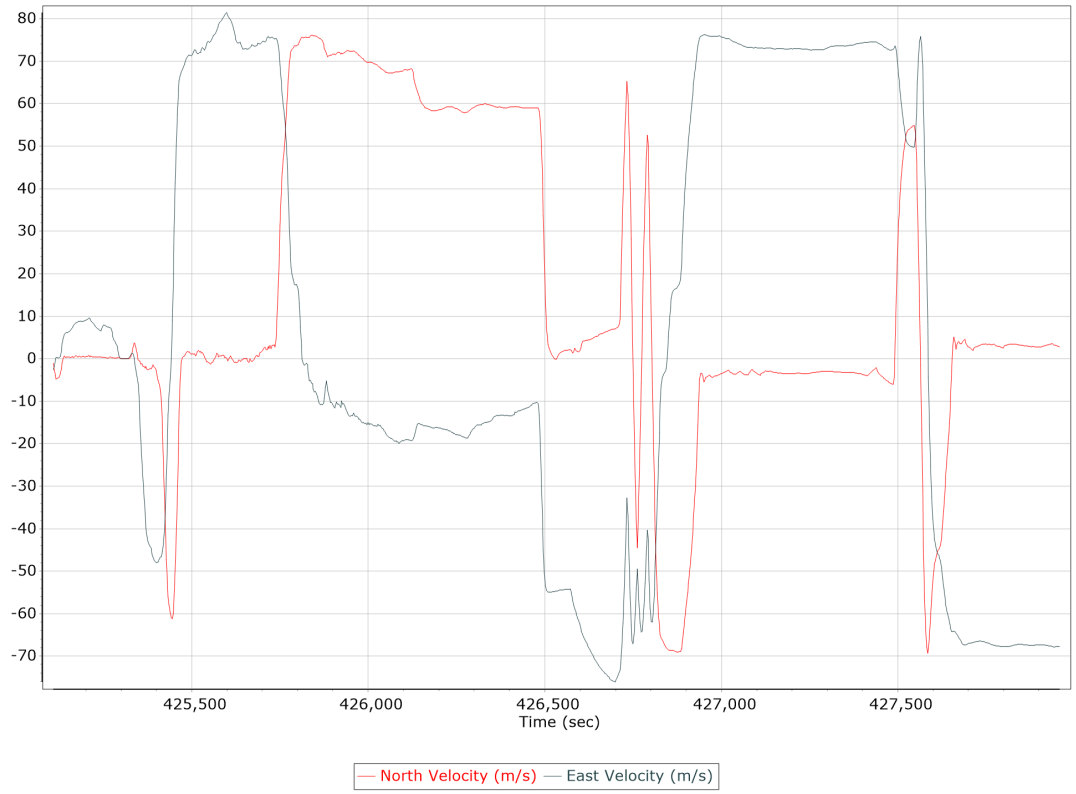
Roll/Pitch



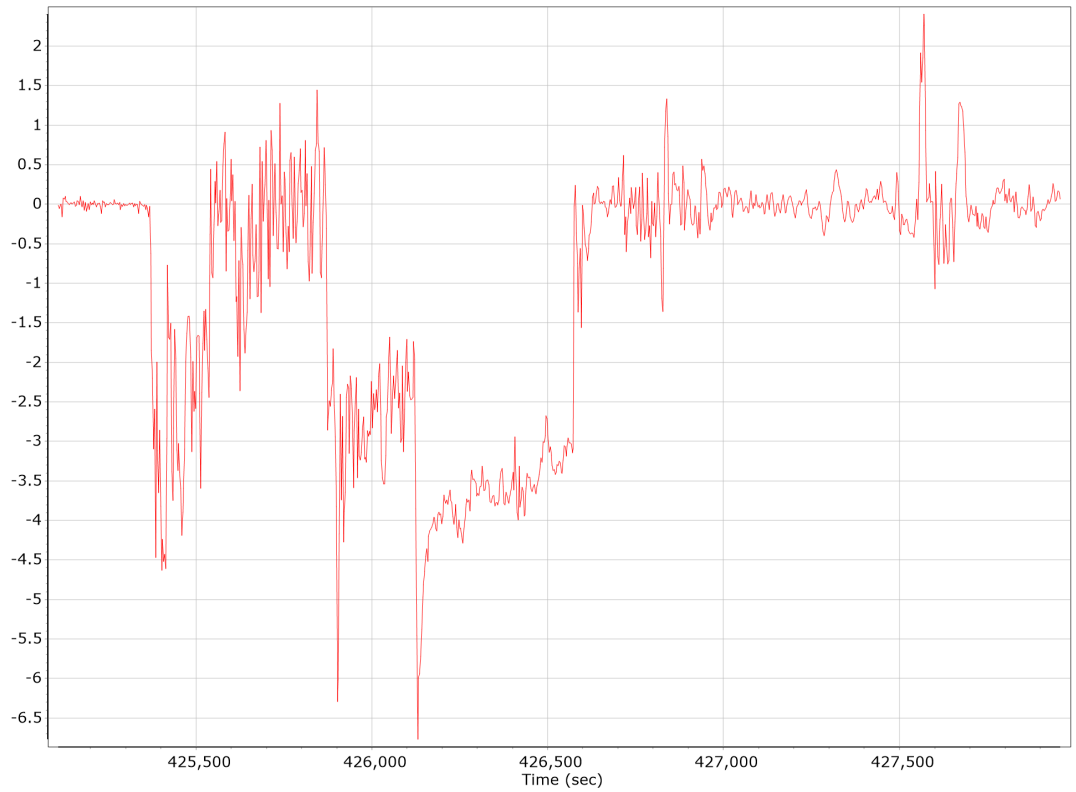
Heading



North/East Velocity



Down Velocity



Total Speed



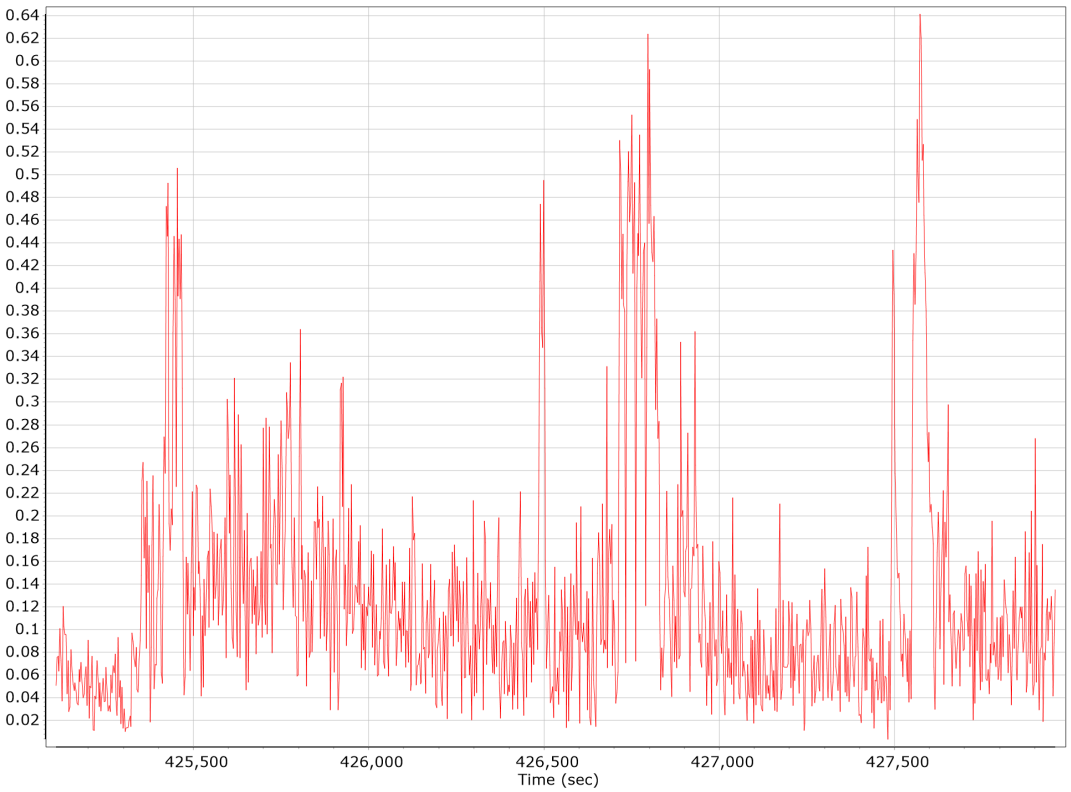
Ground Speed



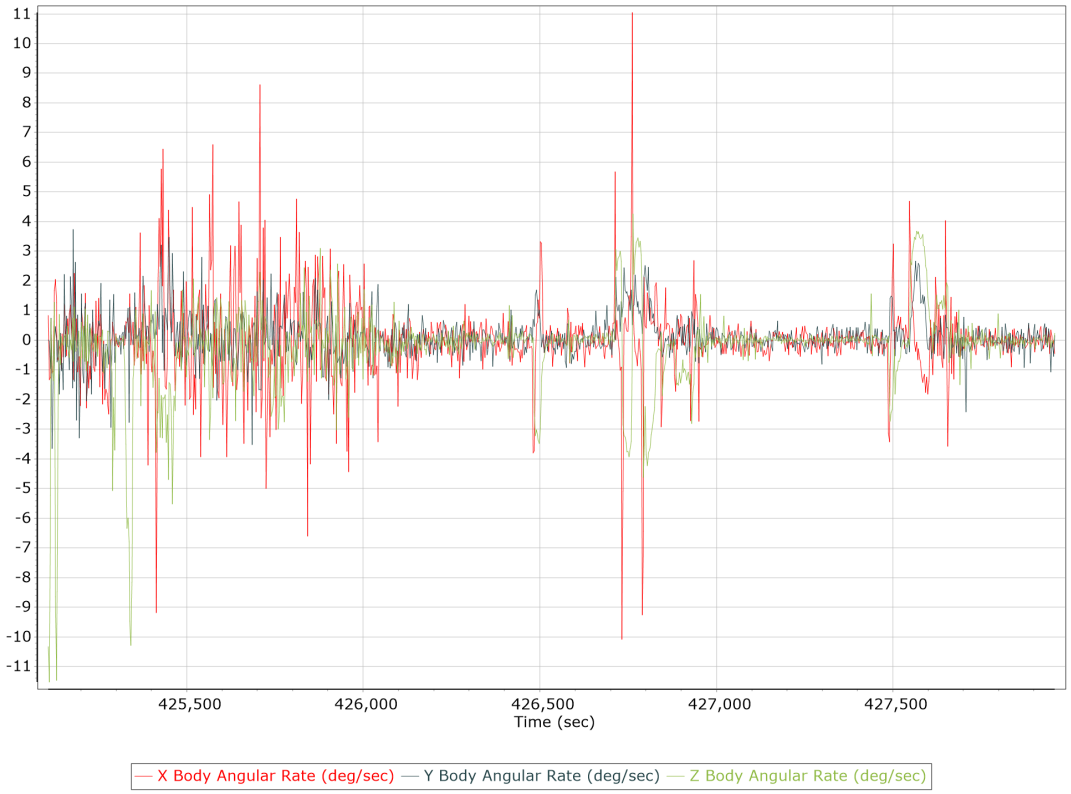
Body Acceleration



Total Body Acceleration

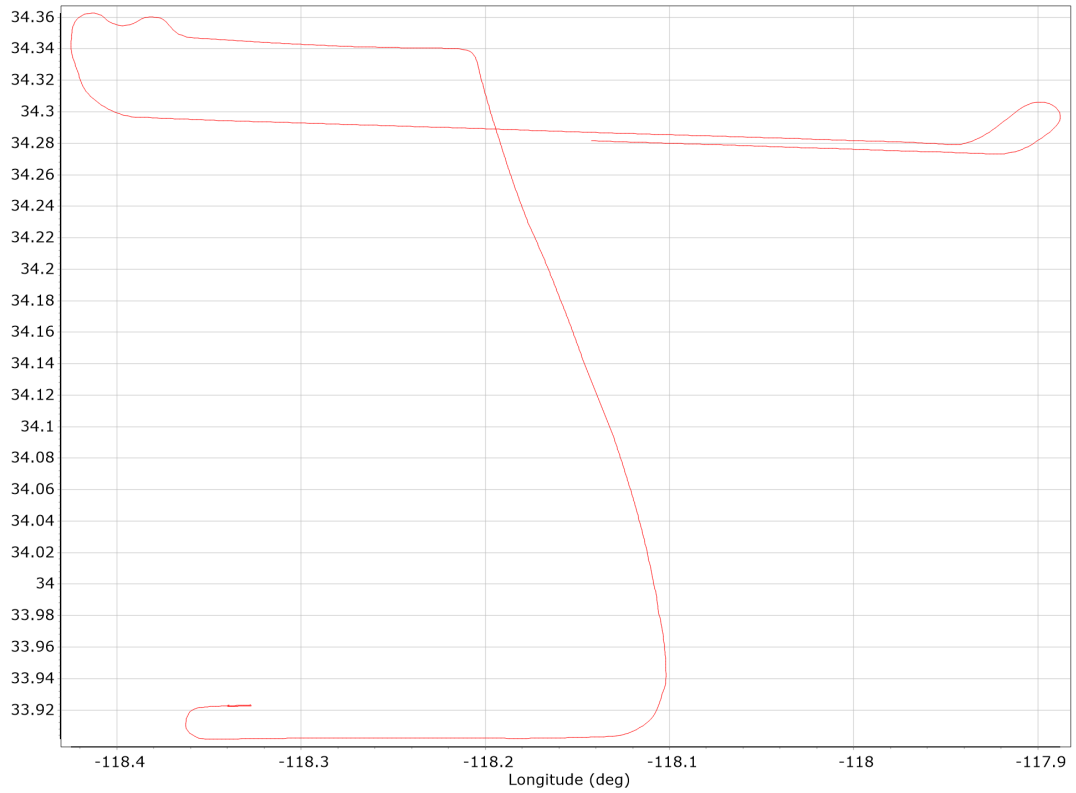


Body Angular Rate

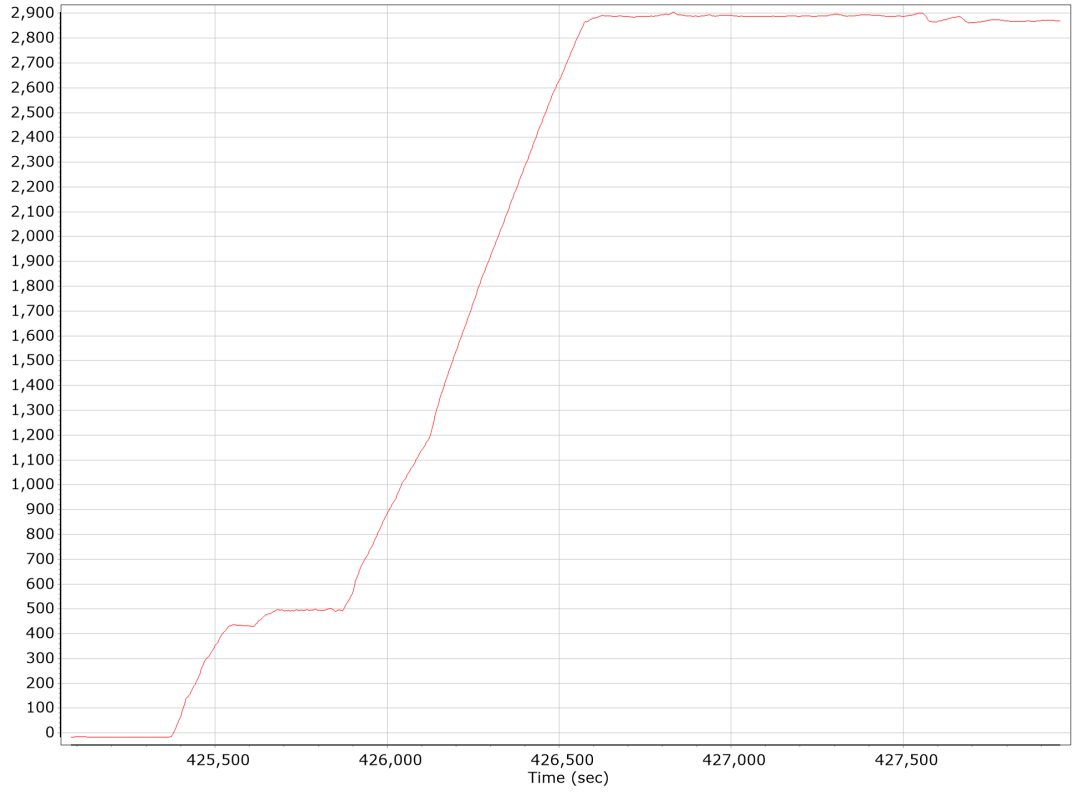


Forward Processed Trajectory Information

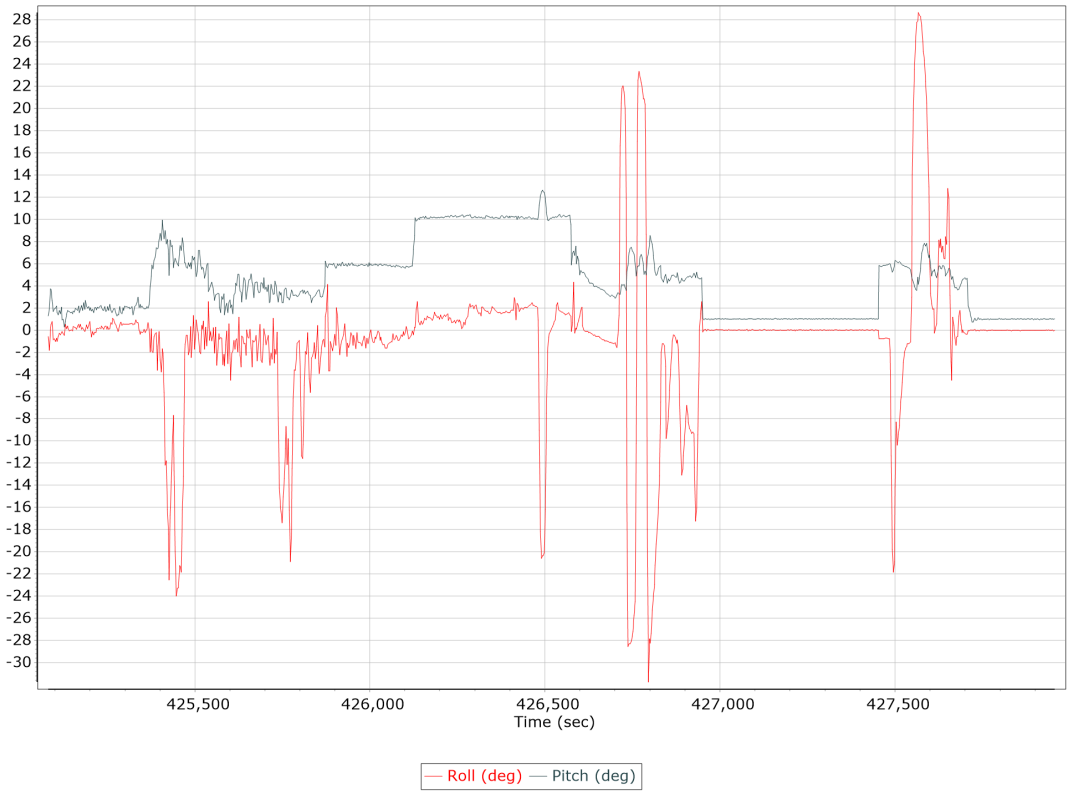
Top View



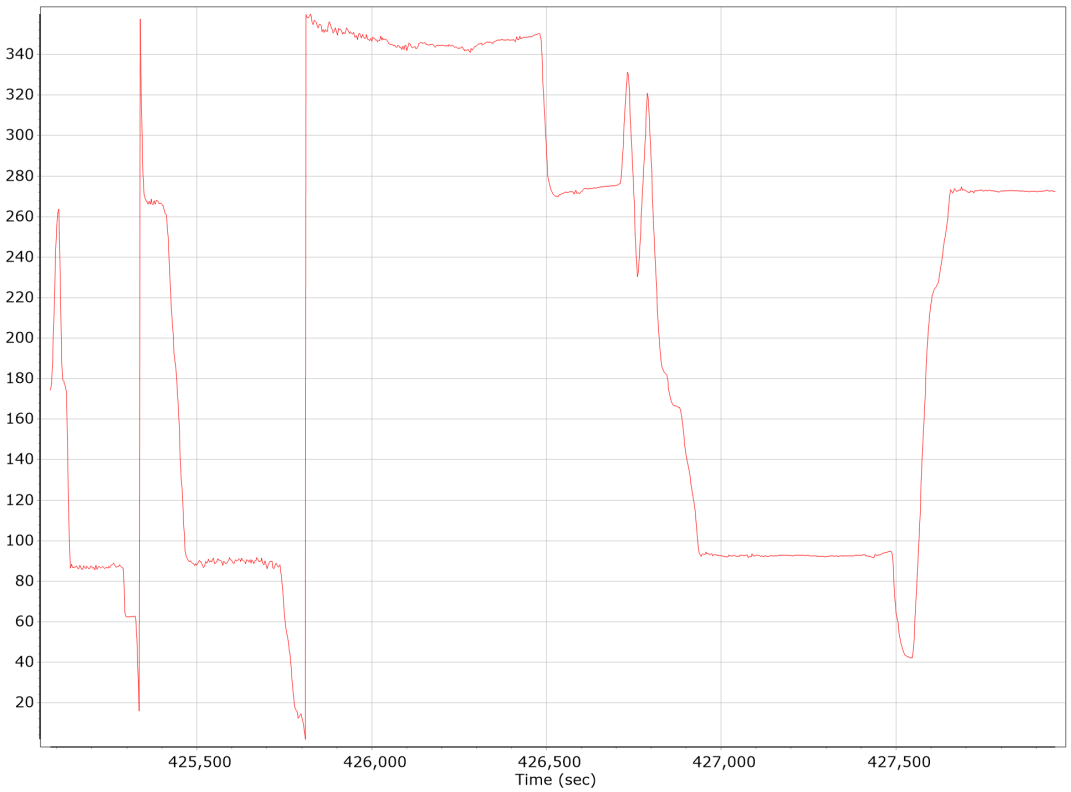
Altitude



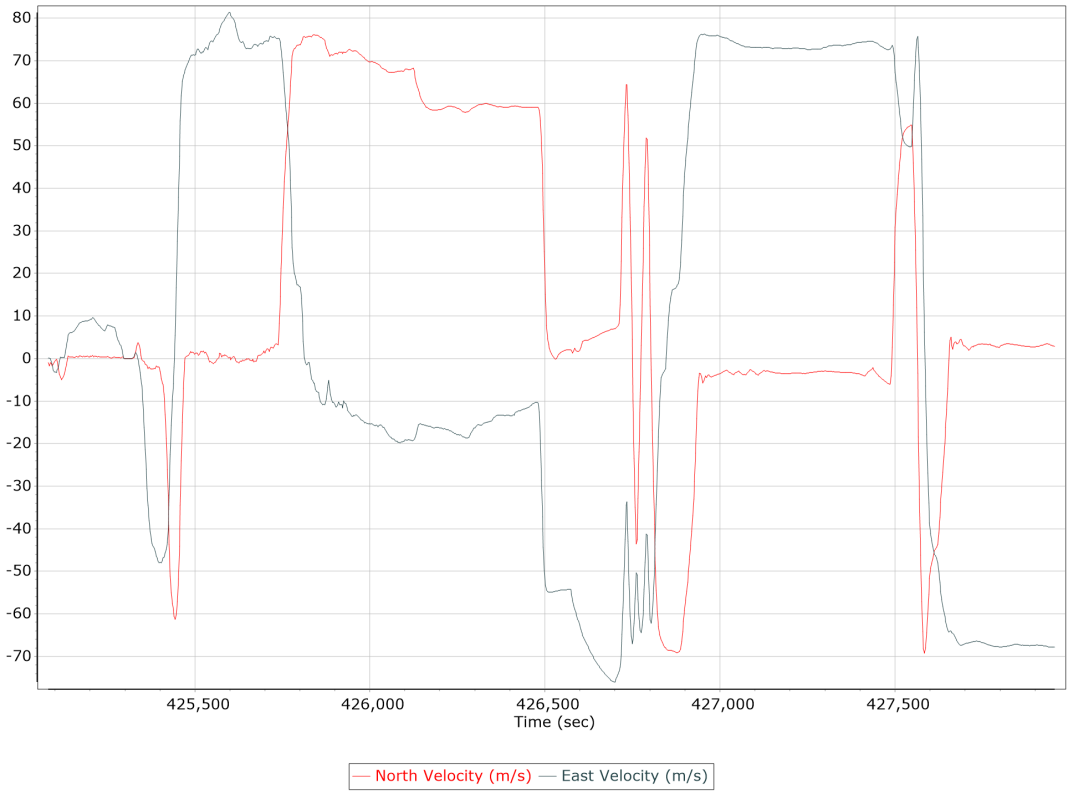
Roll/Pitch



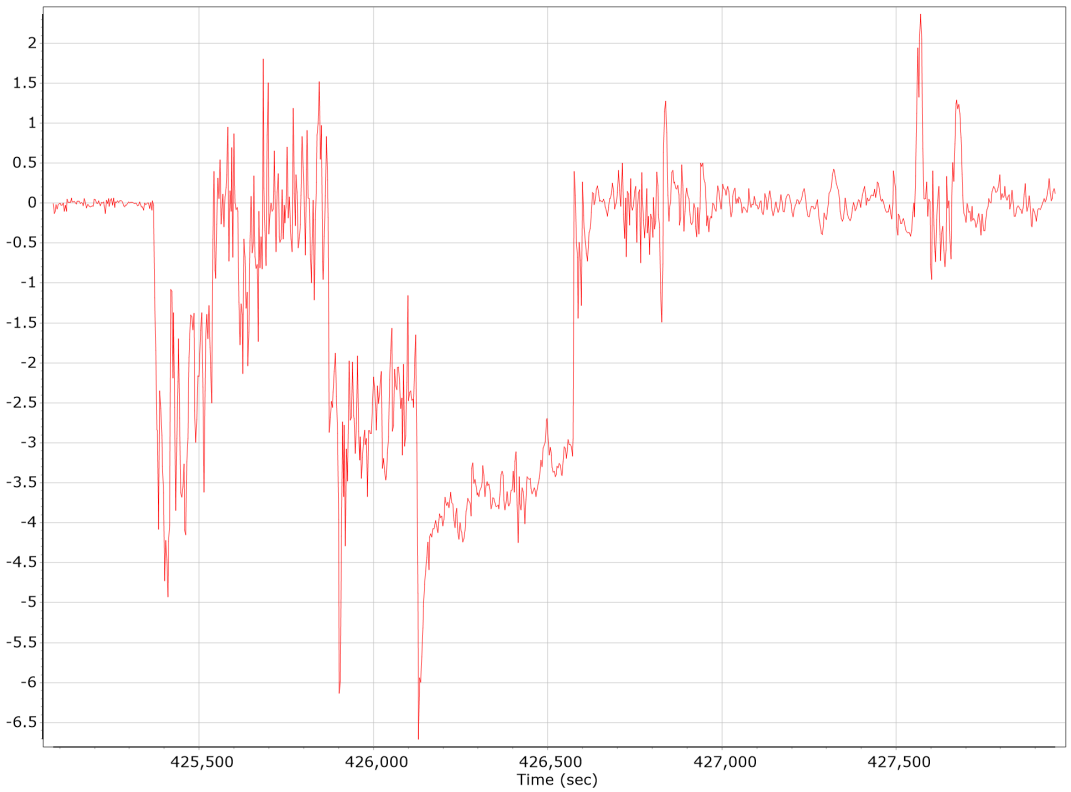
Heading



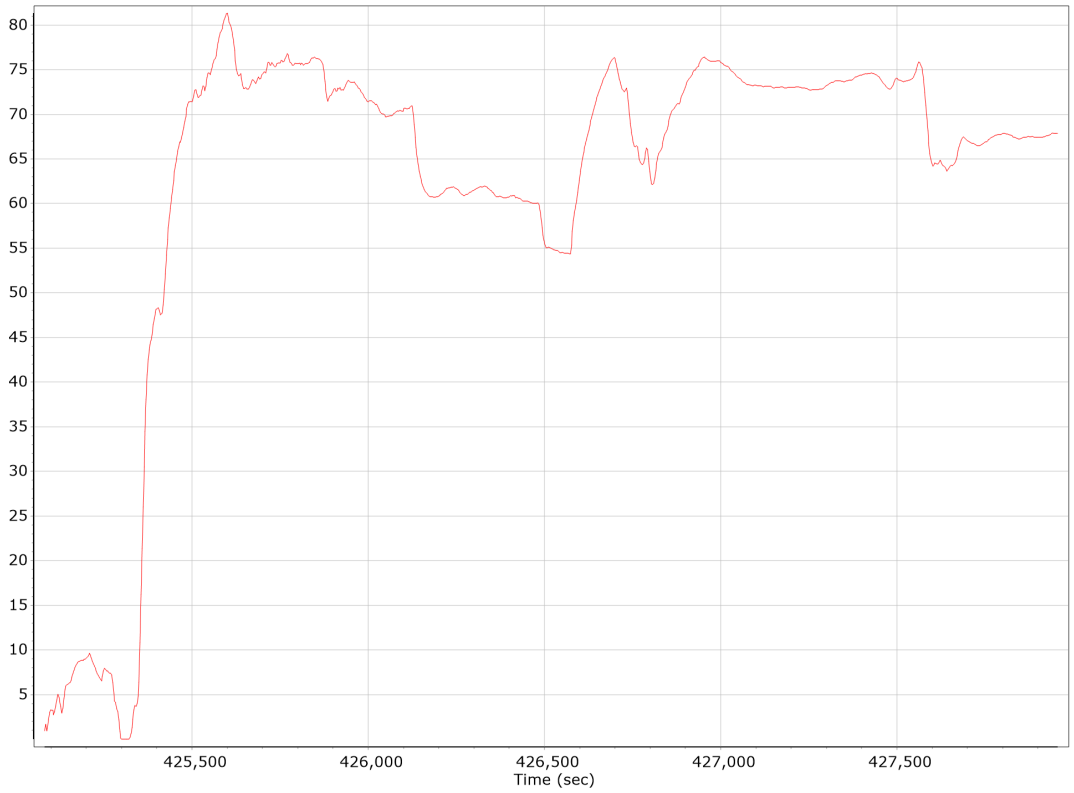
North/East Velocity



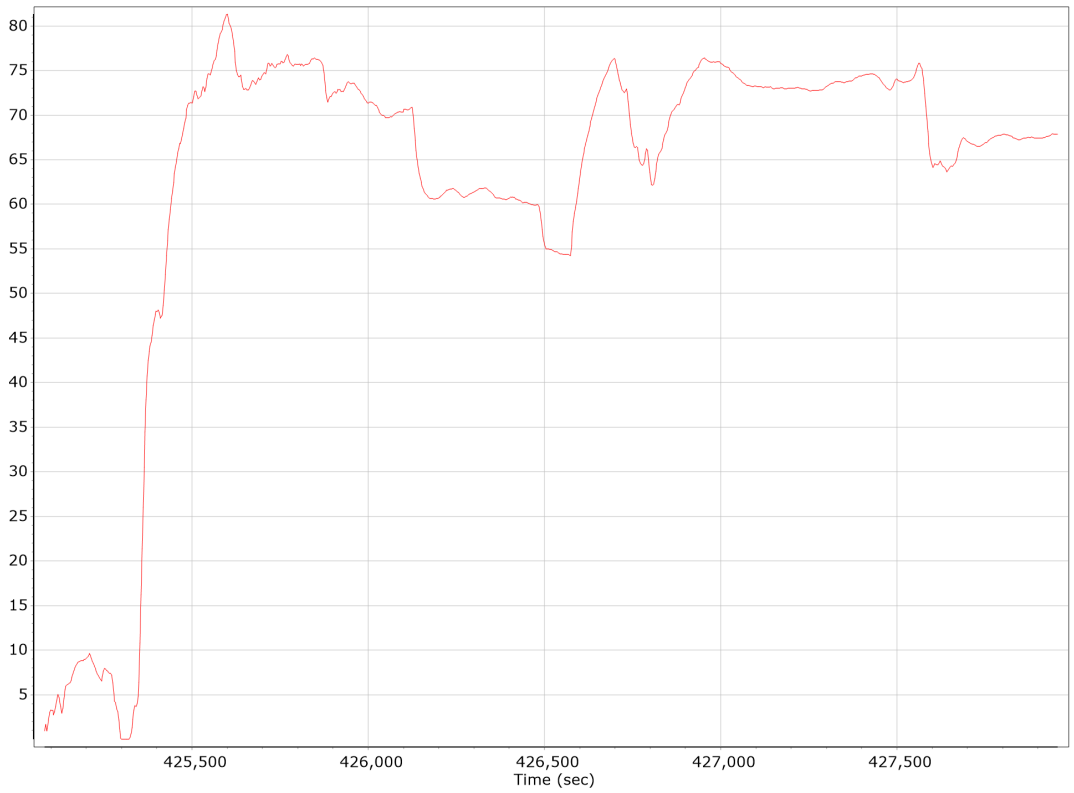
Down Velocity



Total Speed



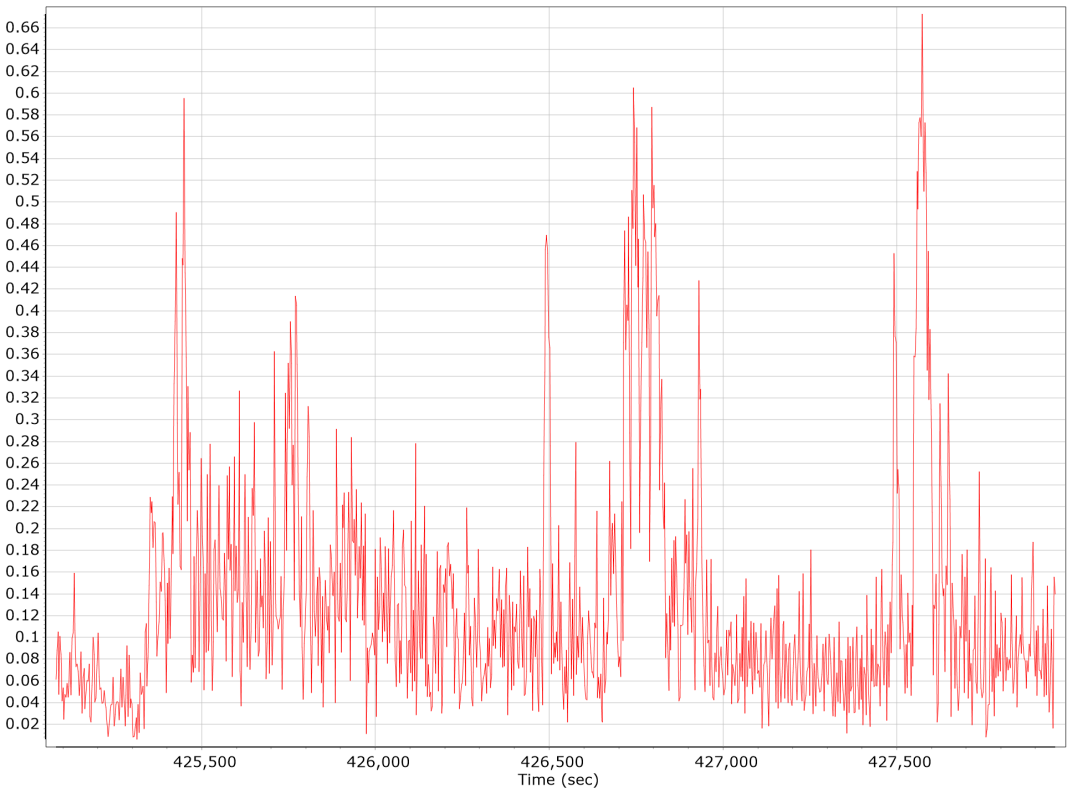
Ground Speed



Body Acceleration



Total Body Acceleration



Body Angular Rate

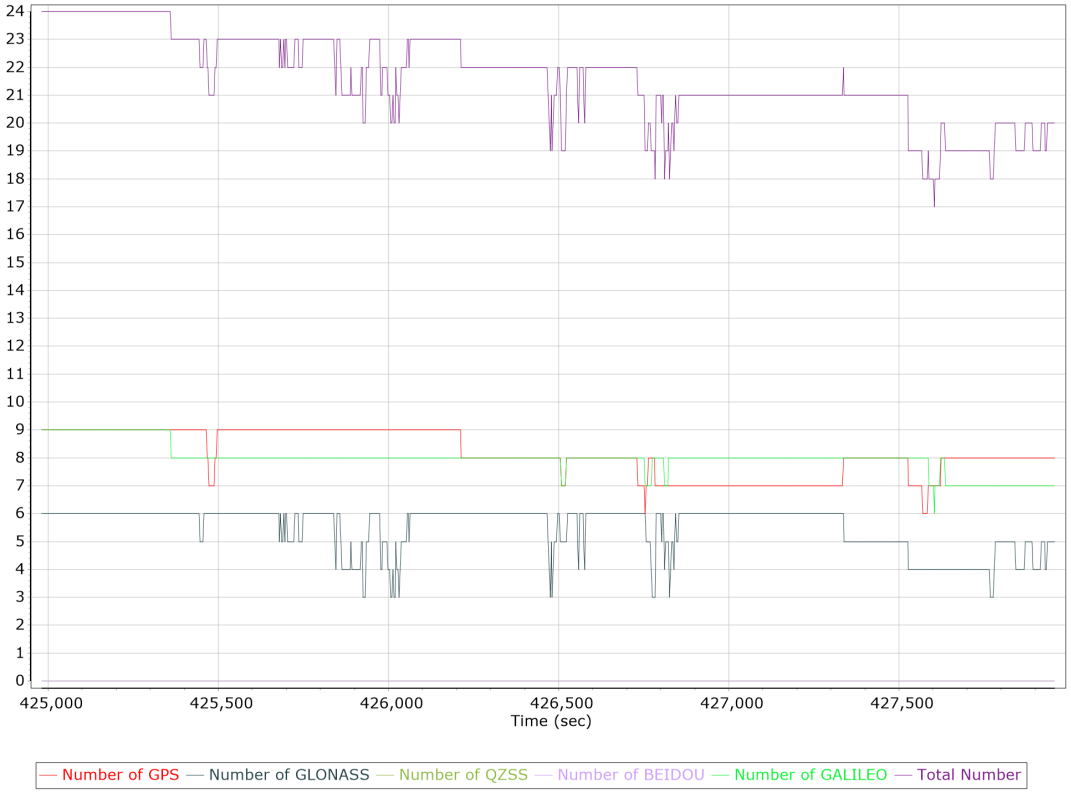


GNSS QC

GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	6	9	8
Number of GLONASS SV	3	6	6
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	6	9	8
Total number of SV	17	24	22
PDOP	1.08	1.46	1.17
QC Solution Gaps	0.00	0.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	3294.00	0.00	0.00
Percentage	100.00	0.00	0.00

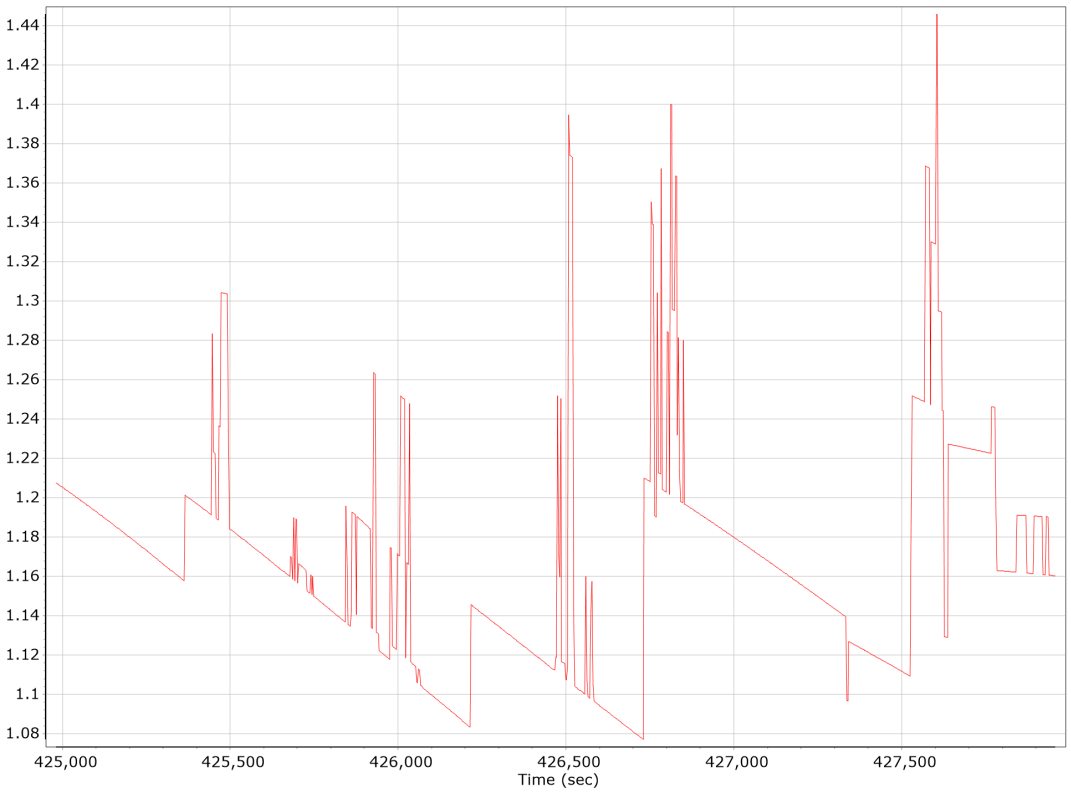
Num SVs in solution



Forward/Reverse Separation



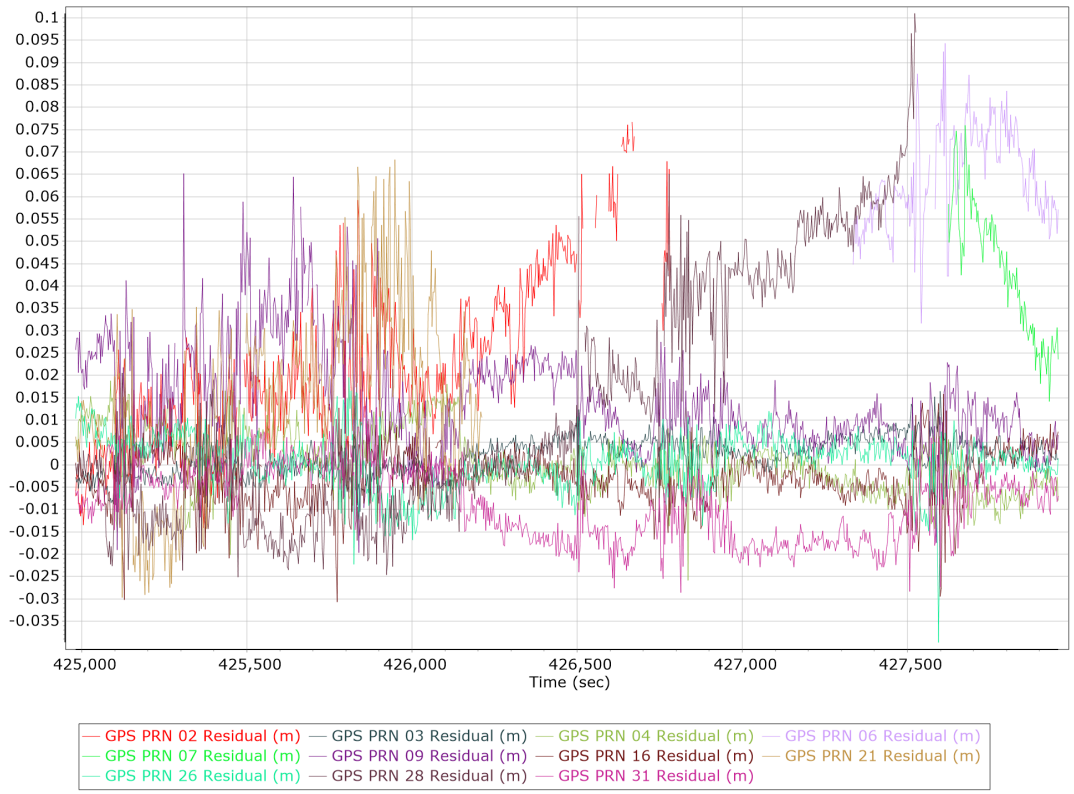
PDOP



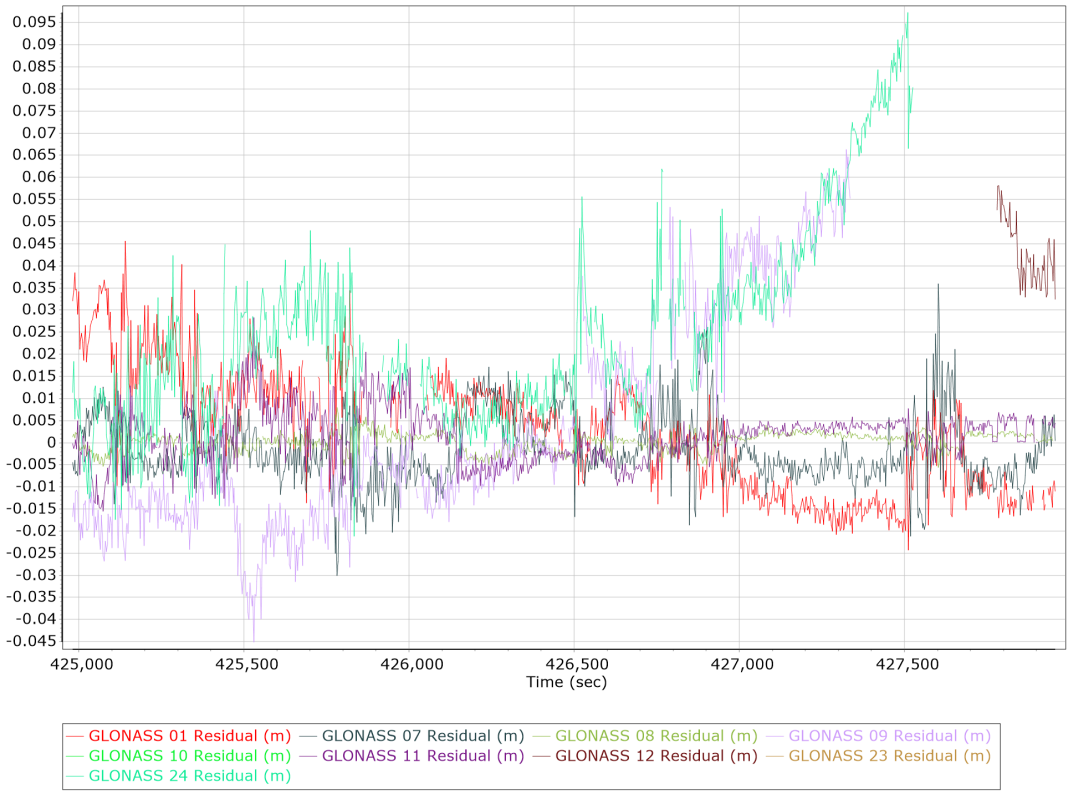
Estimated Position Accuracy



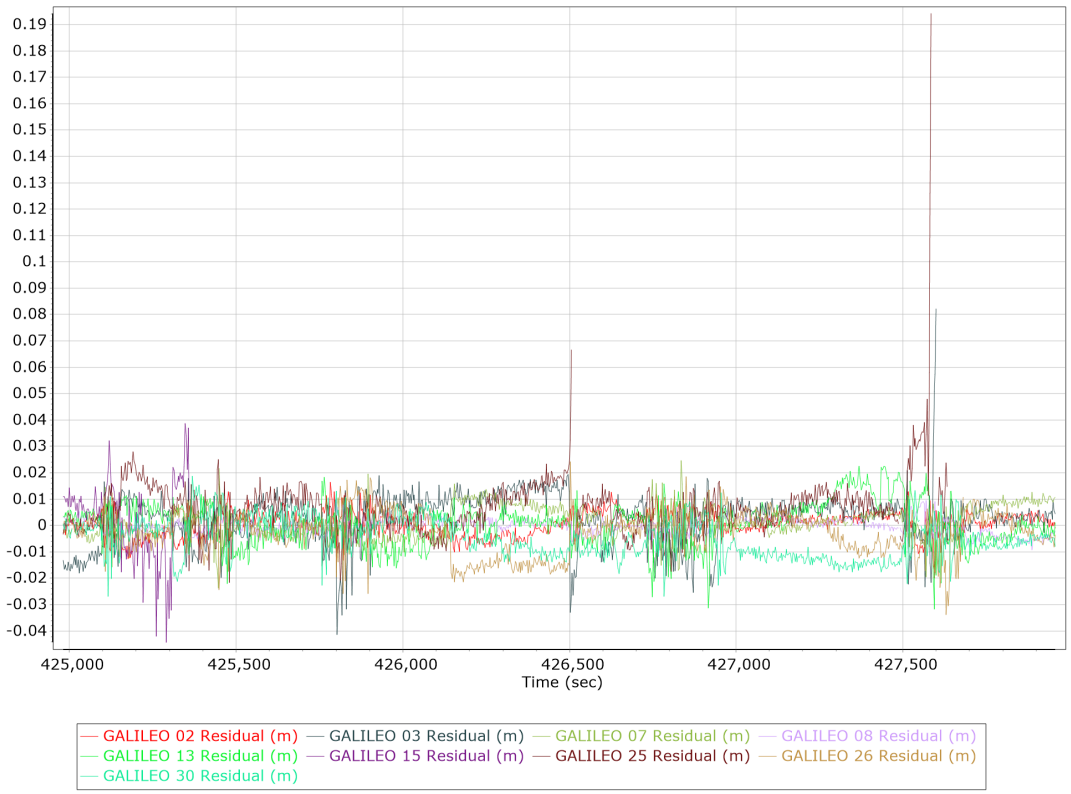
GPS Residuals



GLONASS Residuals



GALILEO Residuals



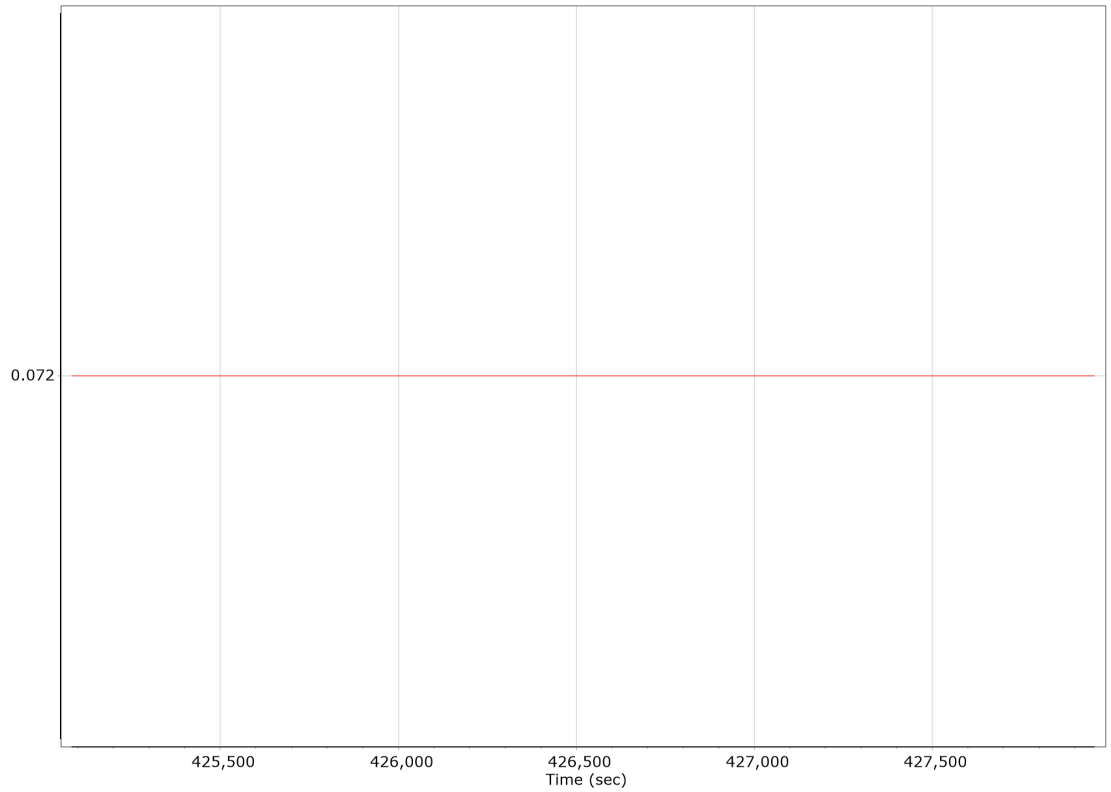
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	424655.000 (9/28/2023 9:57:35 PM)		
Processing end time	427958.000 (9/28/2023 10:52:38 PM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.072	0.090	-1.275
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

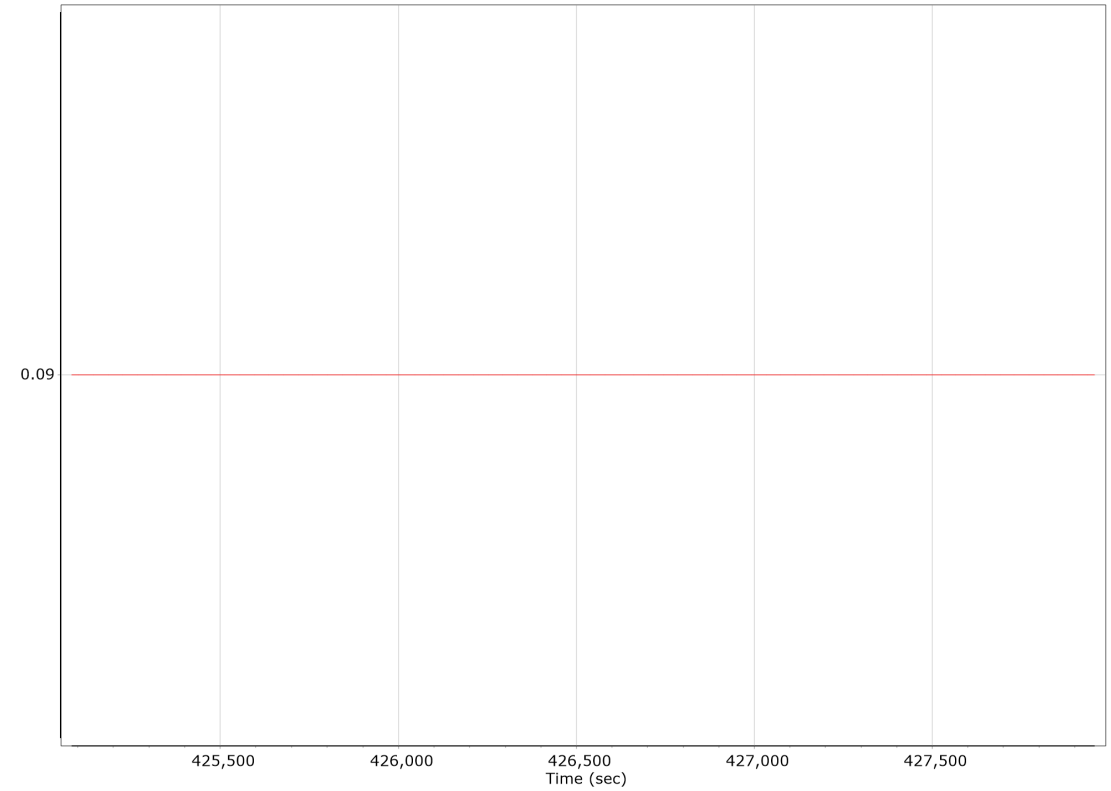
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

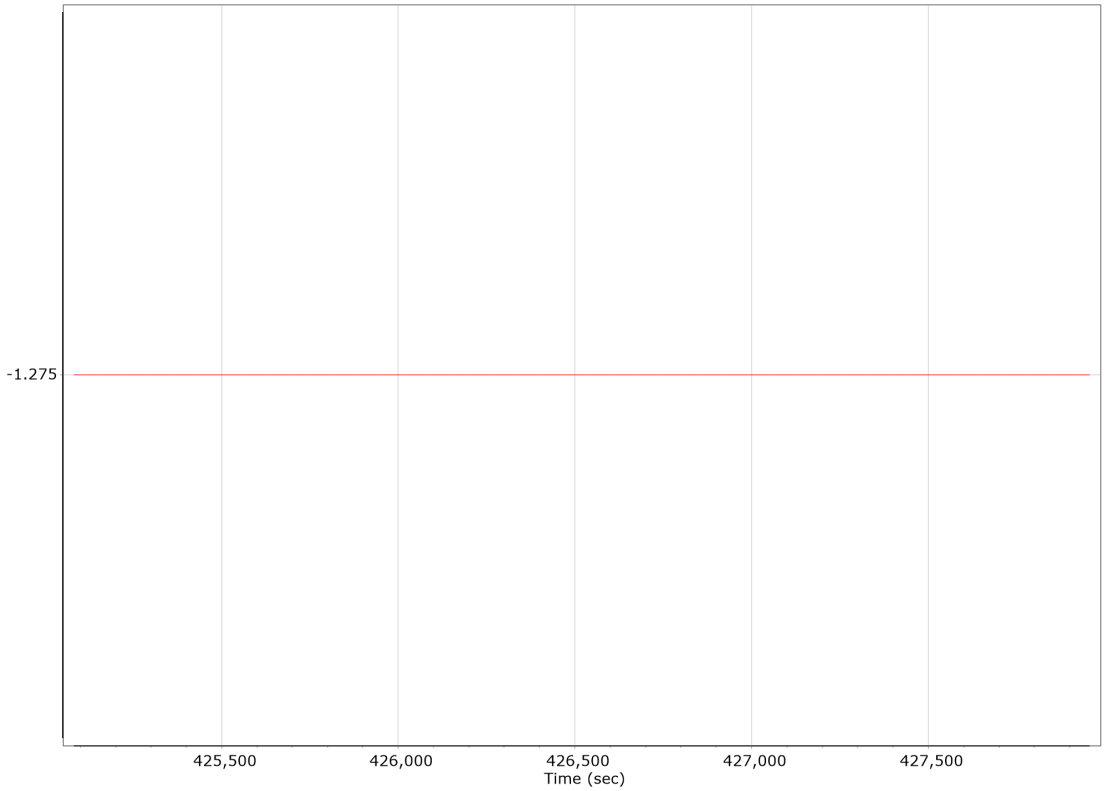
X Reference-Primary GNSS Lever Arm (m)



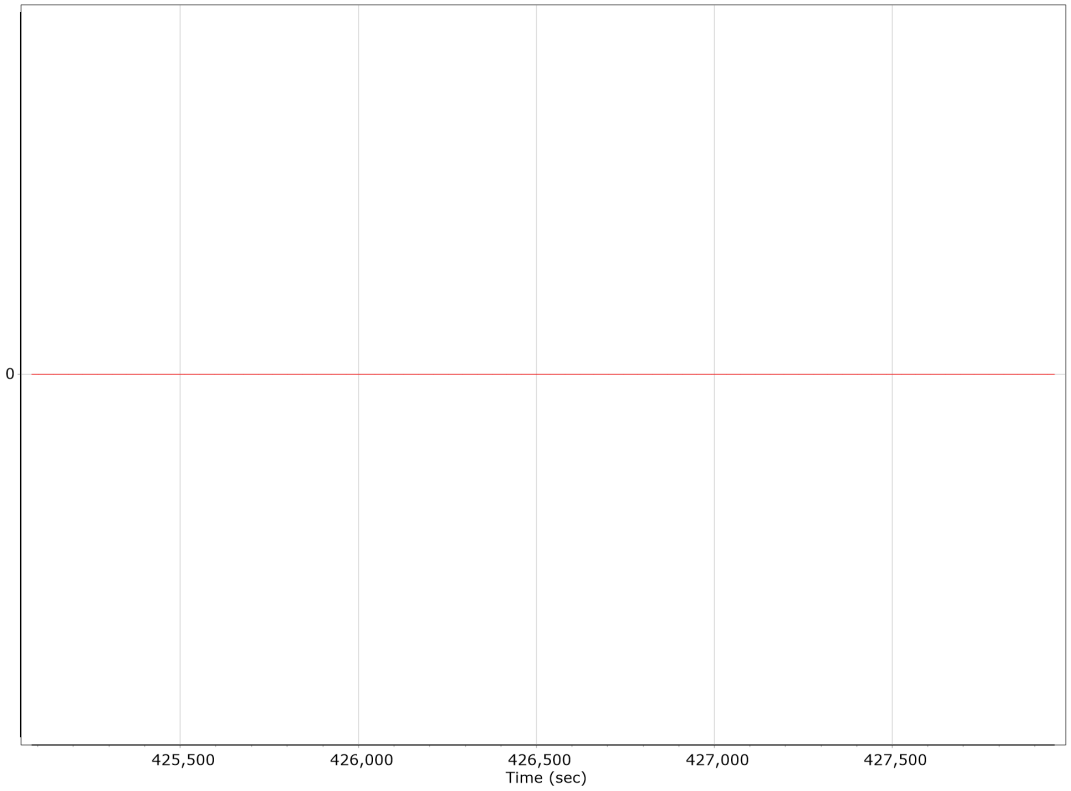
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



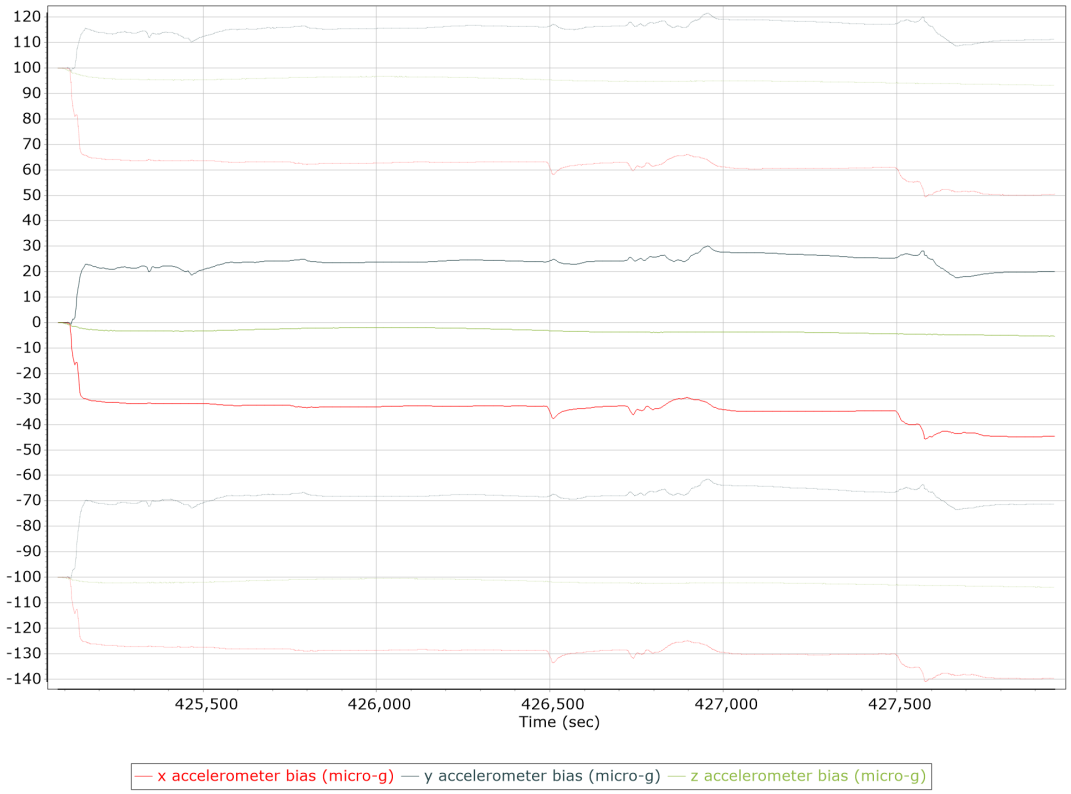
Reference-Primary GNSS Lever Arm Figure of Merit



IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

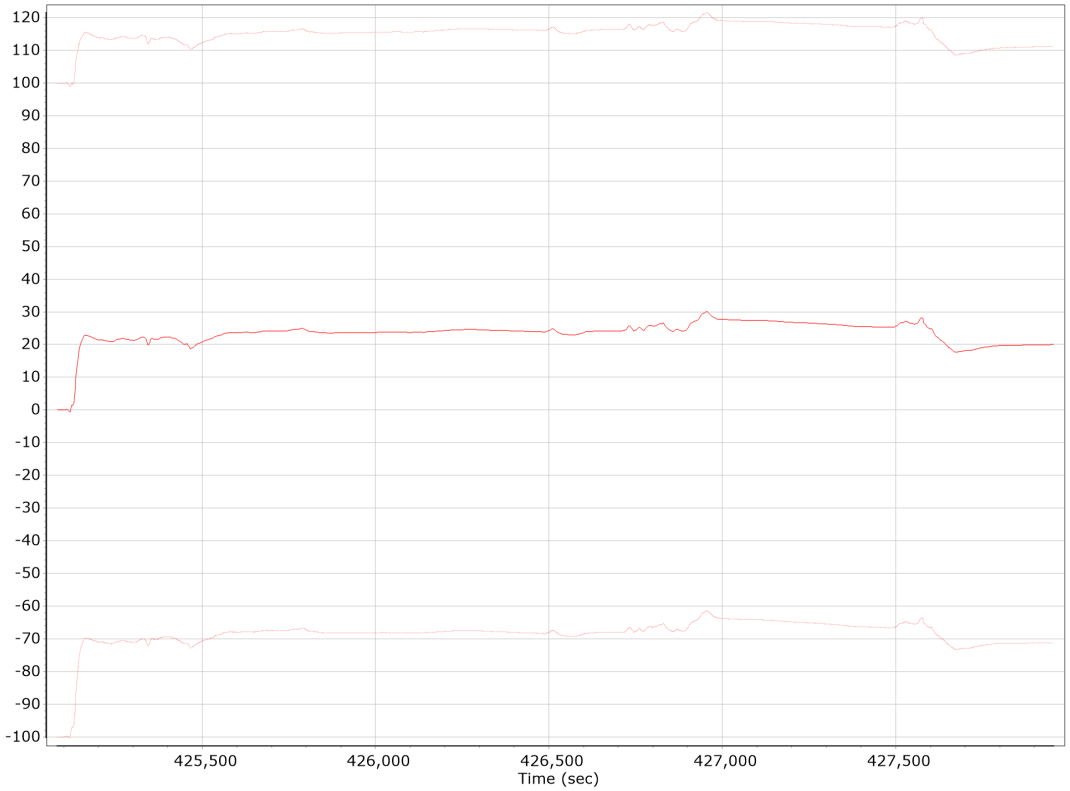
Accelerometer Bias (micro-g)



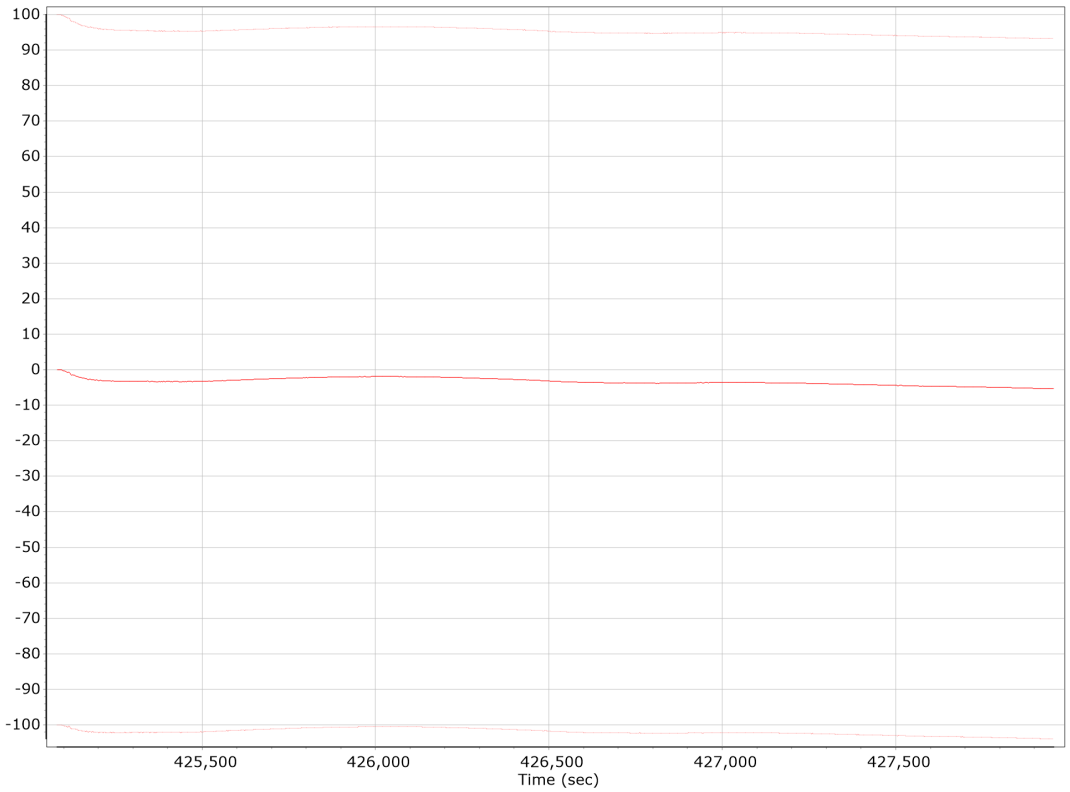
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



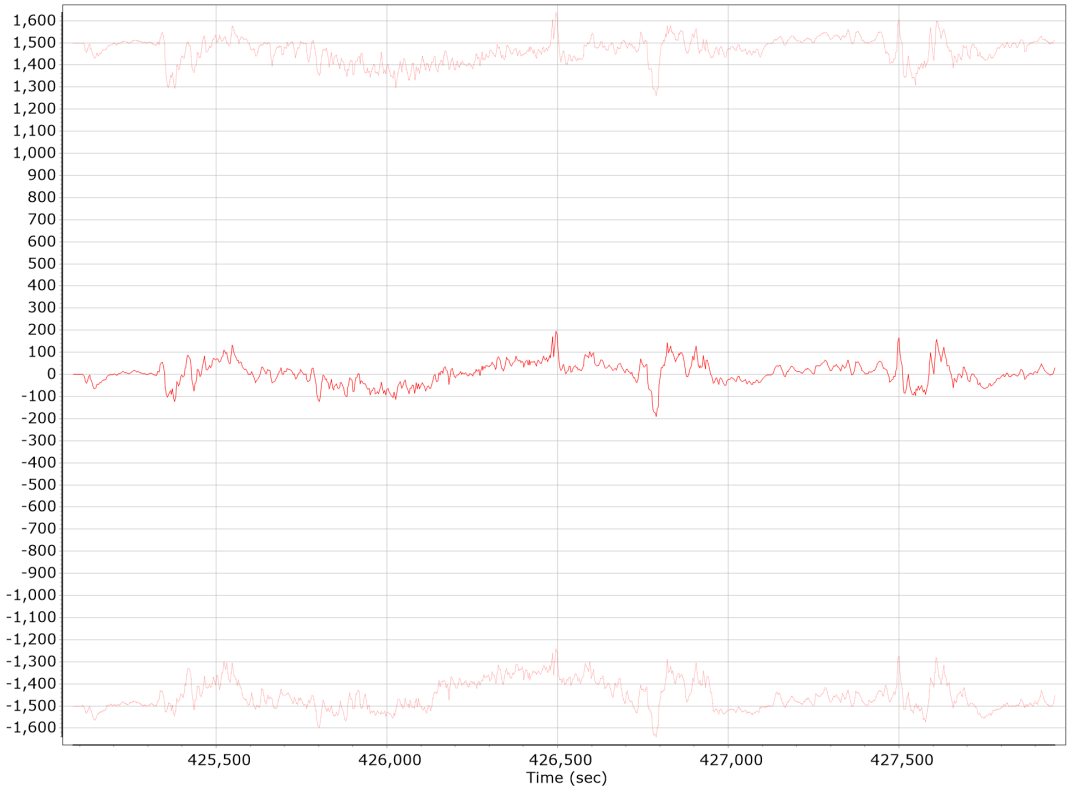
Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



X Accelerometer Scale Error (ppm)



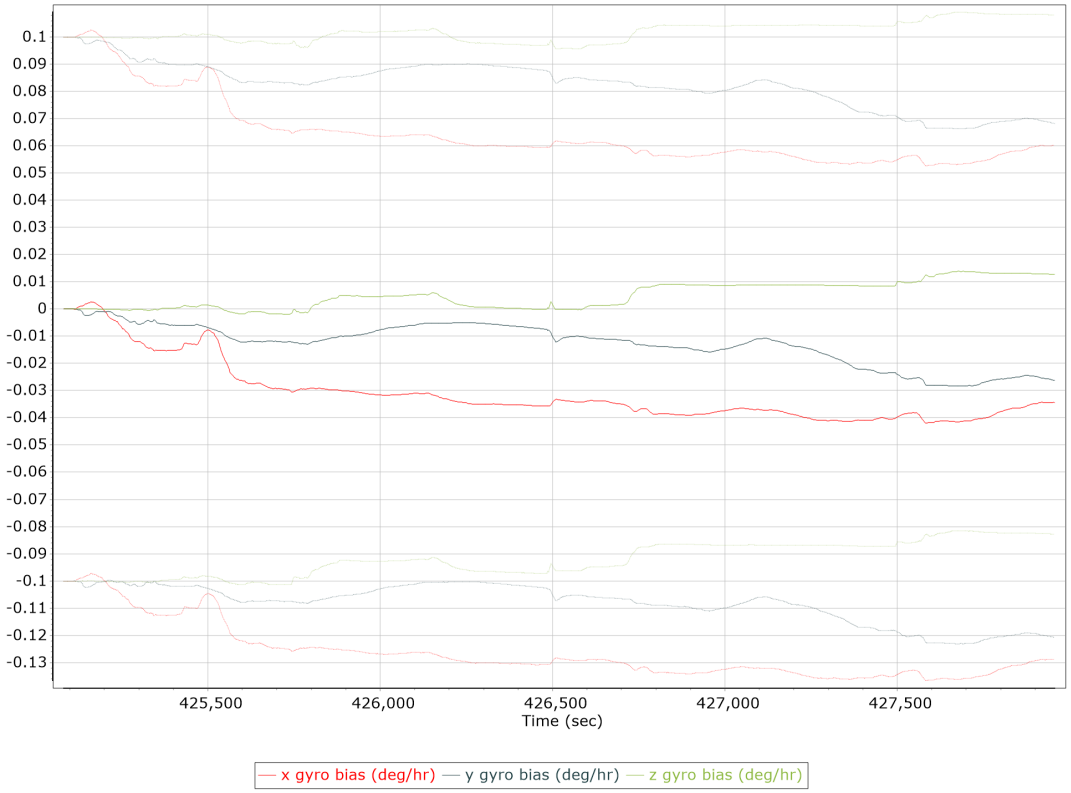
Y Accelerometer Scale Error (ppm)



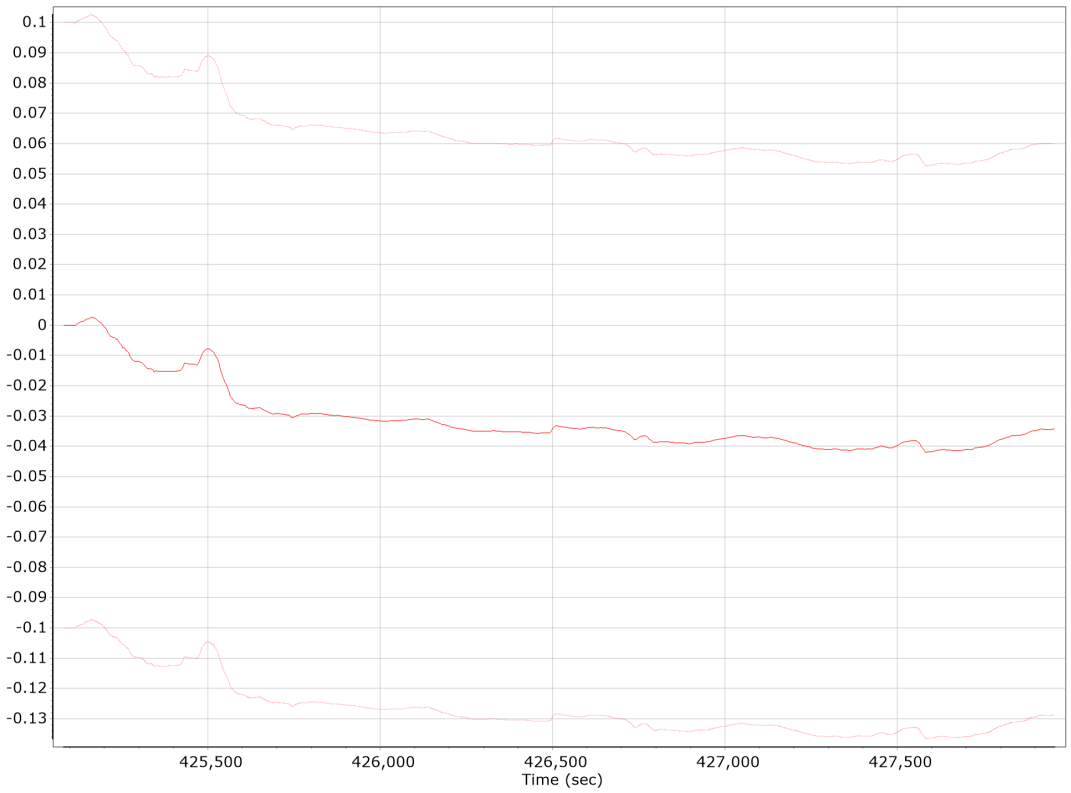
Z Accelerometer Scale Error (ppm)



Gyro Bias (deg/h)



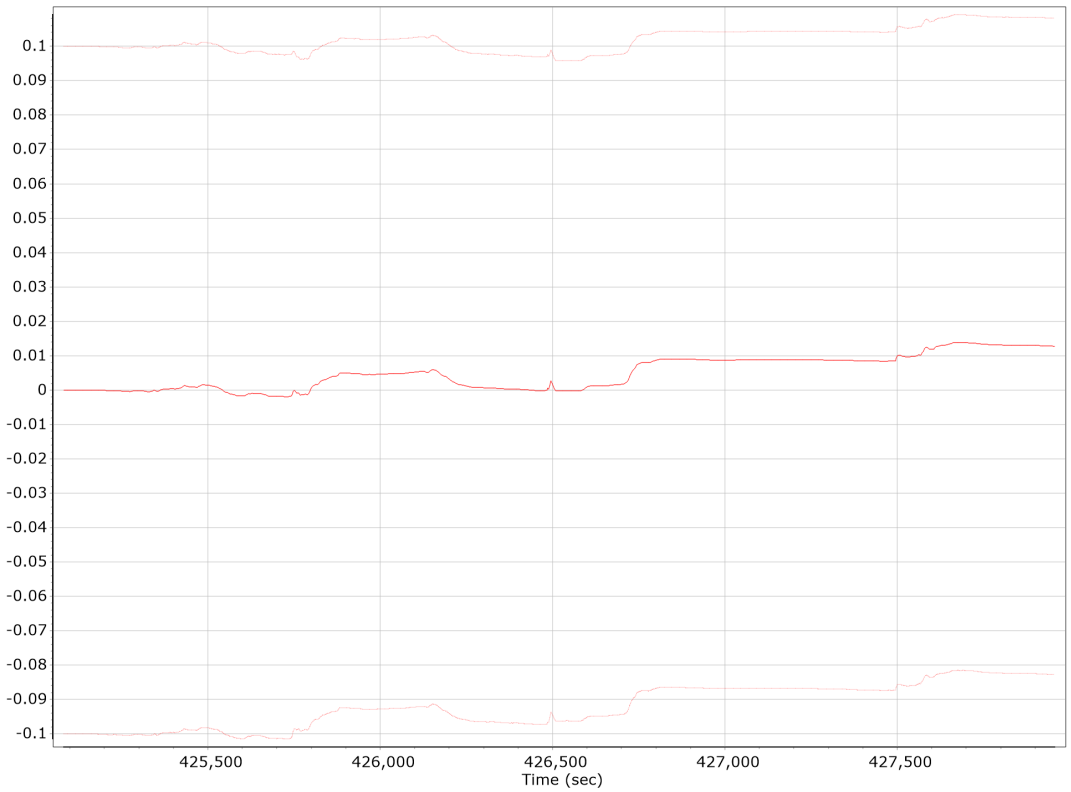
X Gyro Bias (deg/h)



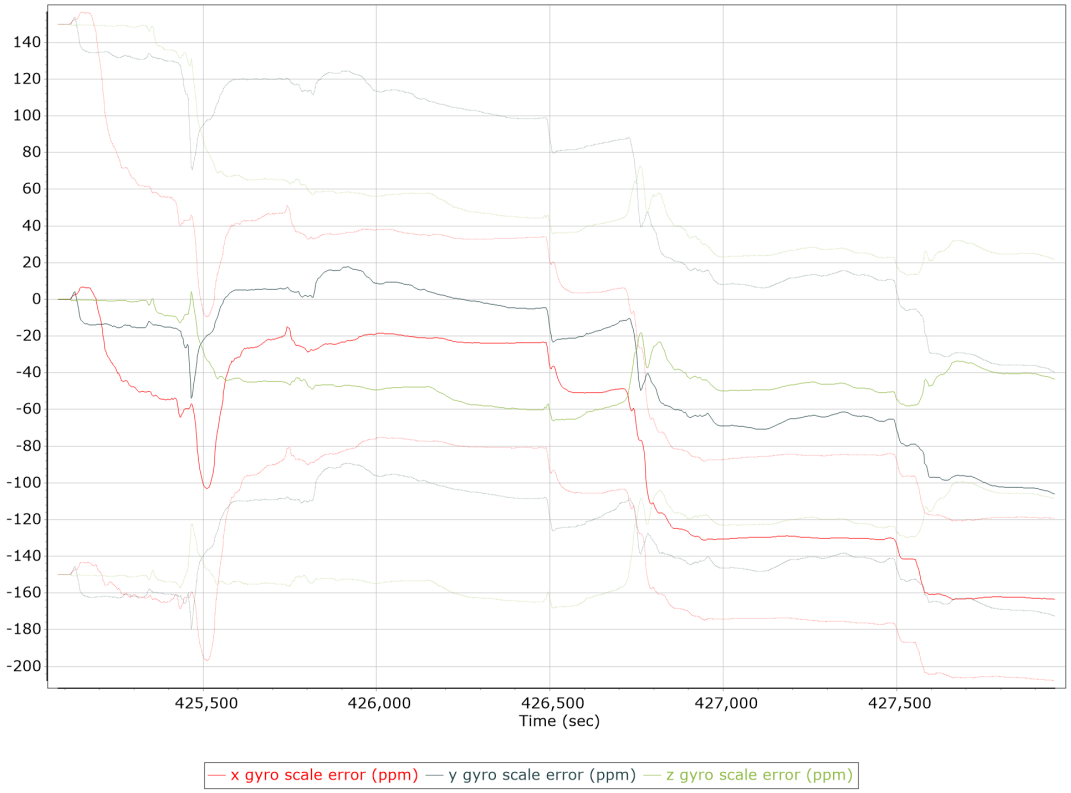
Y Gyro Bias (deg/h)



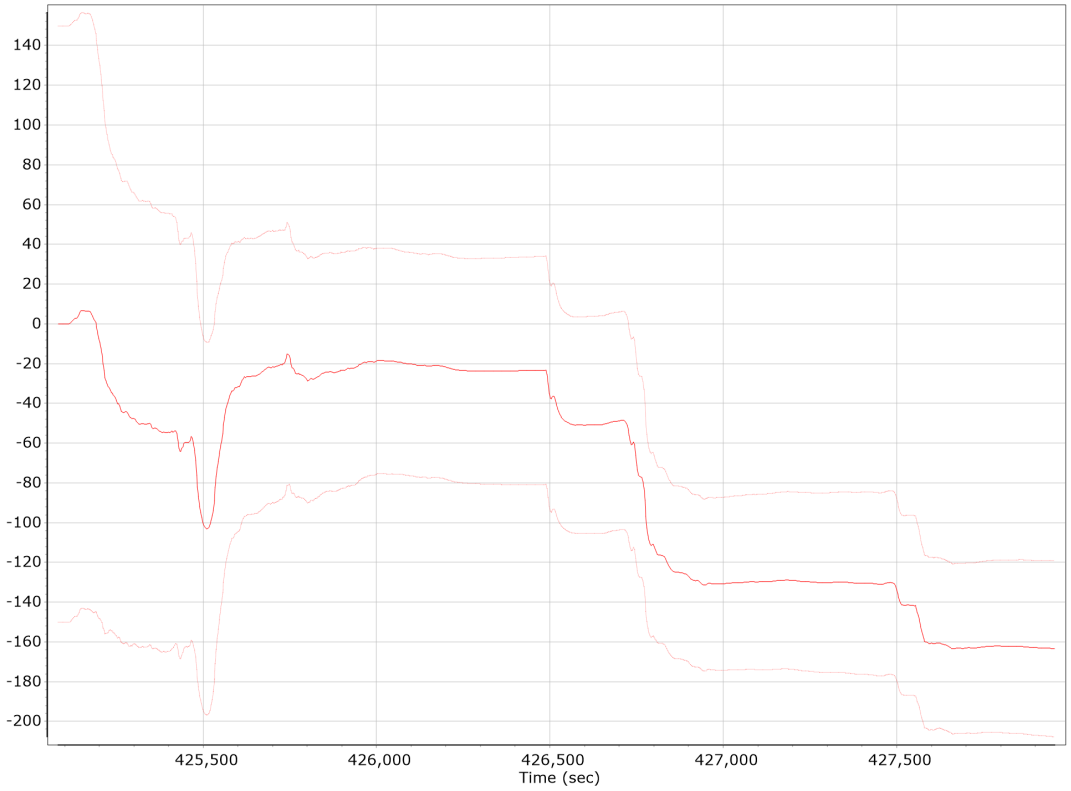
Z Gyro Bias (deg/h)



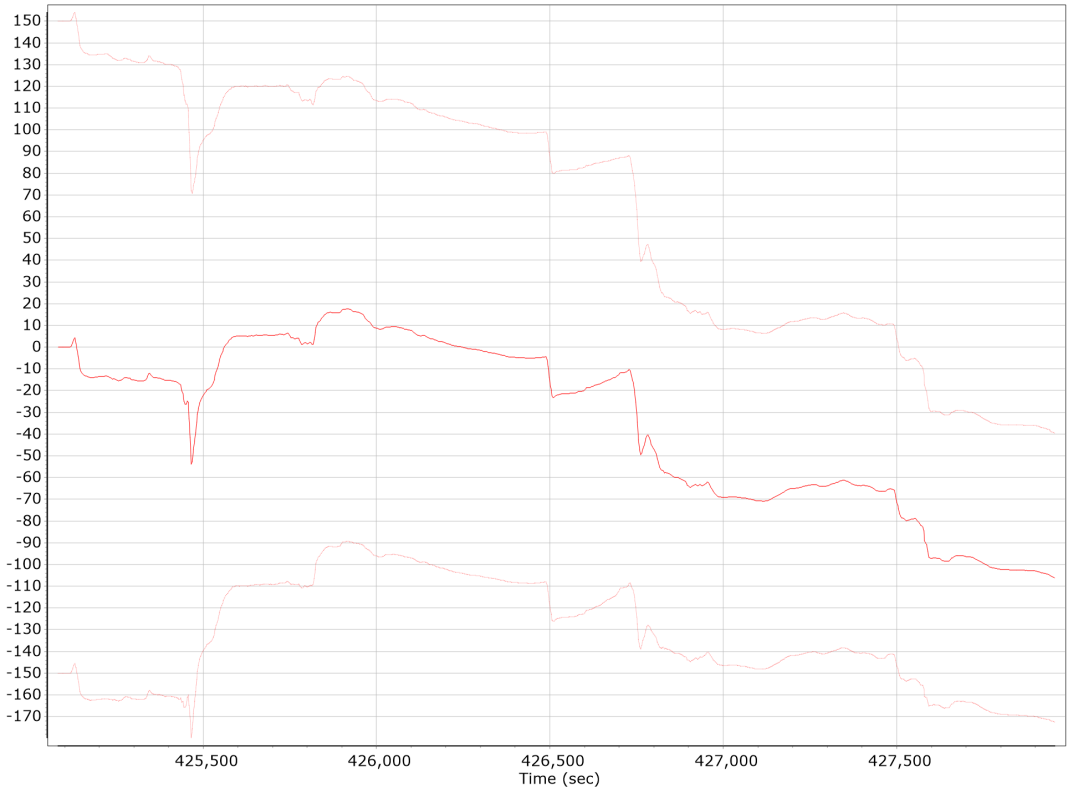
Gyro Scale Error (ppm)



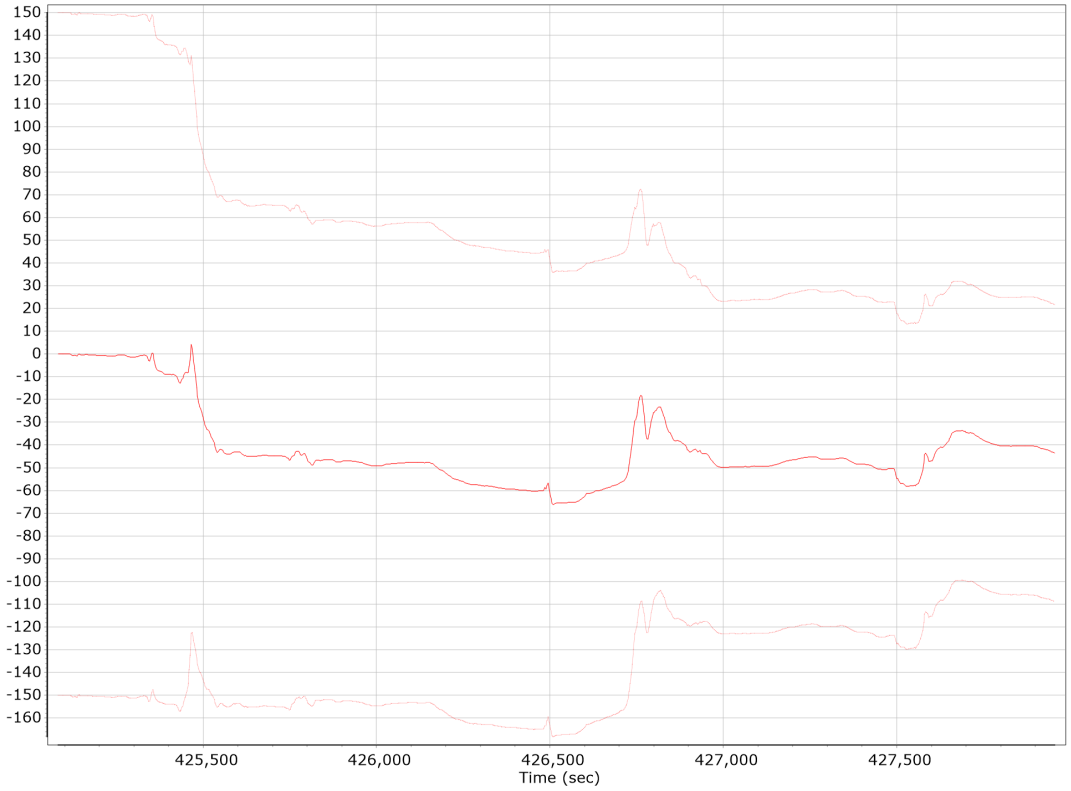
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)

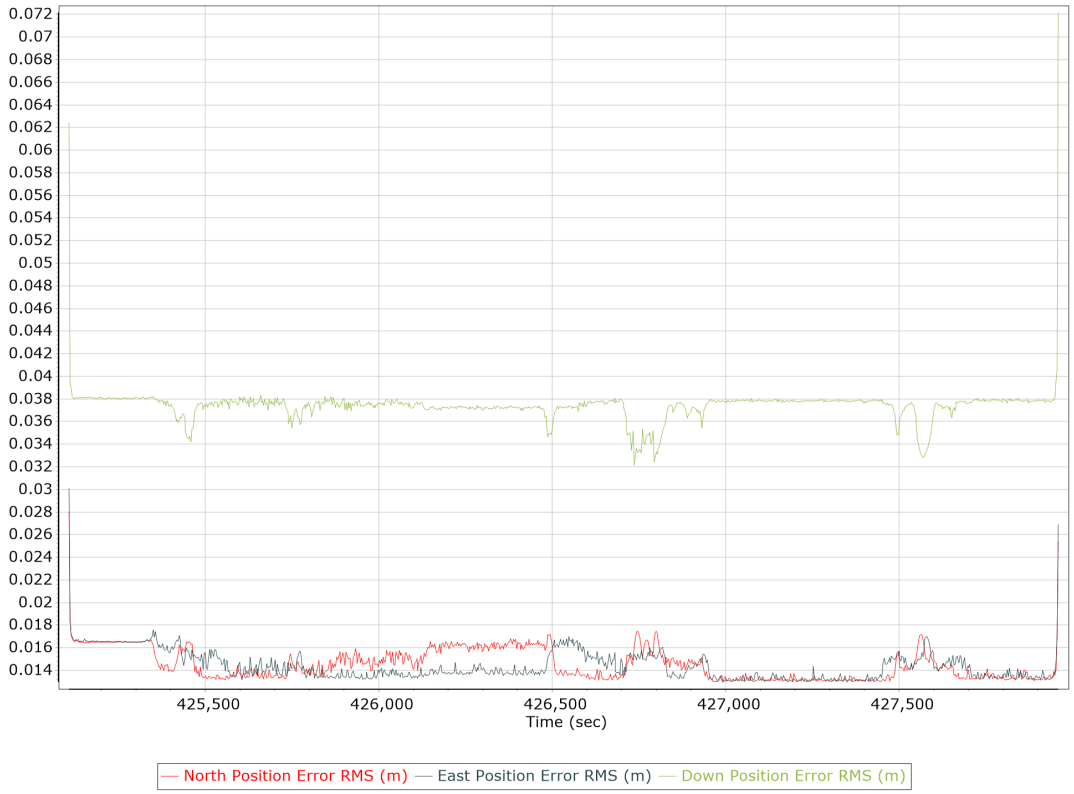


Z Gyro Scale Error (ppm)

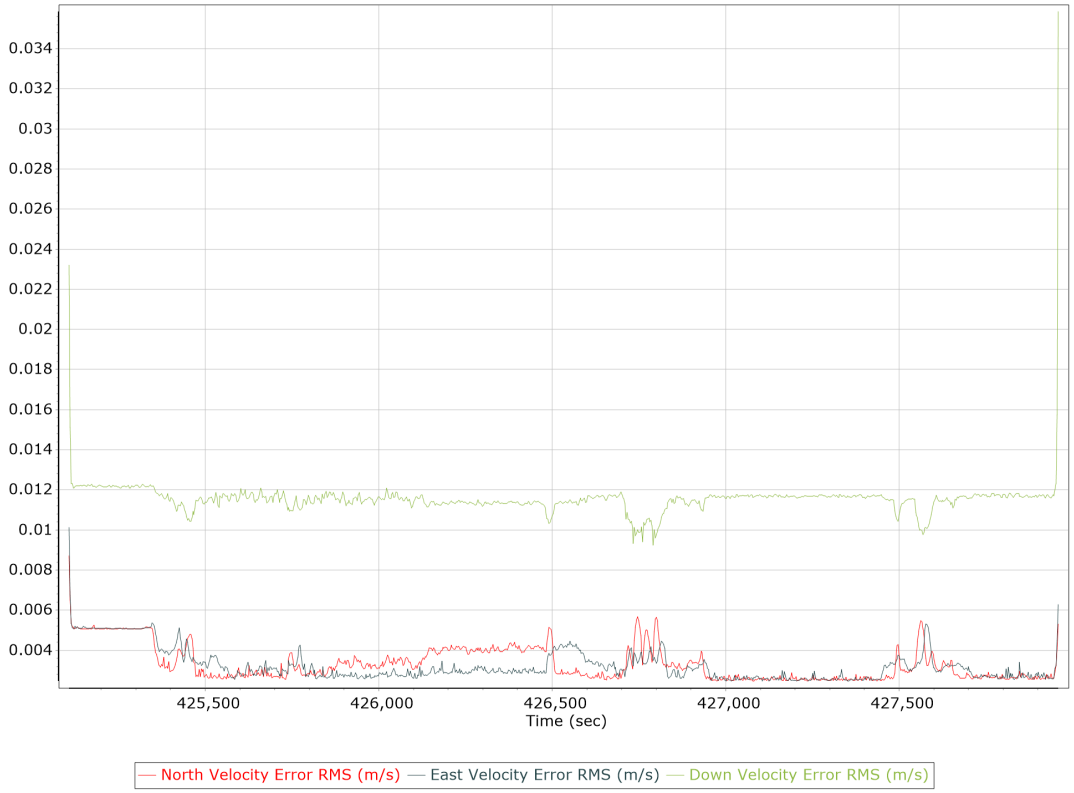


Smoothed Performance Metrics

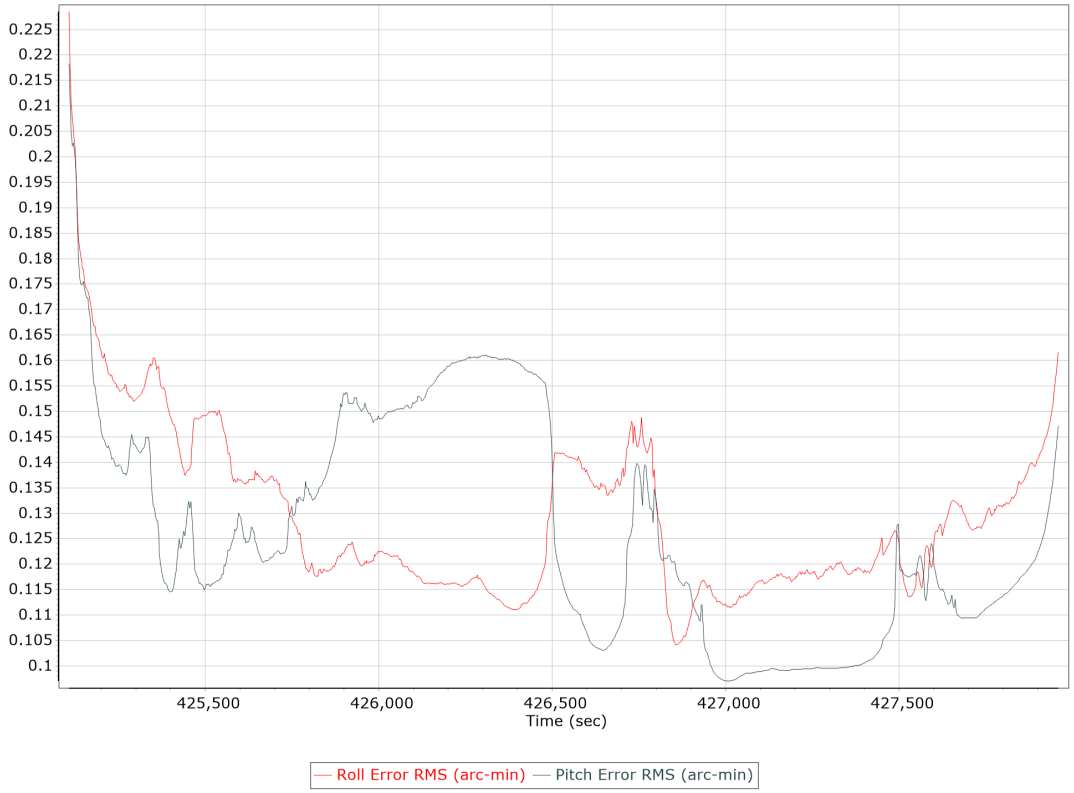
Position Error RMS (m)



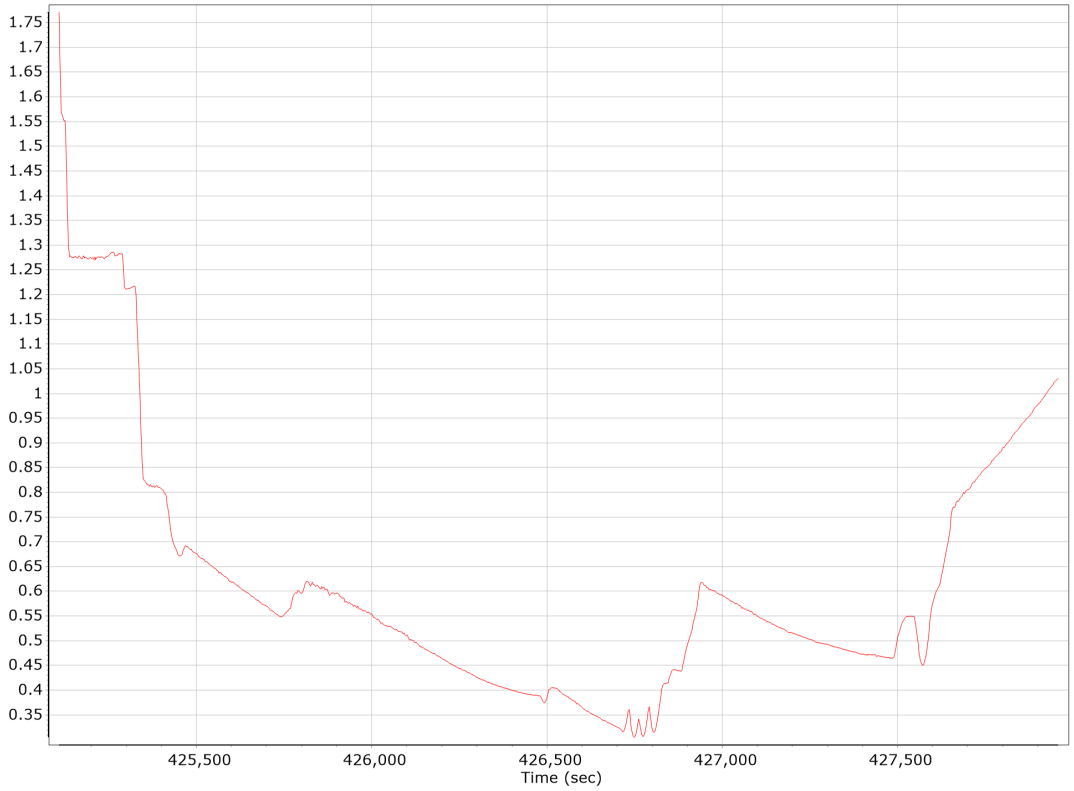
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)



Heading Error RMS (arc-min)



Forward Processed Performance Metrics

Position Error RMS (m)



Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

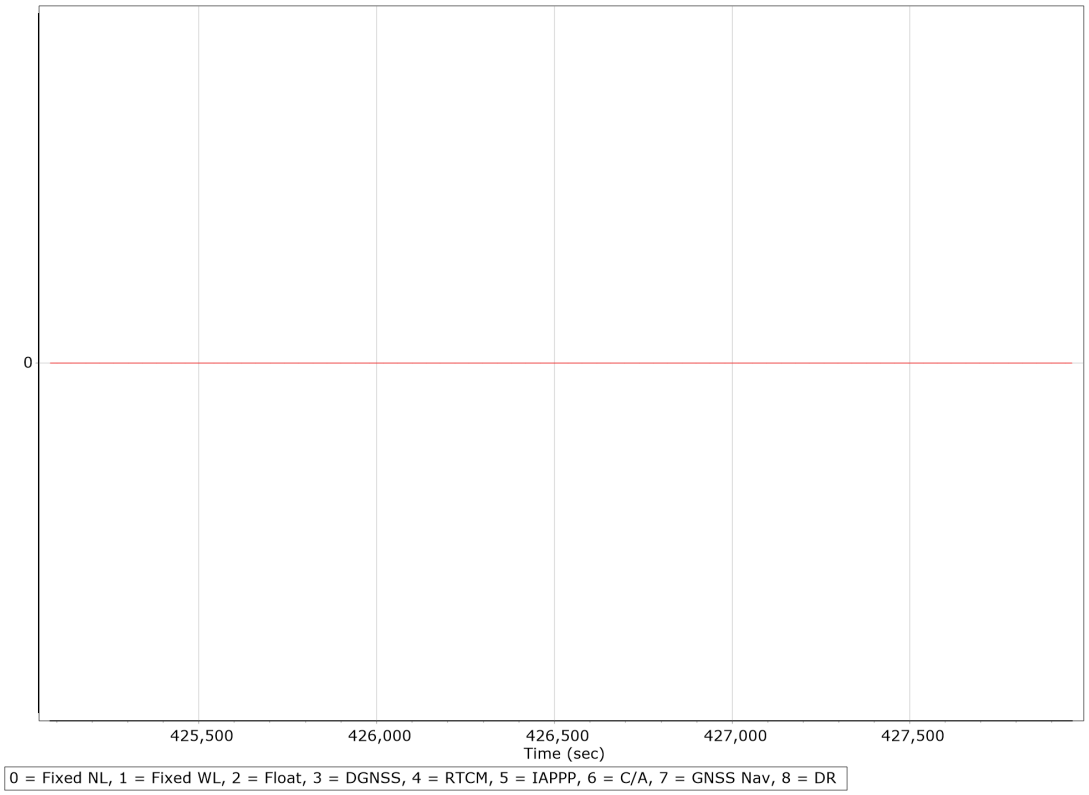


Heading Error RMS (arc-min)



Forward Processed Solution Status

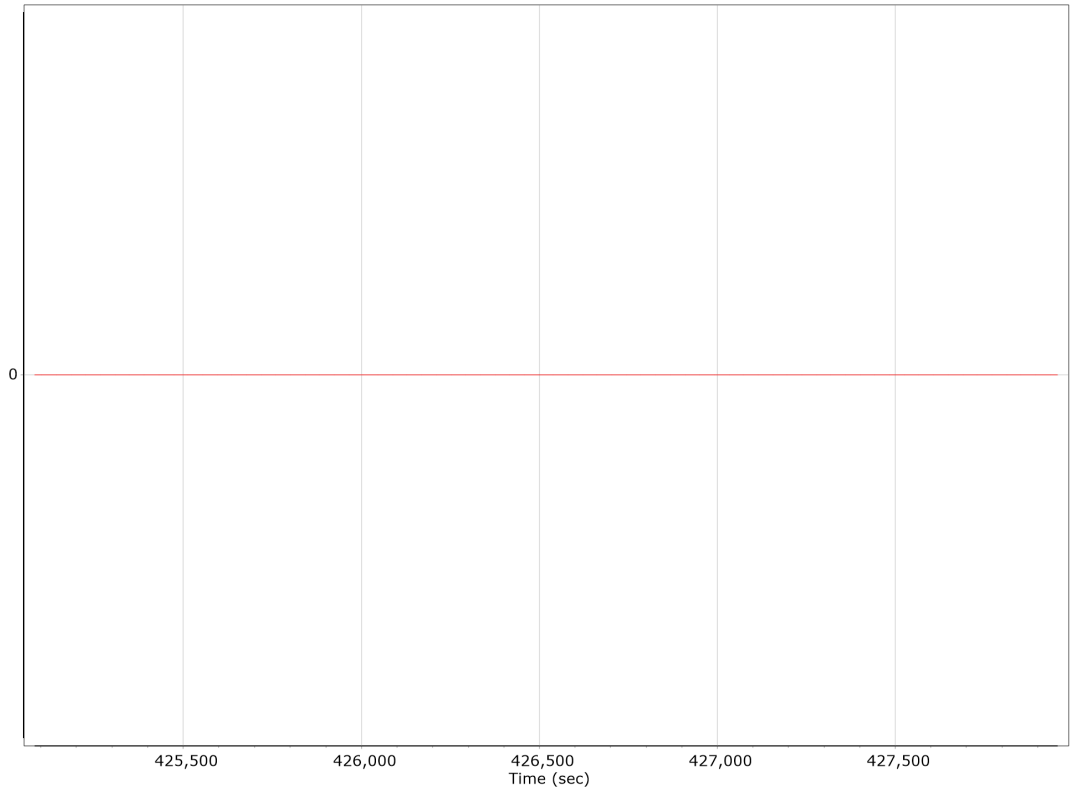
Processing Mode



Number of Satellites



Baseline Length



General Information

Mission Information

Project name	09282023A_4046
Processing date	2024-01-11 18:05:07
Mission date	2023-09-28 21:19:04
Mission duration	04:13:37.015
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N10762
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
230928_211845_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm2710.23g	GLONASS Broadcast Ephemeris
Ephm2710.23n	GPS Broadcast Ephemeris
Ephm2720.23g	GLONASS Broadcast Ephemeris
Ephm2720.23n	GPS Broadcast Ephemeris
IGS0OPSFIN_20232700000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232710000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232720000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232730000_01D_15M_ORB.SP3	GPS Precise Ephemeris

Output Files

Filename	File type
sbet_09282023A_4046.out	SBET Trajectory File

Rover Data Summary

First raw data file	230928_211845_INS-GPS_1.raw		
Last raw data file	230928_211845_INS-GPS_1.raw		
Start GPS week	2281		
Start time	422325.943 (9/28/2023 9:18:45 PM)		
End time	437542.958 (9/29/2023 1:32:22 AM)		
Start of fine alignment	422543.180 (9/28/2023 9:22:23 PM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	0.000	0.000	0.000
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

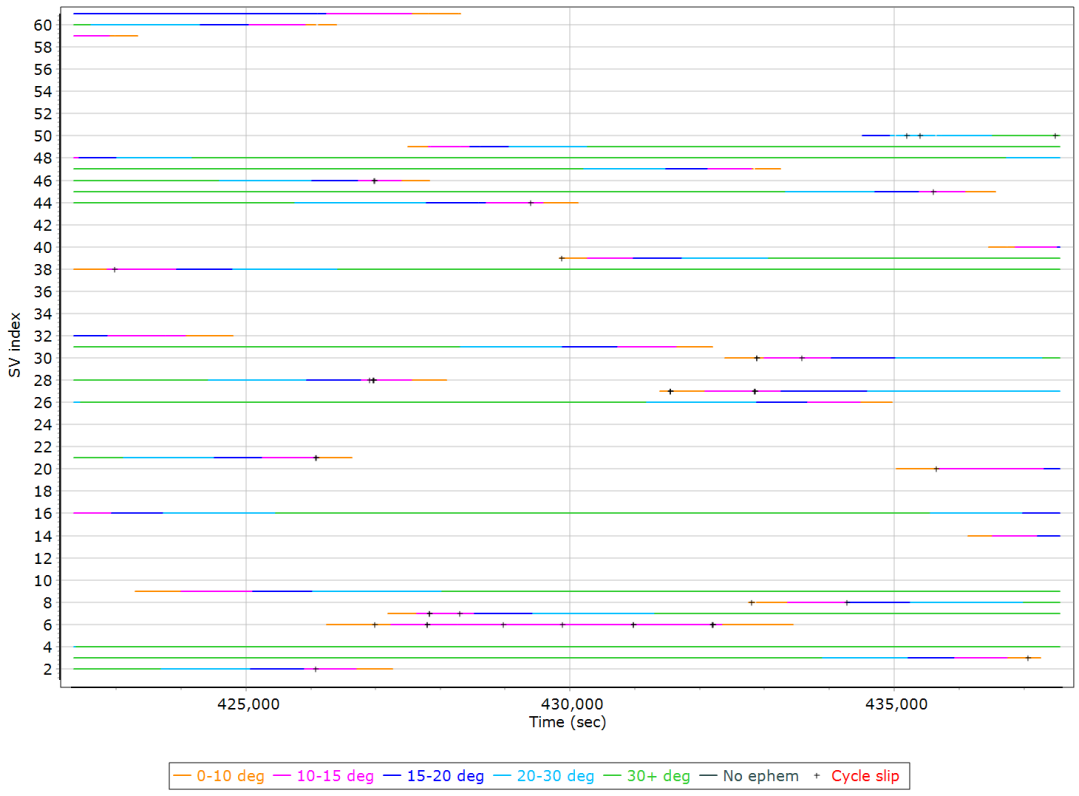
Rover Data QC

Raw IMU Import QC Summary

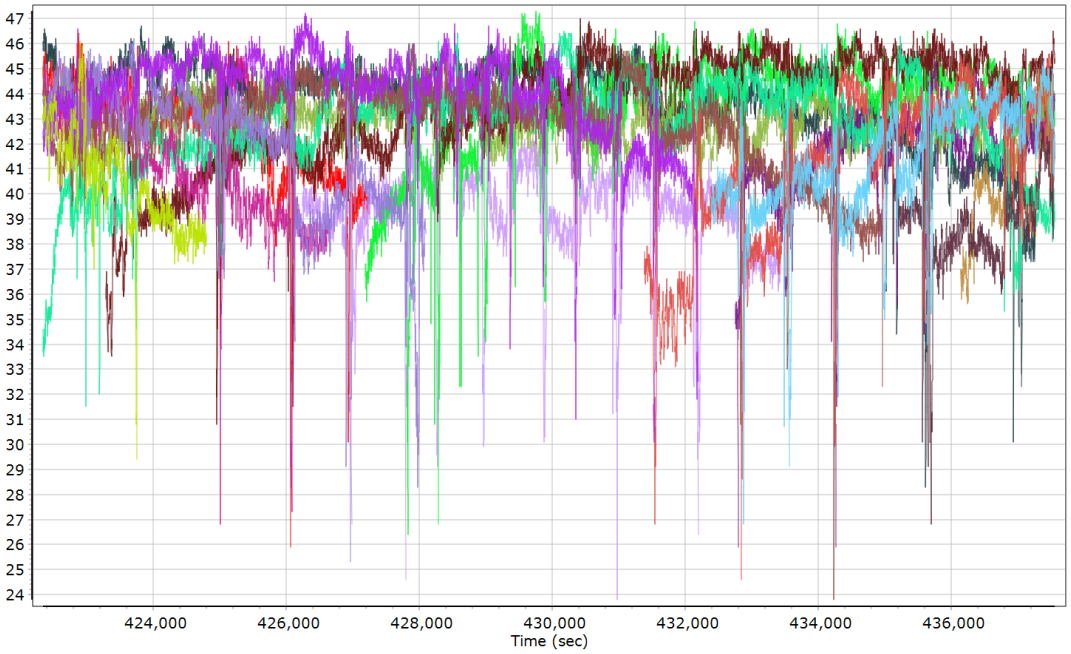
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_09282023A_4046.log
IMU Records Processed	3042999
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

GPS/GLONASS L1 Satellite Lock/Elevation

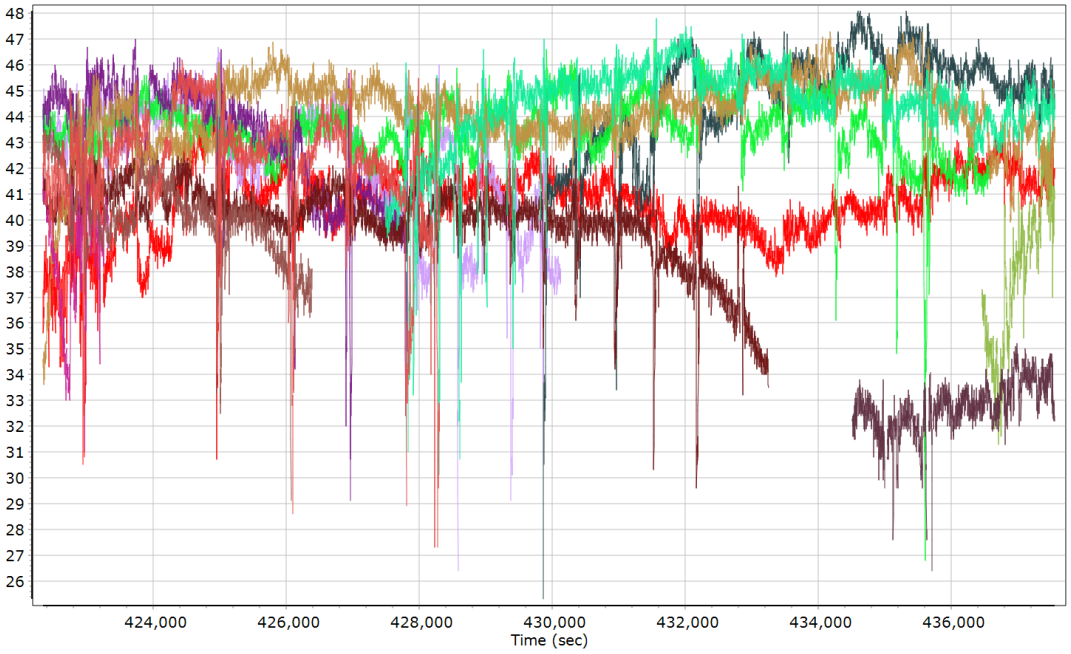


GPS L1 SNR



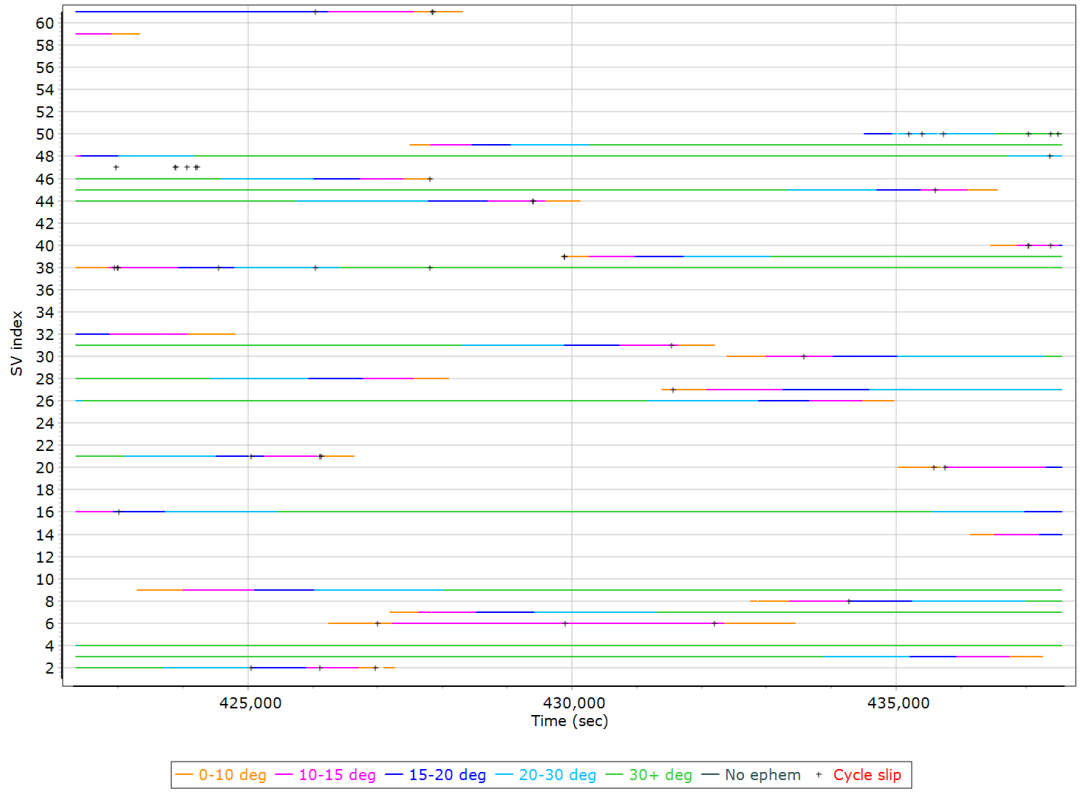
GPS PRN 02 L1 SNR (dB/Hz) GPS PRN 03 L1 SNR (dB/Hz) GPS PRN 04 L1 SNR (dB/Hz) GPS PRN 06 L1 SNR (dB/Hz)
GPS PRN 07 L1 SNR (dB/Hz) GPS PRN 08 L1 SNR (dB/Hz) GPS PRN 09 L1 SNR (dB/Hz) GPS PRN 14 L1 SNR (dB/Hz)
GPS PRN 16 L1 SNR (dB/Hz) GPS PRN 20 L1 SNR (dB/Hz) GPS PRN 21 L1 SNR (dB/Hz) GPS PRN 26 L1 SNR (dB/Hz)
GPS PRN 27 L1 SNR (dB/Hz) GPS PRN 28 L1 SNR (dB/Hz) GPS PRN 30 L1 SNR (dB/Hz) GPS PRN 31 L1 SNR (dB/Hz)
GPS PRN 32 L1 SNR (dB/Hz)

GLONASS L1 SNR

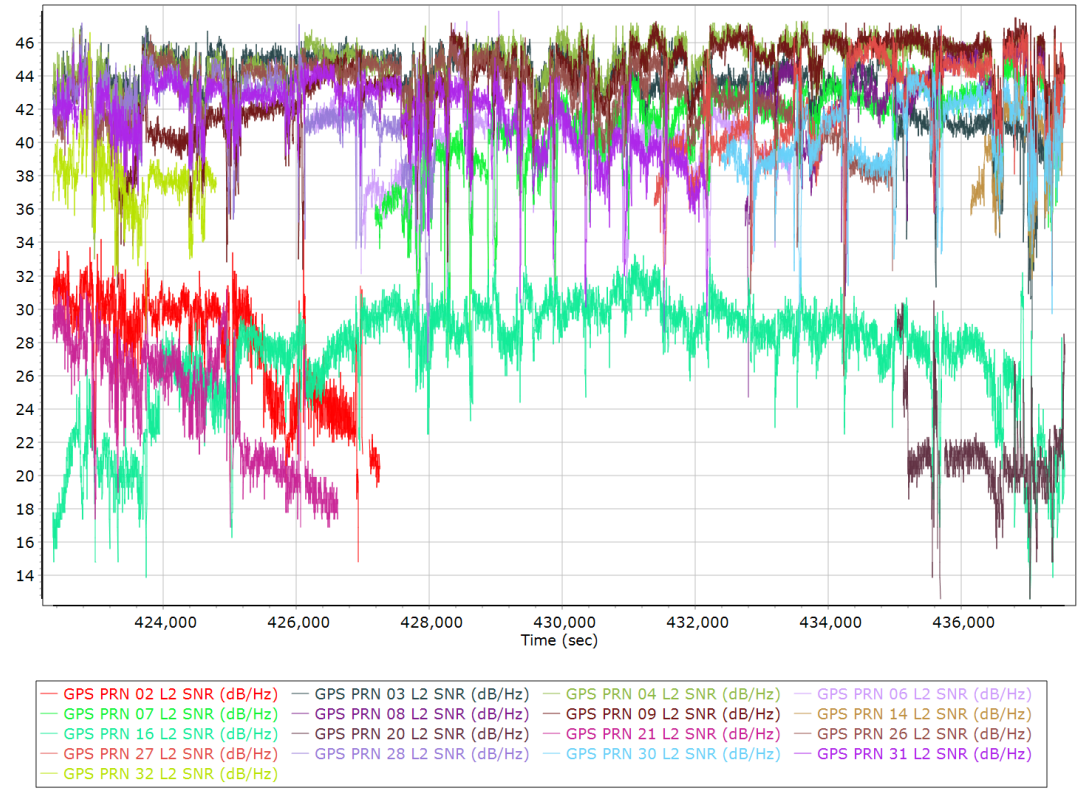


GLONASS 01 L1 SNR (dB/Hz) GLONASS 02 L1 SNR (dB/Hz) GLONASS 03 L1 SNR (dB/Hz)
GLONASS 07 L1 SNR (dB/Hz) GLONASS 08 L1 SNR (dB/Hz) GLONASS 09 L1 SNR (dB/Hz)
GLONASS 10 L1 SNR (dB/Hz) GLONASS 11 L1 SNR (dB/Hz) GLONASS 12 L1 SNR (dB/Hz)
GLONASS 13 L1 SNR (dB/Hz) GLONASS 22 L1 SNR (dB/Hz) GLONASS 23 L1 SNR (dB/Hz)
GLONASS 24 L1 SNR (dB/Hz)

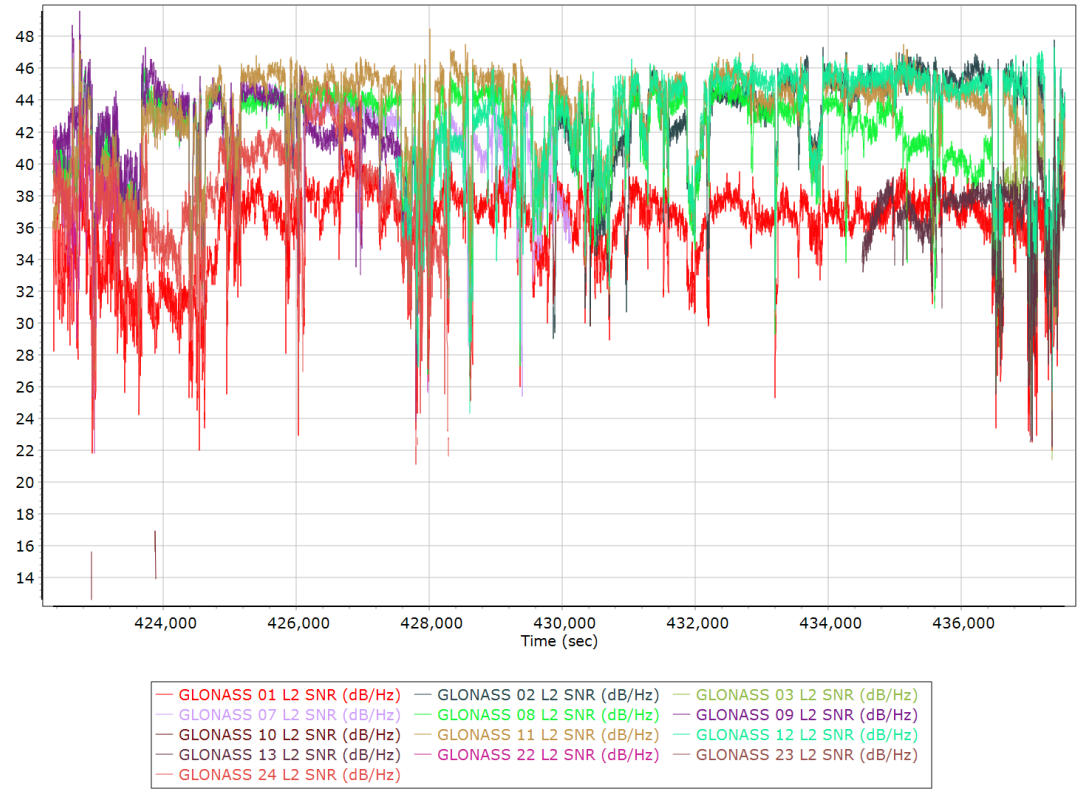
GPS/GLONASS L2 Satellite Lock/Elevation



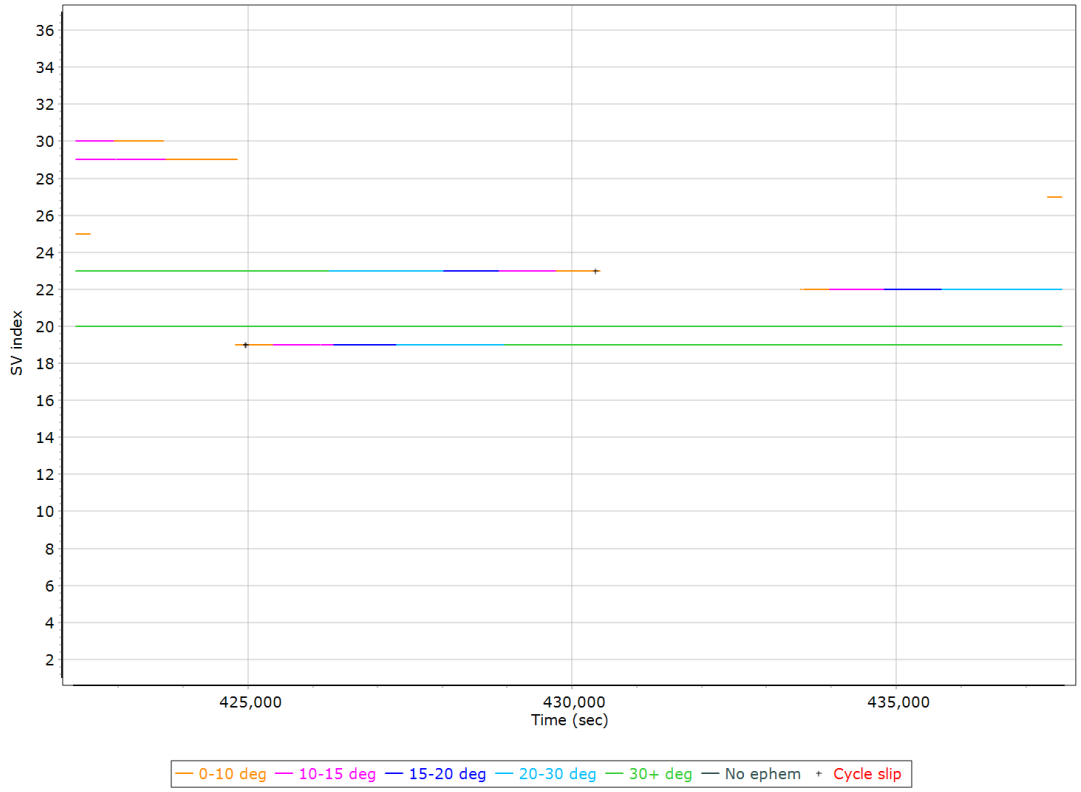
GPS L2 SNR



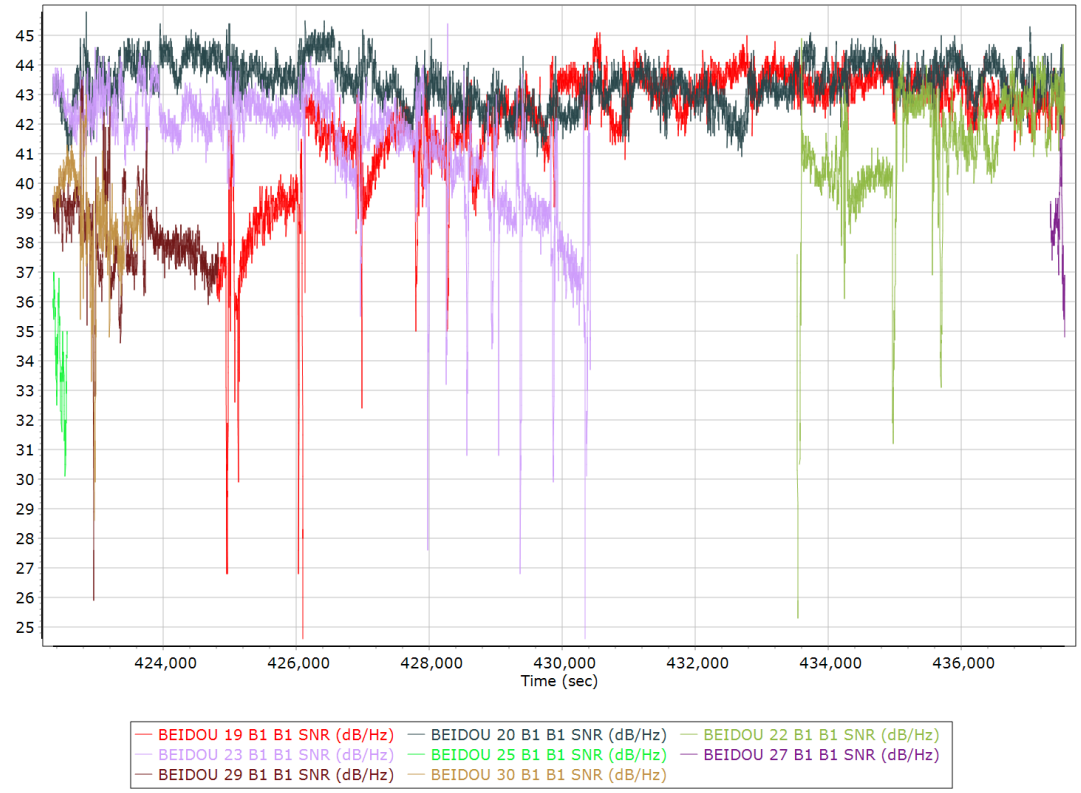
GLONASS L2 SNR



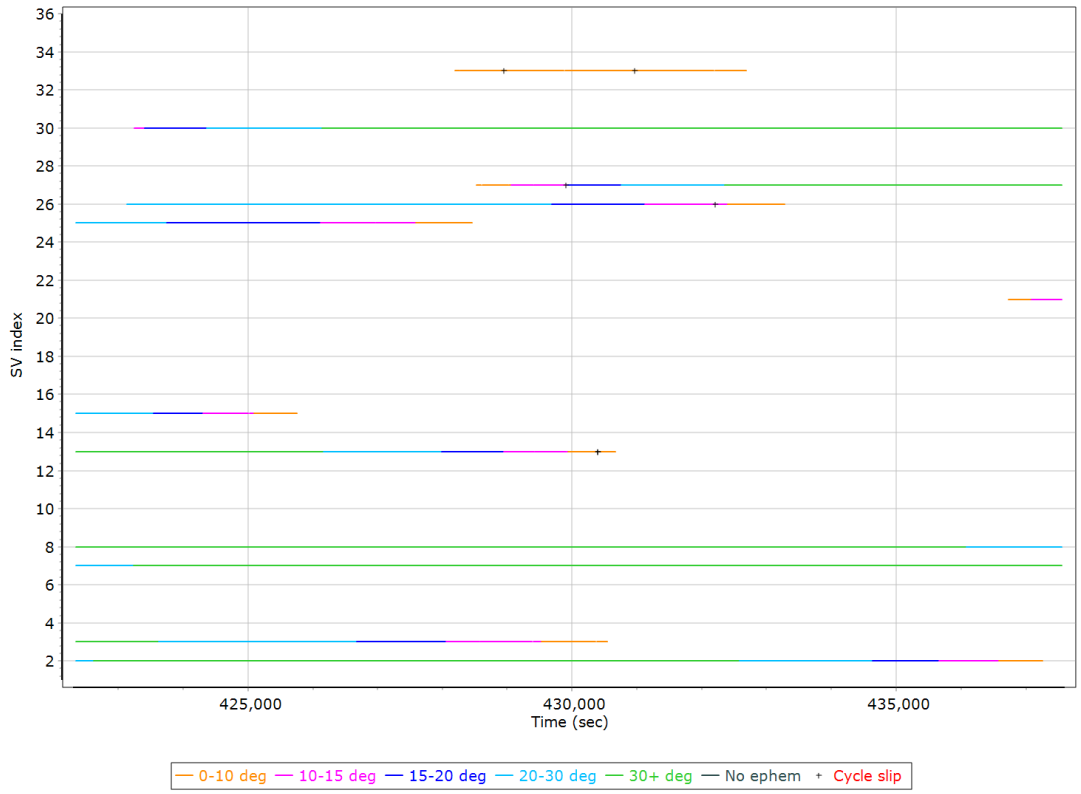
BEIDOU Satellite Lock/Elevation



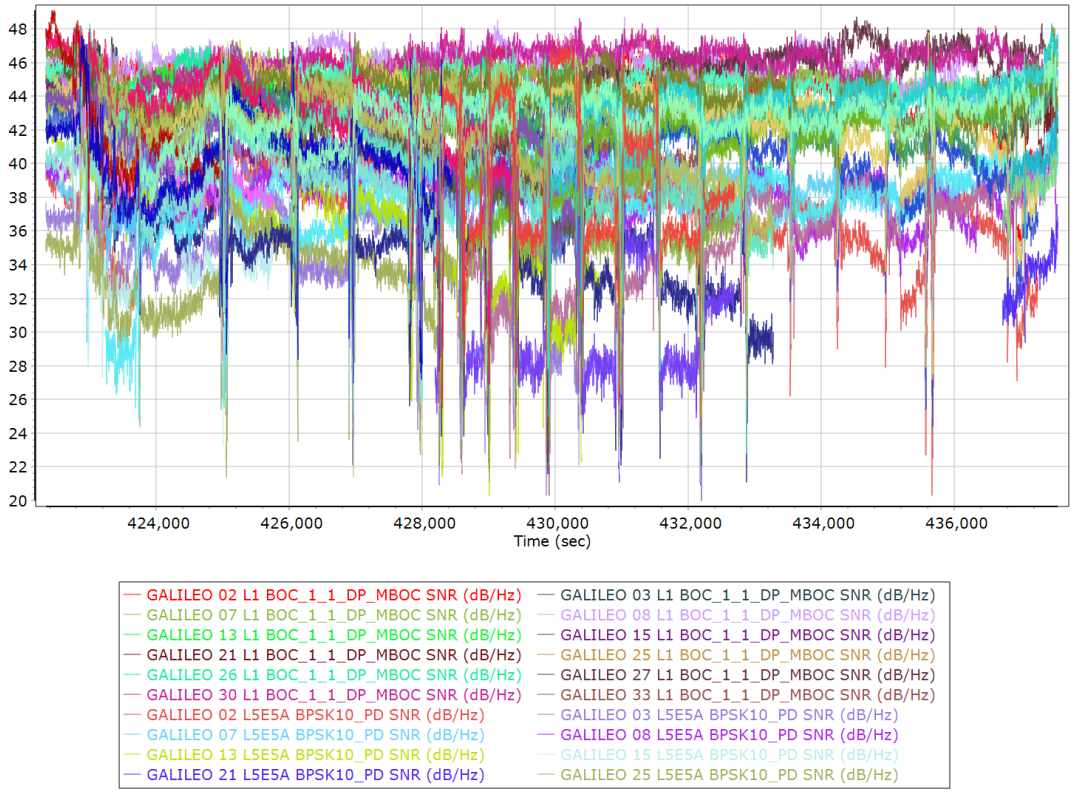
BEIDOU SNR



GALILEO Satellite Lock/Elevation

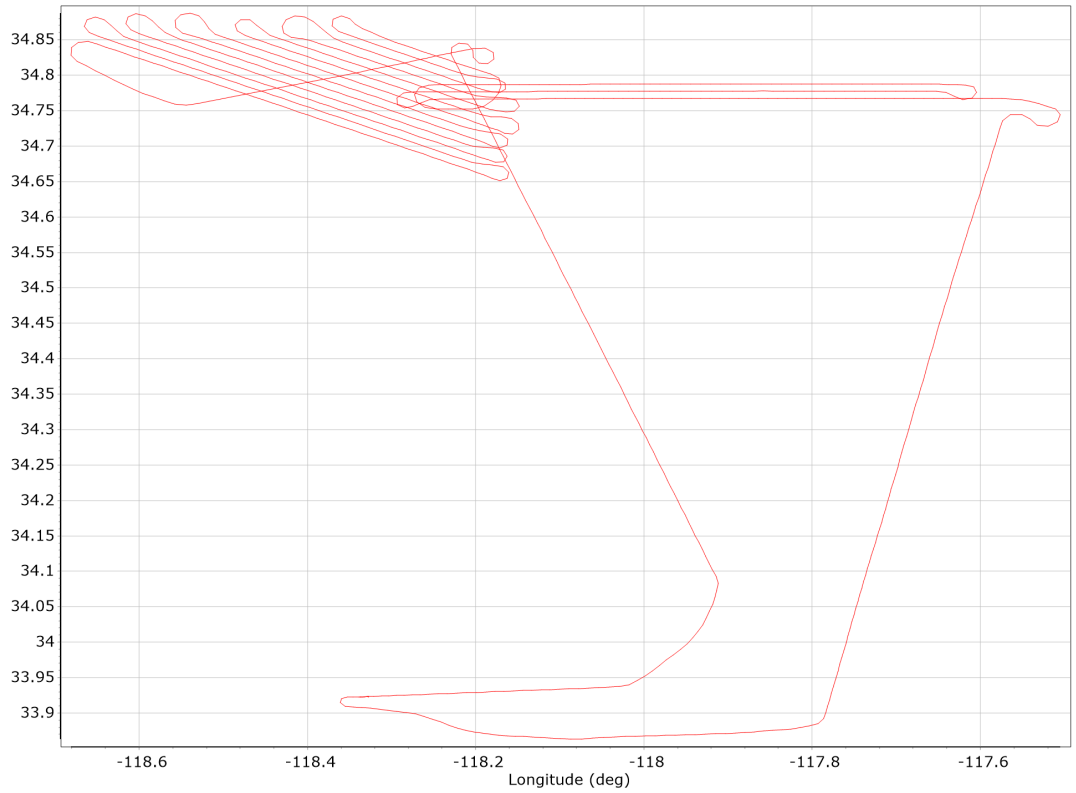


GALILEO SNR

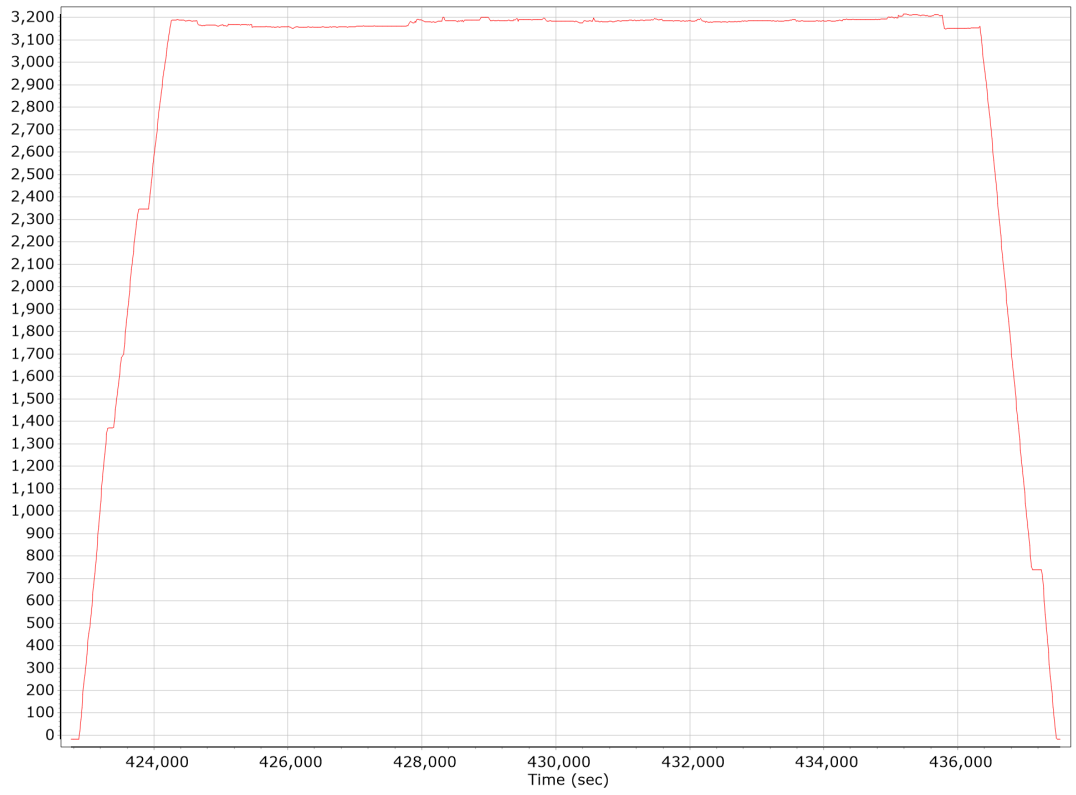

48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
424,000
426,000
428,000
430,000
432,000
434,000
436,000
Time (sec)
GALILEO 02 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 03 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 07 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 08 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 13 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 15 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 21 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 25 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 26 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 27 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 30 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 33 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 02 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 03 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 07 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 08 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 13 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 15 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 21 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 25 L5E5A BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

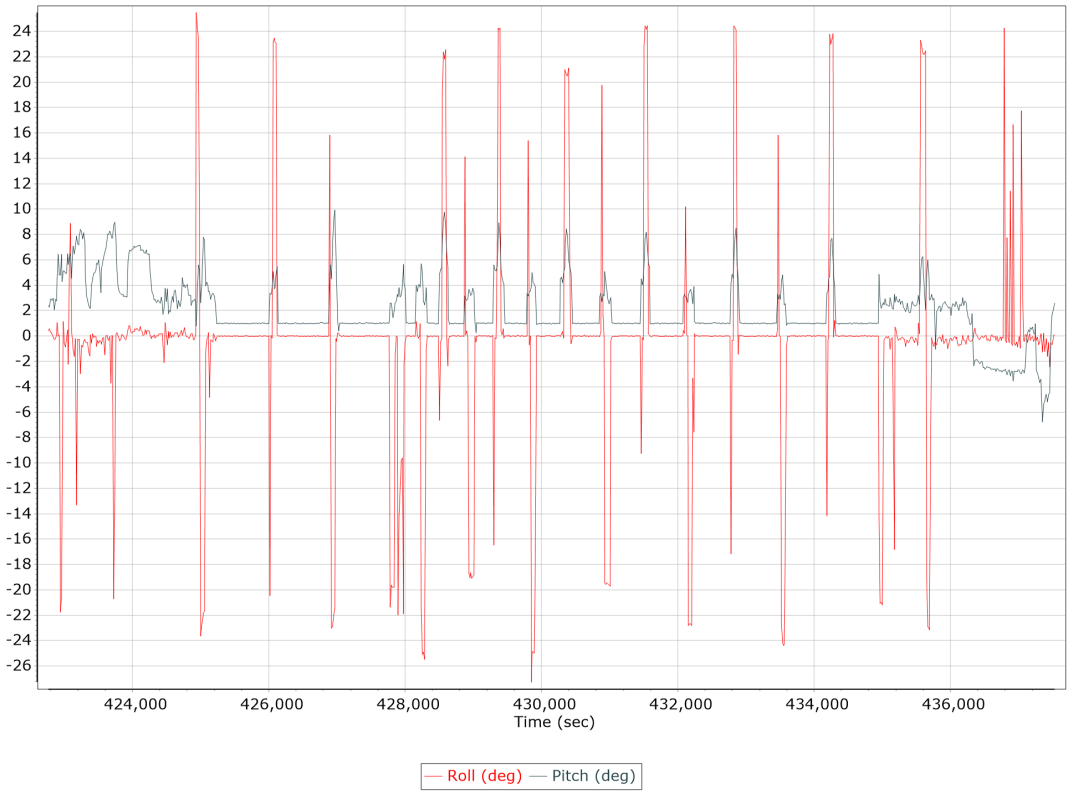
Top View



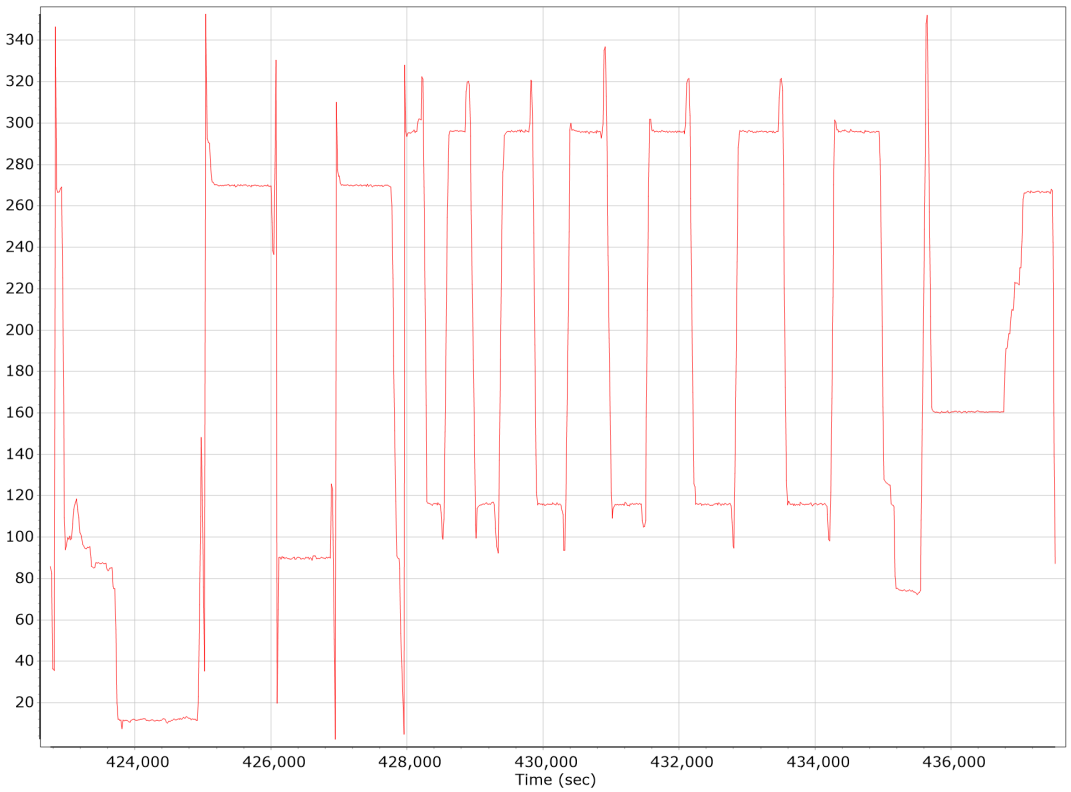
Altitude



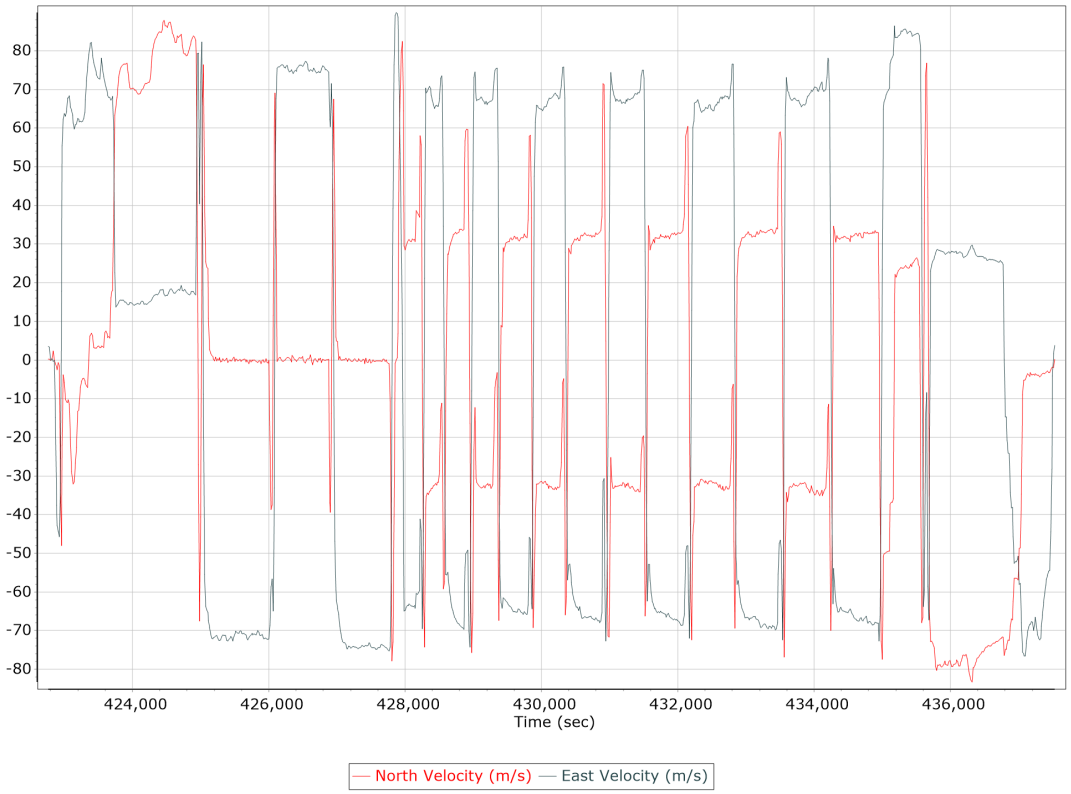
Roll/Pitch



Heading



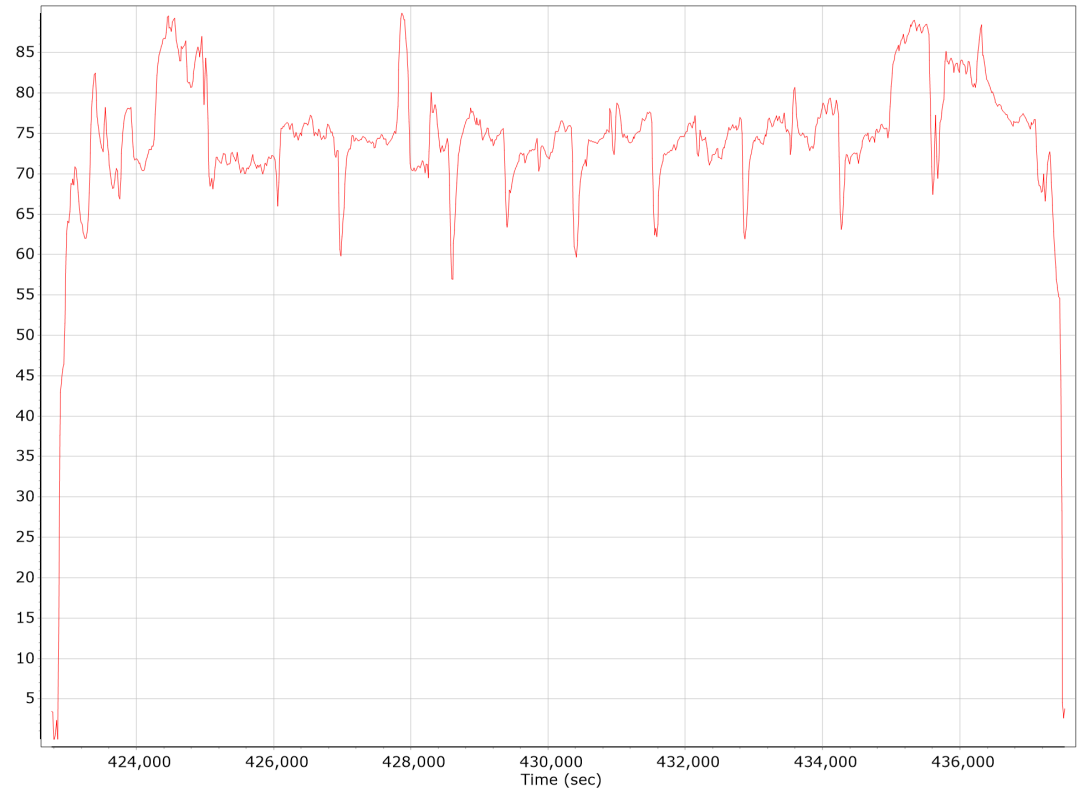
North/East Velocity



Down Velocity



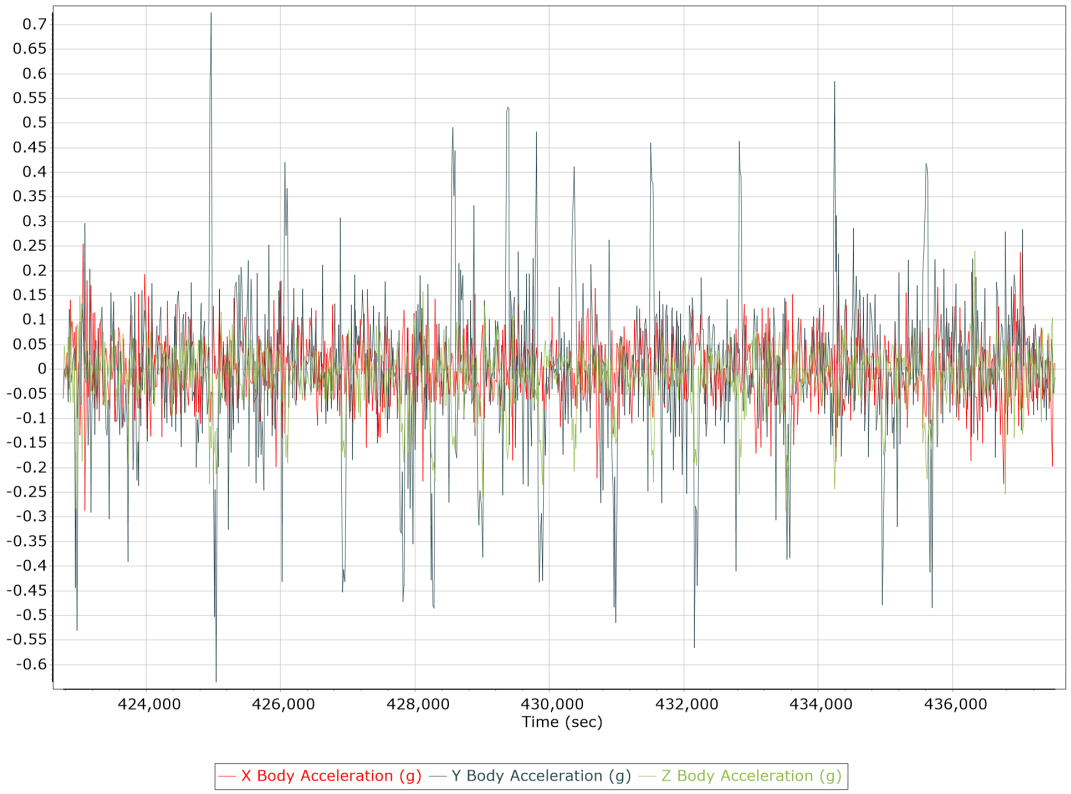
Total Speed



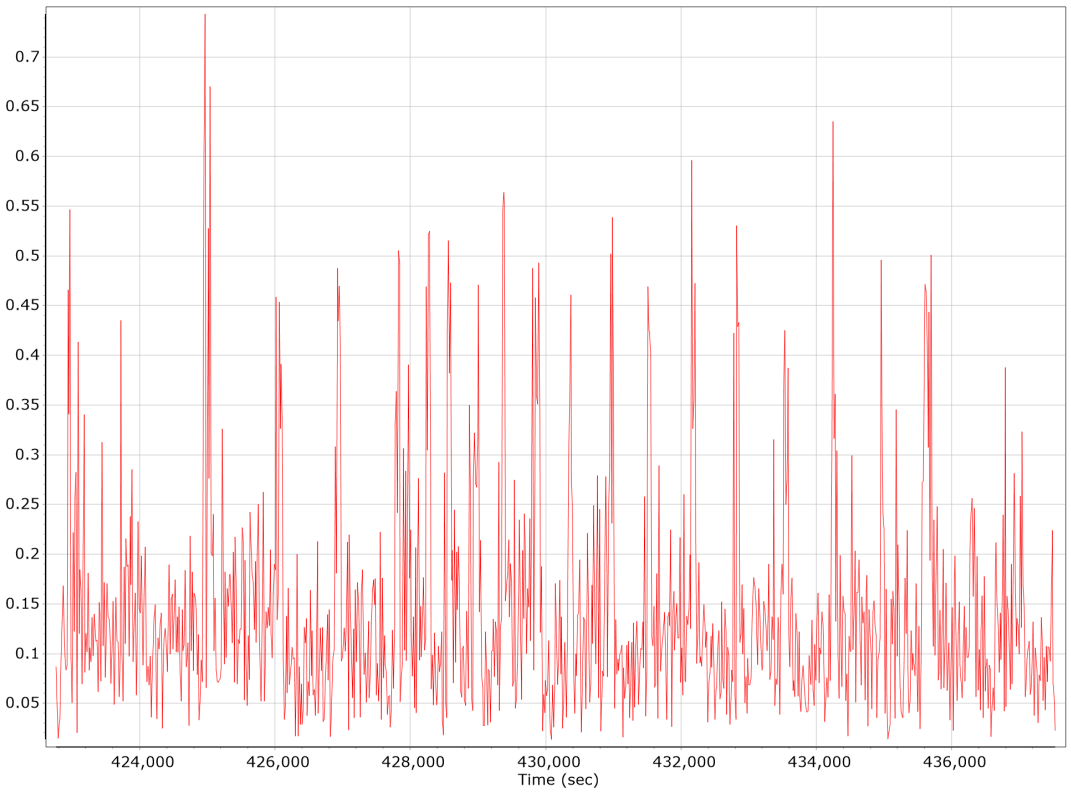
Ground Speed



Body Acceleration



Total Body Acceleration

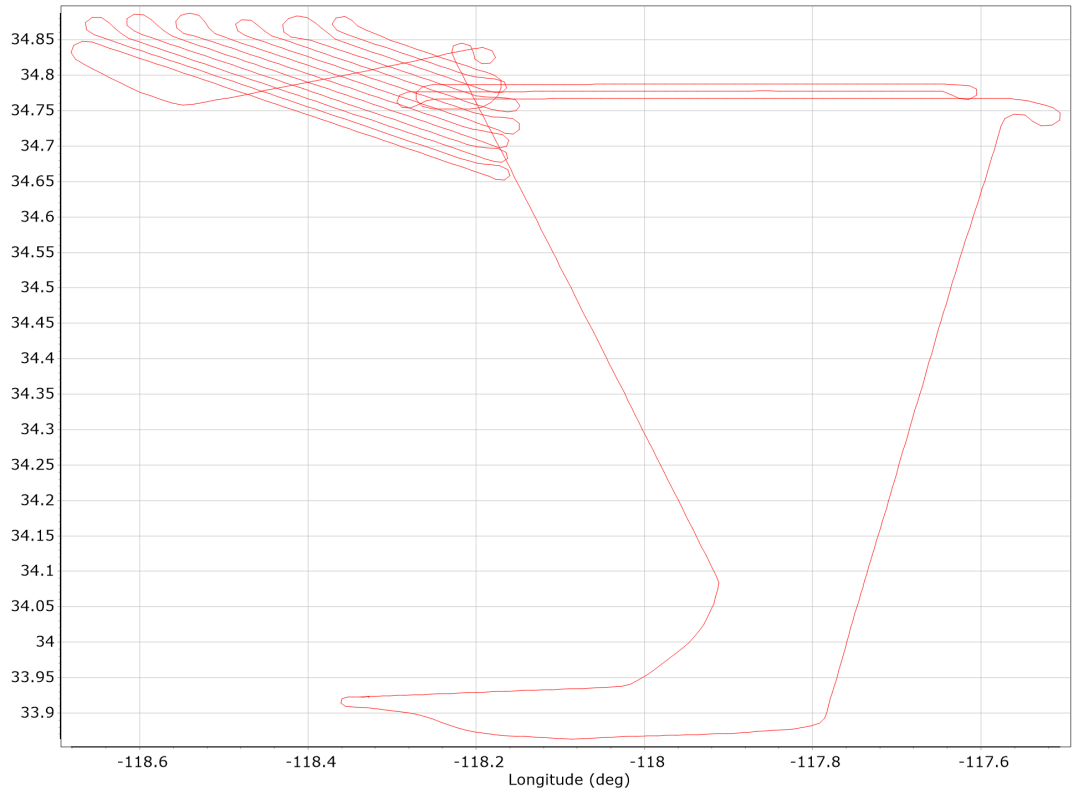


Body Angular Rate

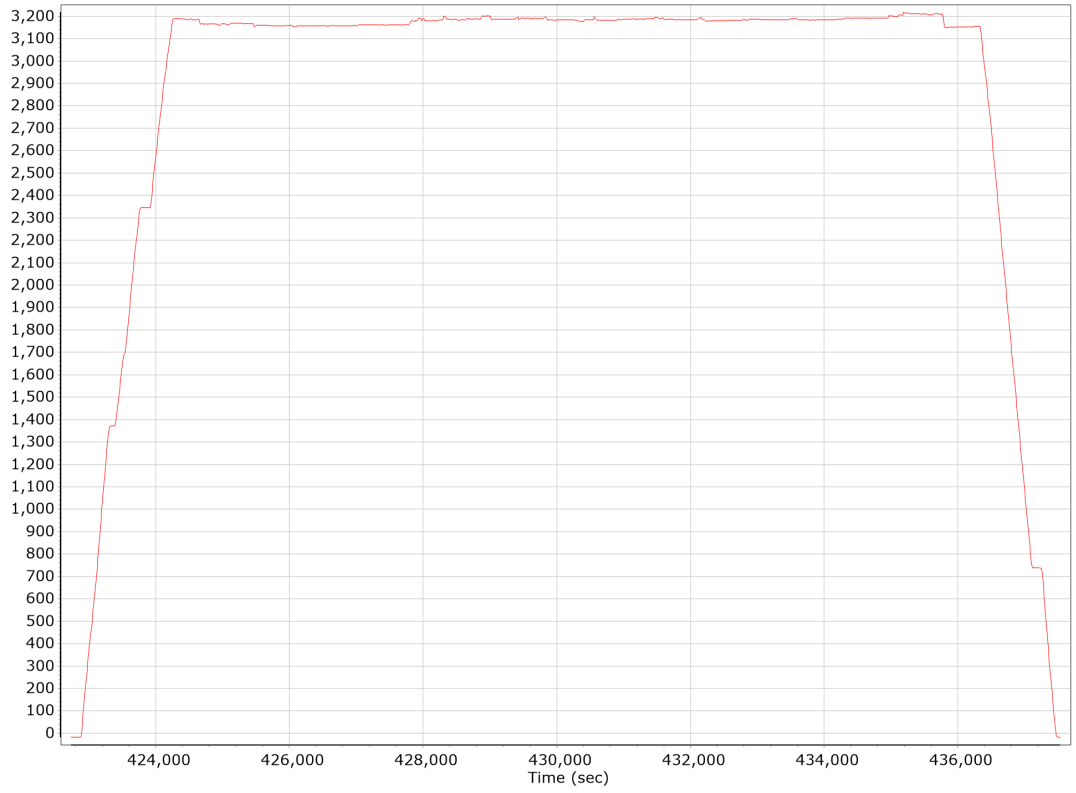


Forward Processed Trajectory Information

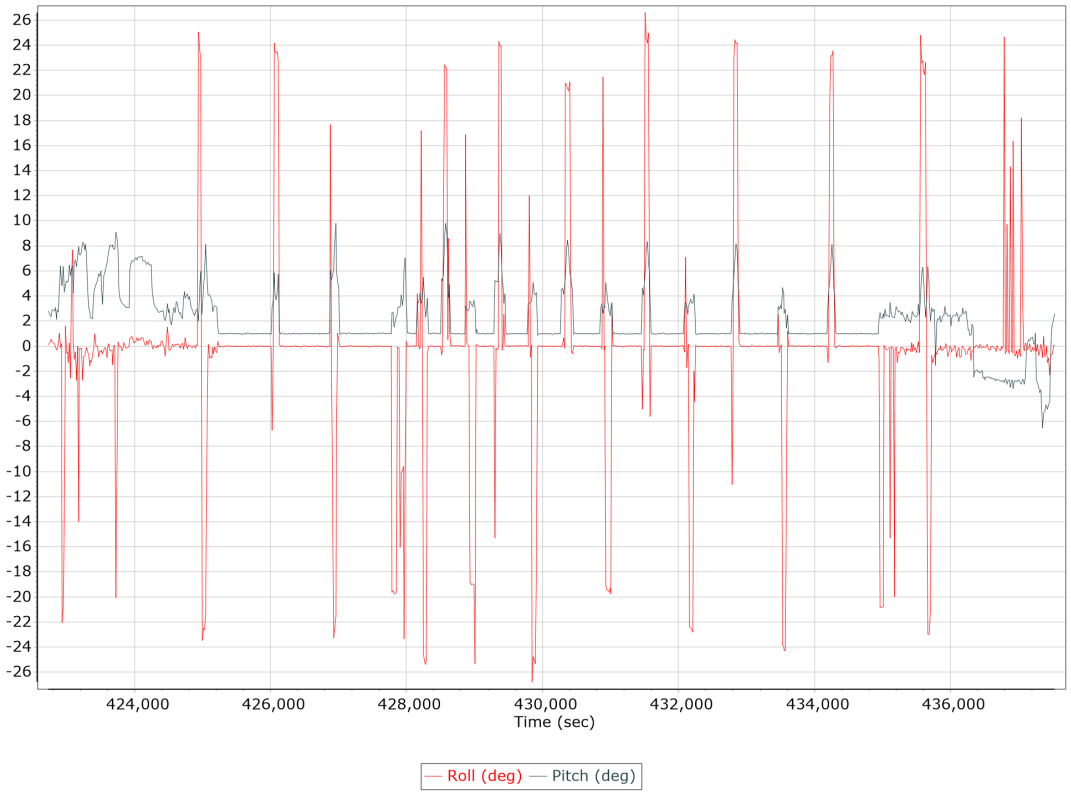
Top View



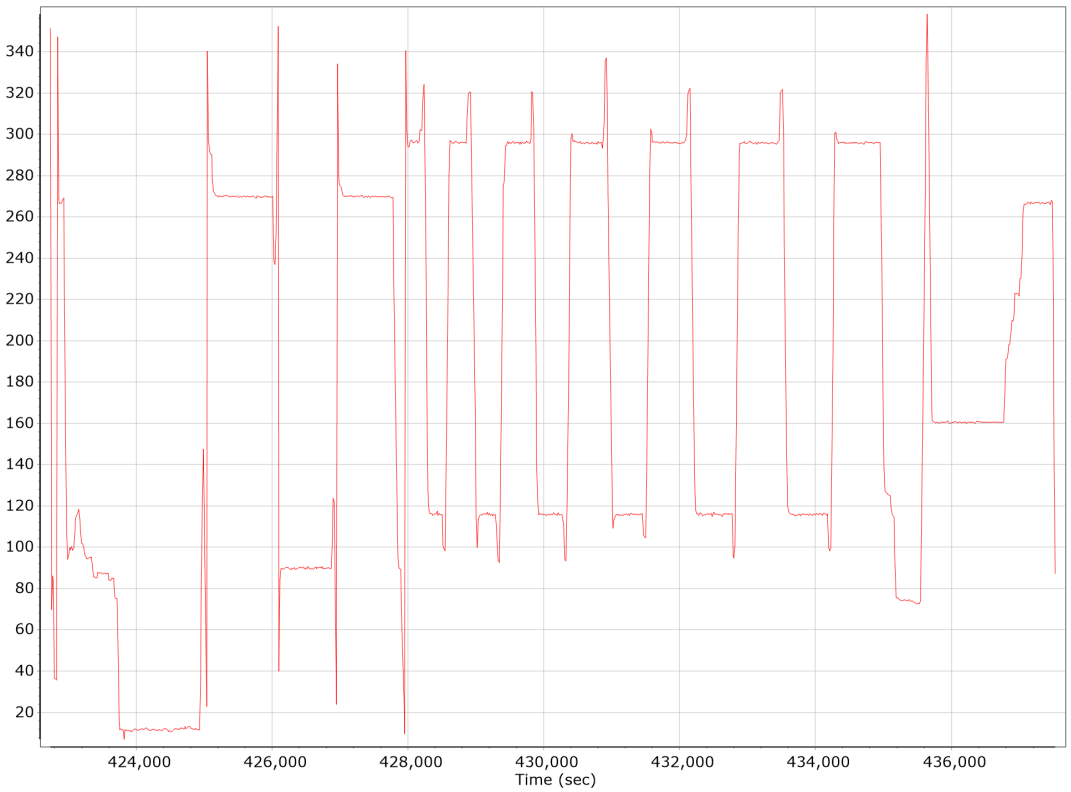
Altitude



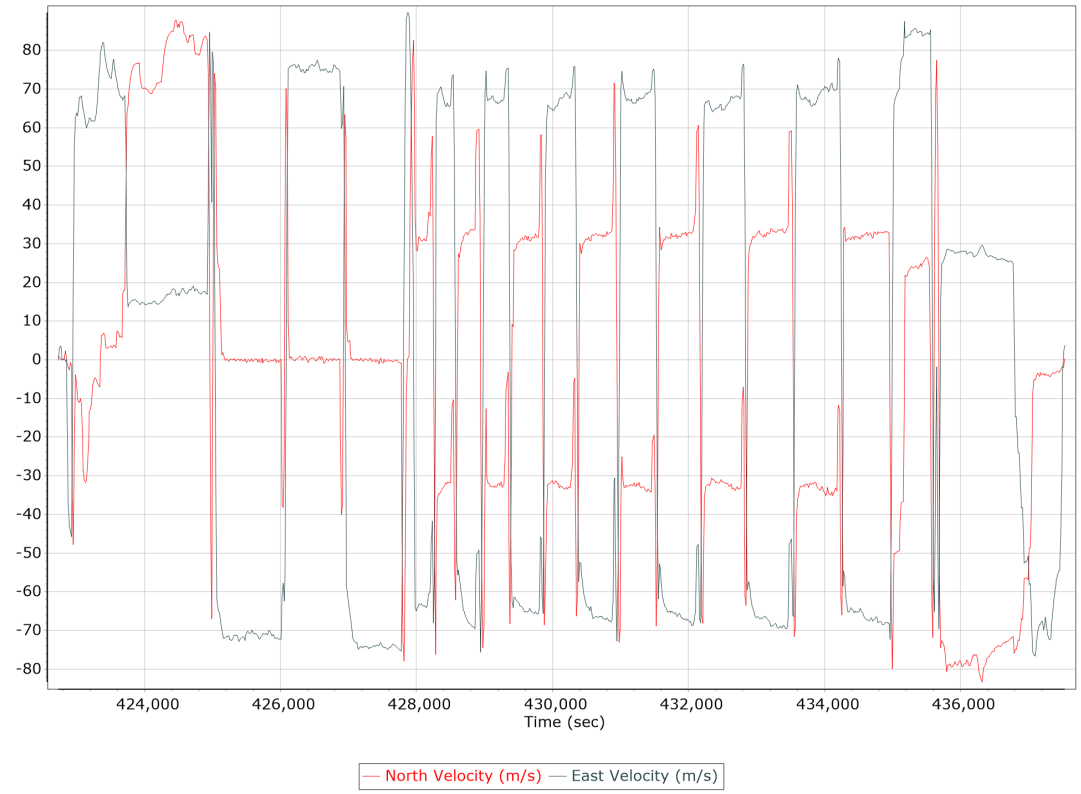
Roll/Pitch



Heading



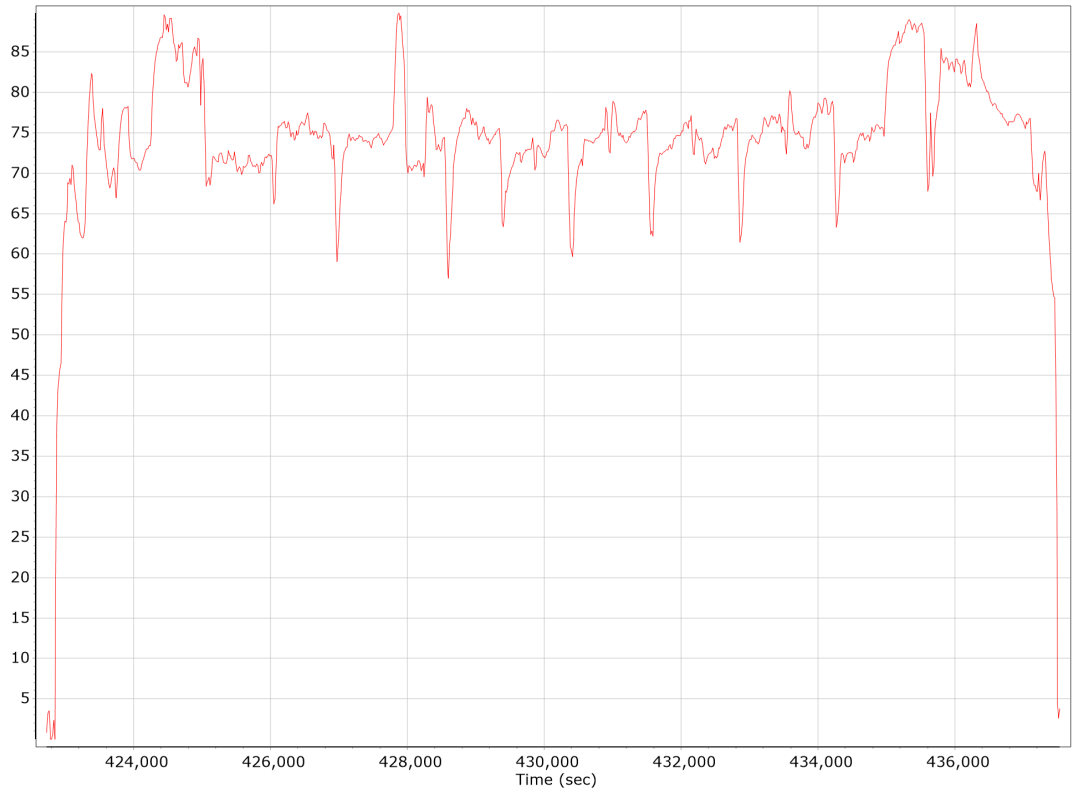
North/East Velocity



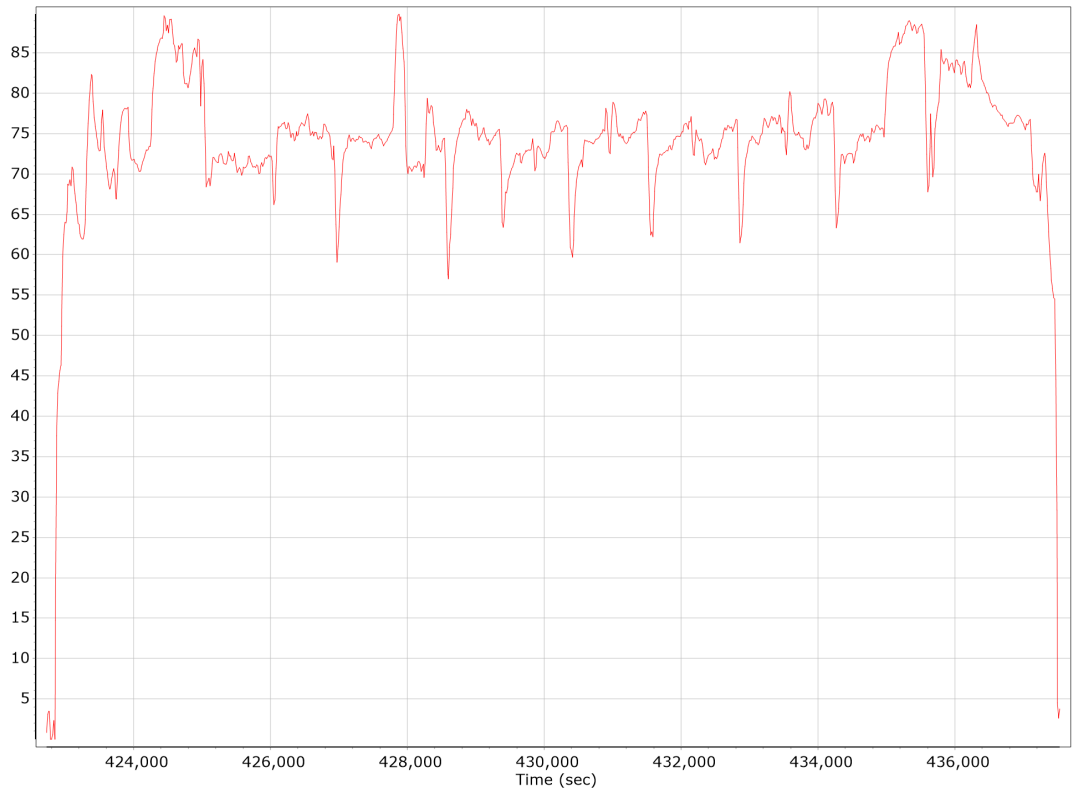
Down Velocity



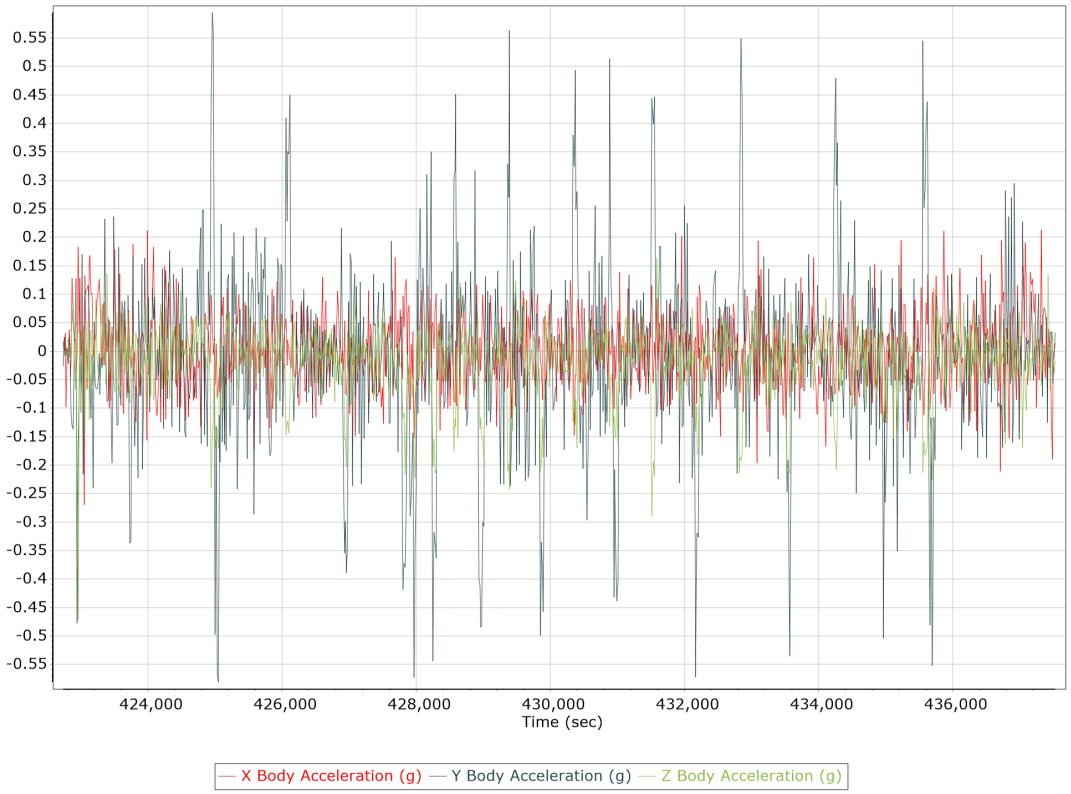
Total Speed



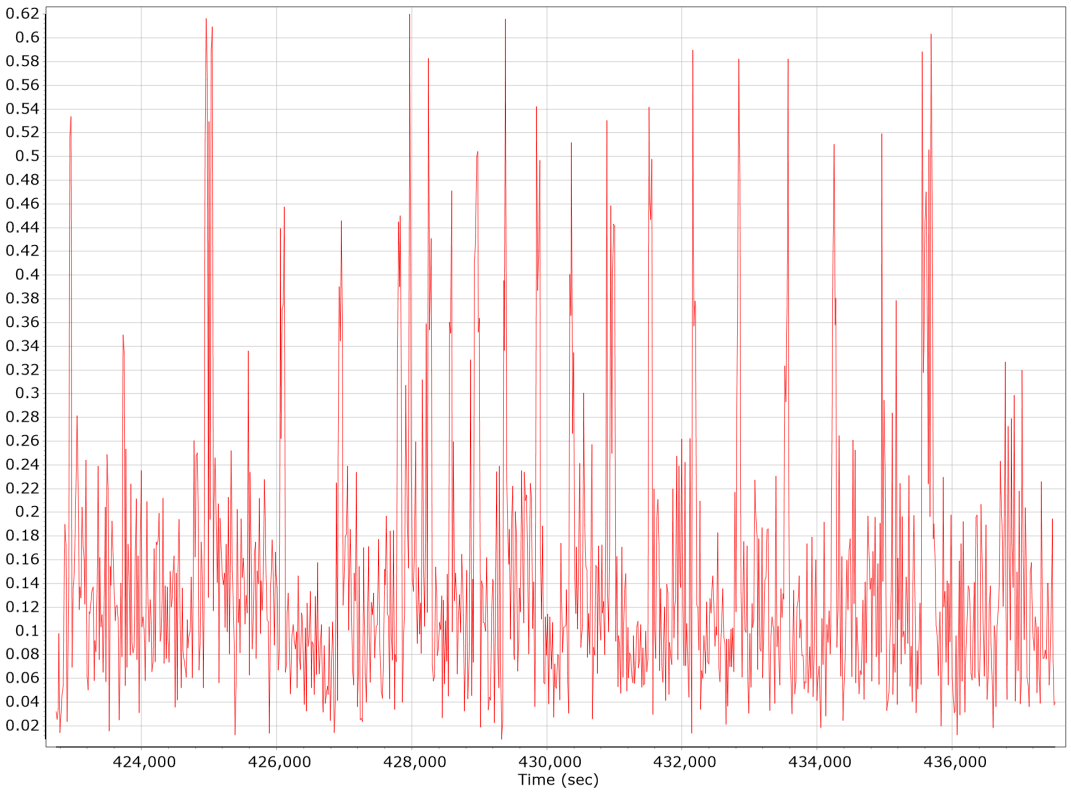
Ground Speed



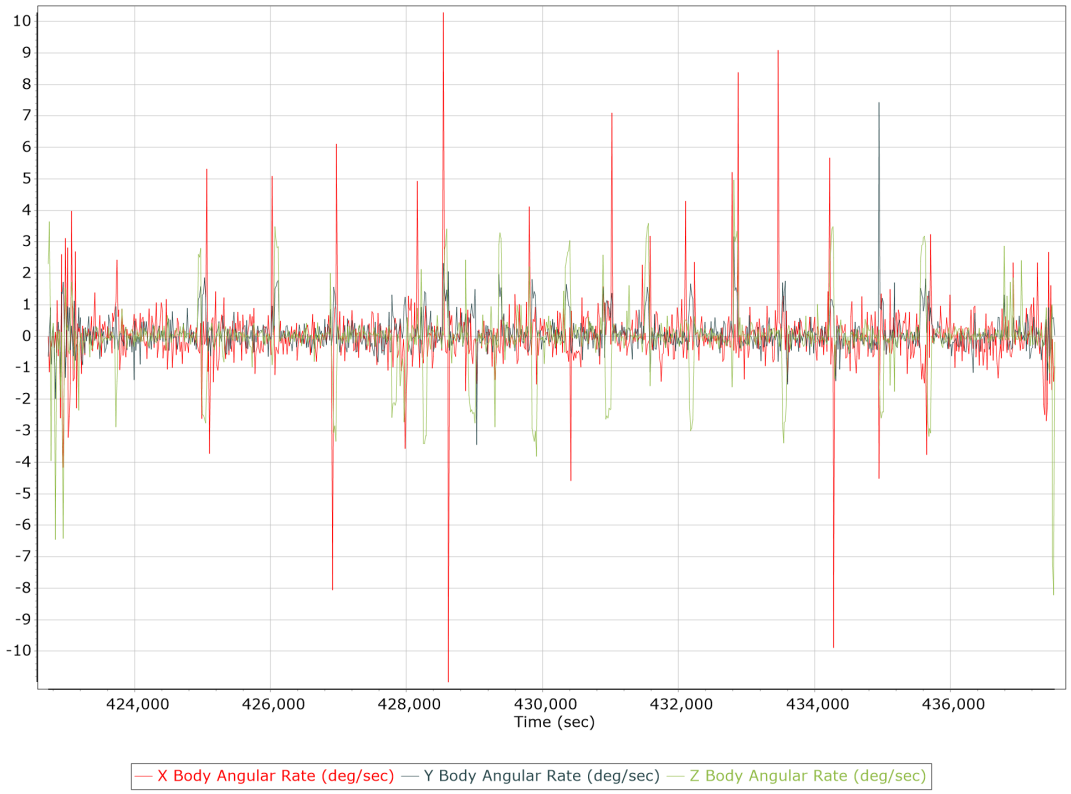
Body Acceleration



Total Body Acceleration



Body Angular Rate

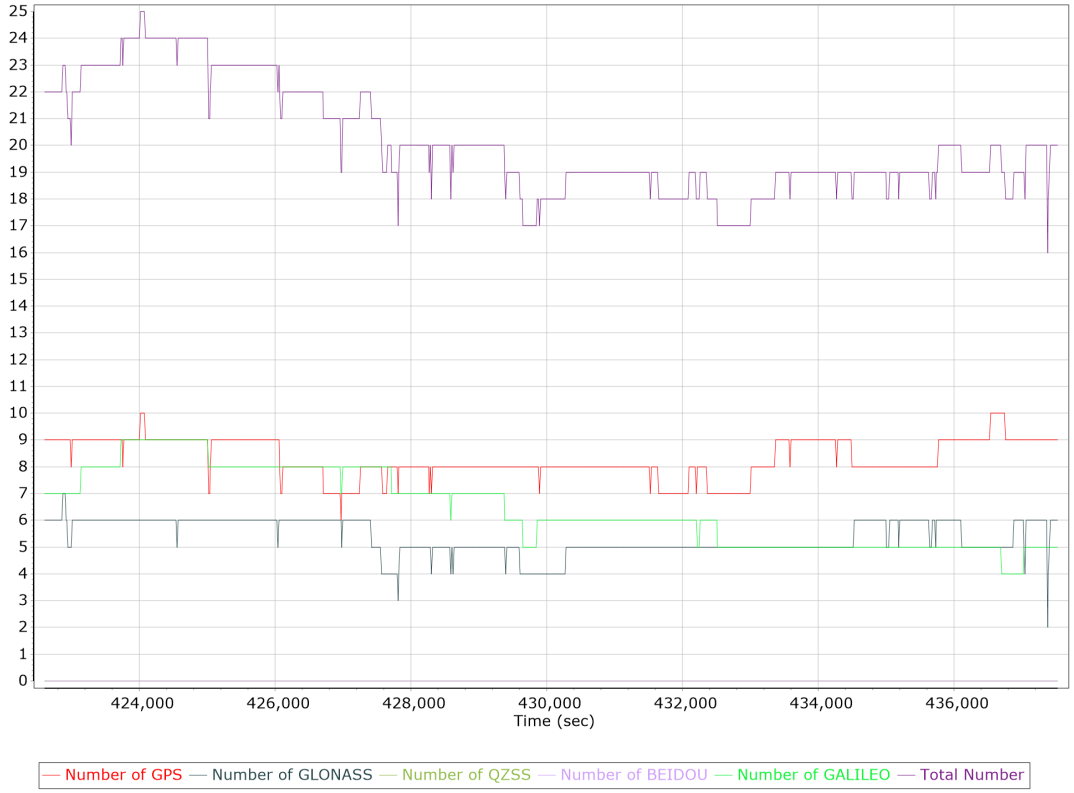


GNSS QC

GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	6	10	8
Number of GLONASS SV	2	7	5
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	4	9	6
Total number of SV	16	25	20
PDOP	1.05	1.54	1.22
QC Solution Gaps	0.00	0.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	15184.00	0.00	0.00
Percentage	100.00	0.00	0.00

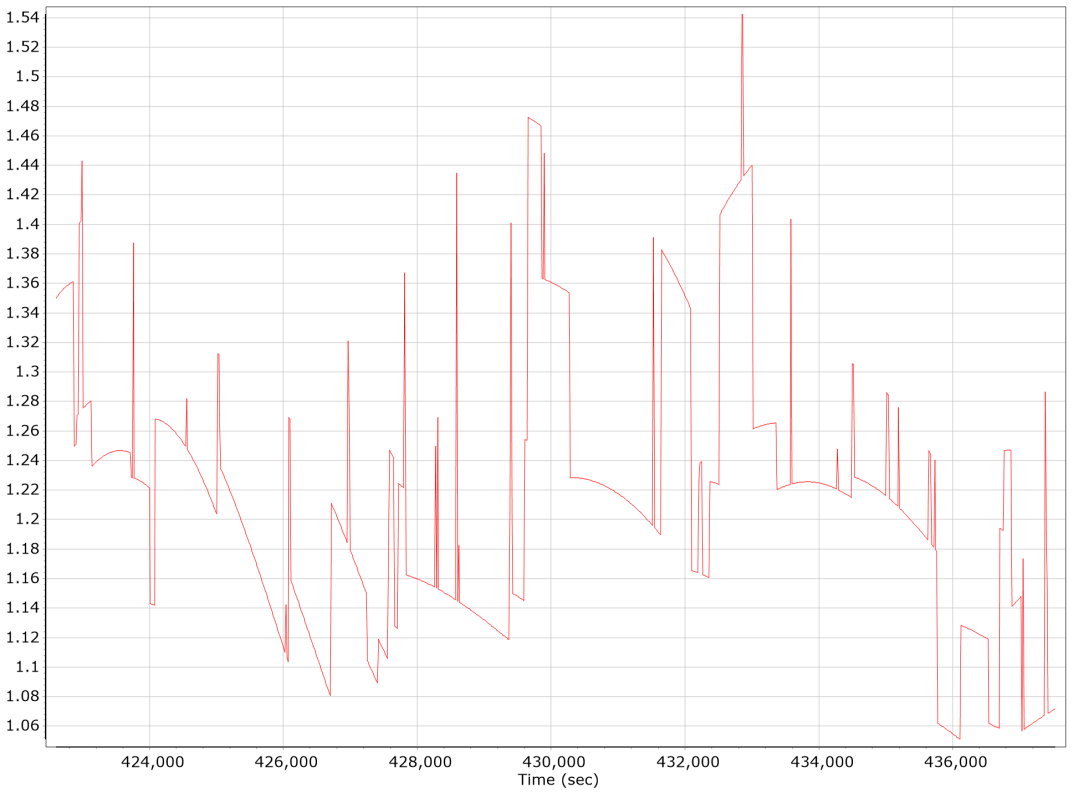
Num SVs in solution



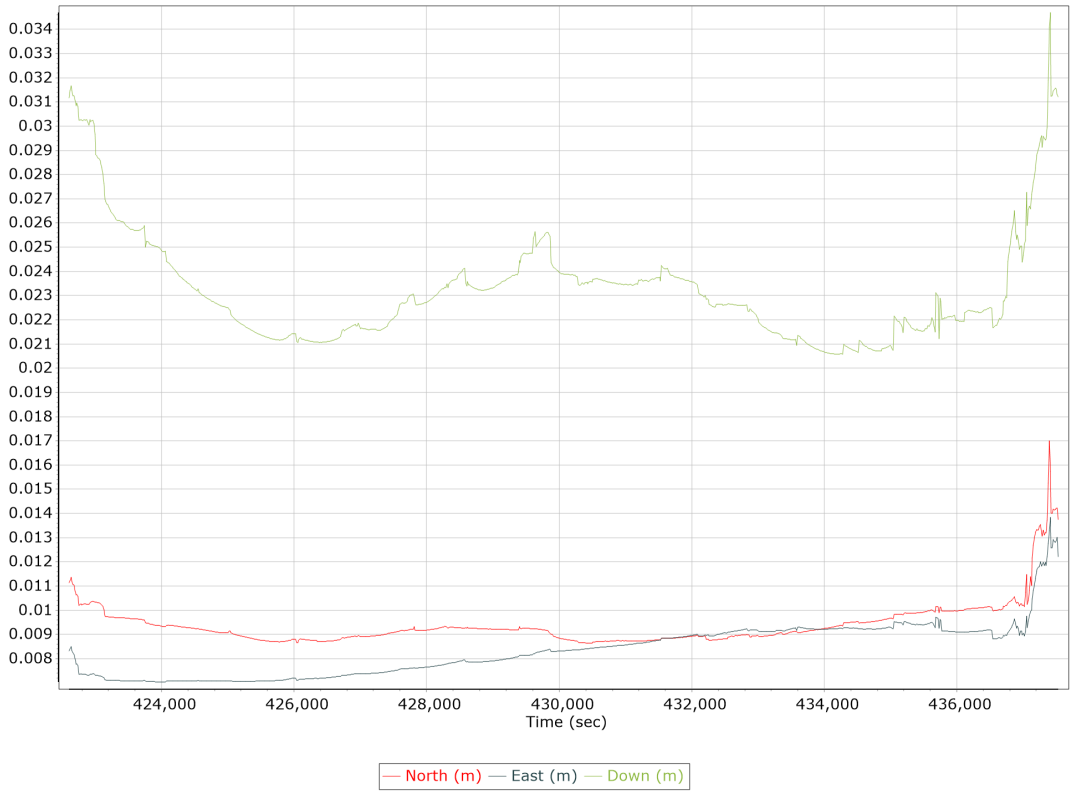
Forward/Reverse Separation



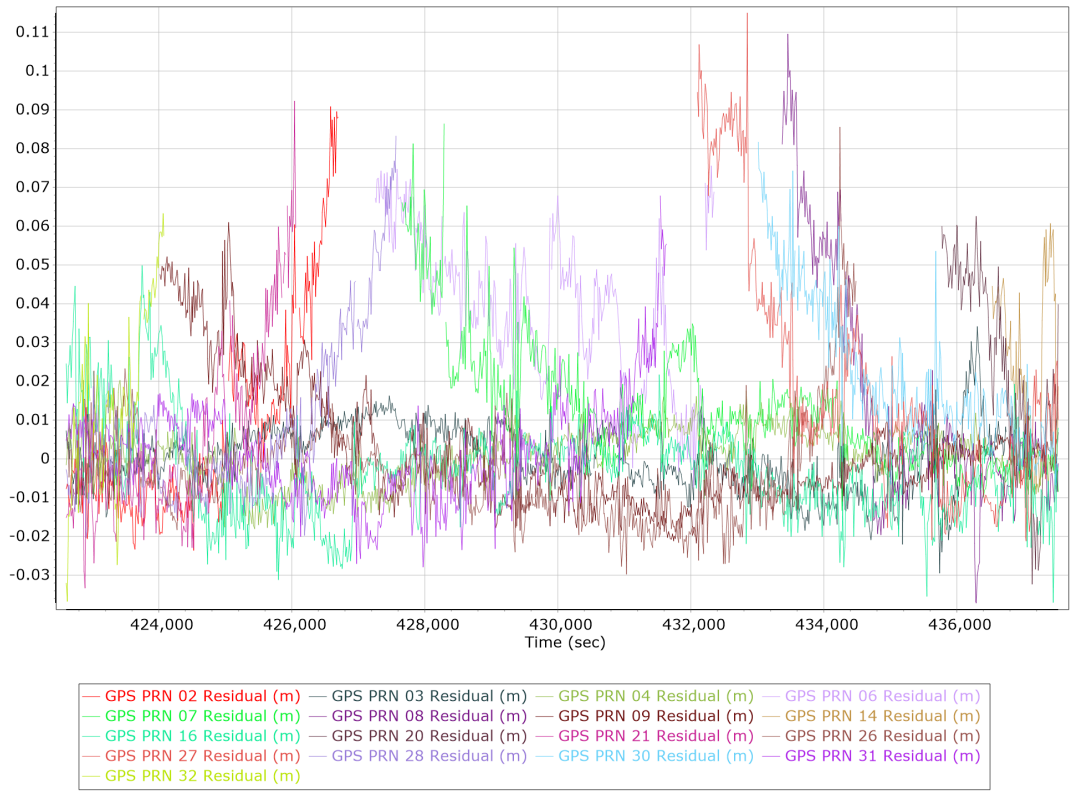
PDOP



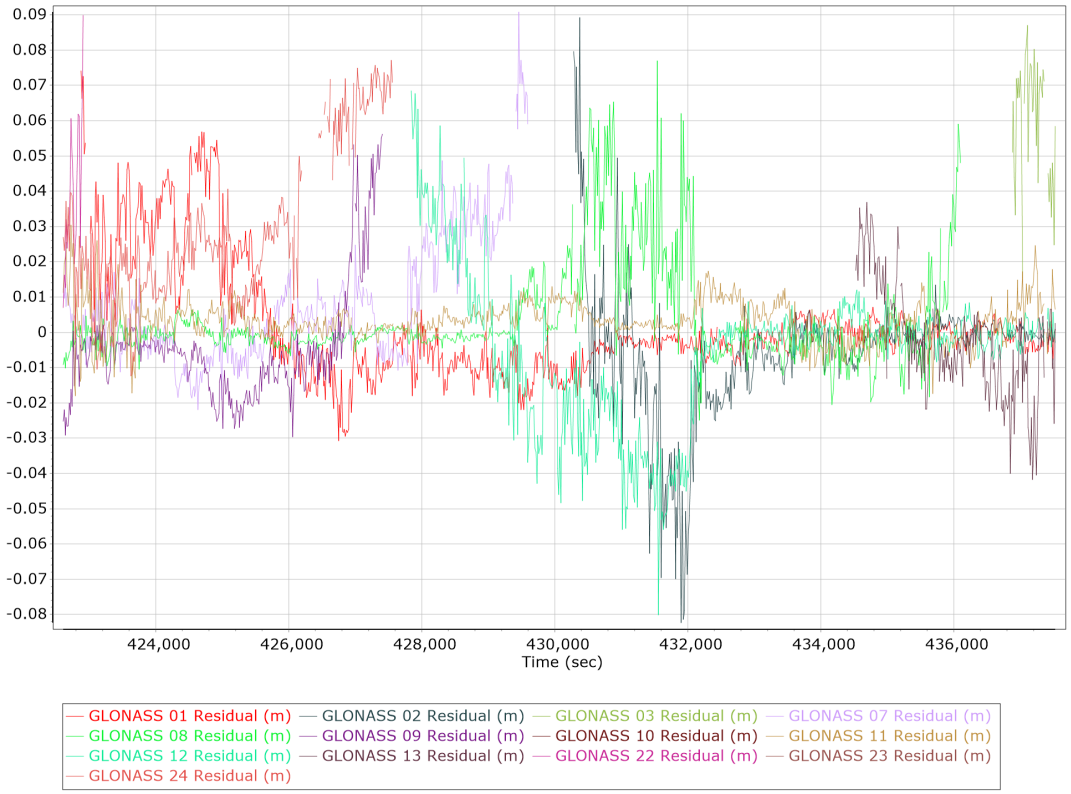
Estimated Position Accuracy



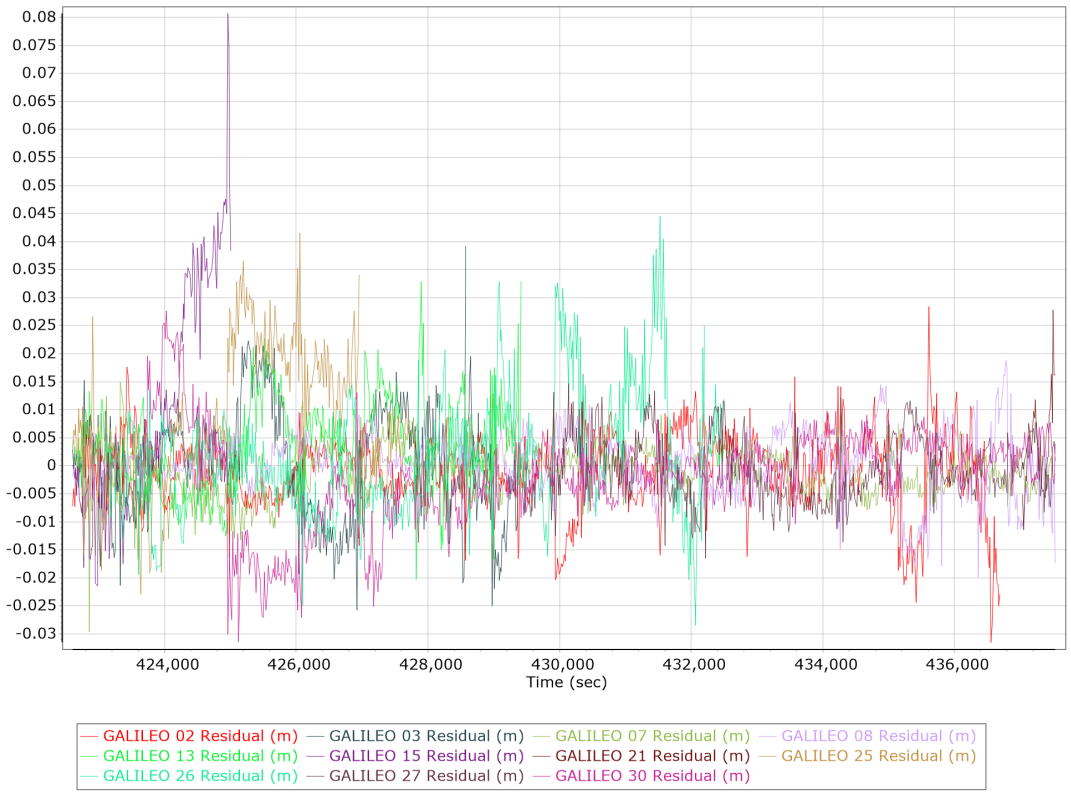
GPS Residuals



GLONASS Residuals



GALILEO Residuals



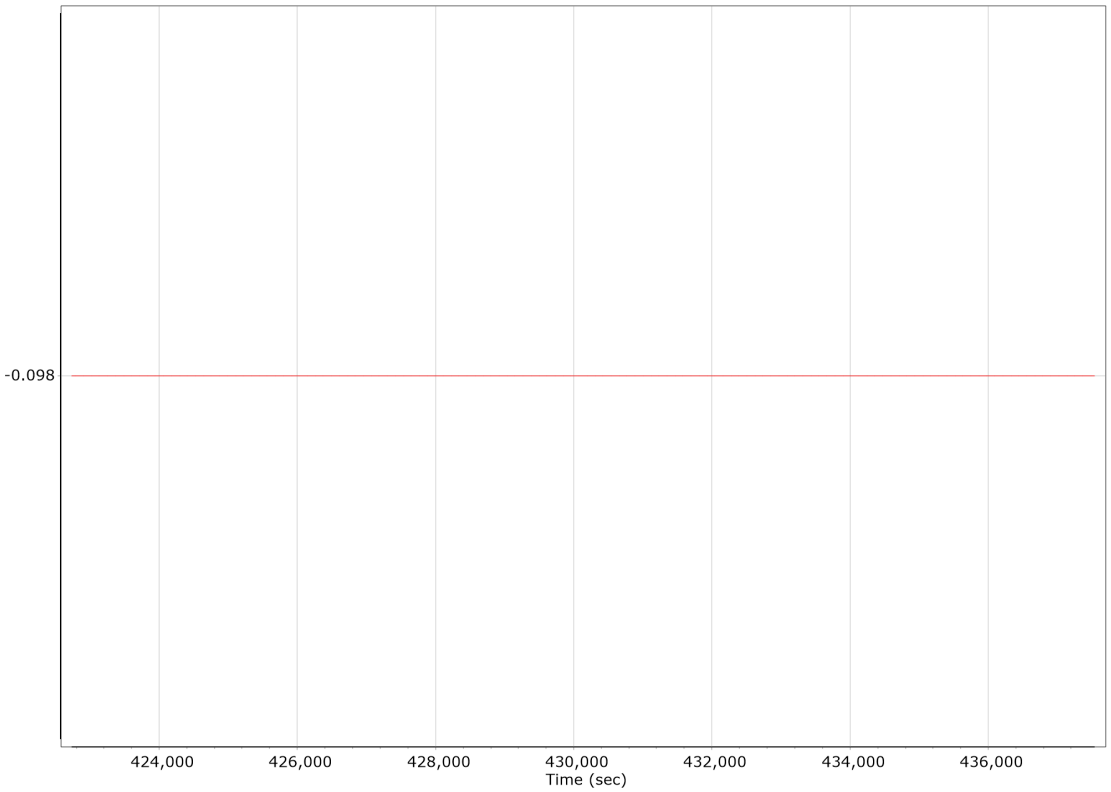
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	422326.000 (9/28/2023 9:18:46 PM)		
Processing end time	437543.000 (9/29/2023 1:32:23 AM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	-0.098	0.057	-1.221
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

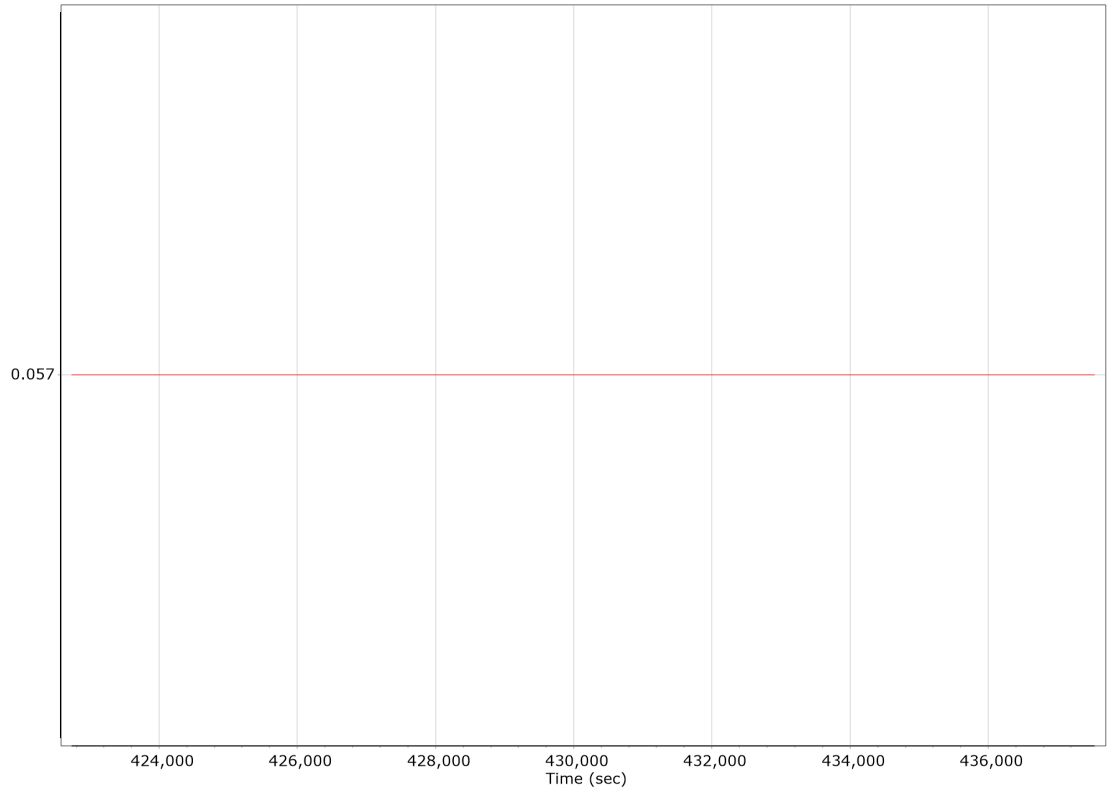
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

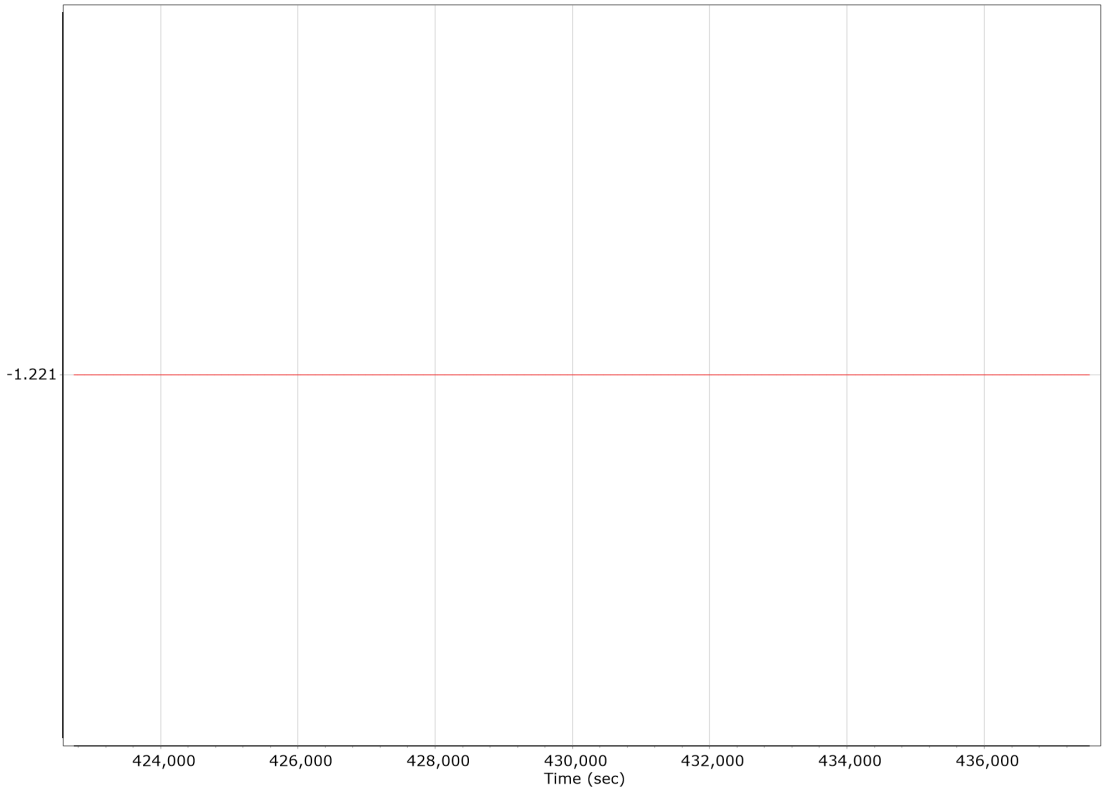
X Reference-Primary GNSS Lever Arm (m)



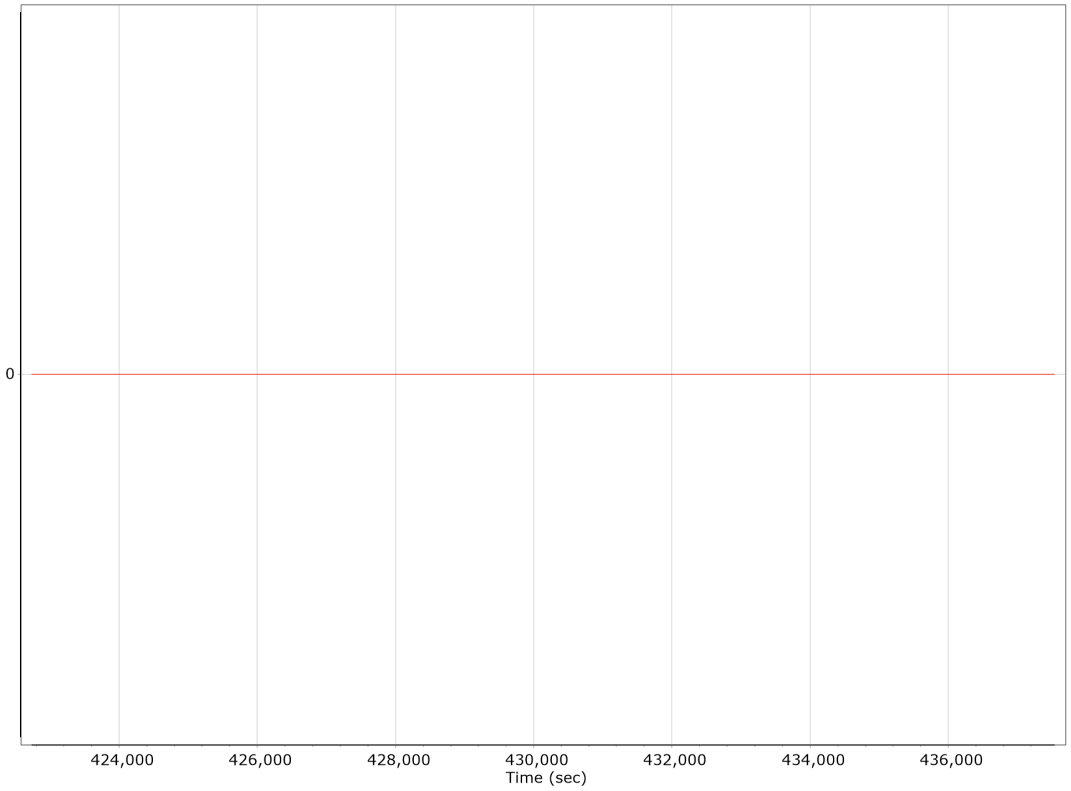
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



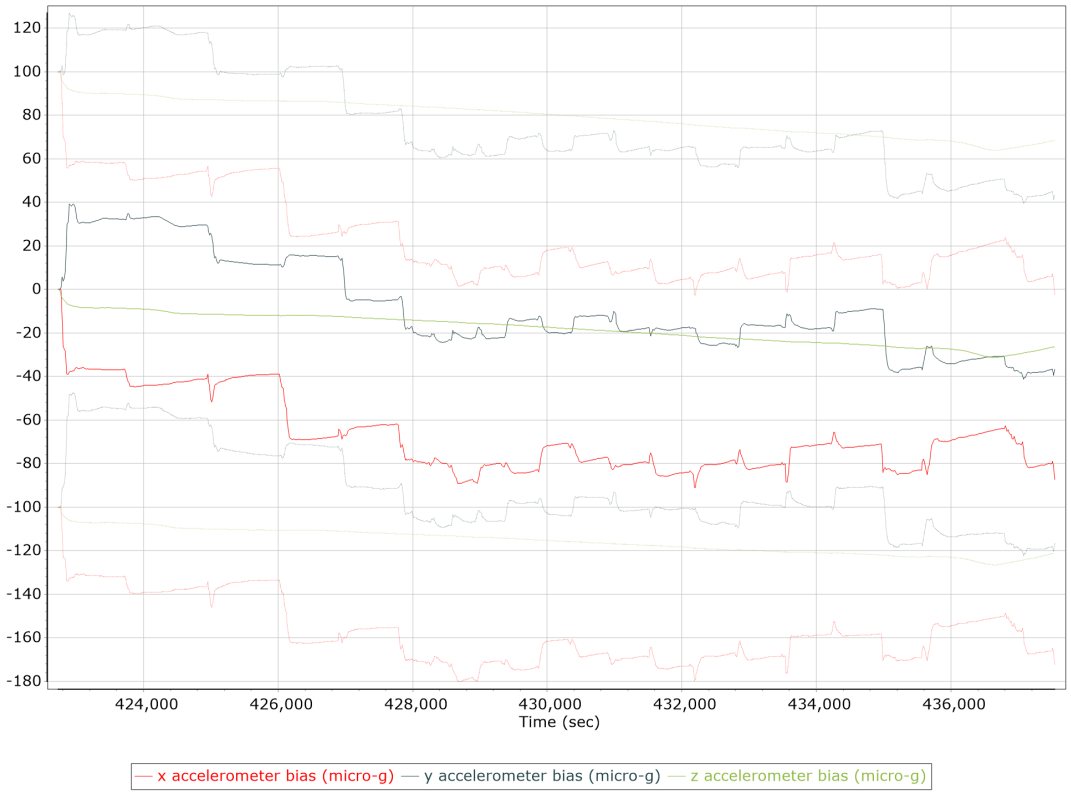
Reference-Primary GNSS Lever Arm Figure of Merit



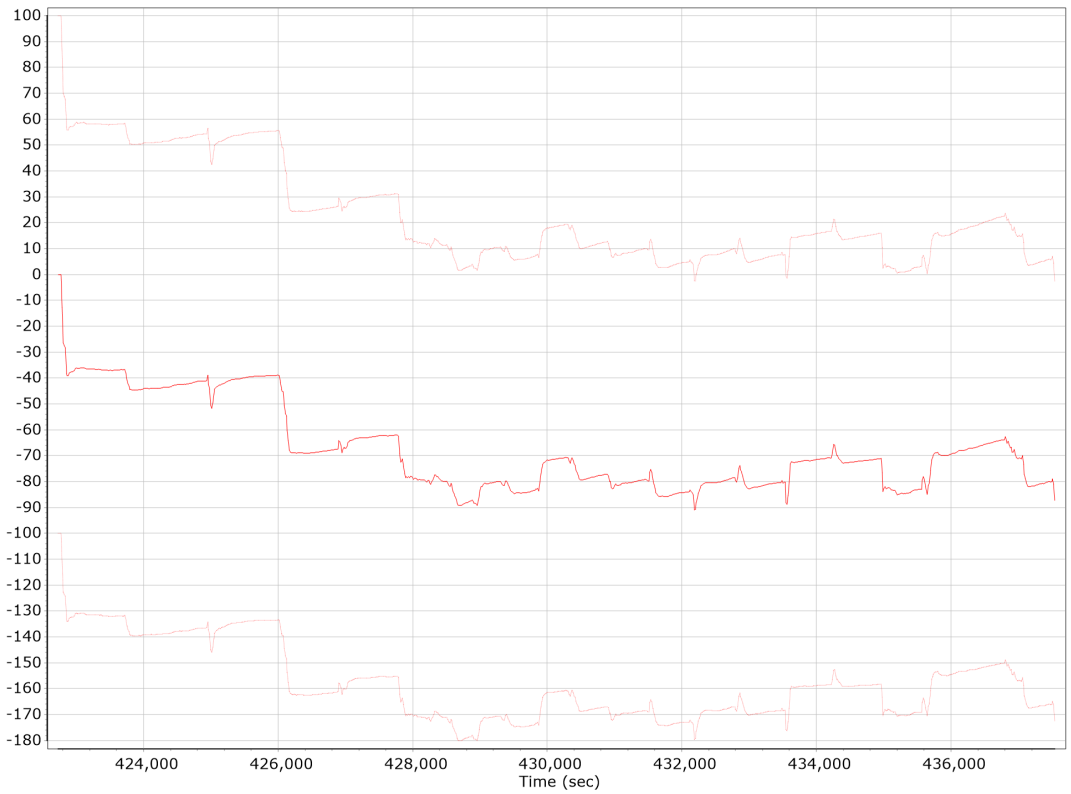
IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

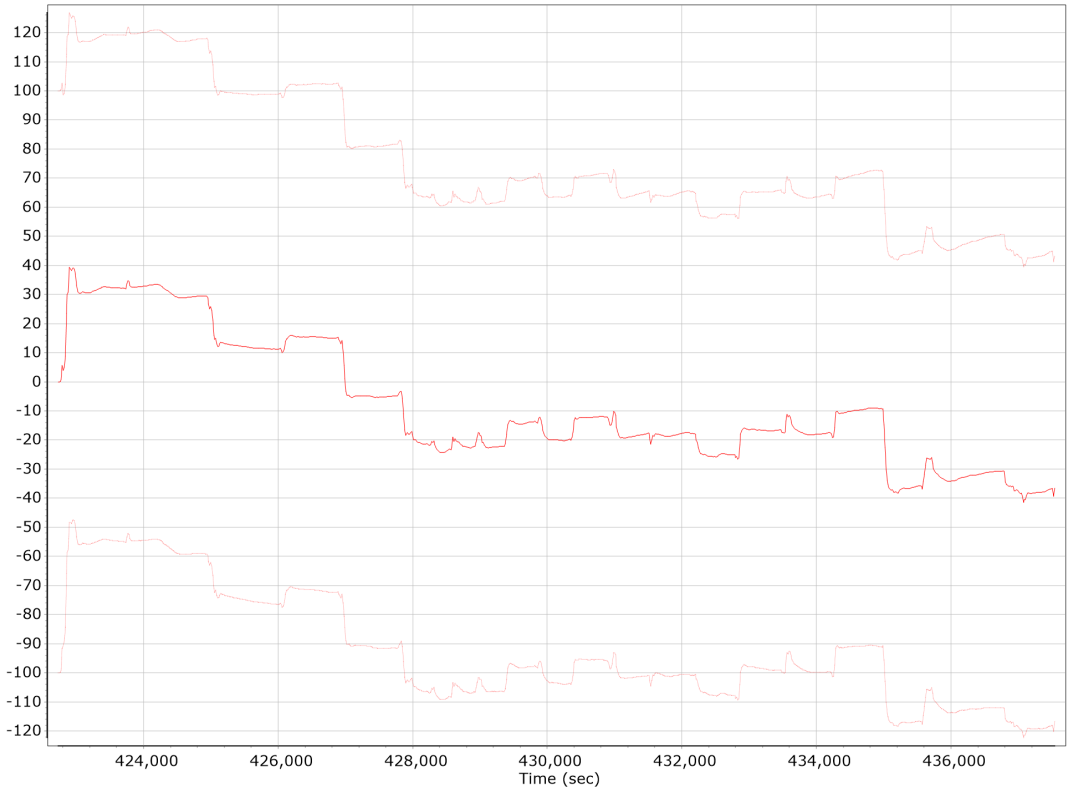
Accelerometer Bias (micro-g)



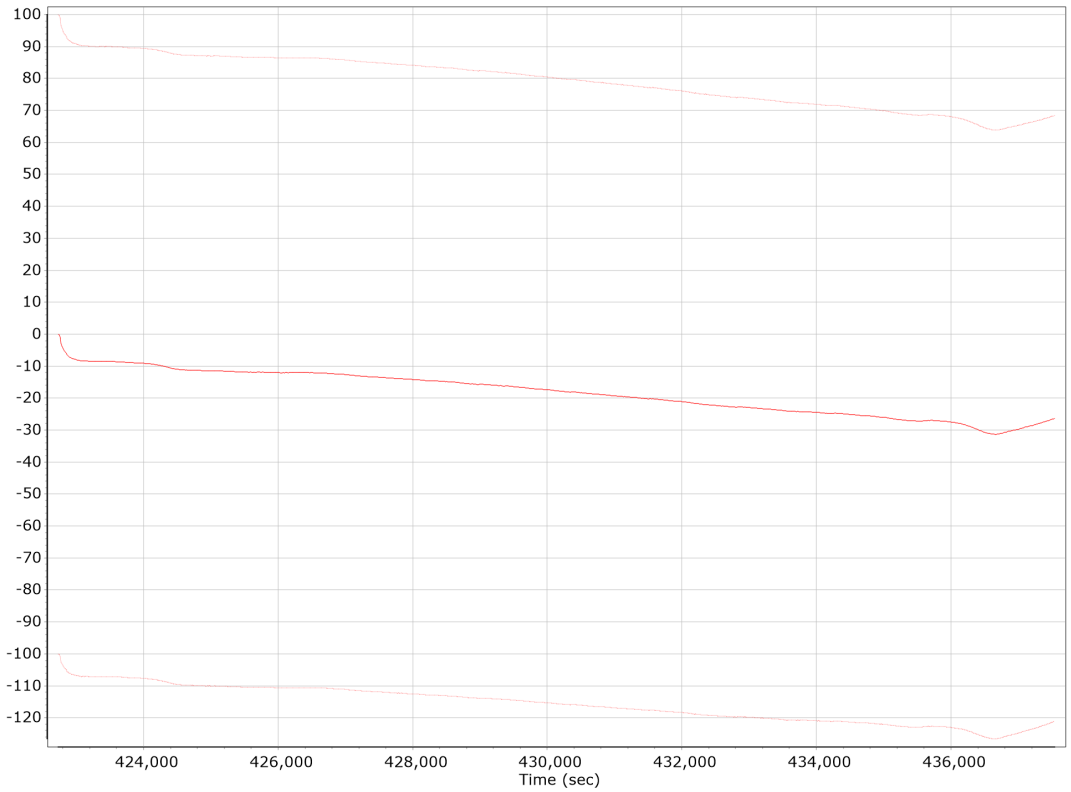
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



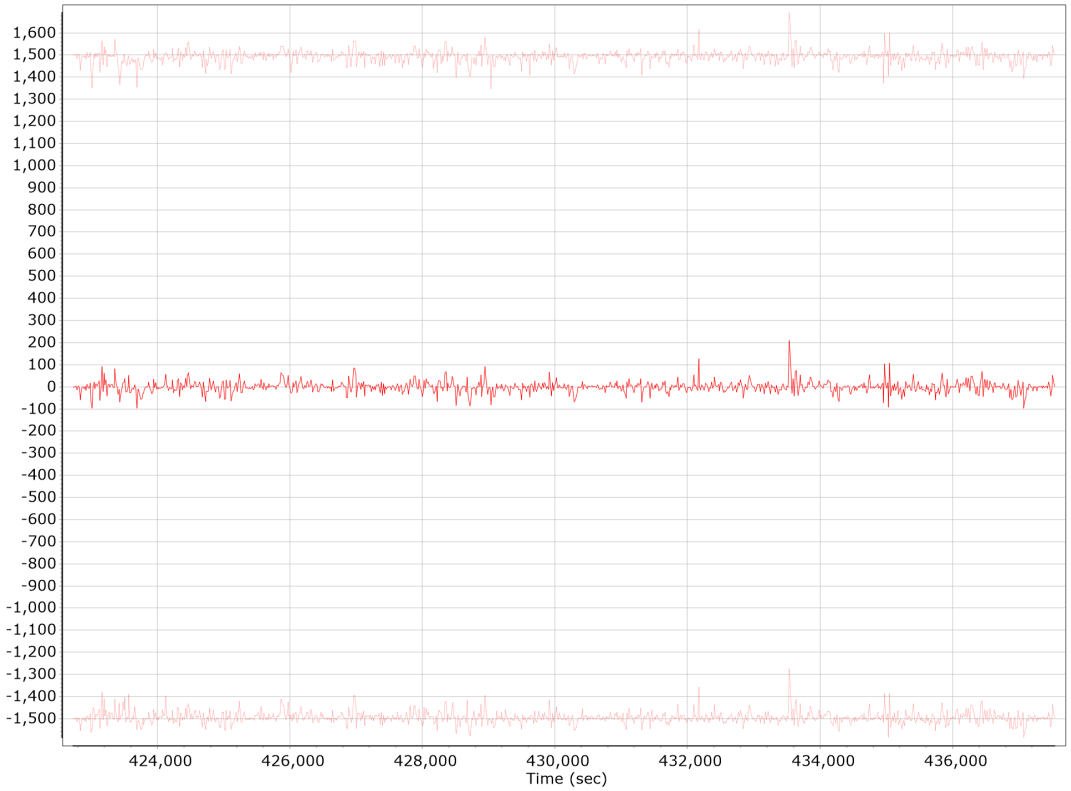
Accelerometer Scale Error (ppm)



X Accelerometer Scale Error (ppm)



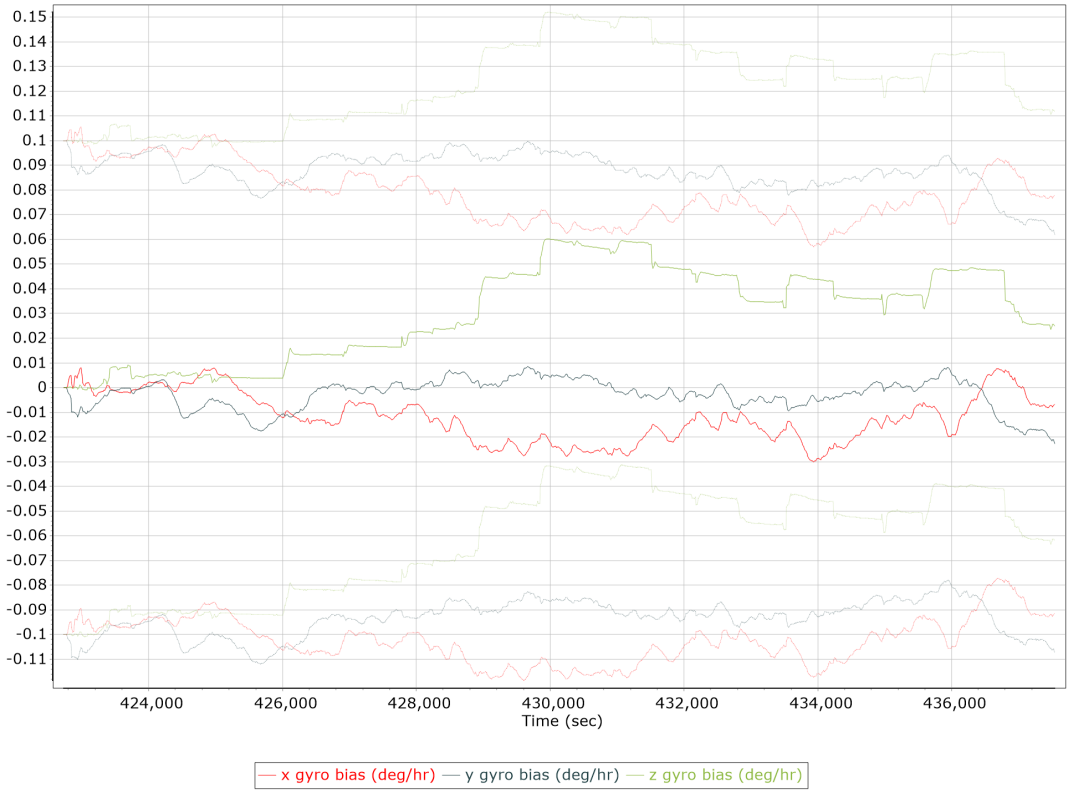
Y Accelerometer Scale Error (ppm)



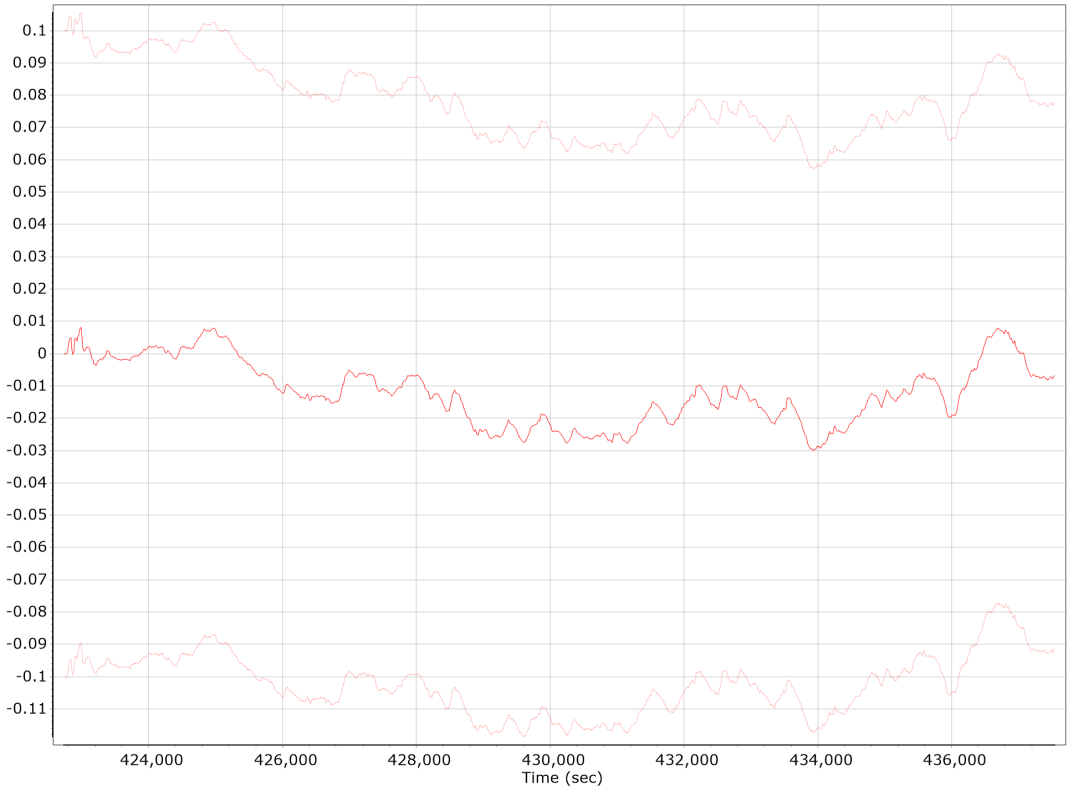
Z Accelerometer Scale Error (ppm)



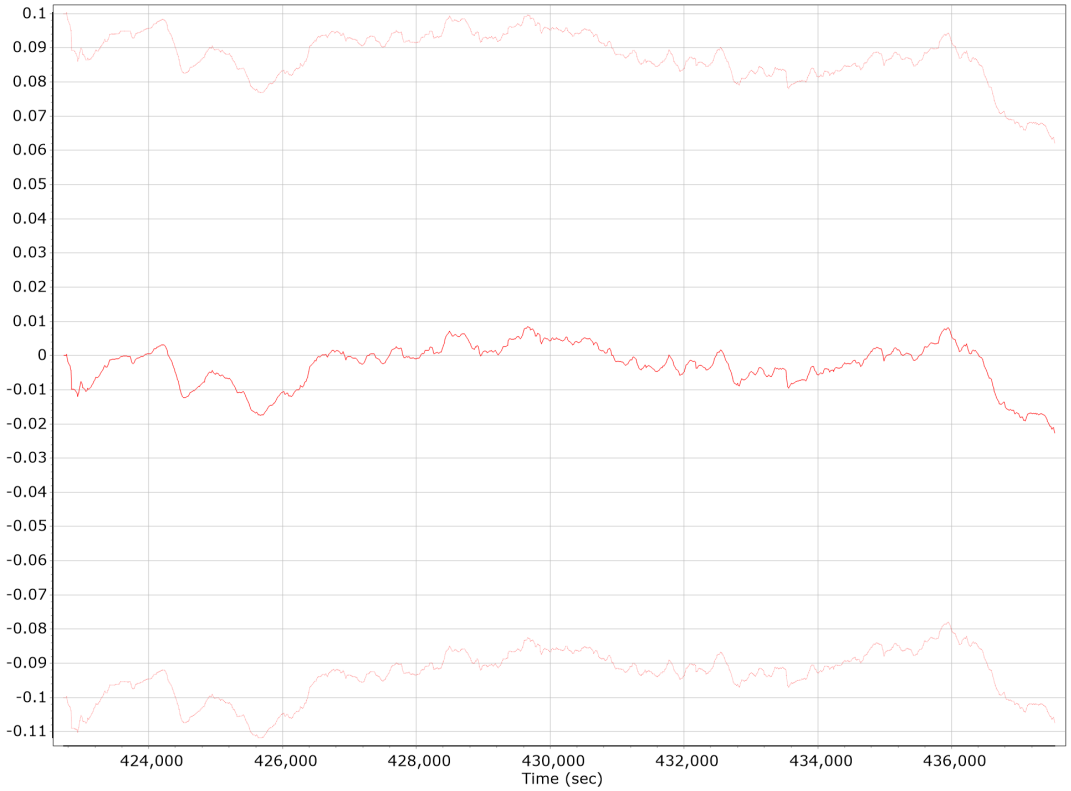
Gyro Bias (deg/h)



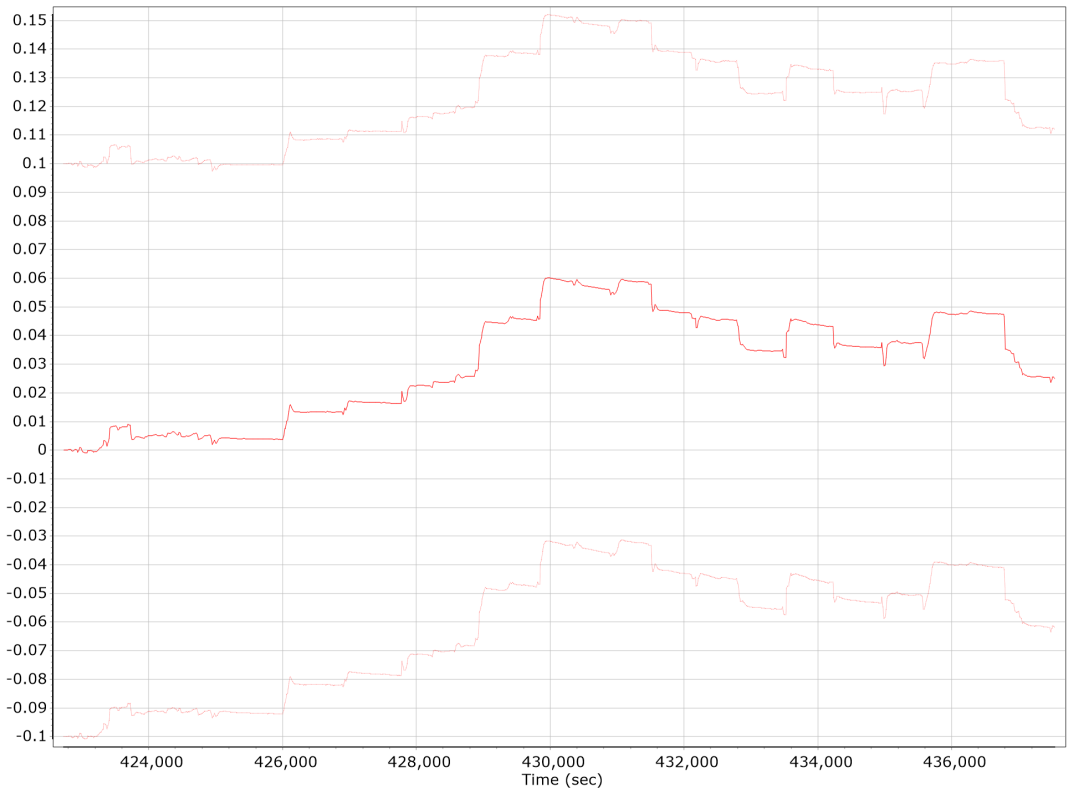
X Gyro Bias (deg/h)



Y Gyro Bias (deg/h)



Z Gyro Bias (deg/h)



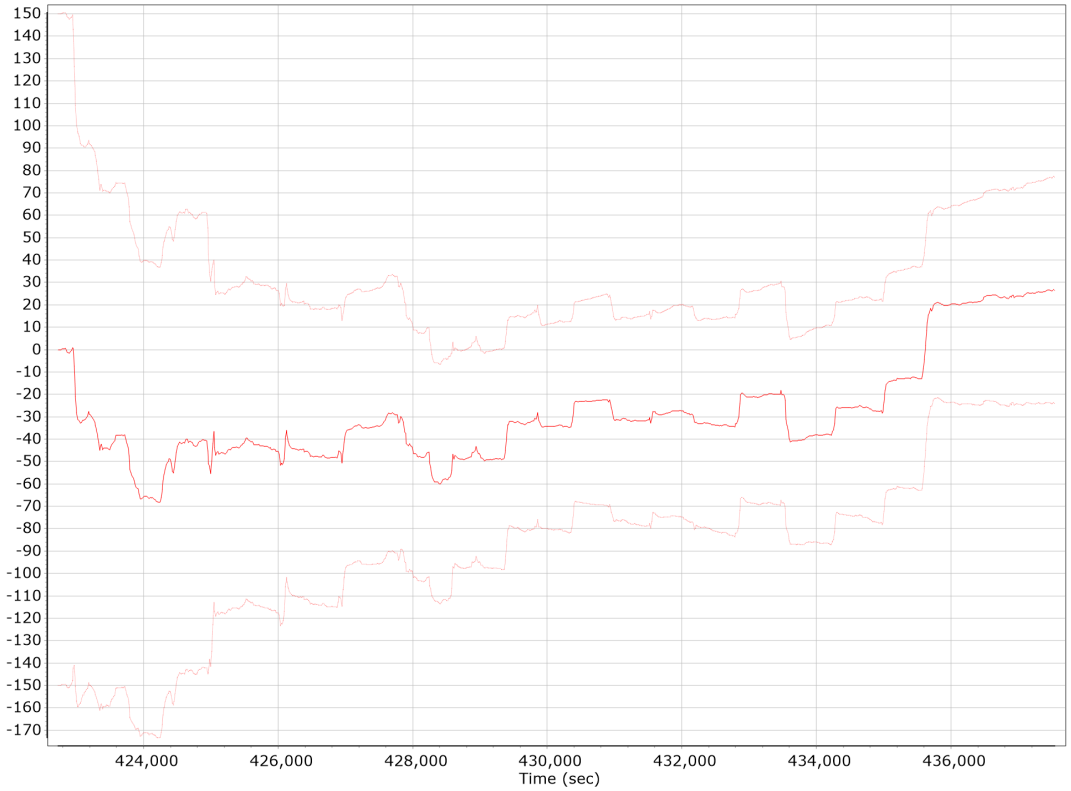
Gyro Scale Error (ppm)



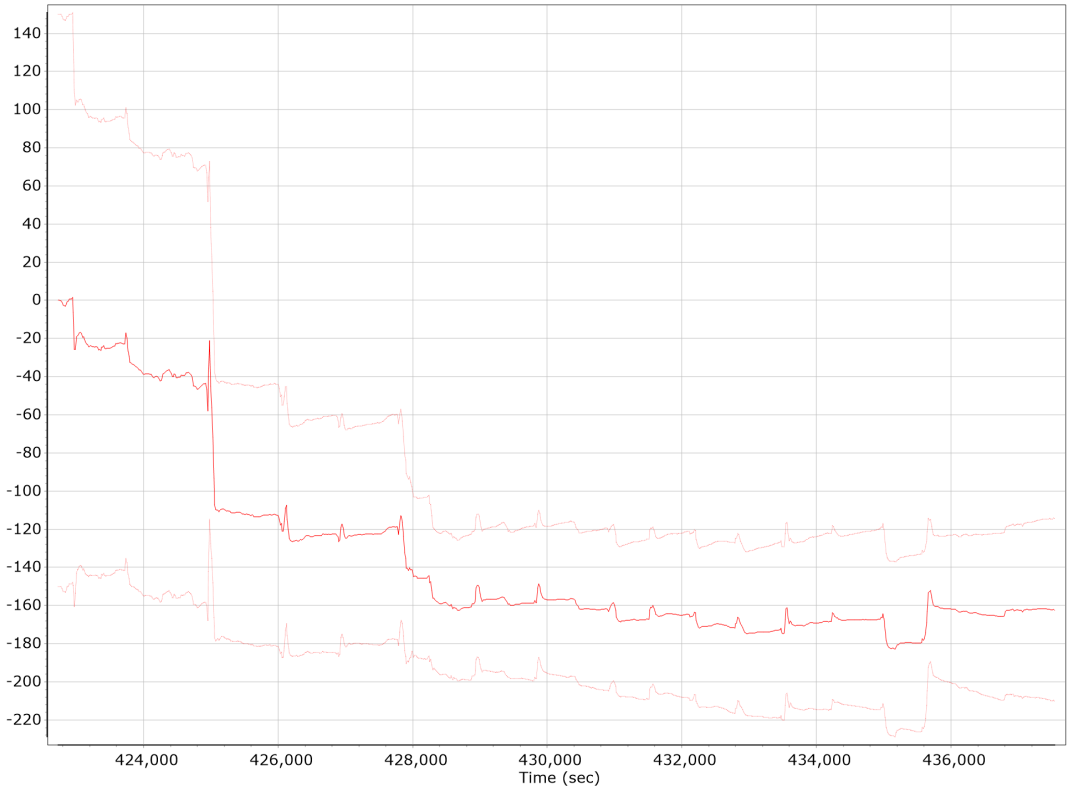
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)

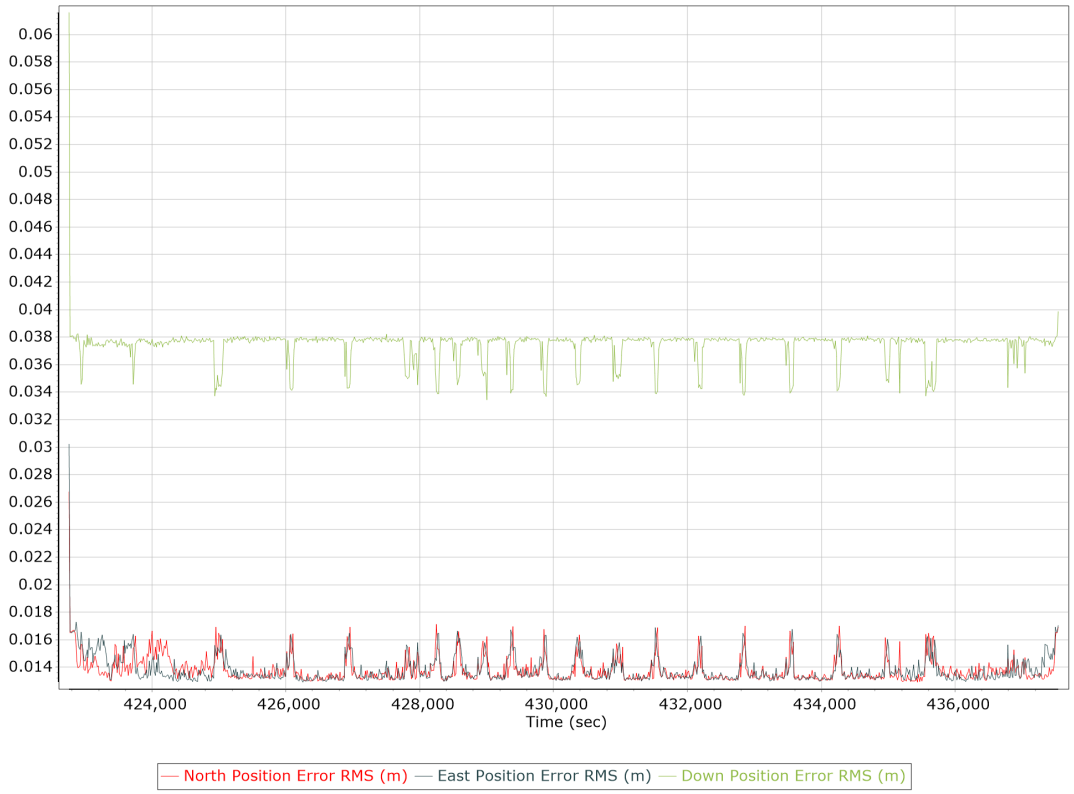


Z Gyro Scale Error (ppm)

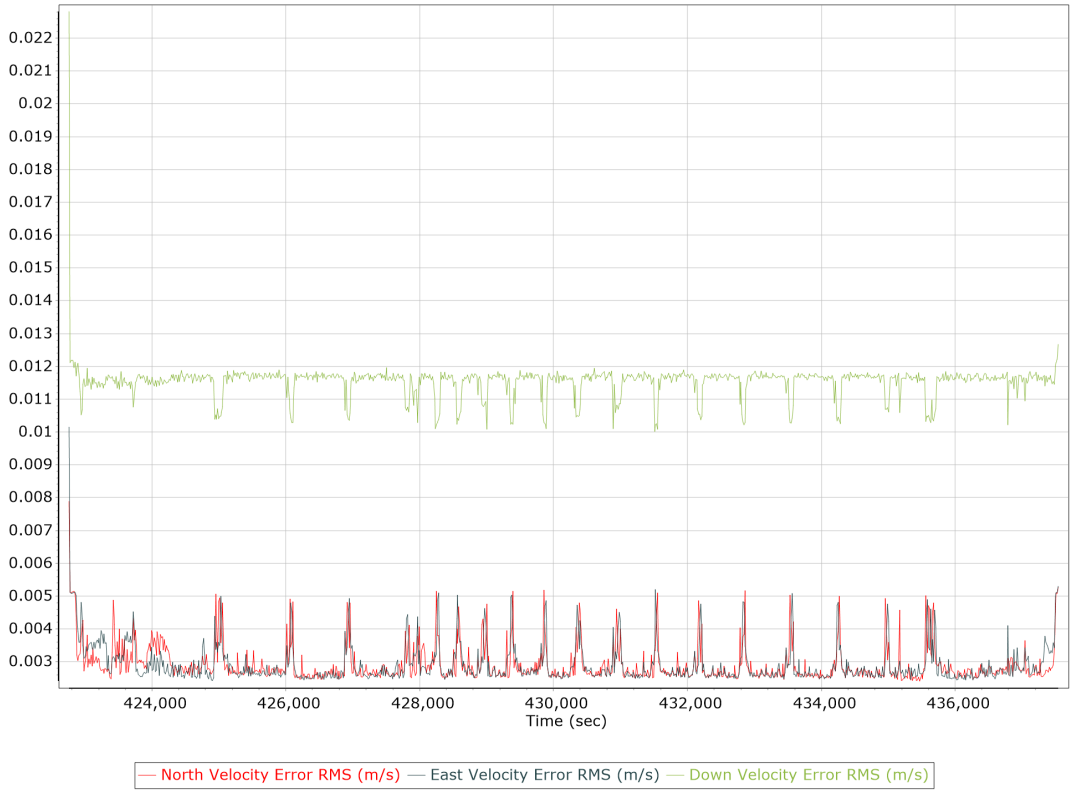


Smoothed Performance Metrics

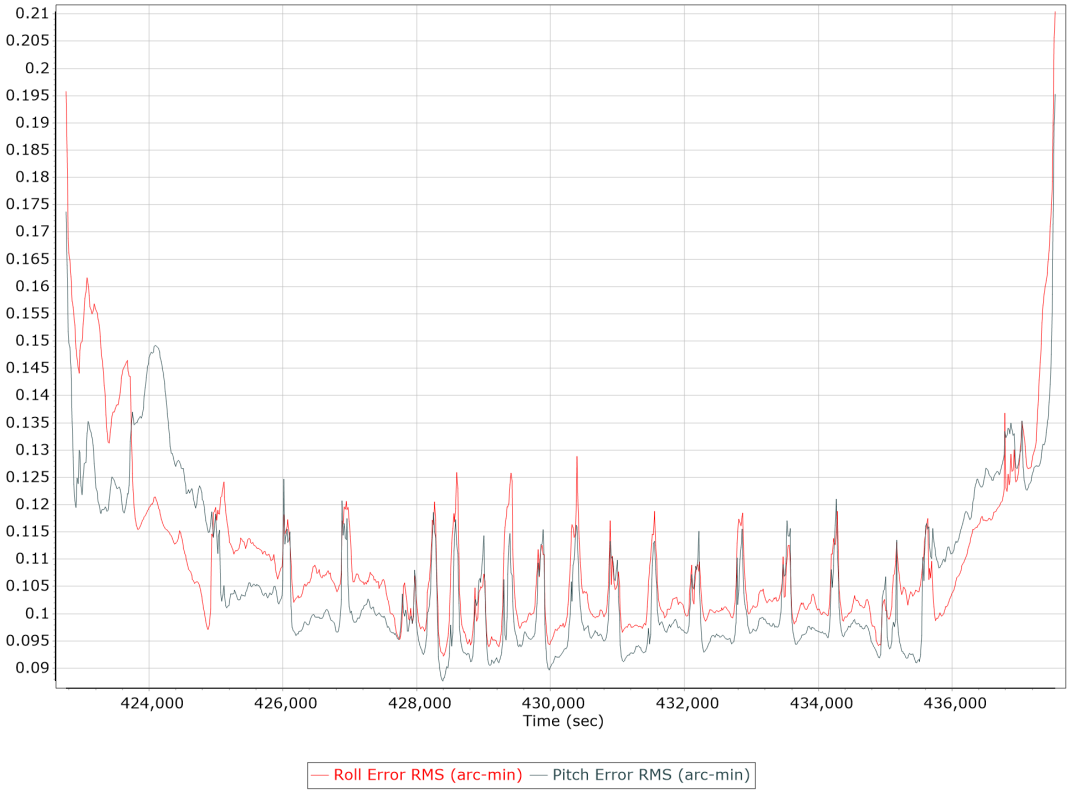
Position Error RMS (m)



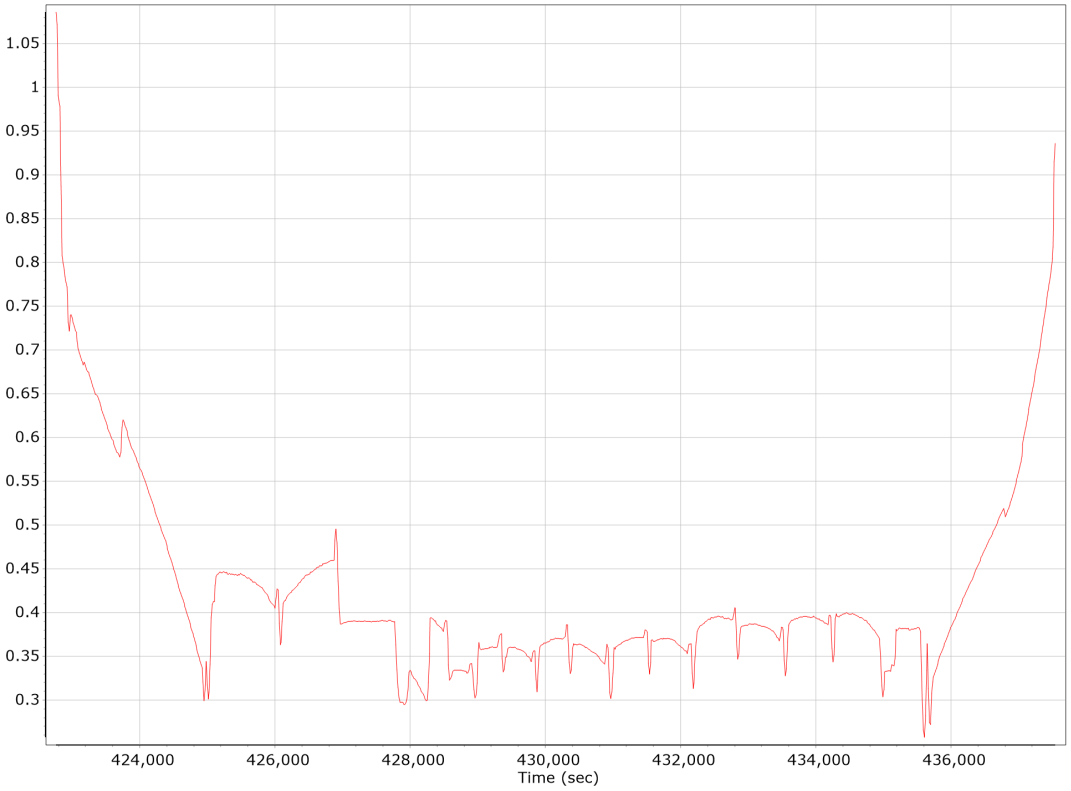
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

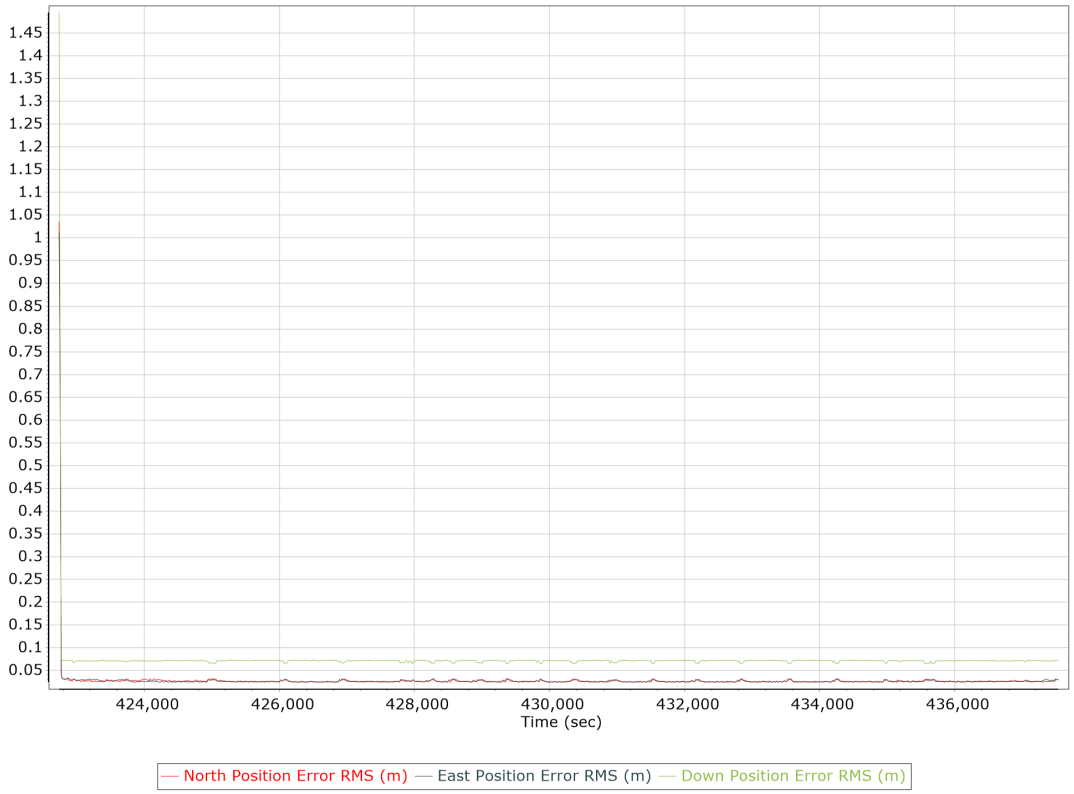


Heading Error RMS (arc-min)



Forward Processed Performance Metrics

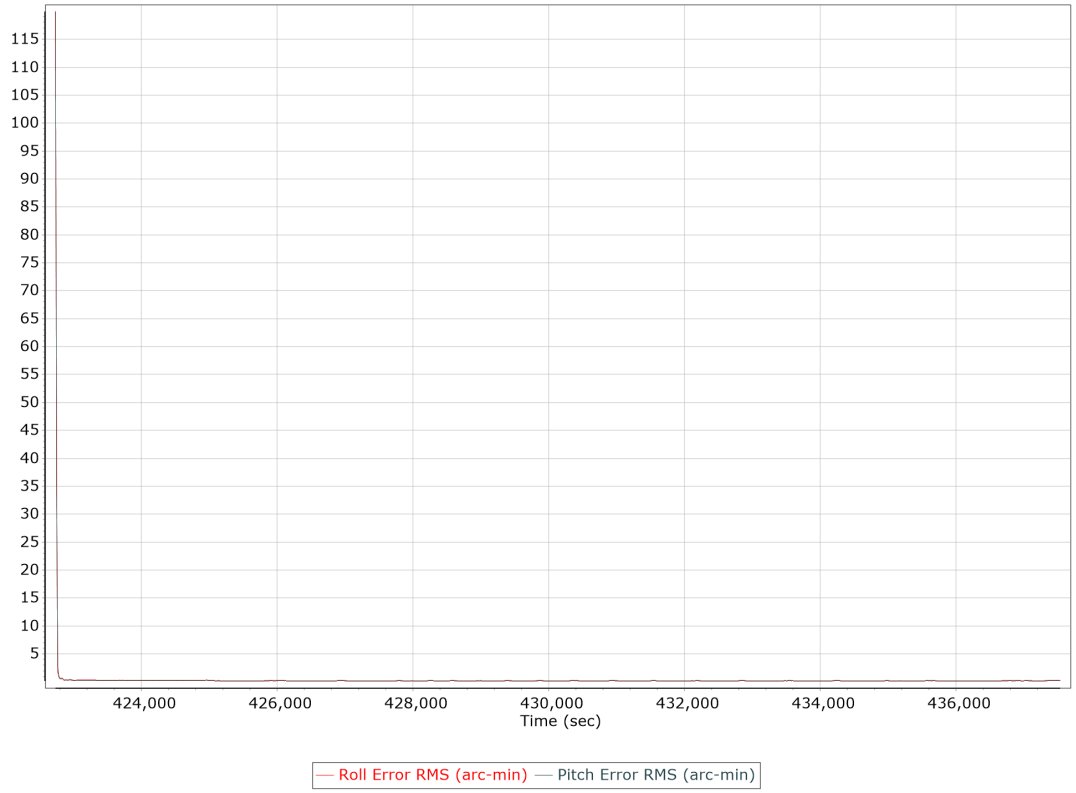
Position Error RMS (m)



Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

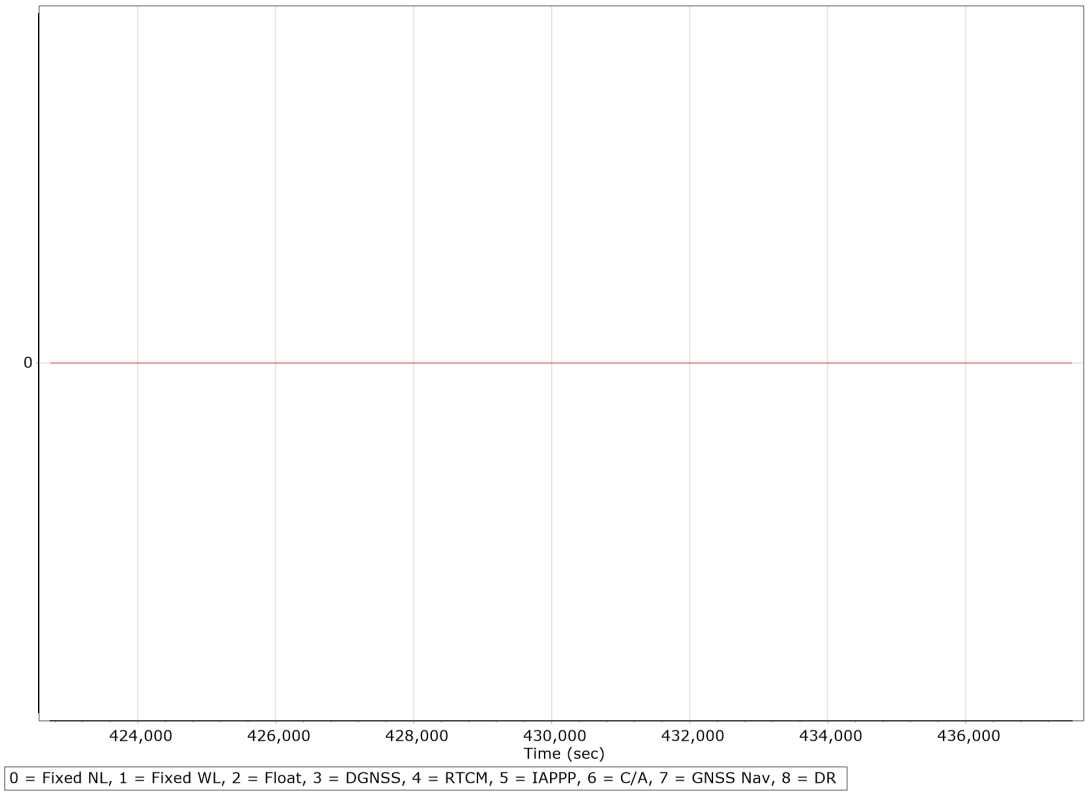


Heading Error RMS (arc-min)



Forward Processed Solution Status

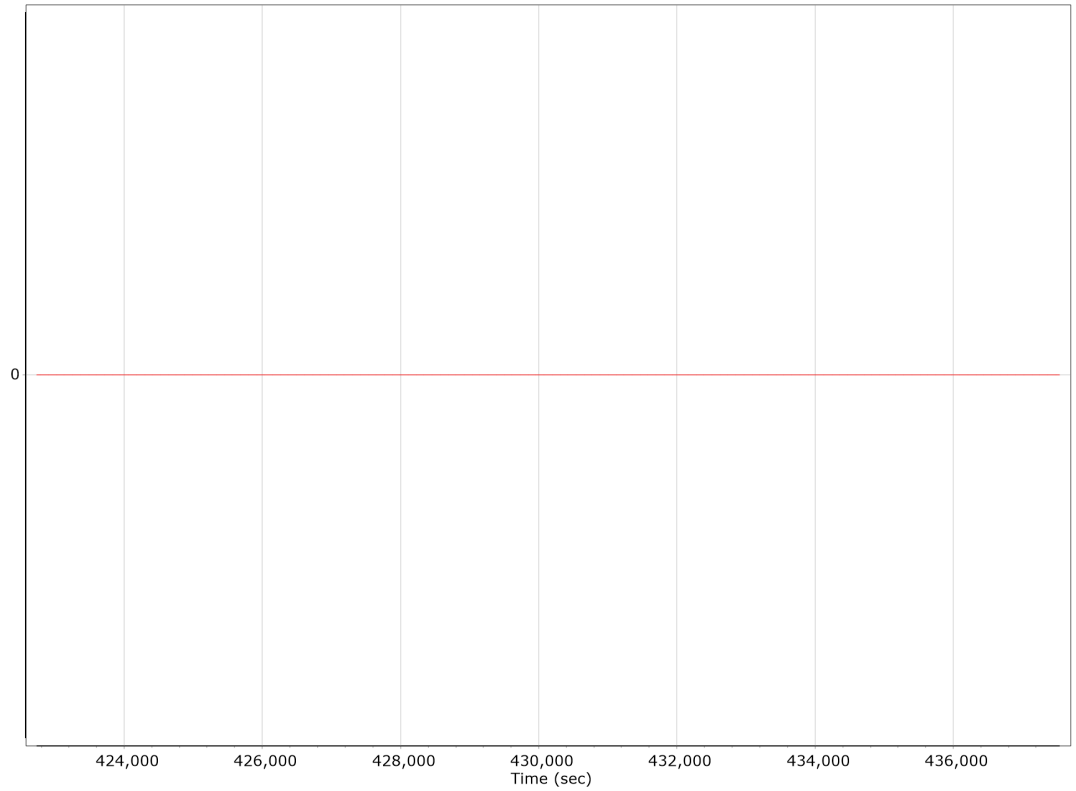
Processing Mode



Number of Satellites



Baseline Length



General Information

Mission Information

Project name	09282023B_4040
Processing date	2024-01-11 16:10:52
Mission date	2023-09-28 00:31:05
Mission duration	01:12:09.800
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N10451
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
230928_003046_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm2710.23g	GLONASS Broadcast Ephemeris
Ephm2710.23n	GPS Broadcast Ephemeris
IGS0OPSFIN_20232700000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232710000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232720000_01D_15M_ORB.SP3	GPS Precise Ephemeris

Output Files

Filename	File type
sbet_09282023B_4040.out	SBET Trajectory File

Rover Data Summary

First raw data file	230928_003046_INS-GPS_1.raw		
Last raw data file	230928_003046_INS-GPS_1.raw		
Start GPS week	2281		
Start time	347446.237 (9/28/2023 12:30:46 AM)		
End time	351776.037 (9/28/2023 1:42:56 AM)		
Start of fine alignment	347561.768 (9/28/2023 12:32:41 AM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.000	0.000	-0.900
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

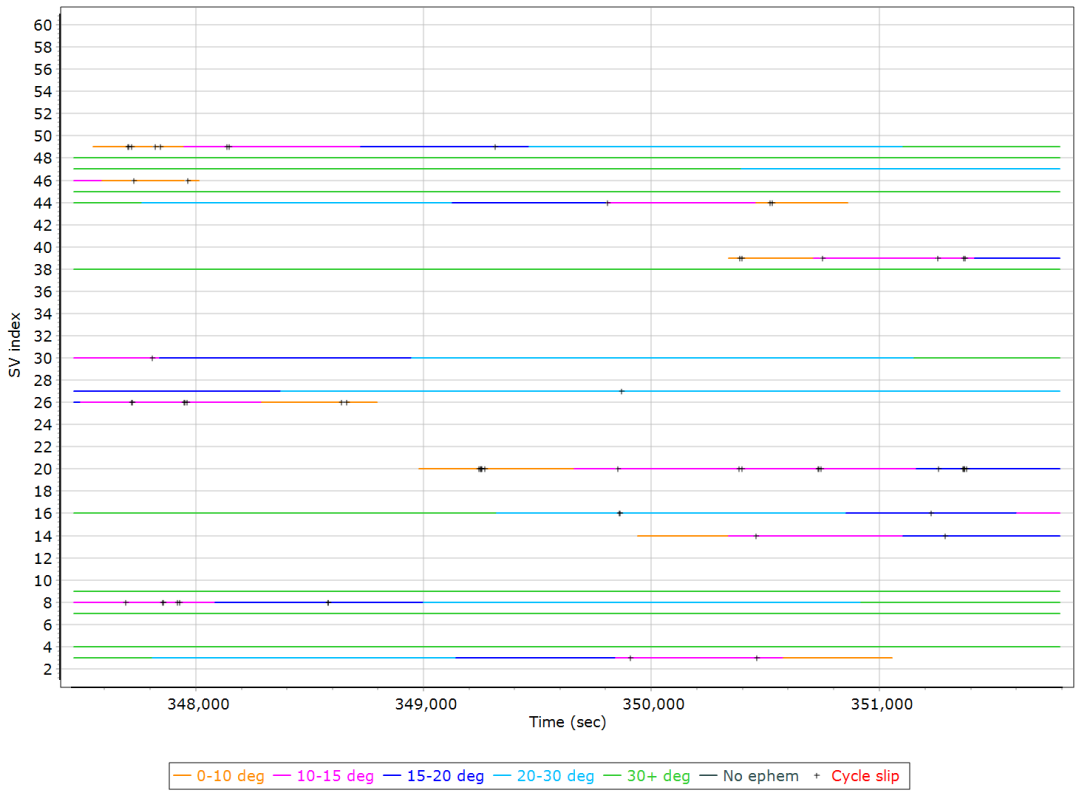
Rover Data QC

Raw IMU Import QC Summary

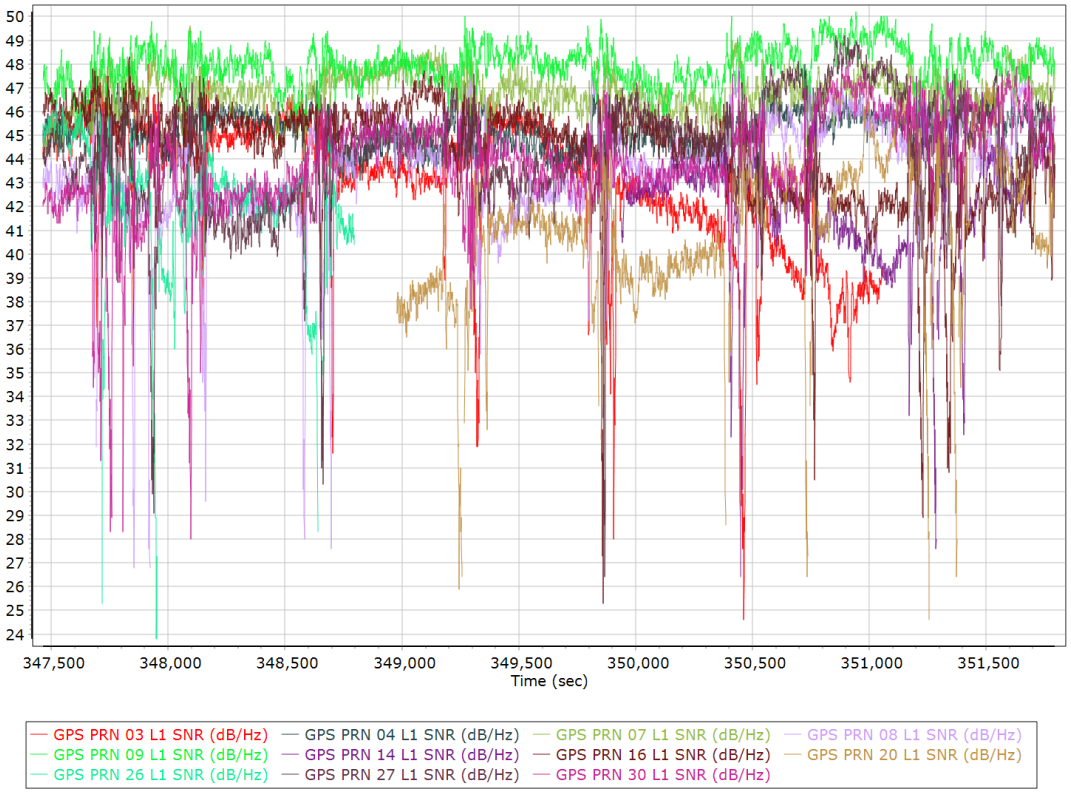
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_09282023B_4040.log
IMU Records Processed	865817
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

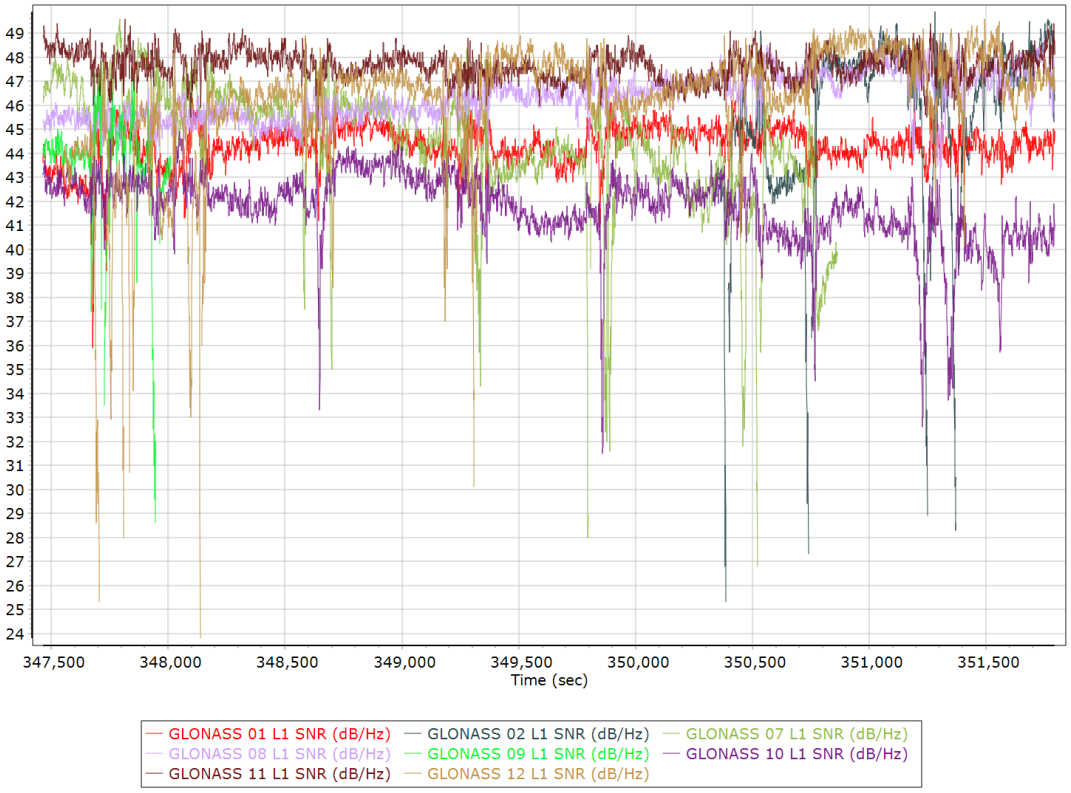
GPS/GLONASS L1 Satellite Lock/Elevation



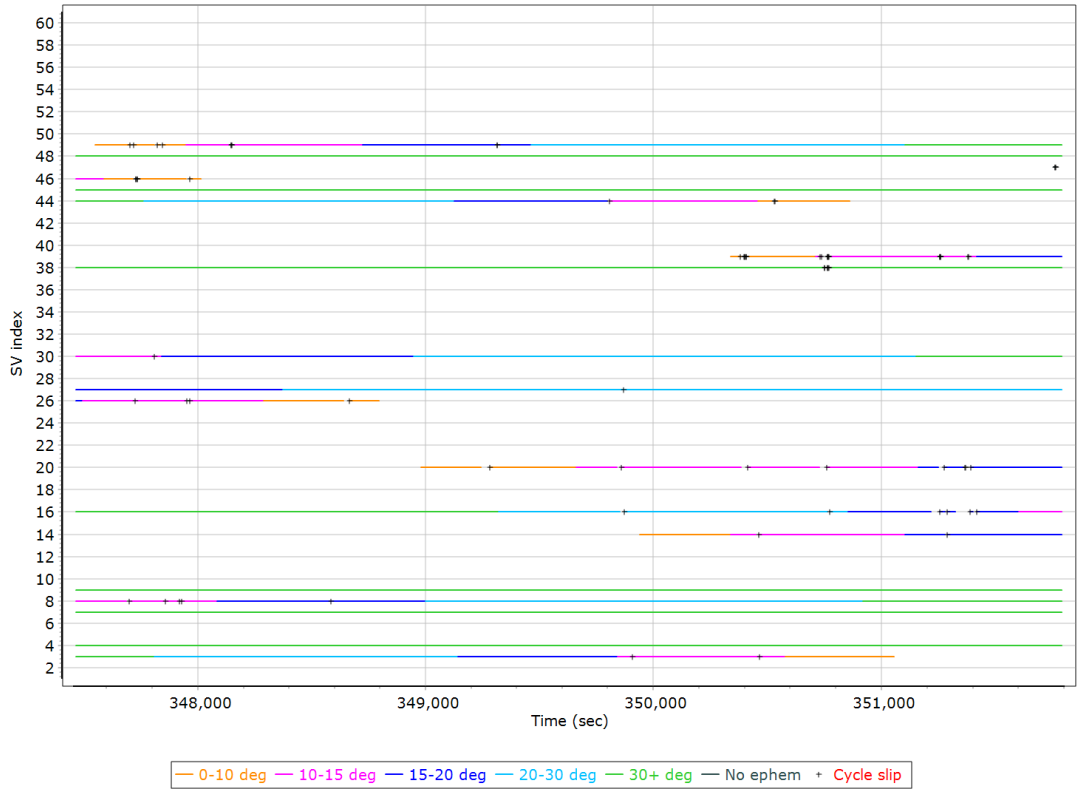
GPS L1 SNR



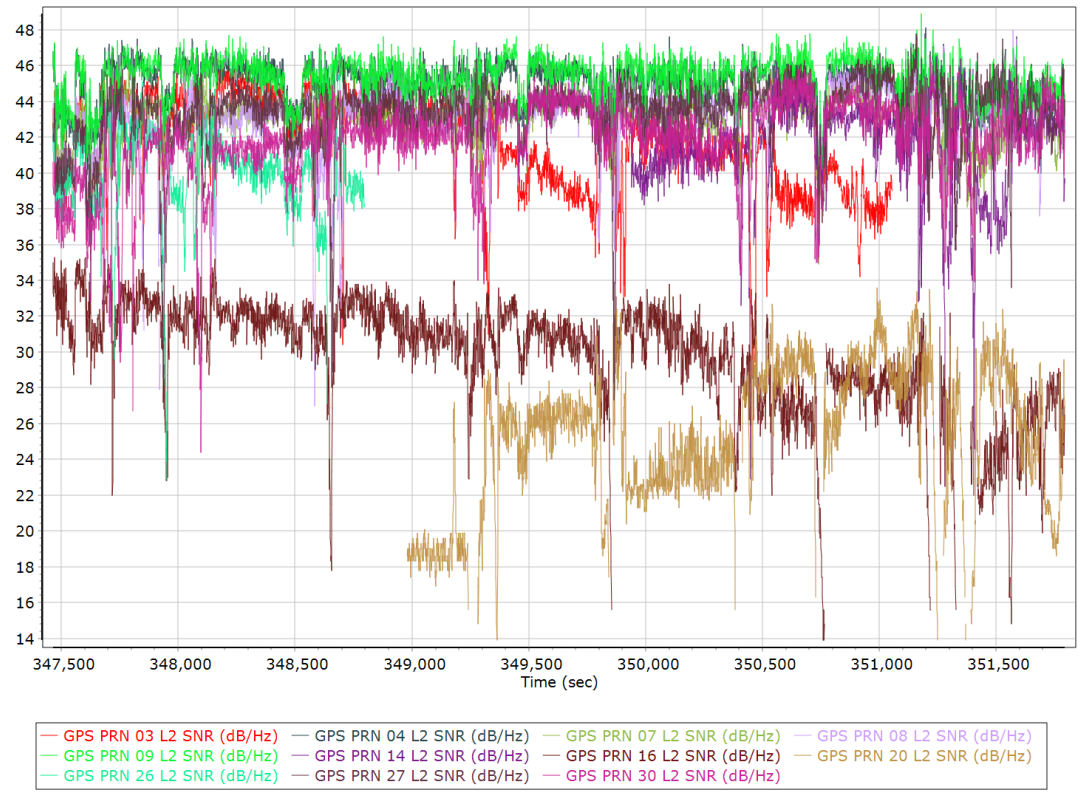
GLONASS L1 SNR



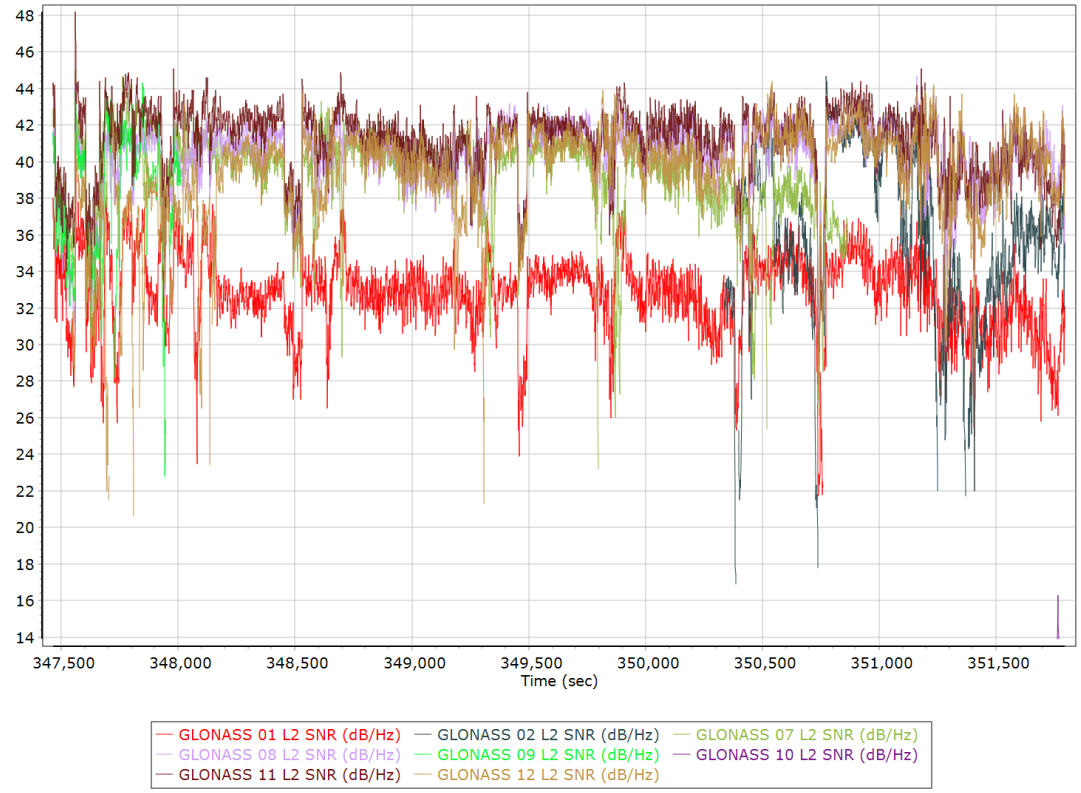
GPS/GLONASS L2 Satellite Lock/Elevation



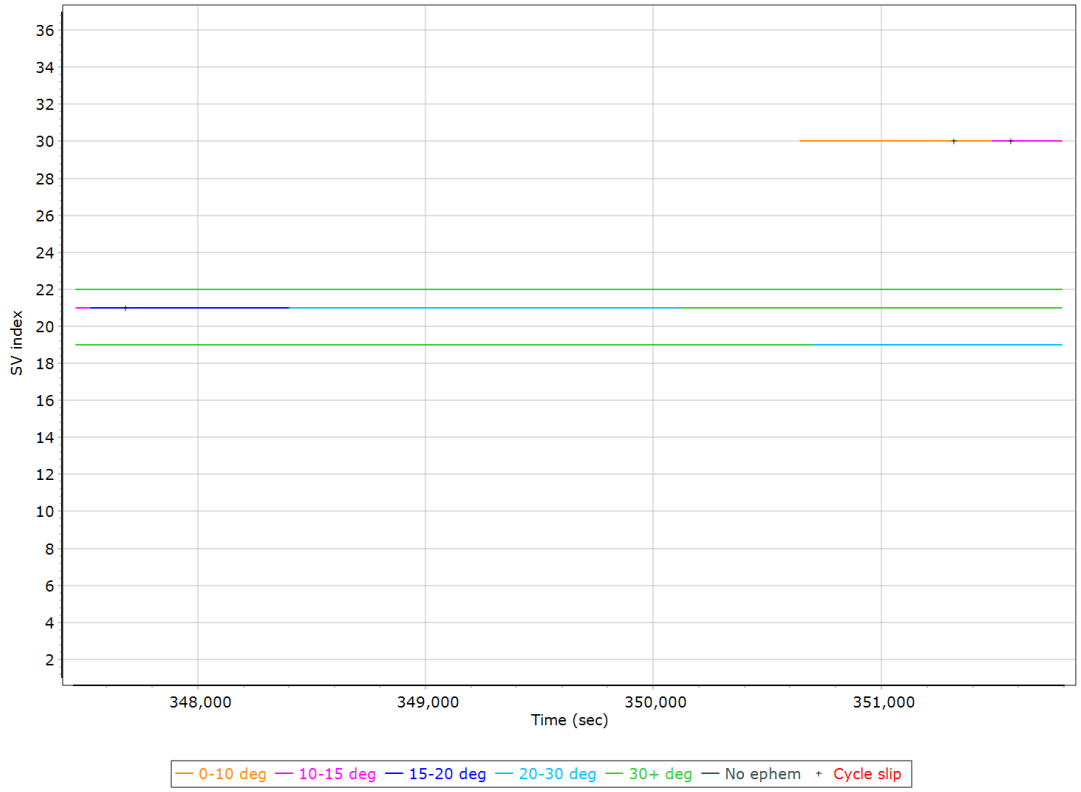
GPS L2 SNR



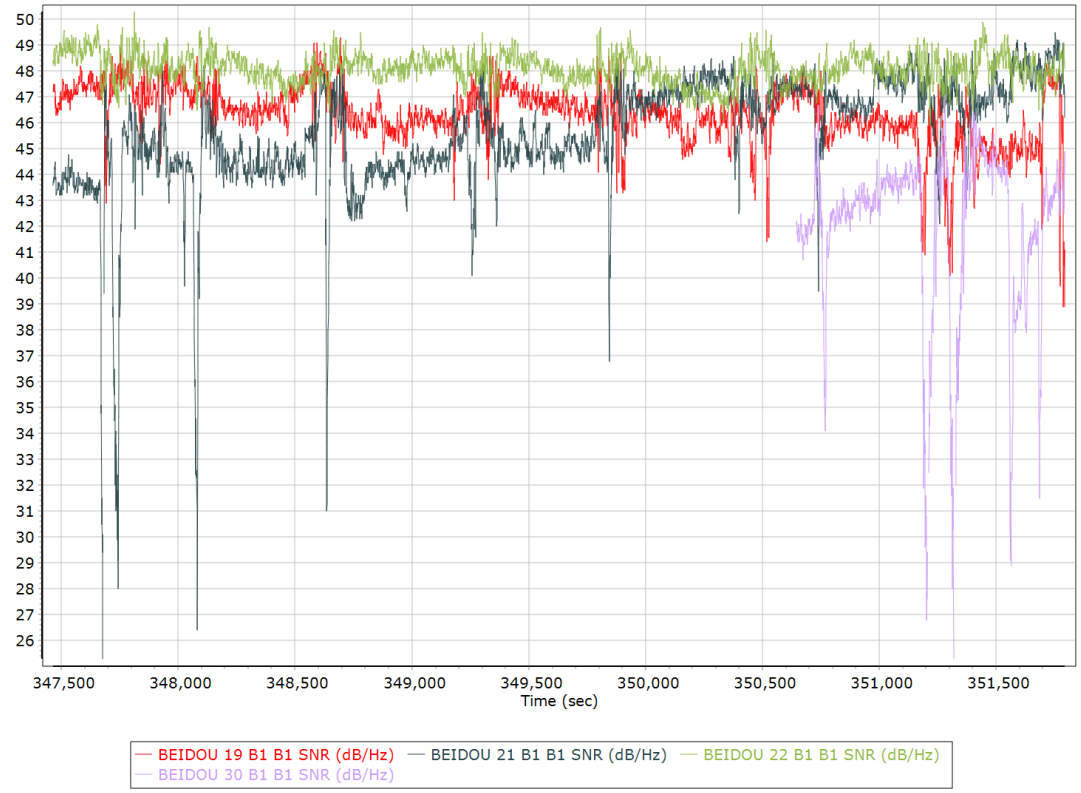
GLONASS L2 SNR



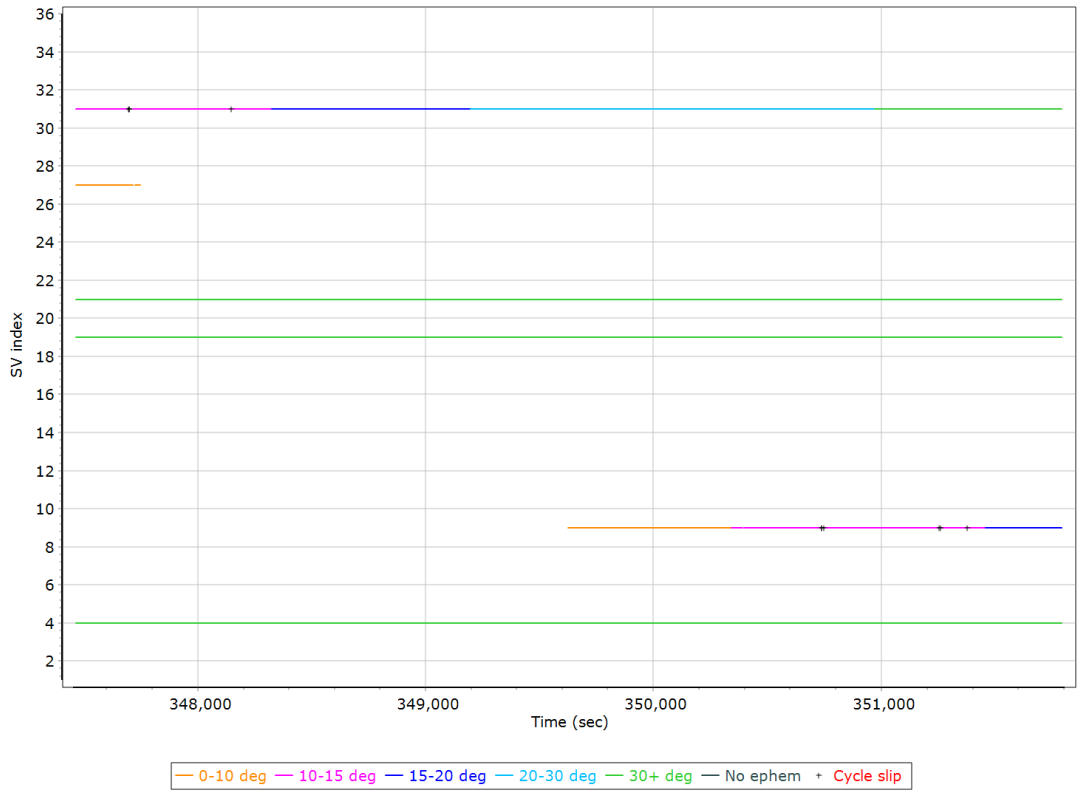
BEIDOU Satellite Lock/Elevation



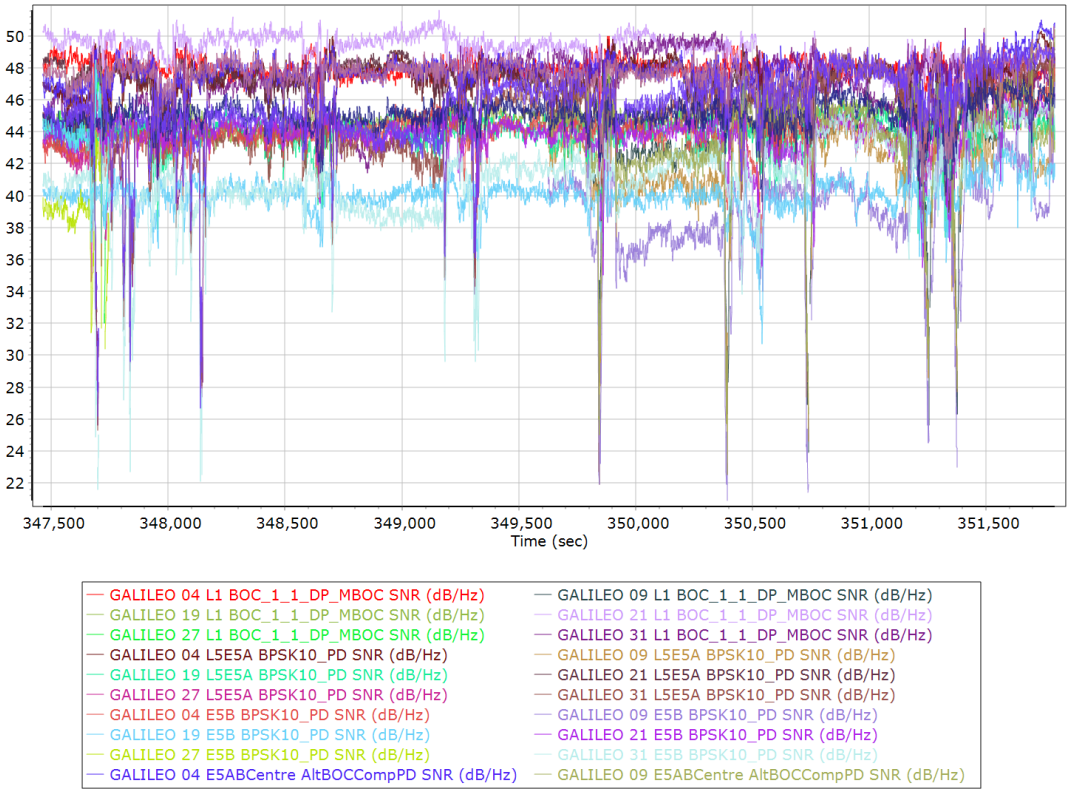
BEIDOU SNR



GALILEO Satellite Lock/Elevation

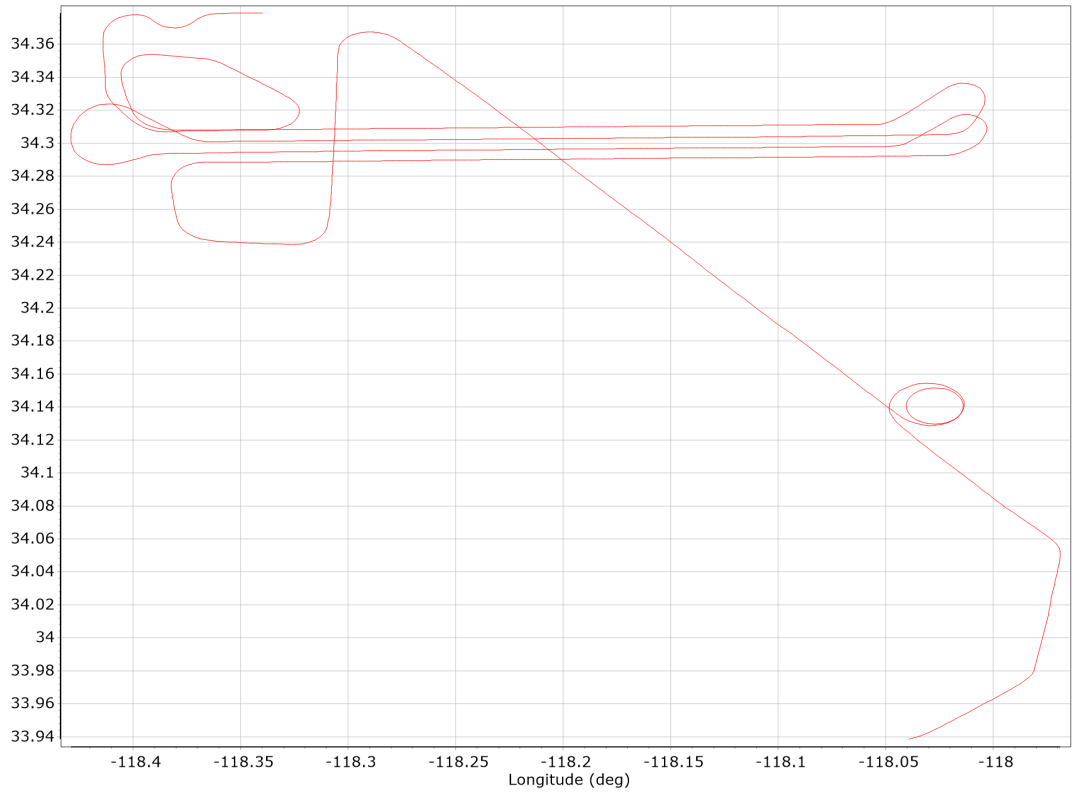


GALILEO SNR

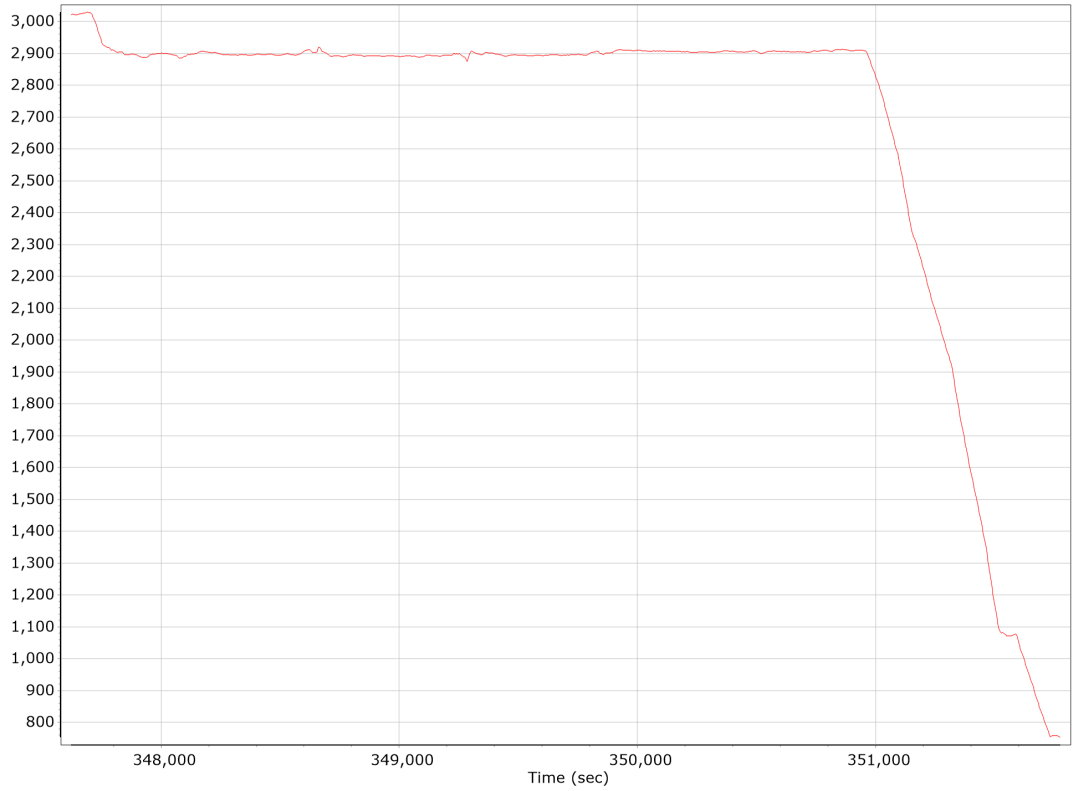

50
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38
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32
30
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24
22
347,500
348,000
348,500
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349,500
350,000
350,500
351,000
351,500
Time (sec)
GALILEO 04 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 09 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 19 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 21 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 27 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 31 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 04 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 09 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 19 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 21 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 27 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 31 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 04 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 09 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 19 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 21 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 27 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 31 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 04 E5ABCentre AltBOCCompPD SNR (dB/Hz)
GALILEO 09 E5ABCentre AltBOCCompPD SNR (dB/Hz)

Smoothed Trajectory Information

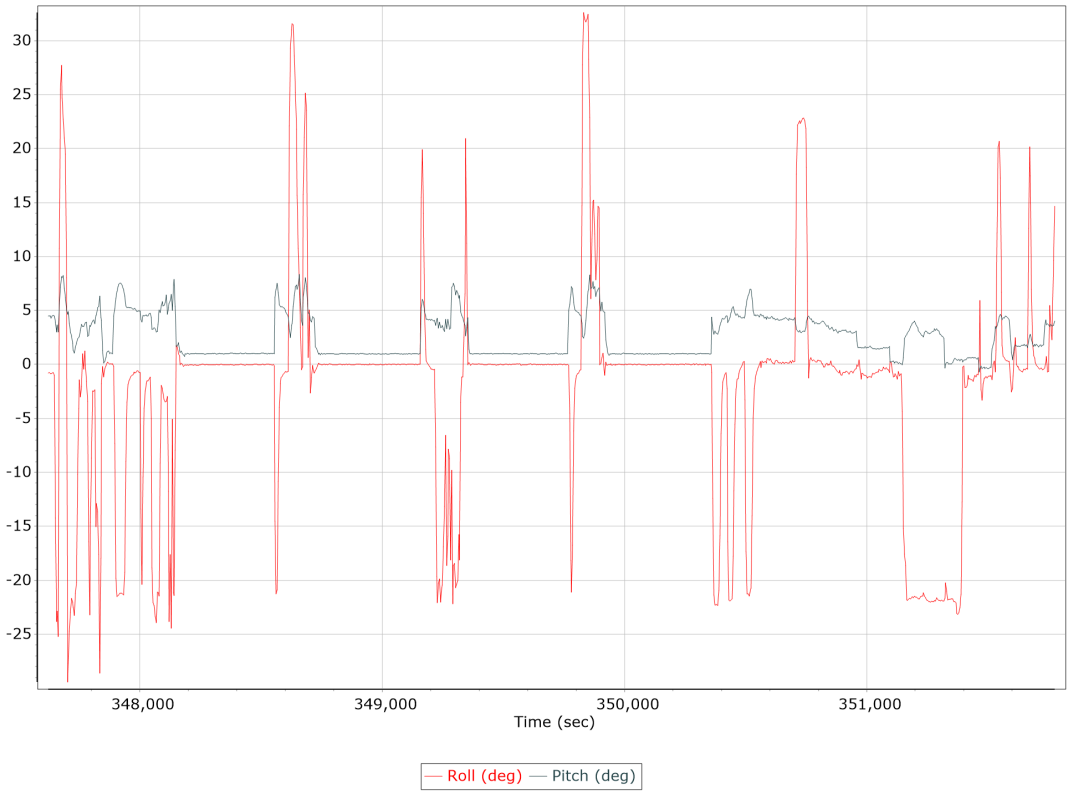
Top View



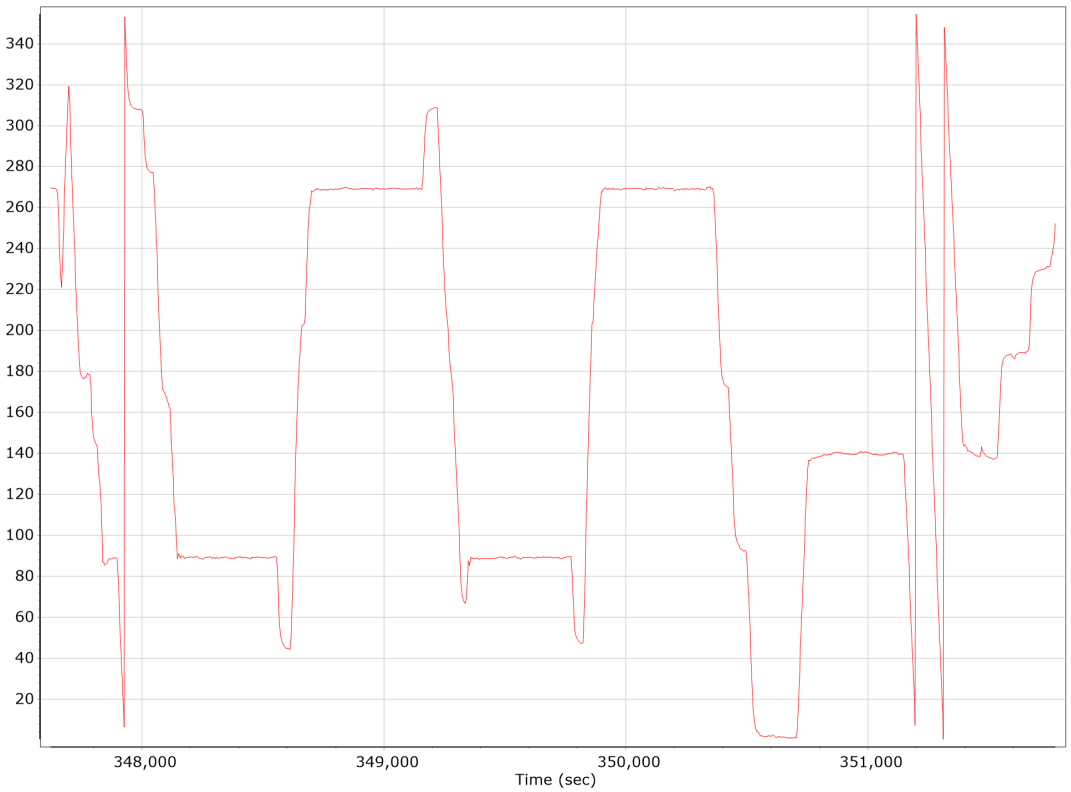
Altitude



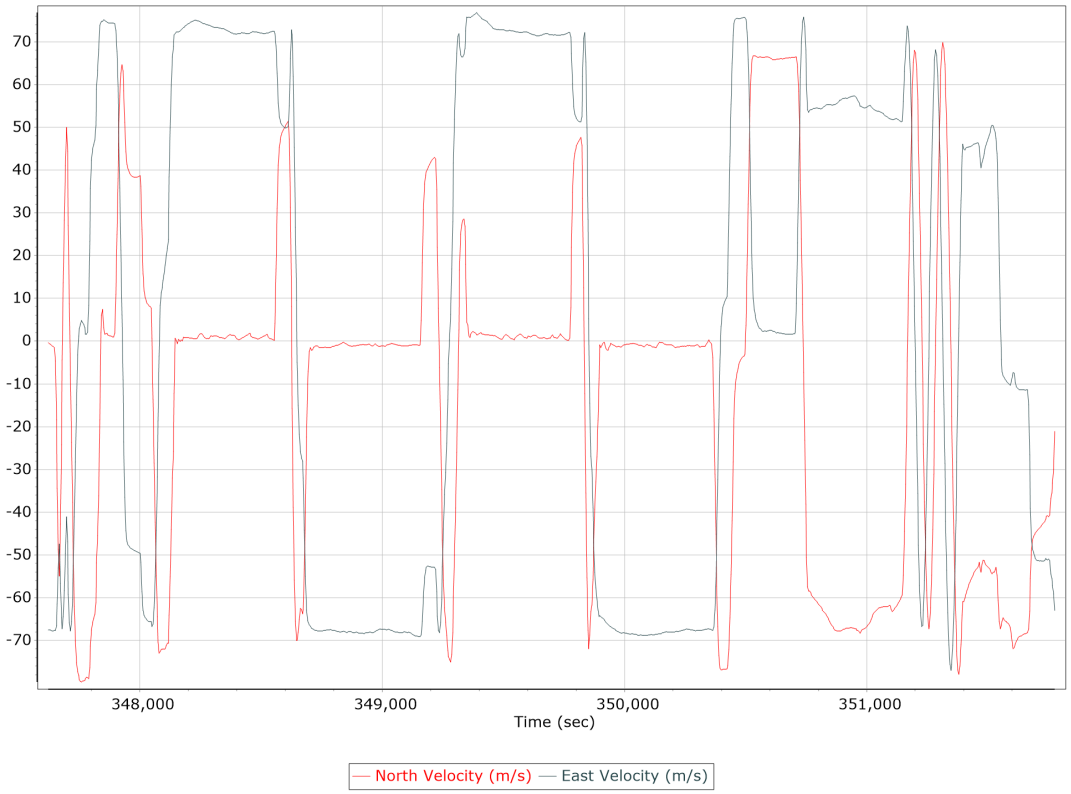
Roll/Pitch



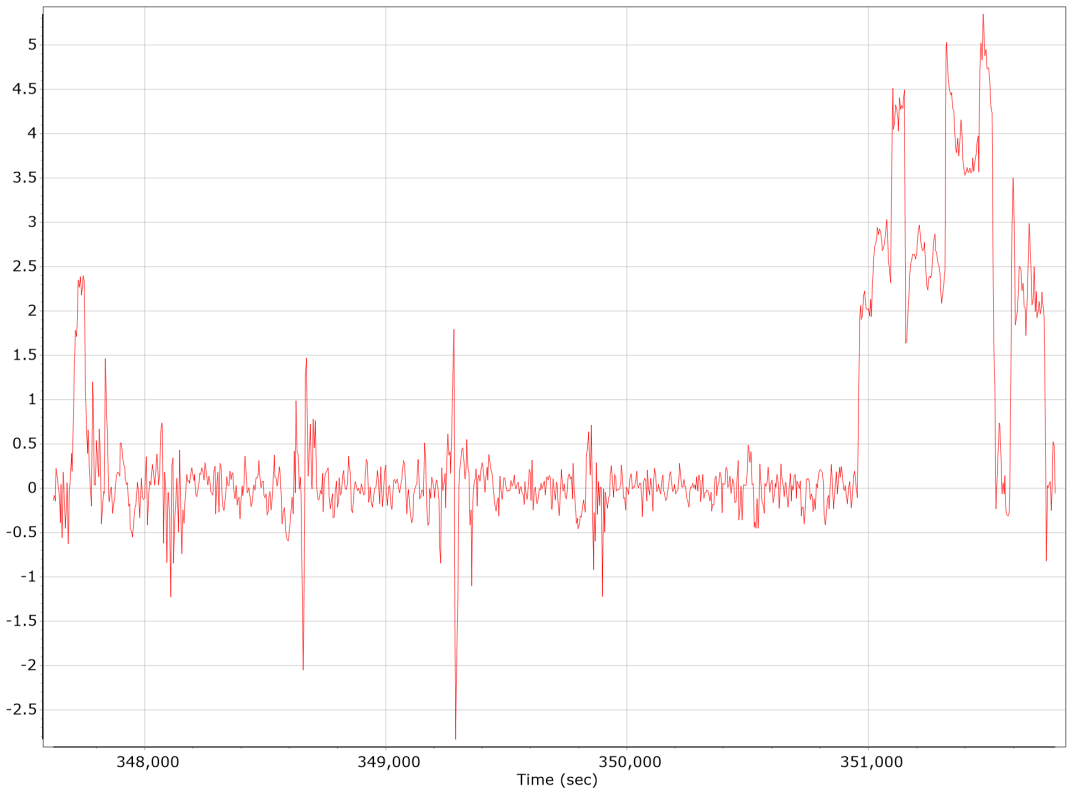
Heading



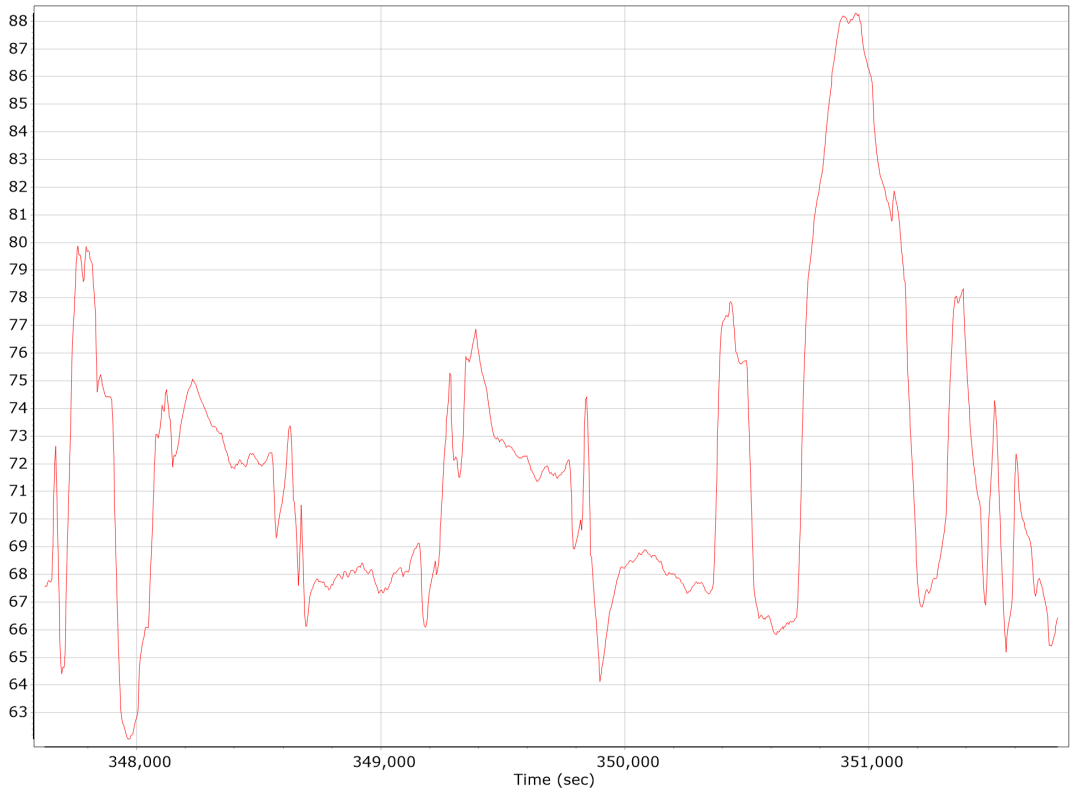
North/East Velocity



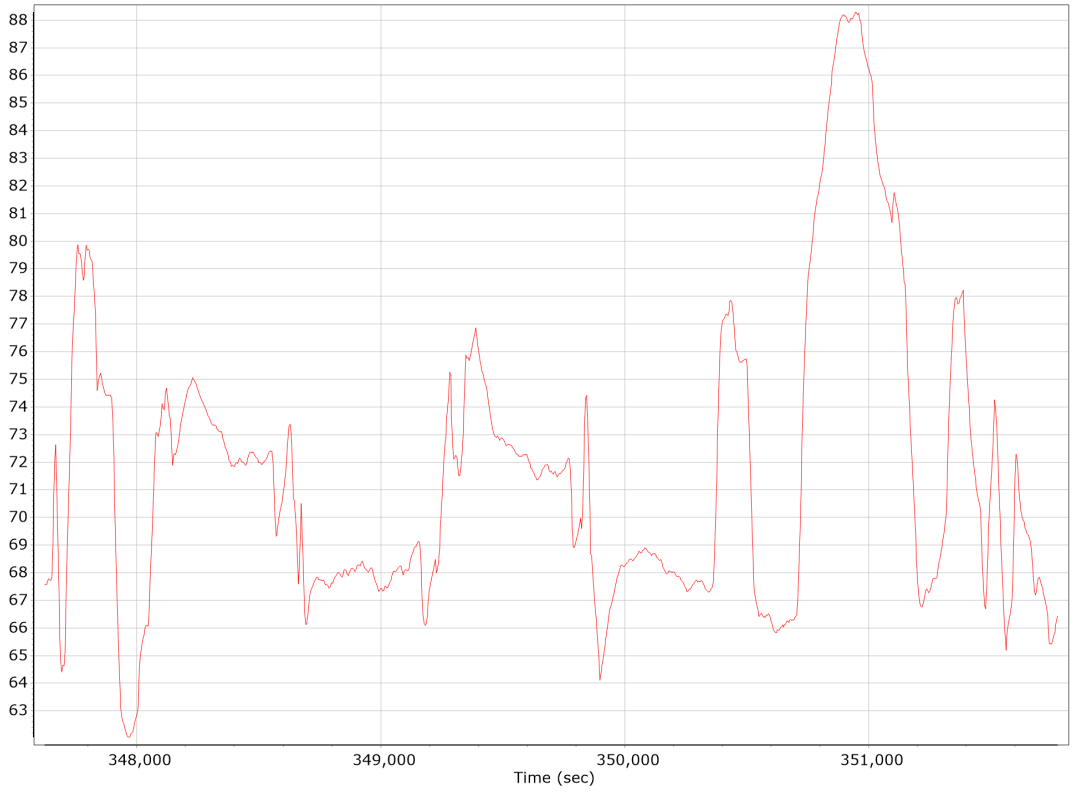
Down Velocity



Total Speed



Ground Speed



Body Acceleration



Total Body Acceleration

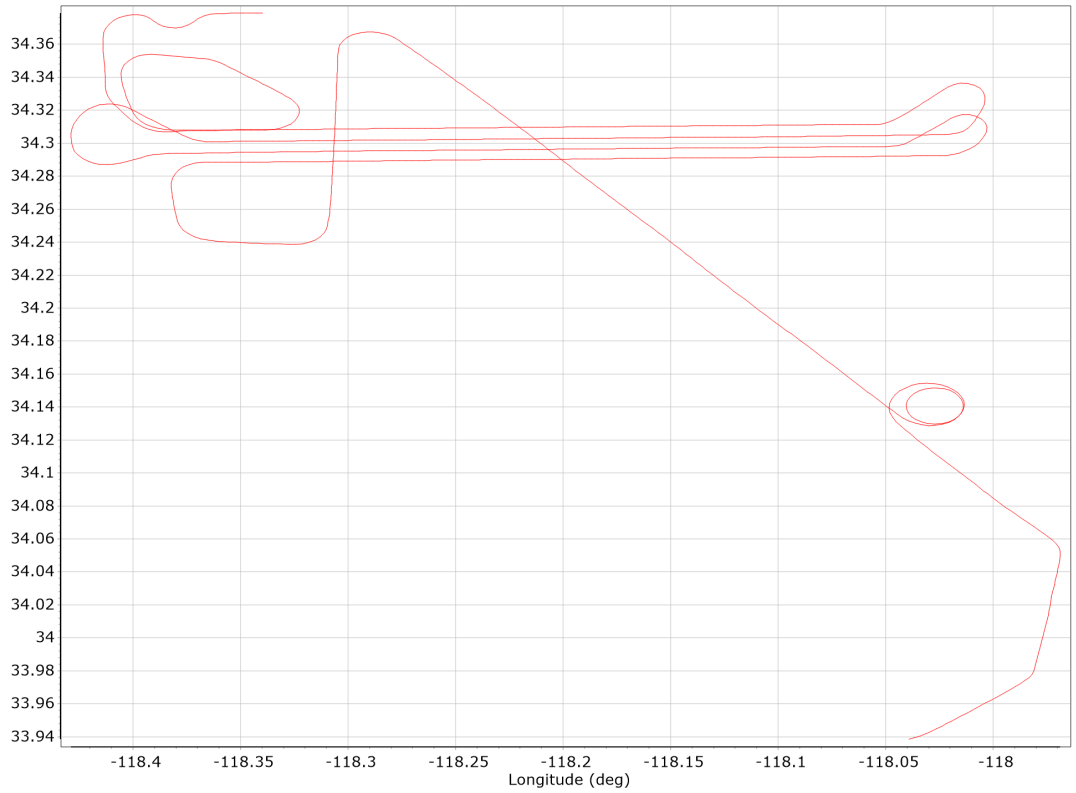


Body Angular Rate

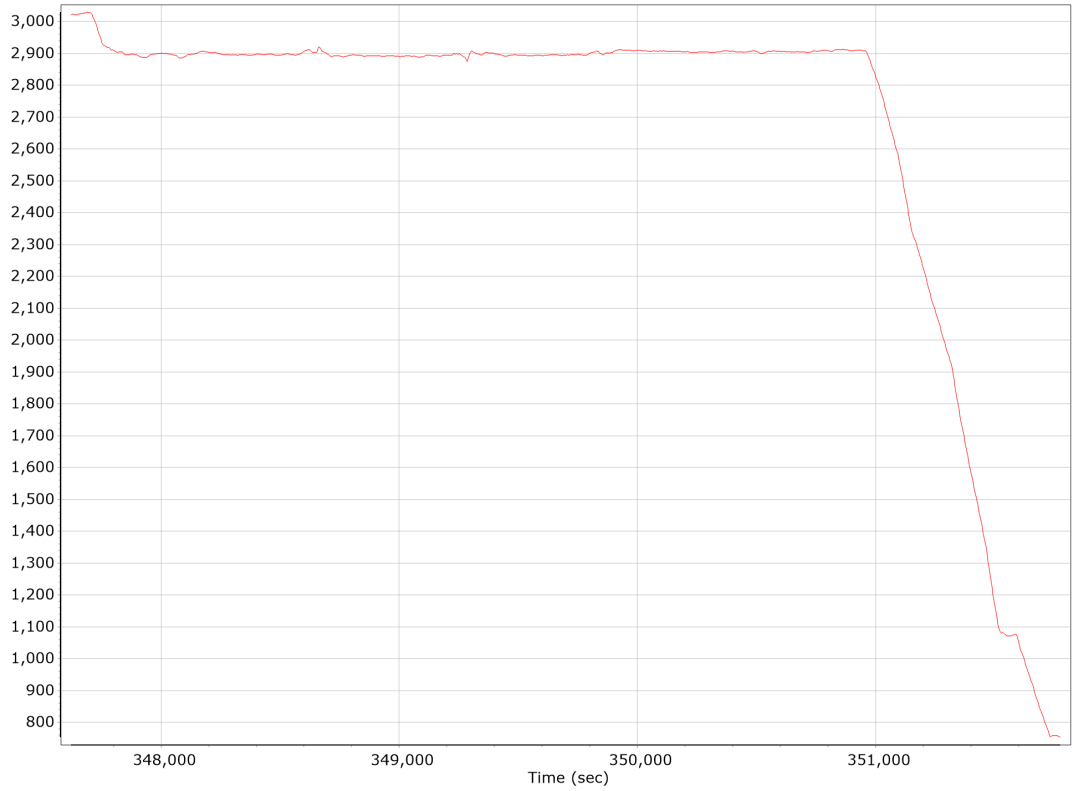


Forward Processed Trajectory Information

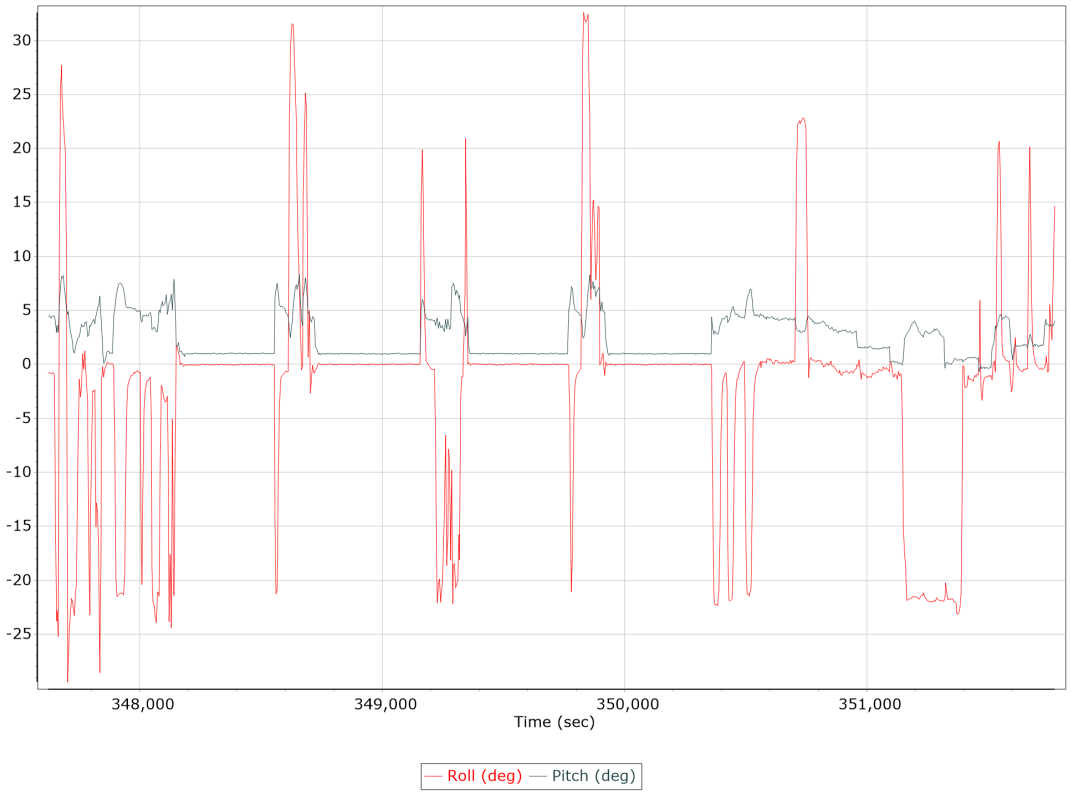
Top View



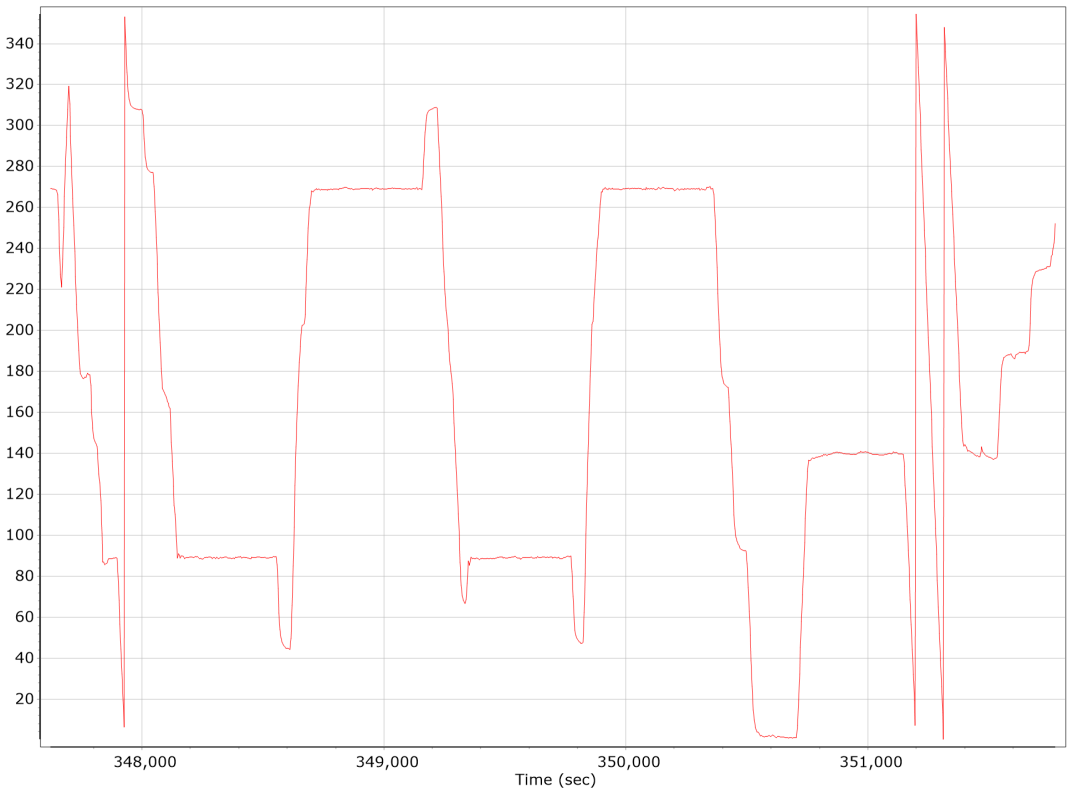
Altitude



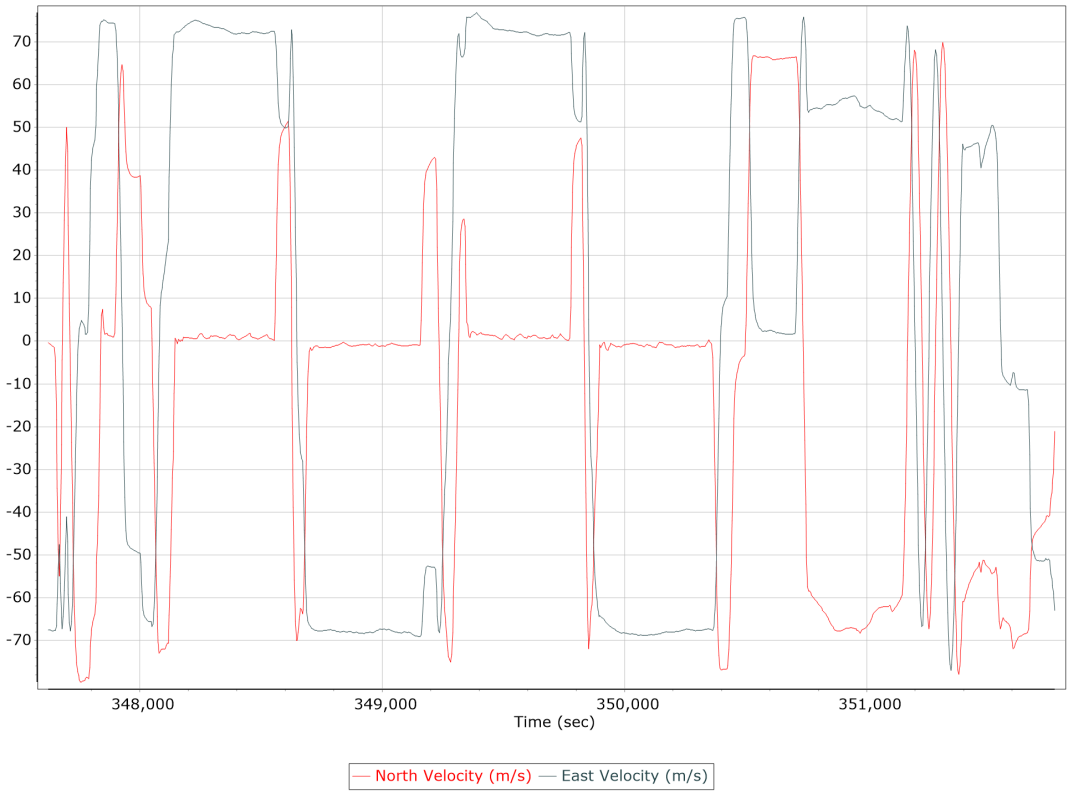
Roll/Pitch



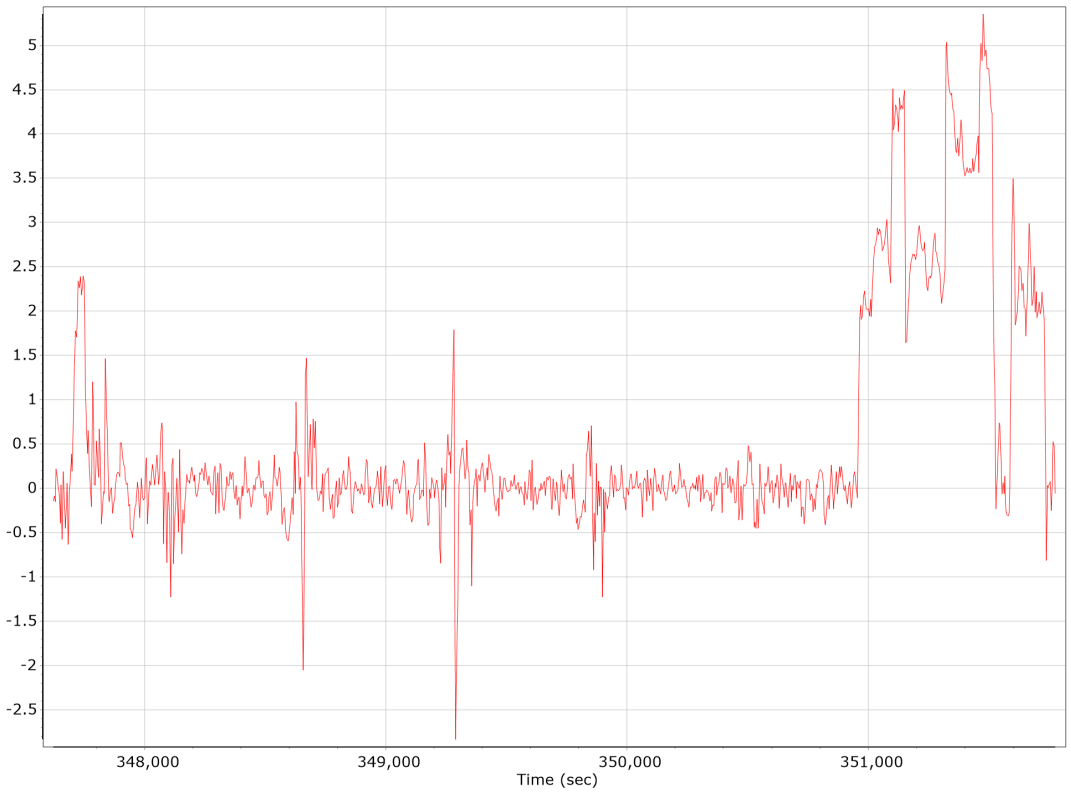
Heading



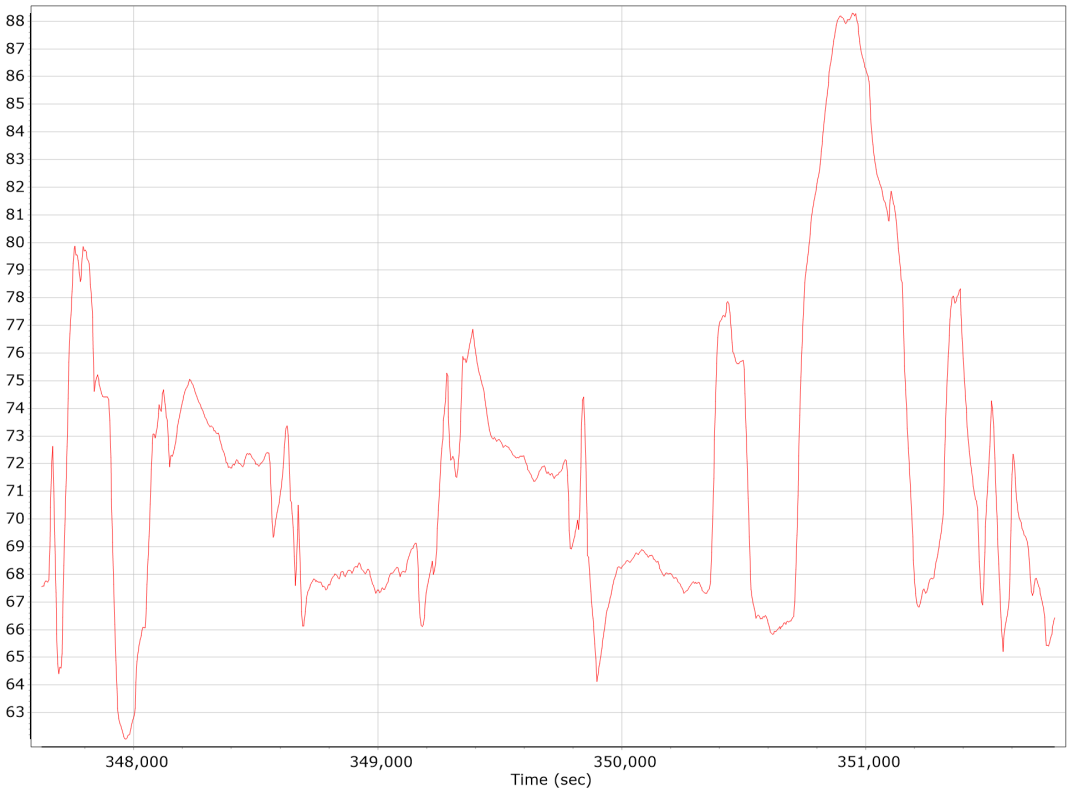
North/East Velocity



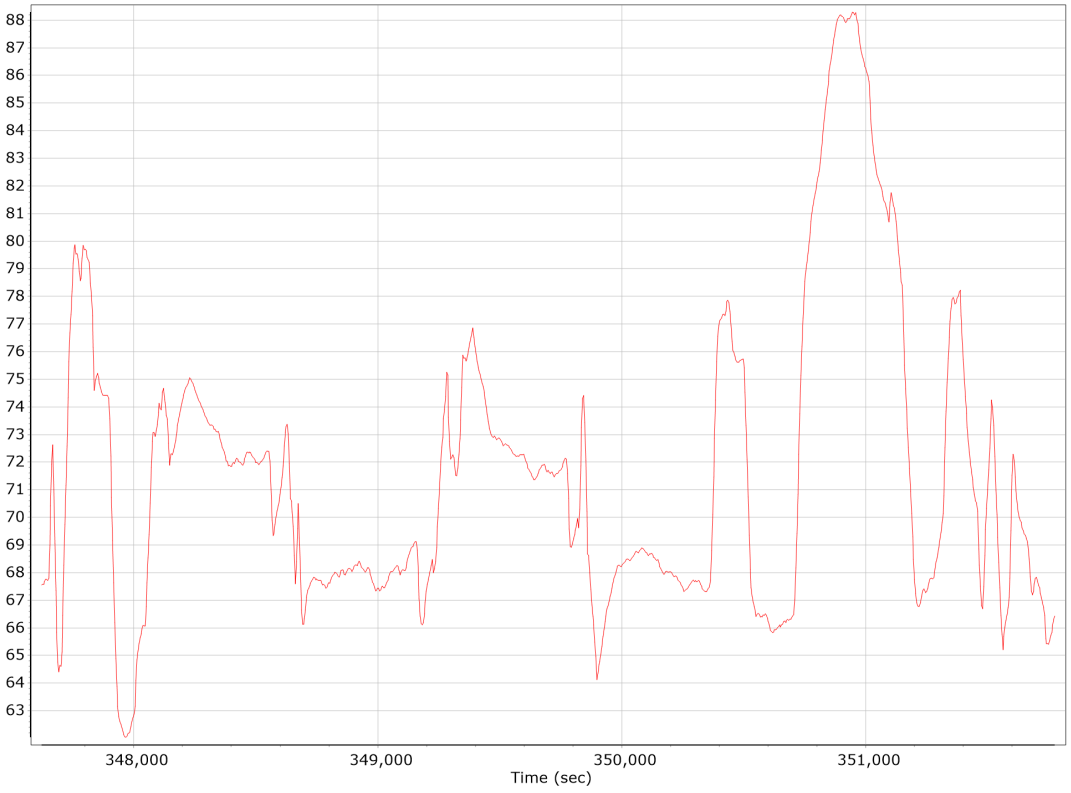
Down Velocity



Total Speed



Ground Speed



Body Acceleration



Total Body Acceleration



Body Angular Rate



GNSS QC

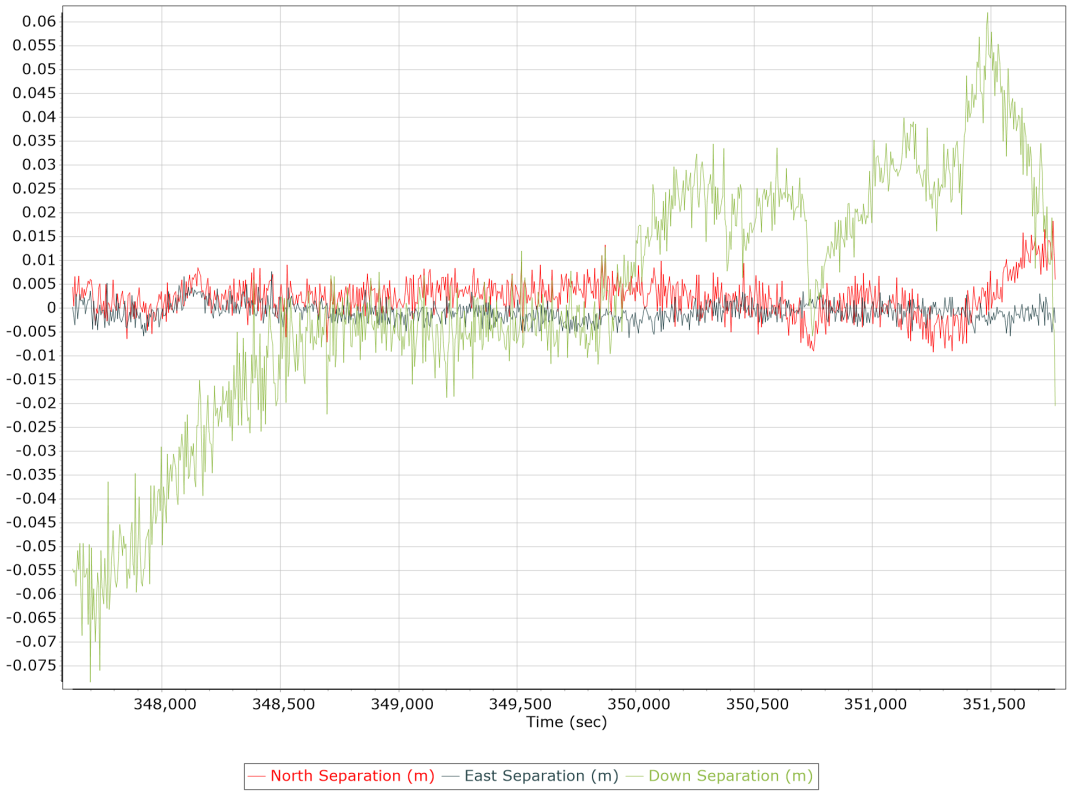
GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	7	10	9
Number of GLONASS SV	3	5	5
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	3	5	4
Total number of SV	15	20	18
PDOP	1.08	1.73	1.31
QC Solution Gaps	0.00	0.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	4318.00	0.00	0.00
Percentage	100.00	0.00	0.00

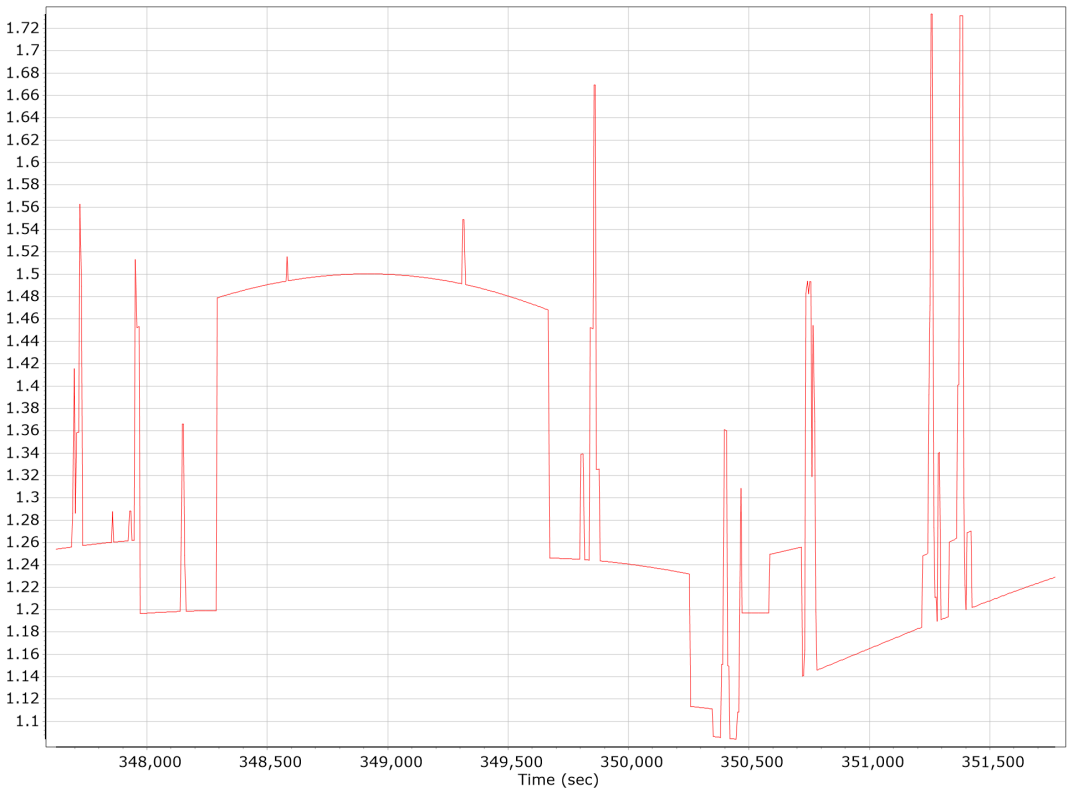
Num SVs in solution



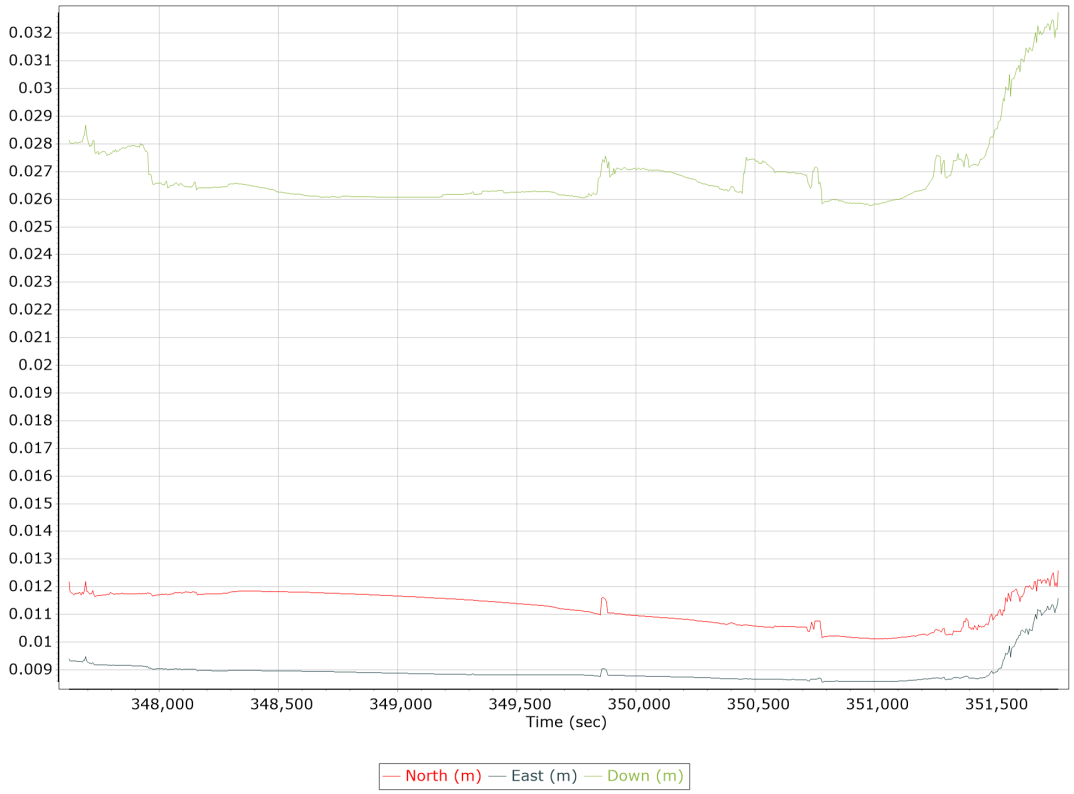
Forward/Reverse Separation



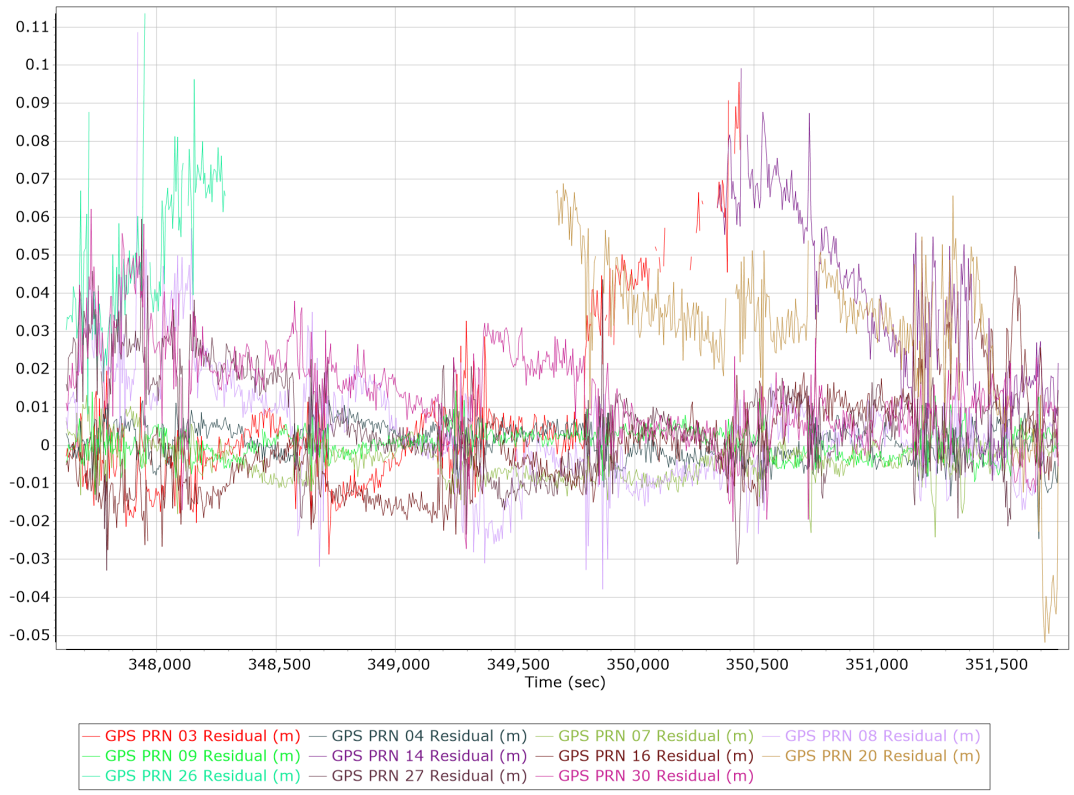
PDOP



Estimated Position Accuracy



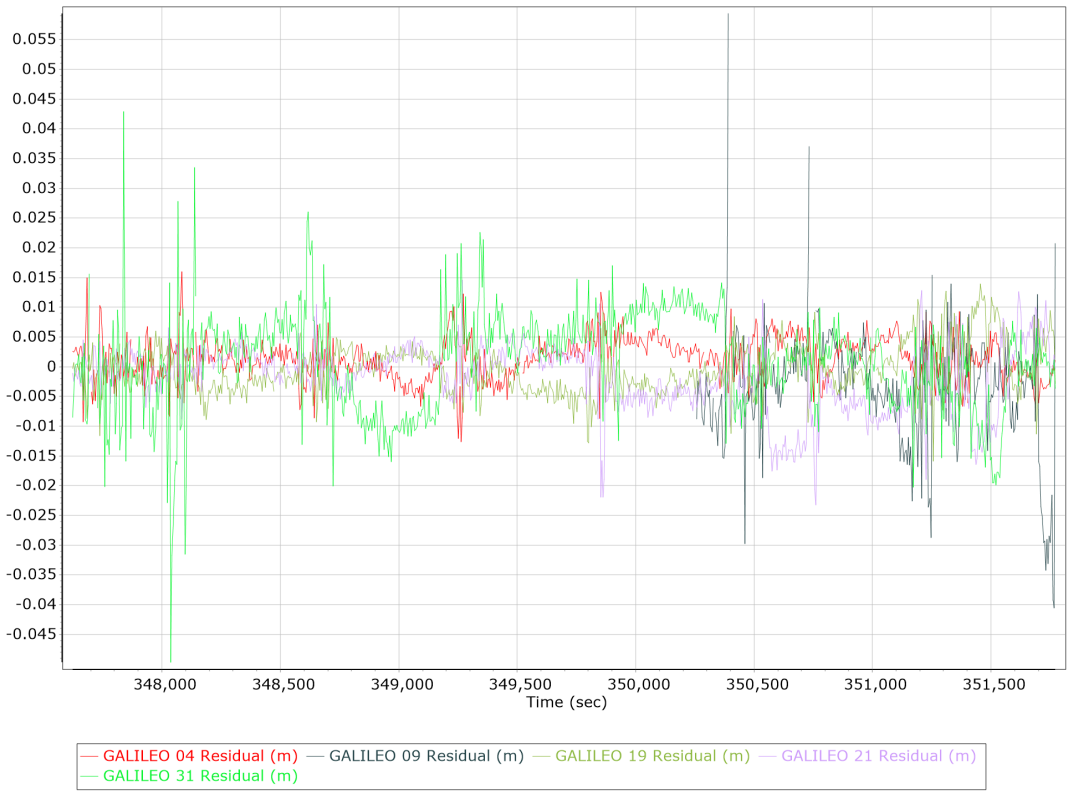
GPS Residuals



GLONASS Residuals



GALILEO Residuals



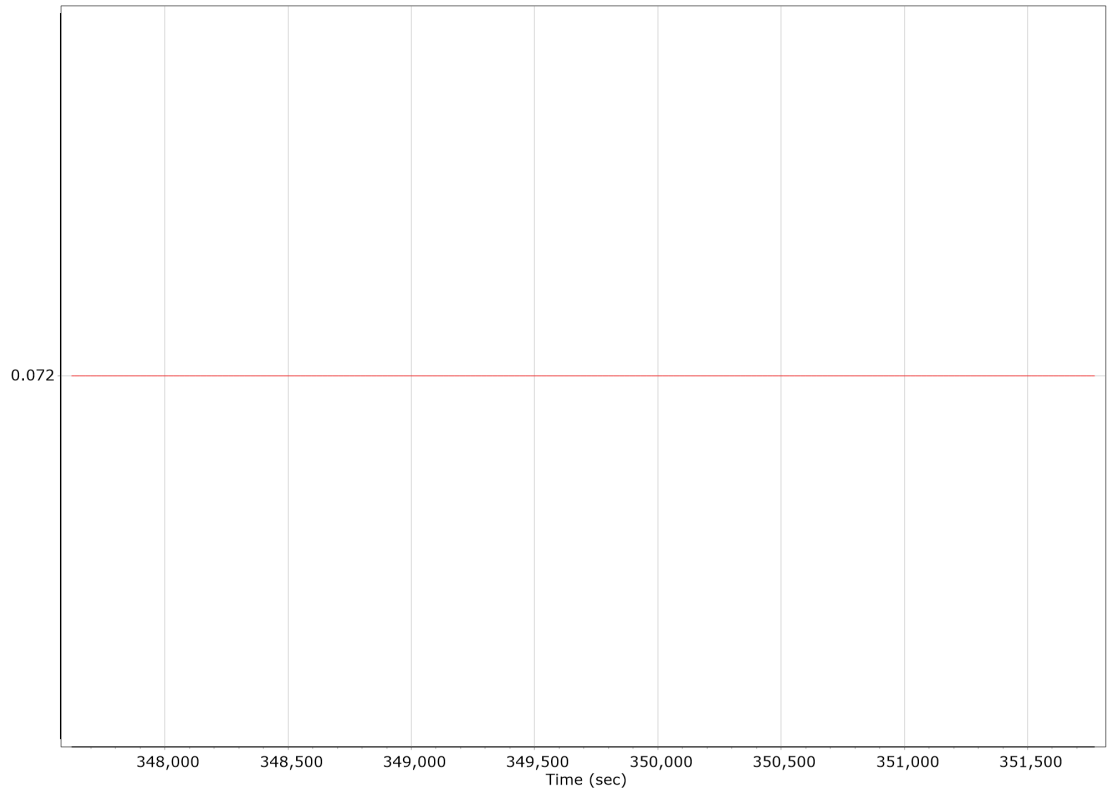
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	347447.000 (9/28/2023 12:30:47 AM)		
Processing end time	351775.000 (9/28/2023 1:42:55 AM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.072	0.090	-1.275
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

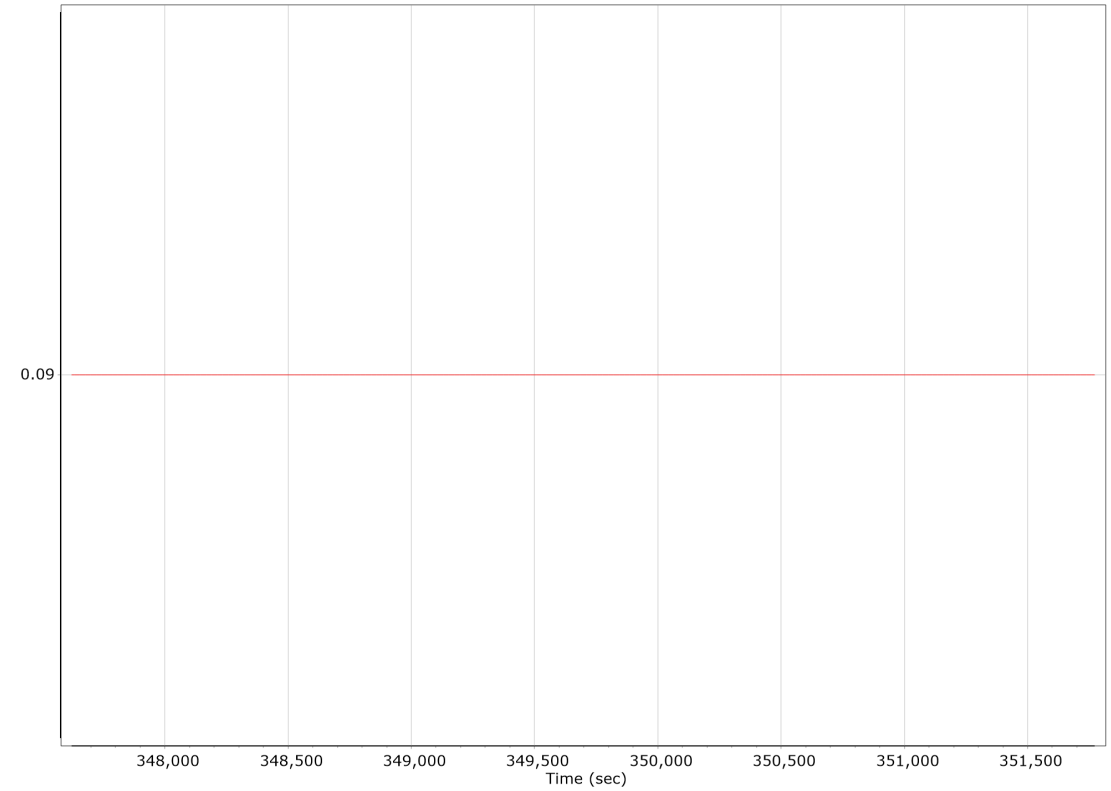
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

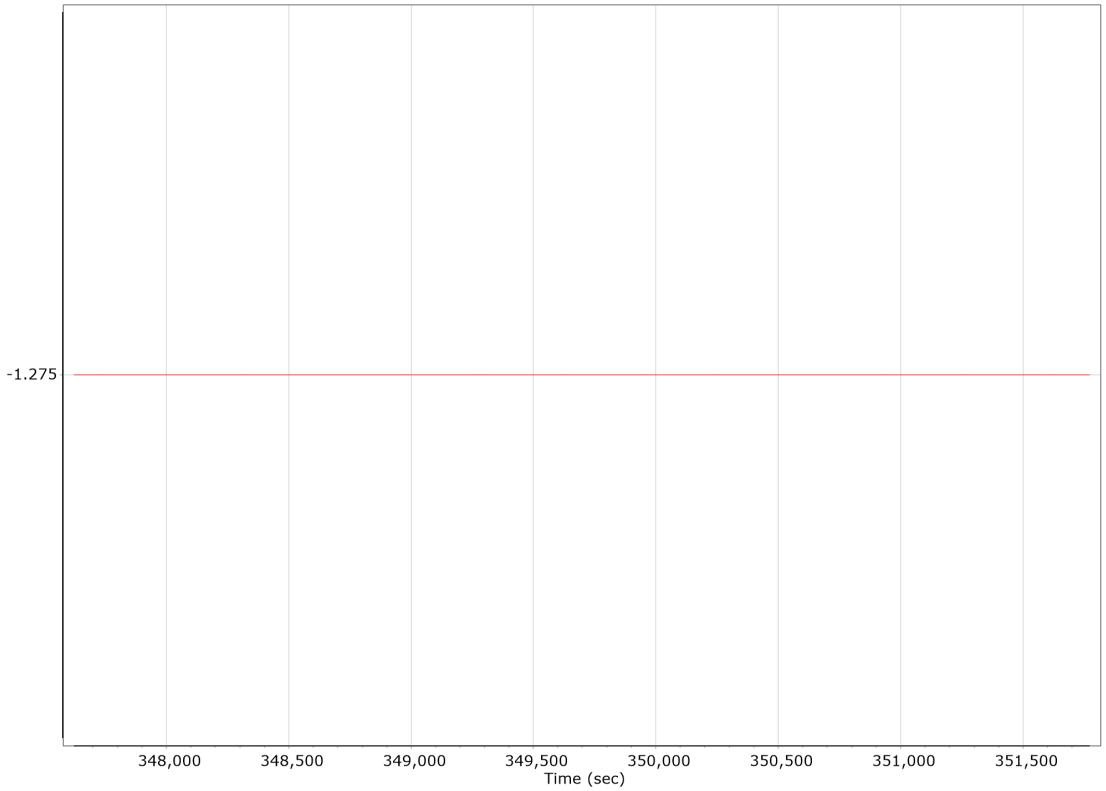
X Reference-Primary GNSS Lever Arm (m)



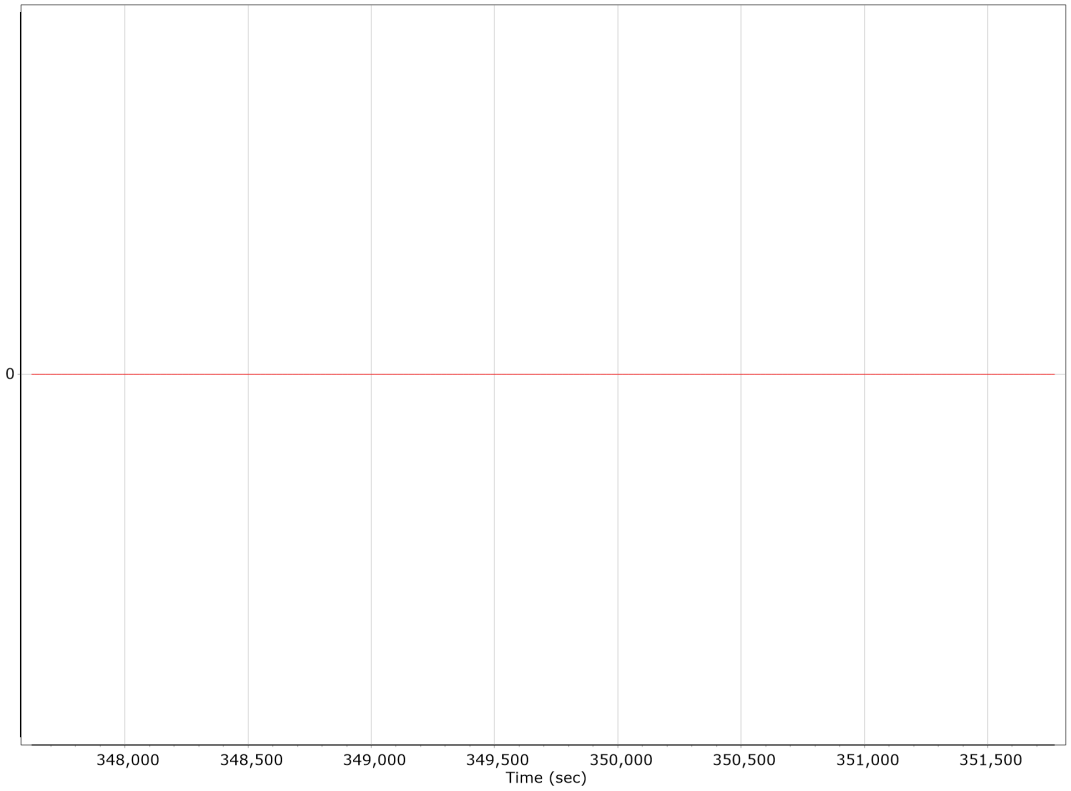
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



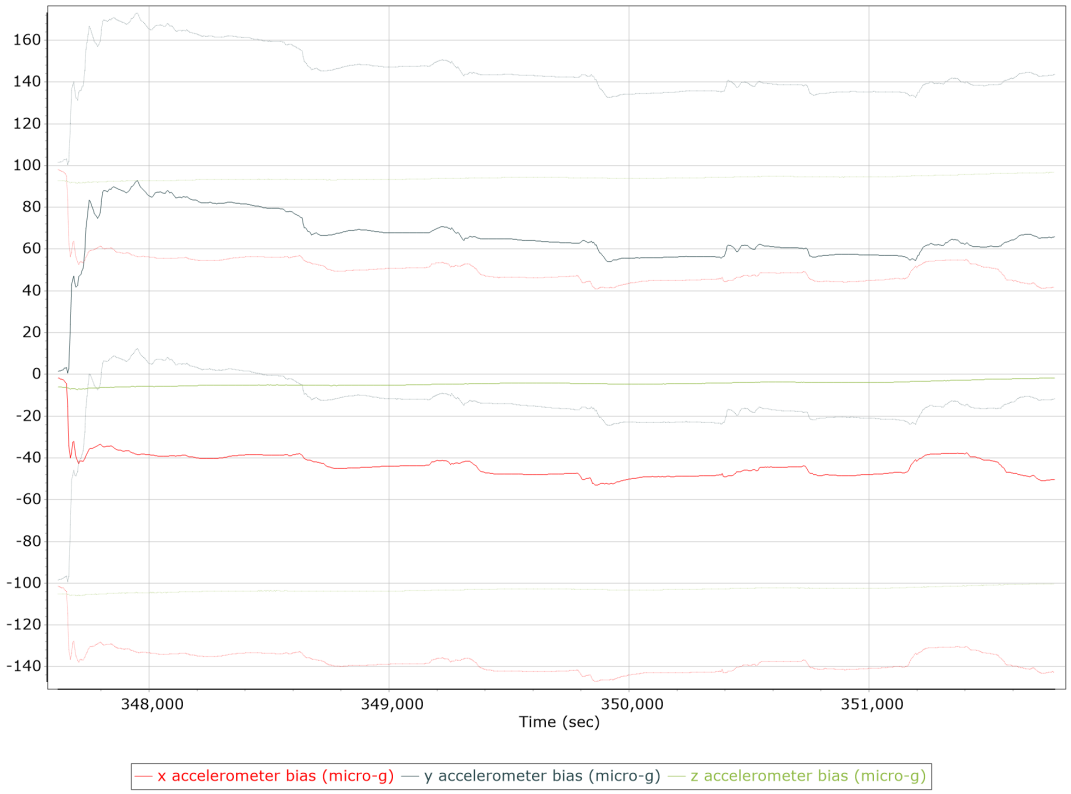
Reference-Primary GNSS Lever Arm Figure of Merit



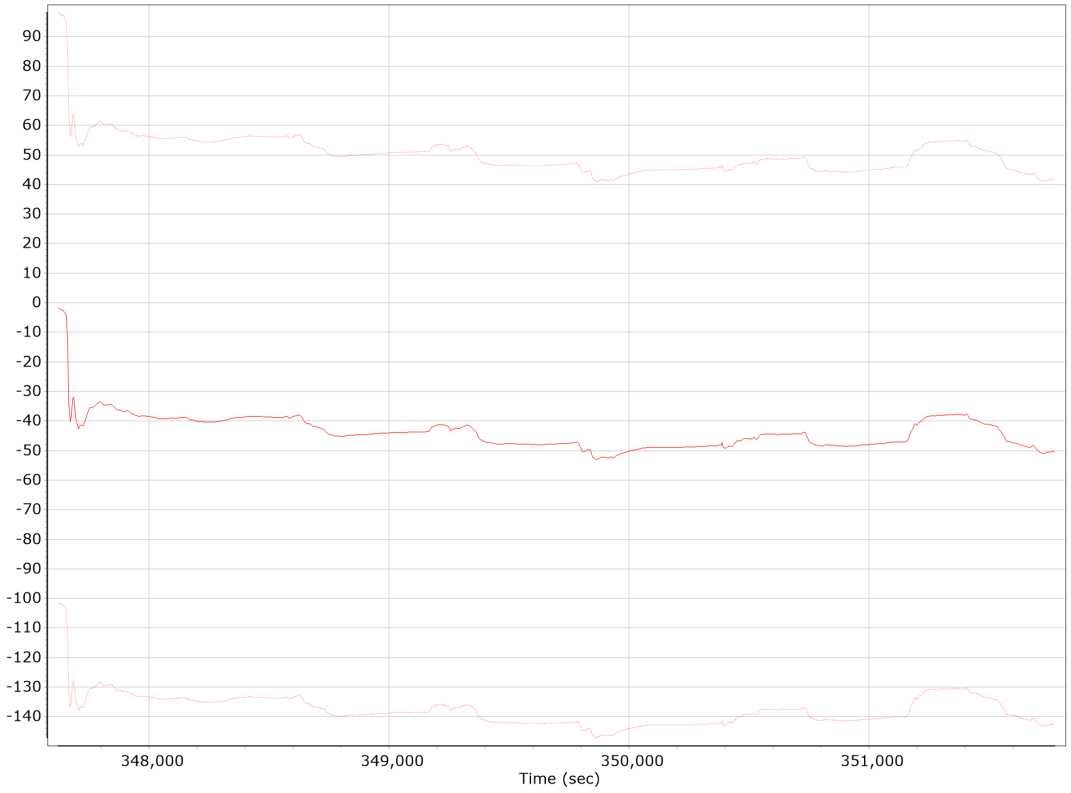
IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

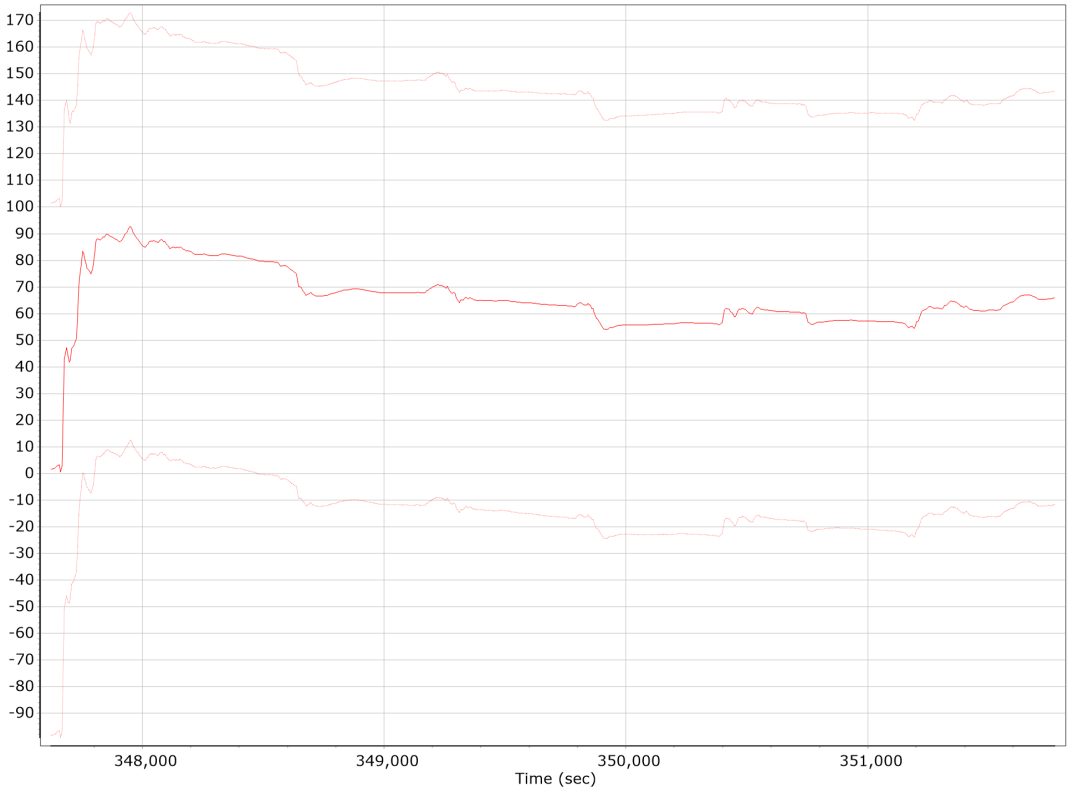
Accelerometer Bias (micro-g)



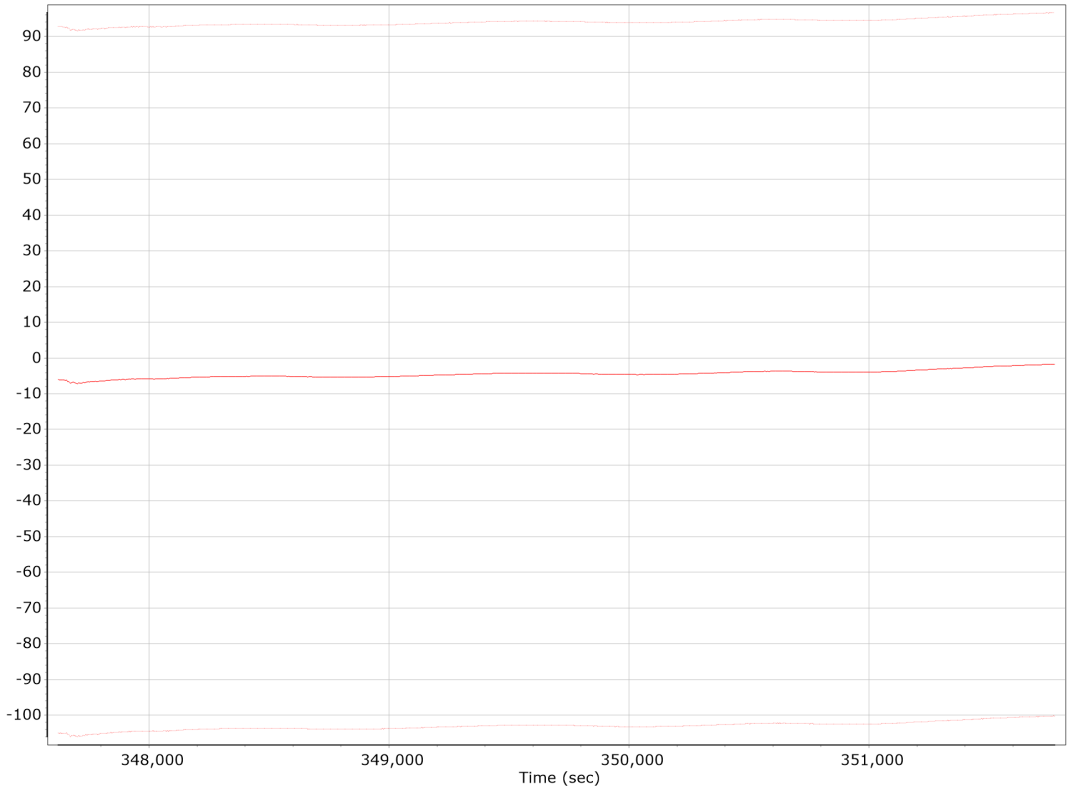
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



X Accelerometer Scale Error (ppm)



Y Accelerometer Scale Error (ppm)



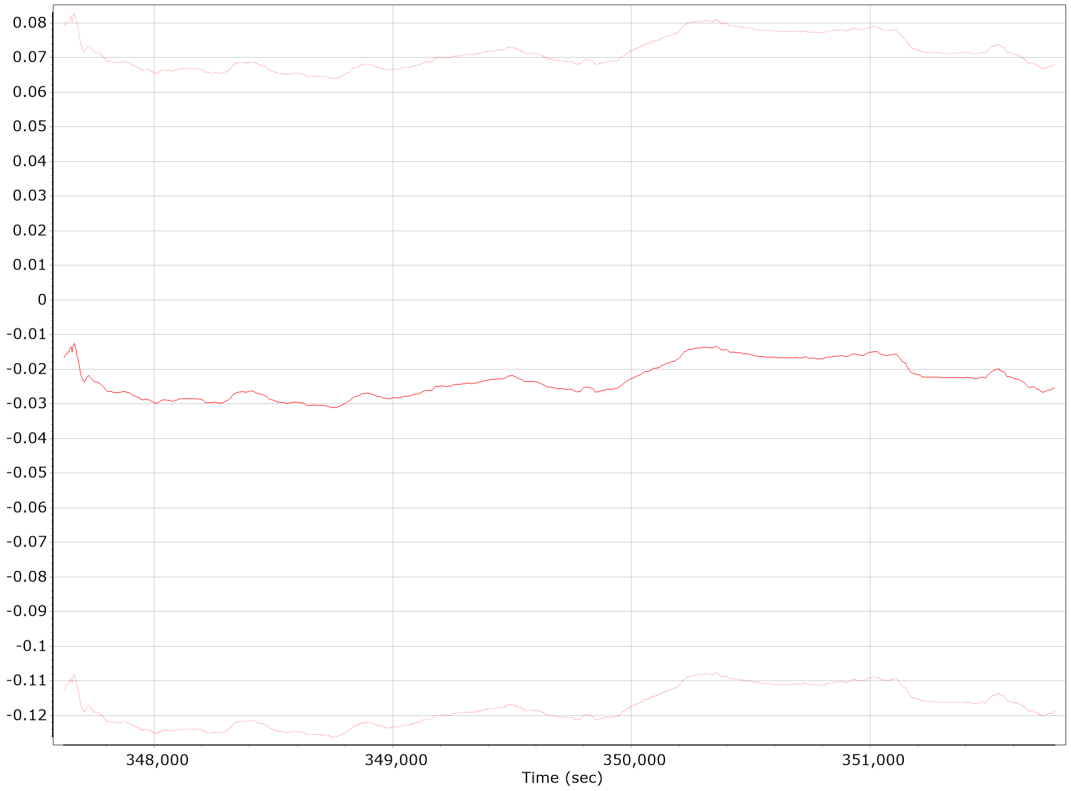
Z Accelerometer Scale Error (ppm)



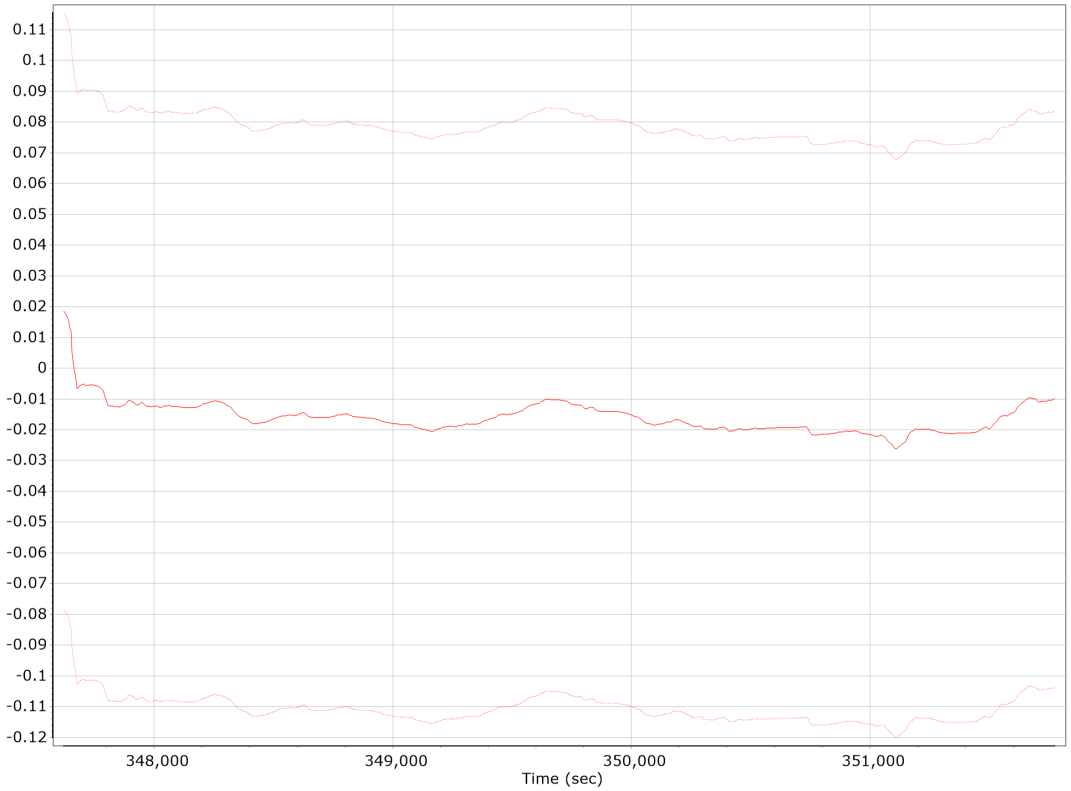
Gyro Bias (deg/h)



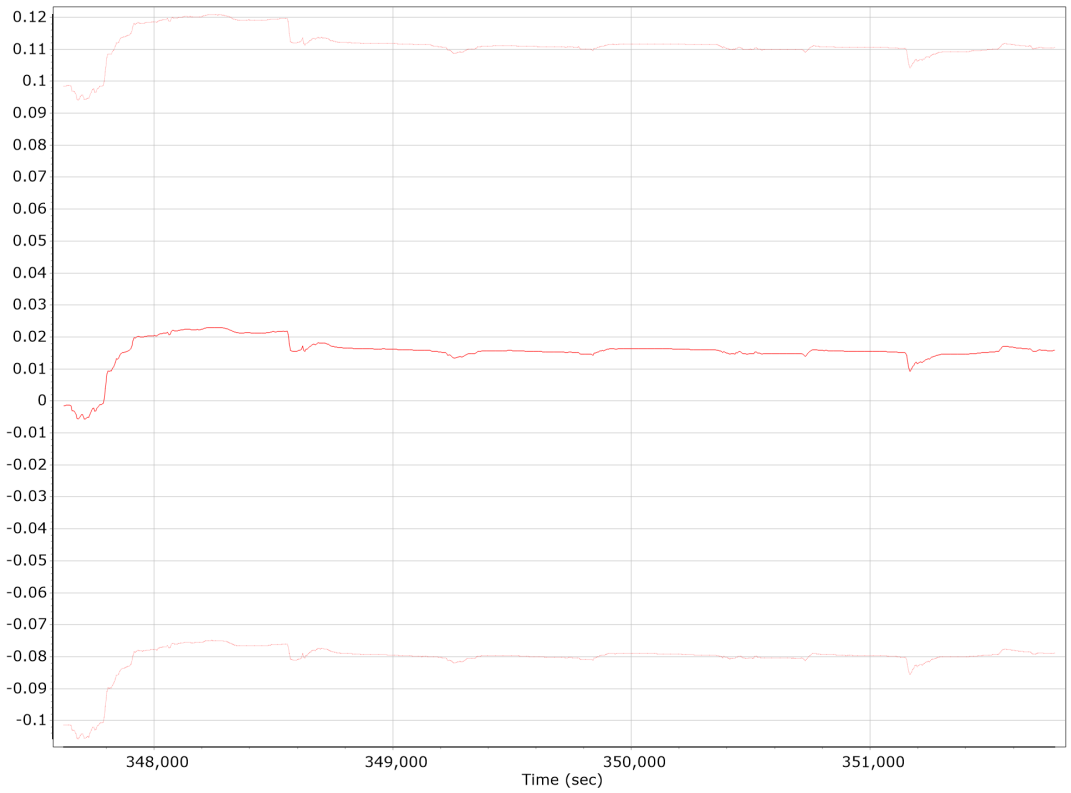
X Gyro Bias (deg/h)



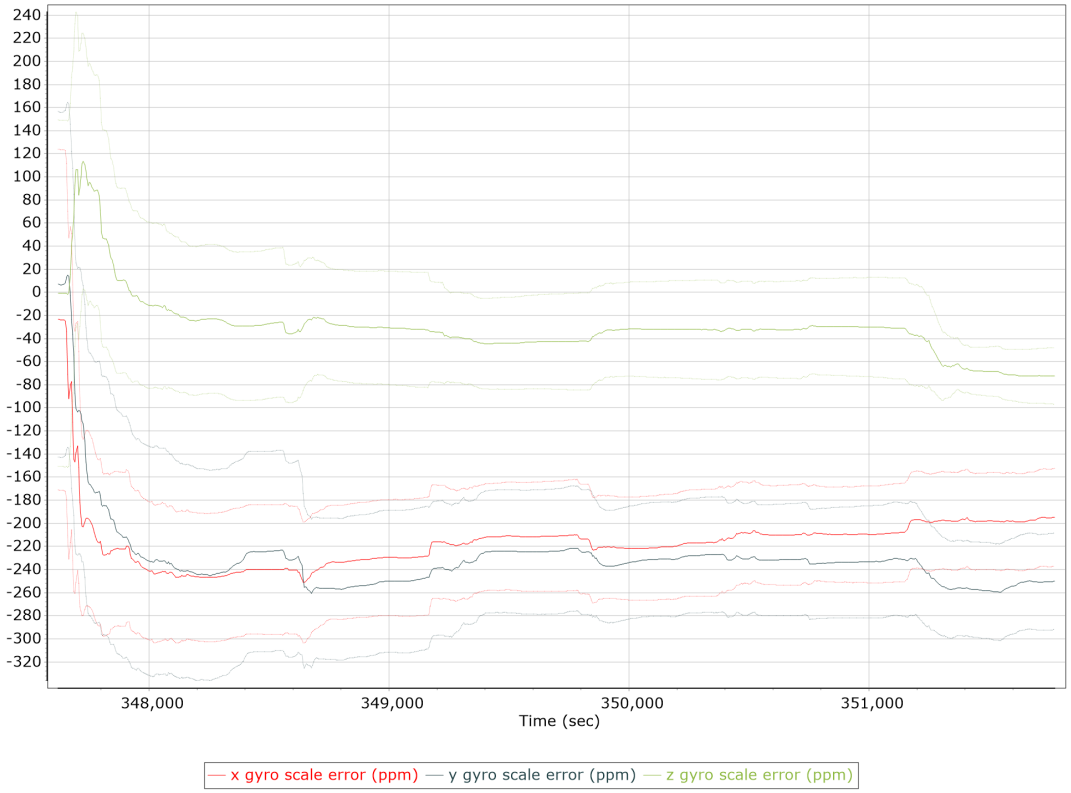
Y Gyro Bias (deg/h)



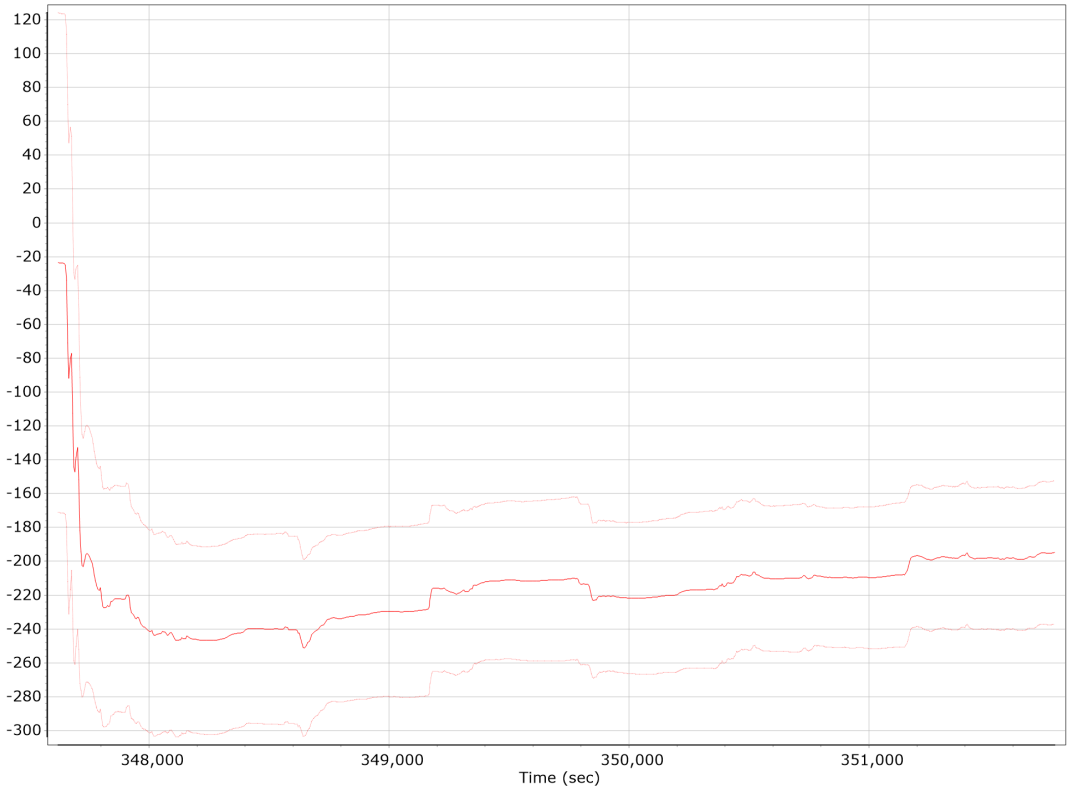
Z Gyro Bias (deg/h)



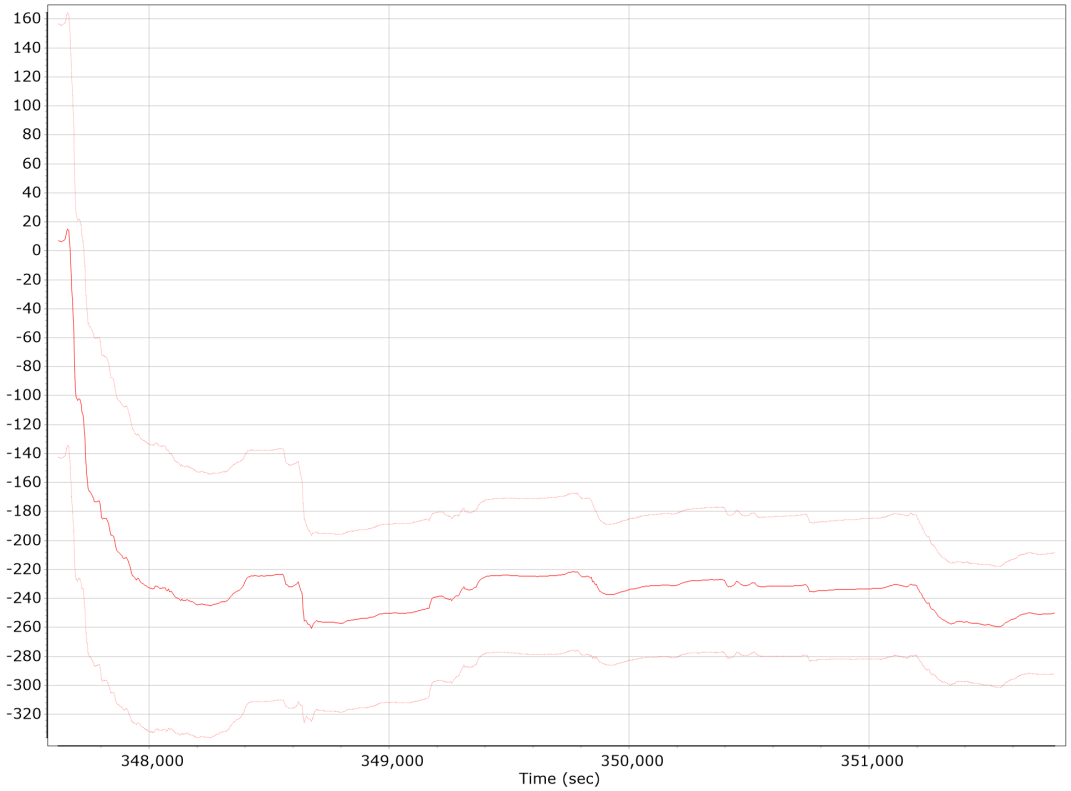
Gyro Scale Error (ppm)



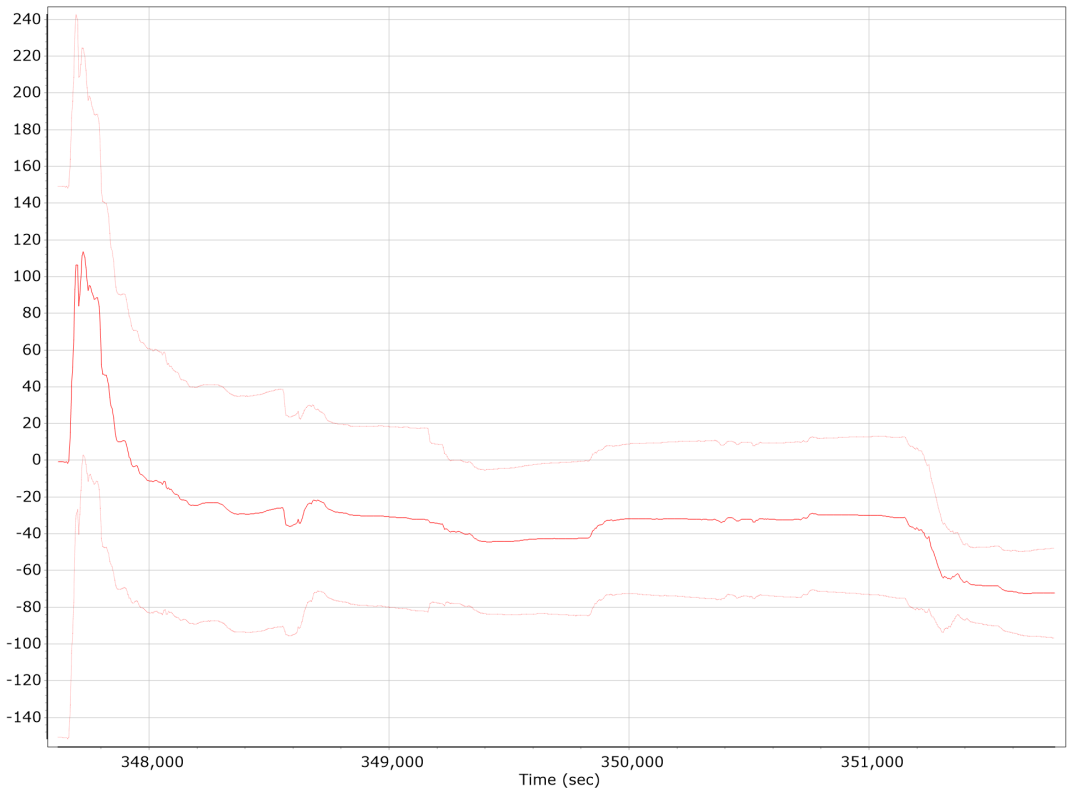
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)

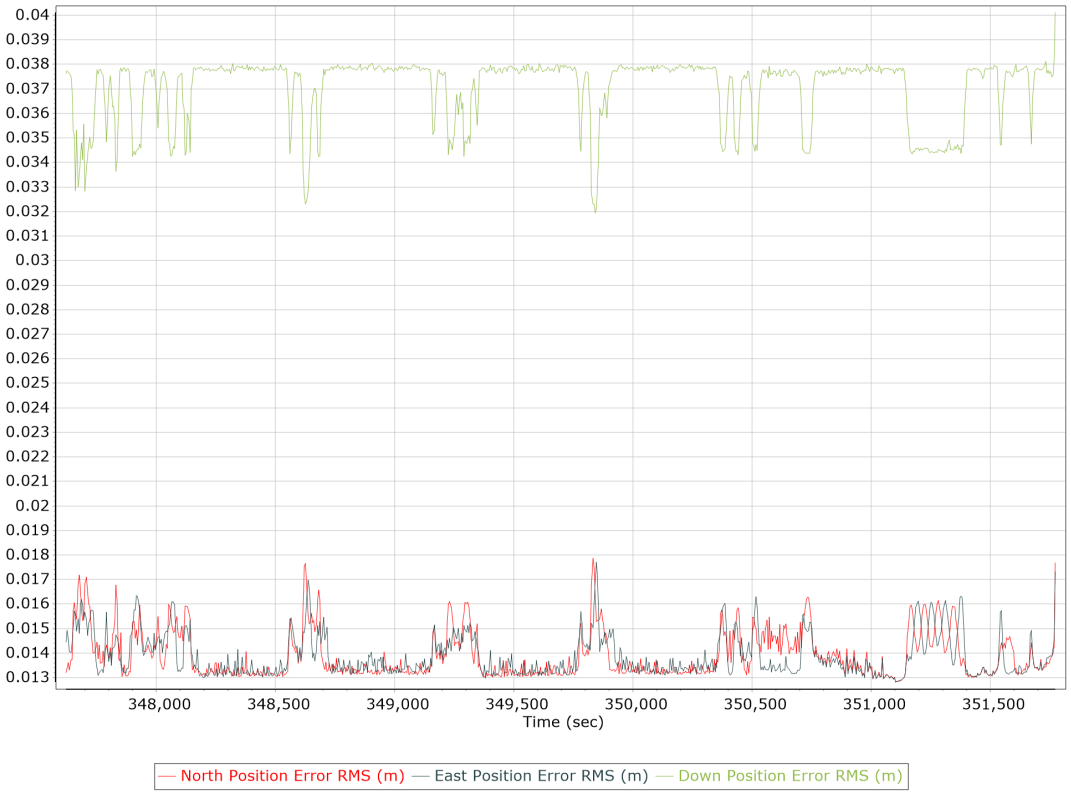


Z Gyro Scale Error (ppm)

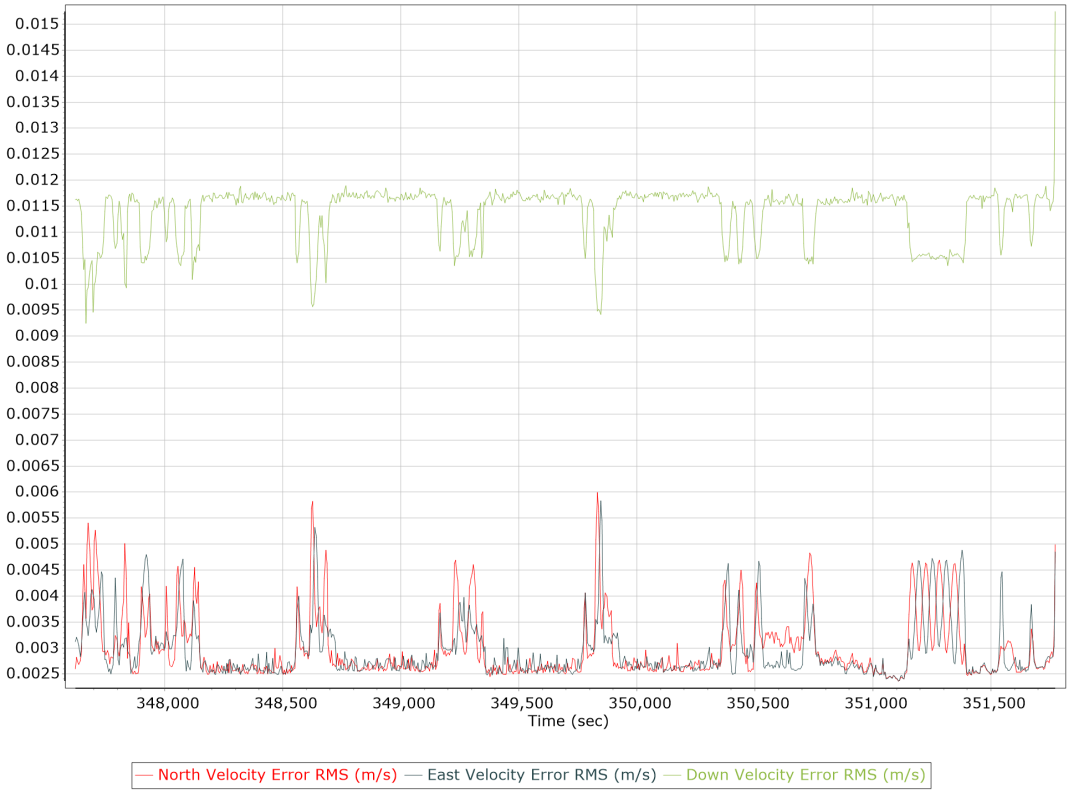


Smoothed Performance Metrics

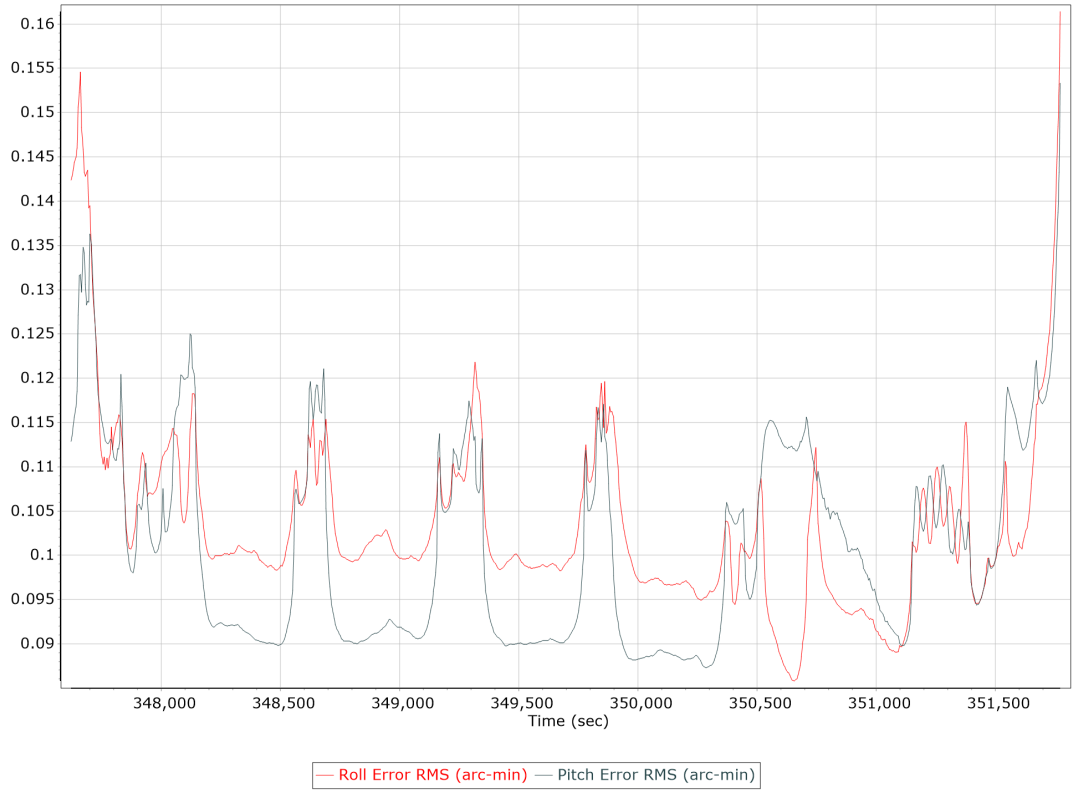
Position Error RMS (m)



Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

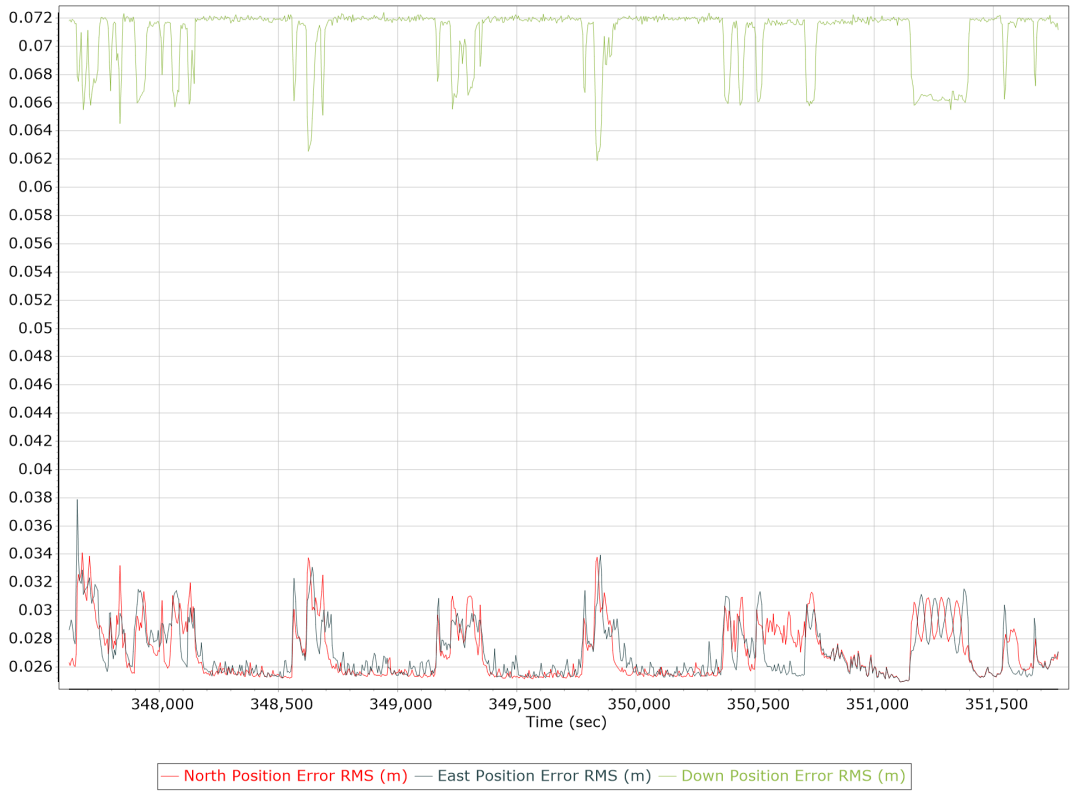


Heading Error RMS (arc-min)

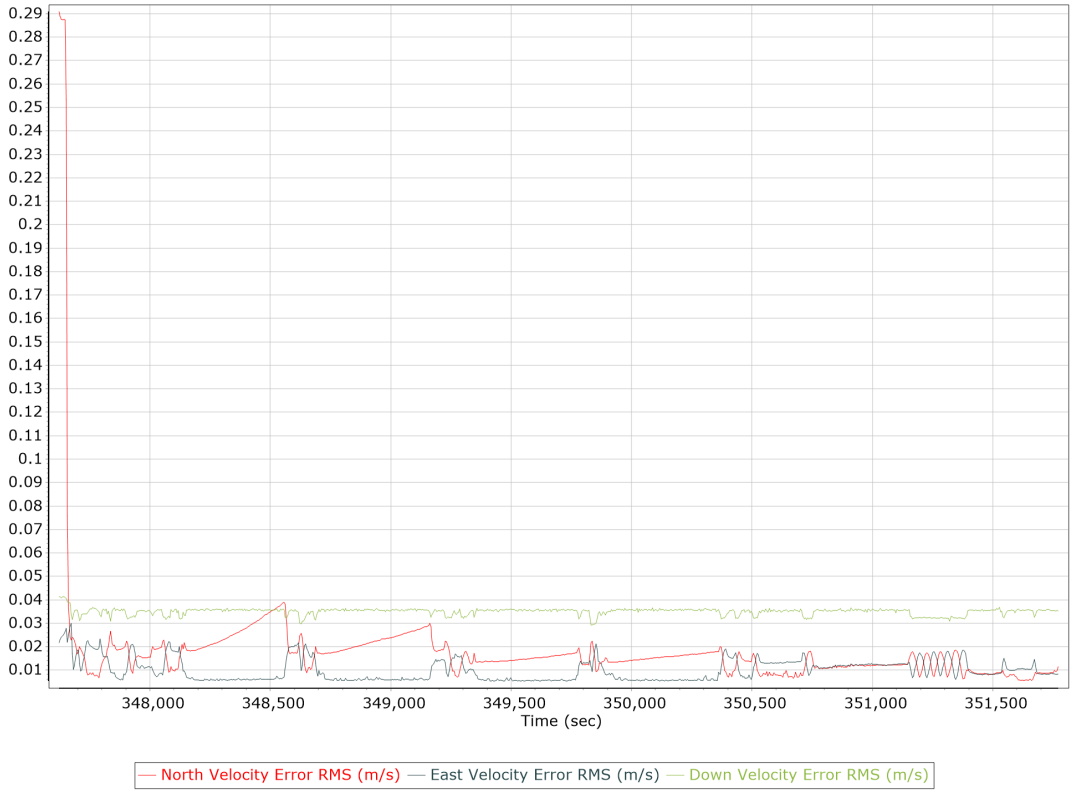


Forward Processed Performance Metrics

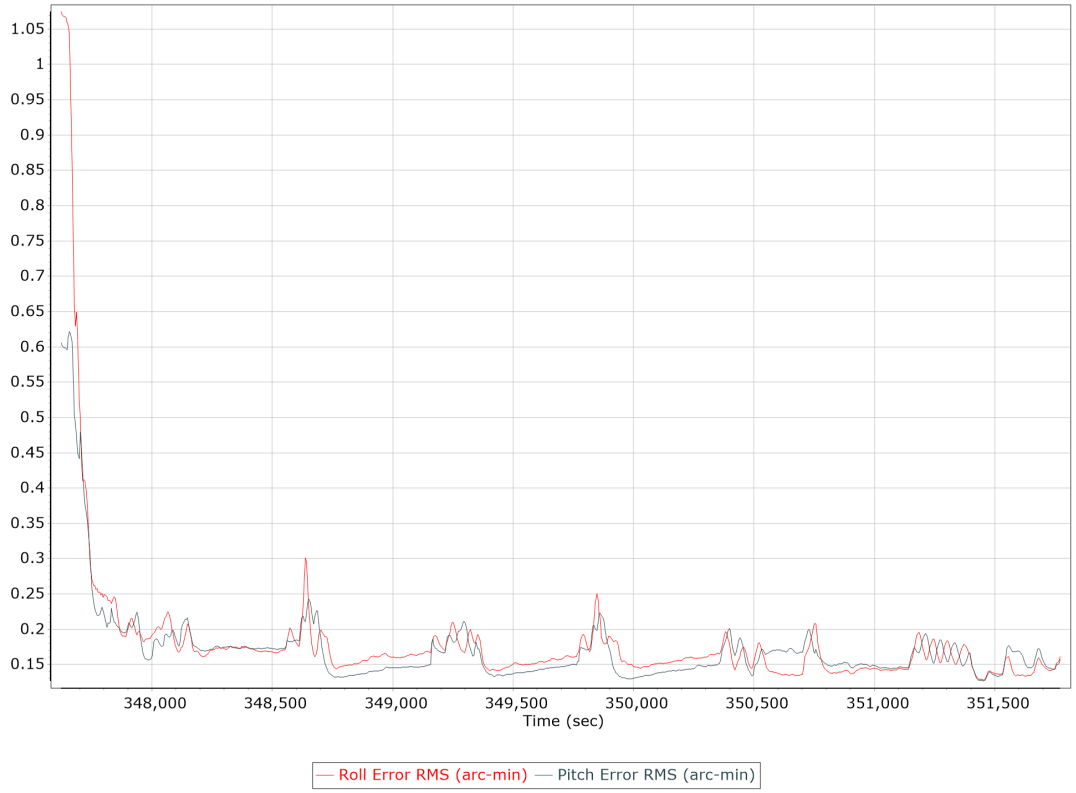
Position Error RMS (m)



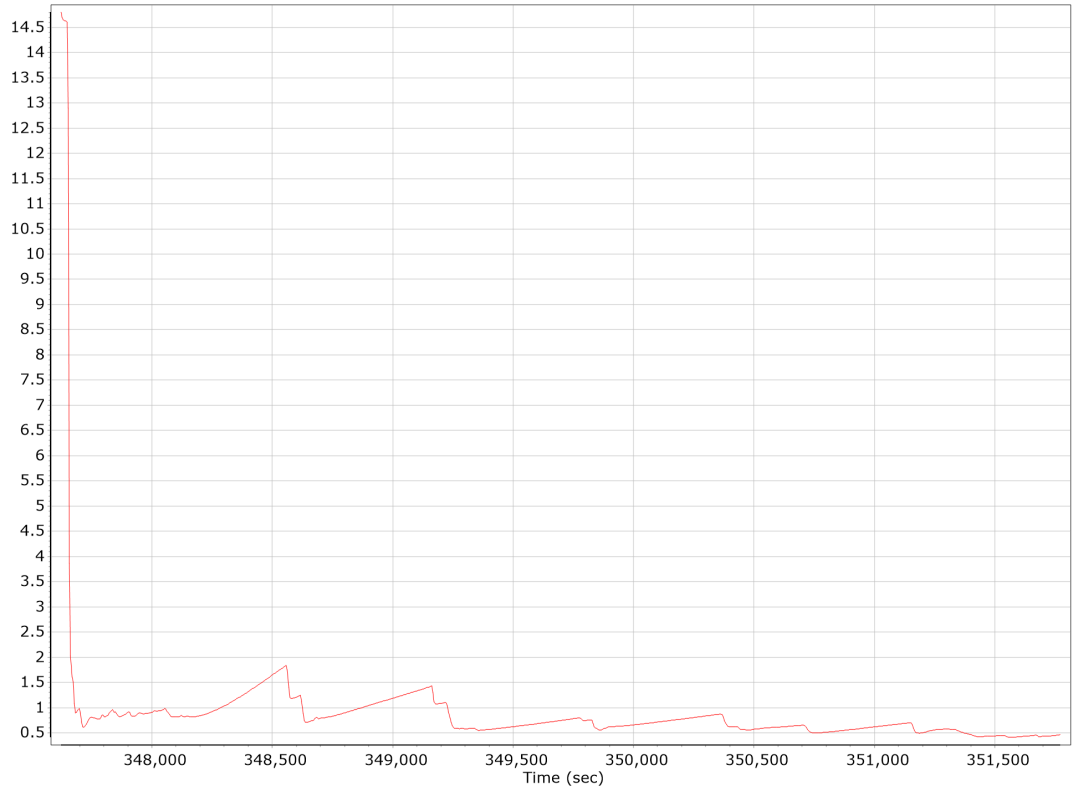
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

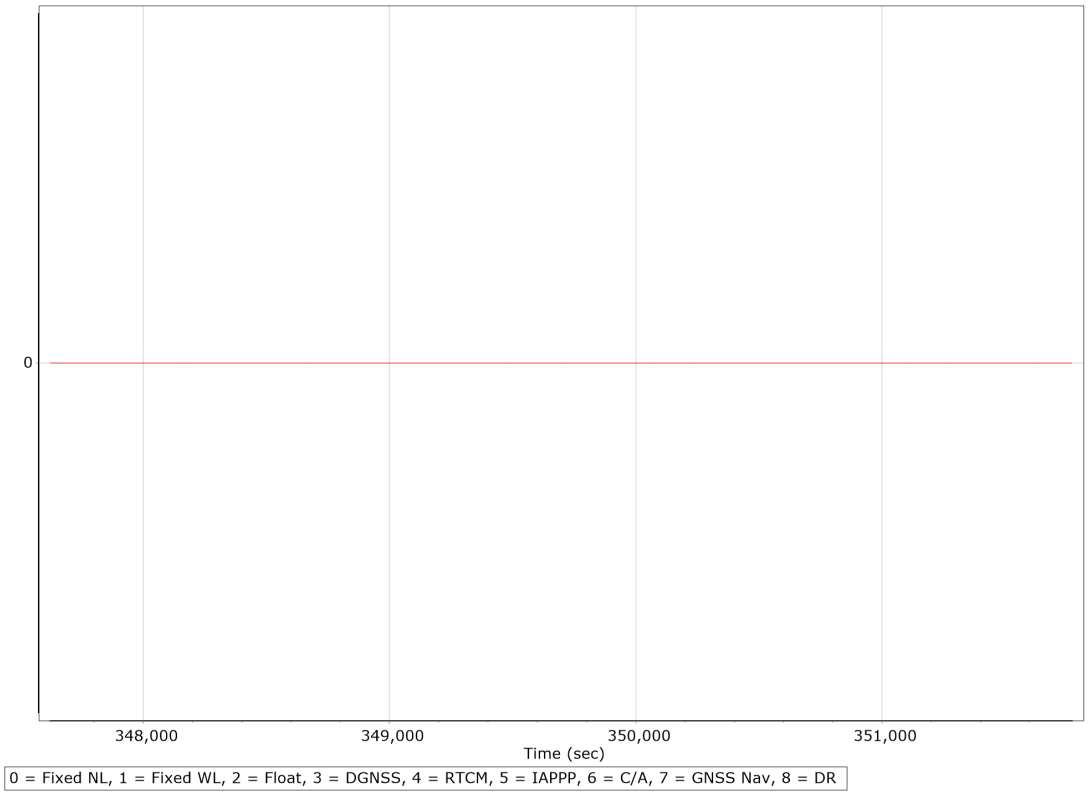


Heading Error RMS (arc-min)



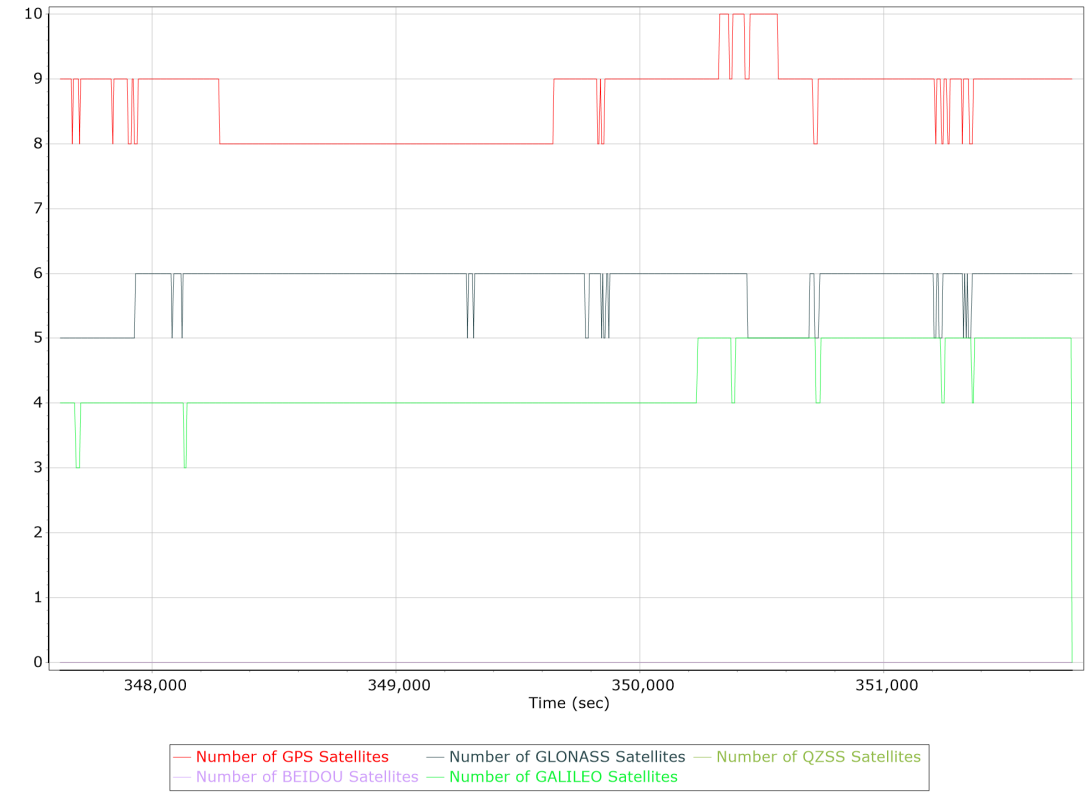
Forward Processed Solution Status

Processing Mode

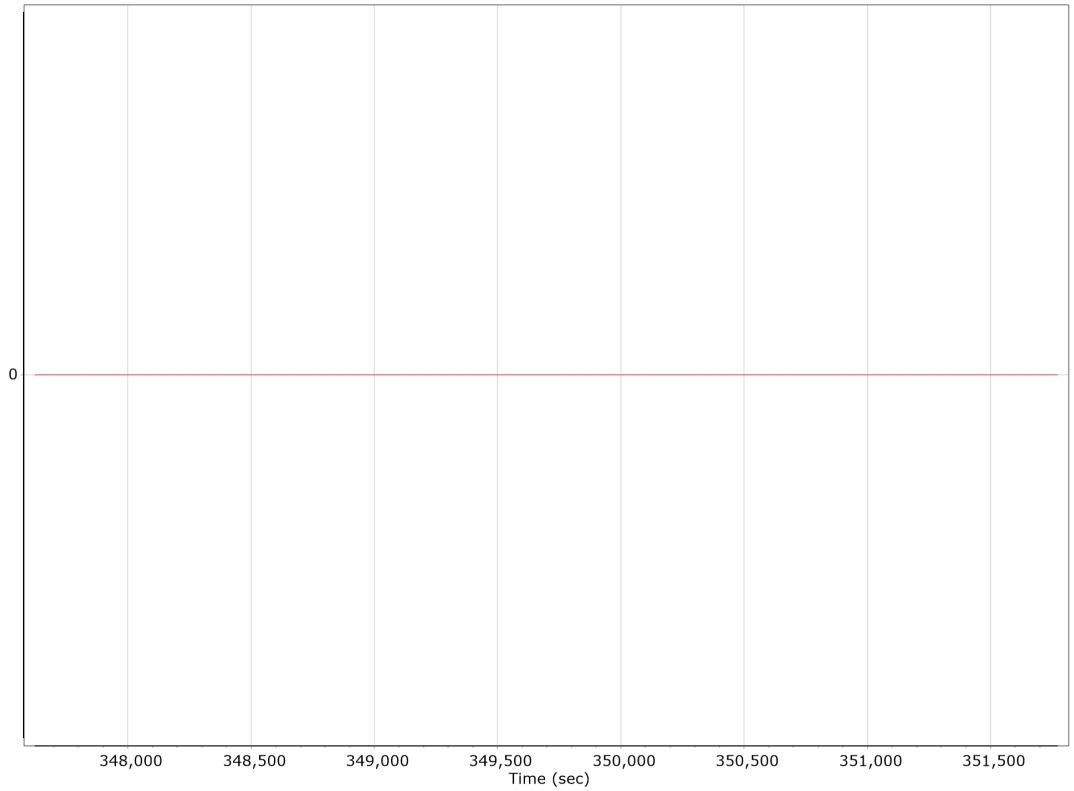


0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGNSS, 4 = RTCM, 5 = IAPPP, 6 = C/A, 7 = GNSS Nav, 8 = DR

Number of Satellites



Baseline Length



General Information

Mission Information

Project name	10032023A_4046
Processing date	2024-01-11 19:04:16
Mission date	2023-10-03 17:11:25
Mission duration	04:15:45.011
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N10762
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
231003_171106_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm2760.23g	GLONASS Broadcast Ephemeris
Ephm2760.23n	GPS Broadcast Ephemeris
IGS0OPSFIN_20232750000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232760000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232770000_01D_15M_ORB.SP3	GPS Precise Ephemeris

Output Files

Filename	File type
sbet_10032023A_4046.out	SBET Trajectory File

Rover Data Summary

First raw data file	231003_171106_INS-GPS_1.raw		
Last raw data file	231003_171106_INS-GPS_1.raw		
Start GPS week	2282		
Start time	234666.870 (10/3/2023 5:11:06 PM)		
End time	250011.881 (10/3/2023 9:26:51 PM)		
Start of fine alignment	234690.475 (10/3/2023 5:11:30 PM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	0.000	0.000	0.000
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

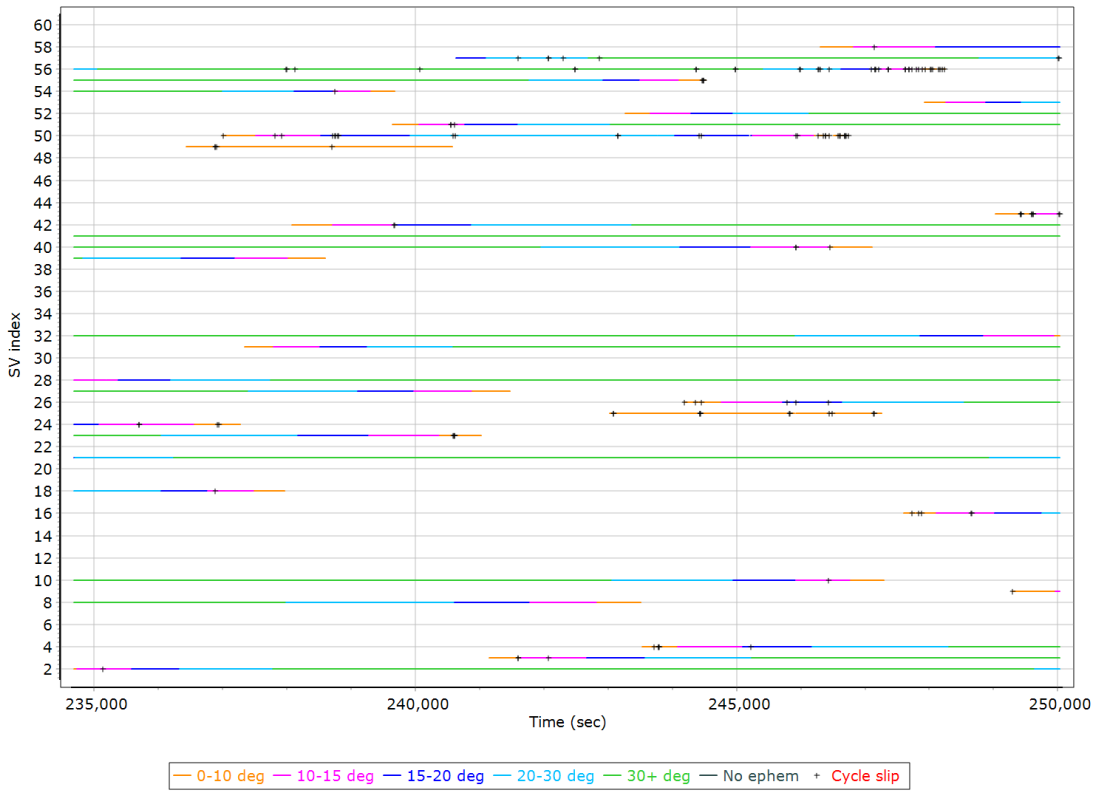
Rover Data QC

Raw IMU Import QC Summary

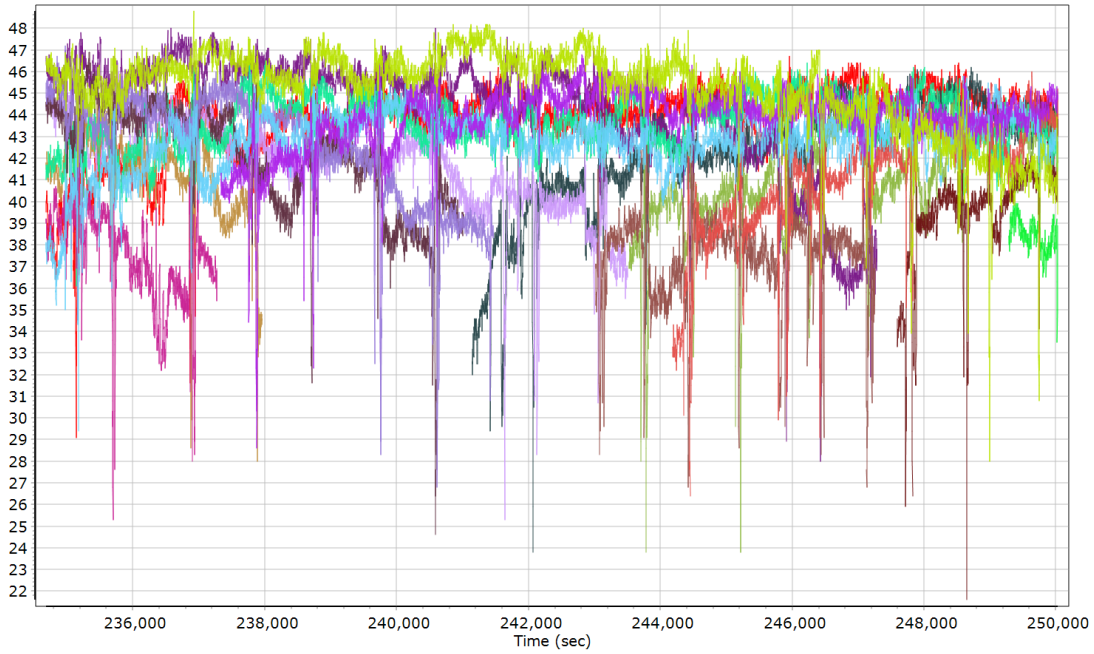
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_10032023A_4046.log
IMU Records Processed	3068485
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

GPS/GLONASS L1 Satellite Lock/Elevation

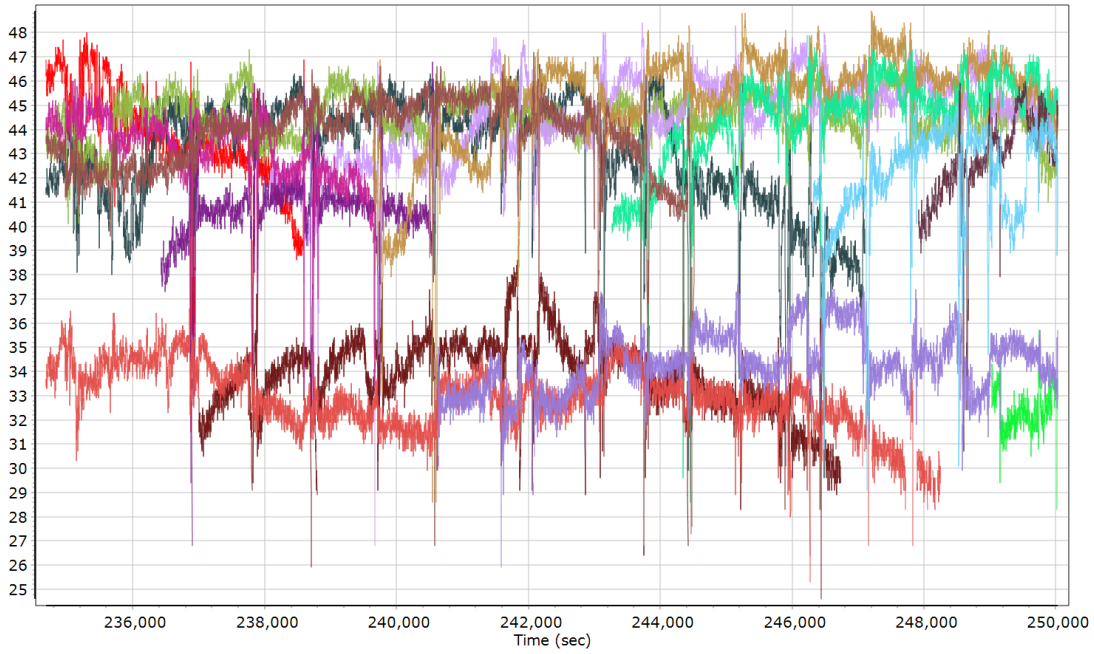


GPS L1 SNR



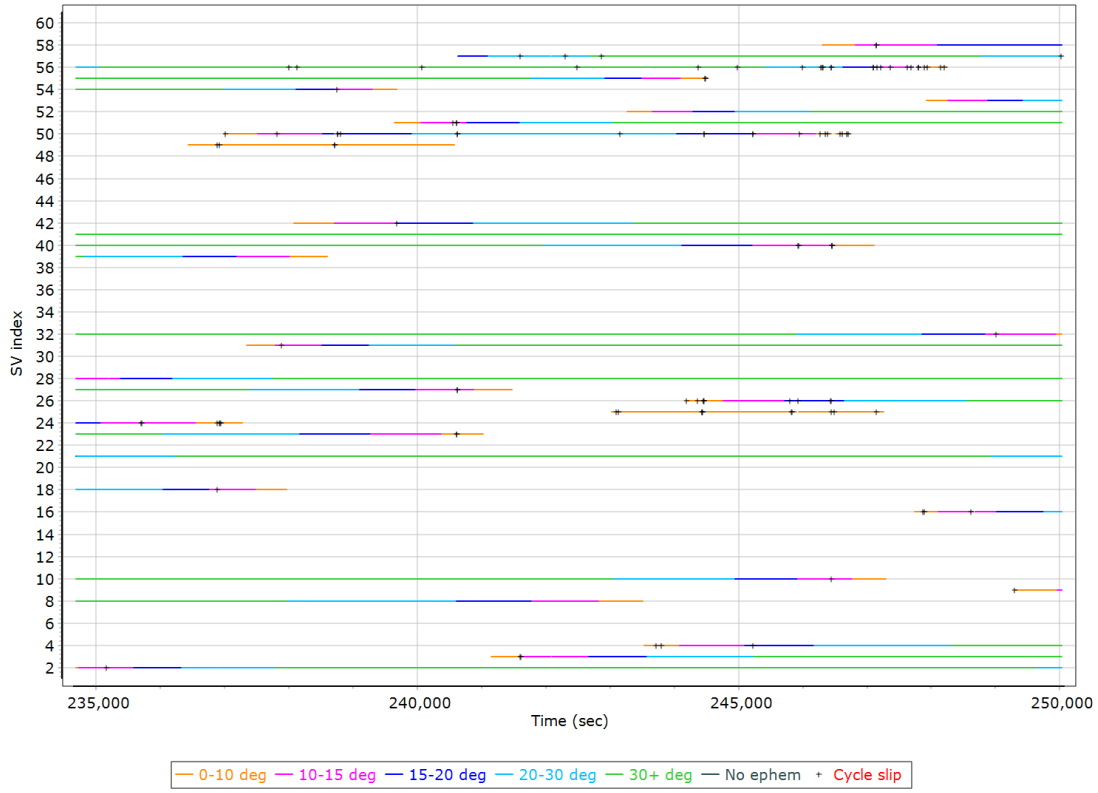
GPS PRN 02 L1 SNR (dB/Hz) GPS PRN 03 L1 SNR (dB/Hz) GPS PRN 04 L1 SNR (dB/Hz) GPS PRN 08 L1 SNR (dB/Hz)
GPS PRN 09 L1 SNR (dB/Hz) GPS PRN 10 L1 SNR (dB/Hz) GPS PRN 16 L1 SNR (dB/Hz) GPS PRN 18 L1 SNR (dB/Hz)
GPS PRN 21 L1 SNR (dB/Hz) GPS PRN 23 L1 SNR (dB/Hz) GPS PRN 24 L1 SNR (dB/Hz) GPS PRN 25 L1 SNR (dB/Hz)
GPS PRN 26 L1 SNR (dB/Hz) GPS PRN 27 L1 SNR (dB/Hz) GPS PRN 28 L1 SNR (dB/Hz) GPS PRN 31 L1 SNR (dB/Hz)
GPS PRN 32 L1 SNR (dB/Hz)

GLONASS L1 SNR

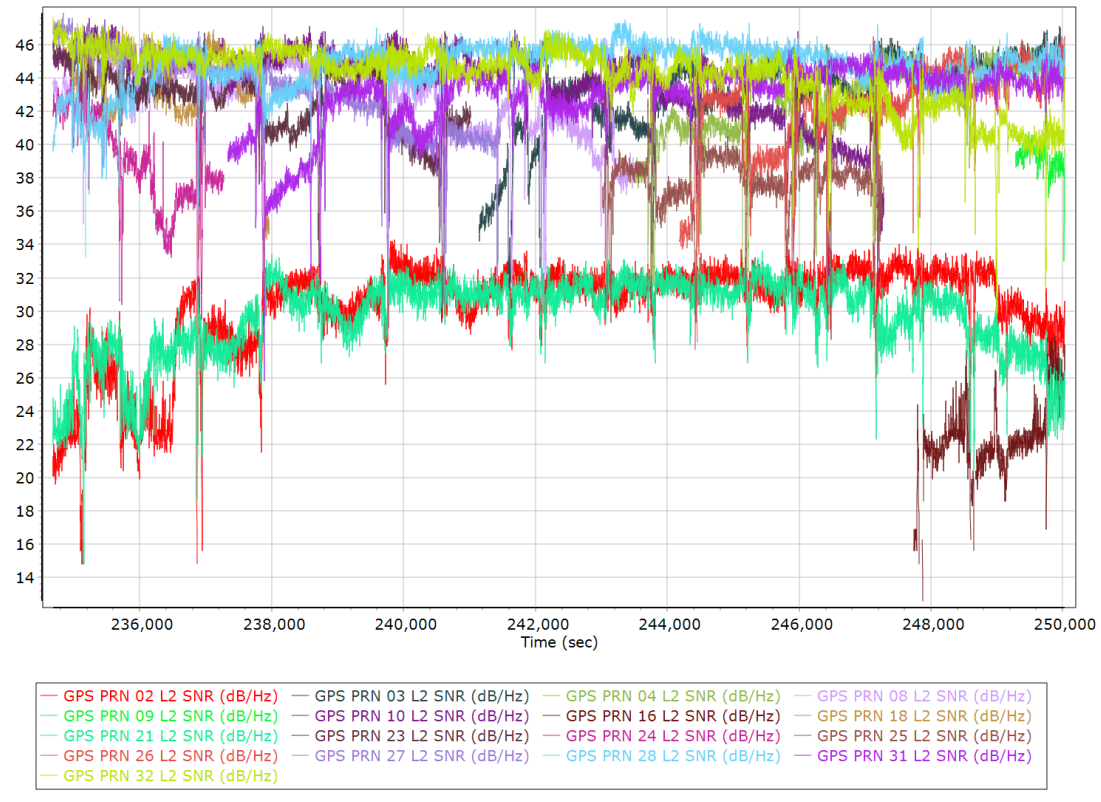


GLONASS 02 L1 SNR (dB/Hz) GLONASS 03 L1 SNR (dB/Hz) GLONASS 04 L1 SNR (dB/Hz)
GLONASS 05 L1 SNR (dB/Hz) GLONASS 06 L1 SNR (dB/Hz) GLONASS 12 L1 SNR (dB/Hz)
GLONASS 13 L1 SNR (dB/Hz) GLONASS 14 L1 SNR (dB/Hz) GLONASS 15 L1 SNR (dB/Hz)
GLONASS 16 L1 SNR (dB/Hz) GLONASS 17 L1 SNR (dB/Hz) GLONASS 18 L1 SNR (dB/Hz)
GLONASS 19 L1 SNR (dB/Hz) GLONASS 20 L1 SNR (dB/Hz) GLONASS 21 L1 SNR (dB/Hz)

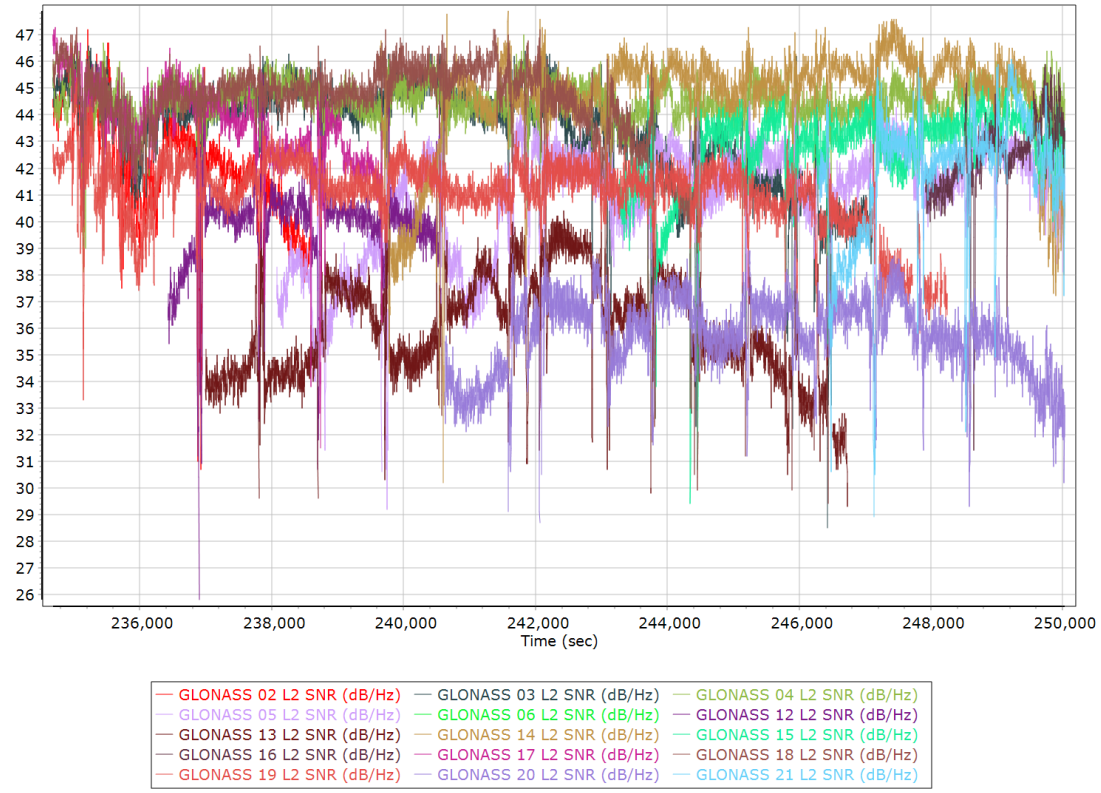
GPS/GLONASS L2 Satellite Lock/Elevation



GPS L2 SNR



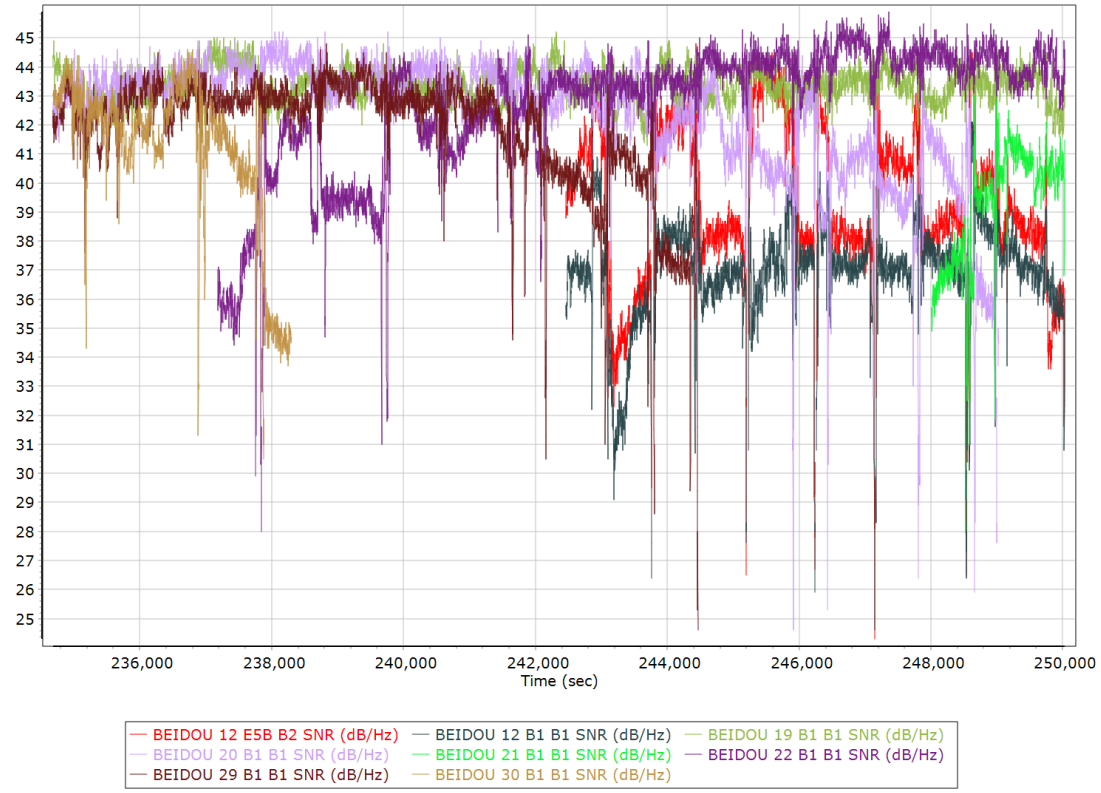
GLONASS L2 SNR



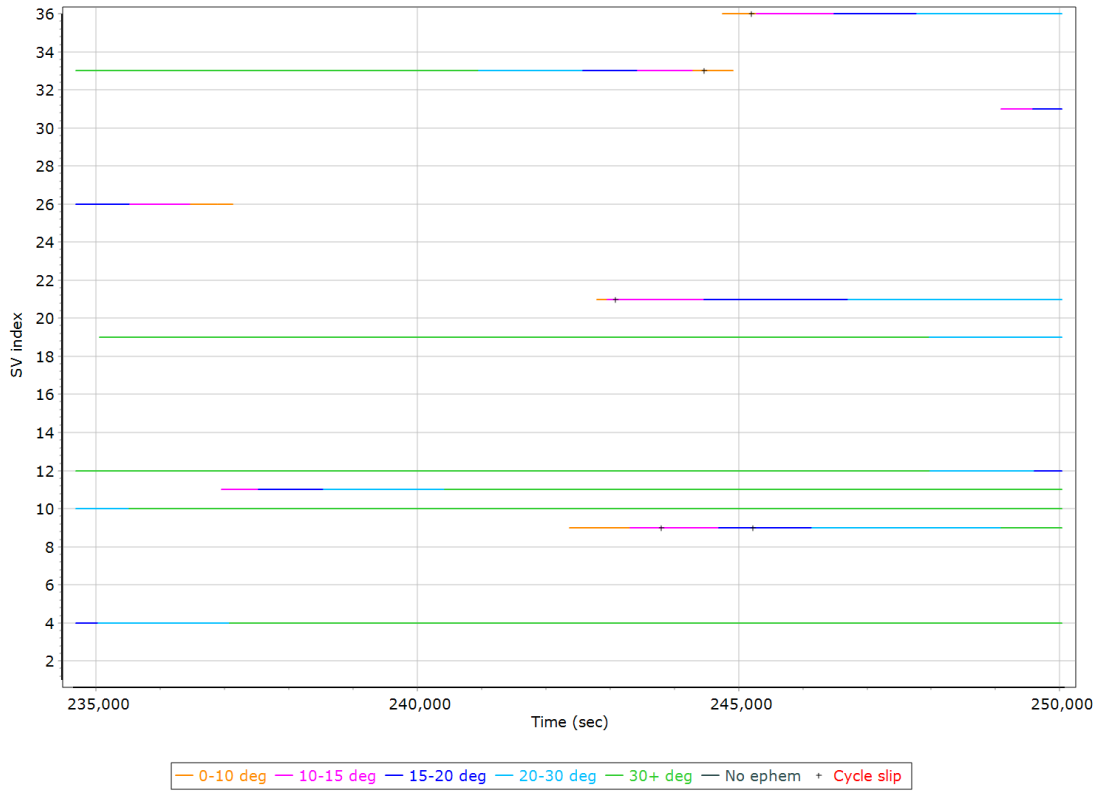
BEIDOU Satellite Lock/Elevation



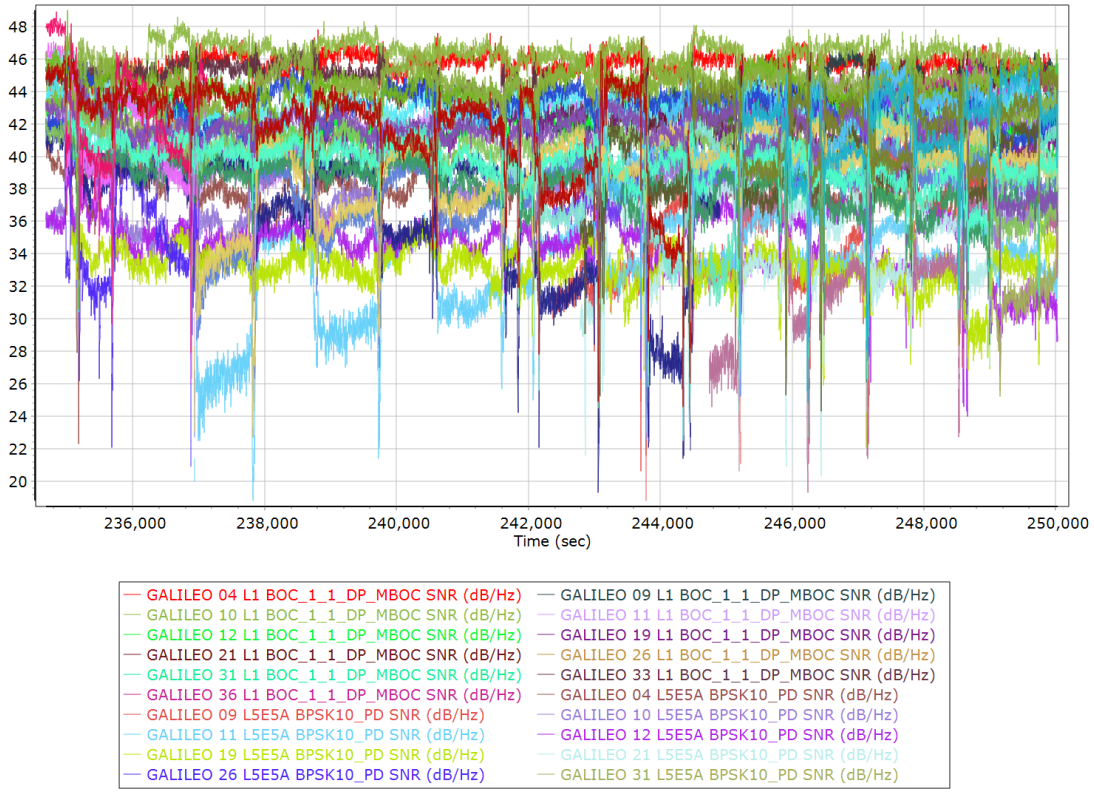
BEIDOU SNR



GALILEO Satellite Lock/Elevation

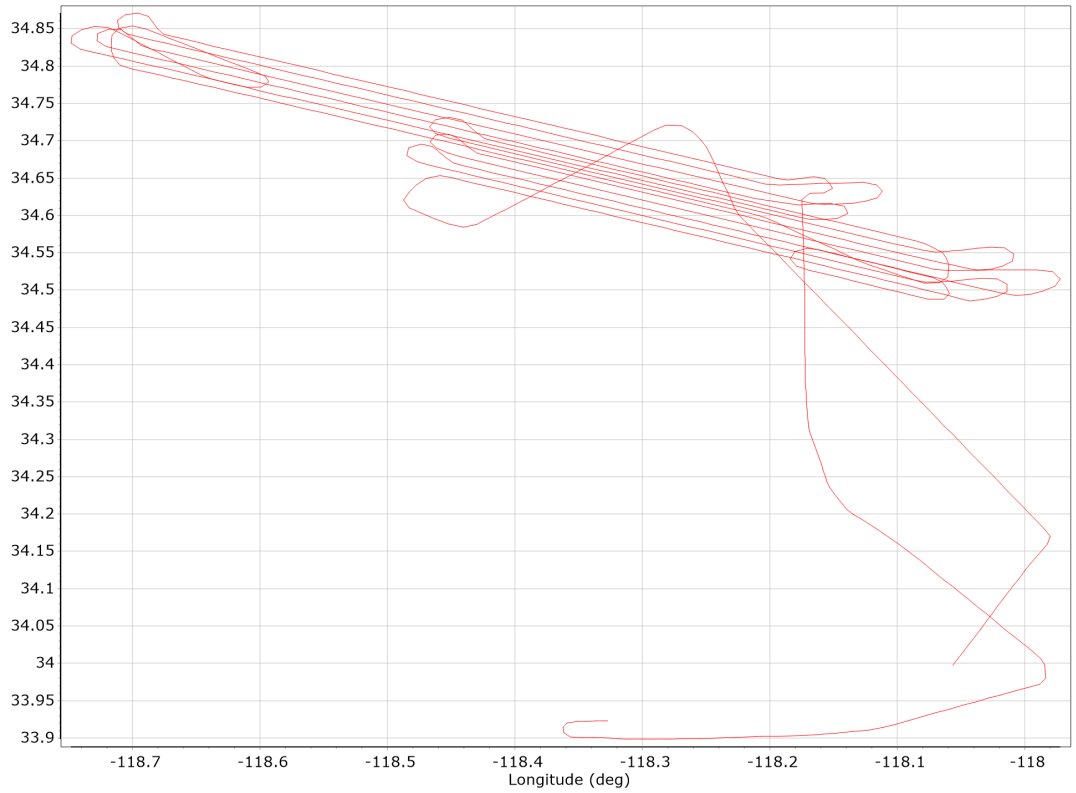


GALILEO SNR

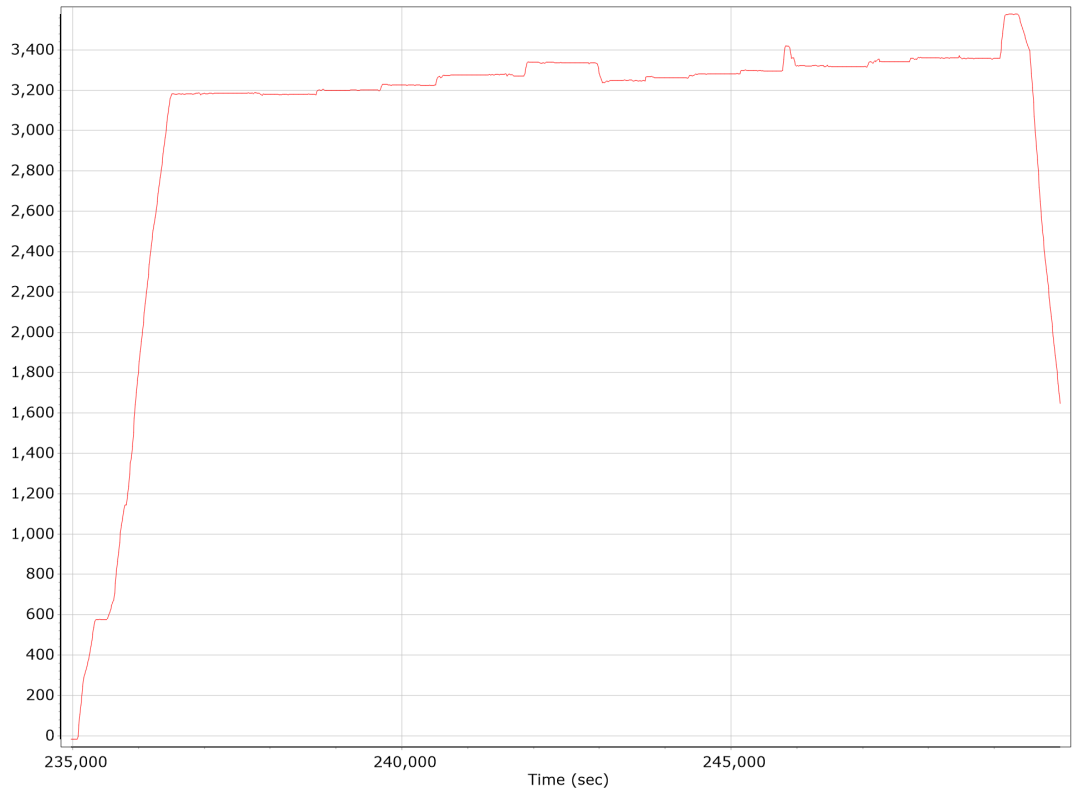

48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
236,000
238,000
240,000
242,000
244,000
246,000
248,000
250,000
Time (sec)
GALILEO 04 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 09 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 10 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 11 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 12 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 19 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 21 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 26 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 31 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 33 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 36 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 04 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 09 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 10 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 11 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 12 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 19 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 21 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 26 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 31 L5E5A BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

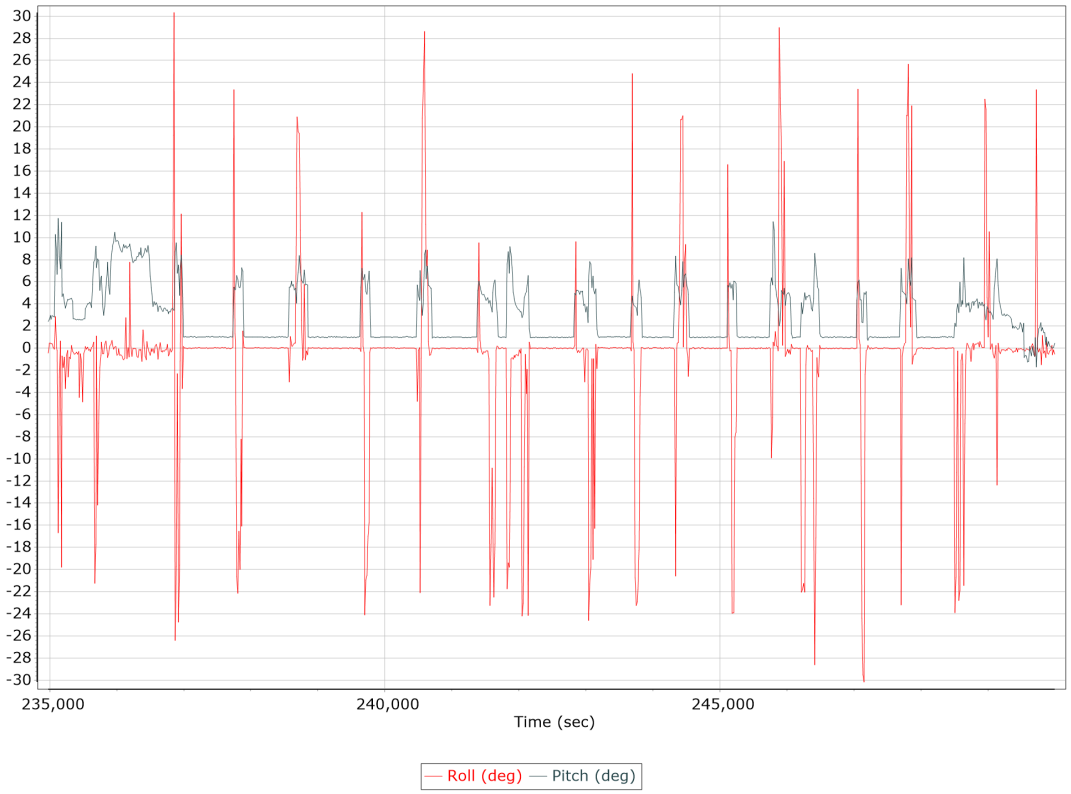
Top View



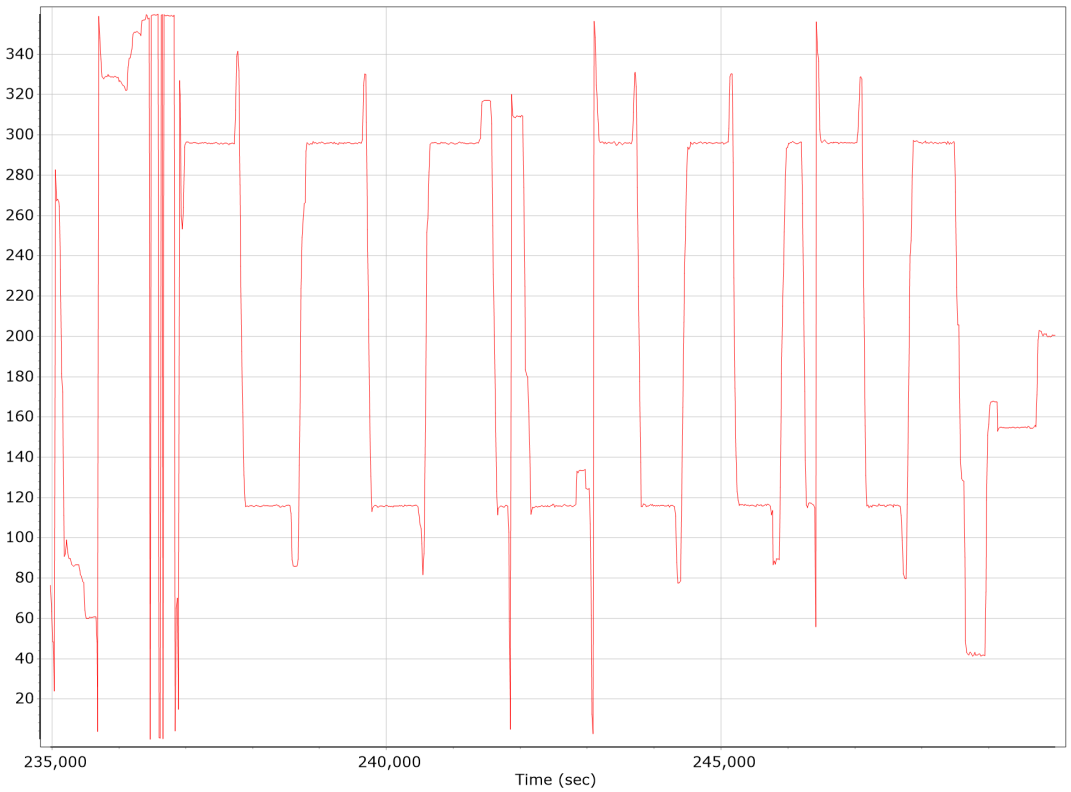
Altitude



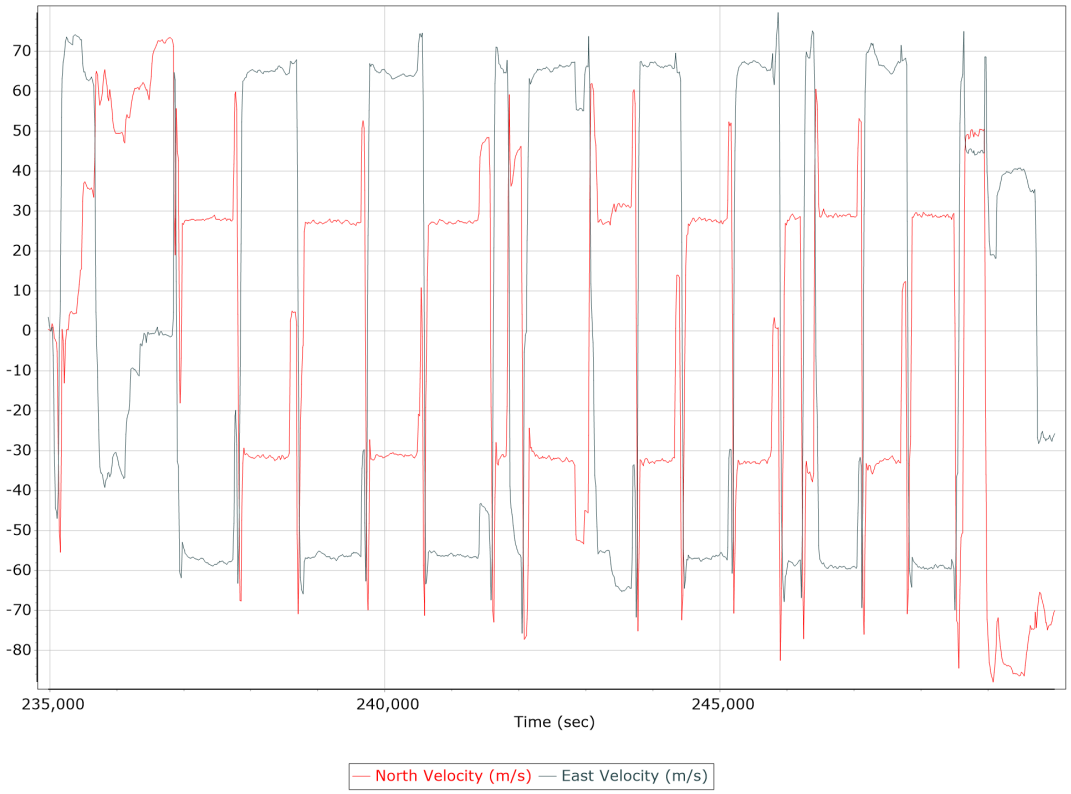
Roll/Pitch



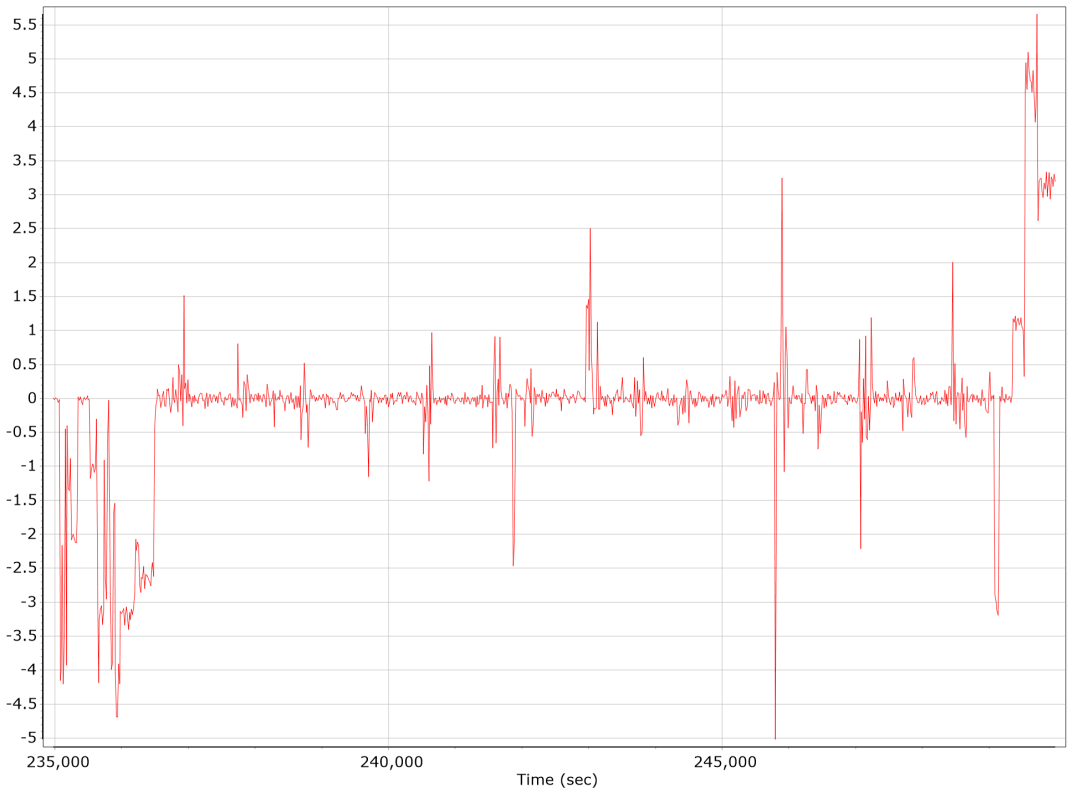
Heading



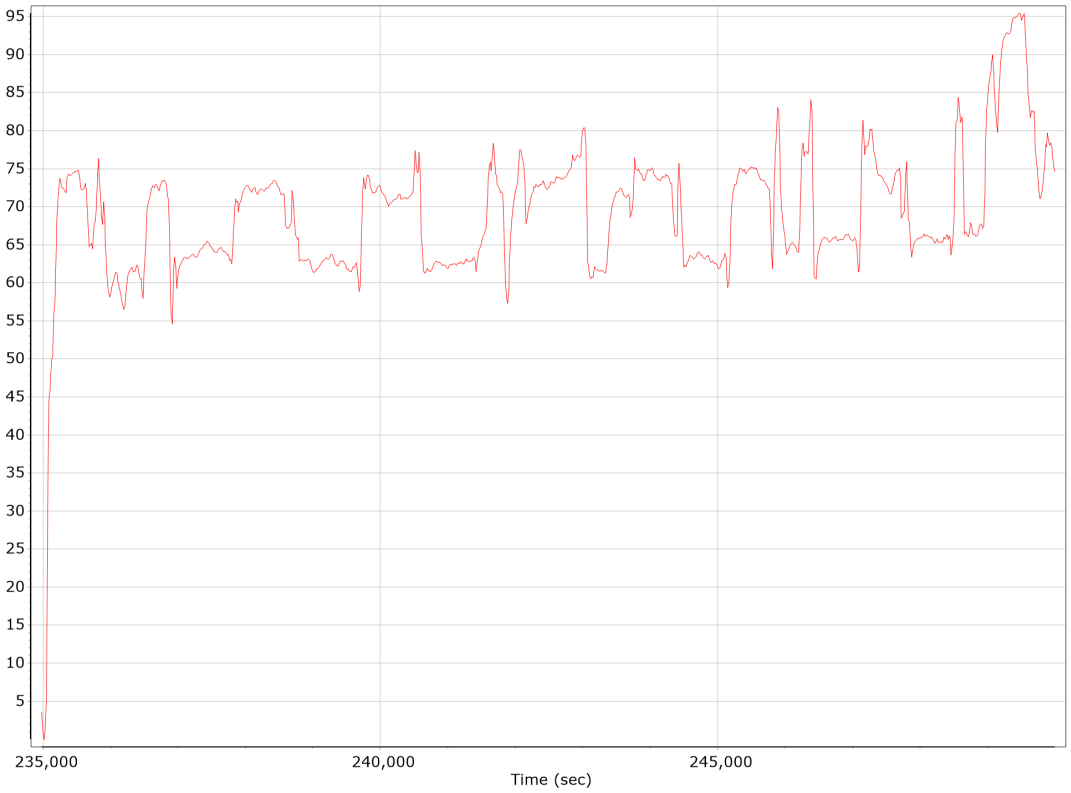
North/East Velocity



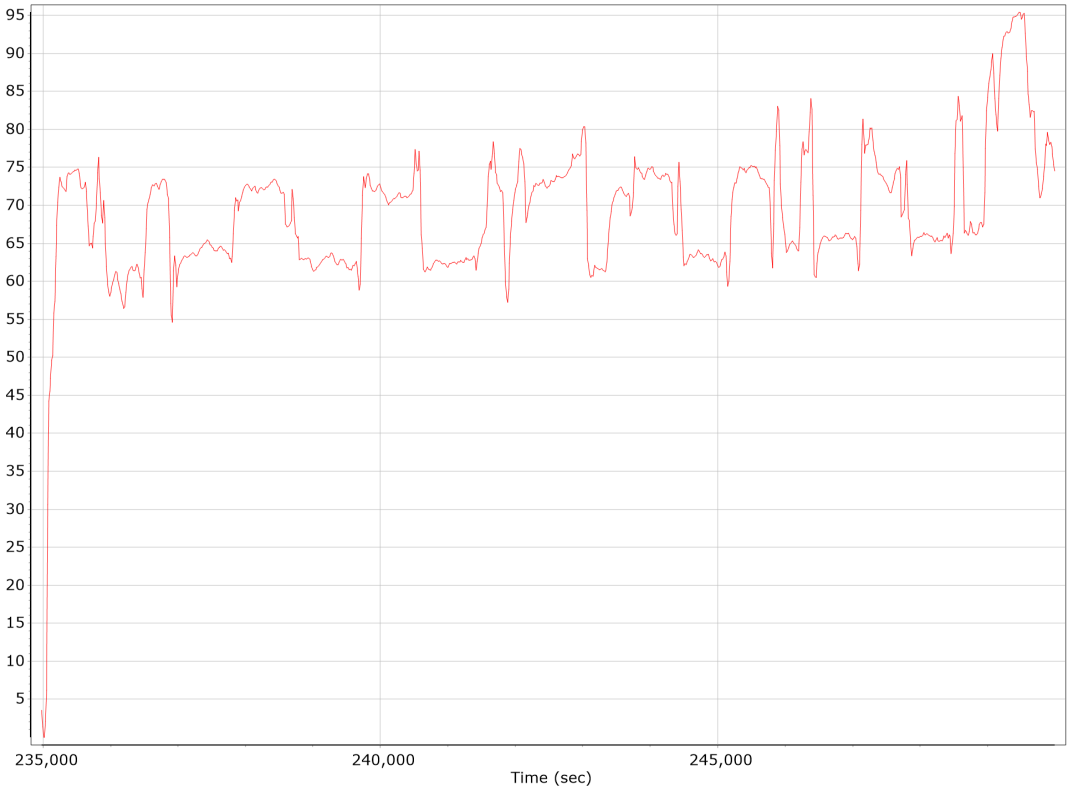
Down Velocity



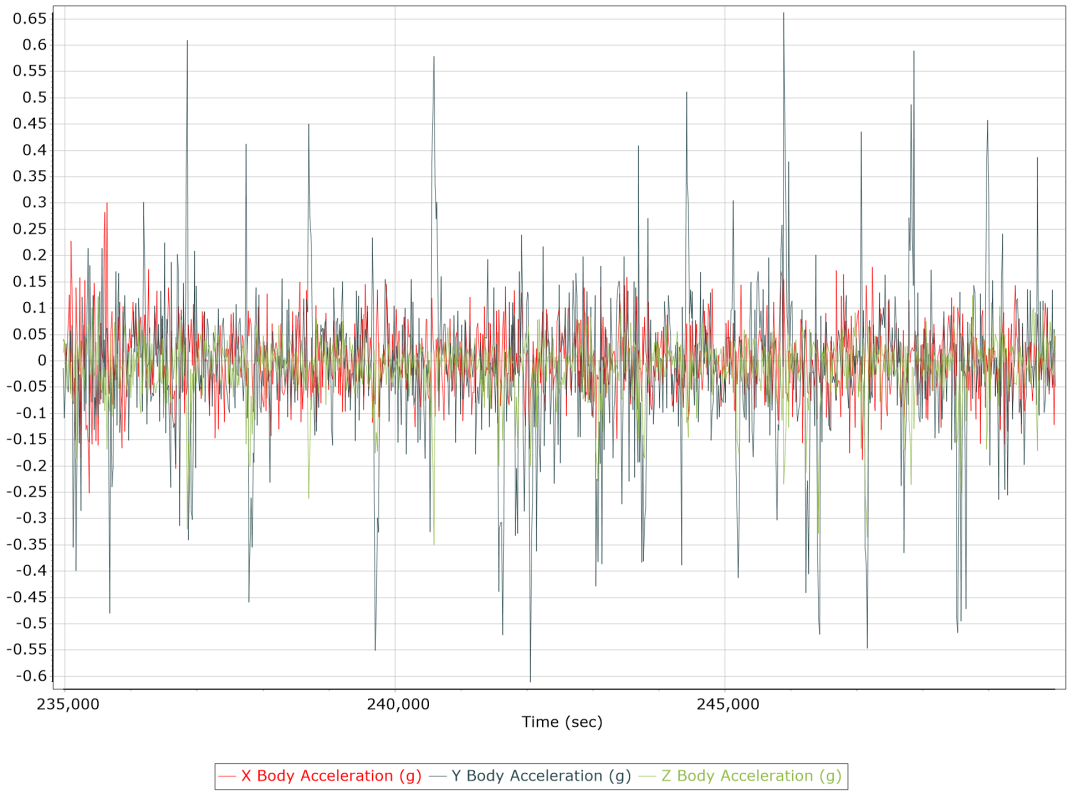
Total Speed



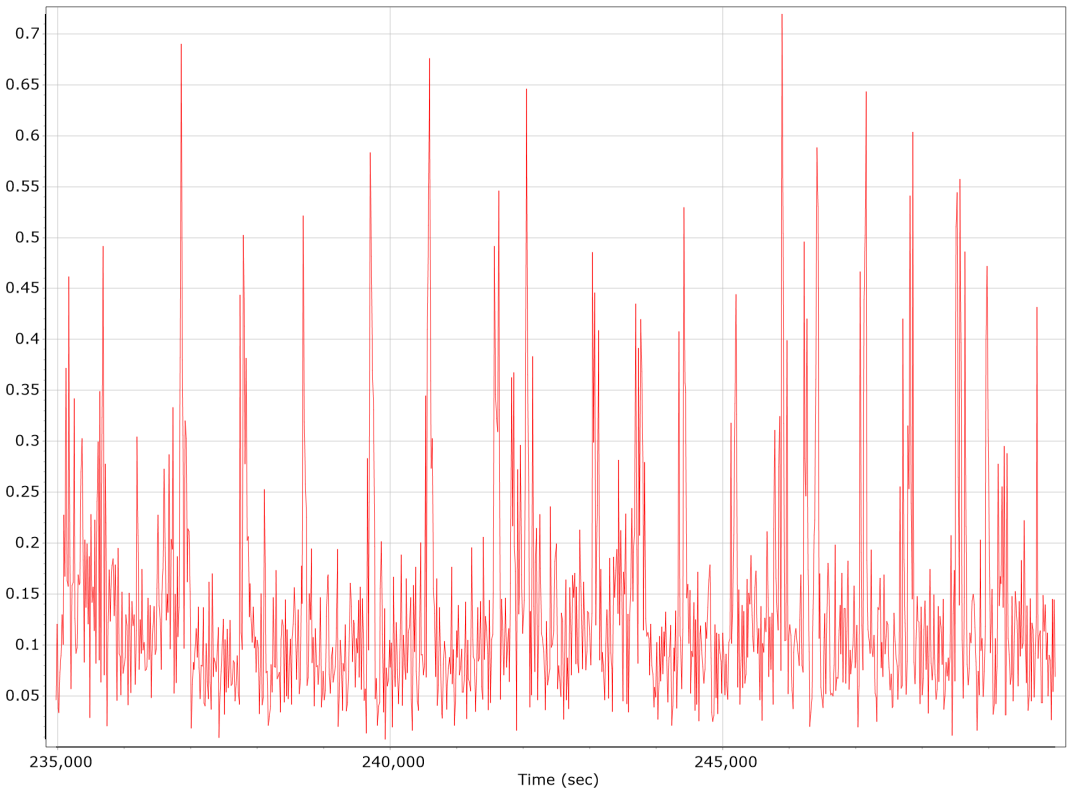
Ground Speed



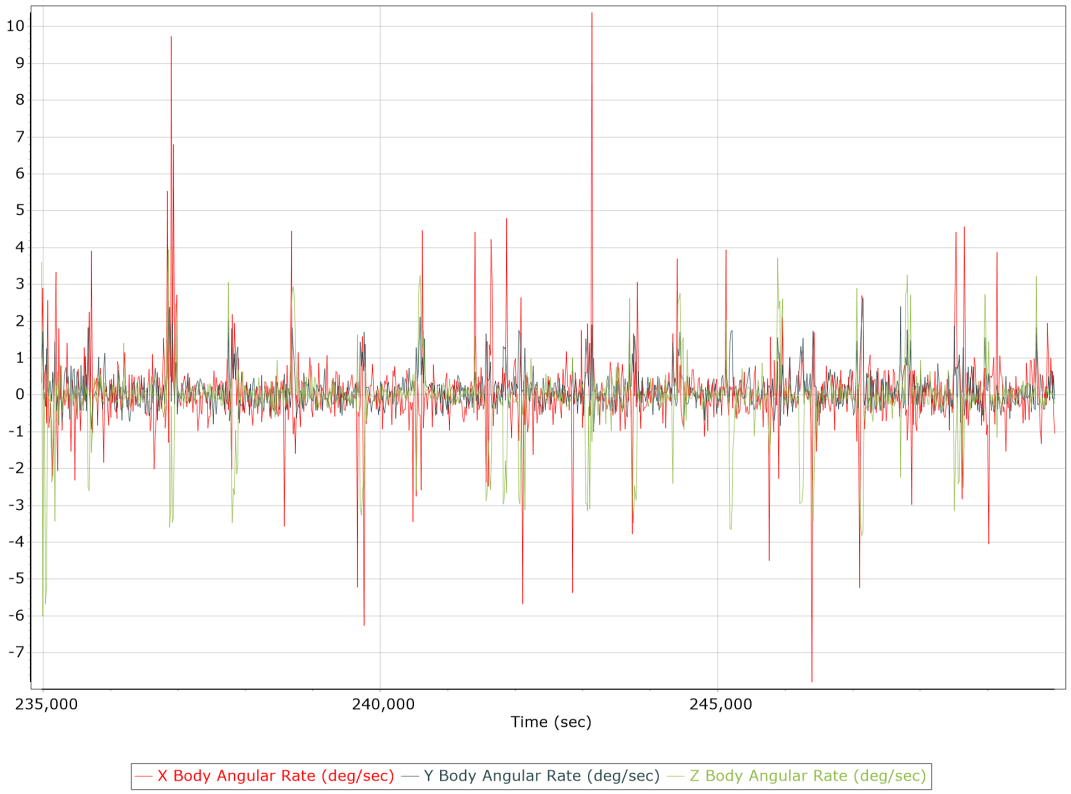
Body Acceleration



Total Body Acceleration

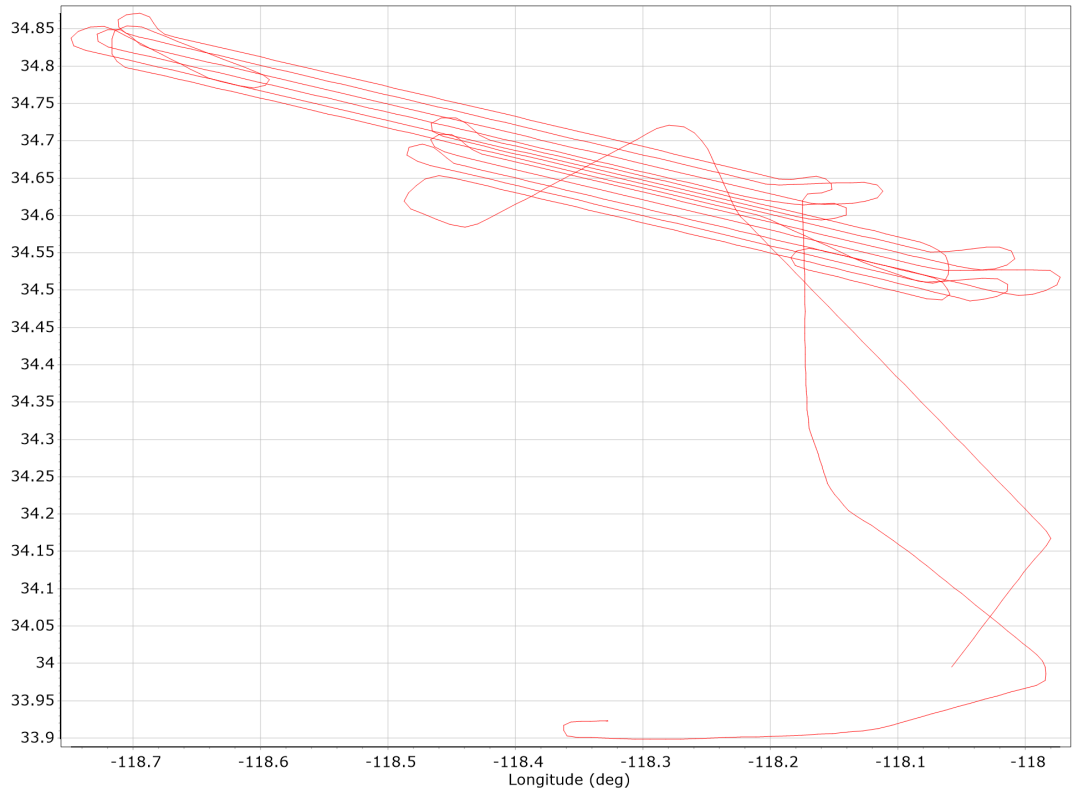


Body Angular Rate

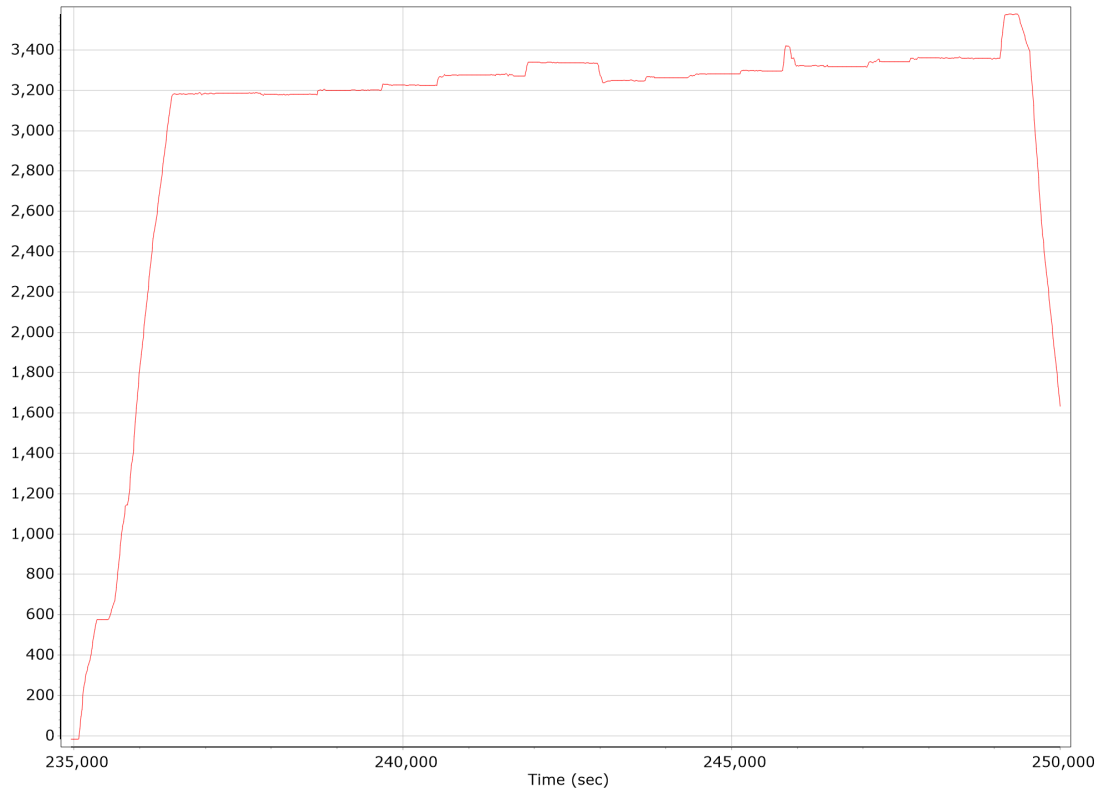


Forward Processed Trajectory Information

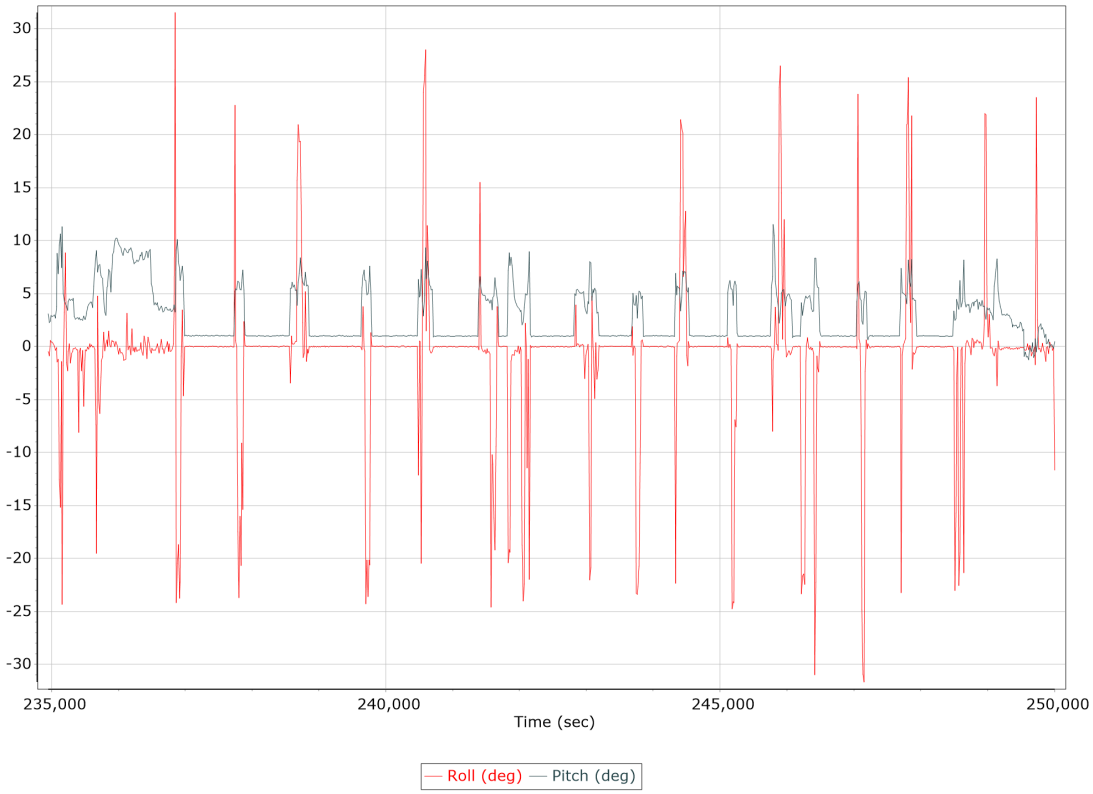
Top View



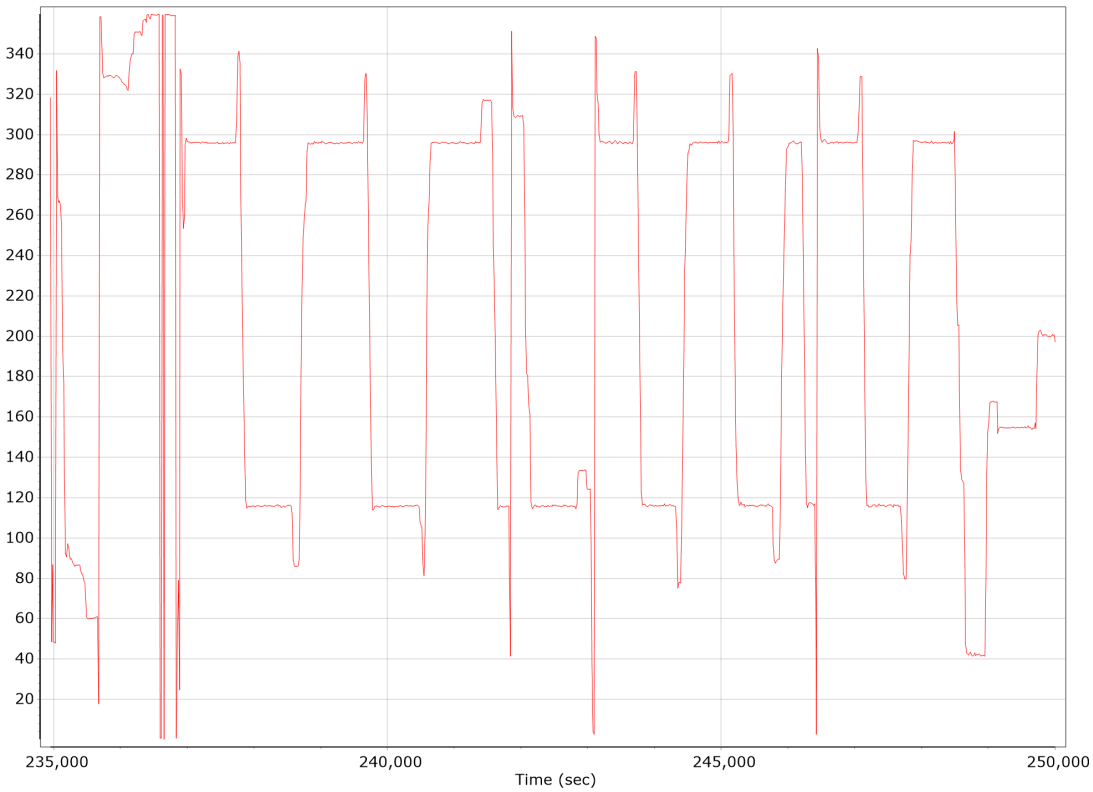
Altitude



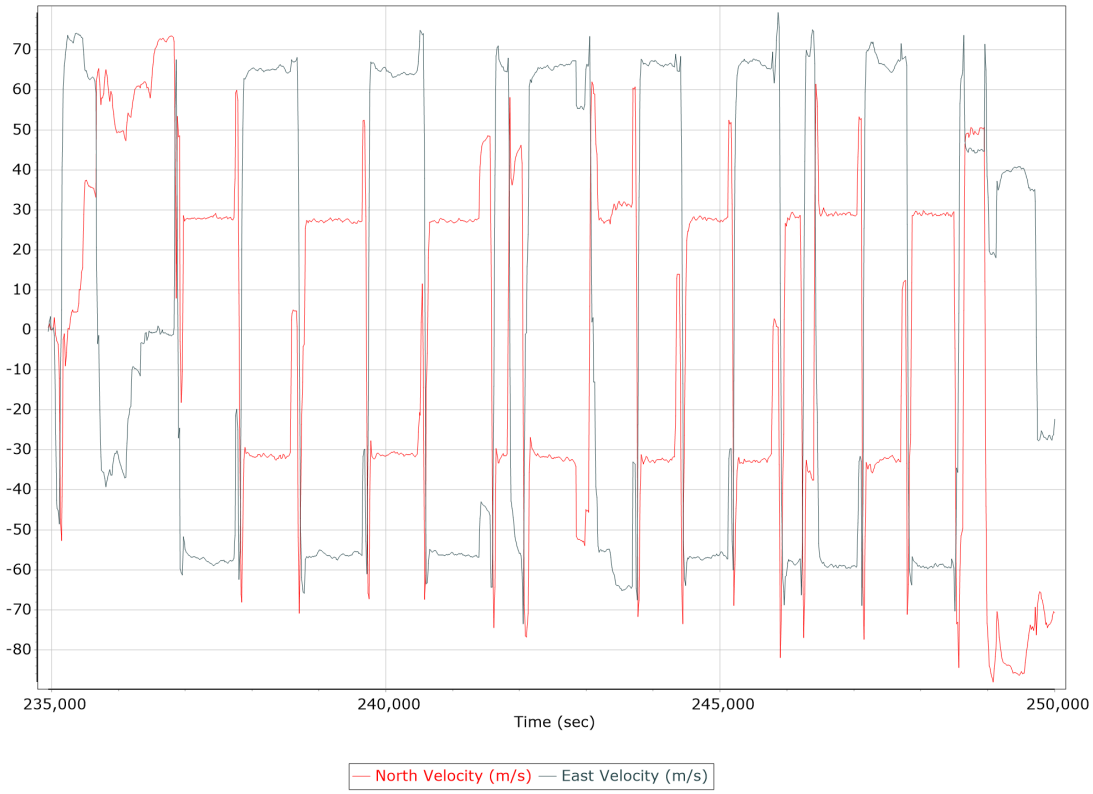
Roll/Pitch



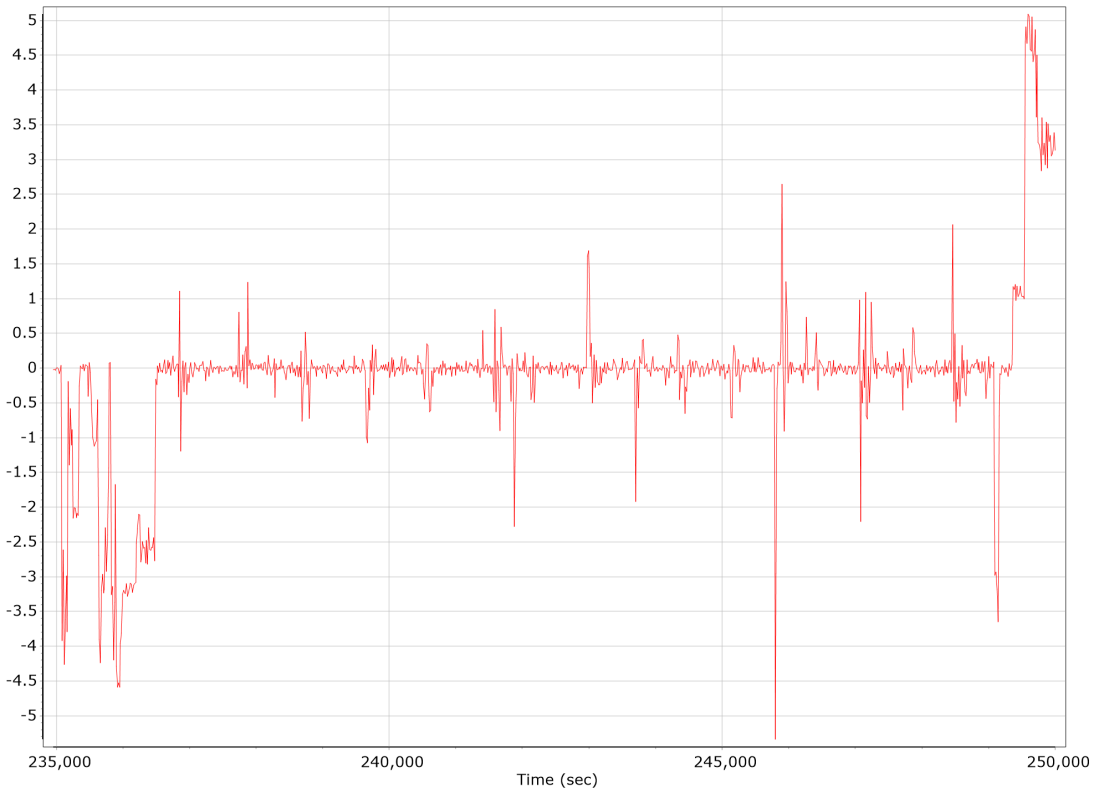
Heading



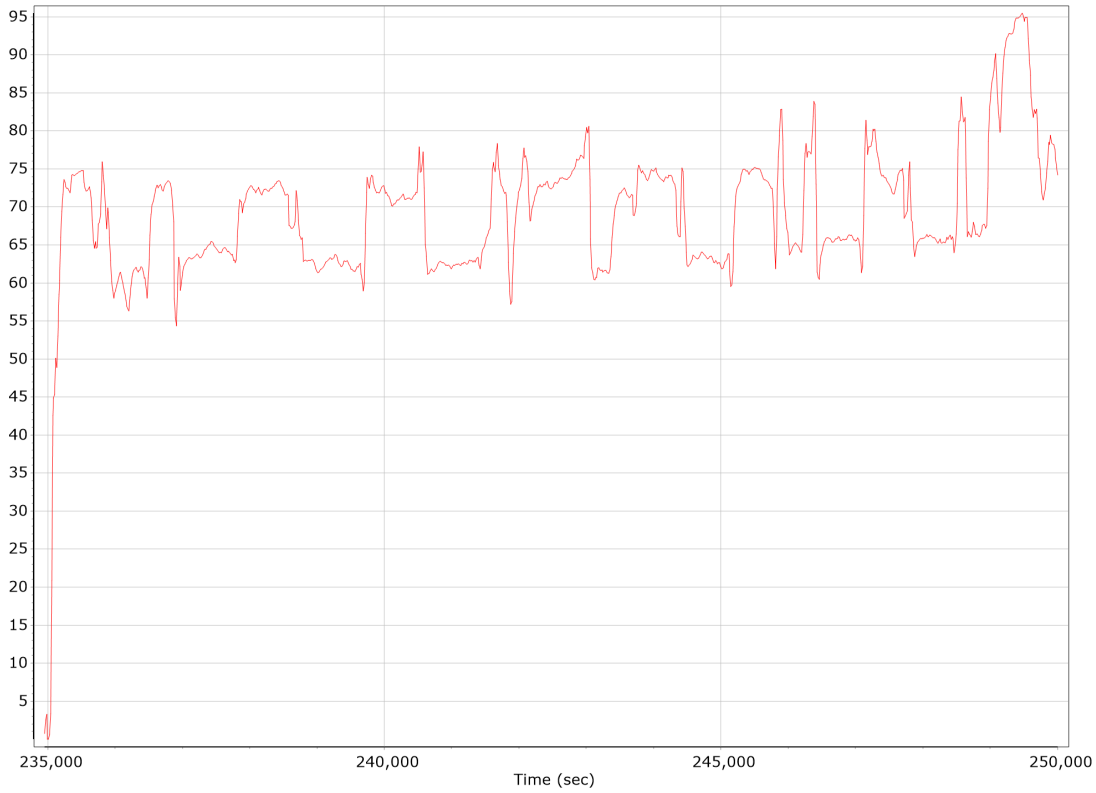
North/East Velocity



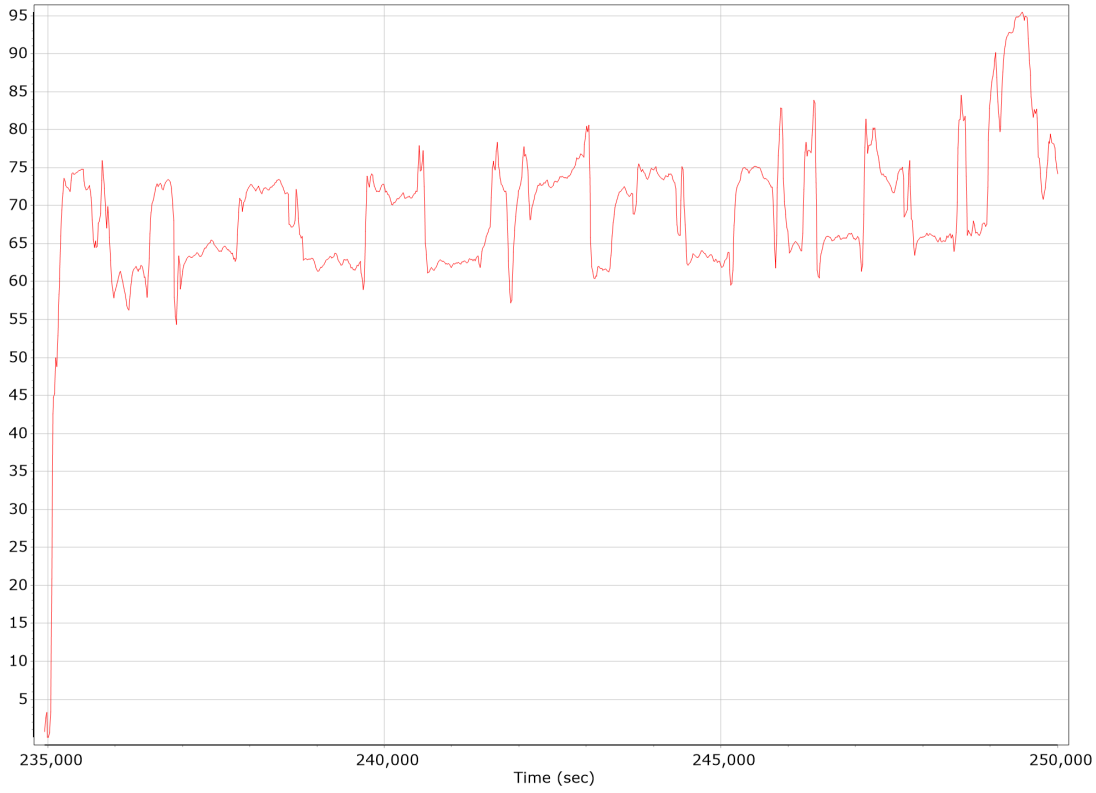
Down Velocity



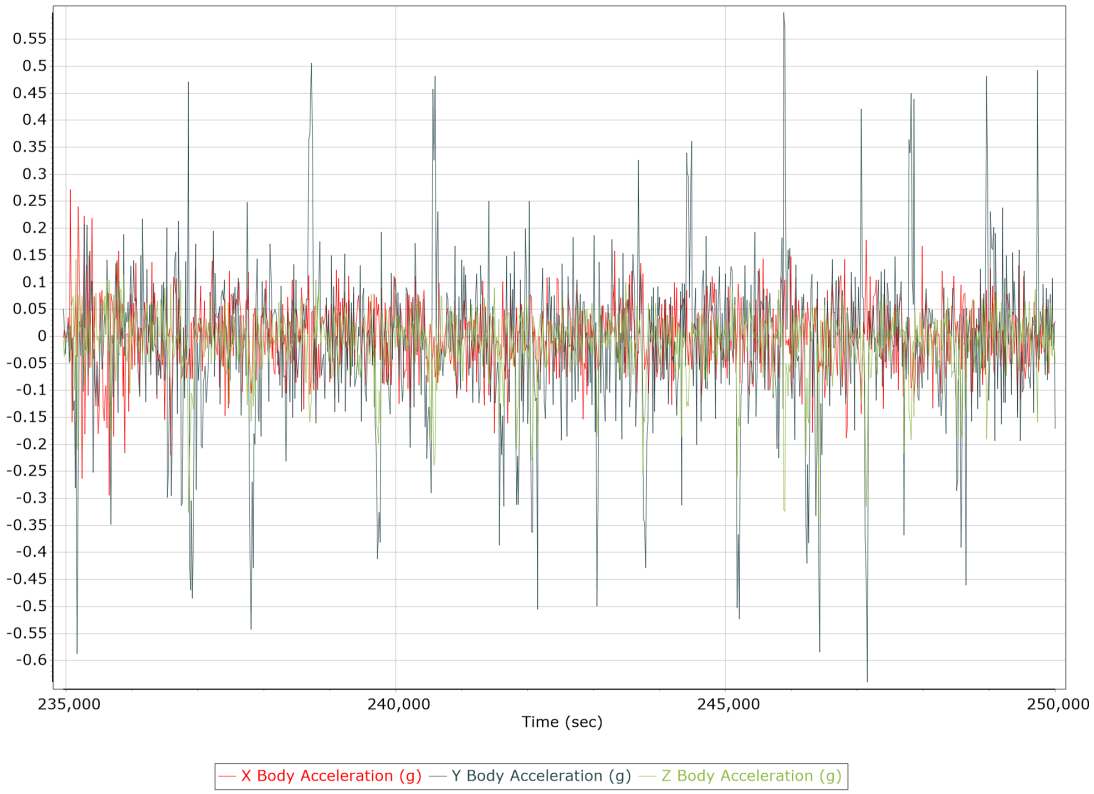
Total Speed



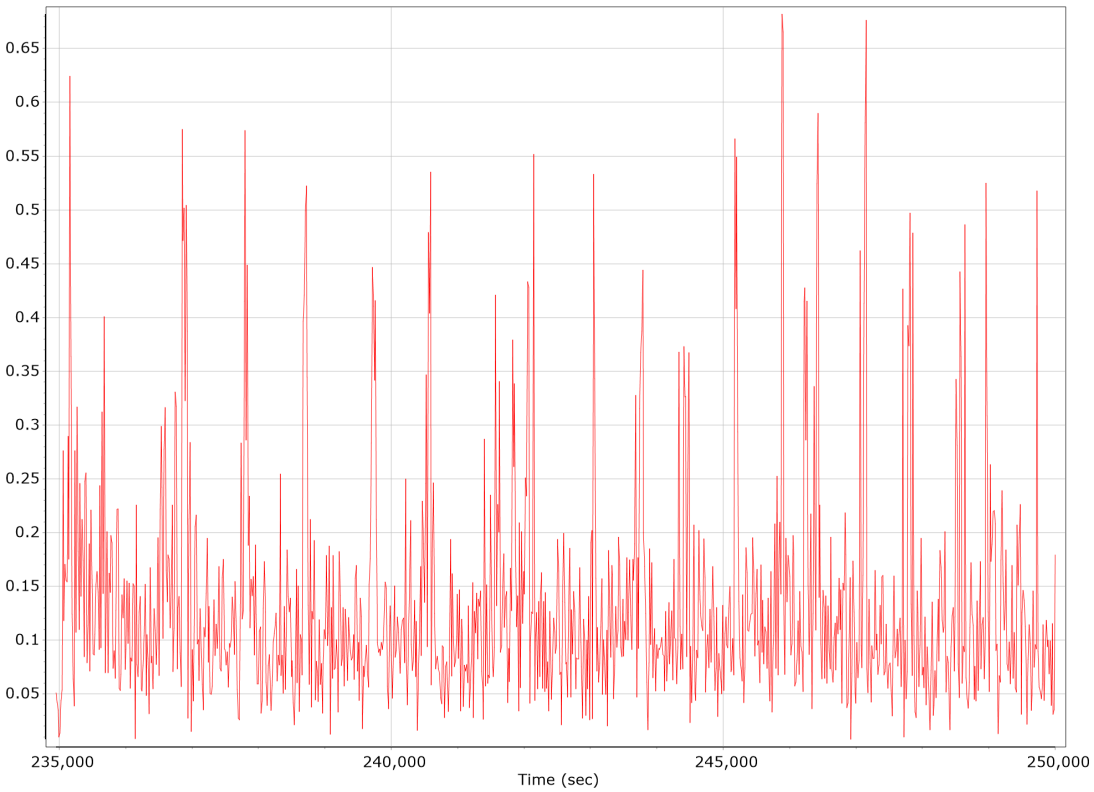
Ground Speed



Body Acceleration



Total Body Acceleration



Body Angular Rate

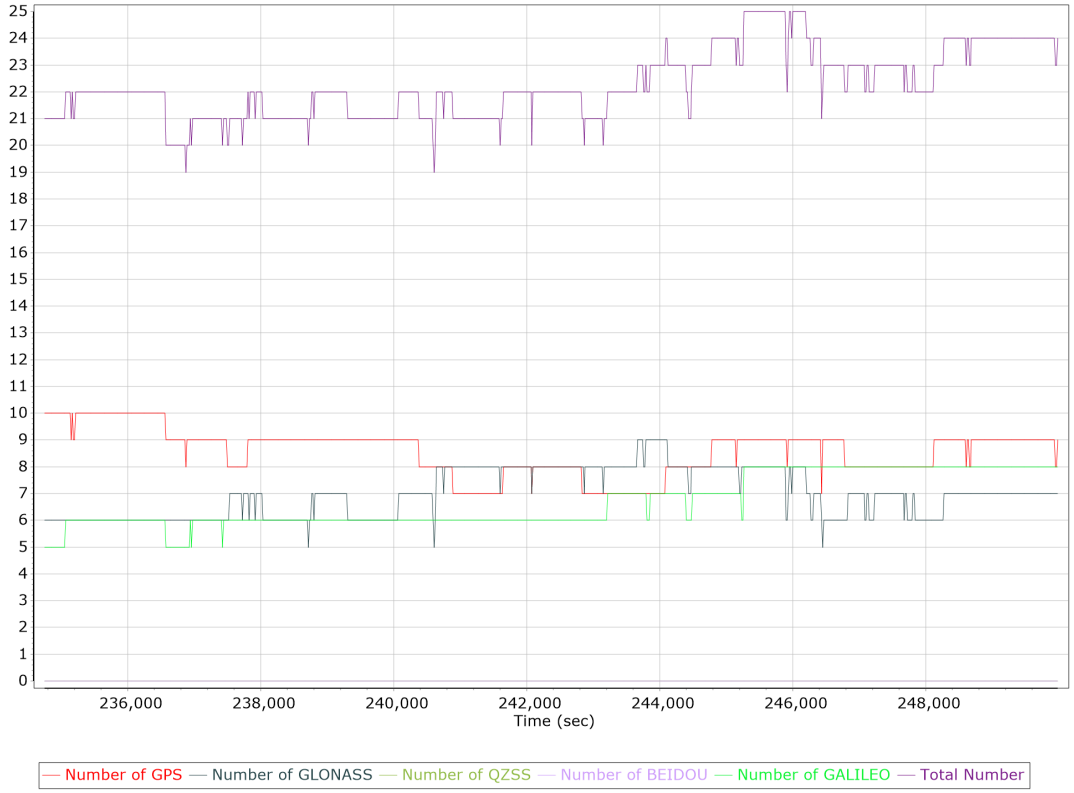


GNSS QC

GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	7	10	9
Number of GLONASS SV	5	9	7
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	5	8	7
Total number of SV	19	25	22
PDOP	1.01	1.51	1.17
QC Solution Gaps	0.00	0.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	15298.00	0.00	0.00
Percentage	100.00	0.00	0.00

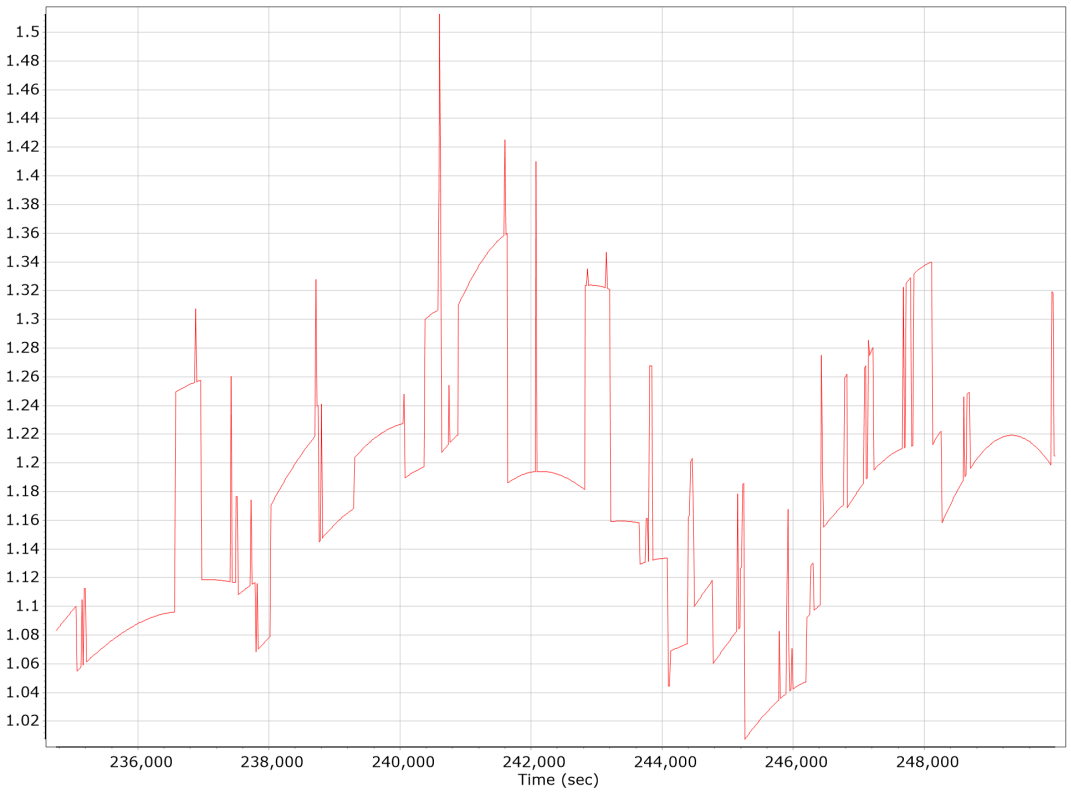
Num SVs in solution



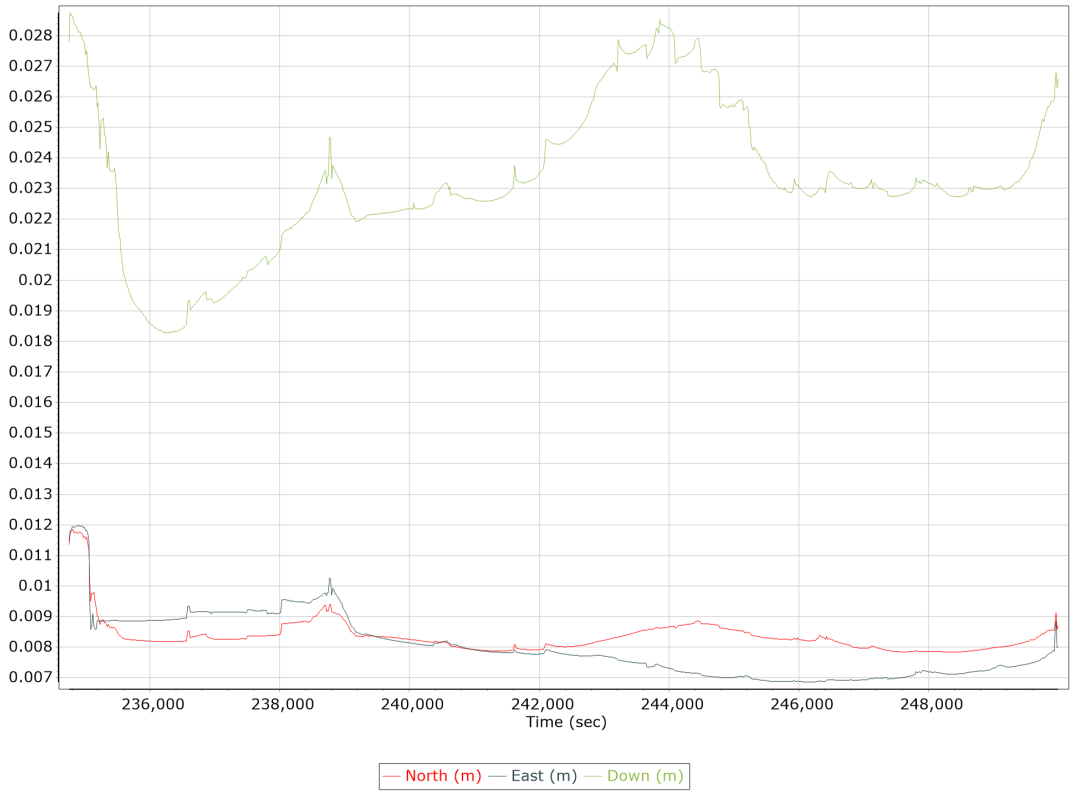
Forward/Reverse Separation



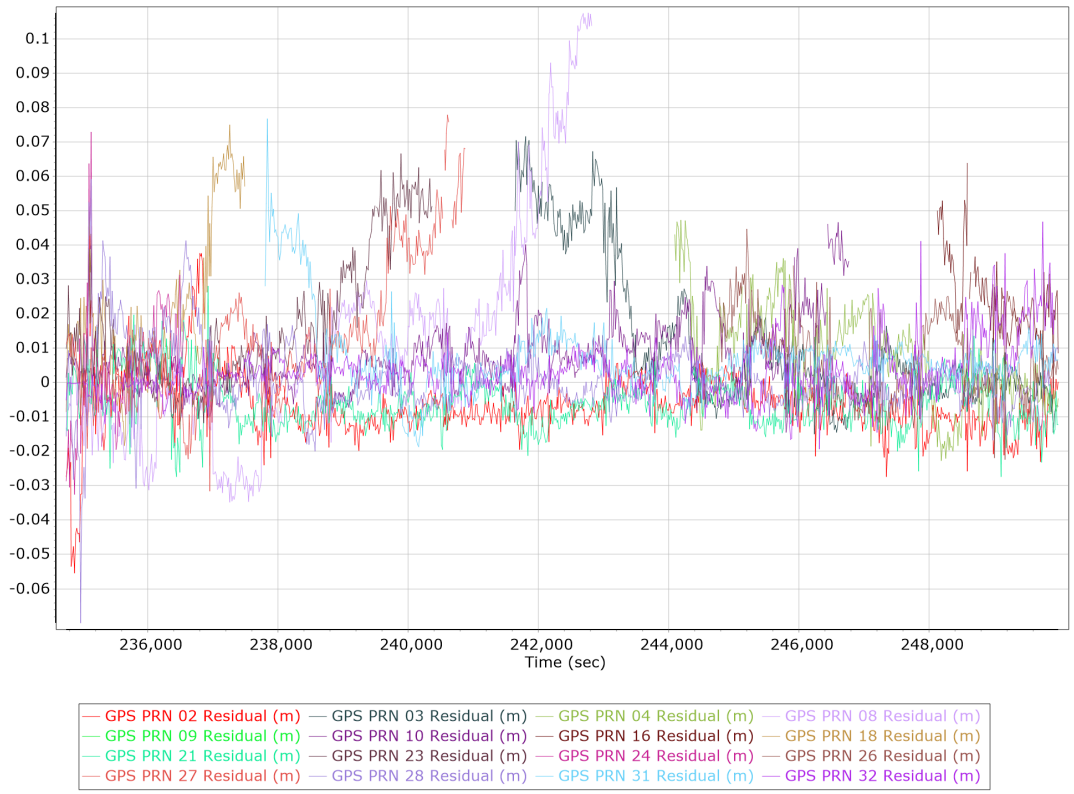
PDOP



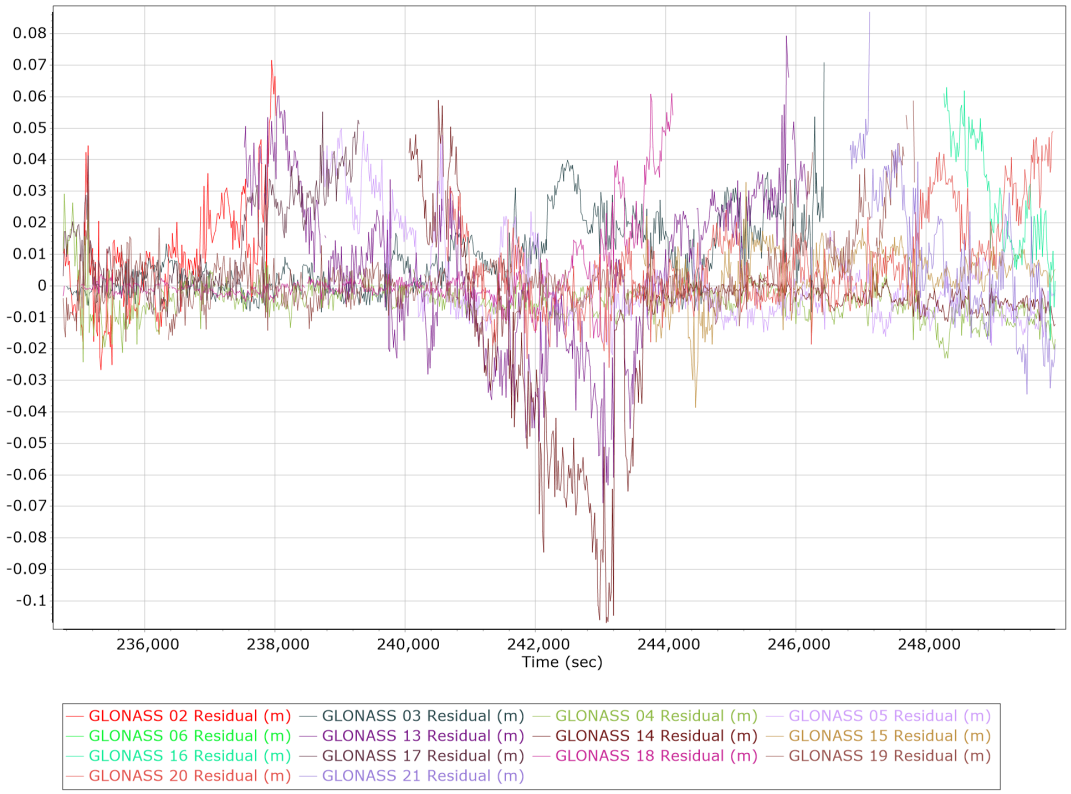
Estimated Position Accuracy



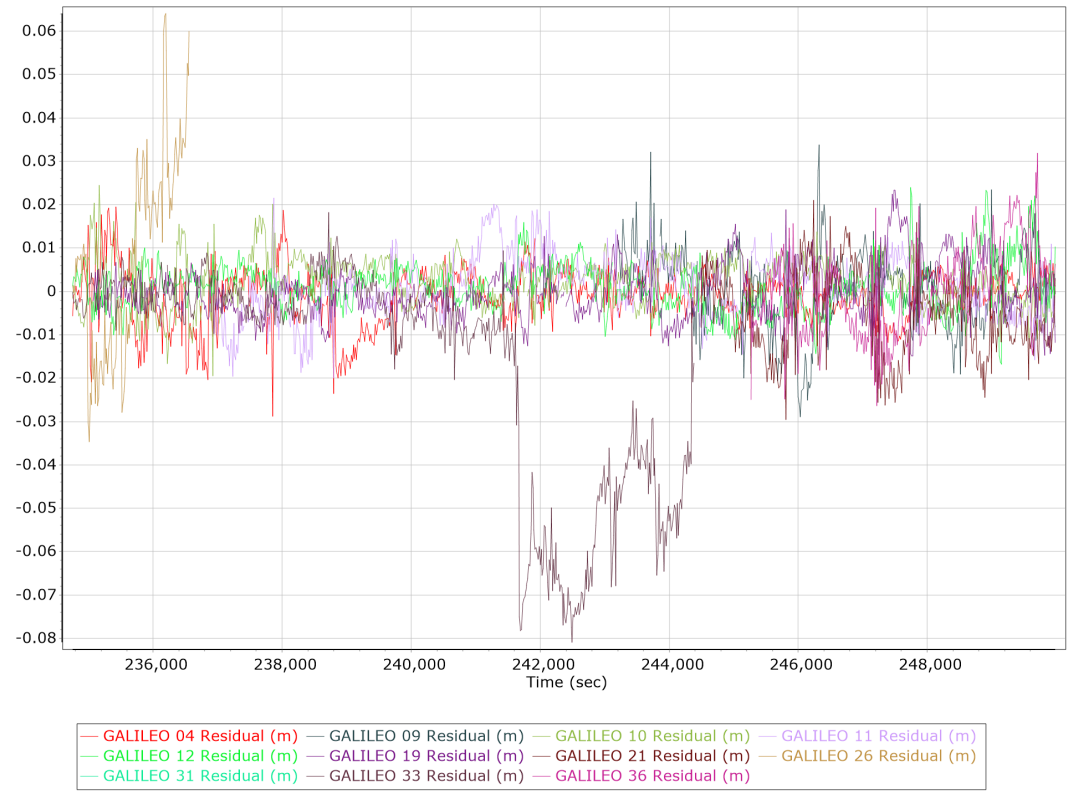
GPS Residuals



GLONASS Residuals



GALILEO Residuals



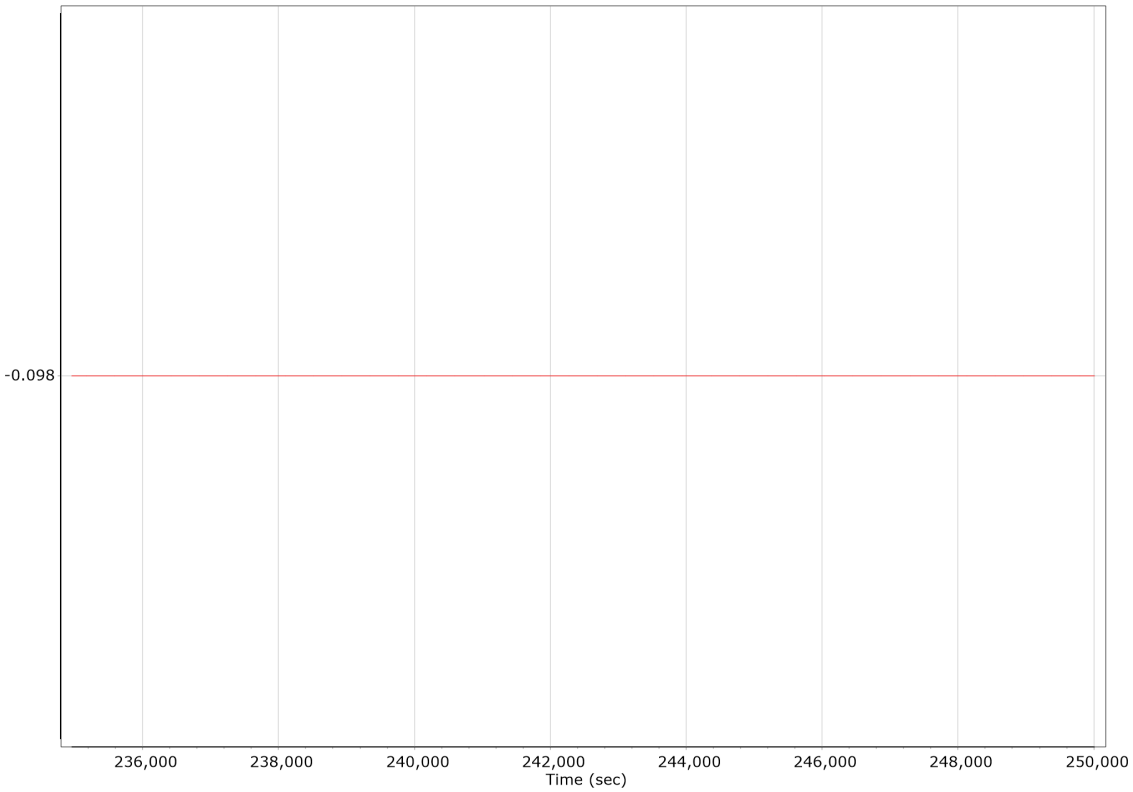
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	234667.000 (10/3/2023 5:11:07 PM)		
Processing end time	250012.000 (10/3/2023 9:26:52 PM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	-0.098	0.057	-1.221
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

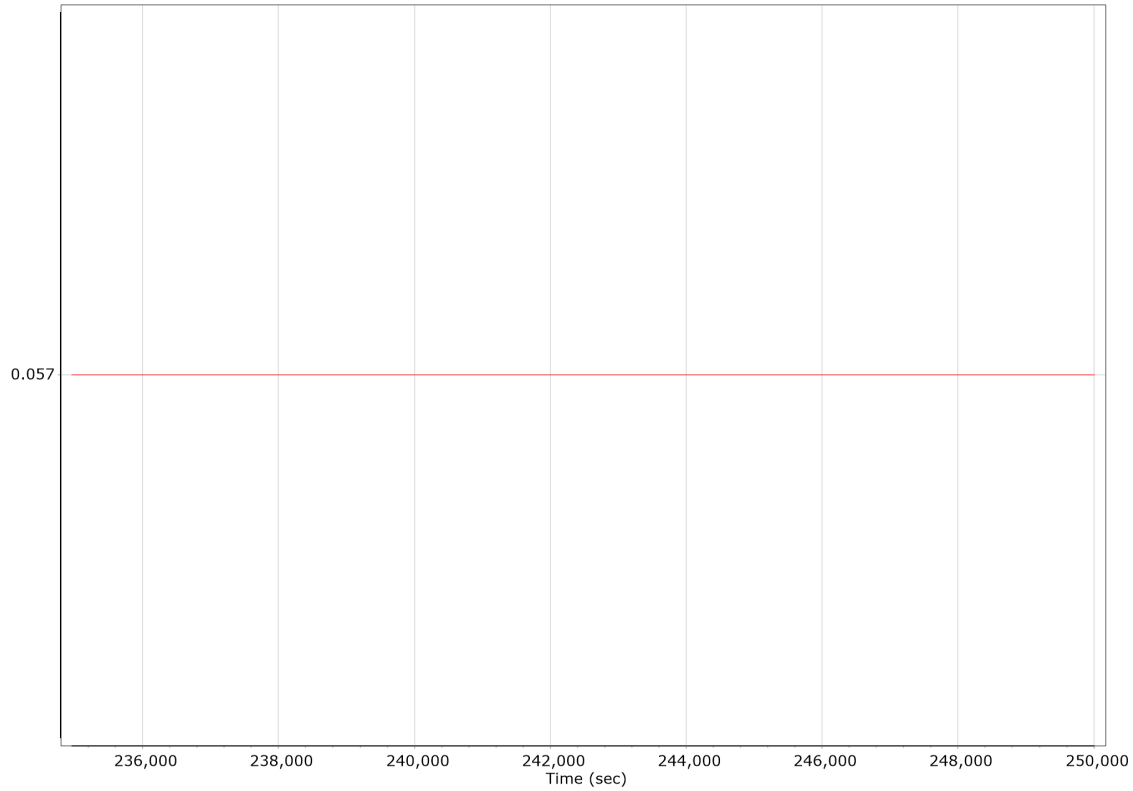
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

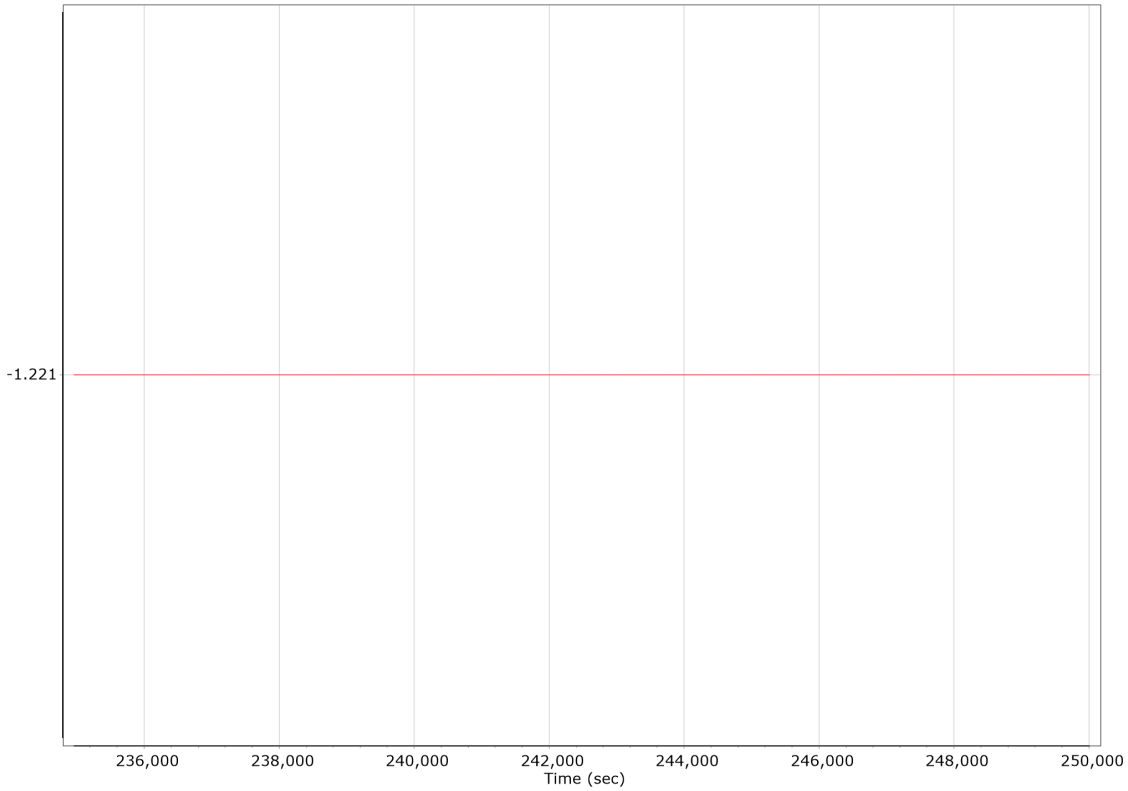
X Reference-Primary GNSS Lever Arm (m)



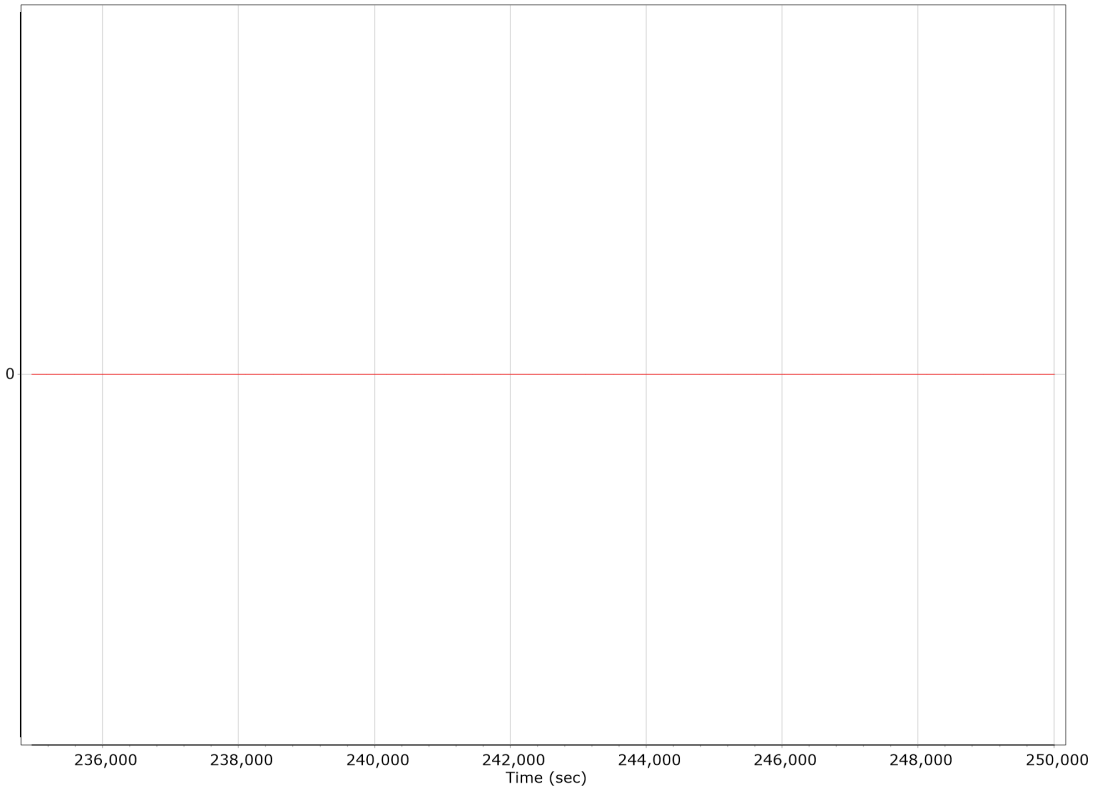
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



Reference-Primary GNSS Lever Arm Figure of Merit



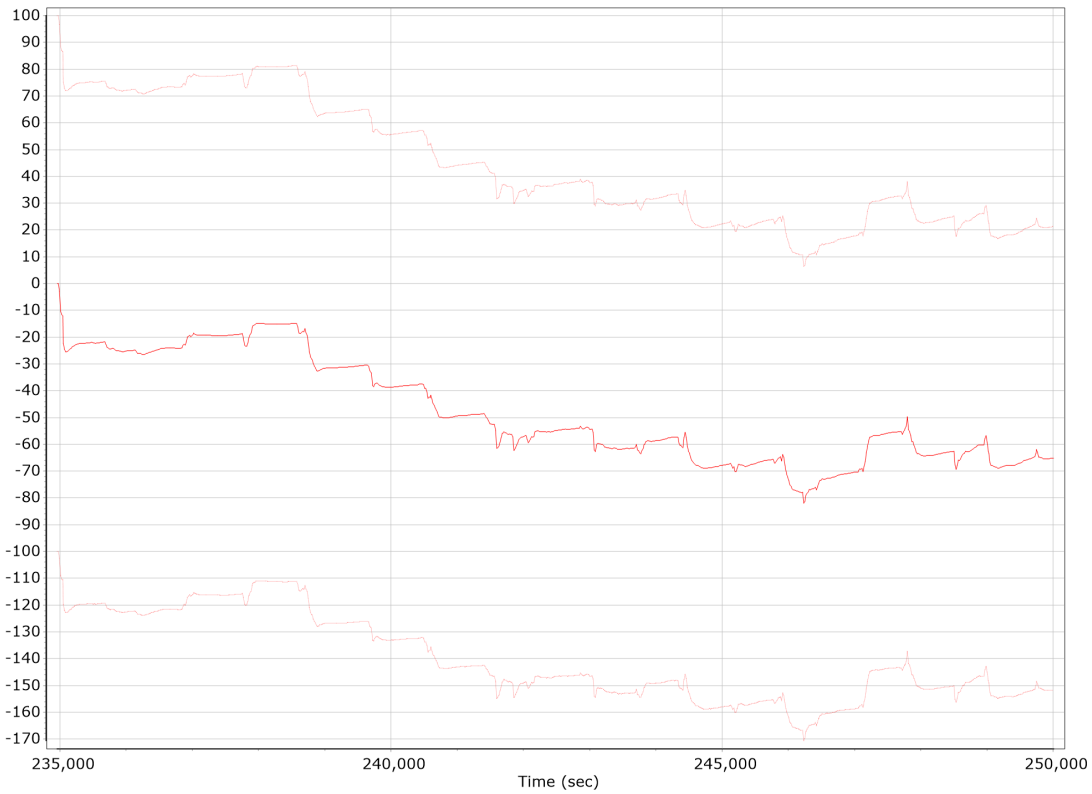
IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

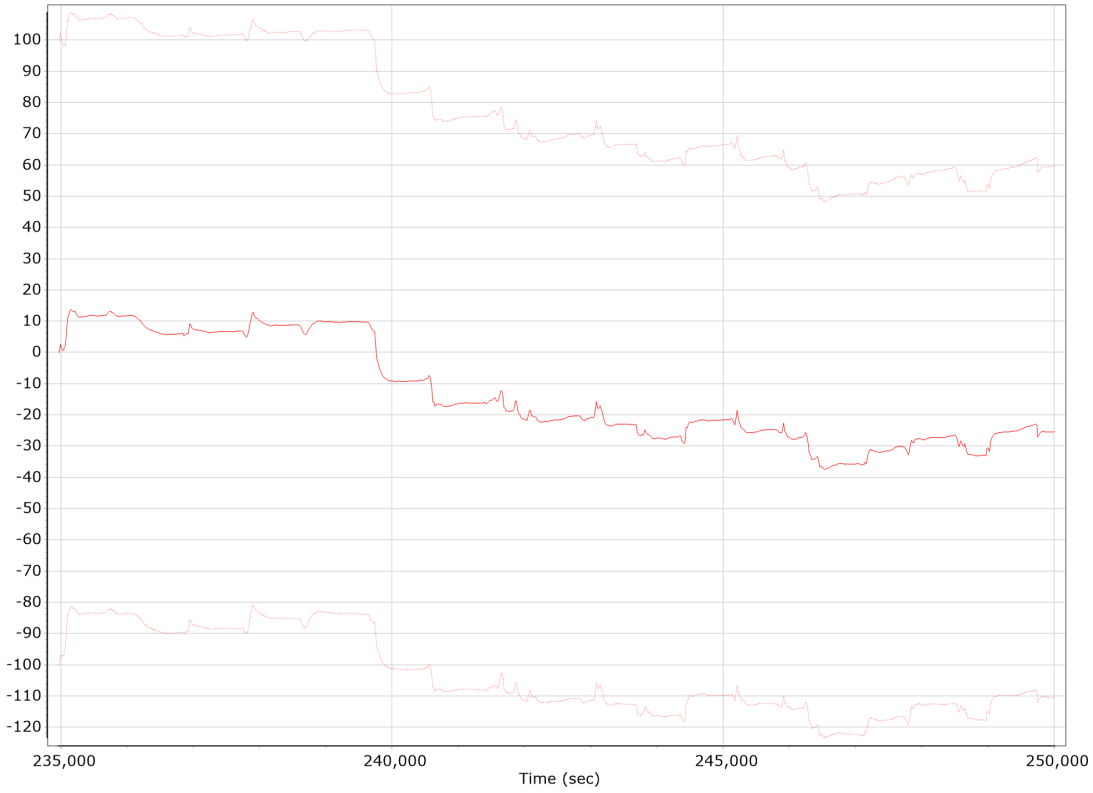
Accelerometer Bias (micro-g)



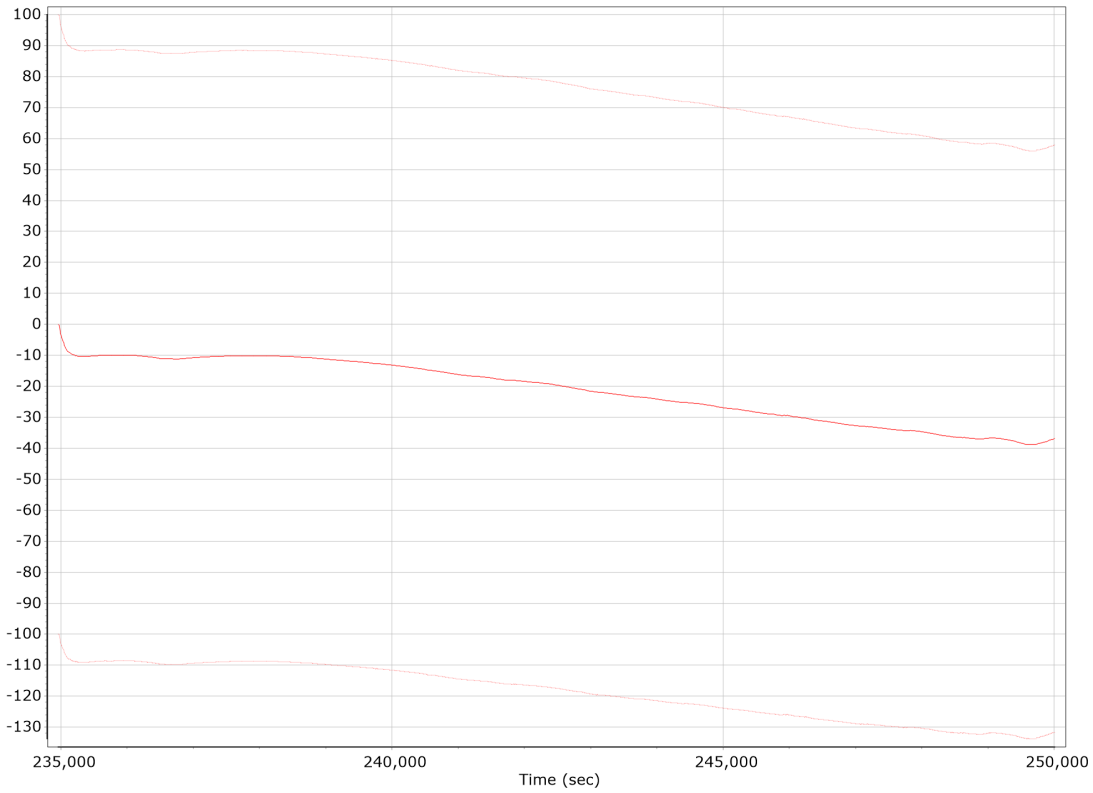
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



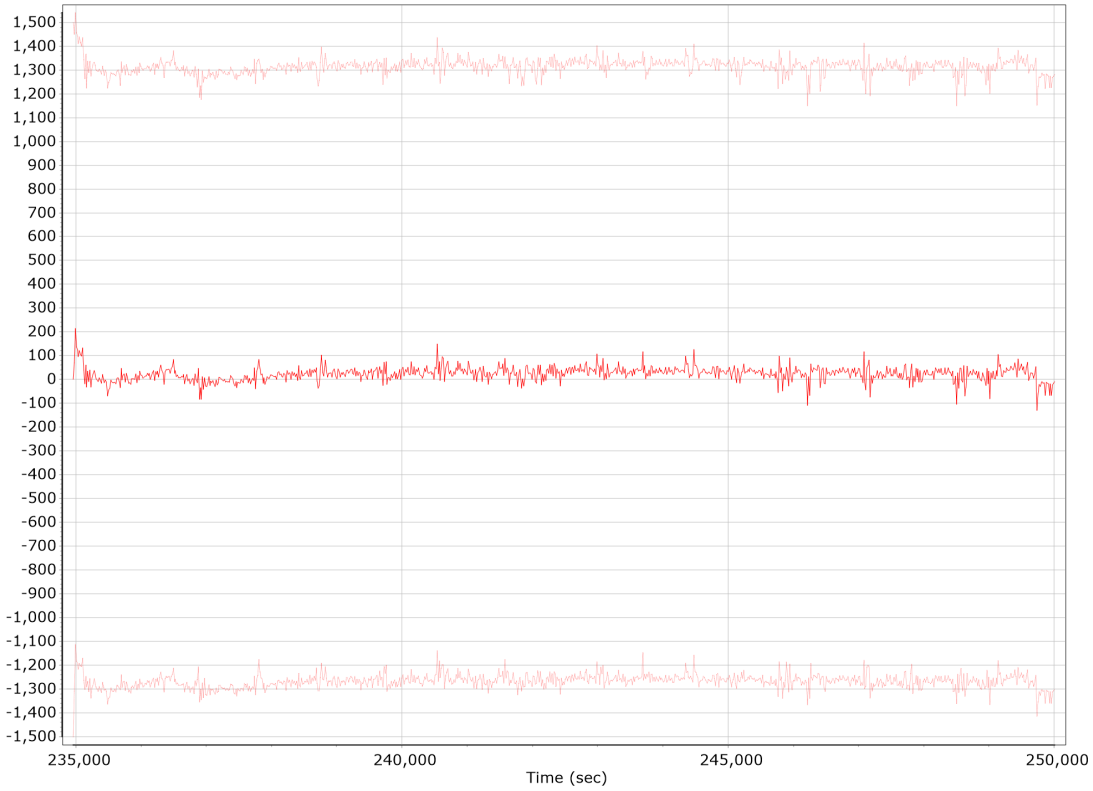
X Accelerometer Scale Error (ppm)



Y Accelerometer Scale Error (ppm)



Z Accelerometer Scale Error (ppm)



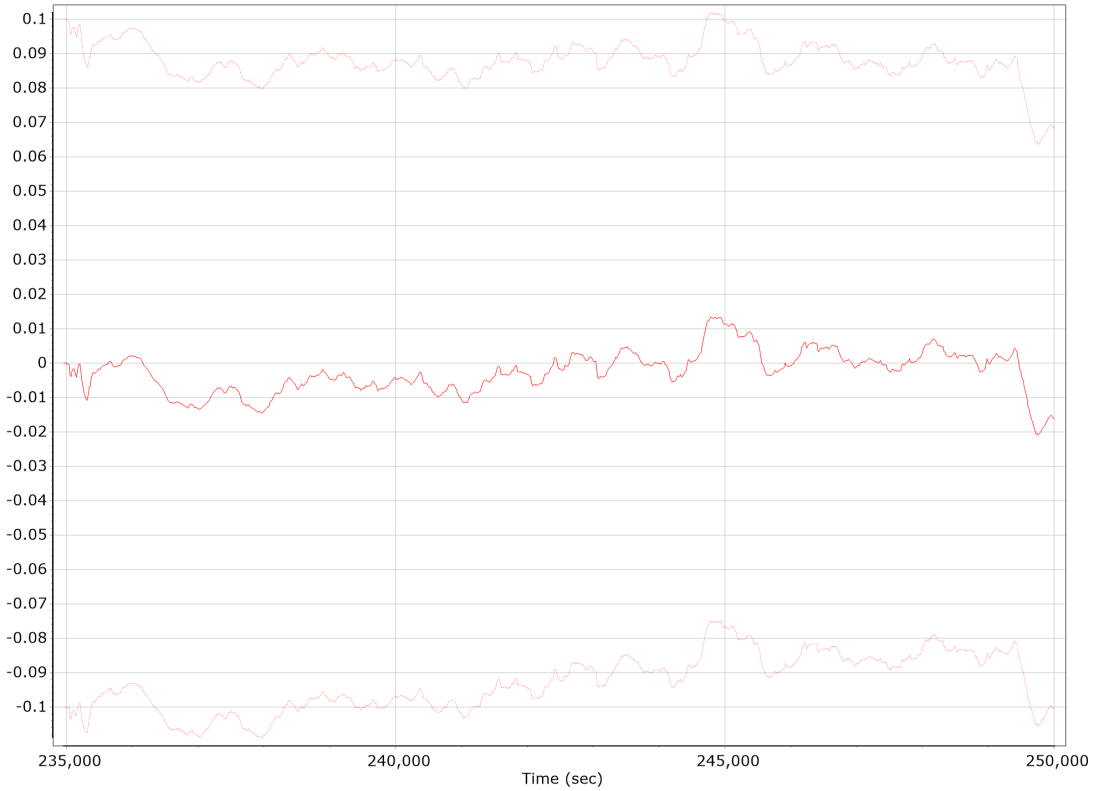
Gyro Bias (deg/h)



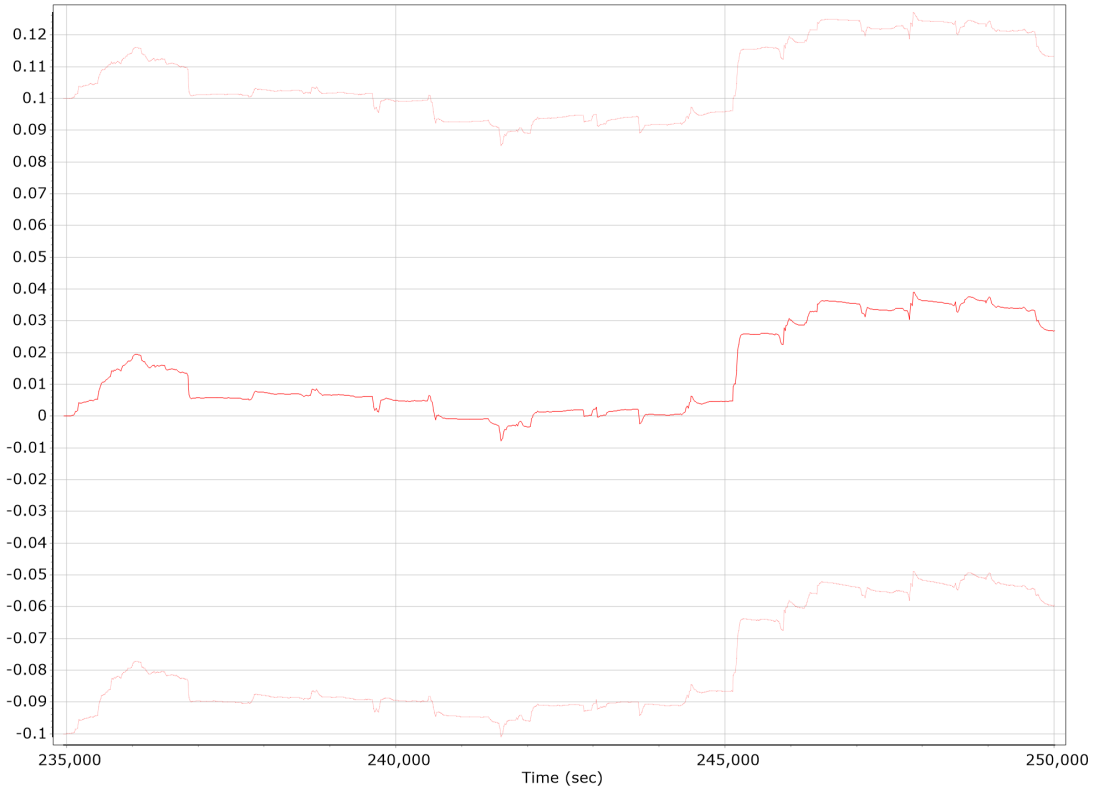
X Gyro Bias (deg/h)



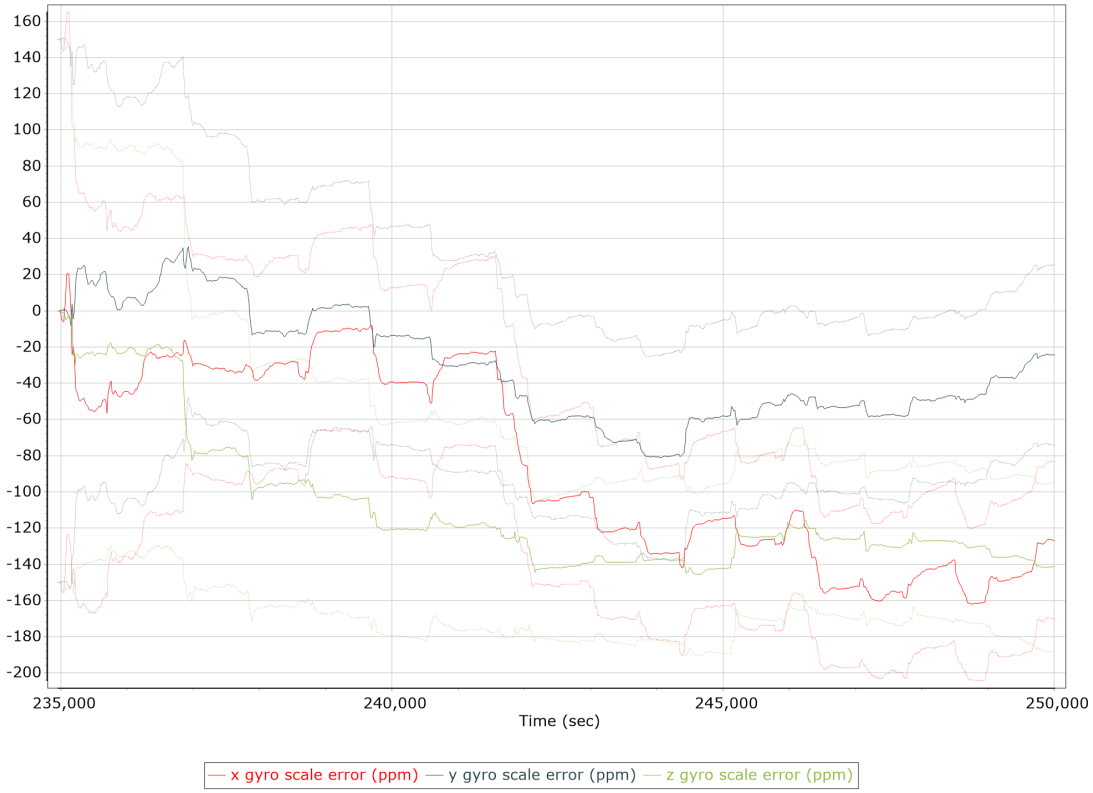
Y Gyro Bias (deg/h)



Z Gyro Bias (deg/h)



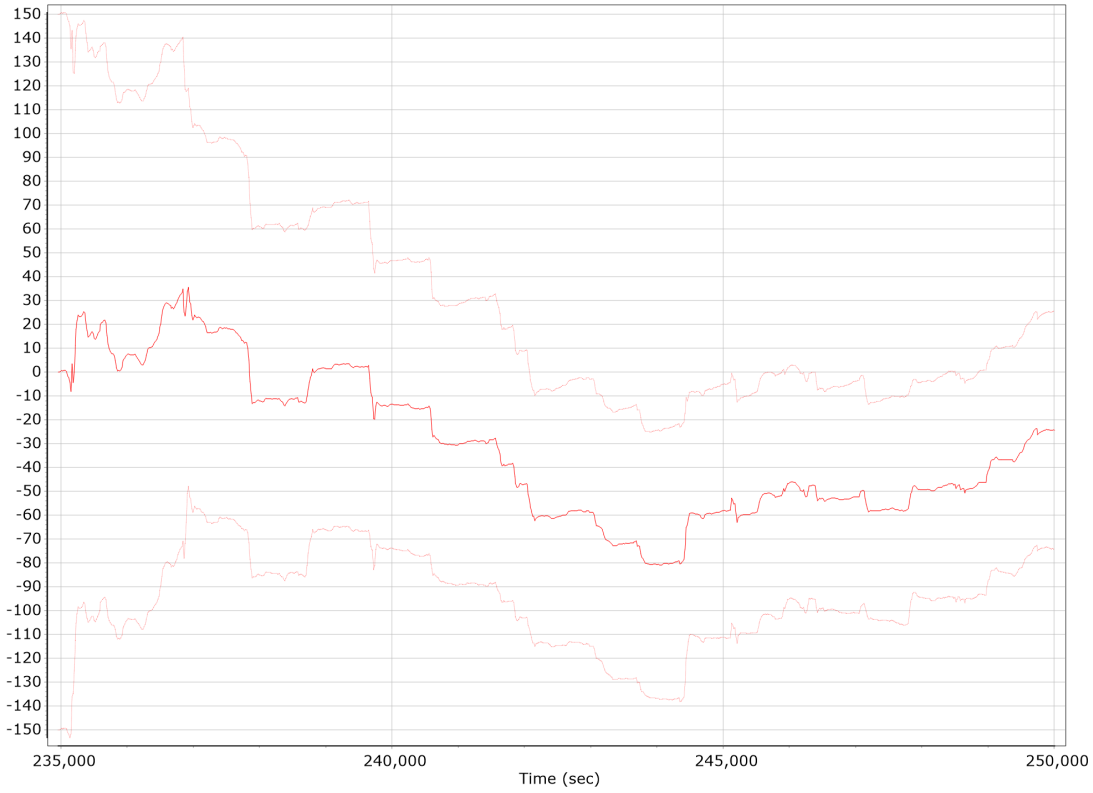
Gyro Scale Error (ppm)



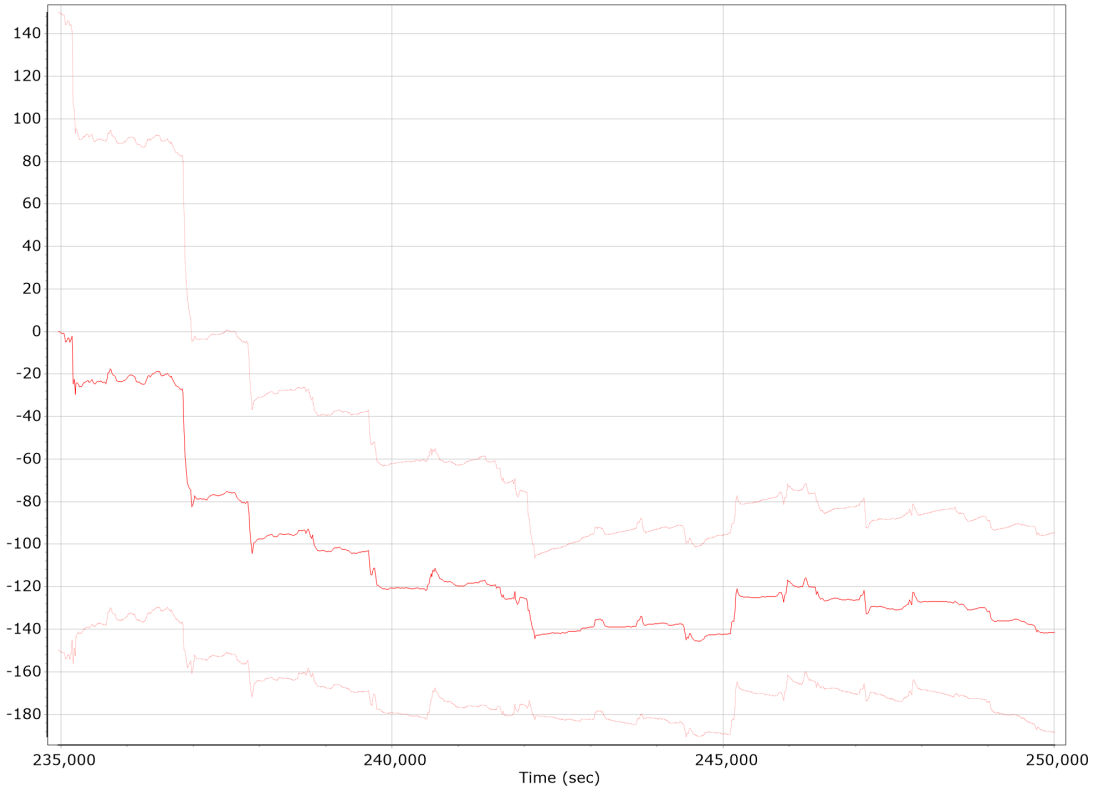
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)

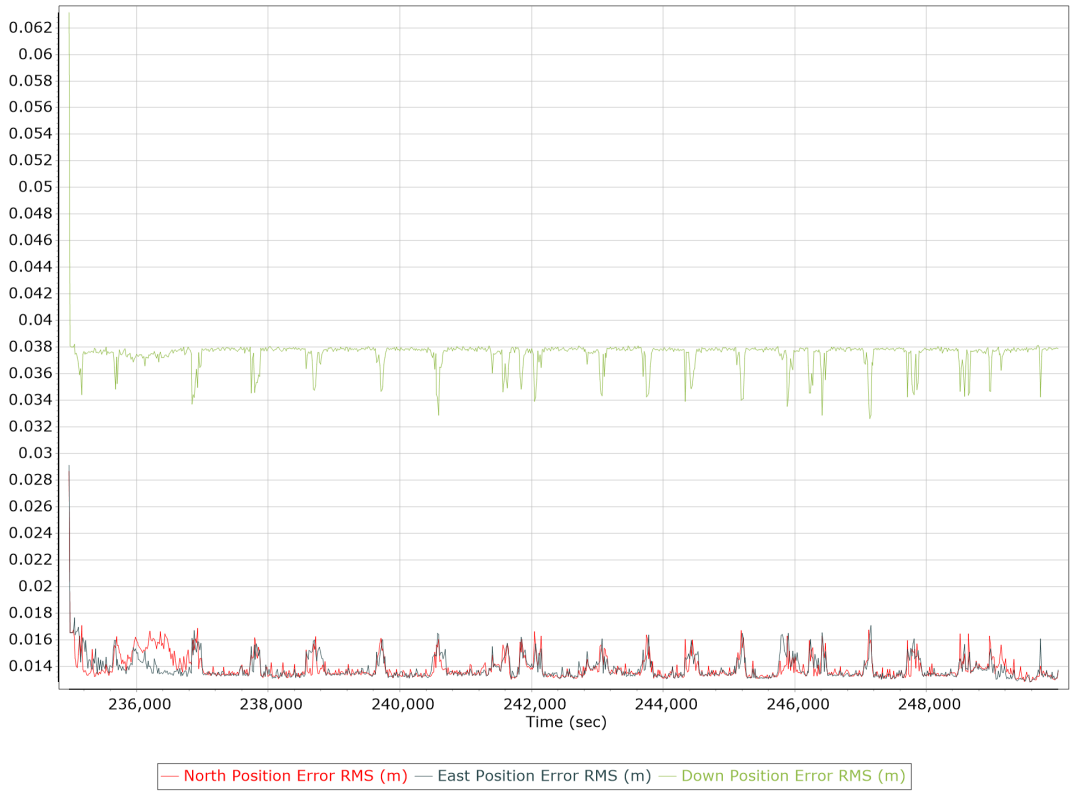


Z Gyro Scale Error (ppm)



Smoothed Performance Metrics

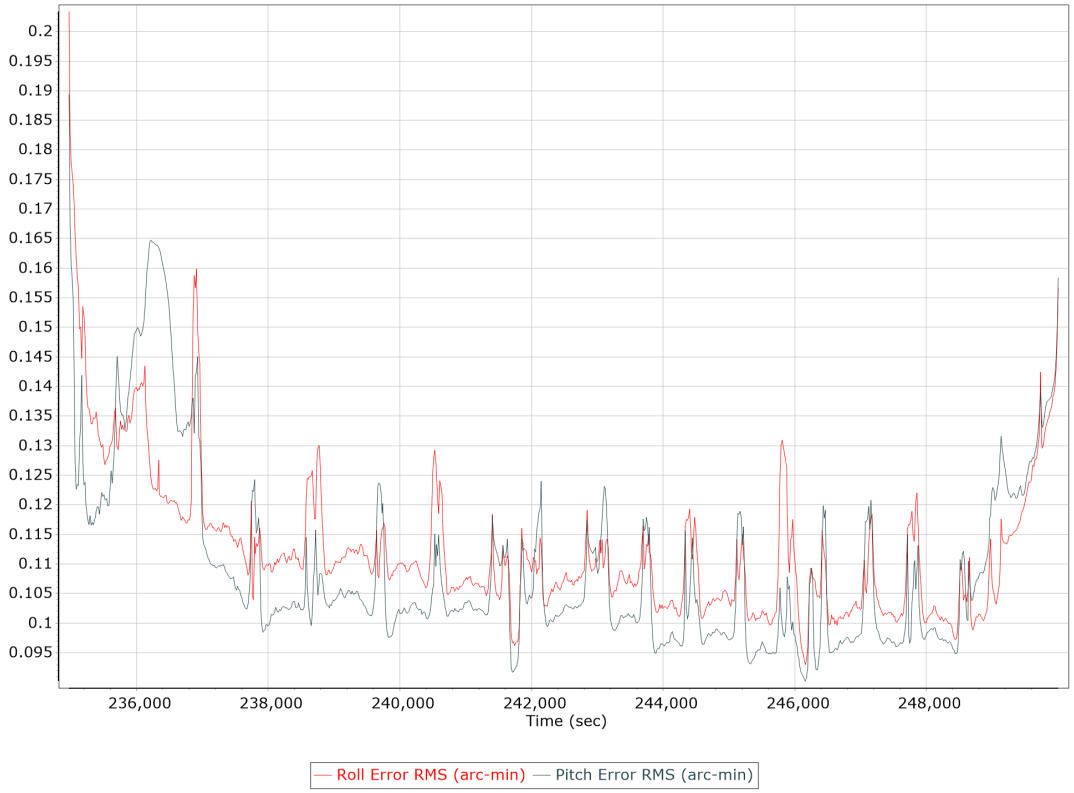
Position Error RMS (m)



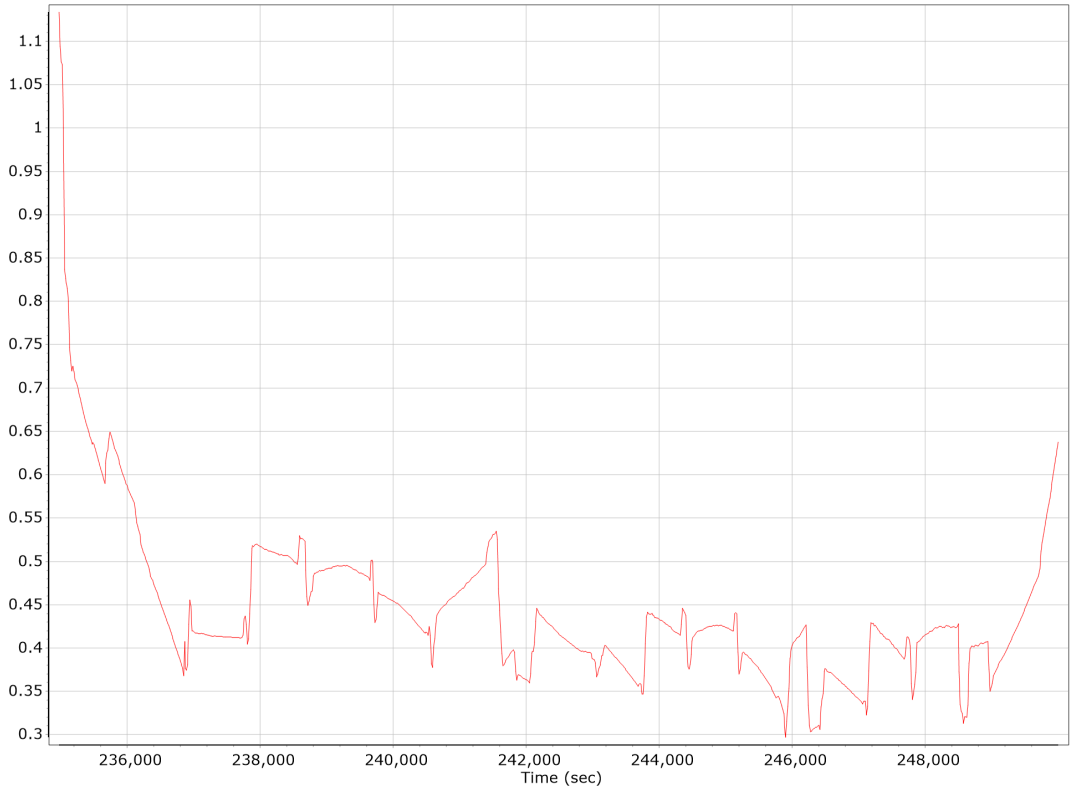
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)



Heading Error RMS (arc-min)

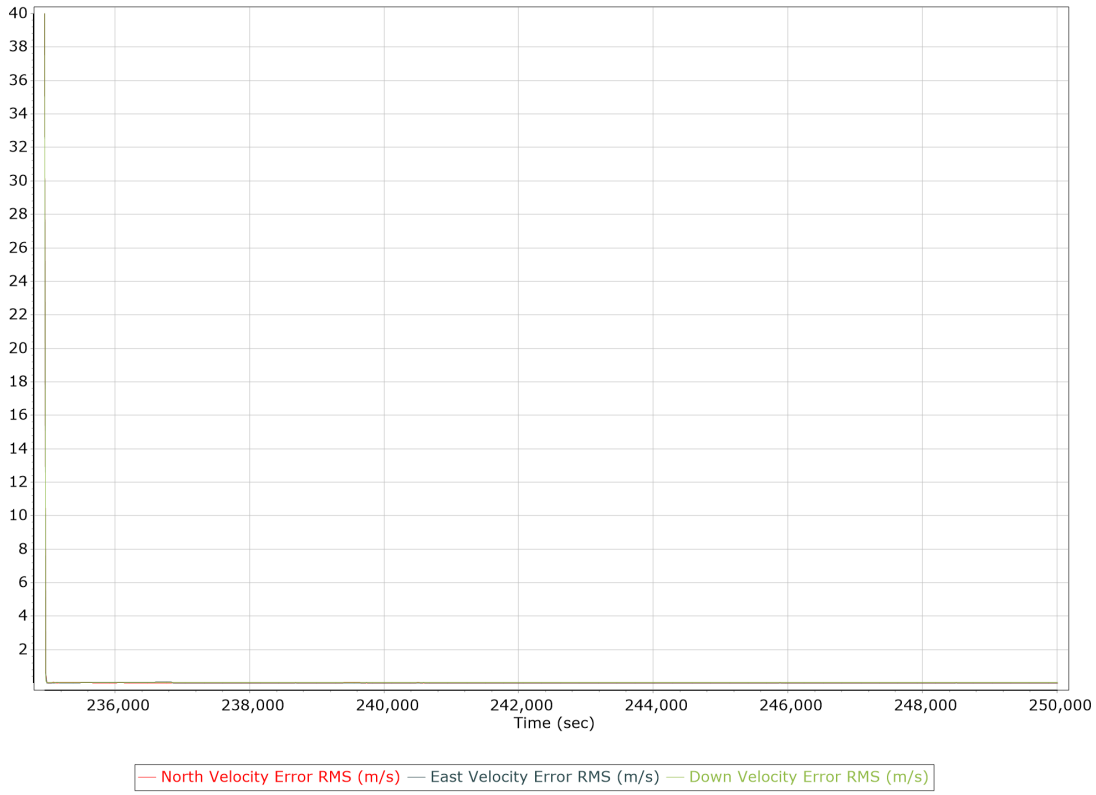


Forward Processed Performance Metrics

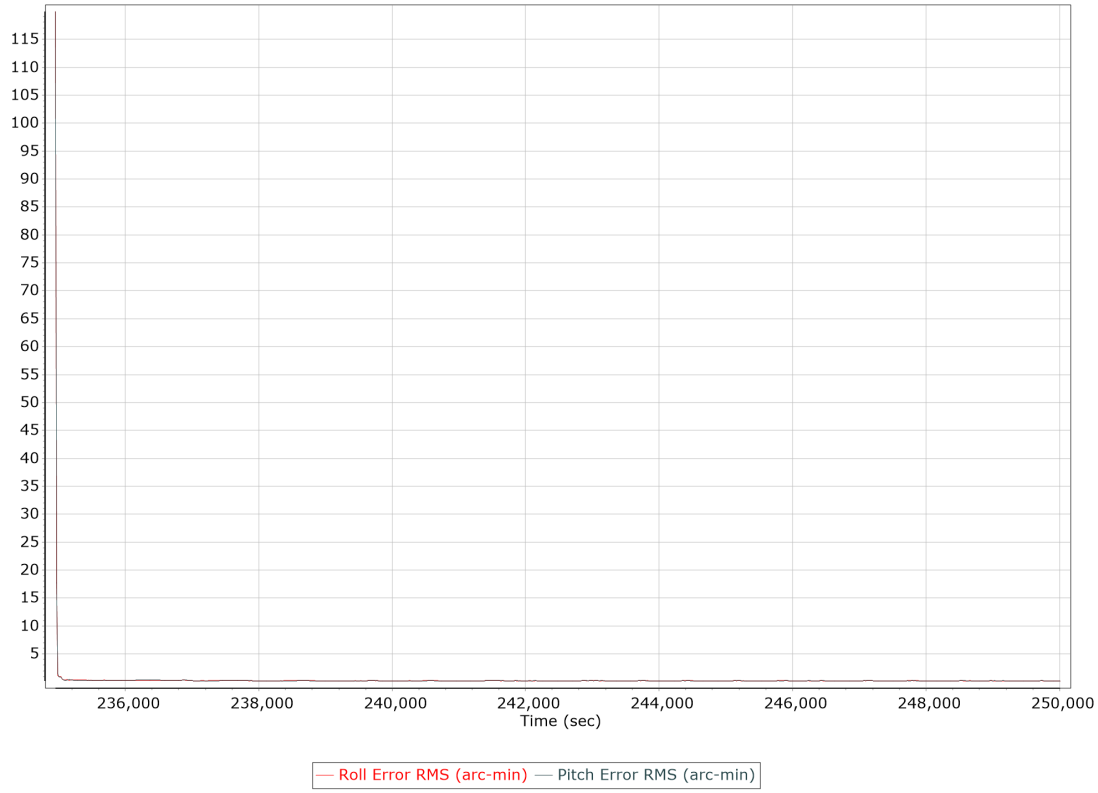
Position Error RMS (m)



Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

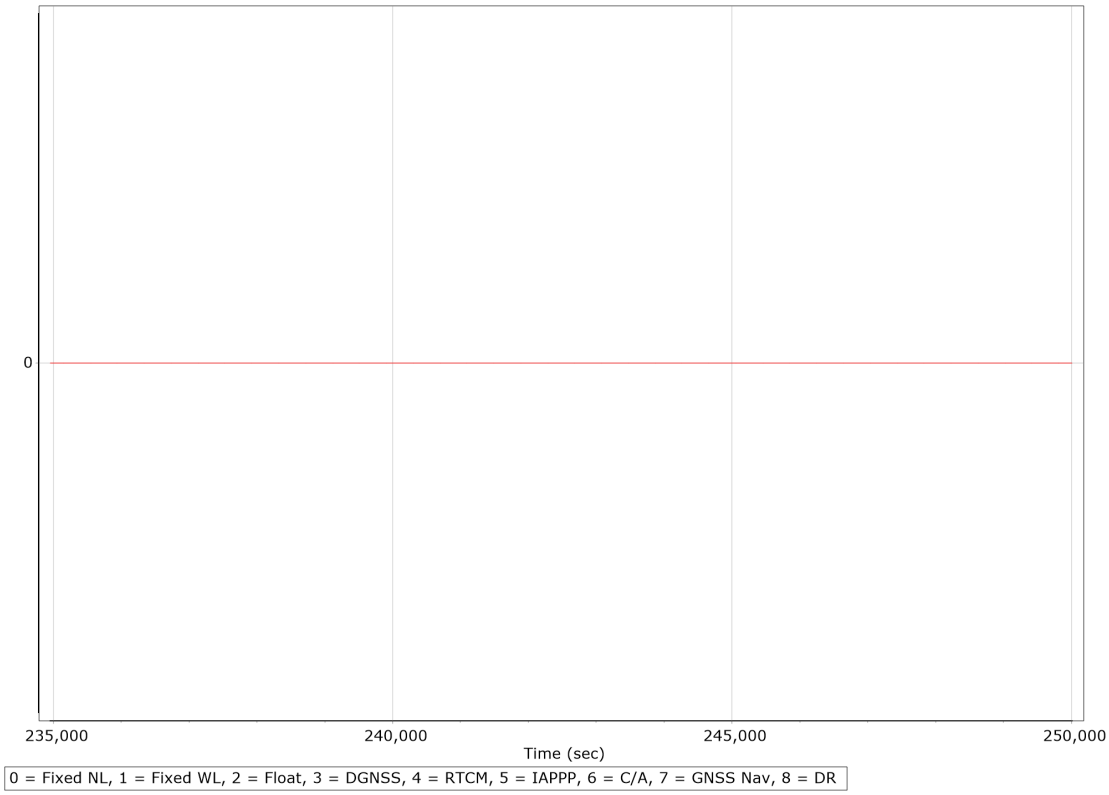


Heading Error RMS (arc-min)

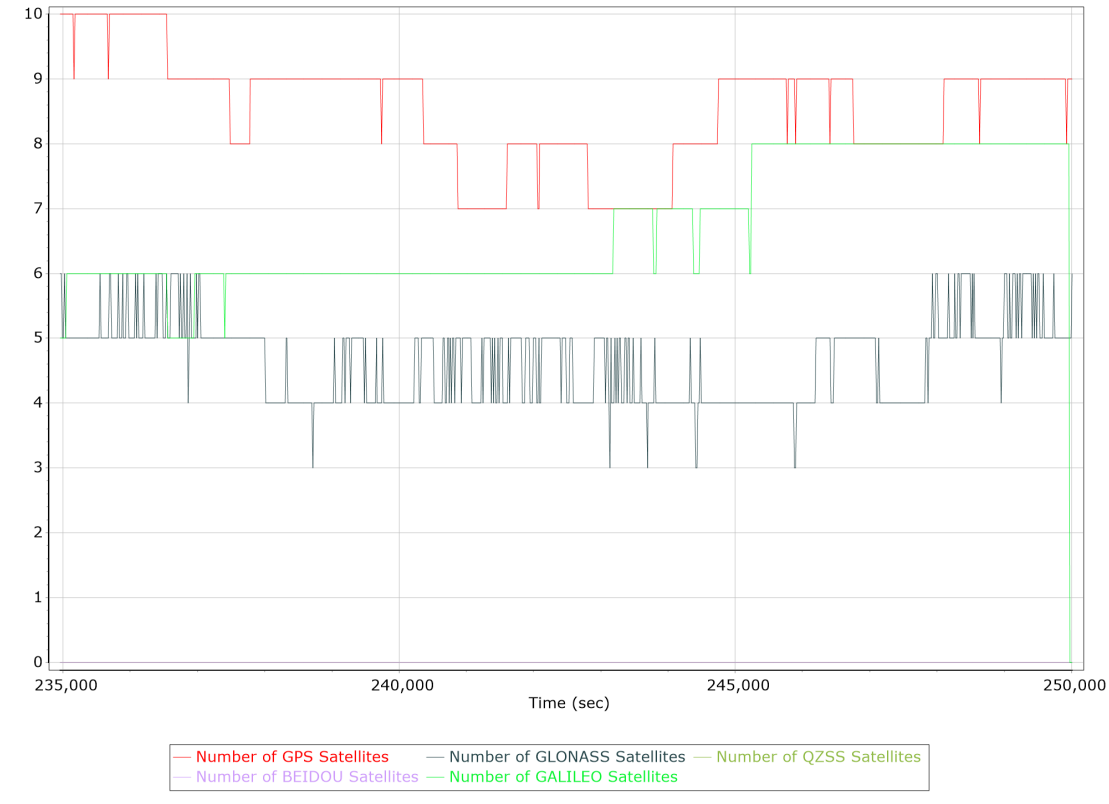


Forward Processed Solution Status

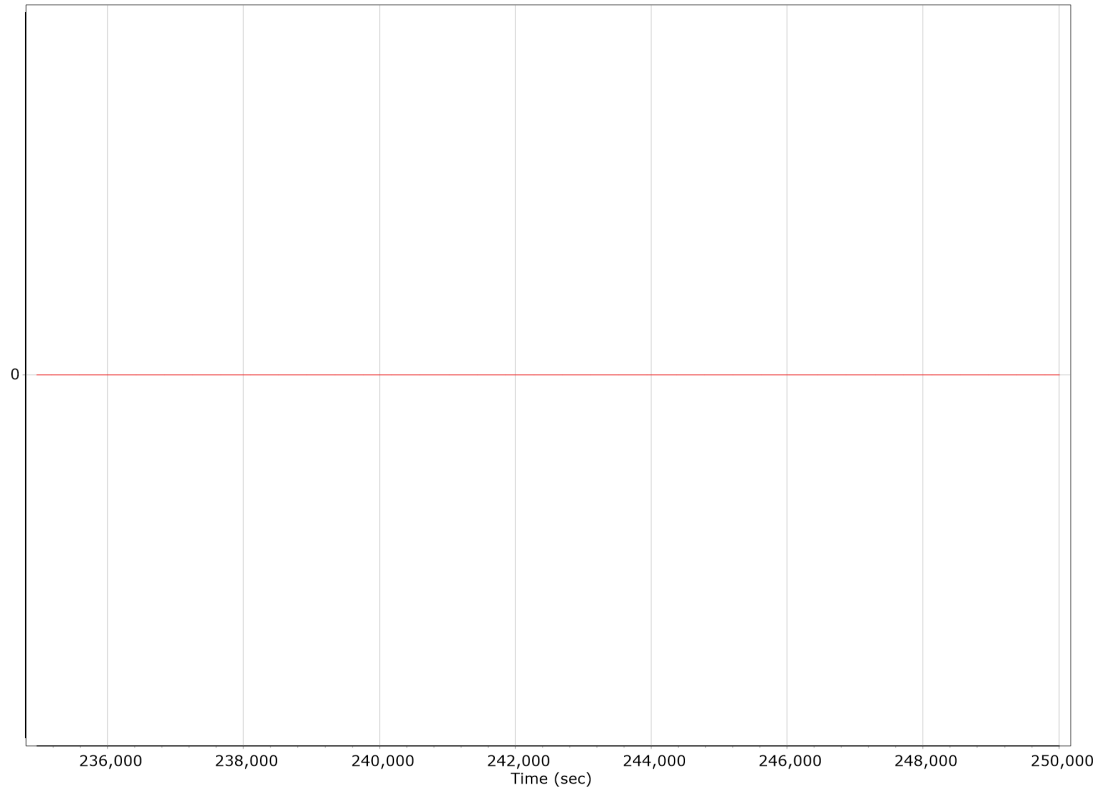
Processing Mode



Number of Satellites



Baseline Length



General Information

Mission Information

Project name	10032023B_4046
Processing date	2024-01-12 20:02:40
Mission date	2023-10-03 22:44:48
Mission duration	02:53:00.050
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N10762
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
CP780.432	POS Data
CP780.433	POS Data
CP780.434	POS Data
CP780.435	POS Data
CP780.436	POS Data
CP780.437	POS Data
CP780.438	POS Data
CP780.439	POS Data
CP780.440	POS Data
CP780.441	POS Data
CP780.442	POS Data
CP780.443	POS Data
CP780.444	POS Data
CP780.445	POS Data
CP780.446	POS Data
CP780.447	POS Data
CP780.448	POS Data
CP780.449	POS Data
CP780.450	POS Data
CP780.451	POS Data
CP780.452	POS Data
CP780.453	POS Data
CP780.454	POS Data

Input Files

File Name	File Type
Ephm2760.23g	GLONASS Broadcast Ephemeris
Ephm2760.23n	GPS Broadcast Ephemeris
Ephm2770.23g	GLONASS Broadcast Ephemeris
Ephm2770.23n	GPS Broadcast Ephemeris
IGS0OPSFIN_20232750000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232760000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232770000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232780000_01D_15M_ORB.SP3	GPS Precise Ephemeris

Output Files

Filename	File type
sbet_10032023B_4046.out	SBET Trajectory File

Rover Data Summary

First raw data file	CP780.432		
Last raw data file	CP780.454		
Start GPS week	2282		
Start time	254681.053 (10/3/2023 10:44:41 PM)		
End time	265061.103 (10/4/2023 1:37:41 AM)		
Start of fine alignment	255032.921 (10/3/2023 10:50:32 PM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	0.000	0.000	0.000
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

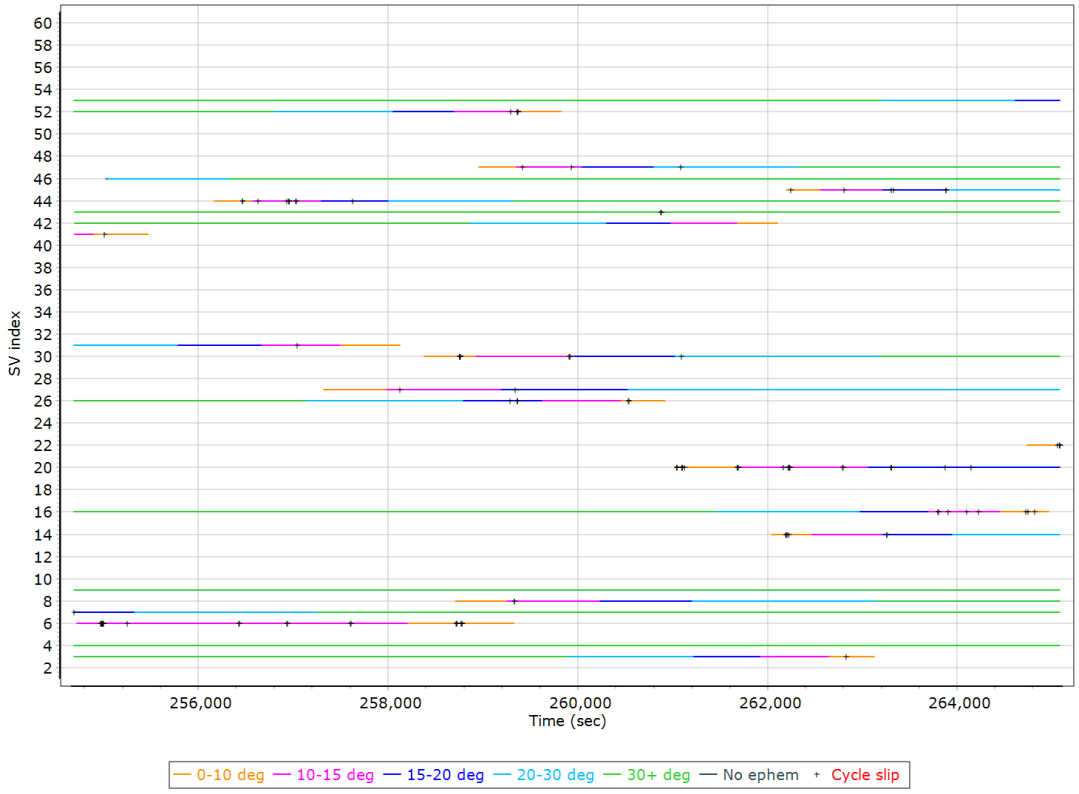
Rover Data QC

Raw IMU Import QC Summary

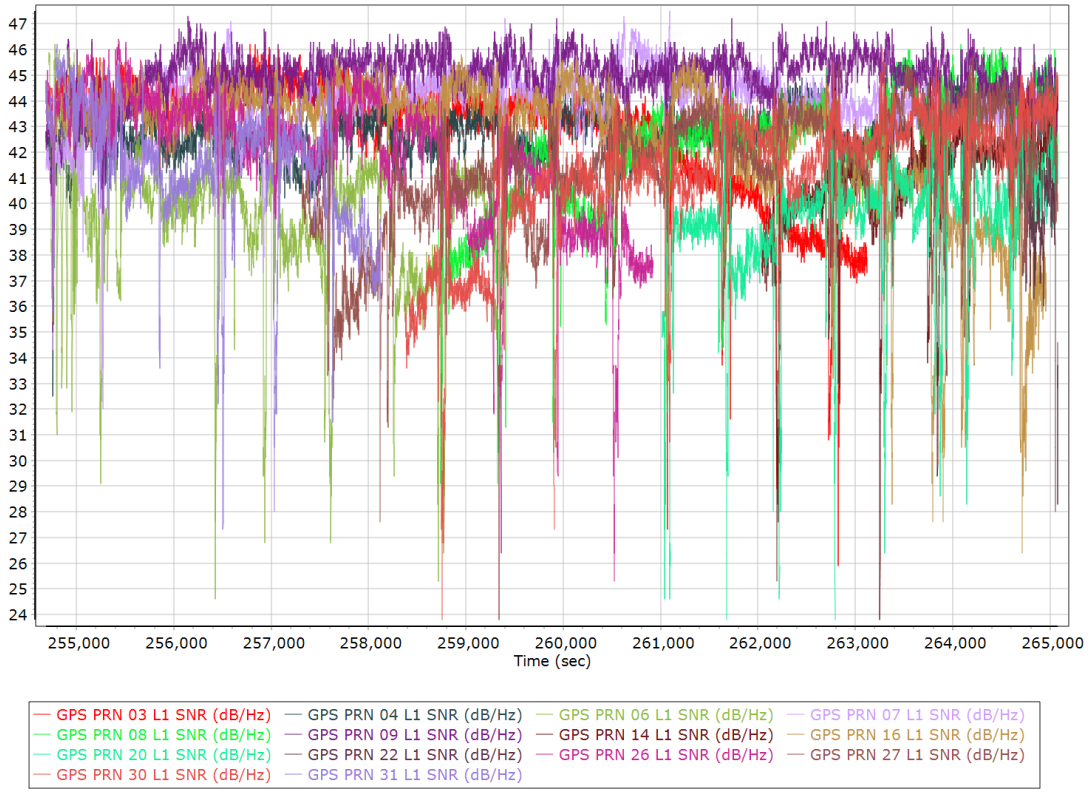
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_10032023B_4046.log
IMU Records Processed	2078075
Termination Status	Warnings
IMU Anomalies	1
IMU Failure Messages	
254680.803 : WARNING : Gap of 254668.8522 seconds in CHECKDT input data	

Primary Observables & Satellite Data

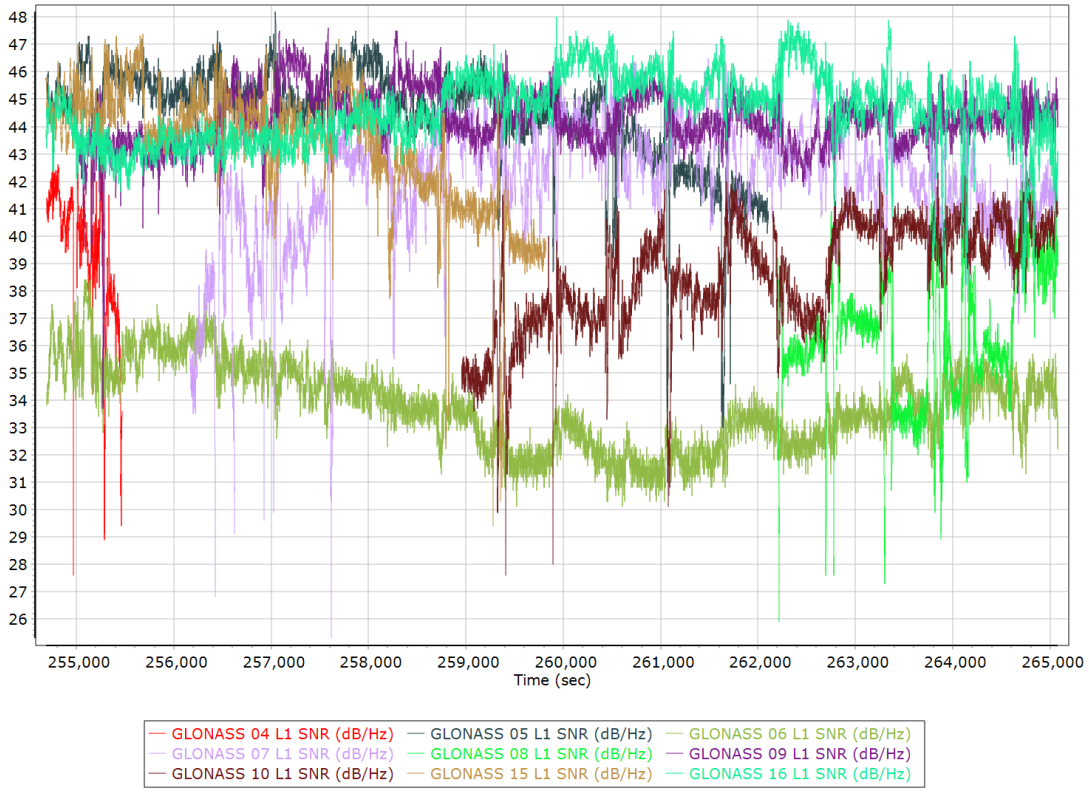
GPS/GLONASS L1 Satellite Lock/Elevation



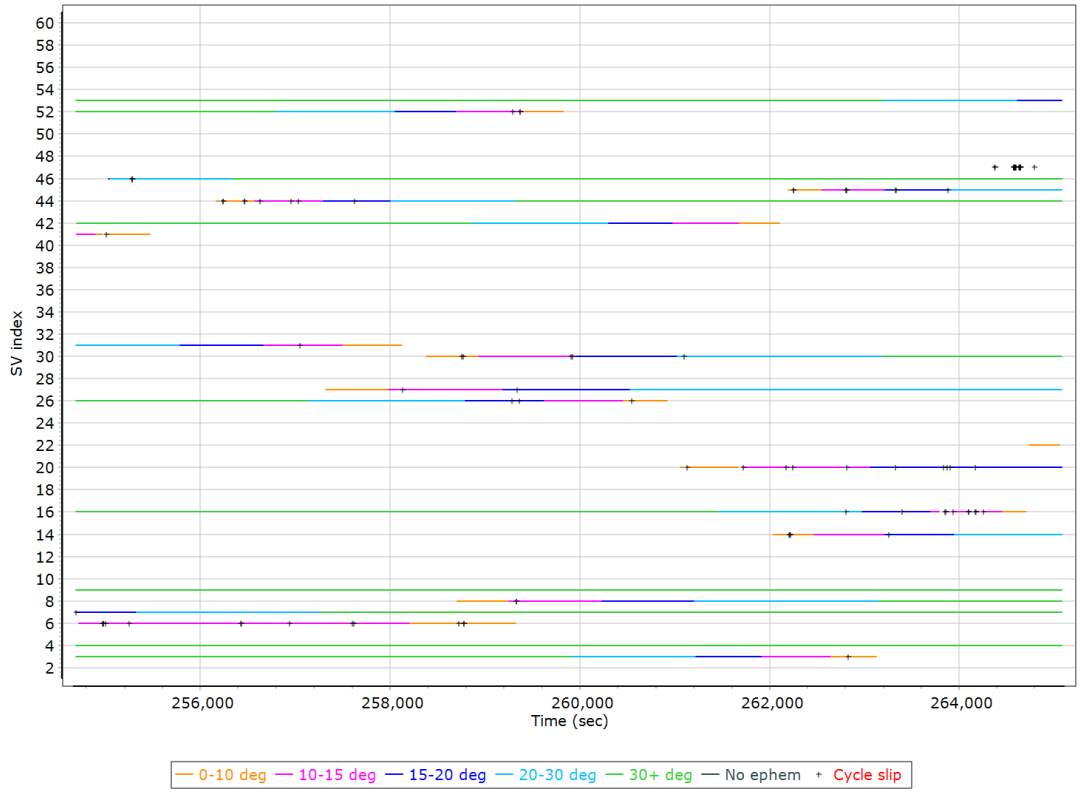
GPS L1 SNR



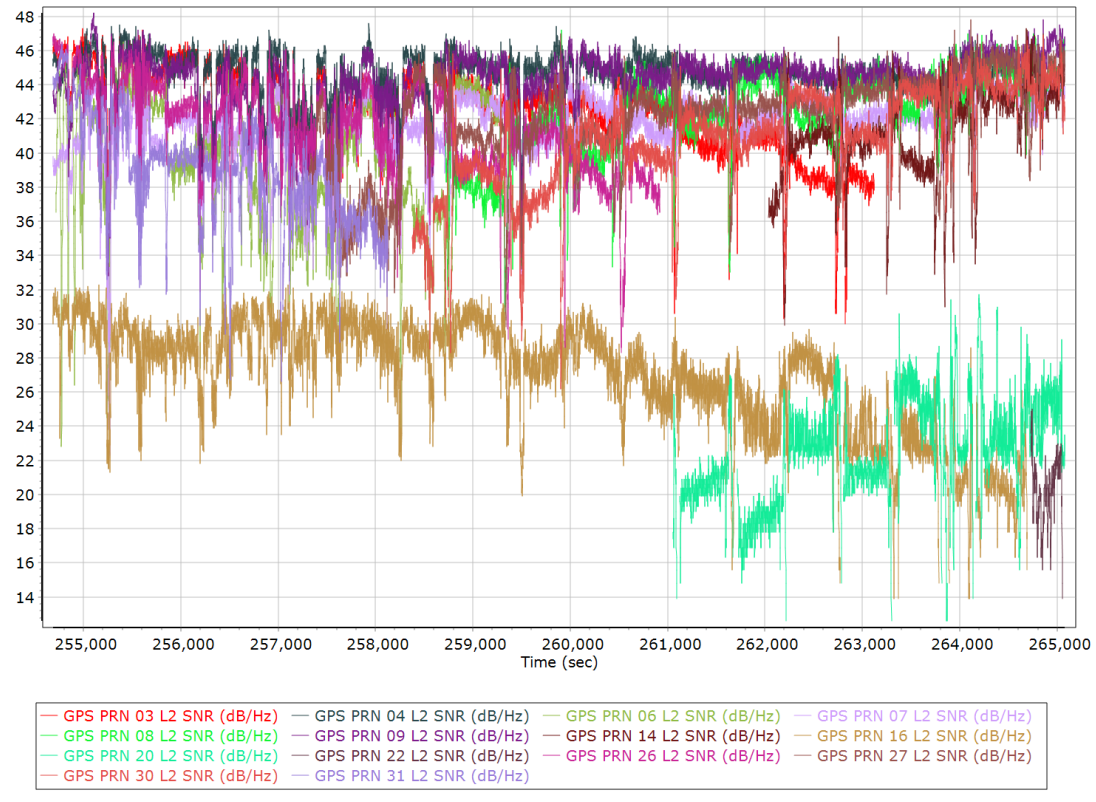
GLONASS L1 SNR



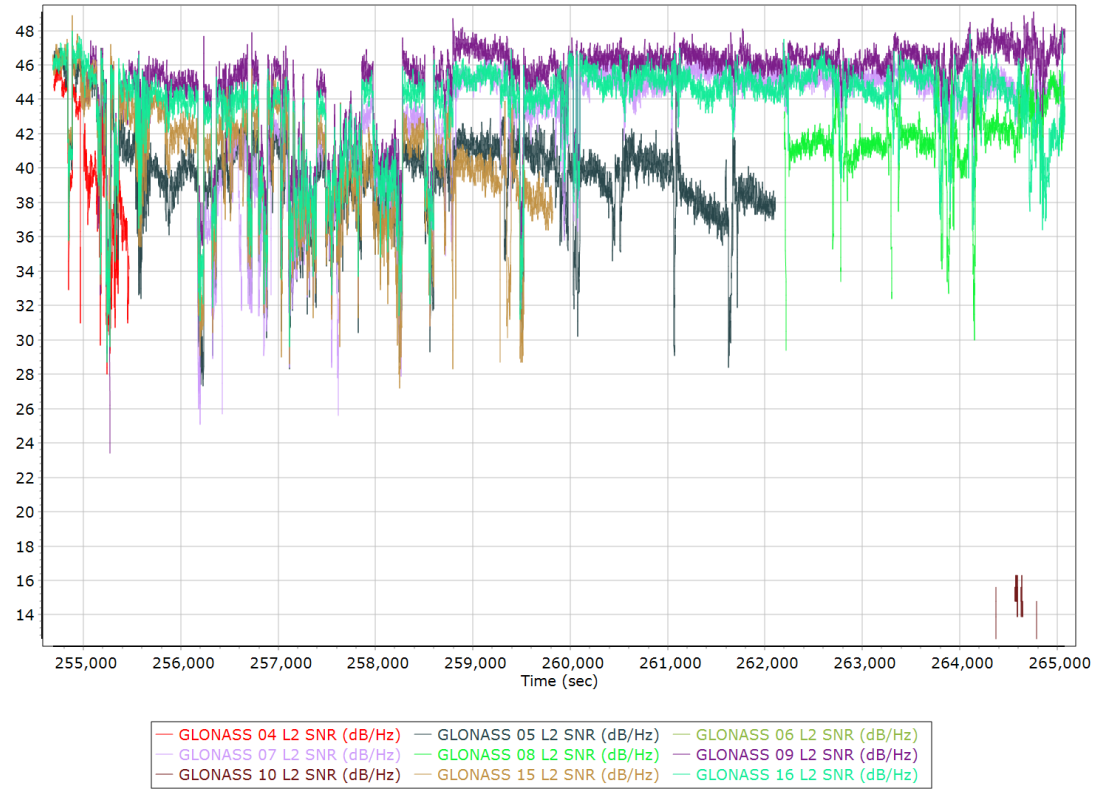
GPS/GLONASS L2 Satellite Lock/Elevation



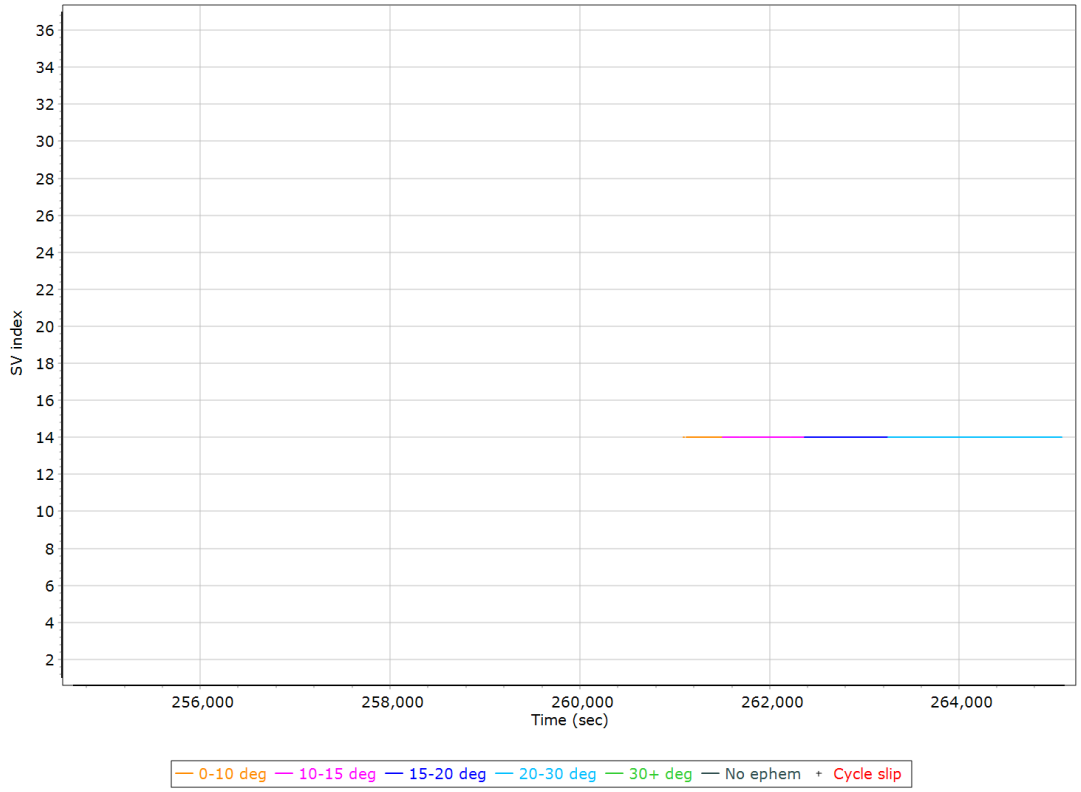
GPS L2 SNR



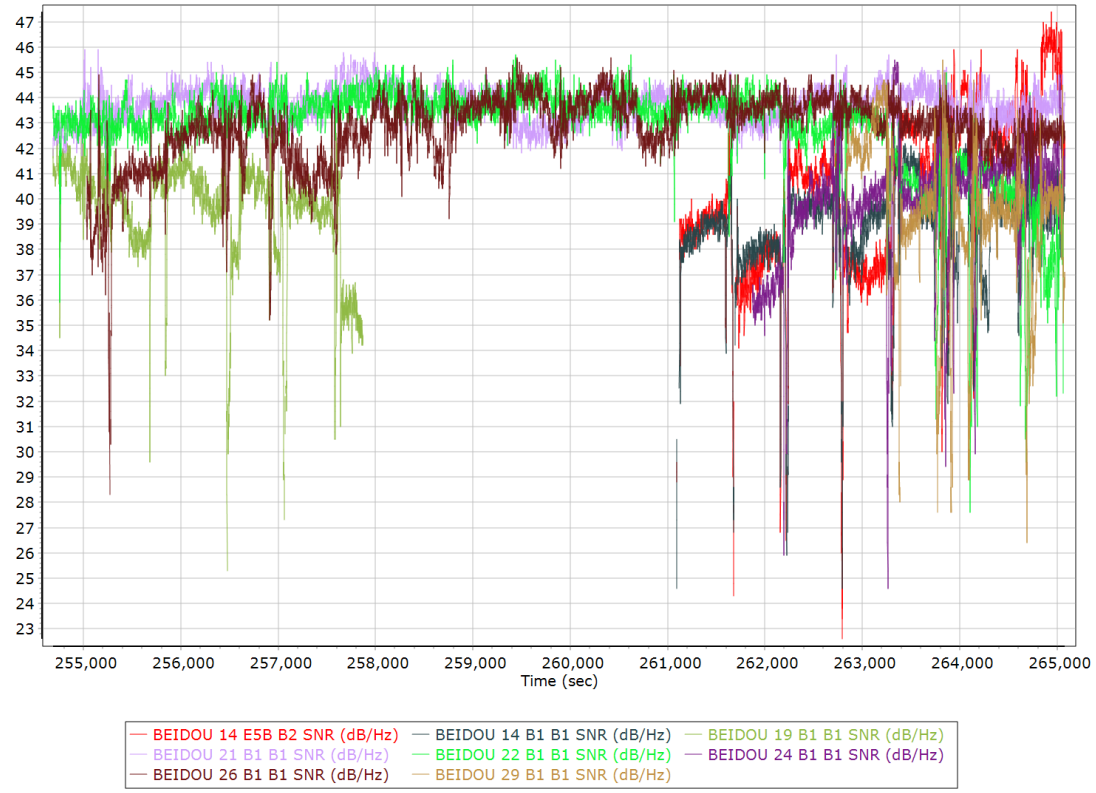
GLONASS L2 SNR



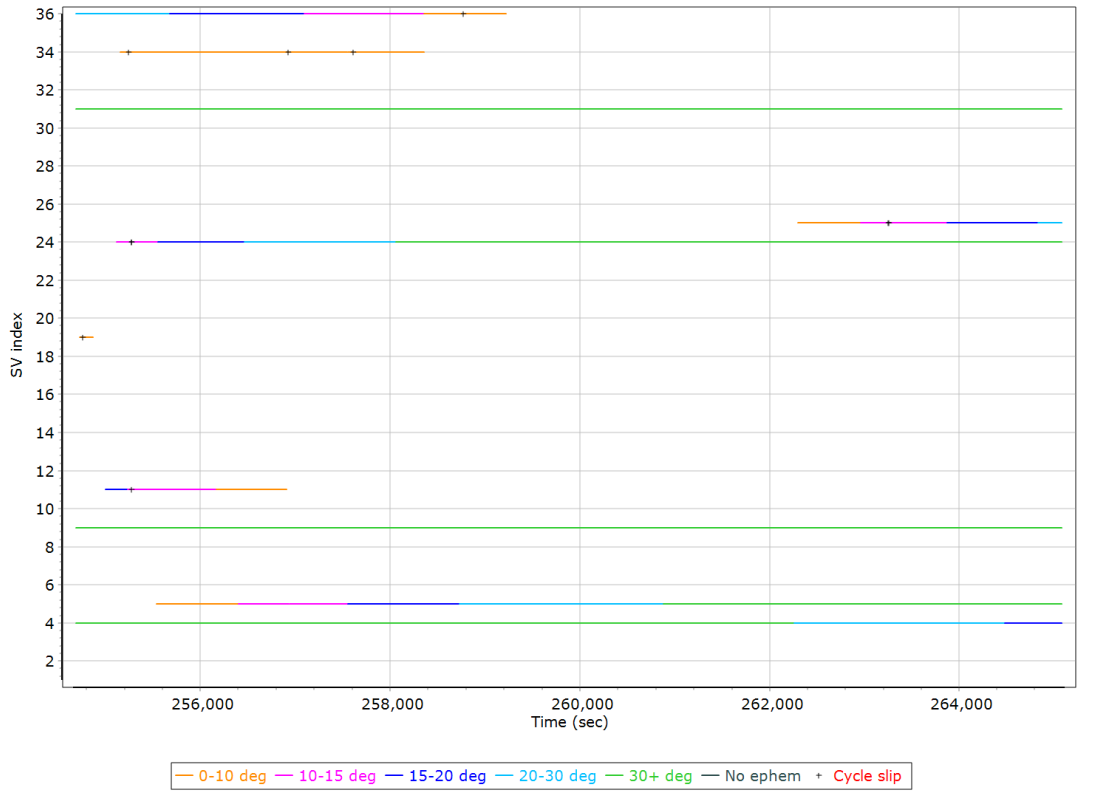
BEIDOU Satellite Lock/Elevation



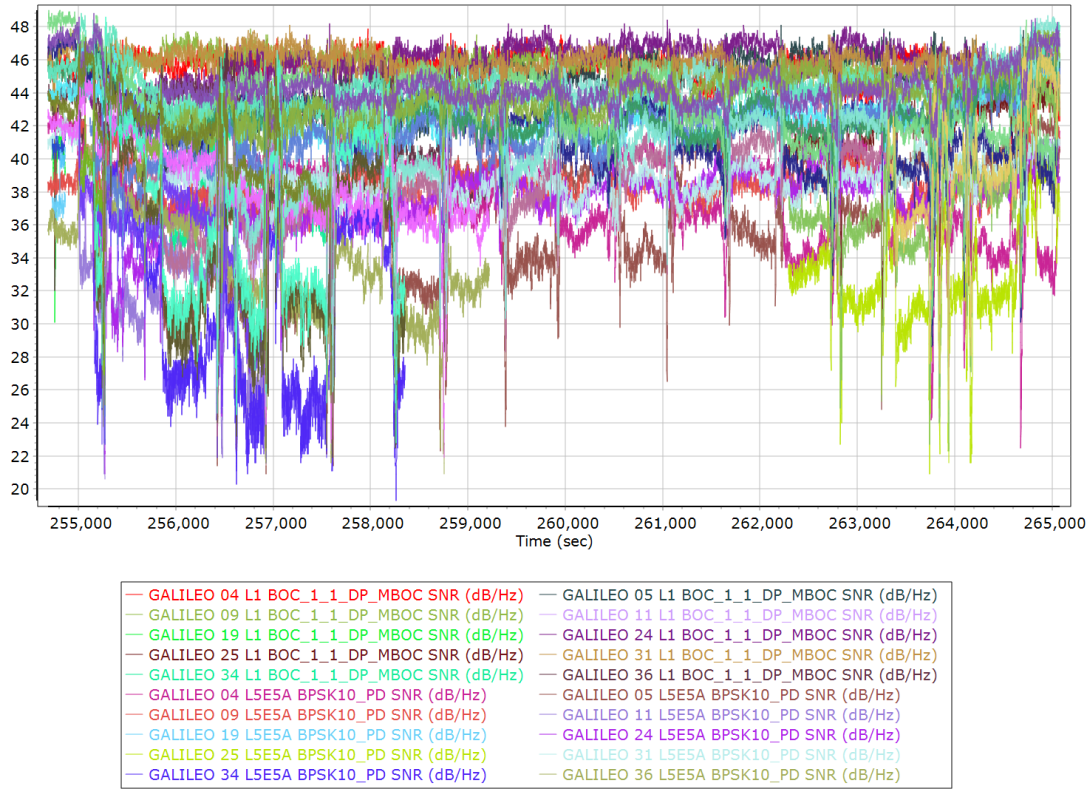
BEIDOU SNR



GALILEO Satellite Lock/Elevation

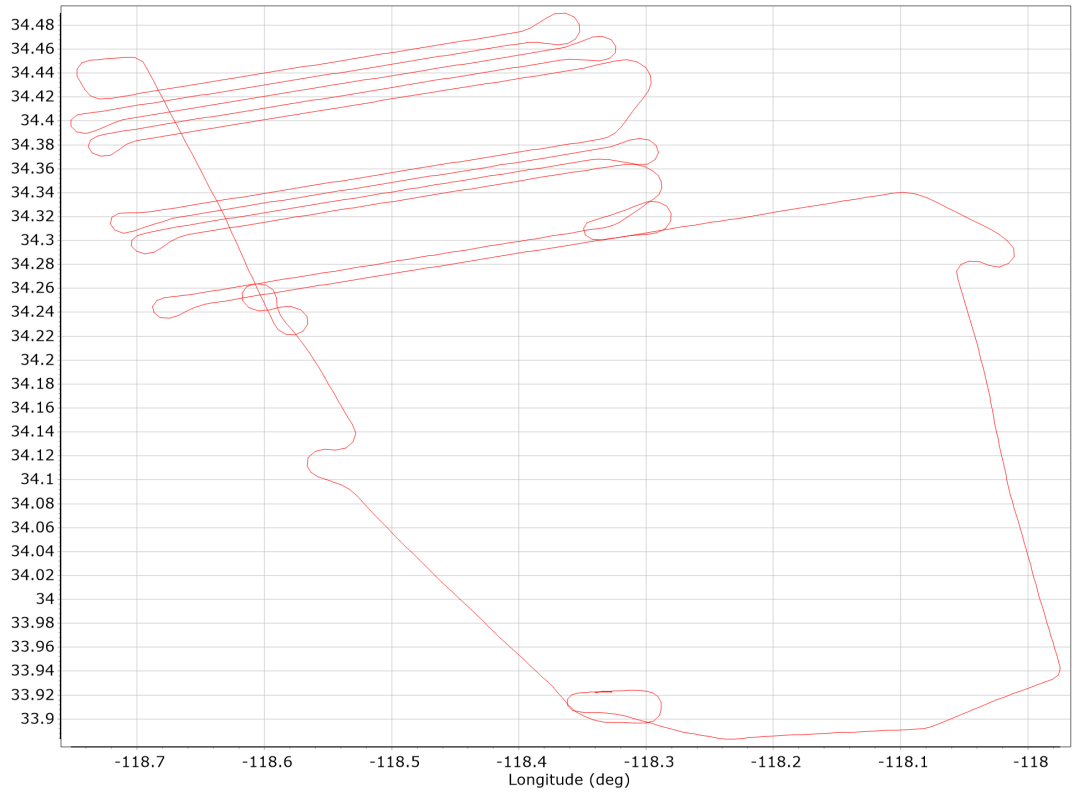


GALILEO SNR

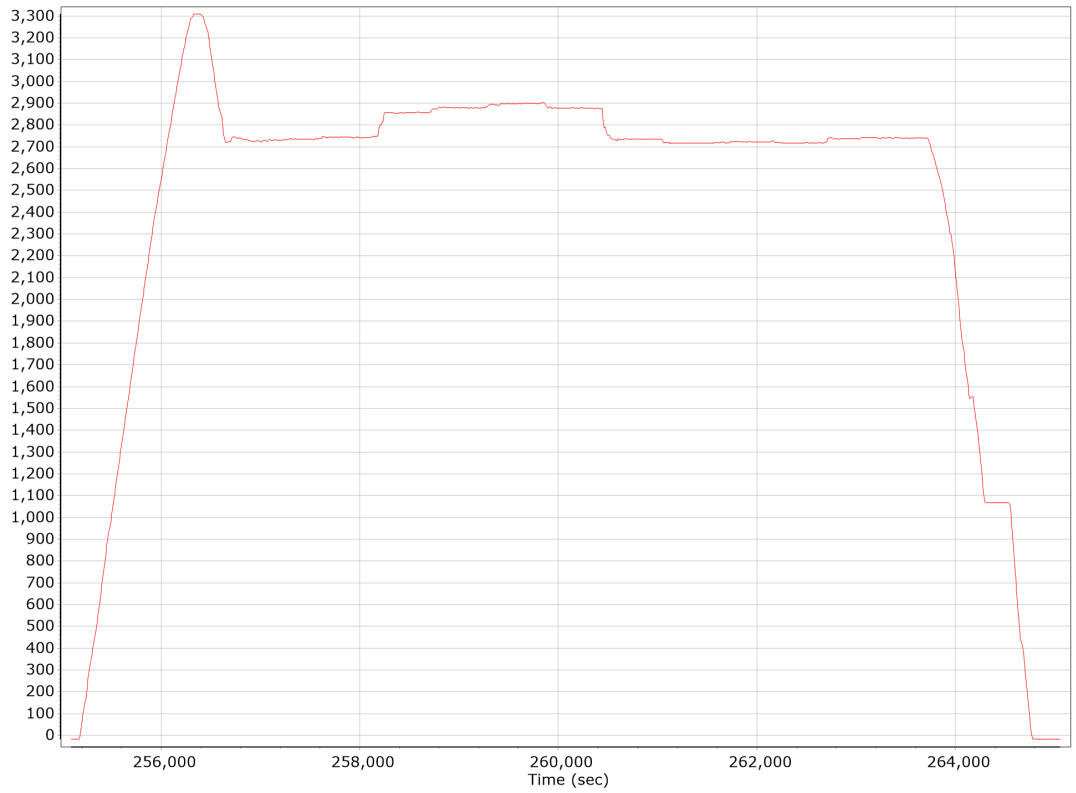

48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
255,000
256,000
257,000
258,000
259,000
260,000
261,000
262,000
263,000
264,000
265,000
Time (sec)
GALILEO 04 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 05 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 09 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 11 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 19 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 24 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 25 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 31 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 34 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 36 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 04 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 05 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 09 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 11 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 19 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 24 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 25 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 31 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 34 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 36 L5E5A BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

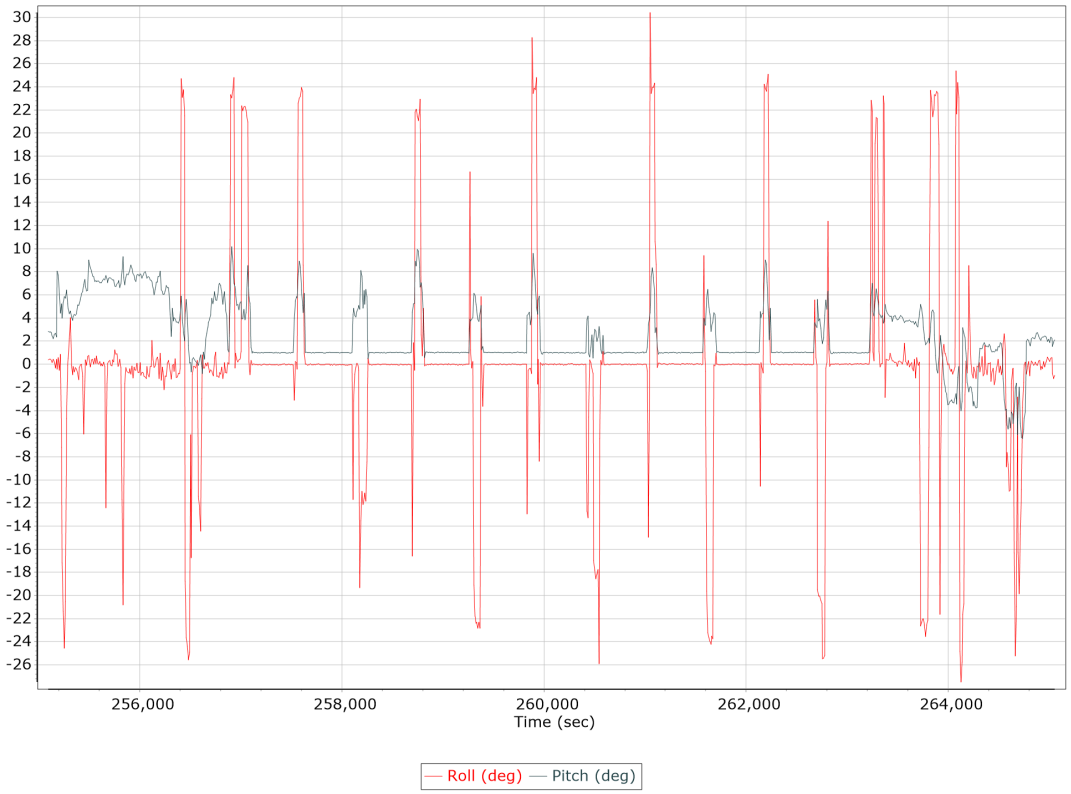
Top View



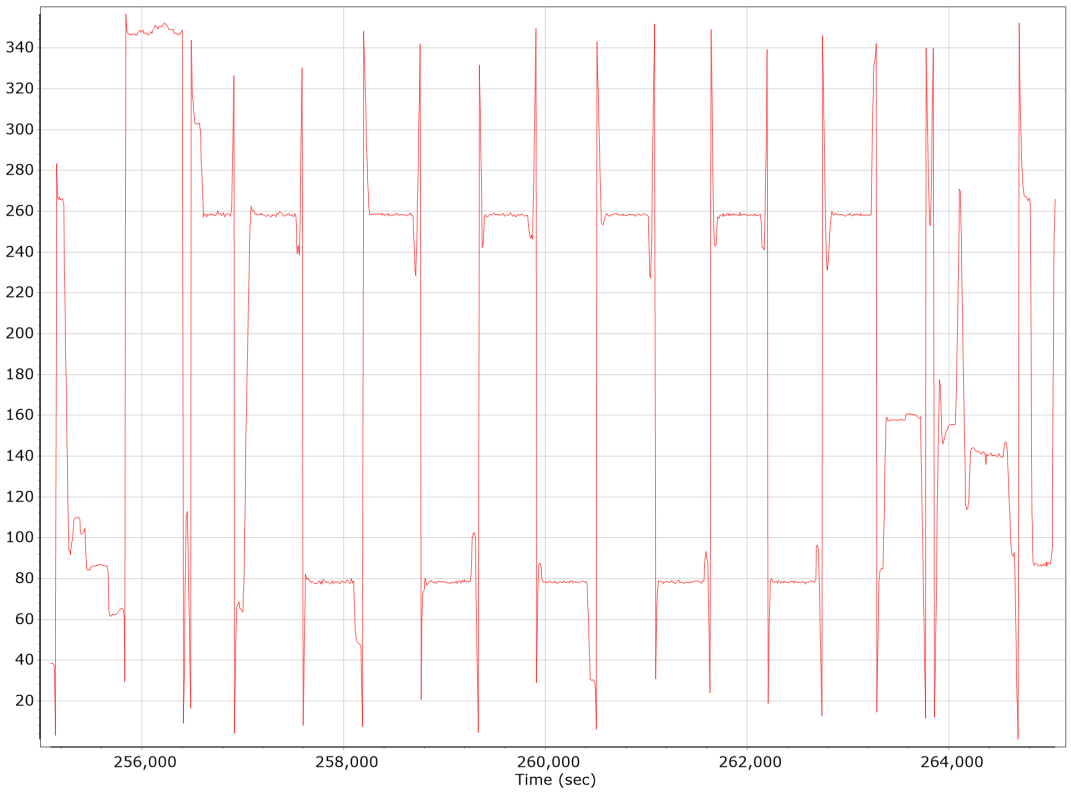
Altitude



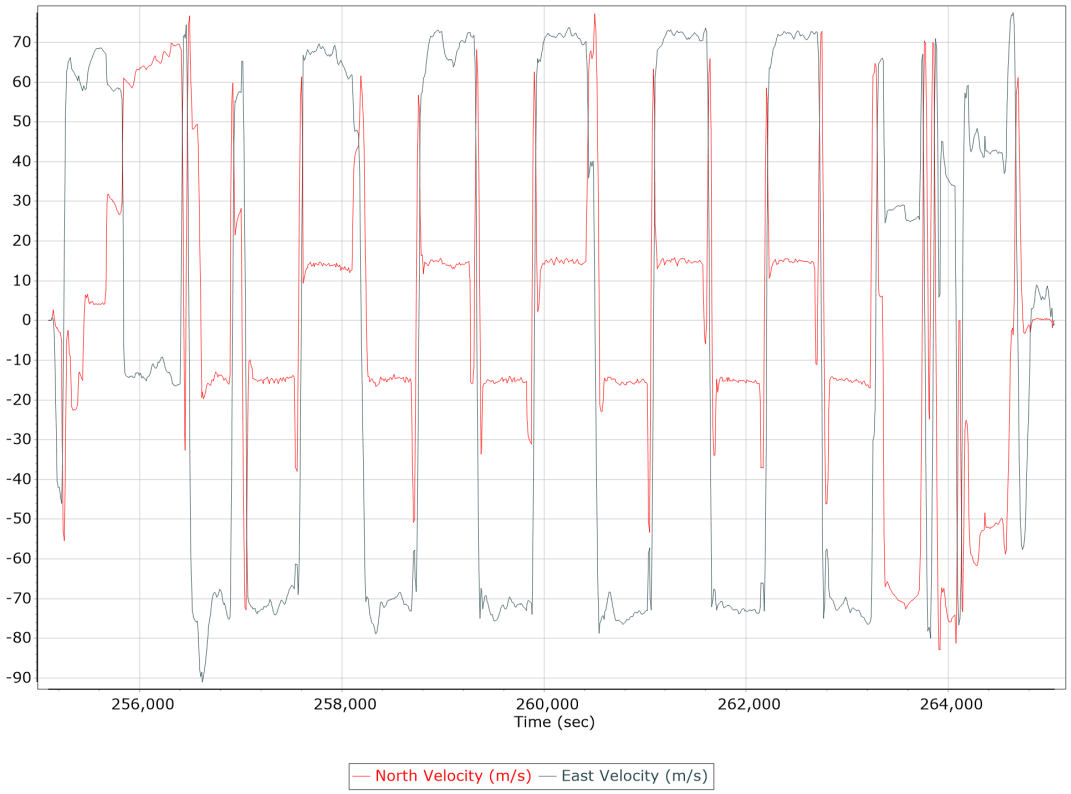
Roll/Pitch



Heading



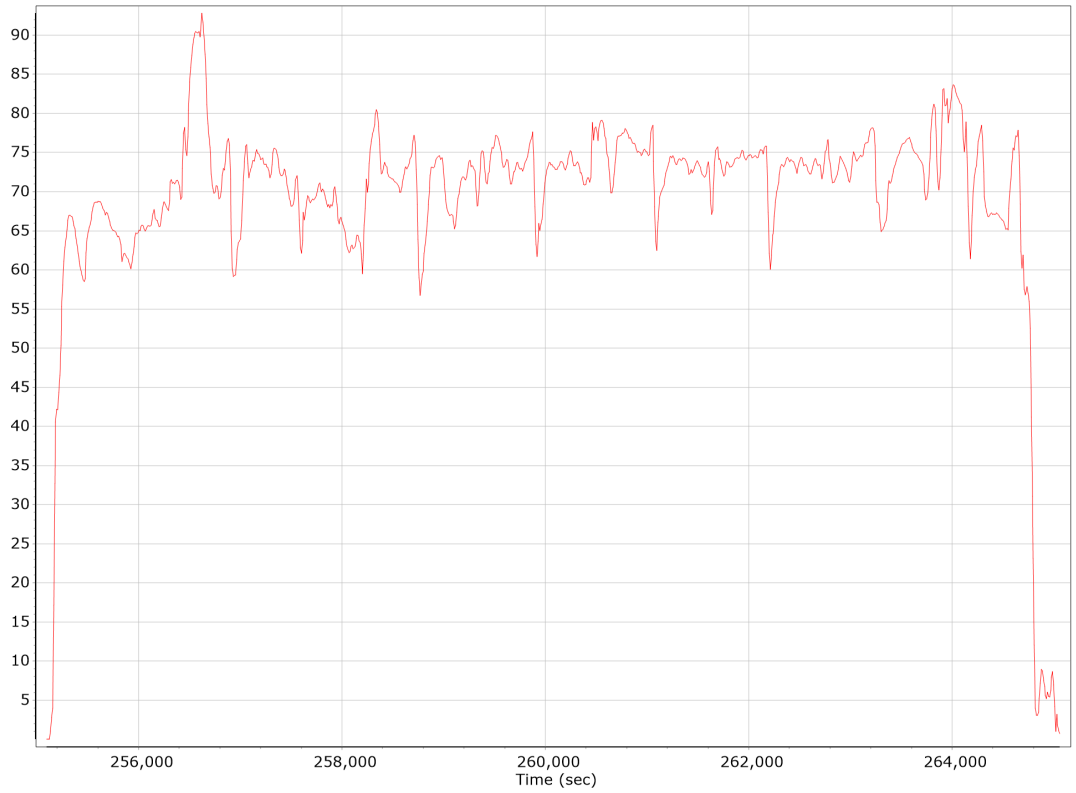
North/East Velocity



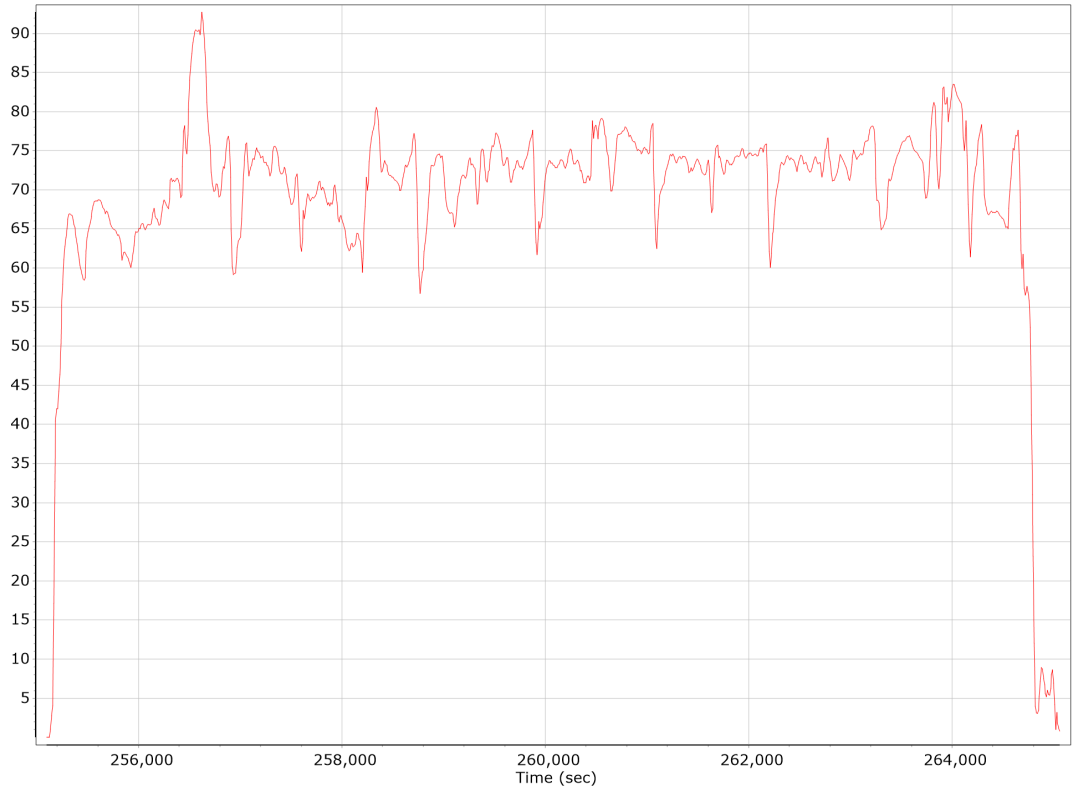
Down Velocity



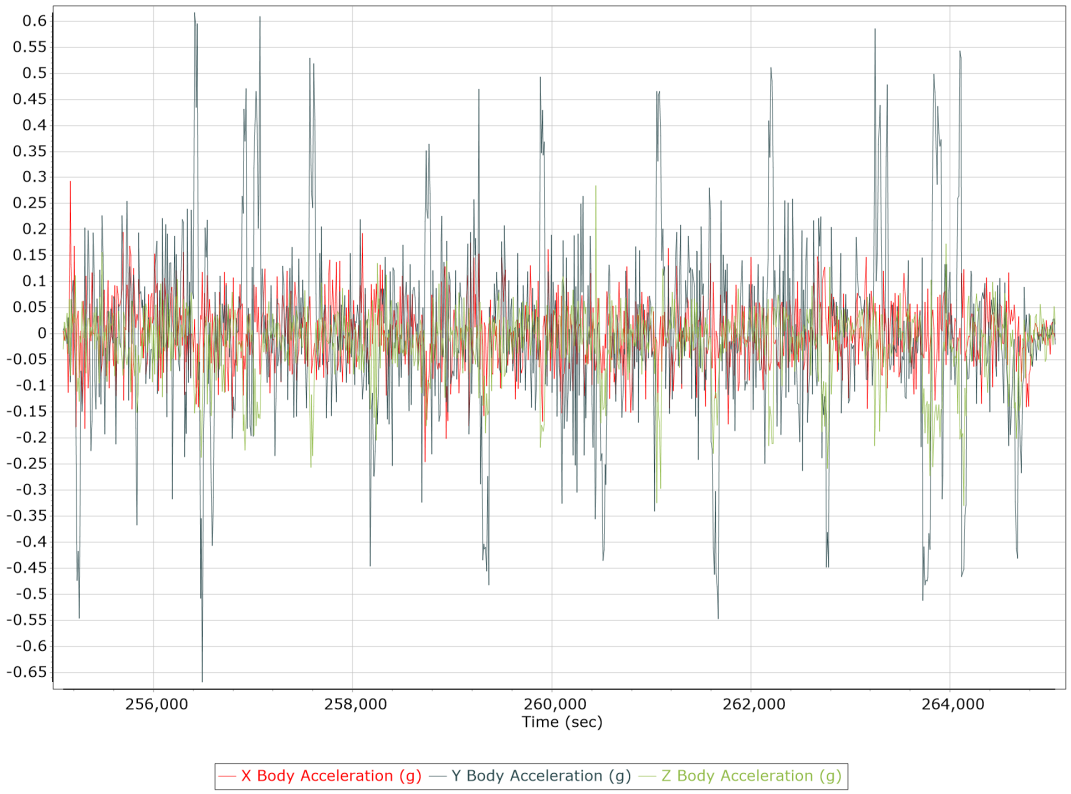
Total Speed



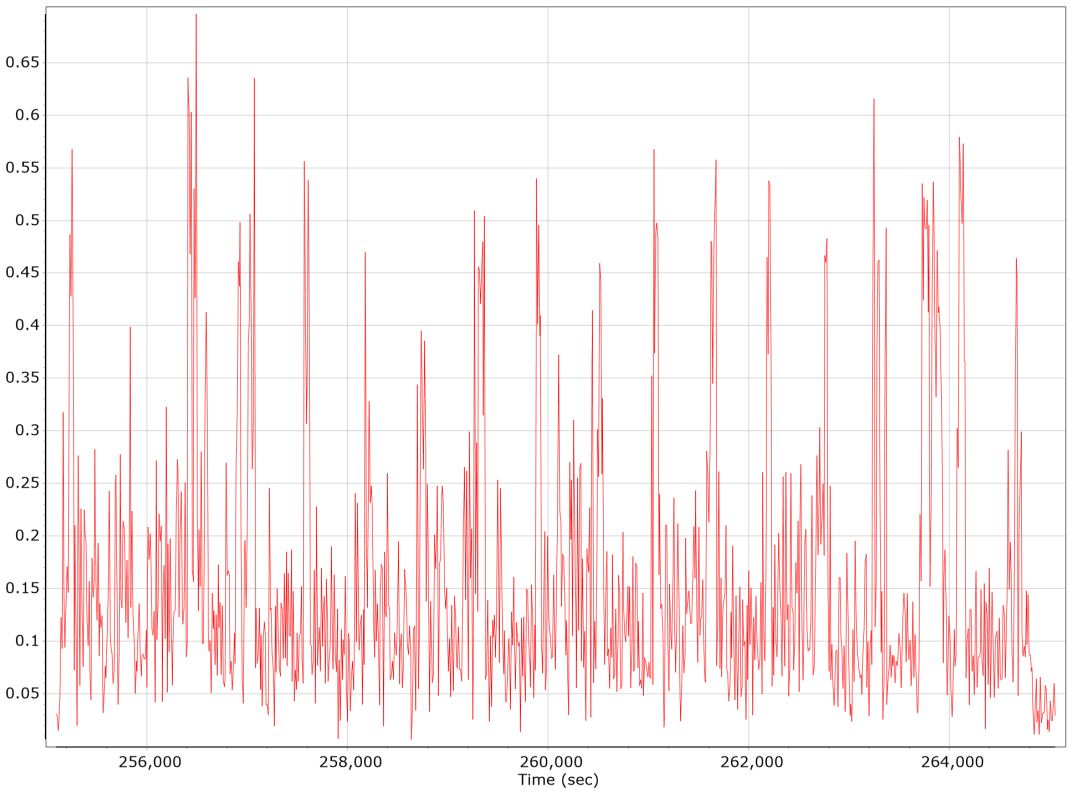
Ground Speed



Body Acceleration



Total Body Acceleration

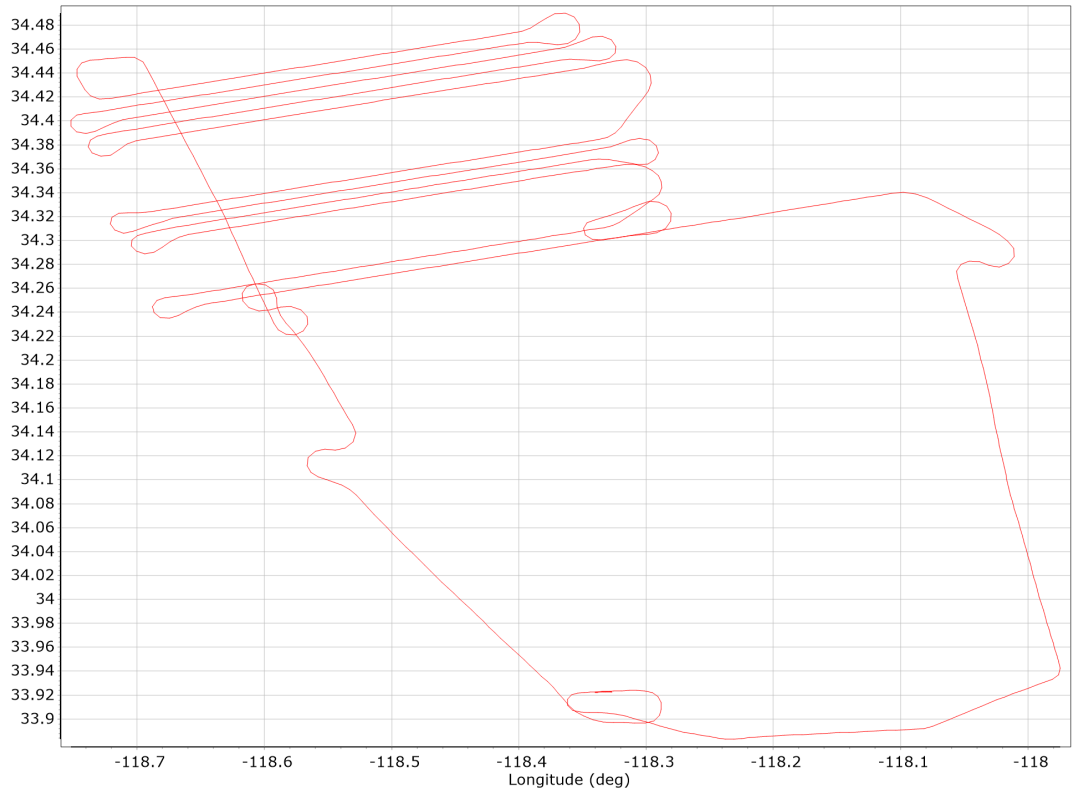


Body Angular Rate

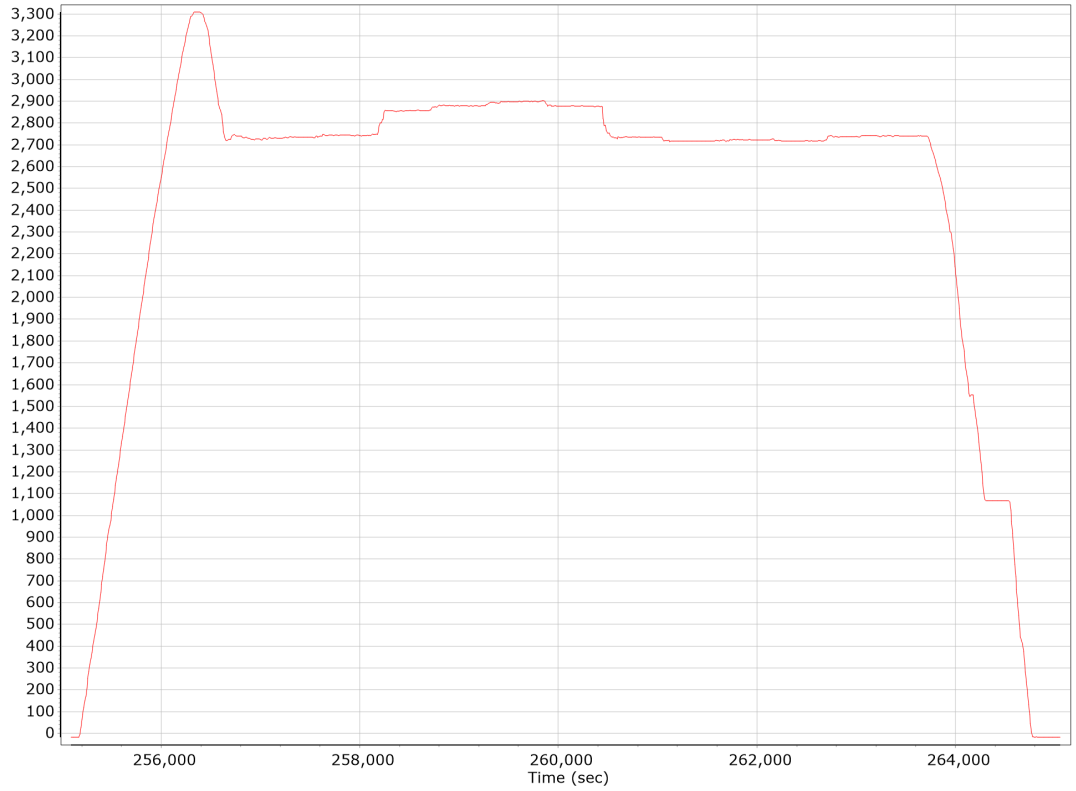


Forward Processed Trajectory Information

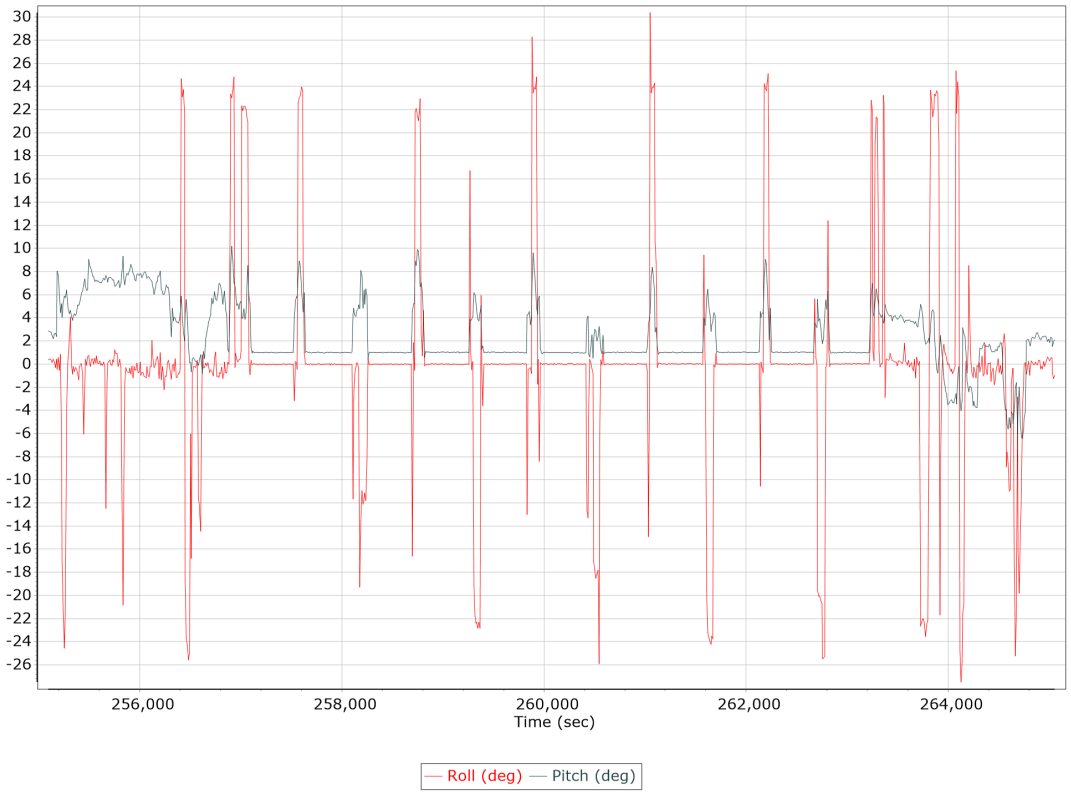
Top View



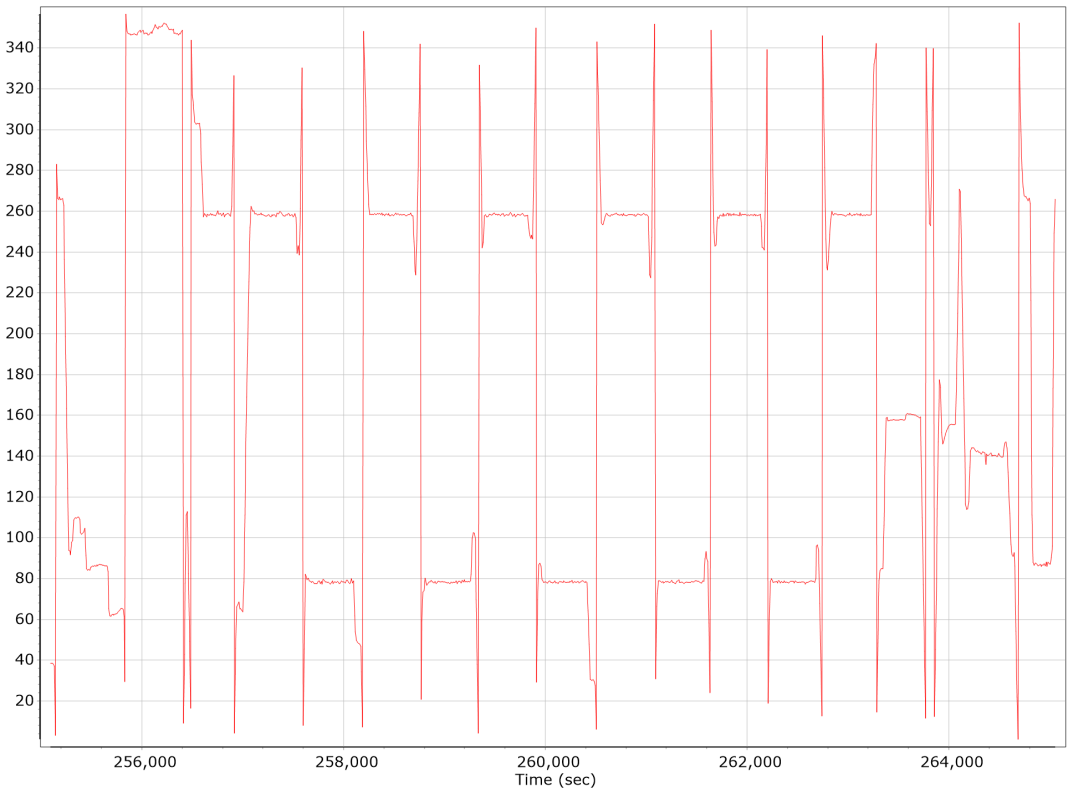
Altitude



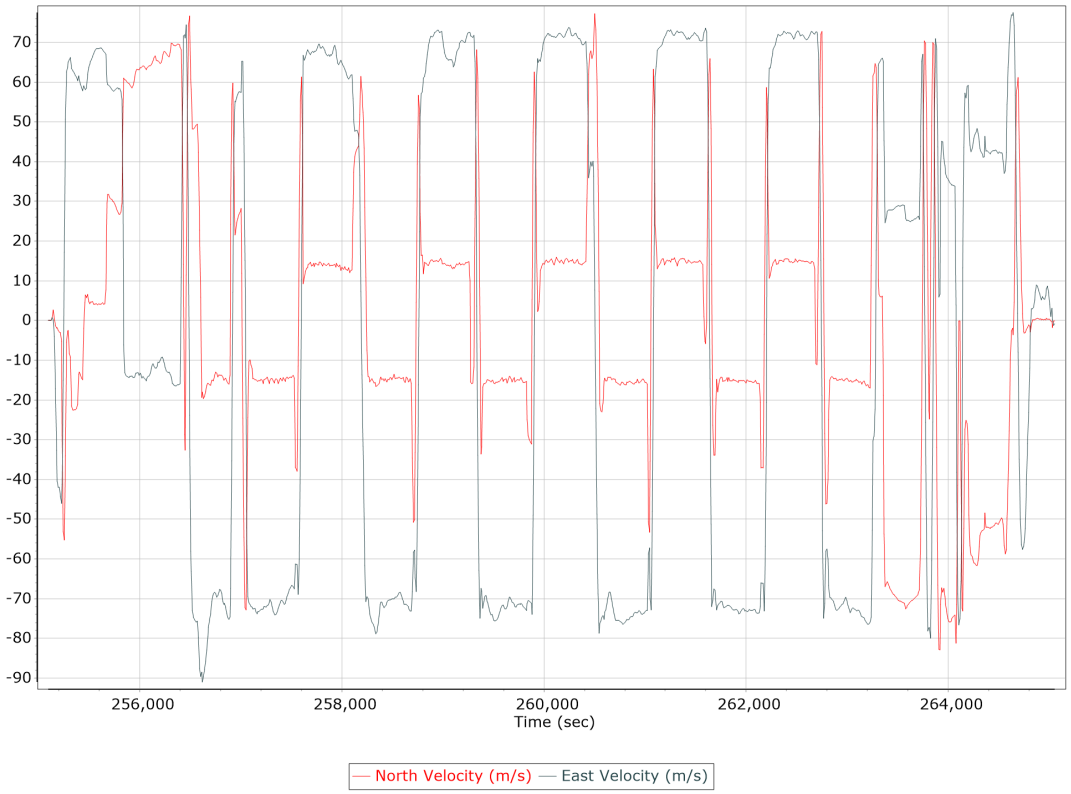
Roll/Pitch



Heading



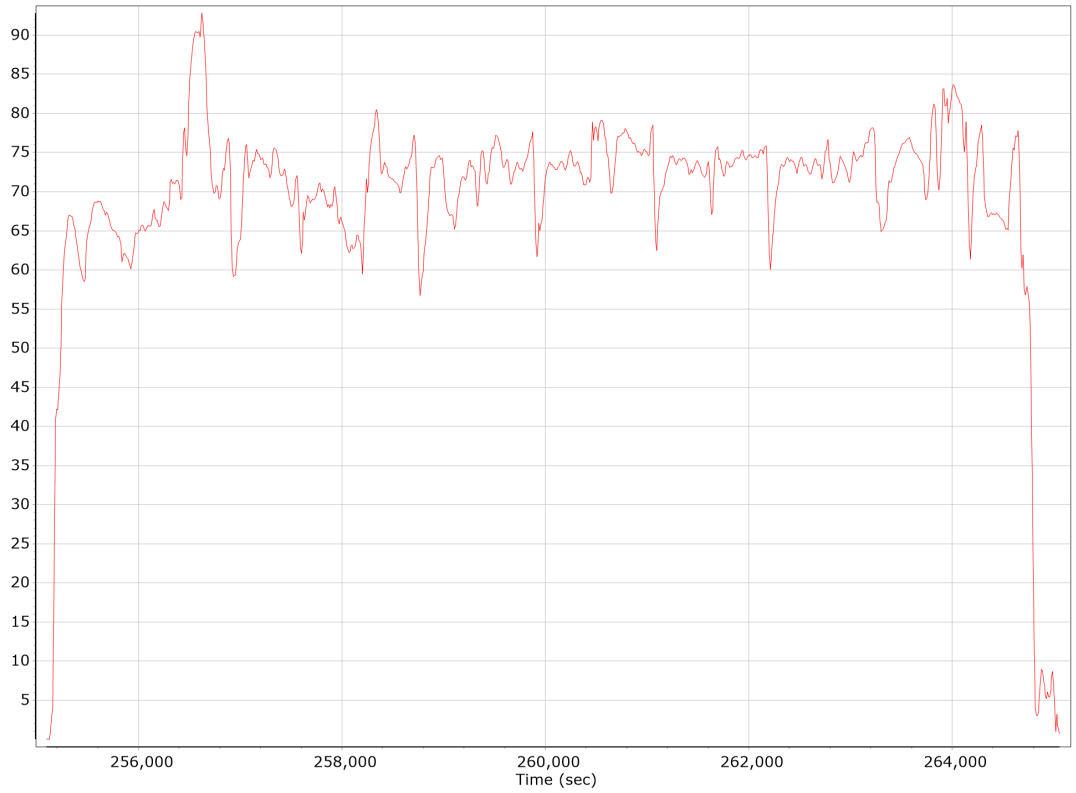
North/East Velocity



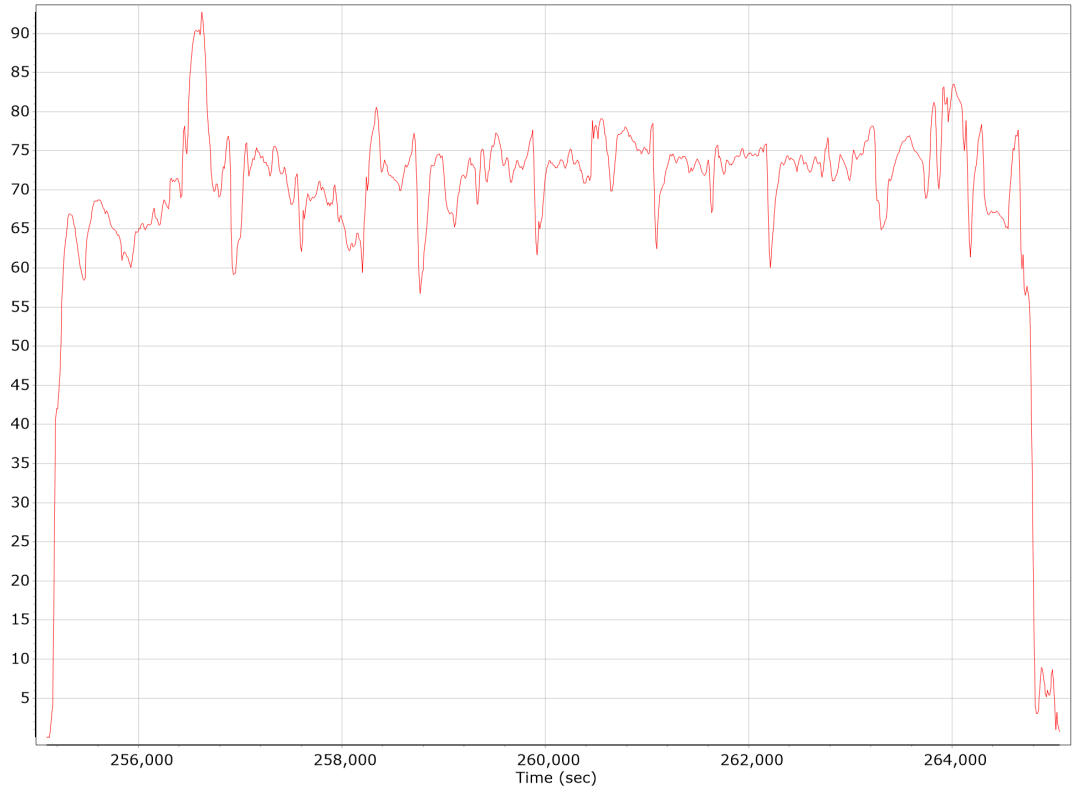
Down Velocity



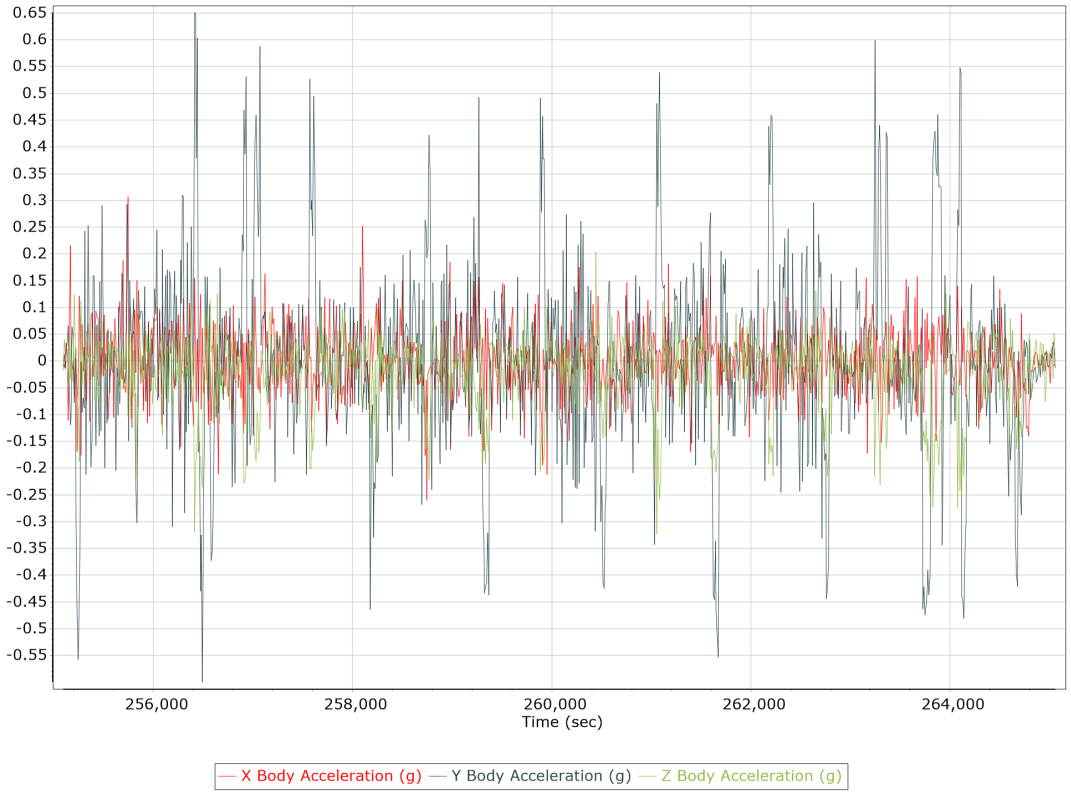
Total Speed



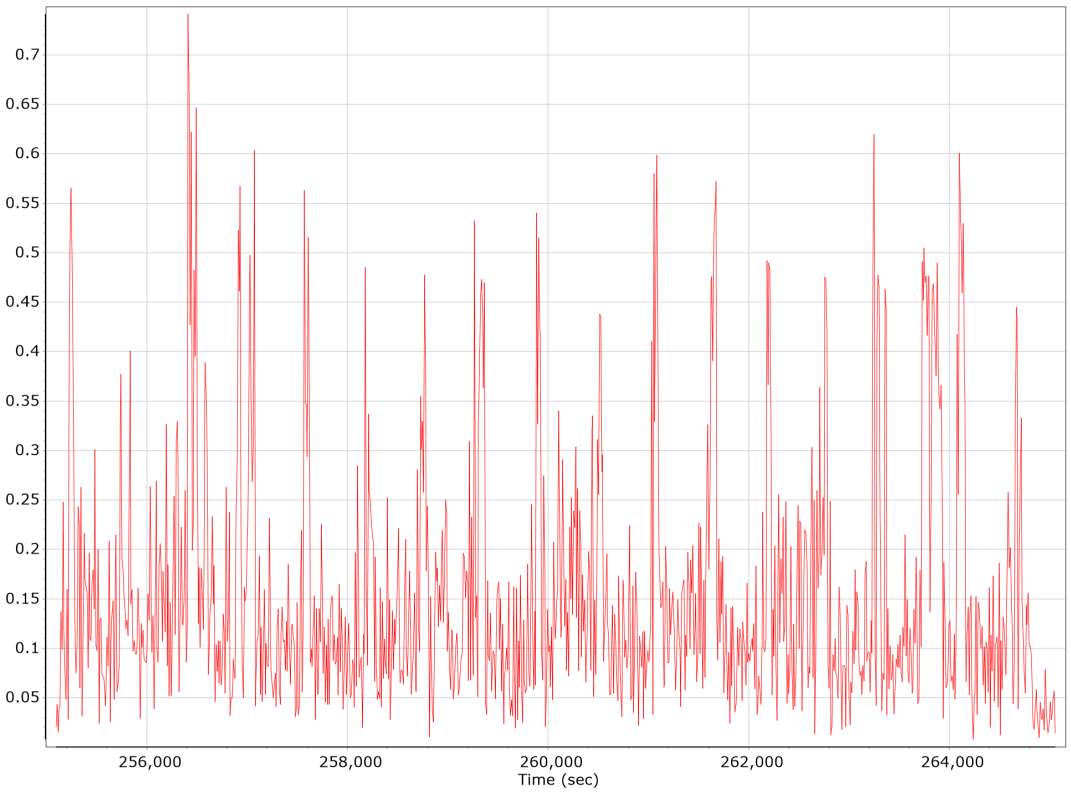
Ground Speed



Body Acceleration



Total Body Acceleration



Body Angular Rate

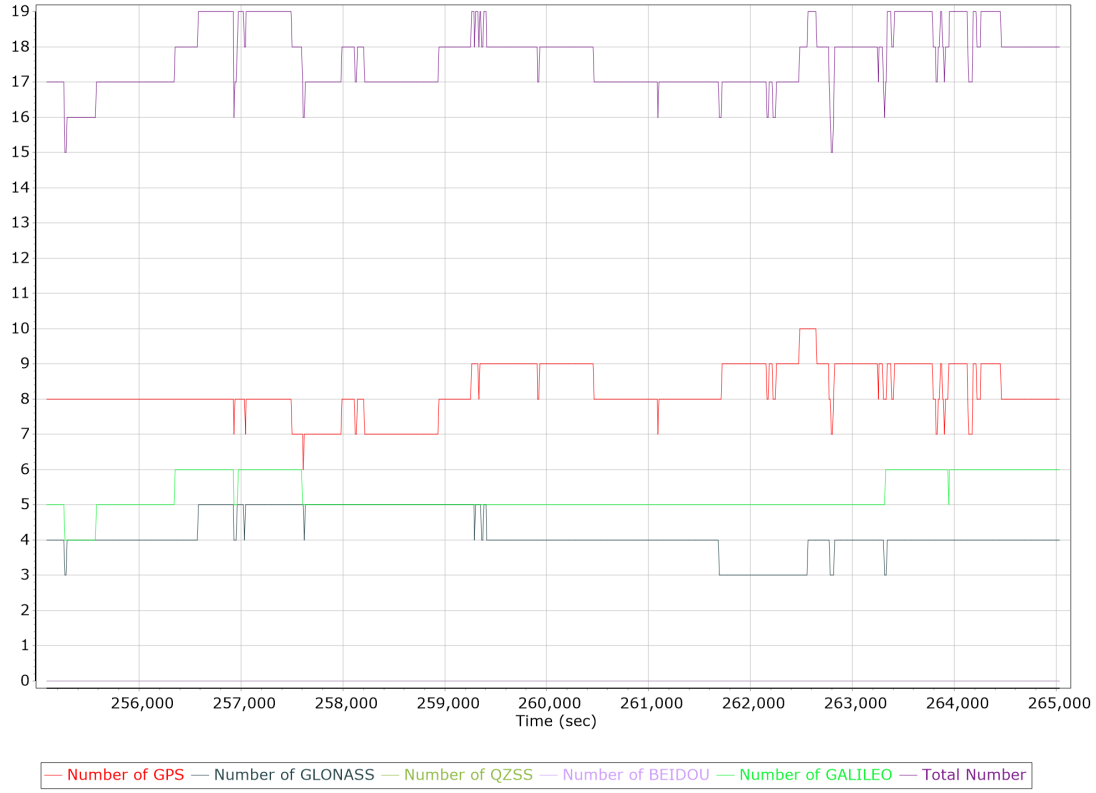


GNSS QC

GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	6	10	8
Number of GLONASS SV	0	5	4
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	4	6	5
Total number of SV	11	19	18
PDOP	1.10	2.20	1.28
QC Solution Gaps	0.00	0.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	10348.00	0.00	0.00
Percentage	100.00	0.00	0.00

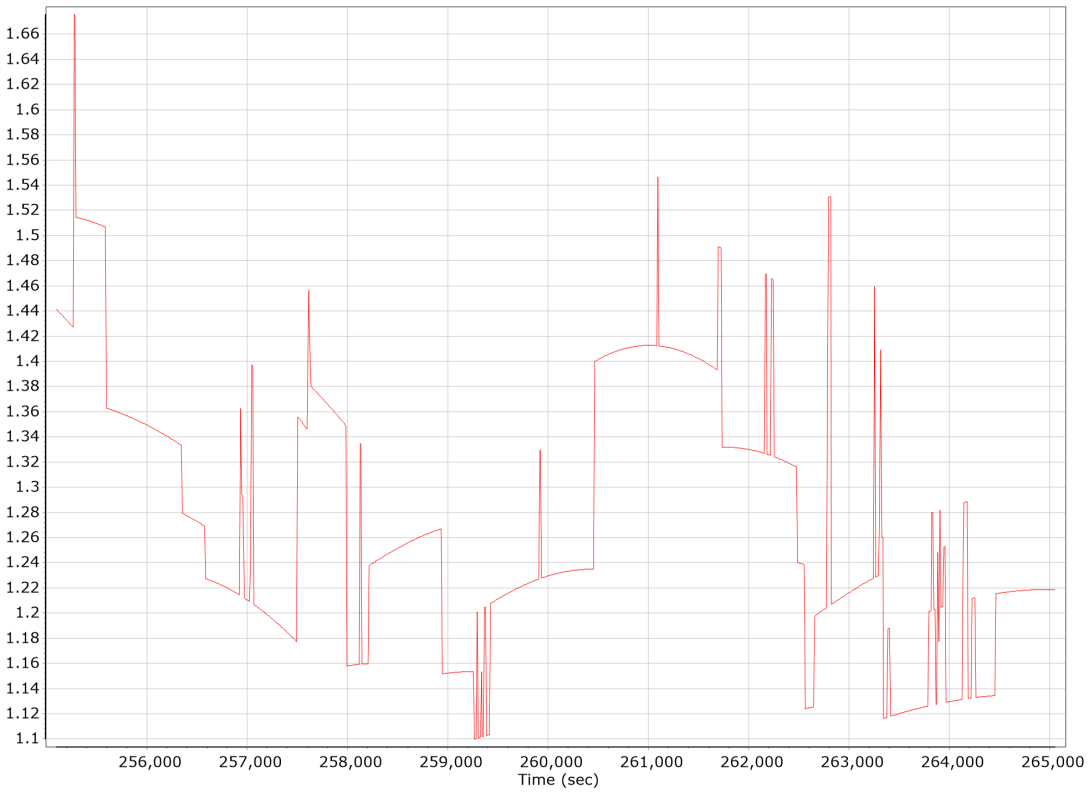
Num SVs in solution



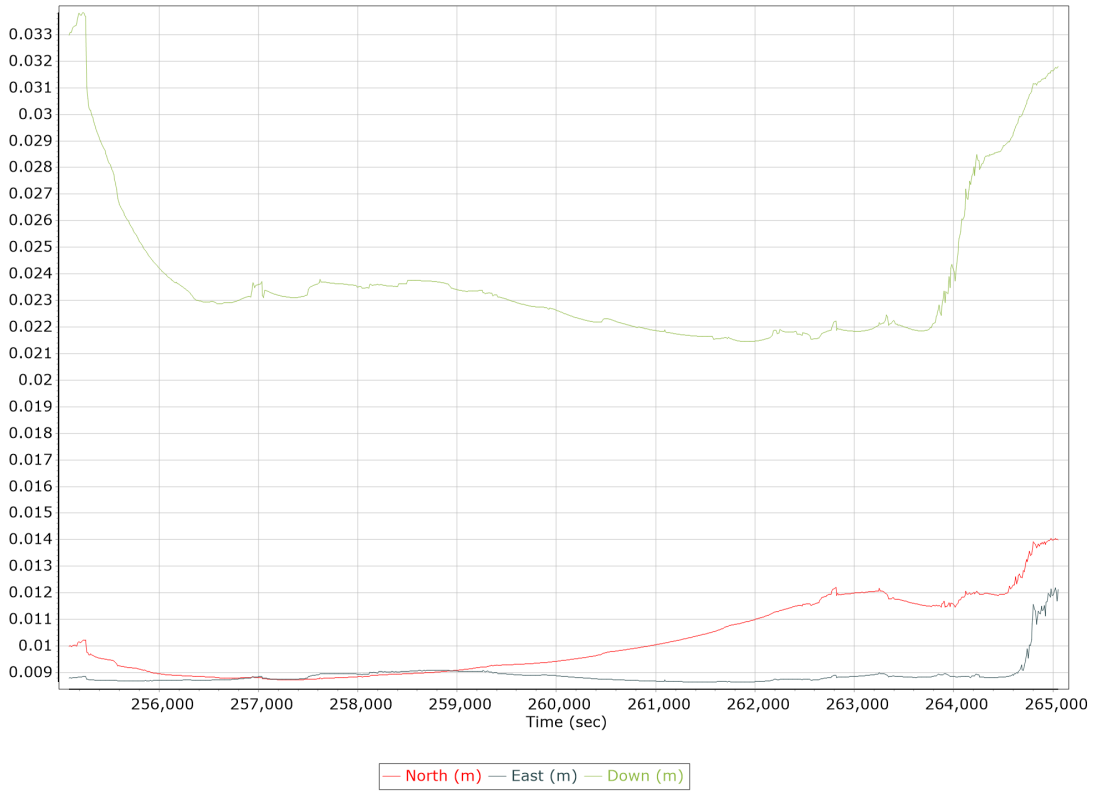
Forward/Reverse Separation



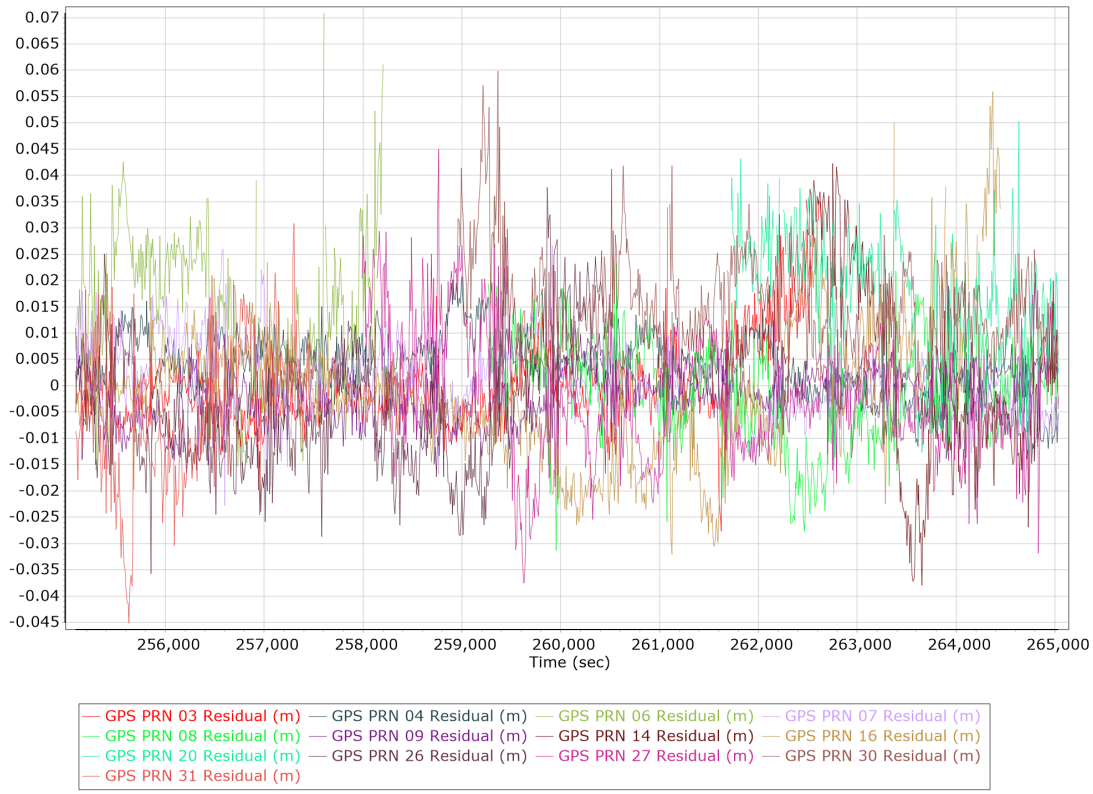
PDOP



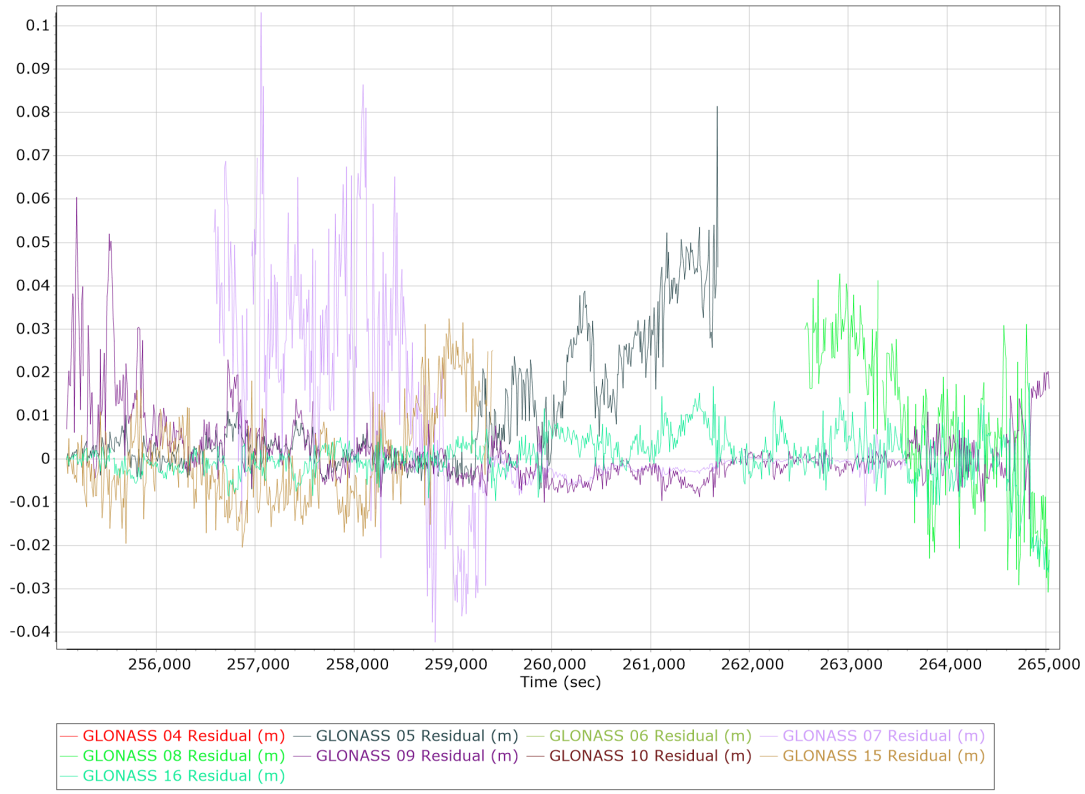
Estimated Position Accuracy



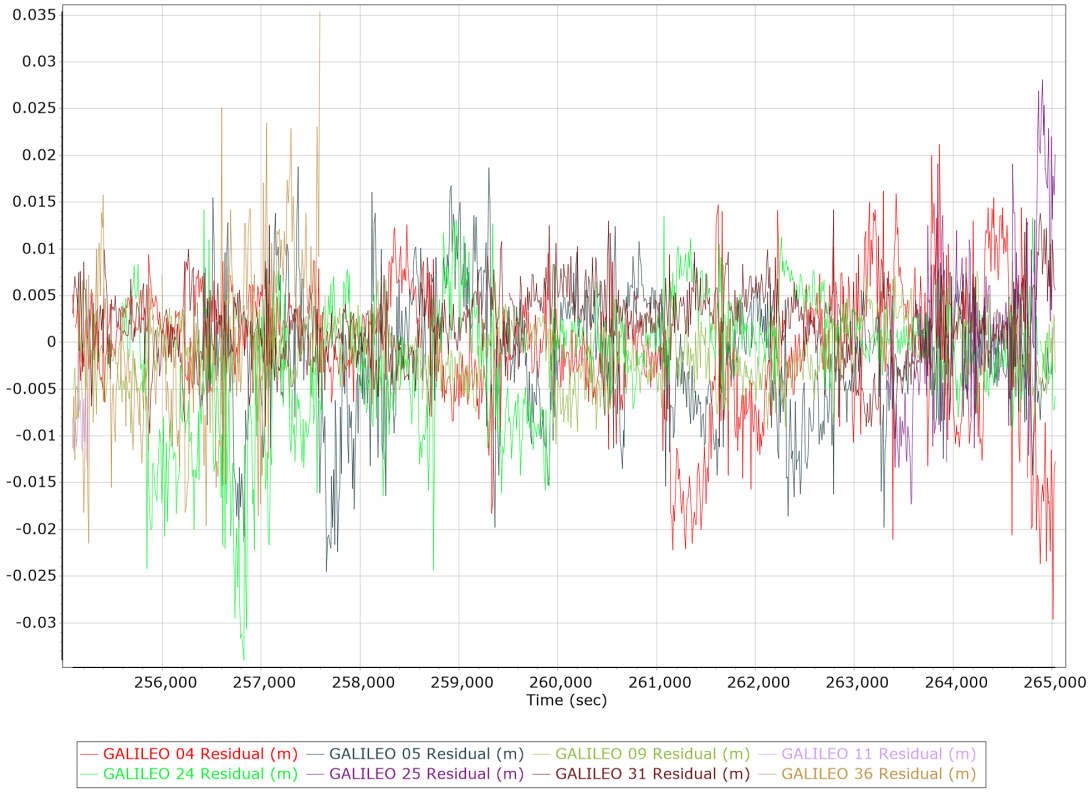
GPS Residuals



GLONASS Residuals



GALILEO Residuals



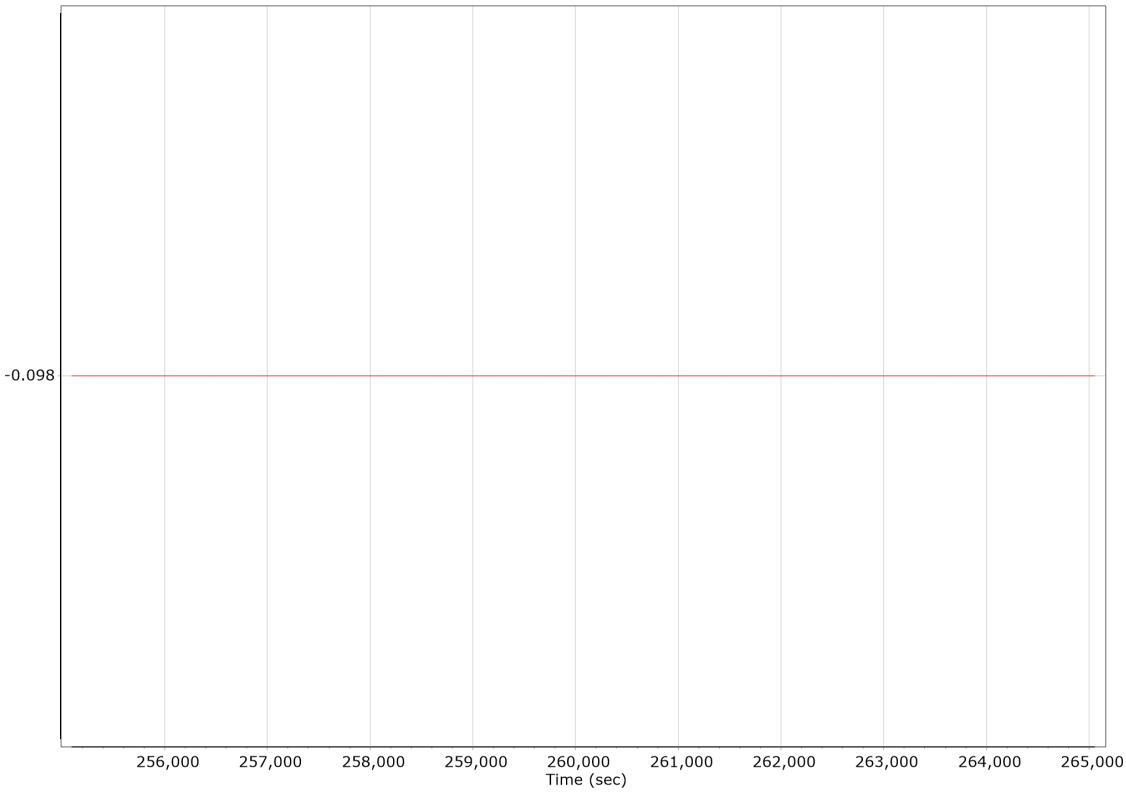
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	254670.000 (10/3/2023 10:44:30 PM)		
Processing end time	265061.000 (10/4/2023 1:37:41 AM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	-0.098	0.057	-1.221
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

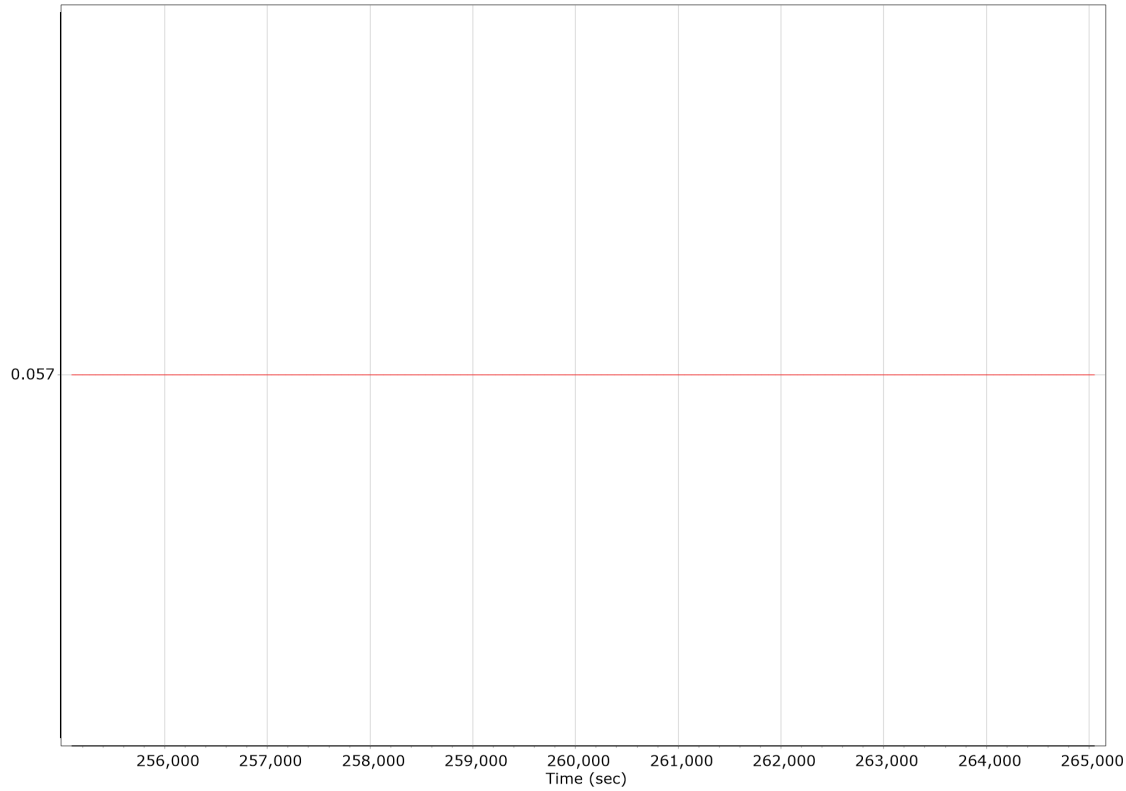
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

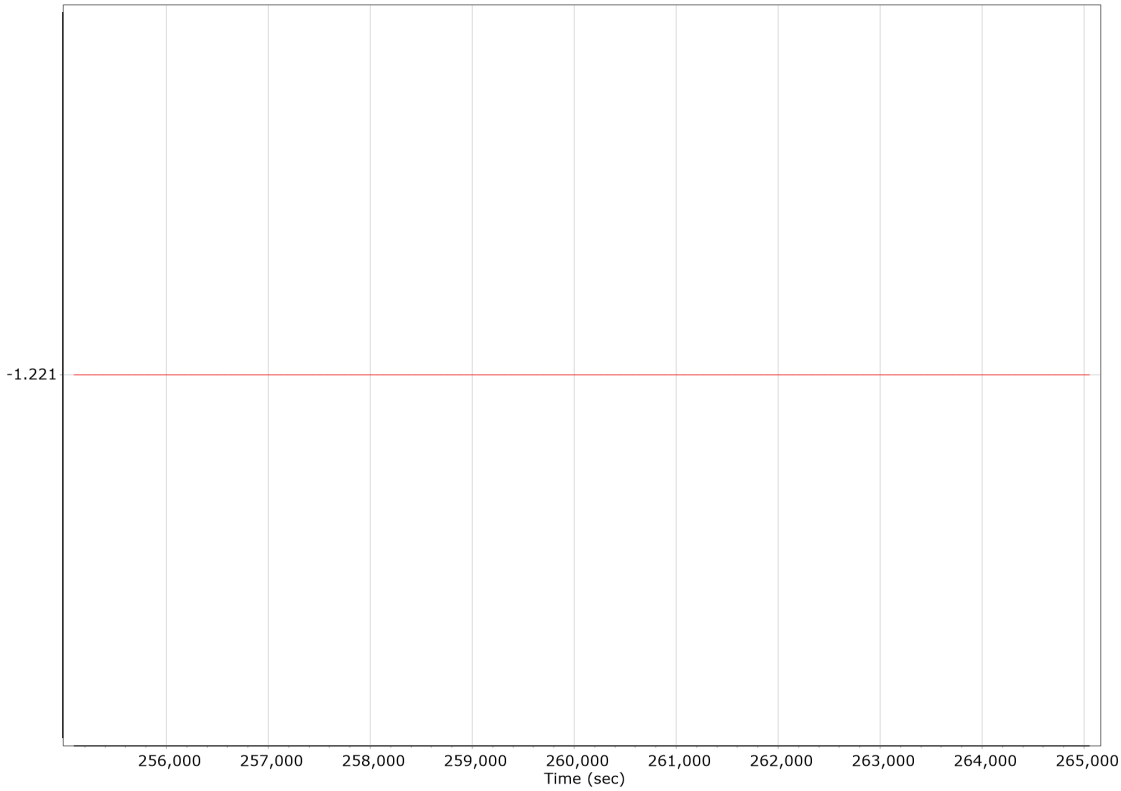
X Reference-Primary GNSS Lever Arm (m)



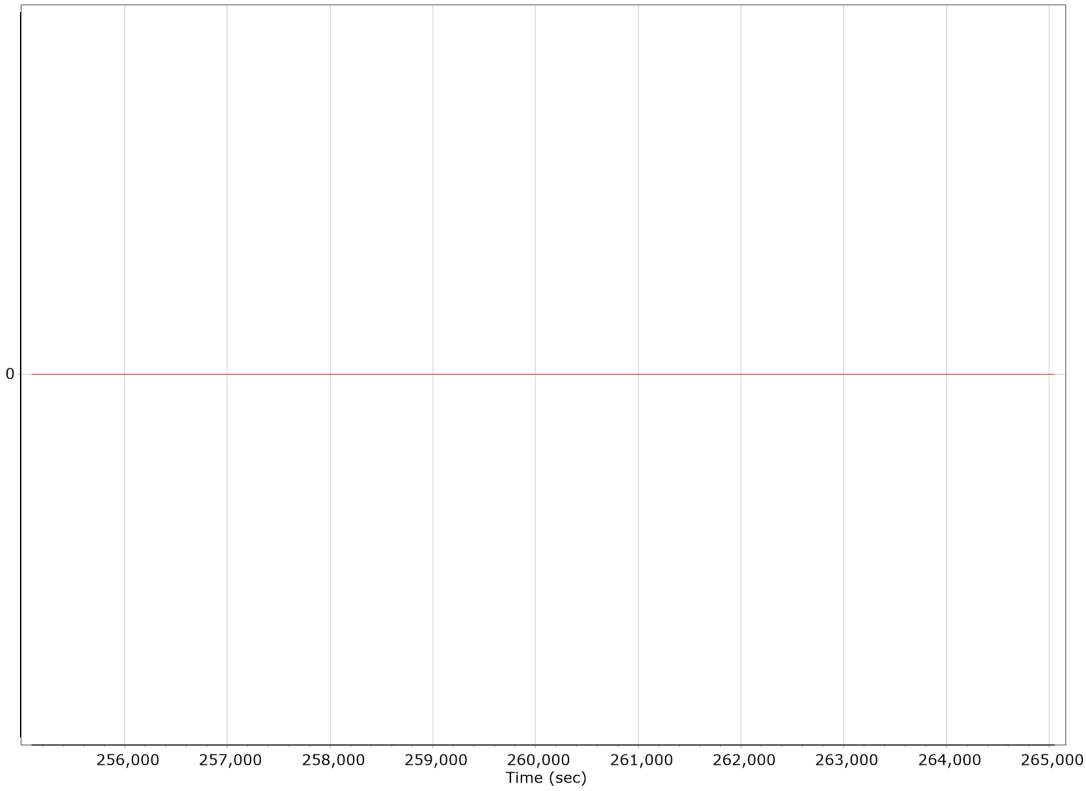
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



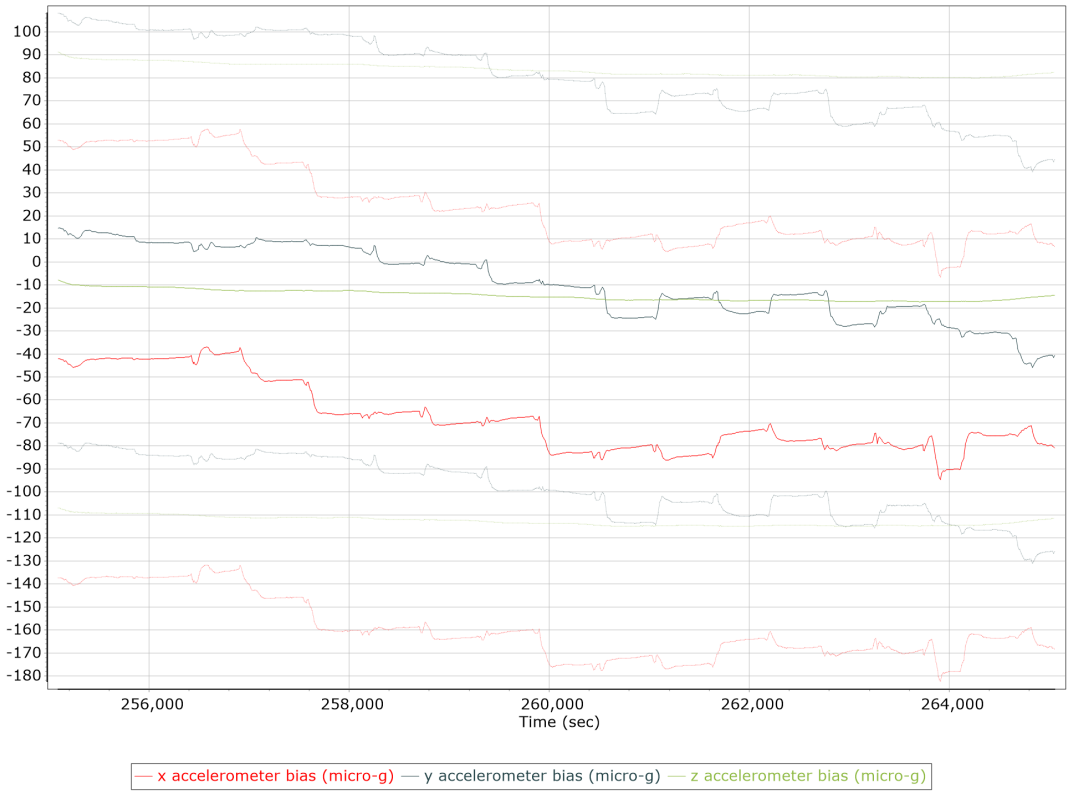
Reference-Primary GNSS Lever Arm Figure of Merit



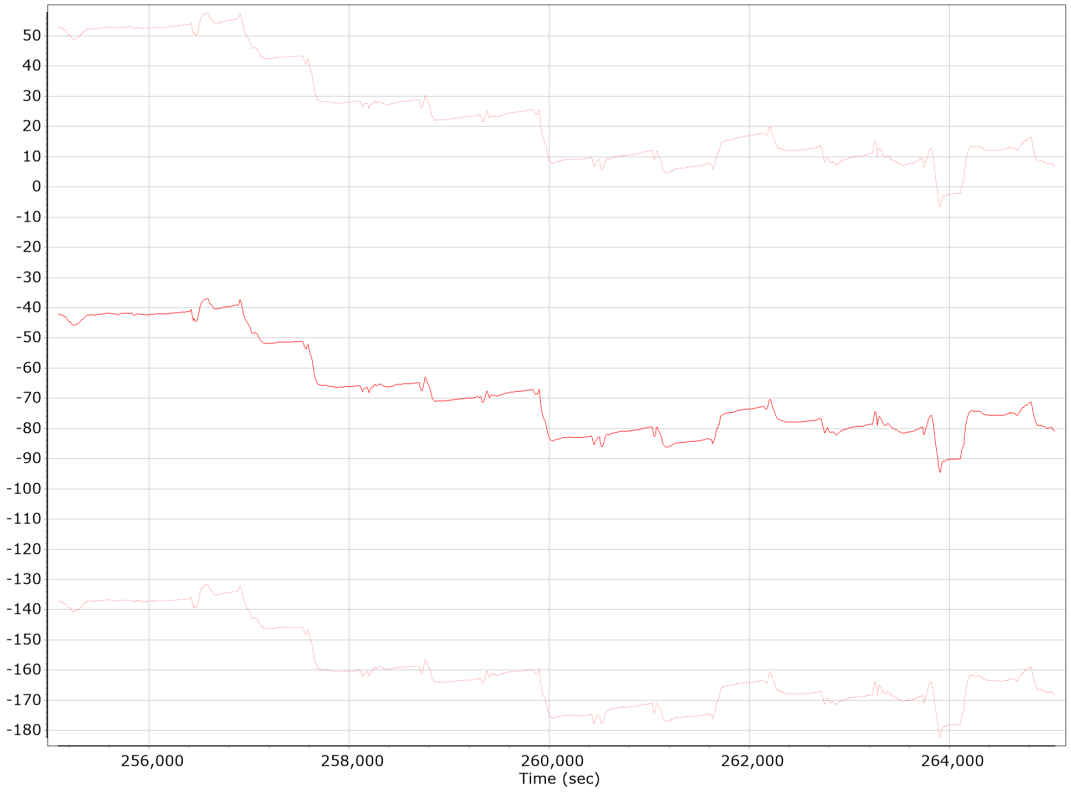
IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

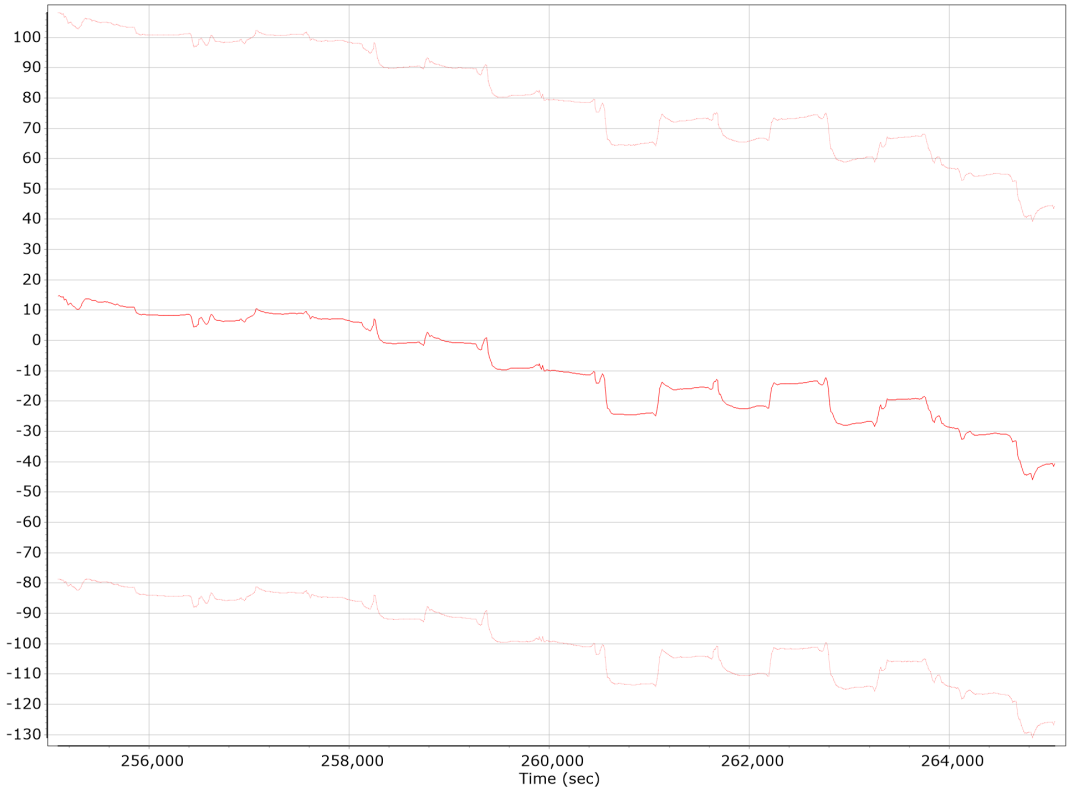
Accelerometer Bias (micro-g)



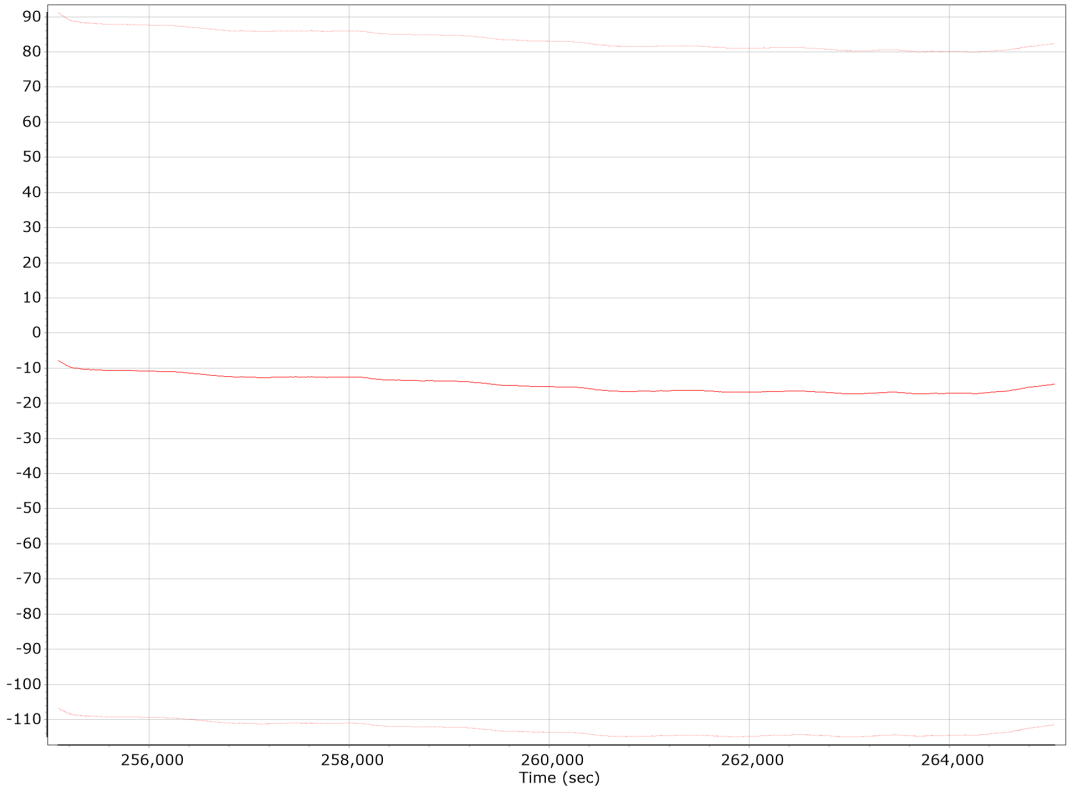
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



X Accelerometer Scale Error (ppm)



Y Accelerometer Scale Error (ppm)



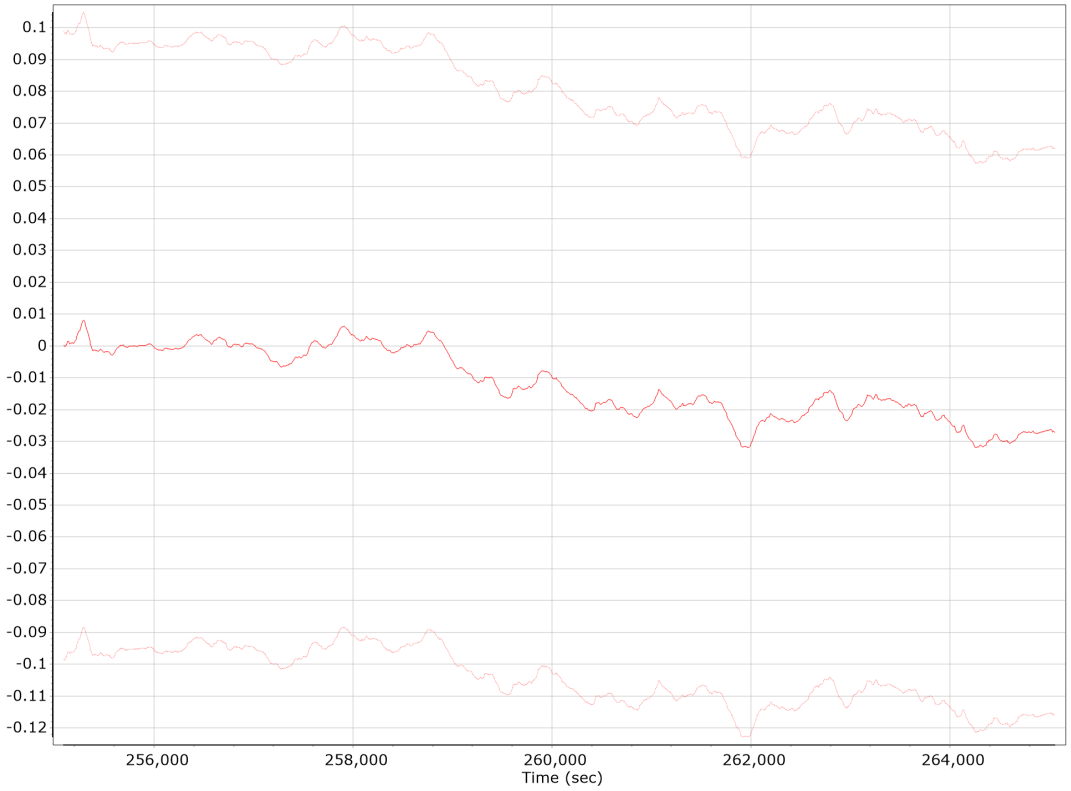
Z Accelerometer Scale Error (ppm)



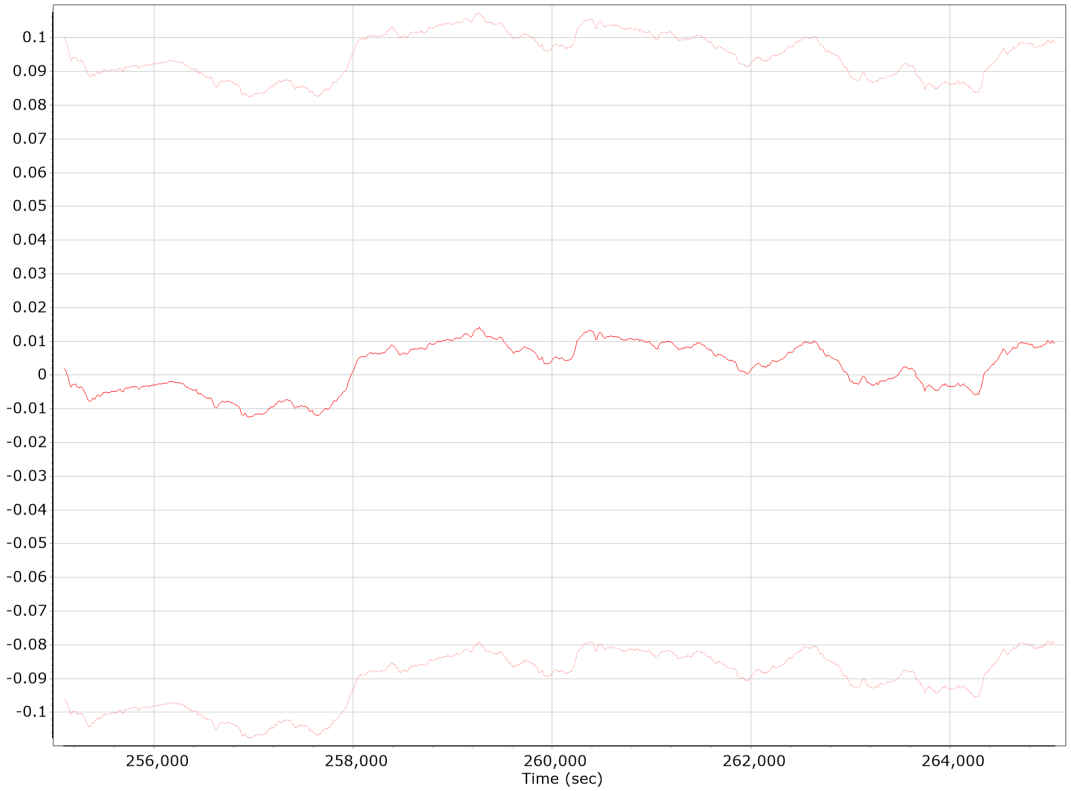
Gyro Bias (deg/h)



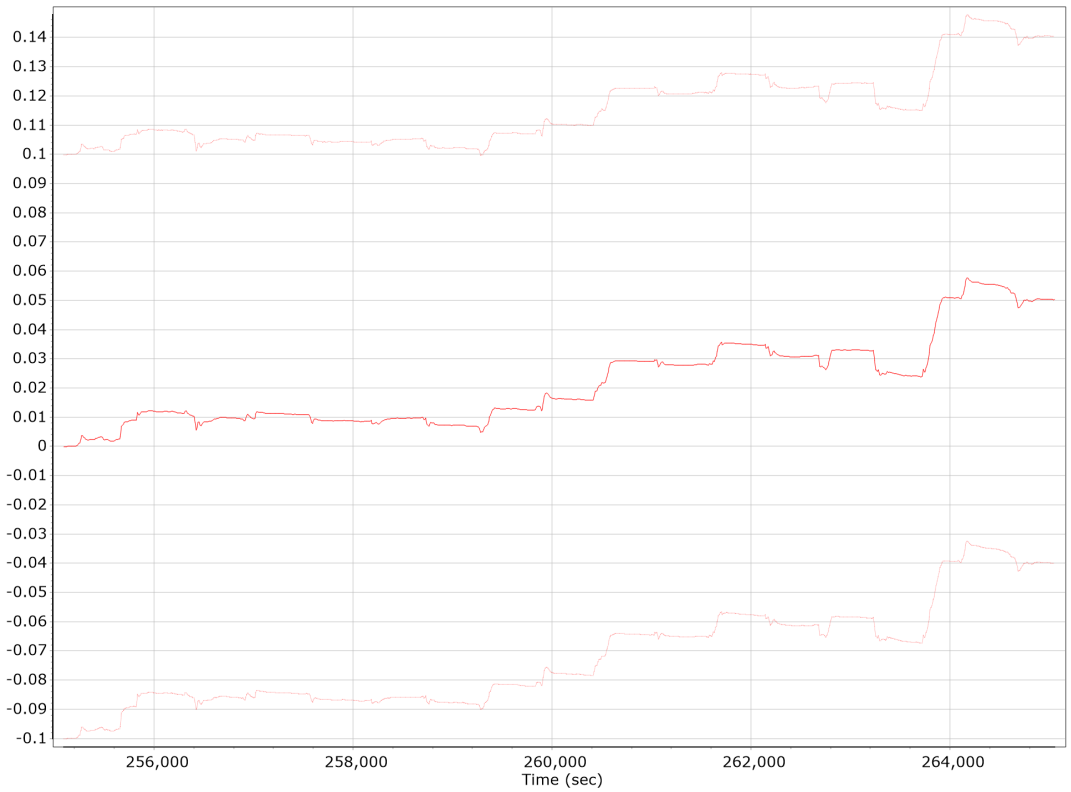
X Gyro Bias (deg/h)



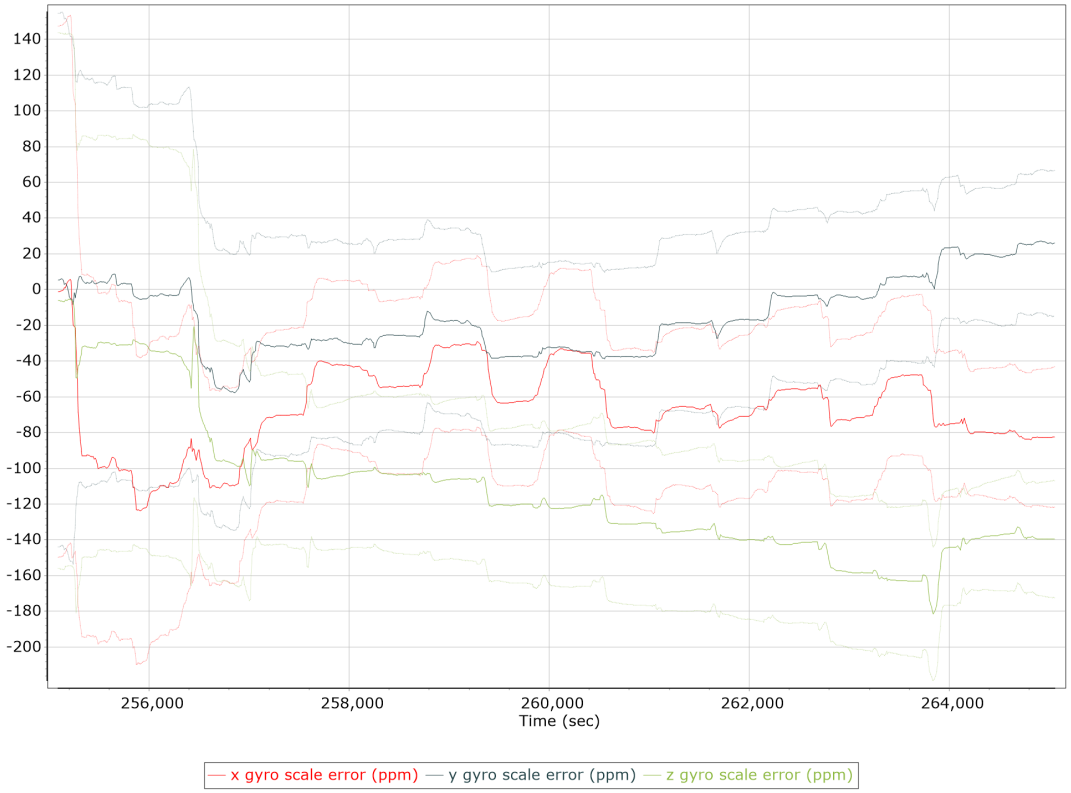
Y Gyro Bias (deg/h)



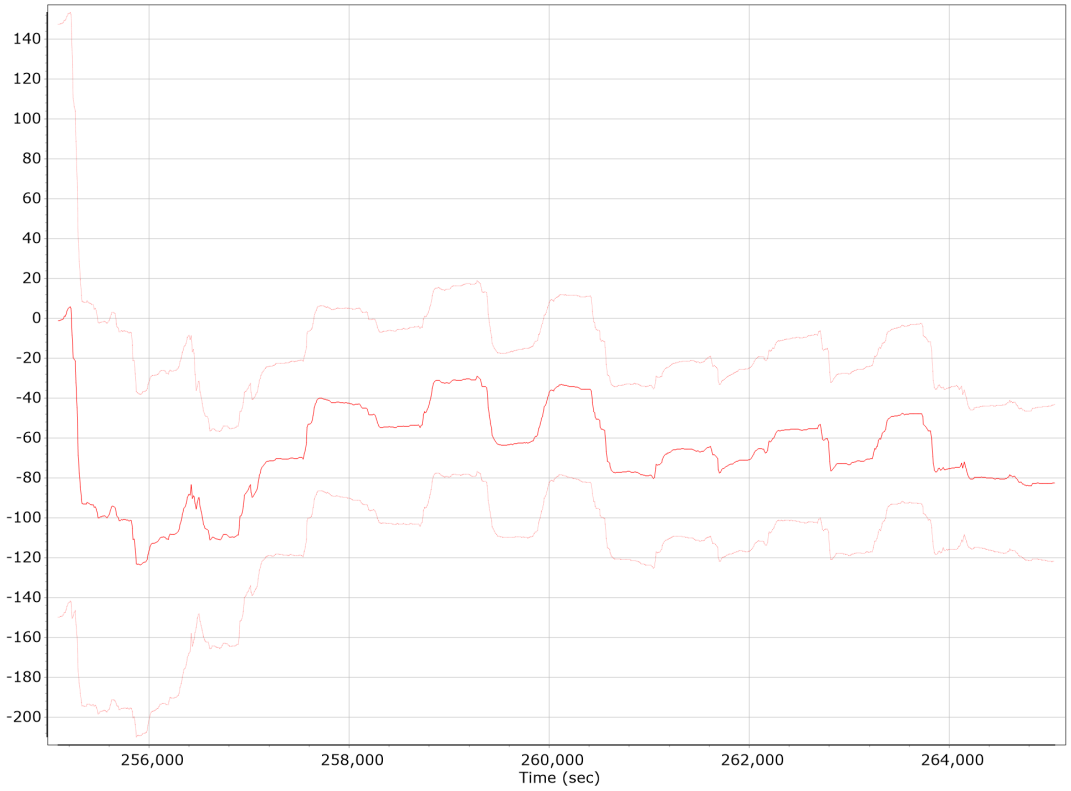
Z Gyro Bias (deg/h)



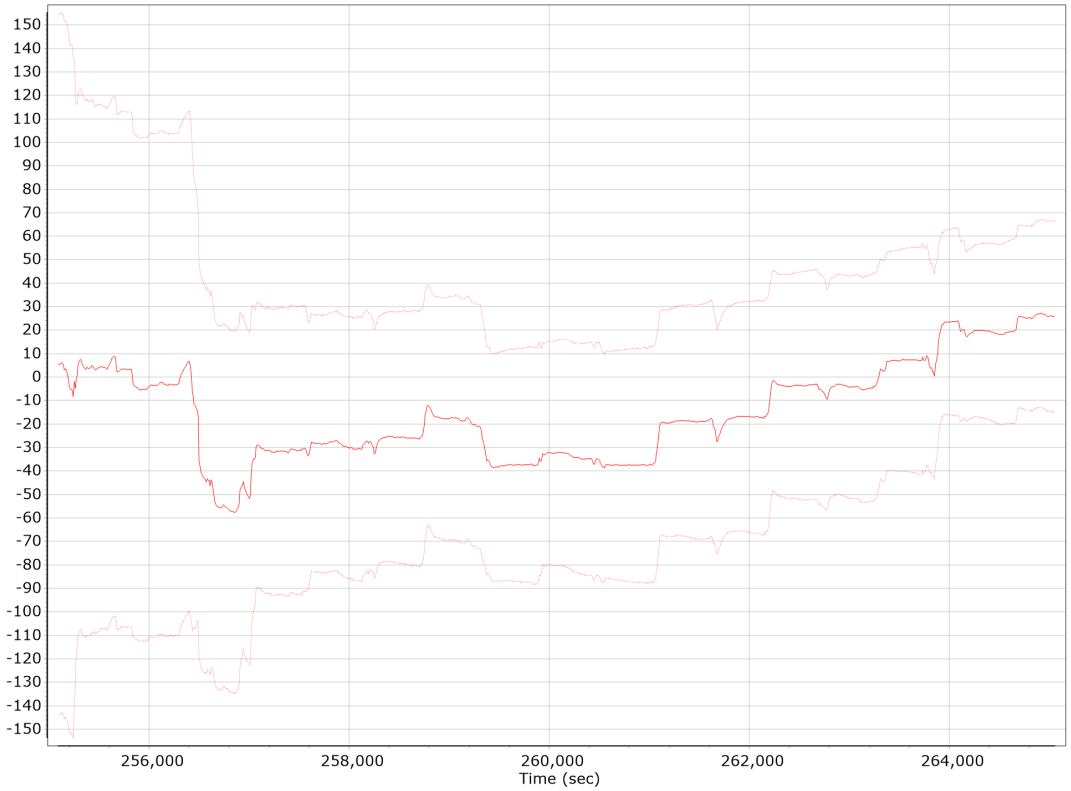
Gyro Scale Error (ppm)



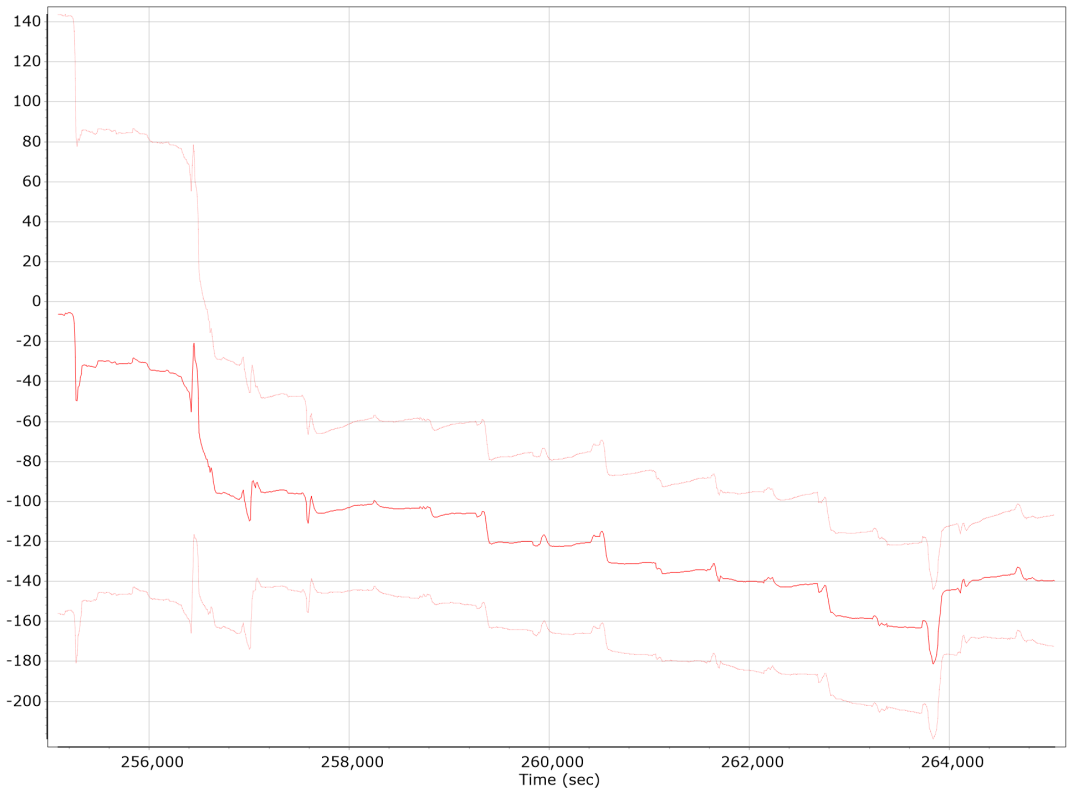
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)



Z Gyro Scale Error (ppm)

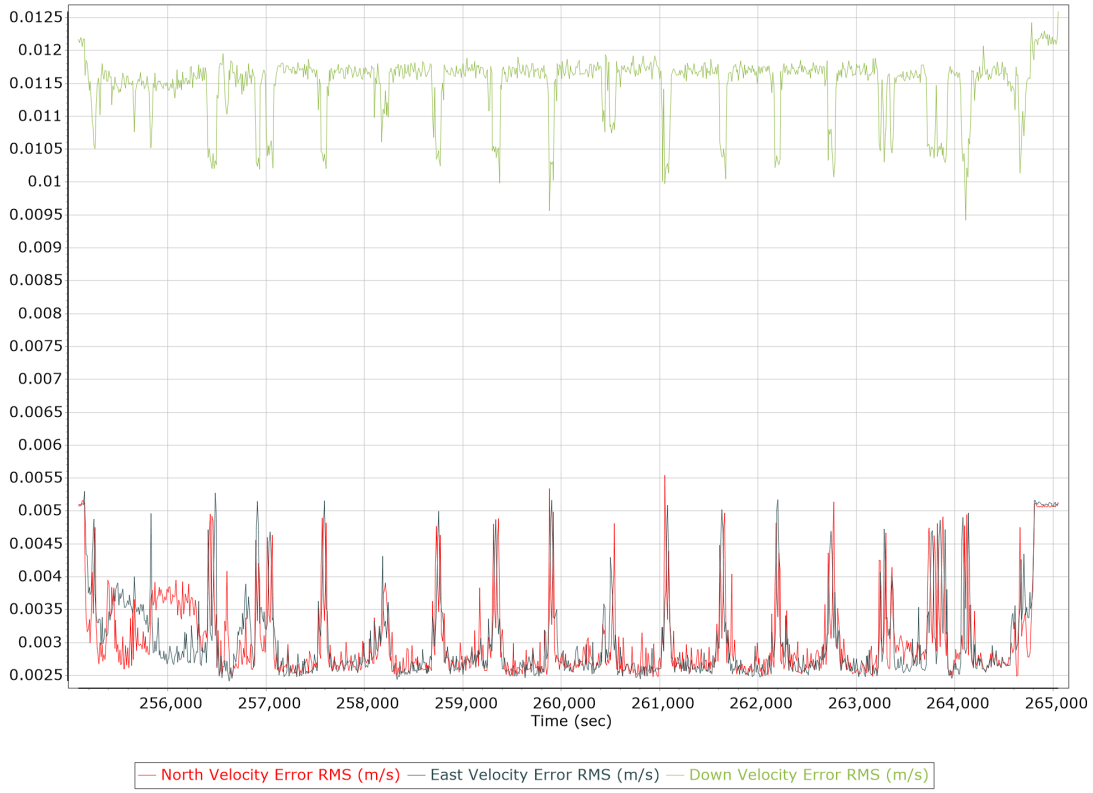


Smoothed Performance Metrics

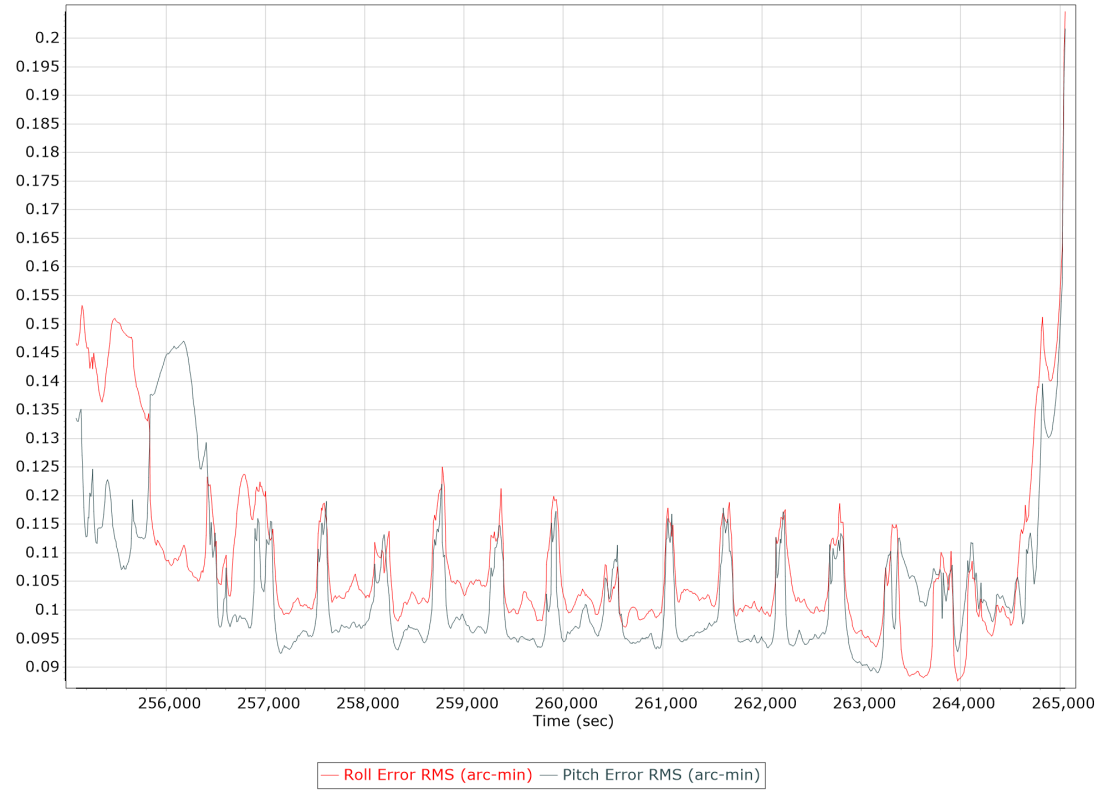
Position Error RMS (m)



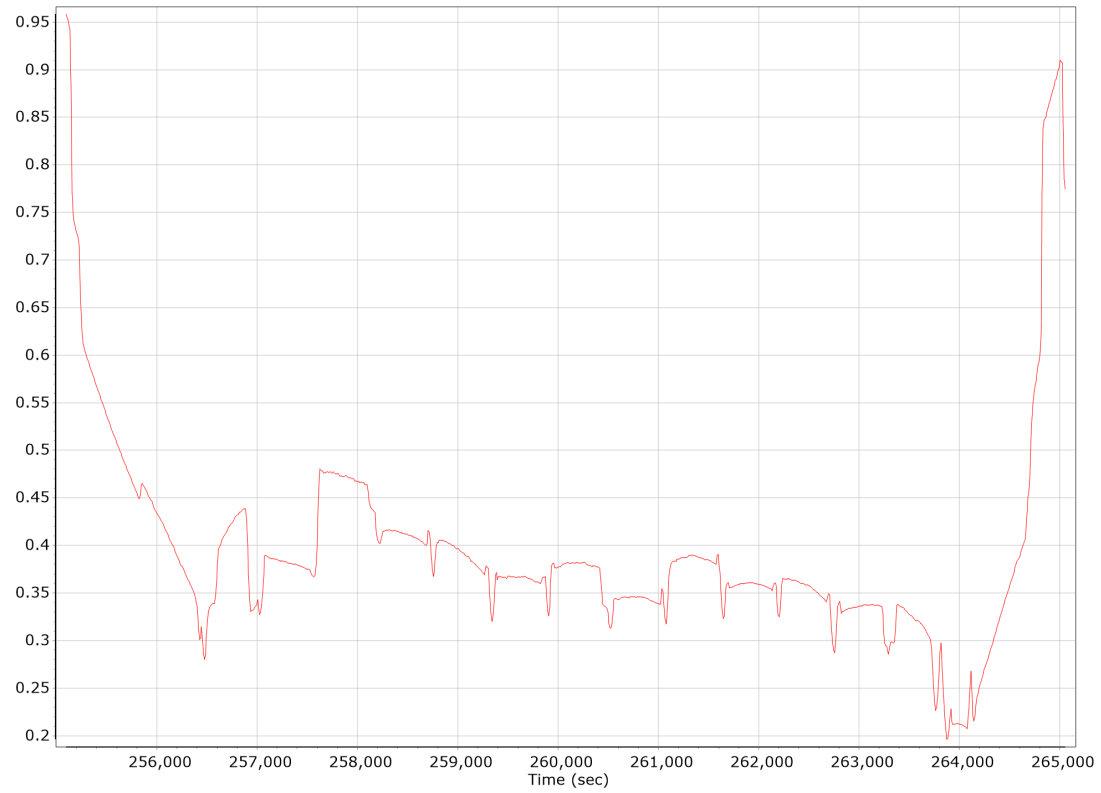
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

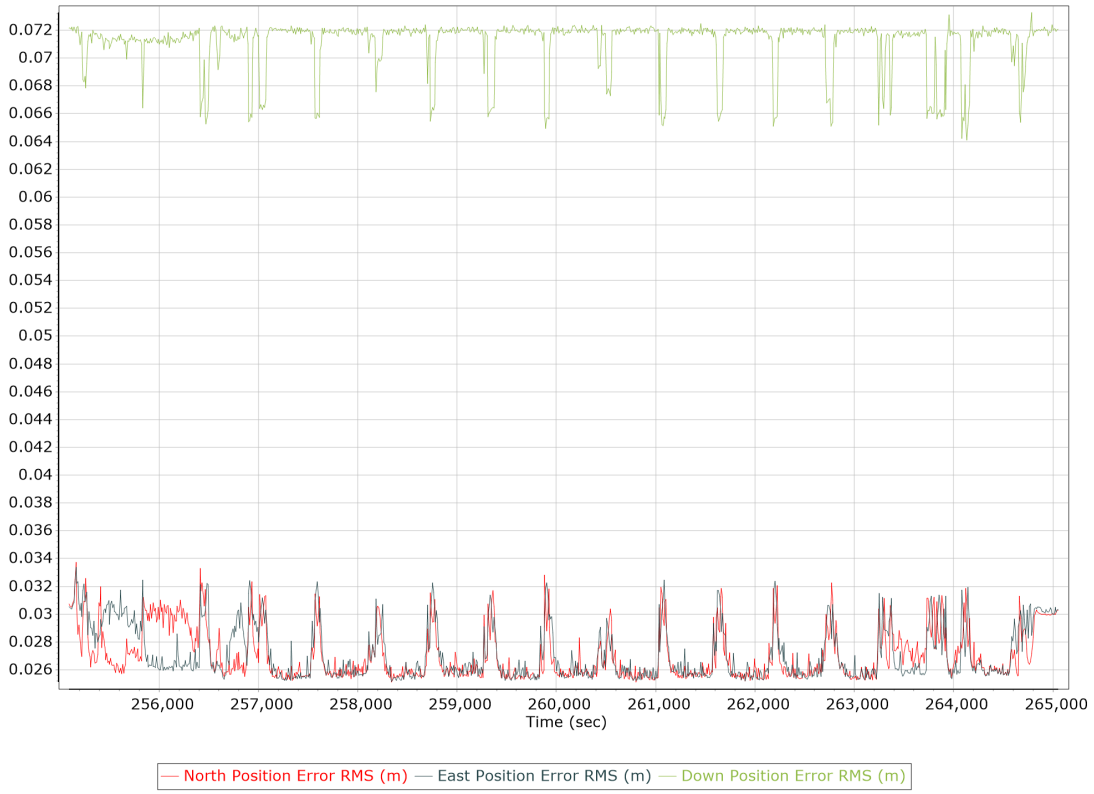


Heading Error RMS (arc-min)



Forward Processed Performance Metrics

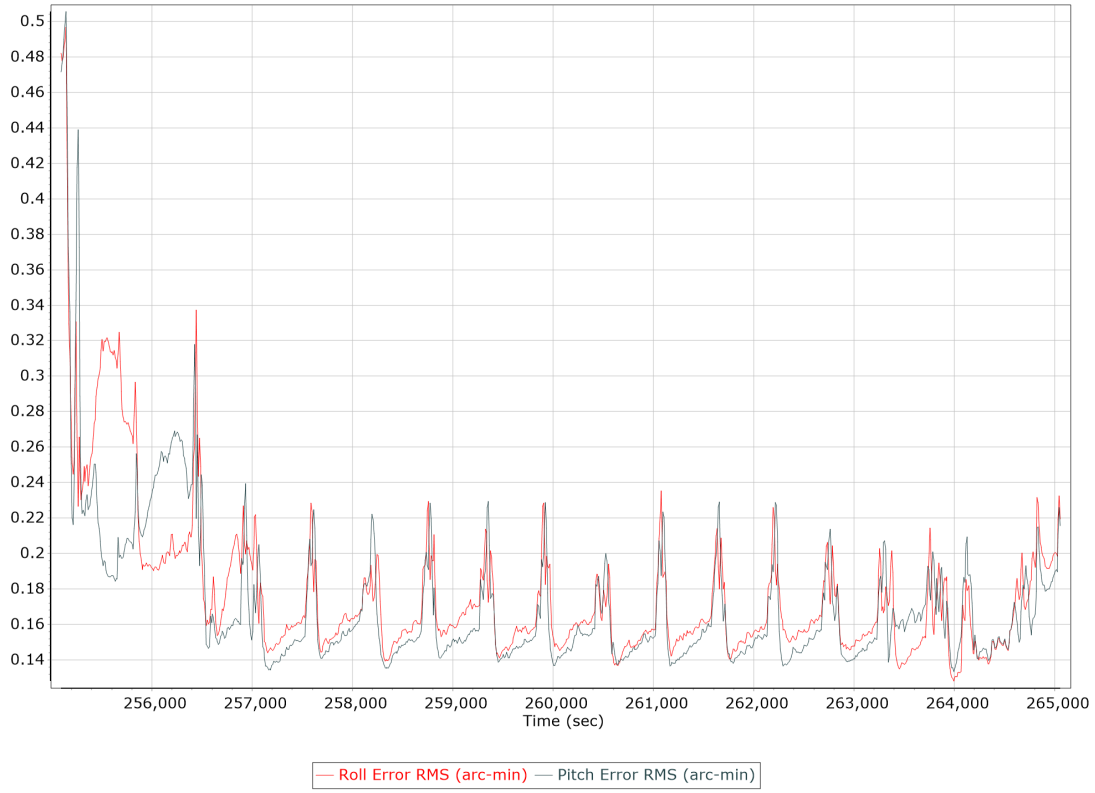
Position Error RMS (m)



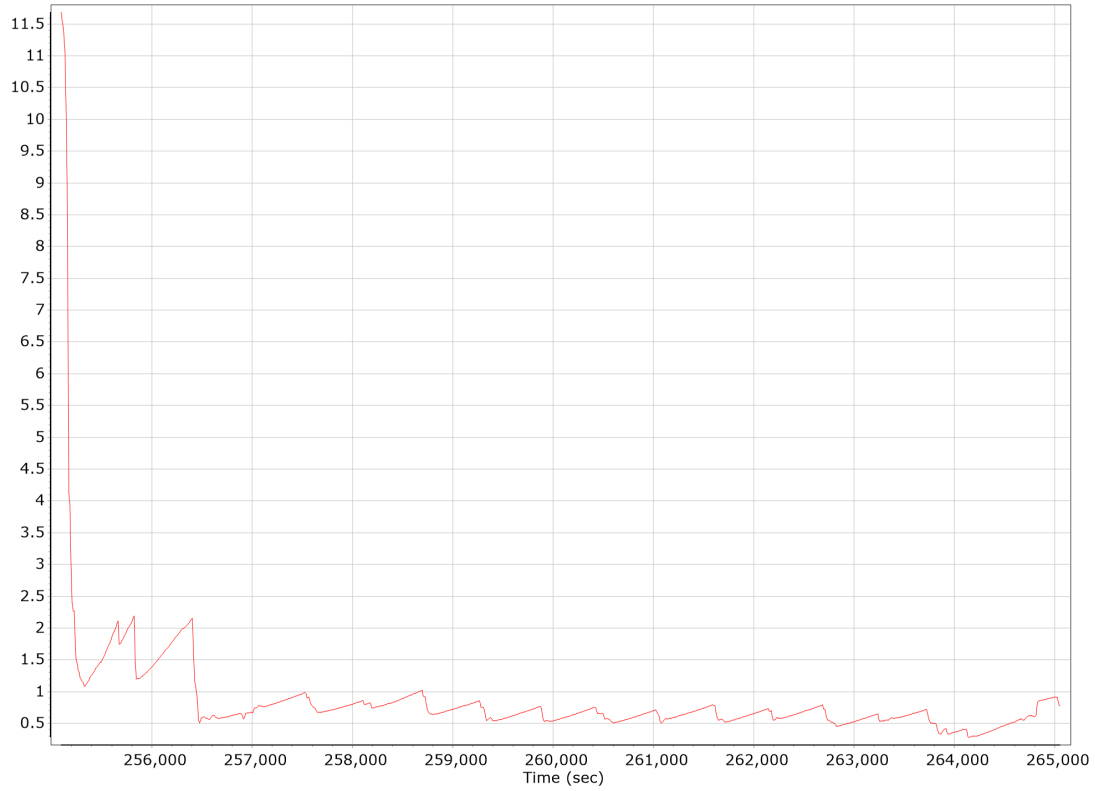
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

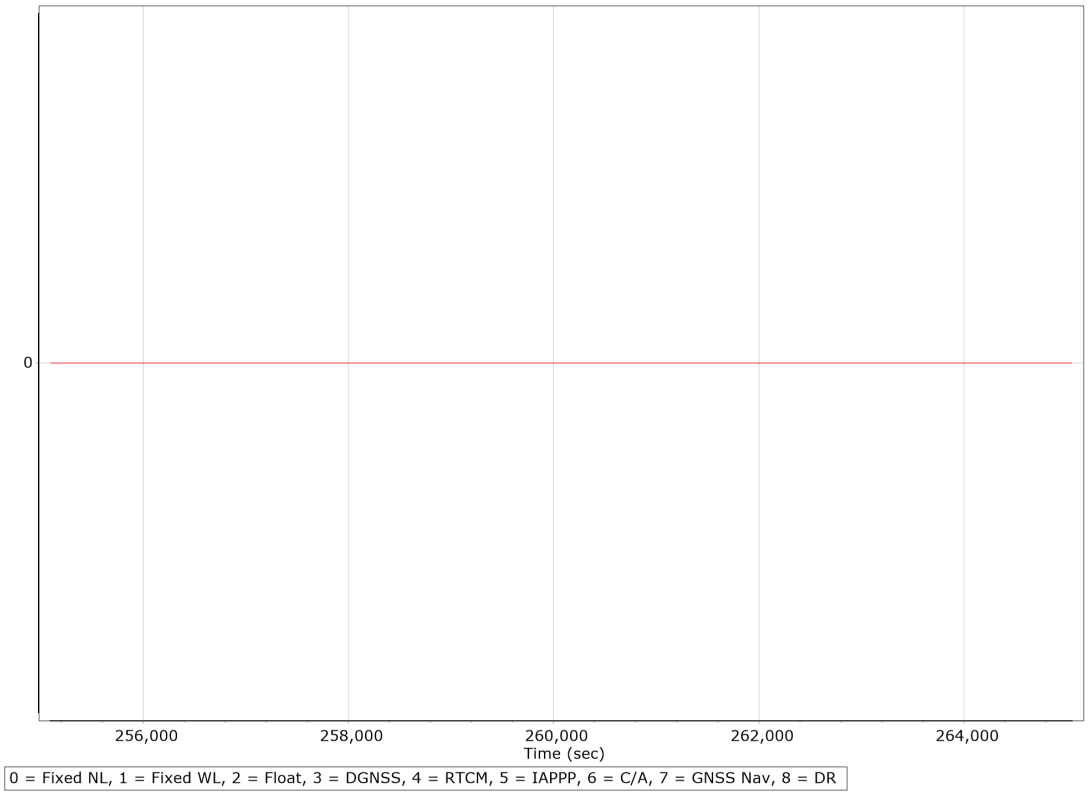


Heading Error RMS (arc-min)



Forward Processed Solution Status

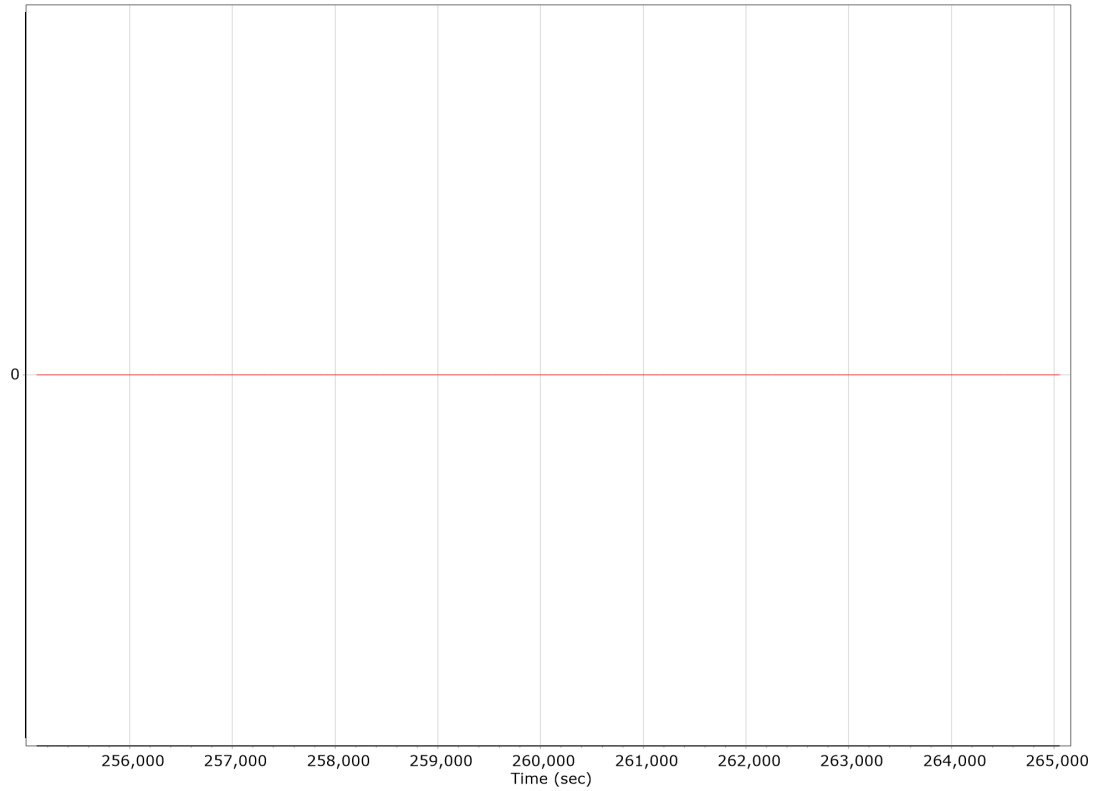
Processing Mode



Number of Satellites



Baseline Length



General Information

Mission Information

Project name	10032023C_4046
Processing date	2024-01-11 20:00:03
Mission date	2023-10-03 03:40:17
Mission duration	2:08:20:11.836
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N10762
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
CP780.357	POS Data
CP780.358	POS Data
CP780.359	POS Data
CP780.360	POS Data
CP780.361	POS Data
CP780.362	POS Data
CP780.363	POS Data
CP780.364	POS Data
CP780.365	POS Data
CP780.366	POS Data
CP780.367	POS Data
CP780.368	POS Data
CP780.369	POS Data
CP780.370	POS Data
CP780.371	POS Data
CP780.372	POS Data
CP780.373	POS Data
CP780.374	POS Data
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CP780.384	POS Data
CP780.385	POS Data
CP780.386	POS Data
CP780.387	POS Data
CP780.388	POS Data
CP780.389	POS Data
CP780.390	POS Data
CP780.391	POS Data
CP780.392	POS Data
CP780.393	POS Data
CP780.394	POS Data
CP780.395	POS Data

Input Files

File Name	File Type
Ephm2760.23g	GLONASS Broadcast Ephemeris
Ephm2760.23n	GPS Broadcast Ephemeris
IGS0OPSFIN_20232750000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232760000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232770000_01D_15M_ORB.SP3	GPS Precise Ephemeris

Output Files

Filename	File type
sbet_10032023C_4046.out	SBET Trajectory File

Rover Data Summary

First raw data file	CP780.357		
Last raw data file	CP780.395		
Start GPS week	2282		
Start time	15.207 (10/1/2023 12:00:15 AM)		
End time	202827.043 (10/3/2023 8:20:27 AM)		
Start of fine alignment	186356.401 (10/3/2023 3:45:56 AM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	0.000	0.000	0.000
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

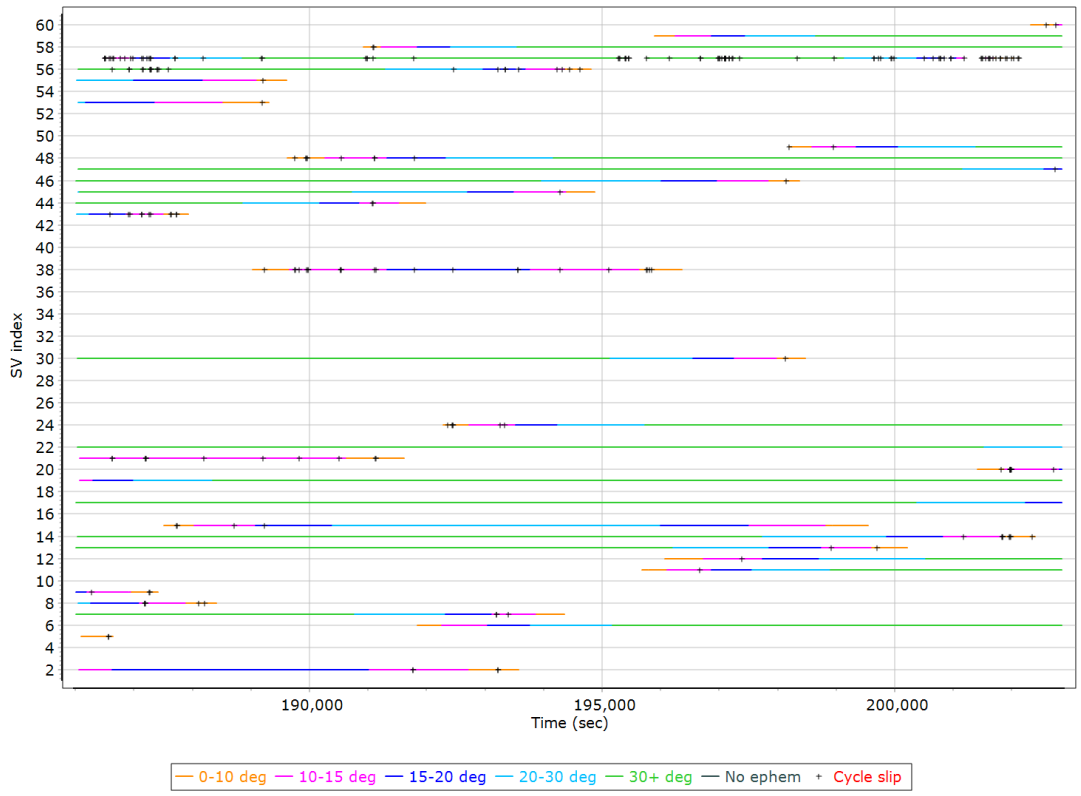
Rover Data QC

Raw IMU Import QC Summary

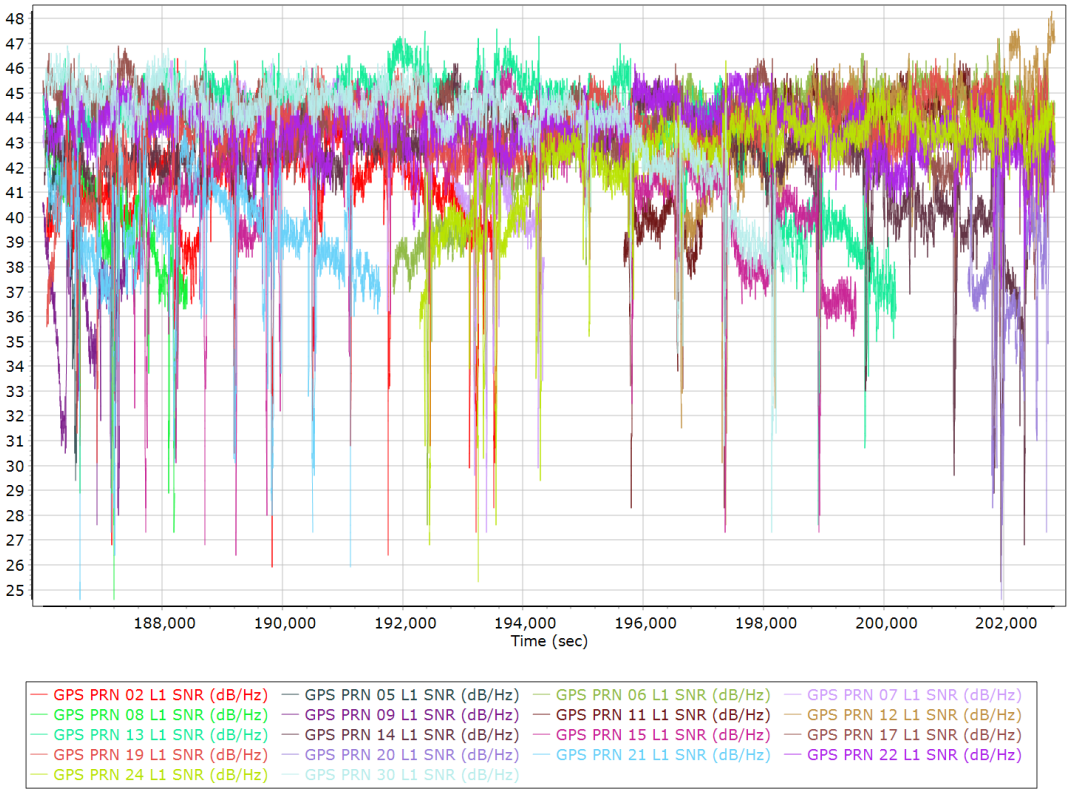
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_10032023C_4046.log
IMU Records Processed	3365158
Termination Status	Warnings
IMU Anomalies	1
IMU Failure Messages	
186014.292 : WARNING : Gap of 185998.3352 seconds in CHECKDT input data	

Primary Observables & Satellite Data

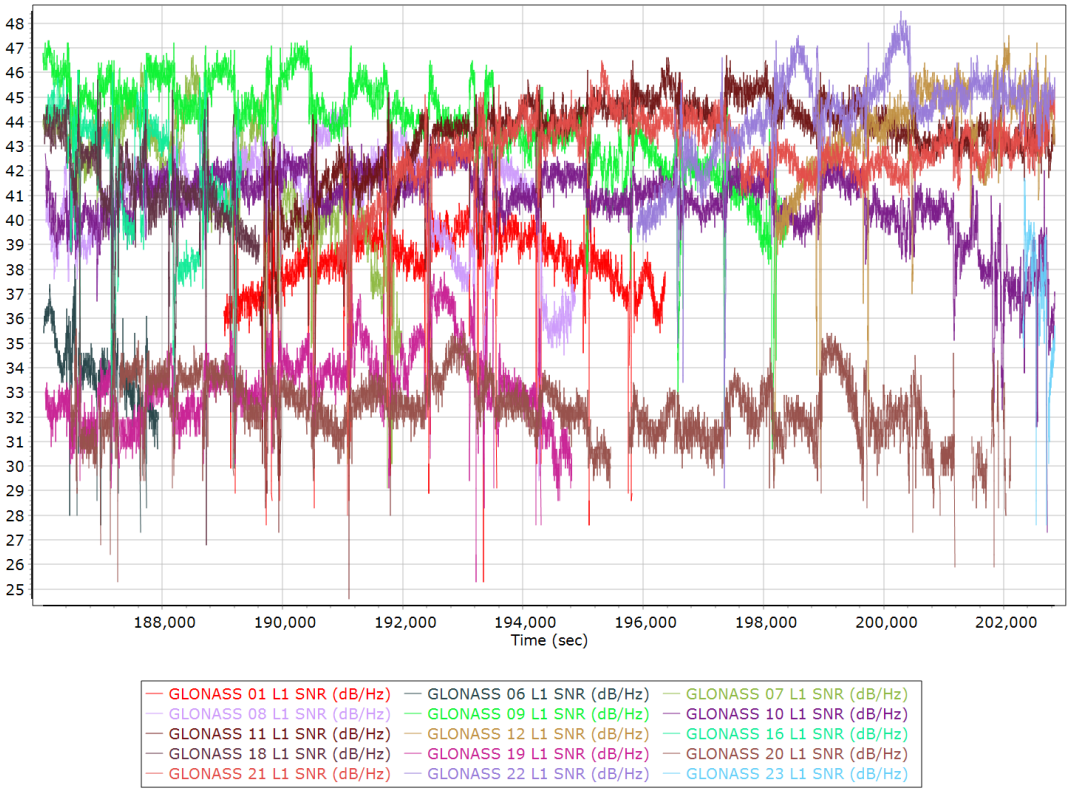
GPS/GLONASS L1 Satellite Lock/Elevation



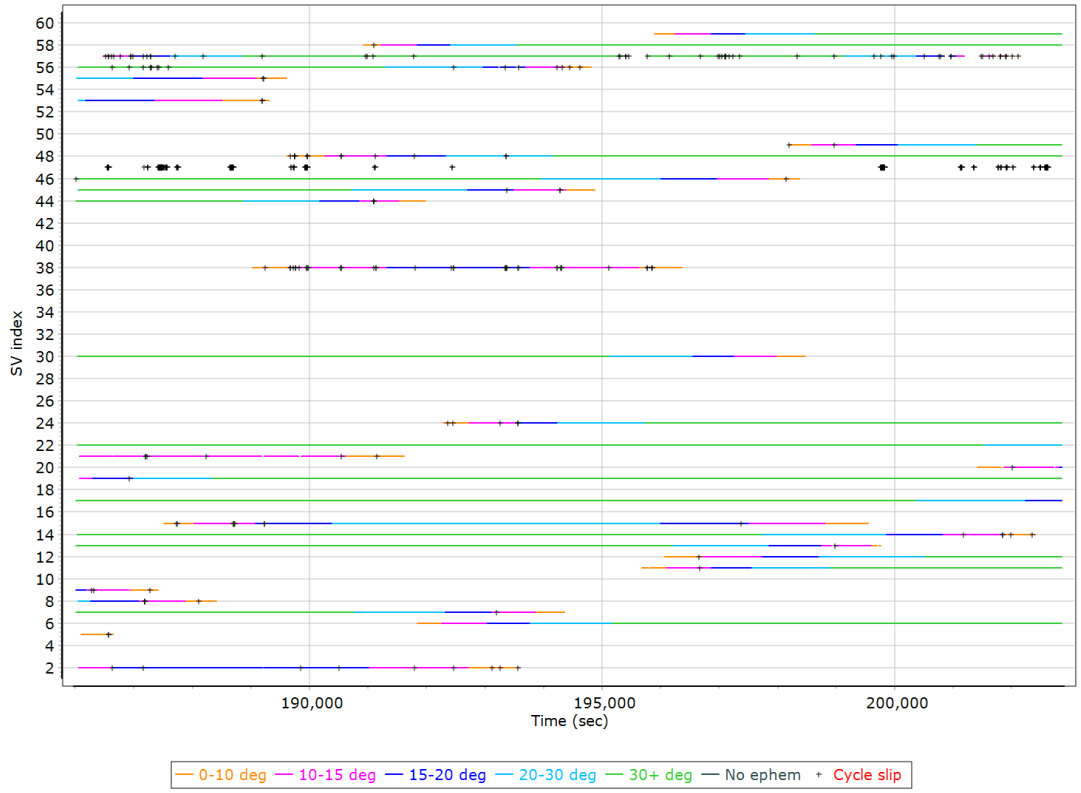
GPS L1 SNR



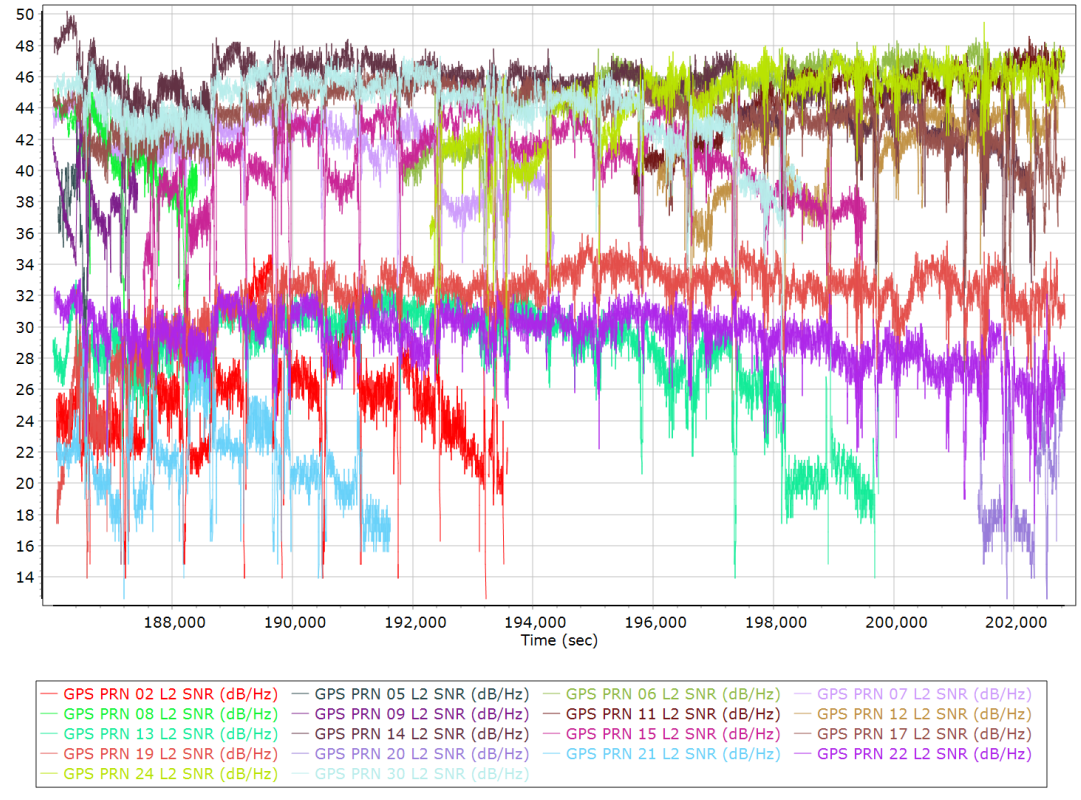
GLONASS L1 SNR



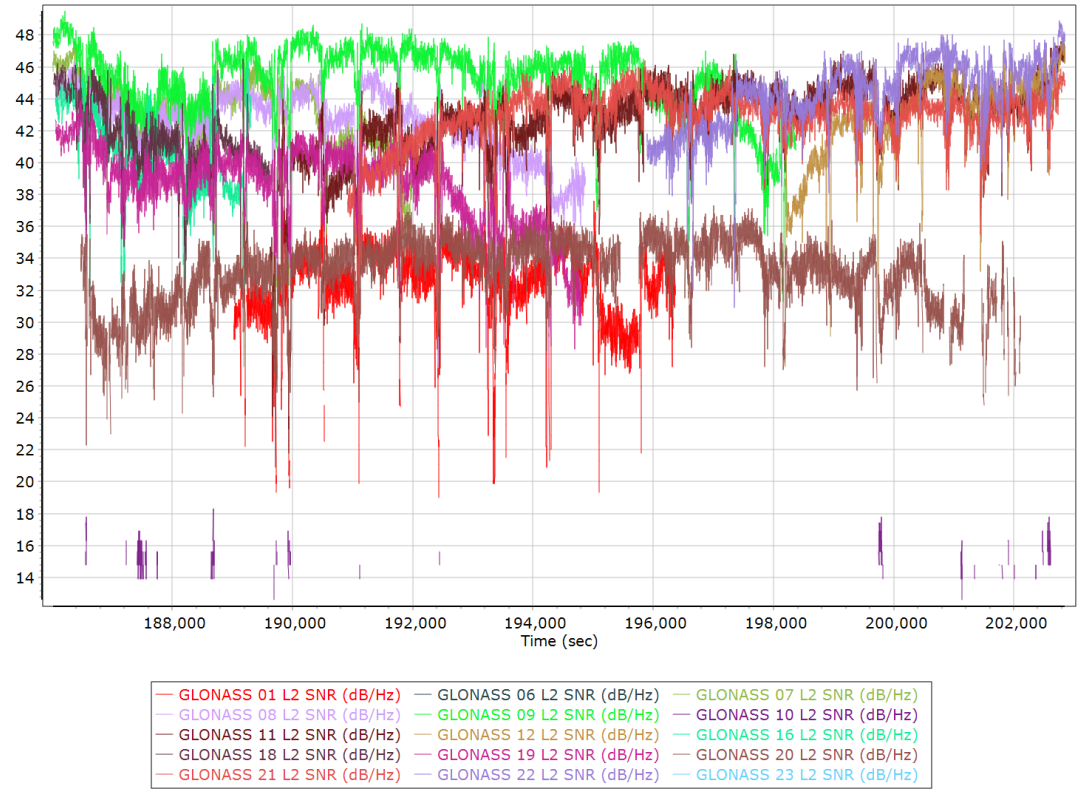
GPS/GLONASS L2 Satellite Lock/Elevation



GPS L2 SNR



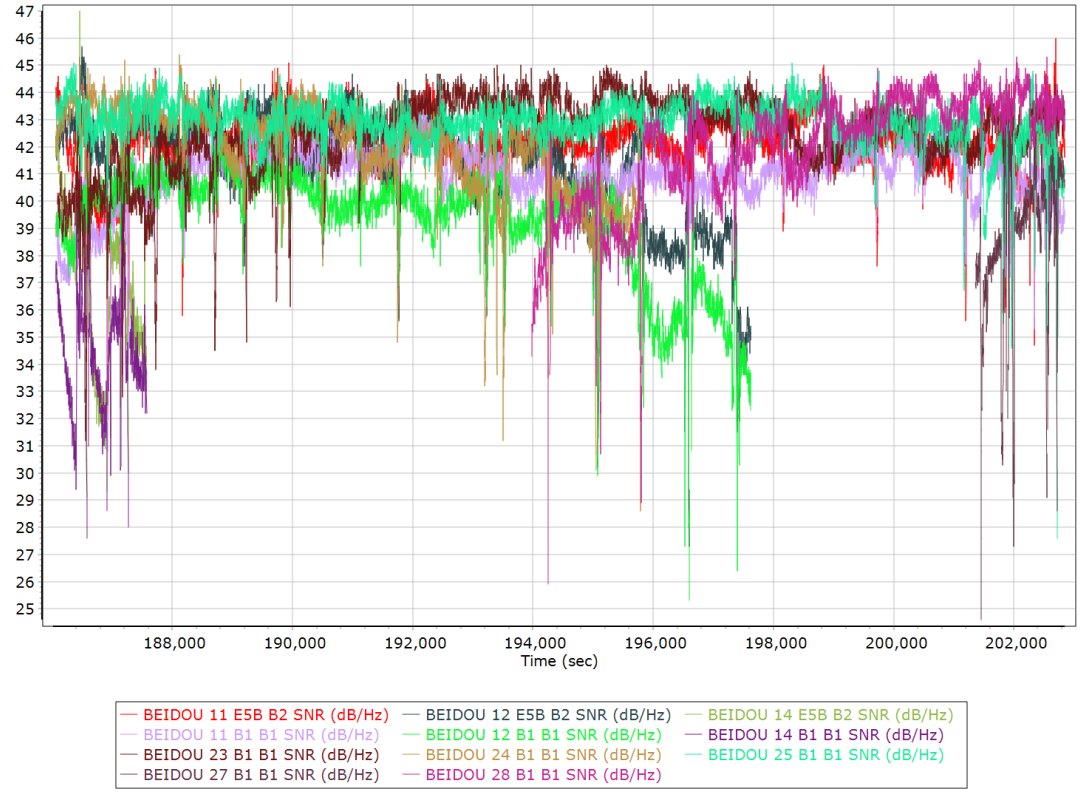
GLONASS L2 SNR



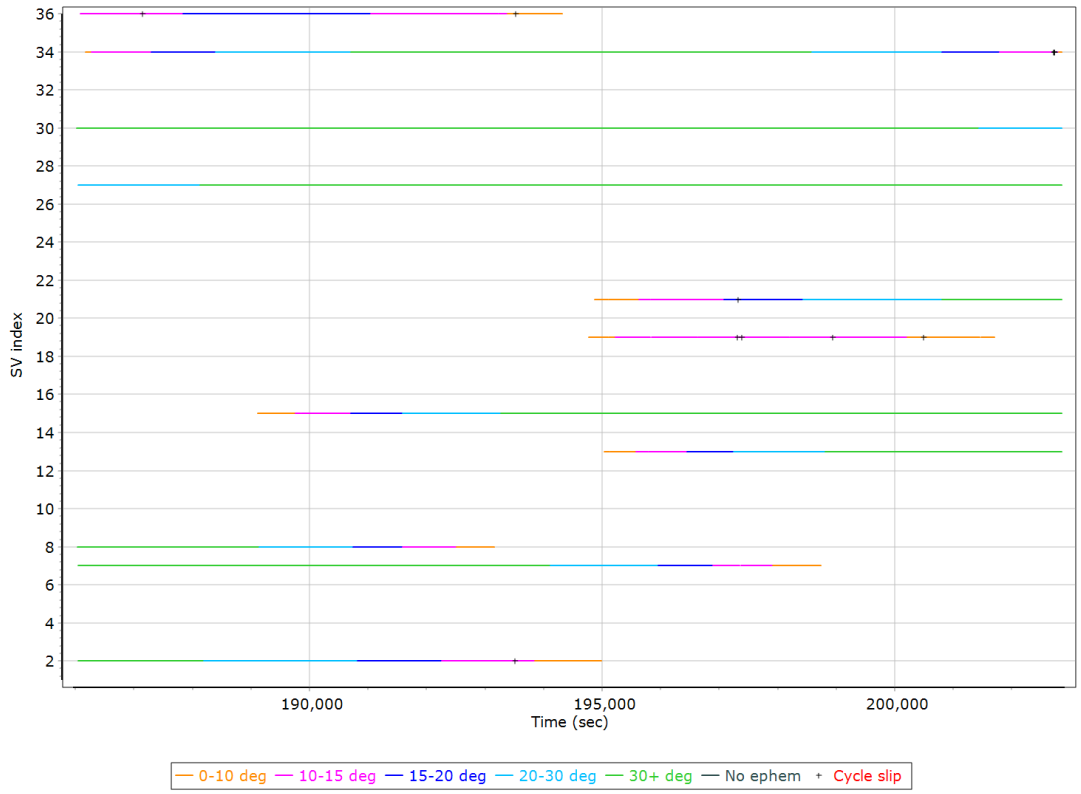
BEIDOU Satellite Lock/Elevation



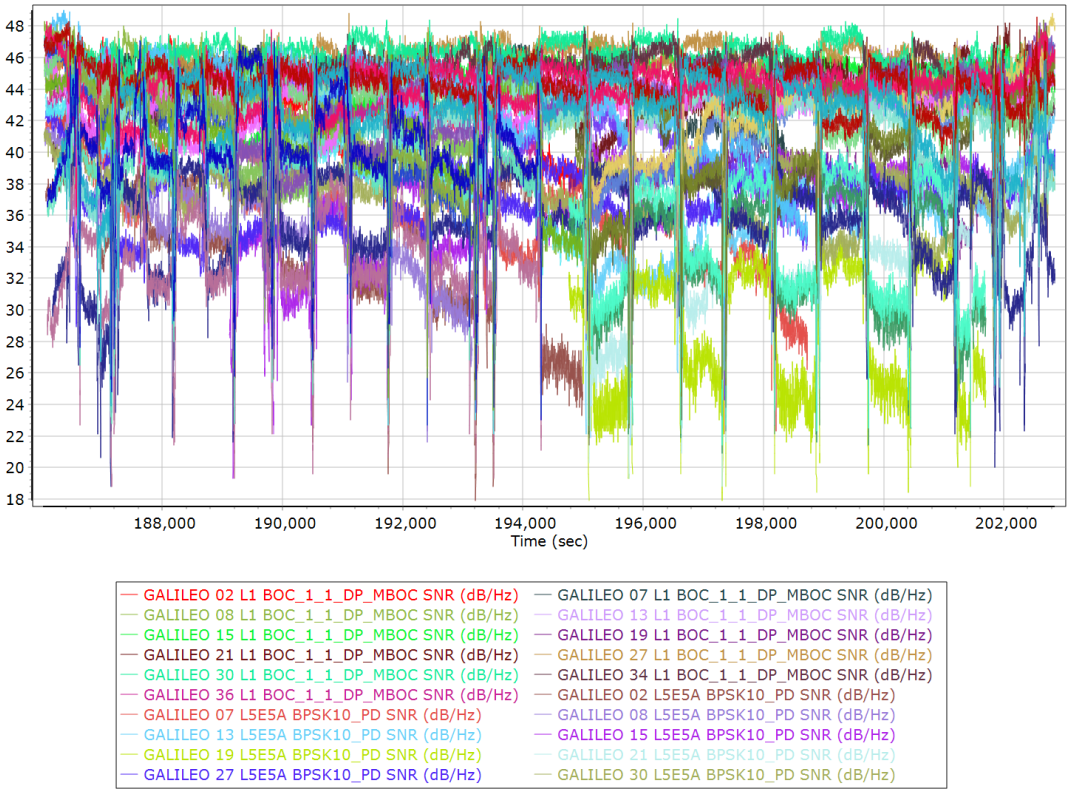
BEIDOU SNR



GALILEO Satellite Lock/Elevation

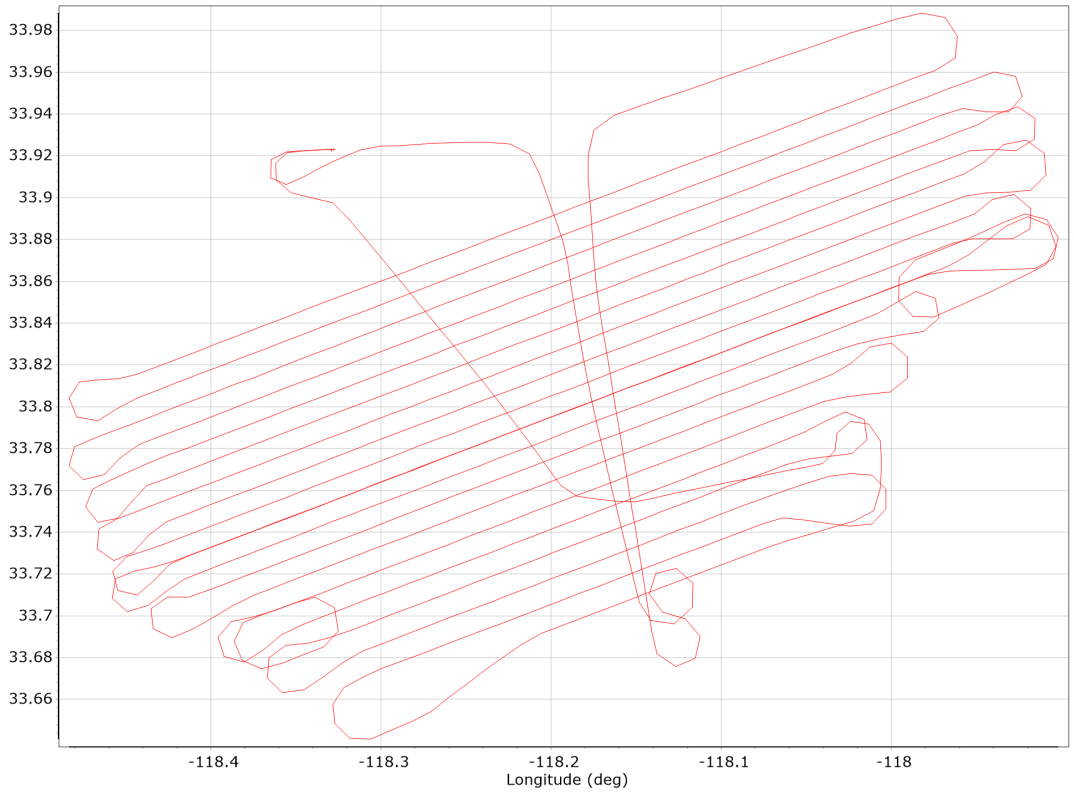


GALILEO SNR

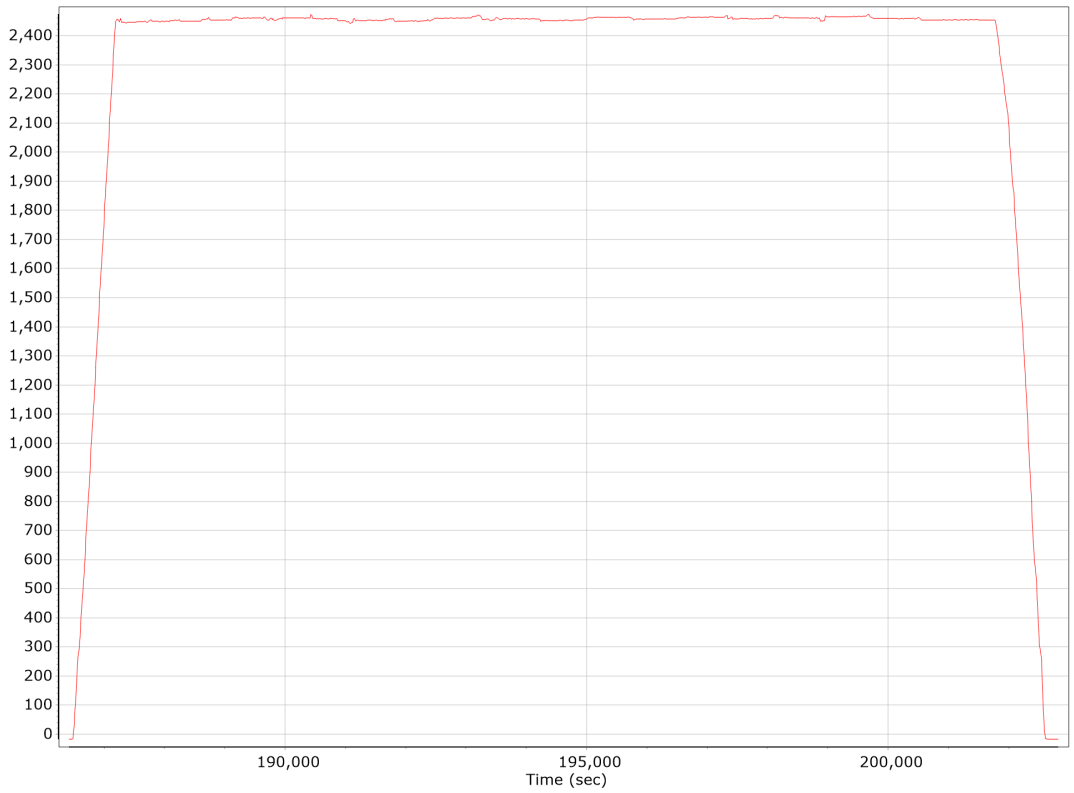

48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
18
188,000
190,000
192,000
194,000
196,000
198,000
200,000
202,000
Time (sec)
GALILEO 02 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 07 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 08 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 13 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 15 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 19 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 21 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 27 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 30 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 34 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 36 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 02 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 07 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 08 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 13 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 15 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 19 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 21 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 27 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 30 L5E5A BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

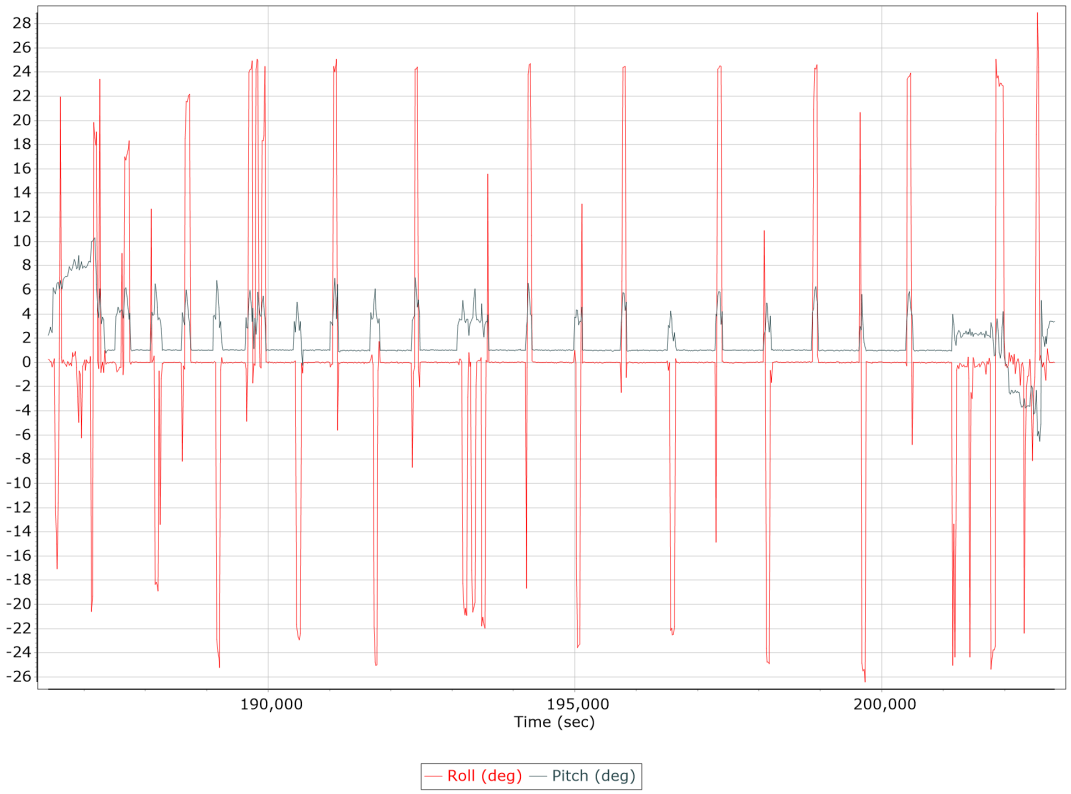
Top View



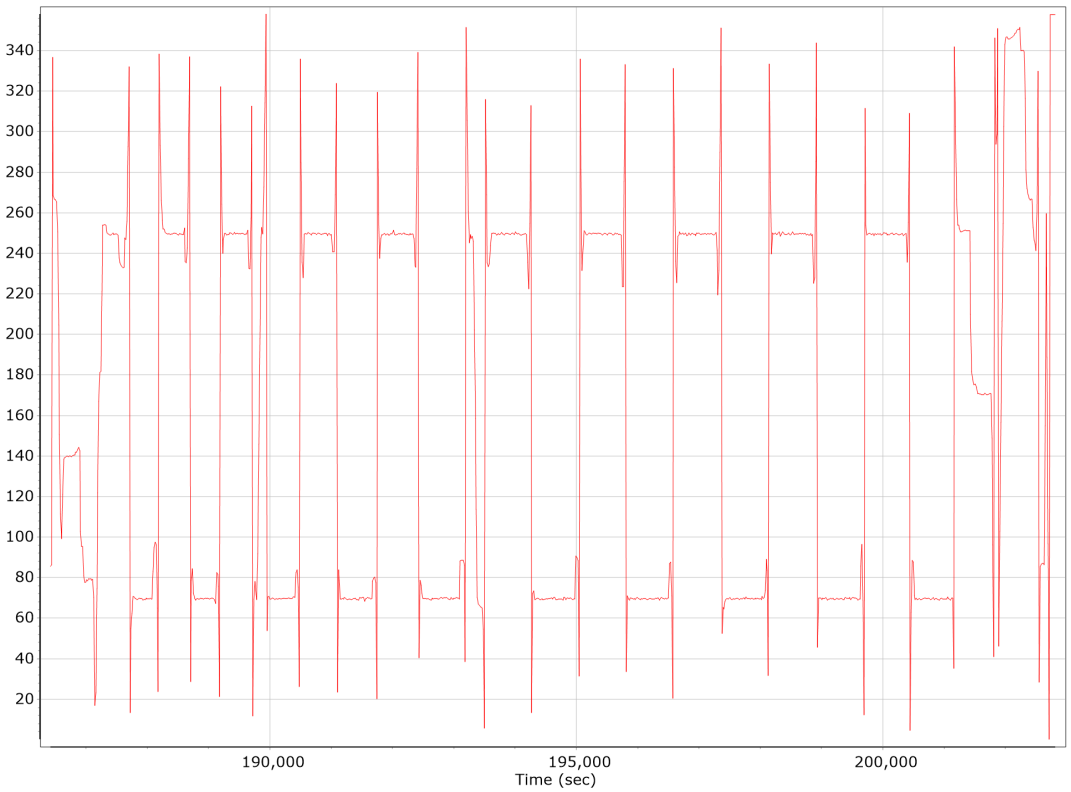
Altitude



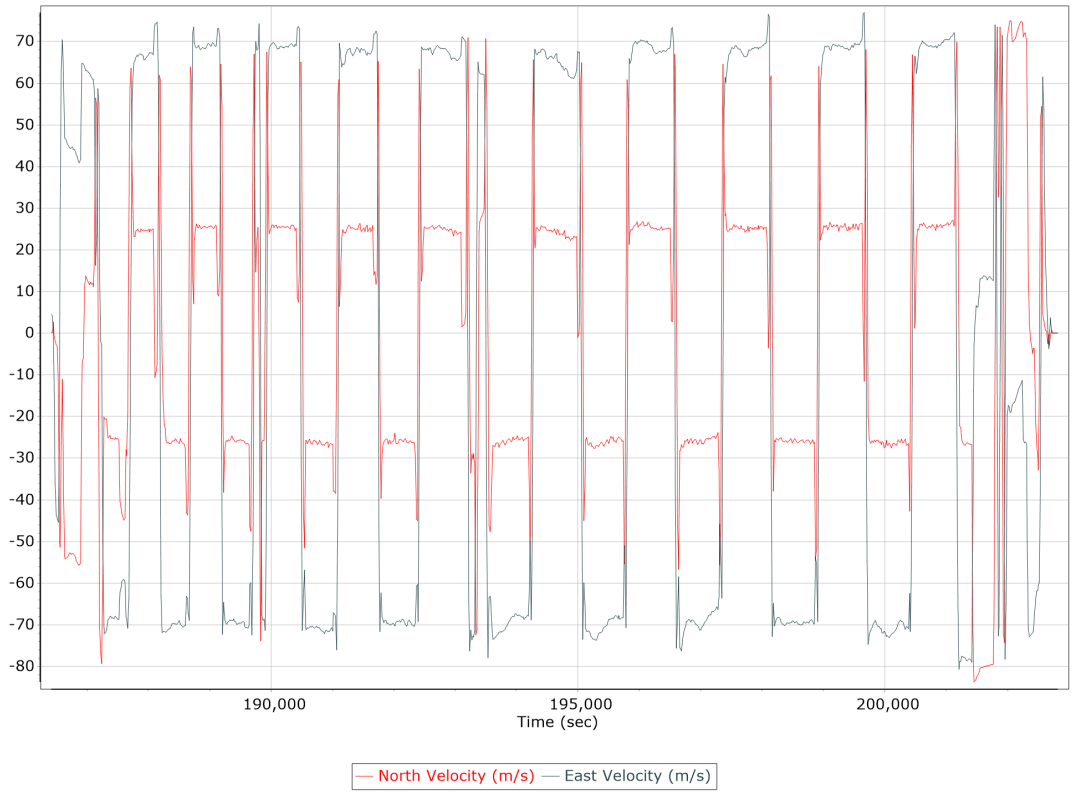
Roll/Pitch



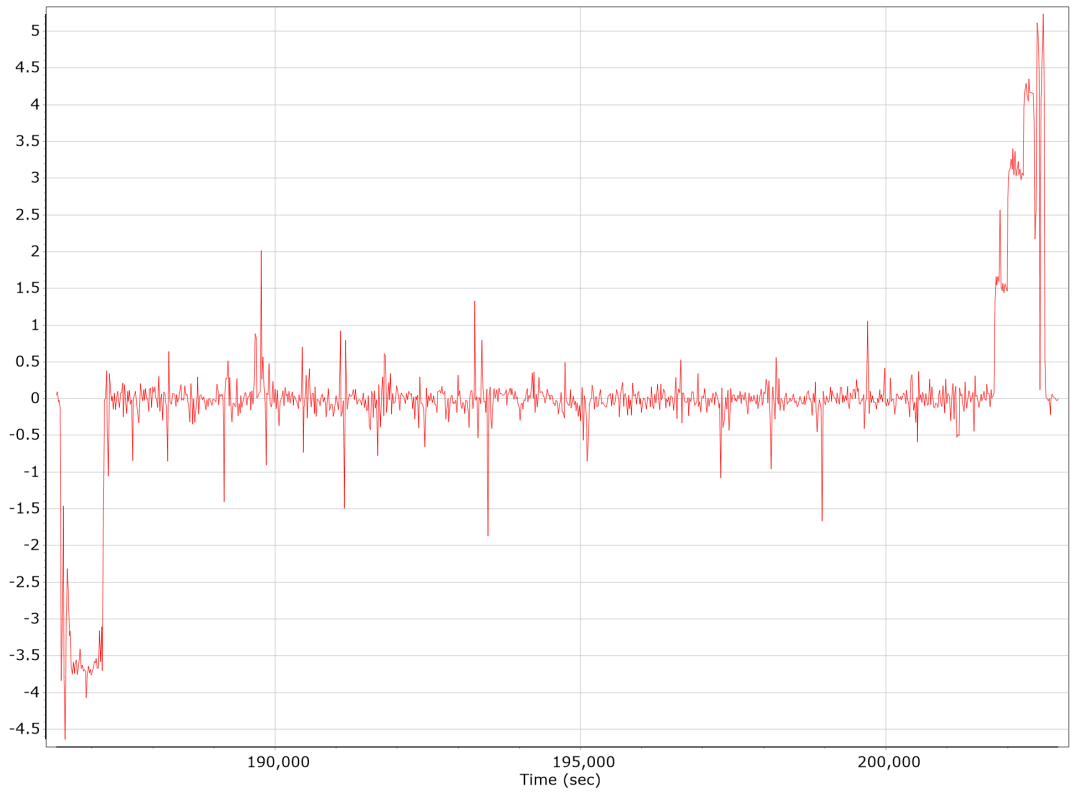
Heading



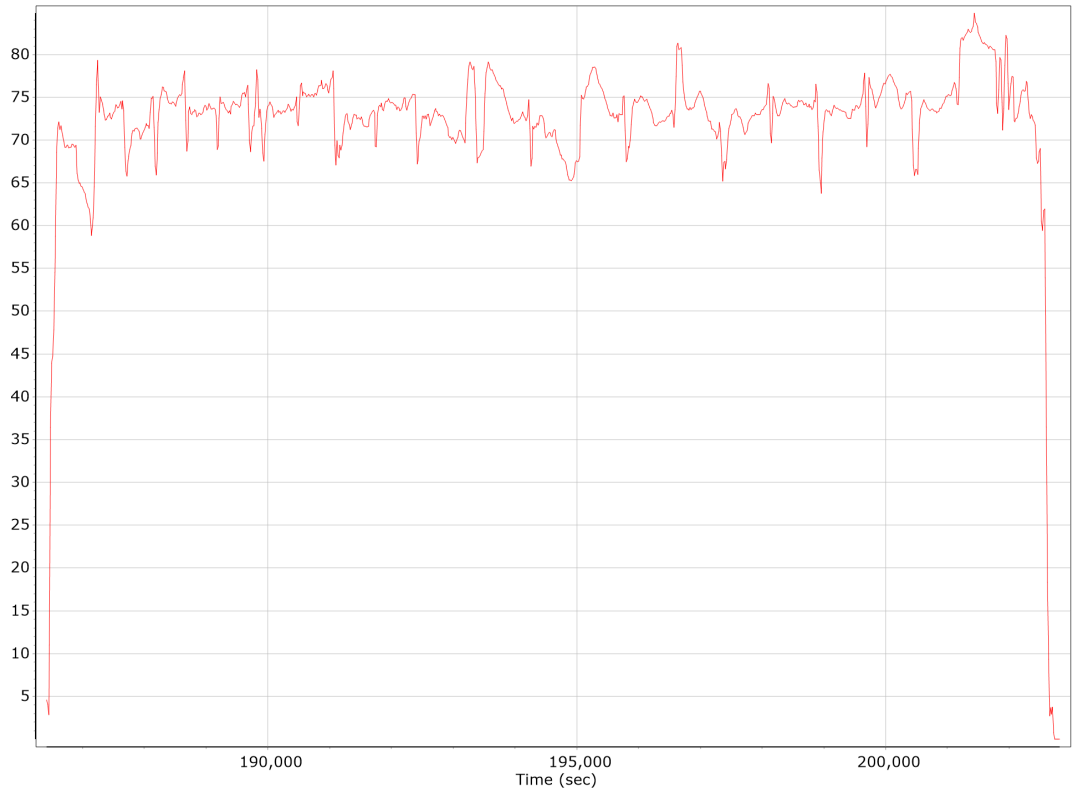
North/East Velocity



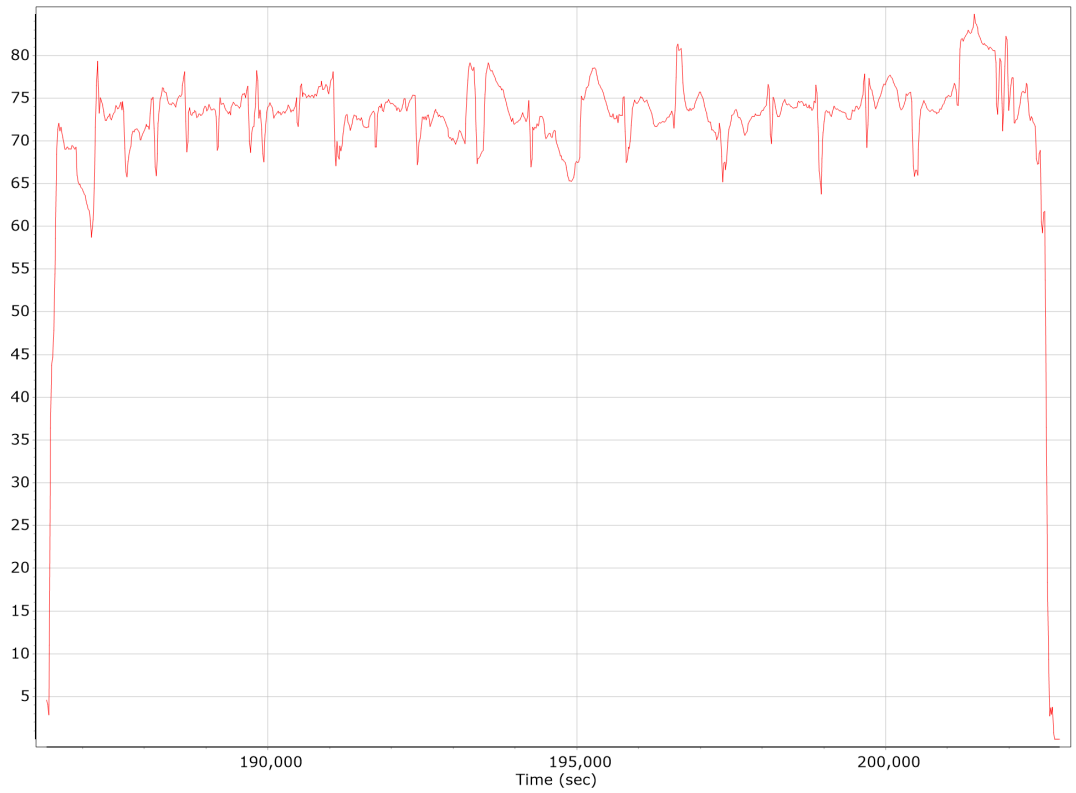
Down Velocity



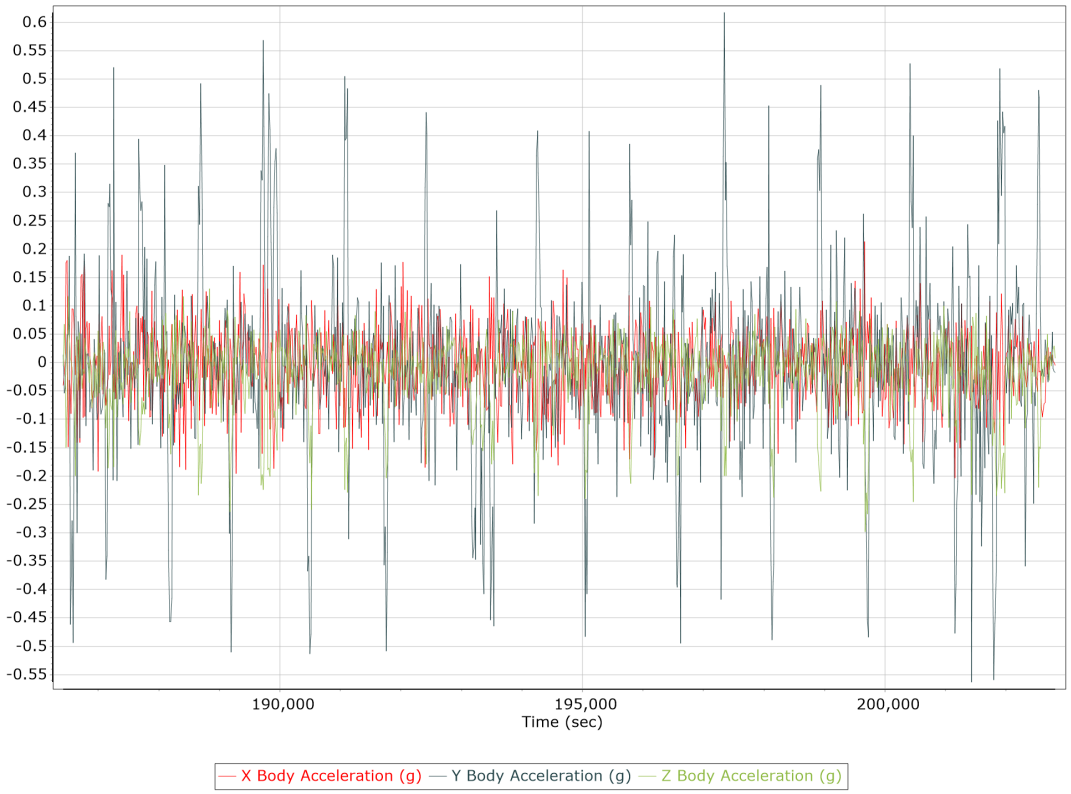
Total Speed



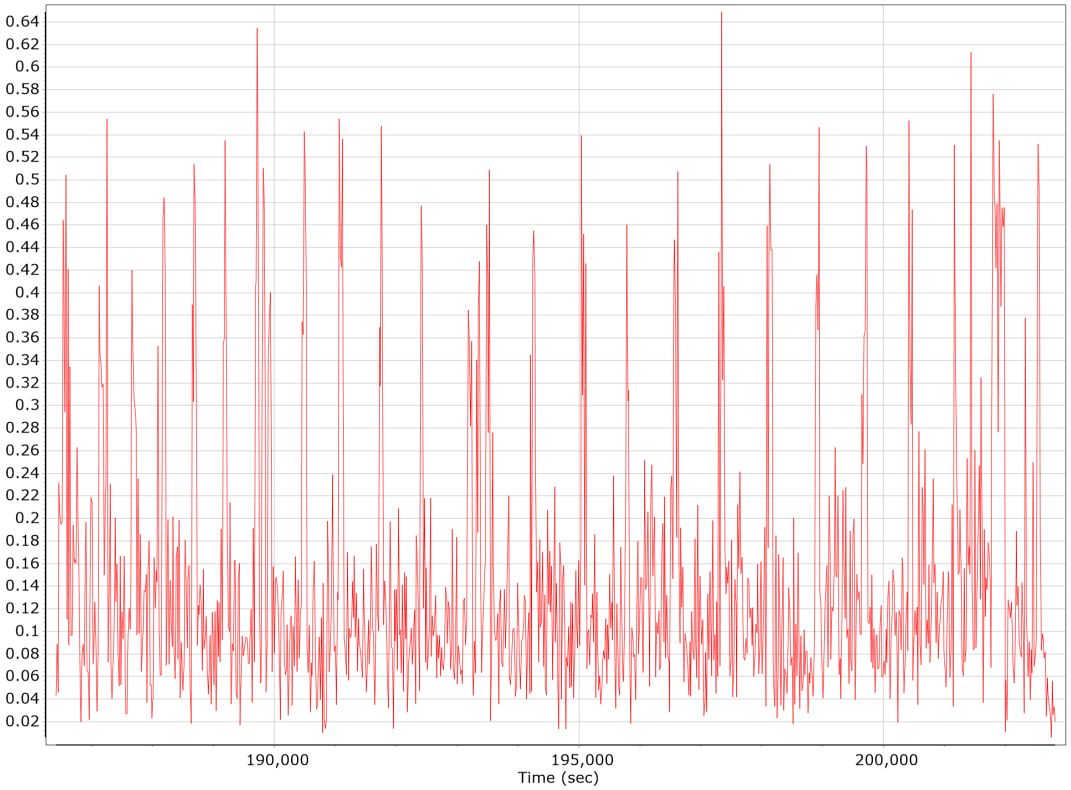
Ground Speed



Body Acceleration



Total Body Acceleration

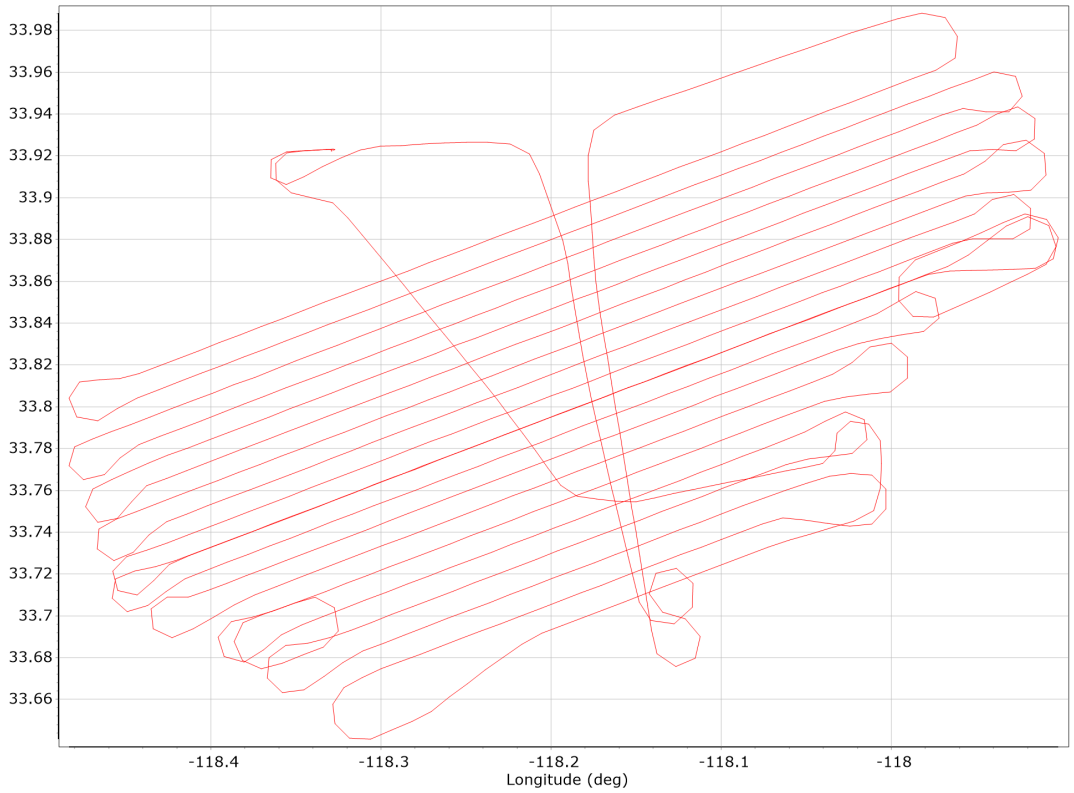


Body Angular Rate

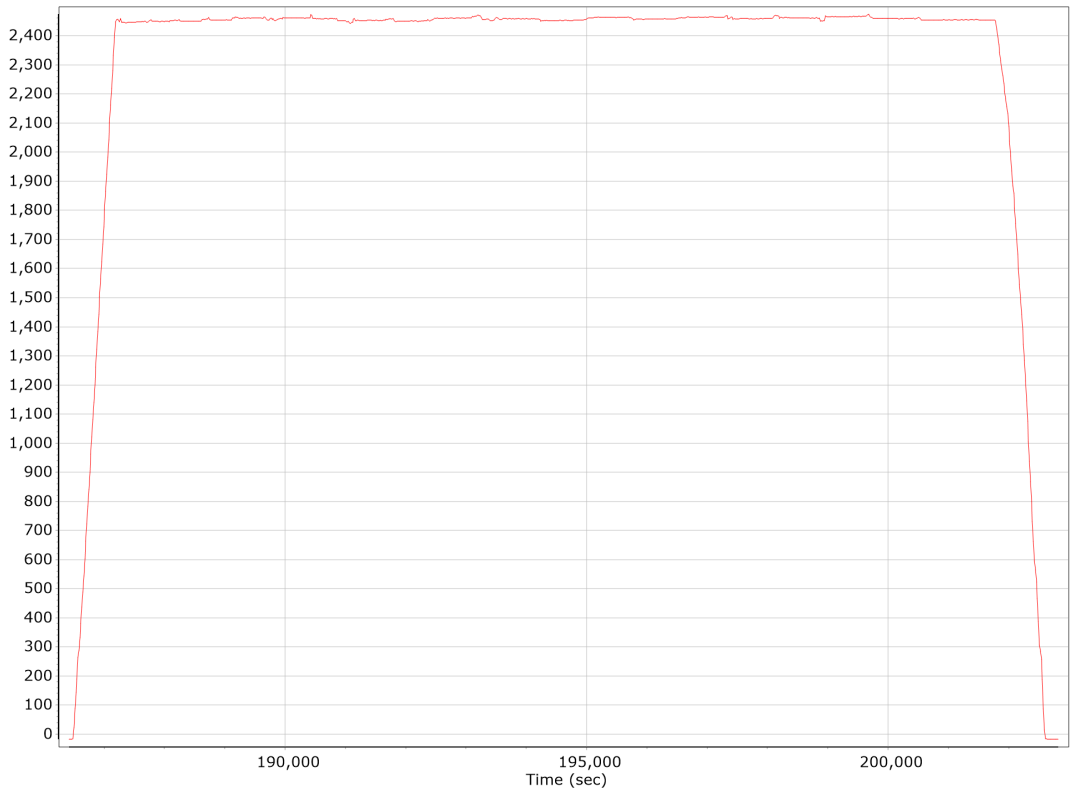


Forward Processed Trajectory Information

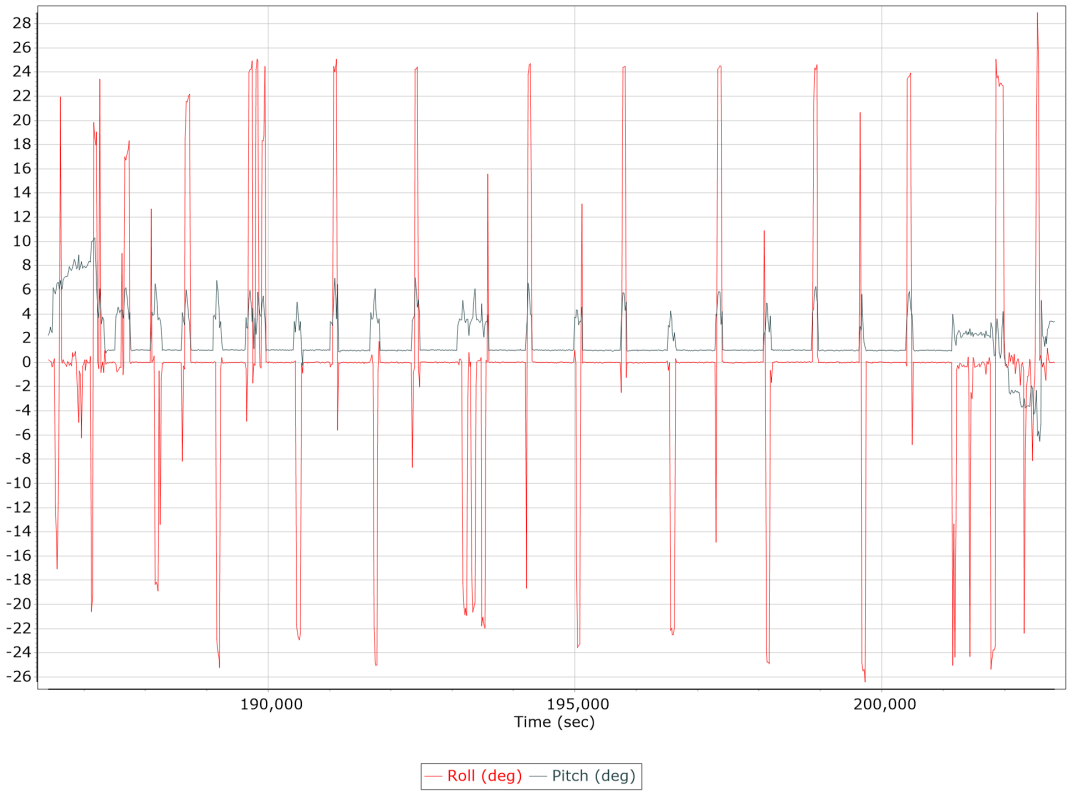
Top View



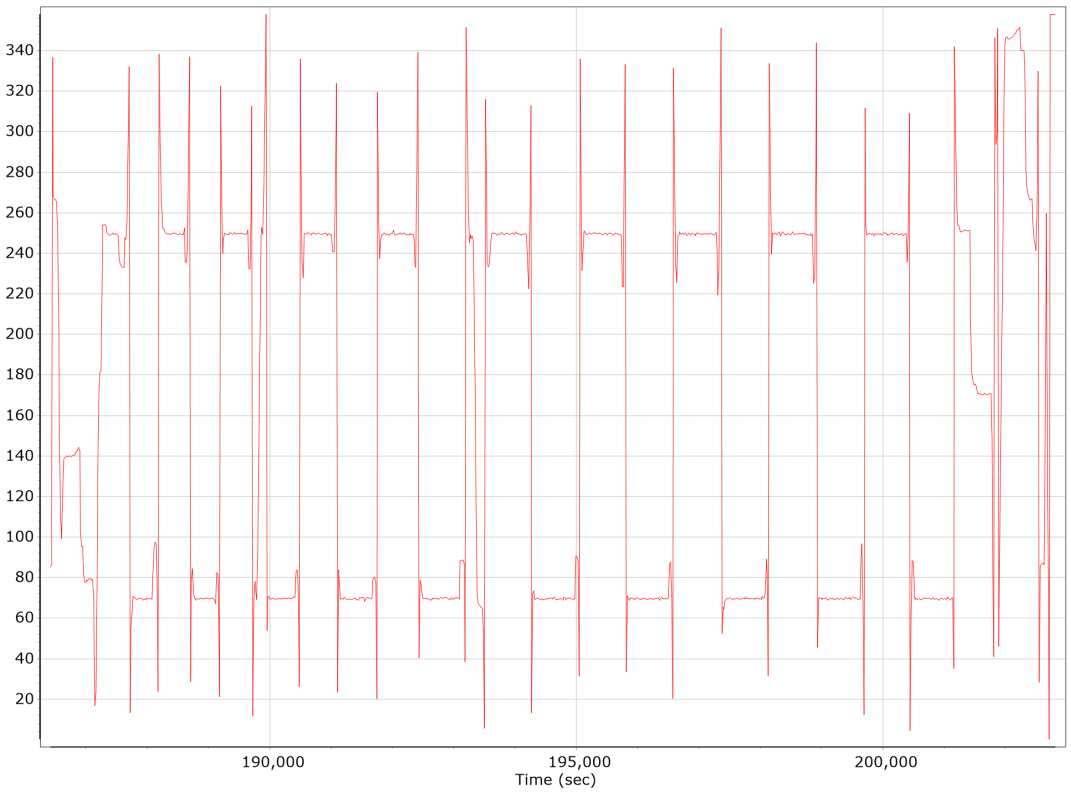
Altitude



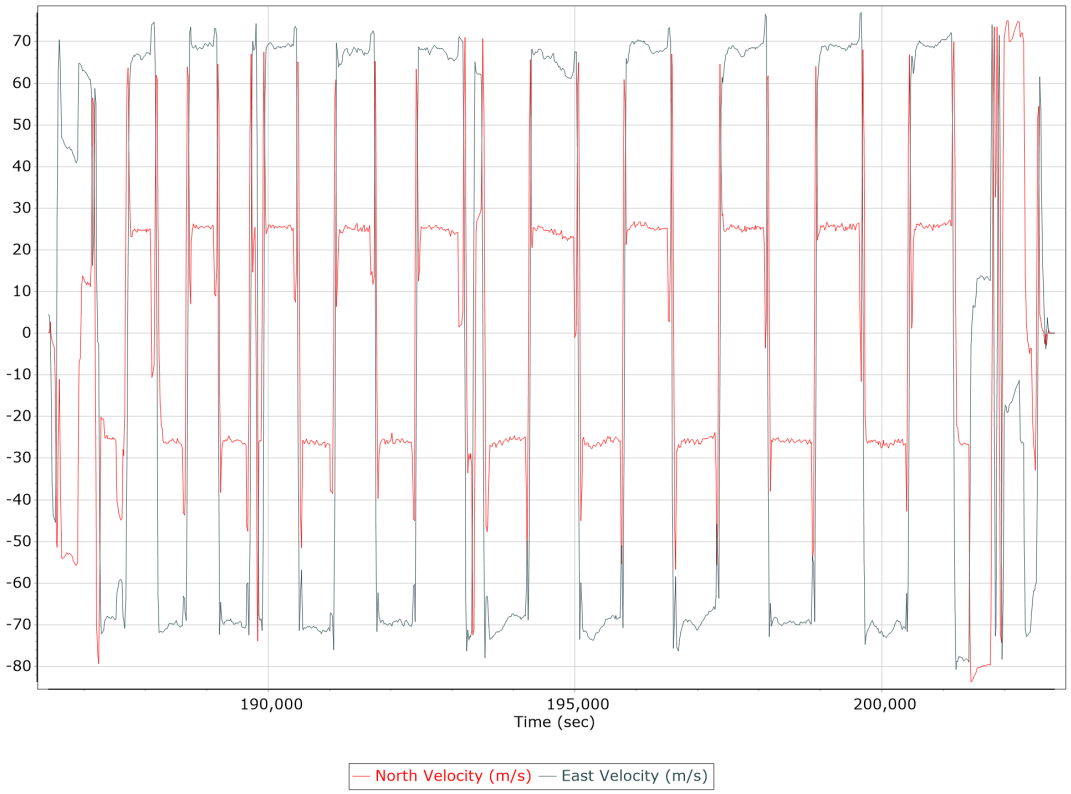
Roll/Pitch



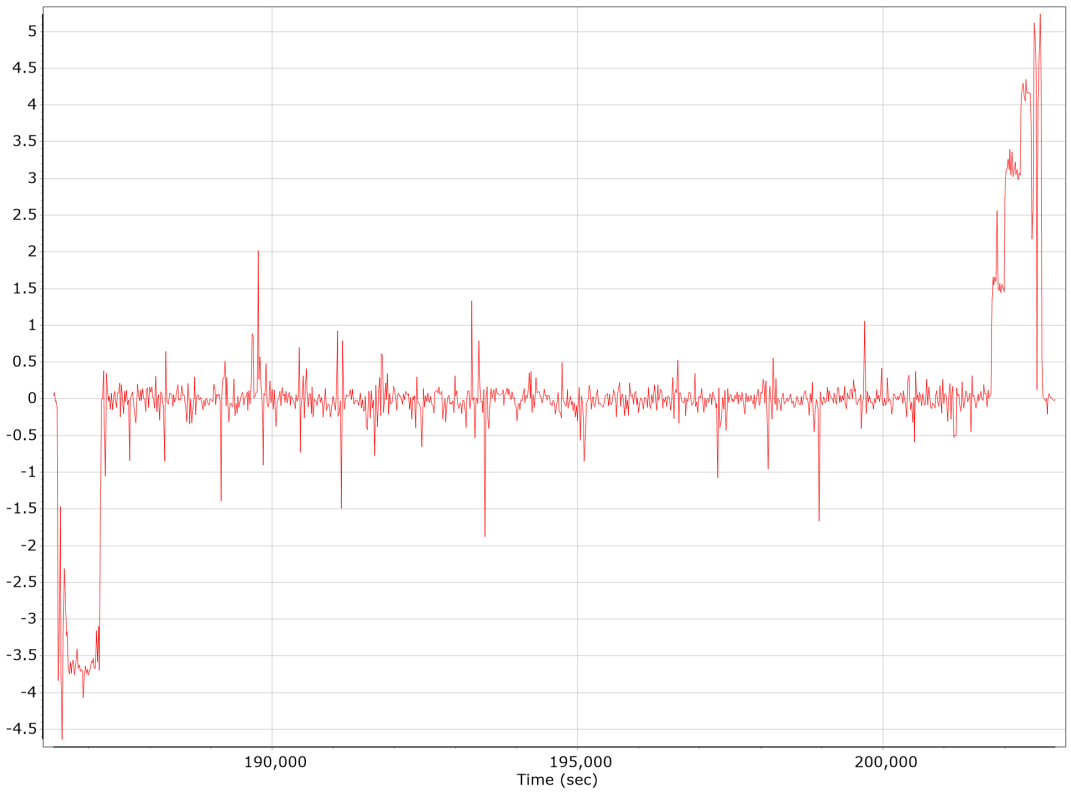
Heading



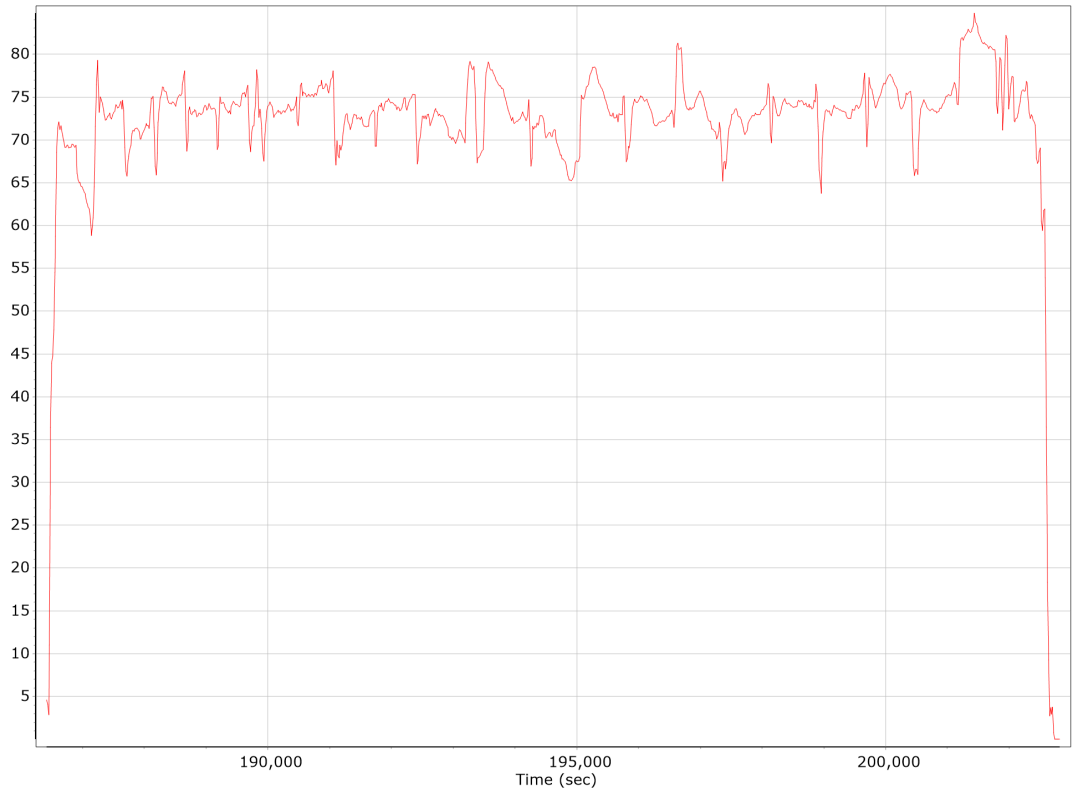
North/East Velocity



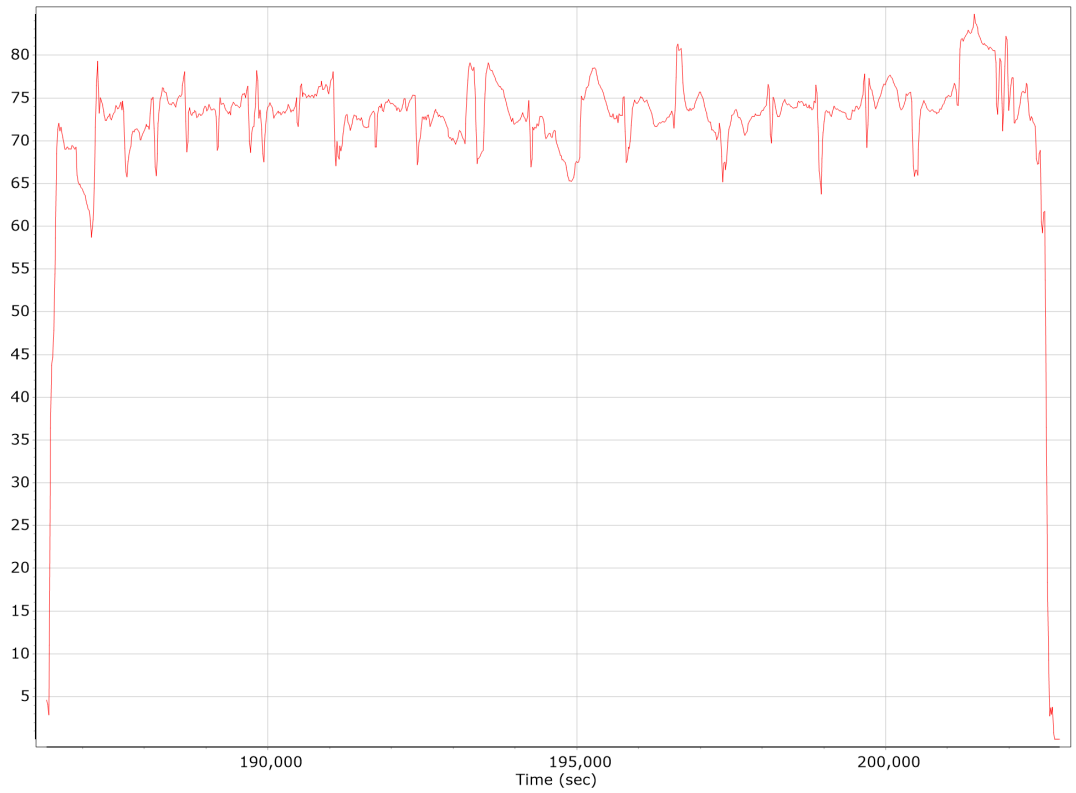
Down Velocity



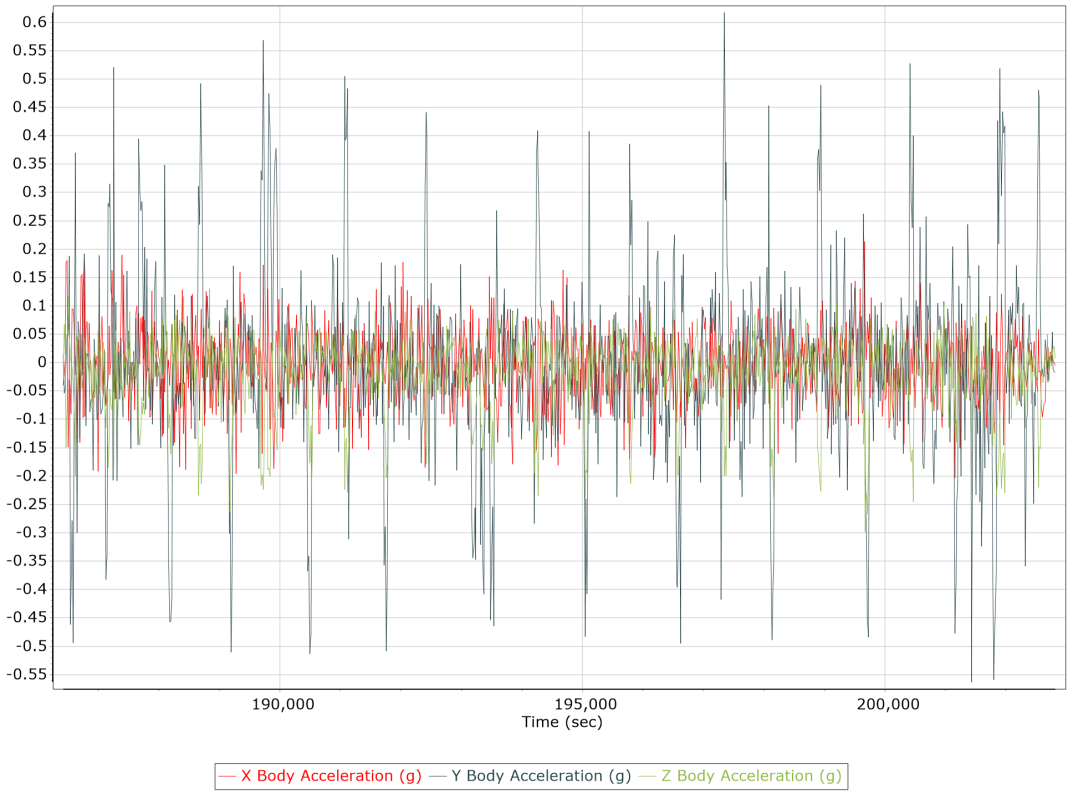
Total Speed



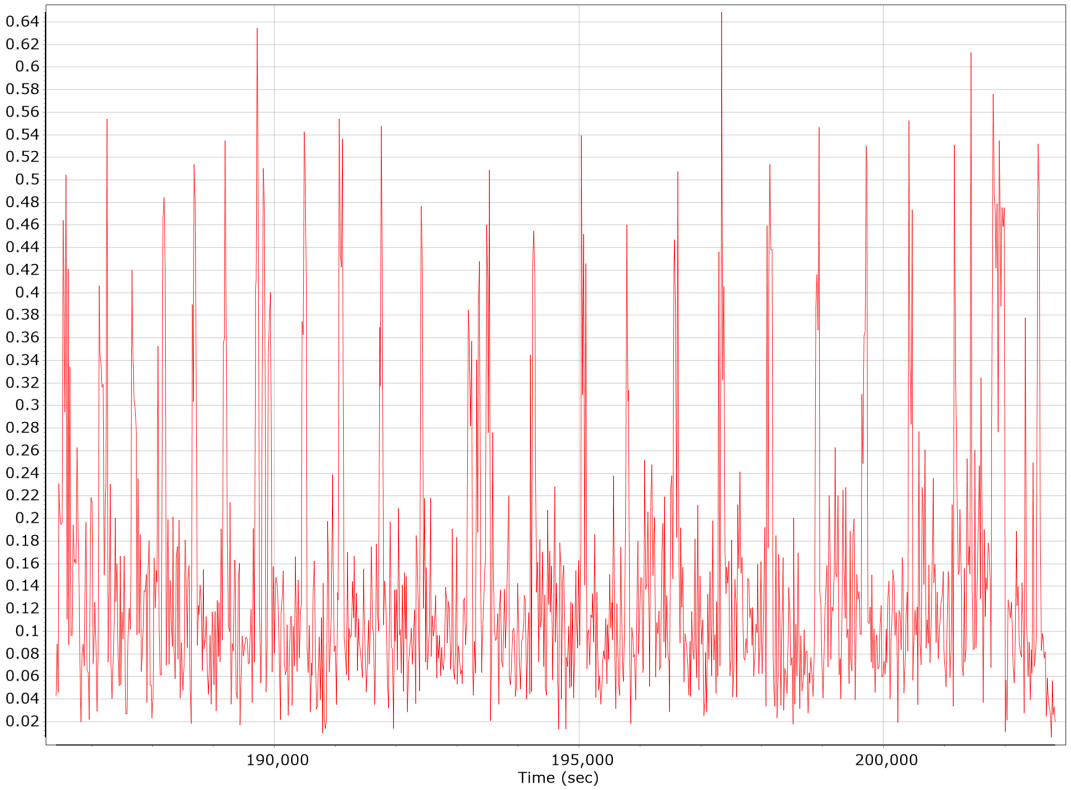
Ground Speed



Body Acceleration



Total Body Acceleration



Body Angular Rate

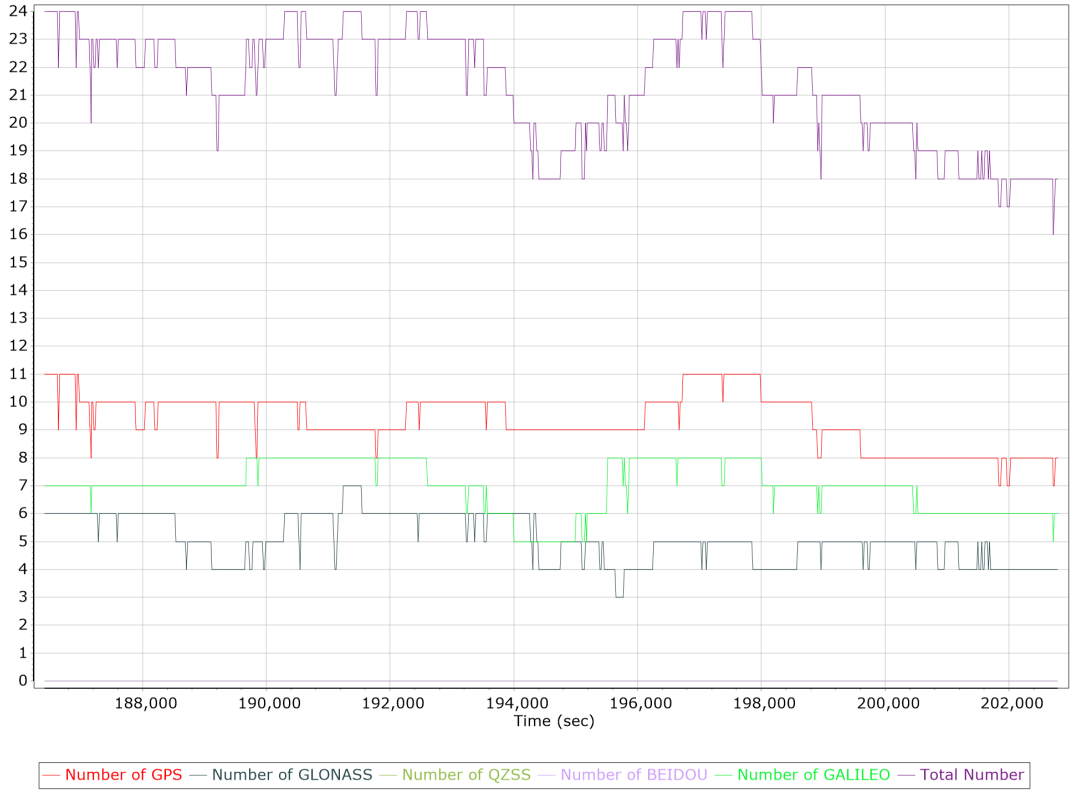


GNSS QC

GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	4	11	9
Number of GLONASS SV	3	7	5
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	0	8	7
Total number of SV	7	24	21
PDOP	1.03	4.12	1.23
QC Solution Gaps	0.00	0.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	16776.00	0.00	0.00
Percentage	100.00	0.00	0.00

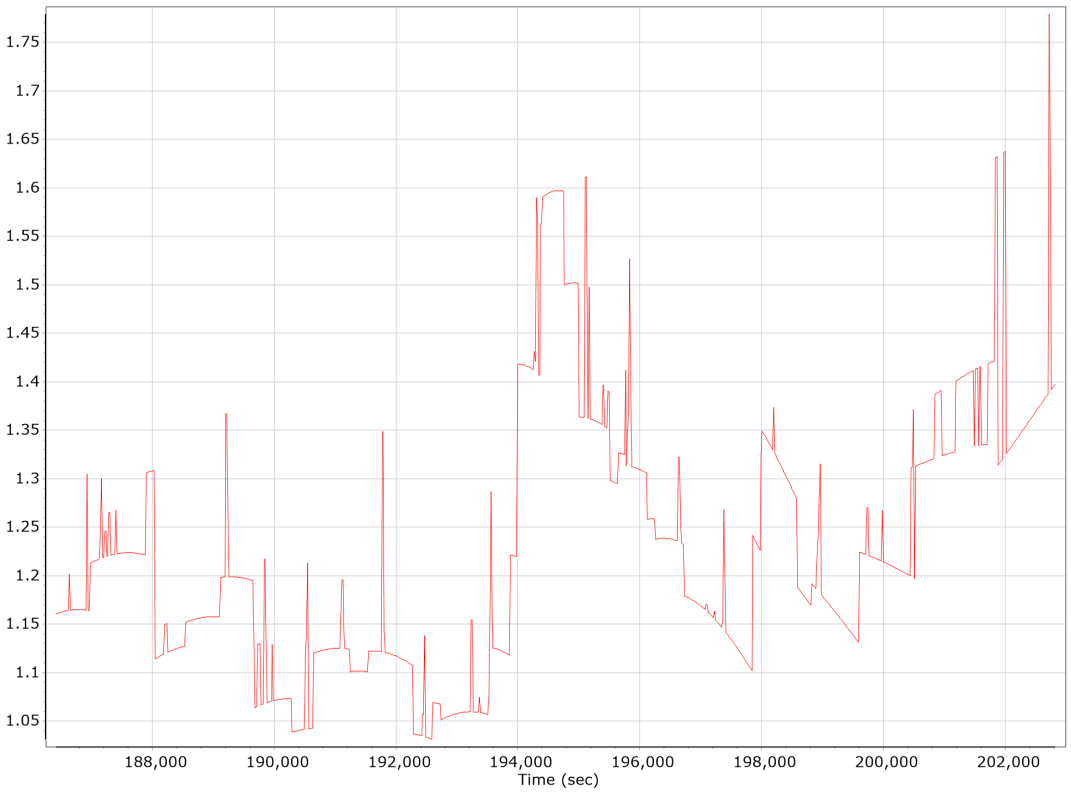
Num SVs in solution



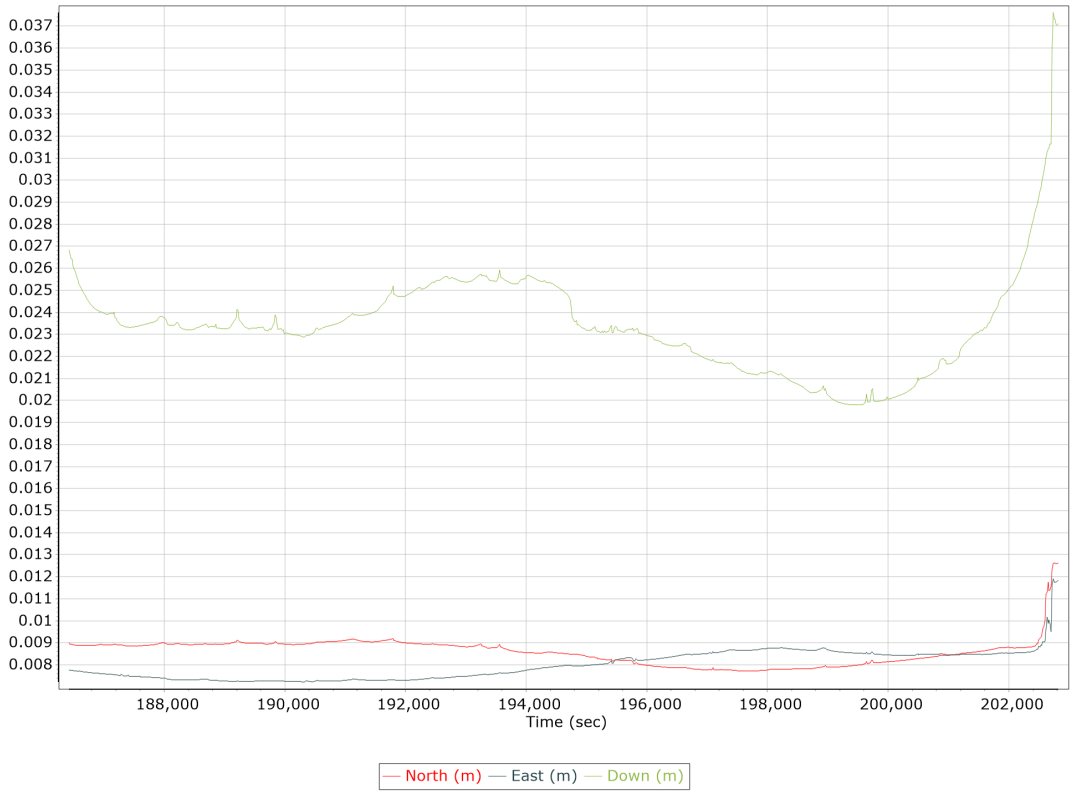
Forward/Reverse Separation



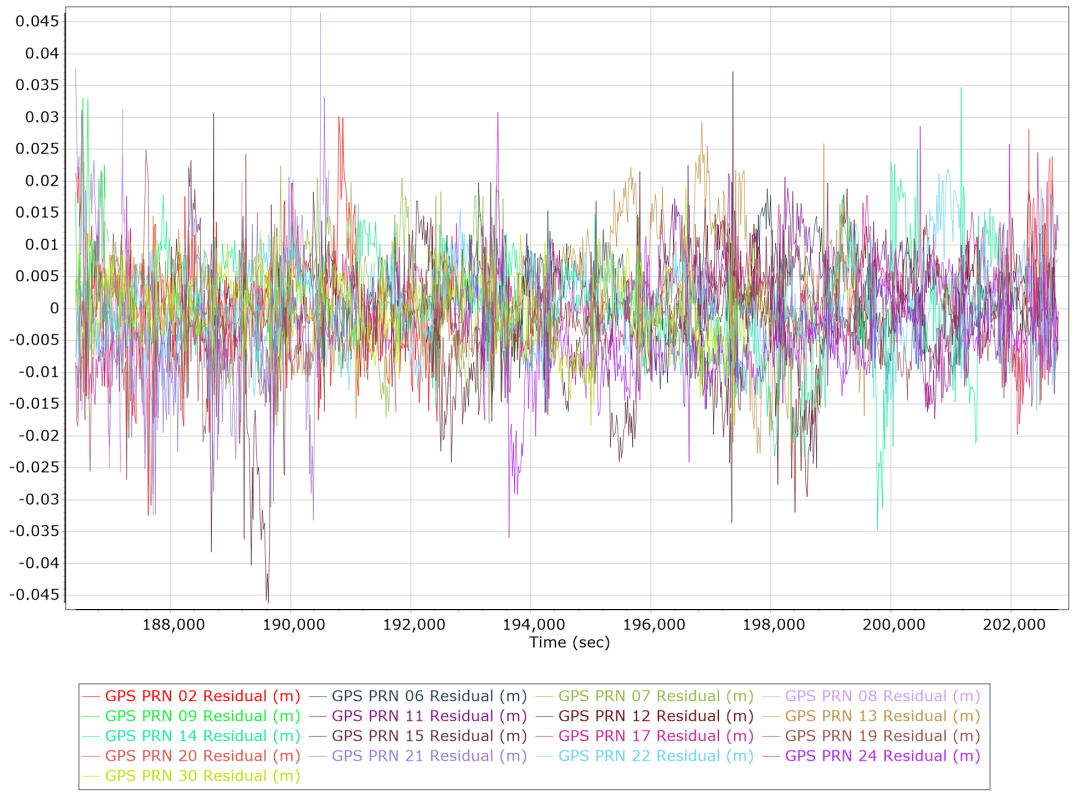
PDOP



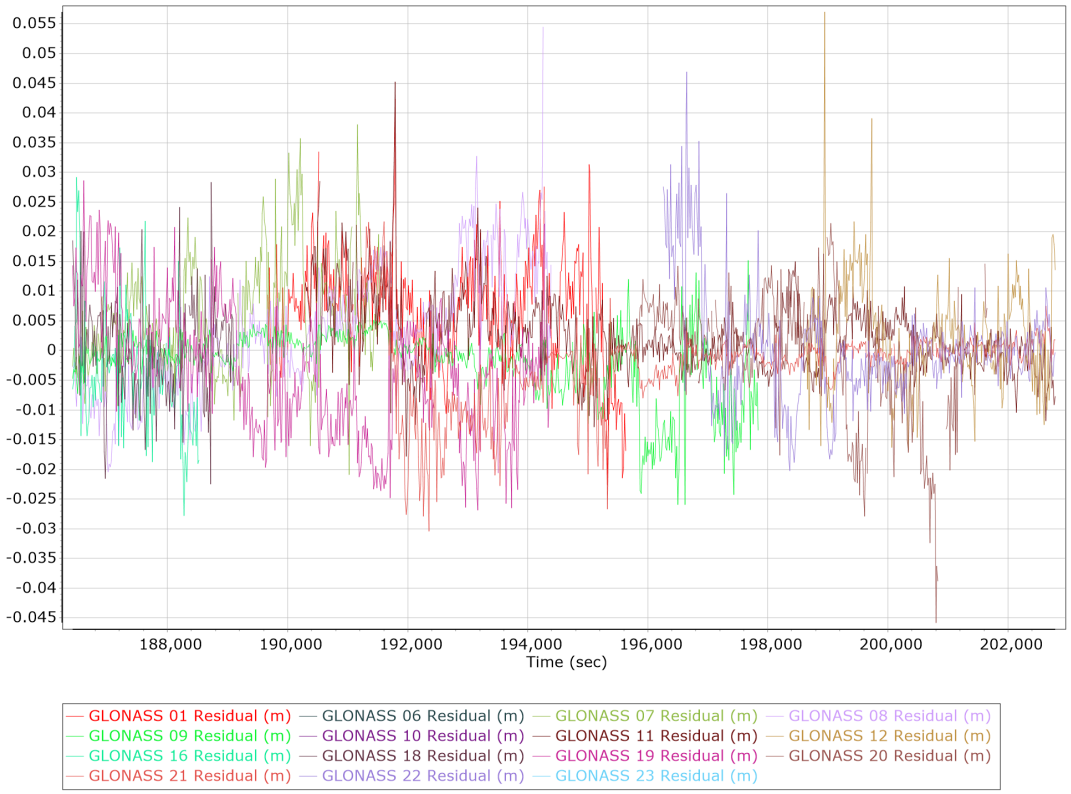
Estimated Position Accuracy



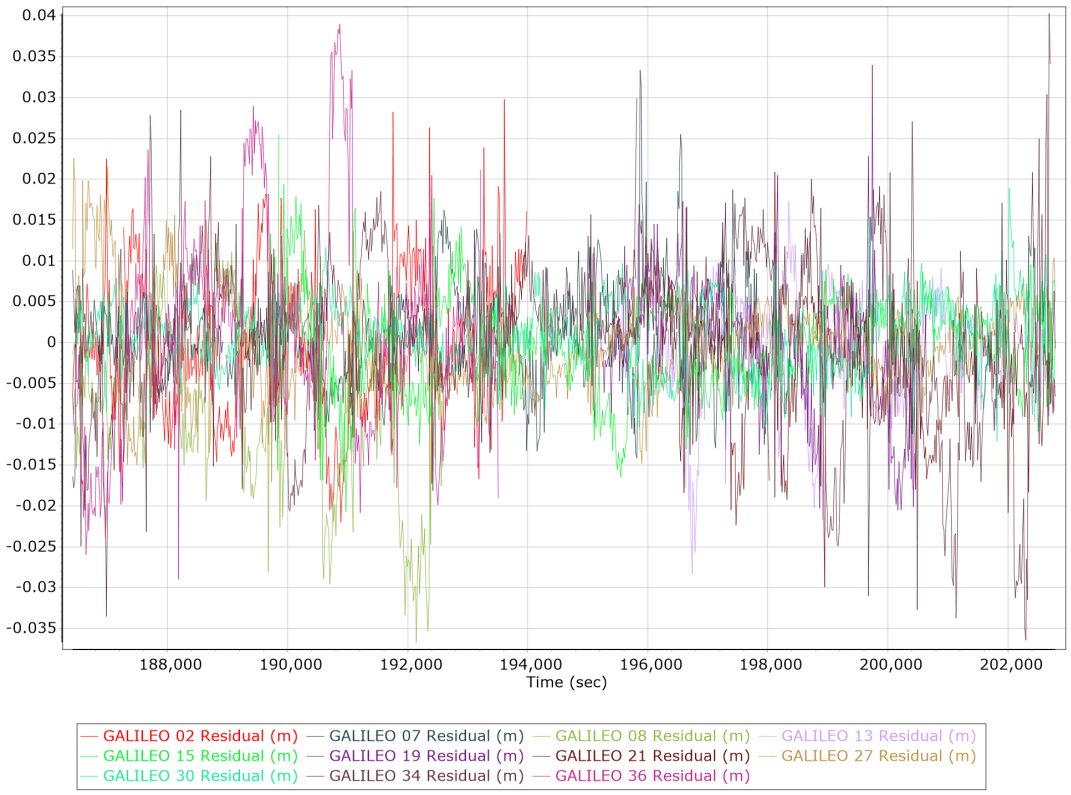
GPS Residuals



GLONASS Residuals



GALILEO Residuals



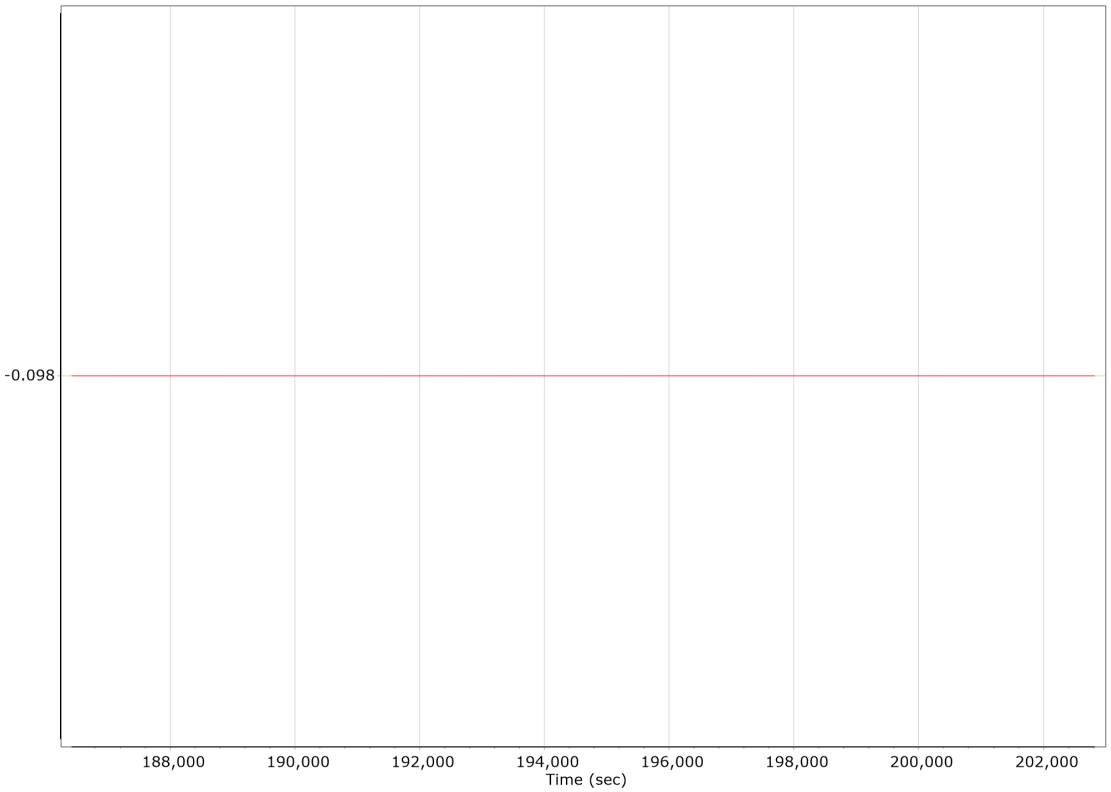
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	185999.000 (10/3/2023 3:39:59 AM)		
Processing end time	202827.000 (10/3/2023 8:20:27 AM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	-0.098	0.057	-1.221
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

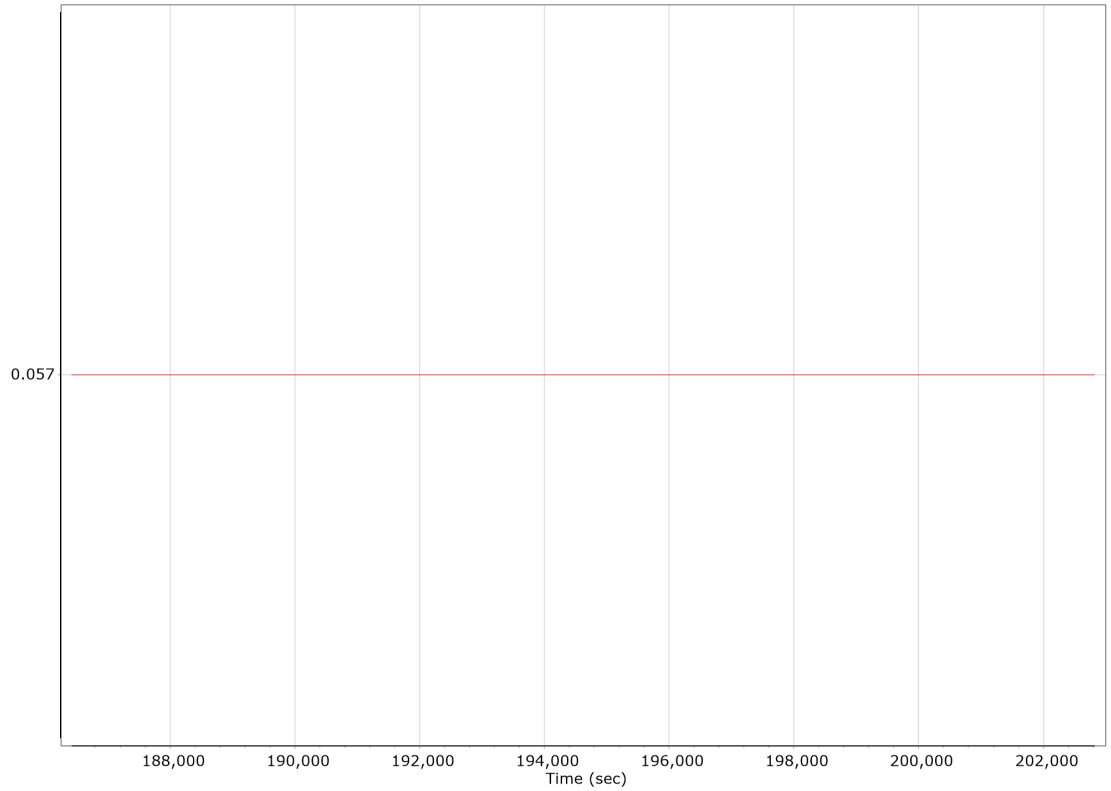
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

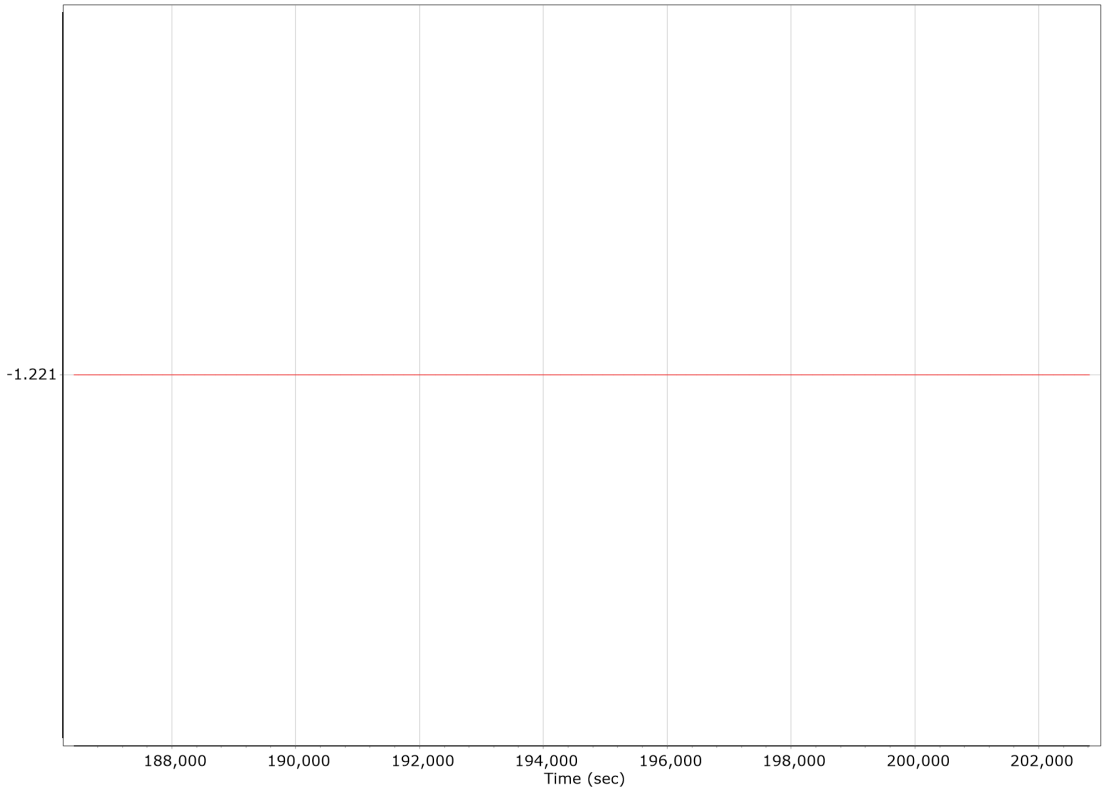
X Reference-Primary GNSS Lever Arm (m)



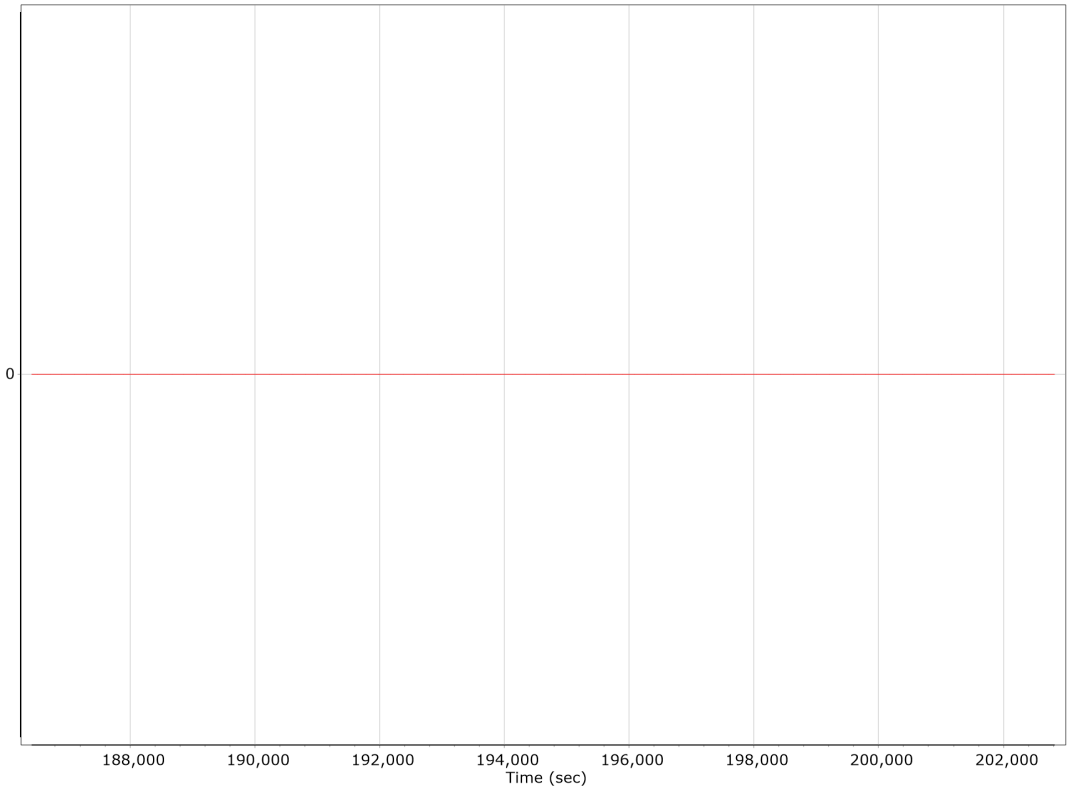
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



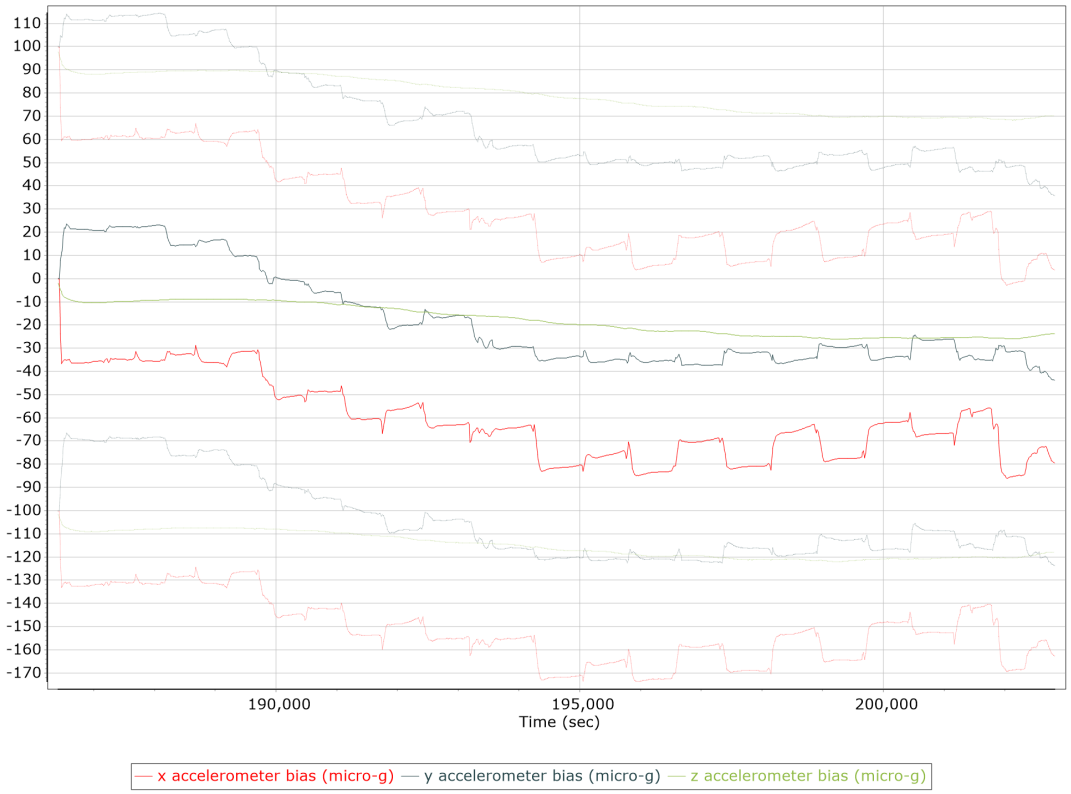
Reference-Primary GNSS Lever Arm Figure of Merit



IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

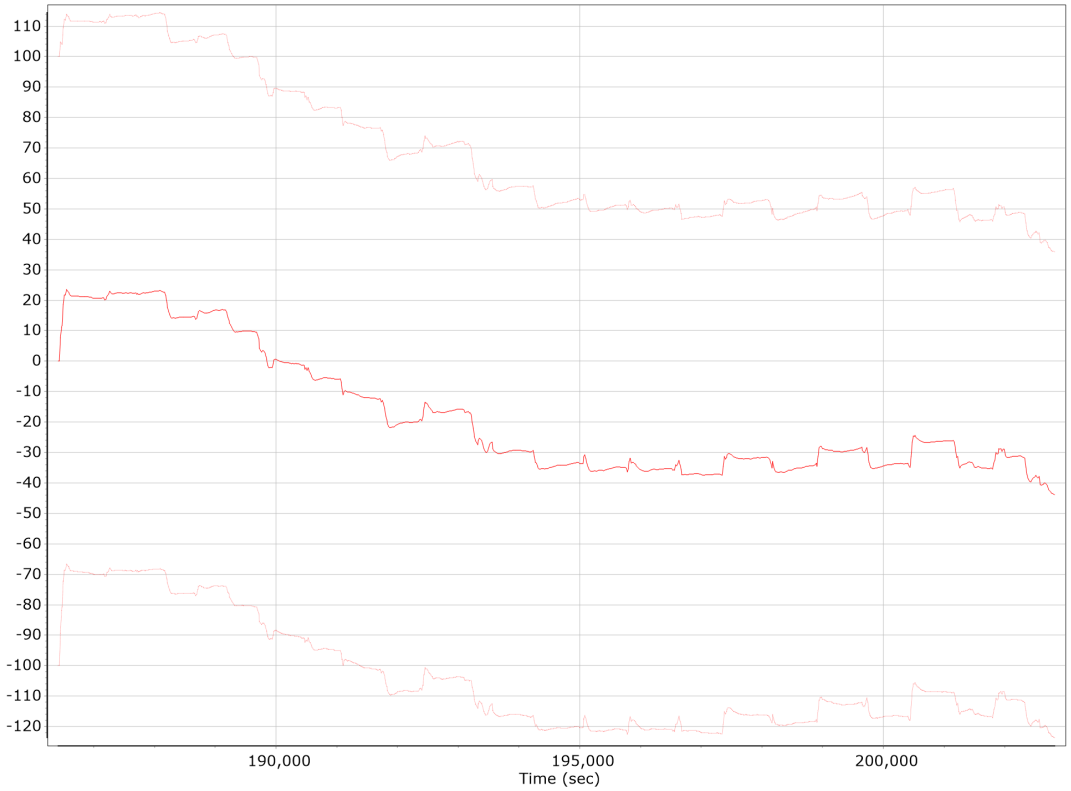
Accelerometer Bias (micro-g)



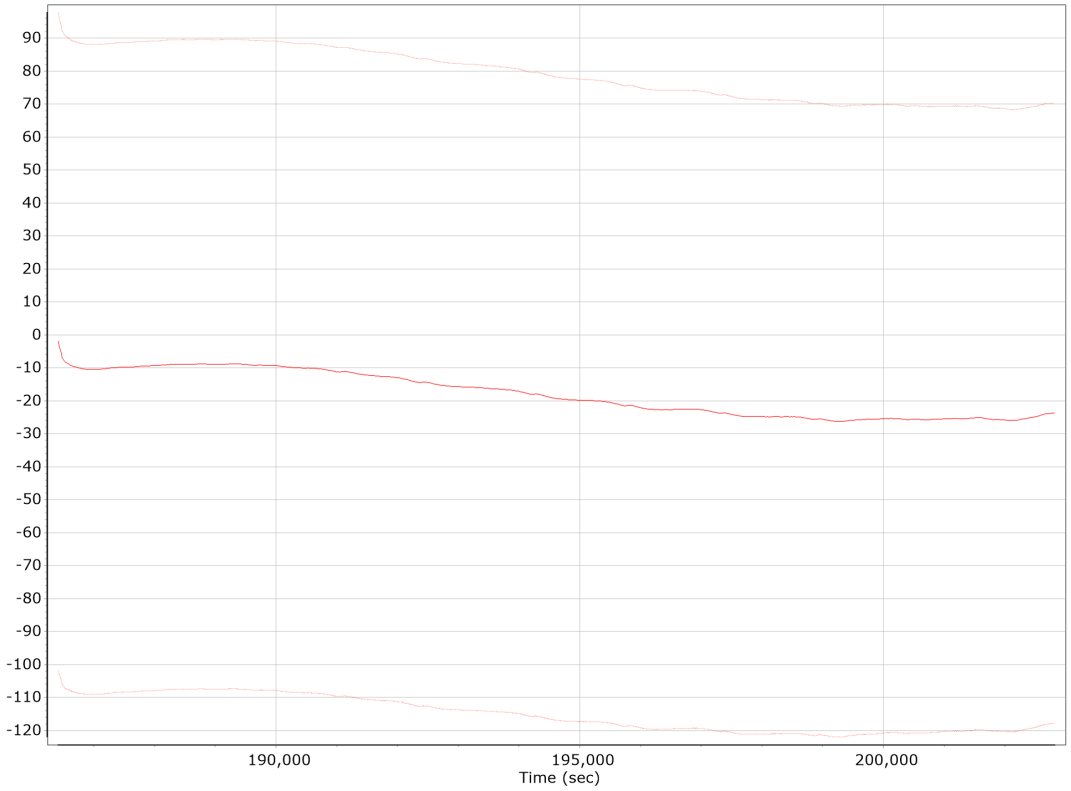
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



X Accelerometer Scale Error (ppm)



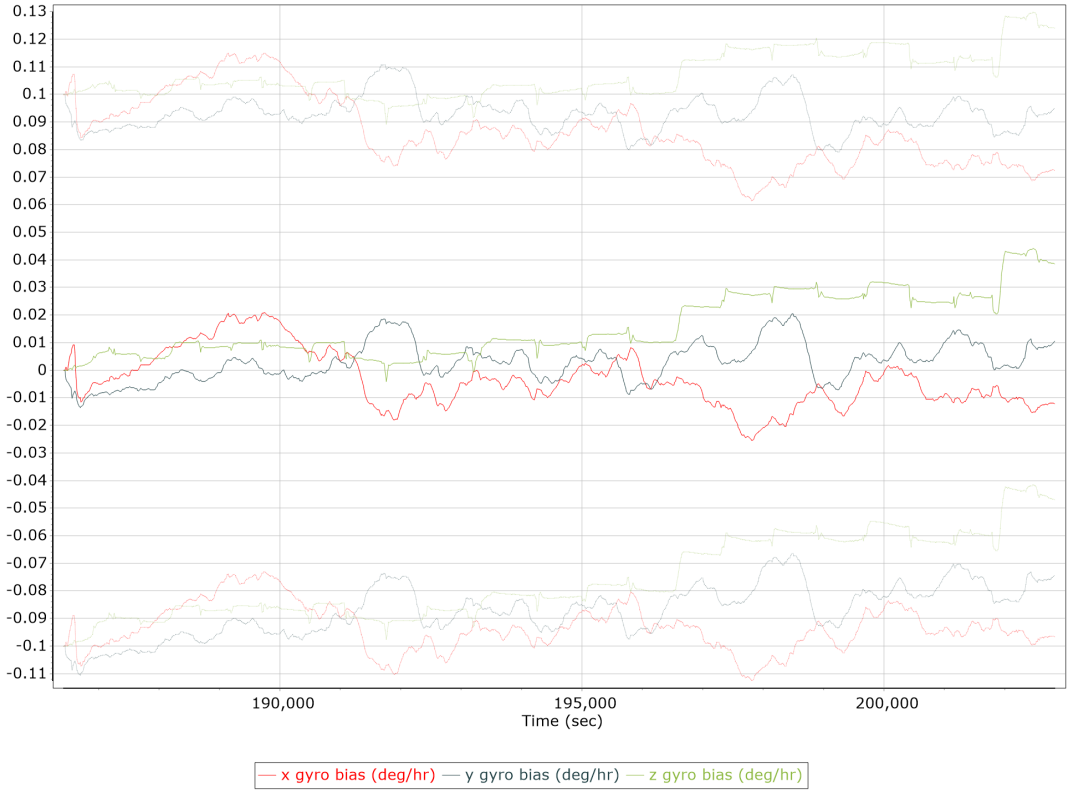
Y Accelerometer Scale Error (ppm)



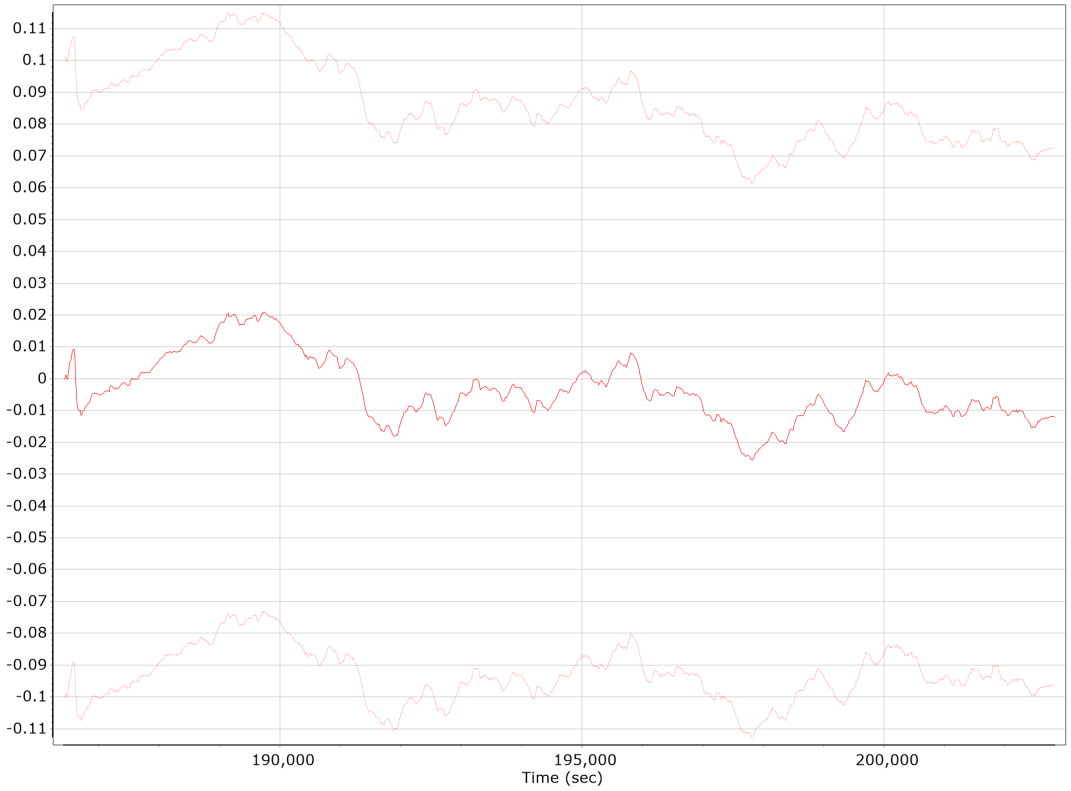
Z Accelerometer Scale Error (ppm)



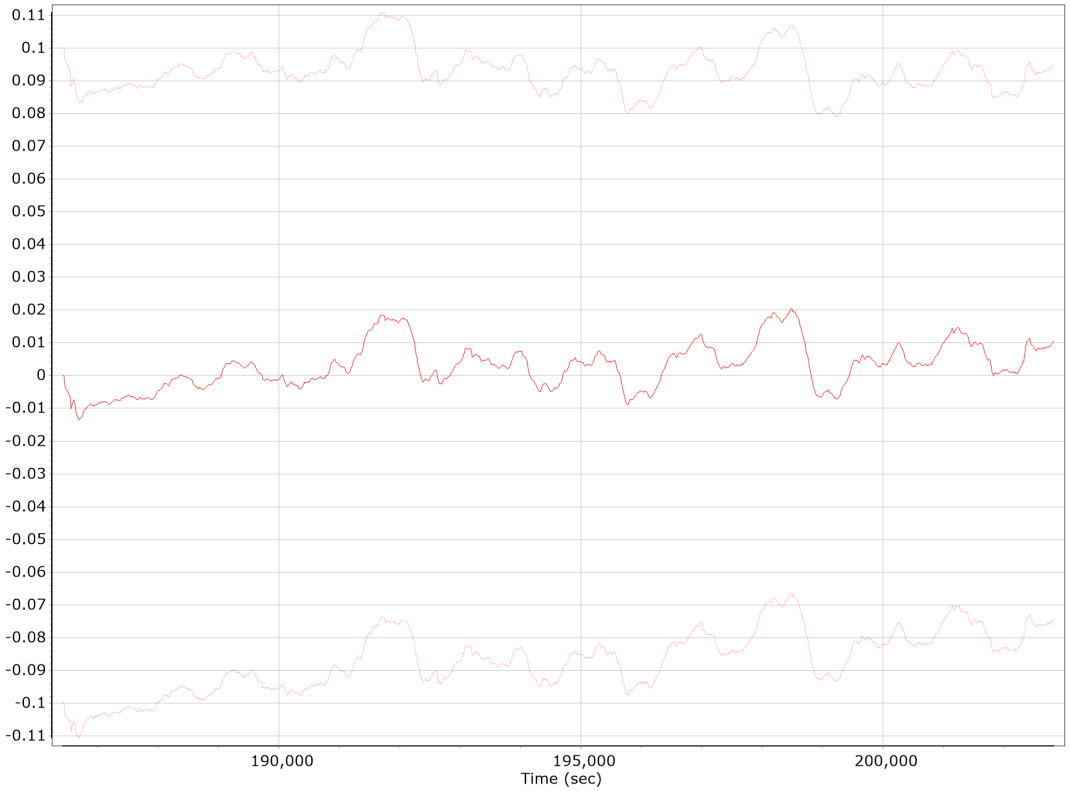
Gyro Bias (deg/h)



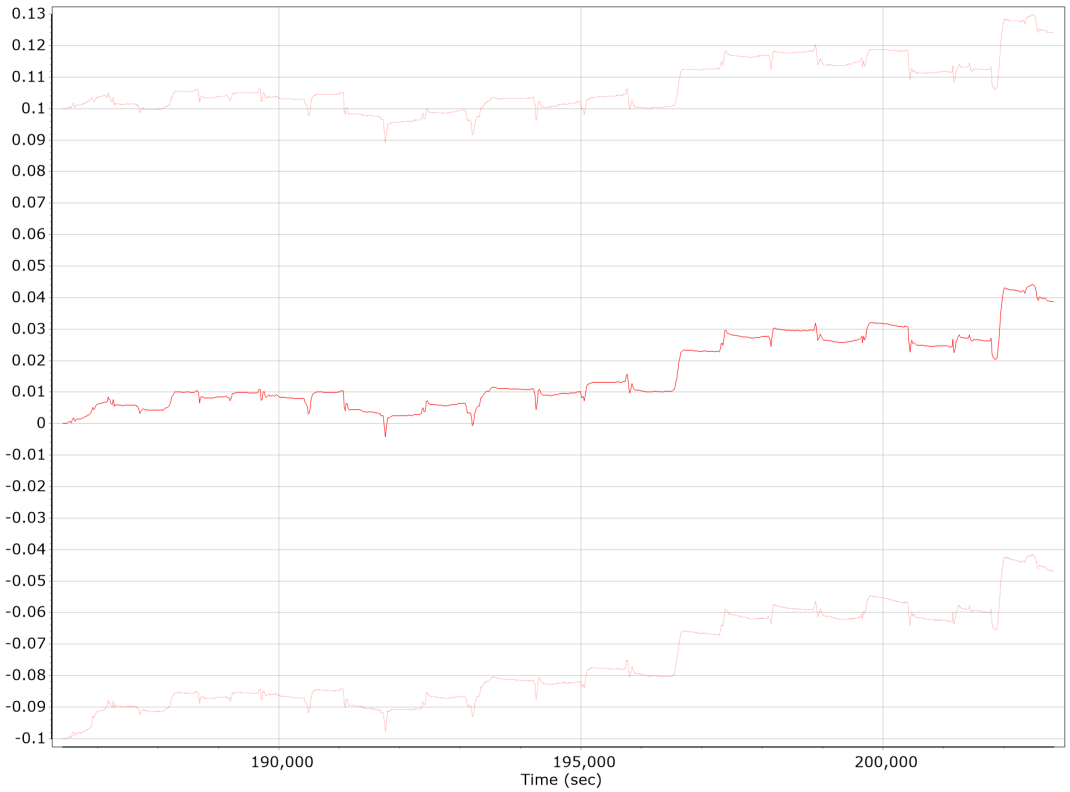
X Gyro Bias (deg/h)



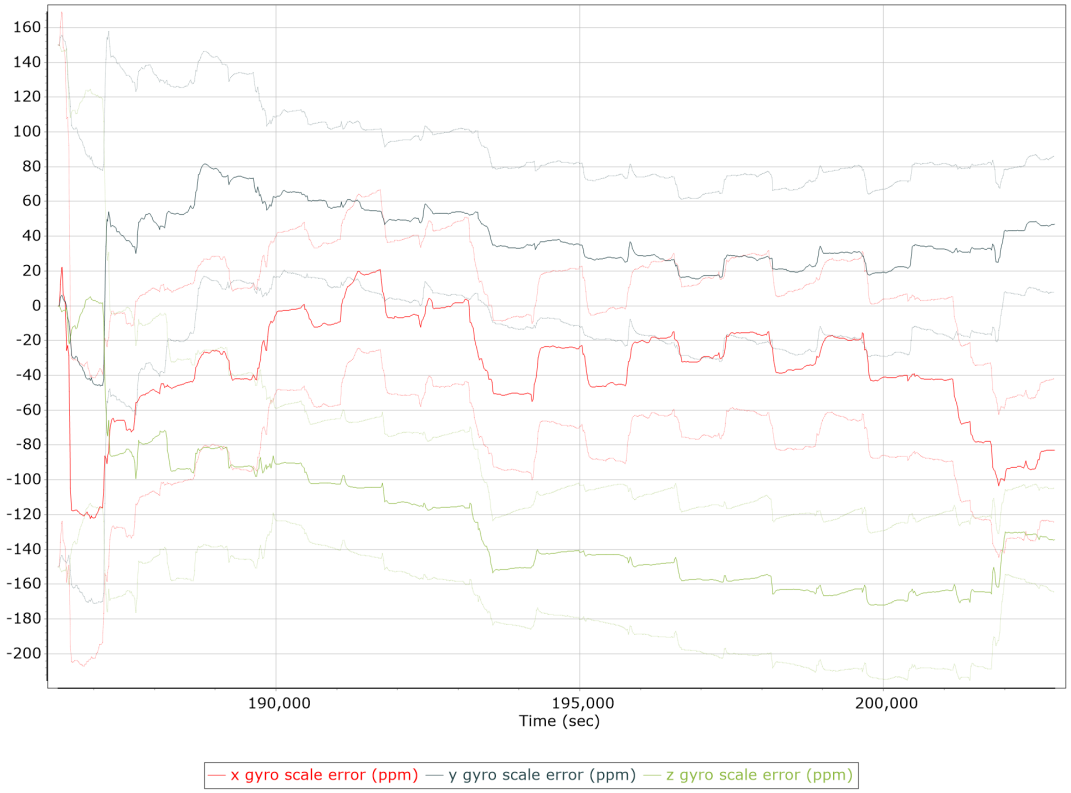
Y Gyro Bias (deg/h)



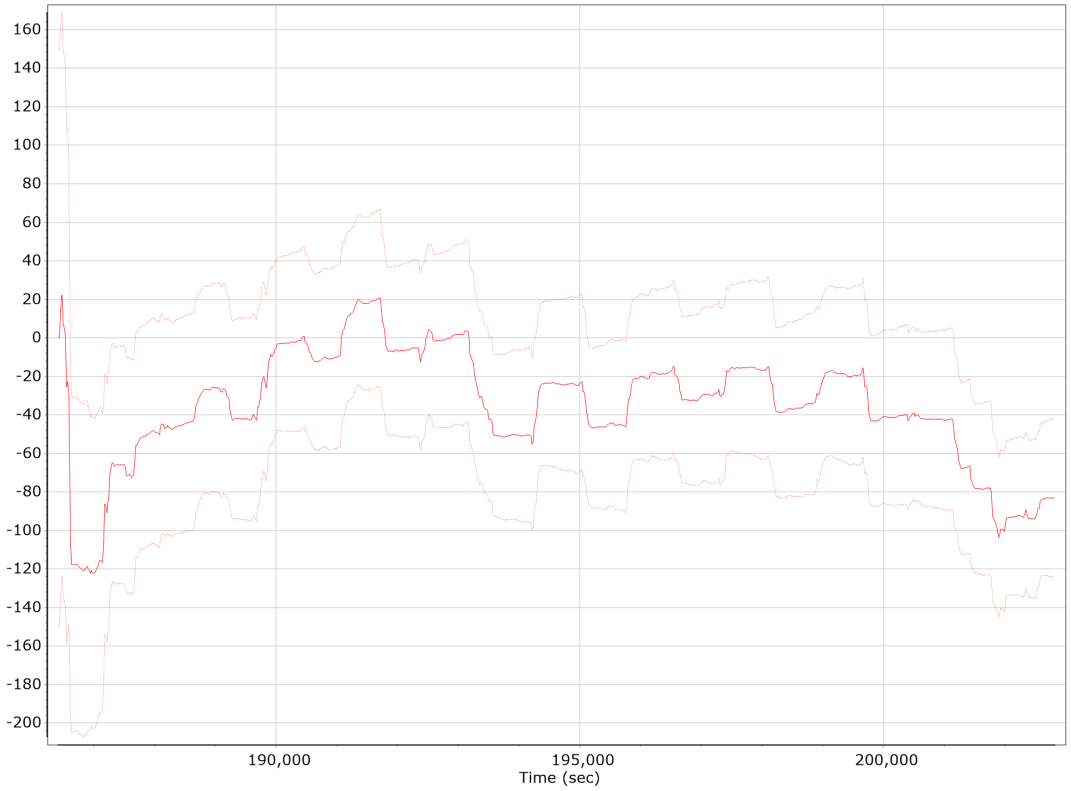
Z Gyro Bias (deg/h)



Gyro Scale Error (ppm)



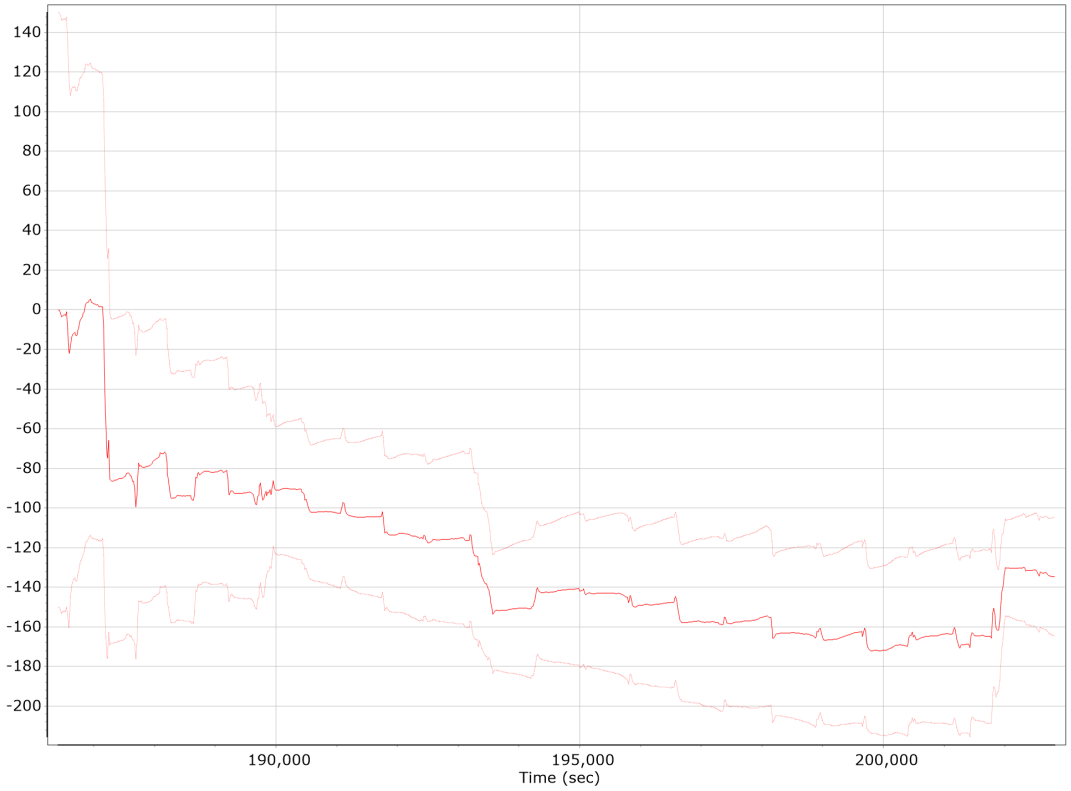
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)

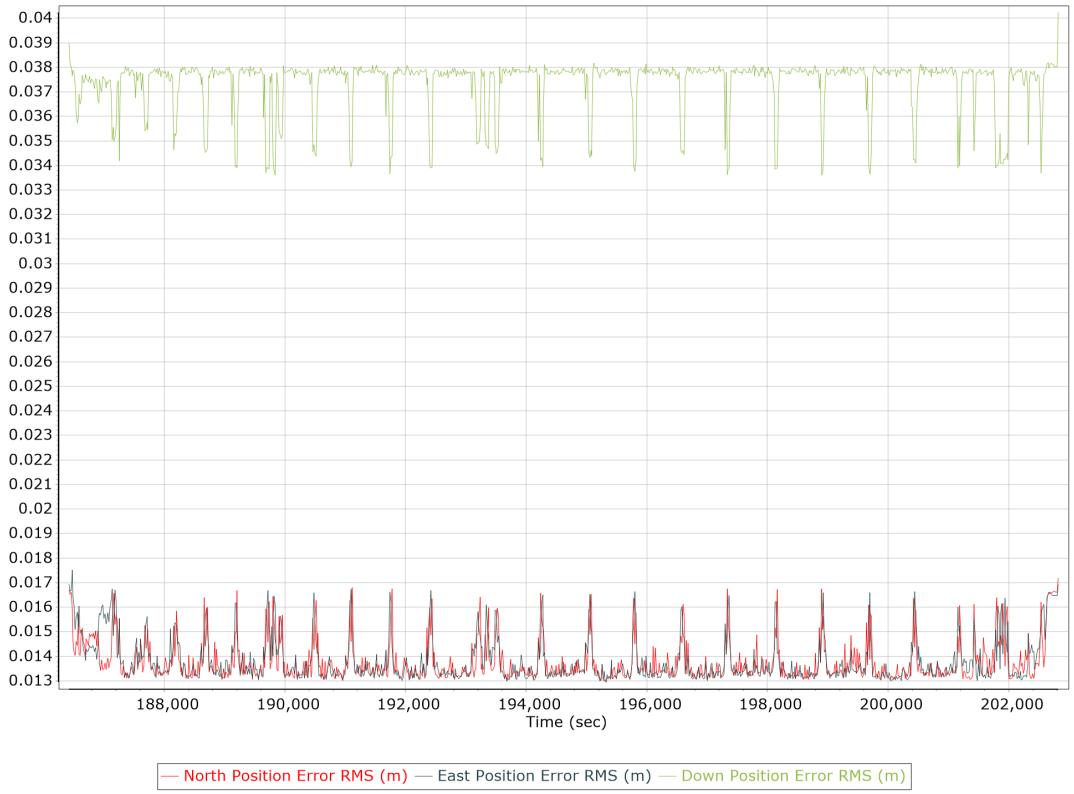


Z Gyro Scale Error (ppm)

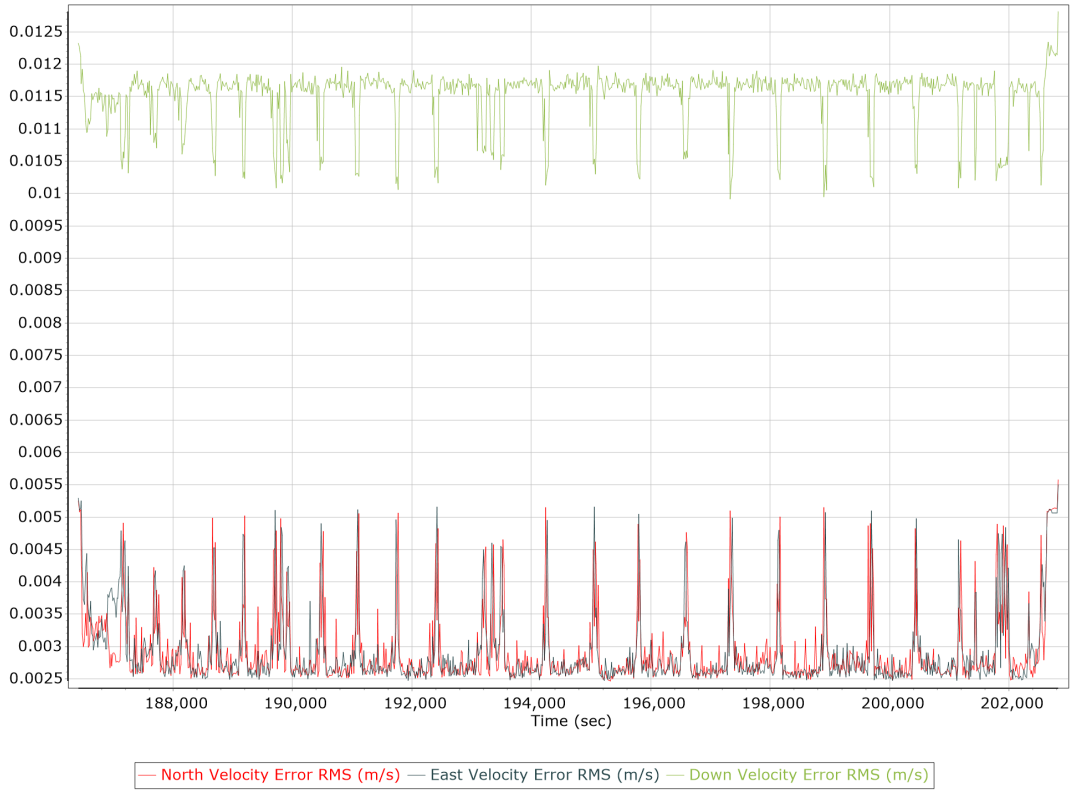


Smoothed Performance Metrics

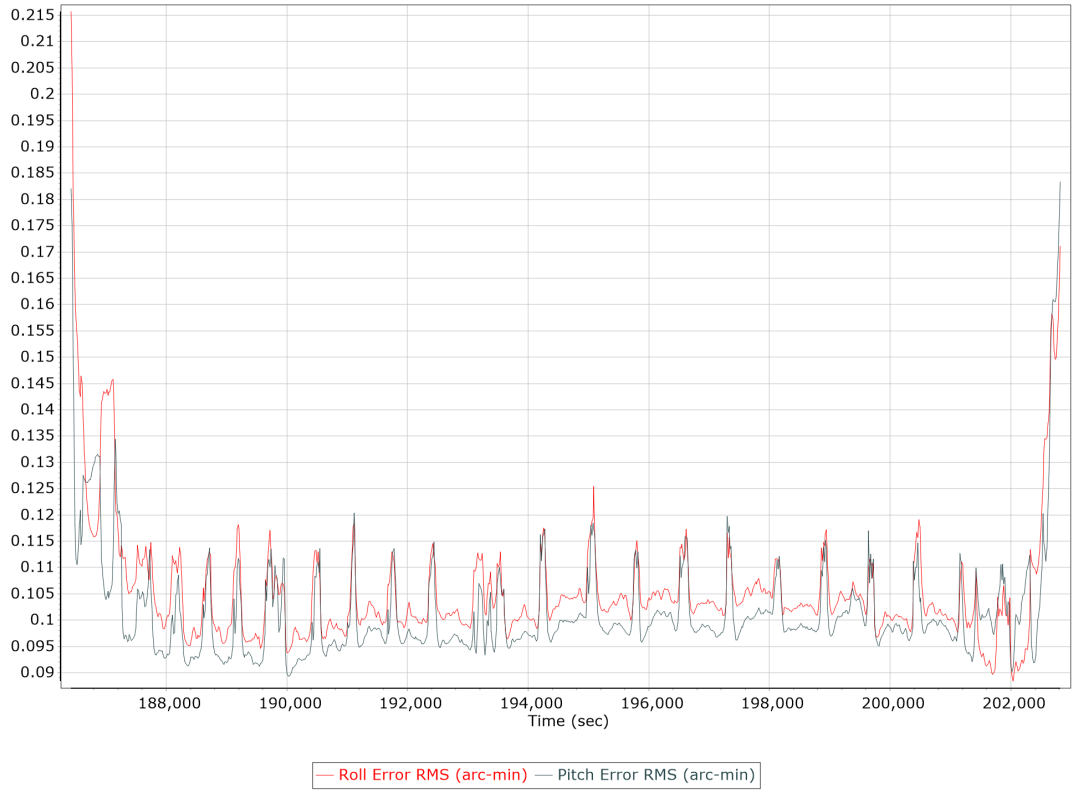
Position Error RMS (m)



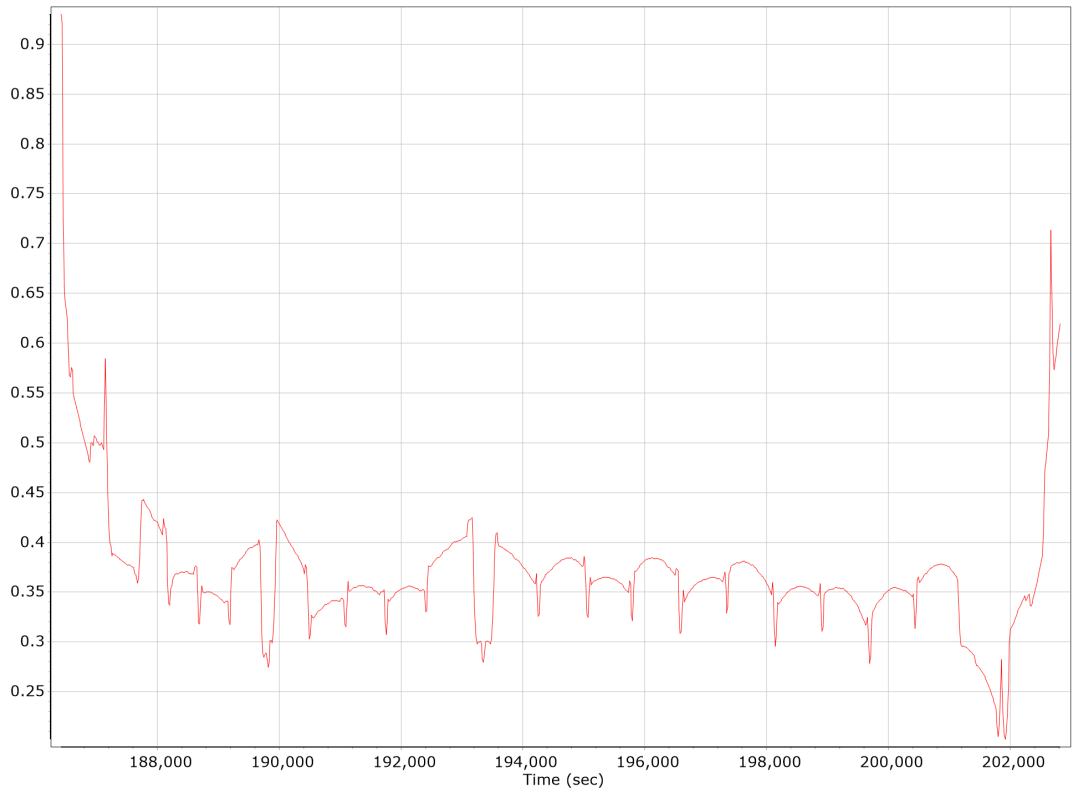
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

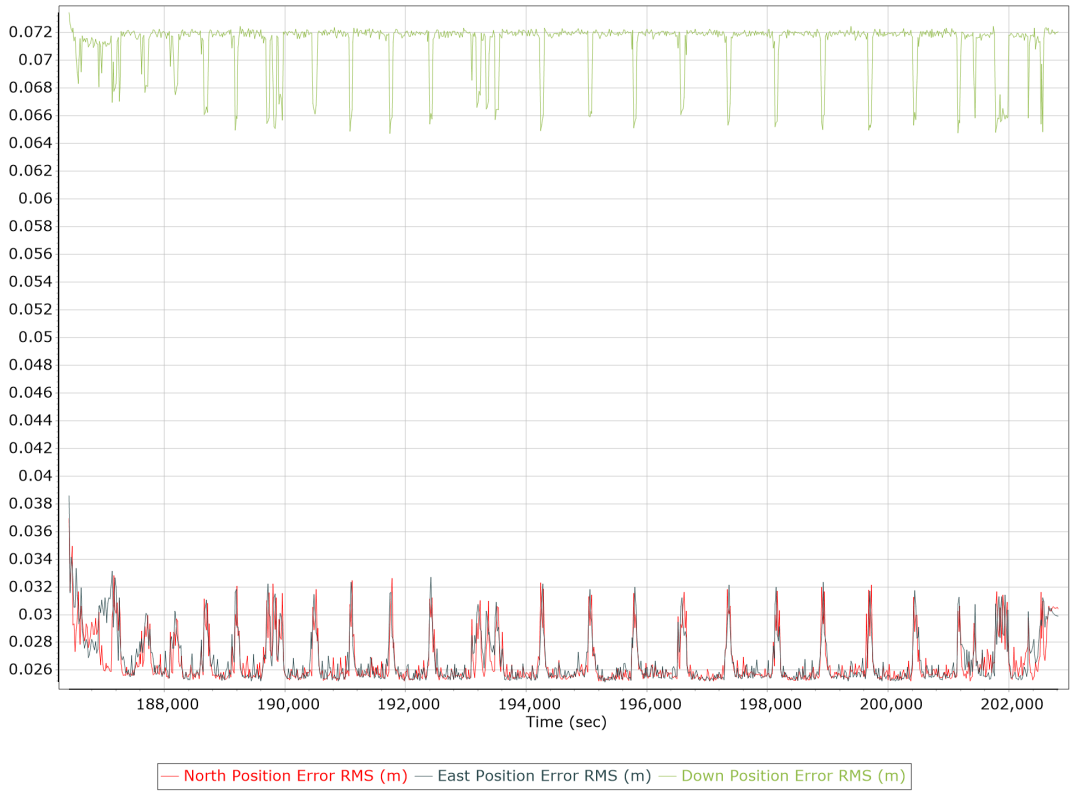


Heading Error RMS (arc-min)

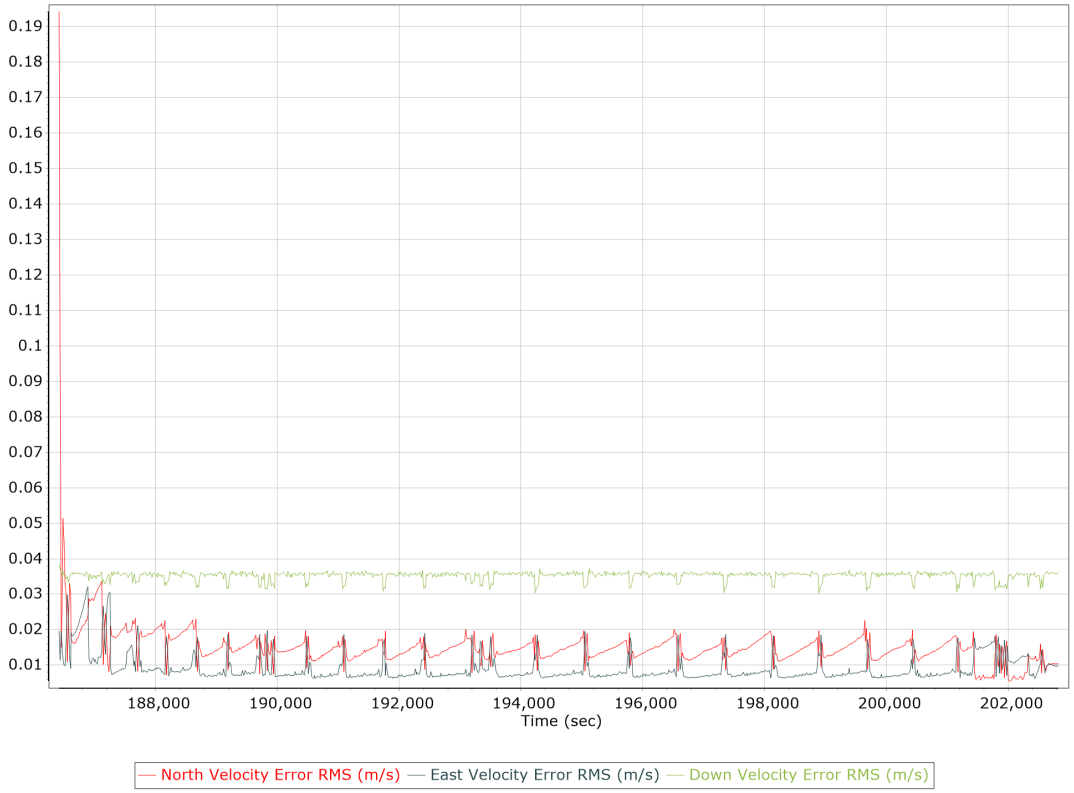


Forward Processed Performance Metrics

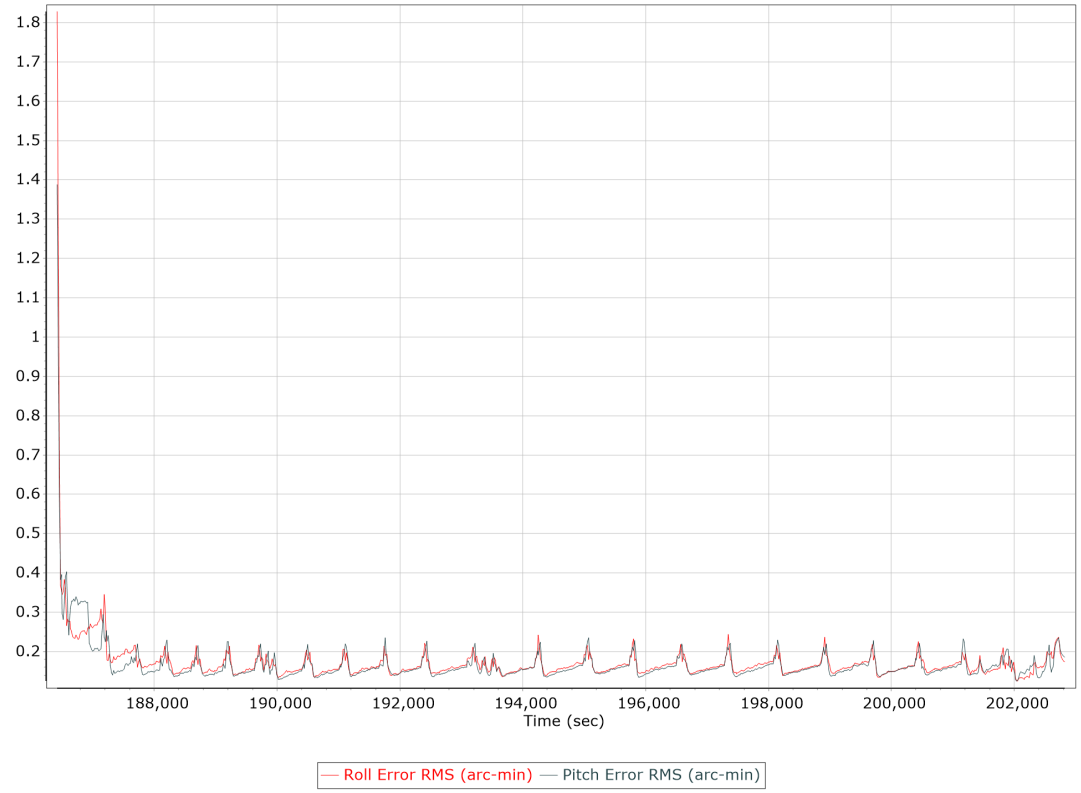
Position Error RMS (m)



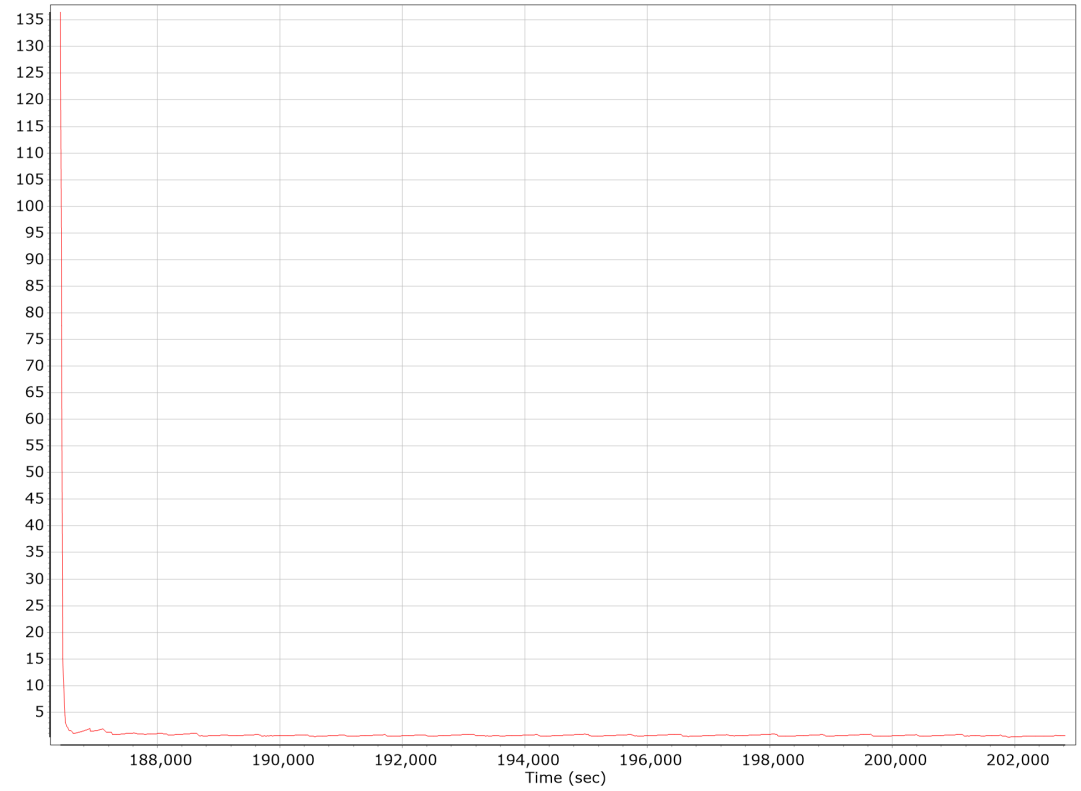
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

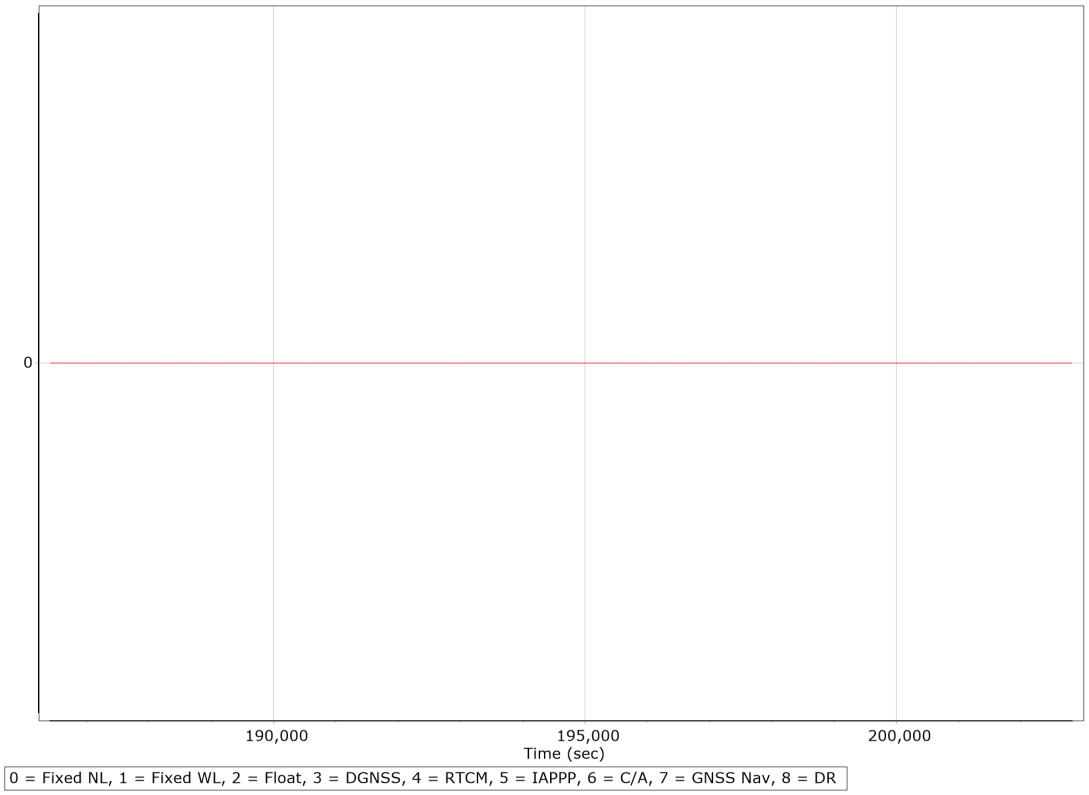


Heading Error RMS (arc-min)

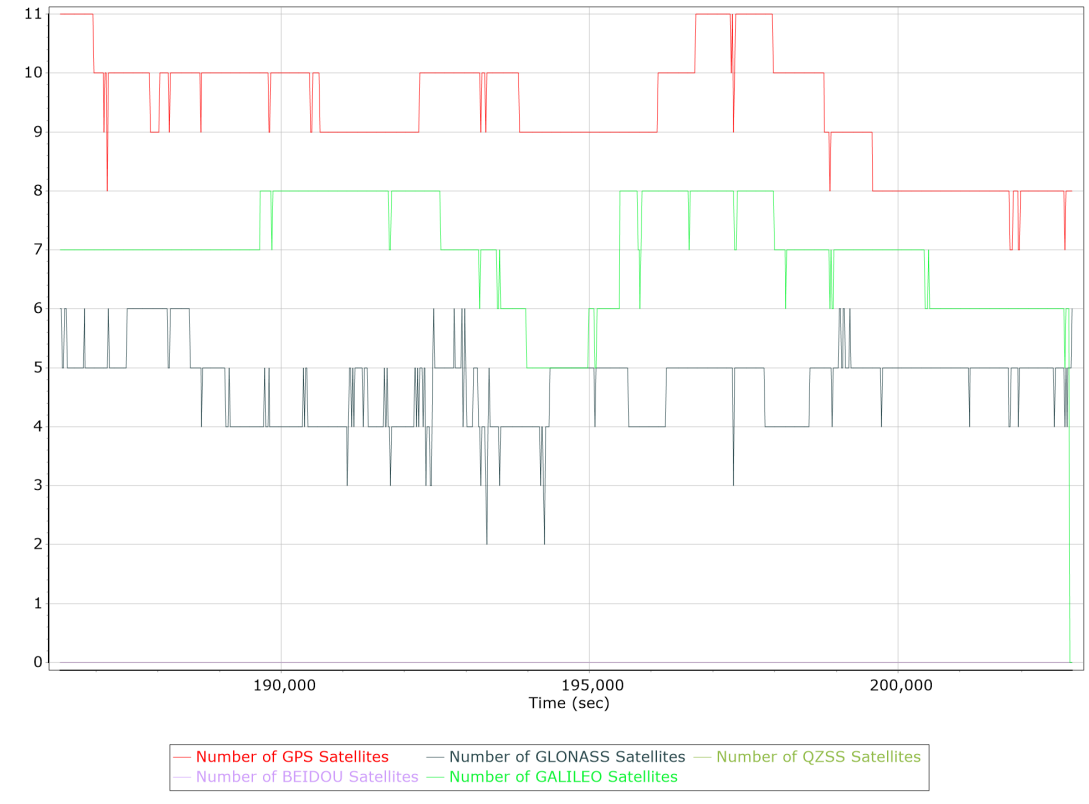


Forward Processed Solution Status

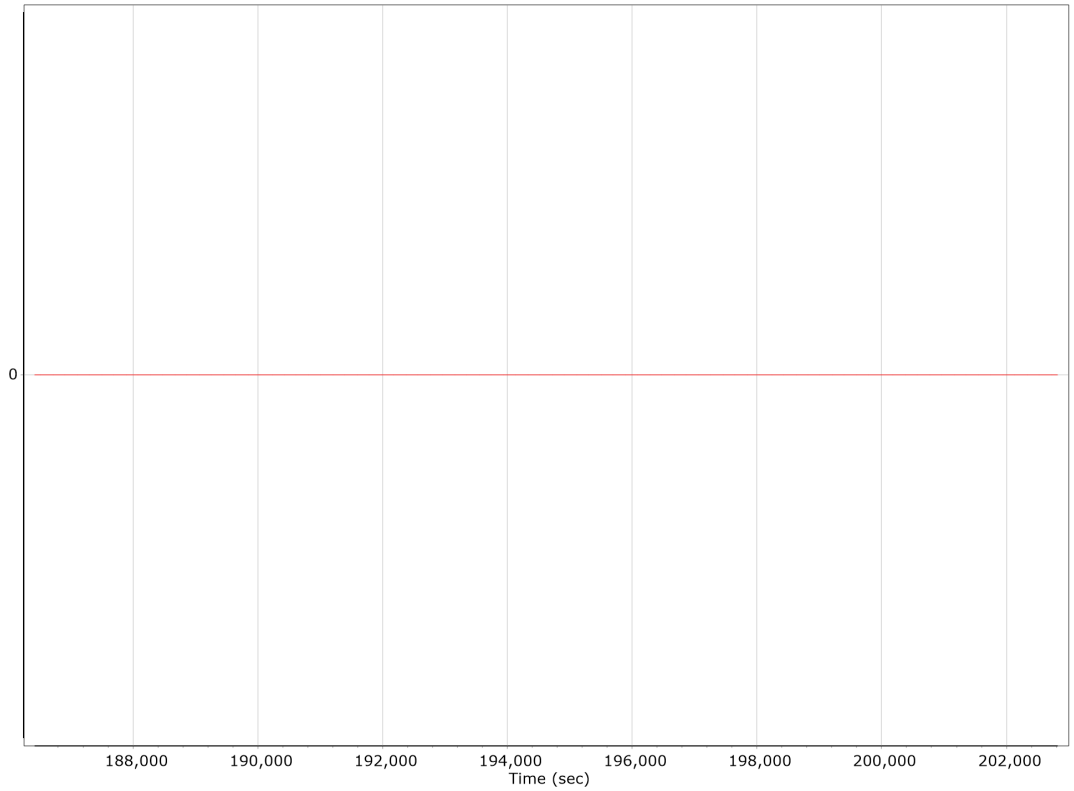
Processing Mode



Number of Satellites



Baseline Length



General Information

Mission Information

Project name	10042023A_4046
Processing date	2024-01-11 20:24:41
Mission date	2023-10-04 17:39:52
Mission duration	03:19:03.347
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N10762
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
231004_173933_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm2770.23g	GLONASS Broadcast Ephemeris
Ephm2770.23n	GPS Broadcast Ephemeris
IGS0OPSFIN_20232760000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232770000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232780000_01D_15M_ORB.SP3	GPS Precise Ephemeris

Output Files

Filename	File type
sbet_10042023A_4046.out	SBET Trajectory File

Rover Data Summary

First raw data file	231004_173933_INS-GPS_1.raw		
Last raw data file	231004_173933_INS-GPS_1.raw		
Start GPS week	2282		
Start time	322773.196 (10/4/2023 5:39:33 PM)		
End time	334716.543 (10/4/2023 8:58:36 PM)		
Start of fine alignment	322800.996 (10/4/2023 5:40:00 PM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	0.000	0.000	0.000
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

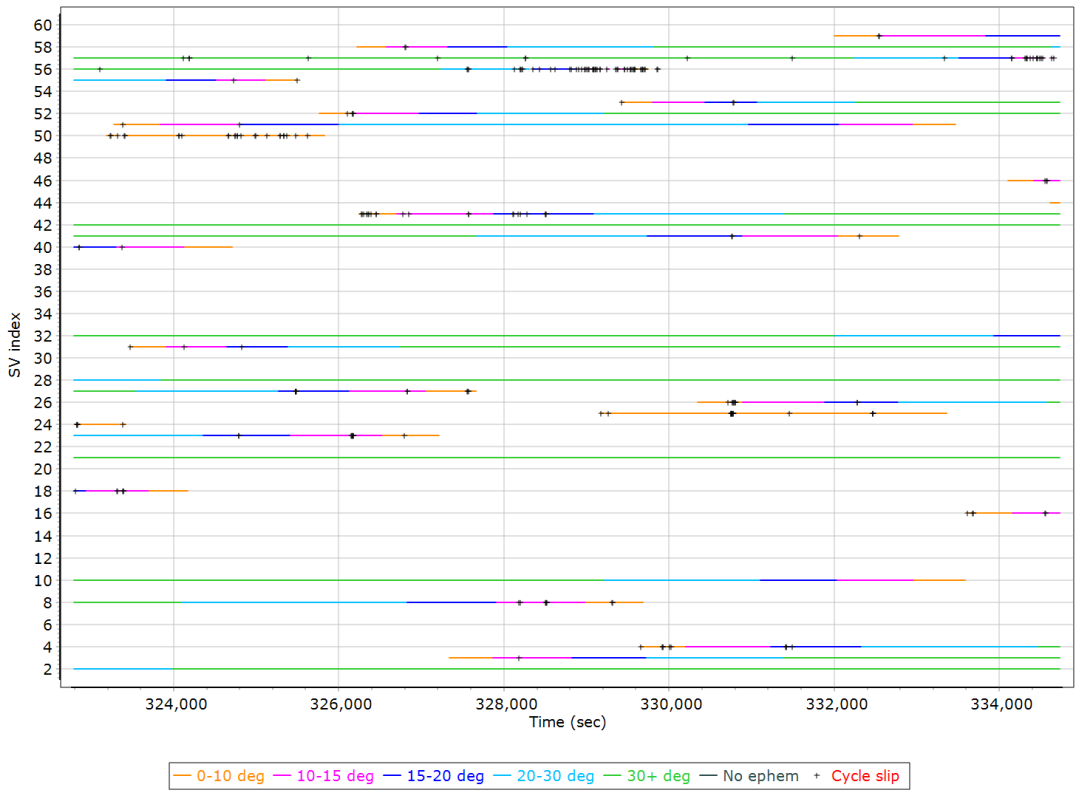
Rover Data QC

Raw IMU Import QC Summary

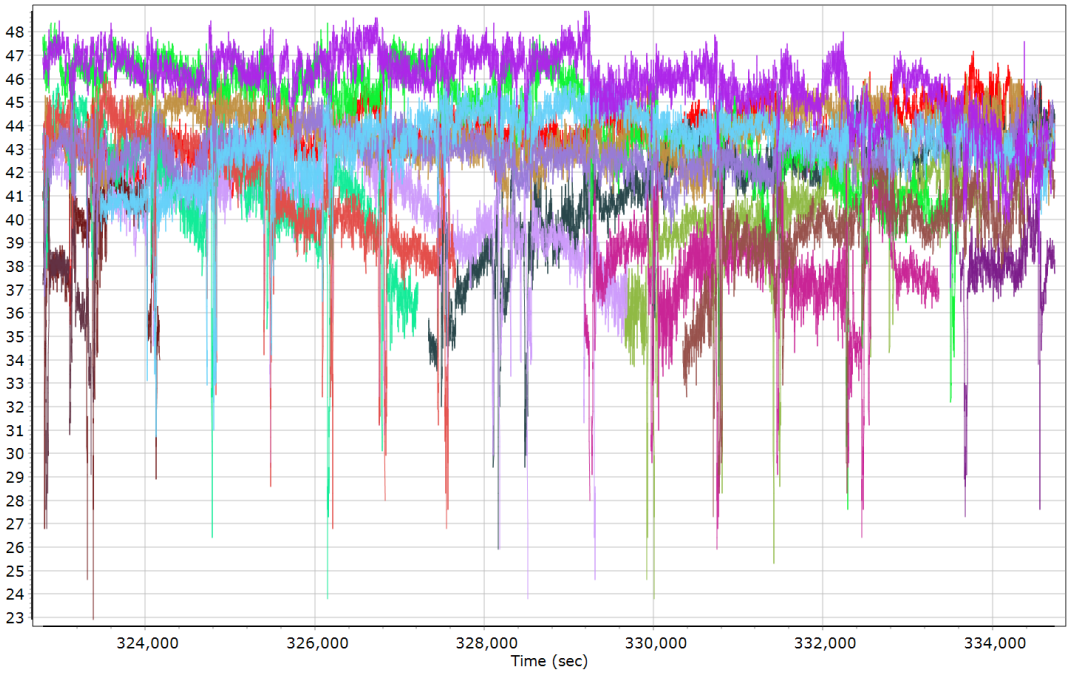
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_10042023A_4046.log
IMU Records Processed	2388345
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

GPS/GLONASS L1 Satellite Lock/Elevation

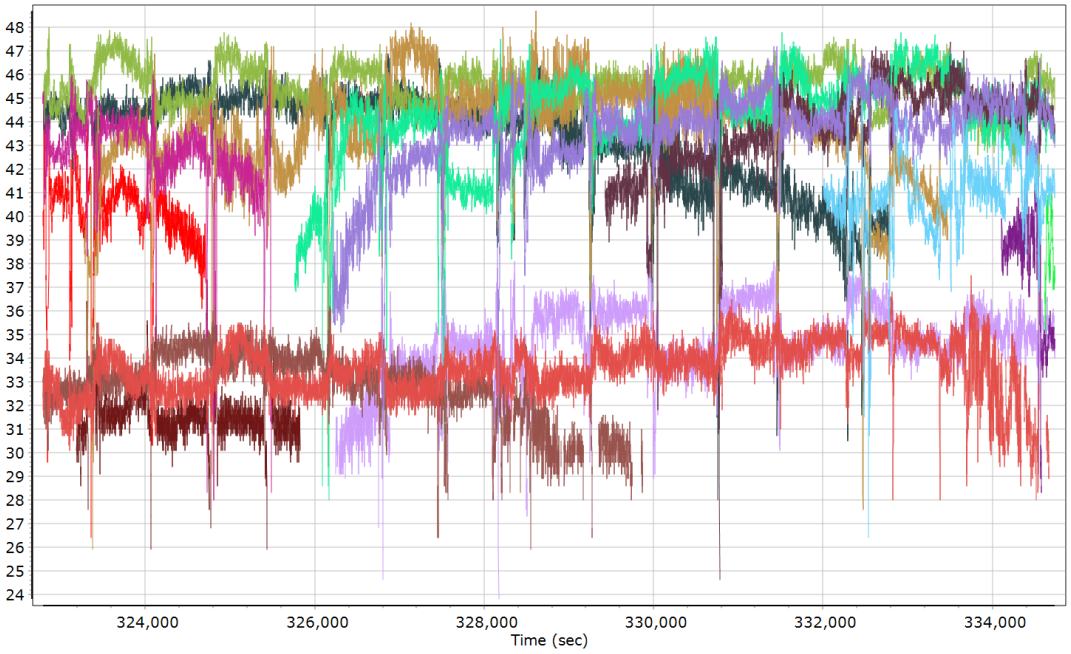


GPS L1 SNR



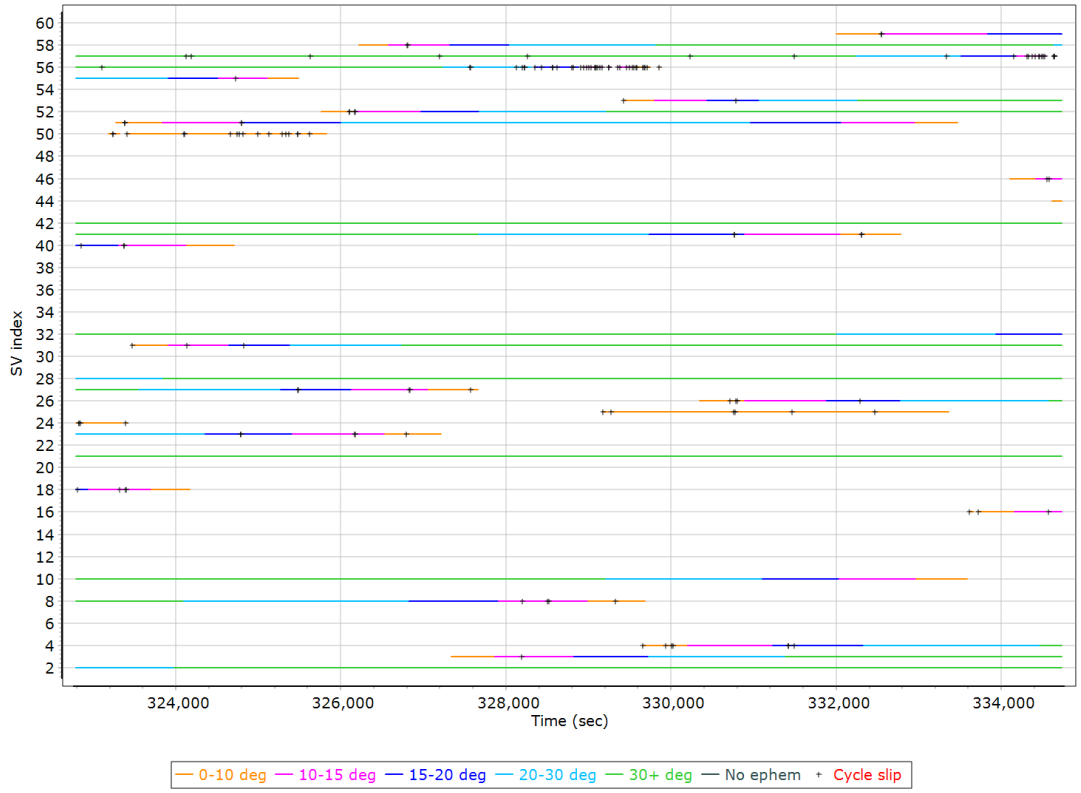
GPS PRN 02 L1 SNR (dB/Hz) GPS PRN 03 L1 SNR (dB/Hz) GPS PRN 04 L1 SNR (dB/Hz) GPS PRN 08 L1 SNR (dB/Hz)
GPS PRN 10 L1 SNR (dB/Hz) GPS PRN 16 L1 SNR (dB/Hz) GPS PRN 18 L1 SNR (dB/Hz) GPS PRN 21 L1 SNR (dB/Hz)
GPS PRN 23 L1 SNR (dB/Hz) GPS PRN 24 L1 SNR (dB/Hz) GPS PRN 25 L1 SNR (dB/Hz) GPS PRN 26 L1 SNR (dB/Hz)
GPS PRN 27 L1 SNR (dB/Hz) GPS PRN 28 L1 SNR (dB/Hz) GPS PRN 31 L1 SNR (dB/Hz) GPS PRN 32 L1 SNR (dB/Hz)

GLONASS L1 SNR

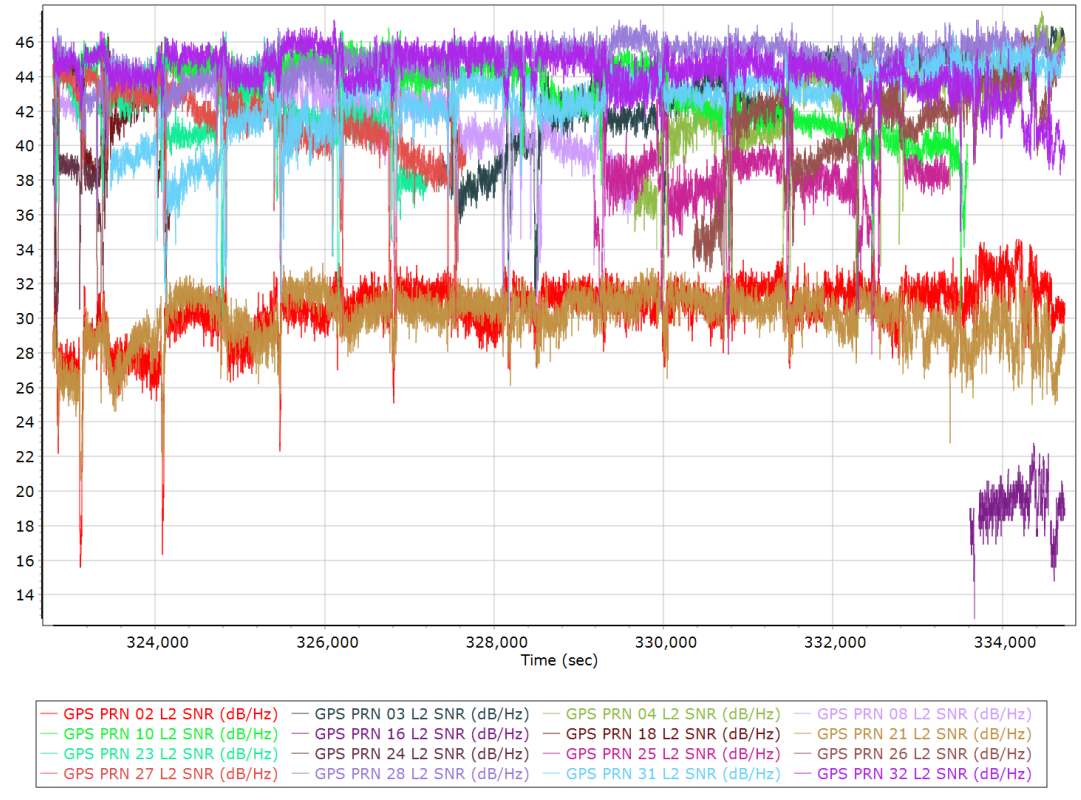


GLONASS 03 L1 SNR (dB/Hz) GLONASS 04 L1 SNR (dB/Hz) GLONASS 05 L1 SNR (dB/Hz)
GLONASS 06 L1 SNR (dB/Hz) GLONASS 07 L1 SNR (dB/Hz) GLONASS 09 L1 SNR (dB/Hz)
GLONASS 13 L1 SNR (dB/Hz) GLONASS 14 L1 SNR (dB/Hz) GLONASS 15 L1 SNR (dB/Hz)
GLONASS 16 L1 SNR (dB/Hz) GLONASS 18 L1 SNR (dB/Hz) GLONASS 19 L1 SNR (dB/Hz)
GLONASS 20 L1 SNR (dB/Hz) GLONASS 21 L1 SNR (dB/Hz) GLONASS 22 L1 SNR (dB/Hz)

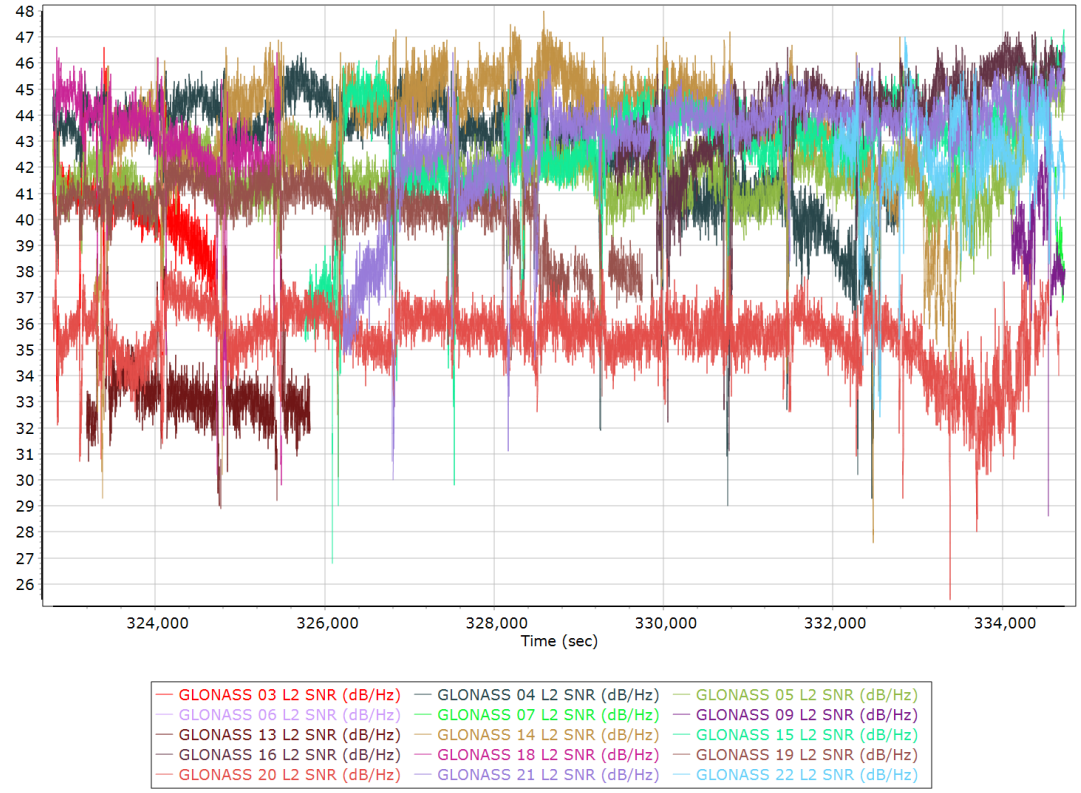
GPS/GLONASS L2 Satellite Lock/Elevation



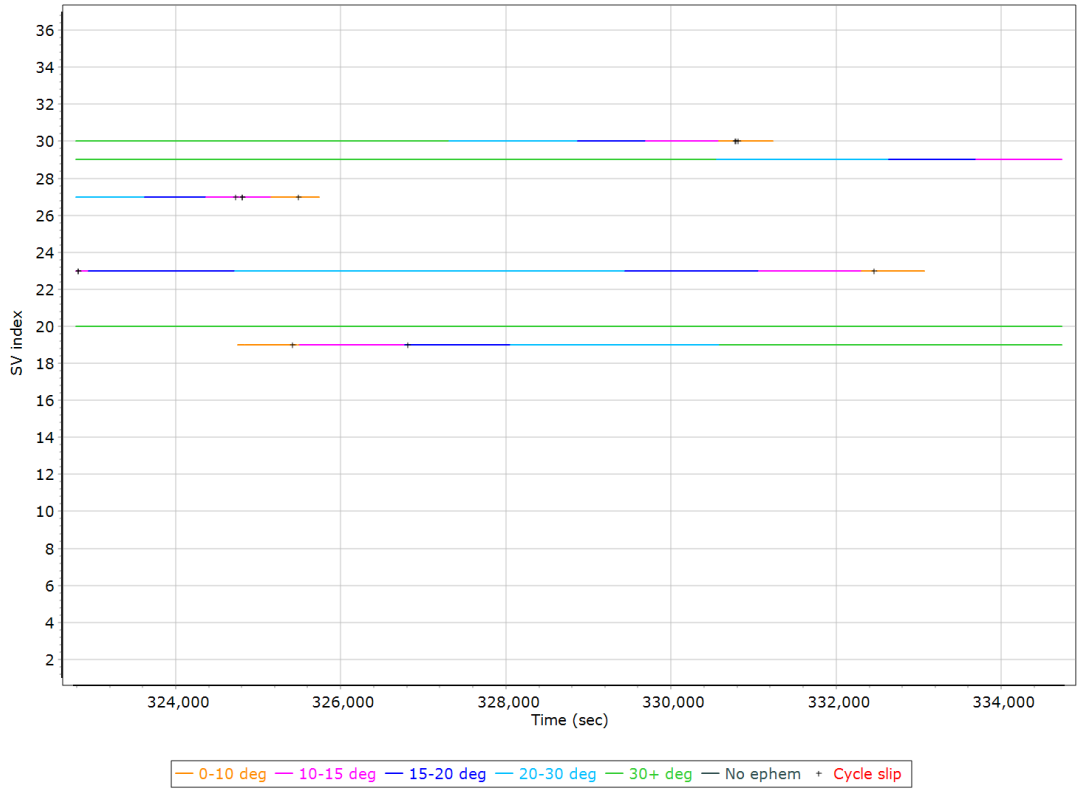
GPS L2 SNR



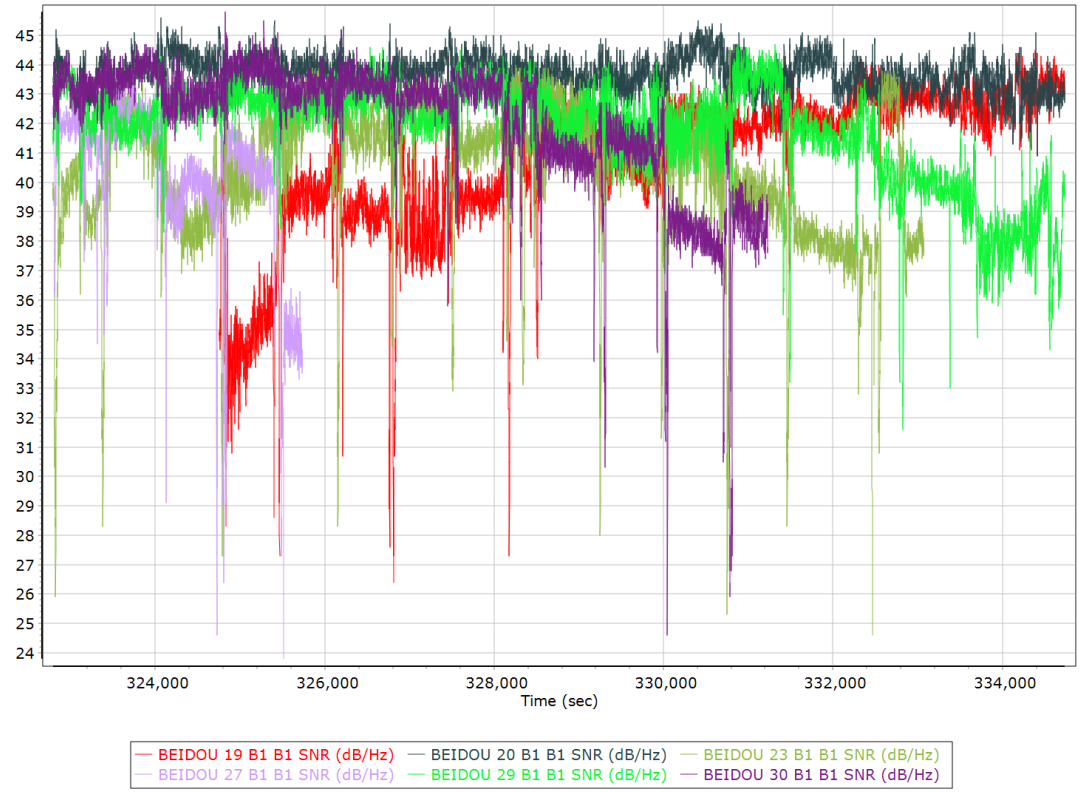
GLONASS L2 SNR



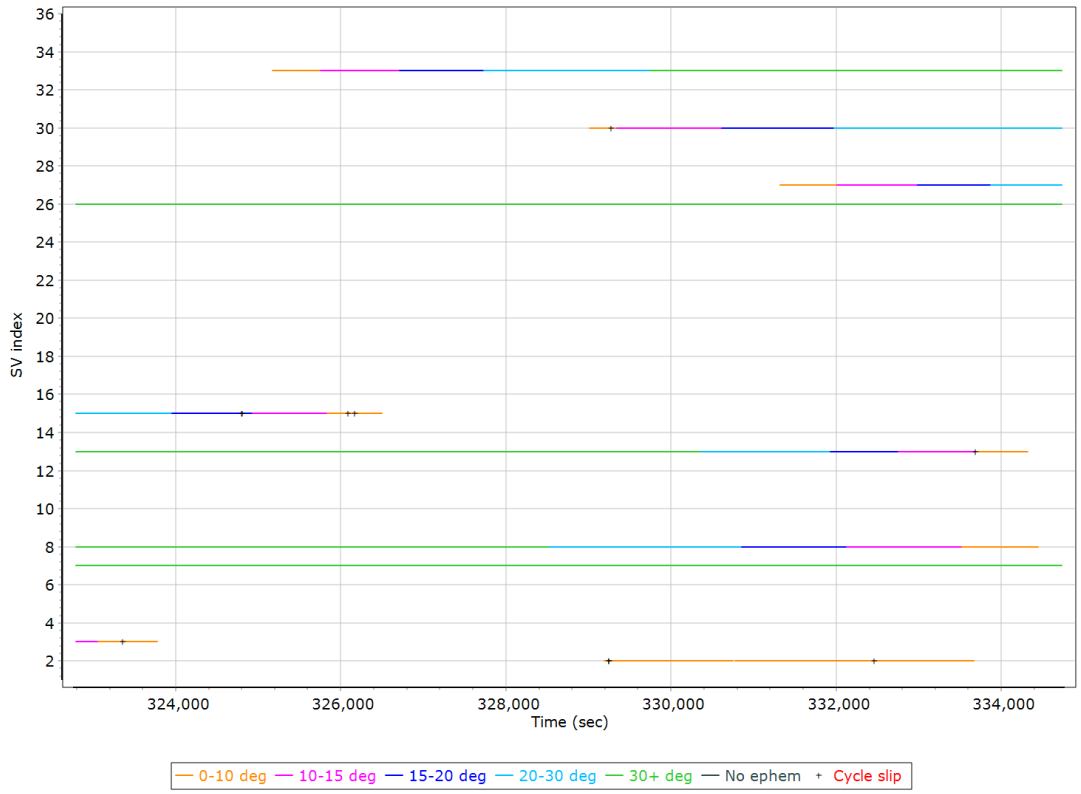
BEIDOU Satellite Lock/Elevation



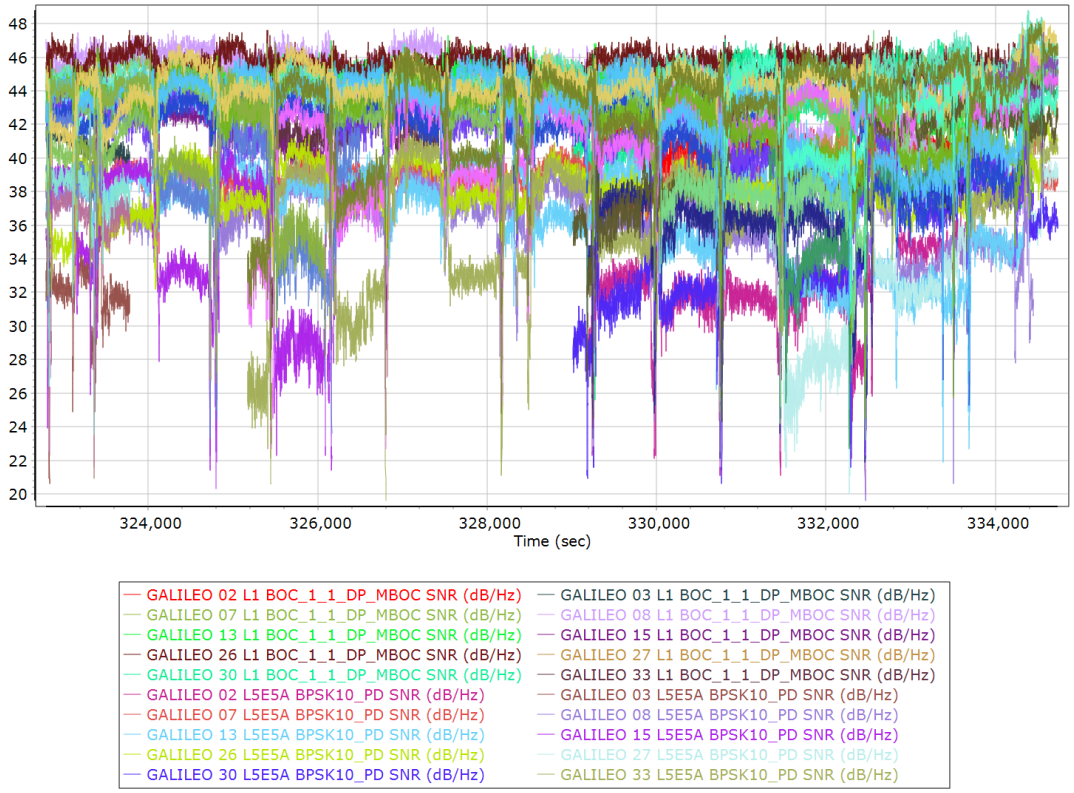
BEIDOU SNR



GALILEO Satellite Lock/Elevation

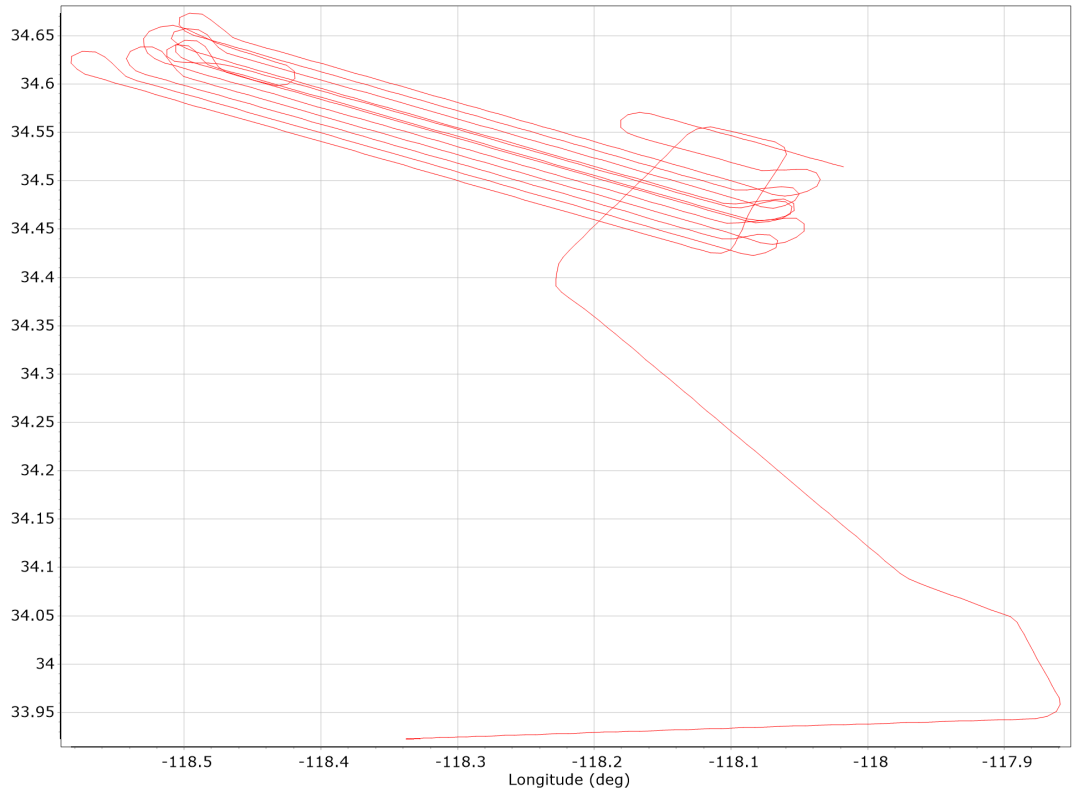


GALILEO SNR

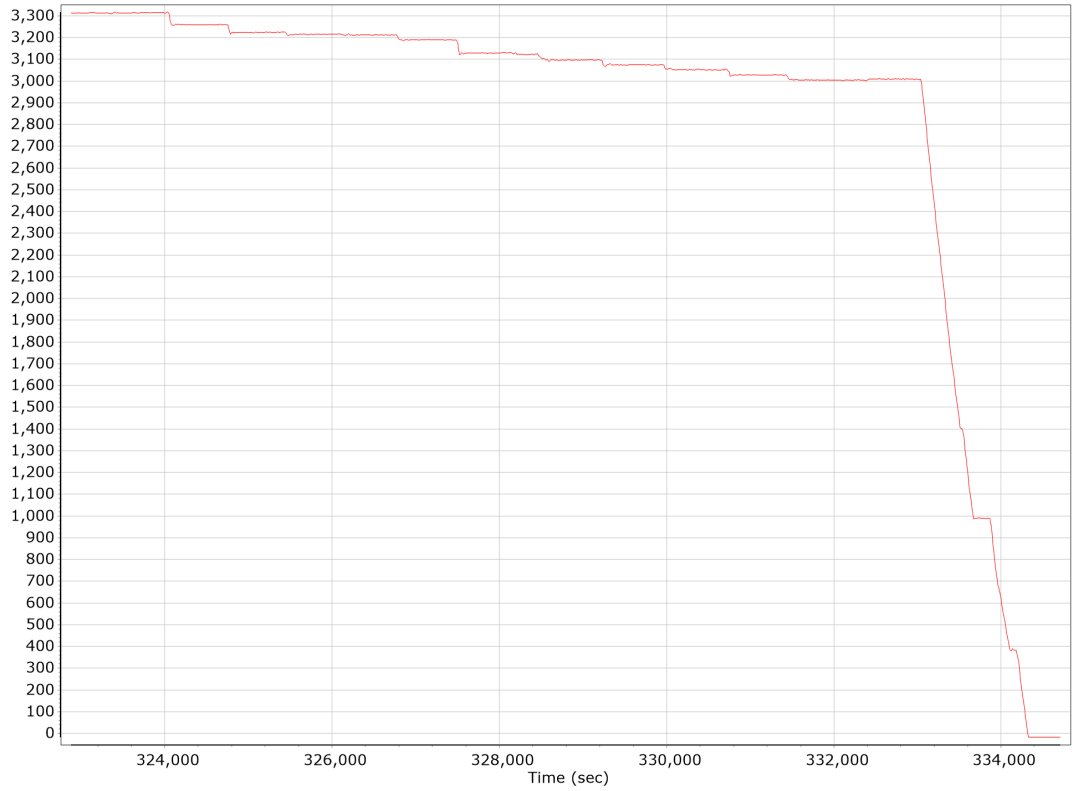

48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
324,000
326,000
328,000
330,000
332,000
334,000
Time (sec)
GALILEO 02 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 03 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 07 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 08 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 13 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 15 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 26 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 27 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 30 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 33 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 02 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 03 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 07 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 08 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 13 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 15 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 26 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 27 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 30 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 33 L5E5A BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

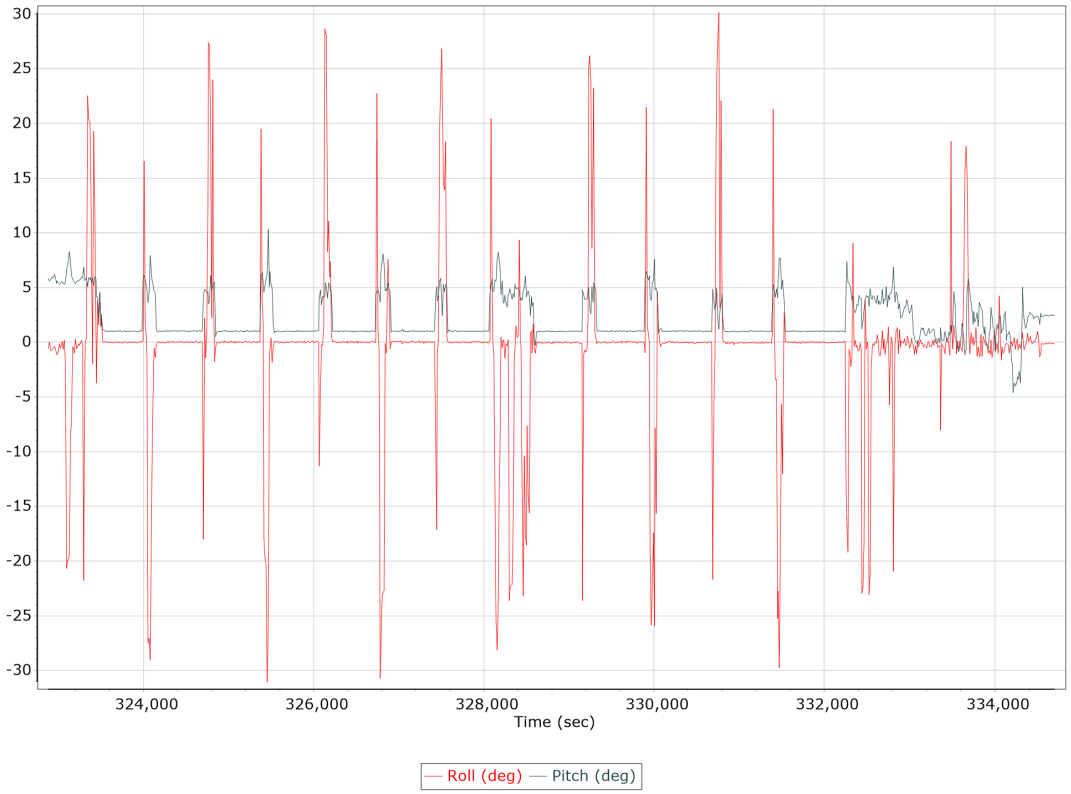
Top View



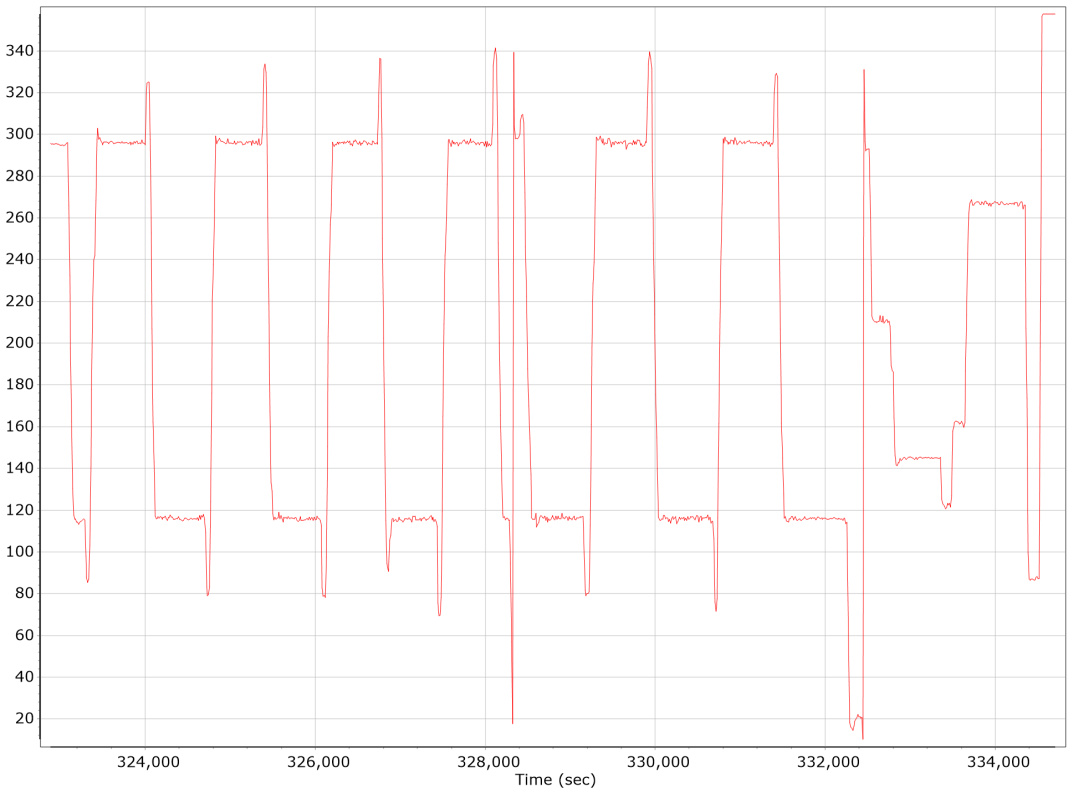
Altitude



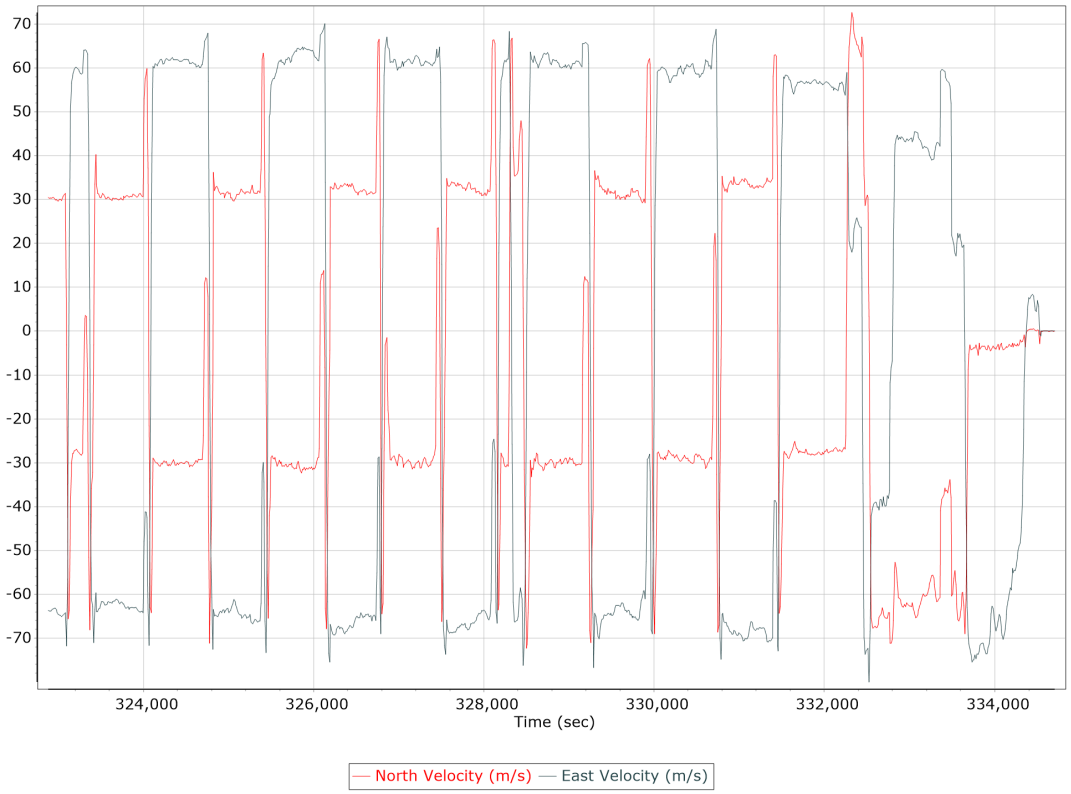
Roll/Pitch



Heading



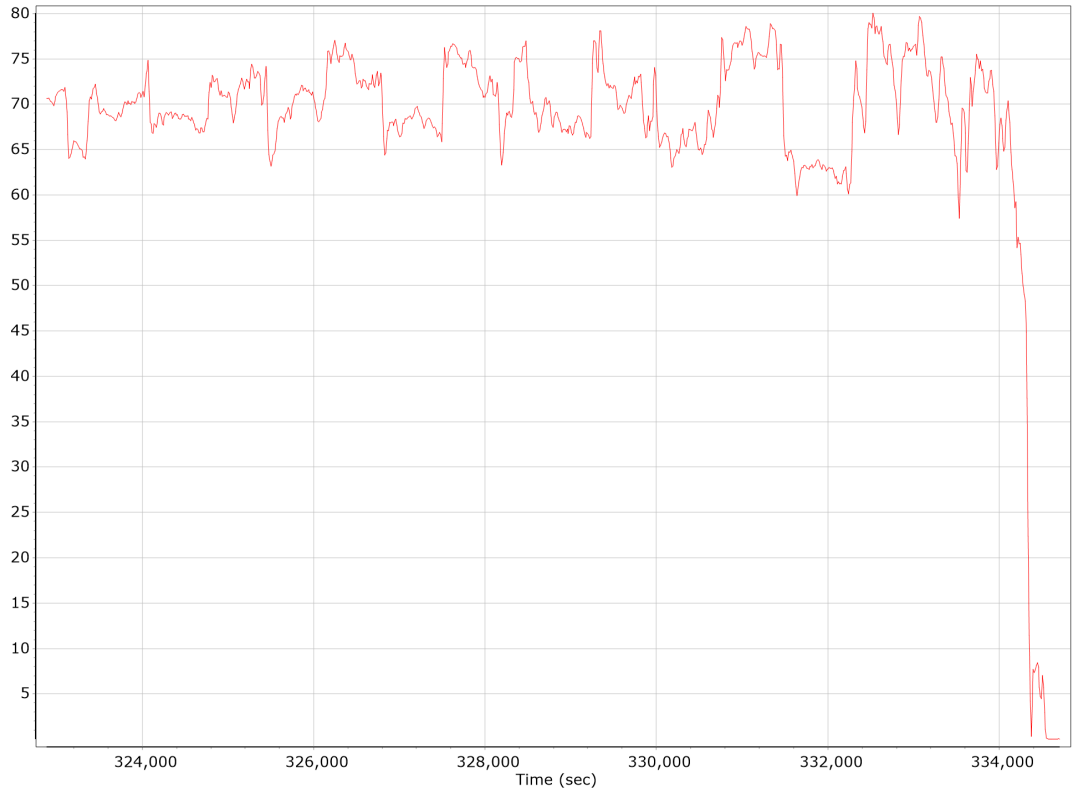
North/East Velocity



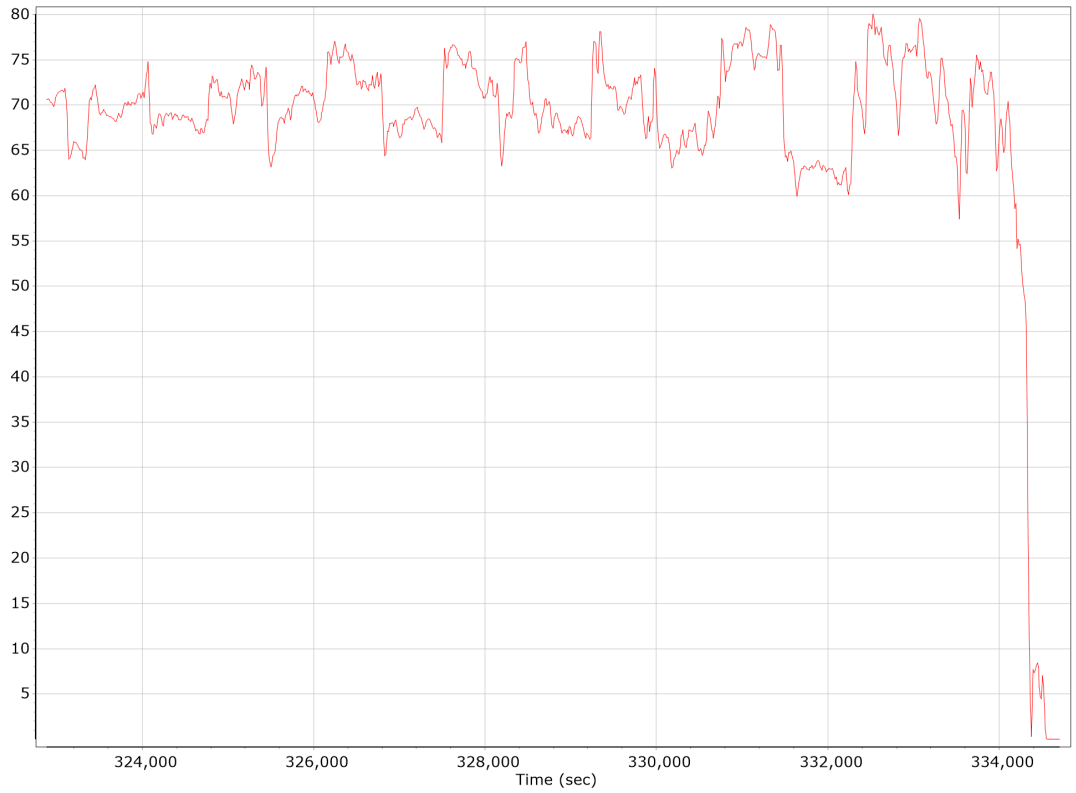
Down Velocity



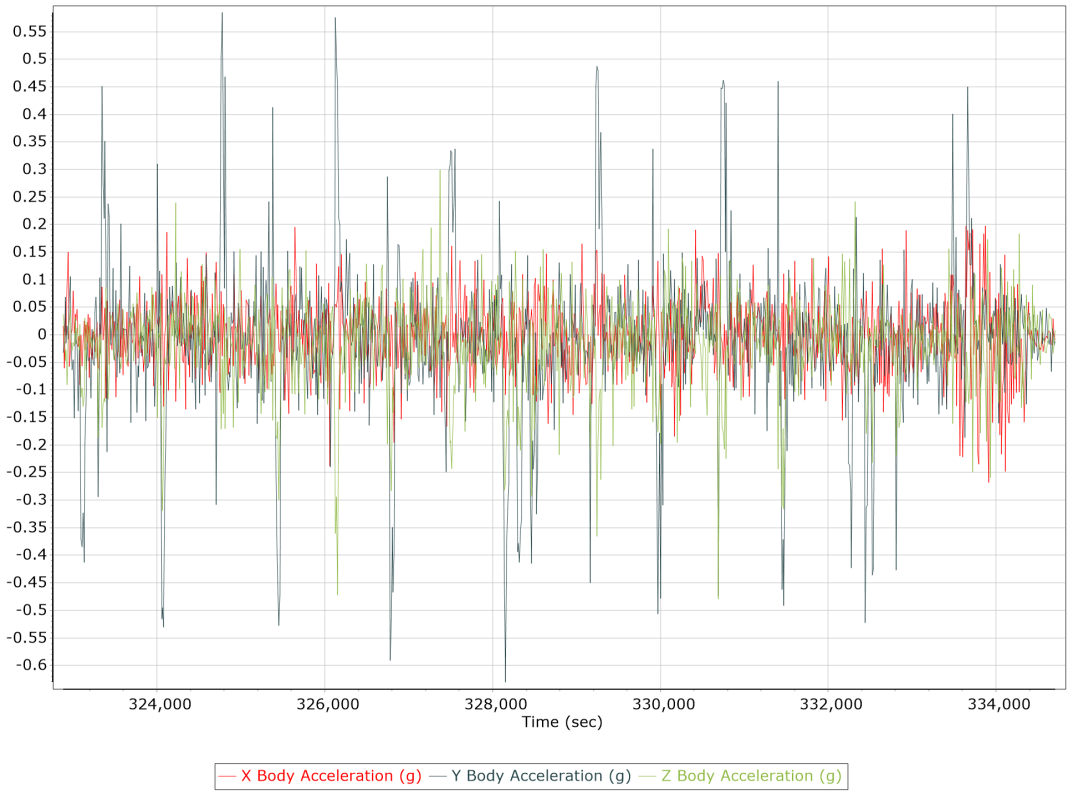
Total Speed



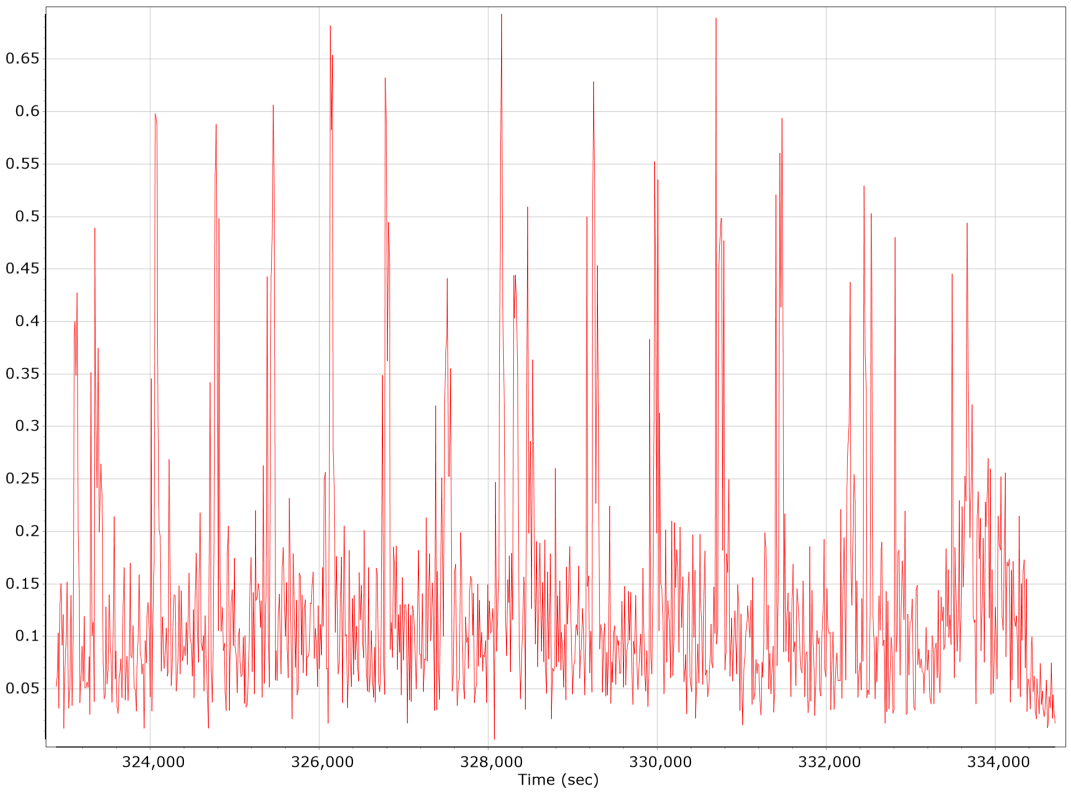
Ground Speed



Body Acceleration



Total Body Acceleration

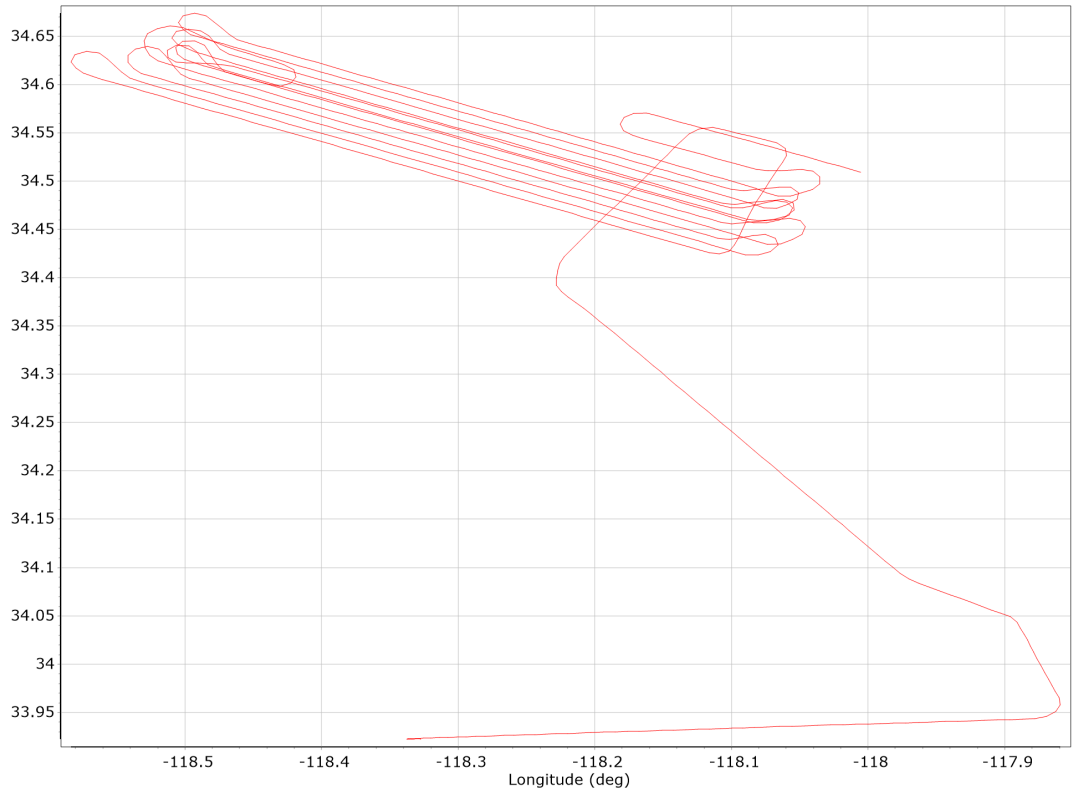


Body Angular Rate

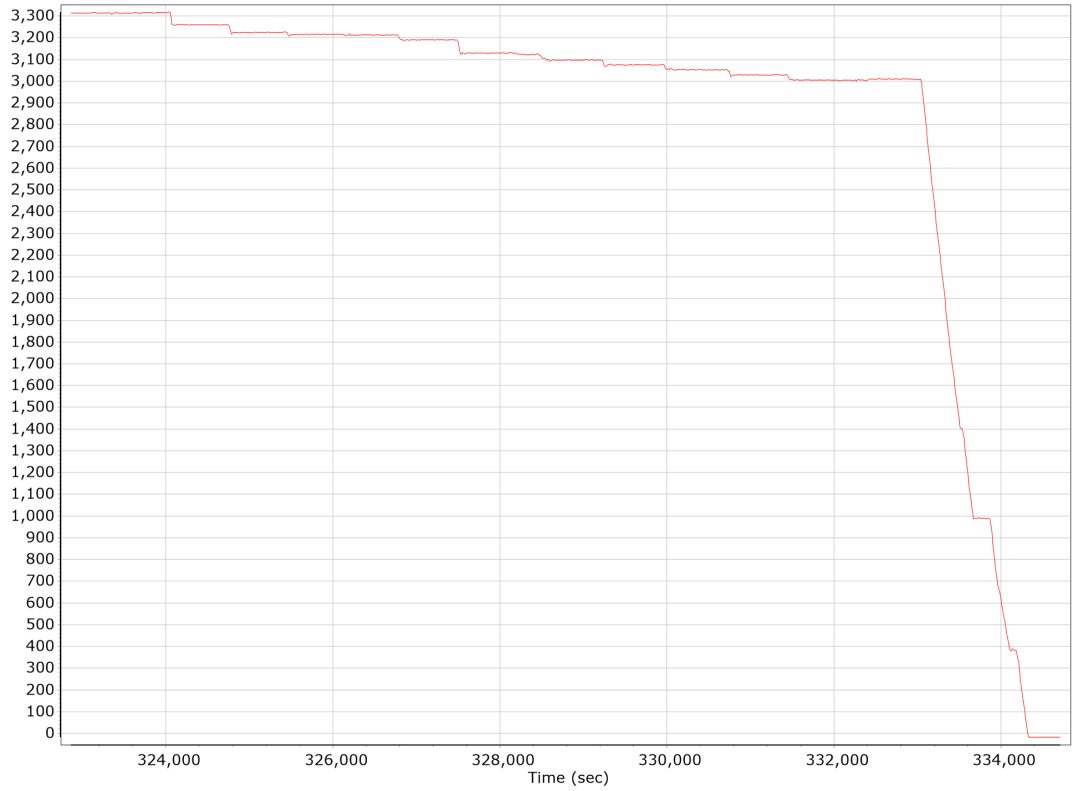


Forward Processed Trajectory Information

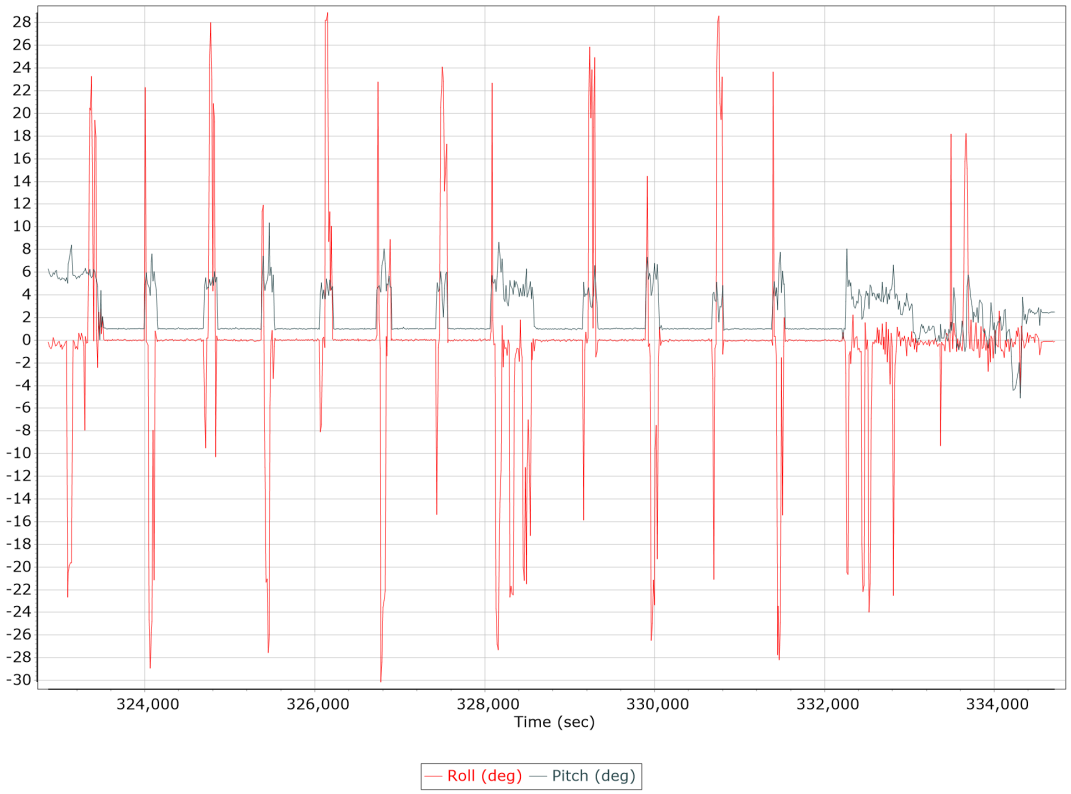
Top View



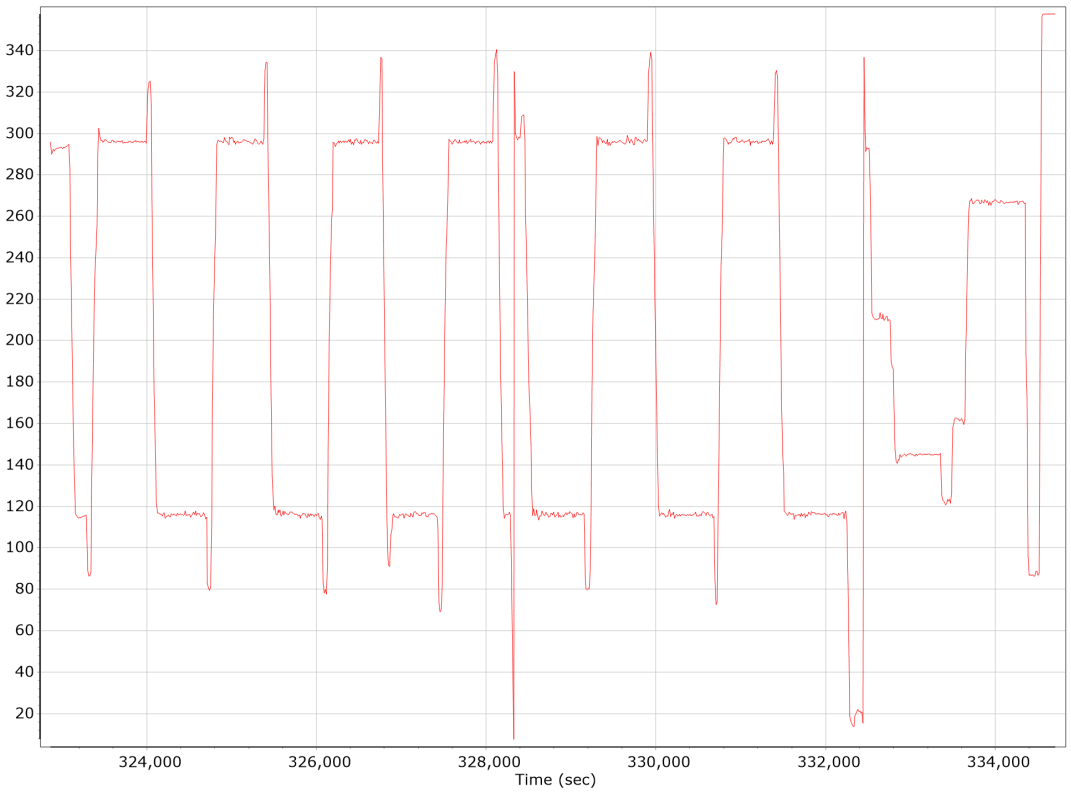
Altitude



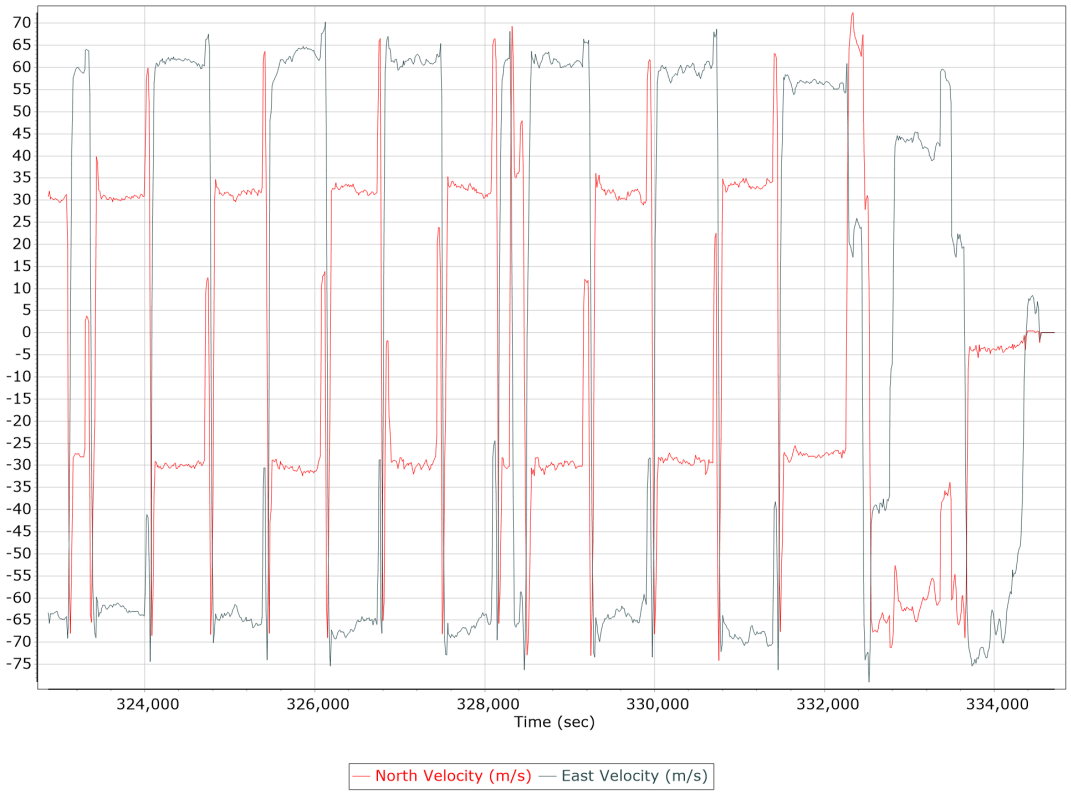
Roll/Pitch



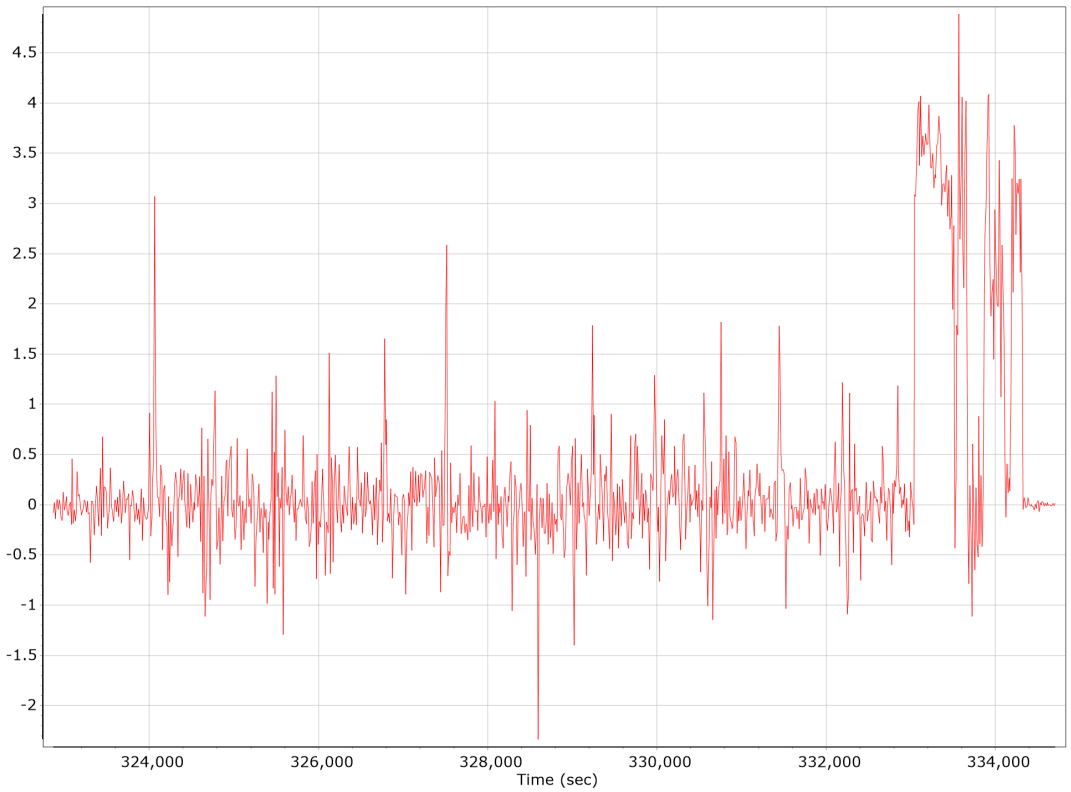
Heading



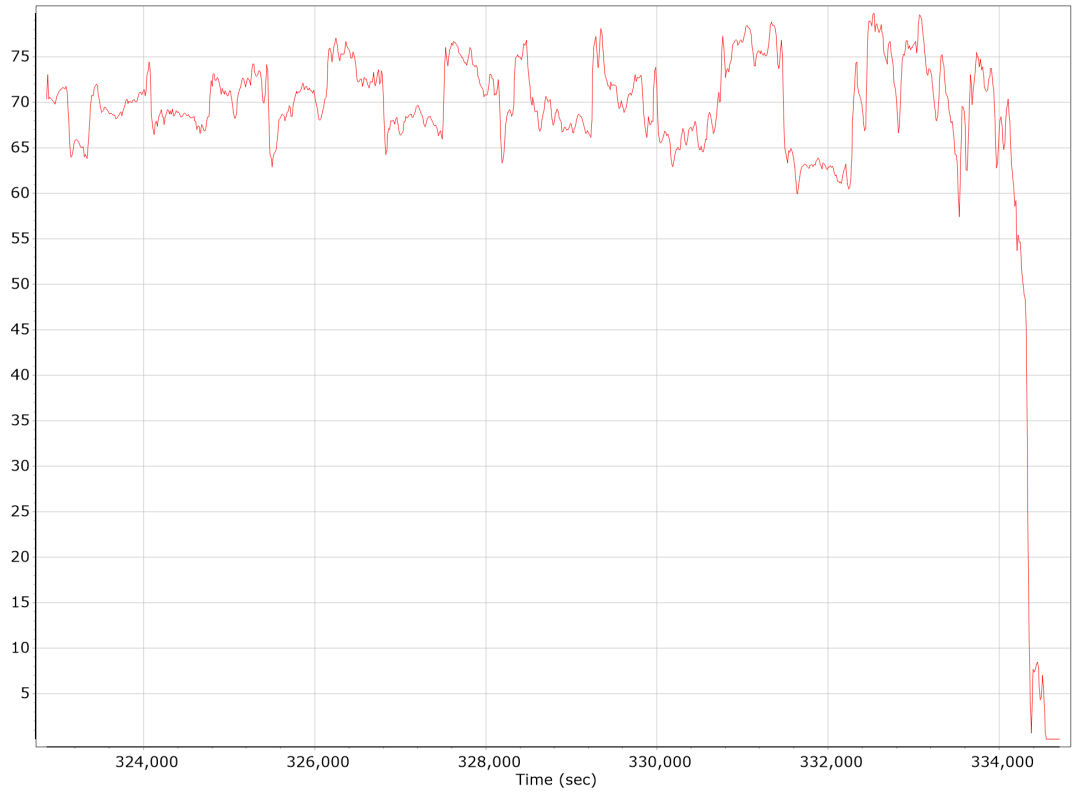
North/East Velocity



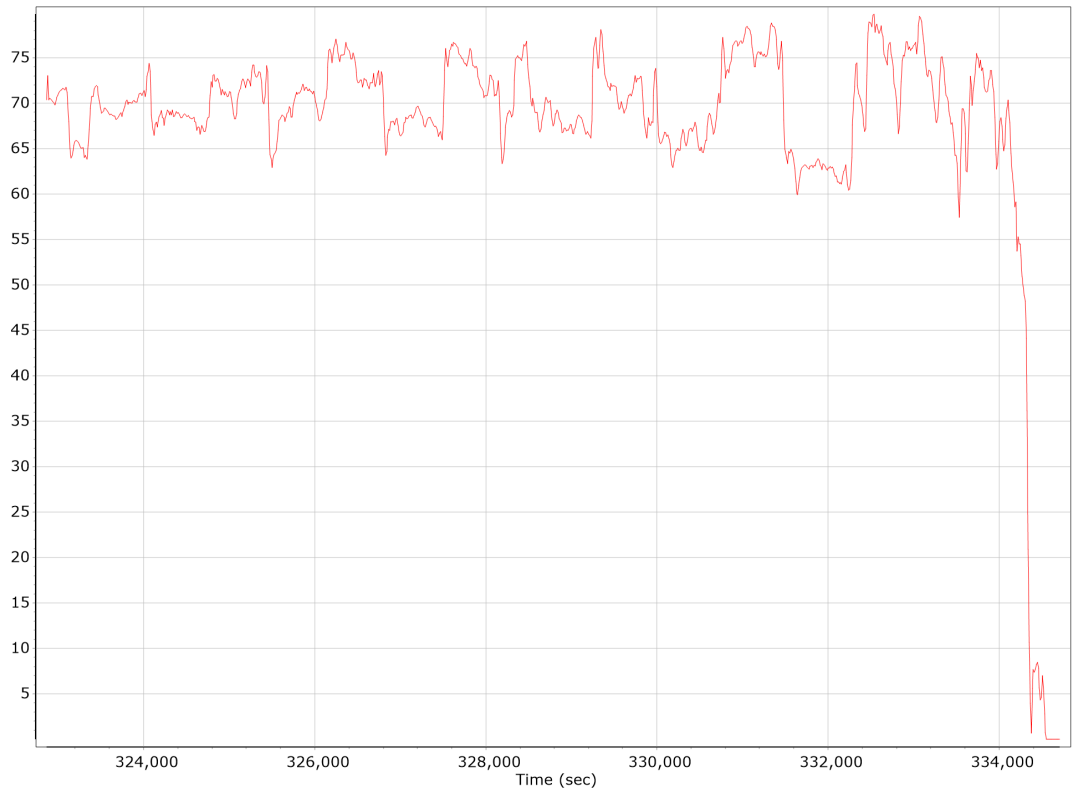
Down Velocity



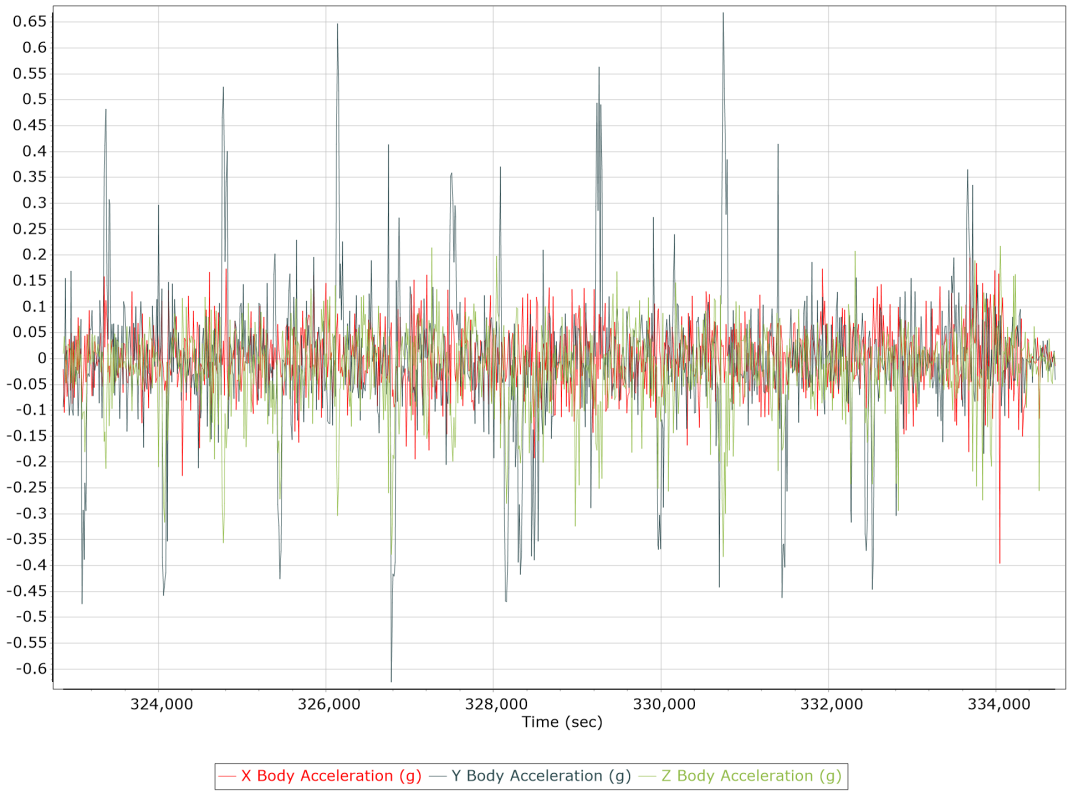
Total Speed



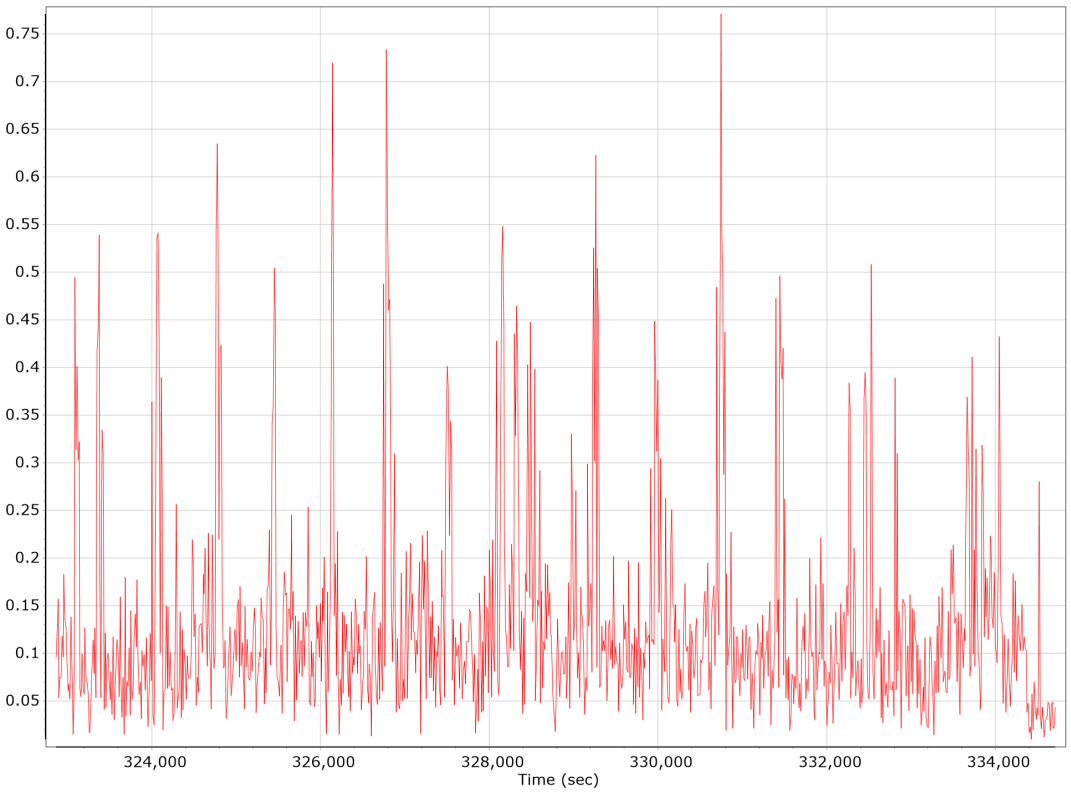
Ground Speed



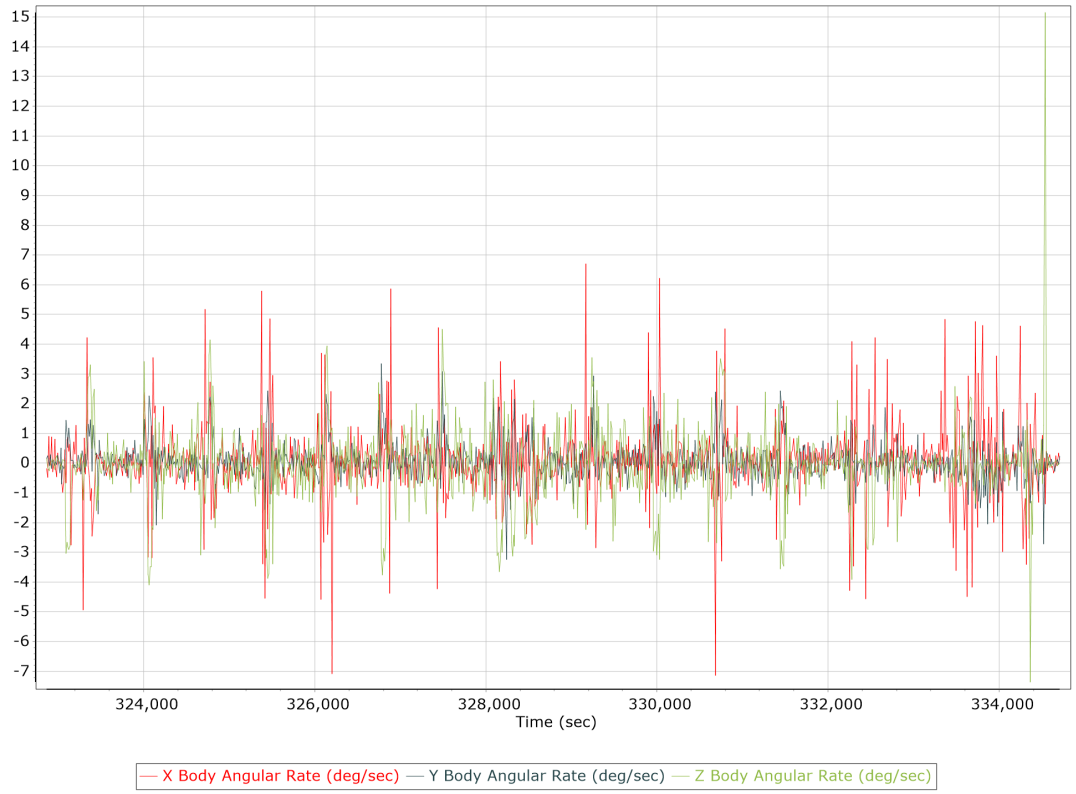
Body Acceleration



Total Body Acceleration



Body Angular Rate

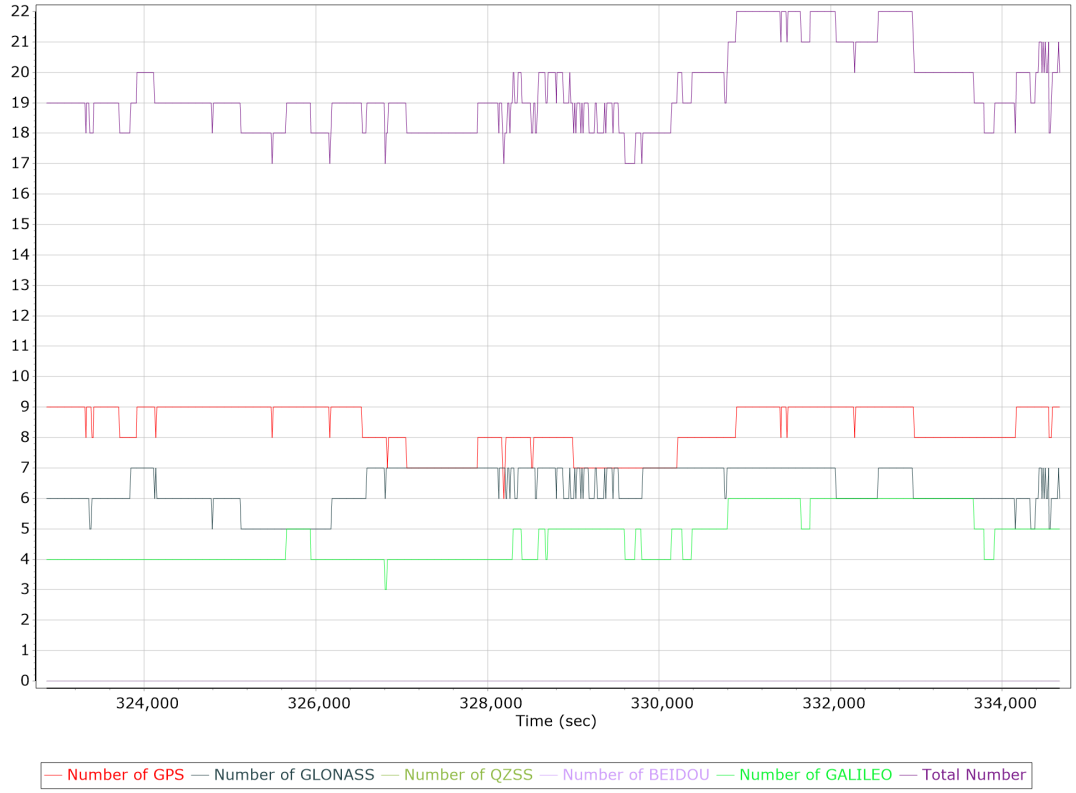


GNSS QC

GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	6	9	8
Number of GLONASS SV	4	7	6
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	3	6	5
Total number of SV	17	22	19
PDOP	1.10	1.75	1.29
QC Solution Gaps	0.00	0.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	11884.00	0.00	0.00
Percentage	100.00	0.00	0.00

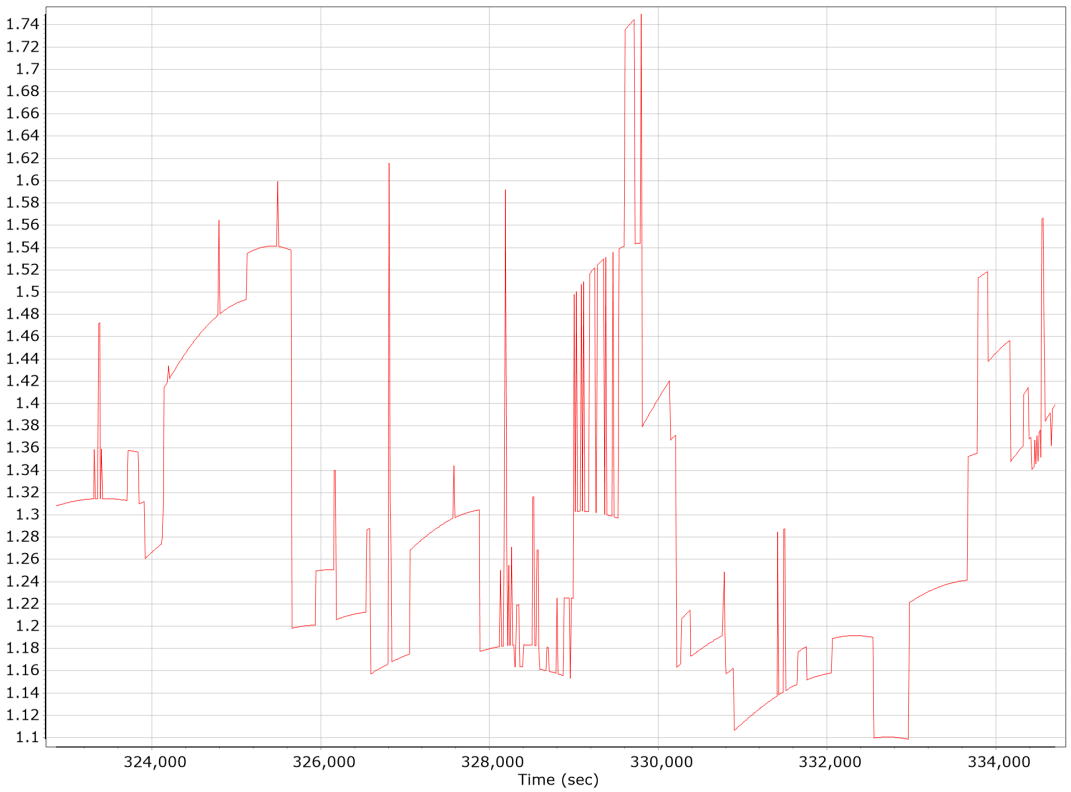
Num SVs in solution



Forward/Reverse Separation



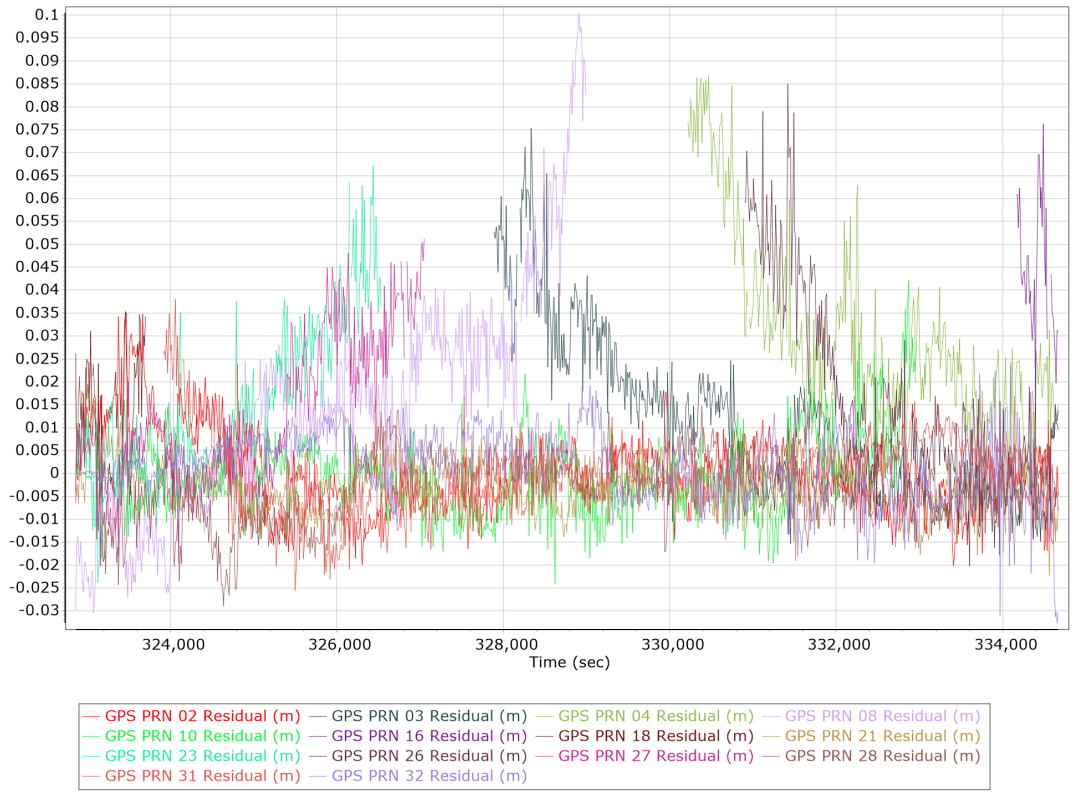
PDOP



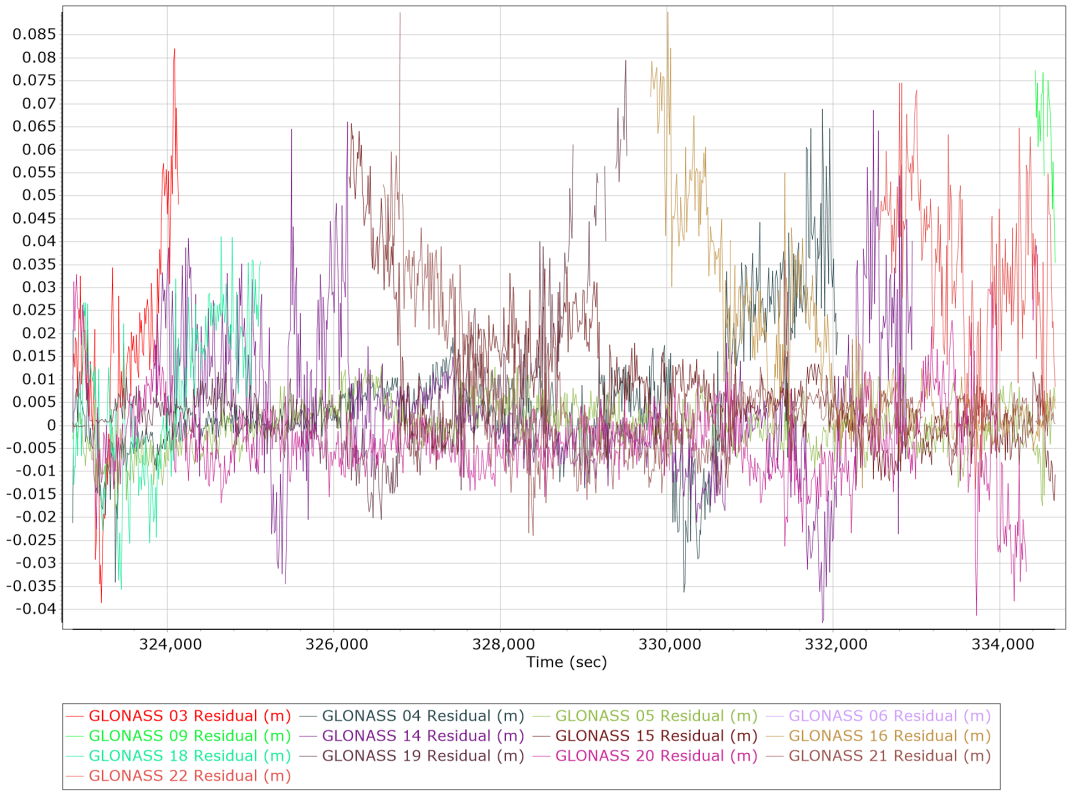
Estimated Position Accuracy



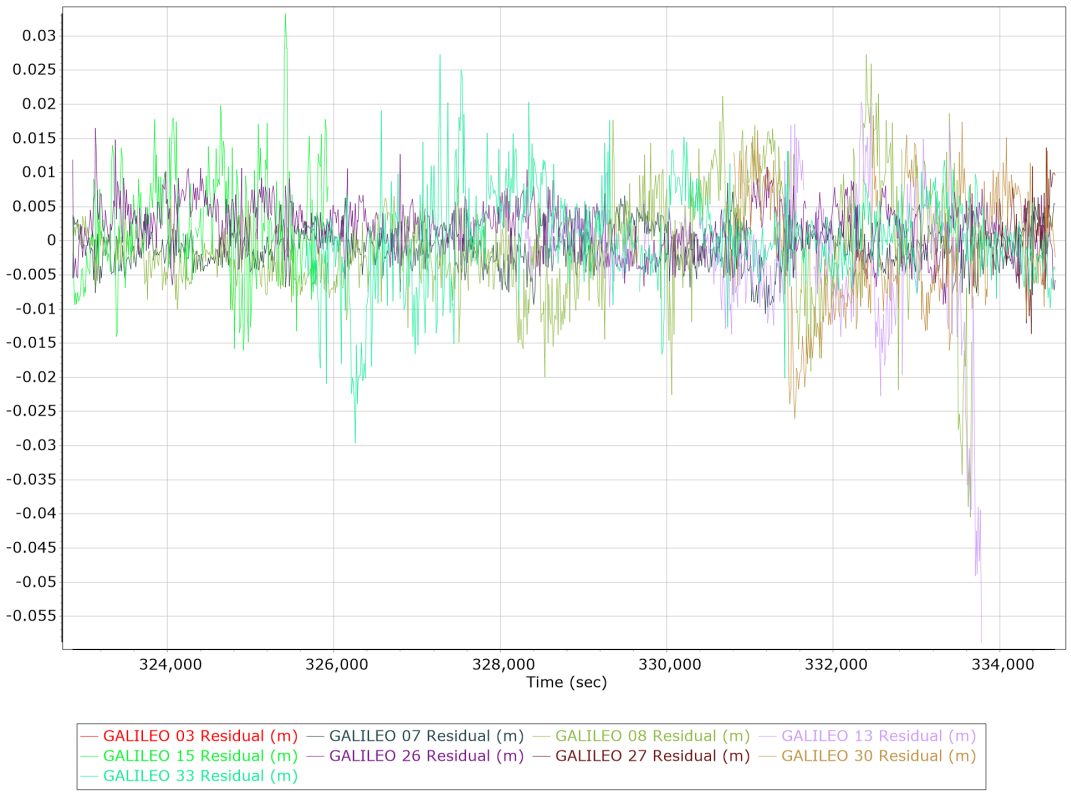
GPS Residuals



GLONASS Residuals



GALILEO Residuals



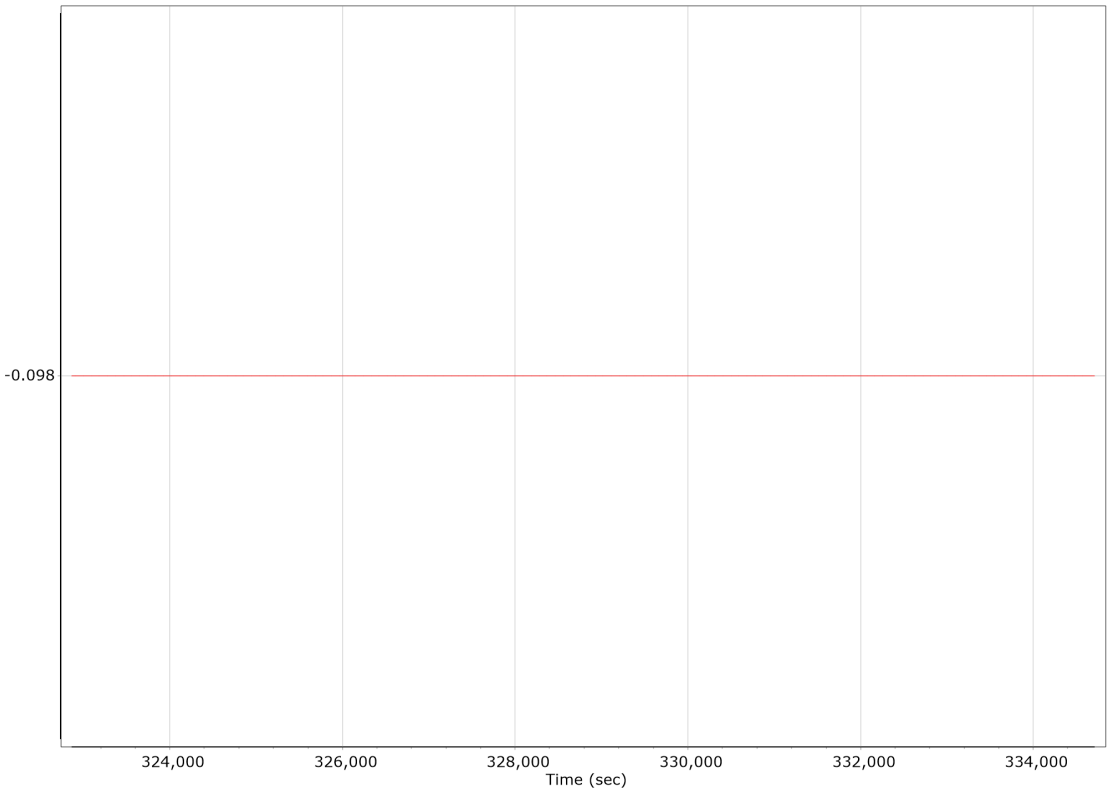
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	322774.000 (10/4/2023 5:39:34 PM)		
Processing end time	334717.000 (10/4/2023 8:58:37 PM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	-0.098	0.057	-1.221
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

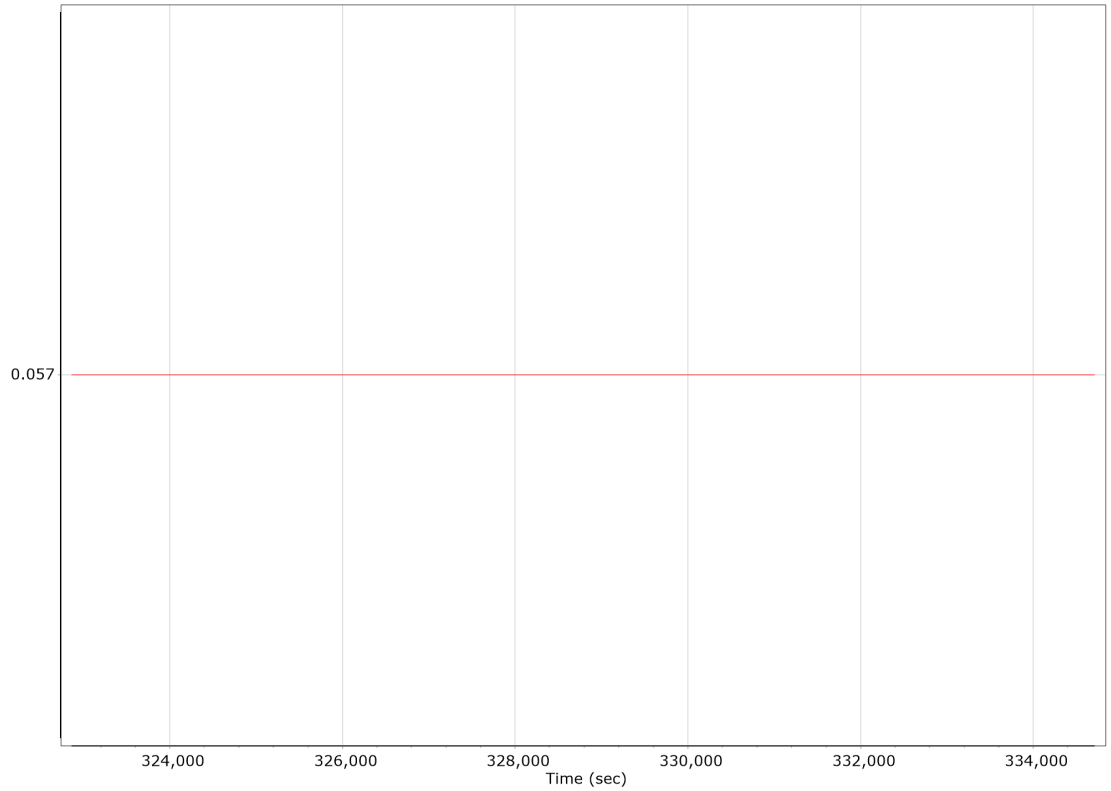
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

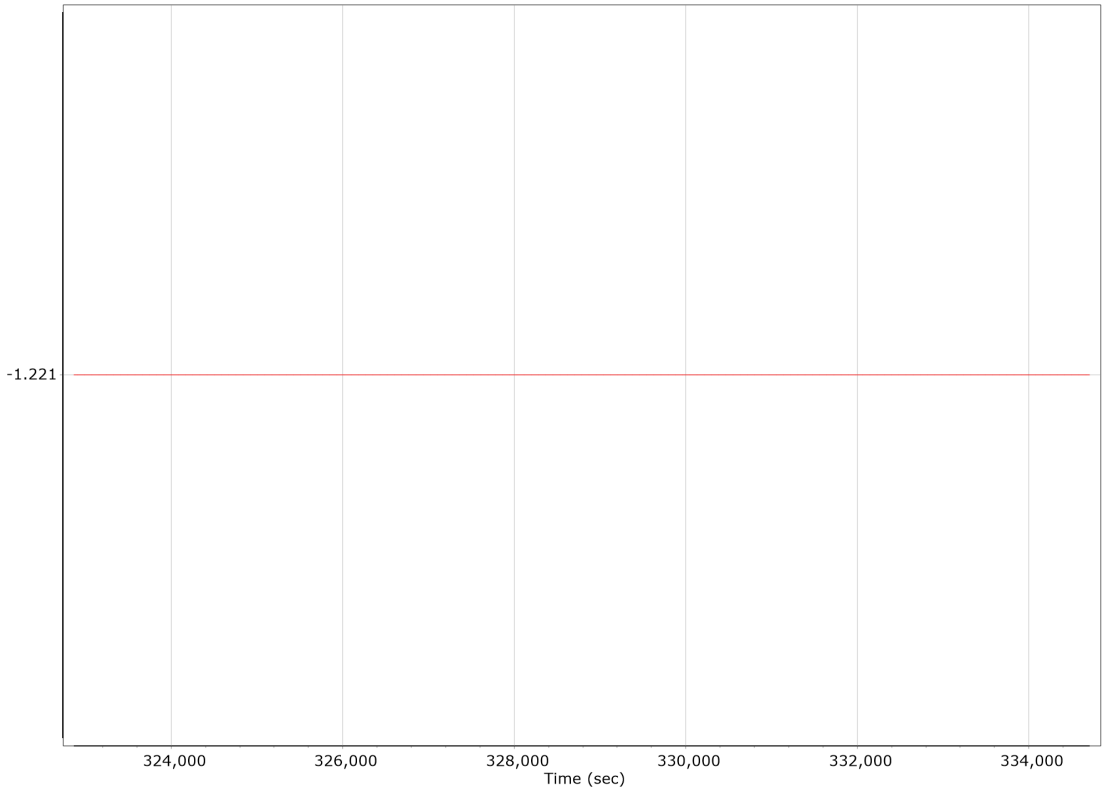
X Reference-Primary GNSS Lever Arm (m)



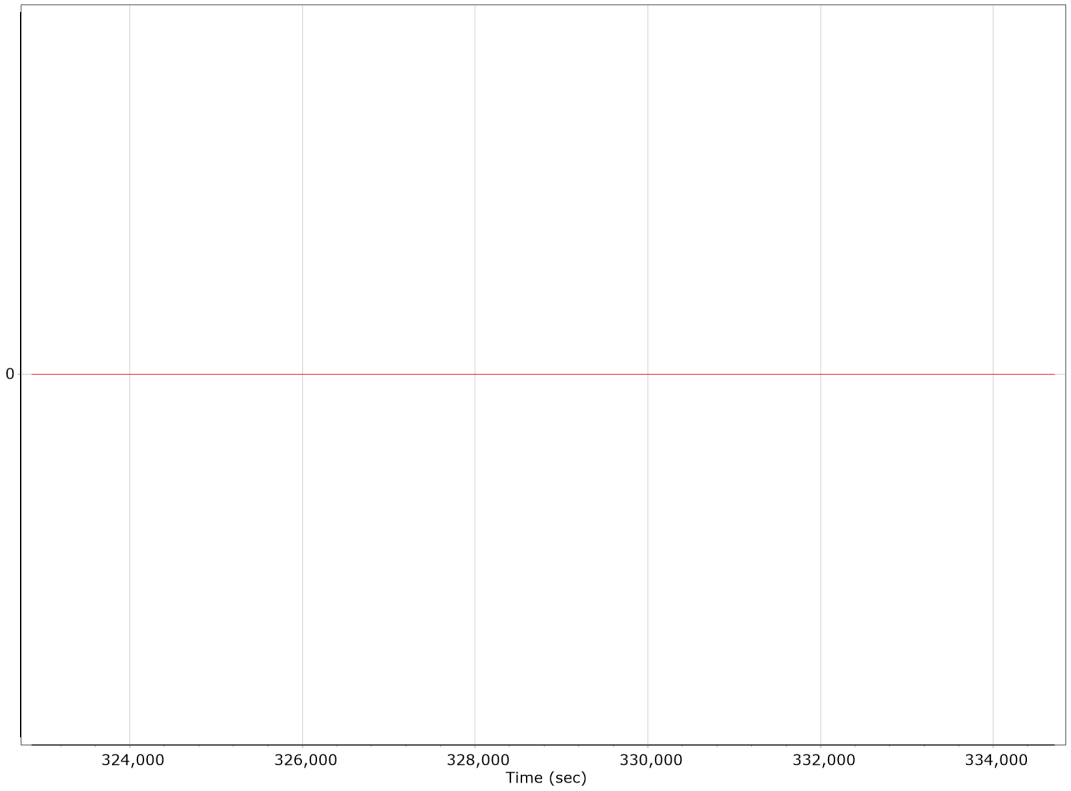
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



Reference-Primary GNSS Lever Arm Figure of Merit



IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

Accelerometer Bias (micro-g)



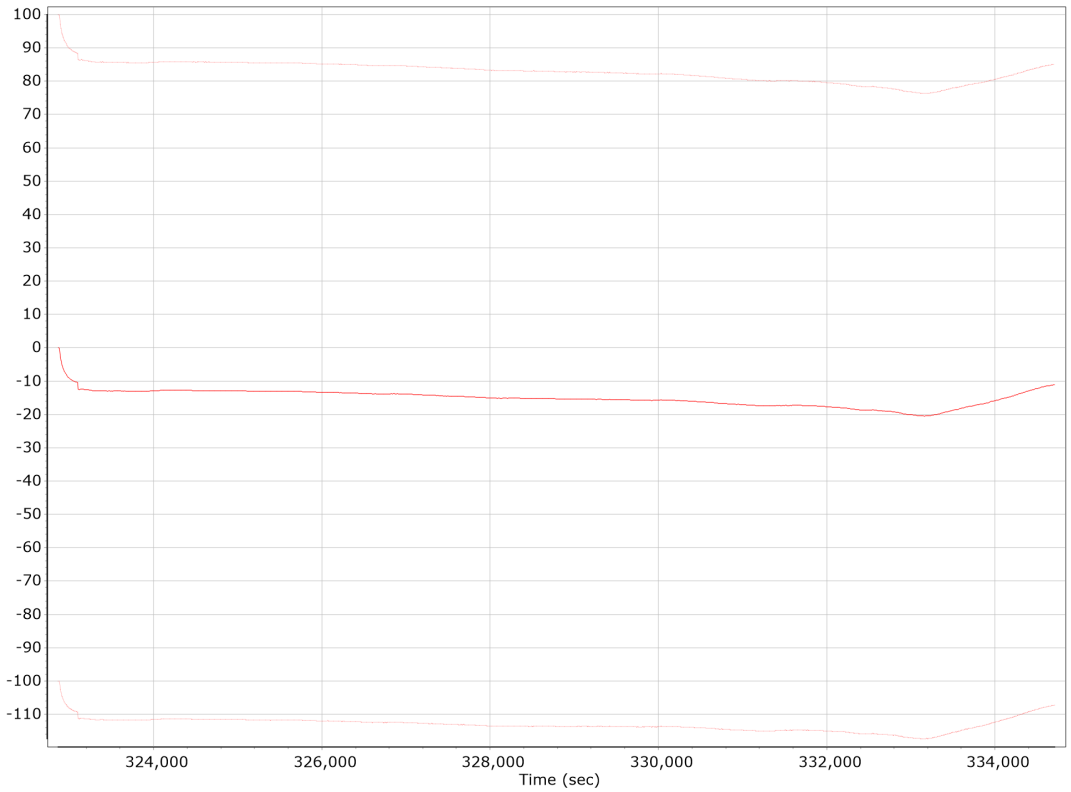
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



X Accelerometer Scale Error (ppm)



Y Accelerometer Scale Error (ppm)



Z Accelerometer Scale Error (ppm)



Gyro Bias (deg/h)



X Gyro Bias (deg/h)



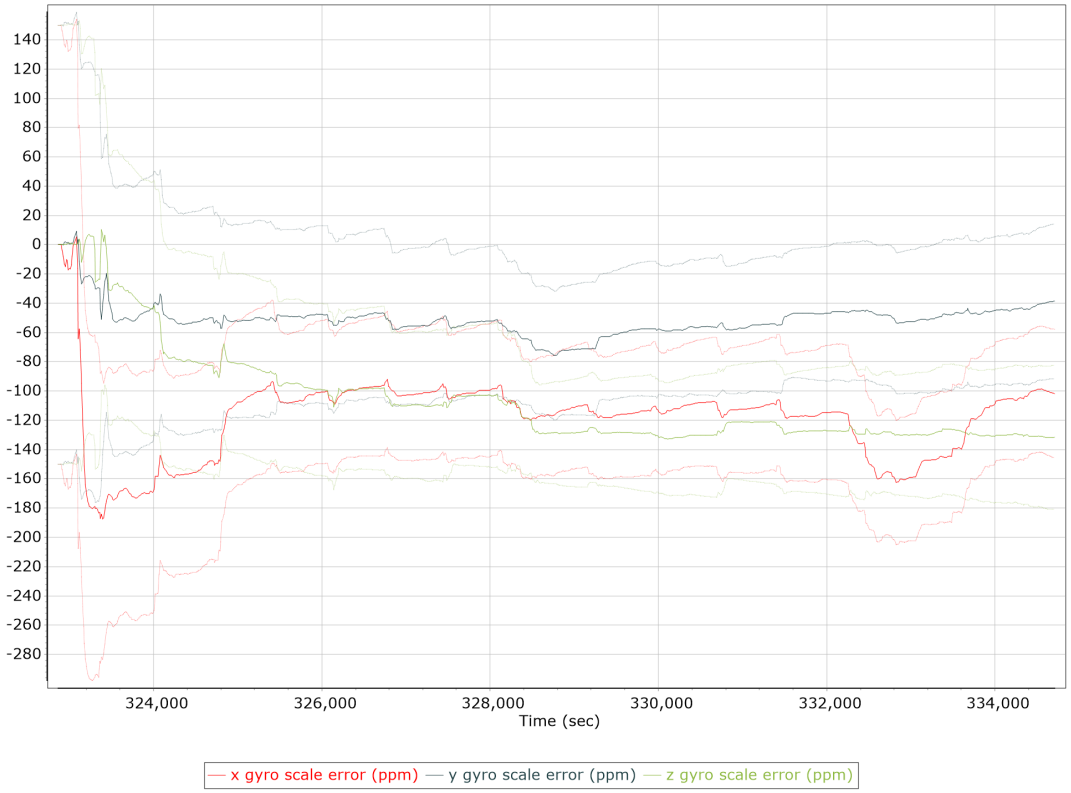
Y Gyro Bias (deg/h)



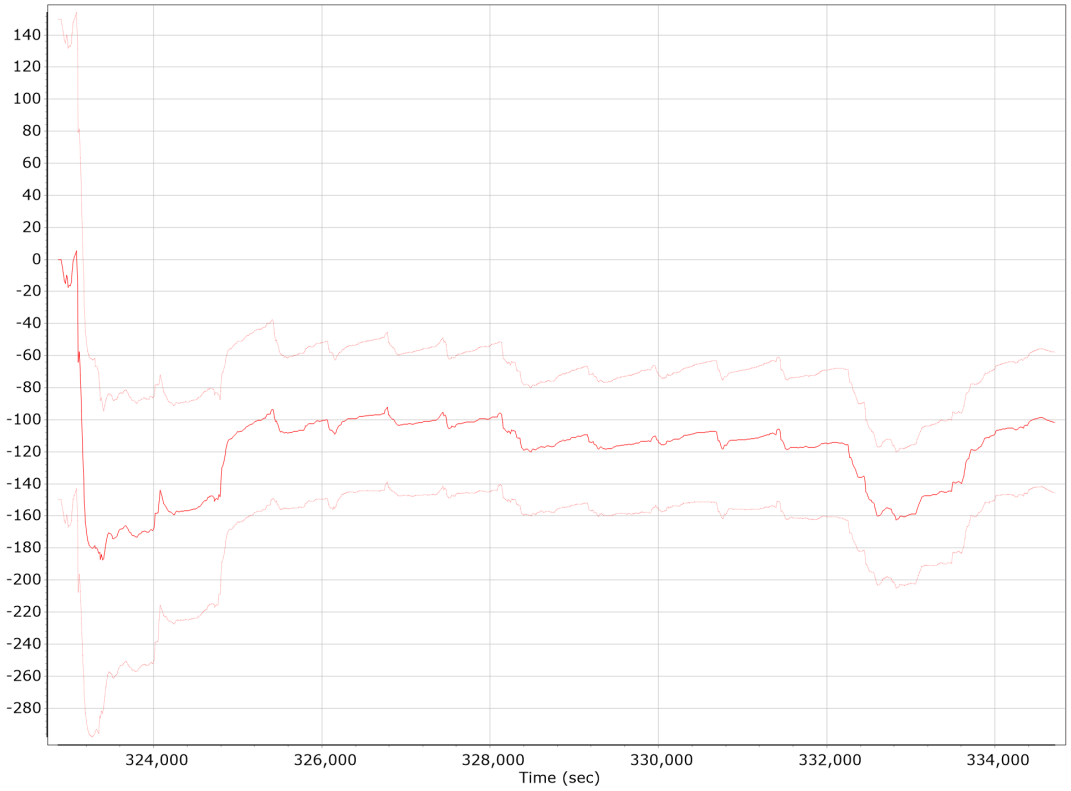
Z Gyro Bias (deg/h)



Gyro Scale Error (ppm)



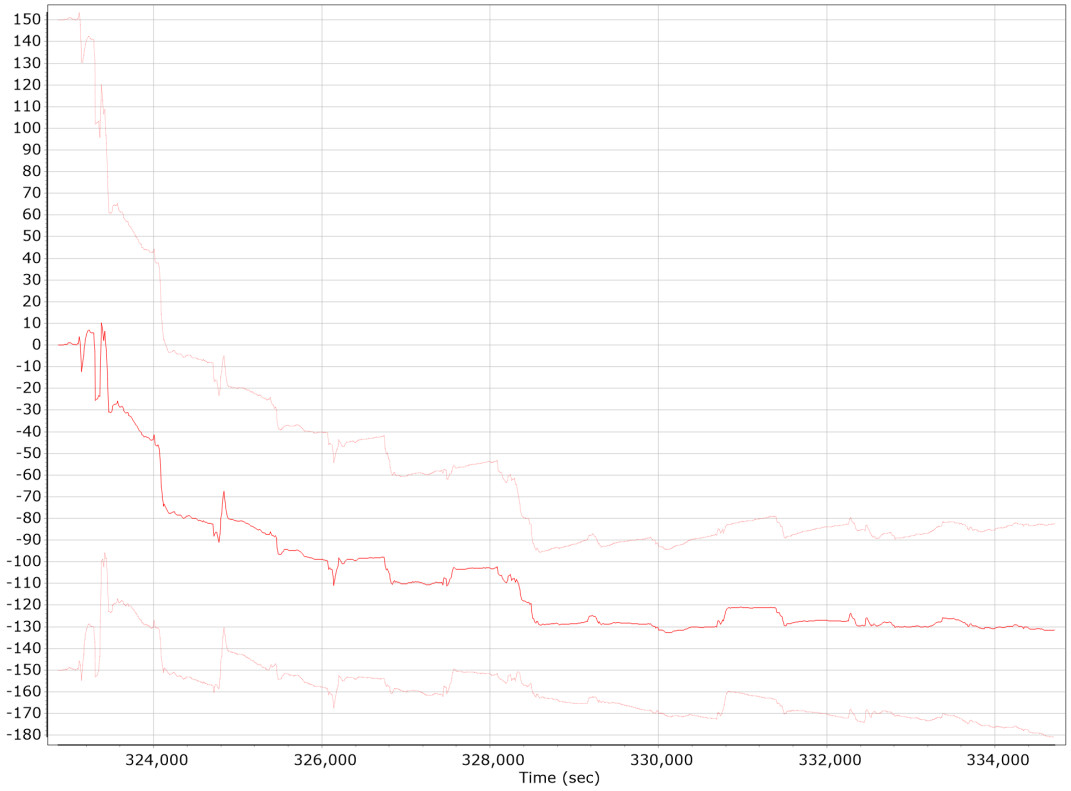
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)

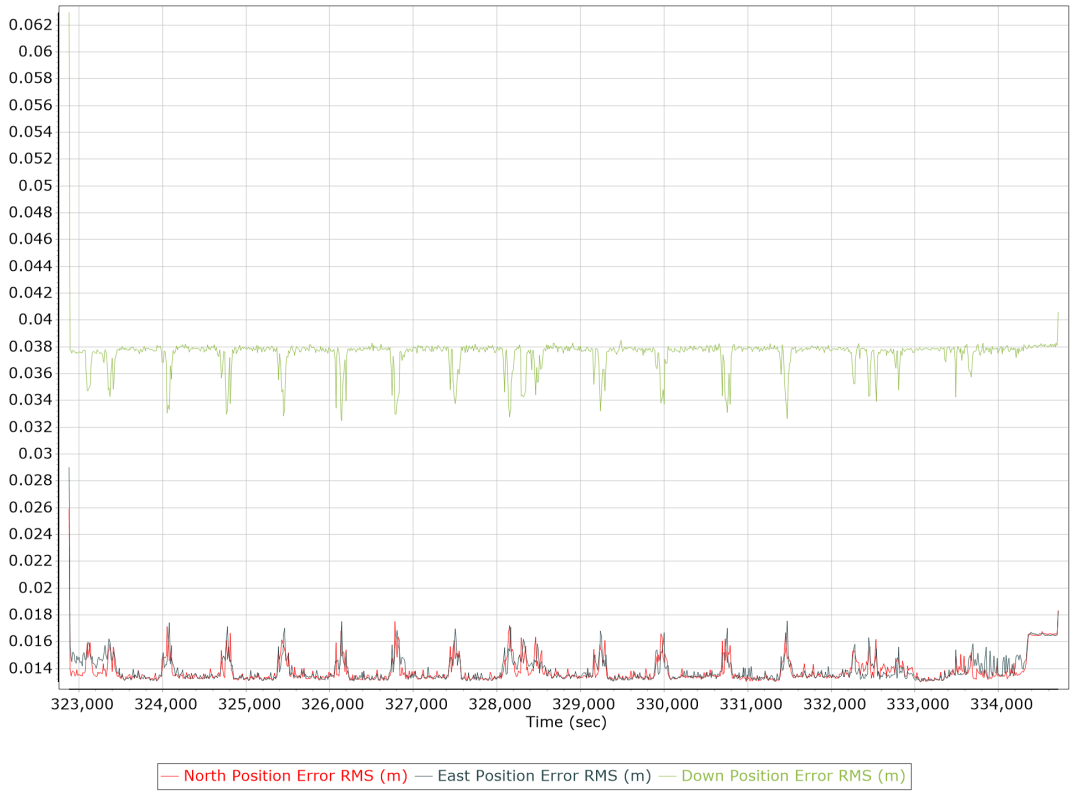


Z Gyro Scale Error (ppm)



Smoothed Performance Metrics

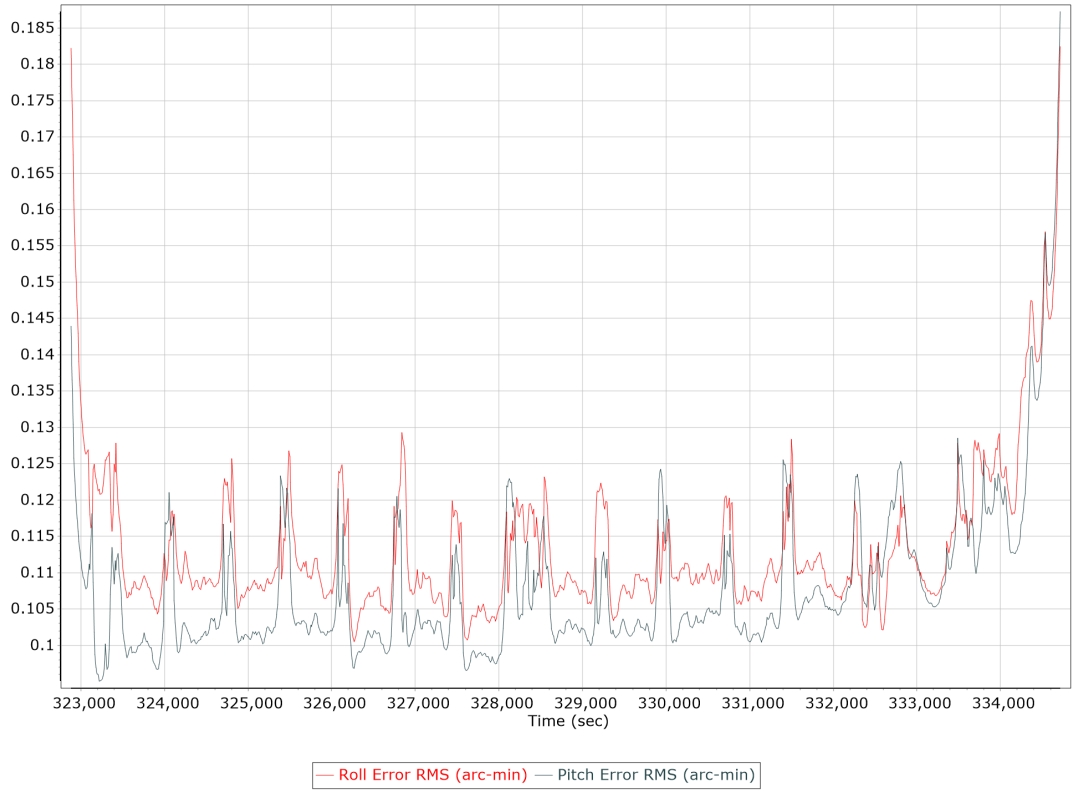
Position Error RMS (m)



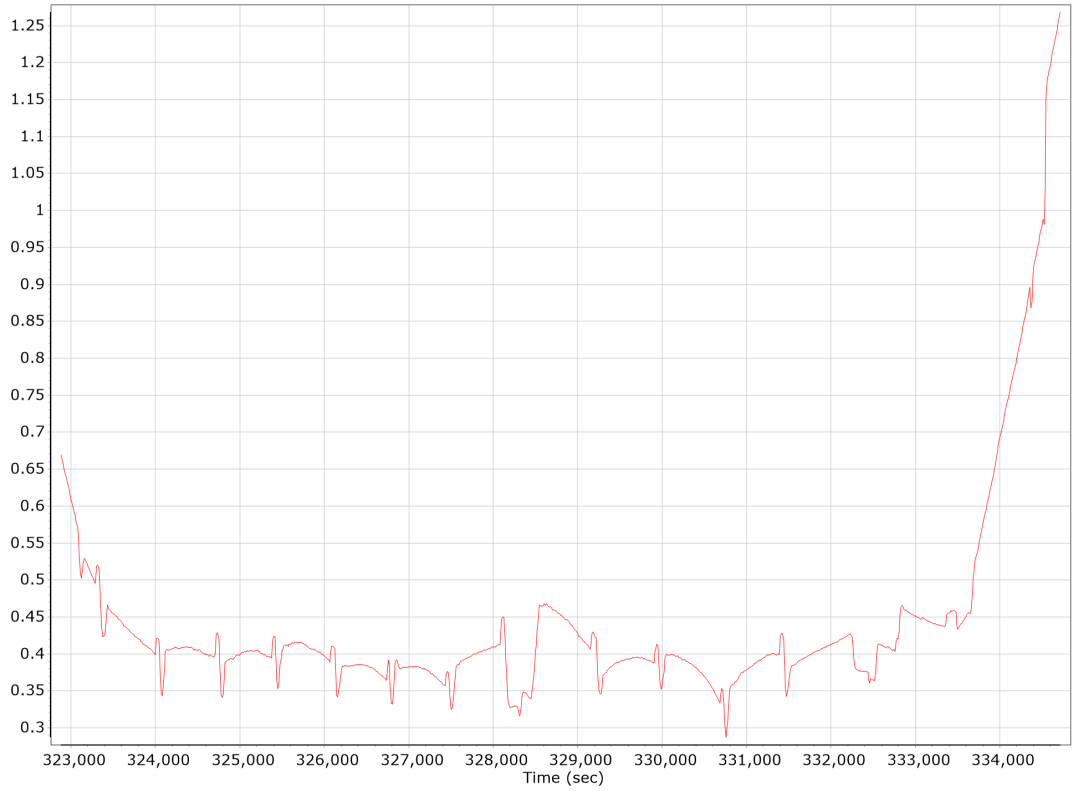
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)



Heading Error RMS (arc-min)



Forward Processed Performance Metrics

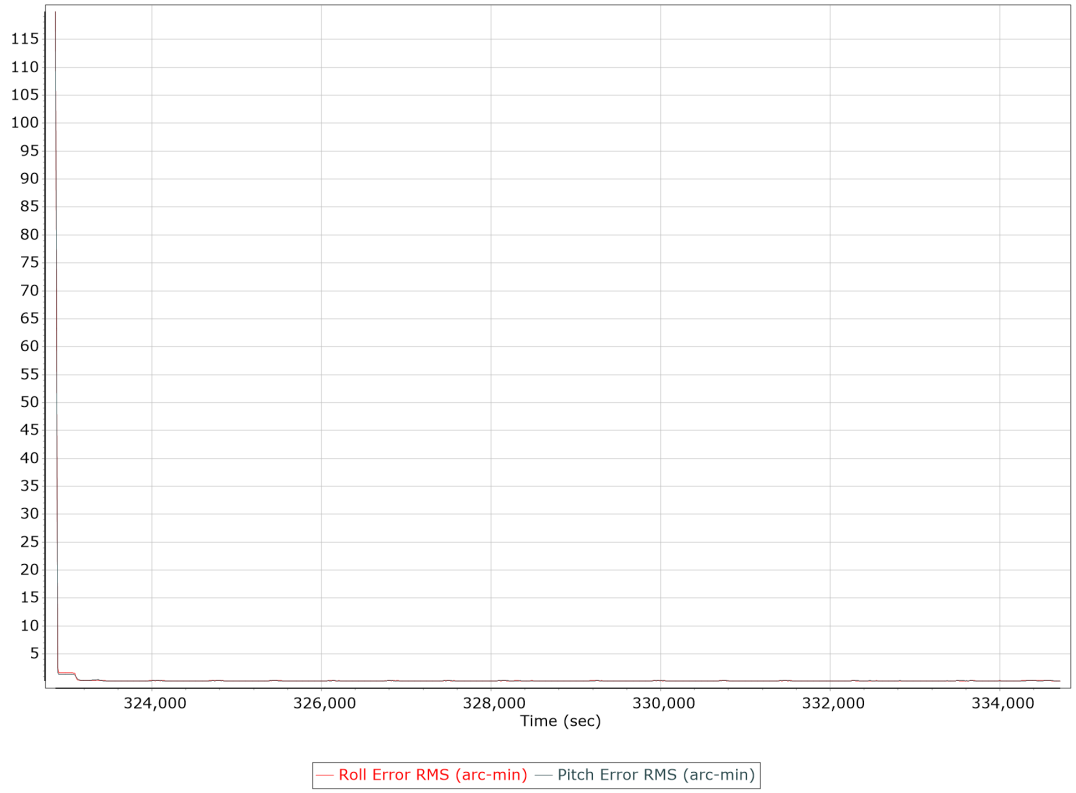
Position Error RMS (m)



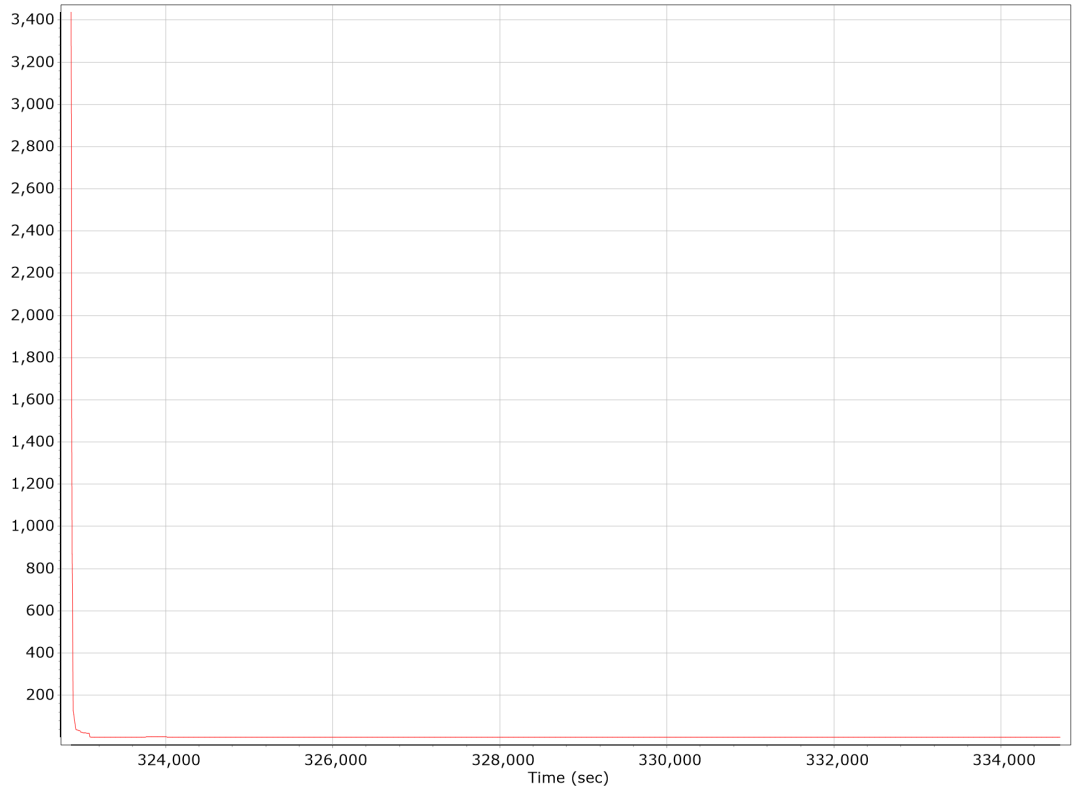
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

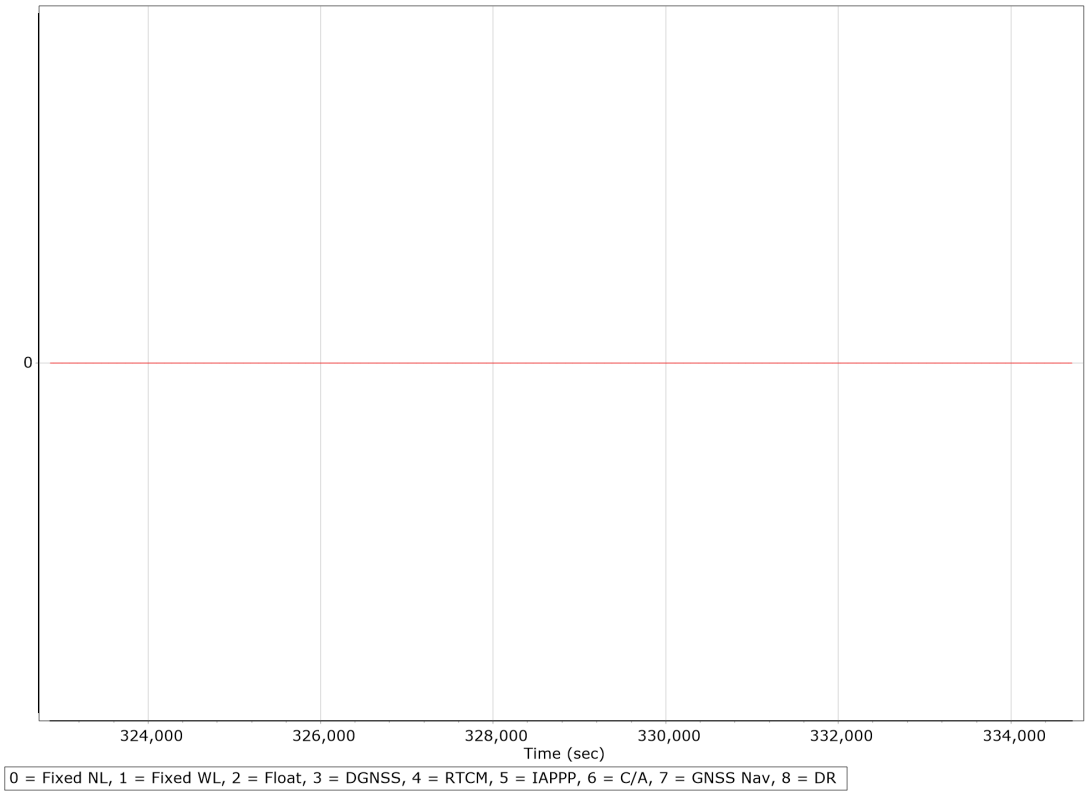


Heading Error RMS (arc-min)



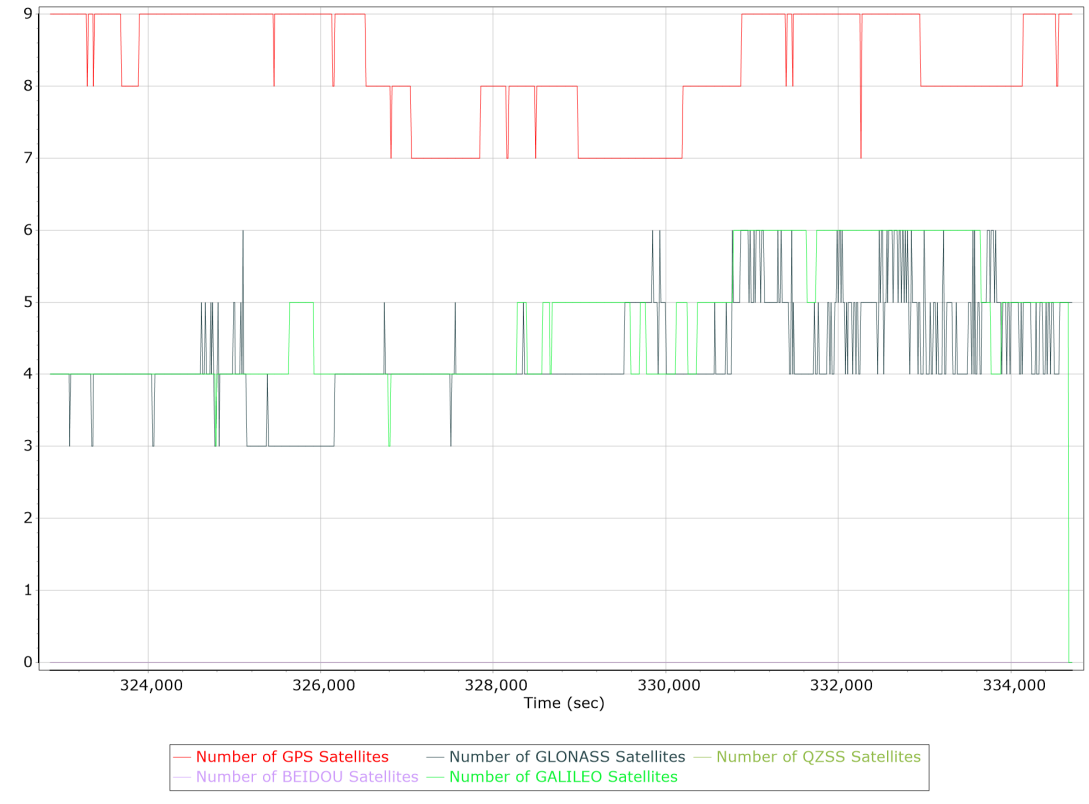
Forward Processed Solution Status

Processing Mode

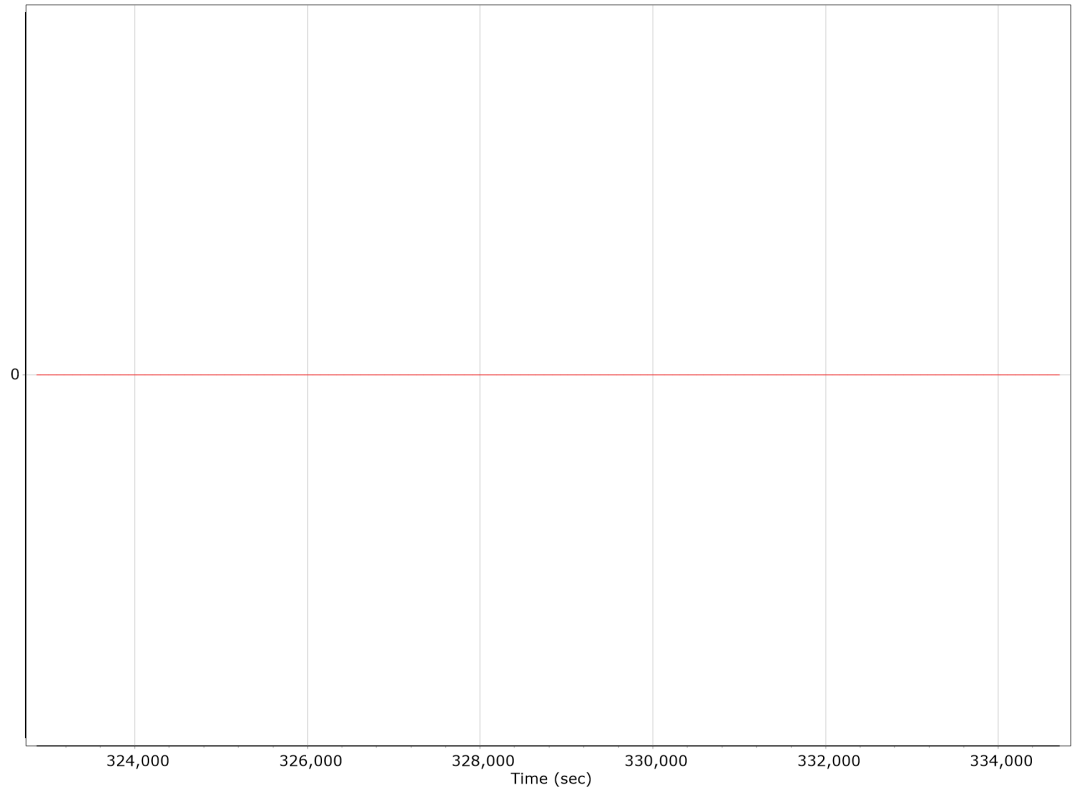


0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGNSS, 4 = RTCM, 5 = IAPPP, 6 = C/A, 7 = GNSS Nav, 8 = DR

Number of Satellites



Baseline Length



General Information

Mission Information

Project name	10042023B_4046
Processing date	2024-01-11 20:56:03
Mission date	2023-10-04 21:54:15
Mission duration	03:52:27.761
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N10762
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
231004_215356_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm2770.23g	GLONASS Broadcast Ephemeris
Ephm2770.23n	GPS Broadcast Ephemeris
Ephm2780.23g	GLONASS Broadcast Ephemeris
Ephm2780.23n	GPS Broadcast Ephemeris
IGS0OPSFIN_20232760000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232770000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232780000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232790000_01D_15M_ORB.SP3	GPS Precise Ephemeris

Output Files

Filename	File type
sbet_10042023B_4046.out	SBET Trajectory File

Rover Data Summary

First raw data file	231004_215356_INS-GPS_1.raw		
Last raw data file	231004_215356_INS-GPS_1.raw		
Start GPS week	2282		
Start time	338036.683 (10/4/2023 9:53:56 PM)		
End time	351984.444 (10/5/2023 1:46:24 AM)		
Start of fine alignment	338152.005 (10/4/2023 9:55:52 PM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	0.000	0.000	0.000
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

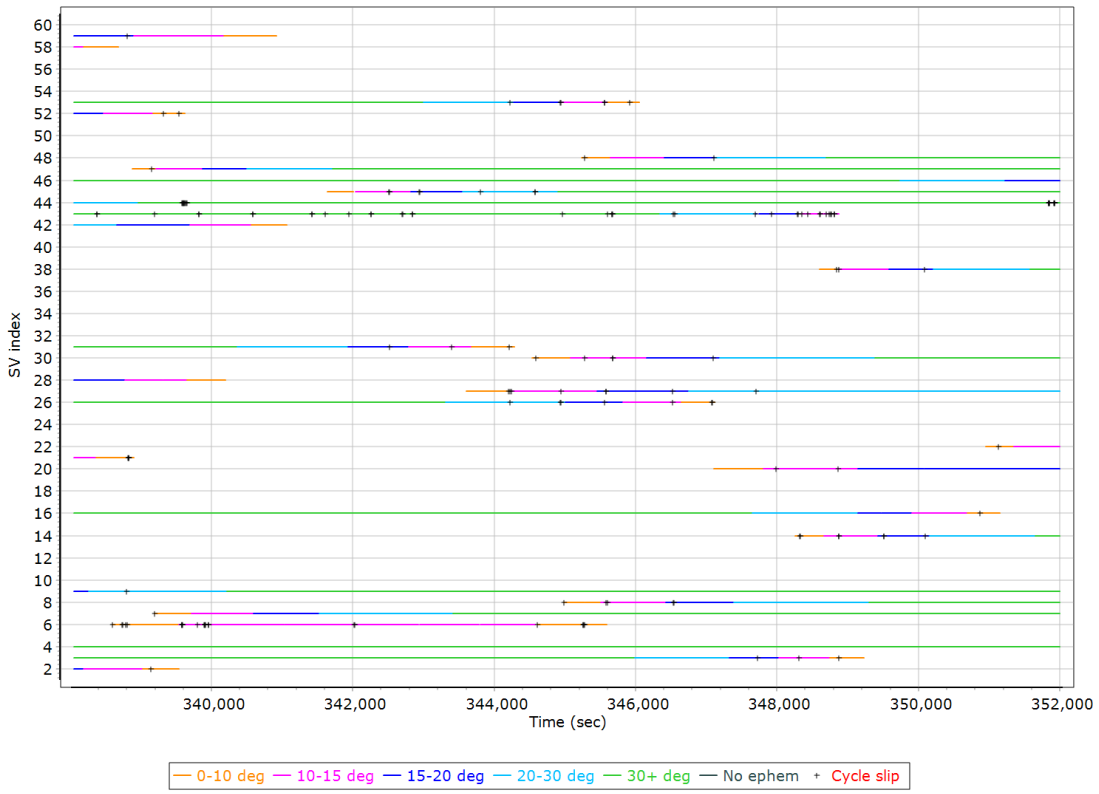
Rover Data QC

Raw IMU Import QC Summary

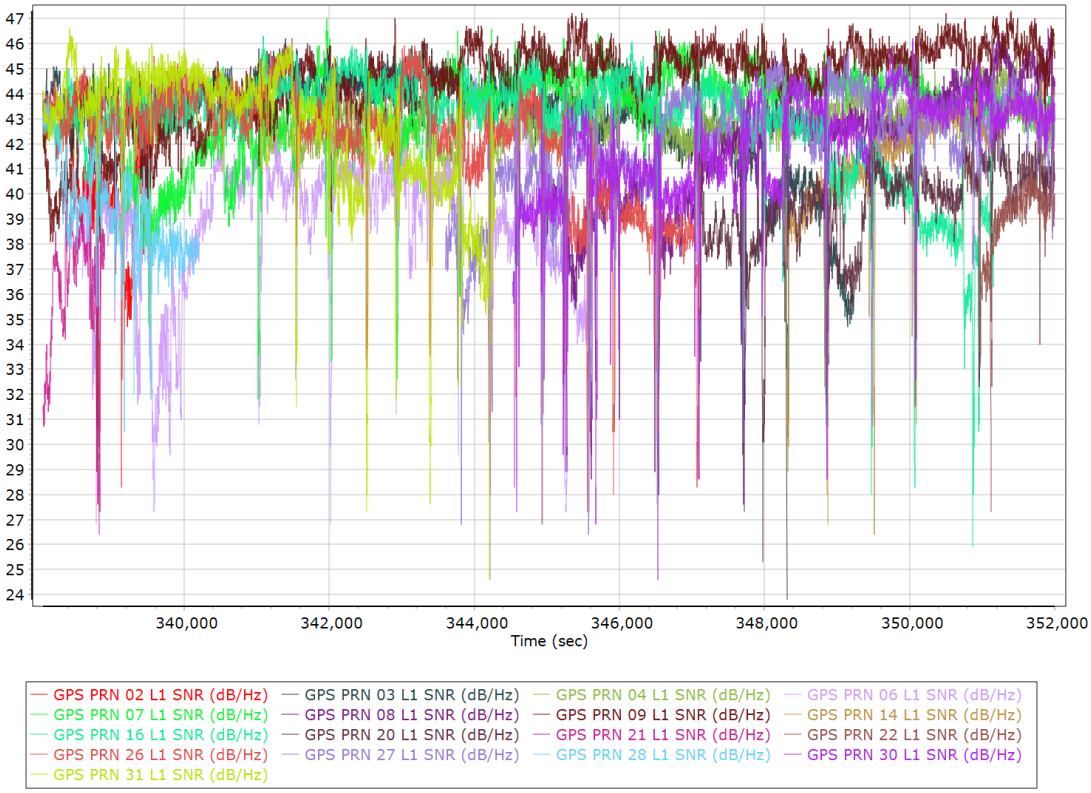
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_10042023B_4046.log
IMU Records Processed	2789147
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

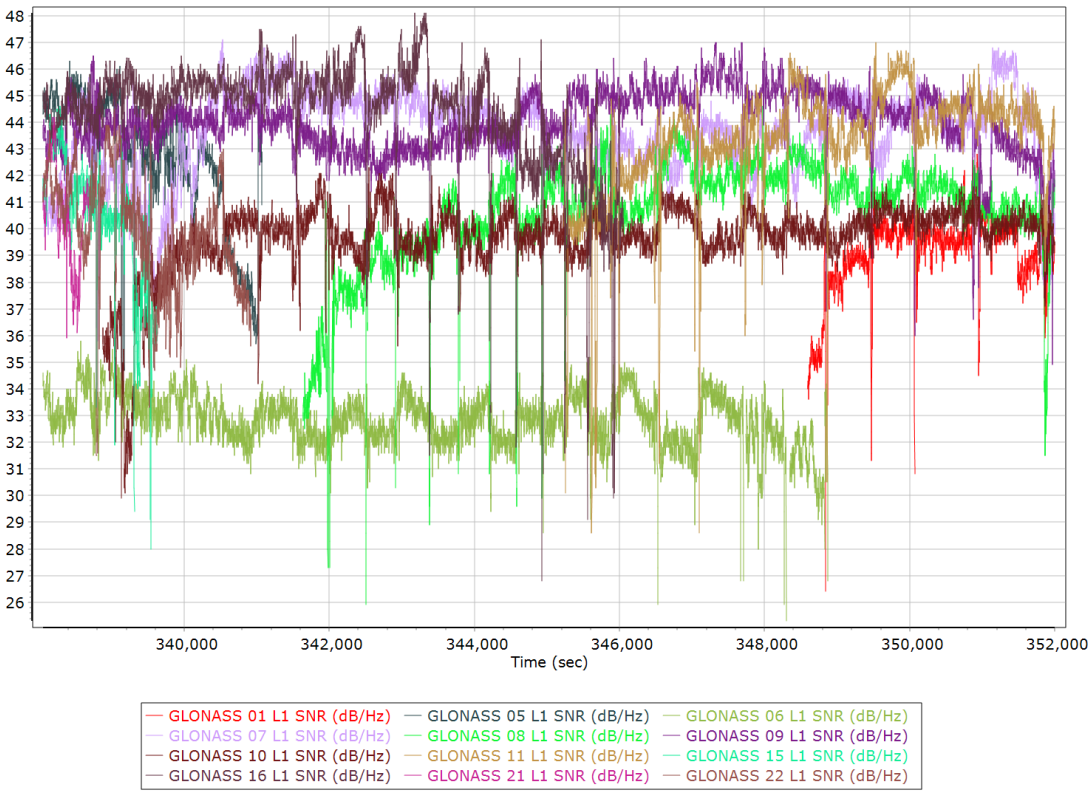
GPS/GLONASS L1 Satellite Lock/Elevation



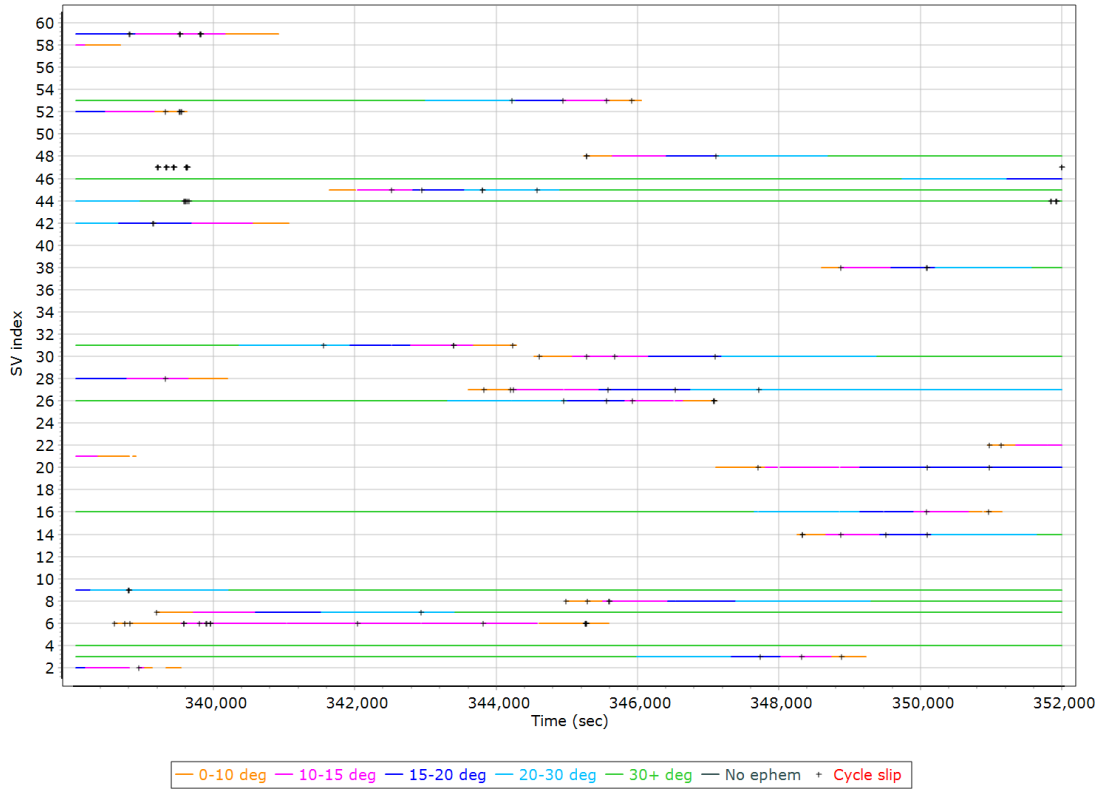
GPS L1 SNR



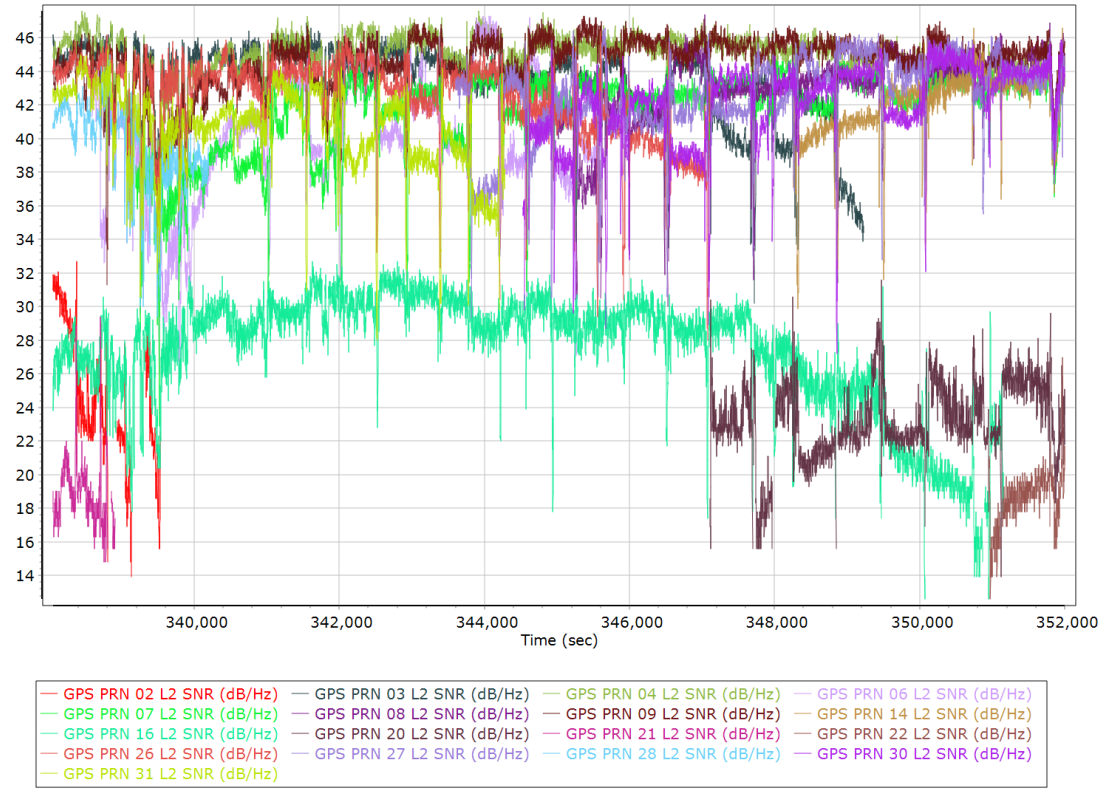
GLONASS L1 SNR



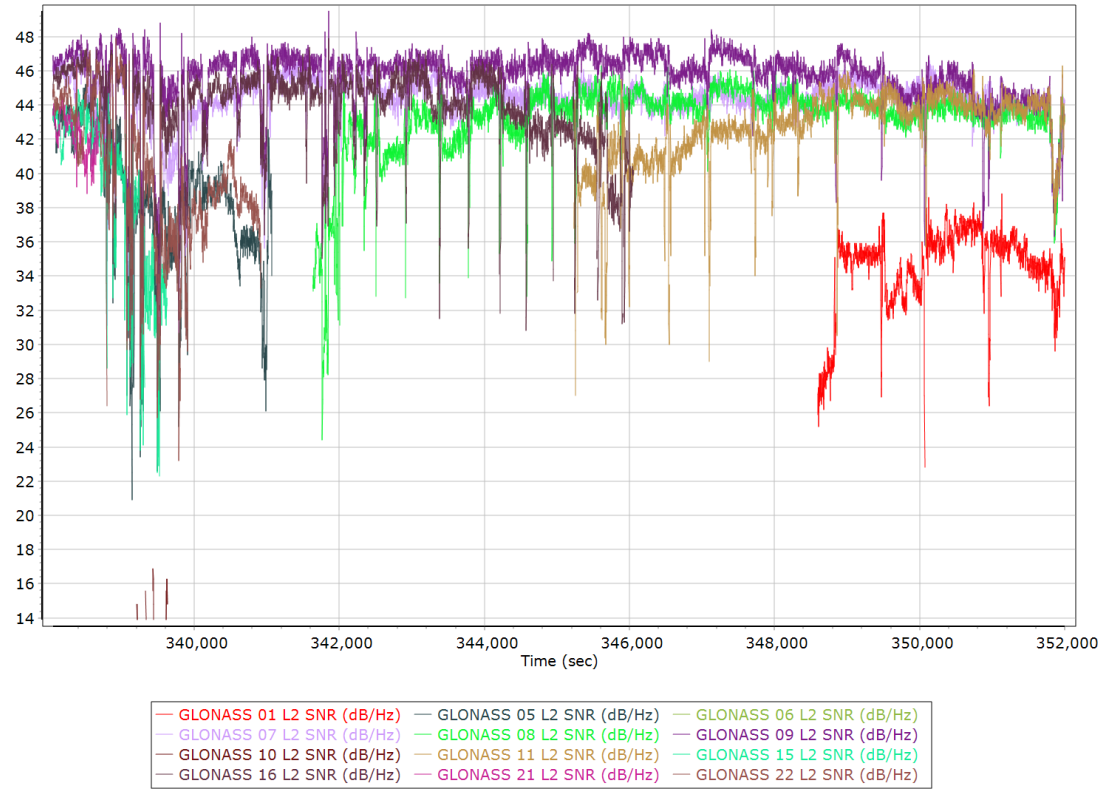
GPS/GLONASS L2 Satellite Lock/Elevation



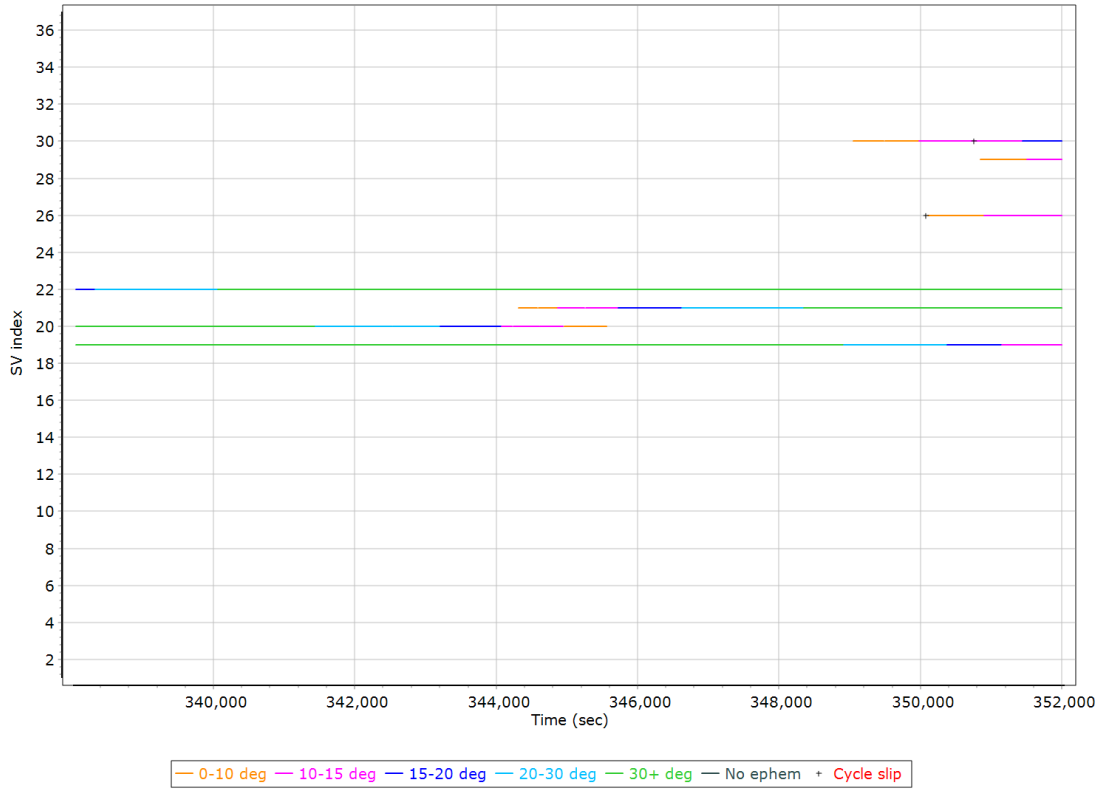
GPS L2 SNR



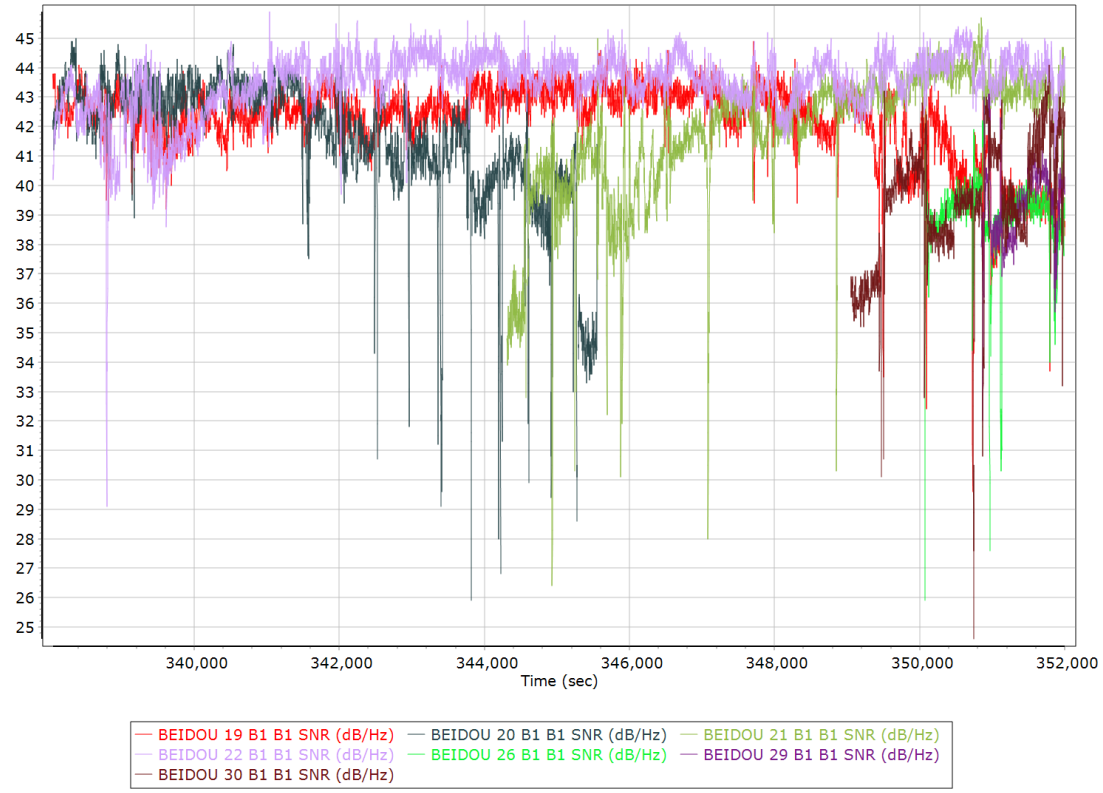
GLONASS L2 SNR



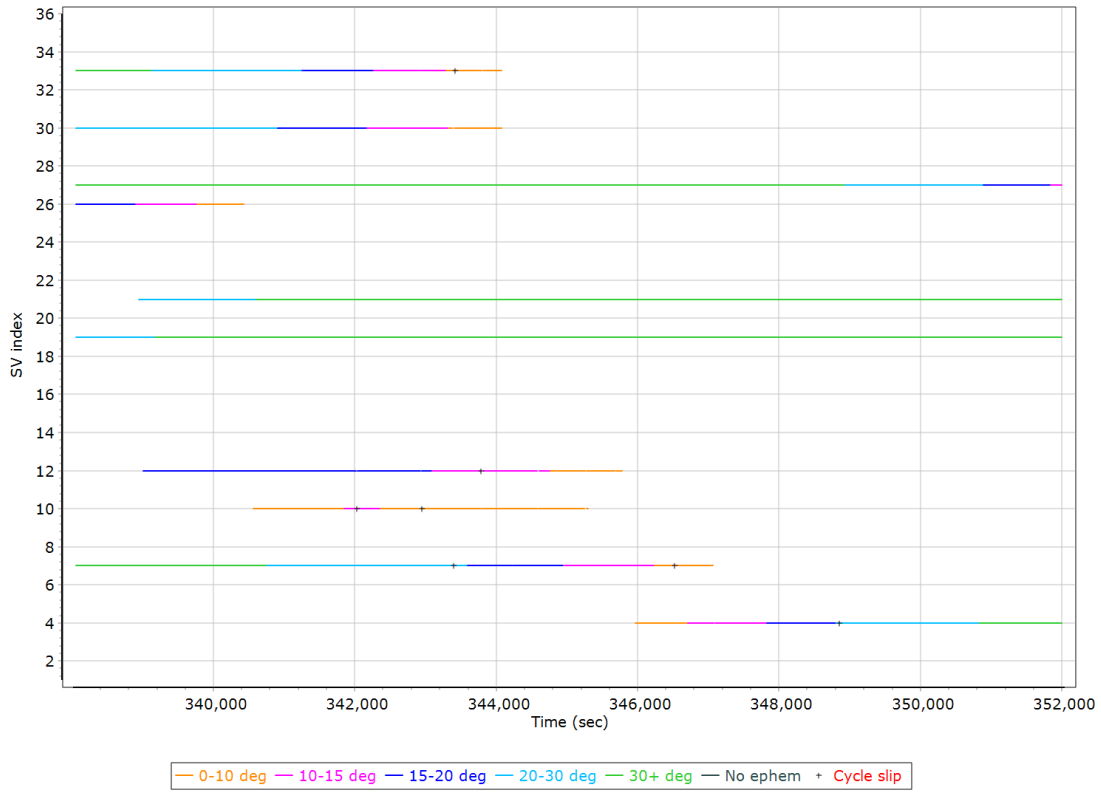
BEIDOU Satellite Lock/Elevation



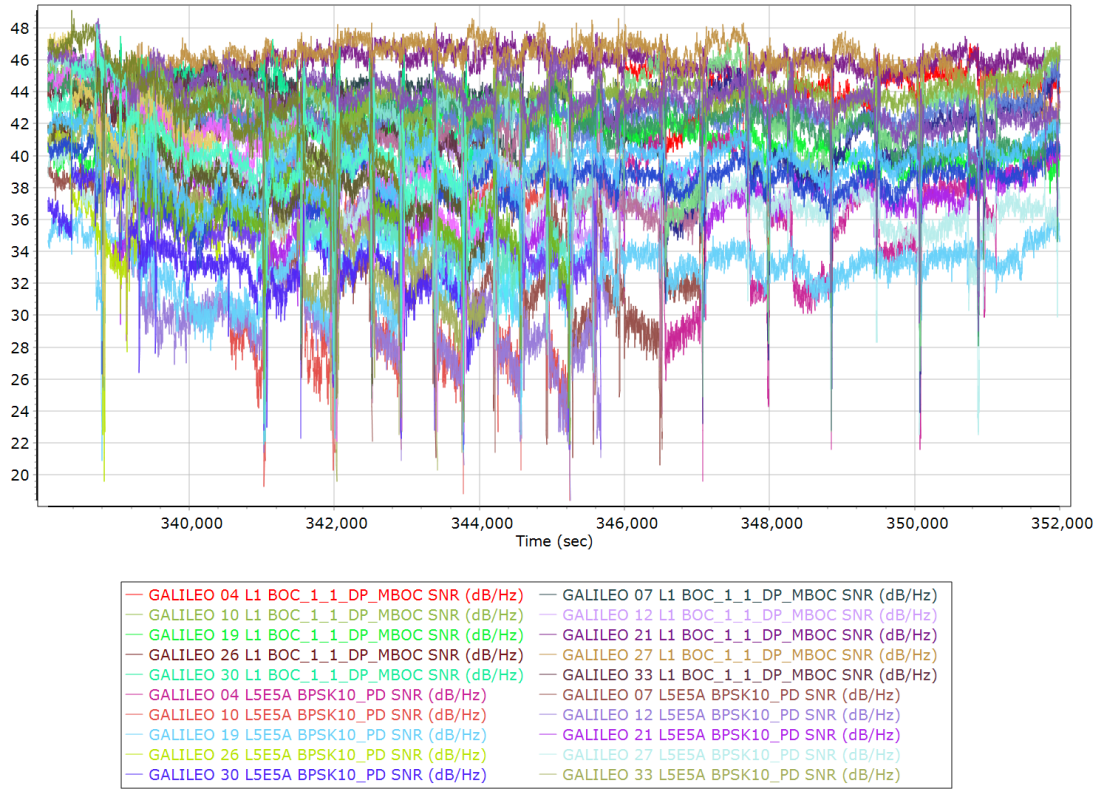
BEIDOU SNR



GALILEO Satellite Lock/Elevation

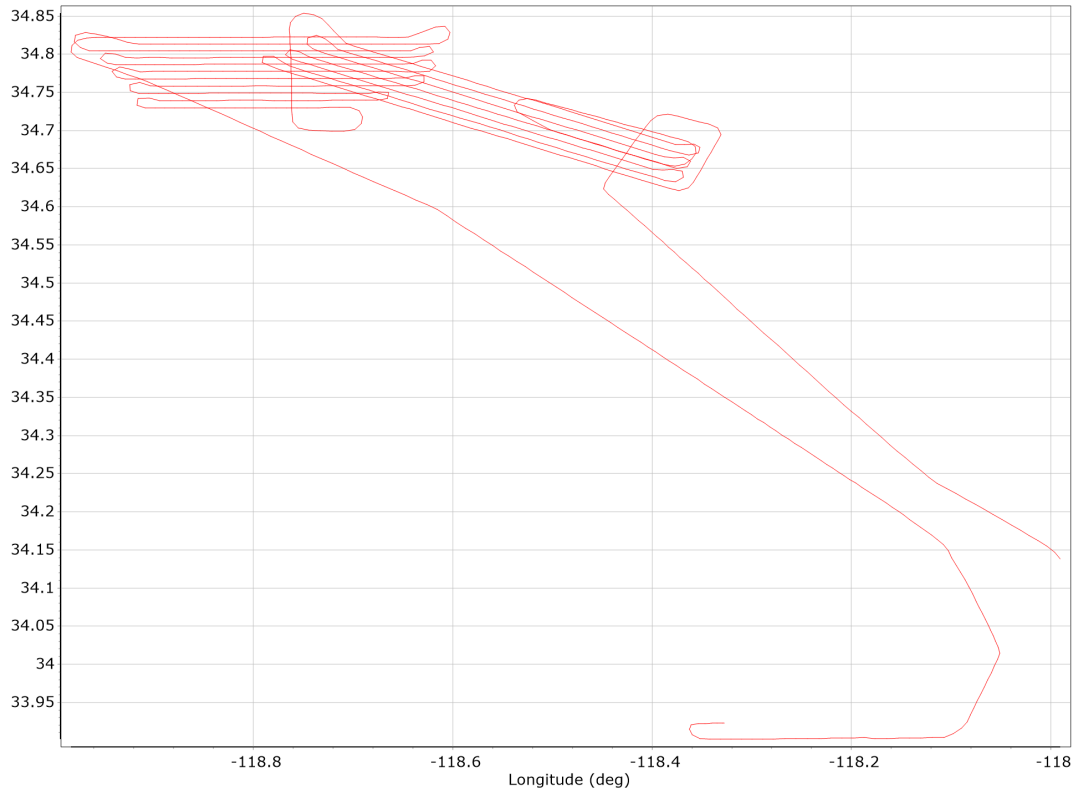


GALILEO SNR

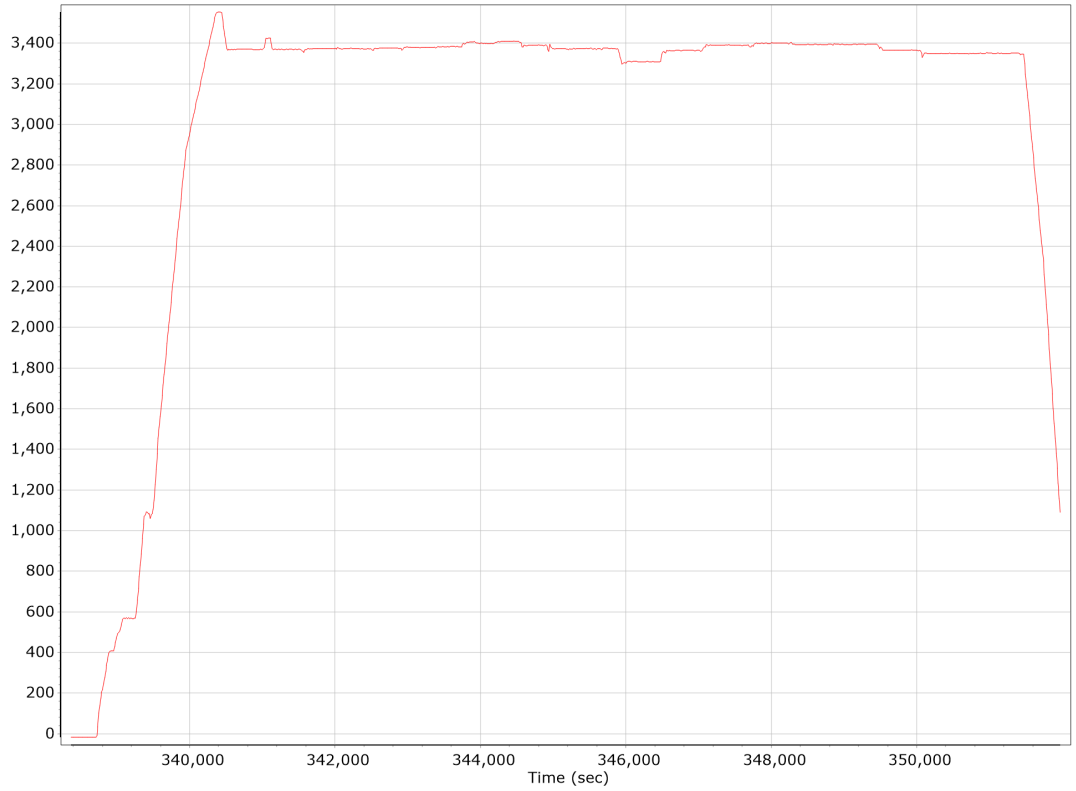

48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
340,000
342,000
344,000
346,000
348,000
350,000
352,000
Time (sec)
GALILEO 04 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 07 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 10 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 12 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 19 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 21 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 26 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 27 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 30 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 33 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 04 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 07 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 10 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 12 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 19 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 21 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 26 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 27 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 30 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 33 L5E5A BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

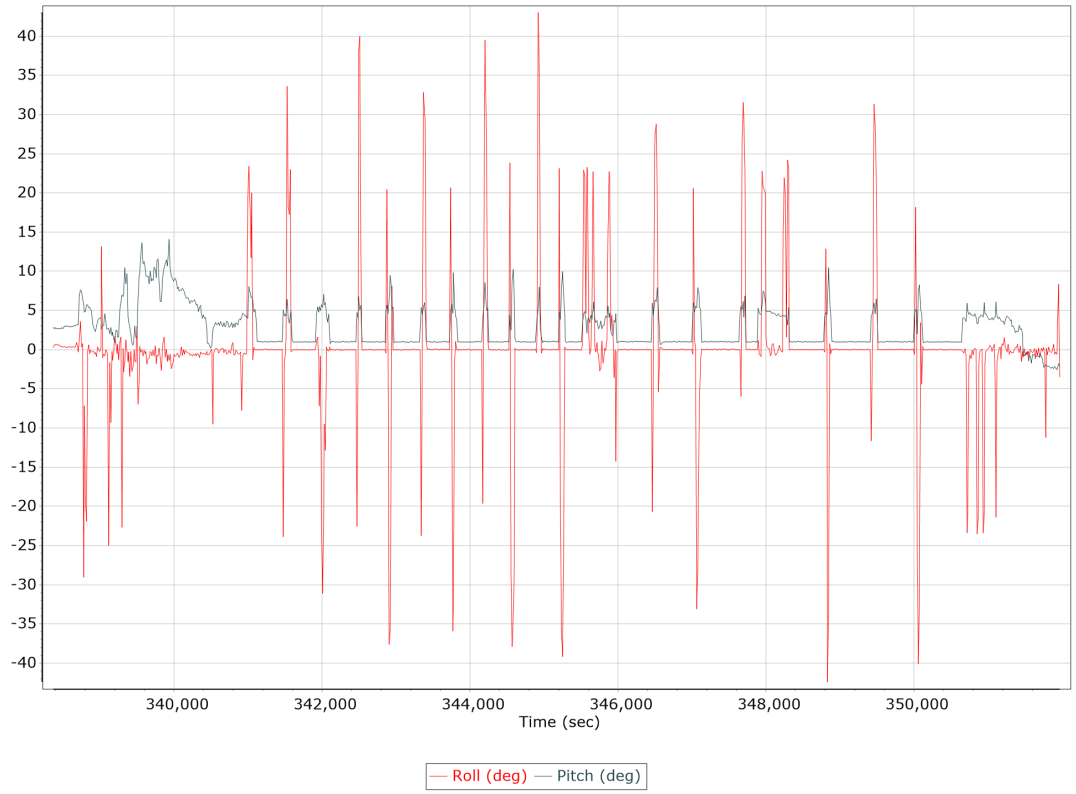
Top View



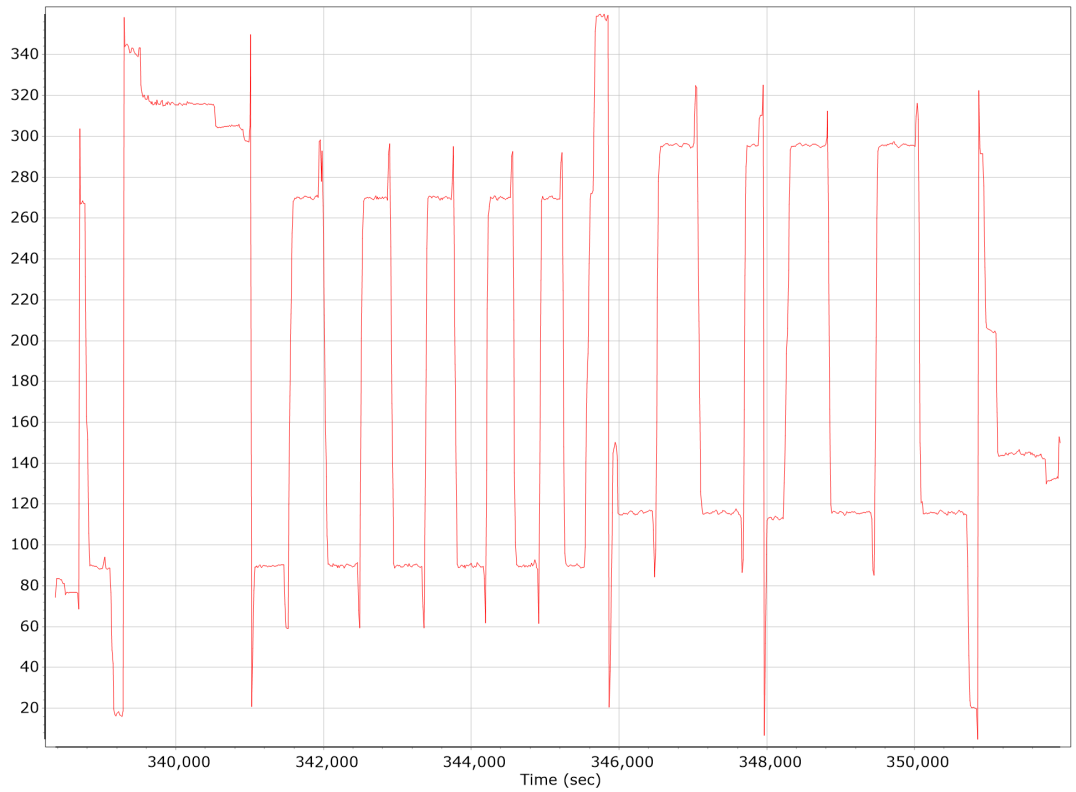
Altitude



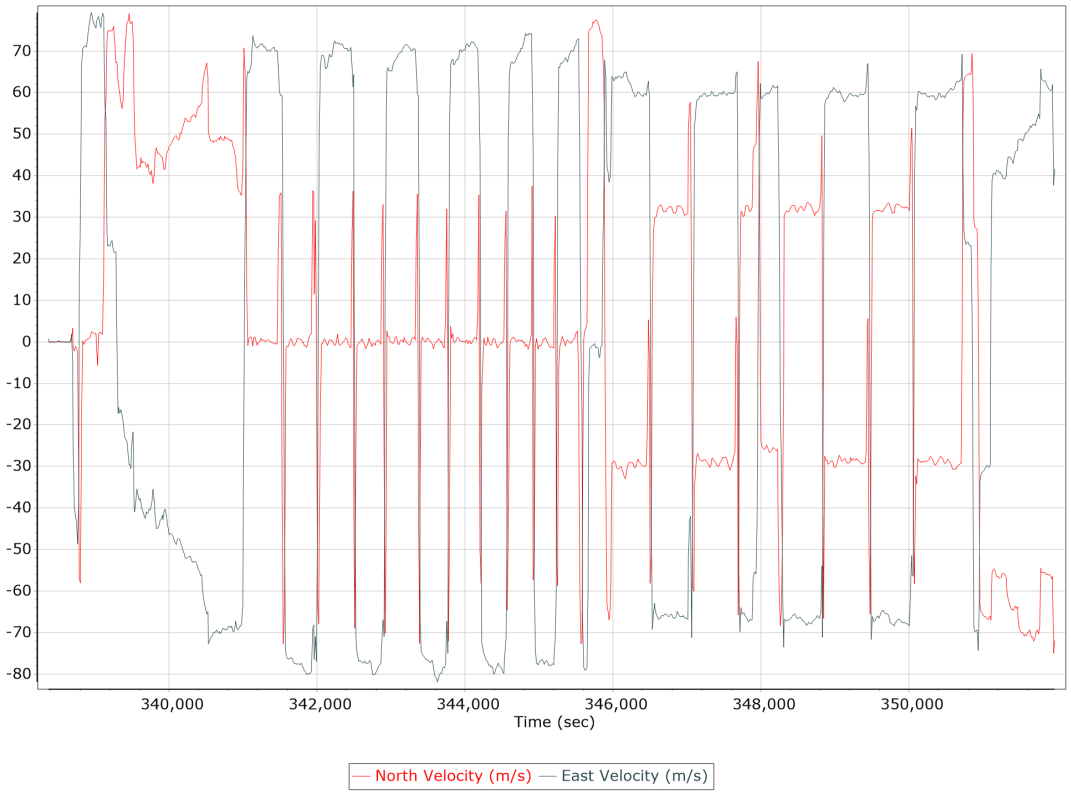
Roll/Pitch



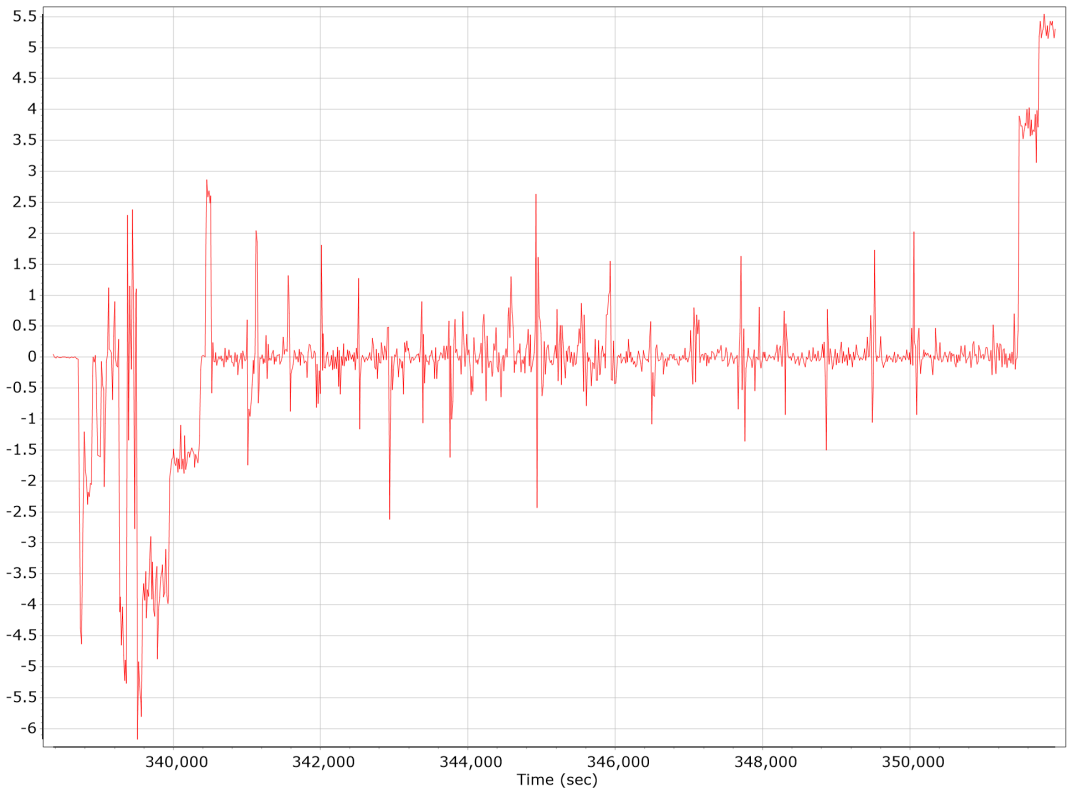
Heading



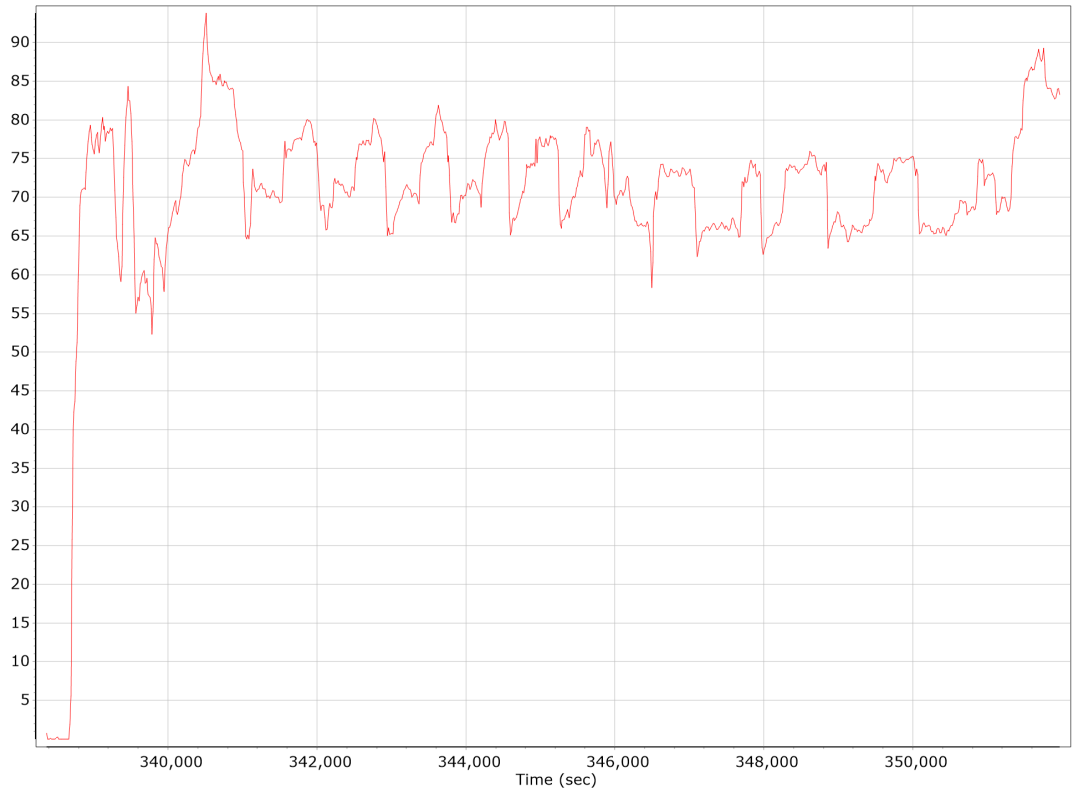
North/East Velocity



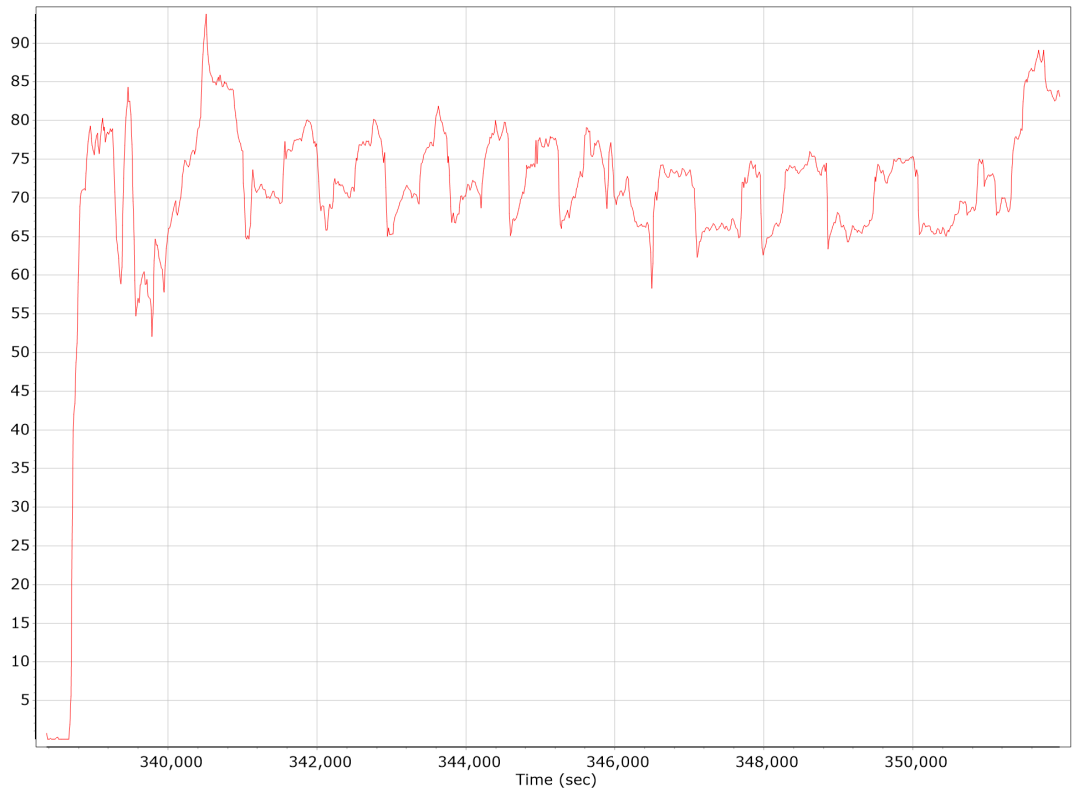
Down Velocity



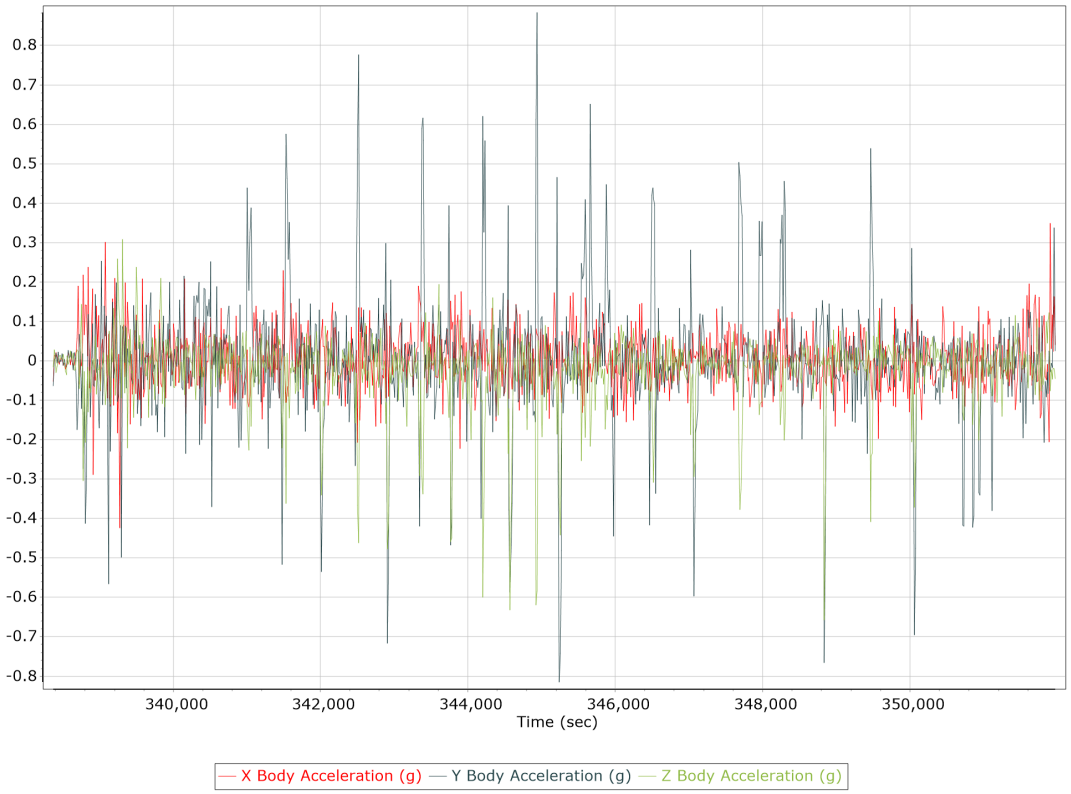
Total Speed



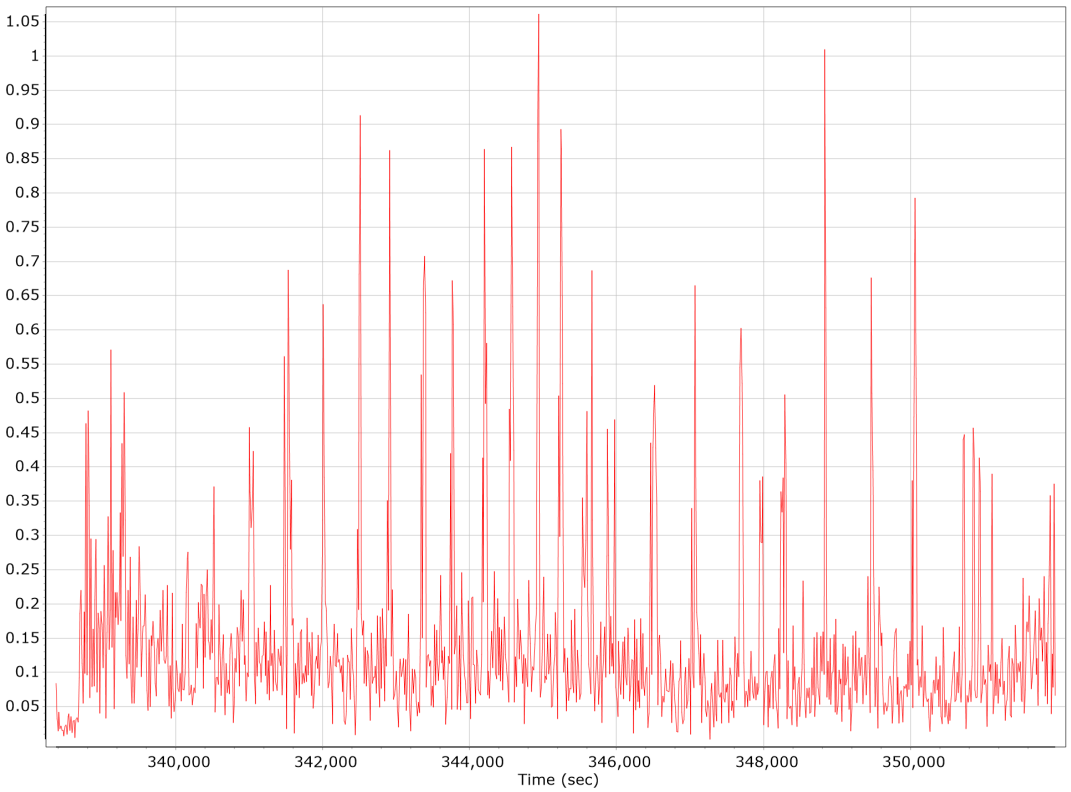
Ground Speed



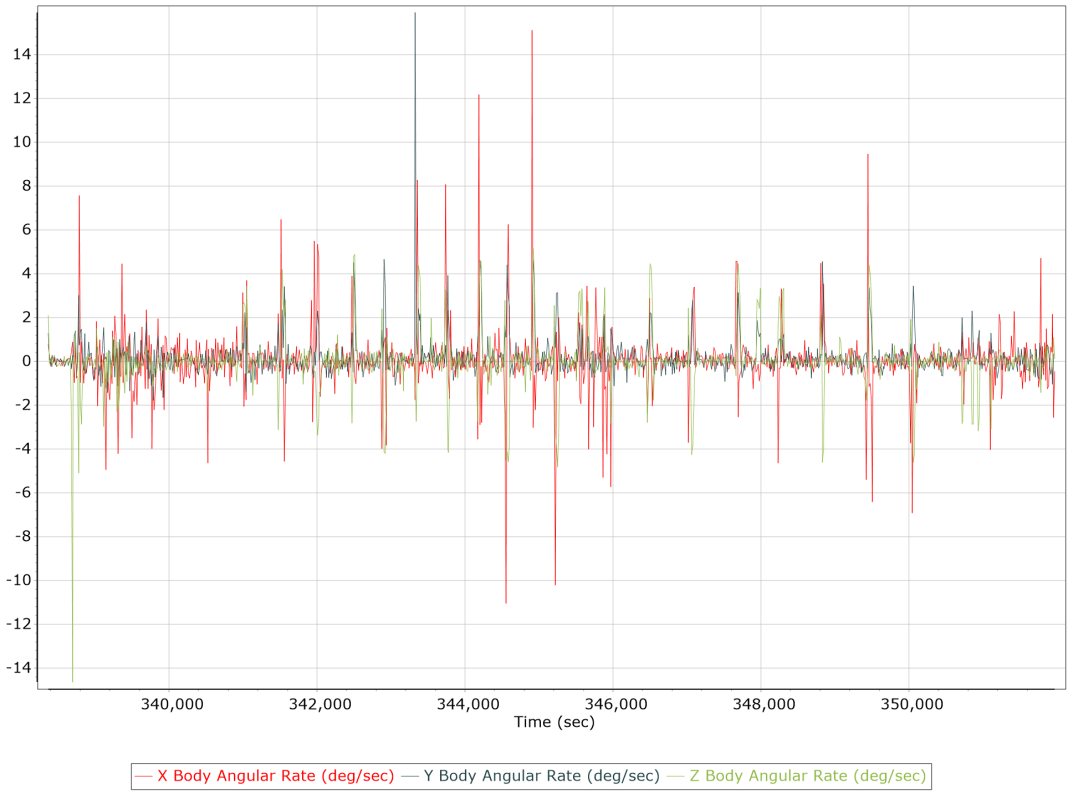
Body Acceleration



Total Body Acceleration

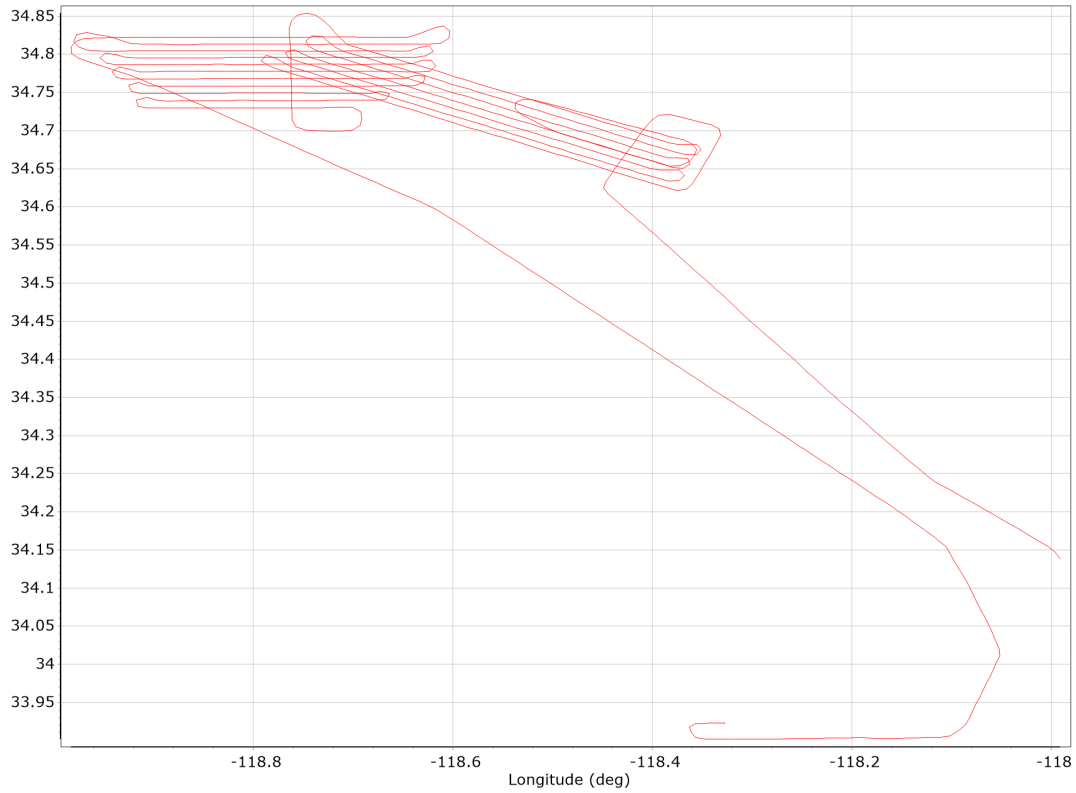


Body Angular Rate

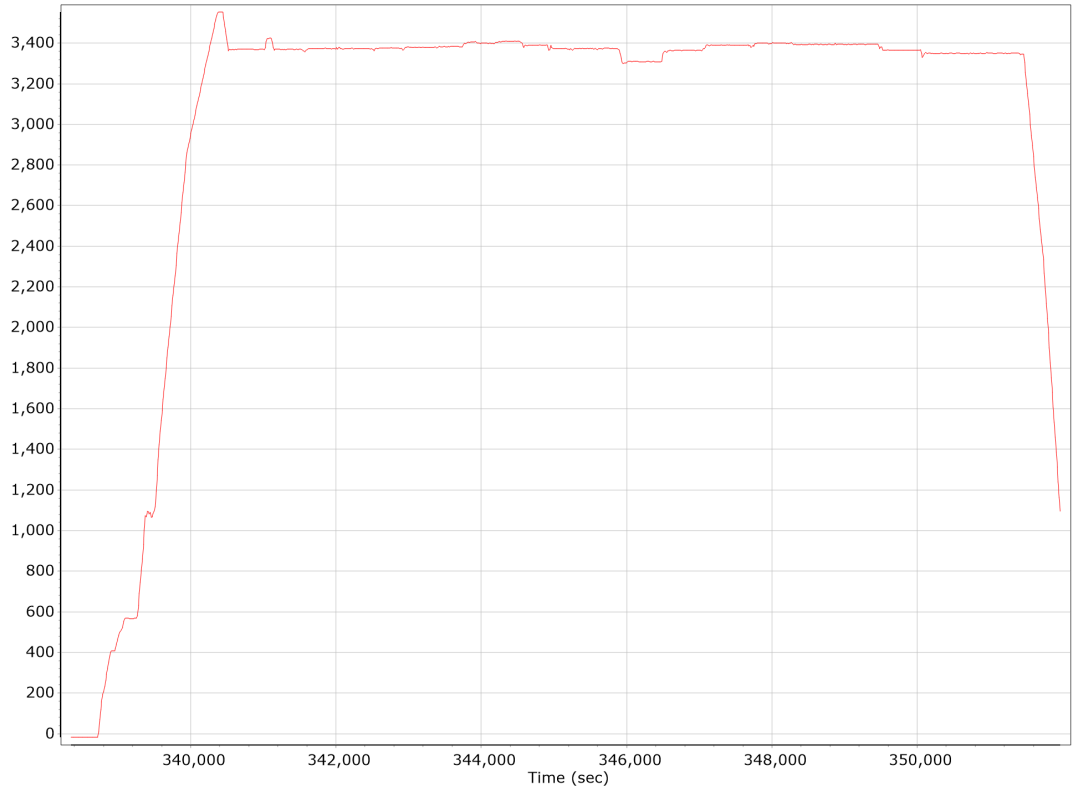


Forward Processed Trajectory Information

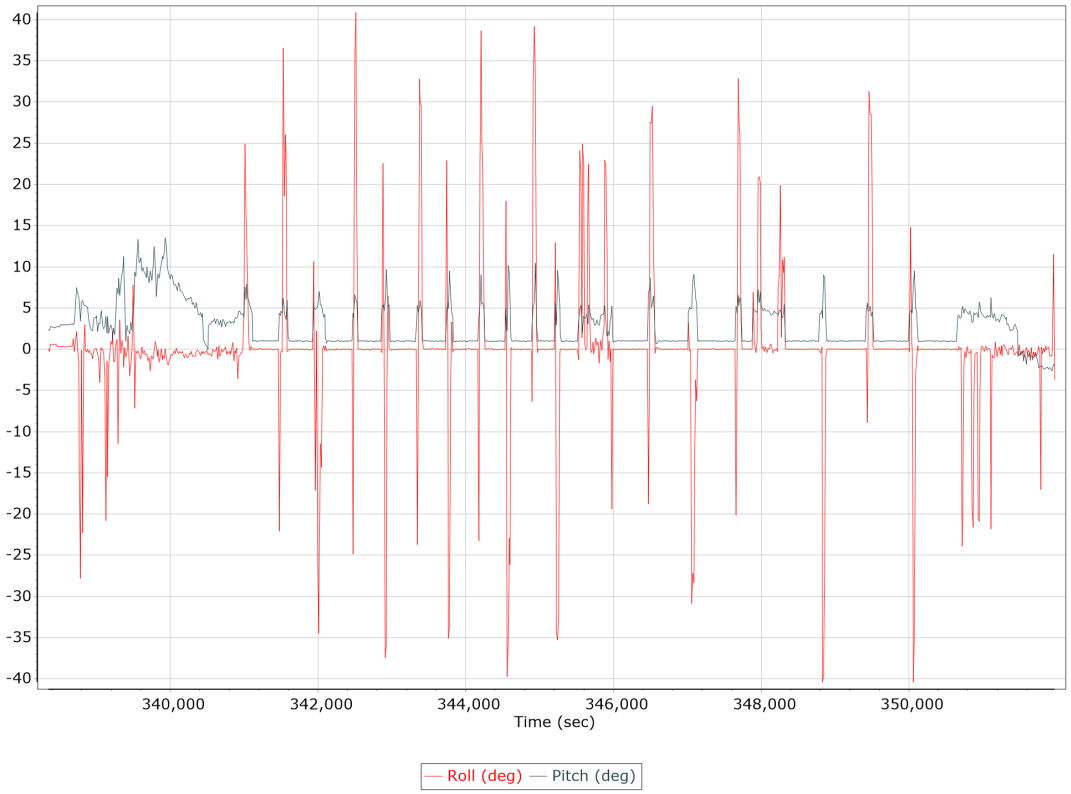
Top View



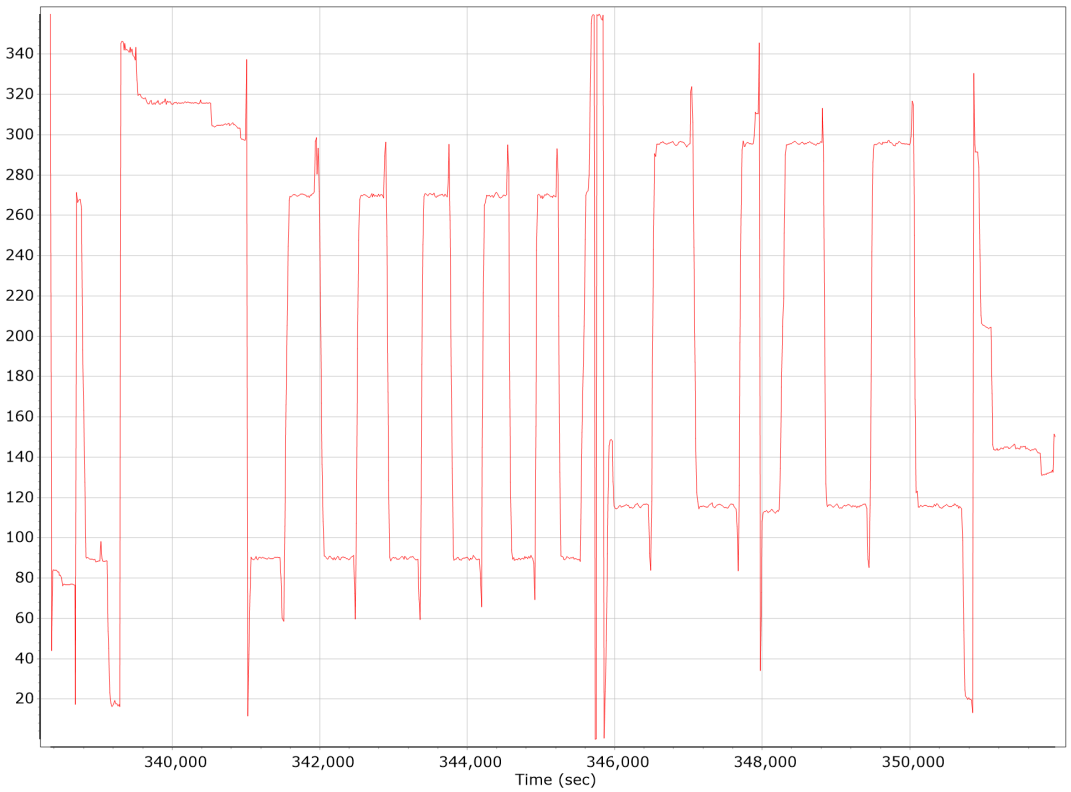
Altitude



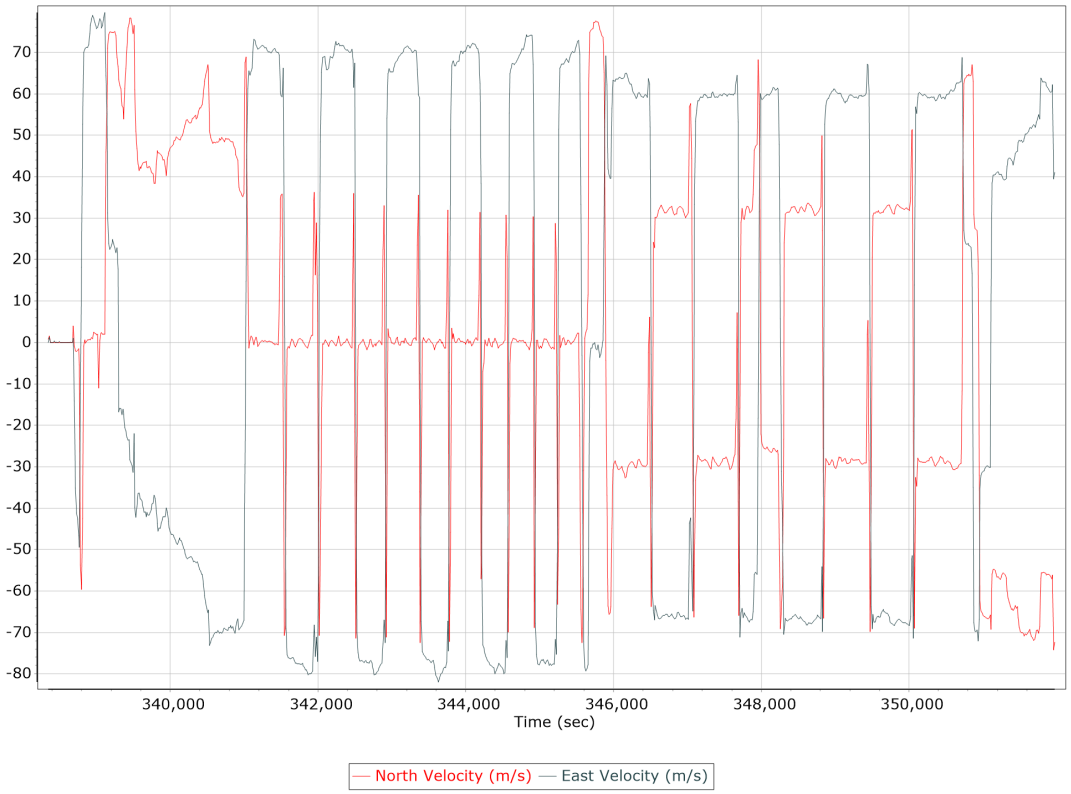
Roll/Pitch



Heading



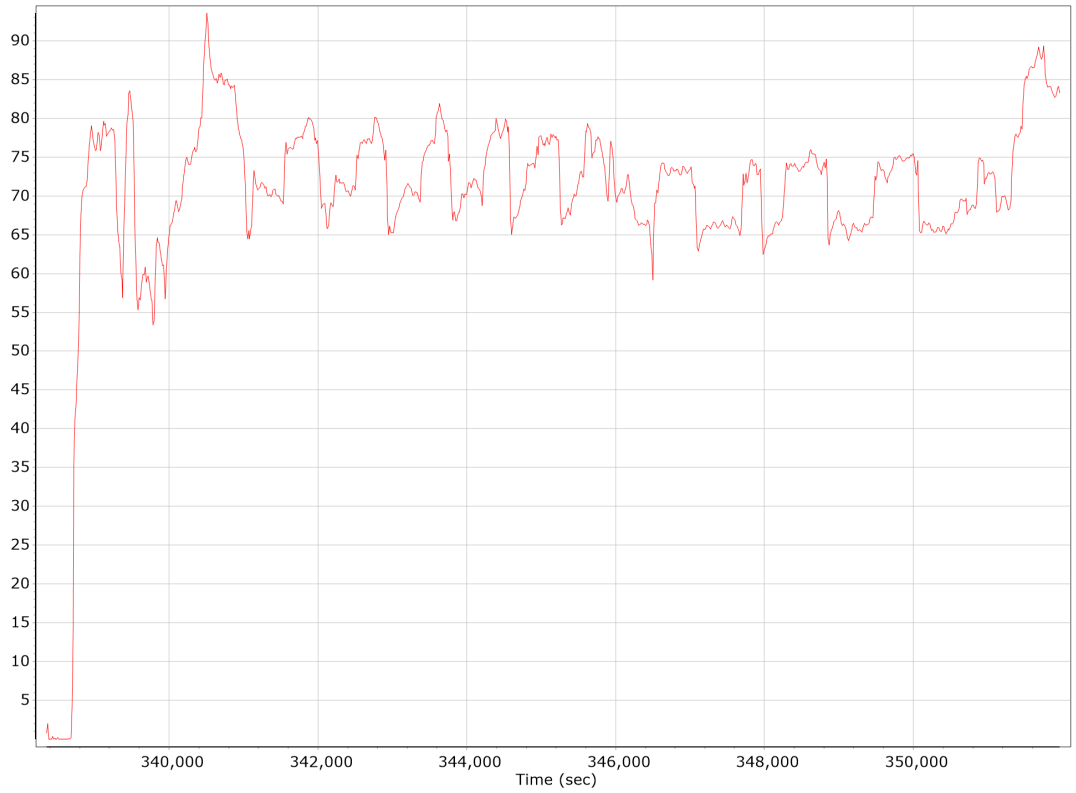
North/East Velocity



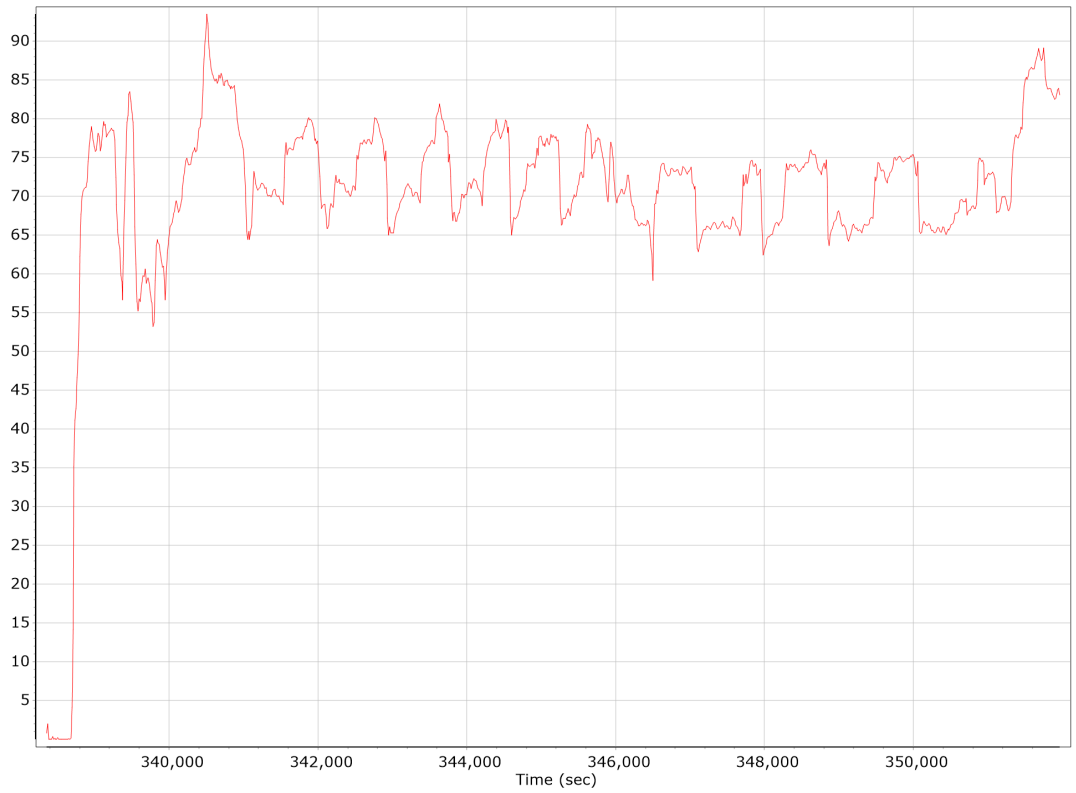
Down Velocity



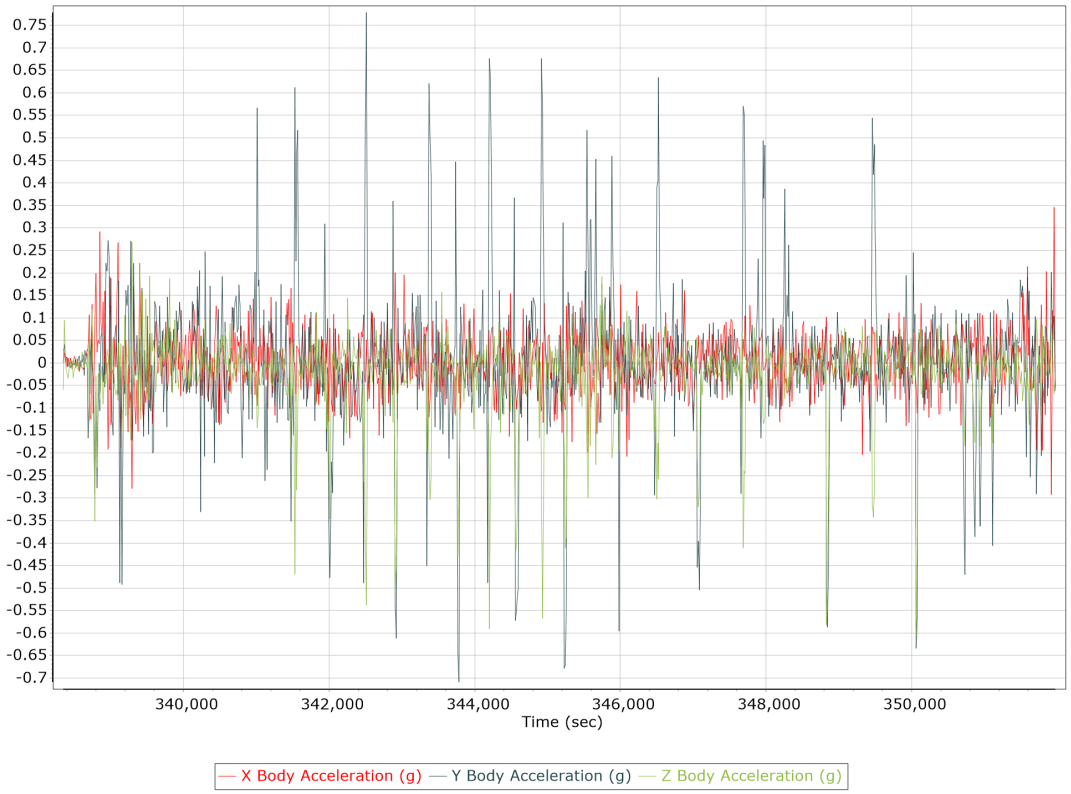
Total Speed



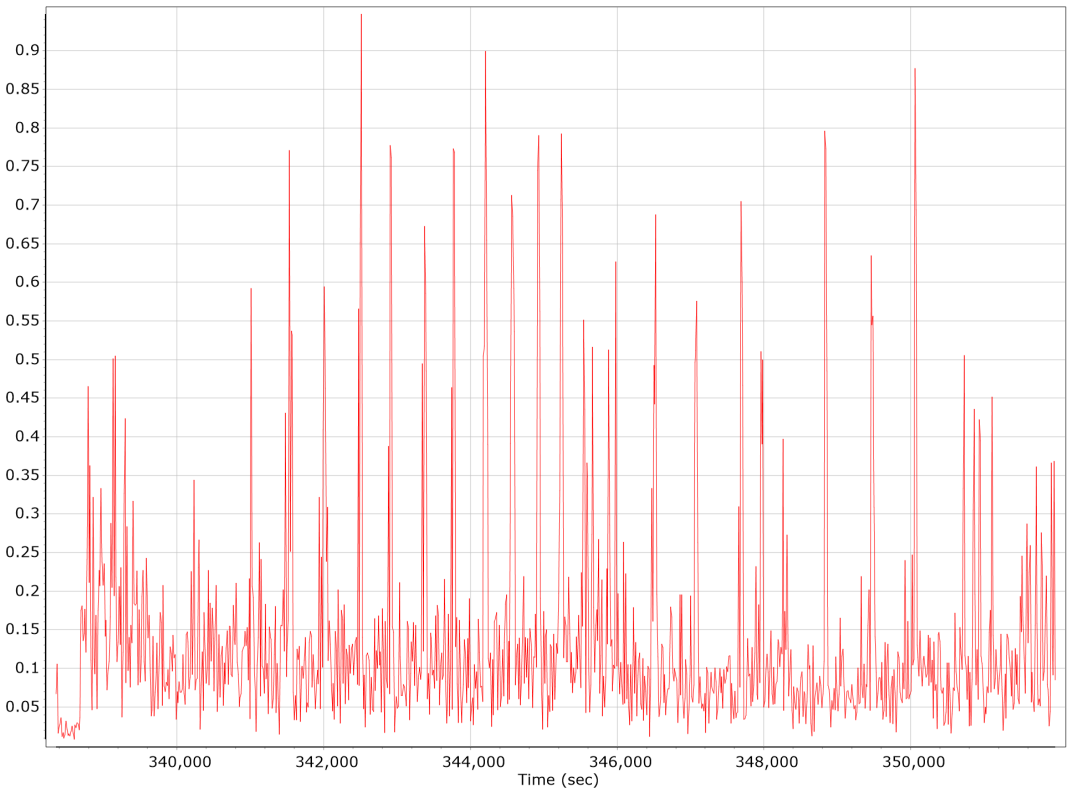
Ground Speed



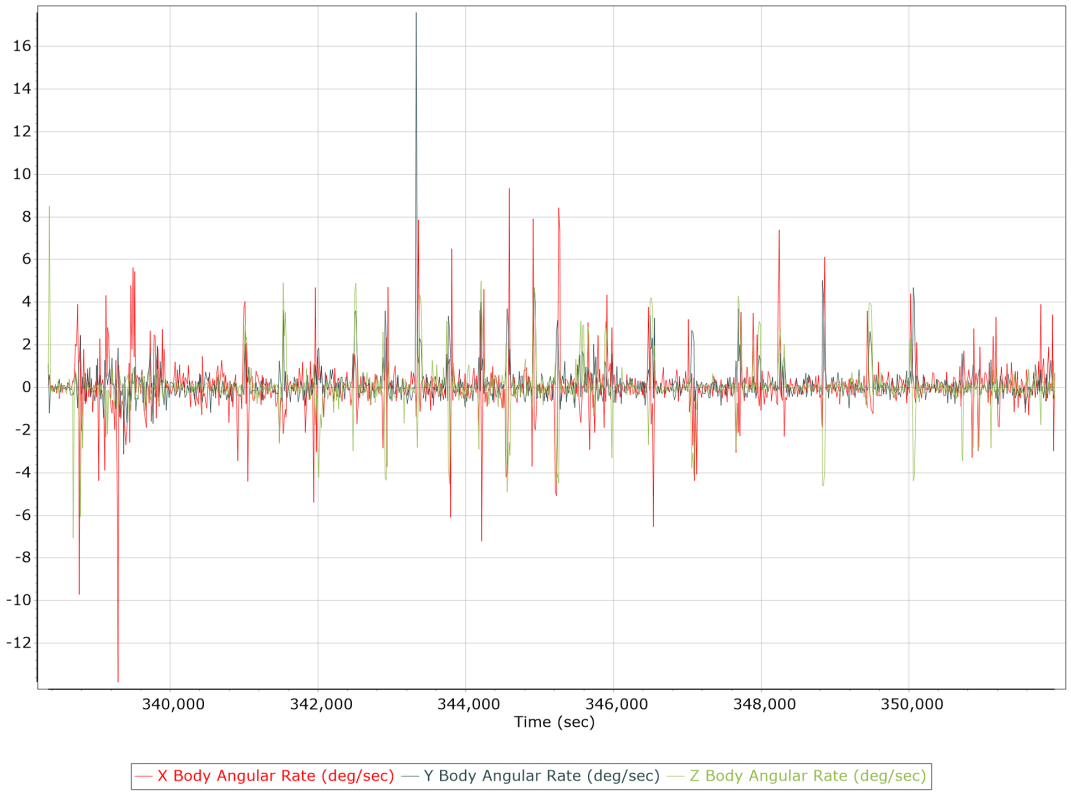
Body Acceleration



Total Body Acceleration



Body Angular Rate

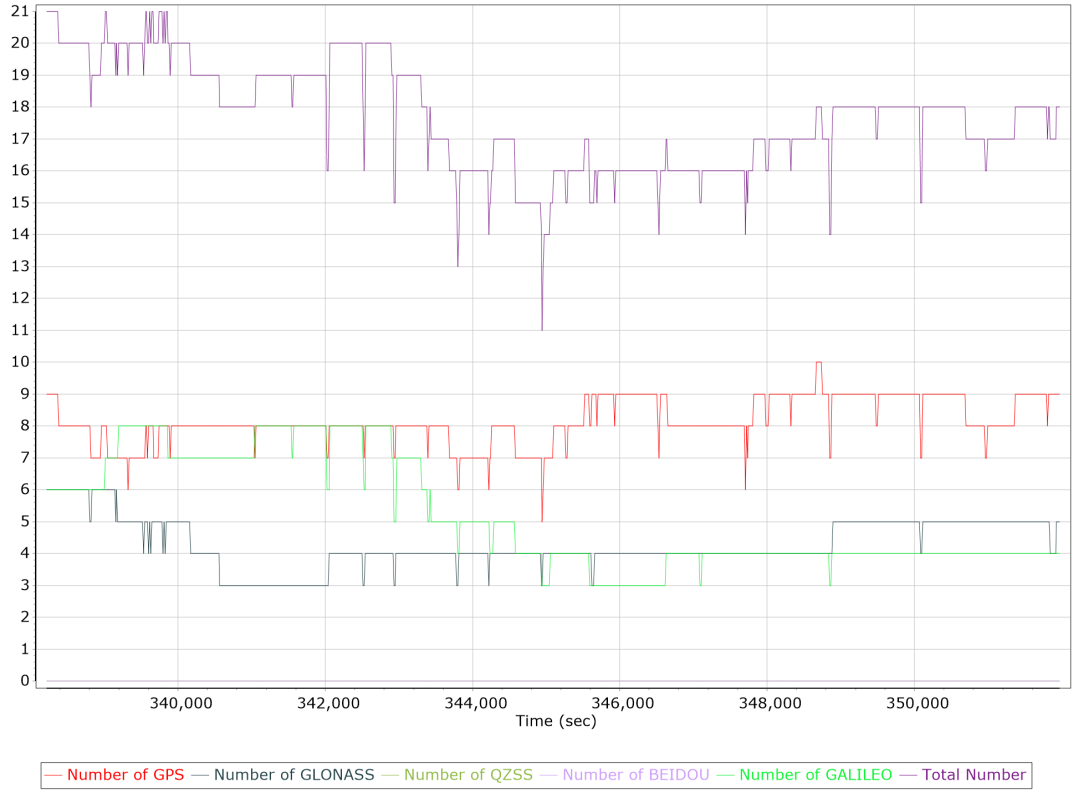


GNSS QC

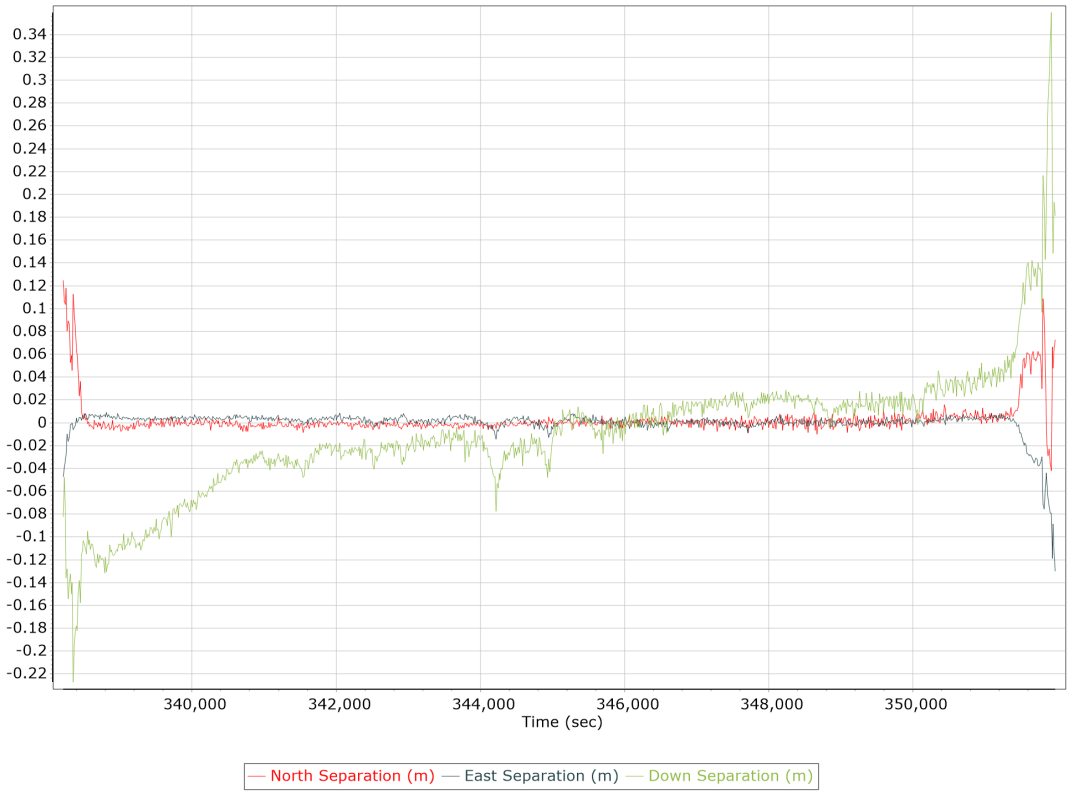
GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	5	10	8
Number of GLONASS SV	3	7	4
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	3	8	5
Total number of SV	11	22	18
PDOP	1.11	2.57	1.30
QC Solution Gaps	0.00	0.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	13932.00	0.00	0.00
Percentage	100.00	0.00	0.00

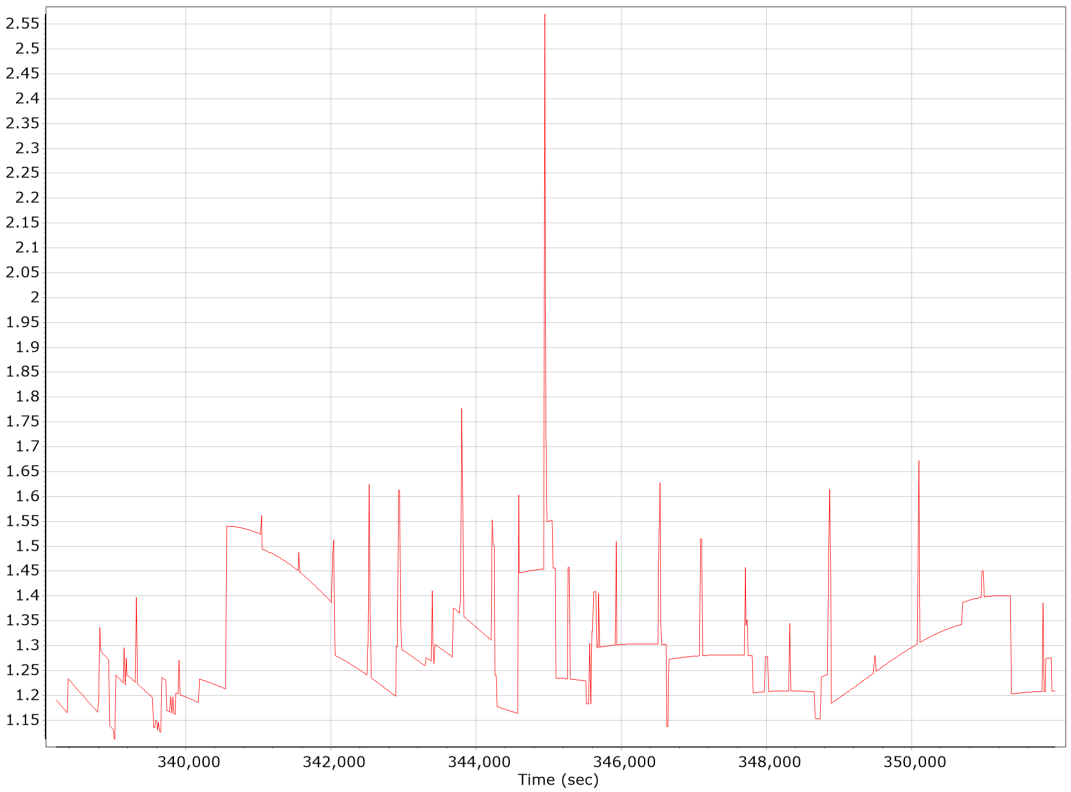
Num SVs in solution



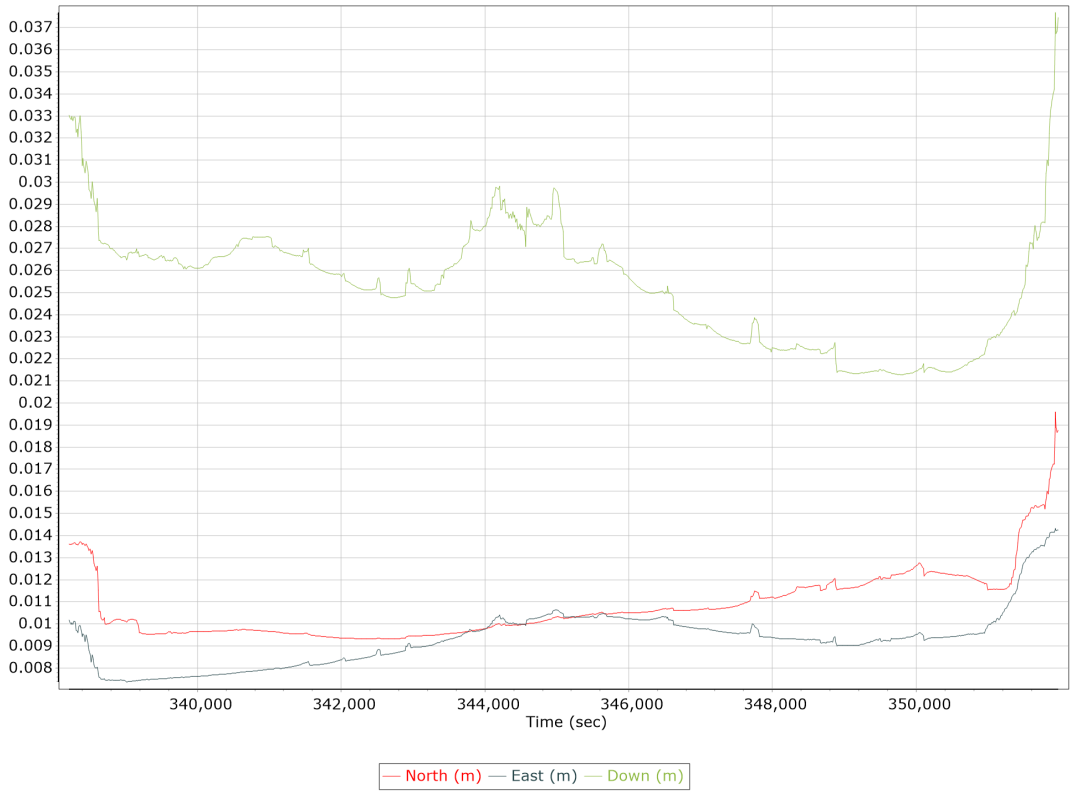
Forward/Reverse Separation



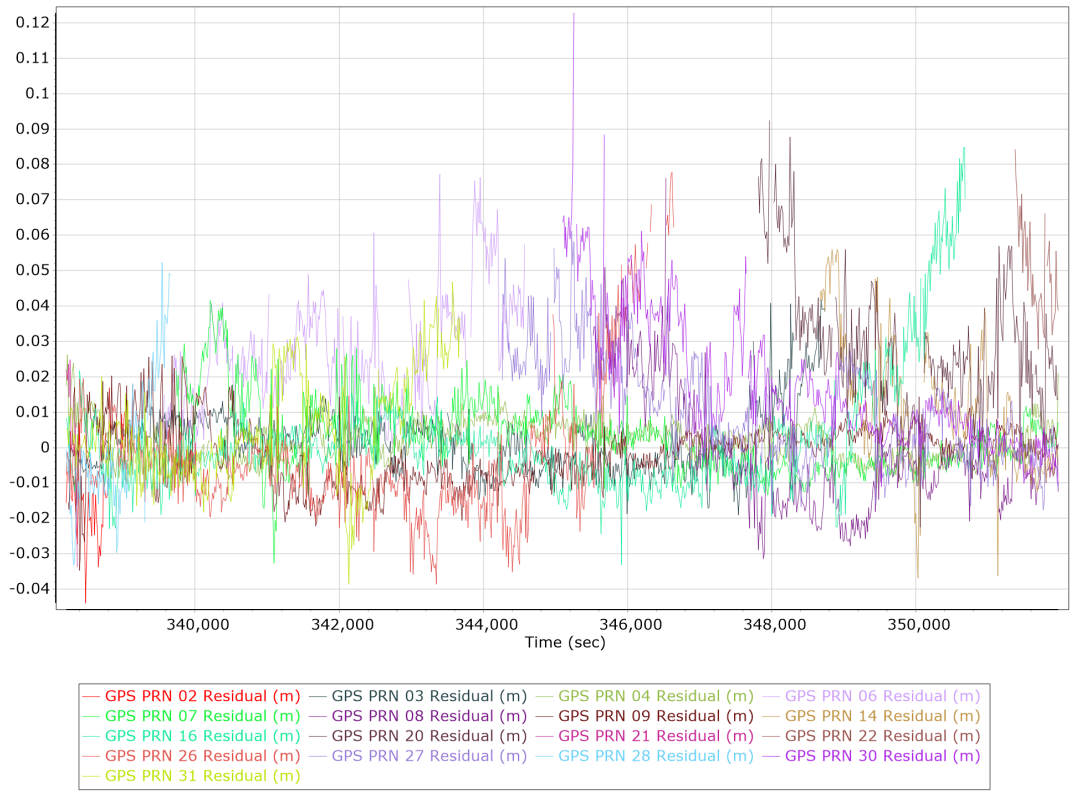
PDOP



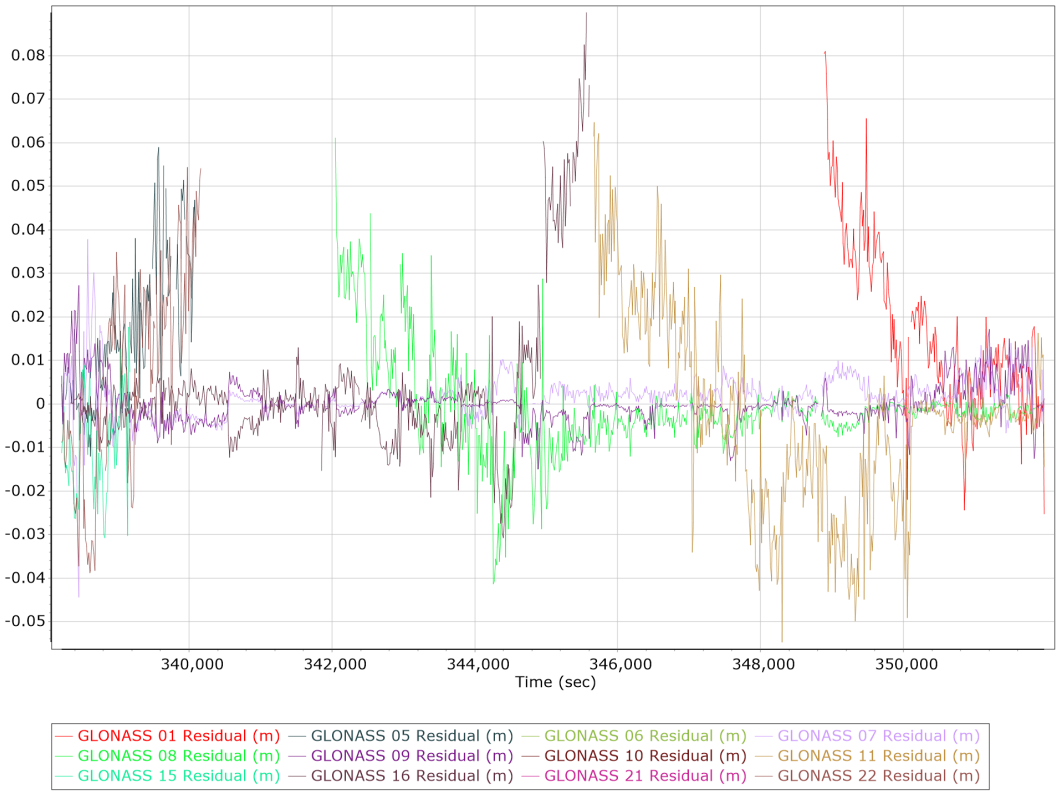
Estimated Position Accuracy



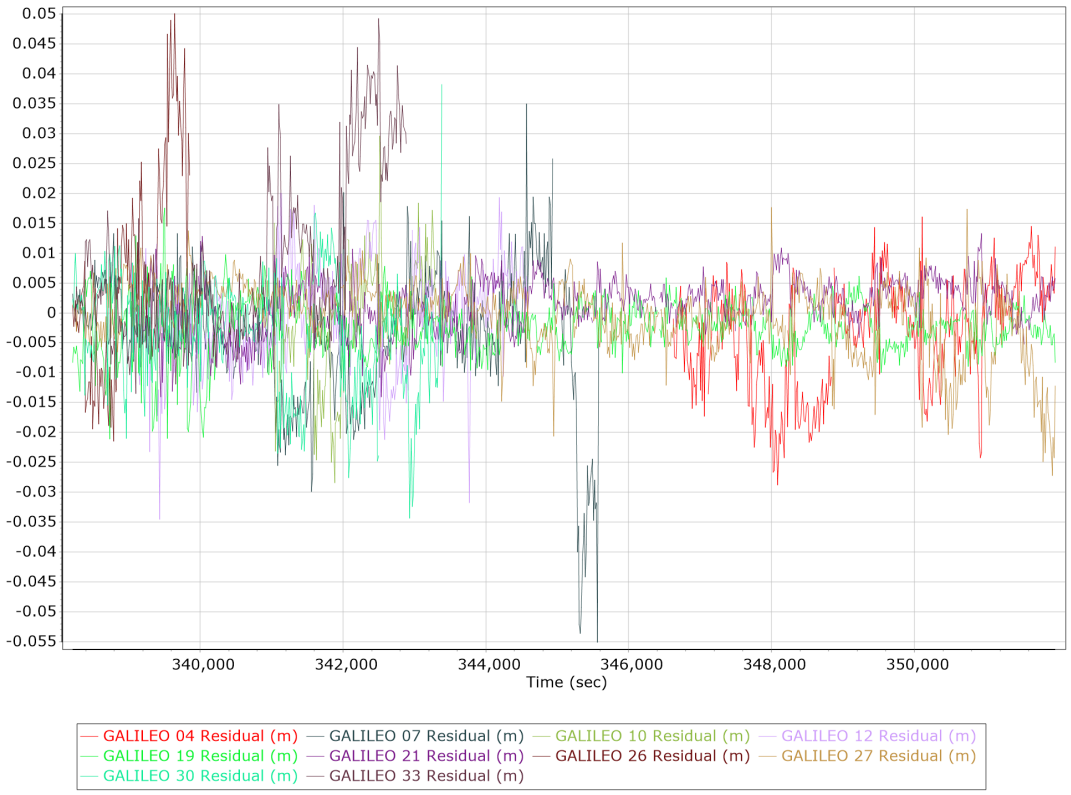
GPS Residuals



GLONASS Residuals



GALILEO Residuals



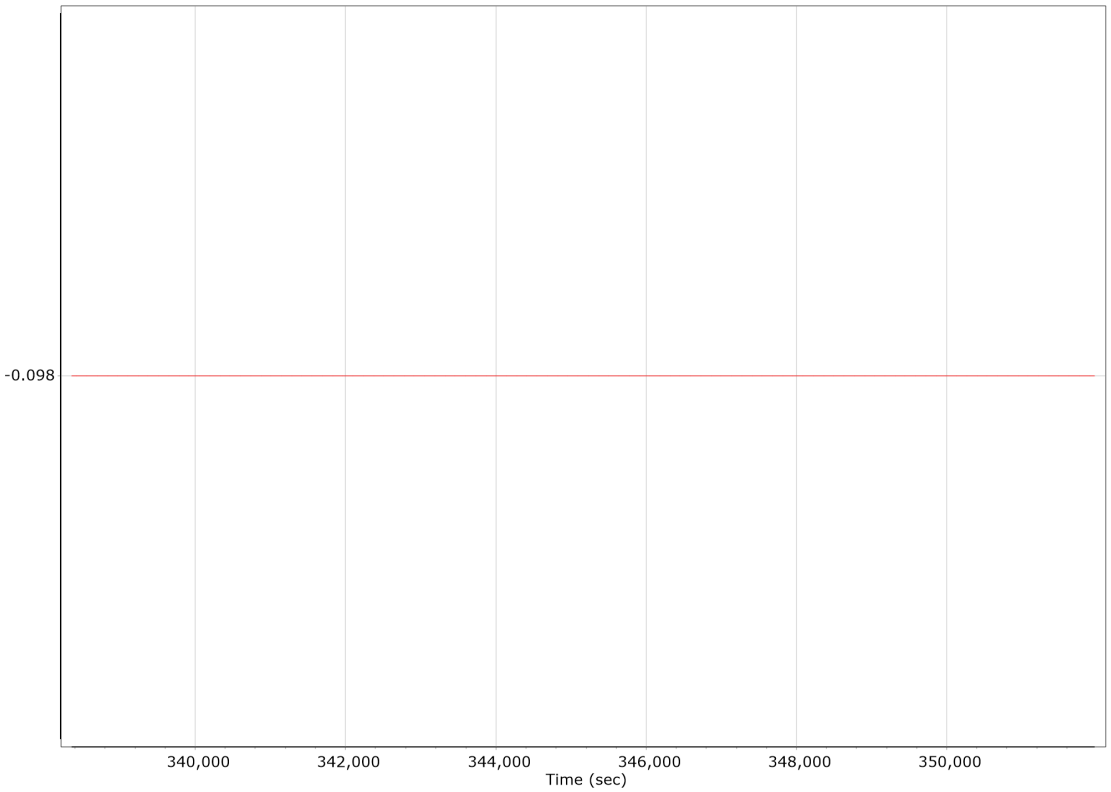
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	338037.000 (10/4/2023 9:53:57 PM)		
Processing end time	351984.000 (10/5/2023 1:46:24 AM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	-0.098	0.057	-1.221
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

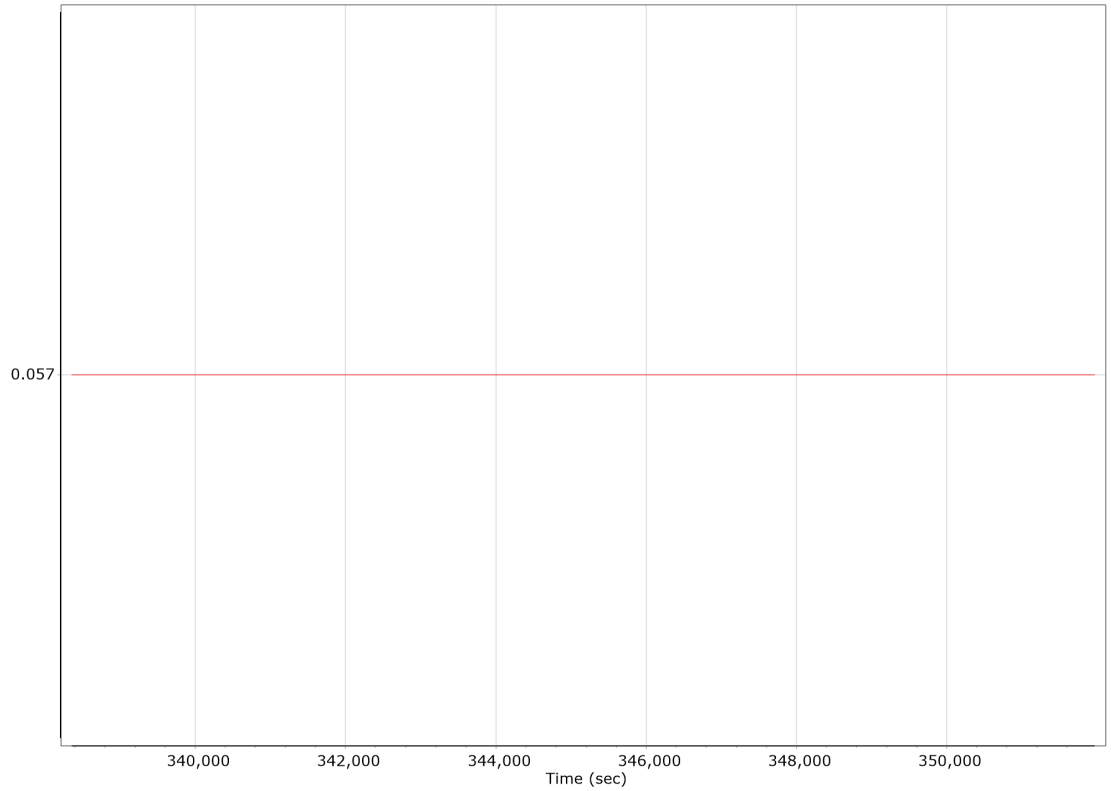
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

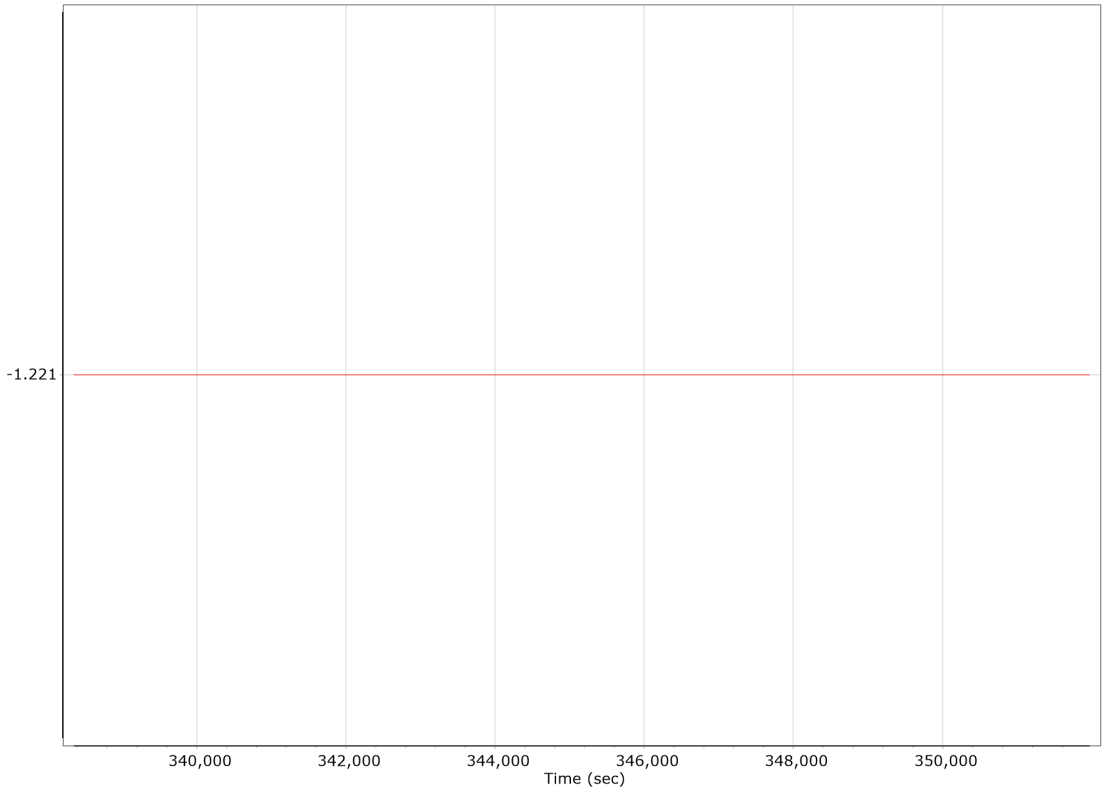
X Reference-Primary GNSS Lever Arm (m)



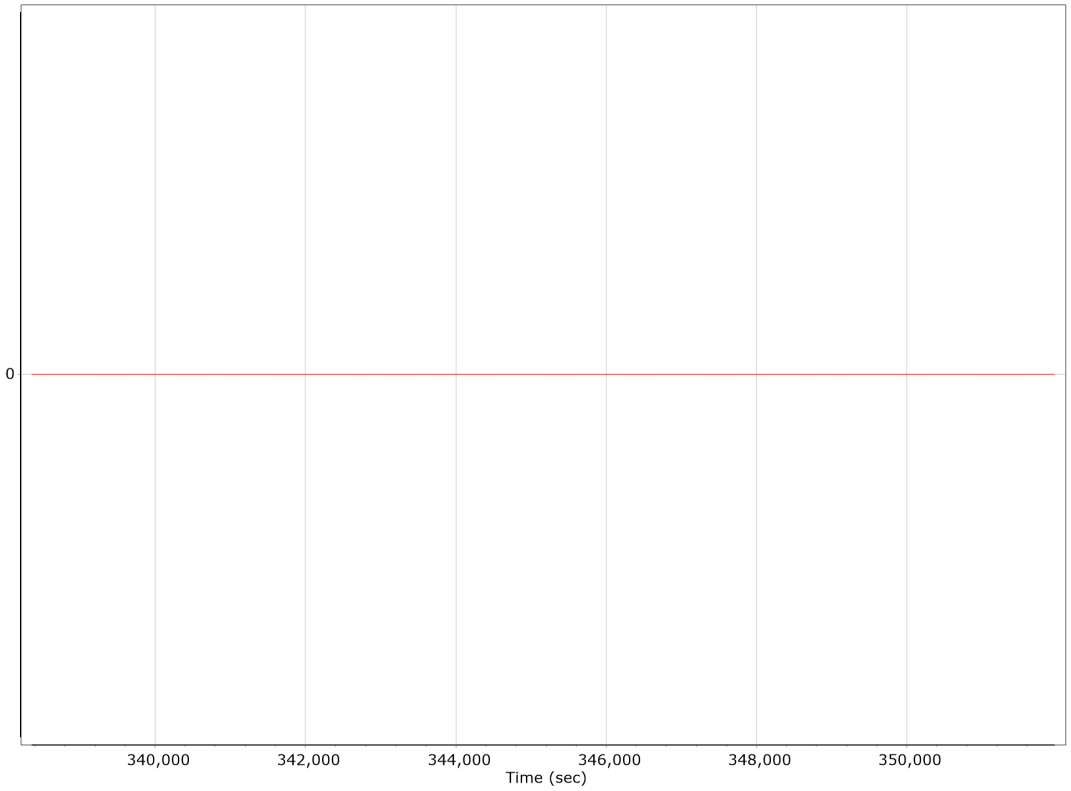
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



Reference-Primary GNSS Lever Arm Figure of Merit



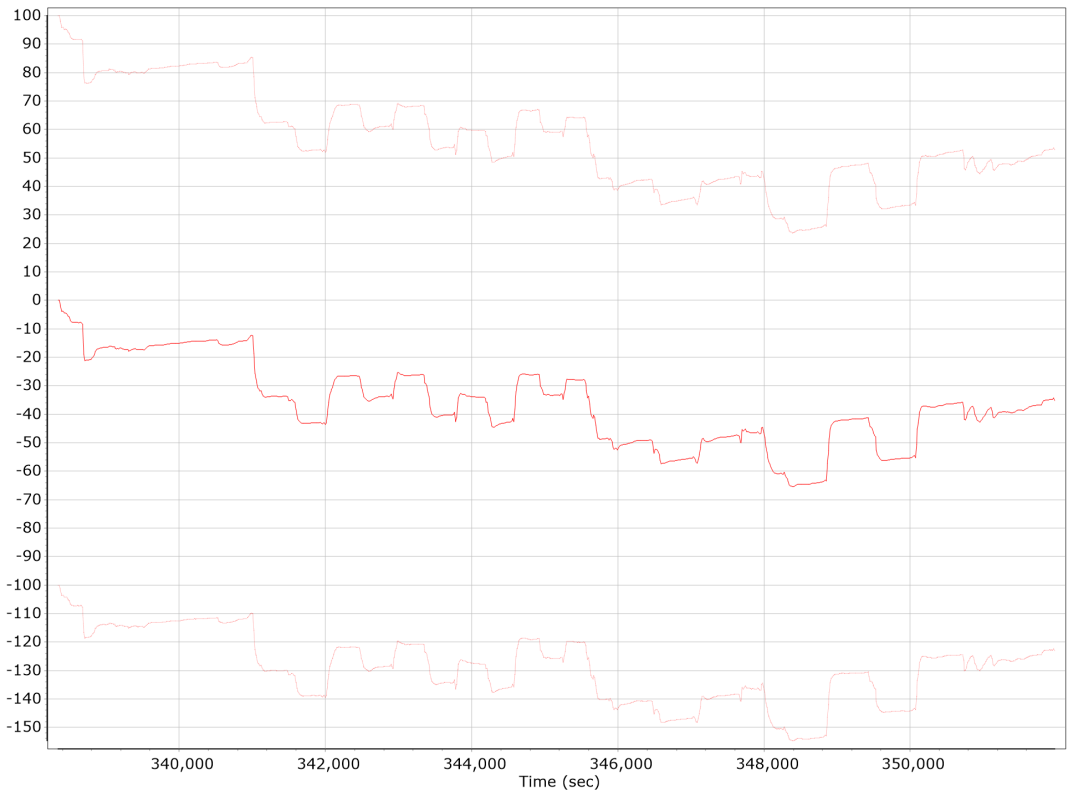
IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

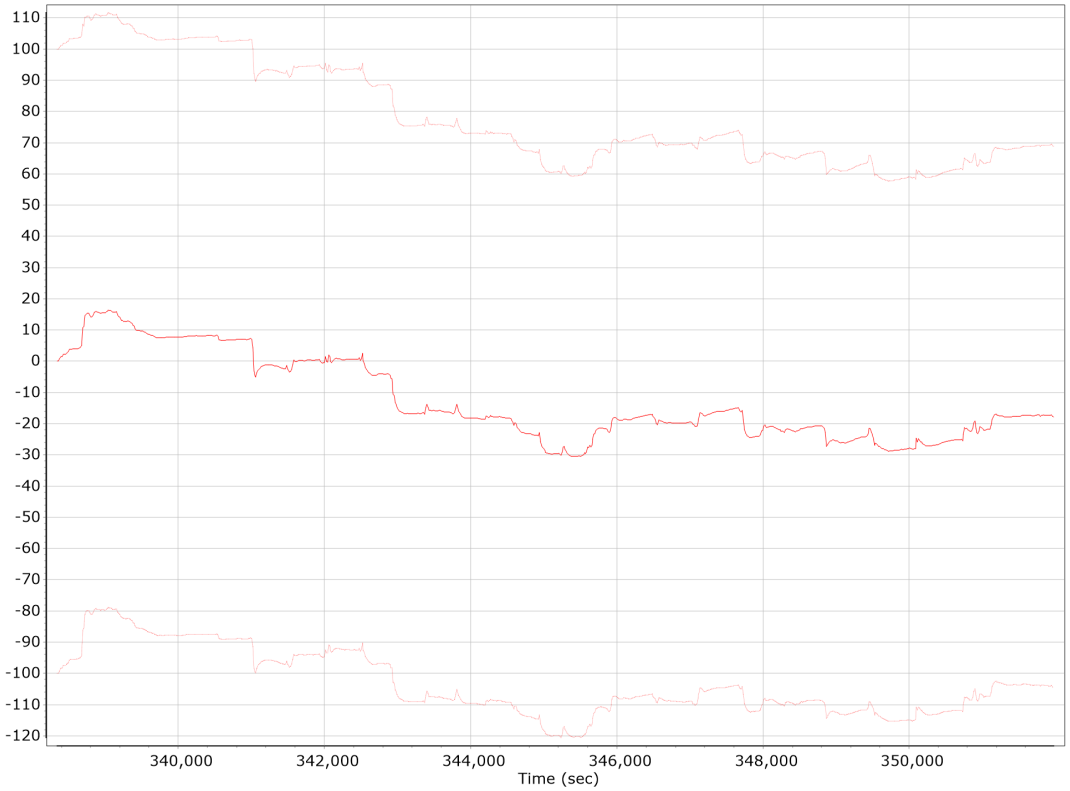
Accelerometer Bias (micro-g)



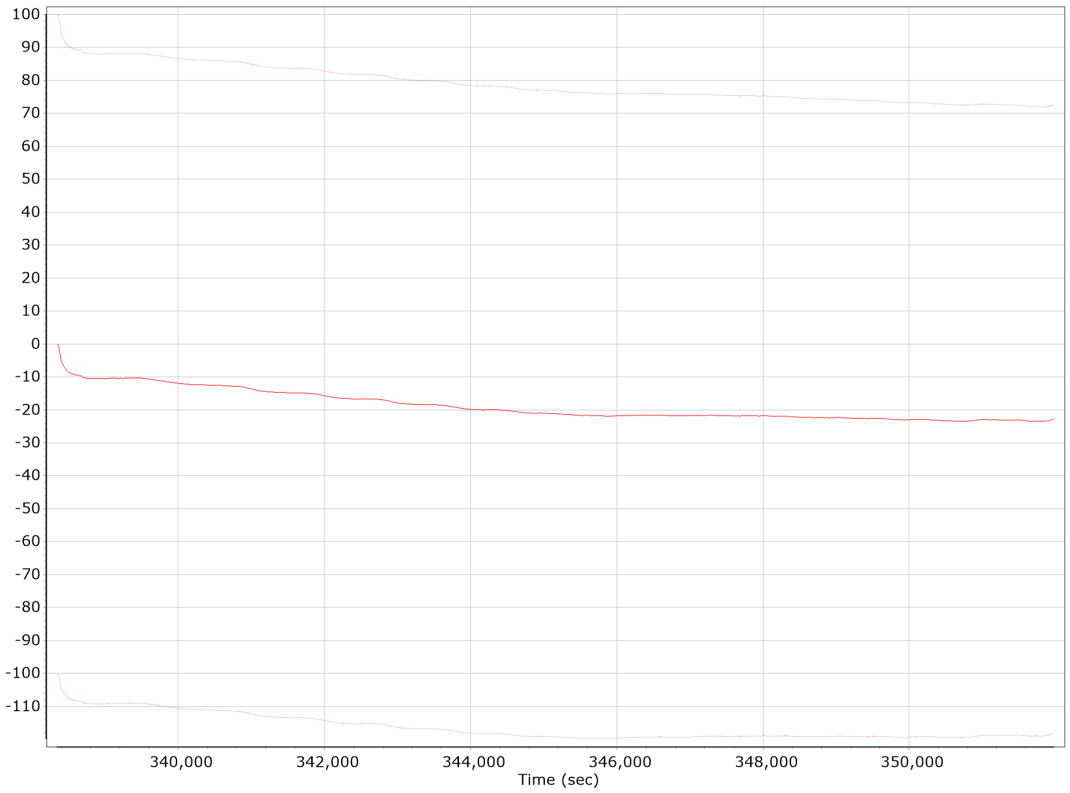
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



X Accelerometer Scale Error (ppm)



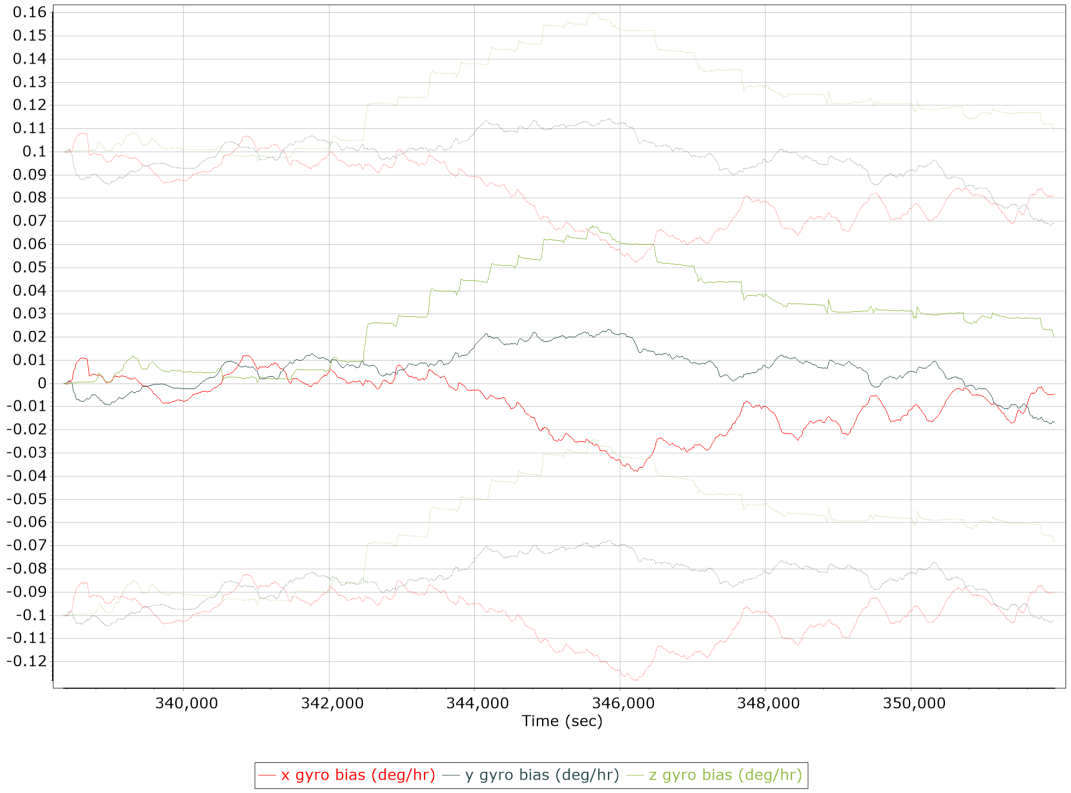
Y Accelerometer Scale Error (ppm)



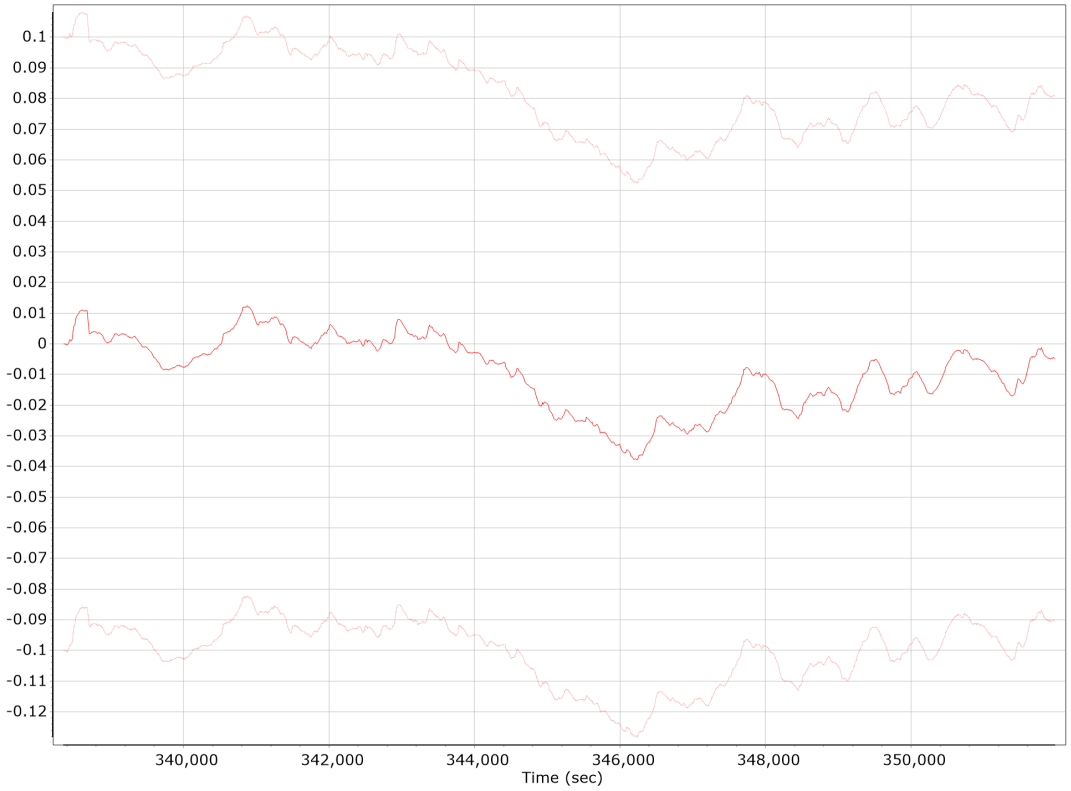
Z Accelerometer Scale Error (ppm)



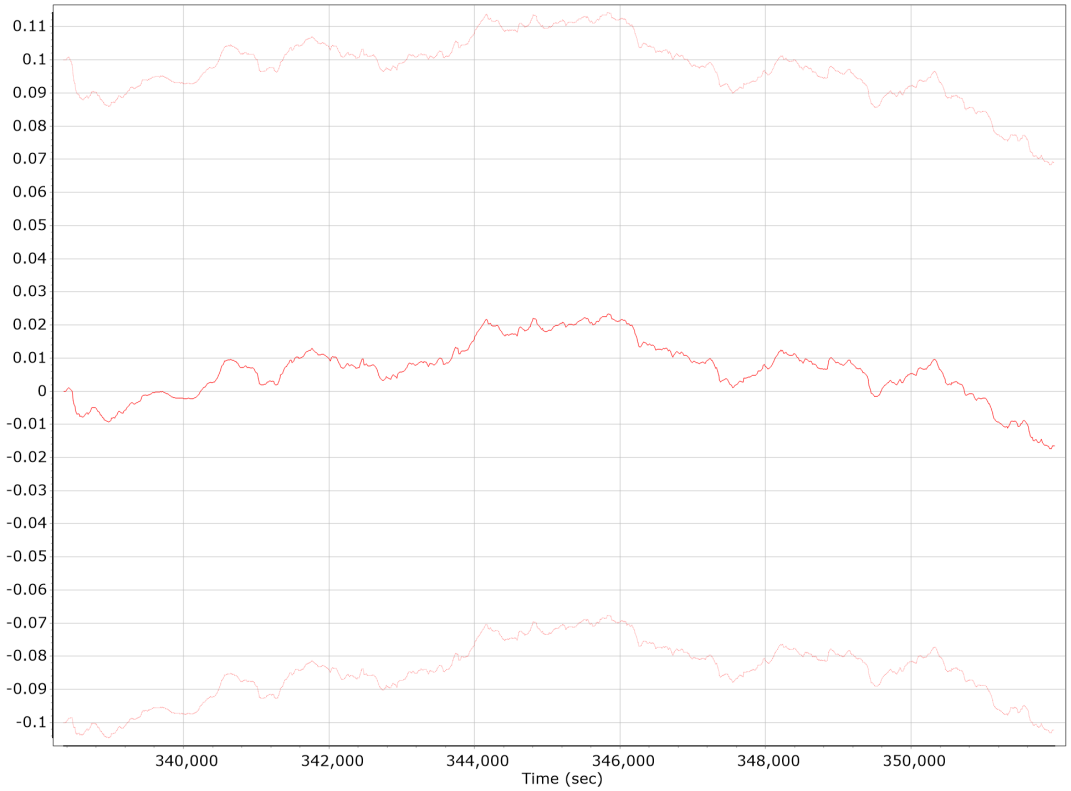
Gyro Bias (deg/h)



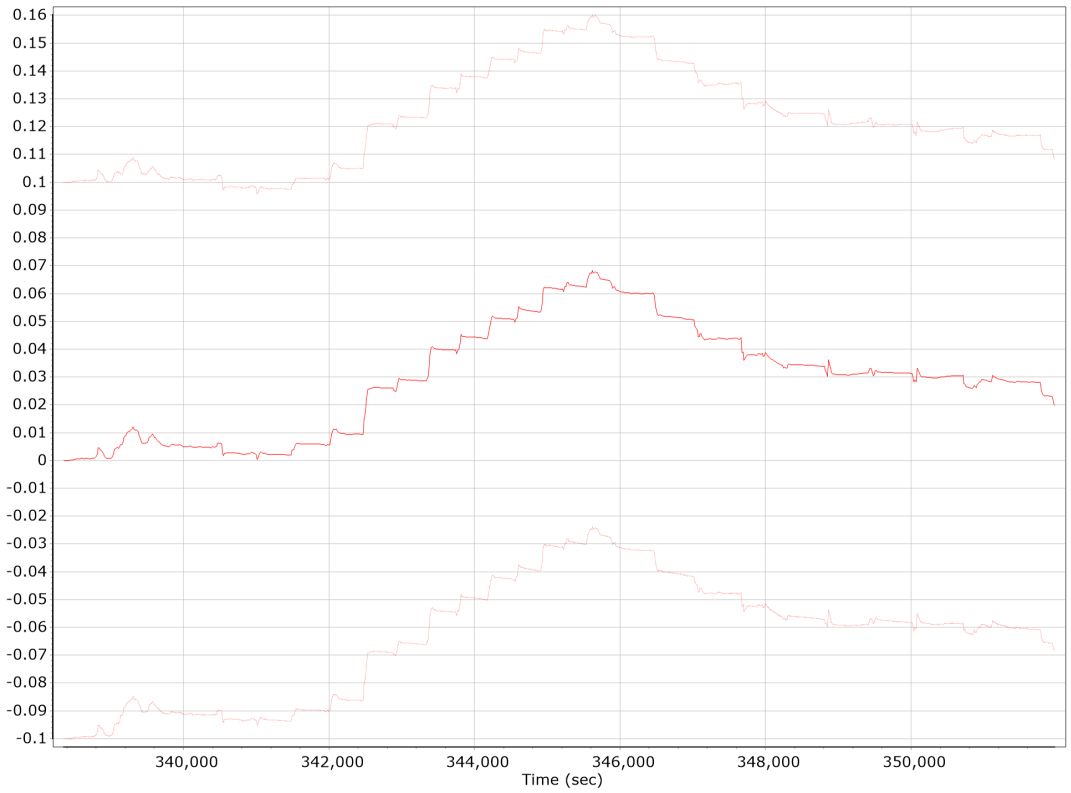
X Gyro Bias (deg/h)



Y Gyro Bias (deg/h)



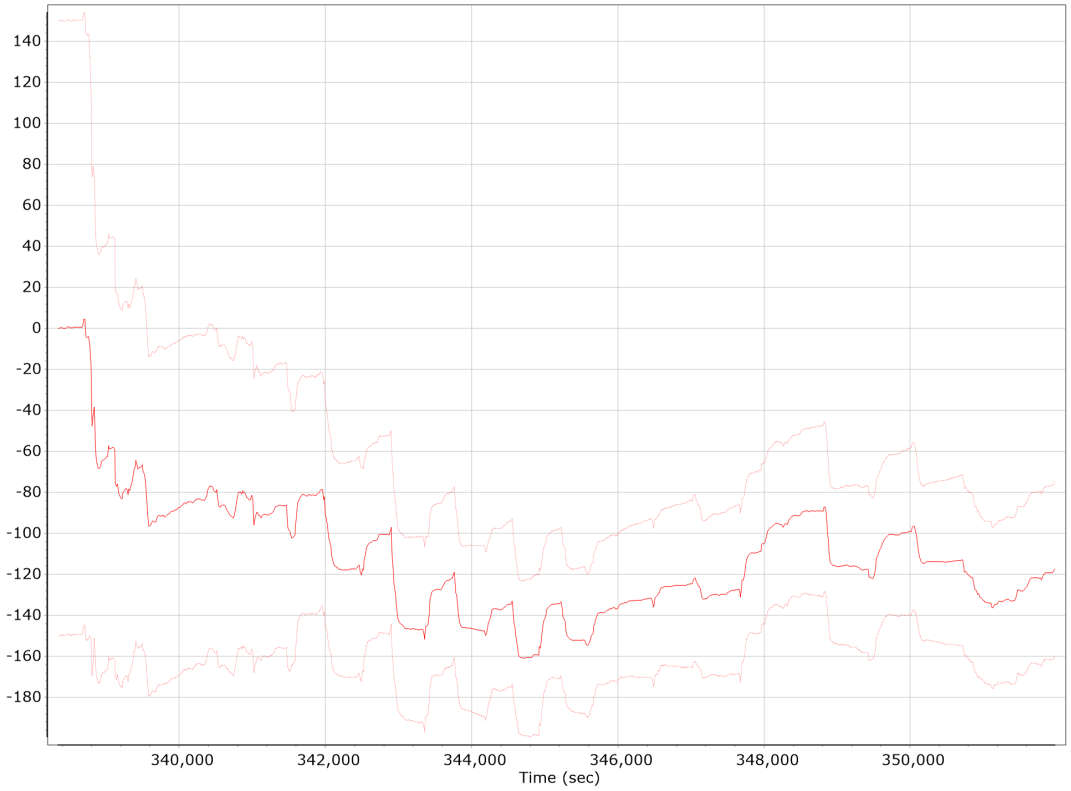
Z Gyro Bias (deg/h)



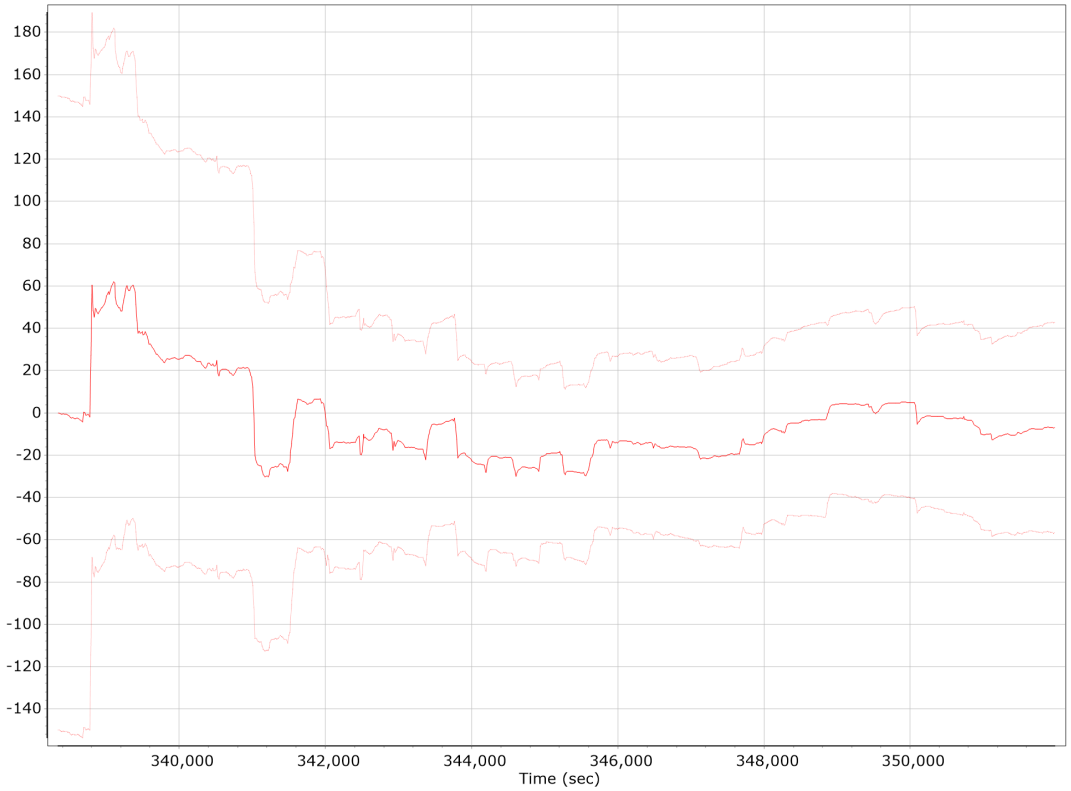
Gyro Scale Error (ppm)



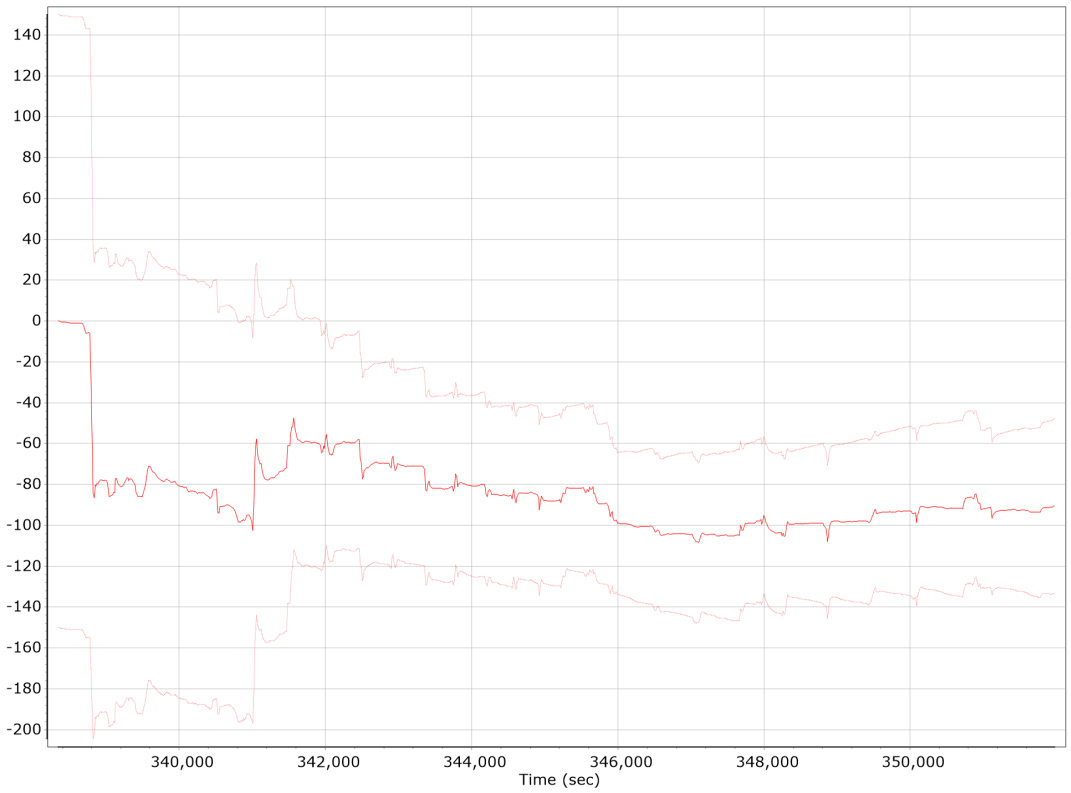
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)

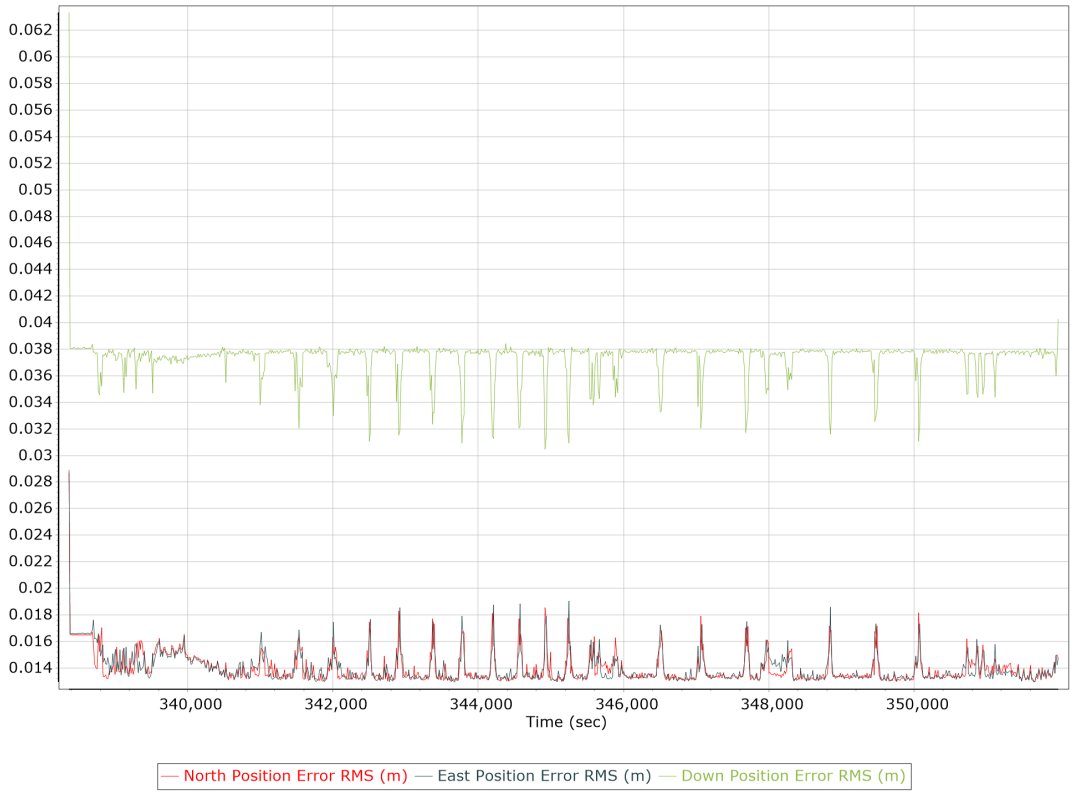


Z Gyro Scale Error (ppm)

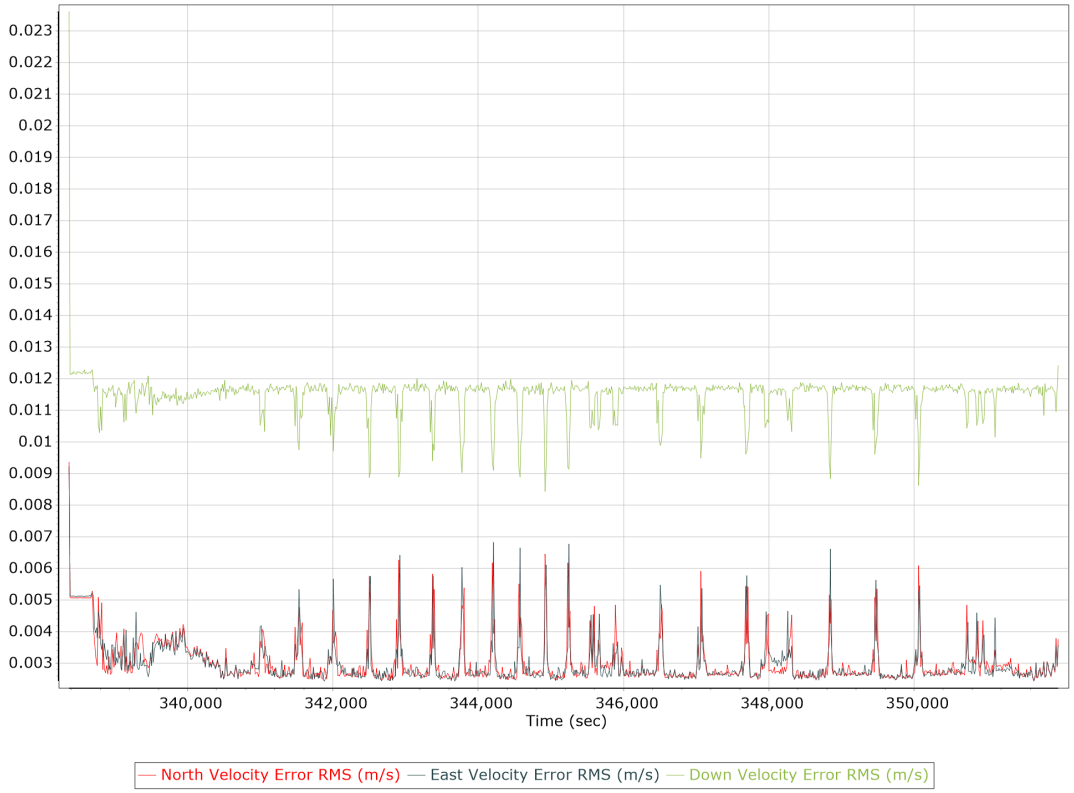


Smoothed Performance Metrics

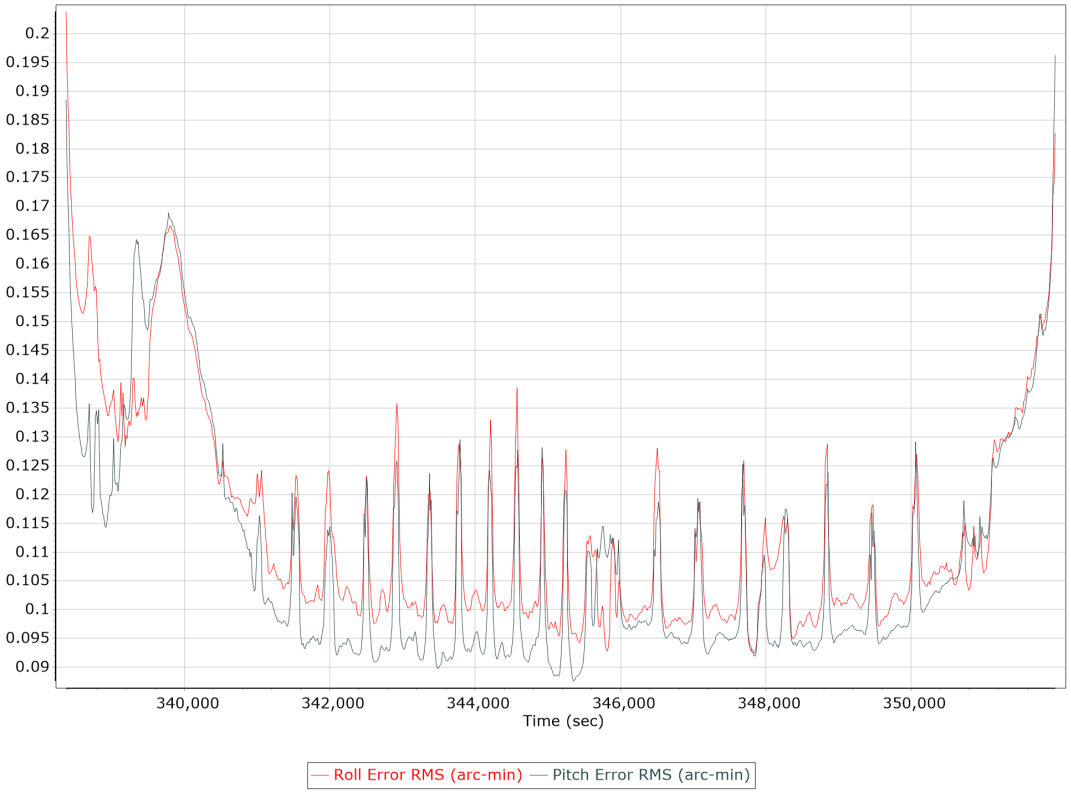
Position Error RMS (m)



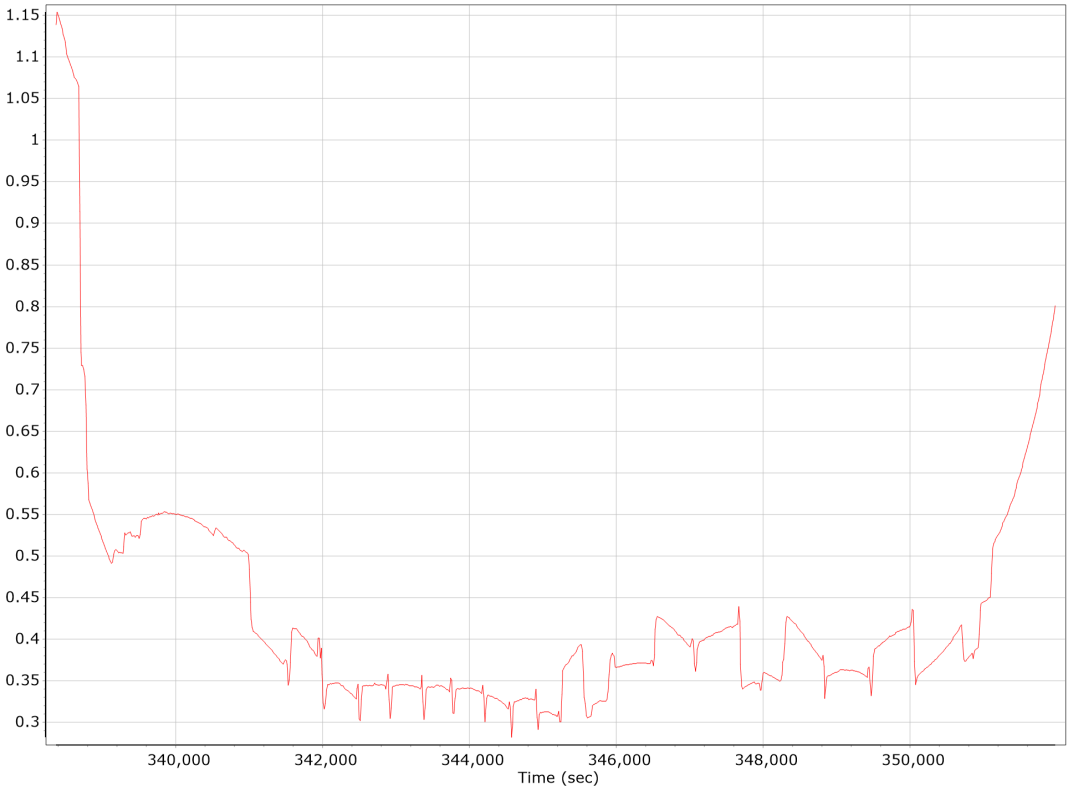
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

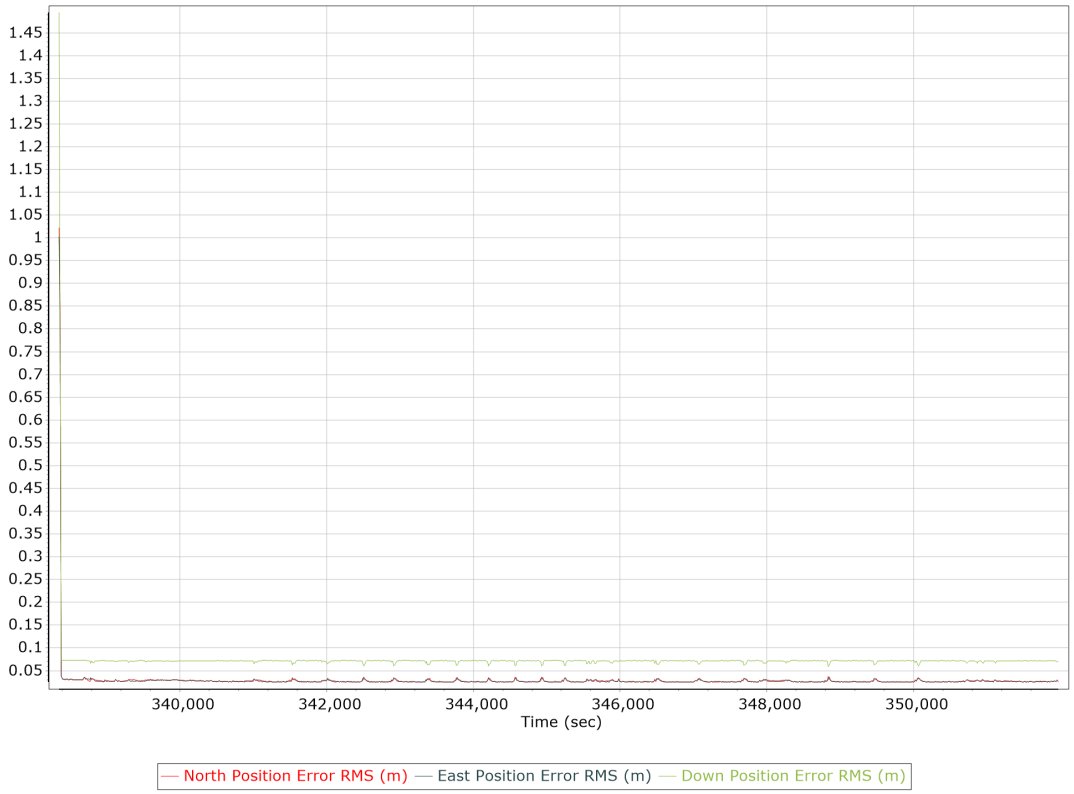


Heading Error RMS (arc-min)



Forward Processed Performance Metrics

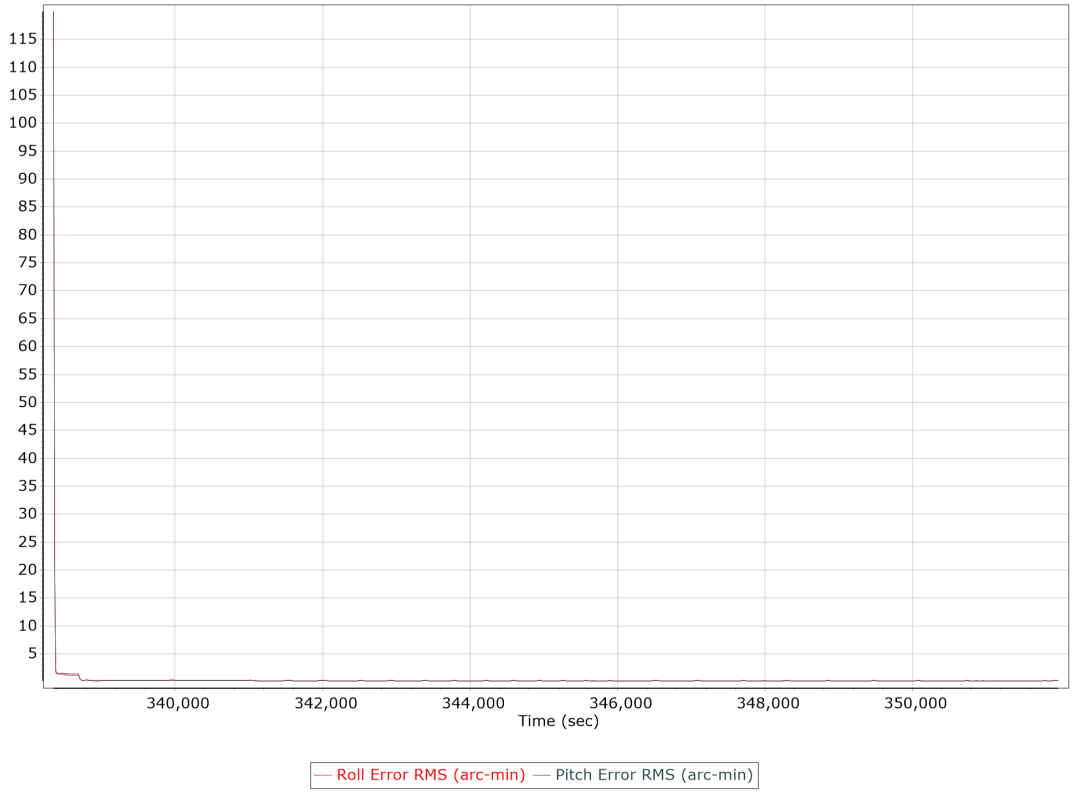
Position Error RMS (m)



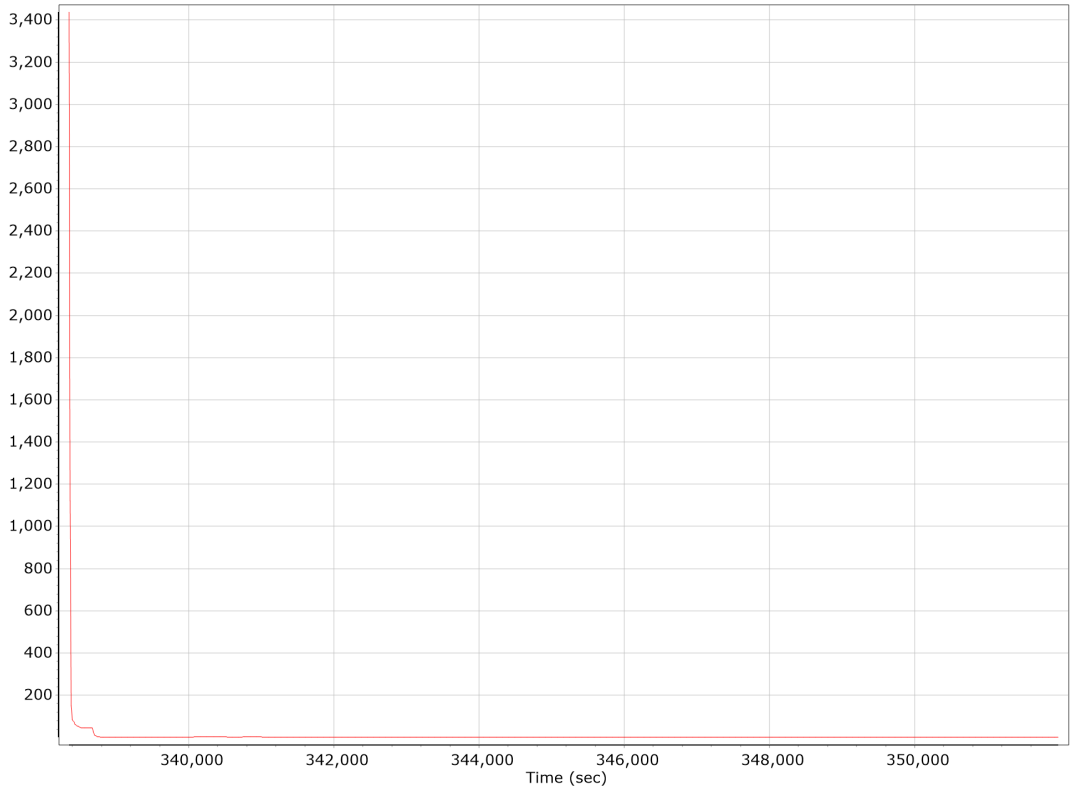
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

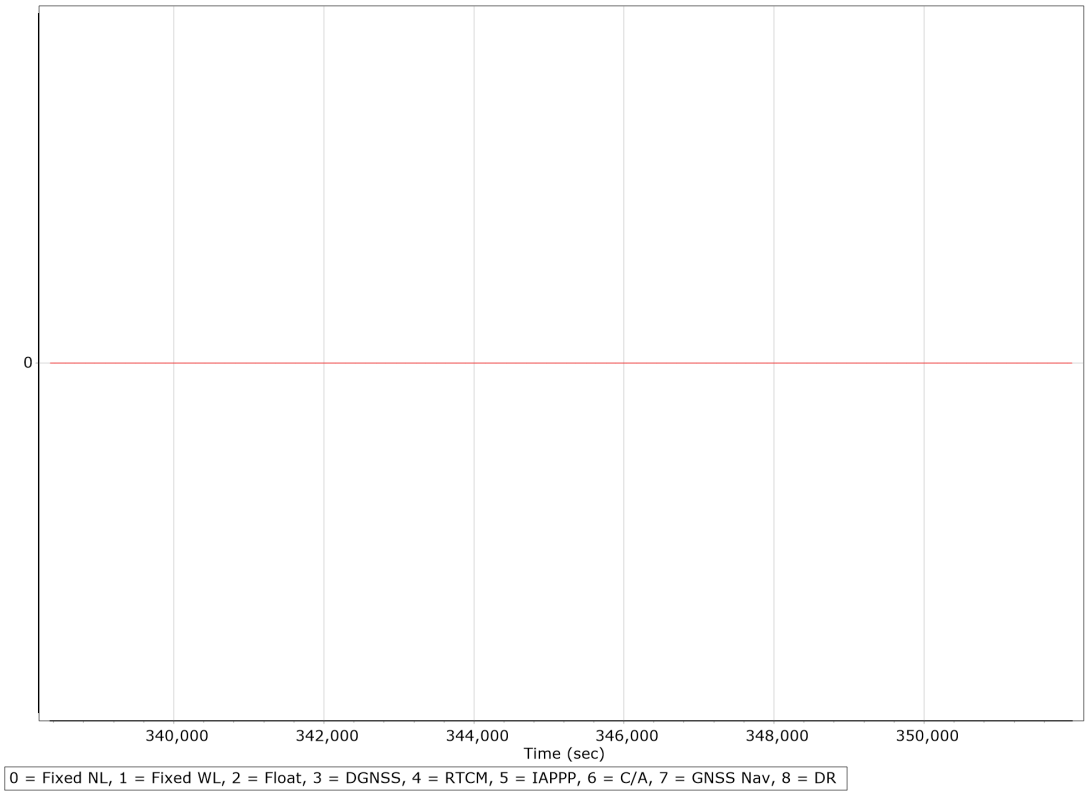


Heading Error RMS (arc-min)

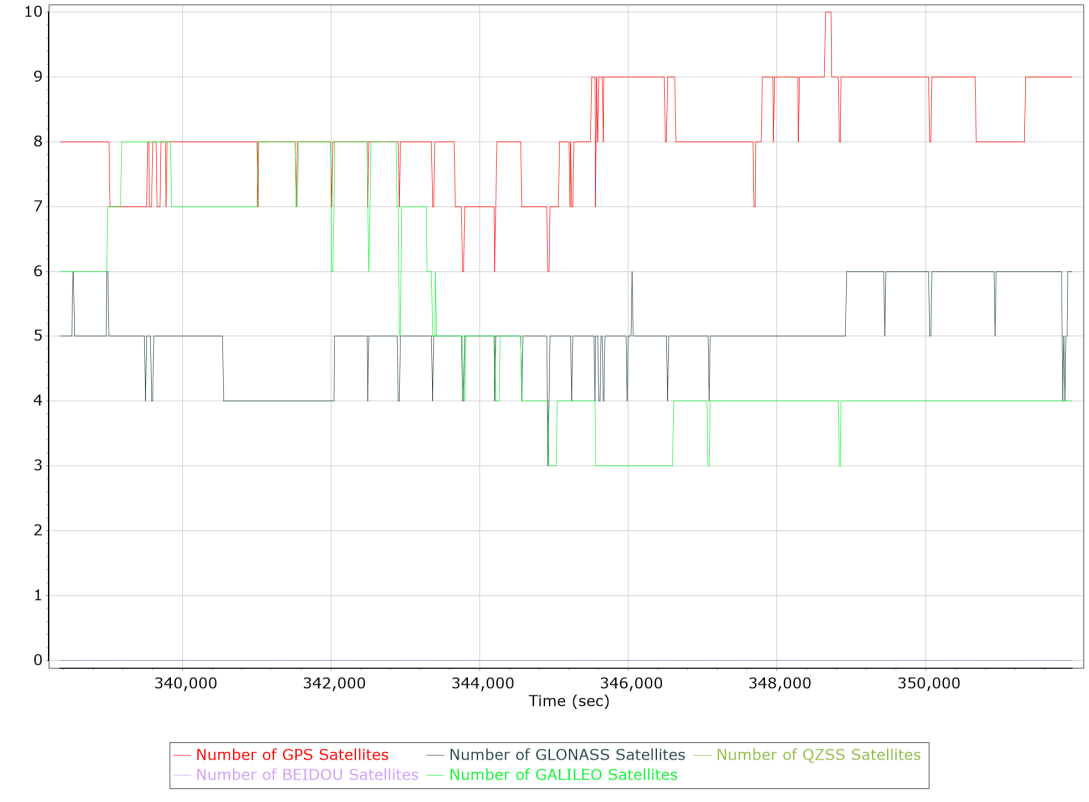


Forward Processed Solution Status

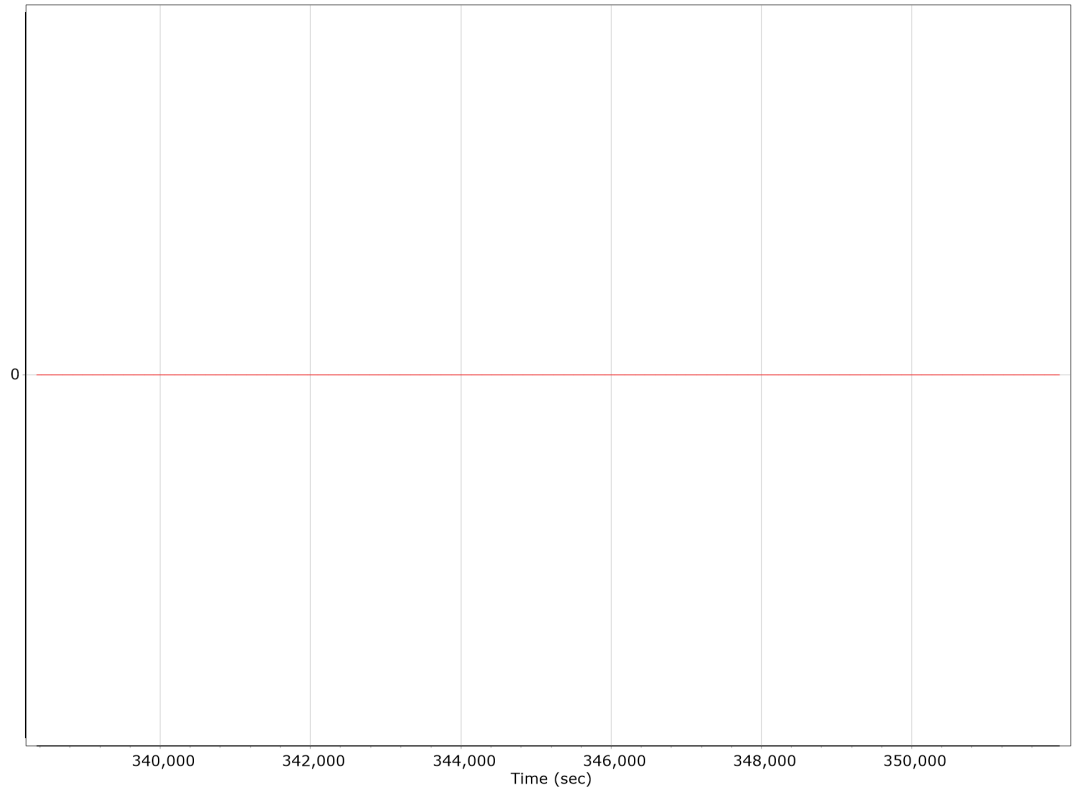
Processing Mode



Number of Satellites



Baseline Length



General Information

Mission Information

Project name	10052023A_4046
Processing date	2024-01-11 21:26:57
Mission date	2023-10-05 16:08:31
Mission duration	05:02:13.554
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N10762
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
231005_160811_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm2780.23g	GLONASS Broadcast Ephemeris
Ephm2780.23n	GPS Broadcast Ephemeris
IGS0OPSFIN_20232770000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232780000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232790000_01D_15M_ORB.SP3	GPS Precise Ephemeris

Output Files

Filename	File type
sbet_10052023A_4046.out	SBET Trajectory File

Rover Data Summary

First raw data file	231005_160811_INS-GPS_1.raw		
Last raw data file	231005_160811_INS-GPS_1.raw		
Start GPS week	2282		
Start time	403692.183 (10/5/2023 4:08:12 PM)		
End time	421825.737 (10/5/2023 9:10:25 PM)		
Start of fine alignment	403716.282 (10/5/2023 4:08:36 PM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	0.000	0.000	0.000
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

Rover Data QC

Raw IMU Import QC Summary

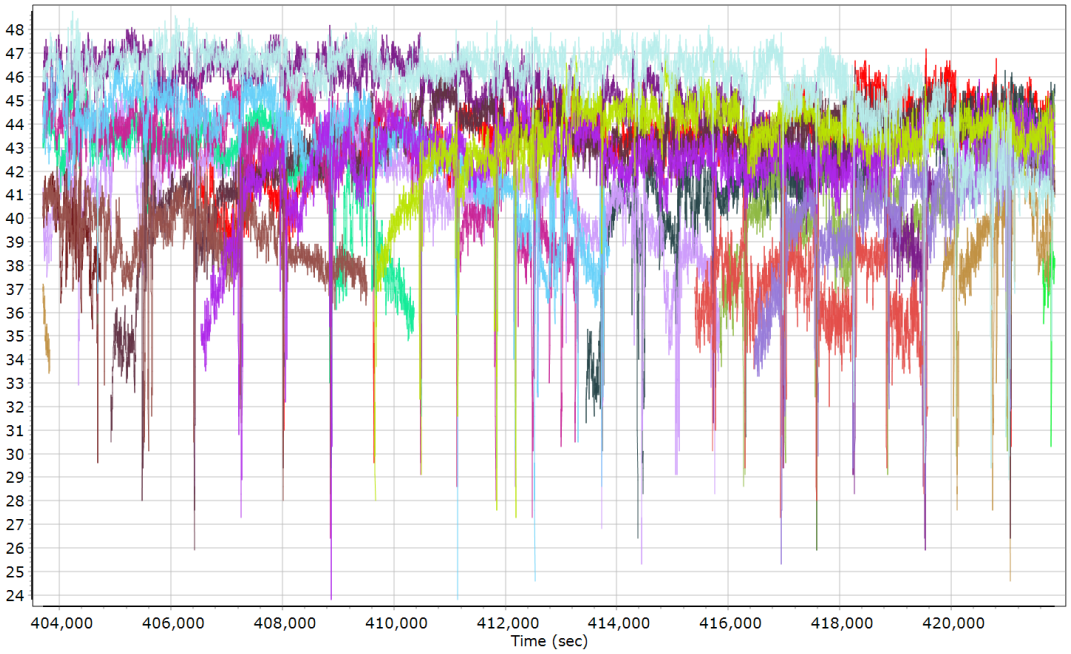
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_10052023A_4046.log
IMU Records Processed	3627677
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

GPS/GLONASS L1 Satellite Lock/Elevation

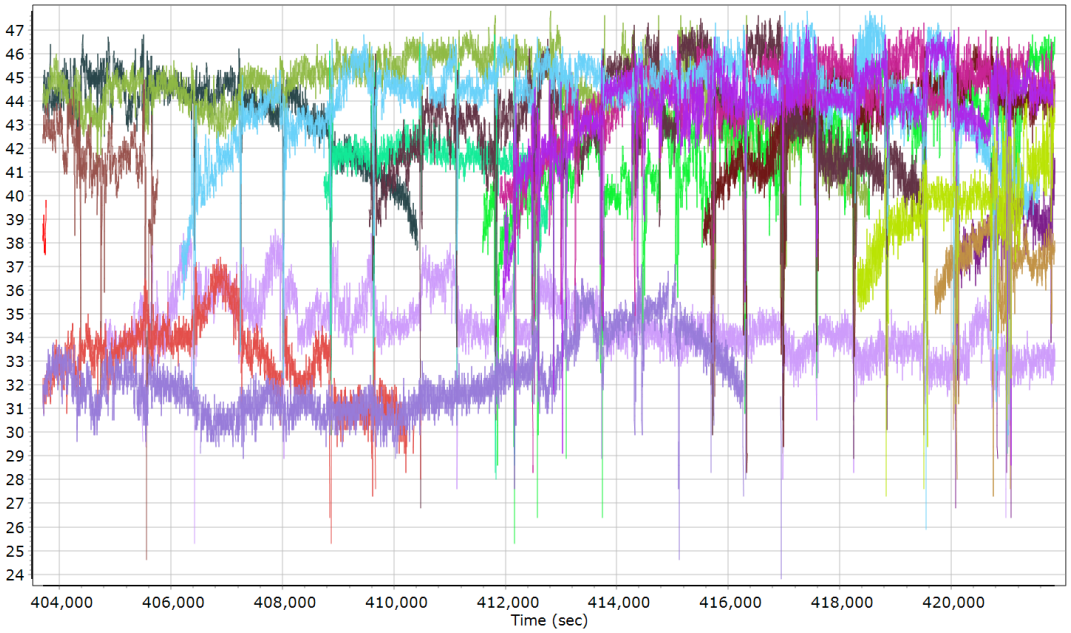


GPS L1 SNR



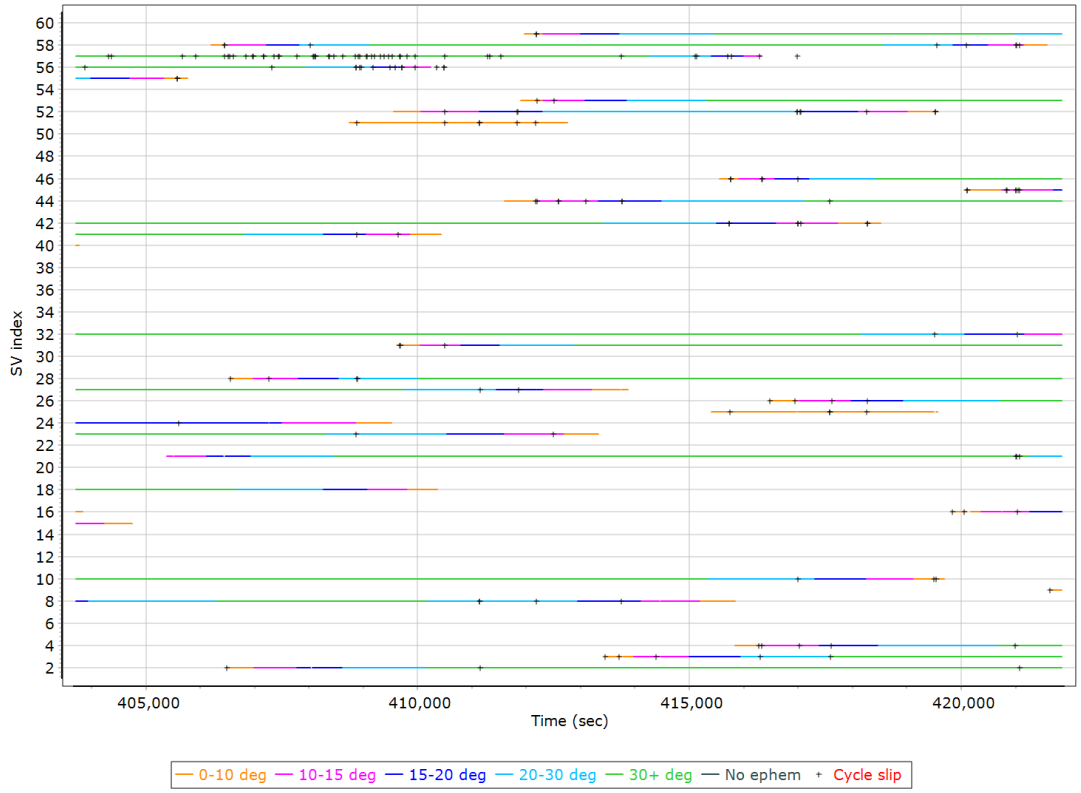
GPS PRN 02 L1 SNR (dB/Hz) GPS PRN 03 L1 SNR (dB/Hz) GPS PRN 04 L1 SNR (dB/Hz) GPS PRN 08 L1 SNR (dB/Hz)
GPS PRN 09 L1 SNR (dB/Hz) GPS PRN 10 L1 SNR (dB/Hz) GPS PRN 15 L1 SNR (dB/Hz) GPS PRN 16 L1 SNR (dB/Hz)
GPS PRN 18 L1 SNR (dB/Hz) GPS PRN 21 L1 SNR (dB/Hz) GPS PRN 23 L1 SNR (dB/Hz) GPS PRN 24 L1 SNR (dB/Hz)
GPS PRN 25 L1 SNR (dB/Hz) GPS PRN 26 L1 SNR (dB/Hz) GPS PRN 27 L1 SNR (dB/Hz) GPS PRN 28 L1 SNR (dB/Hz)
GPS PRN 31 L1 SNR (dB/Hz) GPS PRN 32 L1 SNR (dB/Hz)

GLONASS L1 SNR

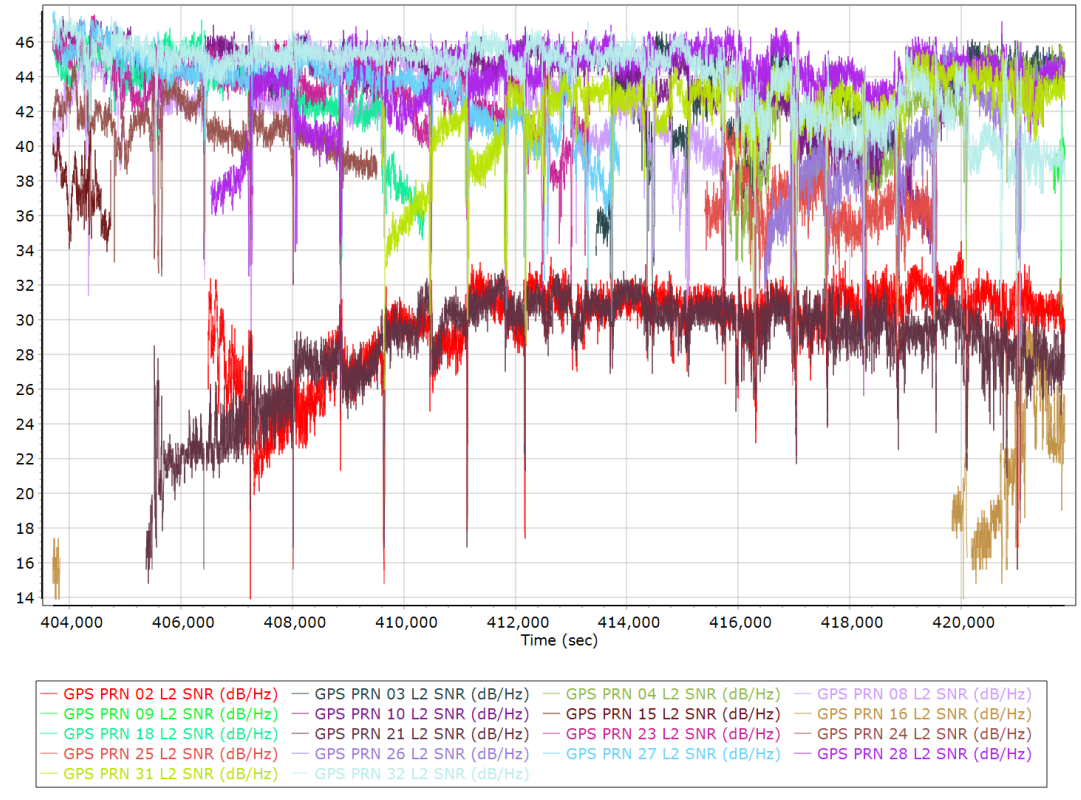


GLONASS 03 L1 SNR (dB/Hz) GLONASS 04 L1 SNR (dB/Hz) GLONASS 05 L1 SNR (dB/Hz)
GLONASS 06 L1 SNR (dB/Hz) GLONASS 07 L1 SNR (dB/Hz) GLONASS 08 L1 SNR (dB/Hz)
GLONASS 09 L1 SNR (dB/Hz) GLONASS 10 L1 SNR (dB/Hz) GLONASS 14 L1 SNR (dB/Hz)
GLONASS 15 L1 SNR (dB/Hz) GLONASS 16 L1 SNR (dB/Hz) GLONASS 18 L1 SNR (dB/Hz)
GLONASS 19 L1 SNR (dB/Hz) GLONASS 20 L1 SNR (dB/Hz) GLONASS 21 L1 SNR (dB/Hz)
GLONASS 22 L1 SNR (dB/Hz) GLONASS 23 L1 SNR (dB/Hz)

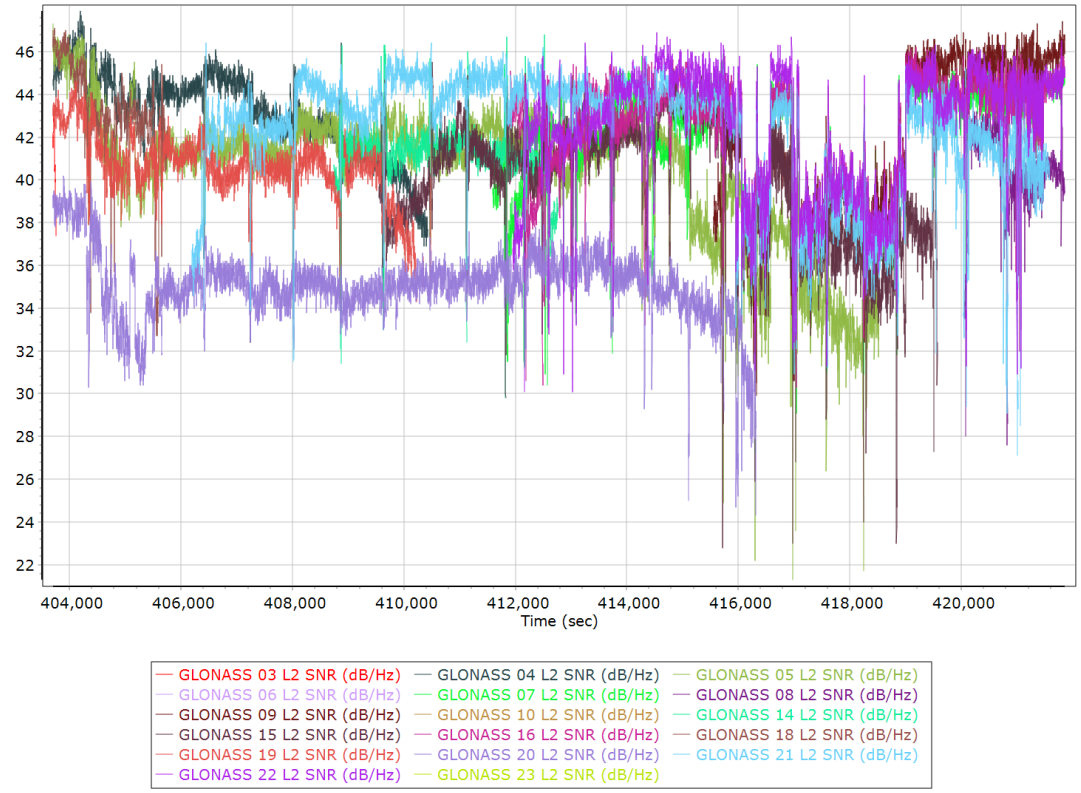
GPS/GLONASS L2 Satellite Lock/Elevation



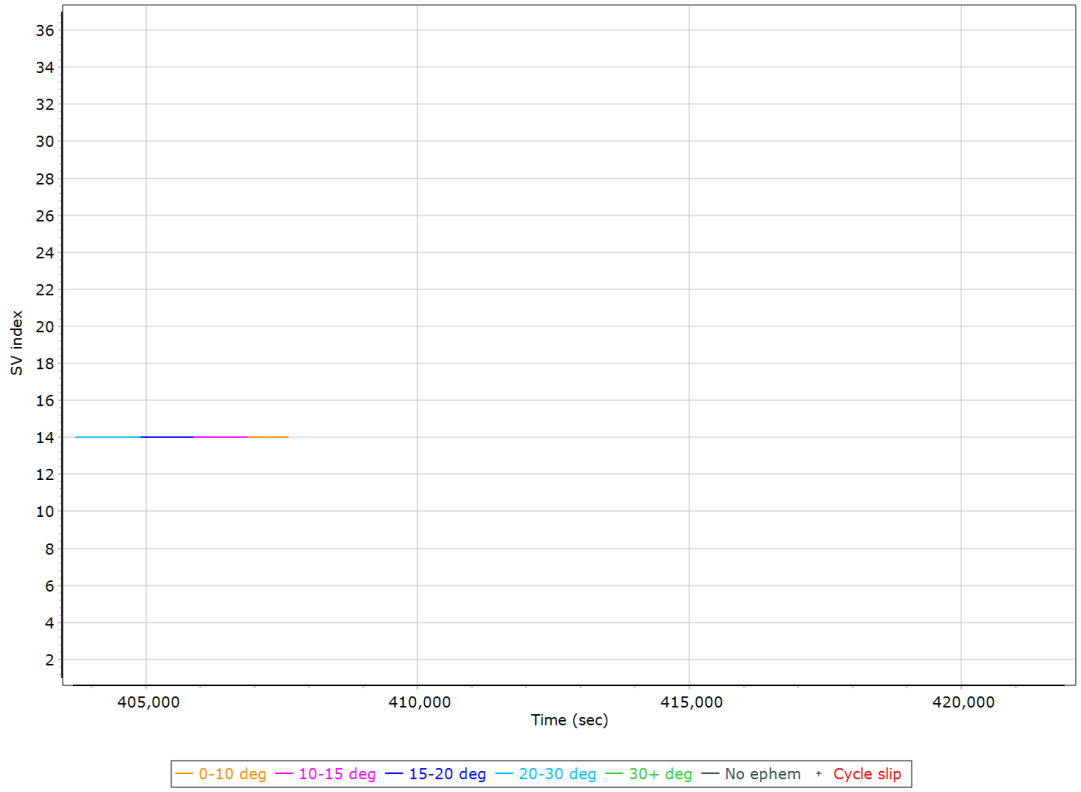
GPS L2 SNR



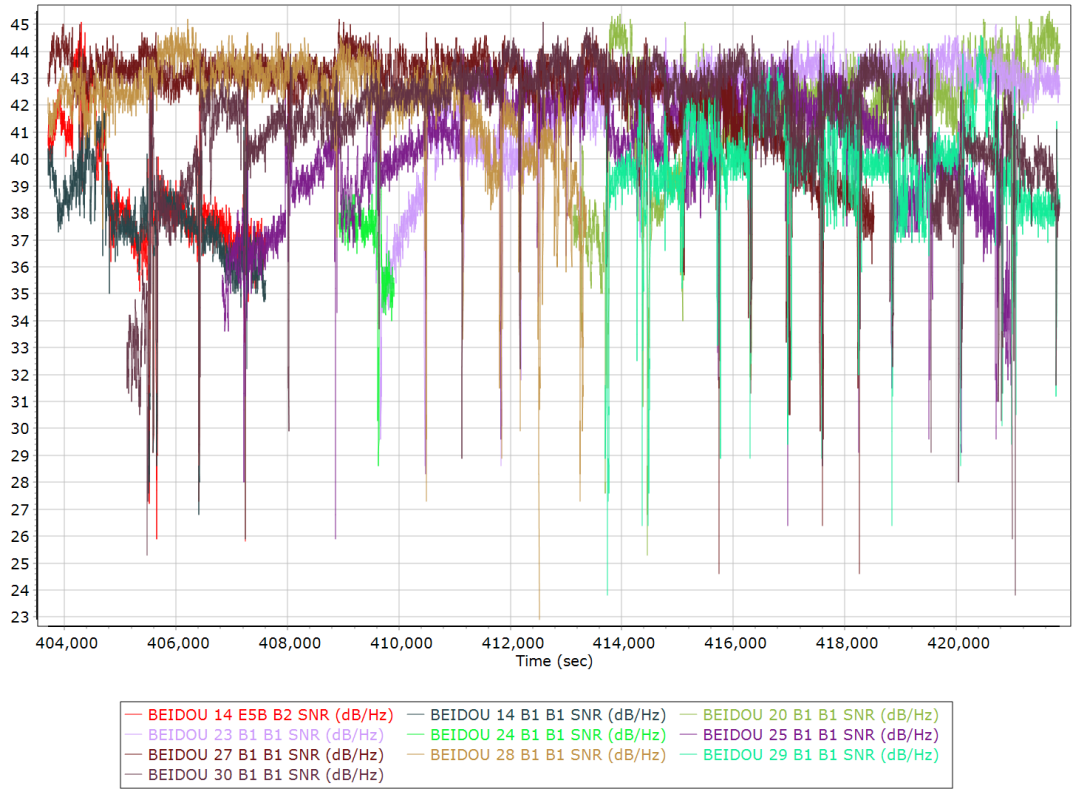
GLONASS L2 SNR



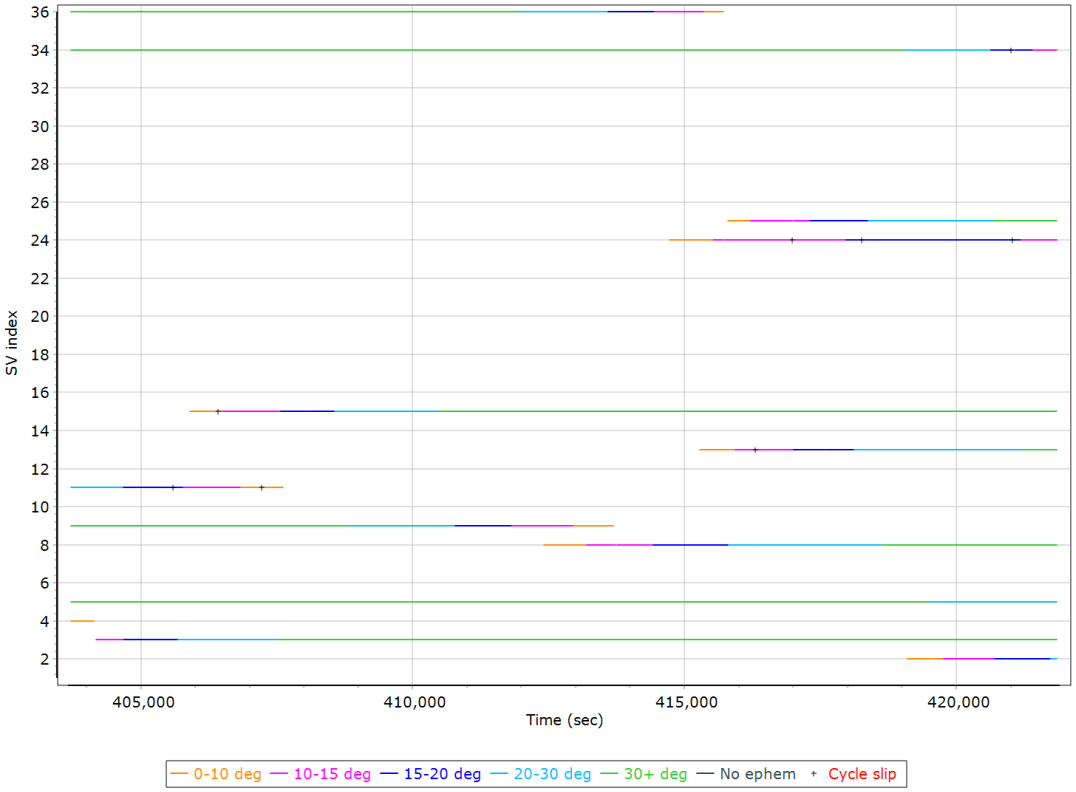
BEIDOU Satellite Lock/Elevation



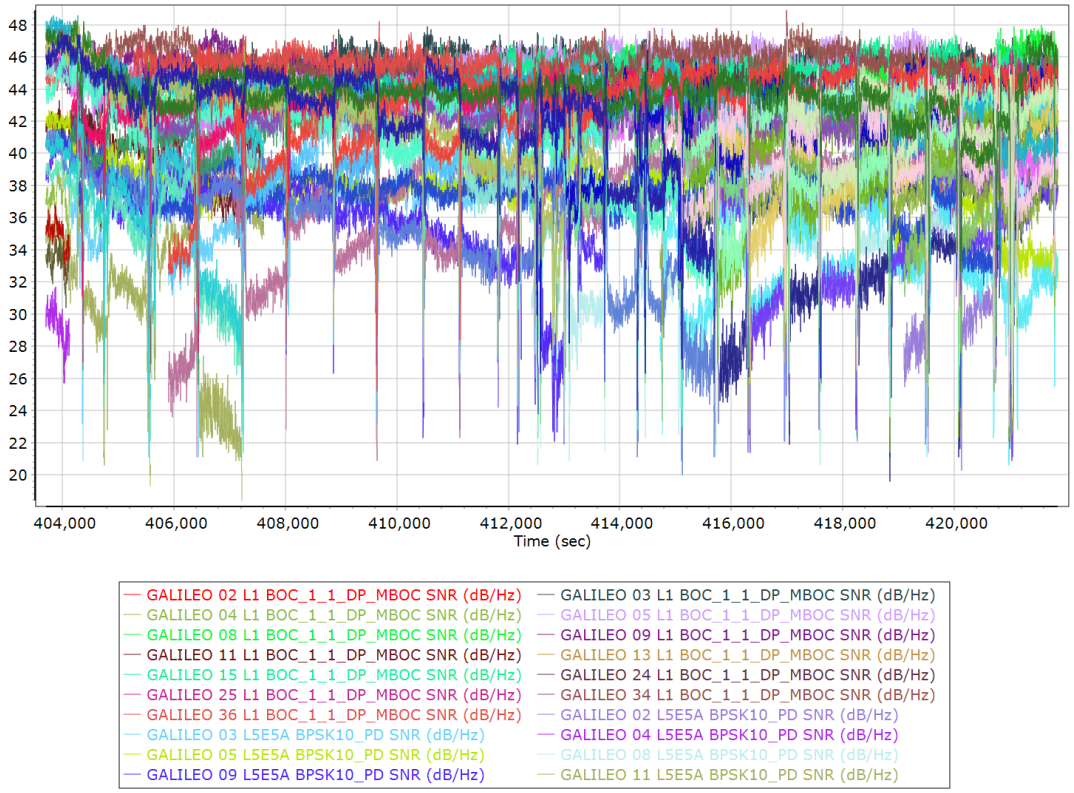
BEIDOU SNR



GALILEO Satellite Lock/Elevation

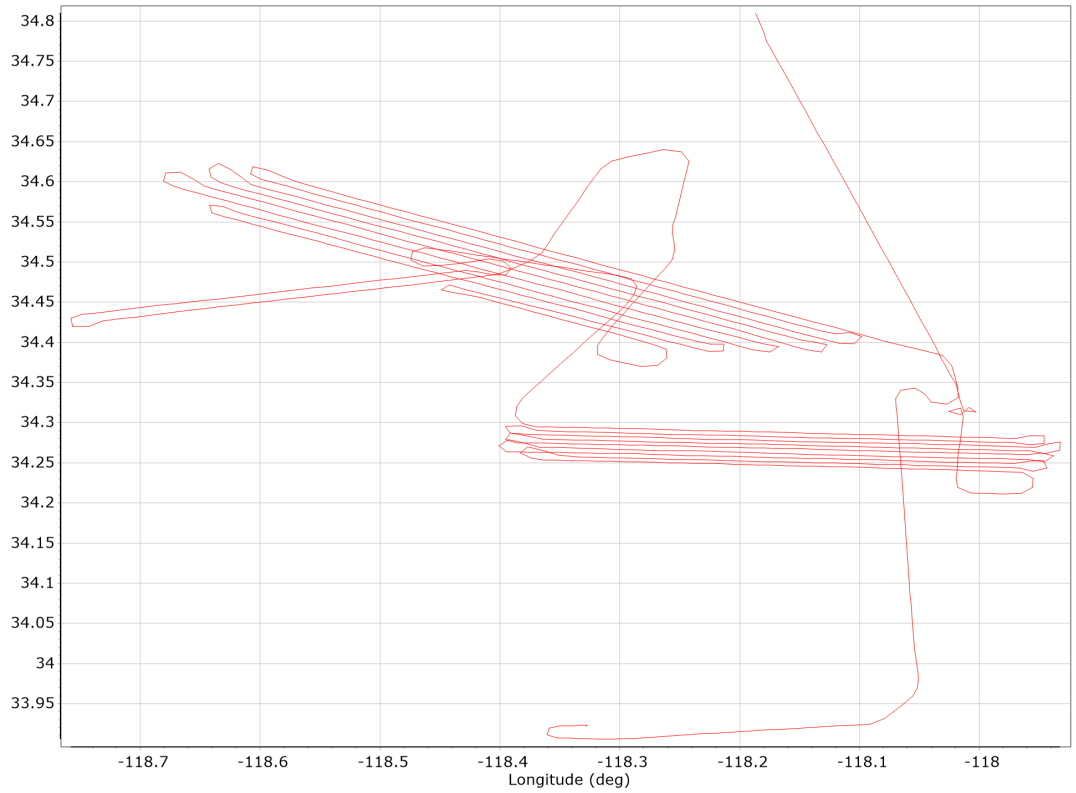


GALILEO SNR

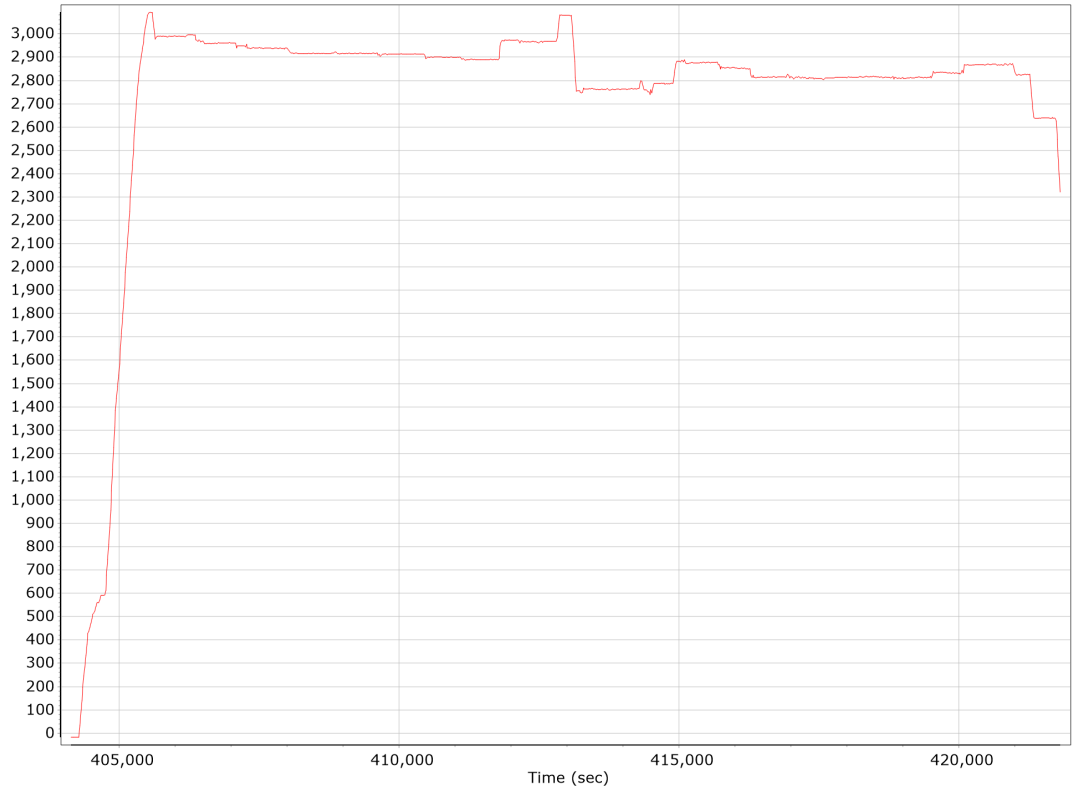

48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
404,000
406,000
408,000
410,000
412,000
414,000
416,000
418,000
420,000
Time (sec)
GALILEO 02 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 03 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 04 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 05 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 08 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 09 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 11 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 13 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 15 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 24 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 25 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 34 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 36 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 02 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 03 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 04 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 05 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 08 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 09 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 11 L5E5A BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

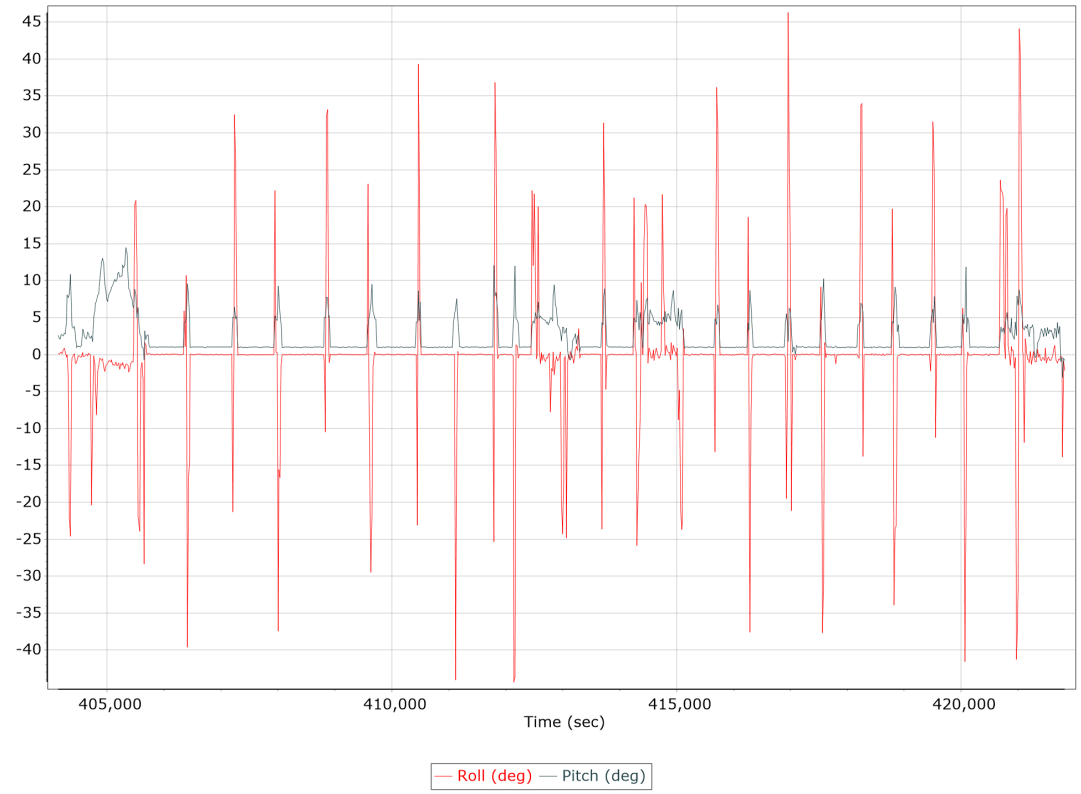
Top View



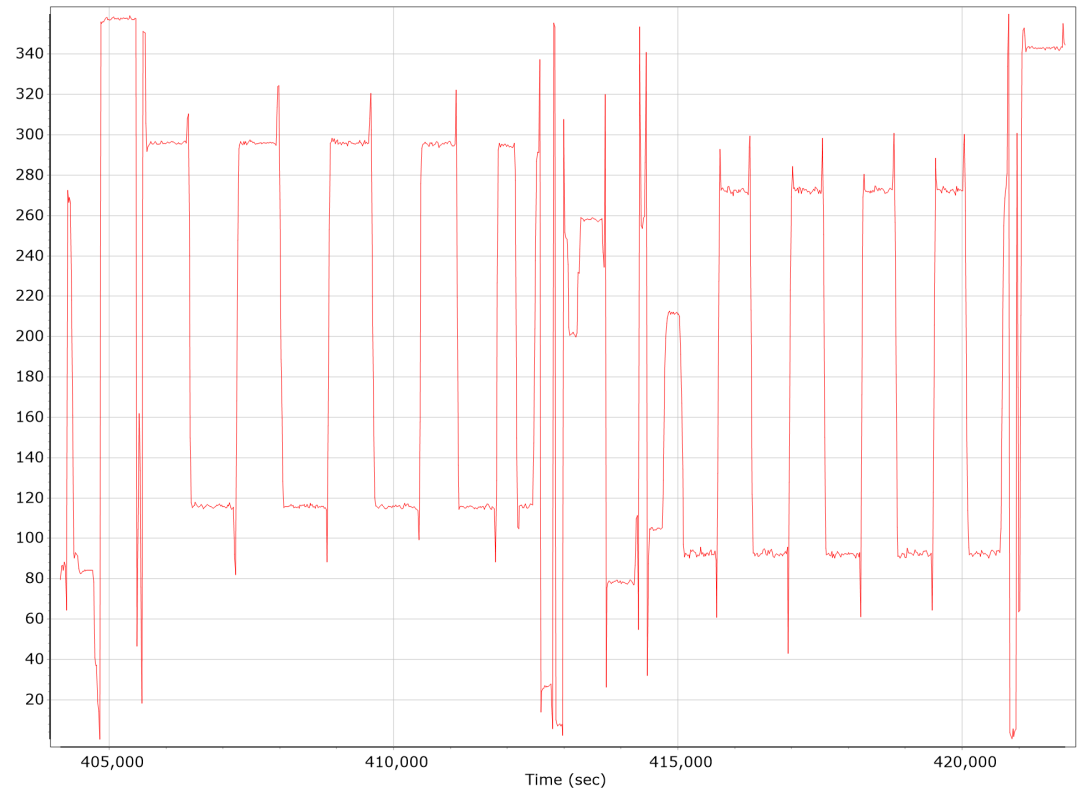
Altitude



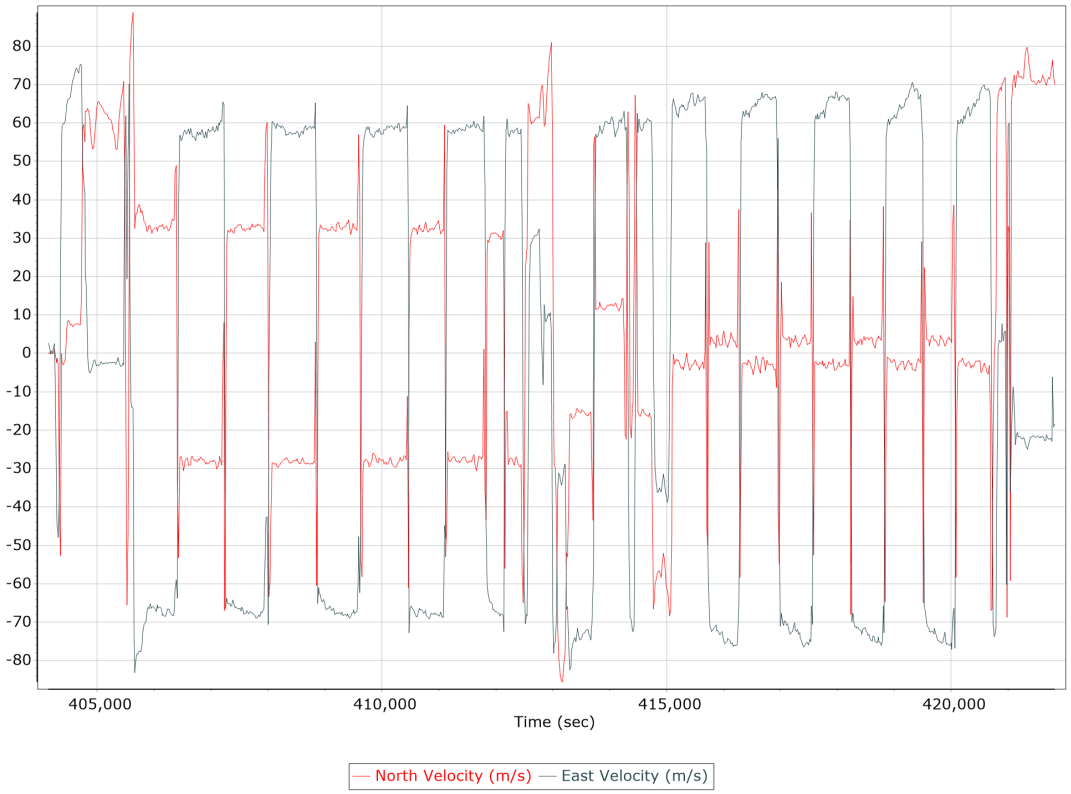
Roll/Pitch



Heading



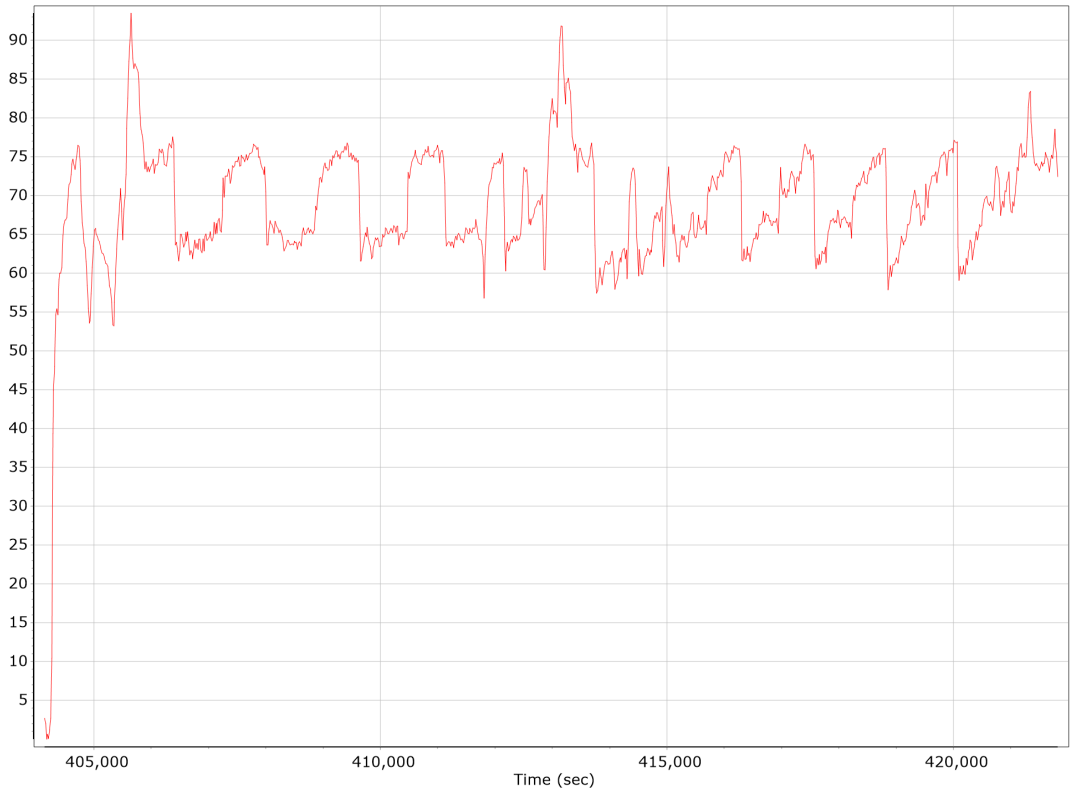
North/East Velocity



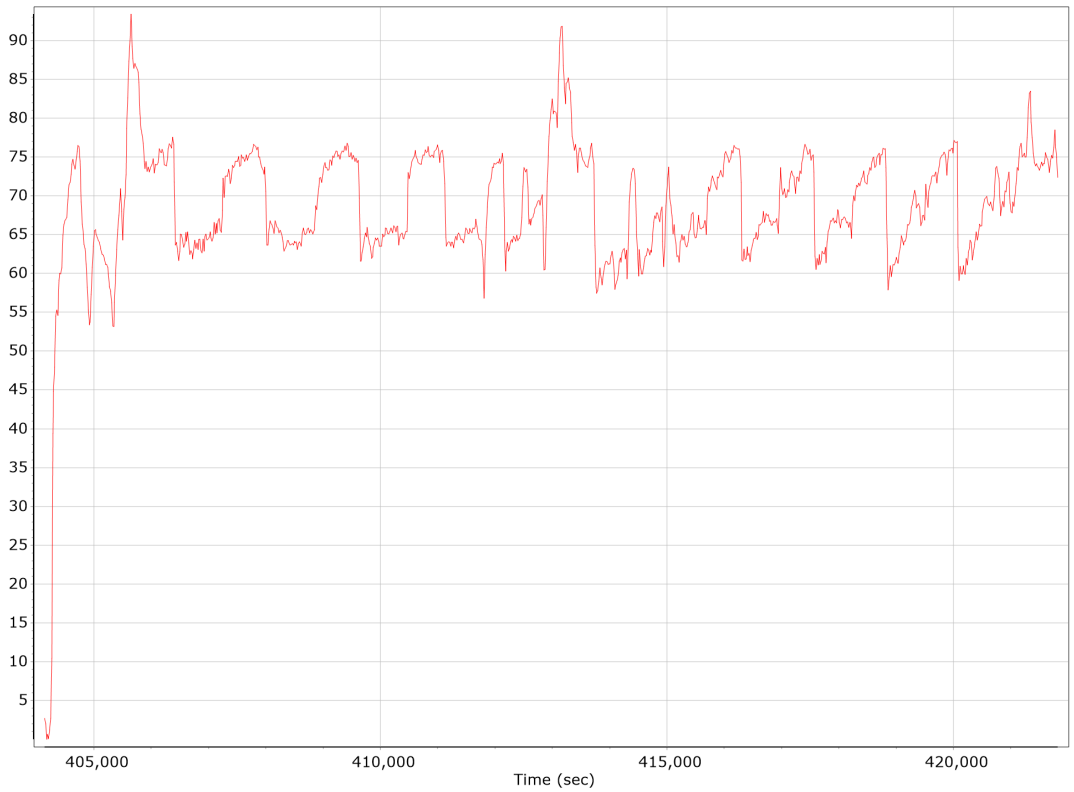
Down Velocity



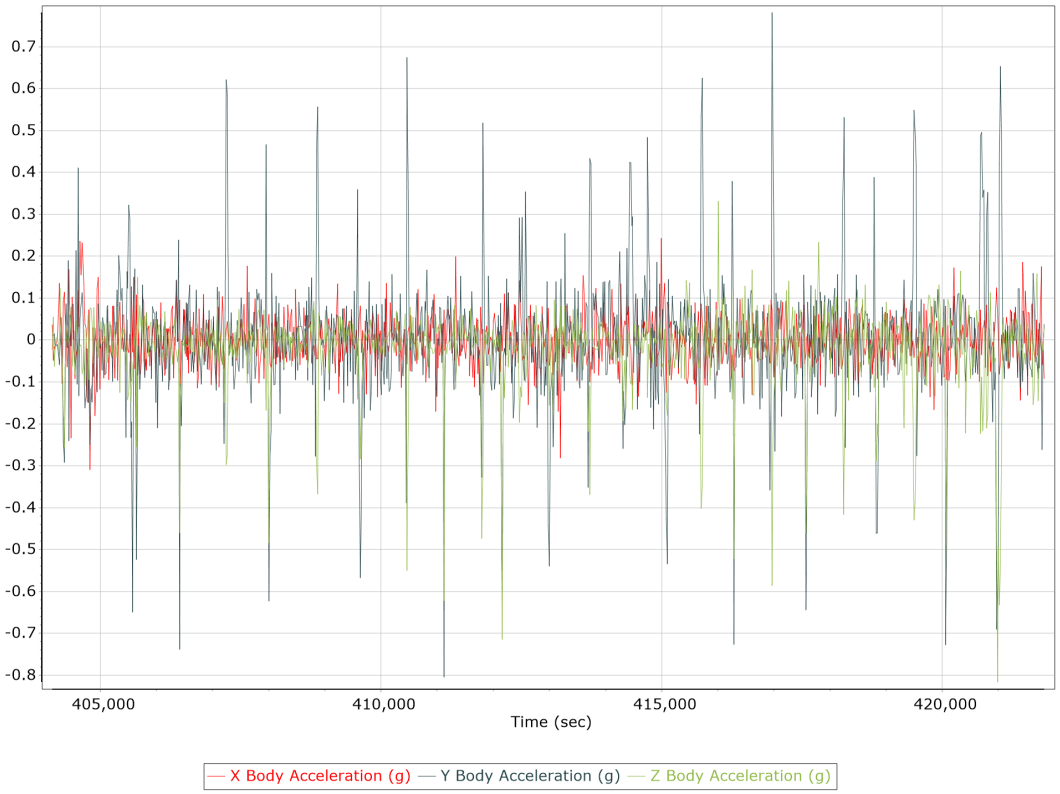
Total Speed



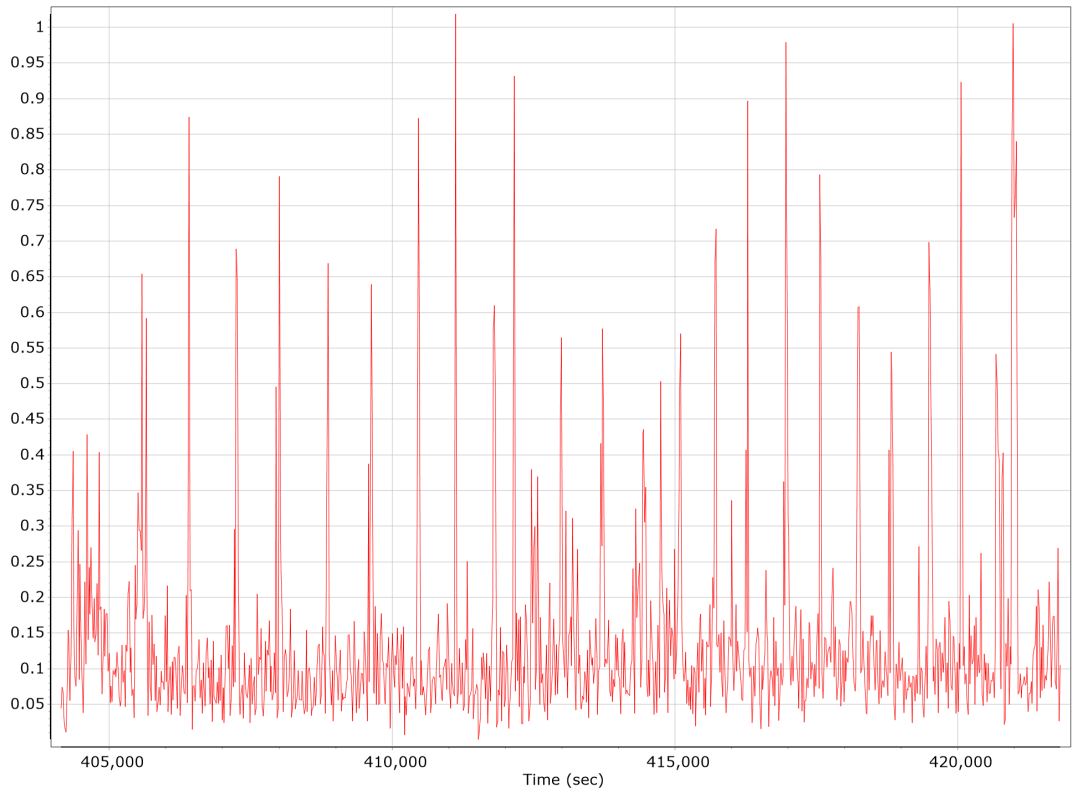
Ground Speed



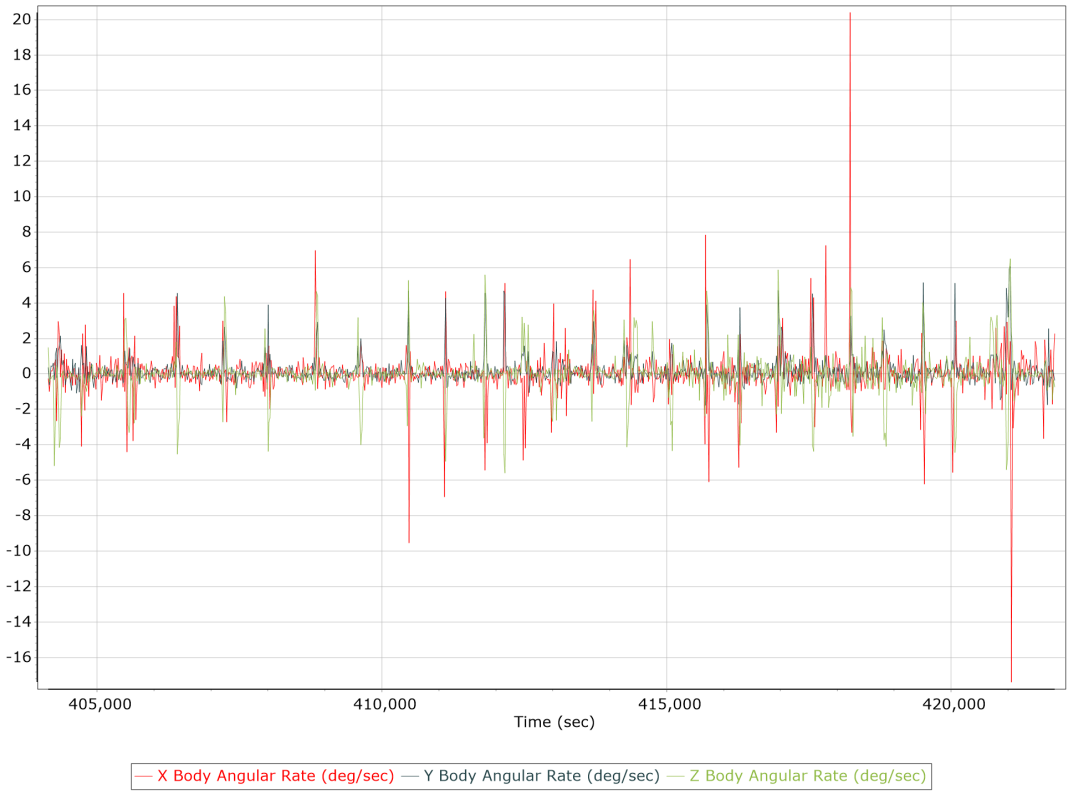
Body Acceleration



Total Body Acceleration

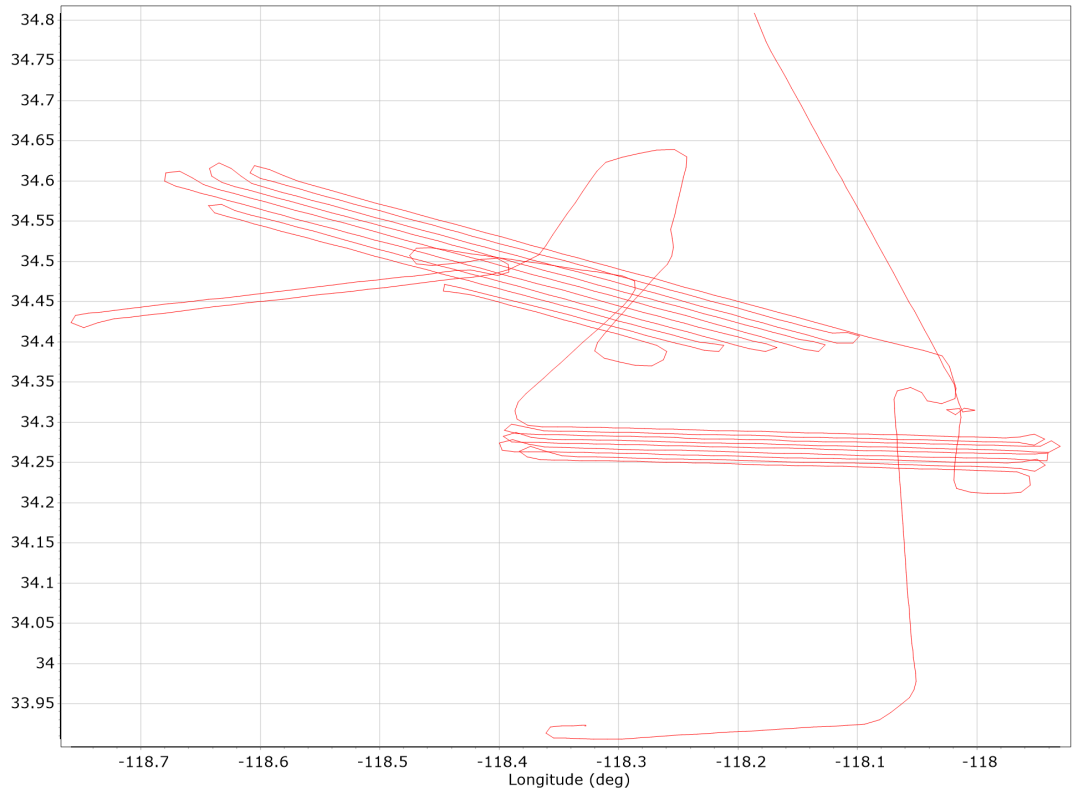


Body Angular Rate

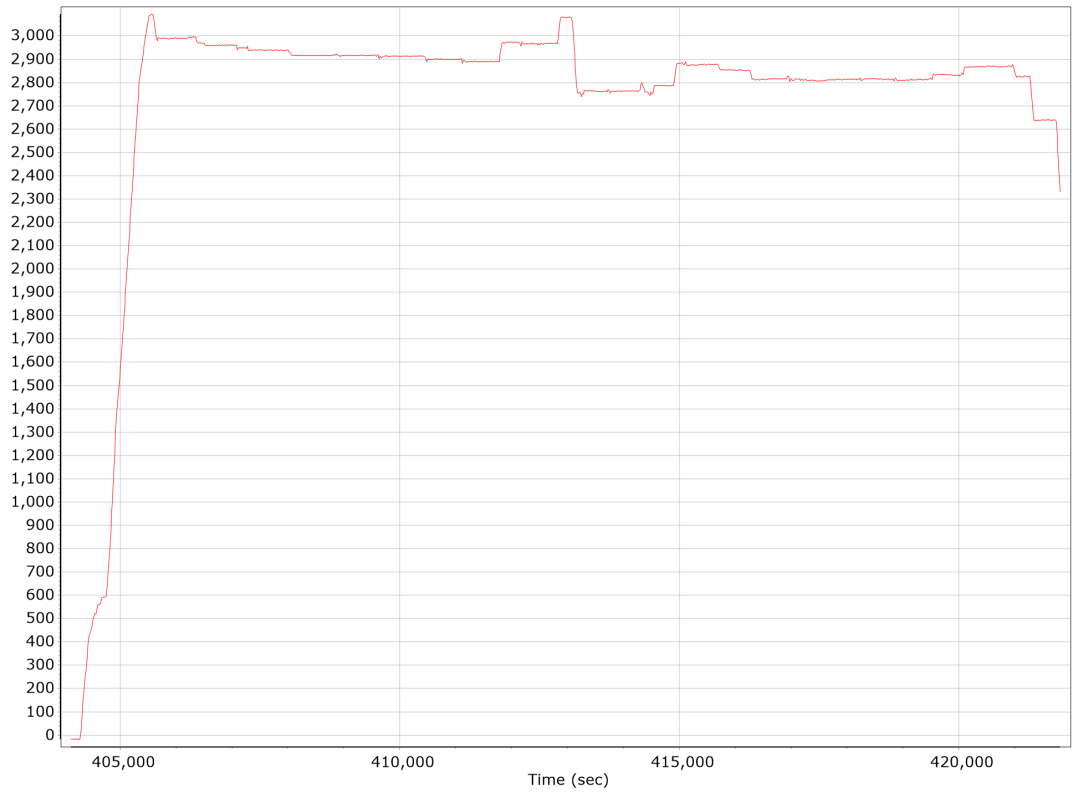


Forward Processed Trajectory Information

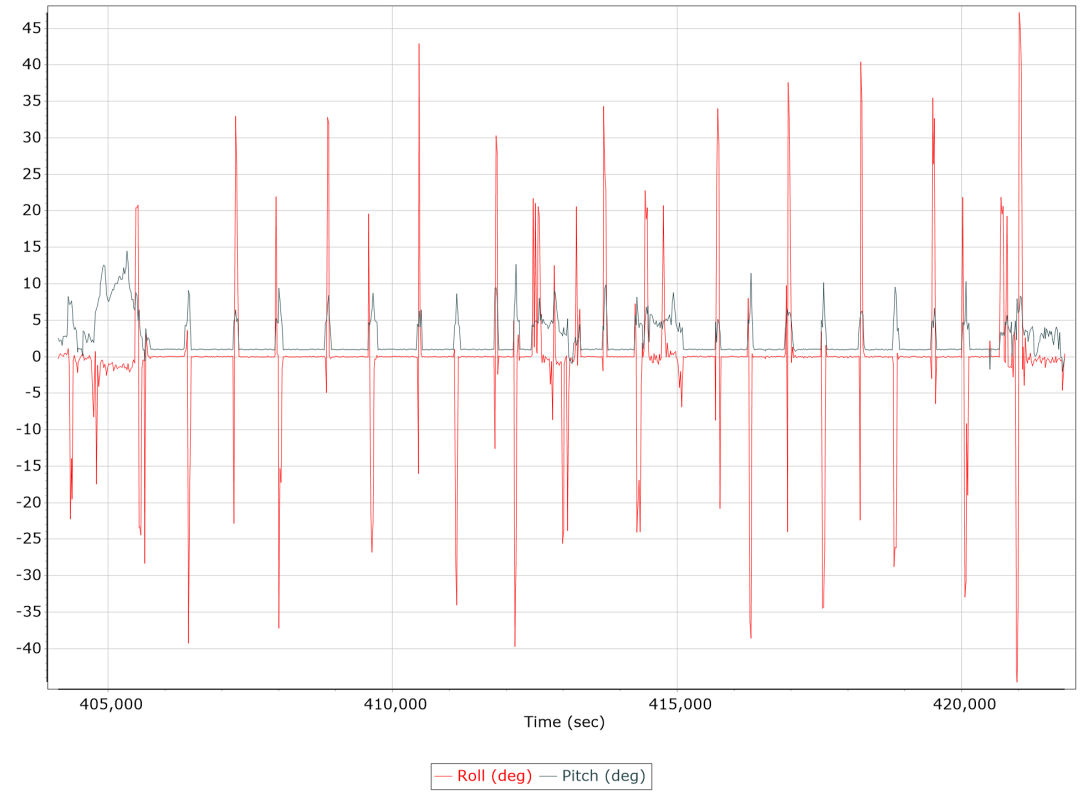
Top View



Altitude



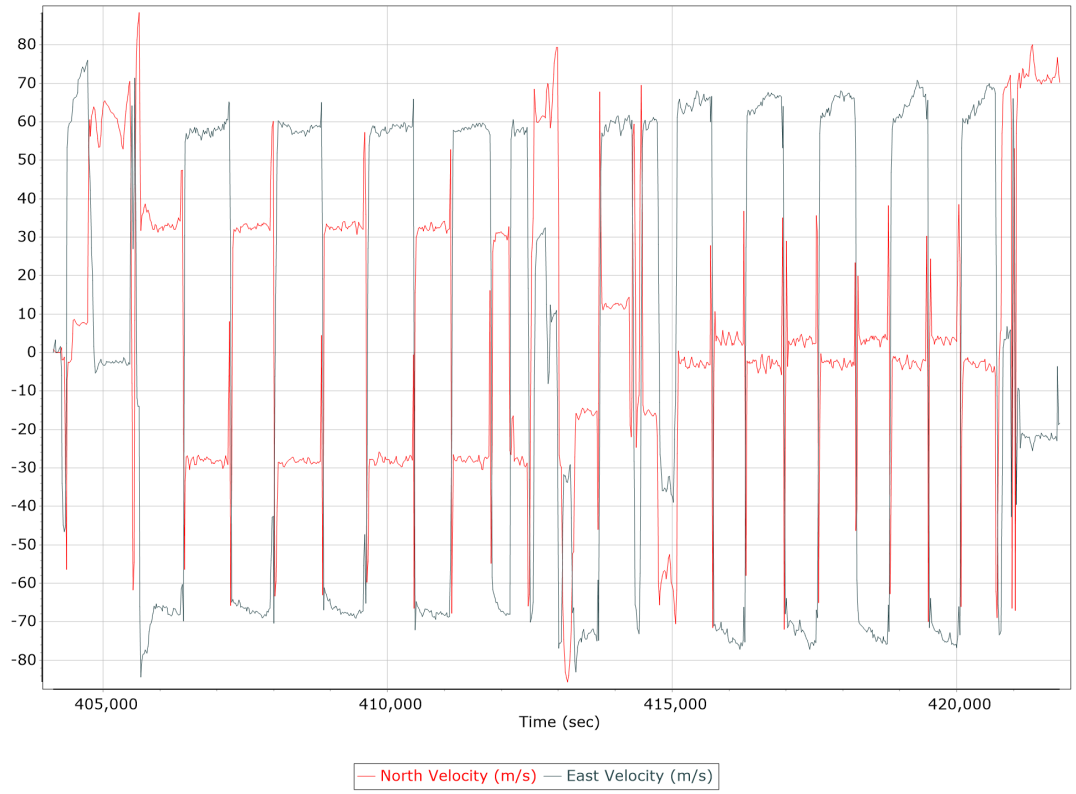
Roll/Pitch



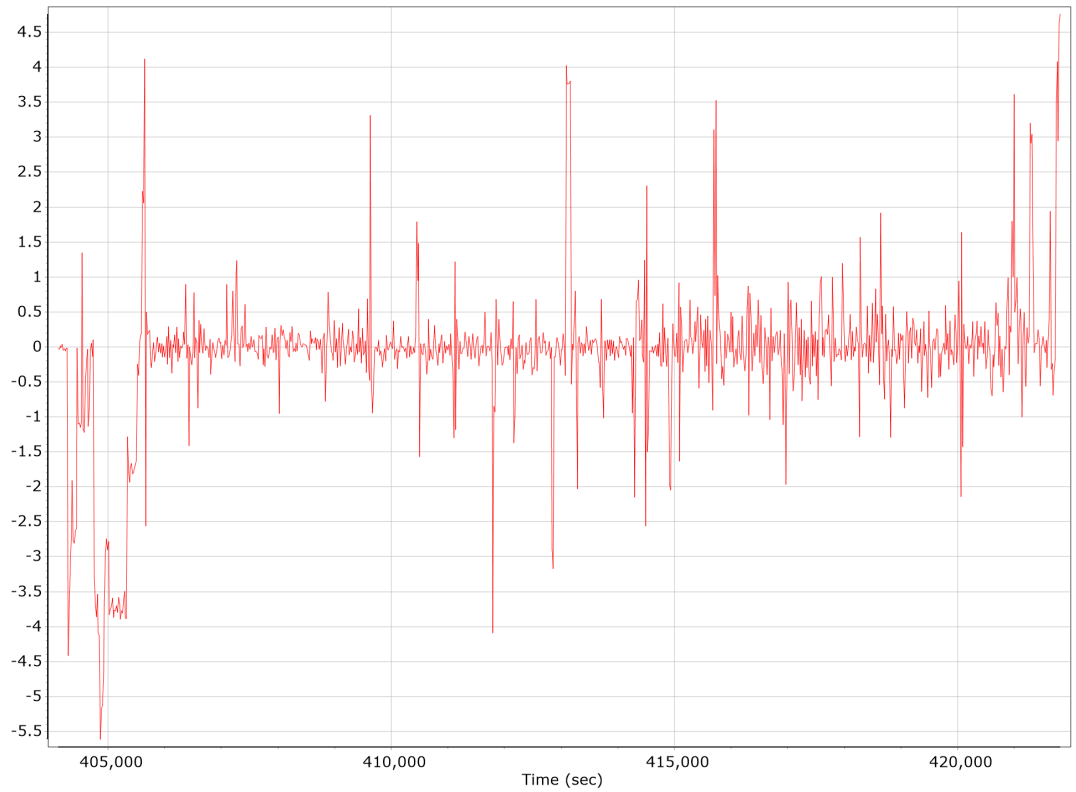
Heading



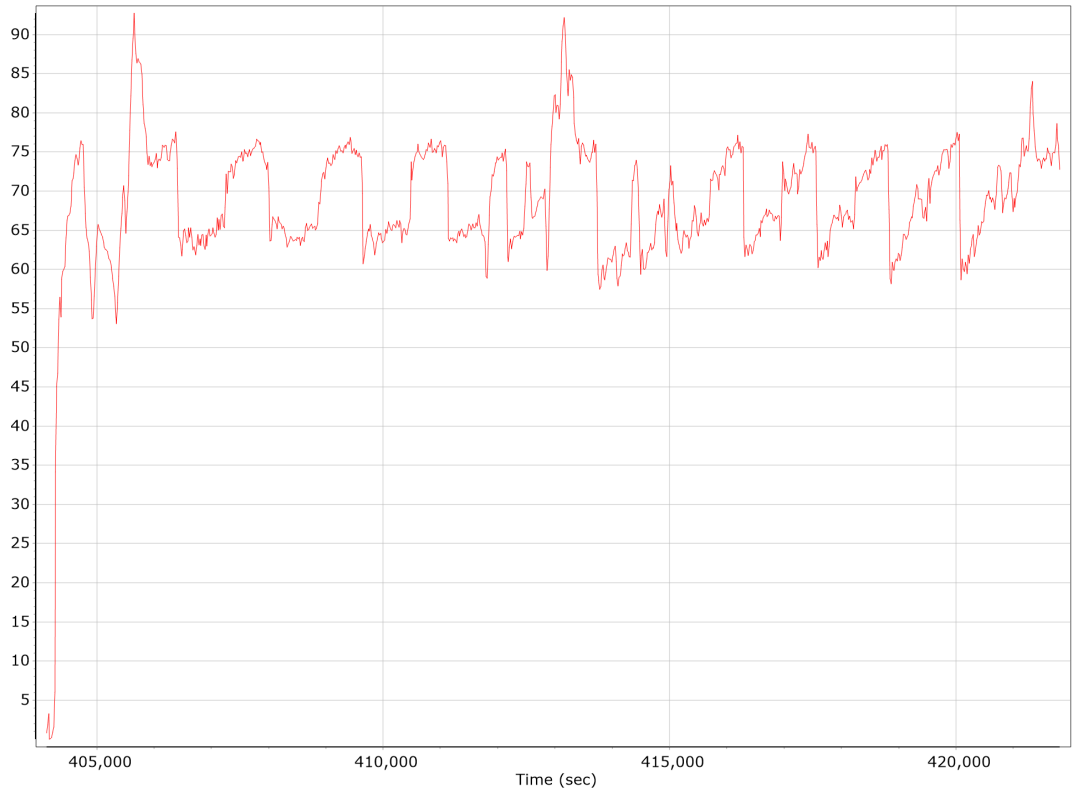
North/East Velocity



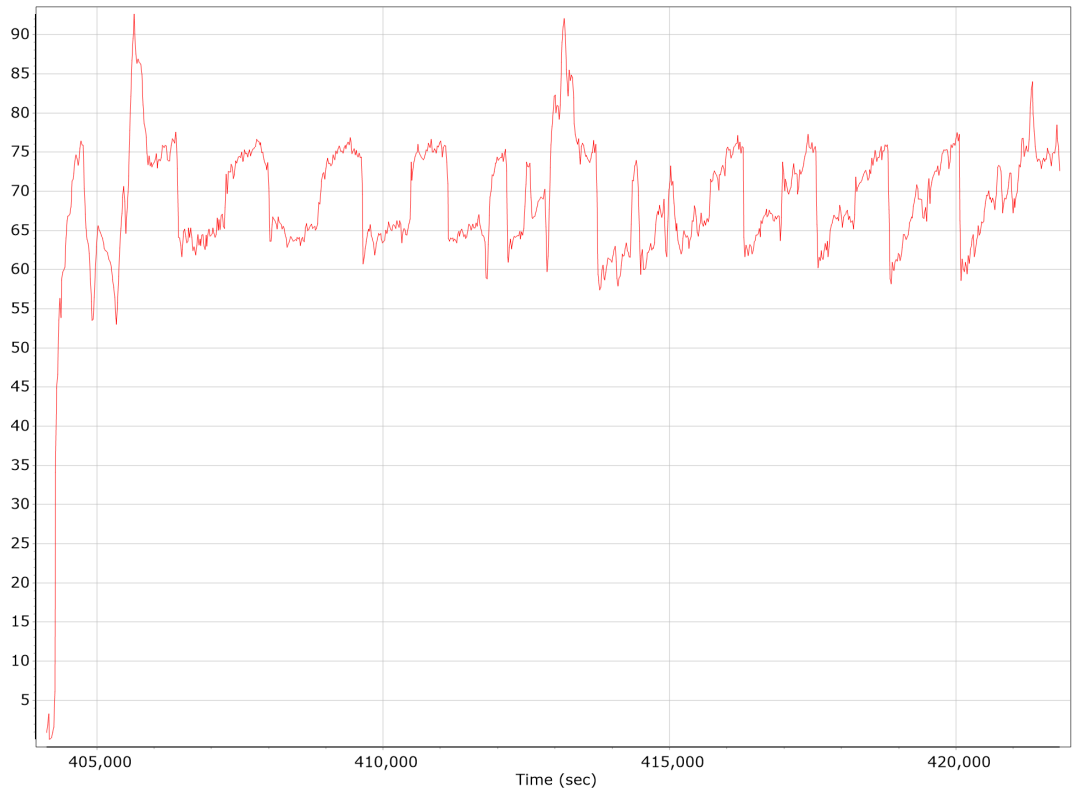
Down Velocity



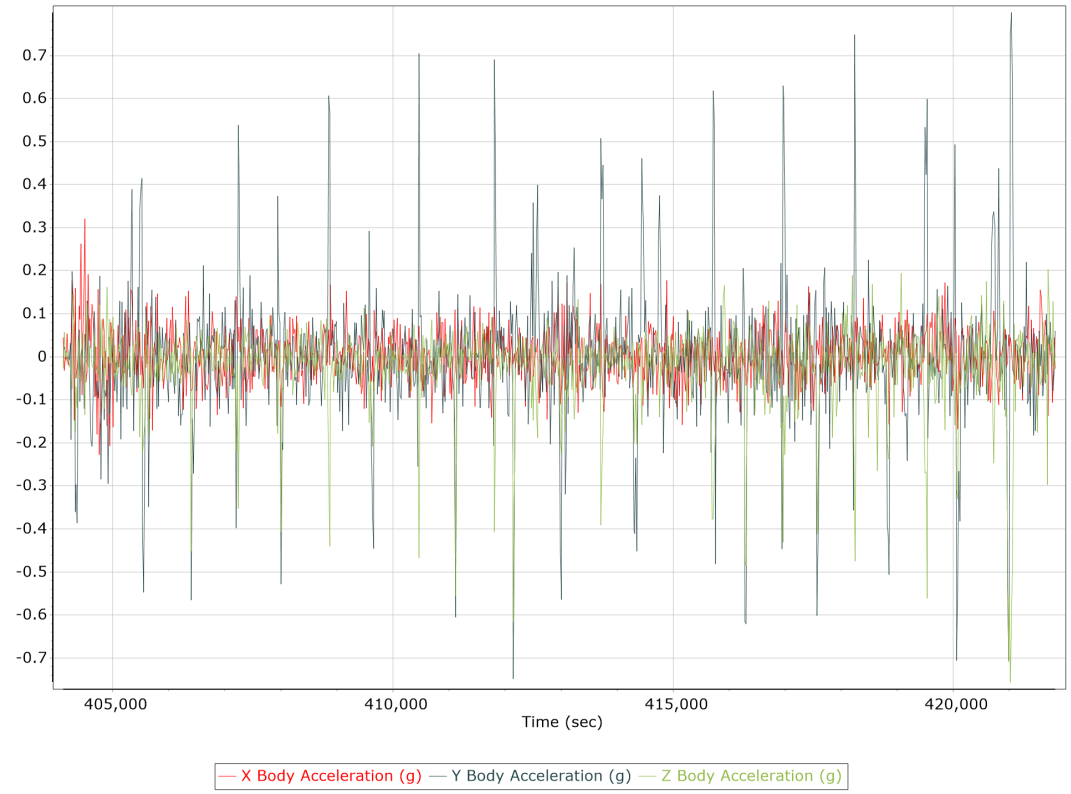
Total Speed



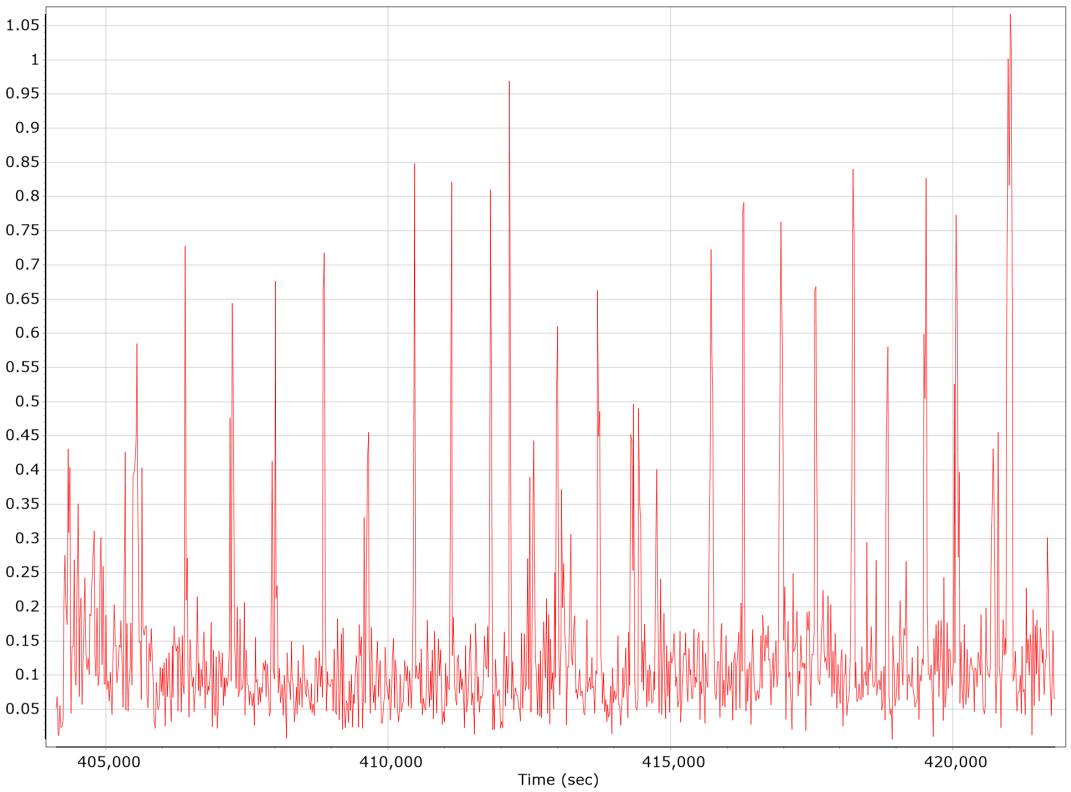
Ground Speed



Body Acceleration



Total Body Acceleration



Body Angular Rate

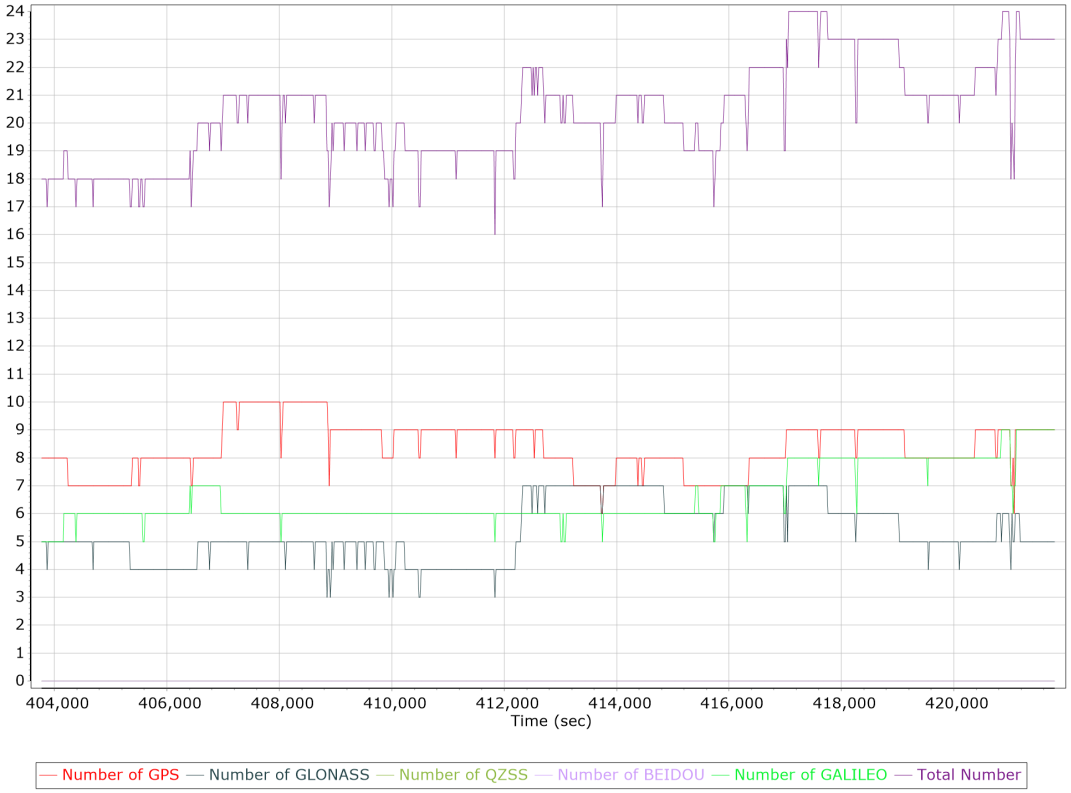


GNSS QC

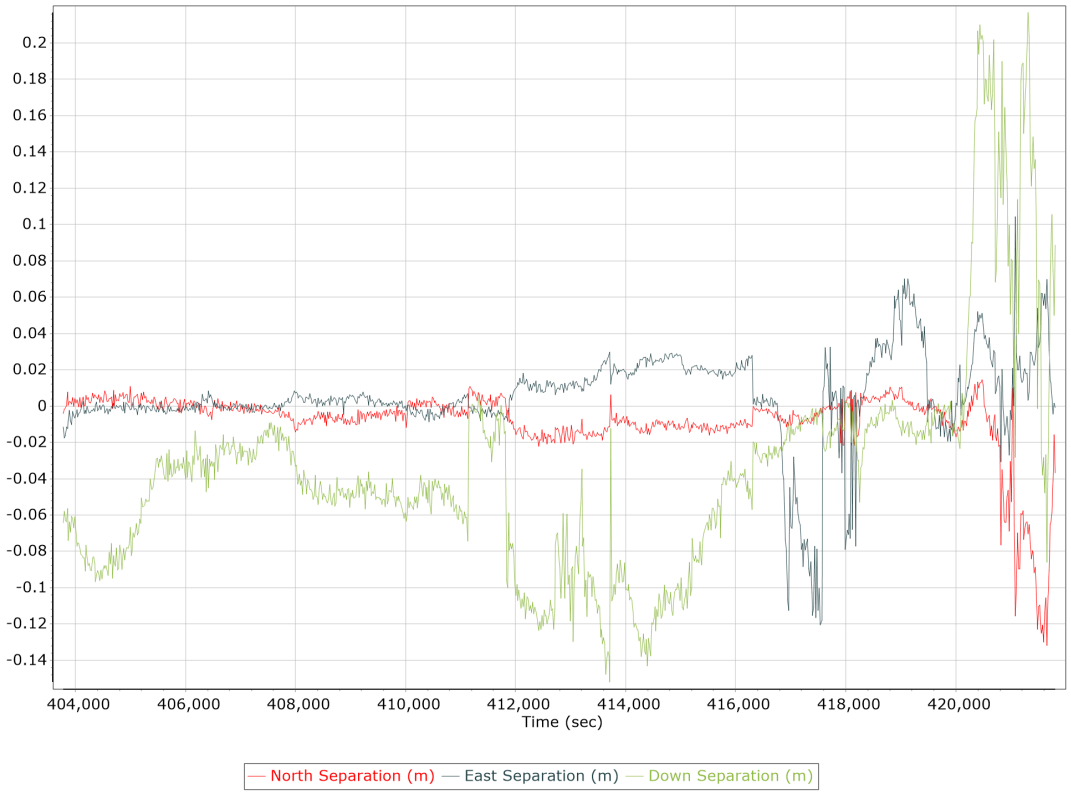
GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	6	10	8
Number of GLONASS SV	2	7	5
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	5	9	7
Total number of SV	15	24	20
PDOP	1.03	1.91	1.22
QC Solution Gaps	0.00	0.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	18085.00	0.00	0.00
Percentage	100.00	0.00	0.00

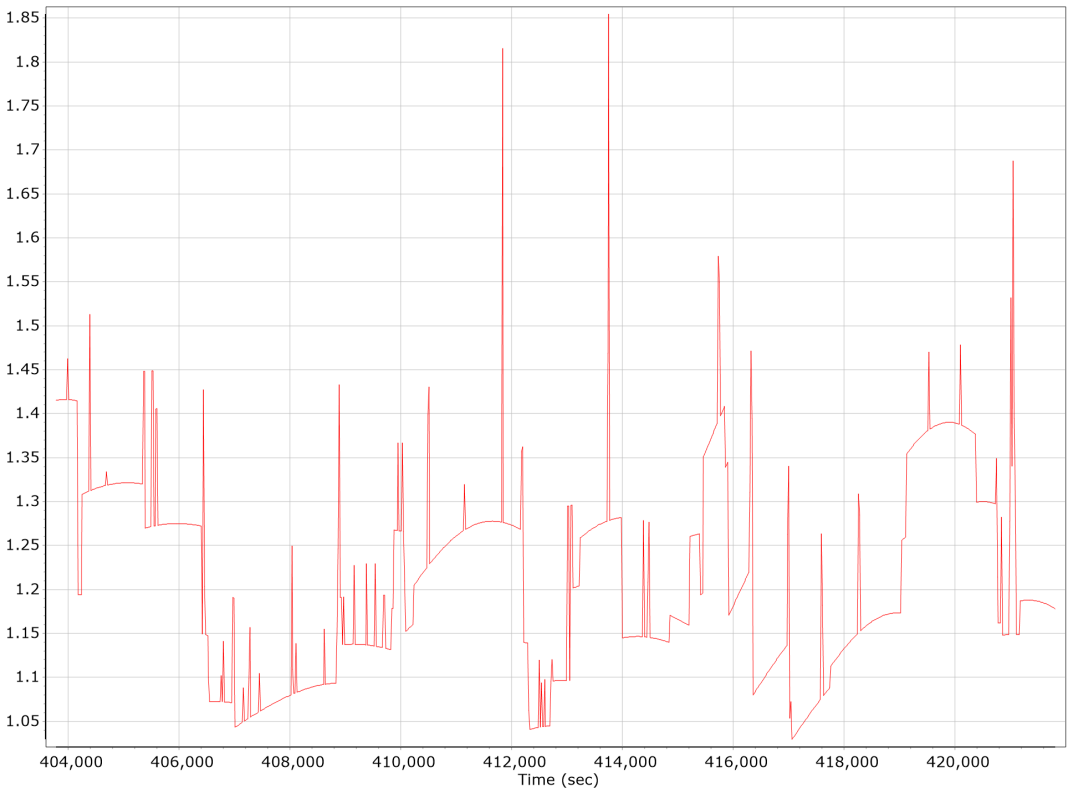
Num SVs in solution



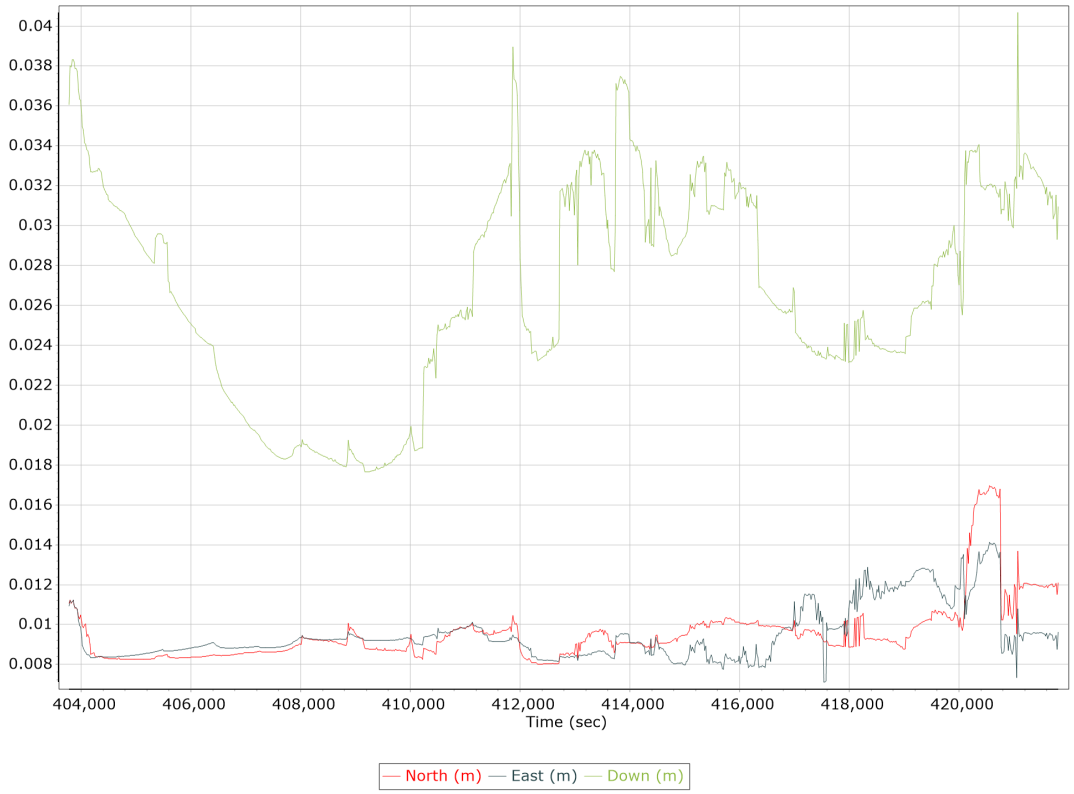
Forward/Reverse Separation



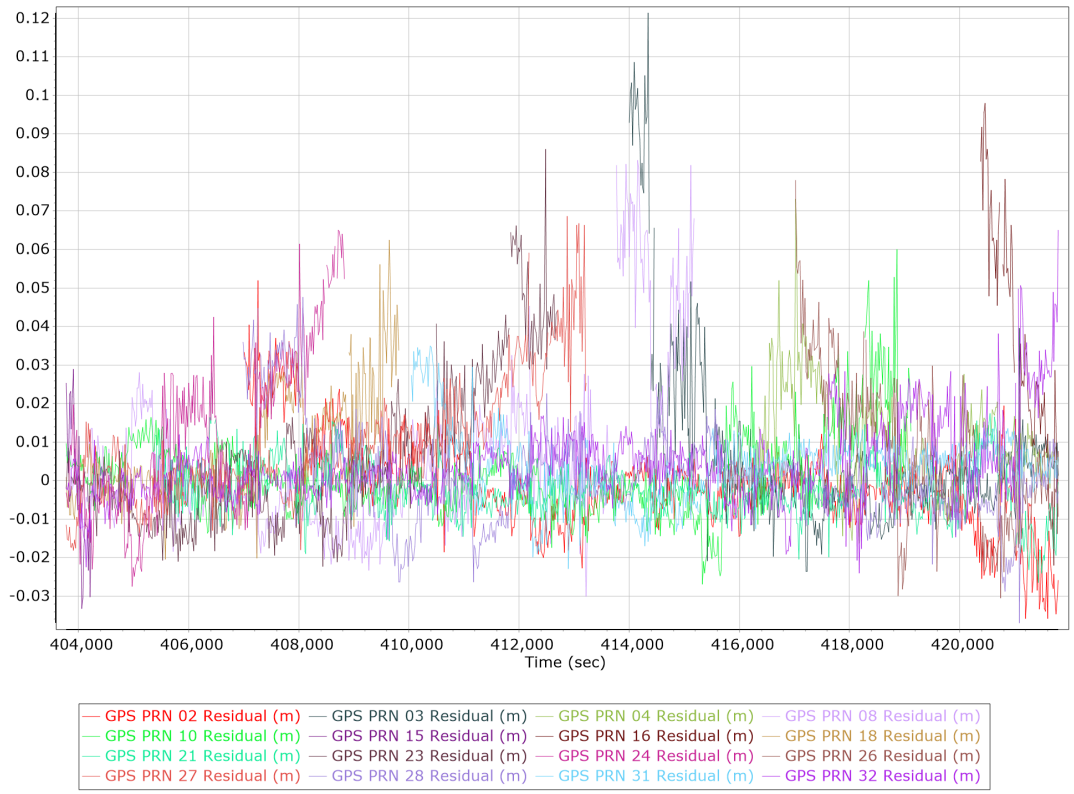
PDOP



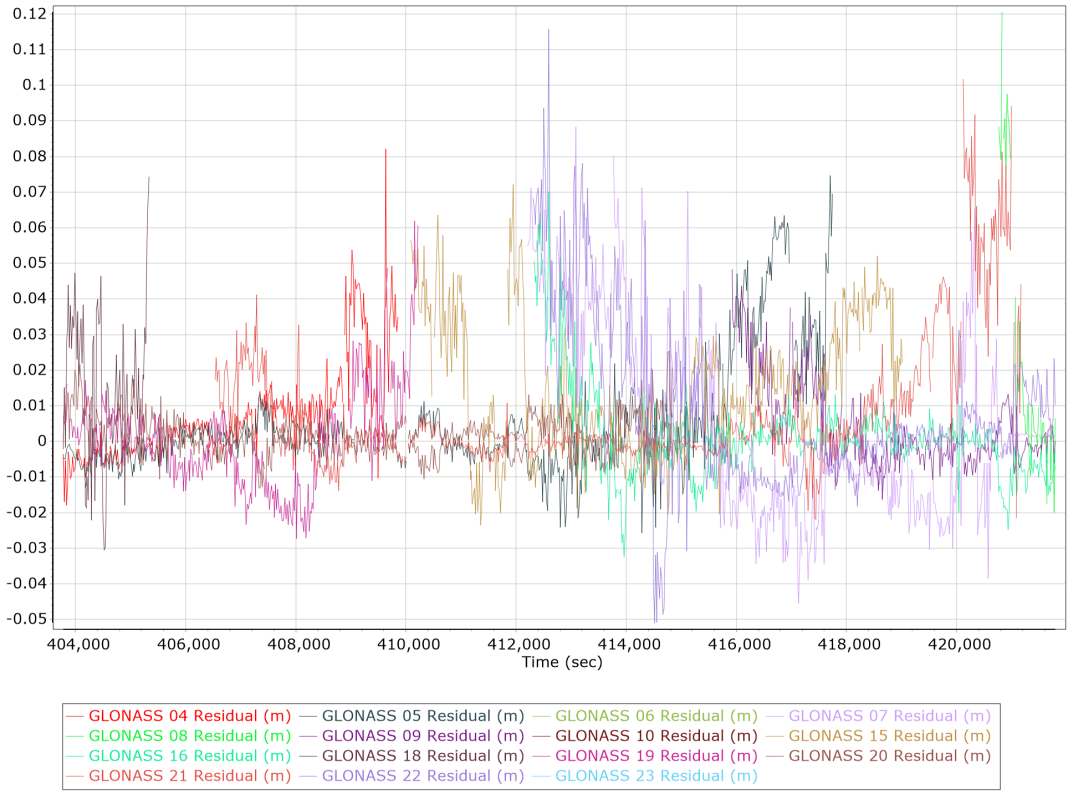
Estimated Position Accuracy



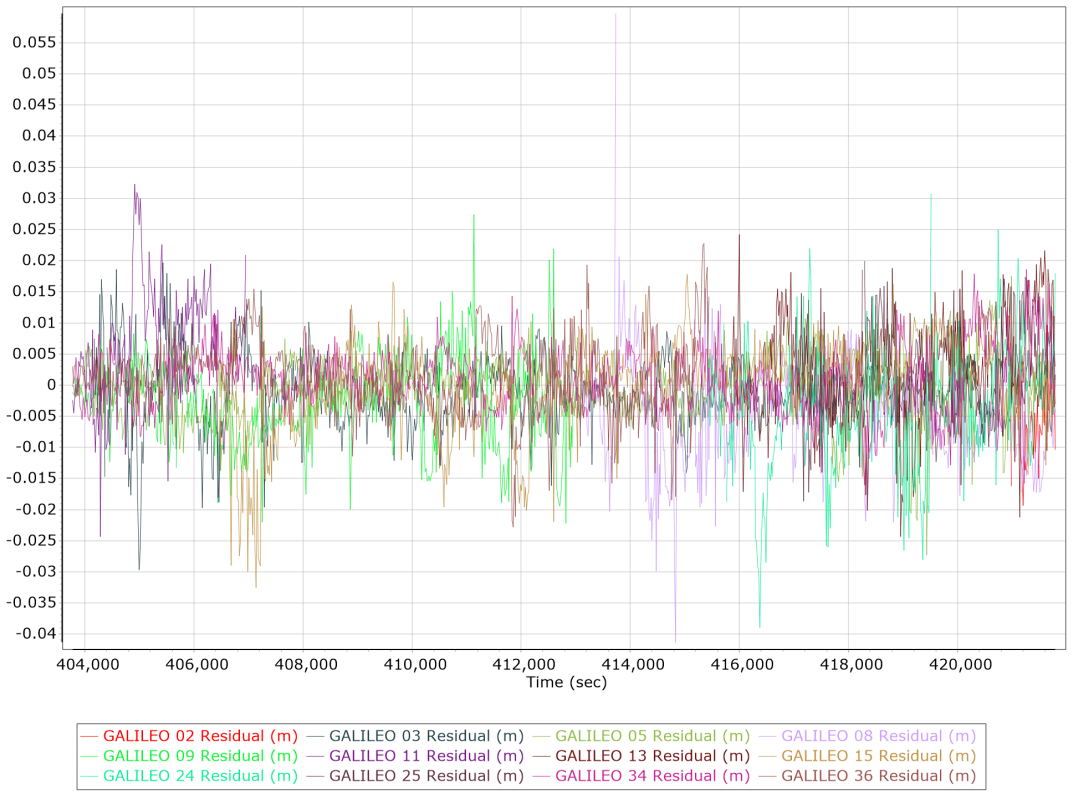
GPS Residuals



GLONASS Residuals



GALILEO Residuals



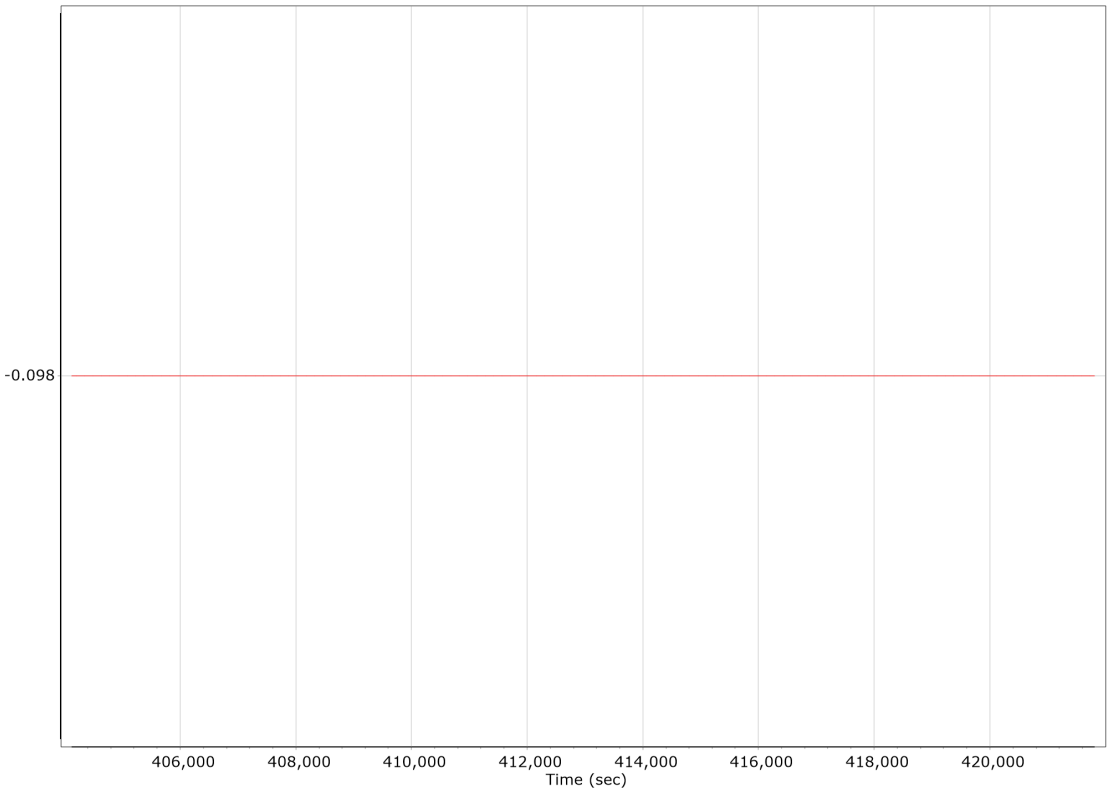
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	403693.000 (10/5/2023 4:08:13 PM)		
Processing end time	421833.000 (10/5/2023 9:10:33 PM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	-0.098	0.057	-1.221
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

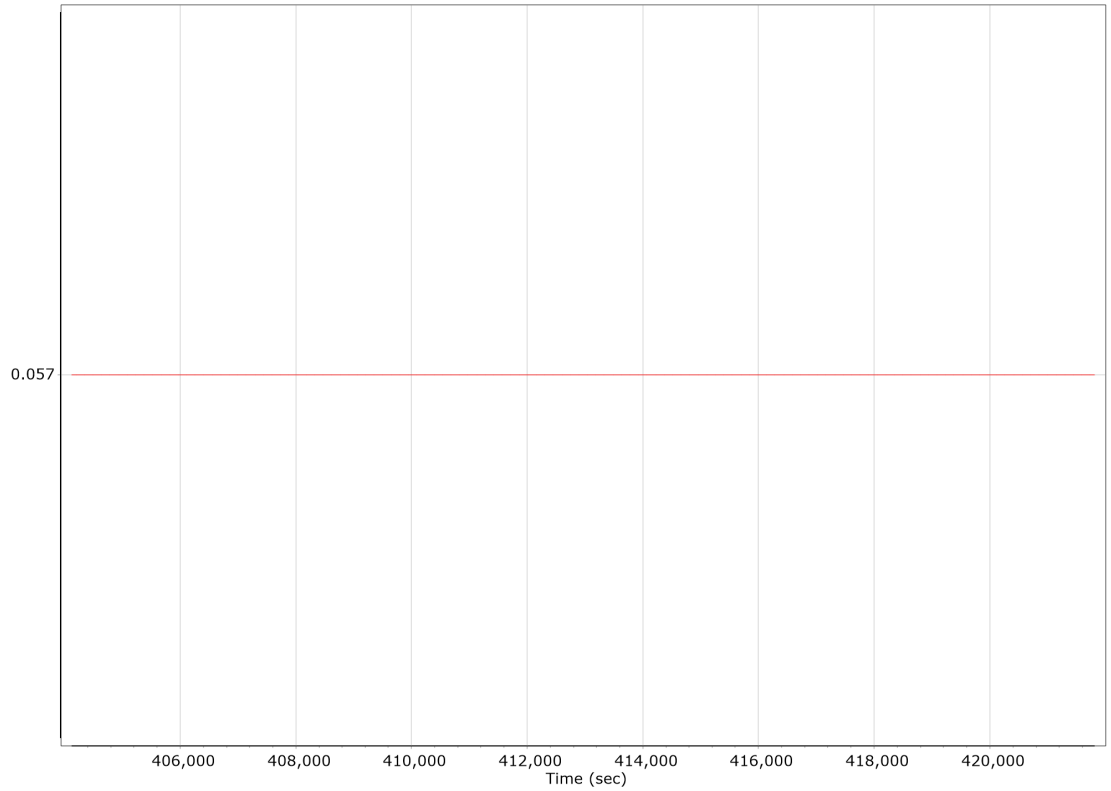
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

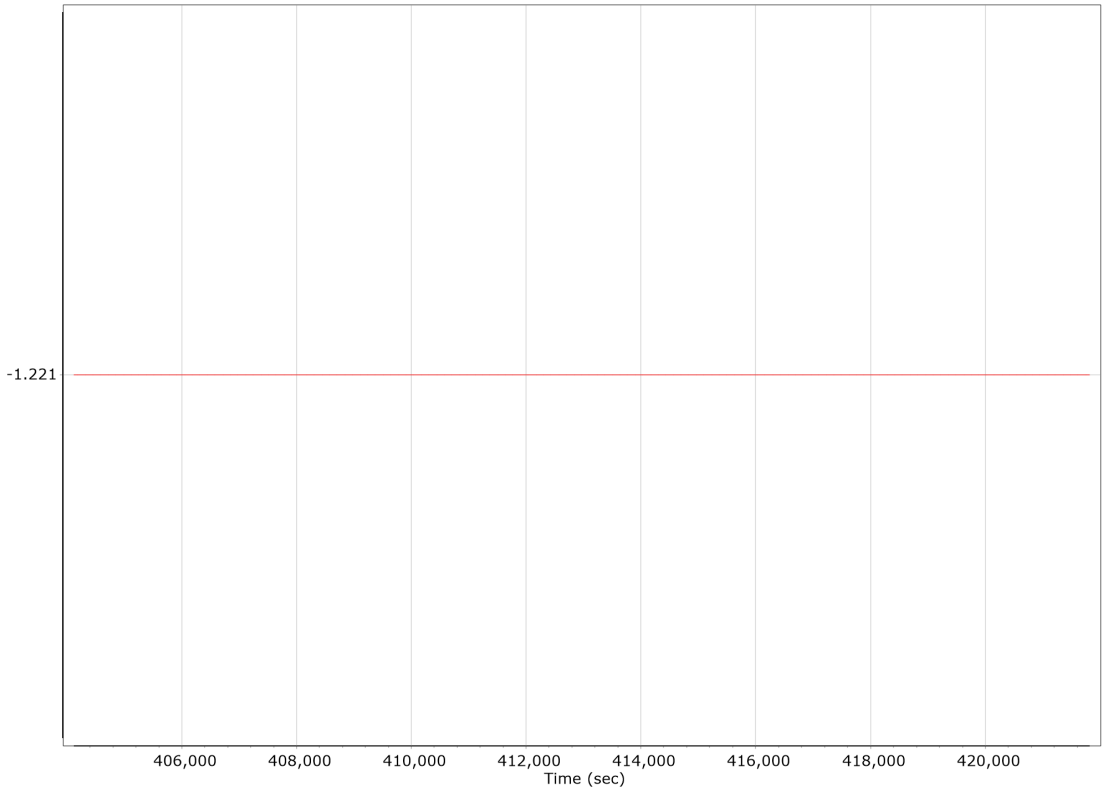
X Reference-Primary GNSS Lever Arm (m)



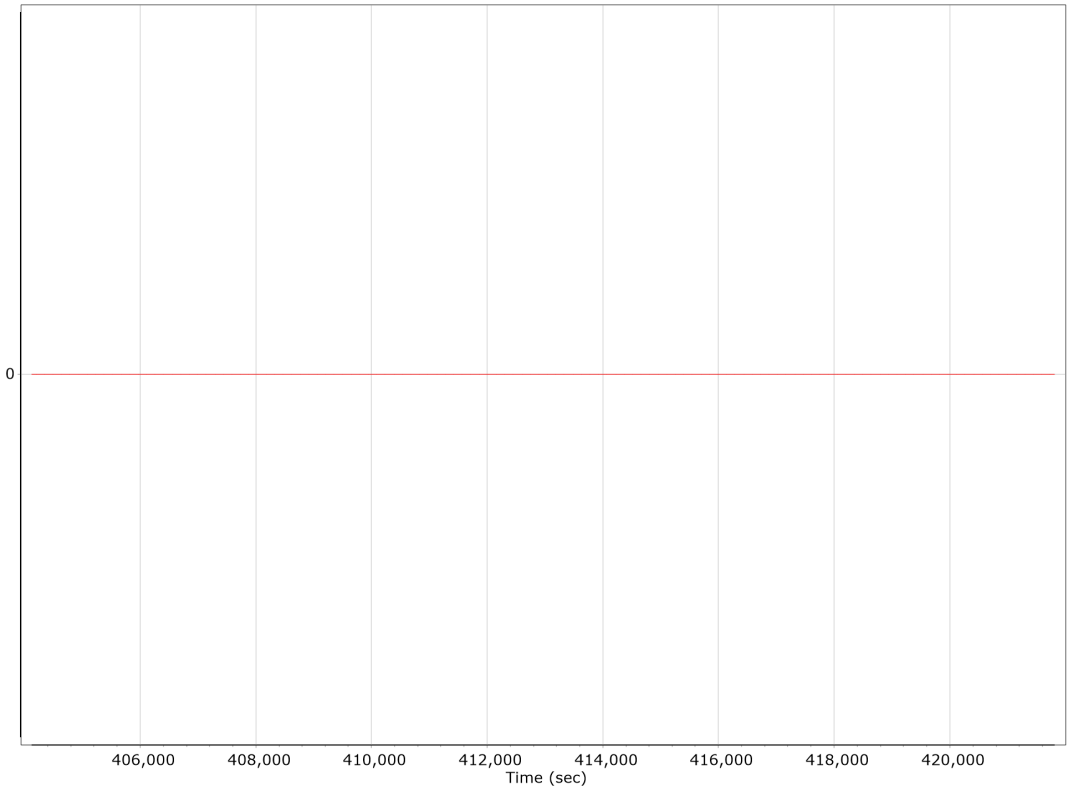
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



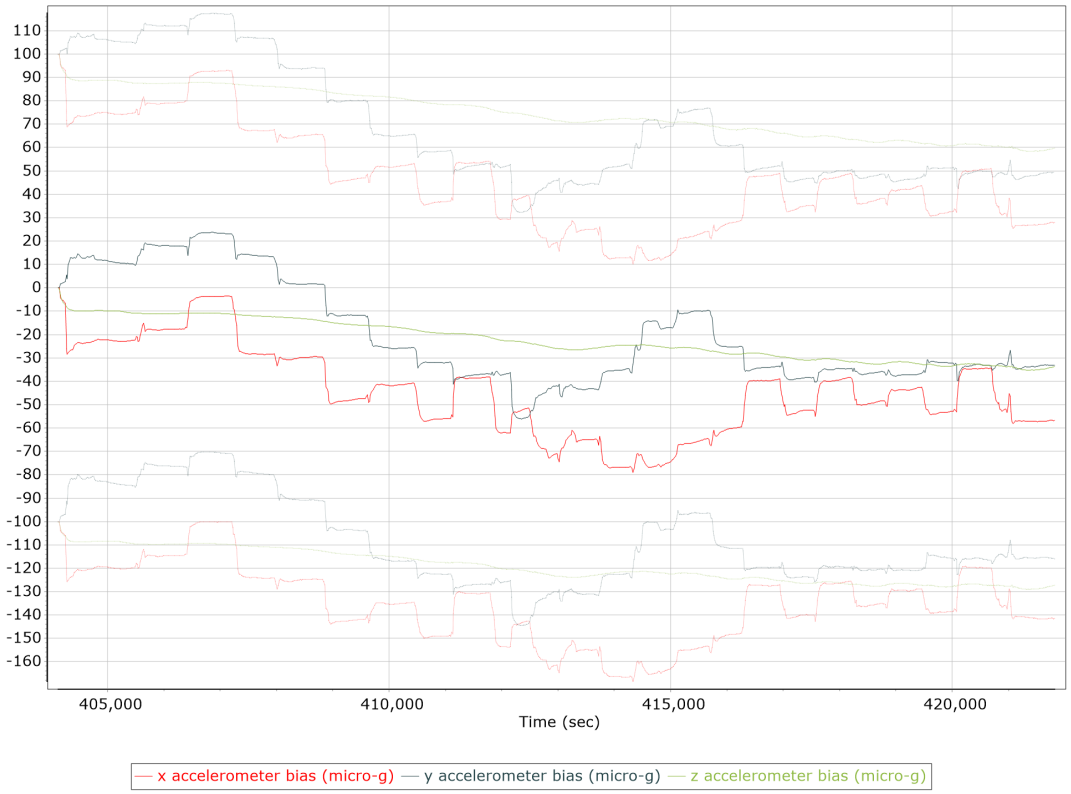
Reference-Primary GNSS Lever Arm Figure of Merit



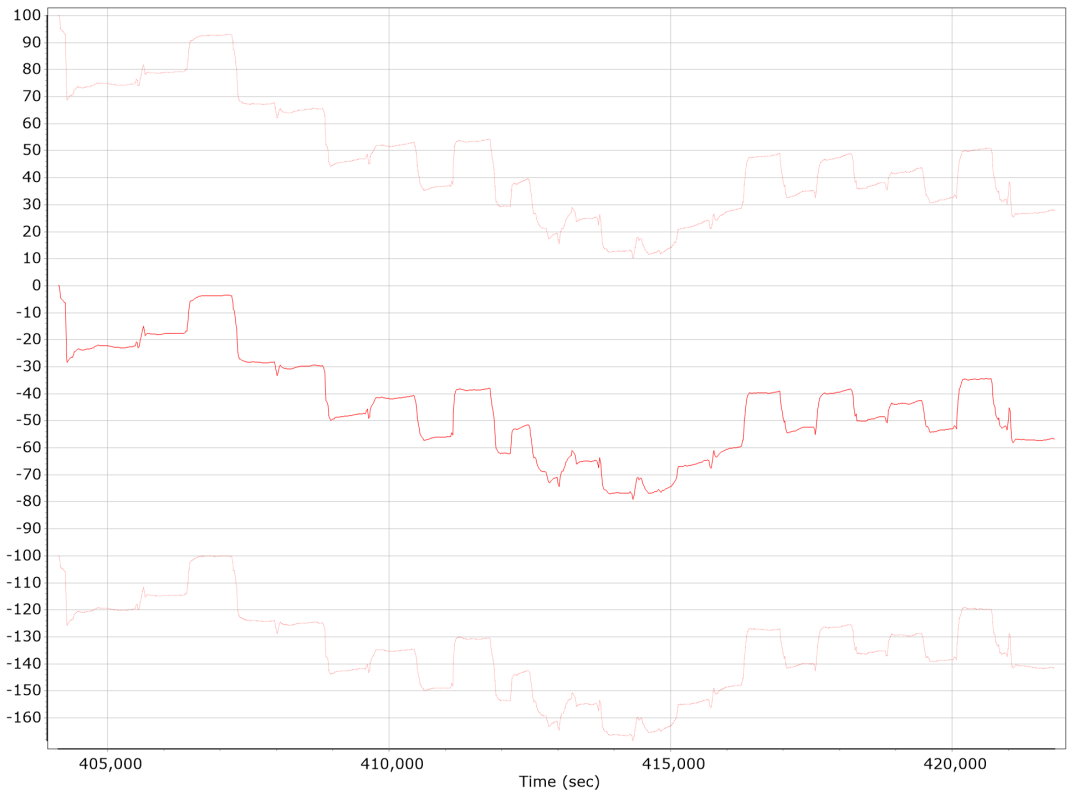
IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

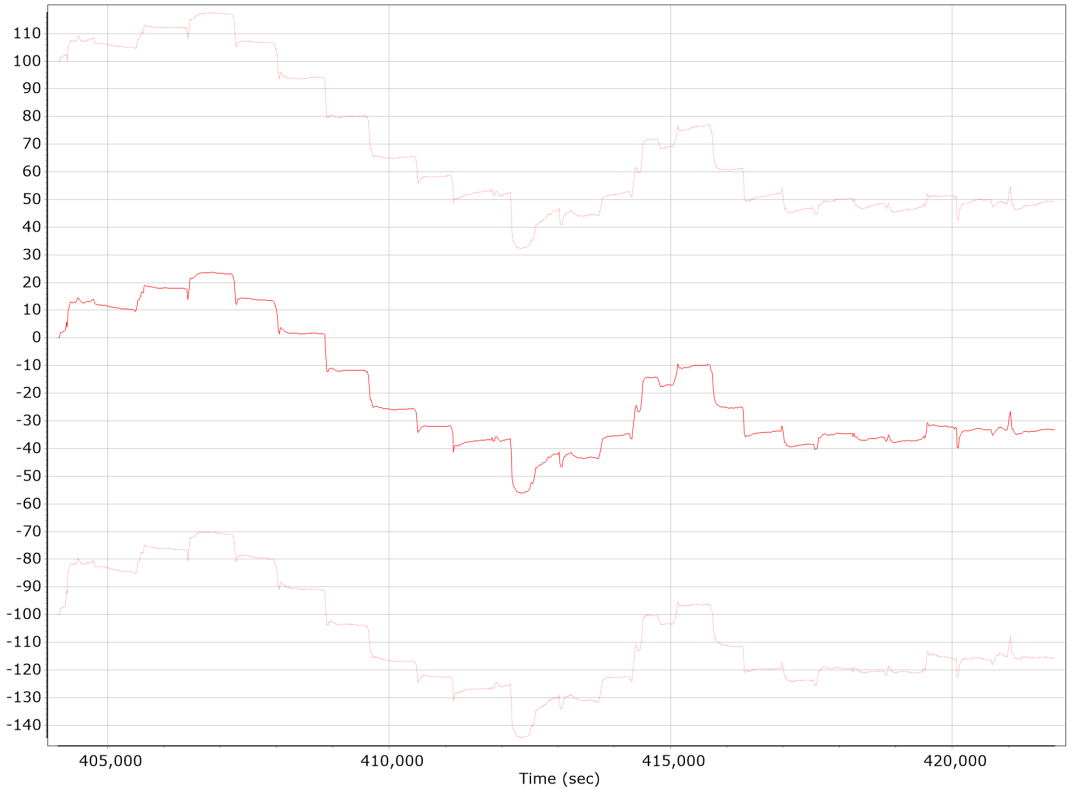
Accelerometer Bias (micro-g)



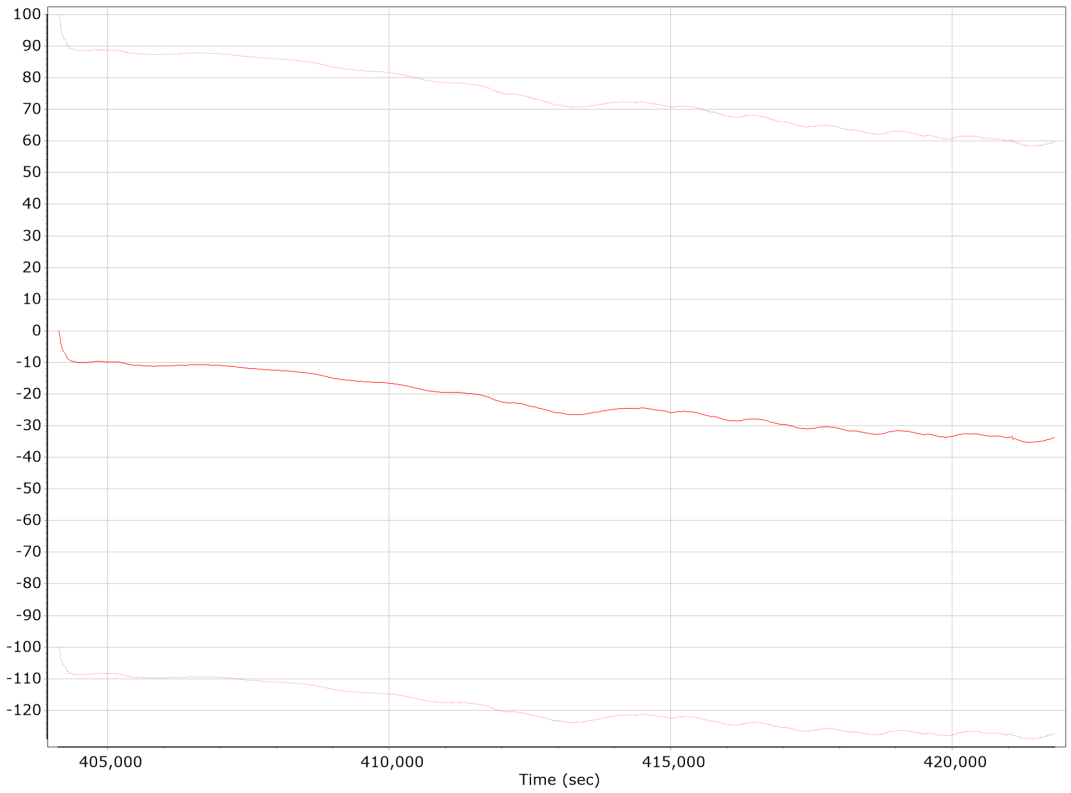
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



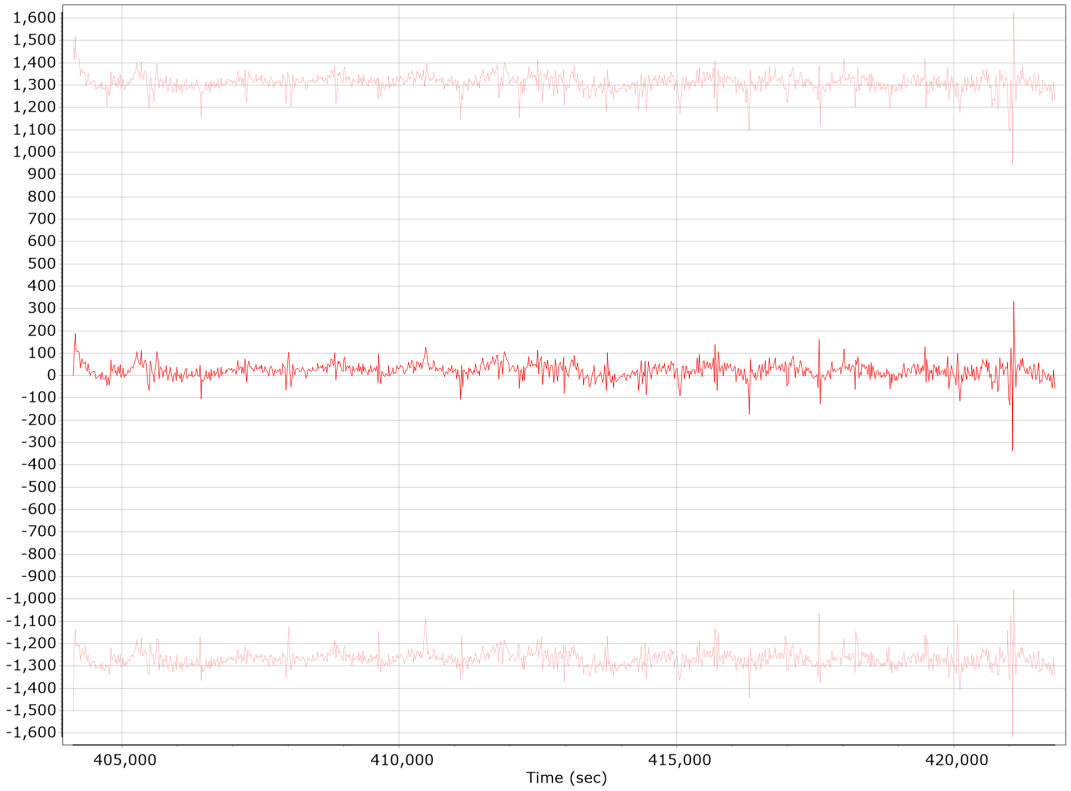
X Accelerometer Scale Error (ppm)



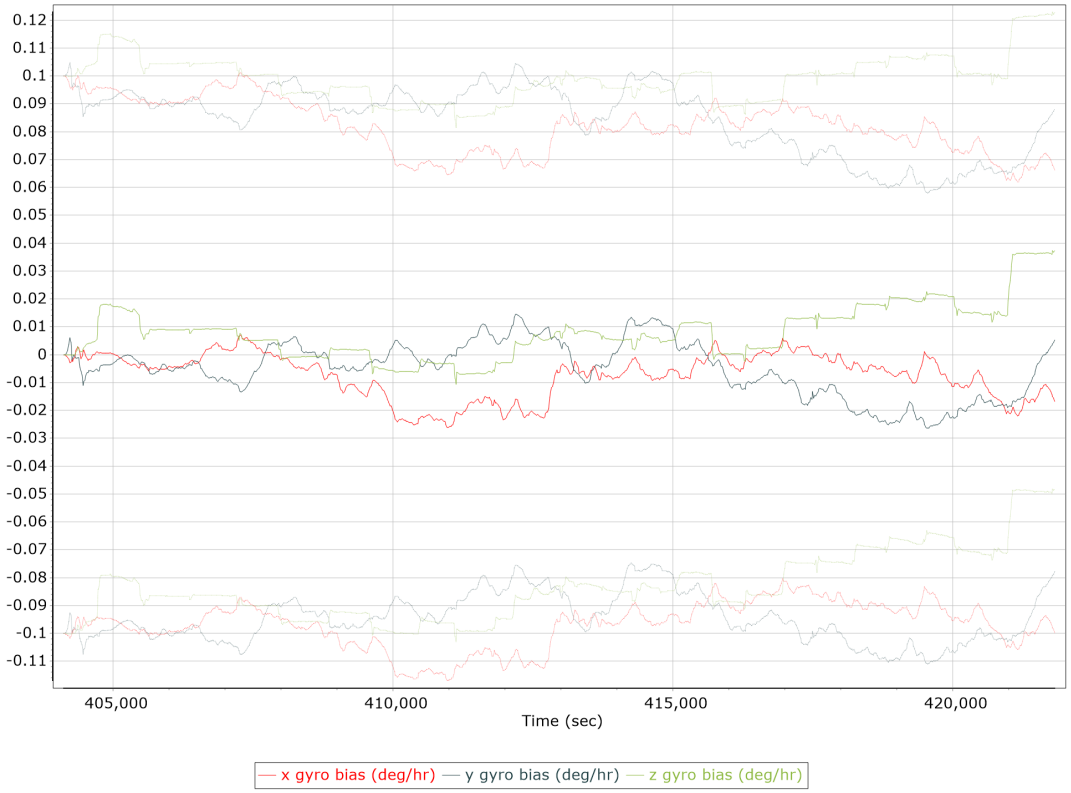
Y Accelerometer Scale Error (ppm)



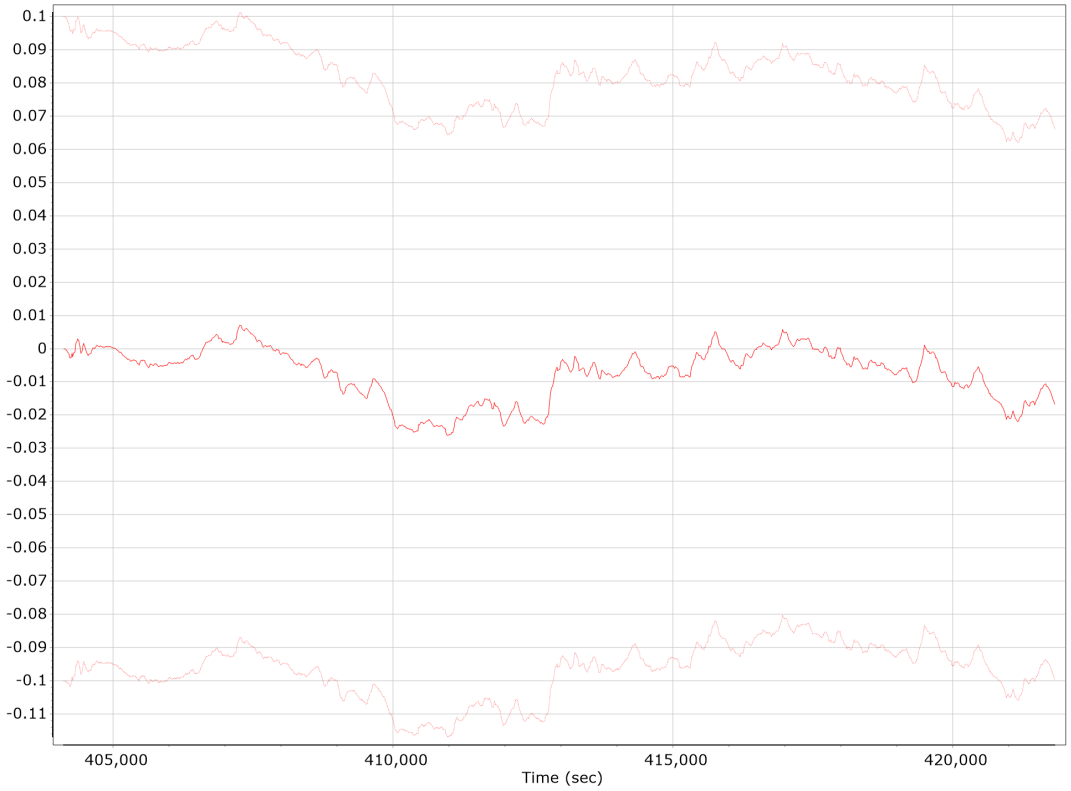
Z Accelerometer Scale Error (ppm)



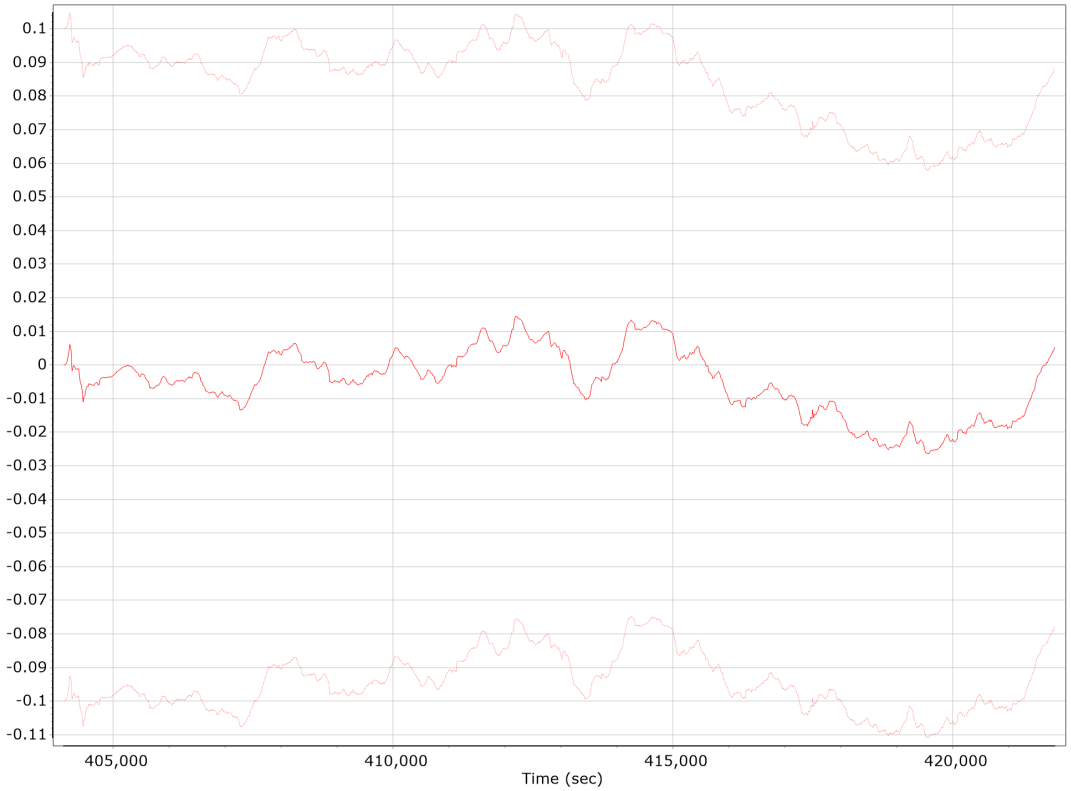
Gyro Bias (deg/h)



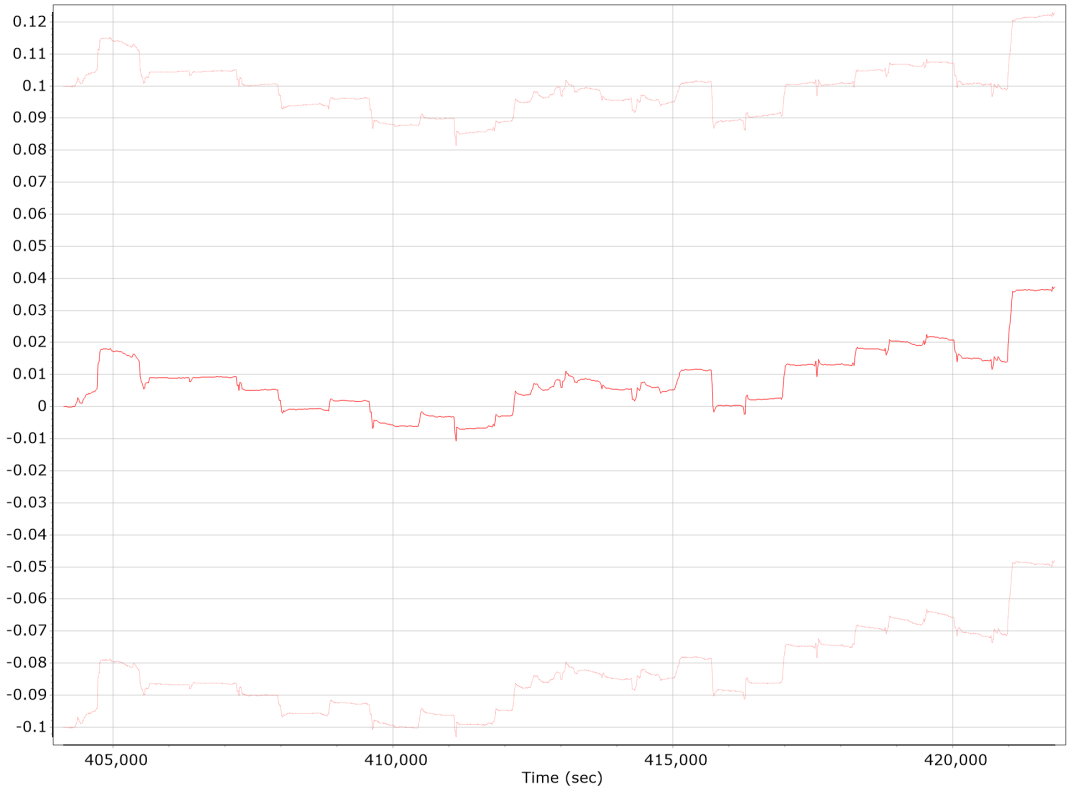
X Gyro Bias (deg/h)



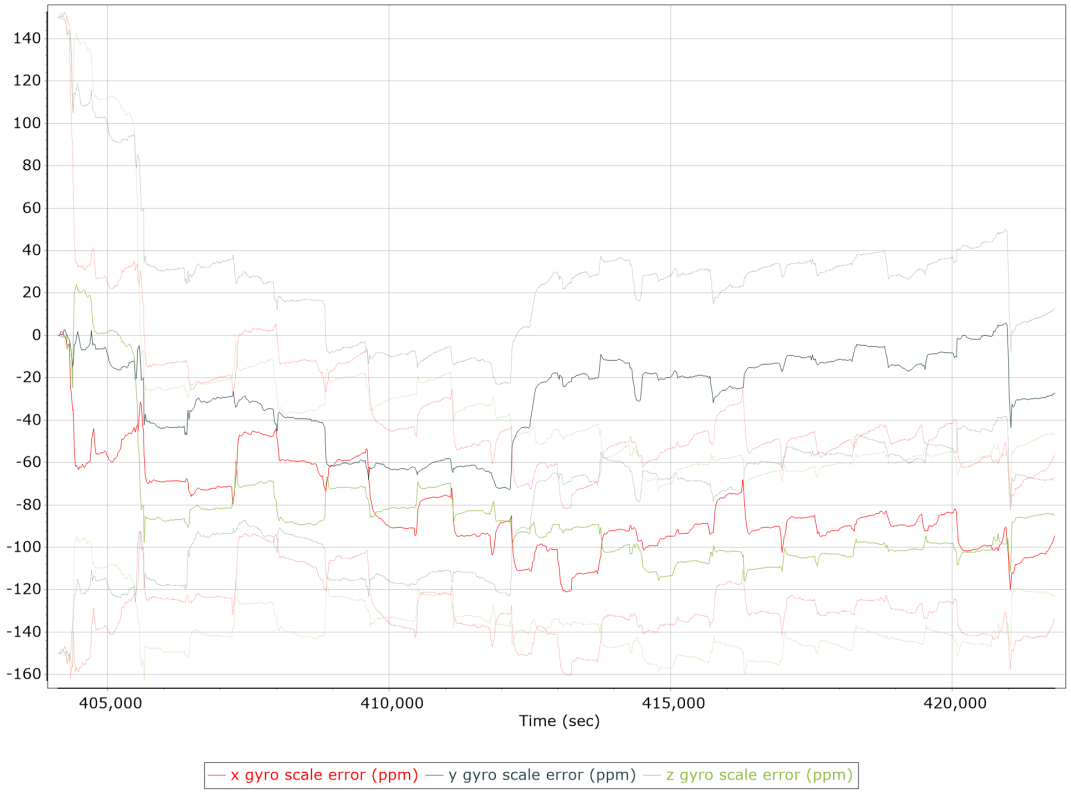
Y Gyro Bias (deg/h)



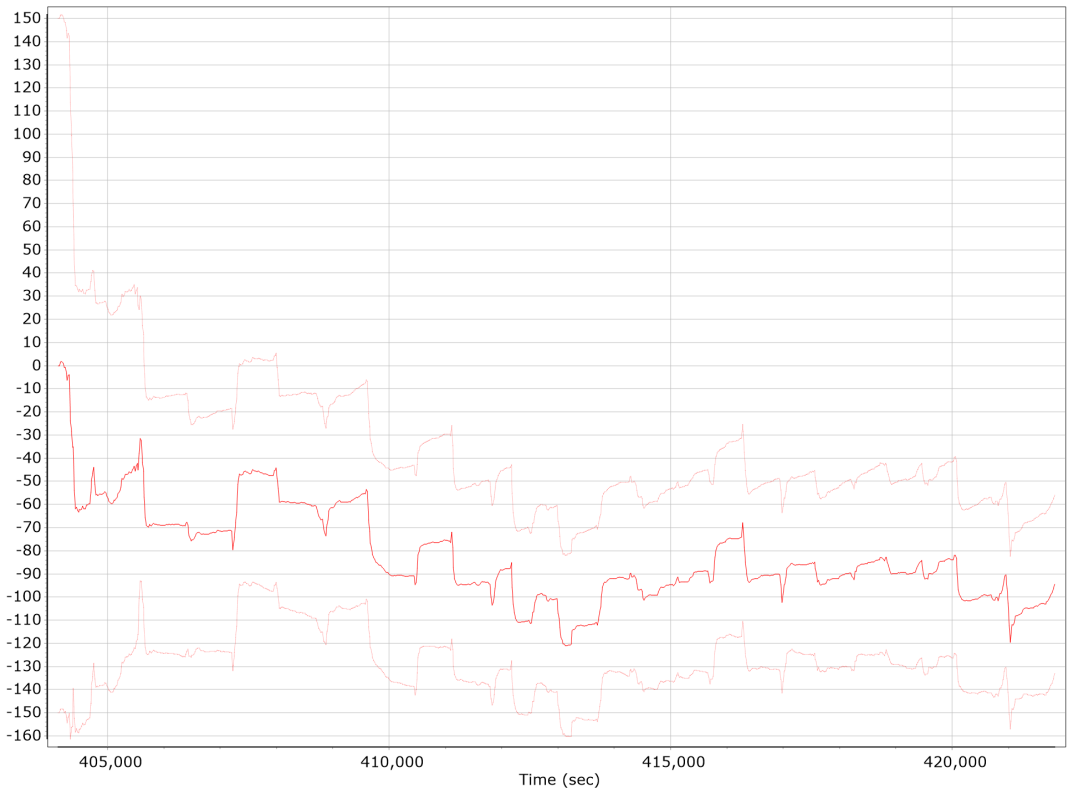
Z Gyro Bias (deg/h)



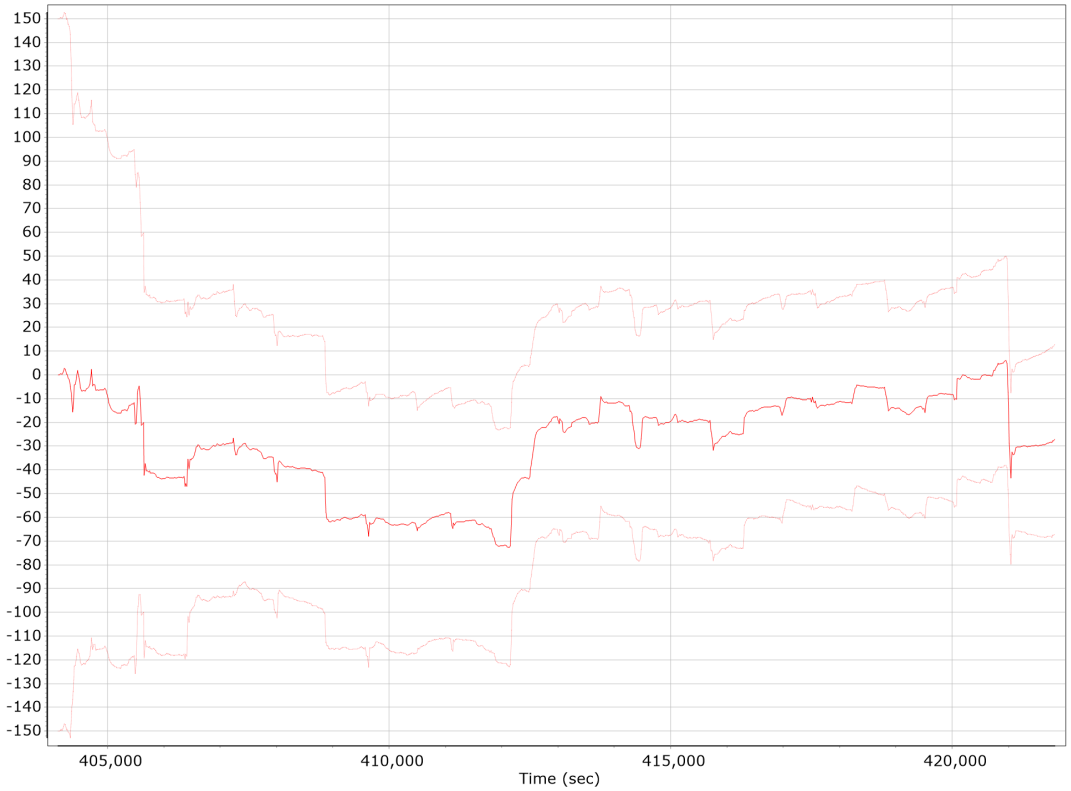
Gyro Scale Error (ppm)



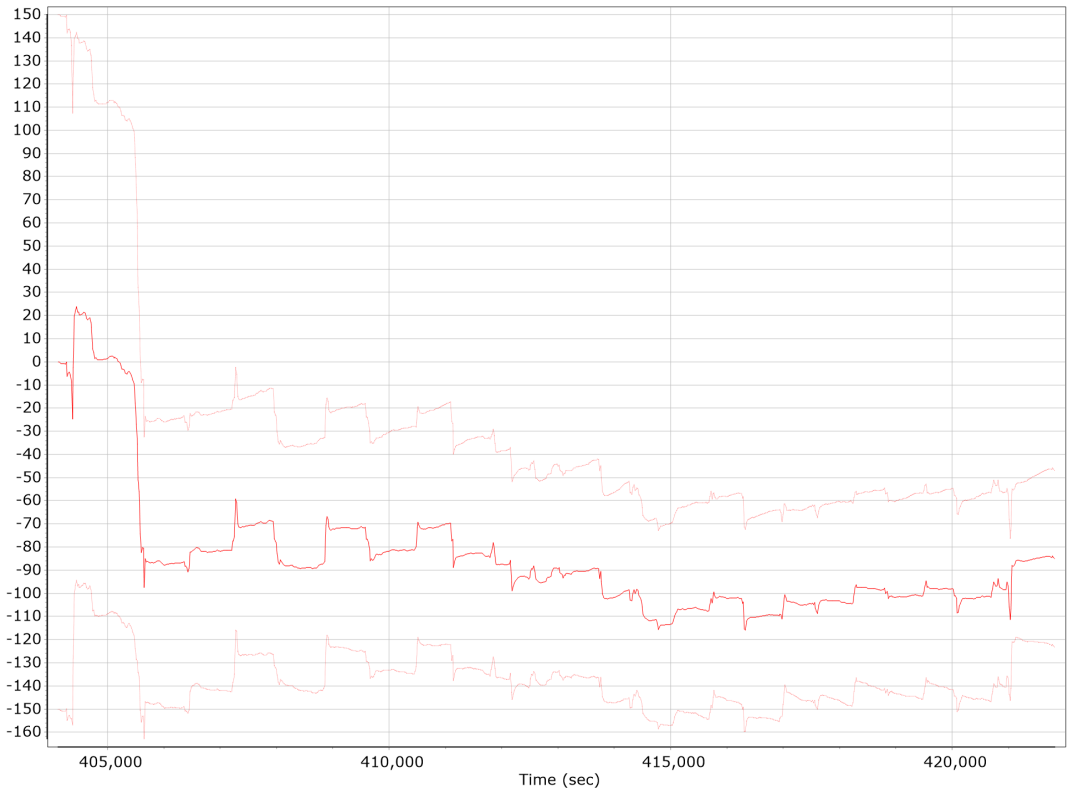
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)



Z Gyro Scale Error (ppm)

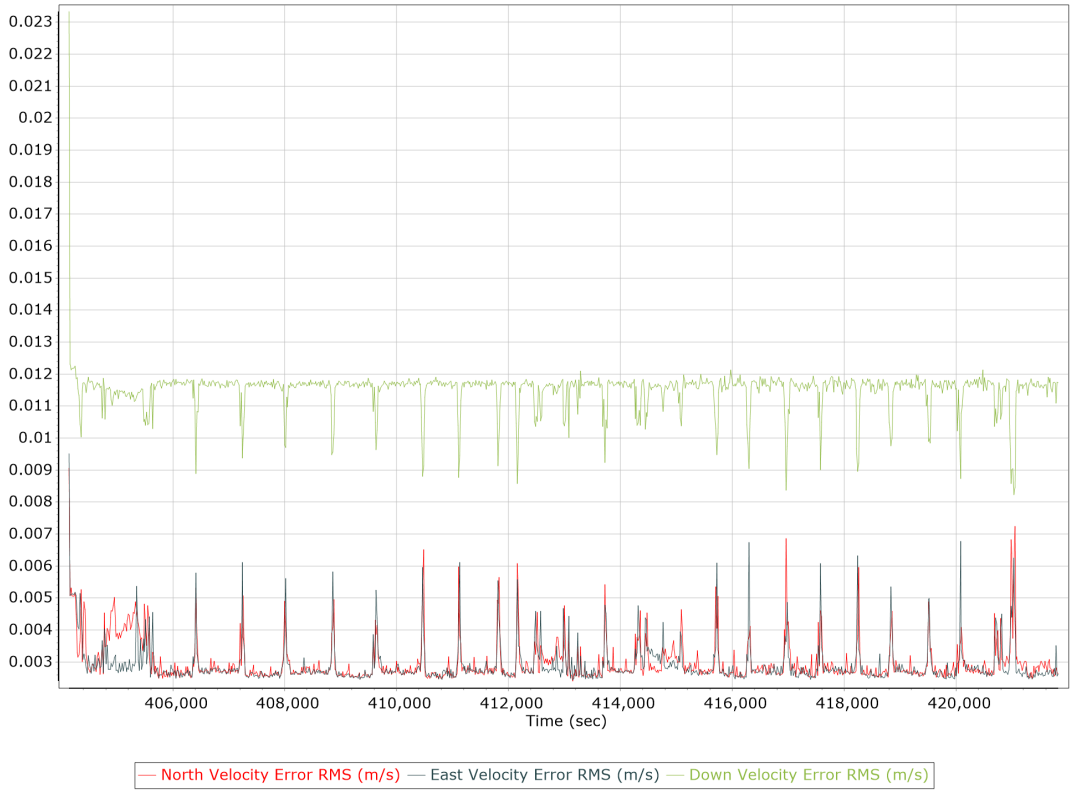


Smoothed Performance Metrics

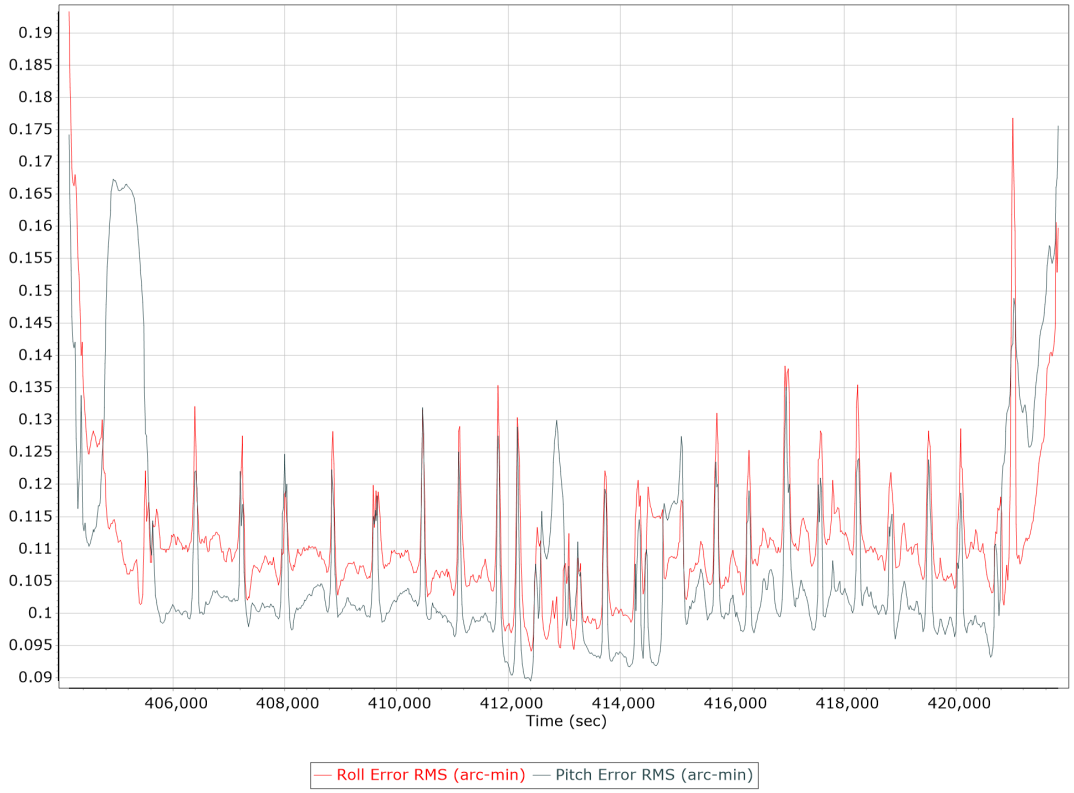
Position Error RMS (m)



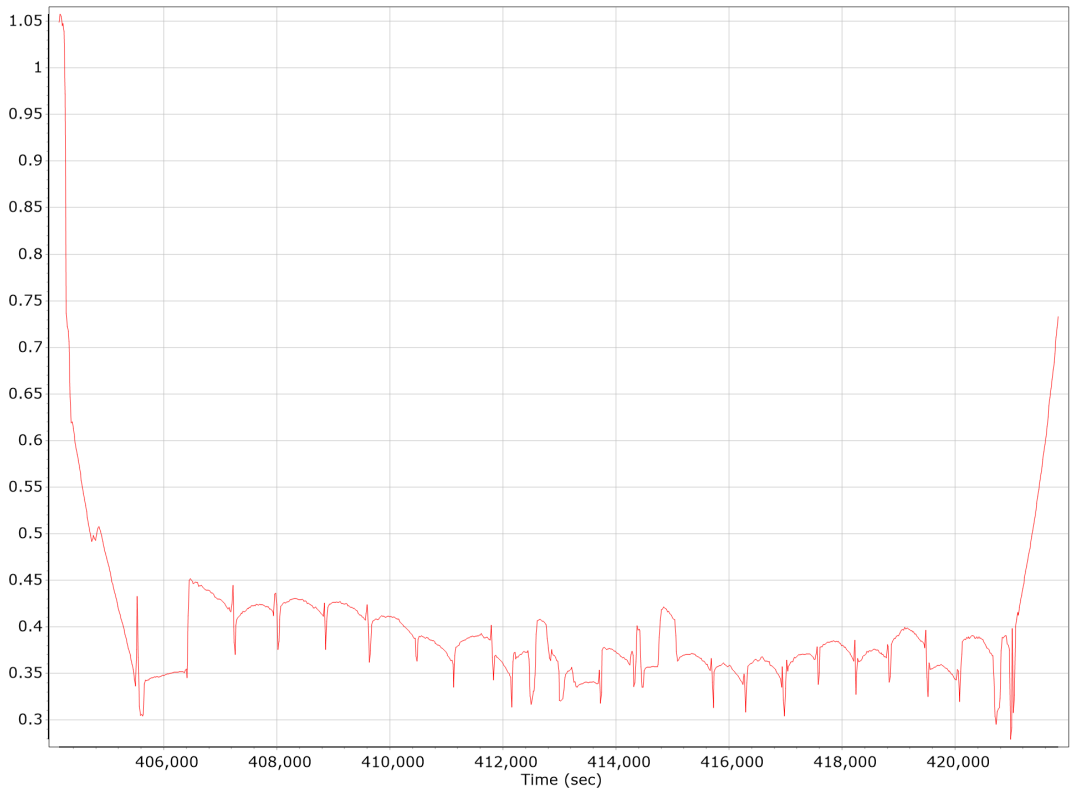
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)



Heading Error RMS (arc-min)



Forward Processed Performance Metrics

Position Error RMS (m)



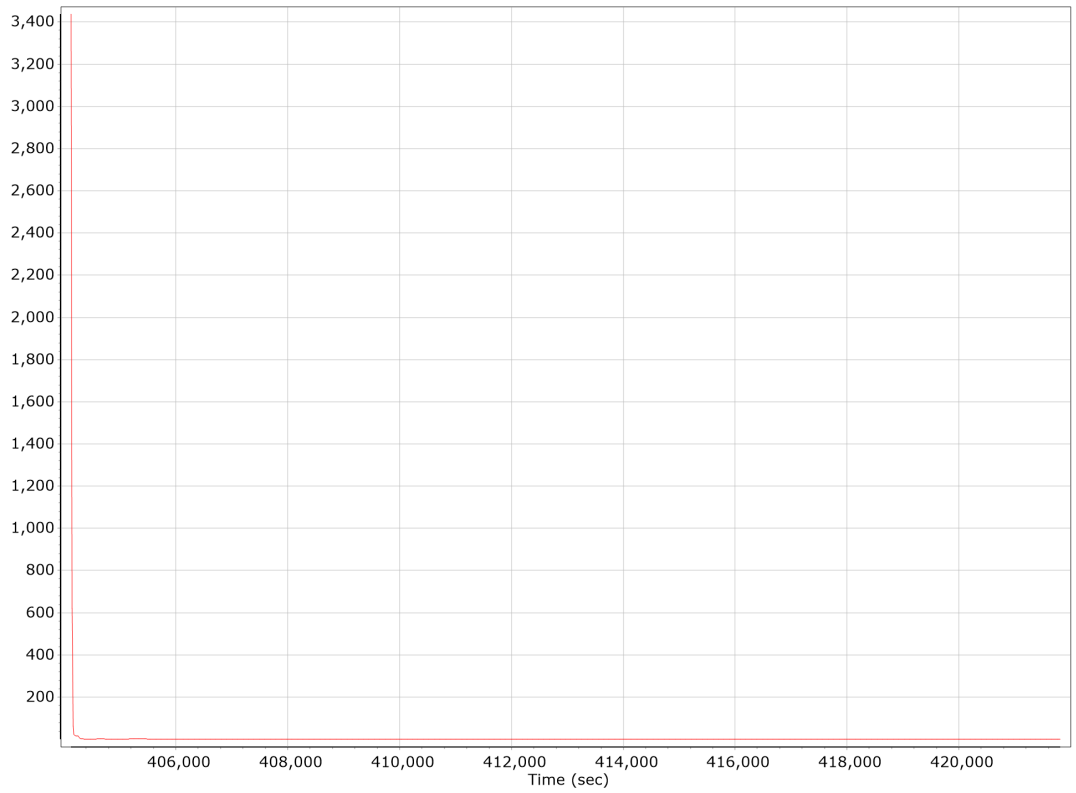
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

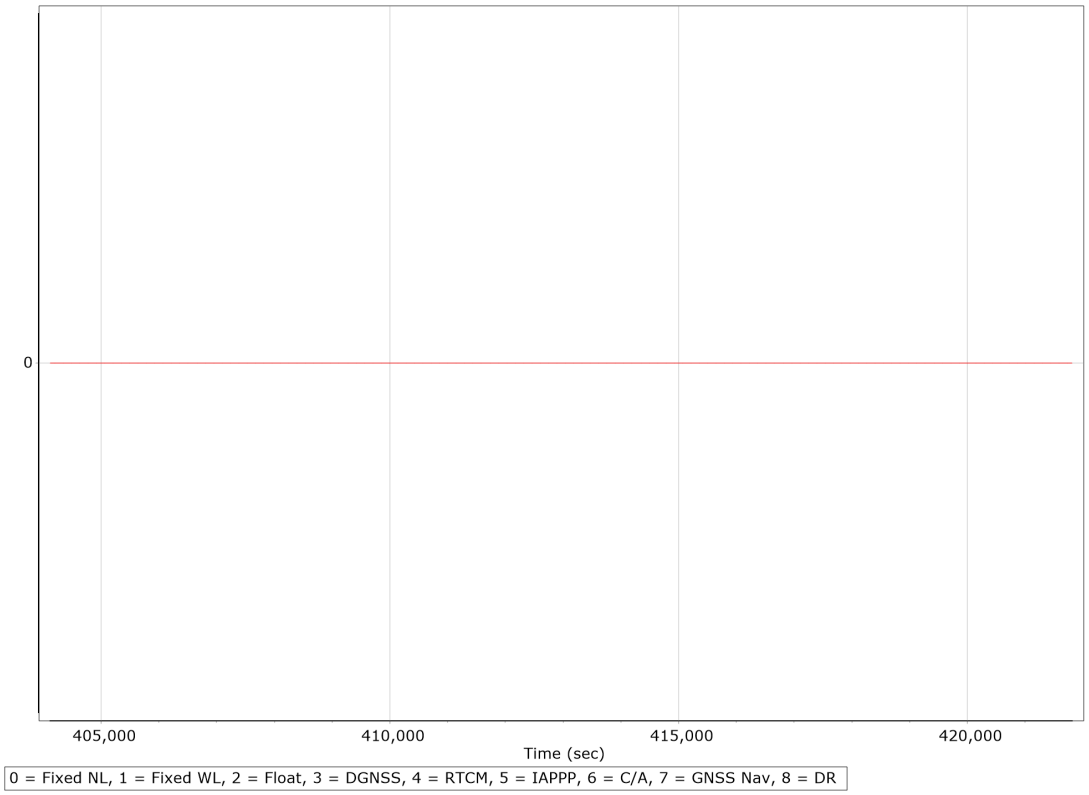


Heading Error RMS (arc-min)



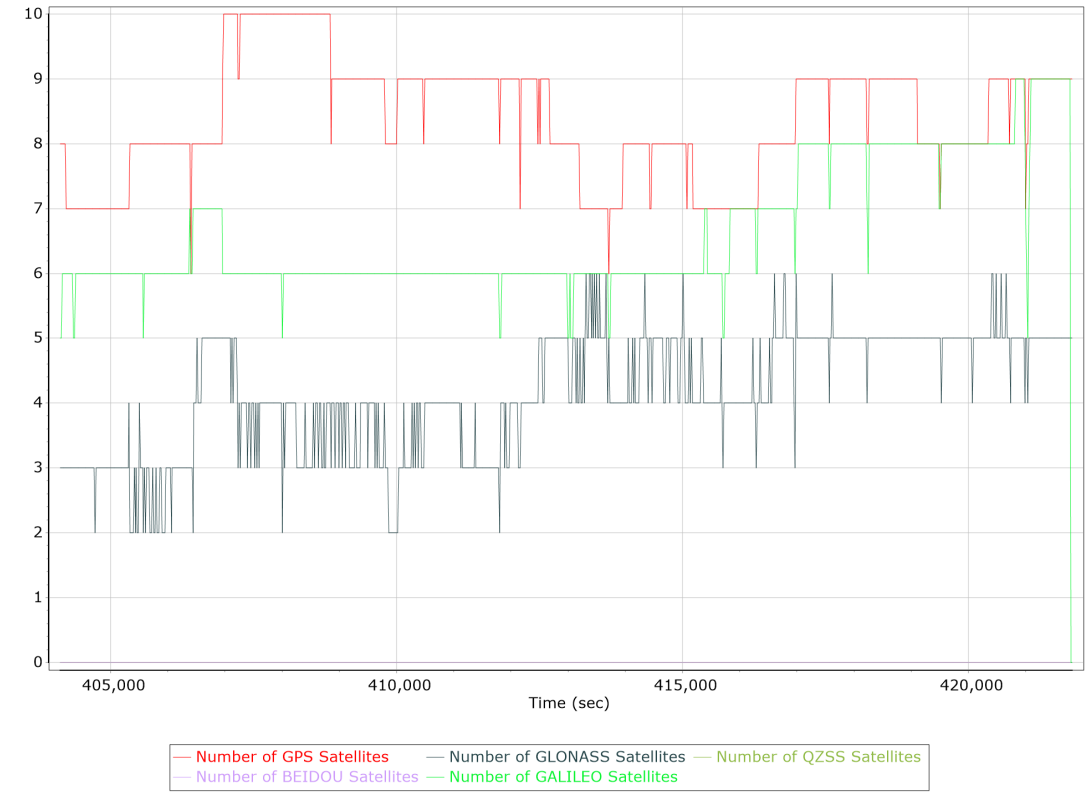
Forward Processed Solution Status

Processing Mode

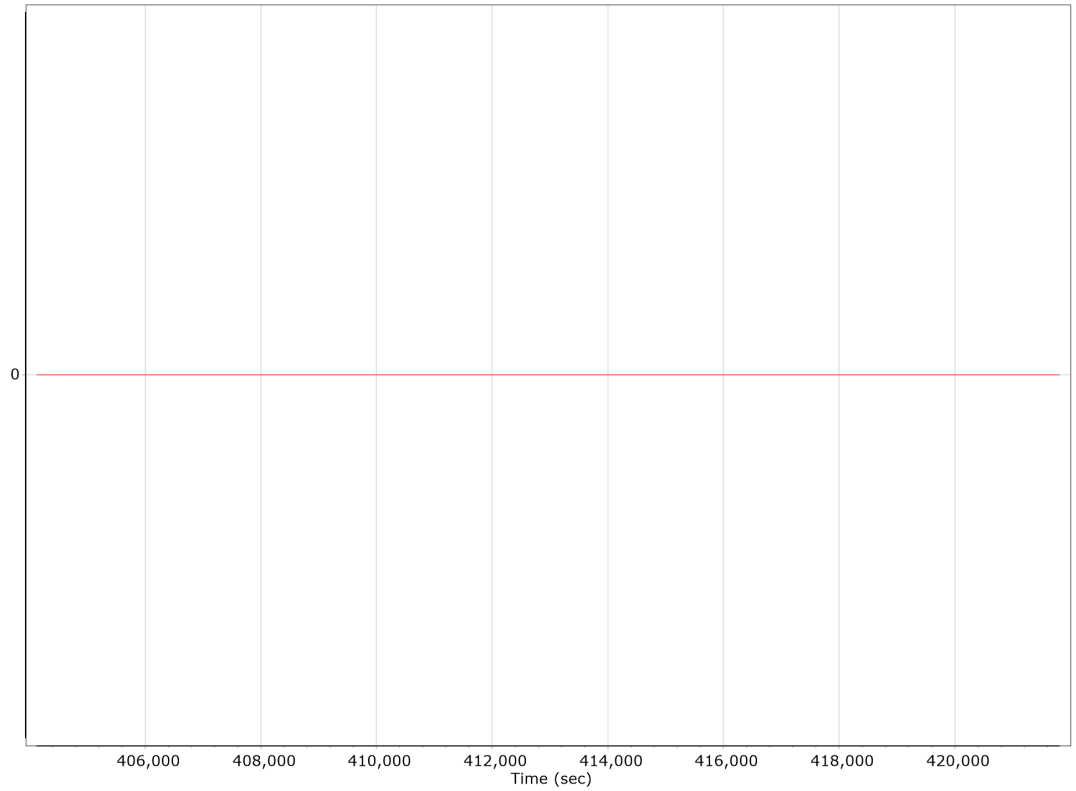


0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGNSS, 4 = RTCM, 5 = IAPPP, 6 = C/A, 7 = GNSS Nav, 8 = DR

Number of Satellites



Baseline Length



General Information

Mission Information

Project name	10052023B_4046
Processing date	2024-01-11 22:10:04
Mission date	2023-10-05 23:54:54
Mission duration	04:23:20.125
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N10762
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
231005_235435_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm2780.23g	GLONASS Broadcast Ephemeris
Ephm2780.23n	GPS Broadcast Ephemeris
Ephm2790.23g	GLONASS Broadcast Ephemeris
Ephm2790.23n	GPS Broadcast Ephemeris
IGS0OPSFIN_20232770000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232780000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232790000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232800000_01D_15M_ORB.SP3	GPS Precise Ephemeris

Output Files

Filename	File type
sbet_10052023B_4046.out	SBET Trajectory File

Rover Data Summary

First raw data file	231005_235435_INS-GPS_1.raw		
Last raw data file	231005_235435_INS-GPS_1.raw		
Start GPS week	2282		
Start time	431676.068 (10/5/2023 11:54:36 PM)		
End time	447476.193 (10/6/2023 4:17:56 AM)		
Start of fine alignment	431945.520 (10/5/2023 11:59:05 PM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	0.000	0.000	0.000
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

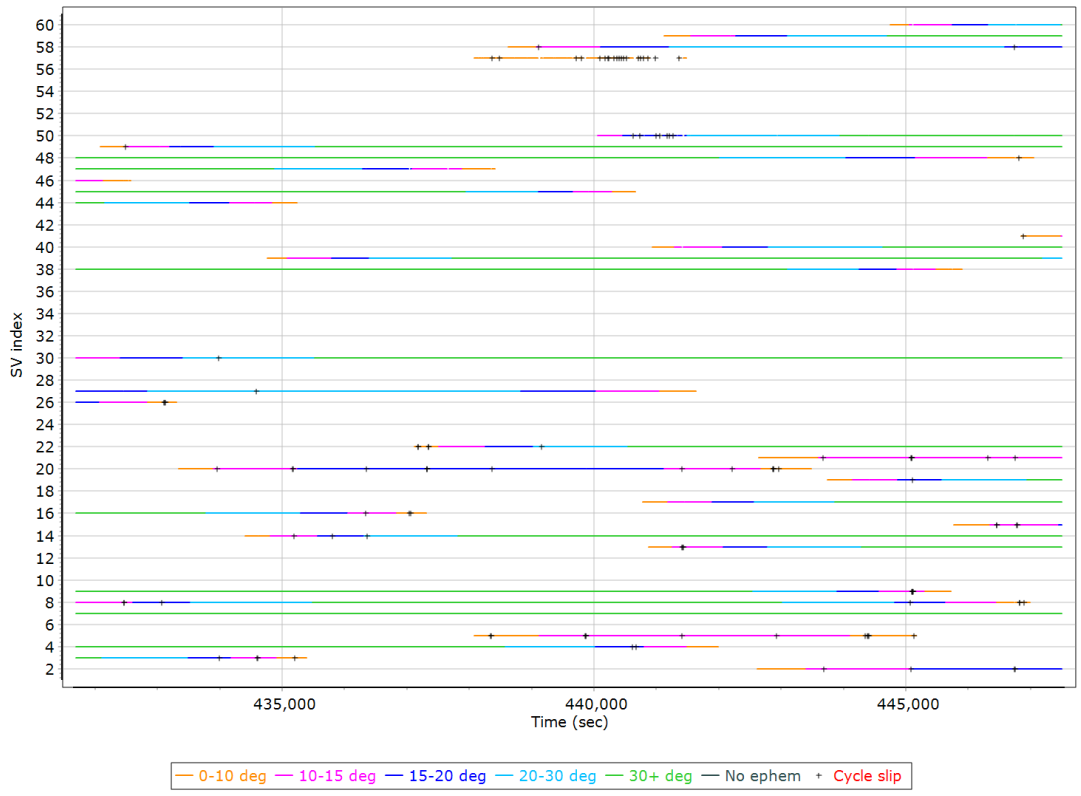
Rover Data QC

Raw IMU Import QC Summary

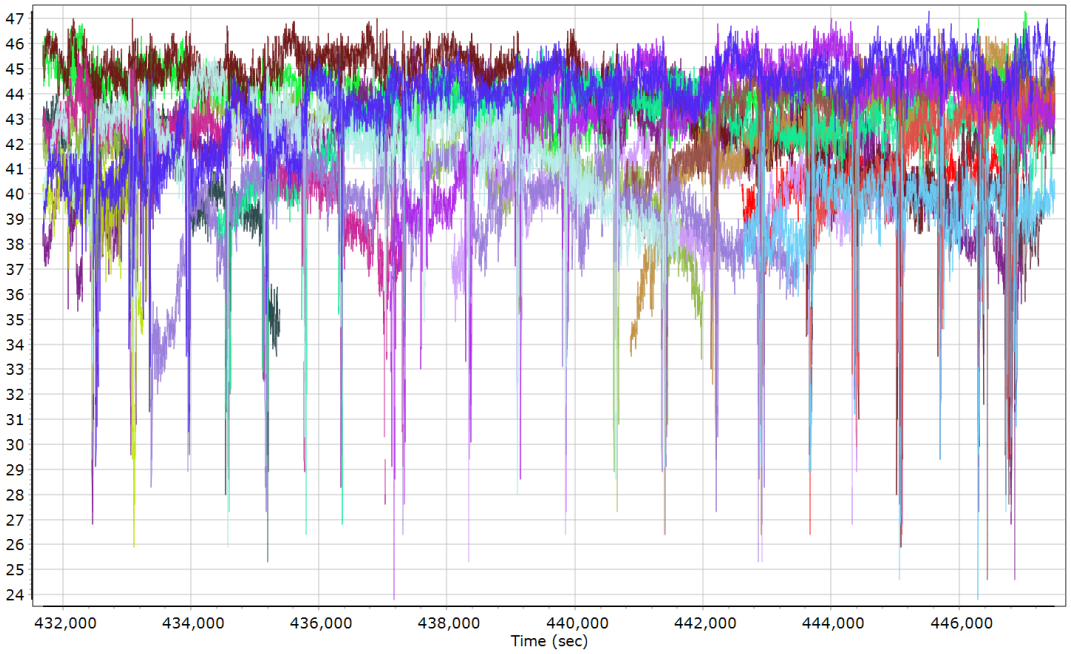
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_10052023B_4046.log
IMU Records Processed	3159421
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

GPS/GLONASS L1 Satellite Lock/Elevation

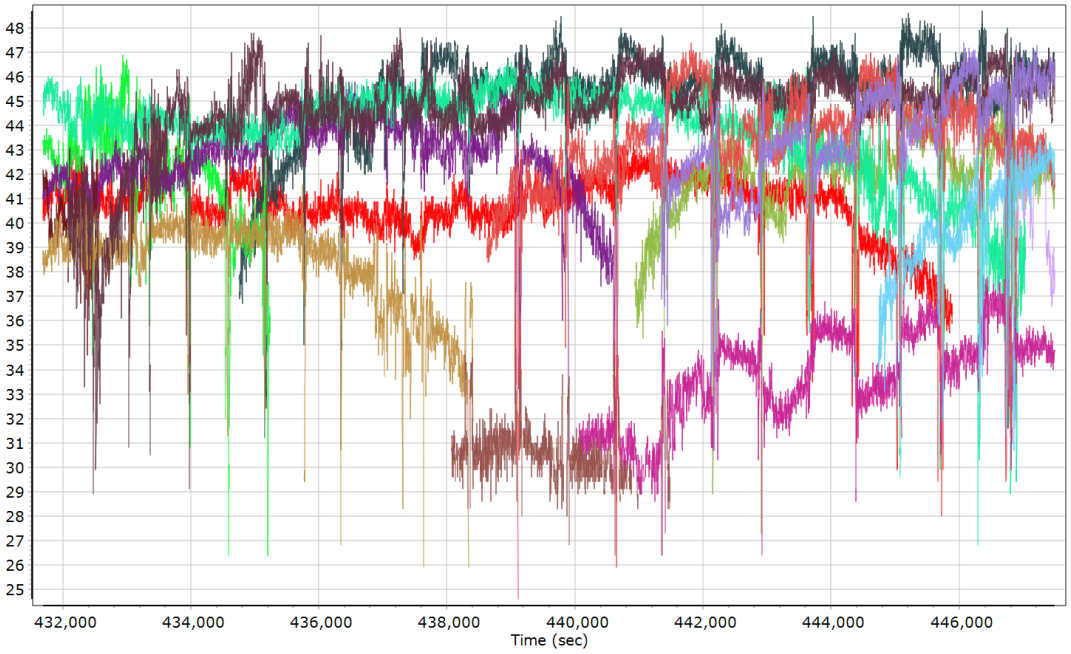


GPS L1 SNR



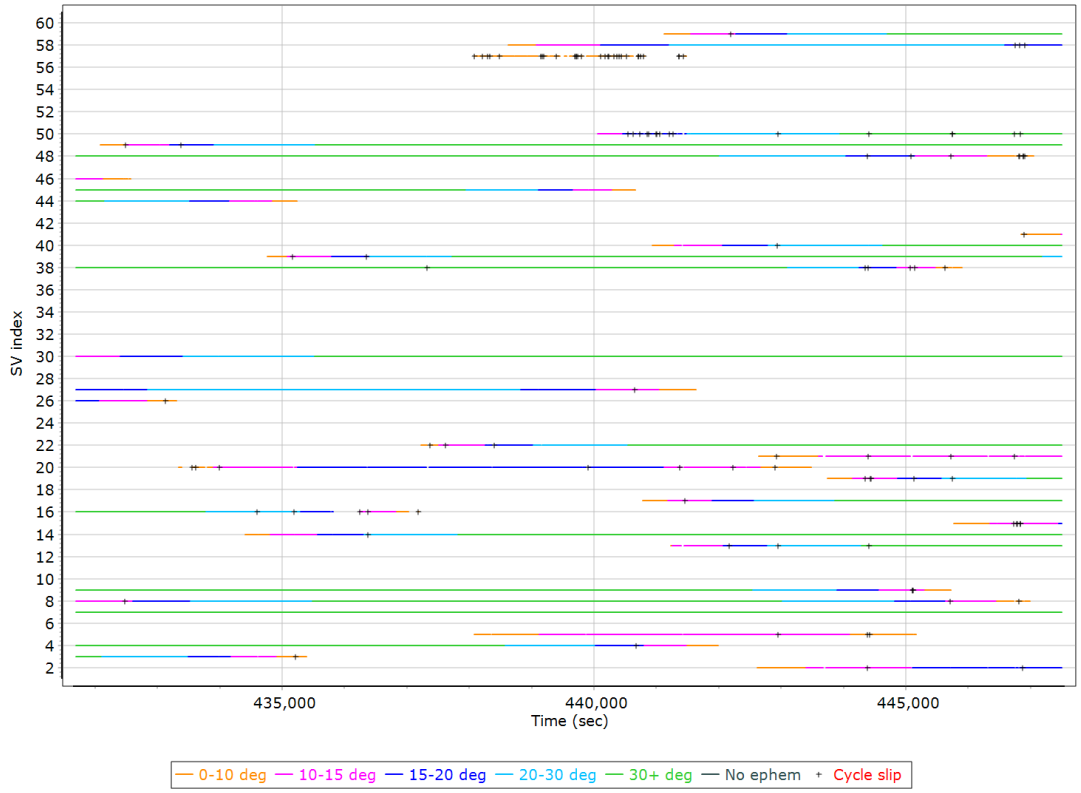
GPS PRN 02 L1 SNR (dB/Hz) GPS PRN 03 L1 SNR (dB/Hz) GPS PRN 04 L1 SNR (dB/Hz) GPS PRN 05 L1 SNR (dB/Hz)
GPS PRN 07 L1 SNR (dB/Hz) GPS PRN 08 L1 SNR (dB/Hz) GPS PRN 09 L1 SNR (dB/Hz) GPS PRN 13 L1 SNR (dB/Hz)
GPS PRN 14 L1 SNR (dB/Hz) GPS PRN 15 L1 SNR (dB/Hz) GPS PRN 16 L1 SNR (dB/Hz) GPS PRN 17 L1 SNR (dB/Hz)
GPS PRN 19 L1 SNR (dB/Hz) GPS PRN 20 L1 SNR (dB/Hz) GPS PRN 21 L1 SNR (dB/Hz) GPS PRN 22 L1 SNR (dB/Hz)
GPS PRN 26 L1 SNR (dB/Hz) GPS PRN 27 L1 SNR (dB/Hz) GPS PRN 30 L1 SNR (dB/Hz)

GLONASS L1 SNR

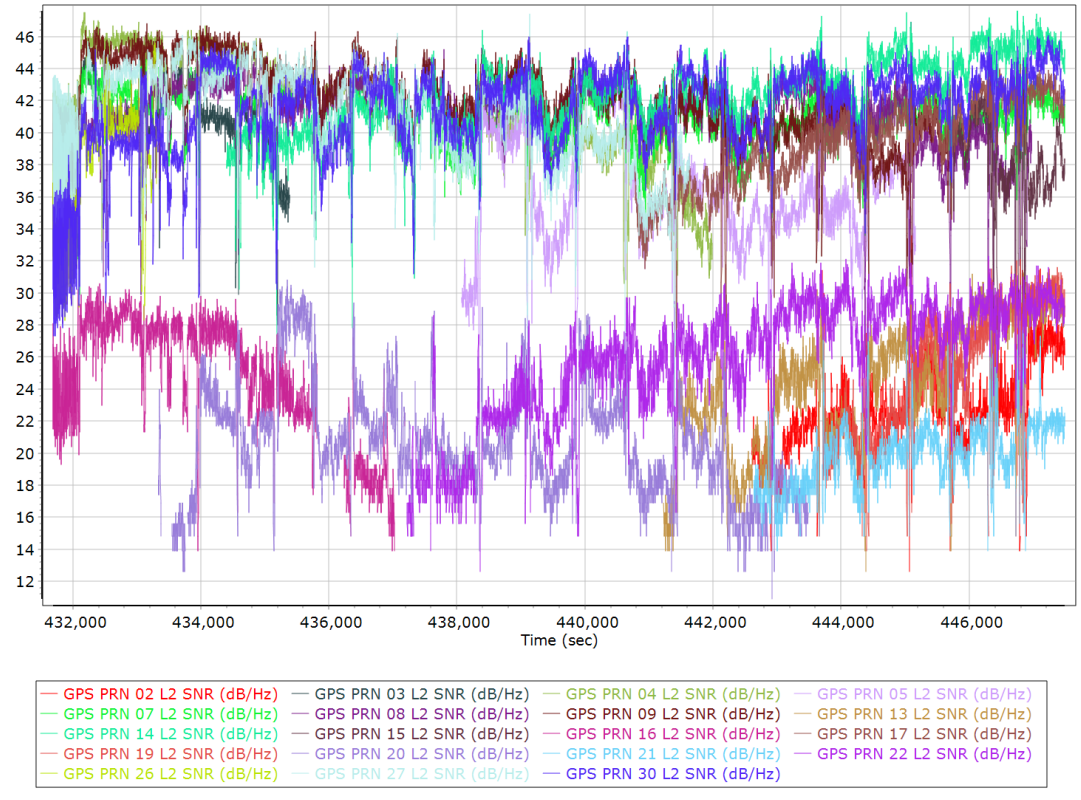


GLONASS 01 L1 SNR (dB/Hz) GLONASS 02 L1 SNR (dB/Hz) GLONASS 03 L1 SNR (dB/Hz)
GLONASS 04 L1 SNR (dB/Hz) GLONASS 07 L1 SNR (dB/Hz) GLONASS 08 L1 SNR (dB/Hz)
GLONASS 09 L1 SNR (dB/Hz) GLONASS 10 L1 SNR (dB/Hz) GLONASS 11 L1 SNR (dB/Hz)
GLONASS 12 L1 SNR (dB/Hz) GLONASS 13 L1 SNR (dB/Hz) GLONASS 20 L1 SNR (dB/Hz)
GLONASS 21 L1 SNR (dB/Hz) GLONASS 22 L1 SNR (dB/Hz) GLONASS 23 L1 SNR (dB/Hz)

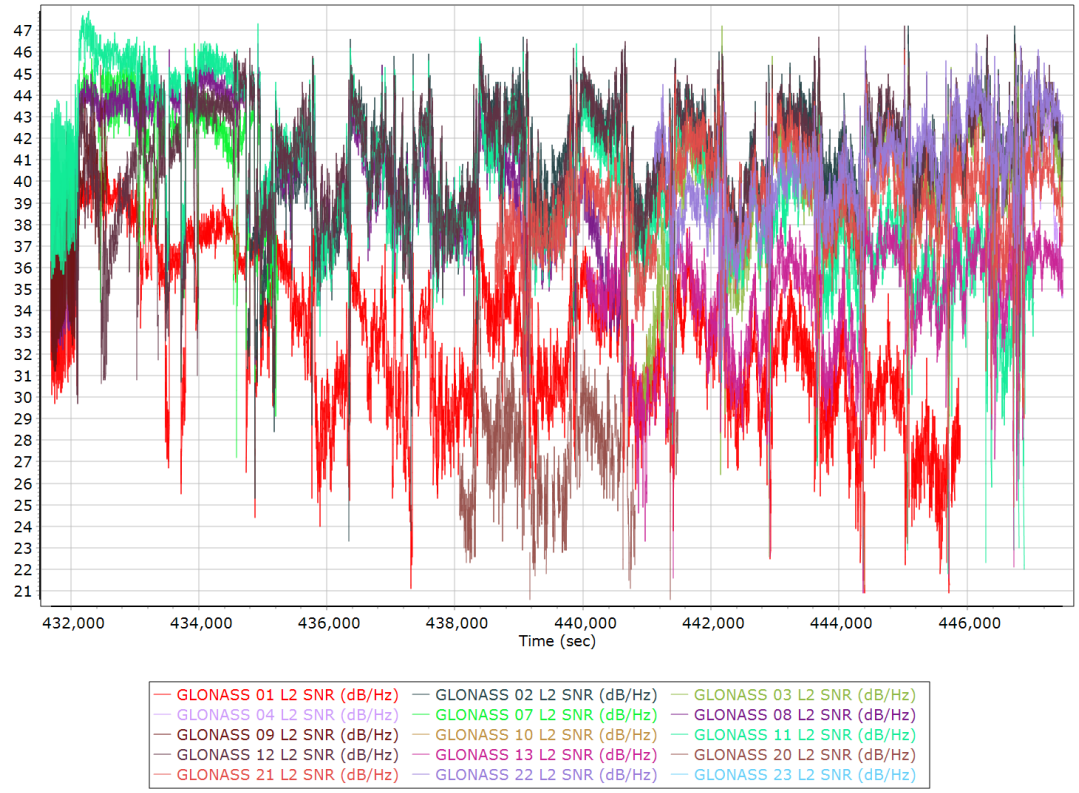
GPS/GLONASS L2 Satellite Lock/Elevation



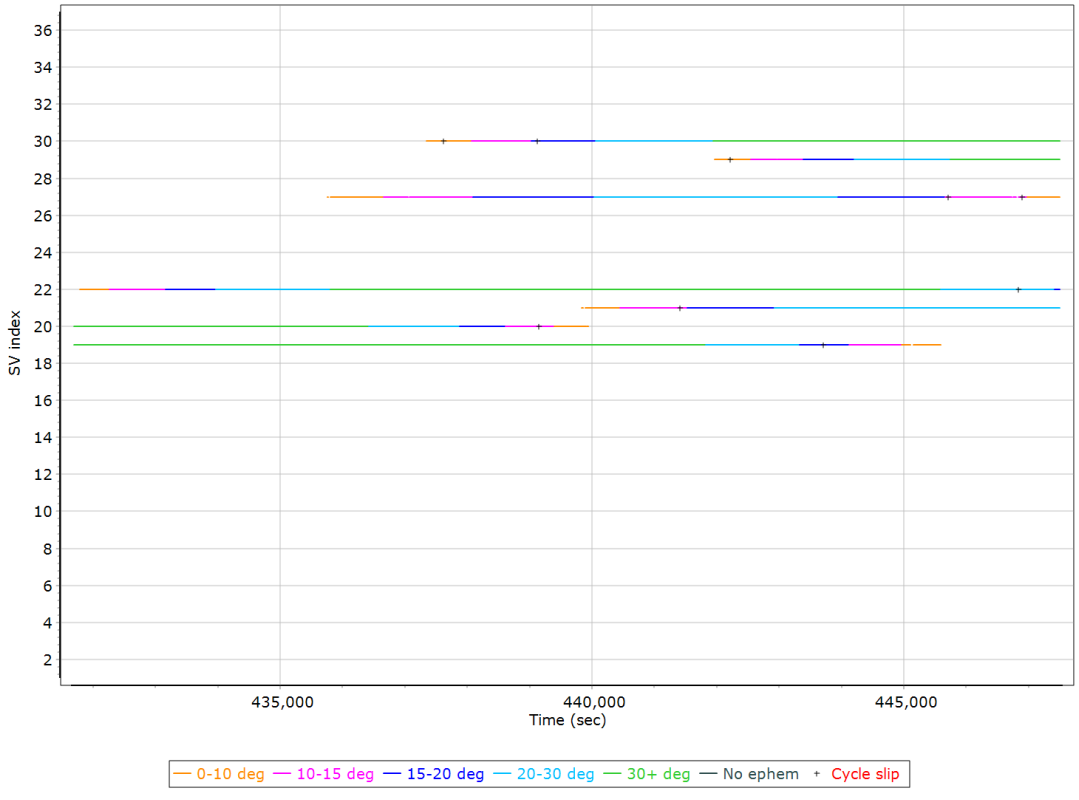
GPS L2 SNR



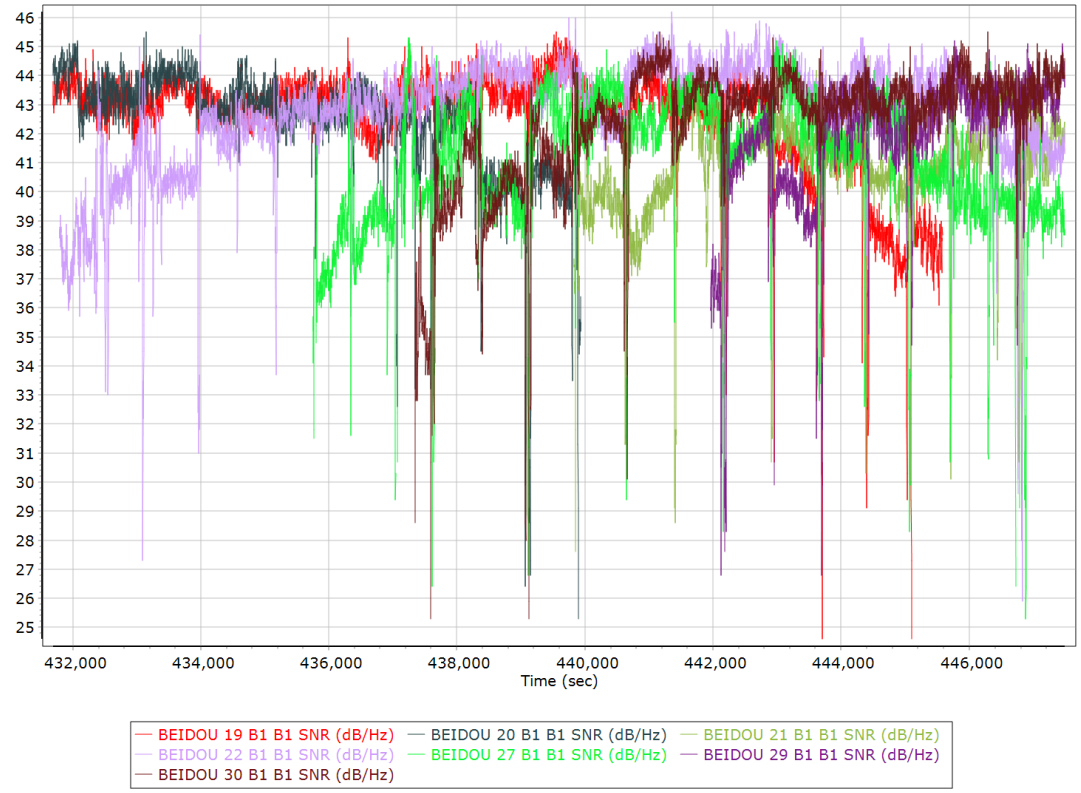
GLONASS L2 SNR



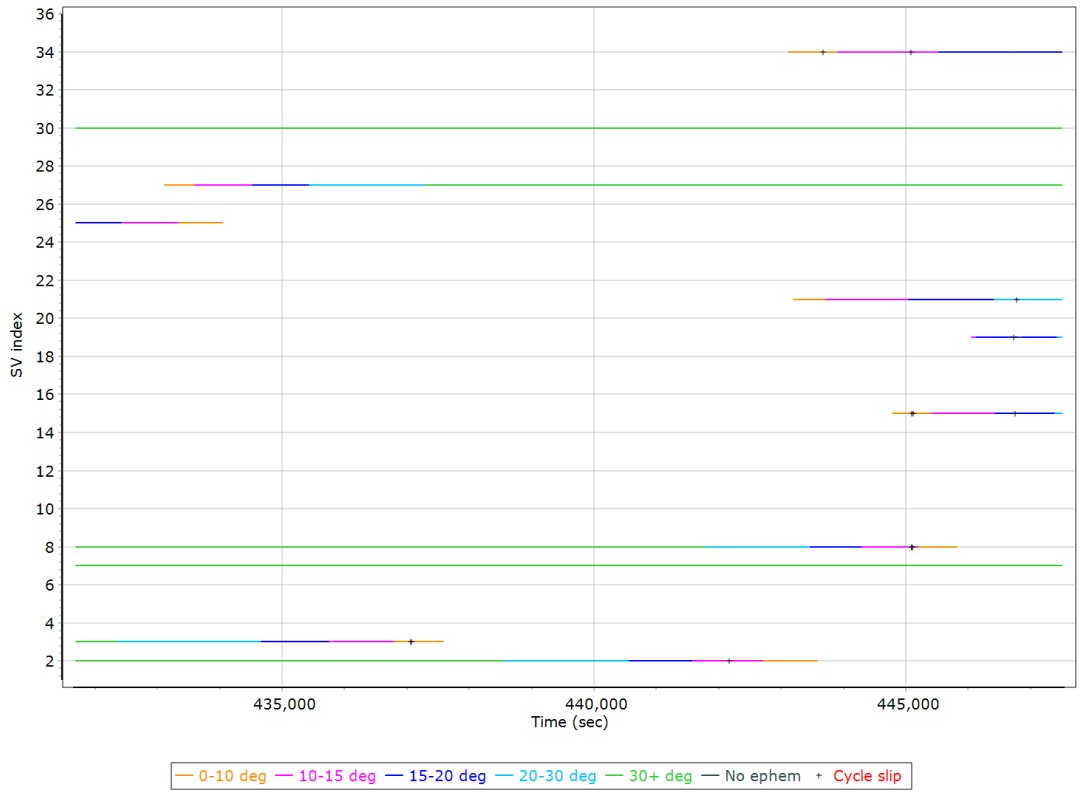
BEIDOU Satellite Lock/Elevation



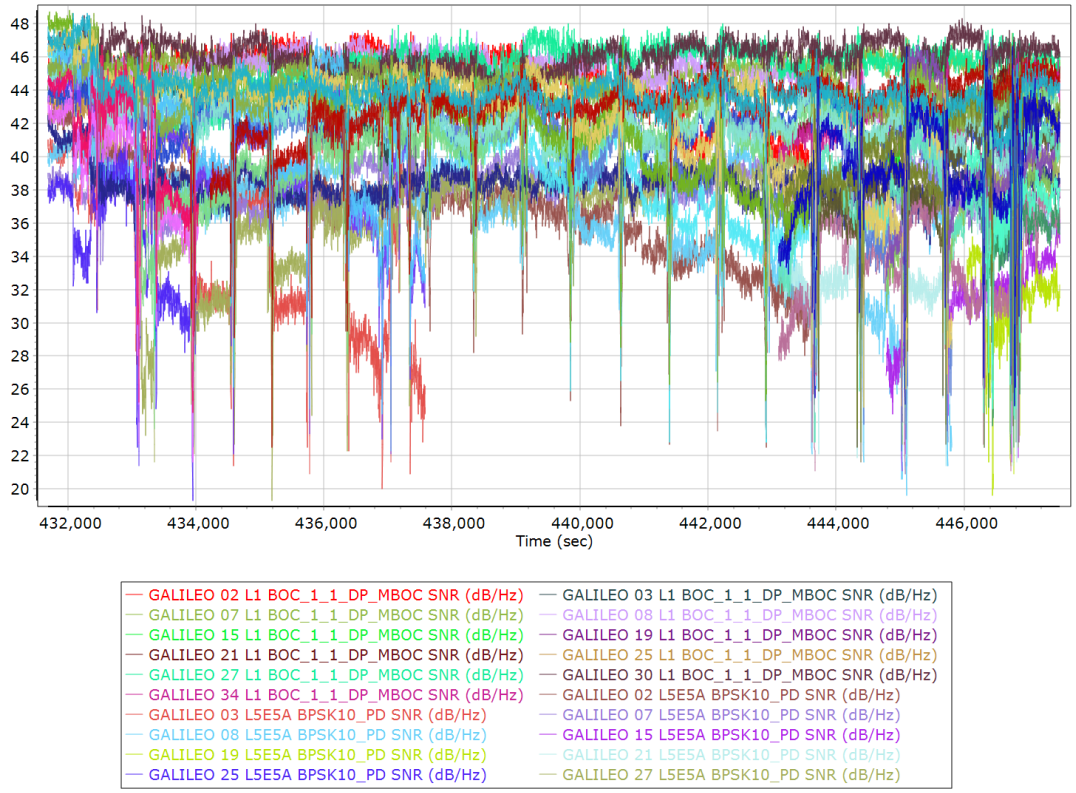
BEIDOU SNR



GALILEO Satellite Lock/Elevation

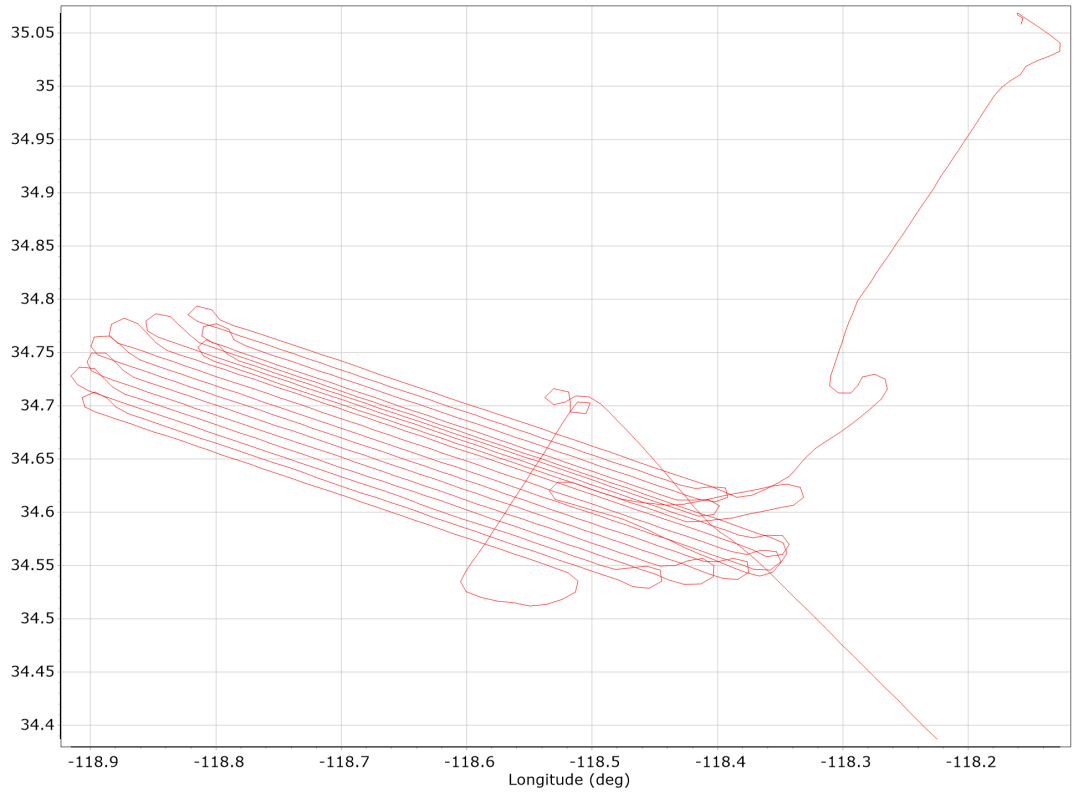


GALILEO SNR

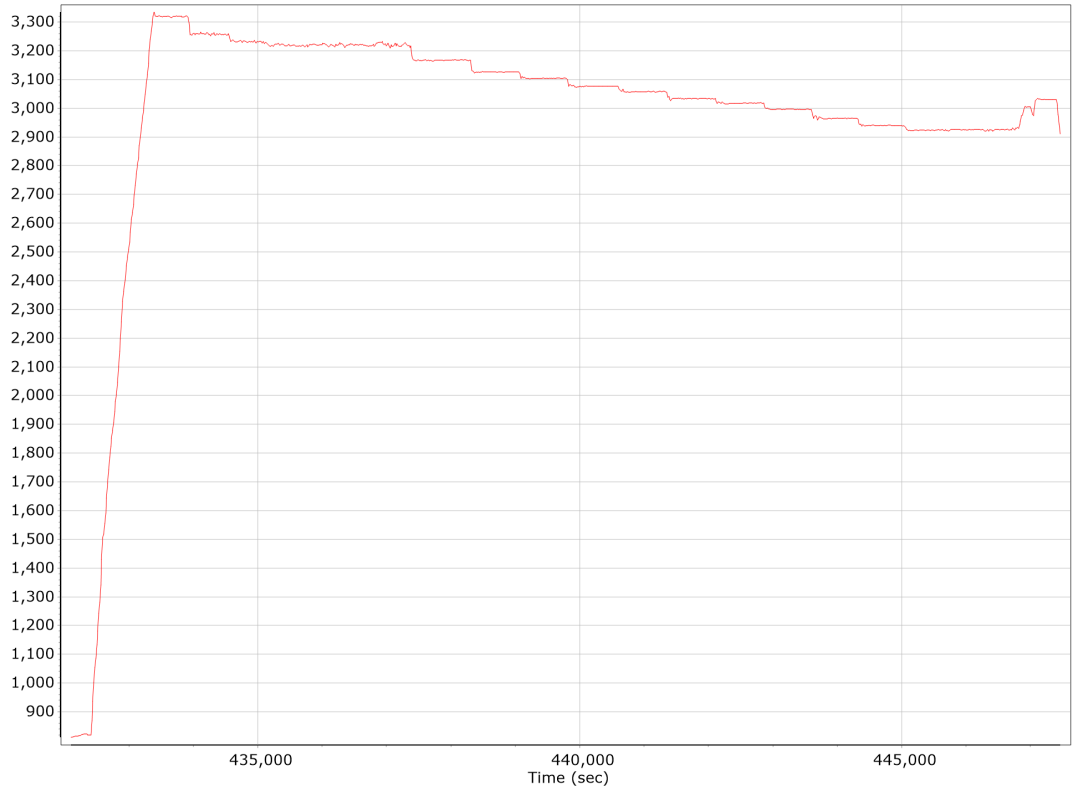

48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
432,000
434,000
436,000
438,000
440,000
442,000
444,000
446,000
Time (sec)
GALILEO 02 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 03 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 07 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 08 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 15 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 19 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 21 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 25 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 27 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 30 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 34 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 02 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 03 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 07 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 08 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 15 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 19 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 21 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 25 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 27 L5E5A BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

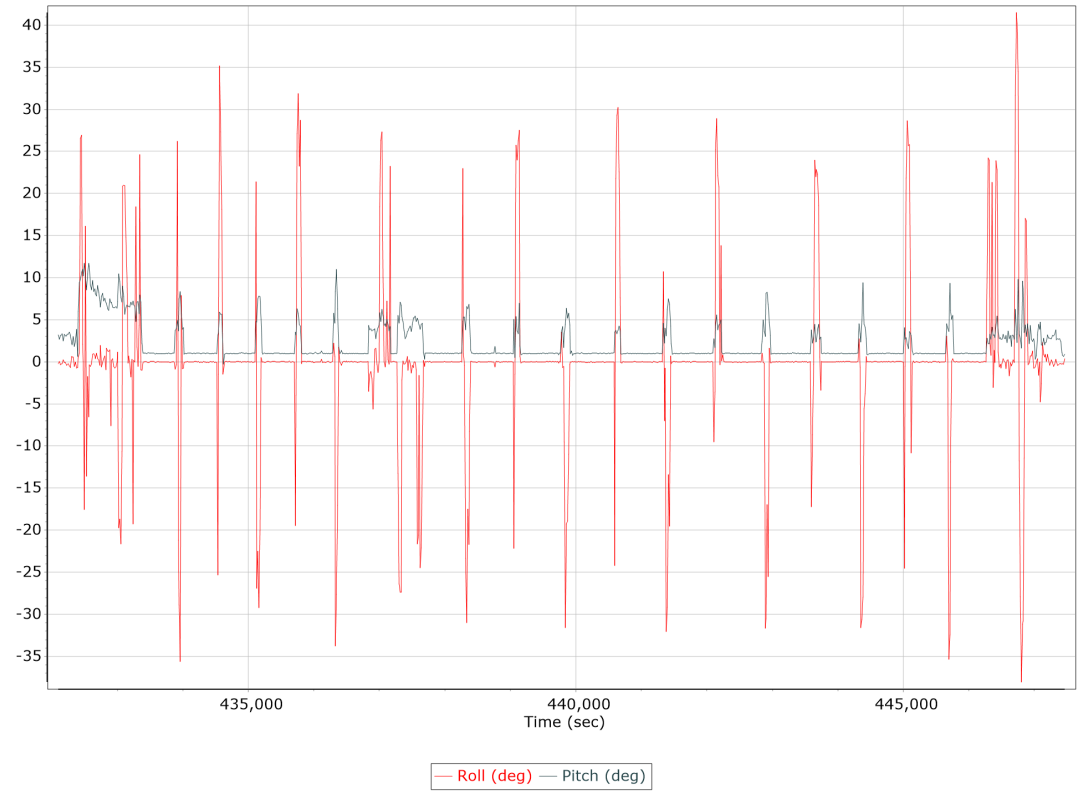
Top View



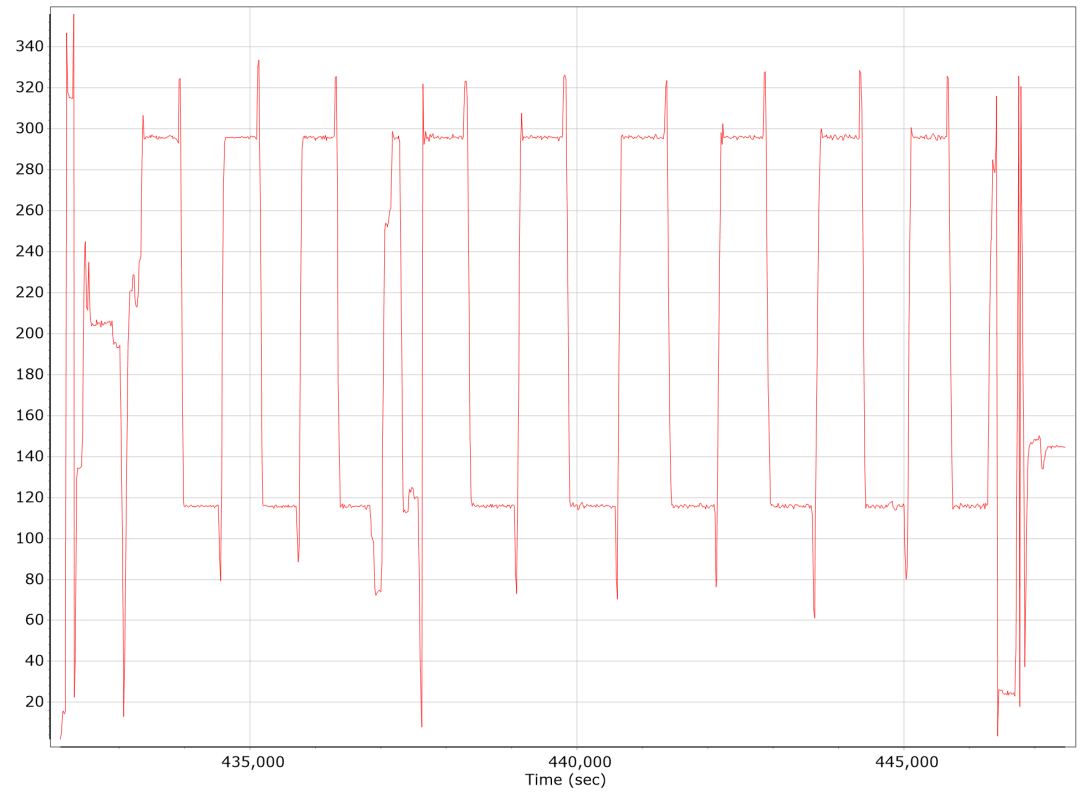
Altitude



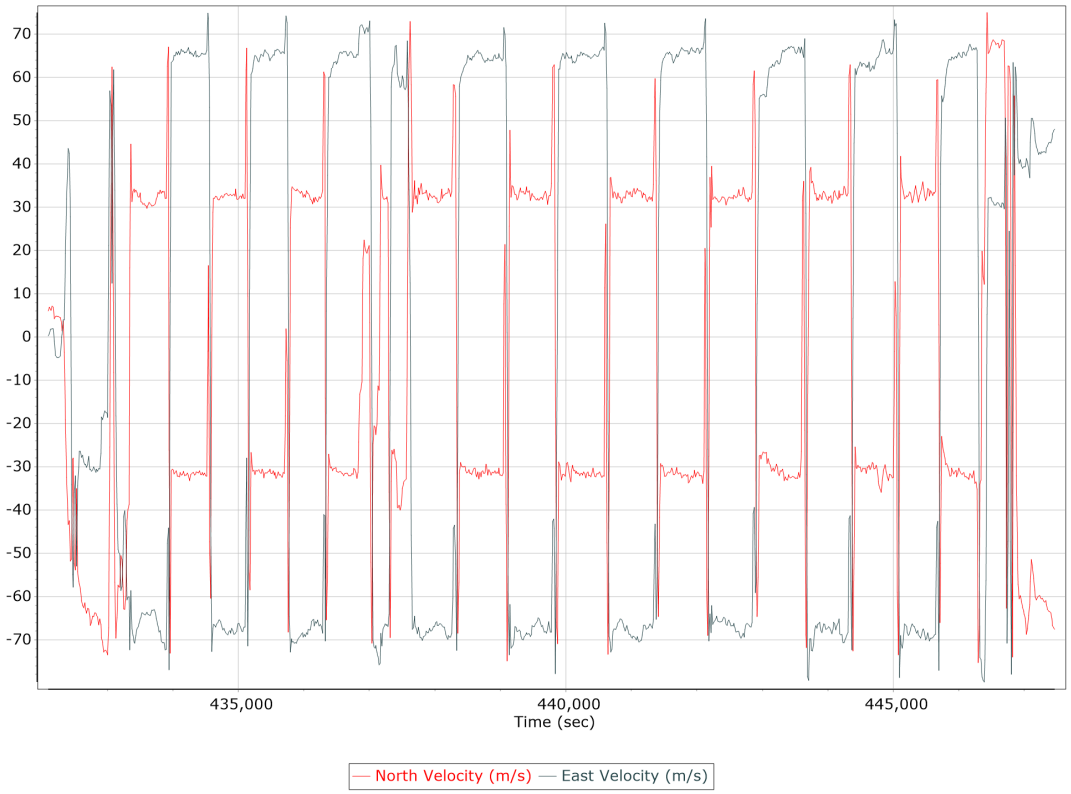
Roll/Pitch



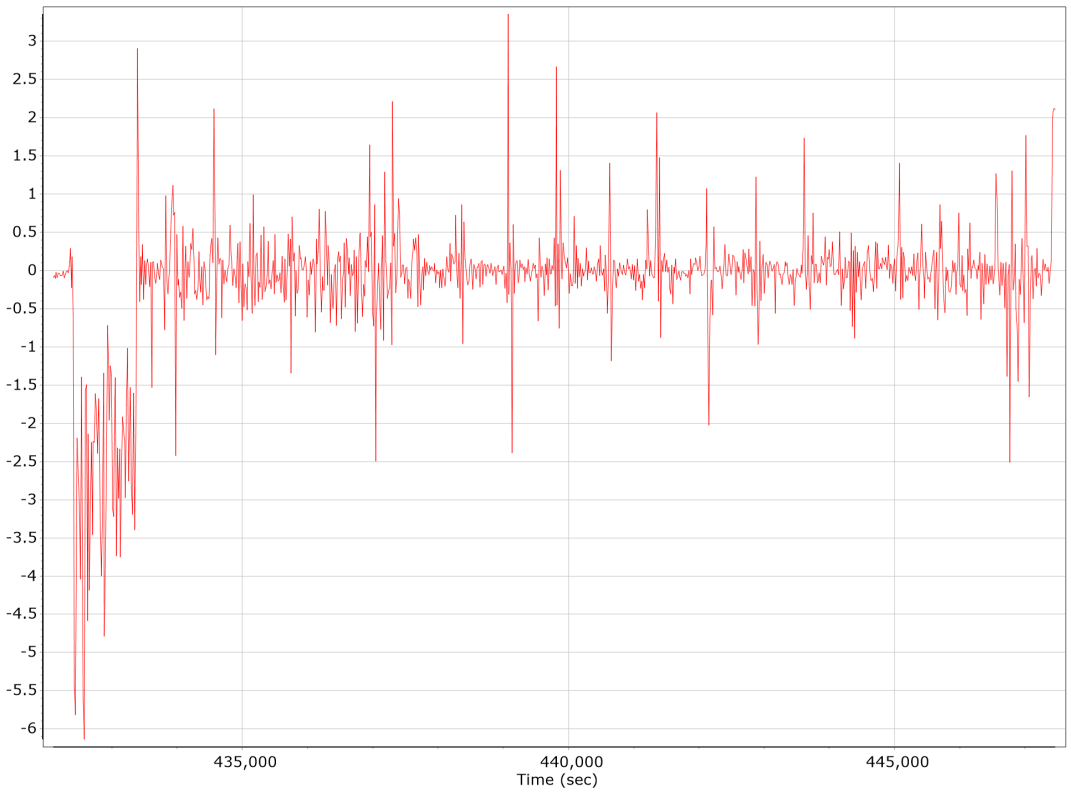
Heading



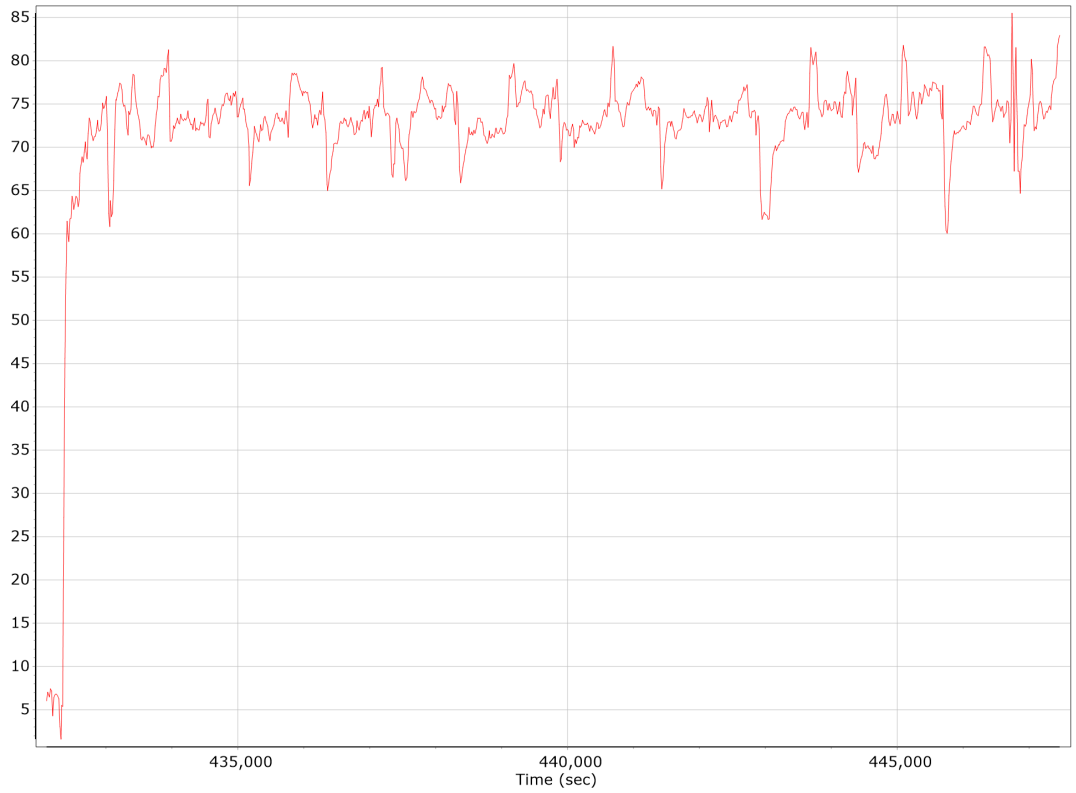
North/East Velocity



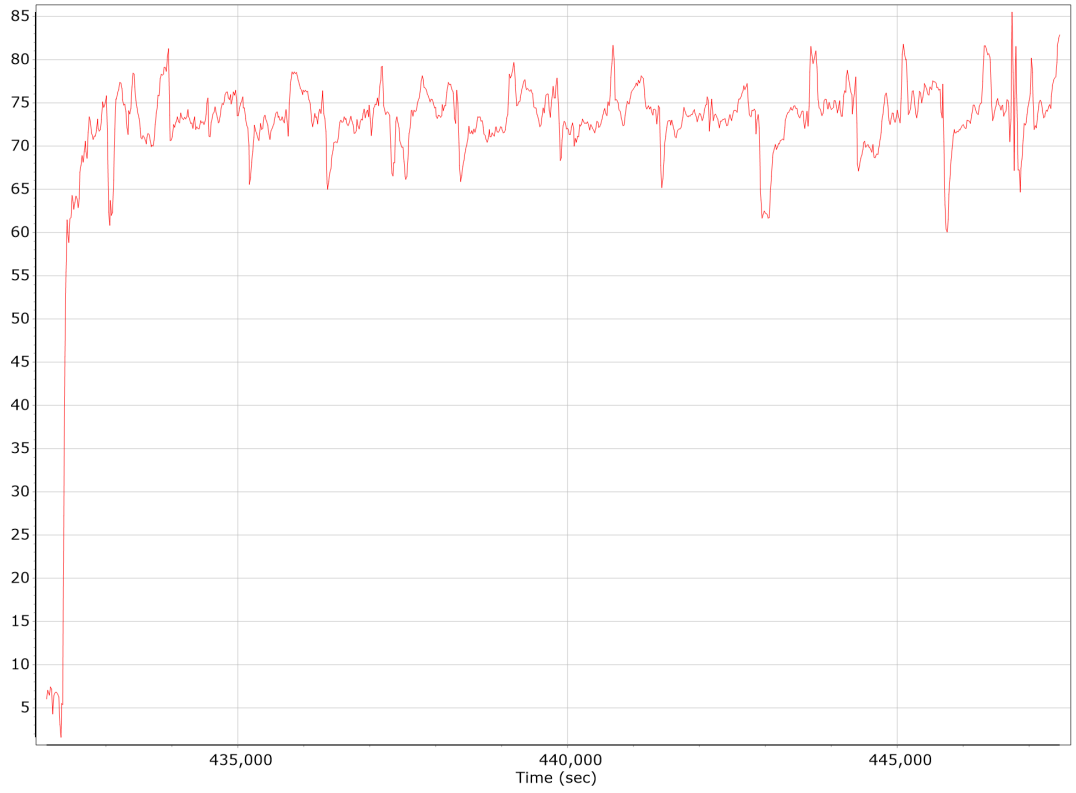
Down Velocity



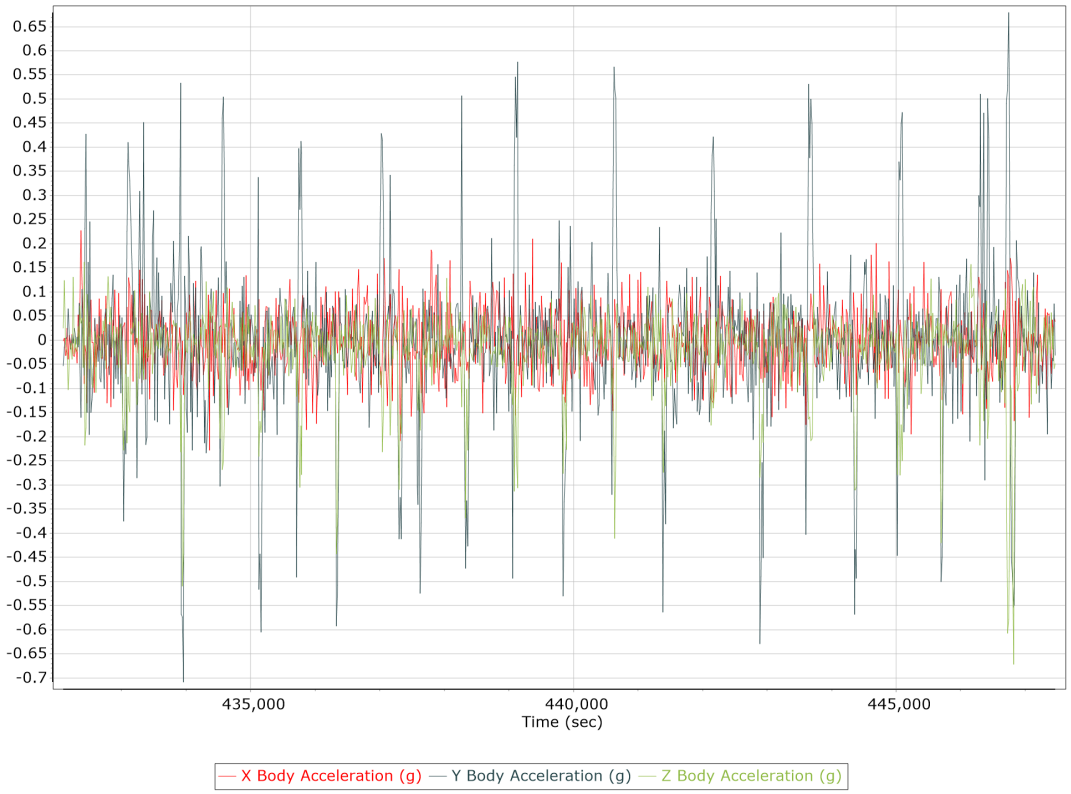
Total Speed



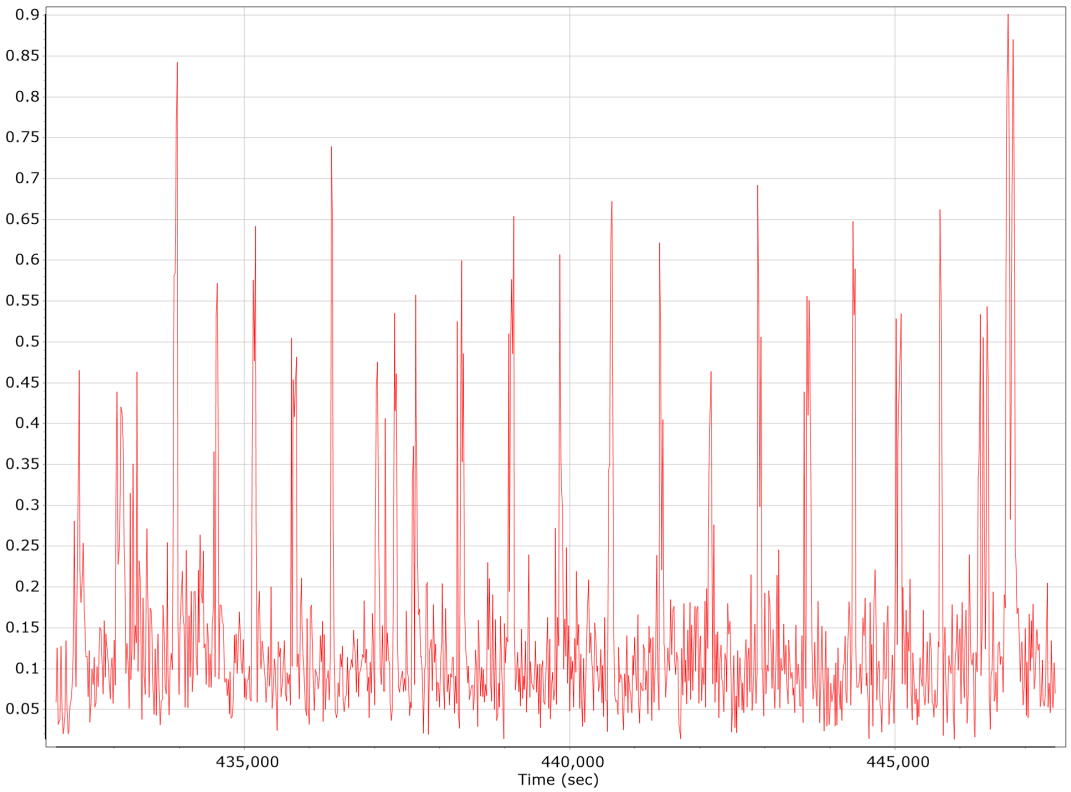
Ground Speed



Body Acceleration



Total Body Acceleration

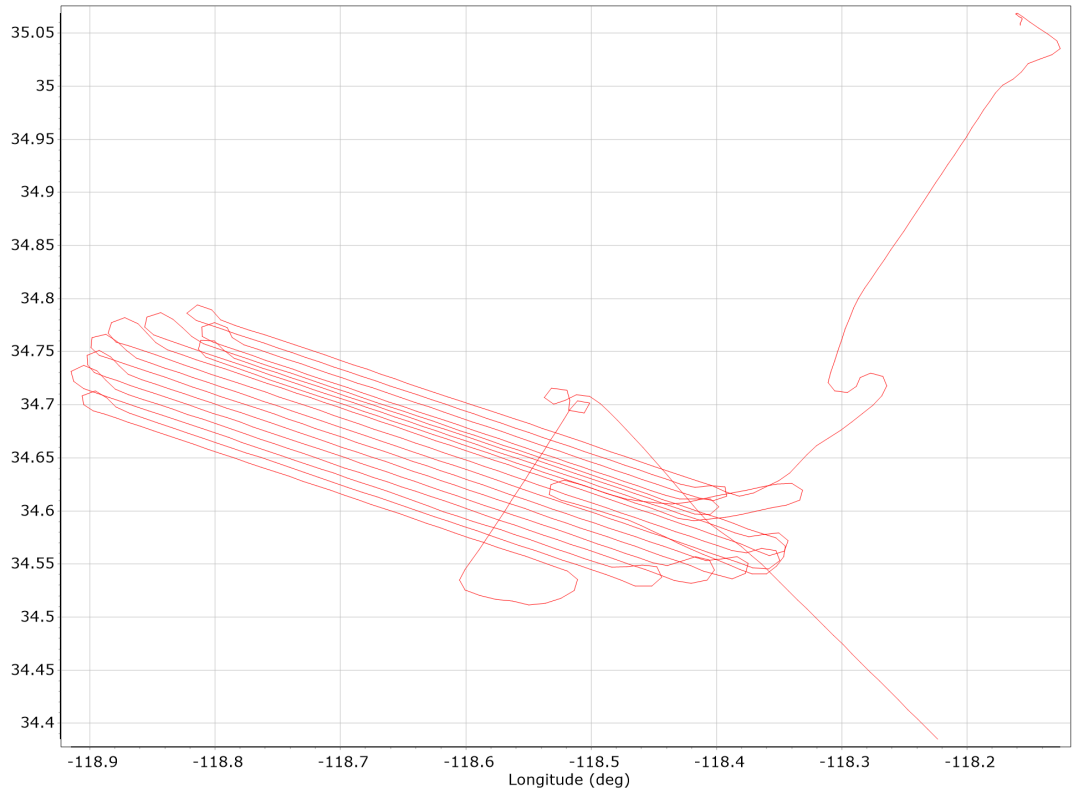


Body Angular Rate

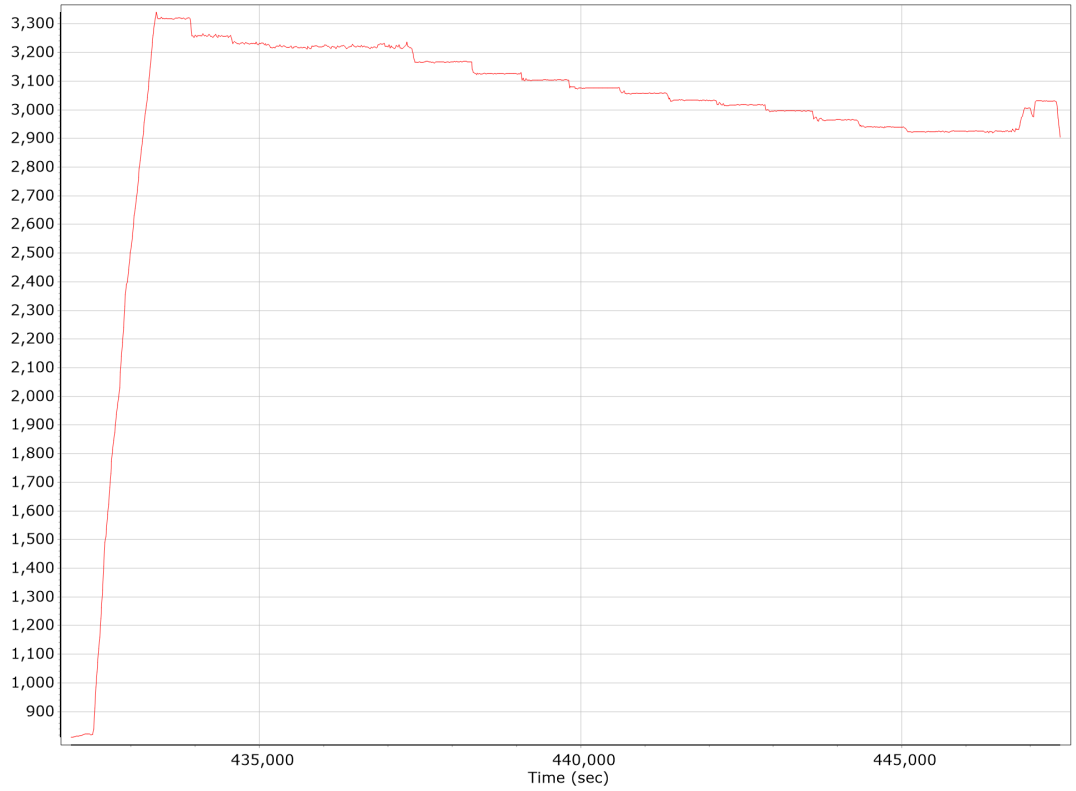


Forward Processed Trajectory Information

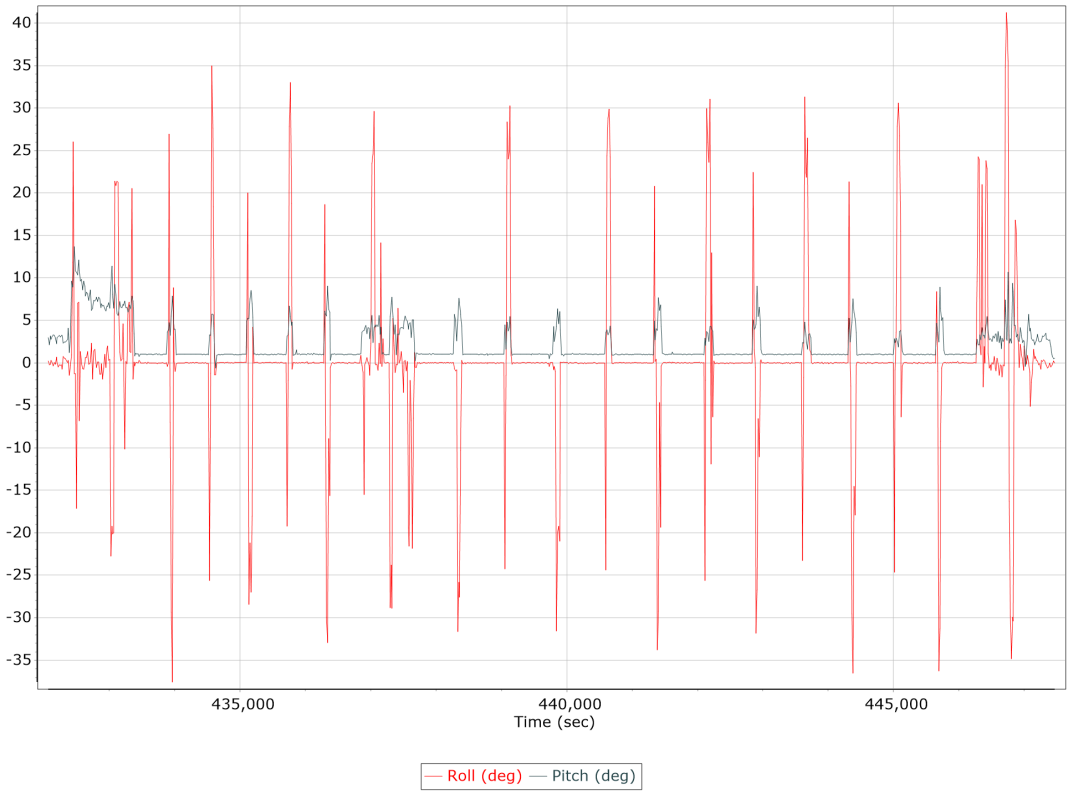
Top View



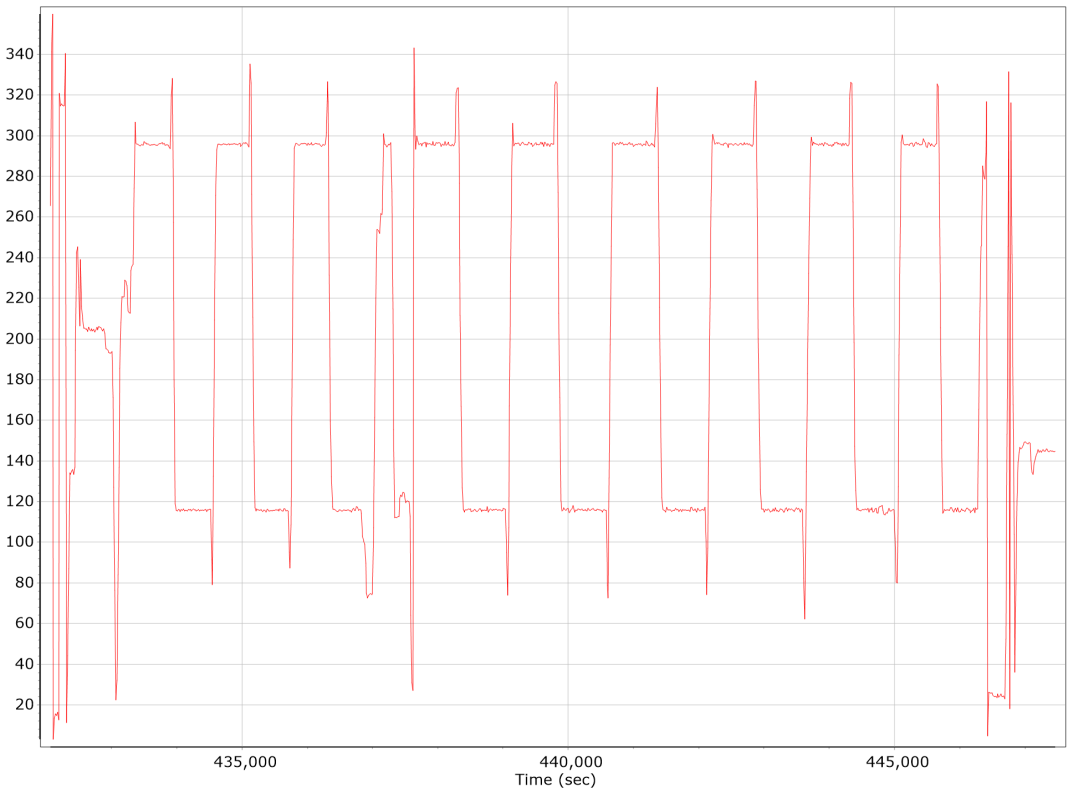
Altitude



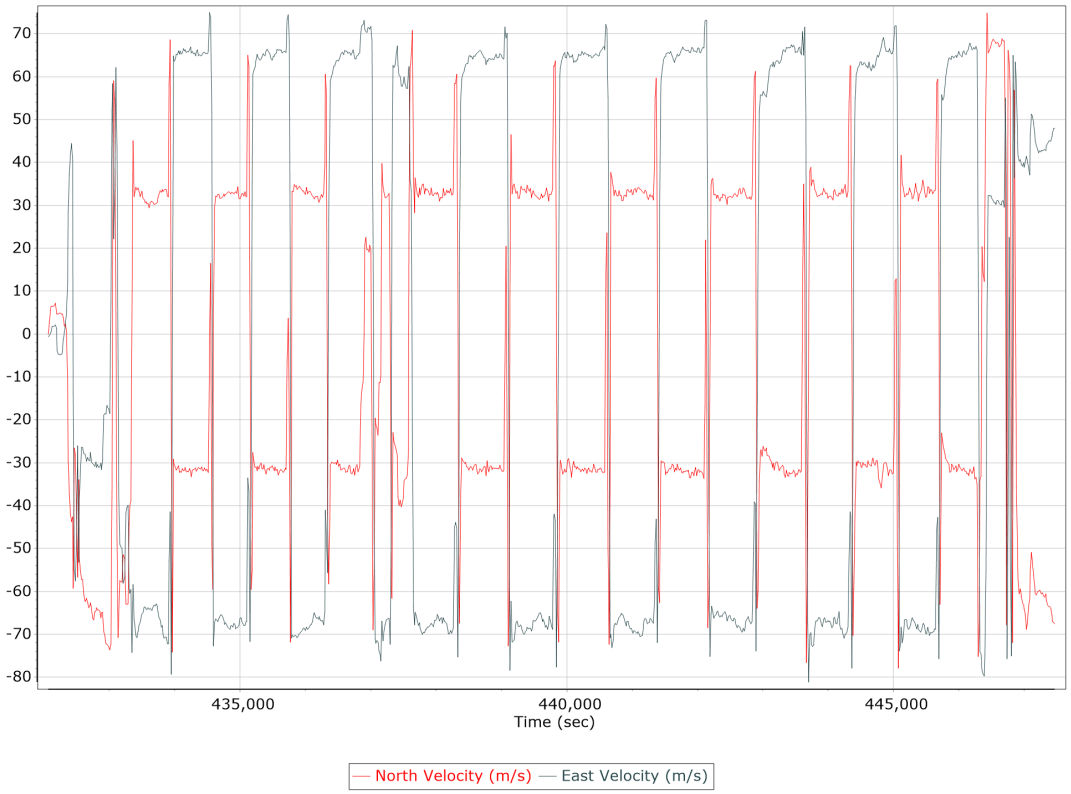
Roll/Pitch



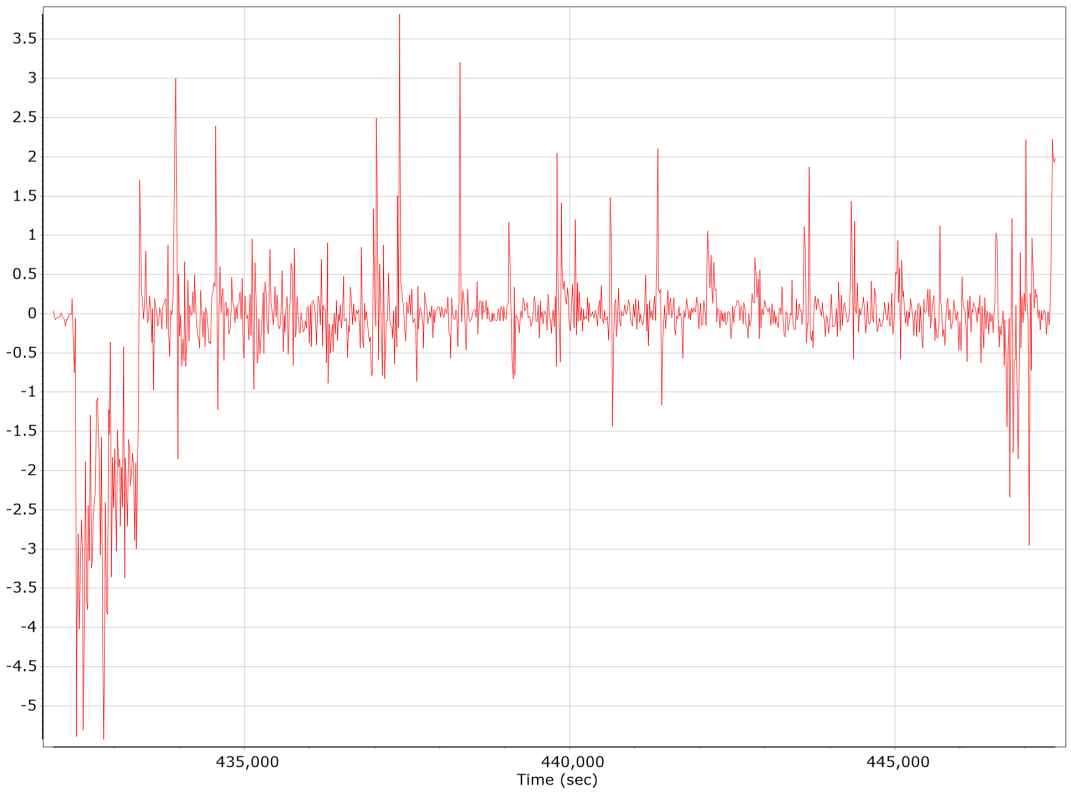
Heading



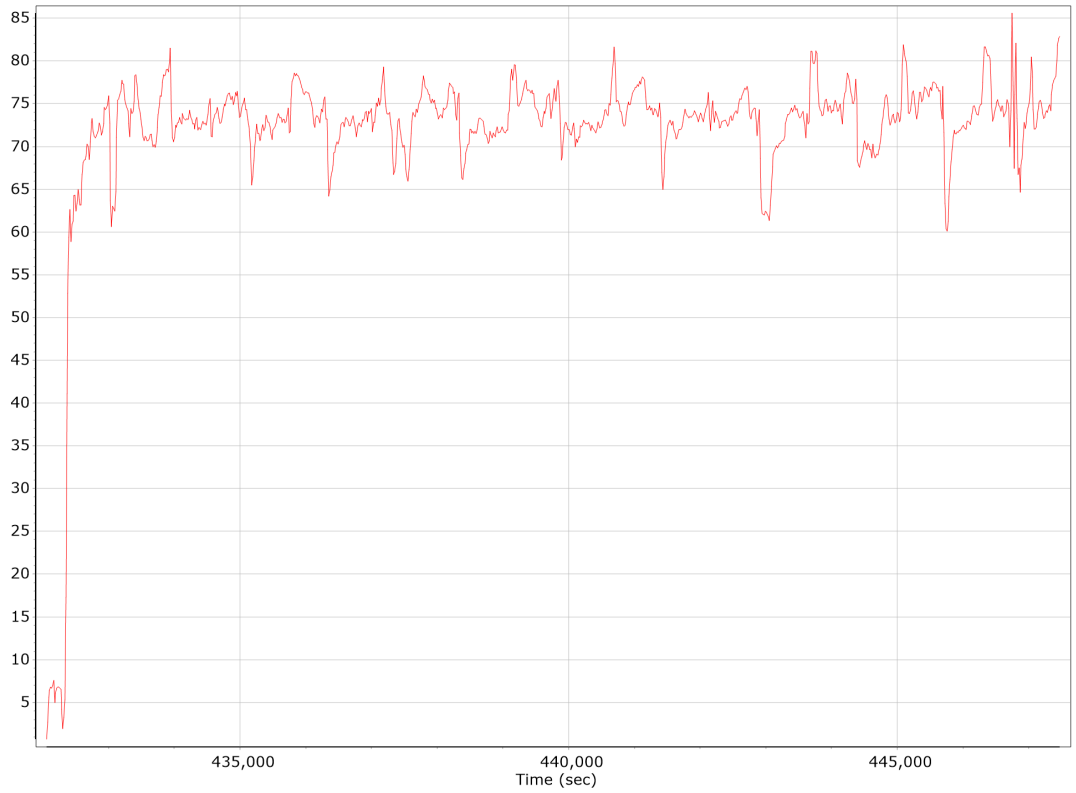
North/East Velocity



Down Velocity



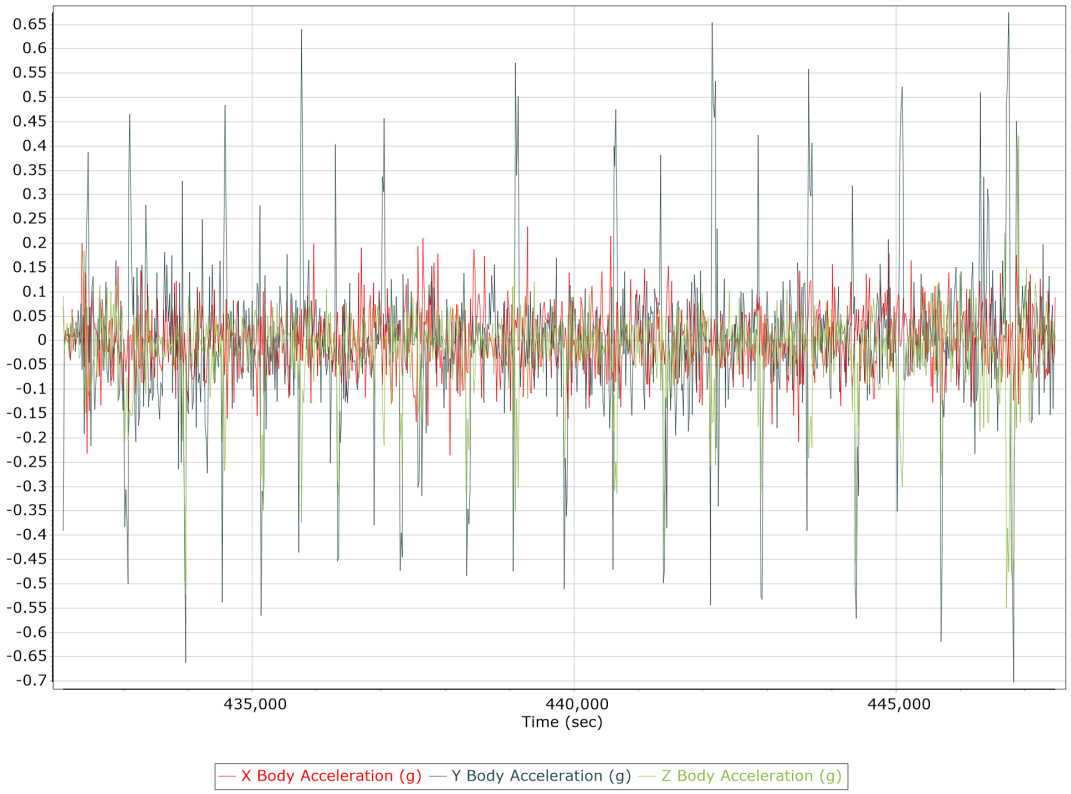
Total Speed



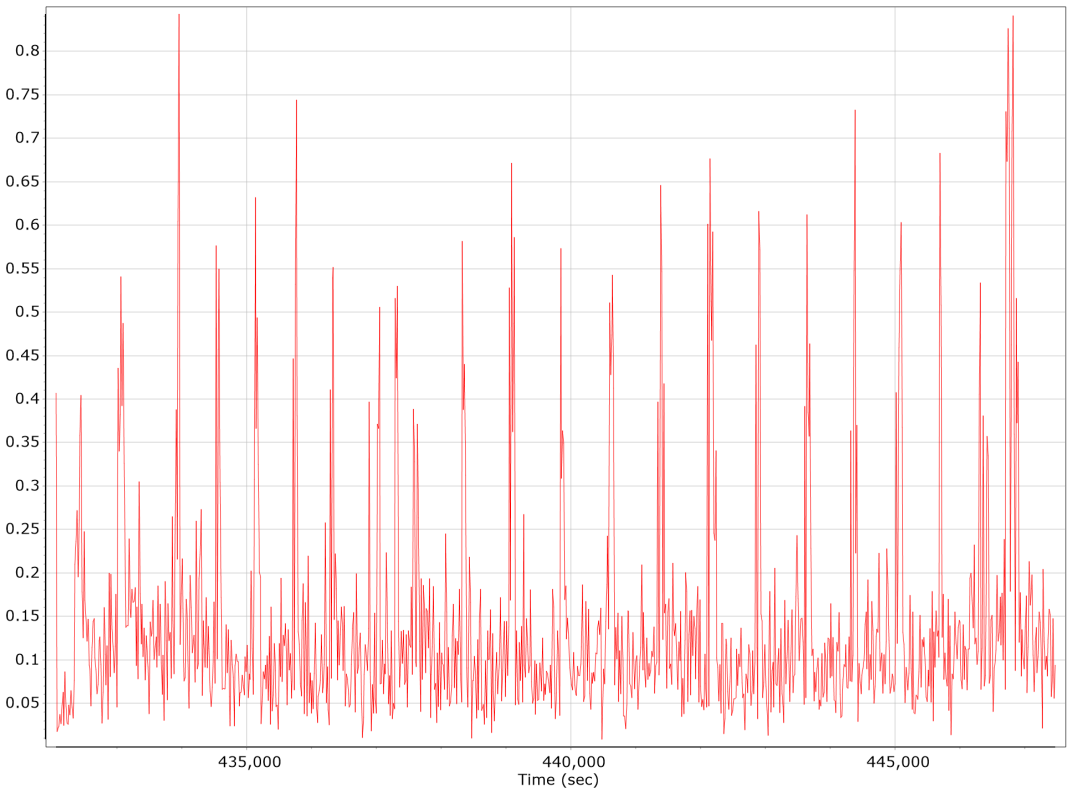
Ground Speed



Body Acceleration



Total Body Acceleration



Body Angular Rate

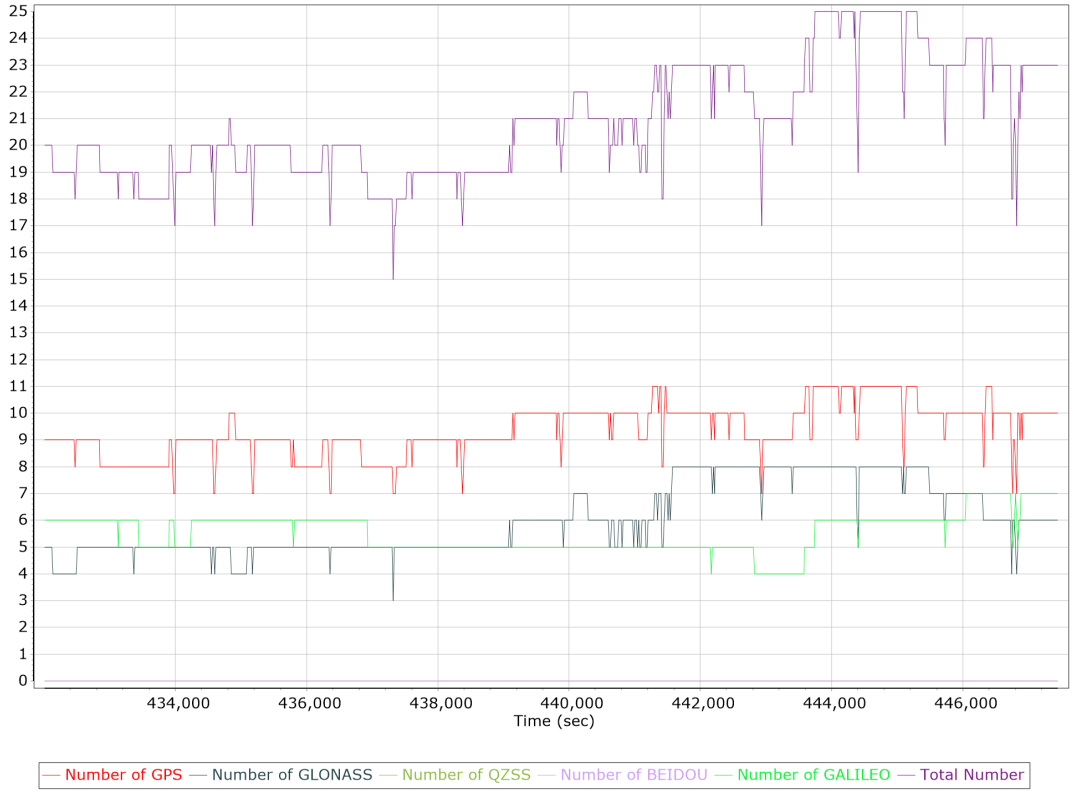


GNSS QC

GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	6	11	9
Number of GLONASS SV	3	8	6
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	4	7	6
Total number of SV	15	25	21
PDOP	0.98	2.73	1.16
QC Solution Gaps	0.00	0.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	15753.00	0.00	0.00
Percentage	100.00	0.00	0.00

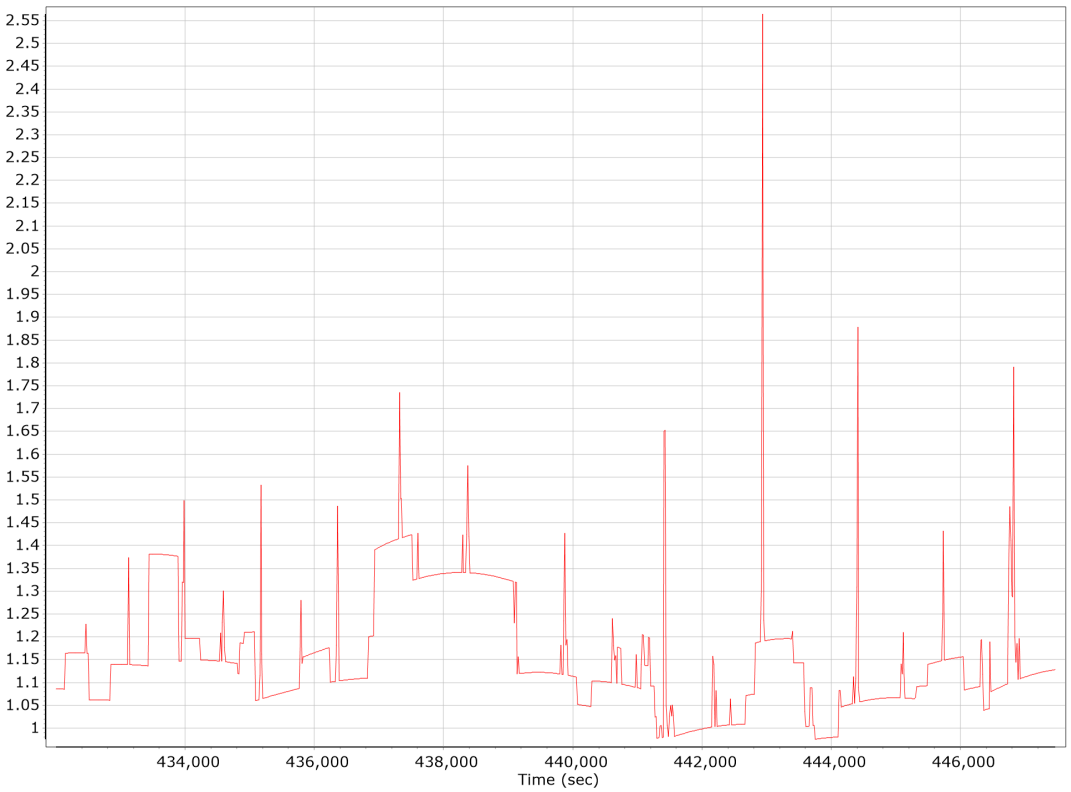
Num SVs in solution



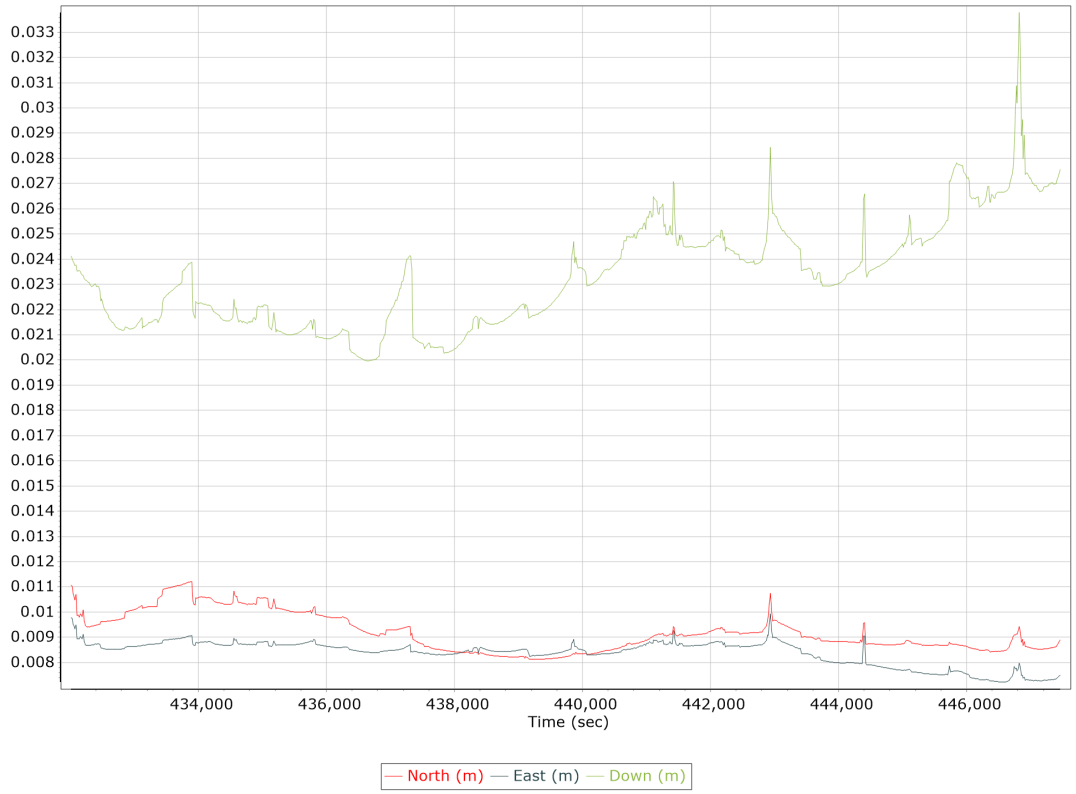
Forward/Reverse Separation



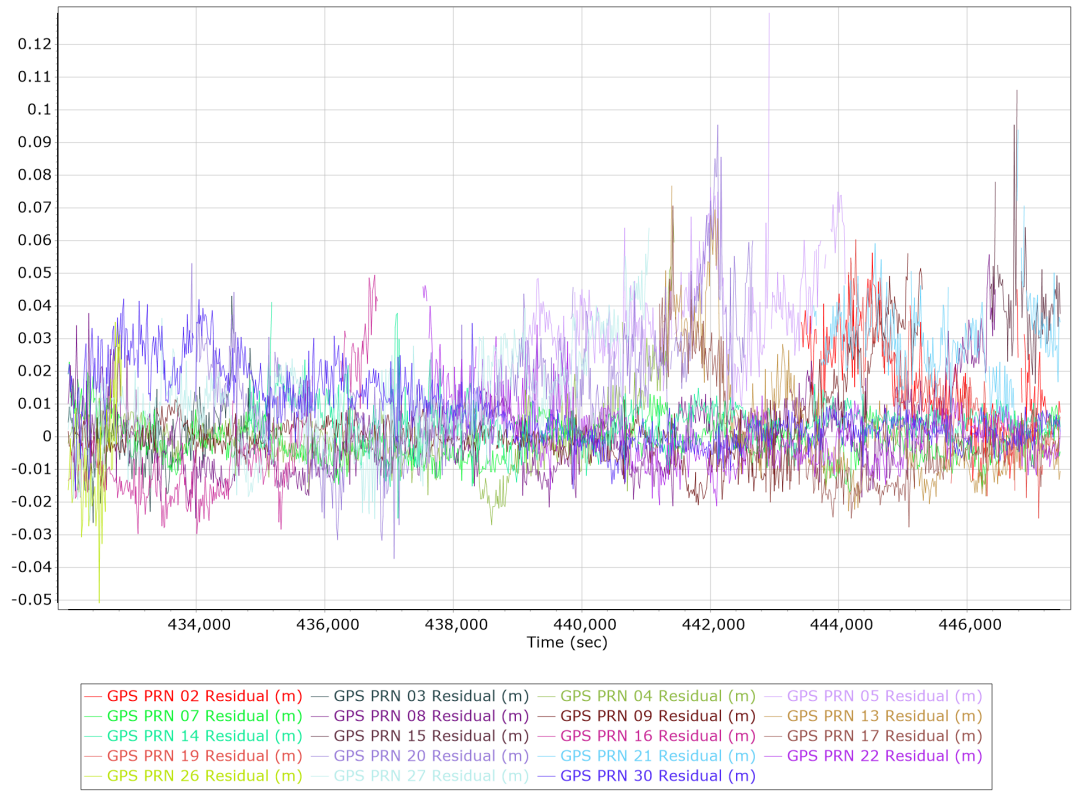
PDOP



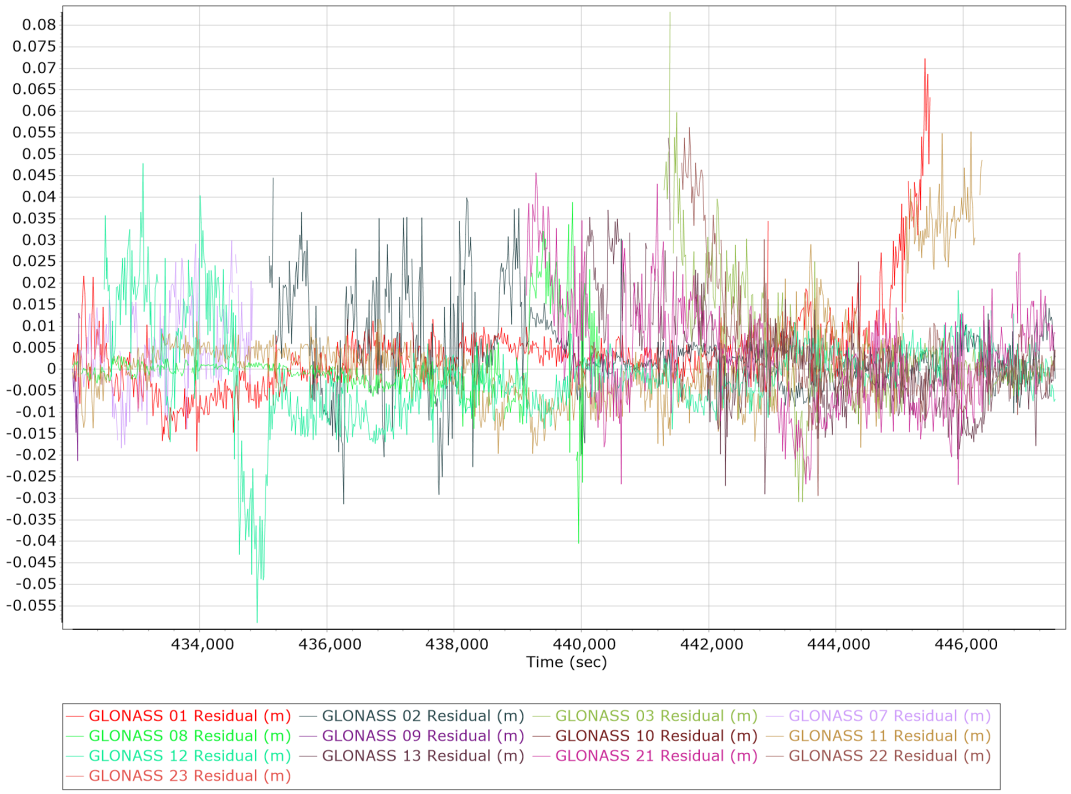
Estimated Position Accuracy



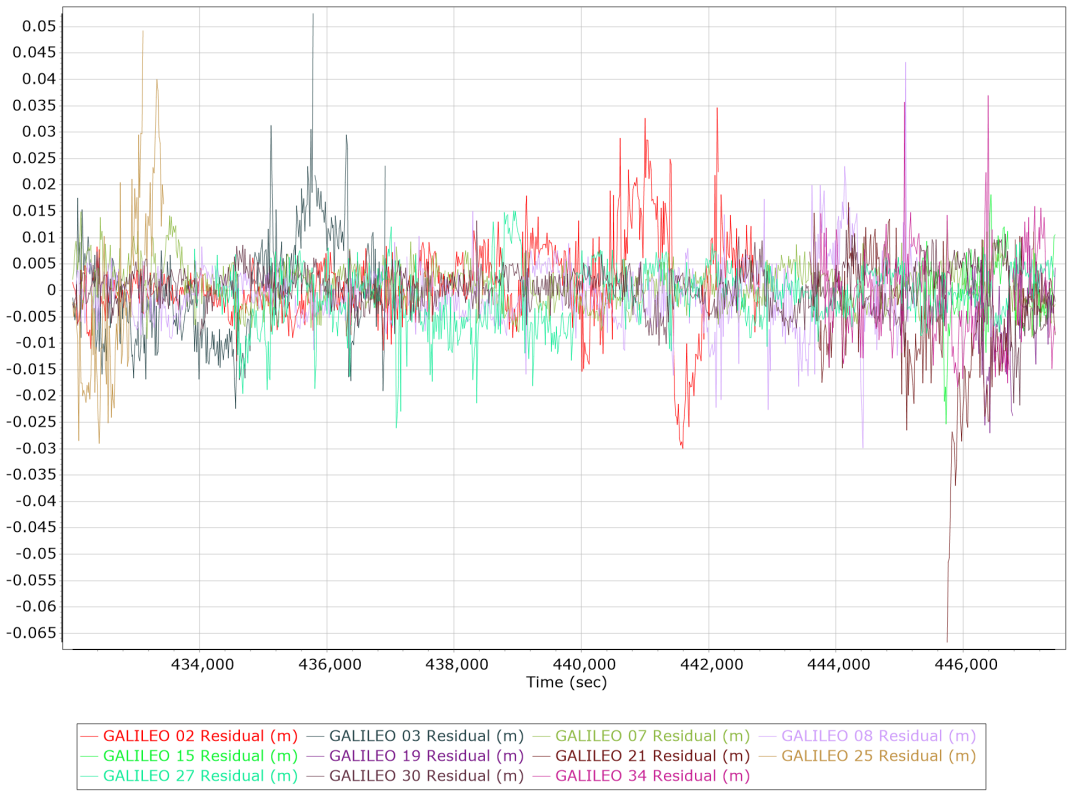
GPS Residuals



GLONASS Residuals



GALILEO Residuals



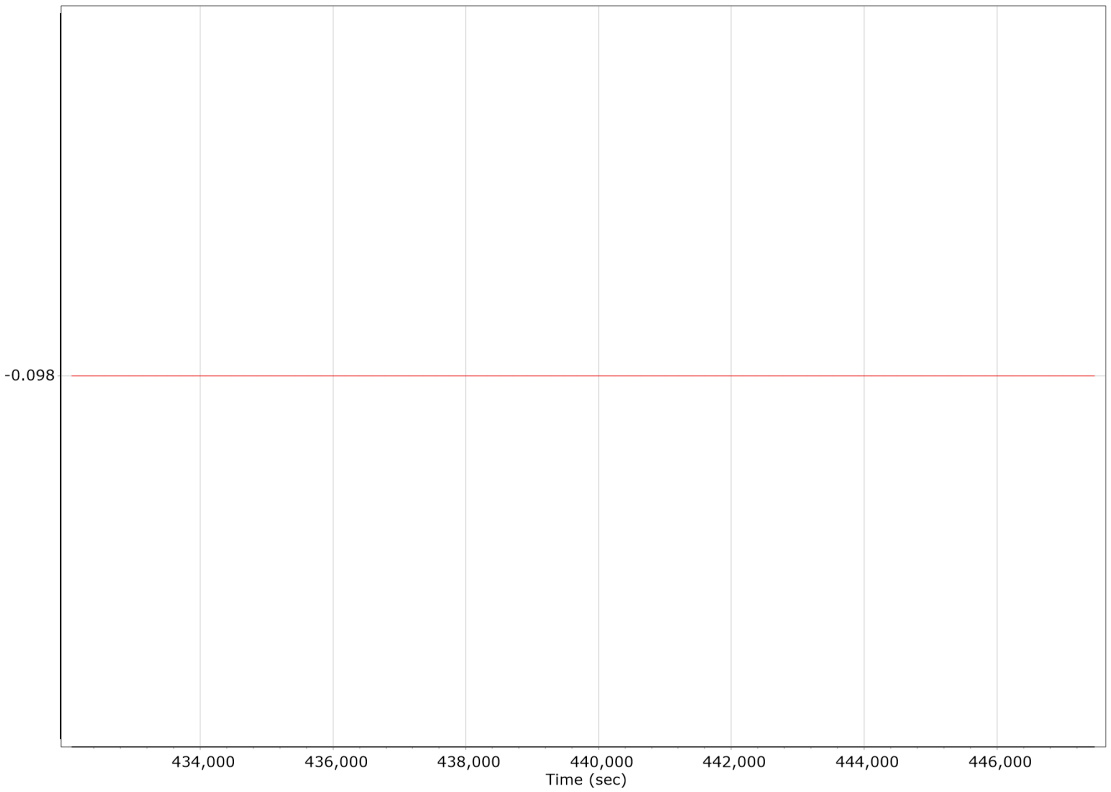
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	431676.038 (10/5/2023 11:54:36 PM)		
Processing end time	447476.000 (10/6/2023 4:17:56 AM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	-0.098	0.057	-1.221
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

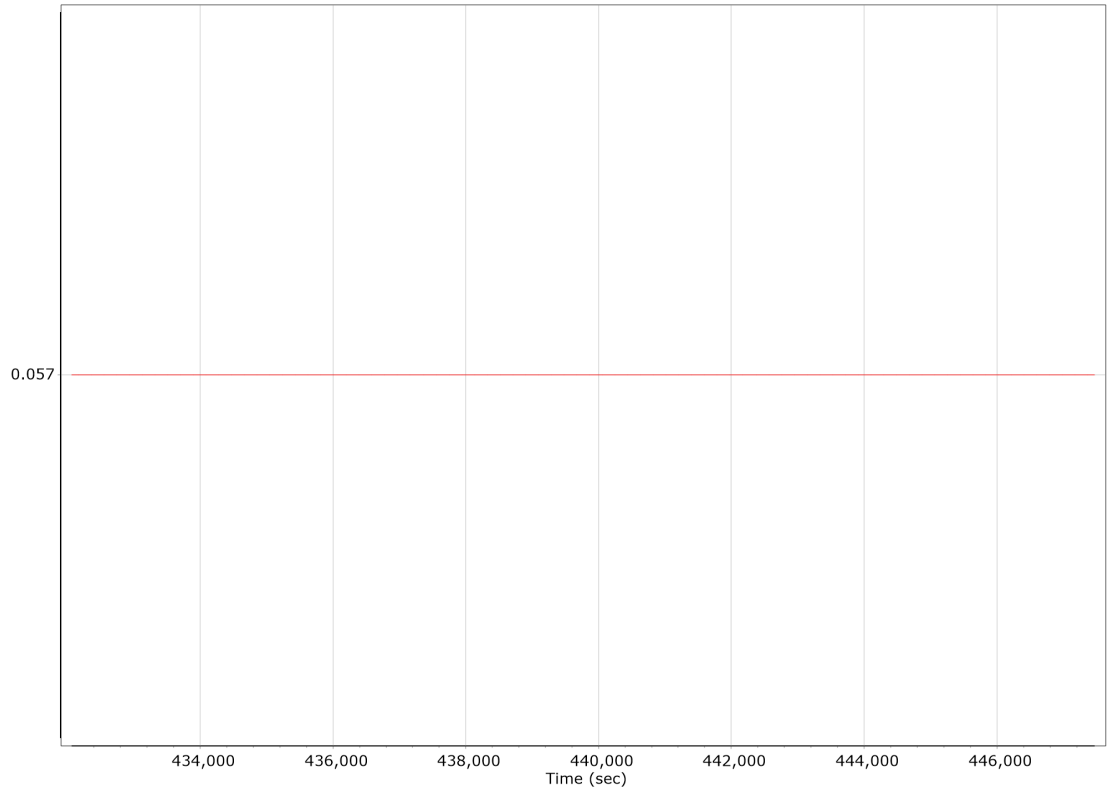
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

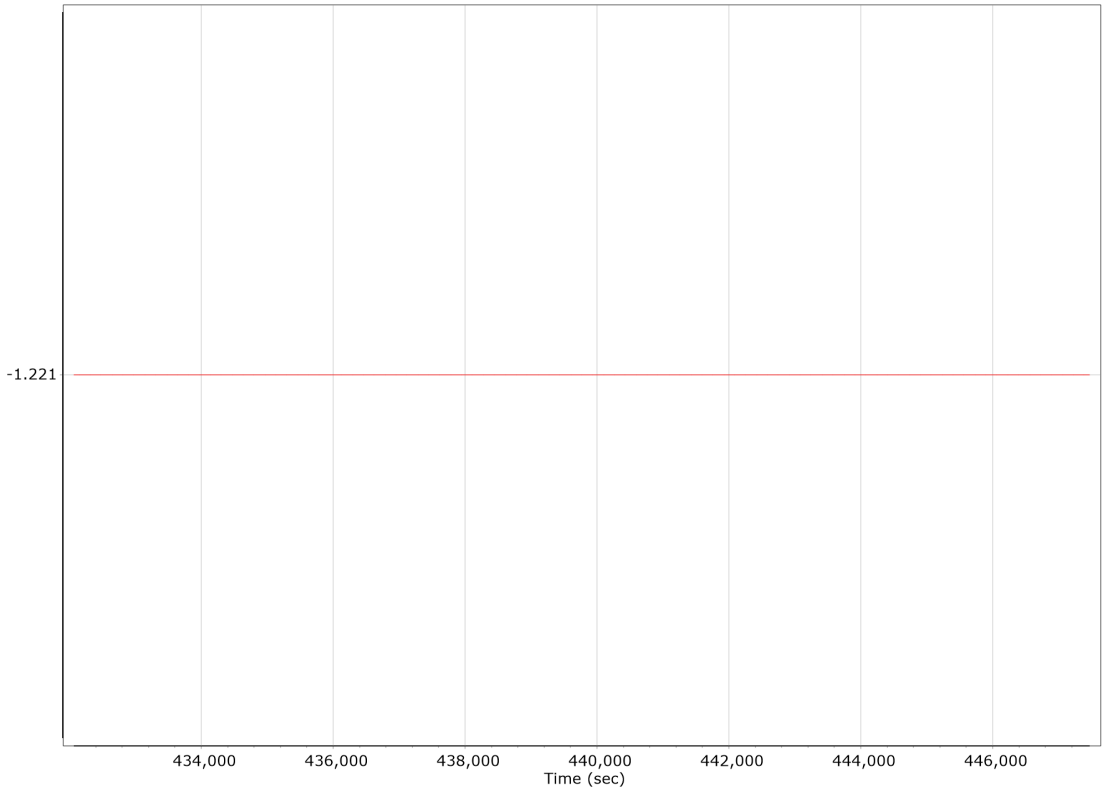
X Reference-Primary GNSS Lever Arm (m)



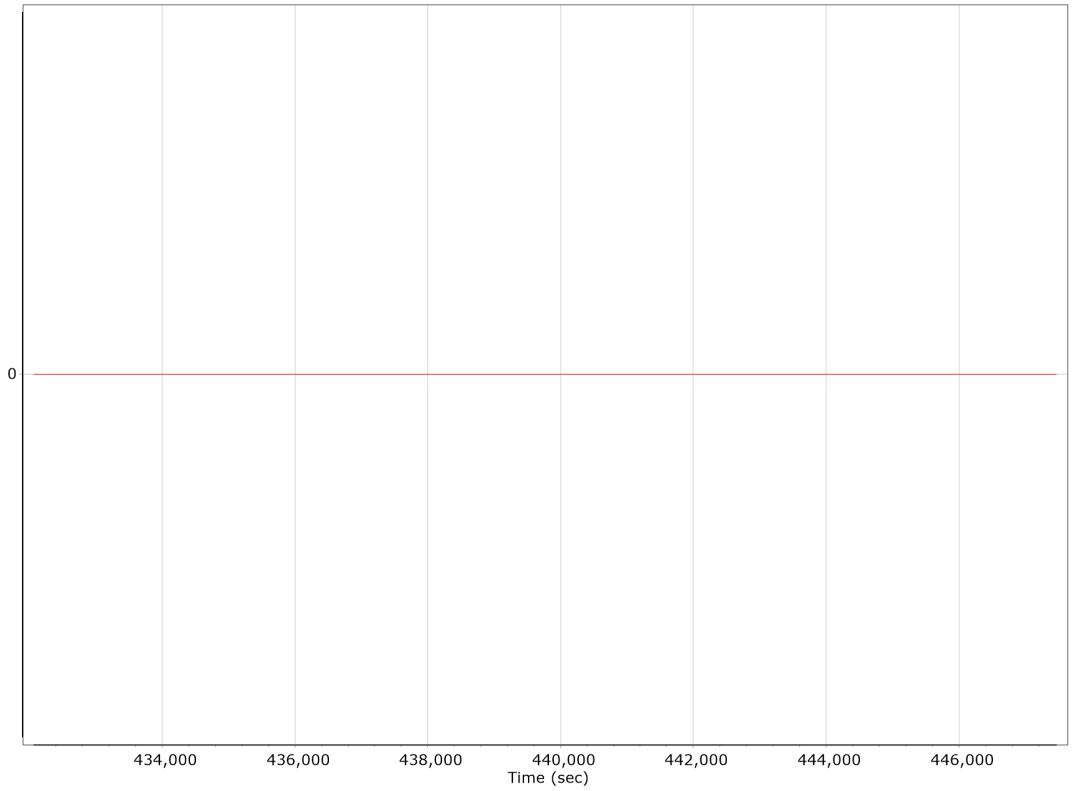
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



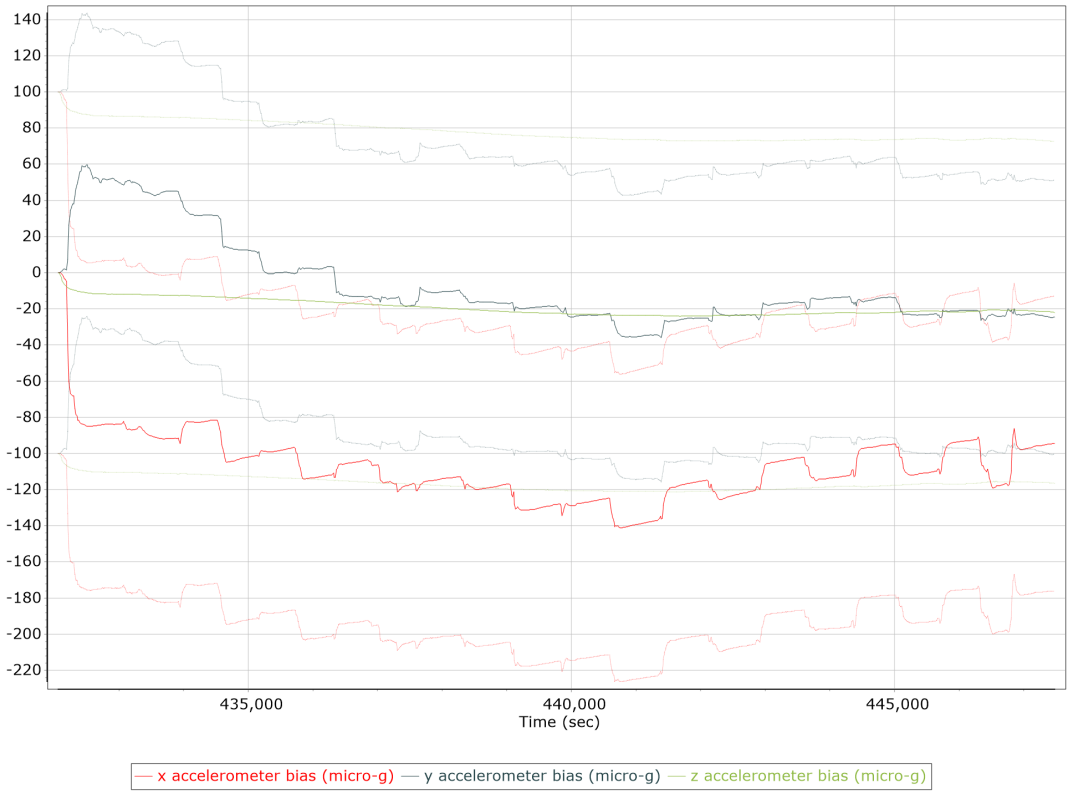
Reference-Primary GNSS Lever Arm Figure of Merit



IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

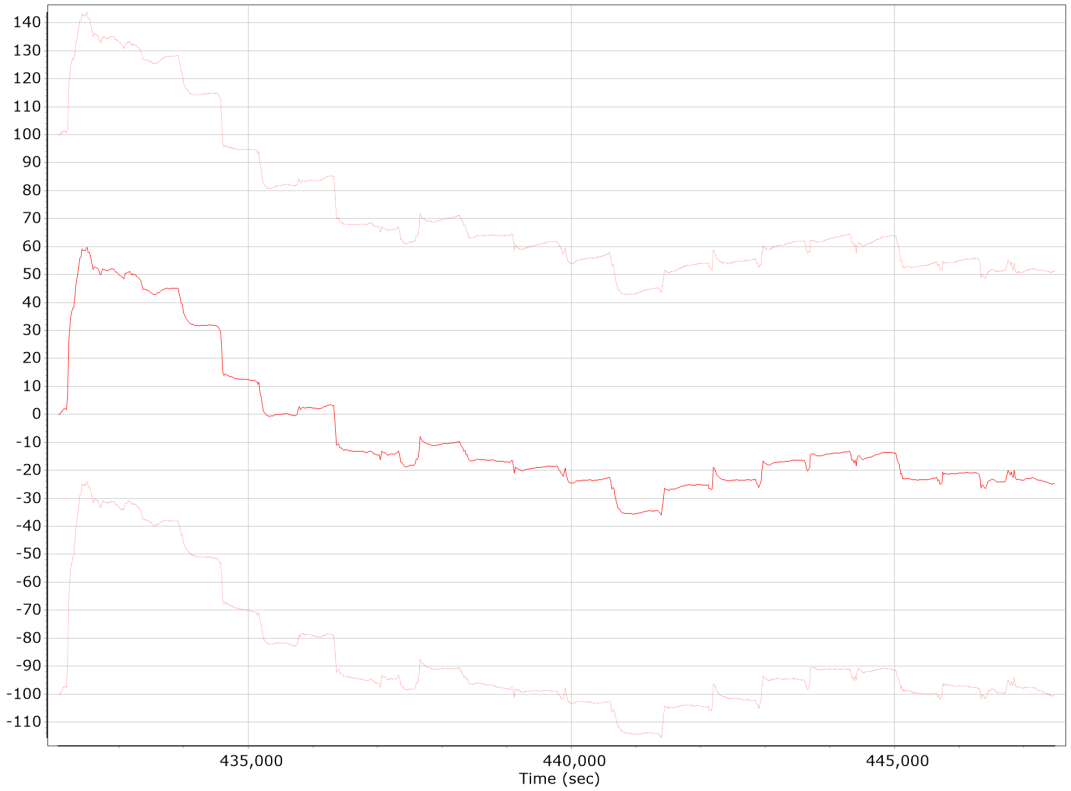
Accelerometer Bias (micro-g)



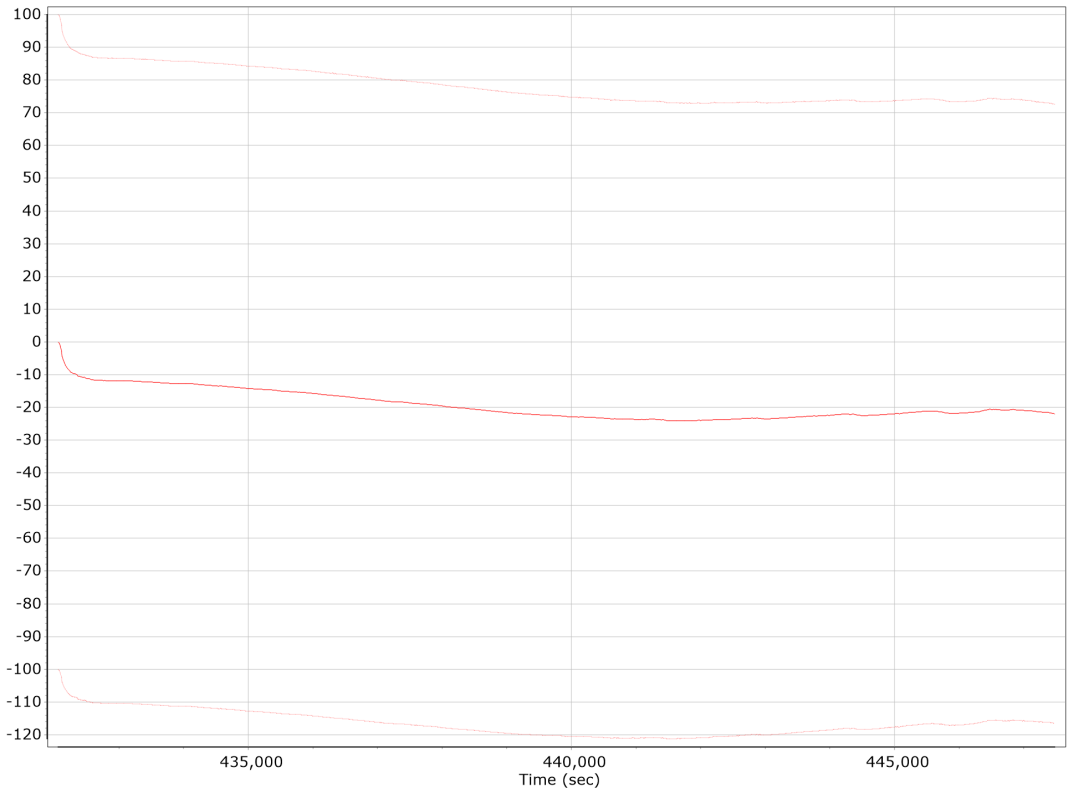
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



X Accelerometer Scale Error (ppm)



Y Accelerometer Scale Error (ppm)



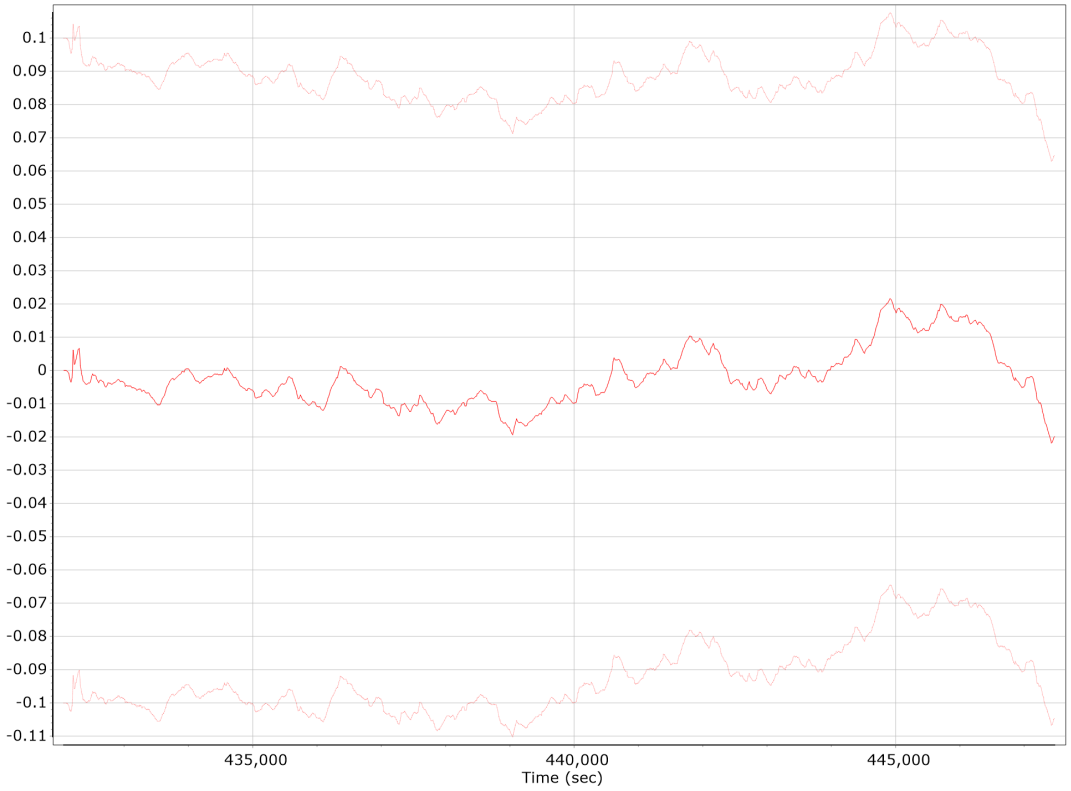
Z Accelerometer Scale Error (ppm)



Gyro Bias (deg/h)



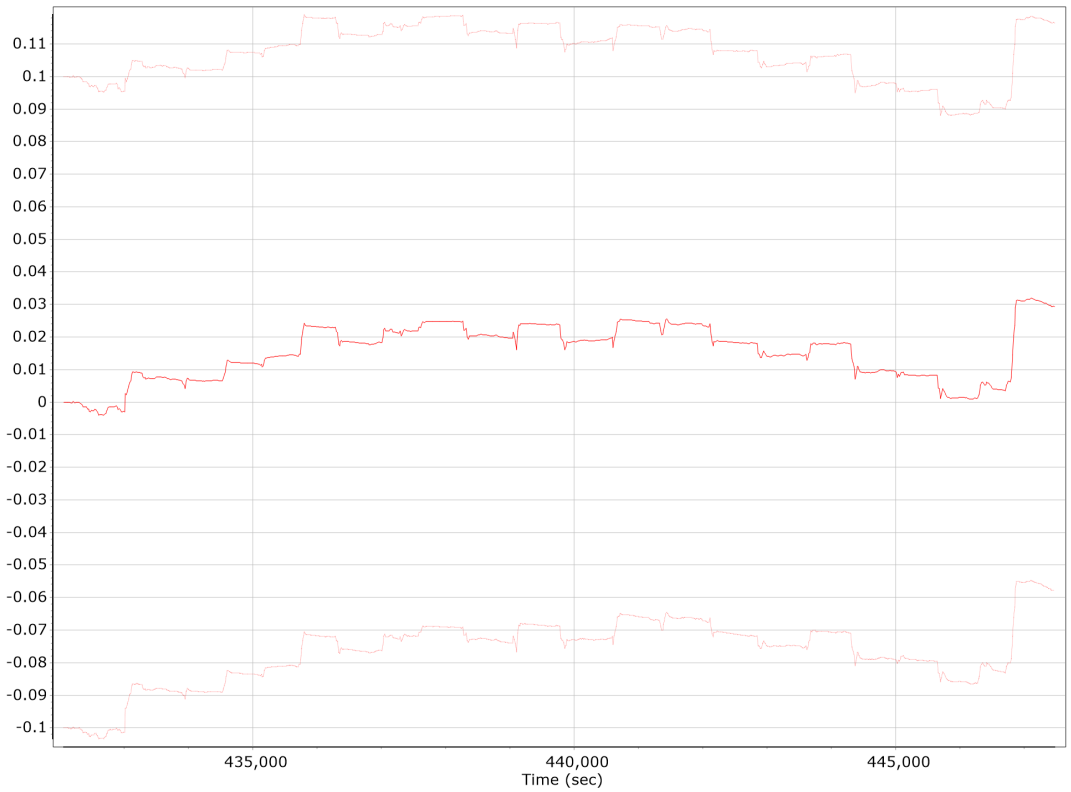
X Gyro Bias (deg/h)



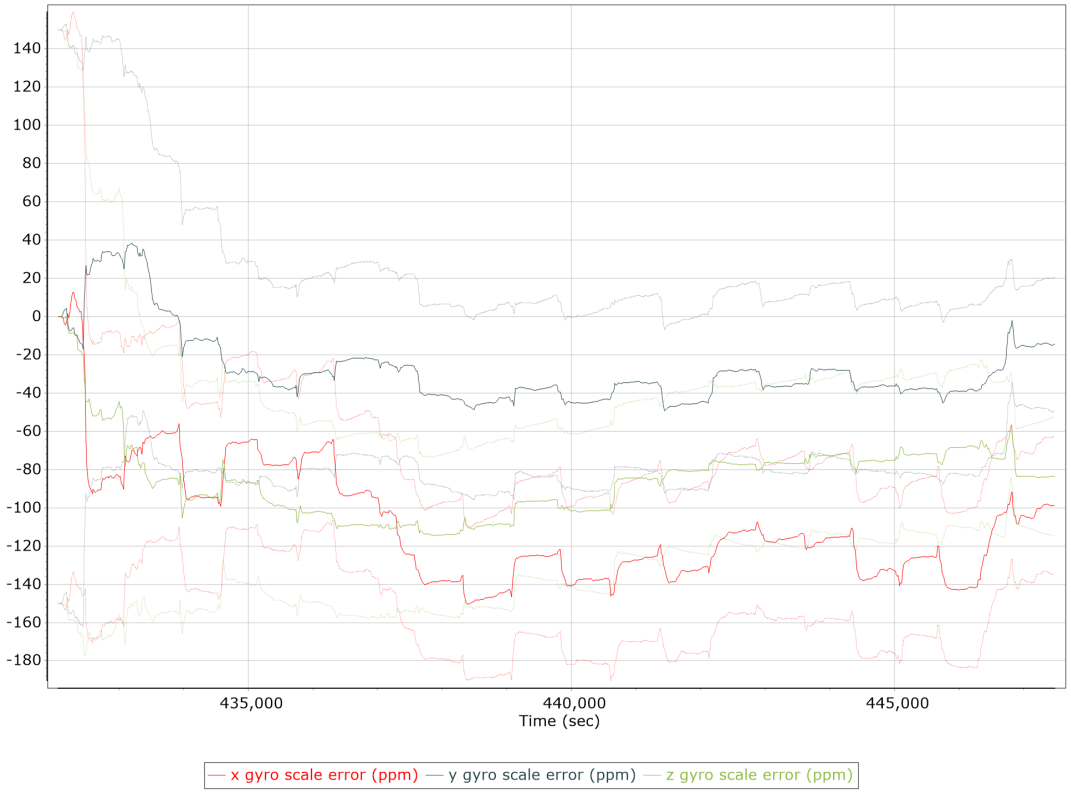
Y Gyro Bias (deg/h)



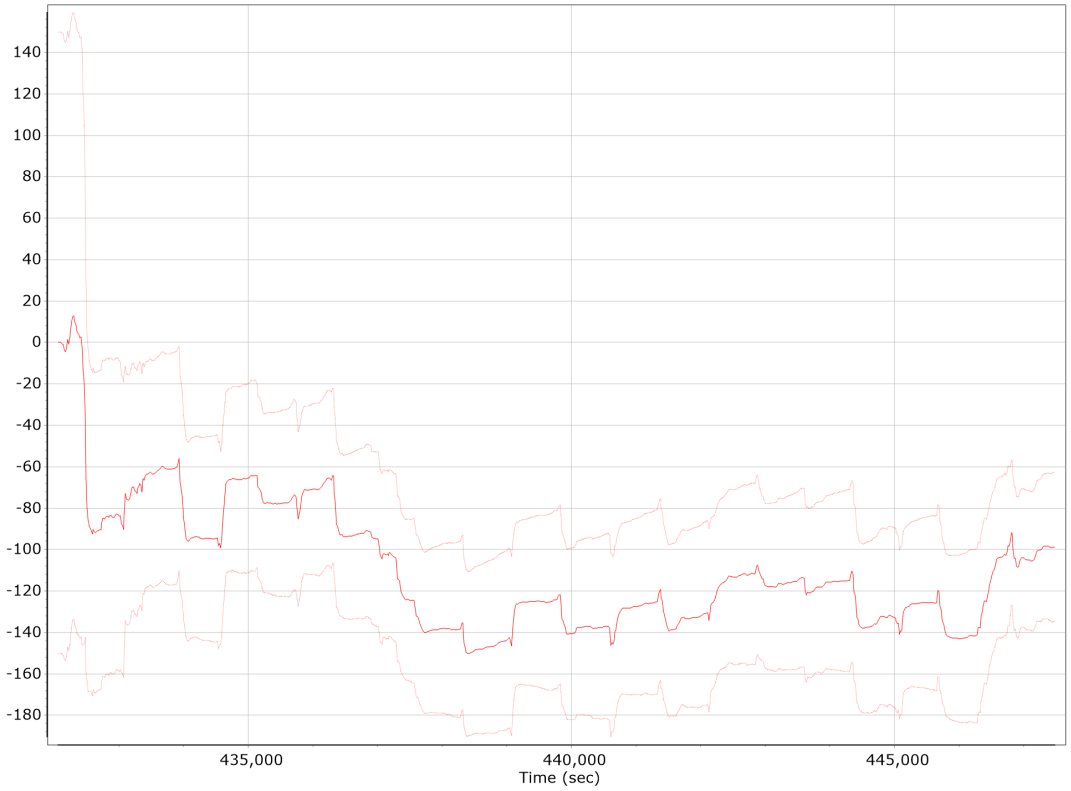
Z Gyro Bias (deg/h)



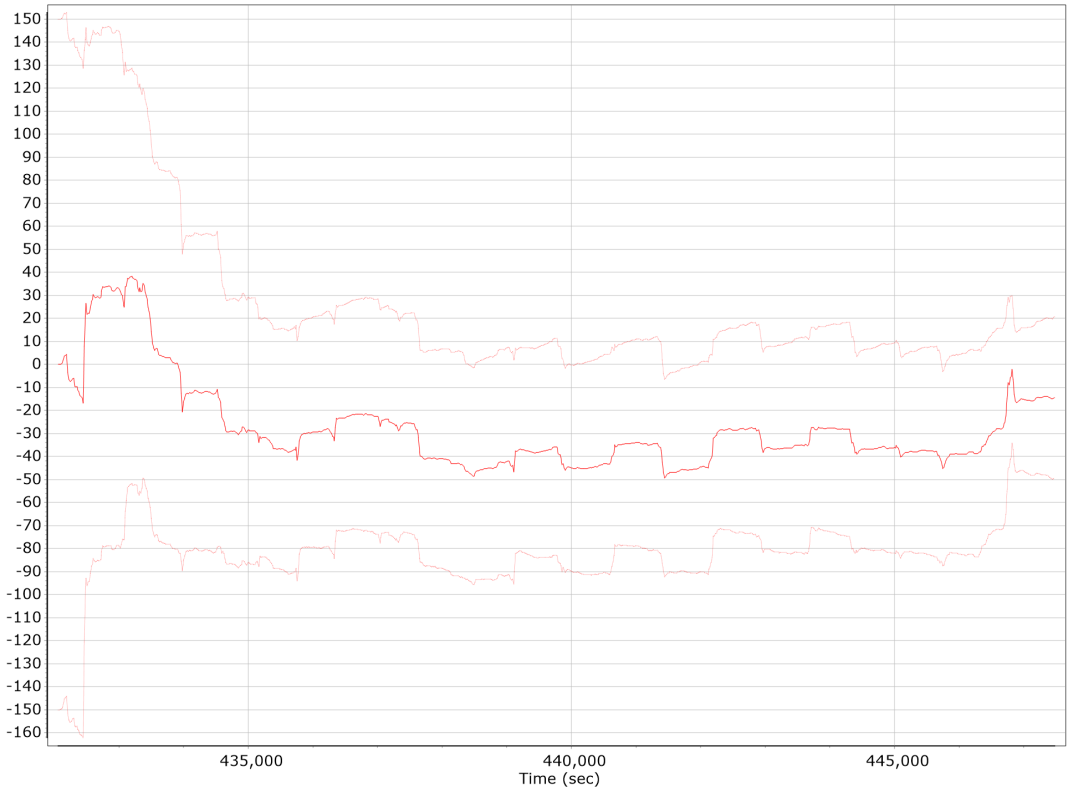
Gyro Scale Error (ppm)



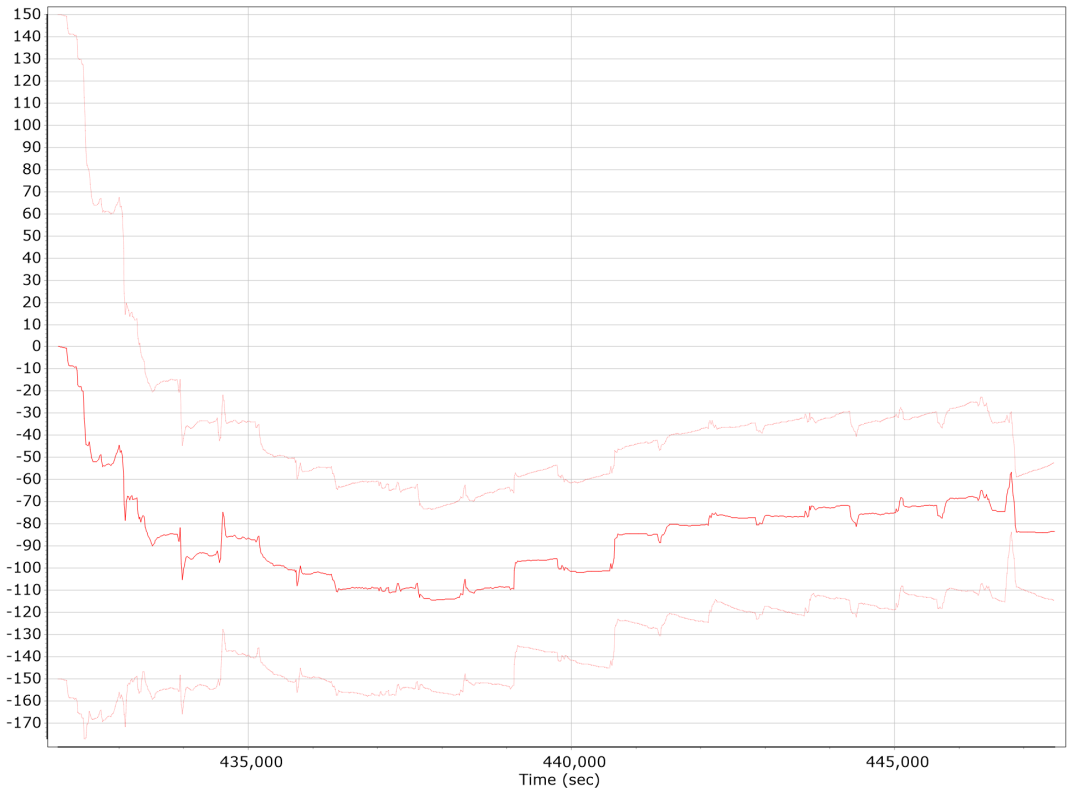
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)

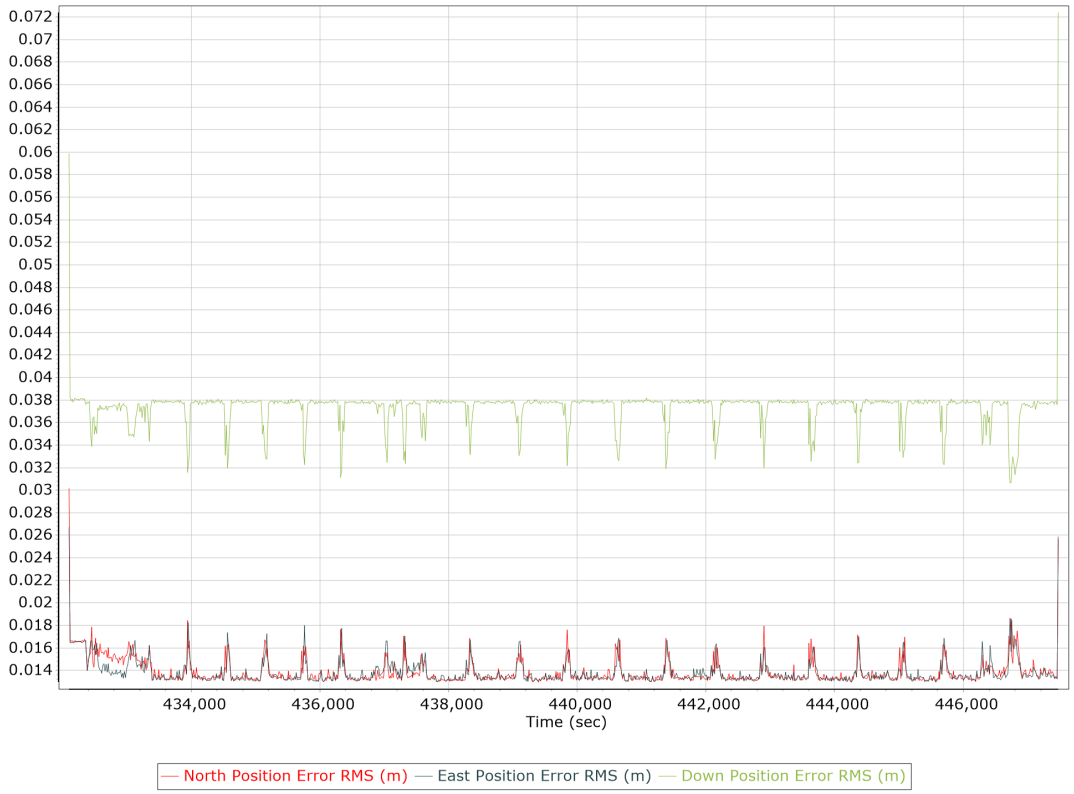


Z Gyro Scale Error (ppm)

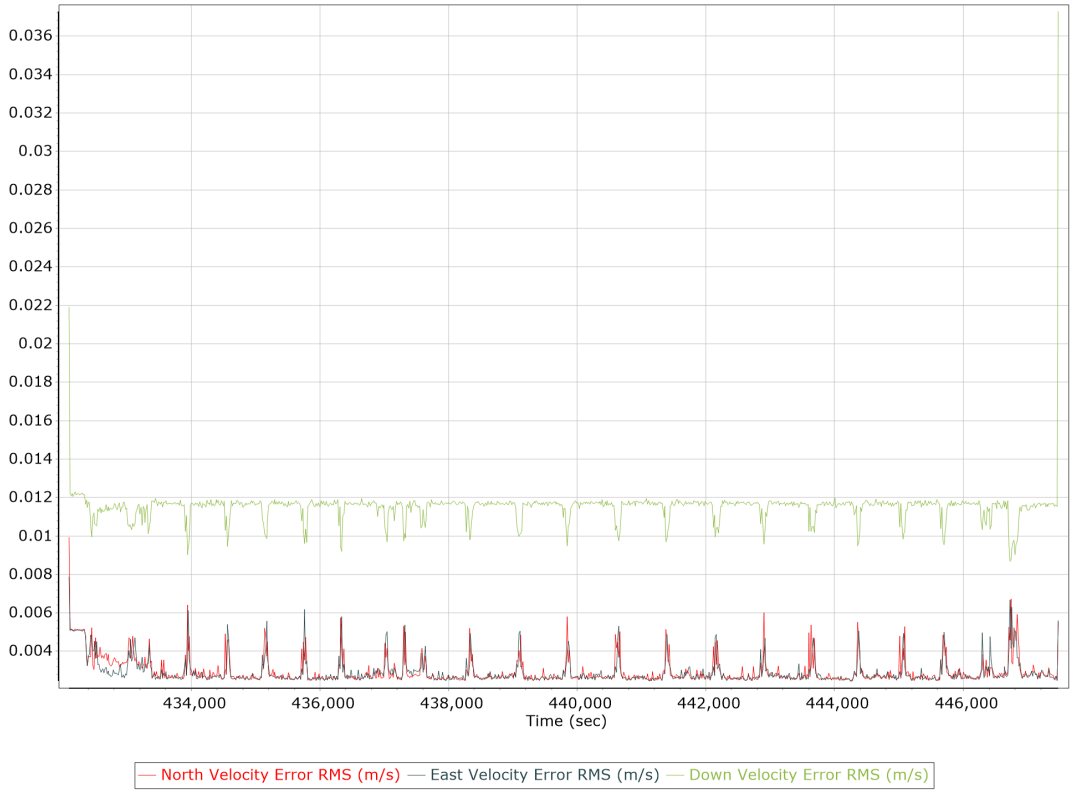


Smoothed Performance Metrics

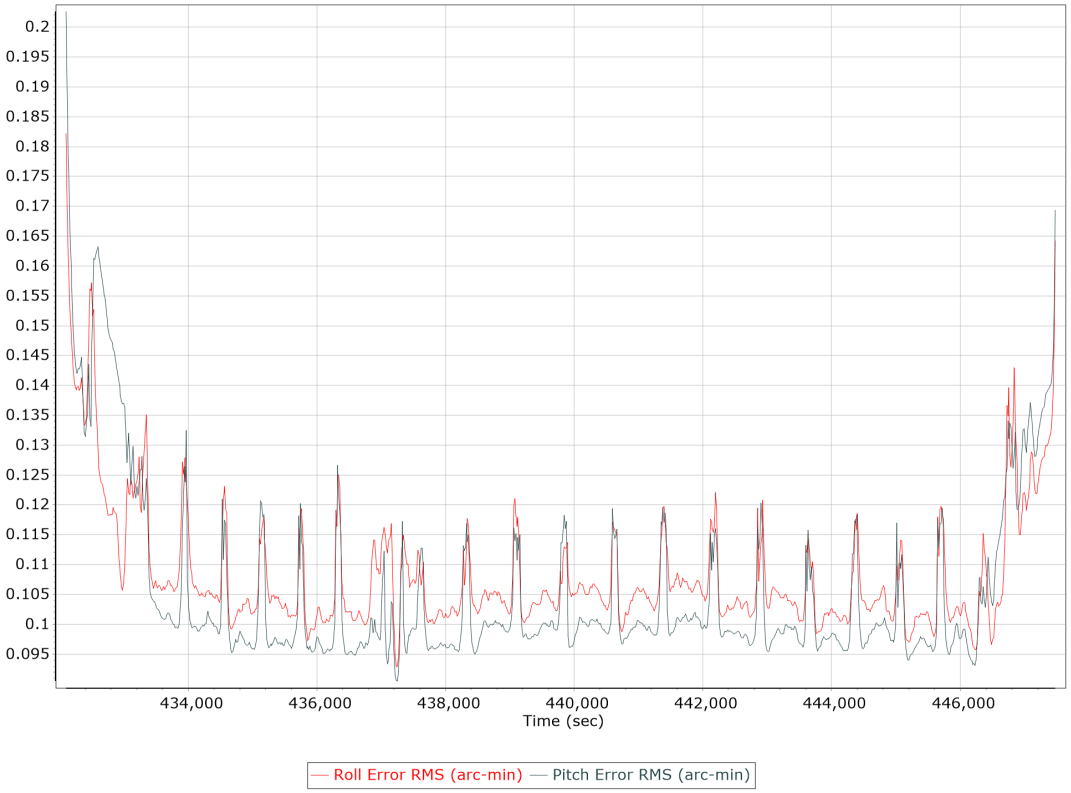
Position Error RMS (m)



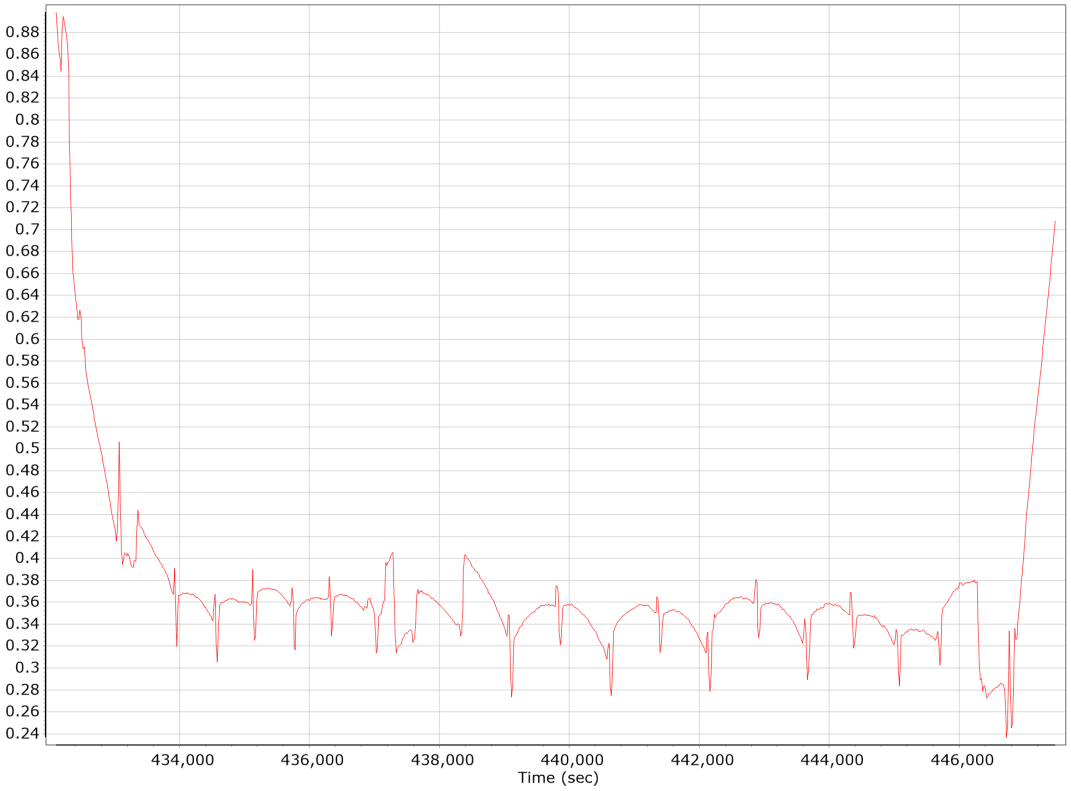
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)



Heading Error RMS (arc-min)



Forward Processed Performance Metrics

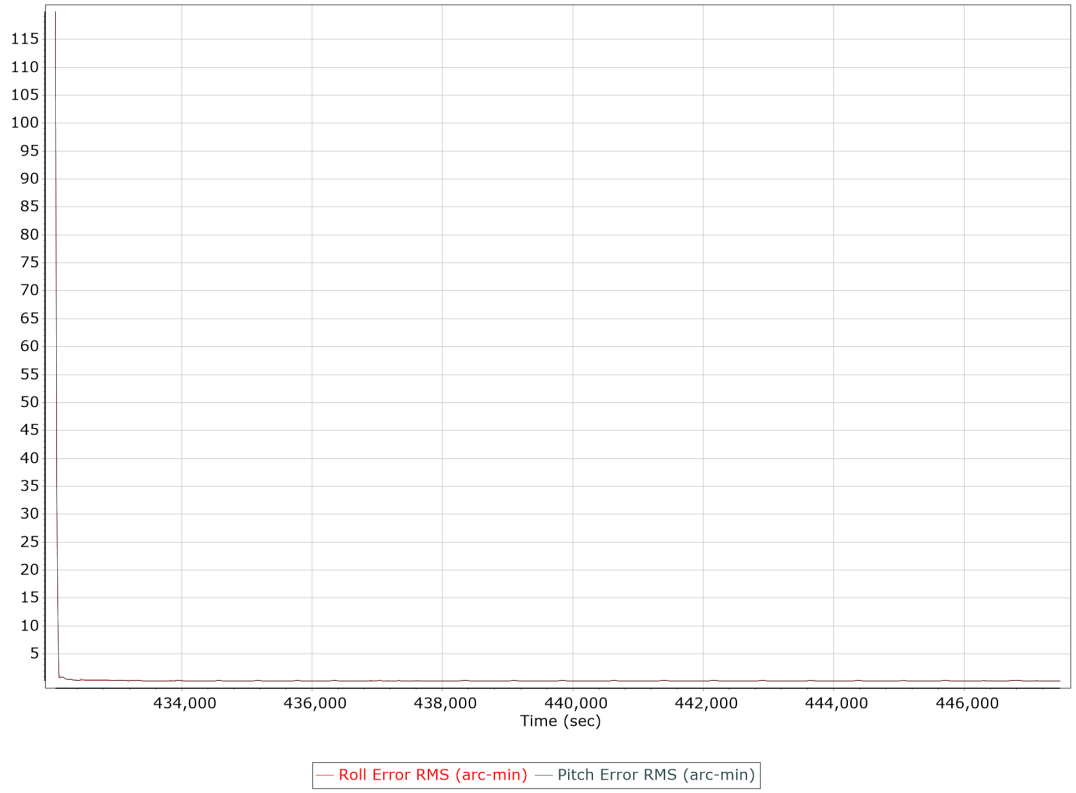
Position Error RMS (m)



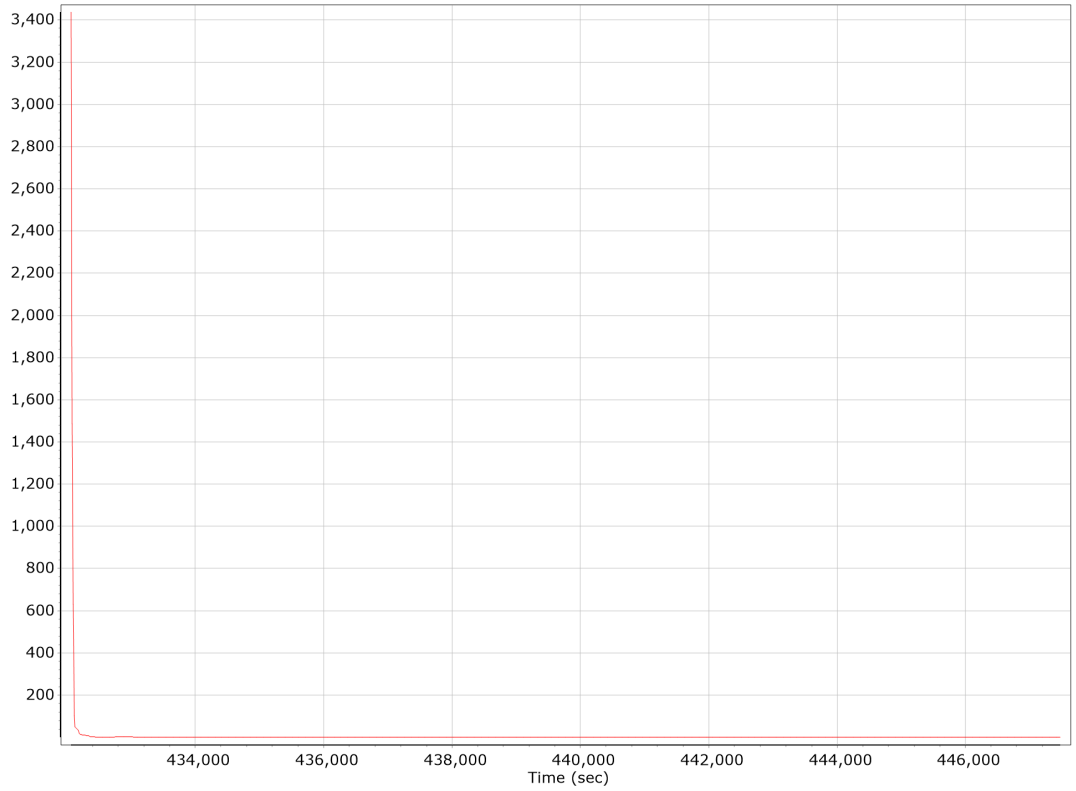
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

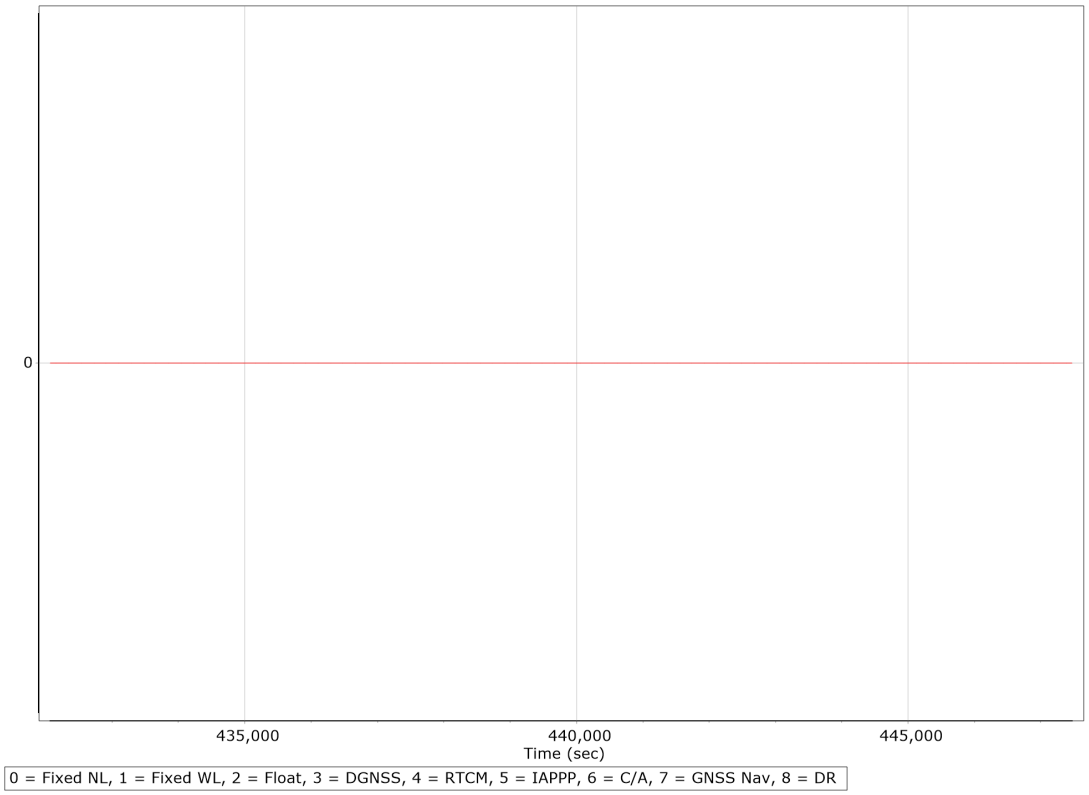


Heading Error RMS (arc-min)

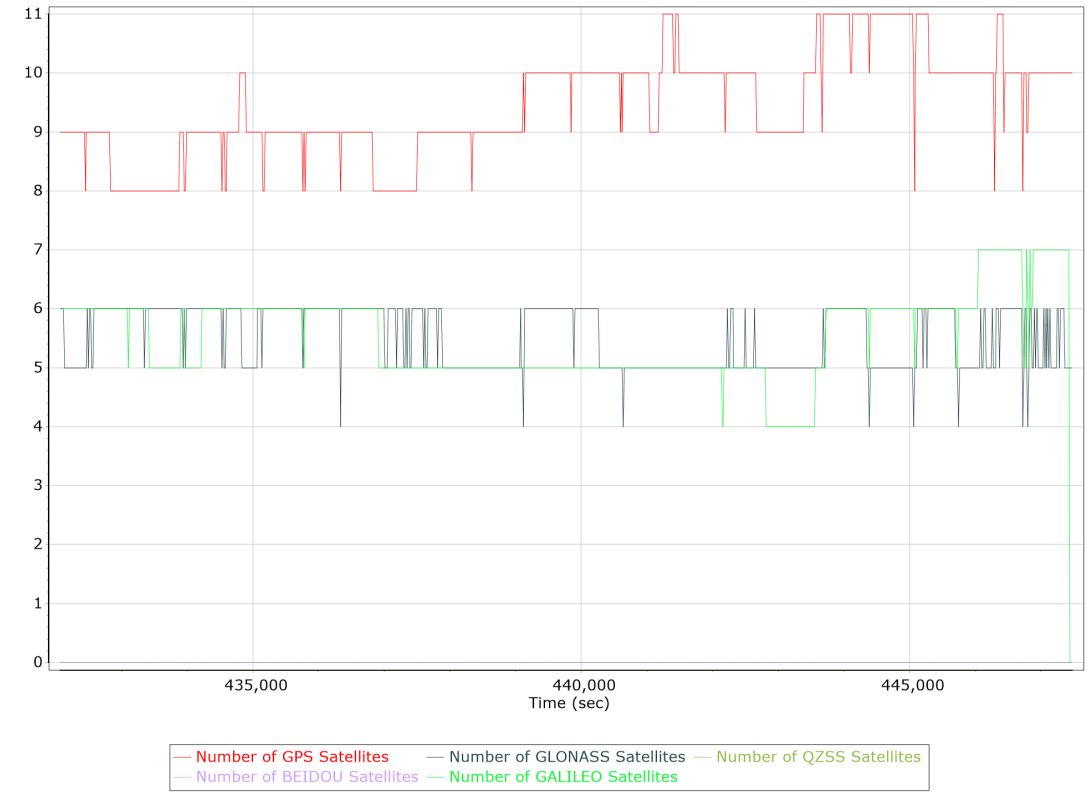


Forward Processed Solution Status

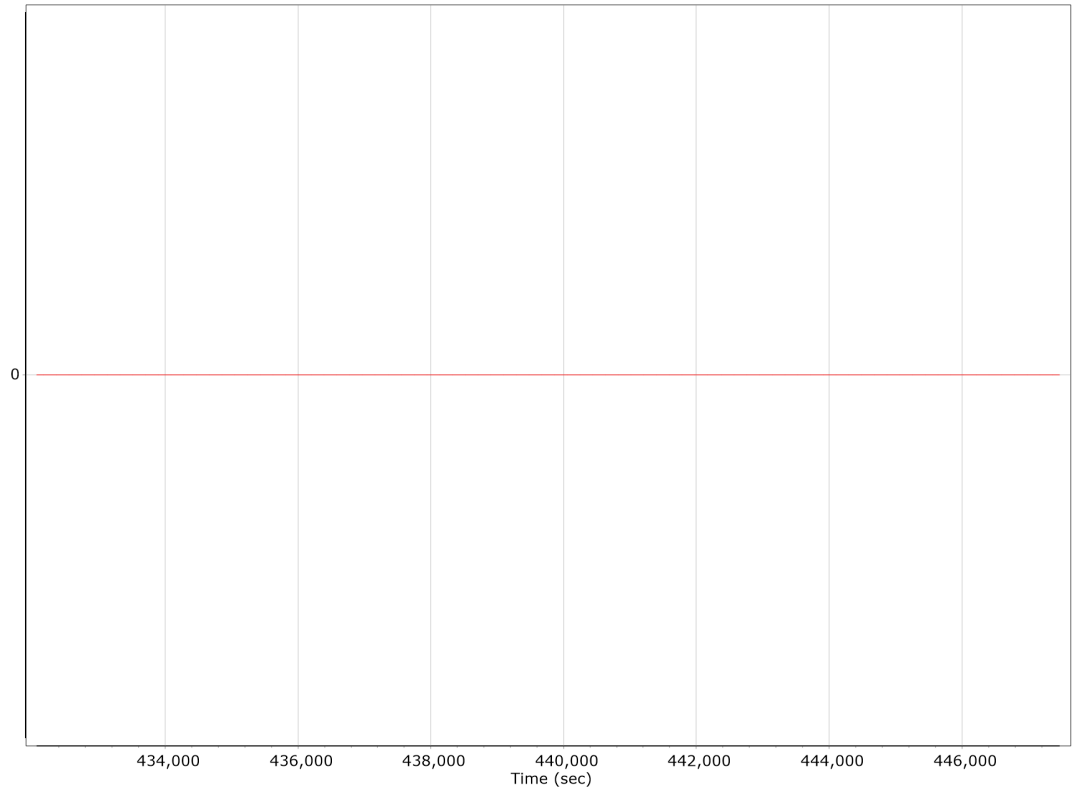
Processing Mode



Number of Satellites



Baseline Length



General Information

Mission Information

Project name	10062023A_4046
Processing date	2024-01-12 14:37:32
Mission date	2023-10-06 17:10:40
Mission duration	03:59:54.832
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N10762
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
231006_171020_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm2790.23g	GLONASS Broadcast Ephemeris
Ephm2790.23n	GPS Broadcast Ephemeris
IGS0OPSFIN_20232780000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232790000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232800000_01D_15M_ORB.SP3	GPS Precise Ephemeris

Output Files

Filename	File type
sbet_10062023A_4046.out	SBET Trajectory File

Rover Data Summary

First raw data file	231006_171020_INS-GPS_1.raw		
Last raw data file	231006_171020_INS-GPS_1.raw		
Start GPS week	2282		
Start time	493821.225 (10/6/2023 5:10:21 PM)		
End time	508216.057 (10/6/2023 9:10:16 PM)		
Start of fine alignment	493987.562 (10/6/2023 5:13:07 PM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	0.000	0.000	0.000
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

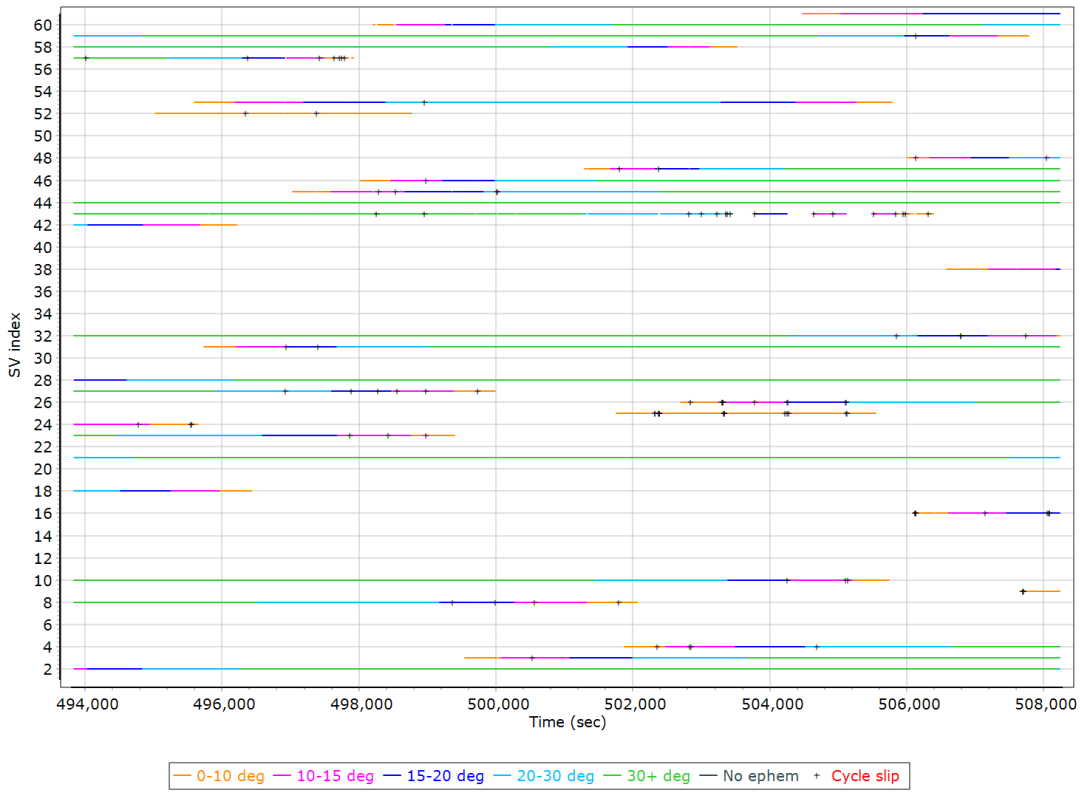
Rover Data QC

Raw IMU Import QC Summary

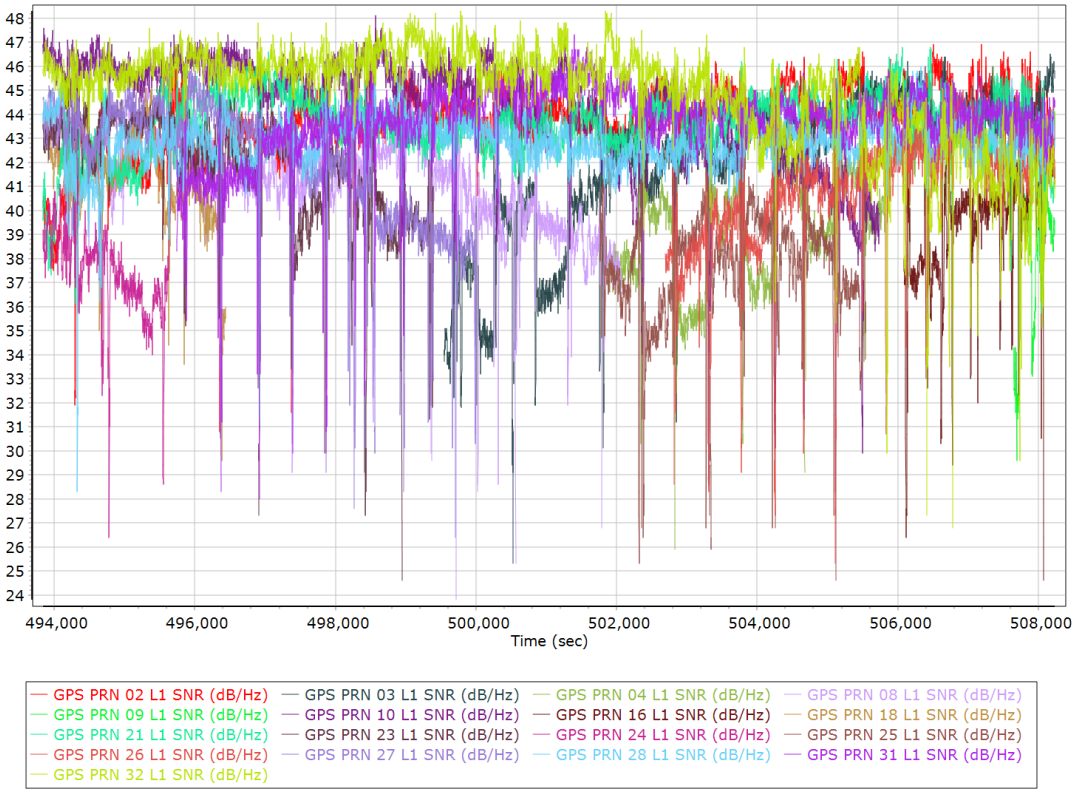
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_10062023A_4046.log
IMU Records Processed	2878594
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

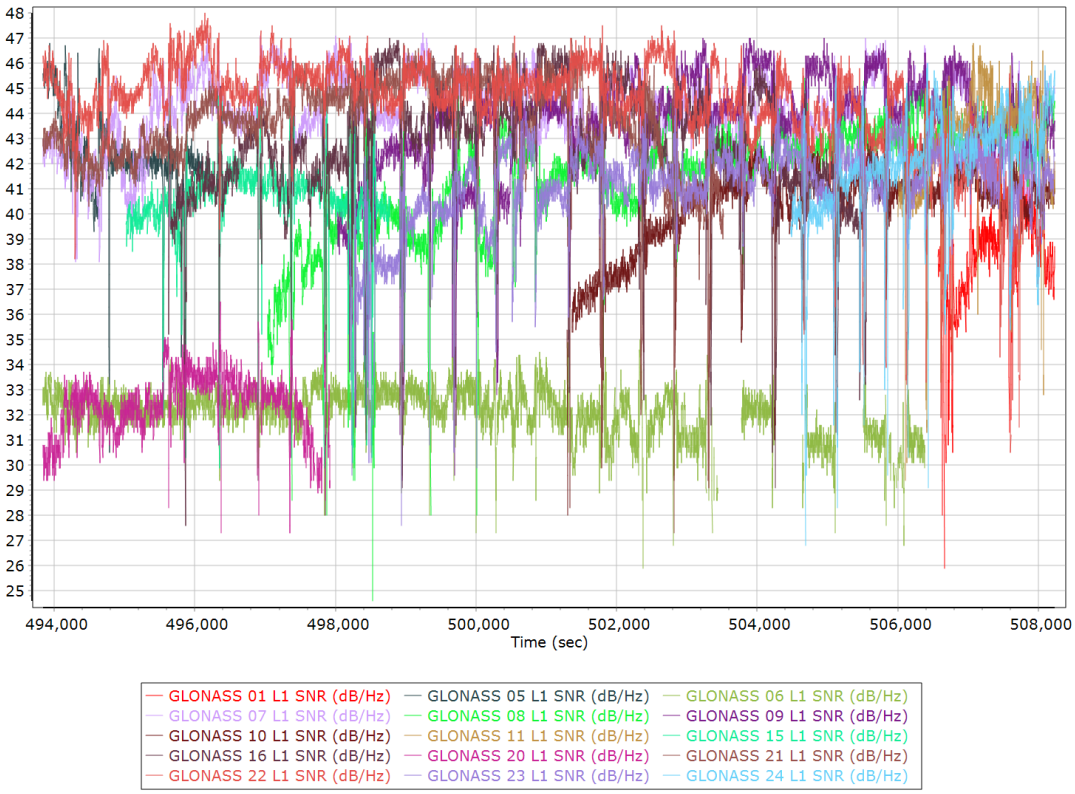
GPS/GLONASS L1 Satellite Lock/Elevation



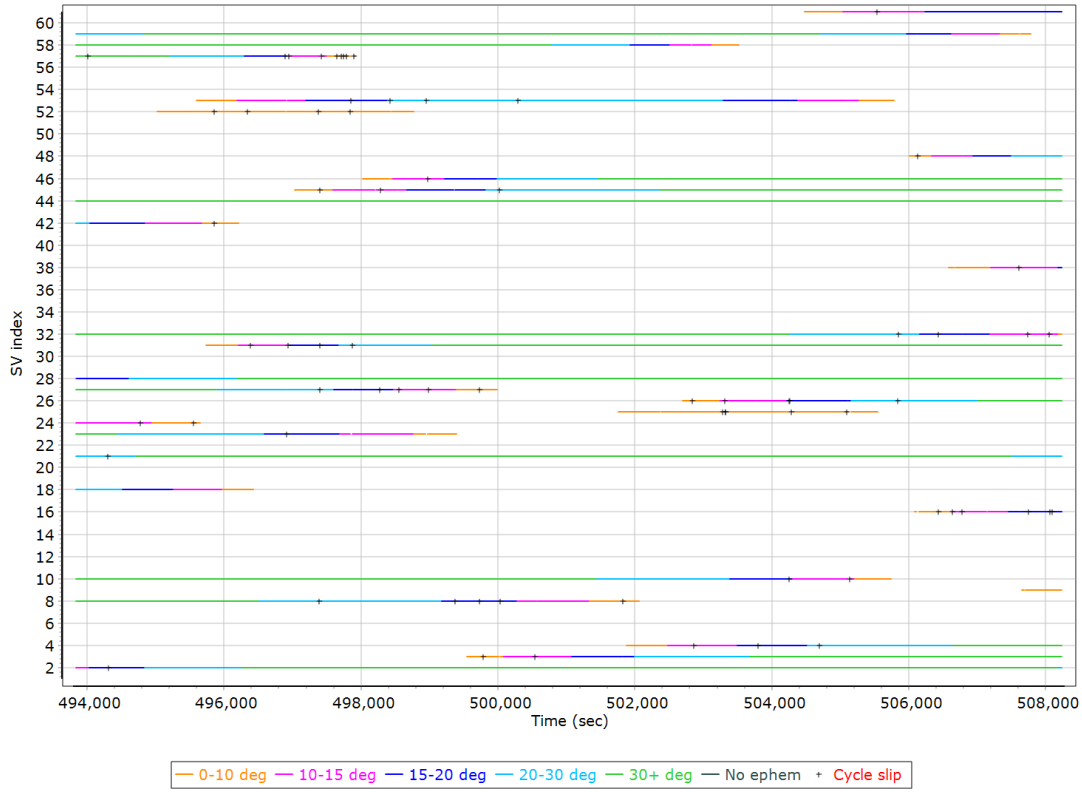
GPS L1 SNR



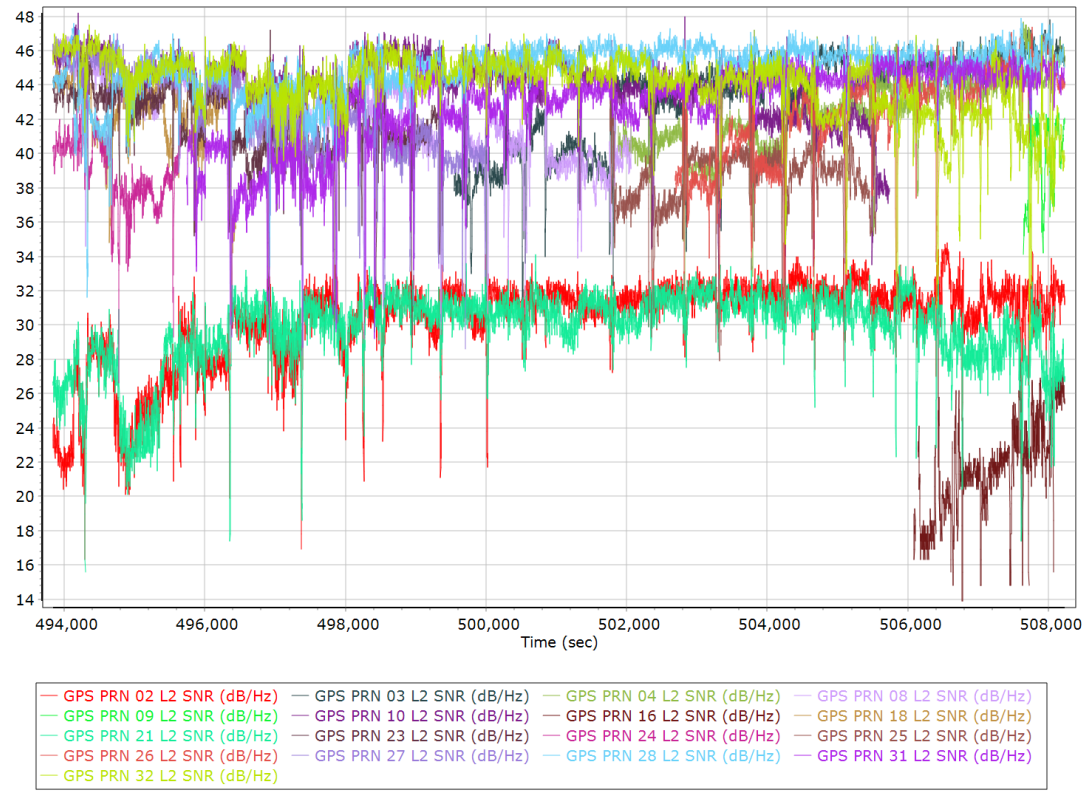
GLONASS L1 SNR



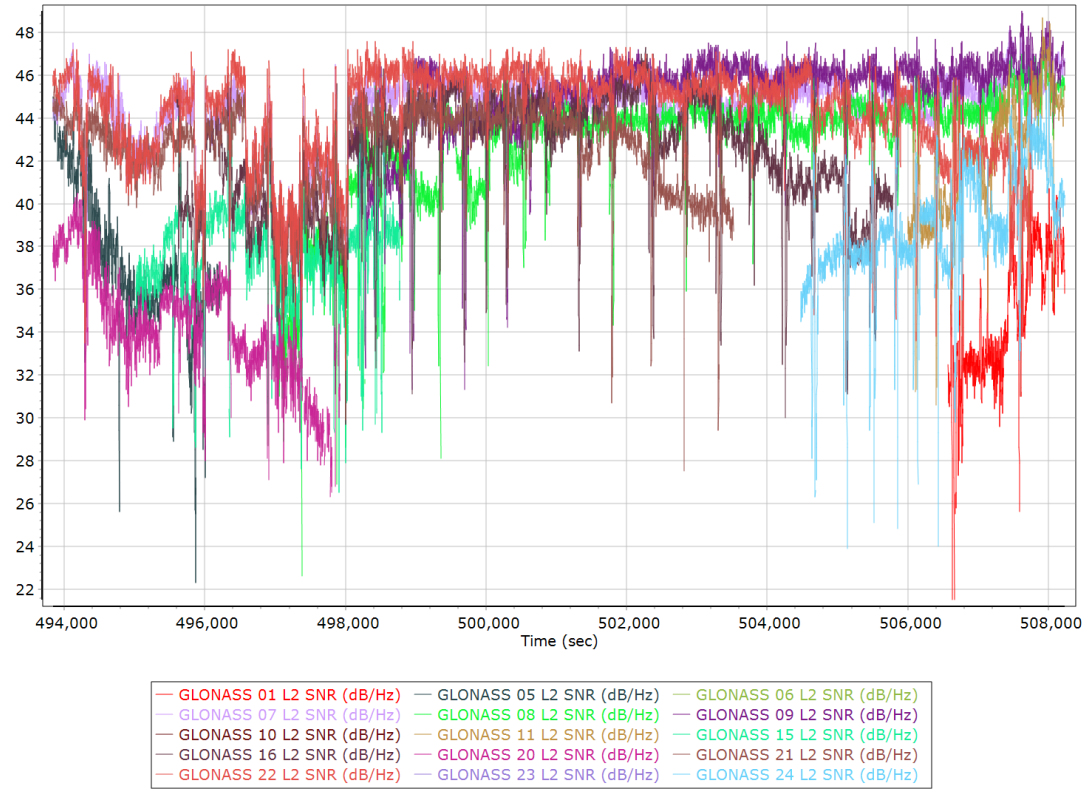
GPS/GLONASS L2 Satellite Lock/Elevation



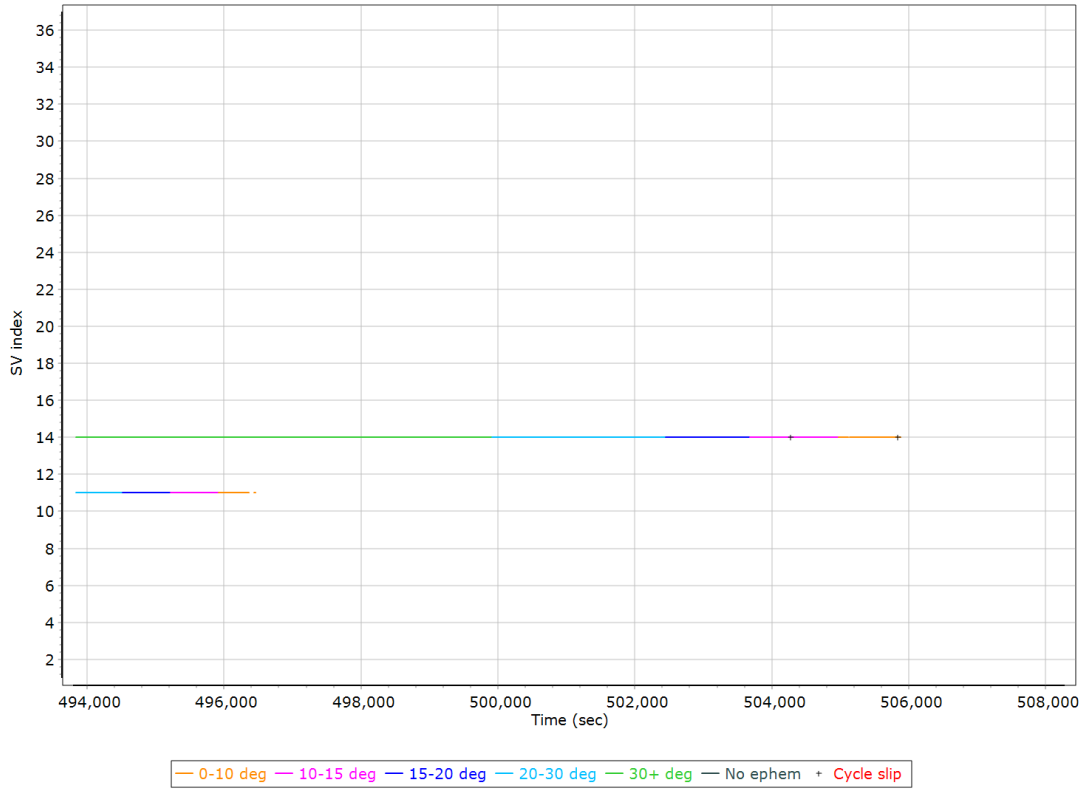
GPS L2 SNR



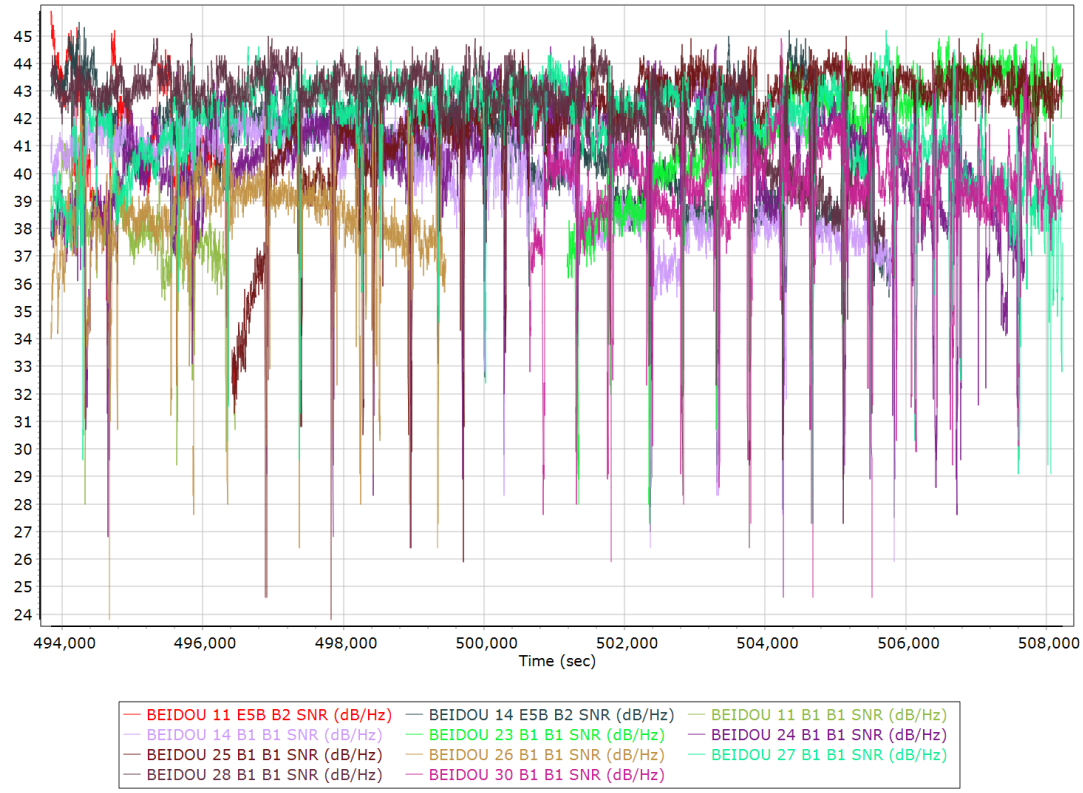
GLONASS L2 SNR



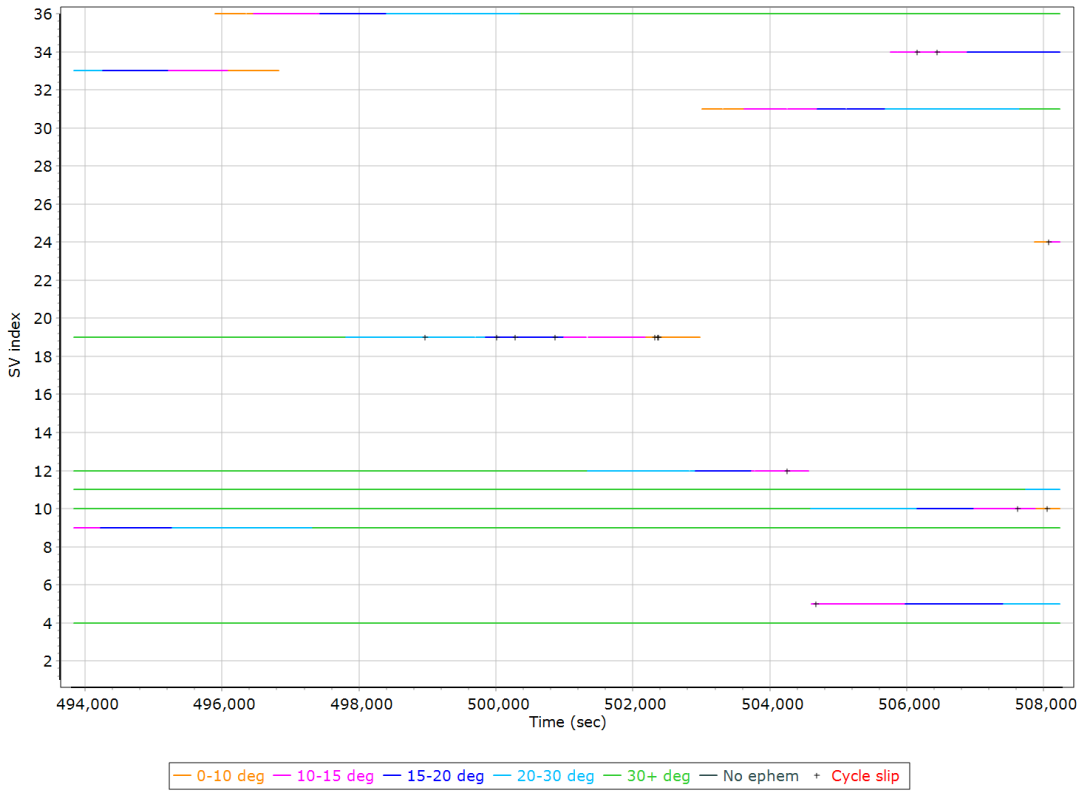
BEIDOU Satellite Lock/Elevation



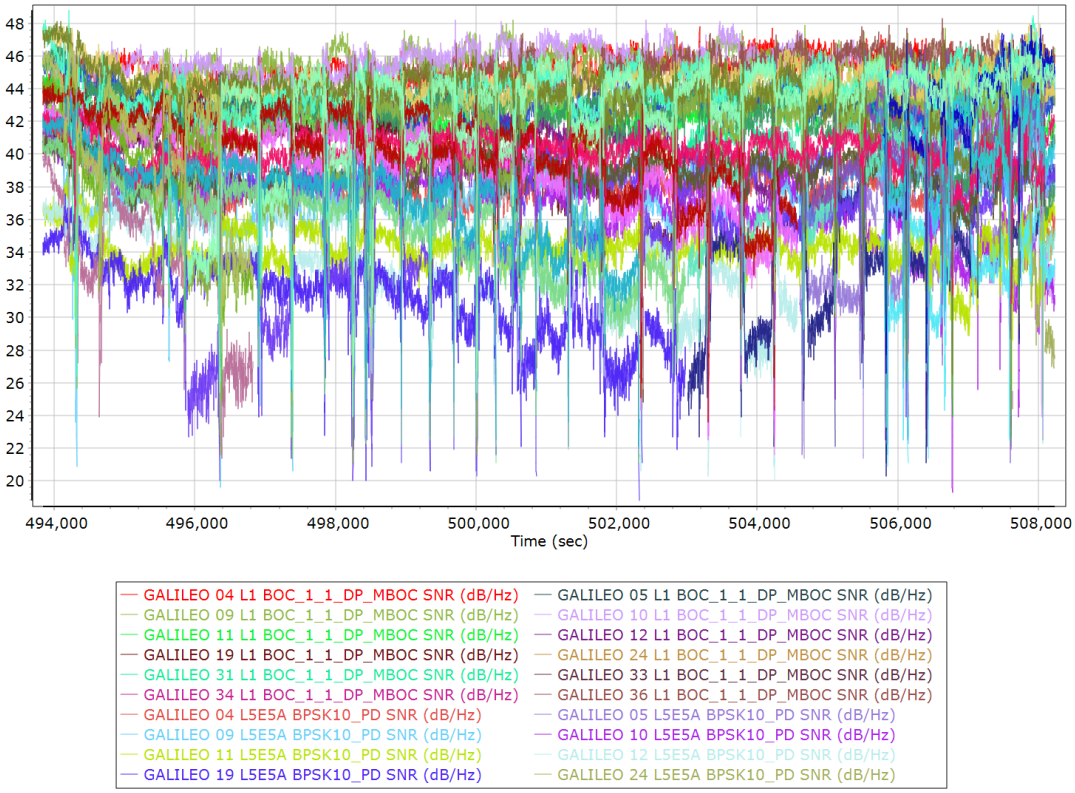
BEIDOU SNR



GALILEO Satellite Lock/Elevation

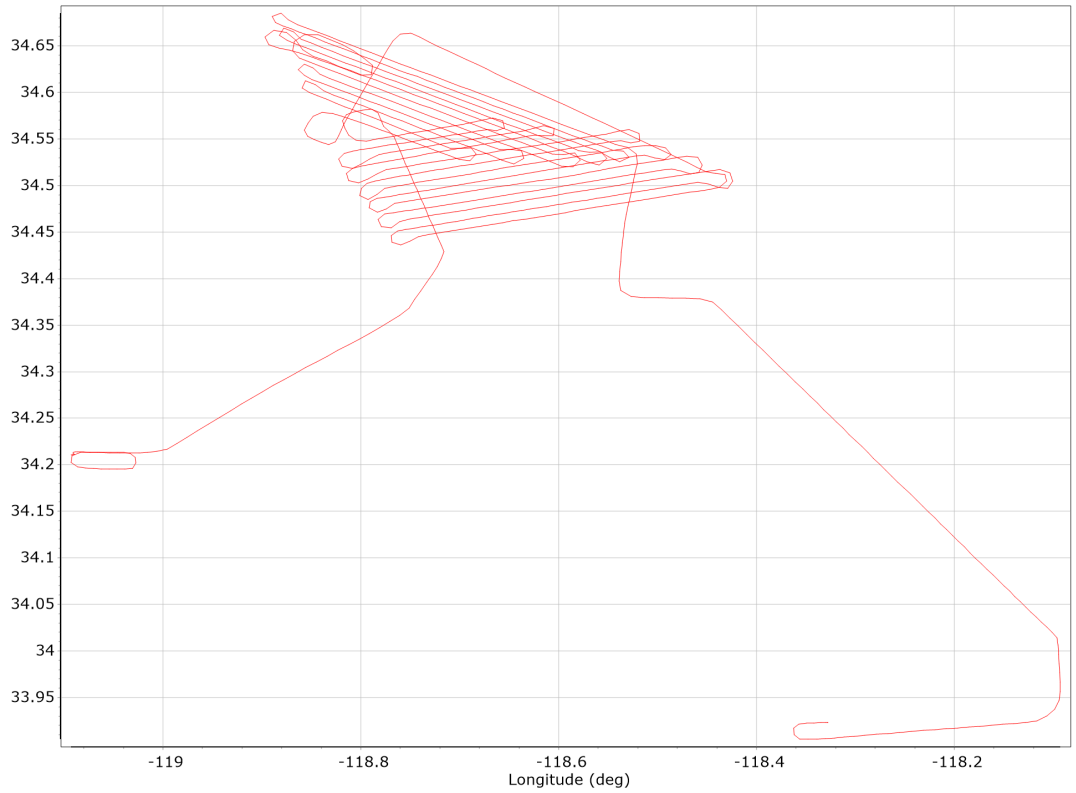


GALILEO SNR

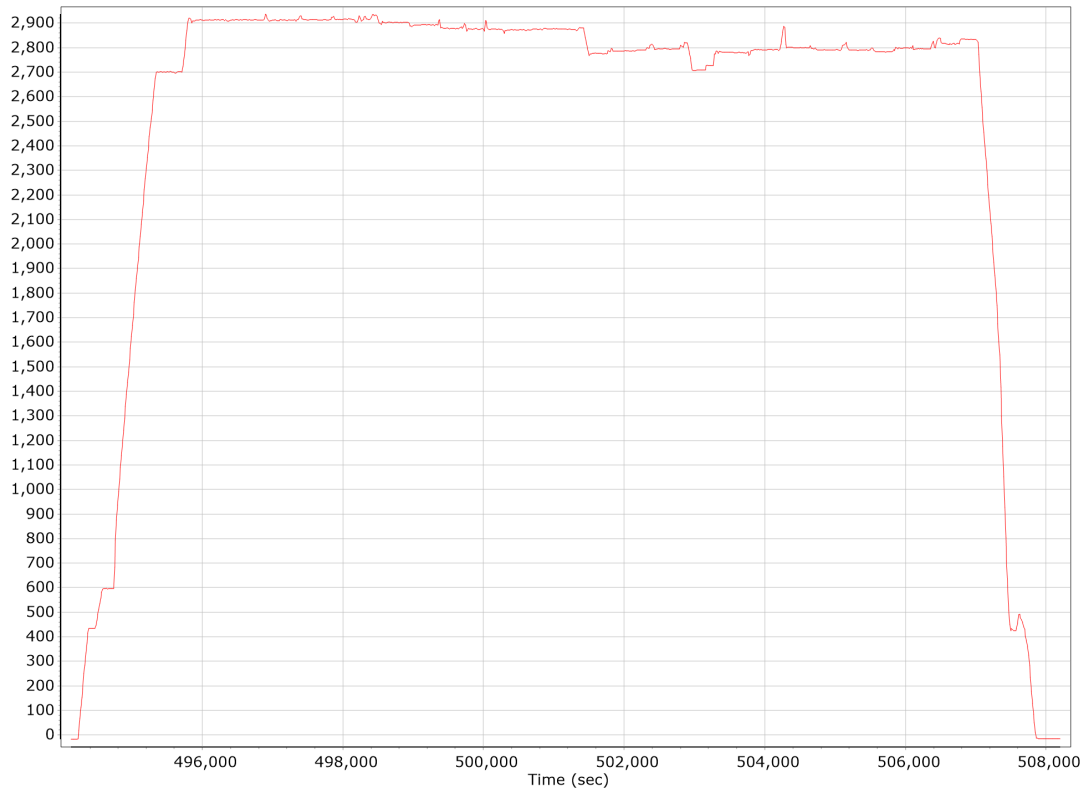

48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
494,000
496,000
498,000
500,000
502,000
504,000
506,000
508,000
Time (sec)
GALILEO 04 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 05 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 09 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 10 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 11 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 12 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 19 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 24 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 31 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 33 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 34 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 36 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 04 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 05 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 09 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 10 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 11 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 12 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 19 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 24 L5E5A BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

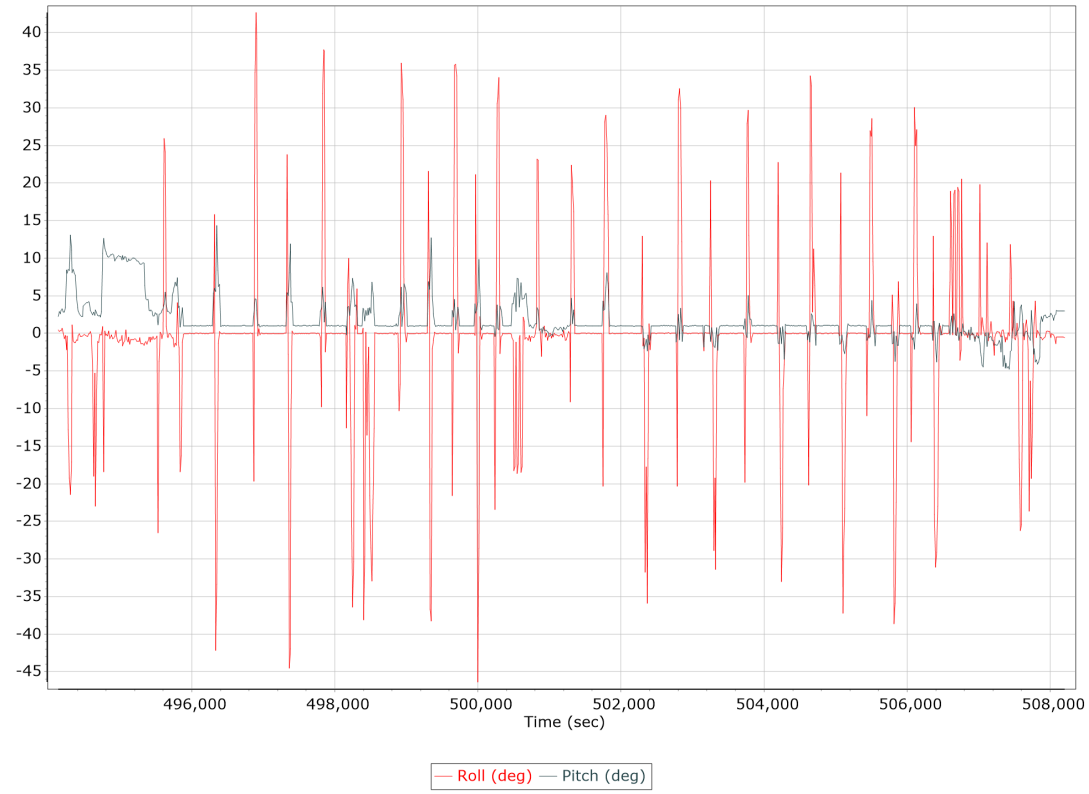
Top View



Altitude



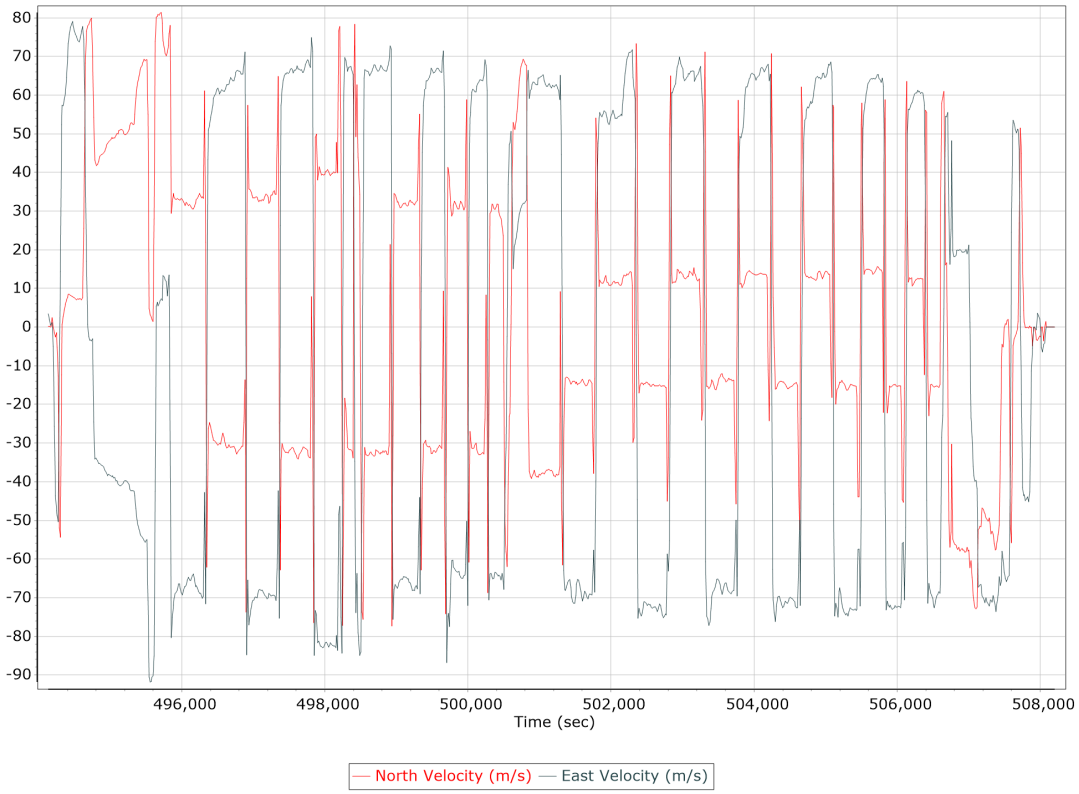
Roll/Pitch



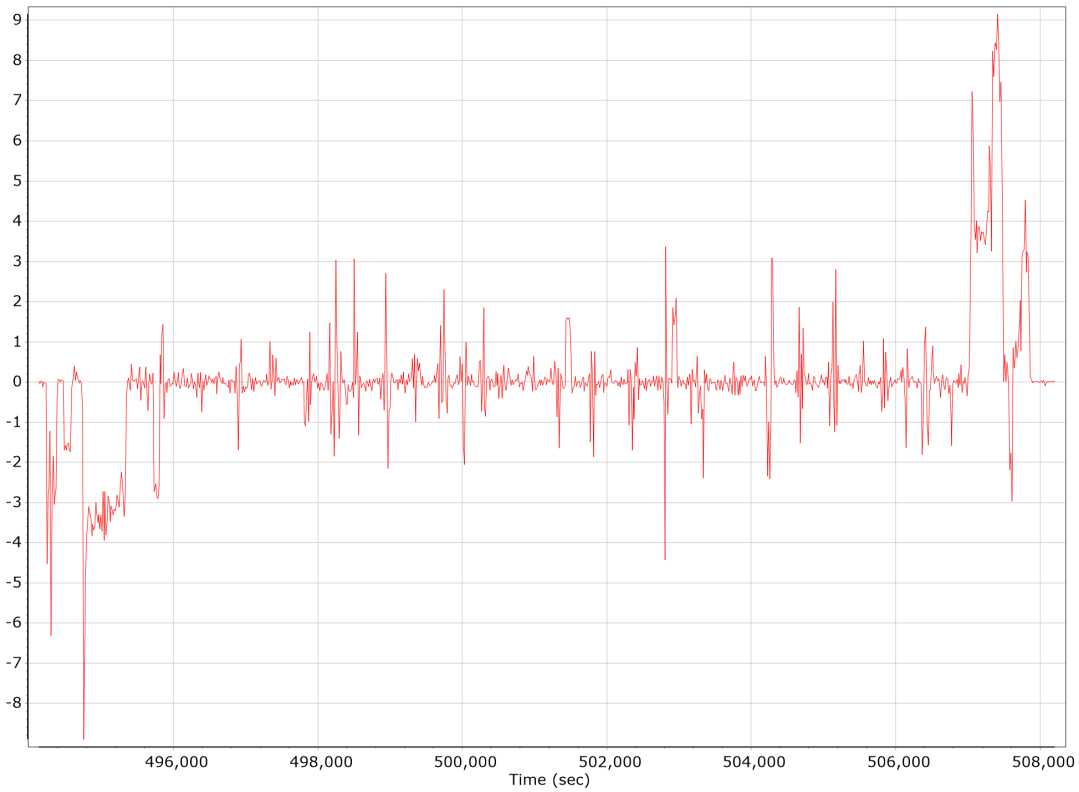
Heading



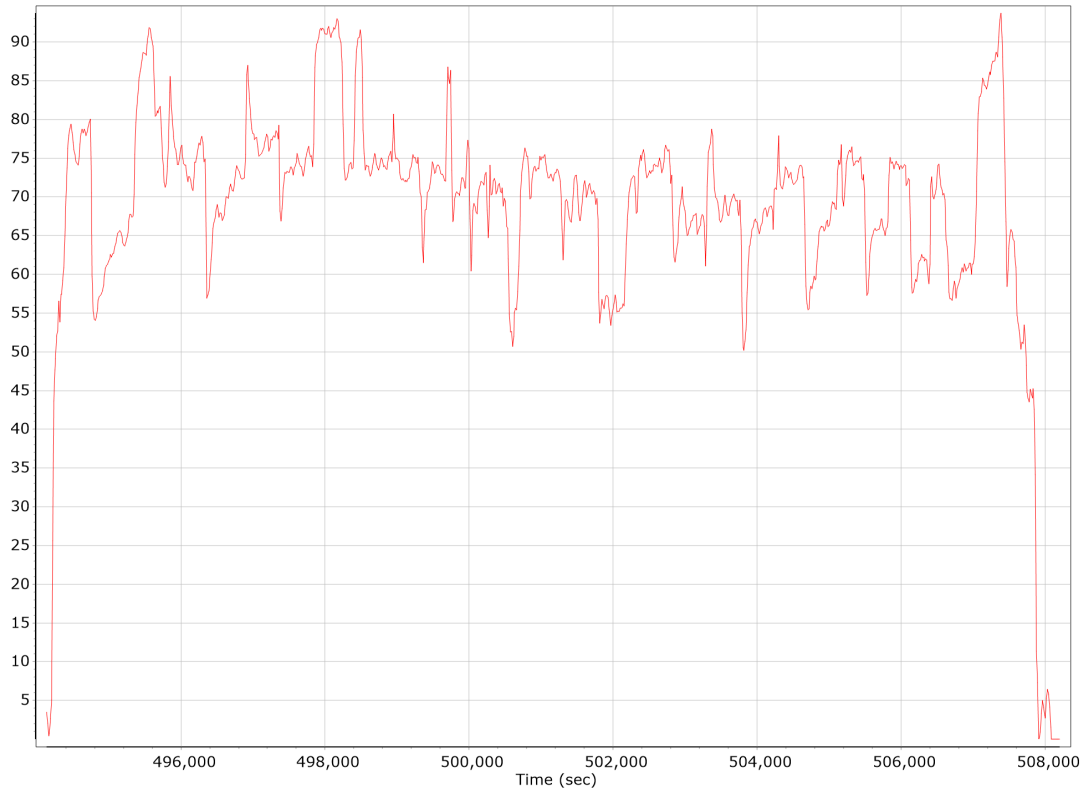
North/East Velocity



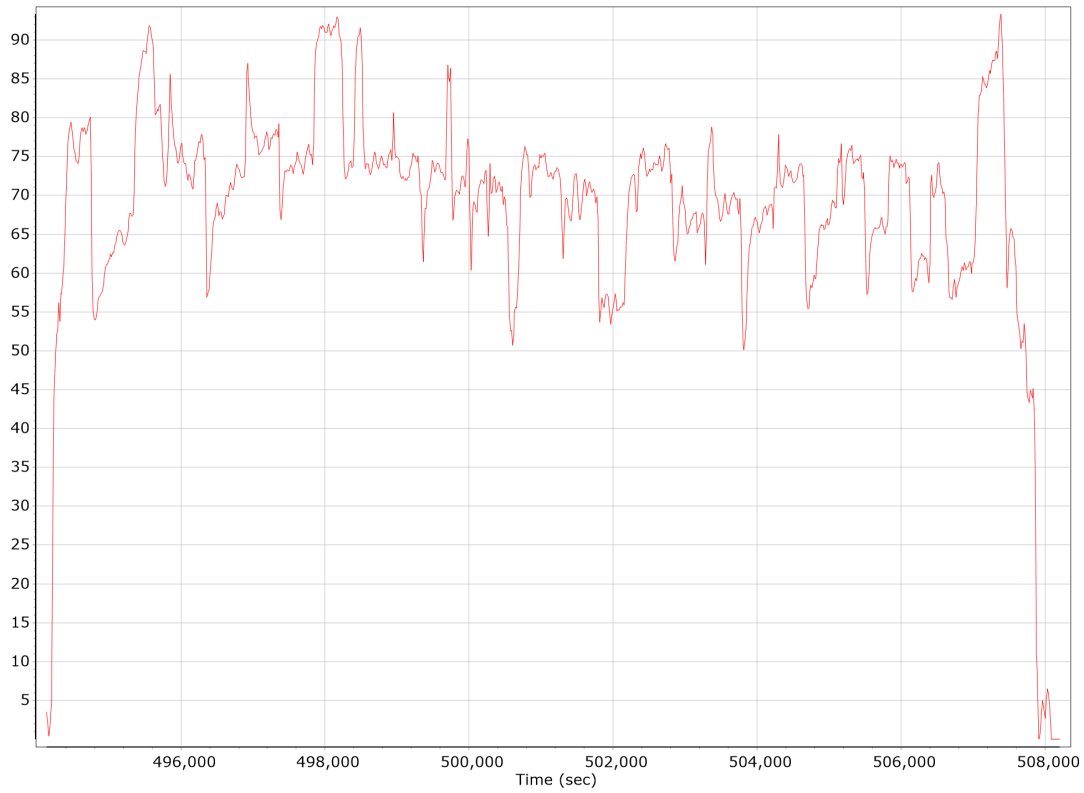
Down Velocity



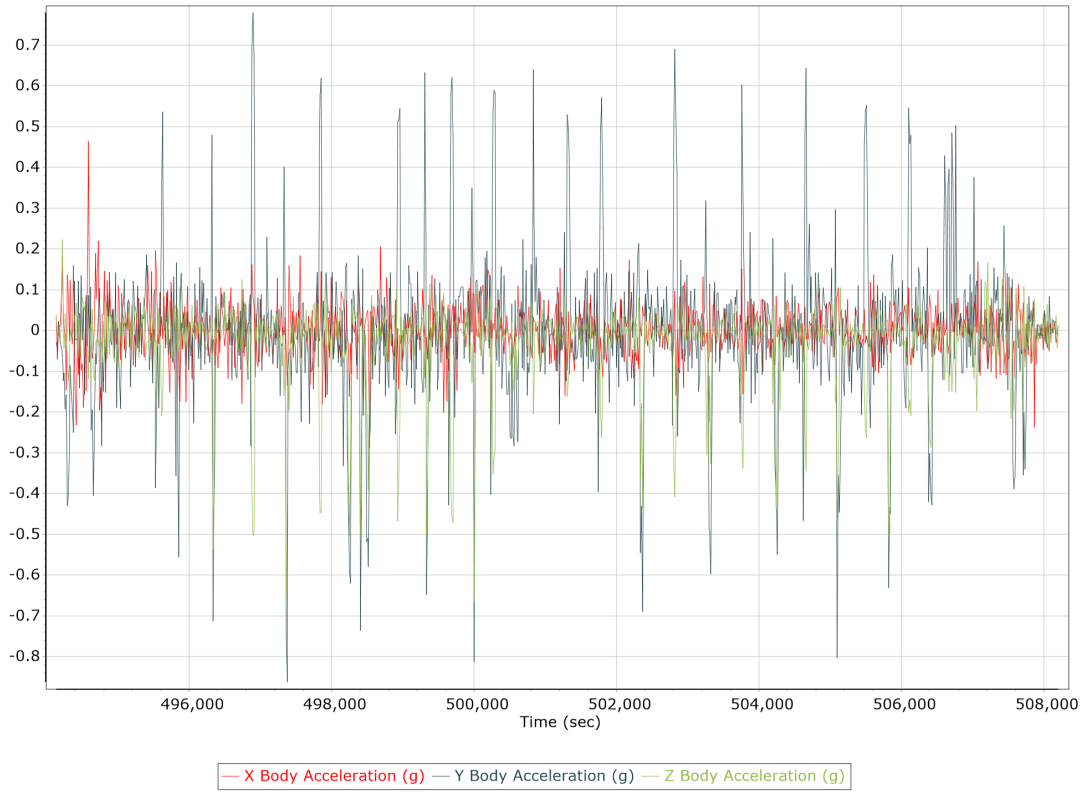
Total Speed



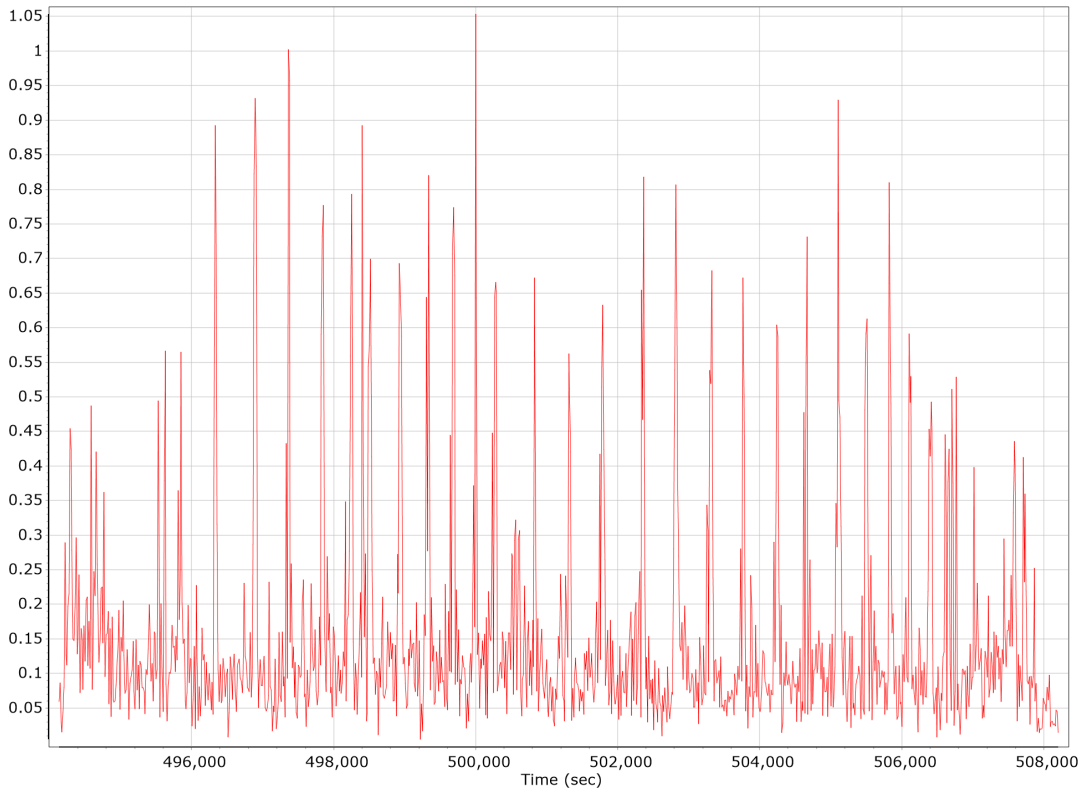
Ground Speed



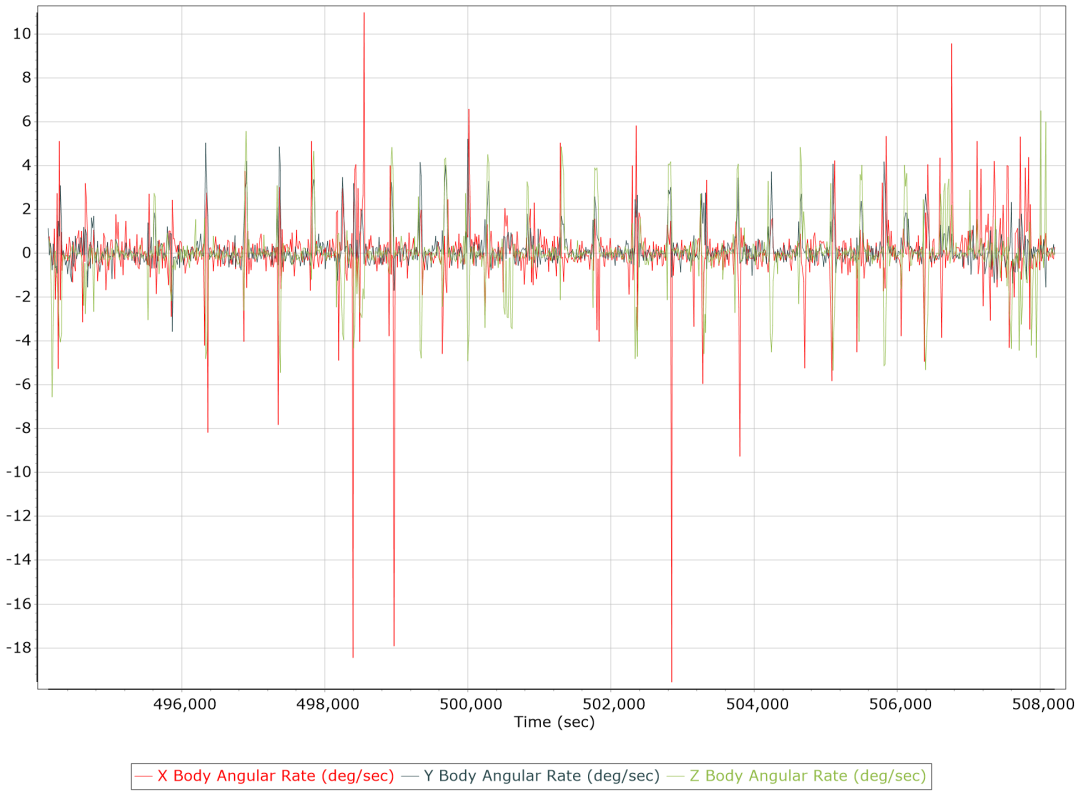
Body Acceleration



Total Body Acceleration

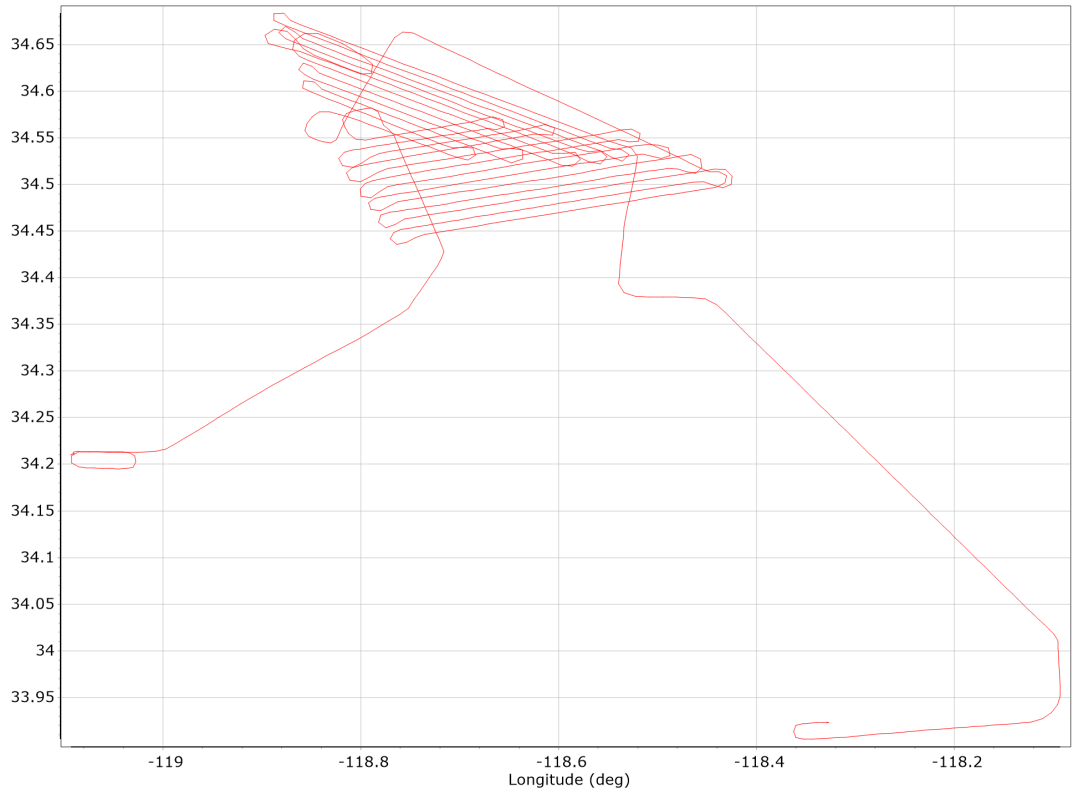


Body Angular Rate

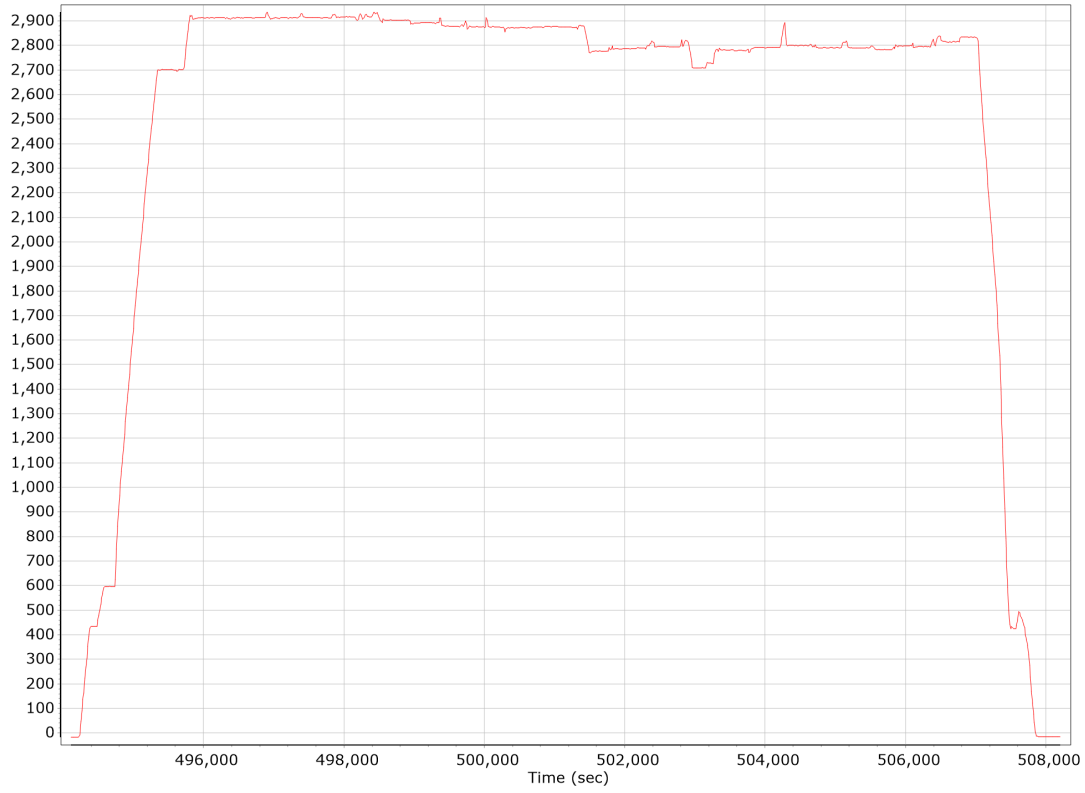


Forward Processed Trajectory Information

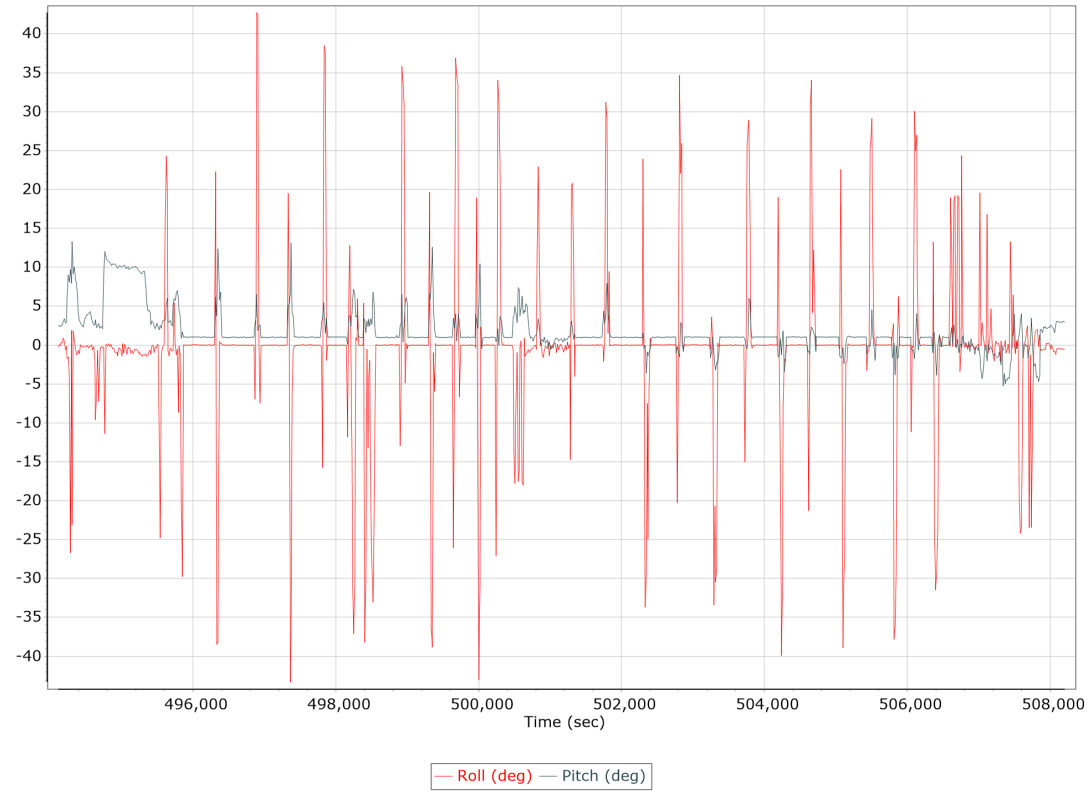
Top View



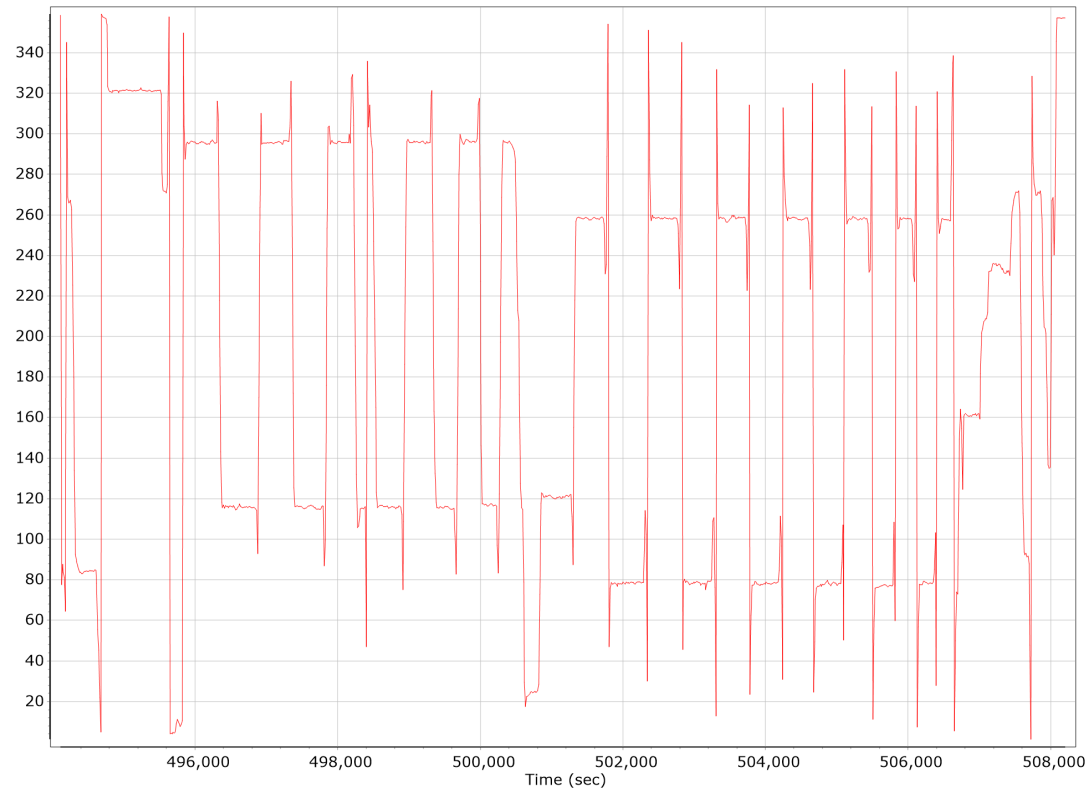
Altitude



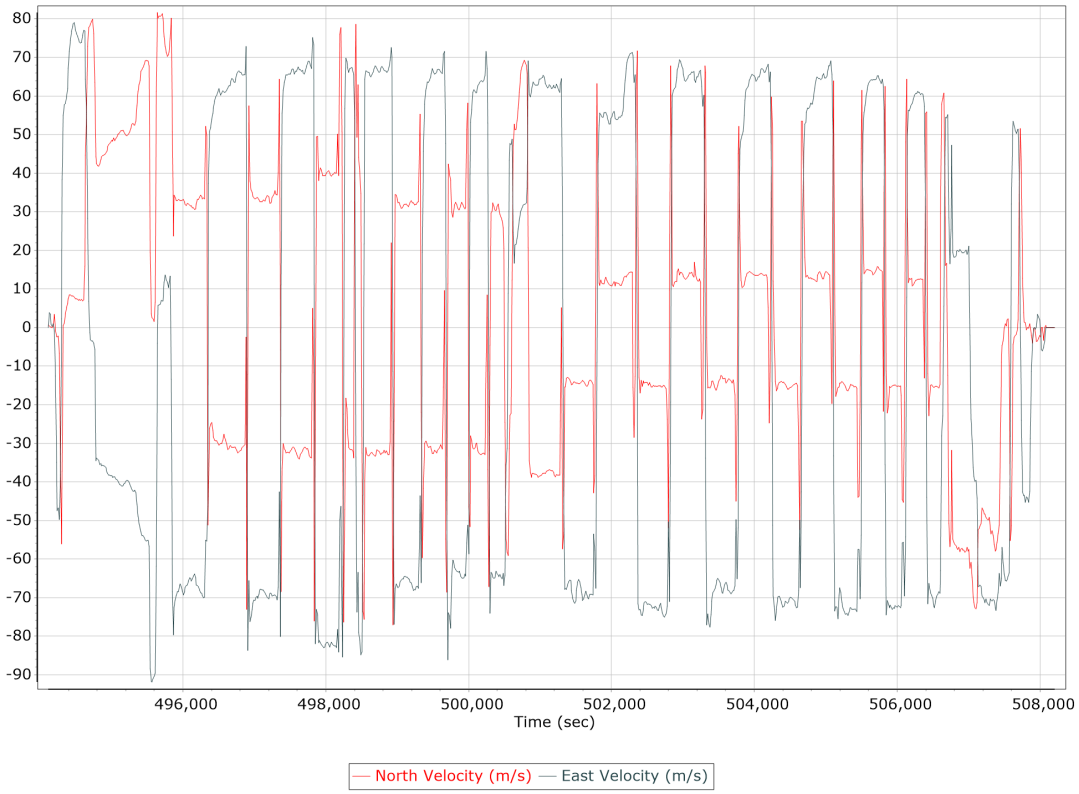
Roll/Pitch



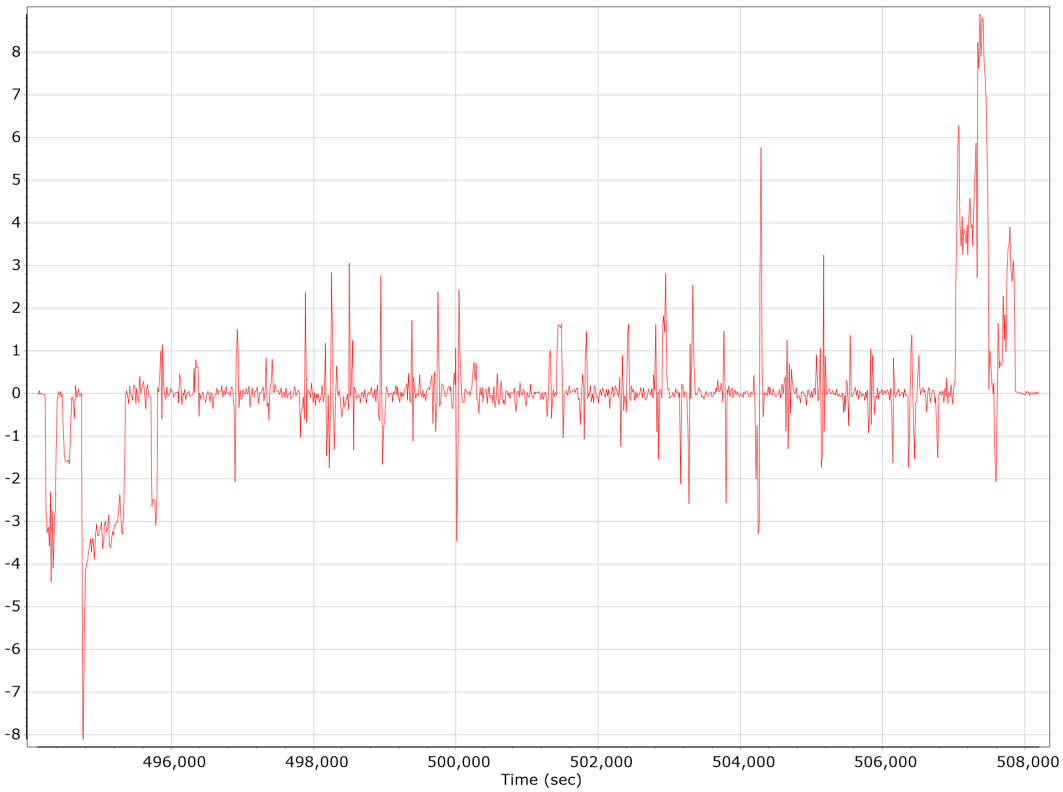
Heading



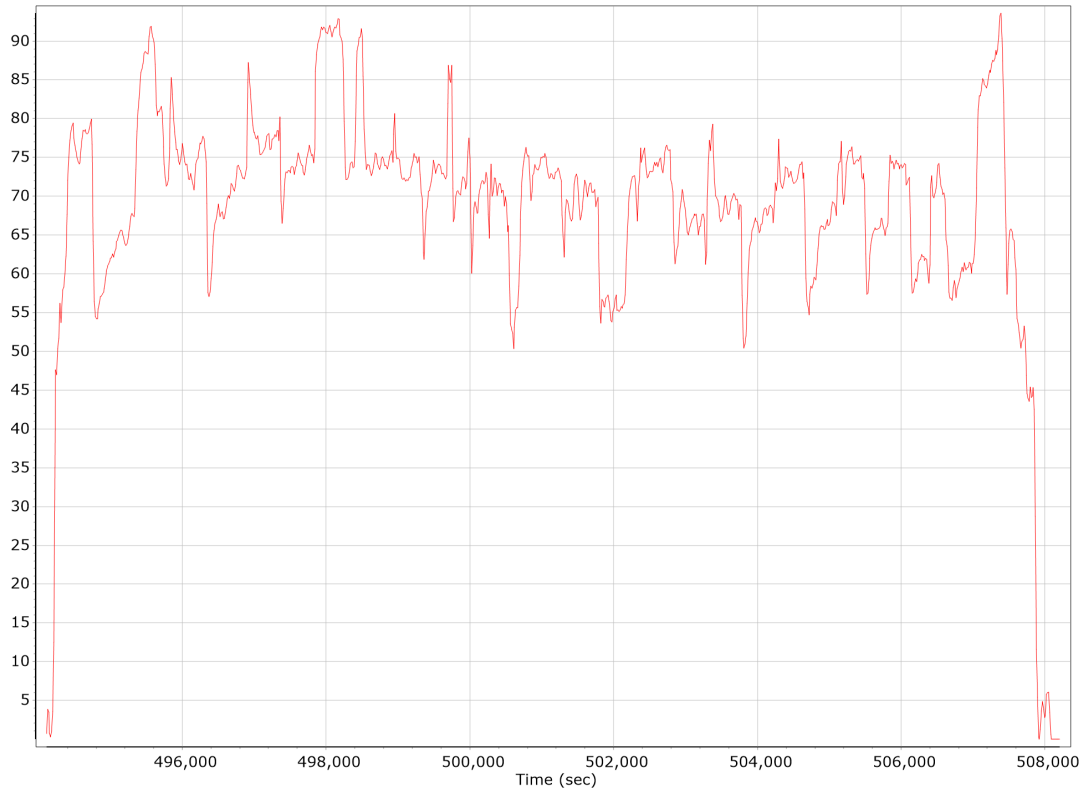
North/East Velocity



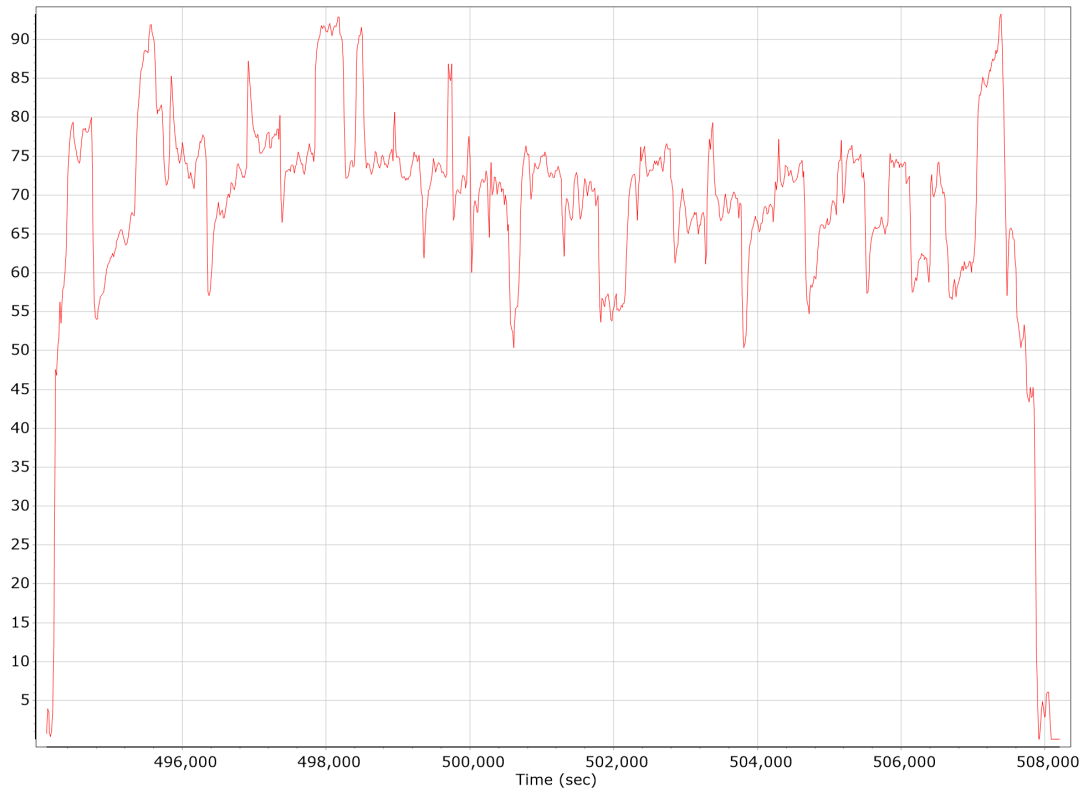
Down Velocity



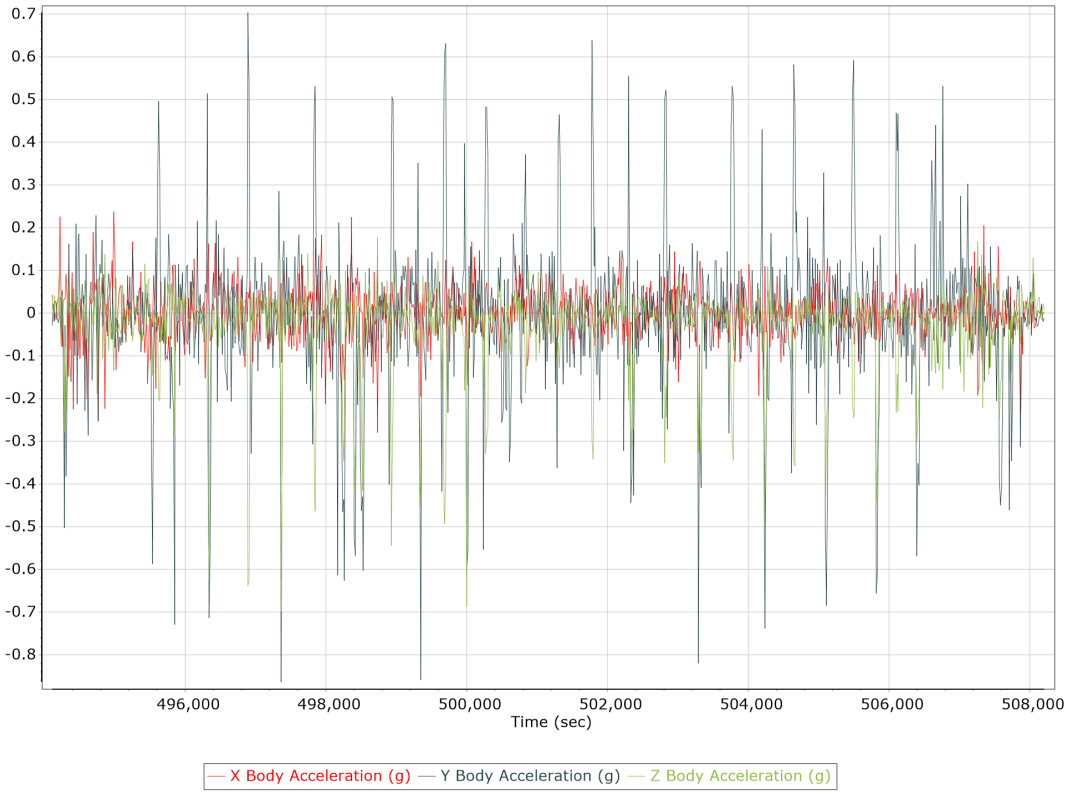
Total Speed



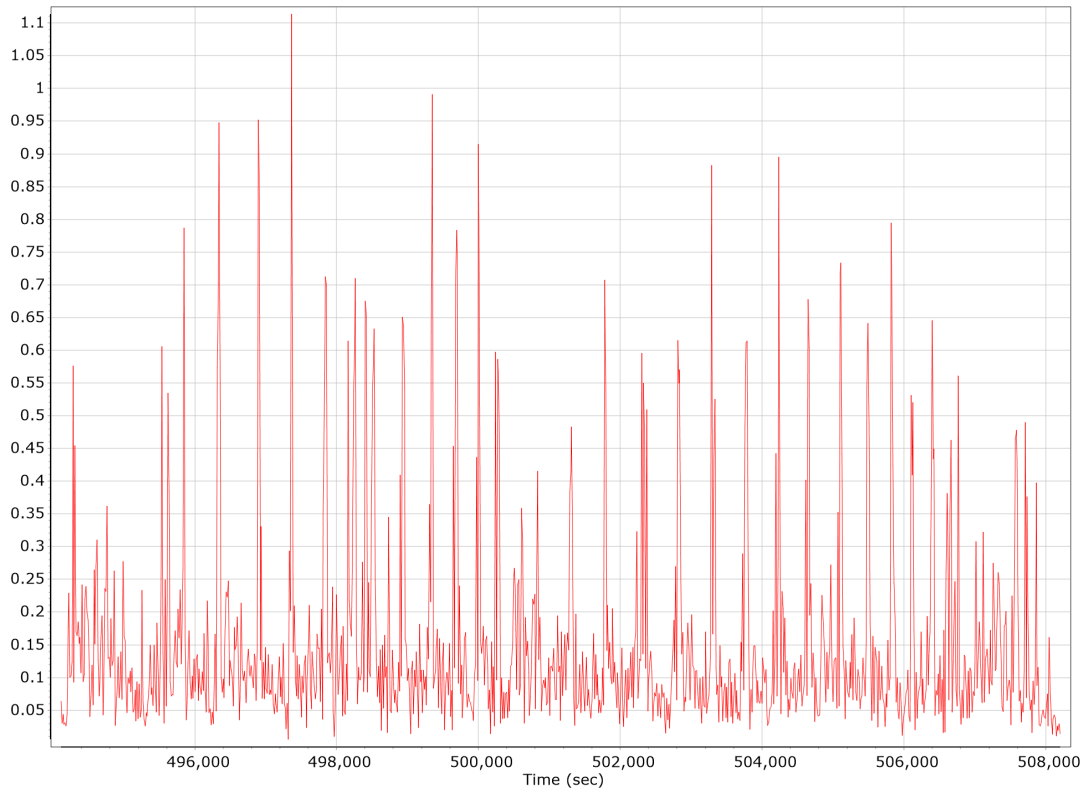
Ground Speed



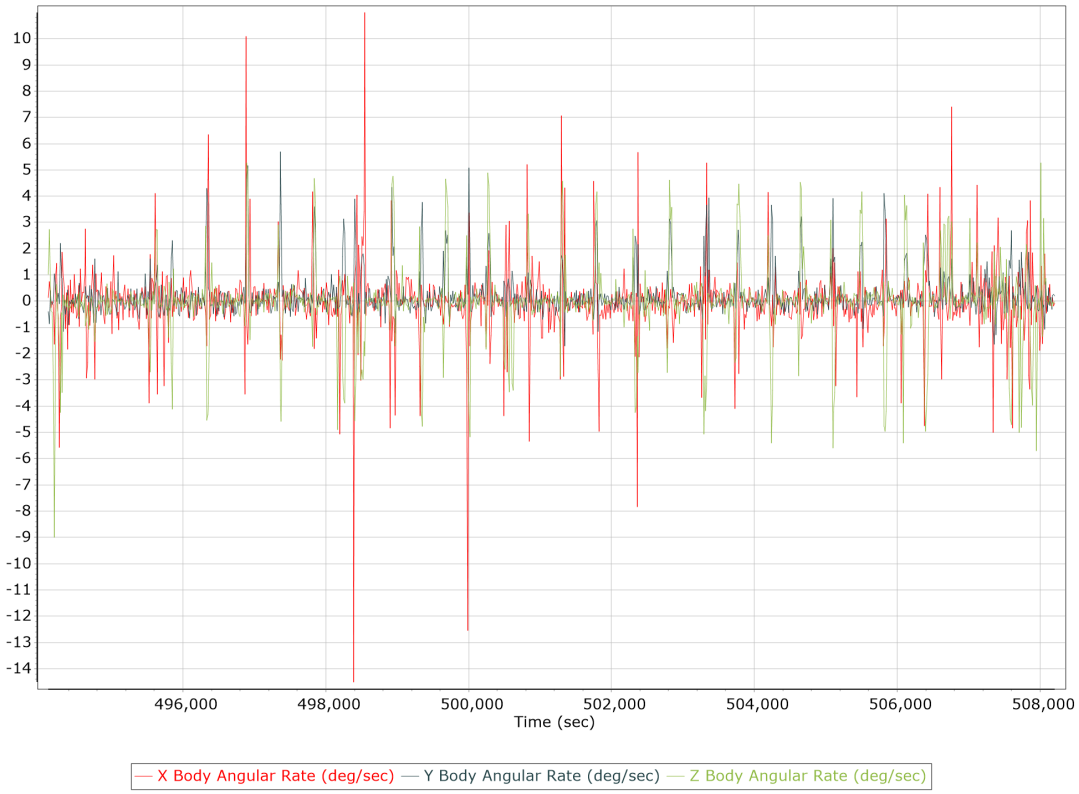
Body Acceleration



Total Body Acceleration



Body Angular Rate

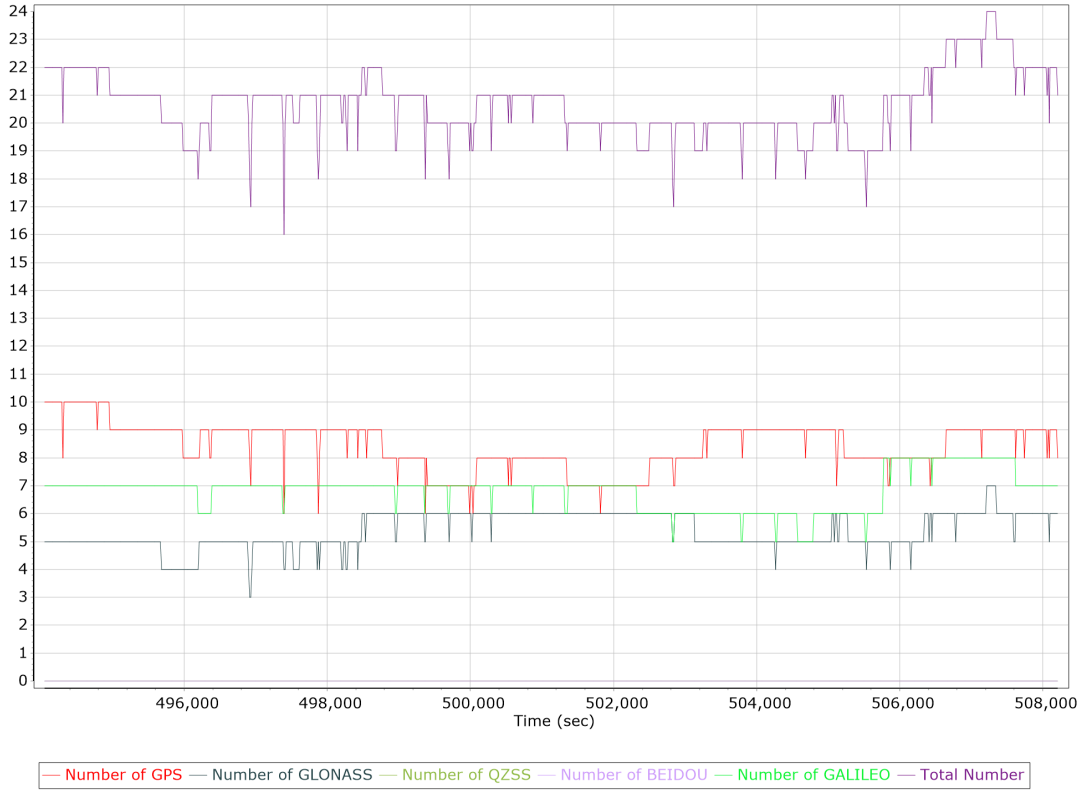


GNSS QC

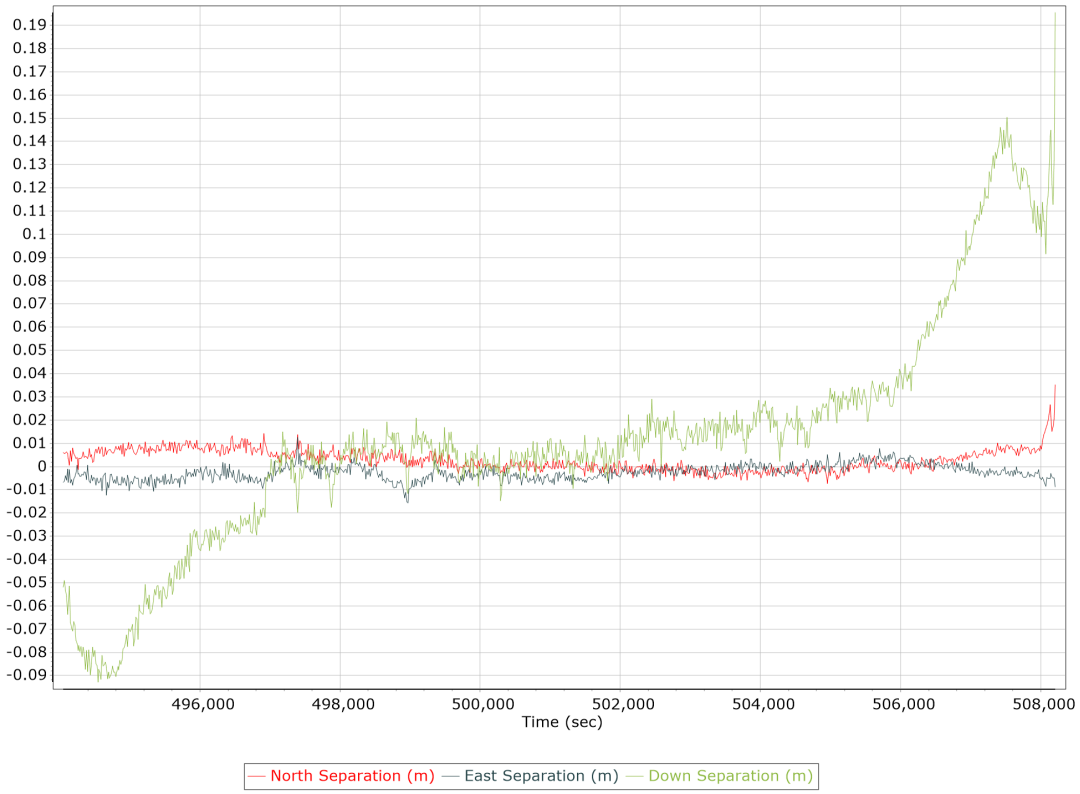
GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	6	10	8
Number of GLONASS SV	3	7	5
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	5	8	7
Total number of SV	16	24	21
PDOP	1.04	1.89	1.20
QC Solution Gaps	0.00	0.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	14387.00	0.00	0.00
Percentage	100.00	0.00	0.00

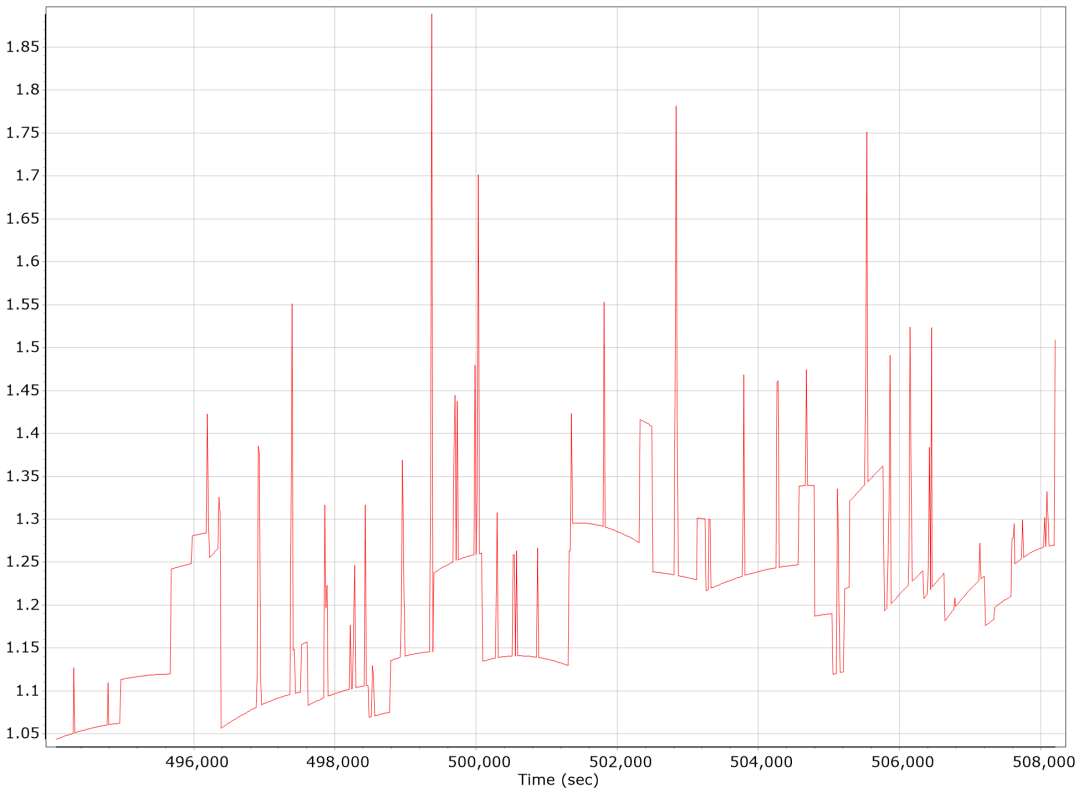
Num SVs in solution



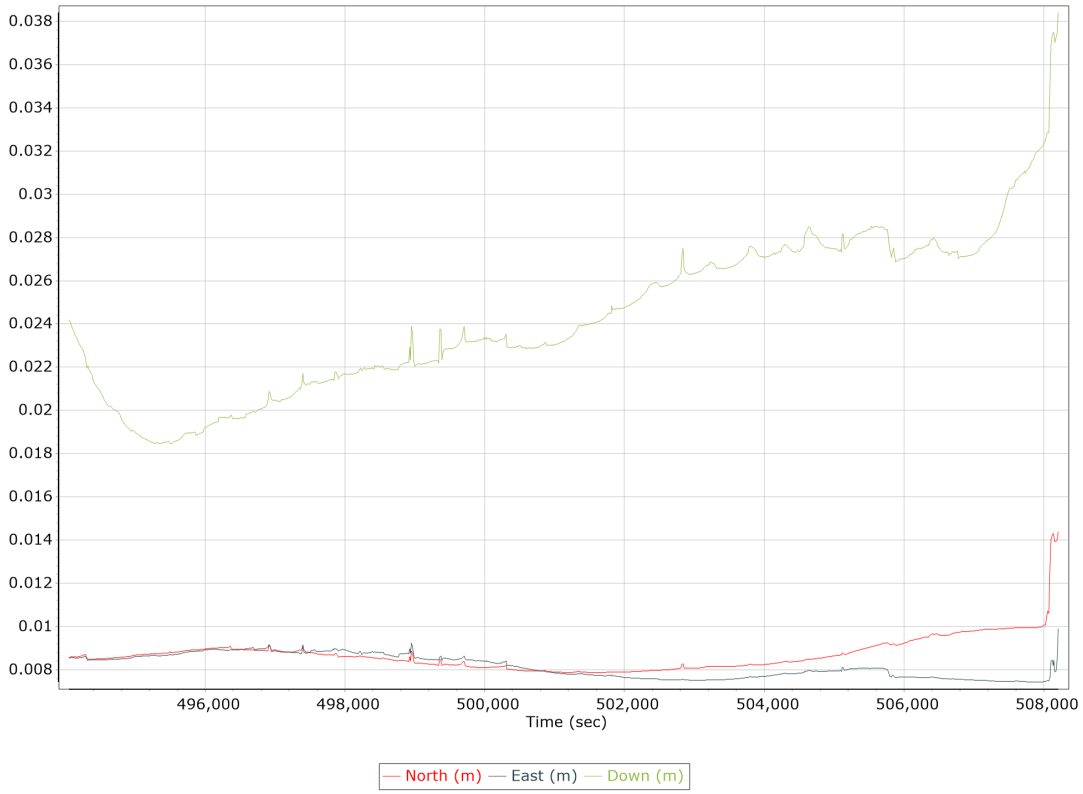
Forward/Reverse Separation



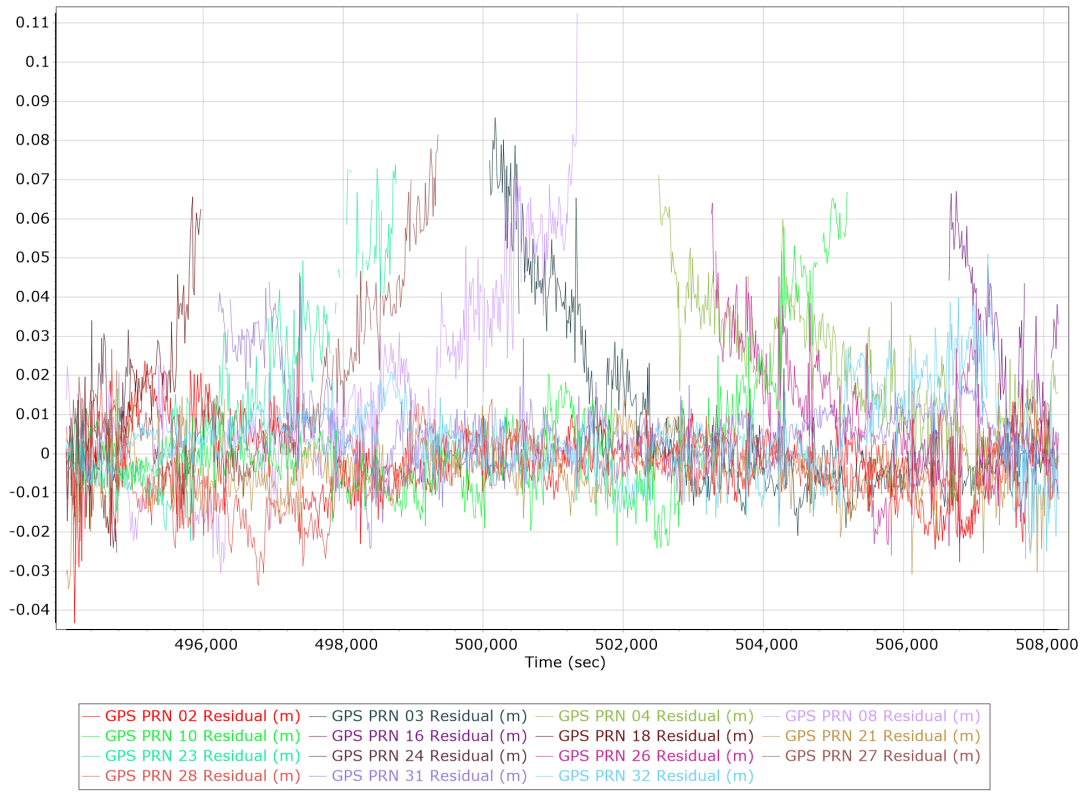
PDOP



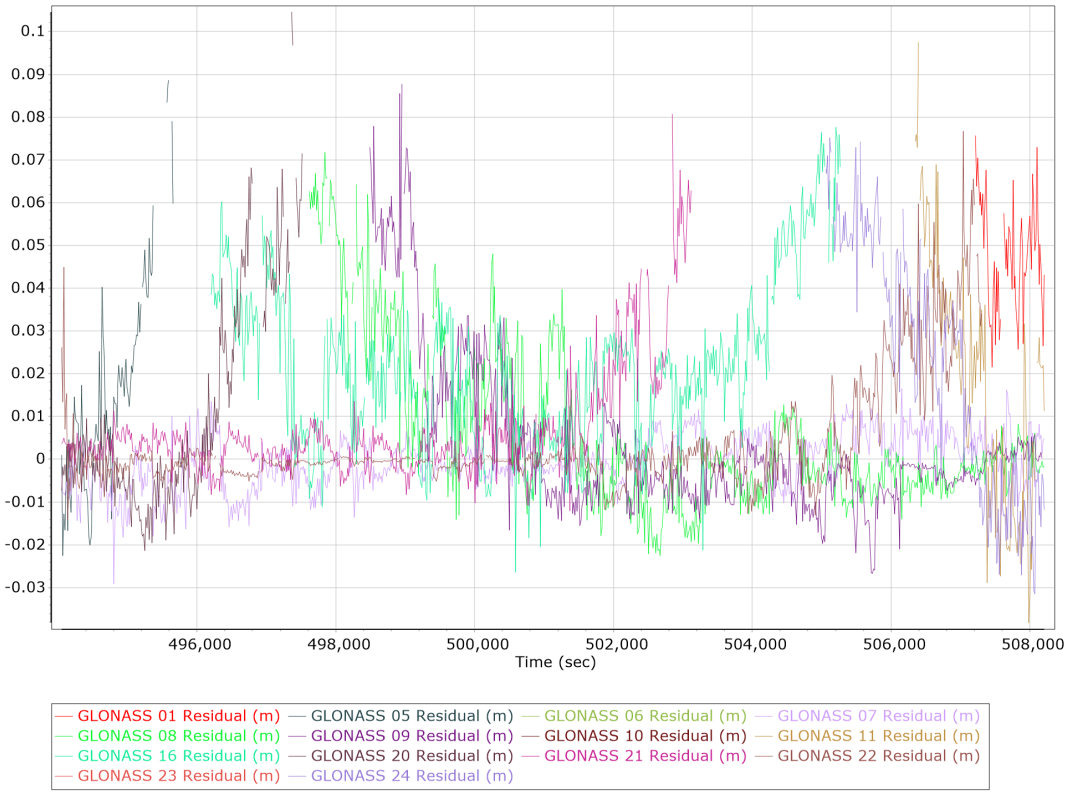
Estimated Position Accuracy



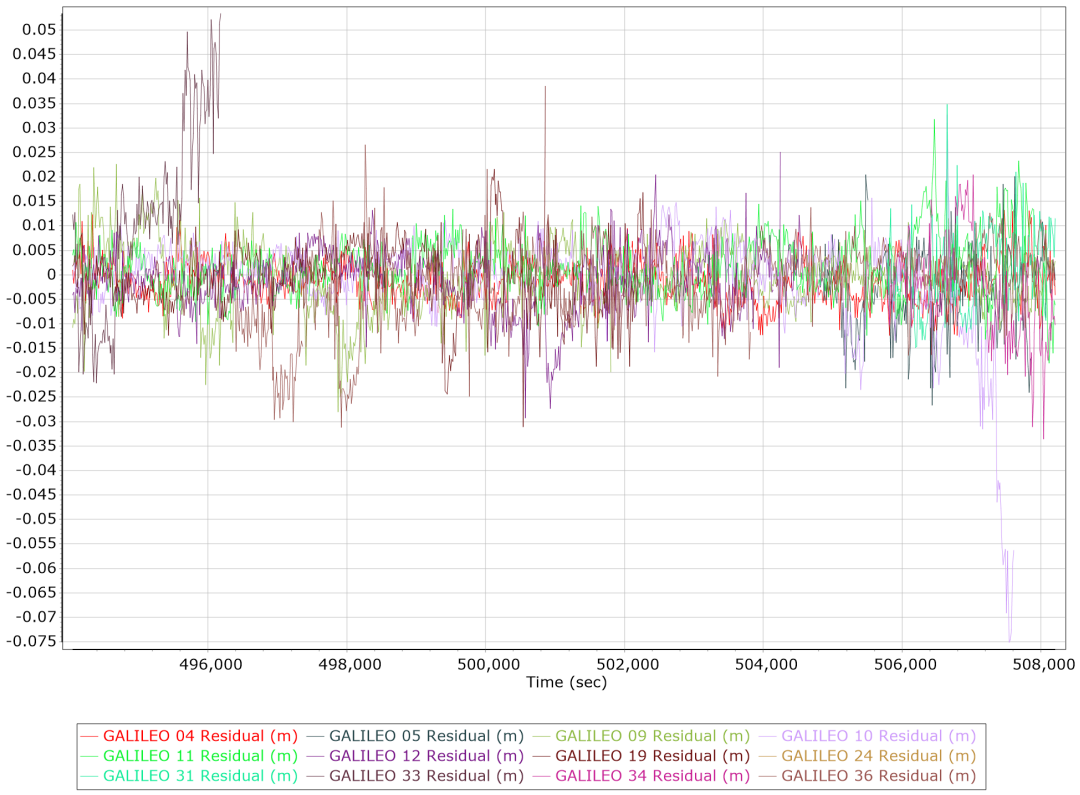
GPS Residuals



GLONASS Residuals



GALILEO Residuals



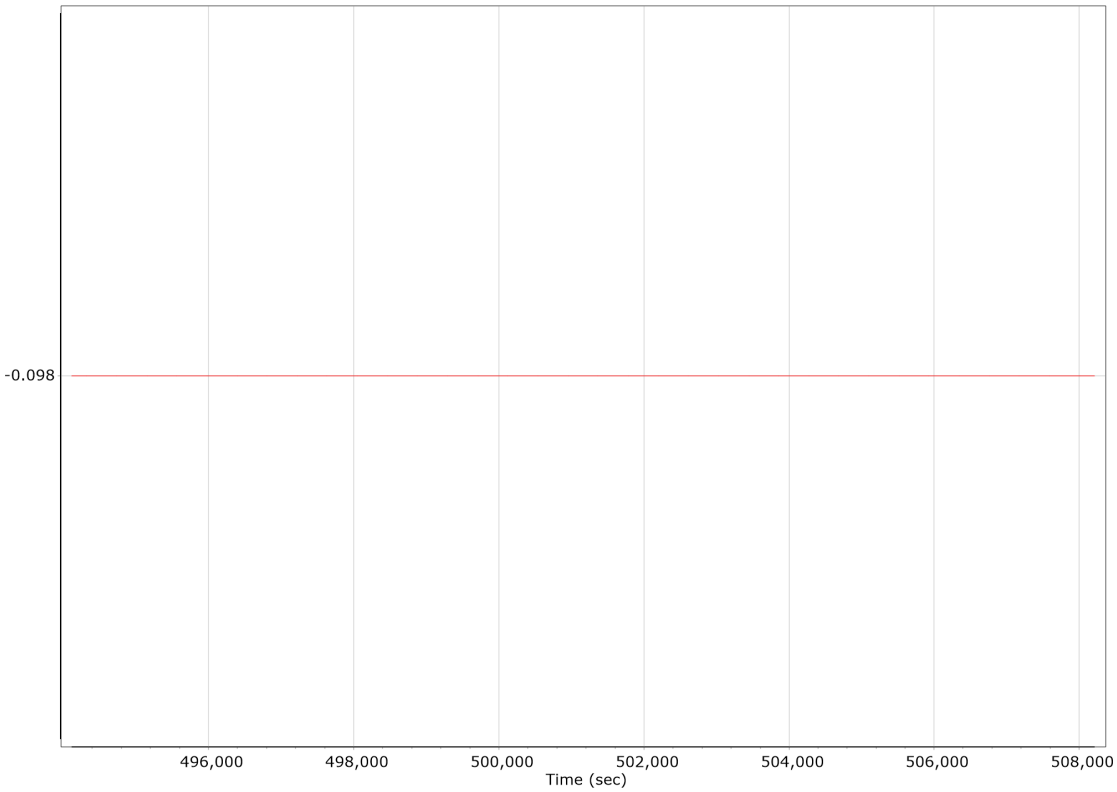
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	493822.000 (10/6/2023 5:10:22 PM)		
Processing end time	508216.000 (10/6/2023 9:10:16 PM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	-0.098	0.057	-1.221
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

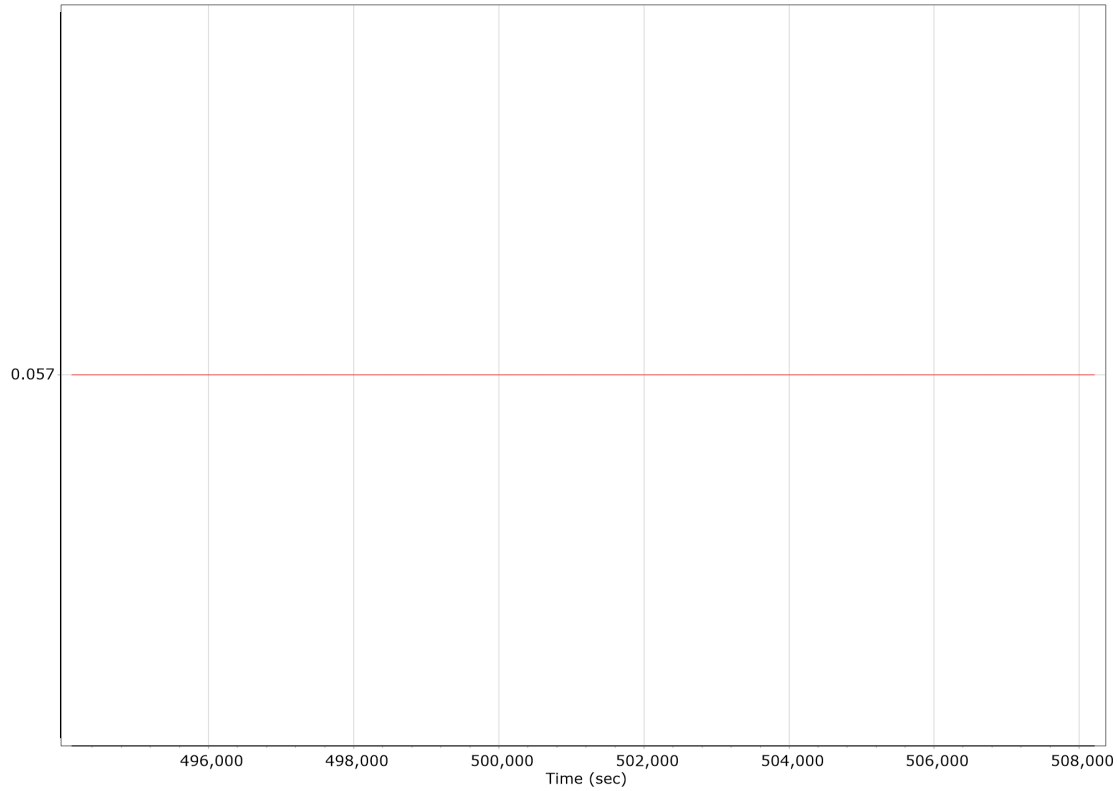
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

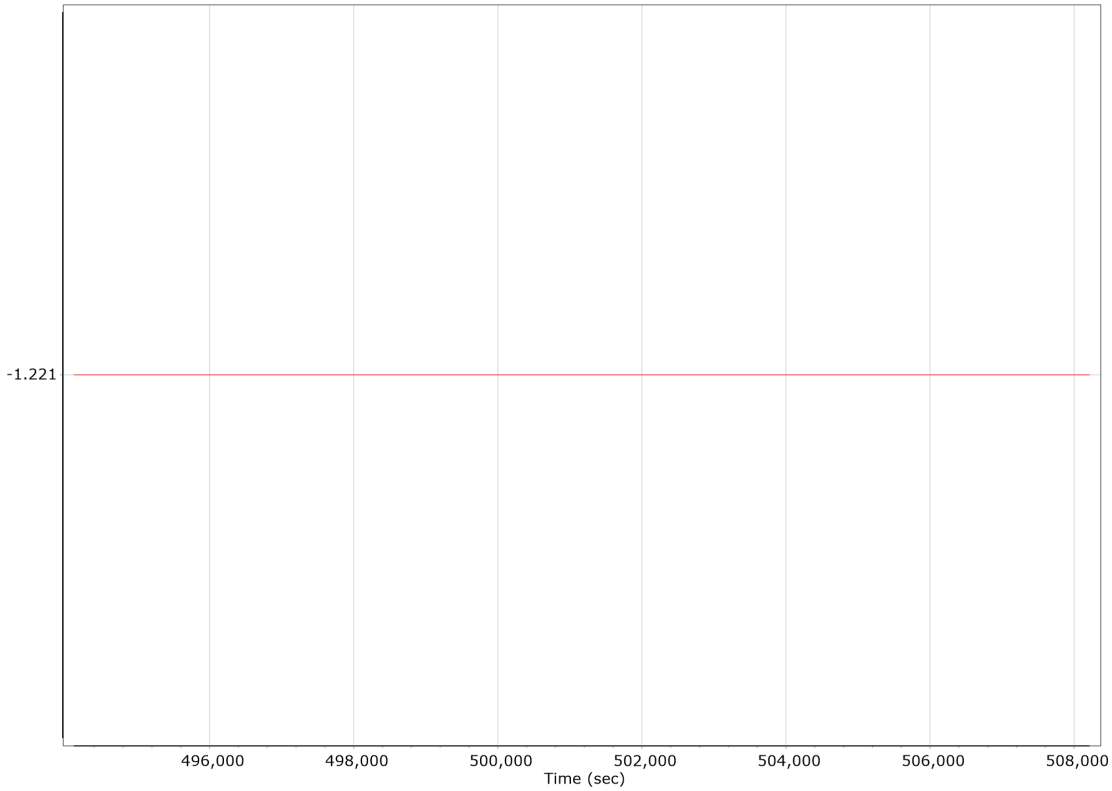
X Reference-Primary GNSS Lever Arm (m)



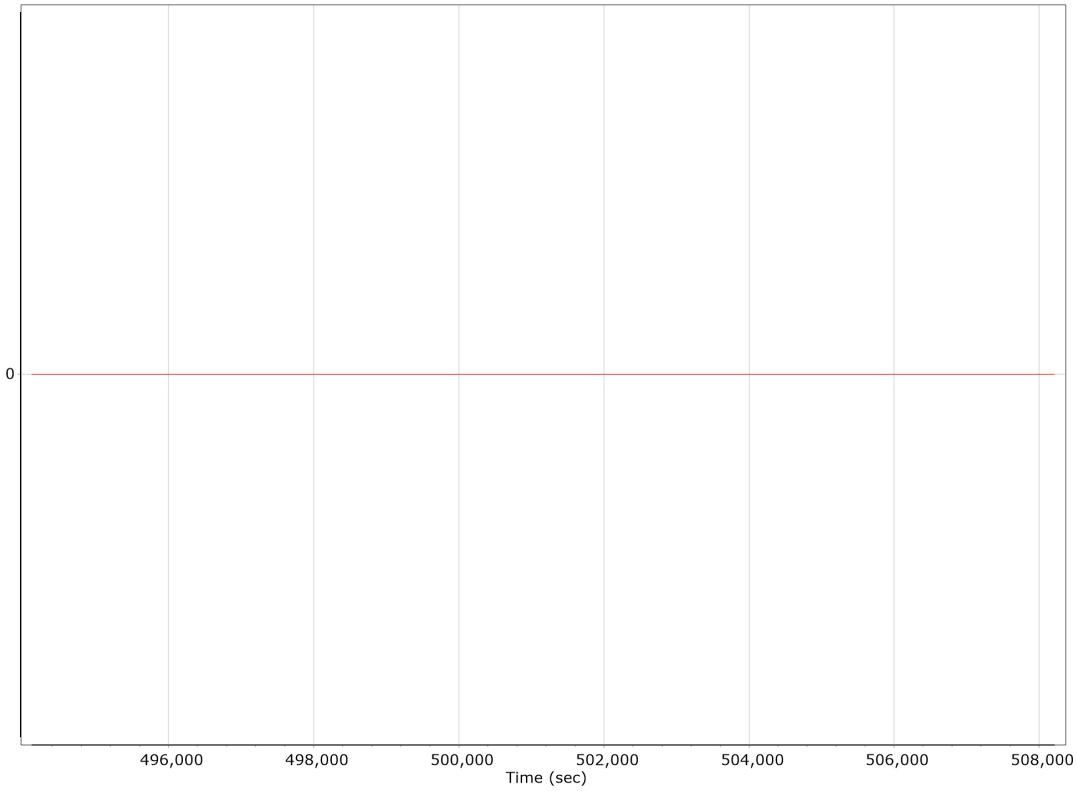
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



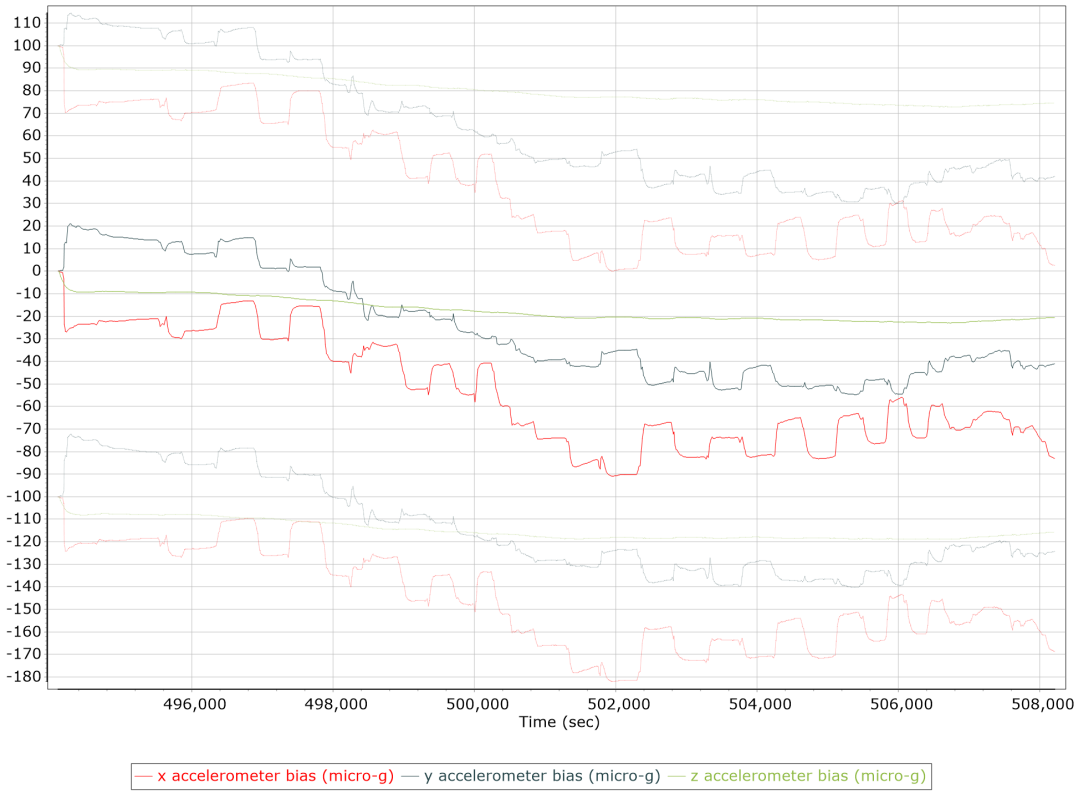
Reference-Primary GNSS Lever Arm Figure of Merit



IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

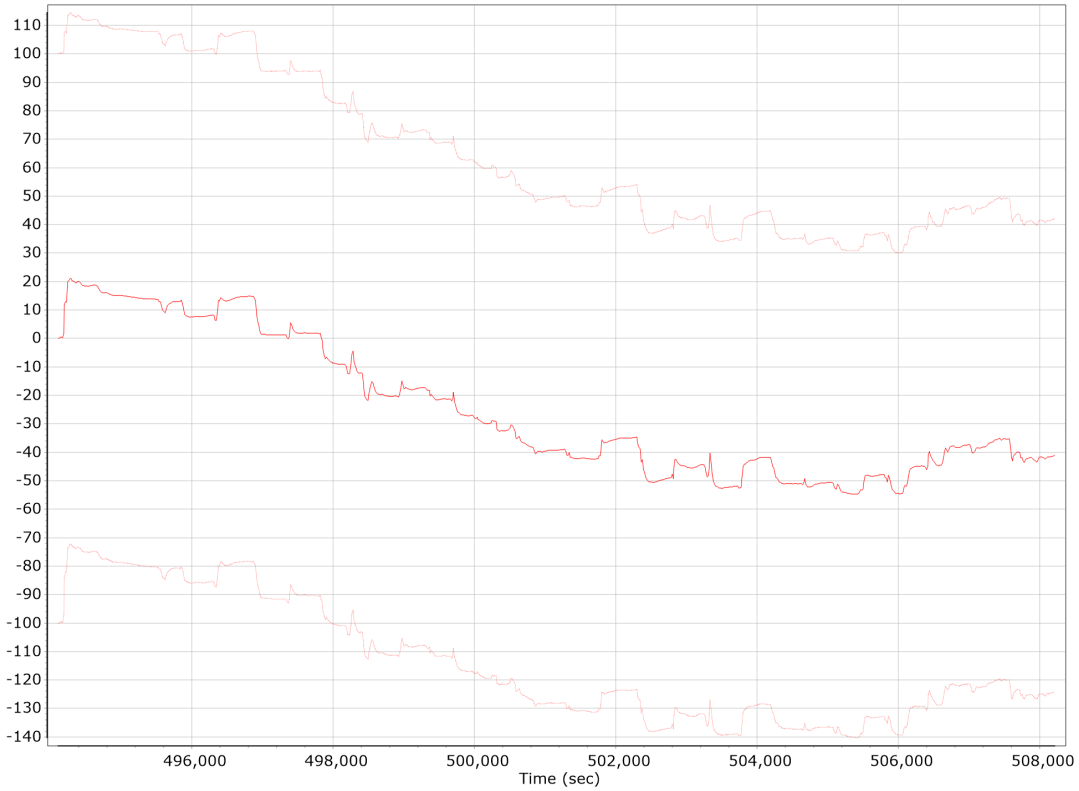
Accelerometer Bias (micro-g)



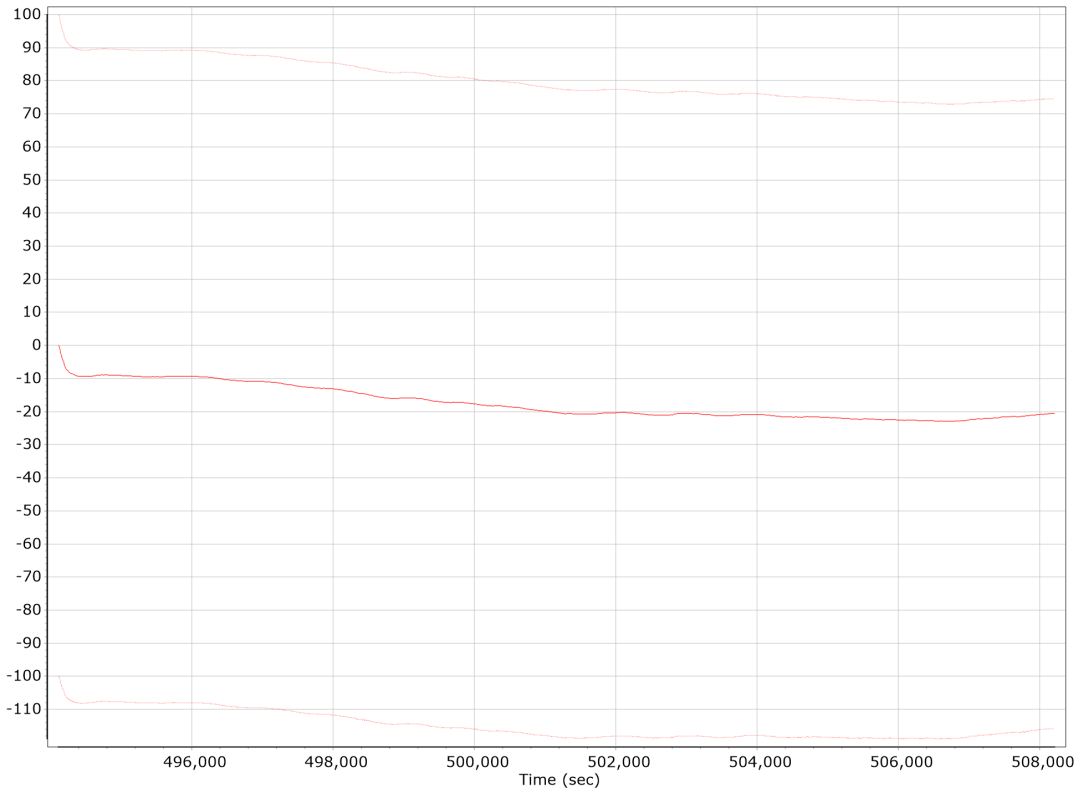
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



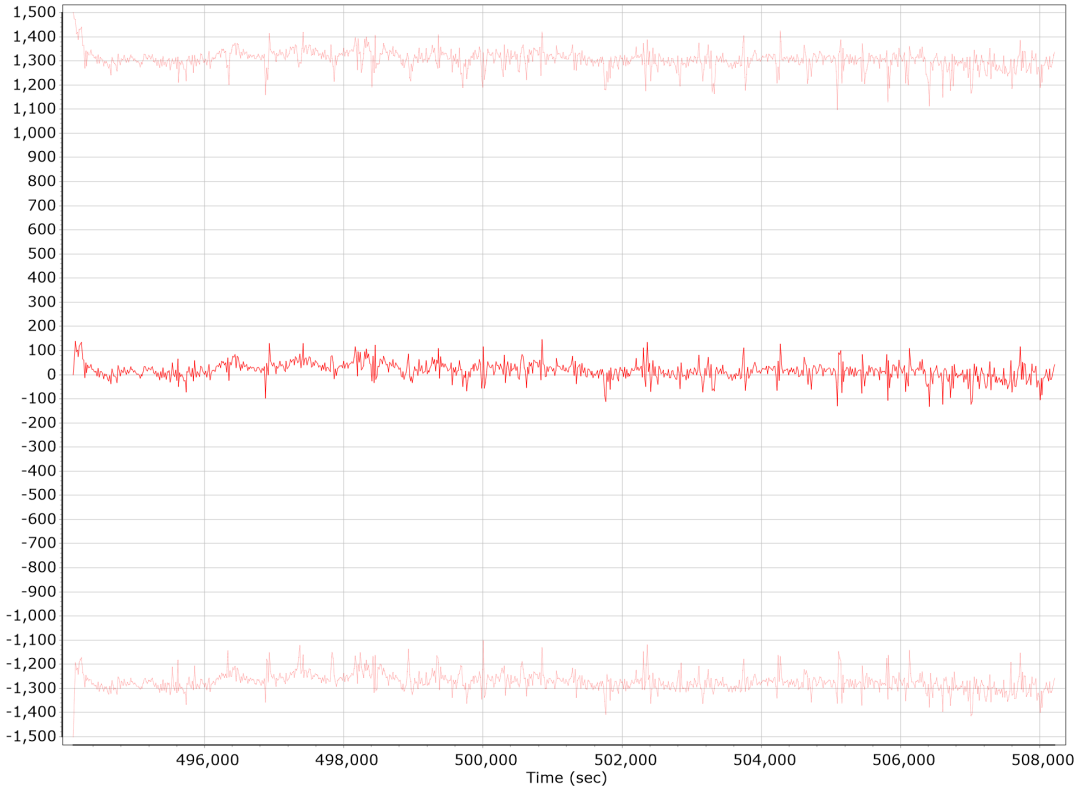
X Accelerometer Scale Error (ppm)



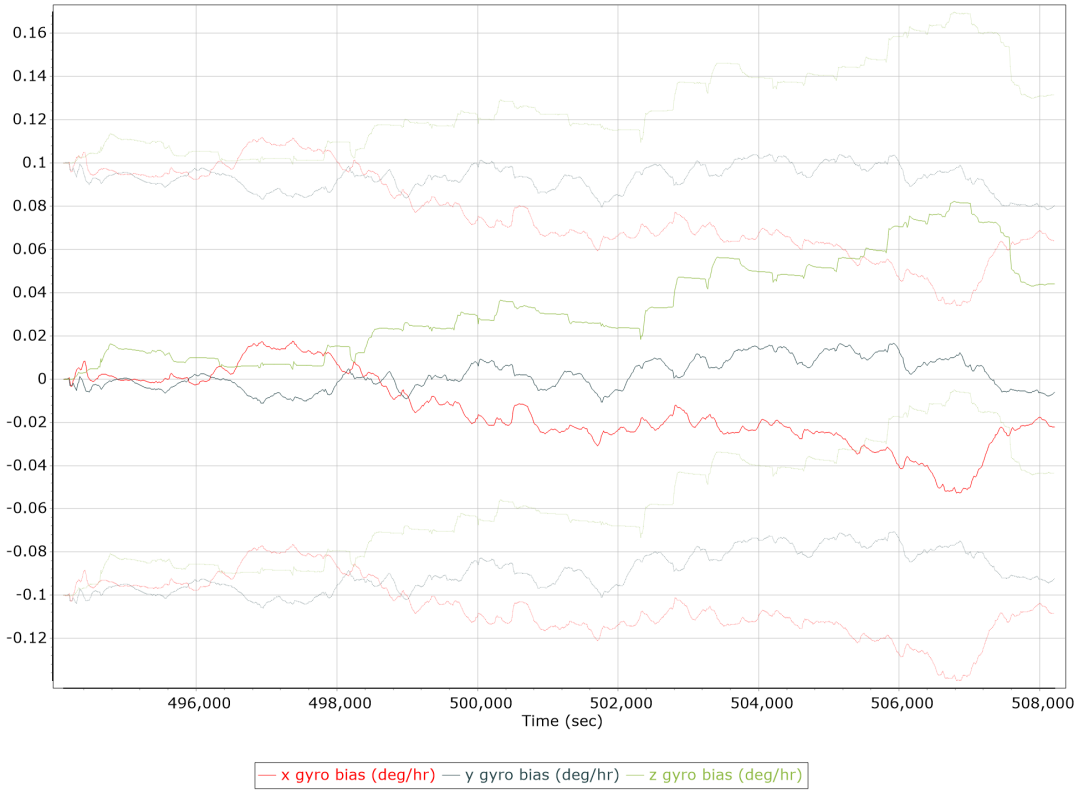
Y Accelerometer Scale Error (ppm)



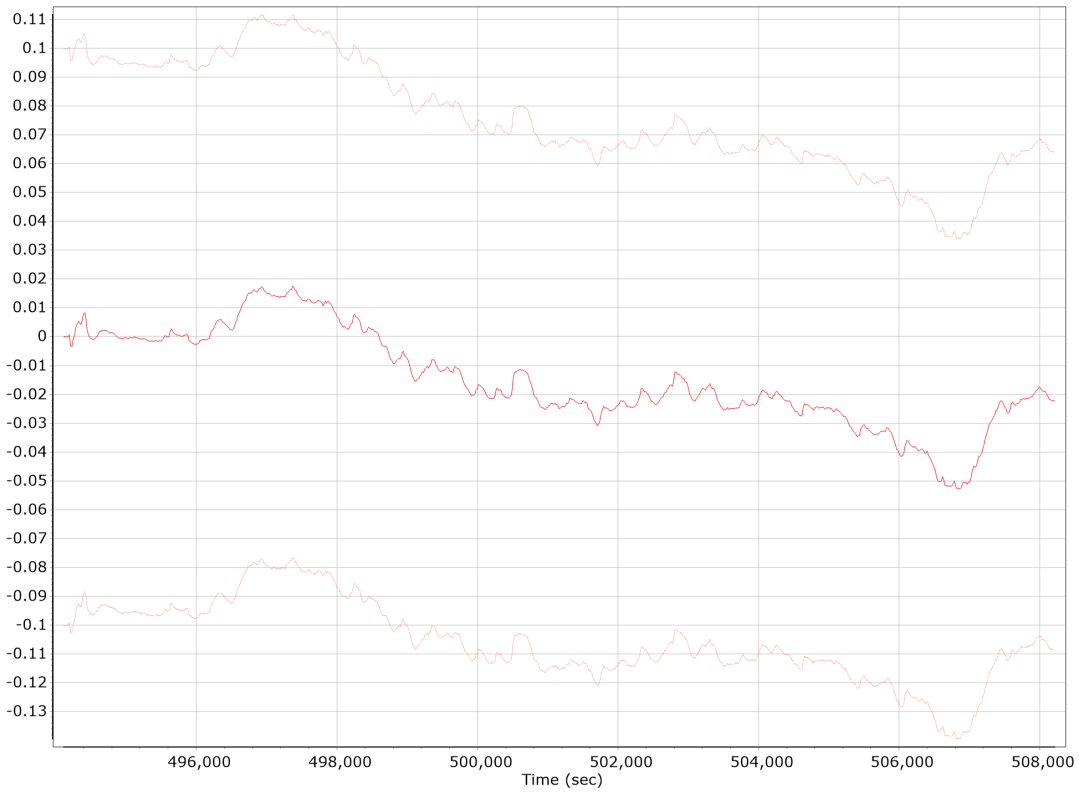
Z Accelerometer Scale Error (ppm)



Gyro Bias (deg/h)



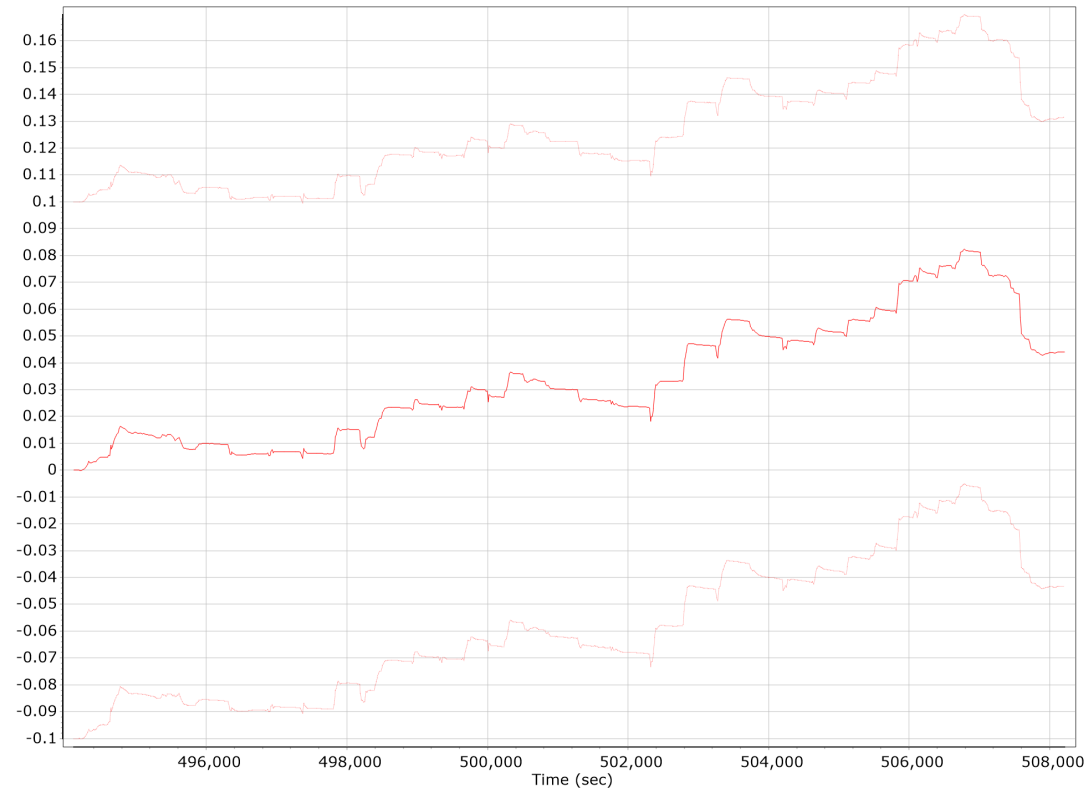
X Gyro Bias (deg/h)



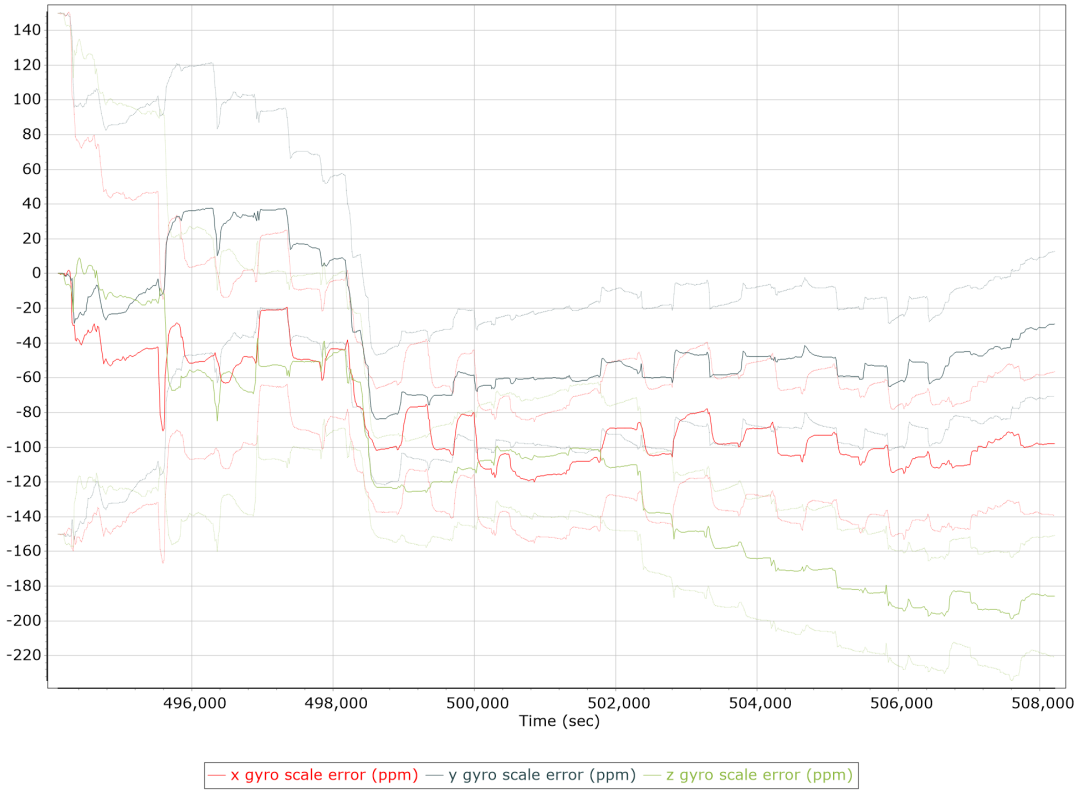
Y Gyro Bias (deg/h)



Z Gyro Bias (deg/h)



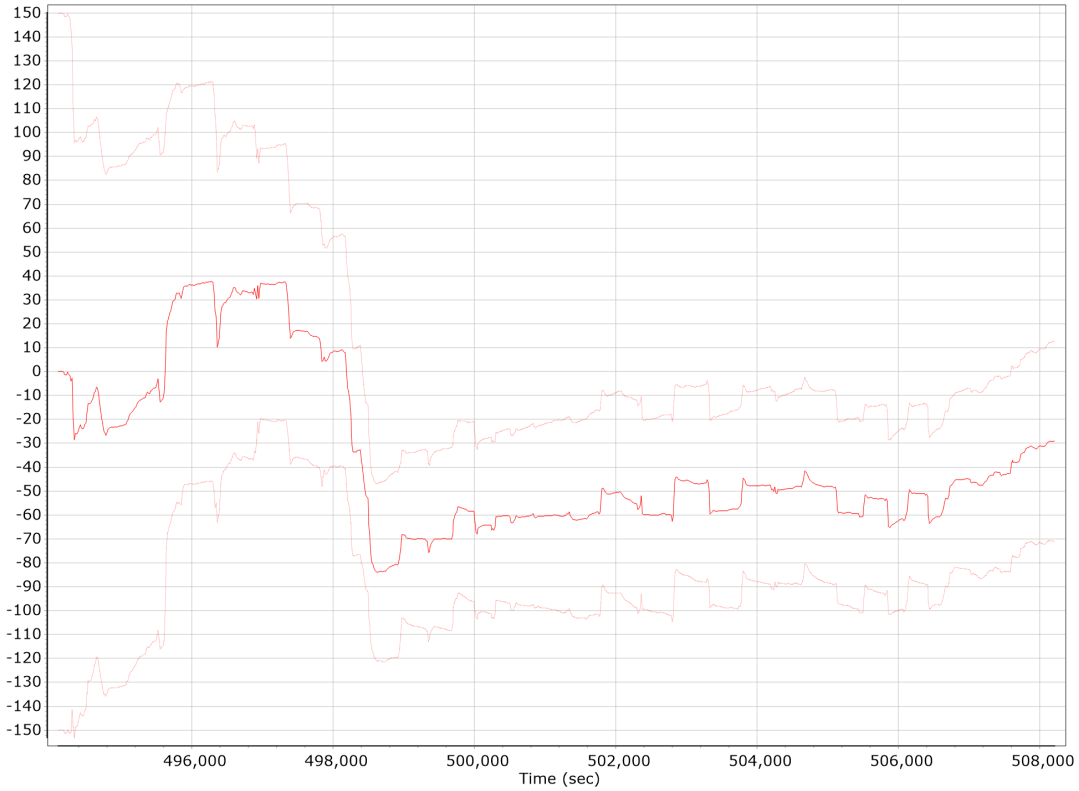
Gyro Scale Error (ppm)



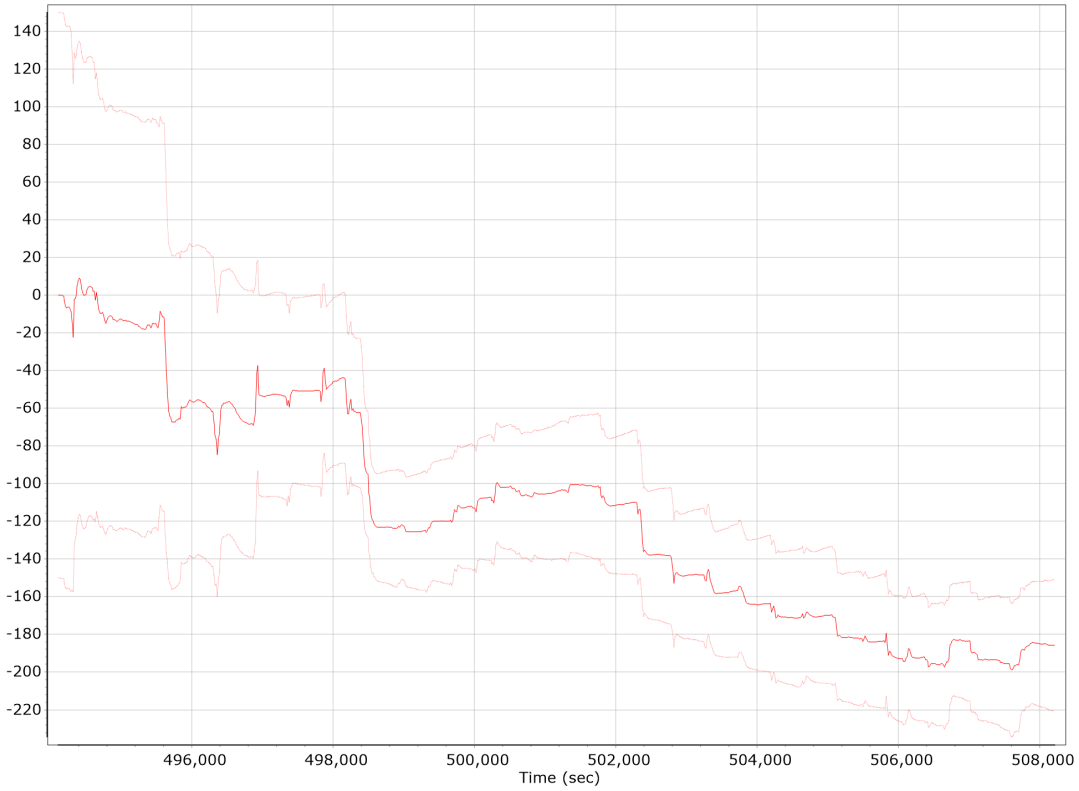
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)

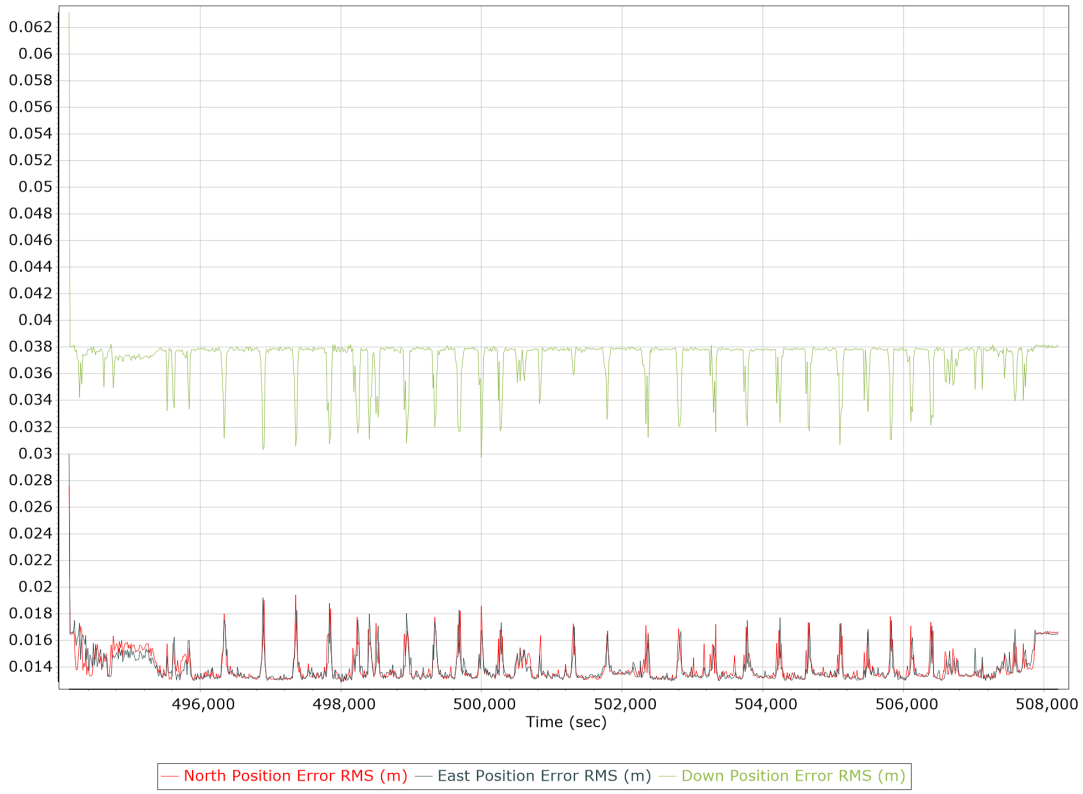


Z Gyro Scale Error (ppm)

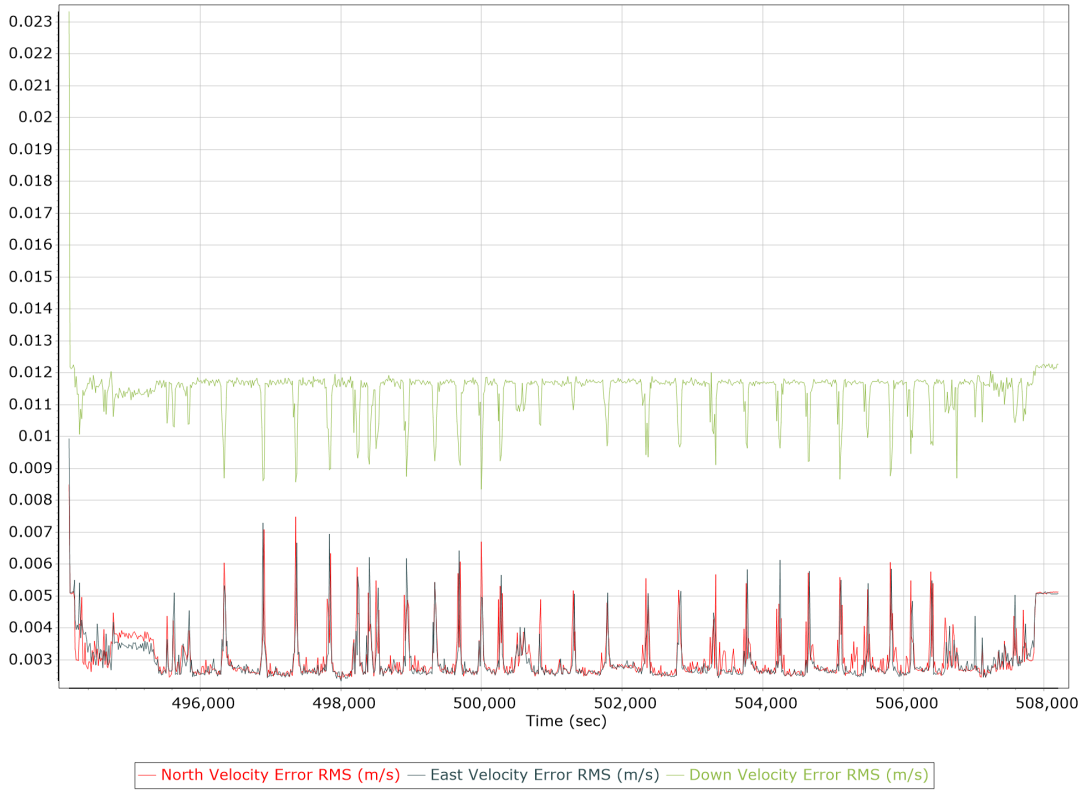


Smoothed Performance Metrics

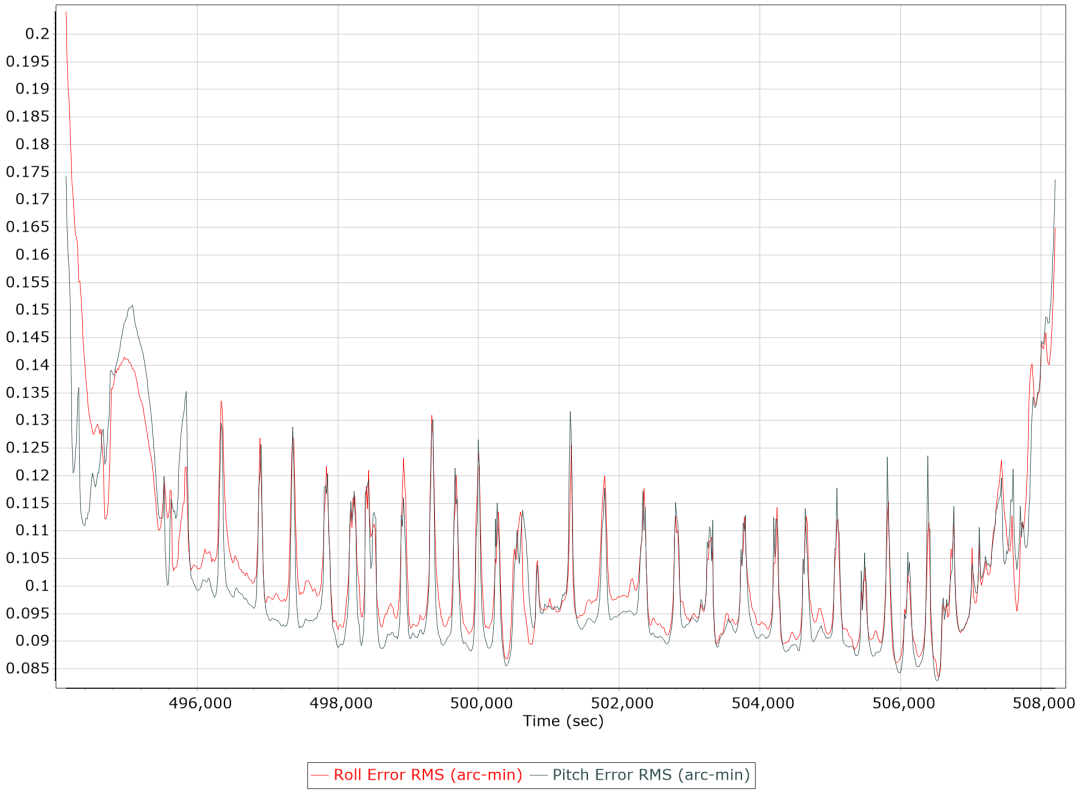
Position Error RMS (m)



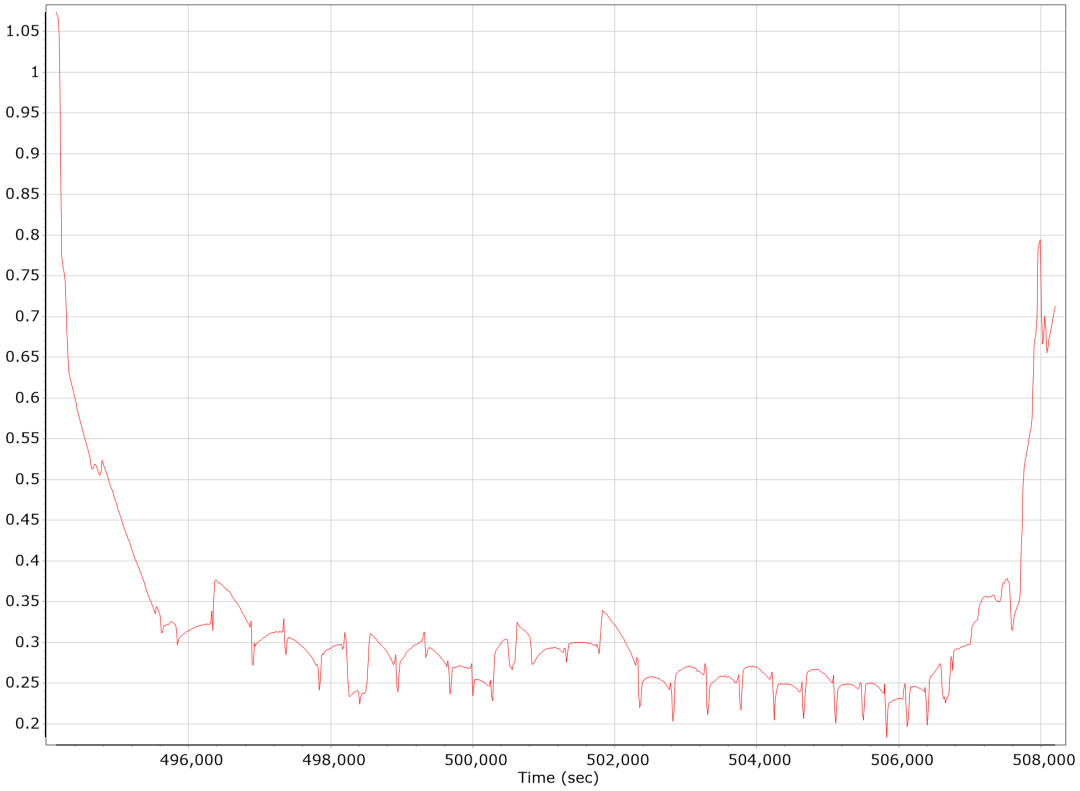
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)



Heading Error RMS (arc-min)

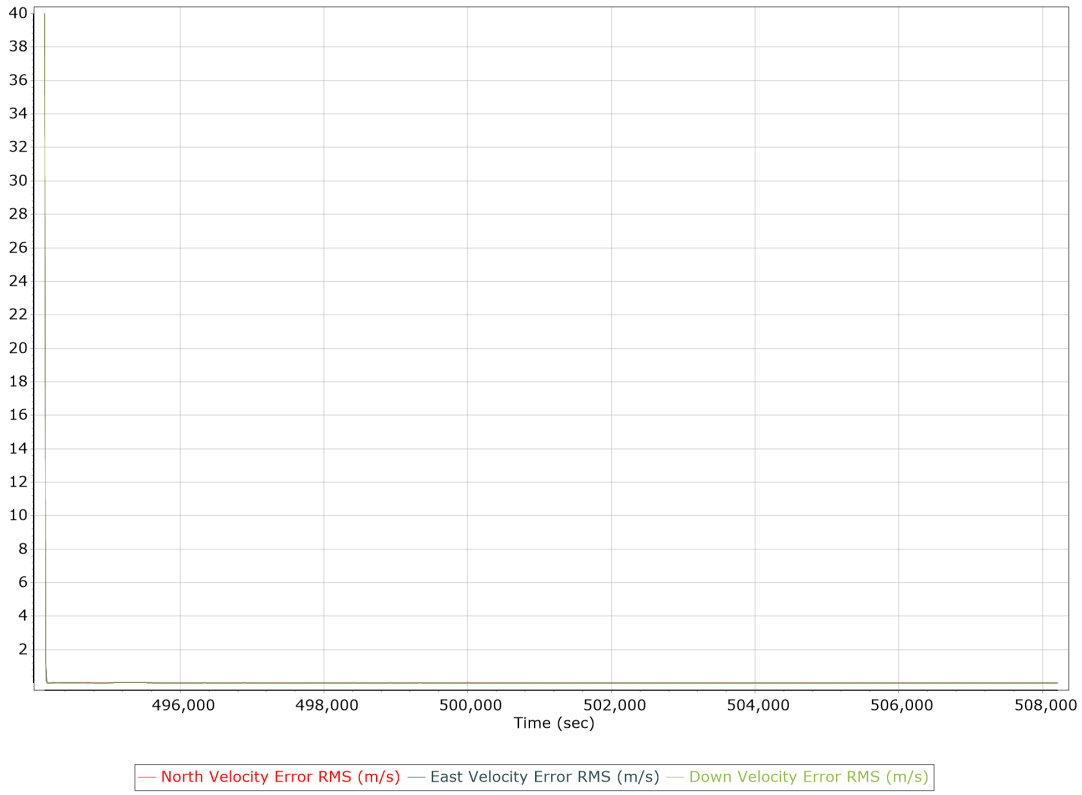


Forward Processed Performance Metrics

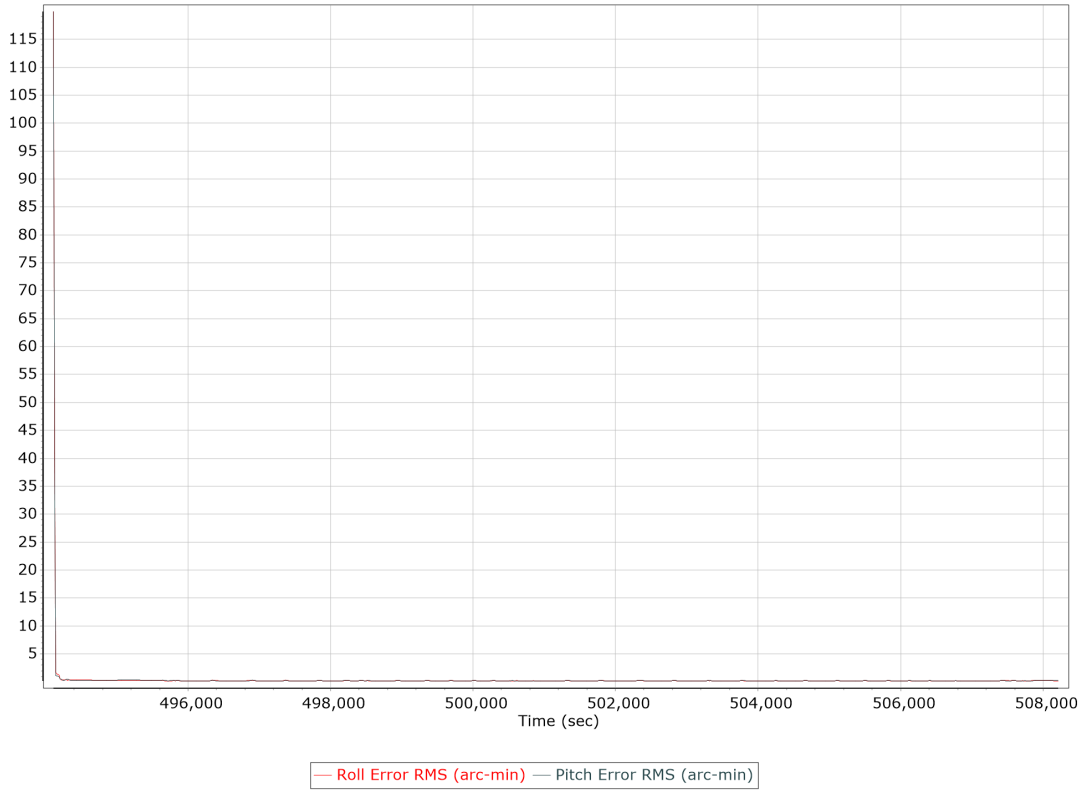
Position Error RMS (m)



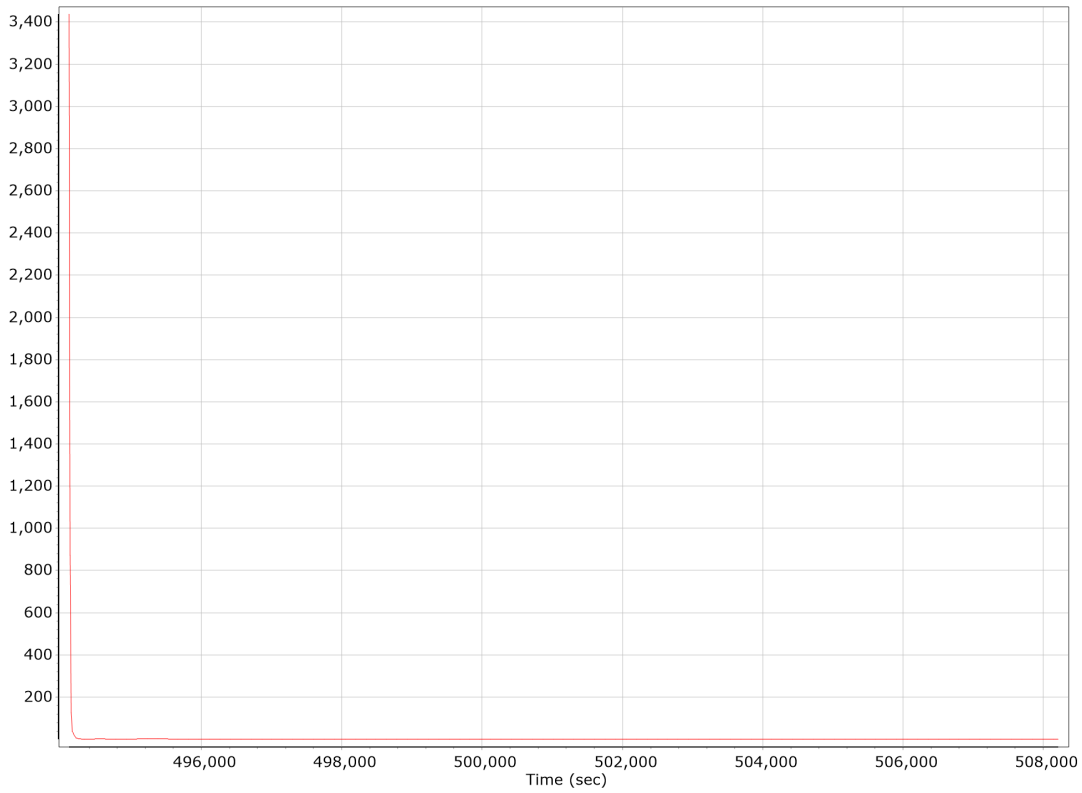
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

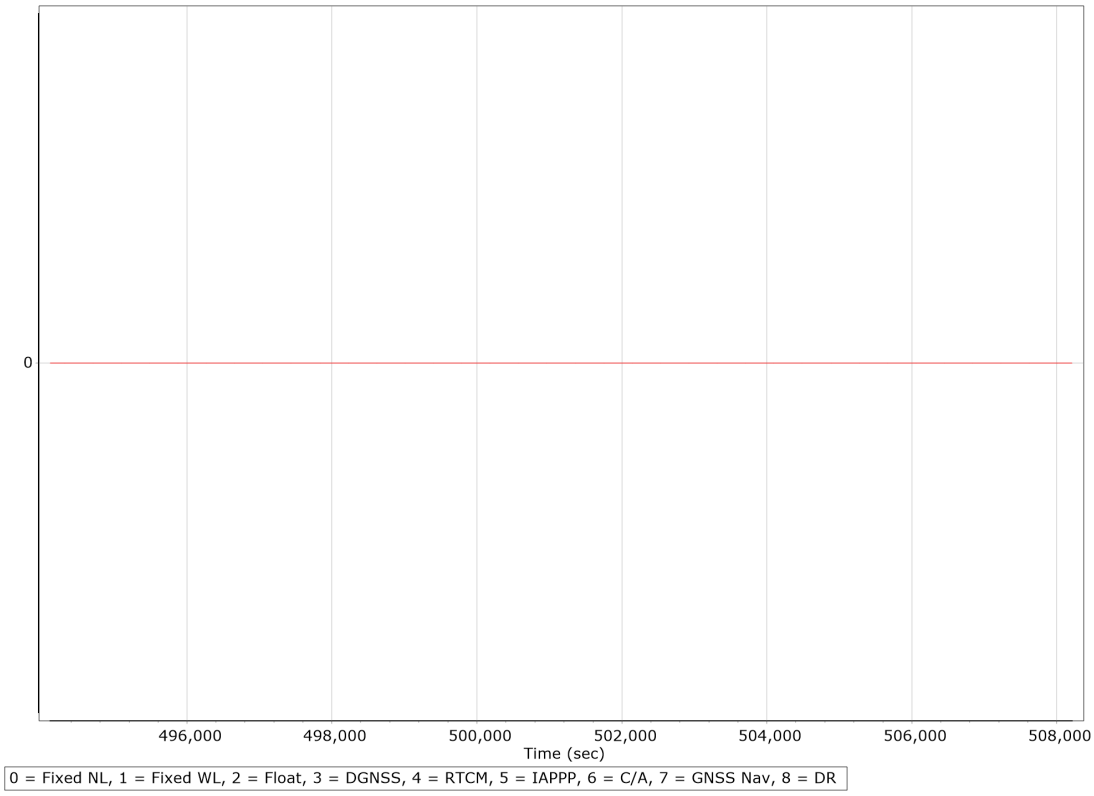


Heading Error RMS (arc-min)

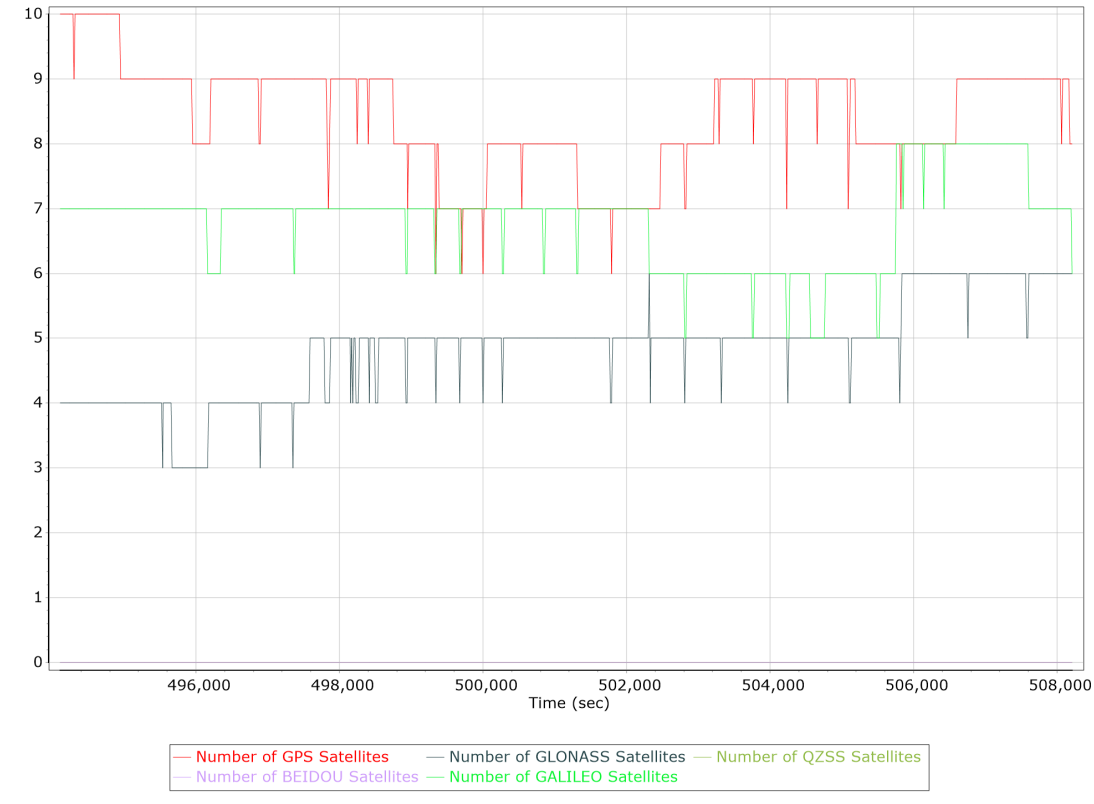


Forward Processed Solution Status

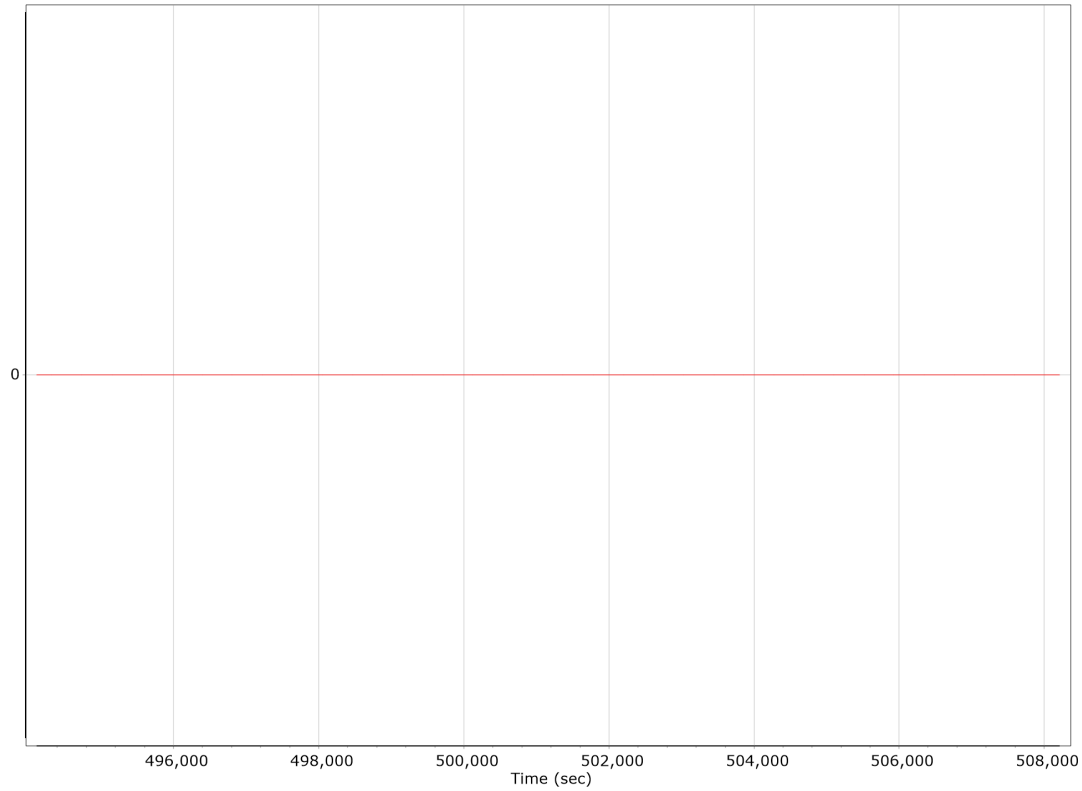
Processing Mode



Number of Satellites



Baseline Length



General Information

Mission Information

Project name	10062023B_4046
Processing date	2024-01-12 15:34:30
Mission date	2023-10-06 23:28:27
Mission duration	04:26:26.176
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N10762
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
231006_232808_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm2790.23g	GLONASS Broadcast Ephemeris
Ephm2790.23n	GPS Broadcast Ephemeris
Ephm2800.23g	GLONASS Broadcast Ephemeris
Ephm2800.23n	GPS Broadcast Ephemeris
IGS0OPSFIN_20232780000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232790000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232800000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232810000_01D_15M_ORB.SP3	GPS Precise Ephemeris

Output Files

Filename	File type
sbet_10062023B_4046.out	SBET Trajectory File

Rover Data Summary

First raw data file	231006_232808_INS-GPS_1.raw		
Last raw data file	231006_232808_INS-GPS_1.raw		
Start GPS week	2282		
Start time	516488.646 (10/6/2023 11:28:08 PM)		
End time	532474.822 (10/7/2023 3:54:34 AM)		
Start of fine alignment	516729.298 (10/6/2023 11:32:09 PM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	0.000	0.000	0.000
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

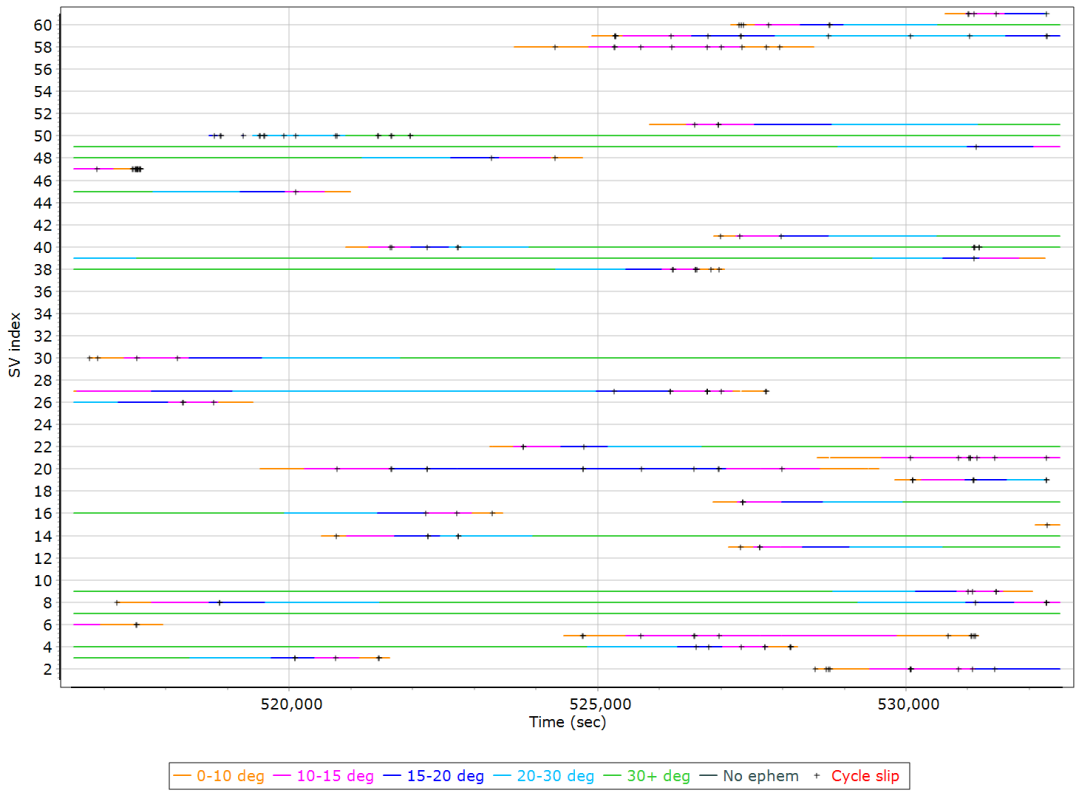
Rover Data QC

Raw IMU Import QC Summary

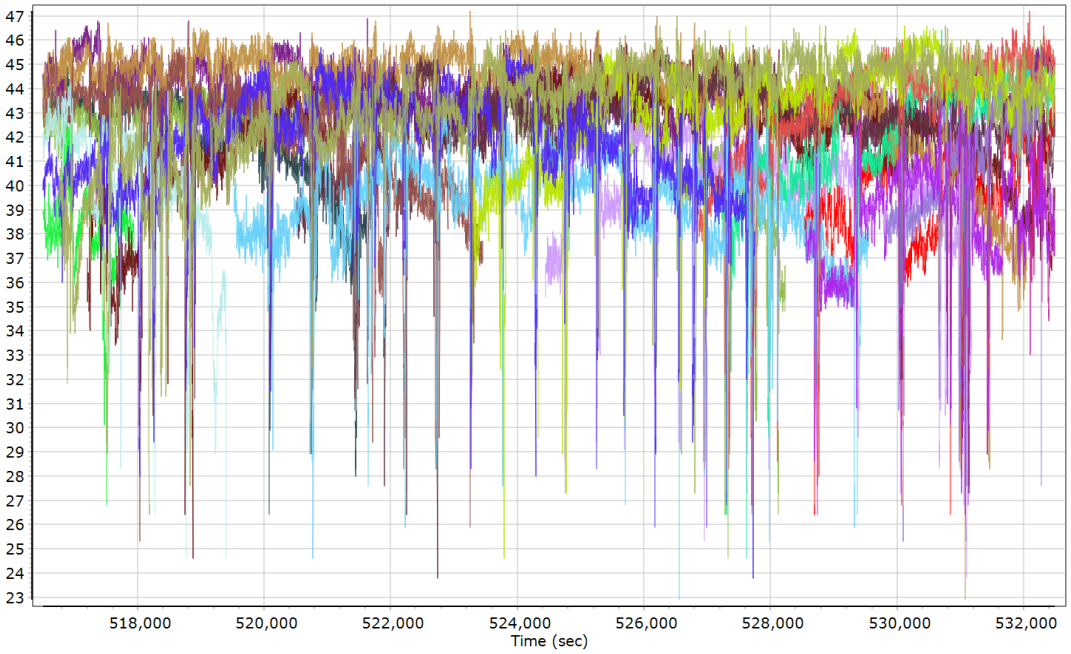
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_10062023B_4046.log
IMU Records Processed	3196768
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

GPS/GLONASS L1 Satellite Lock/Elevation

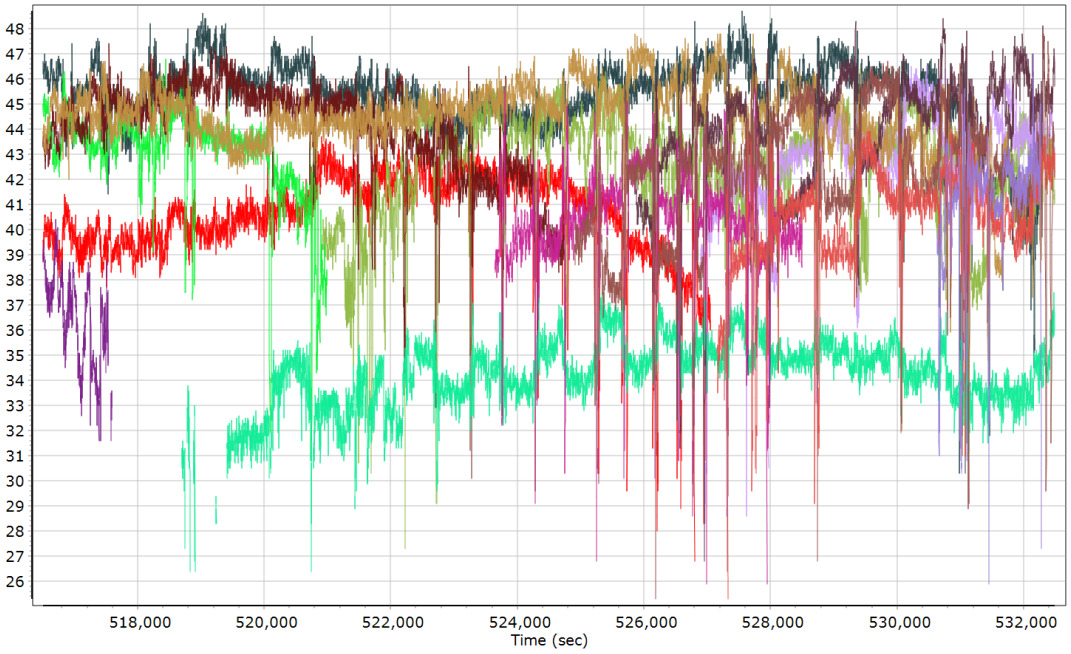


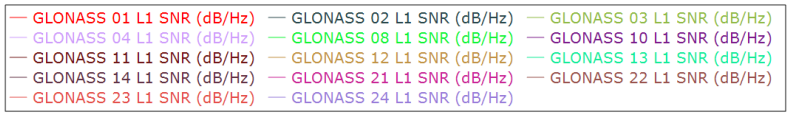
GPS L1 SNR



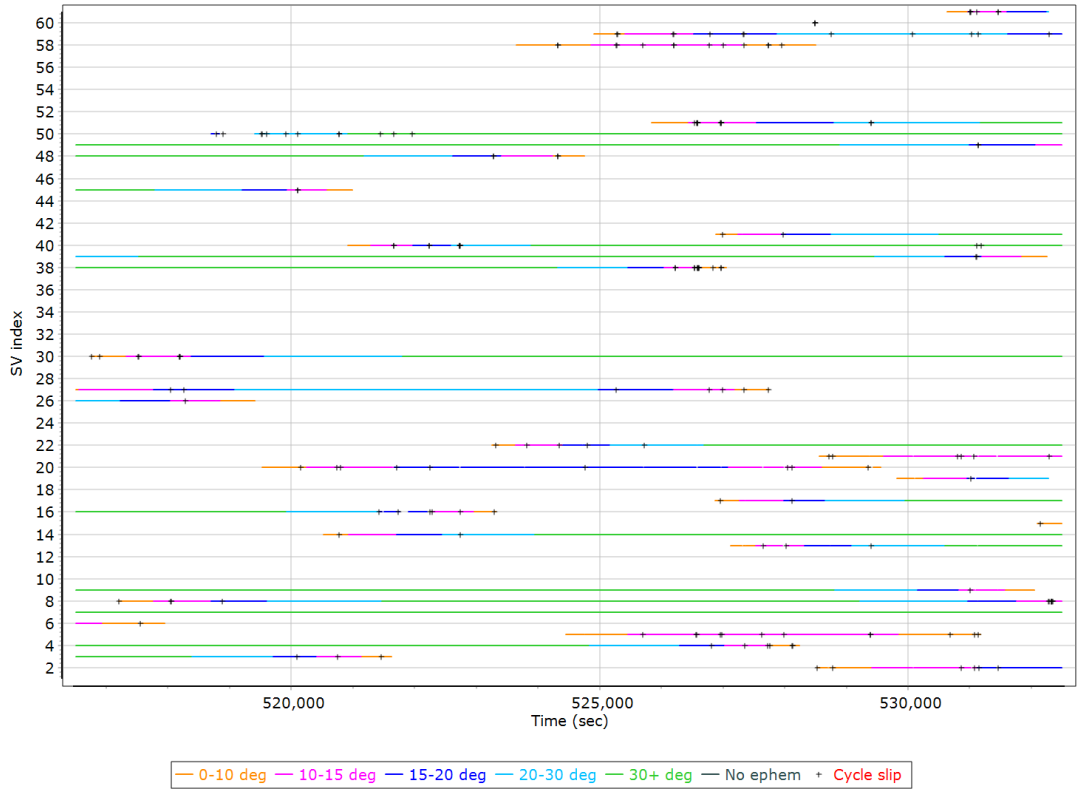


GLONASS L1 SNR

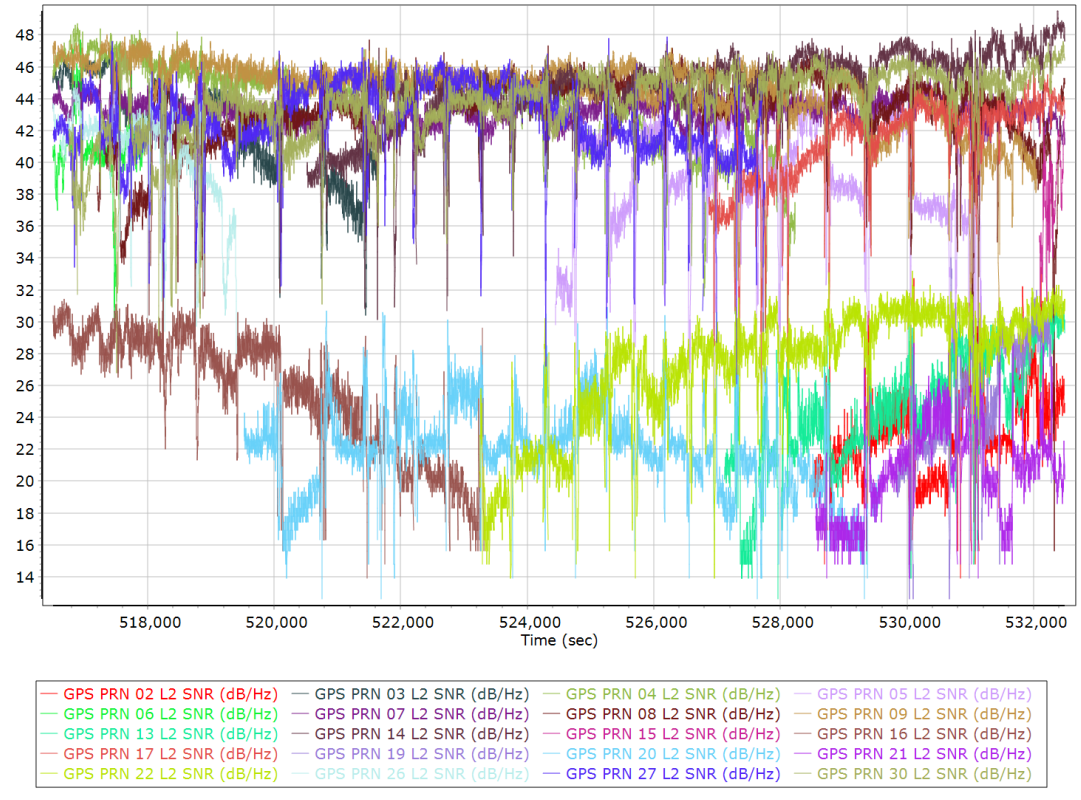




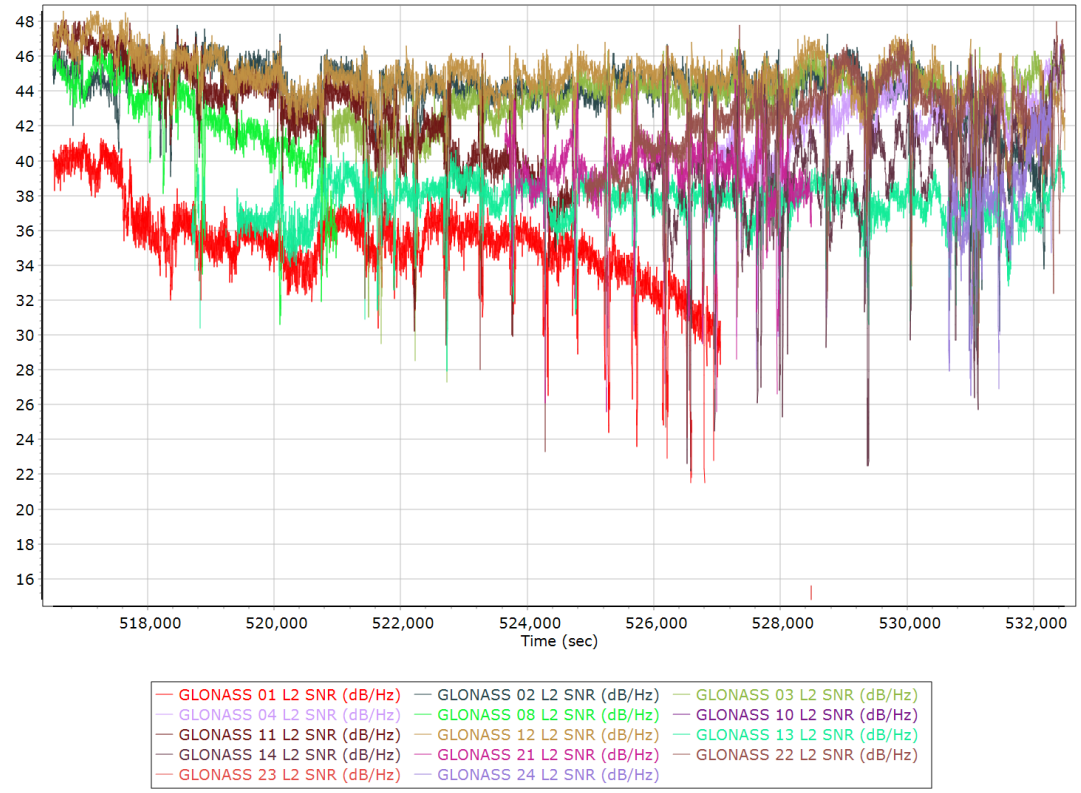
GPS/GLONASS L2 Satellite Lock/Elevation



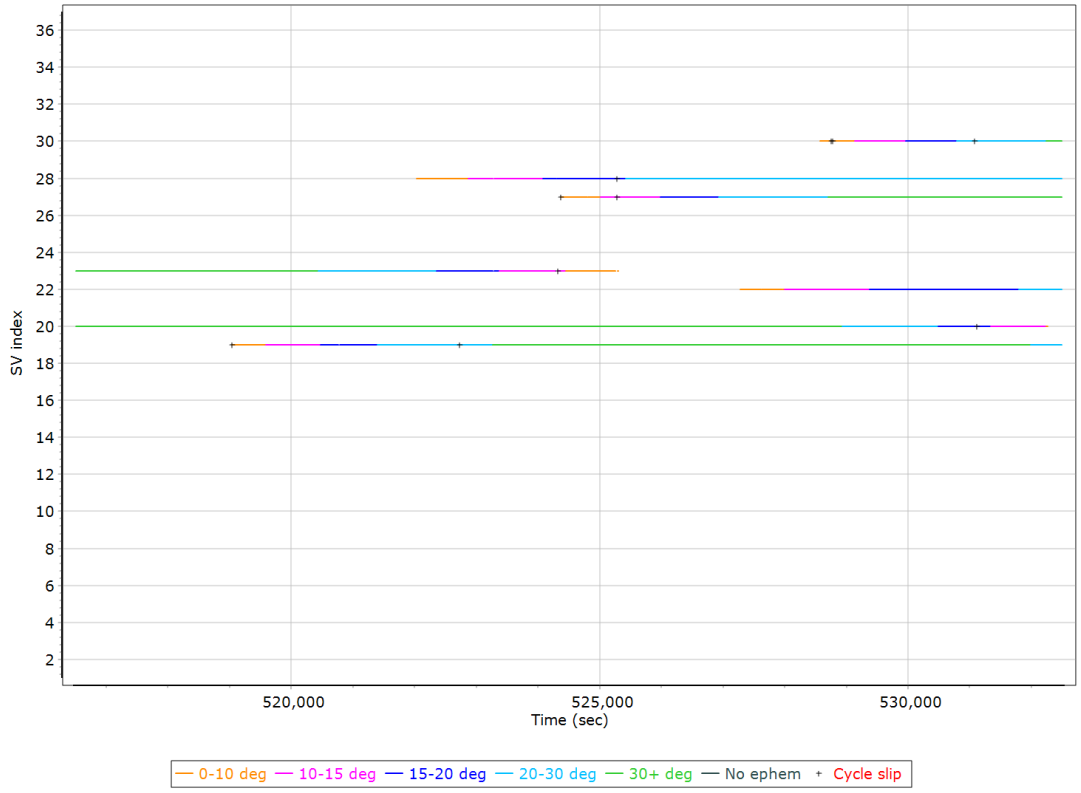
GPS L2 SNR



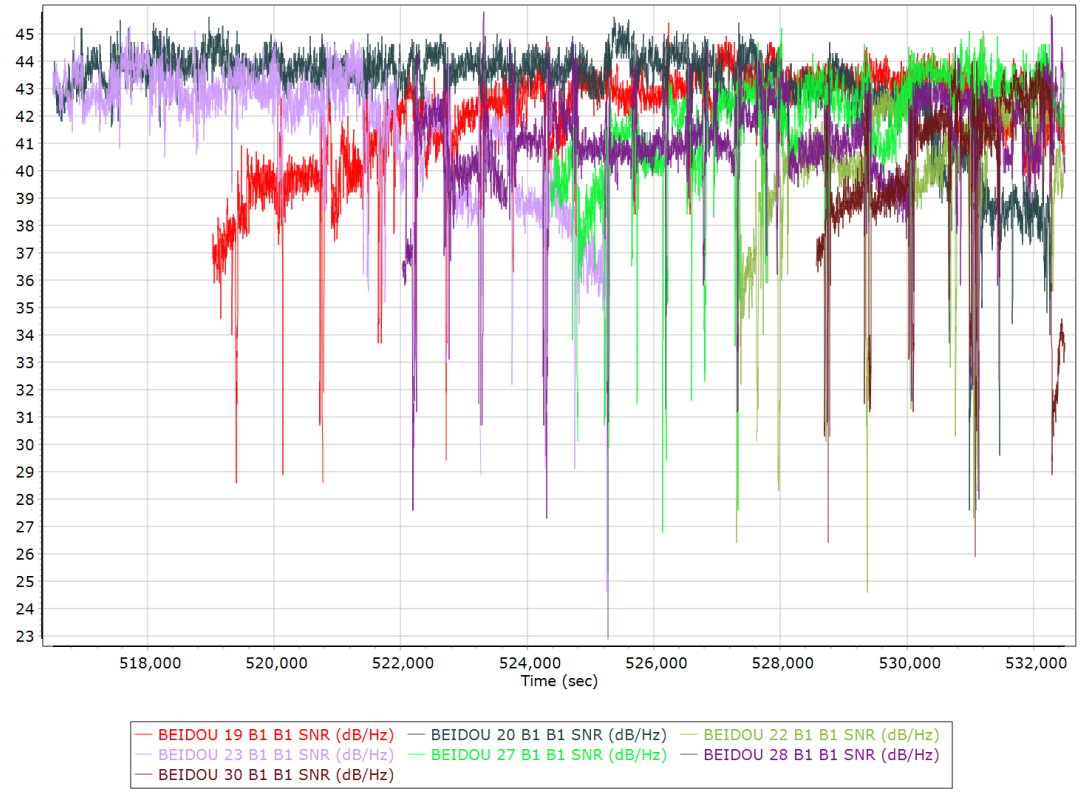
GLONASS L2 SNR



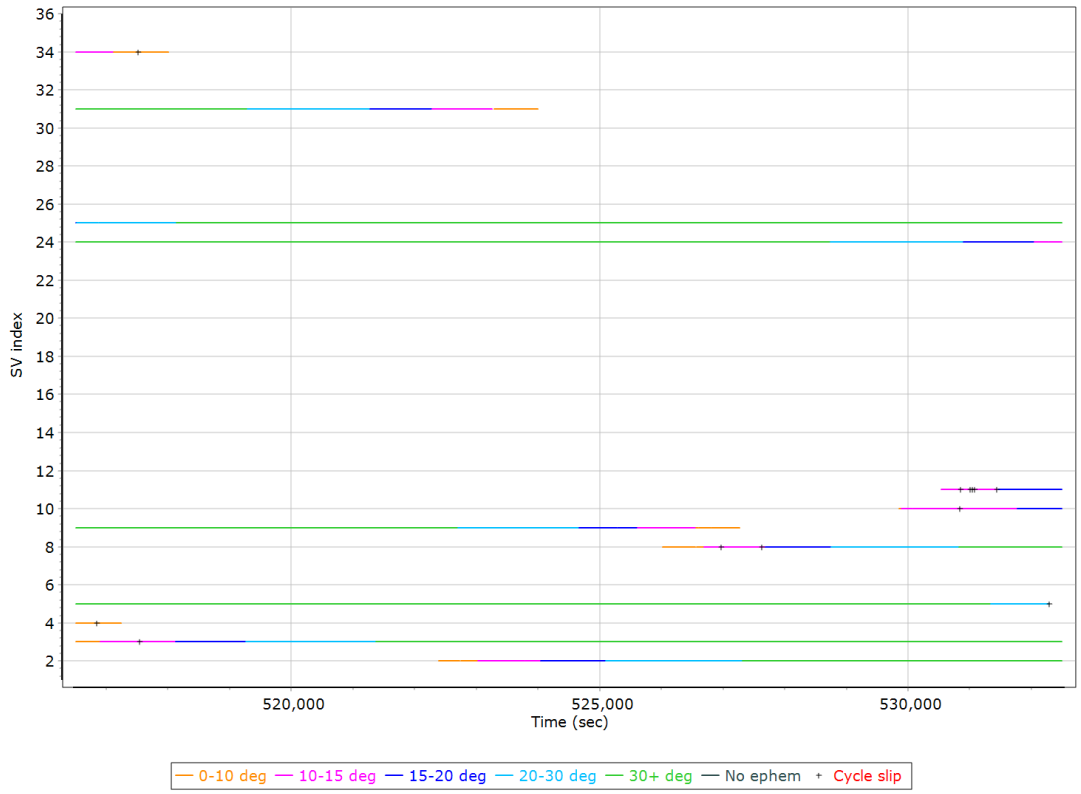
BEIDOU Satellite Lock/Elevation



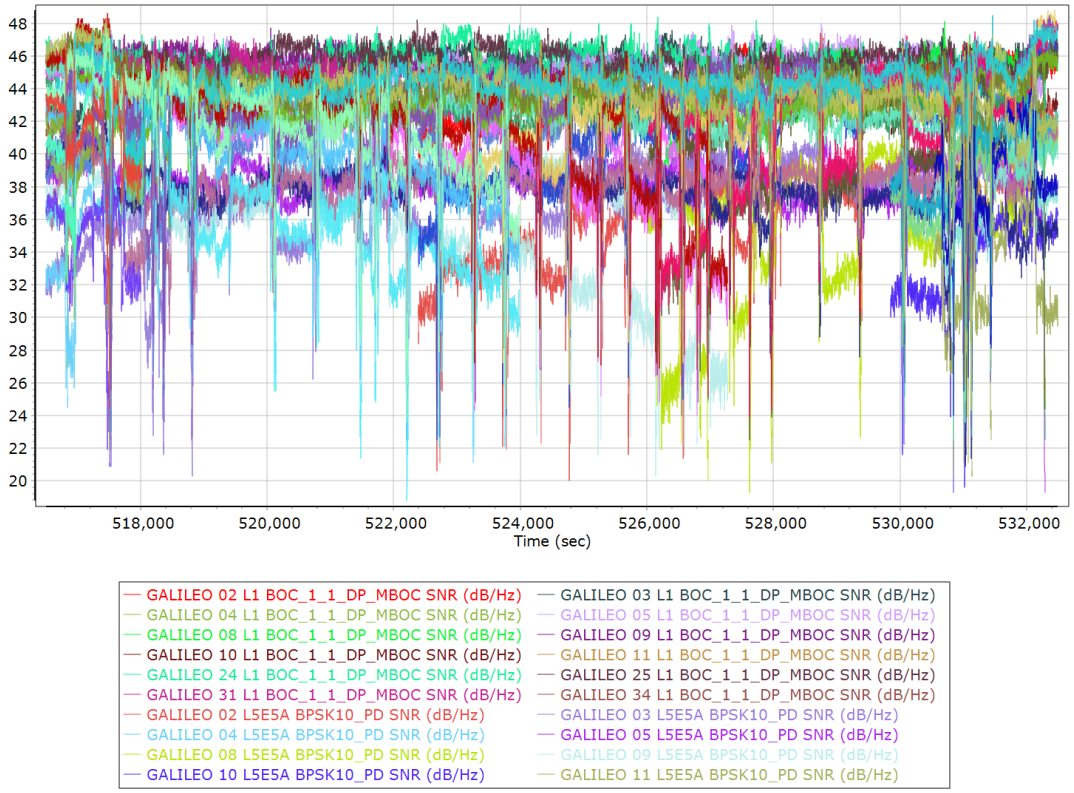
BEIDOU SNR



GALILEO Satellite Lock/Elevation

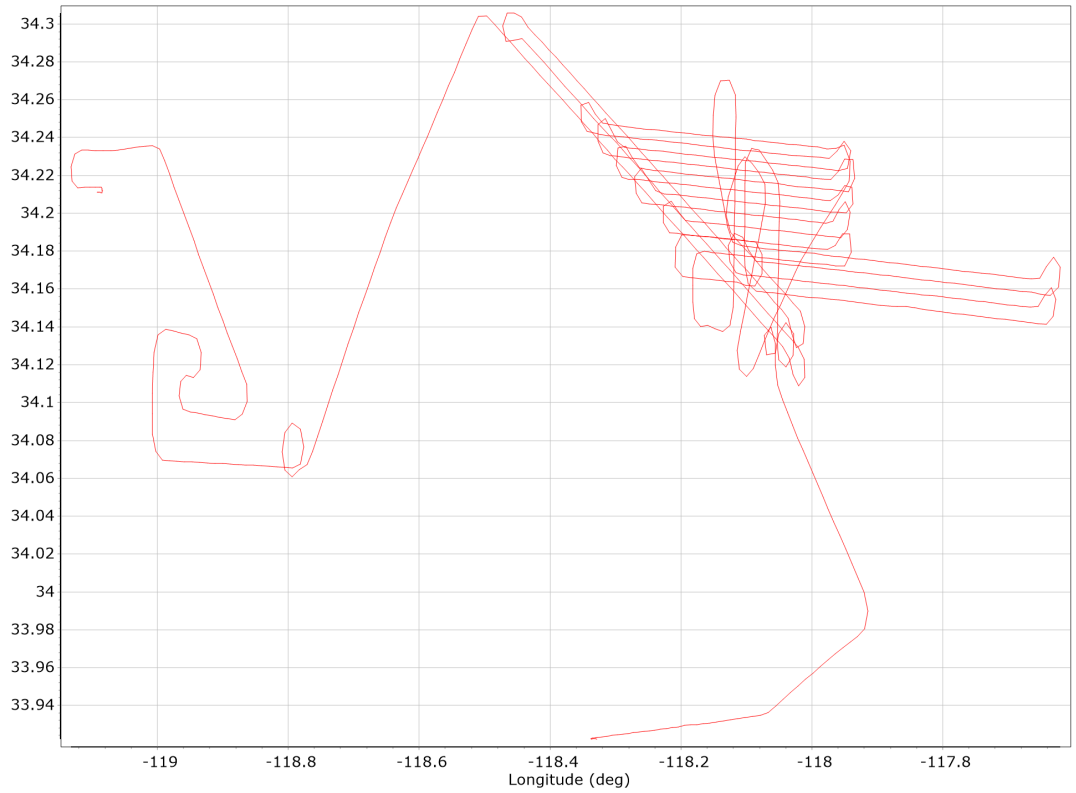


GALILEO SNR

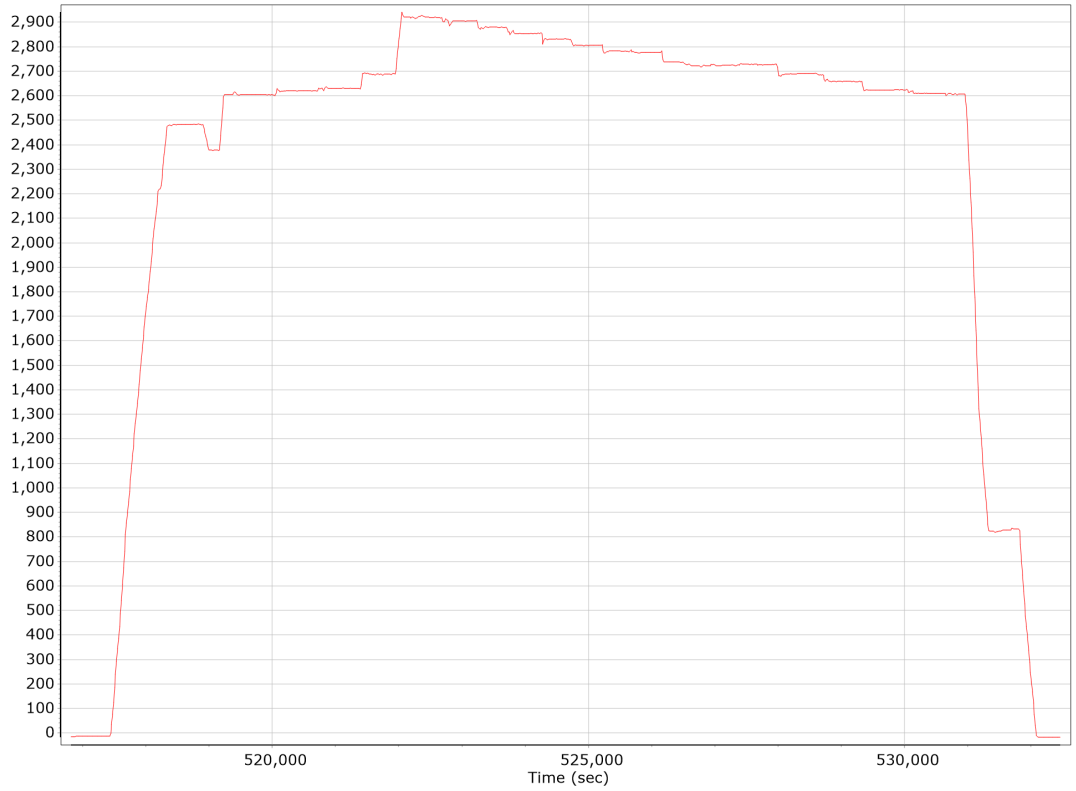

48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
518,000
520,000
522,000
524,000
526,000
528,000
530,000
532,000
Time (sec)
GALILEO 02 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 03 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 04 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 05 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 08 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 09 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 10 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 11 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 24 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 25 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 31 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 34 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 02 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 03 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 04 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 05 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 08 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 09 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 10 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 11 L5E5A BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

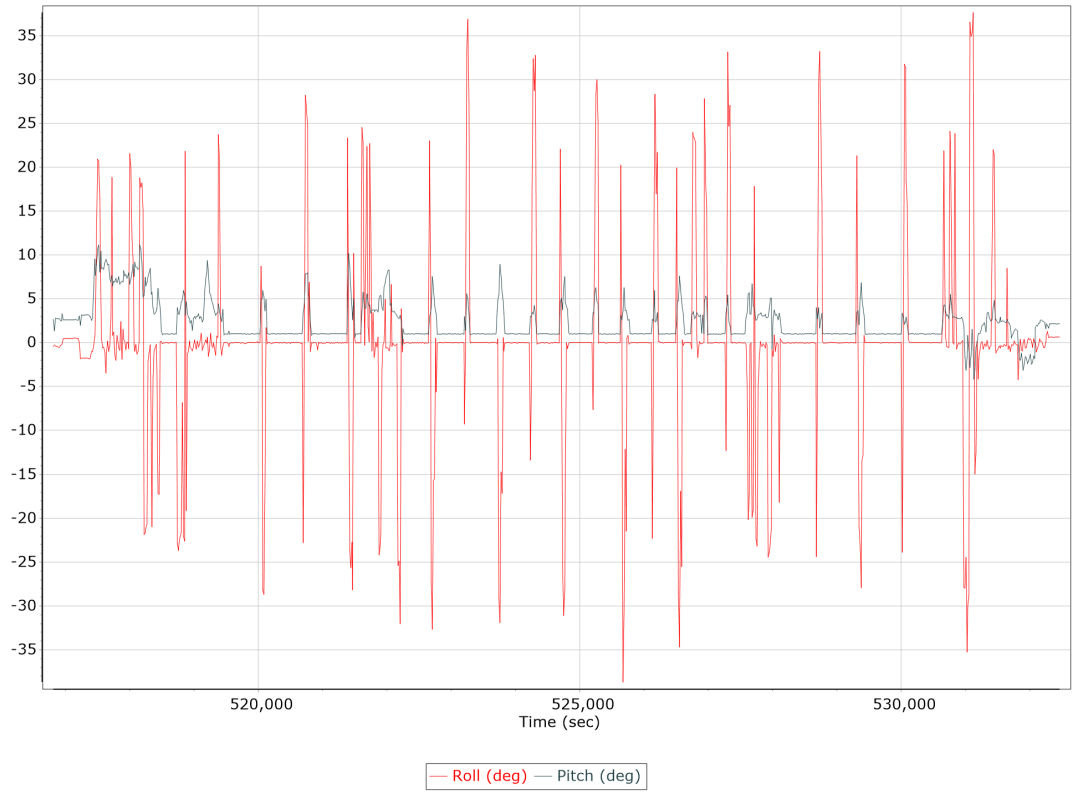
Top View



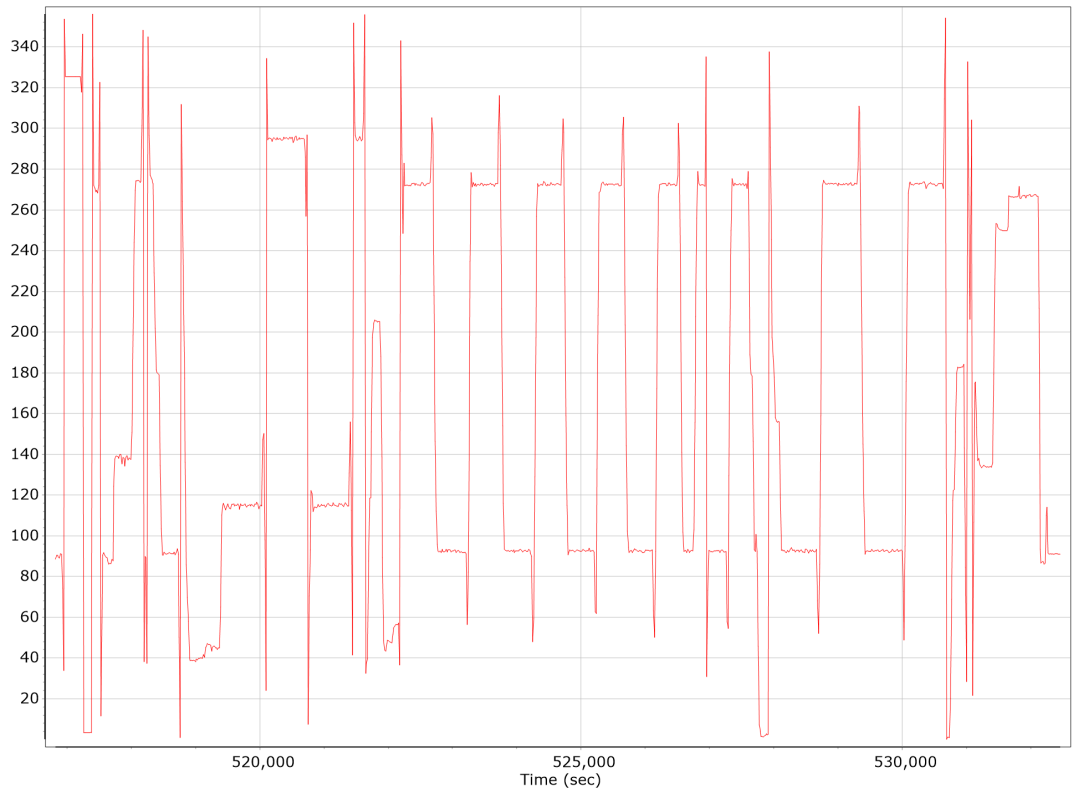
Altitude



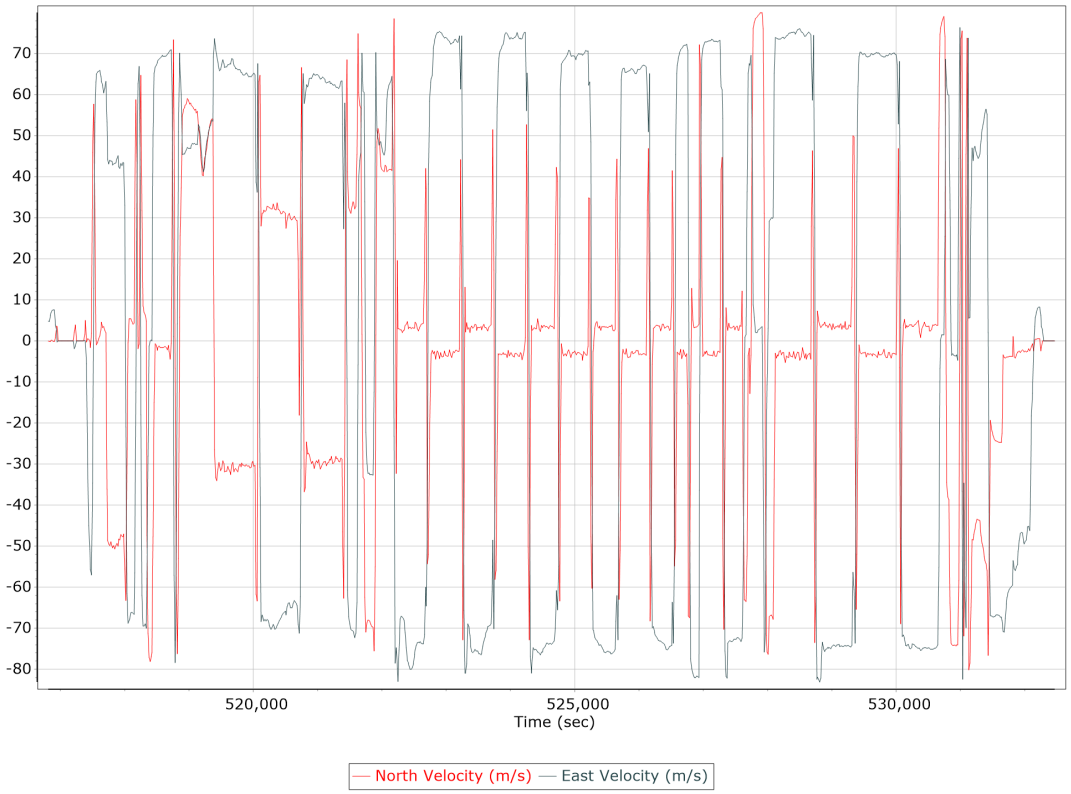
Roll/Pitch



Heading



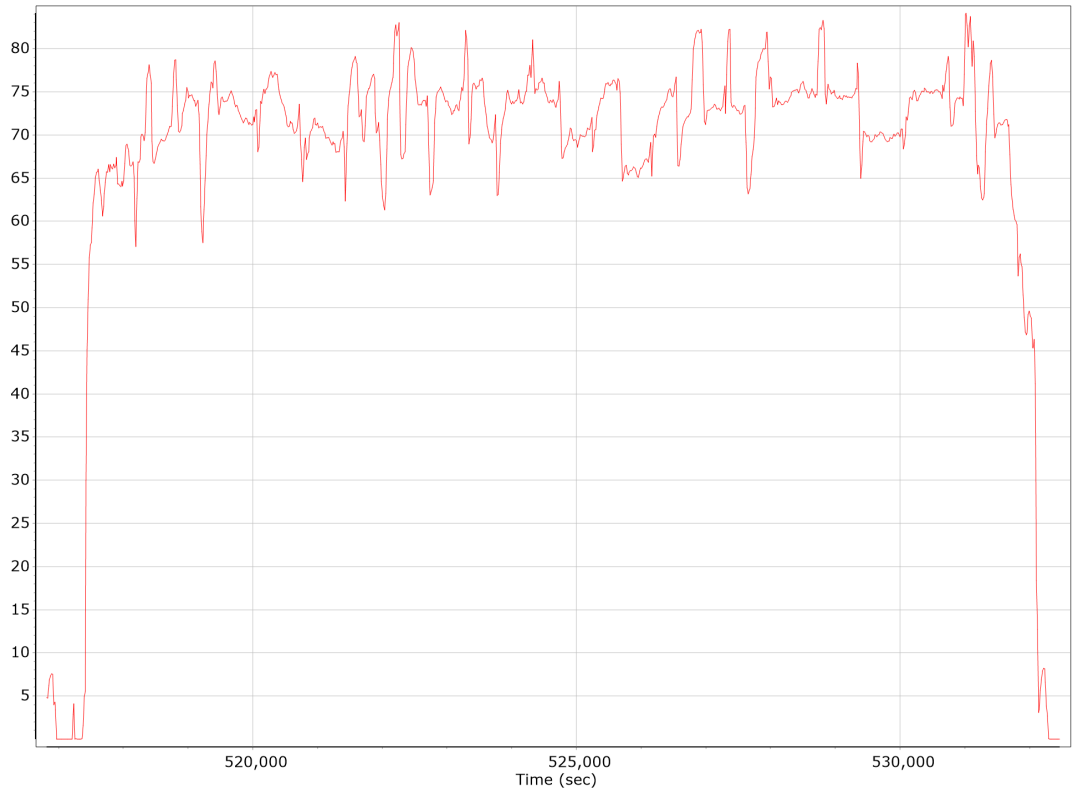
North/East Velocity



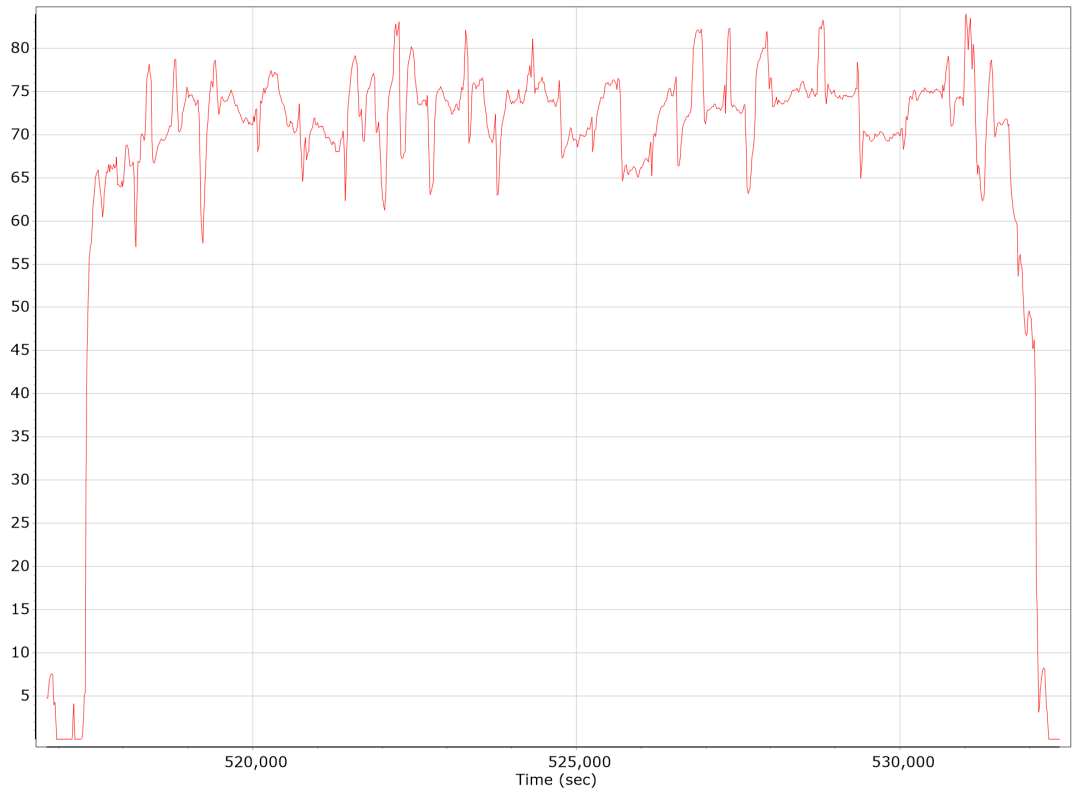
Down Velocity



Total Speed



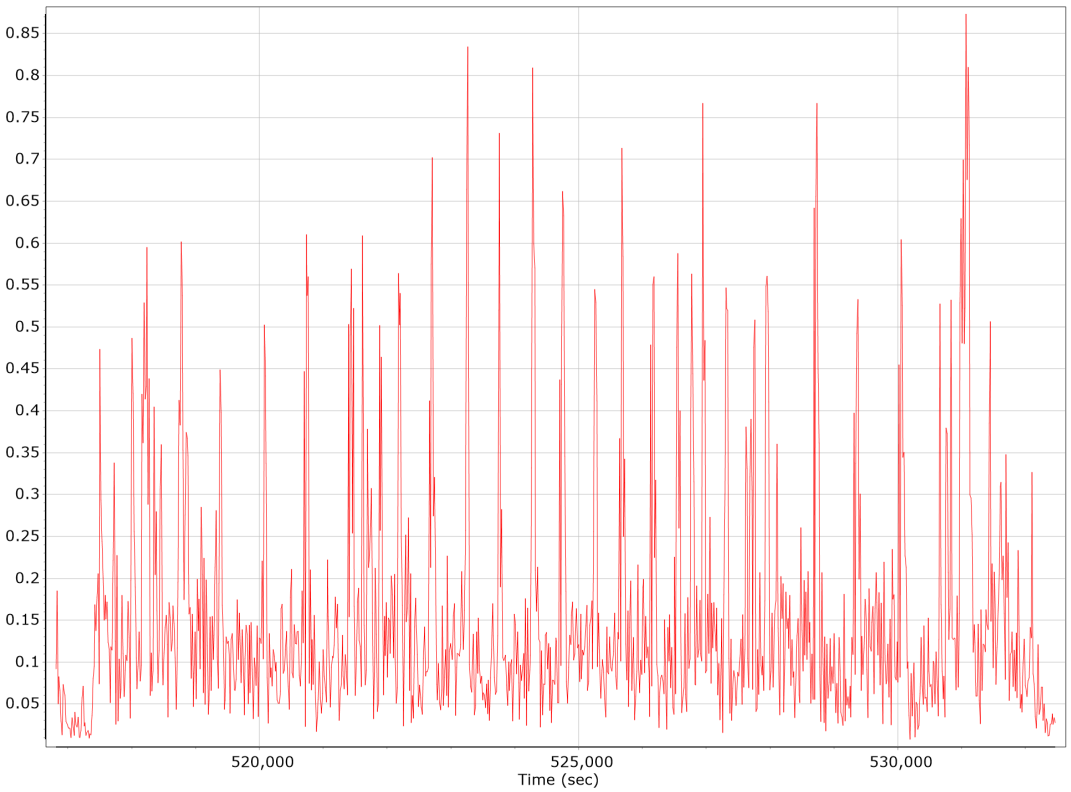
Ground Speed



Body Acceleration



Total Body Acceleration

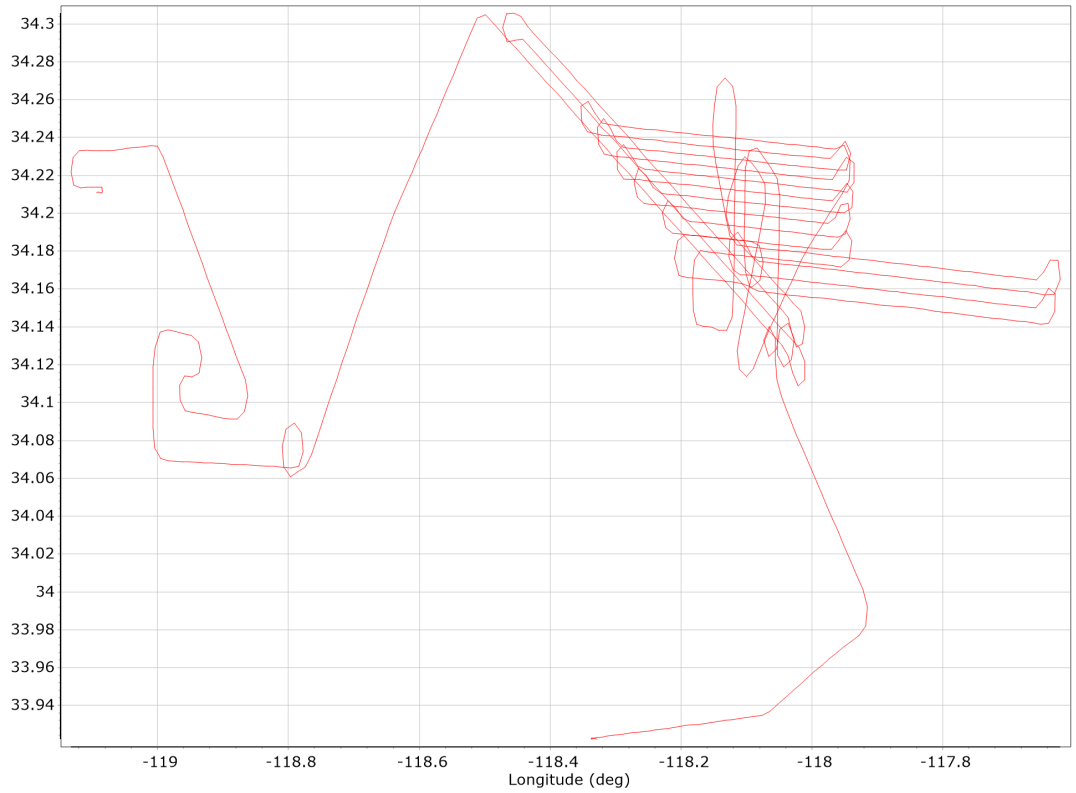


Body Angular Rate

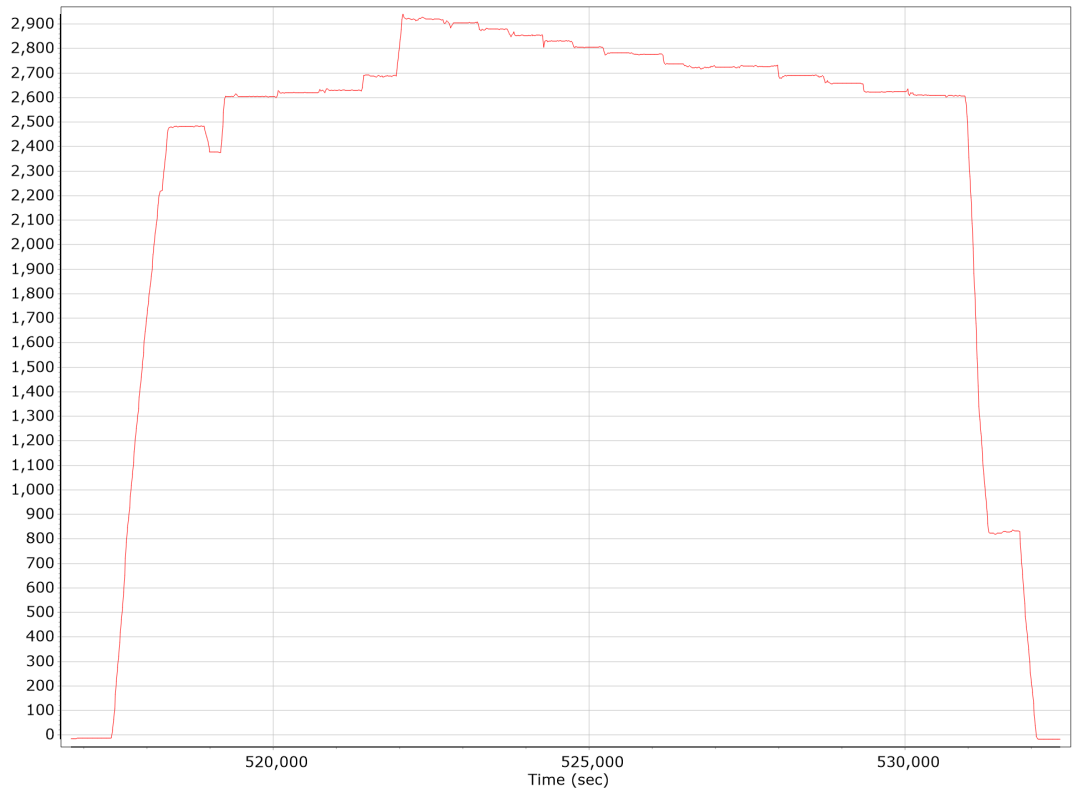


Forward Processed Trajectory Information

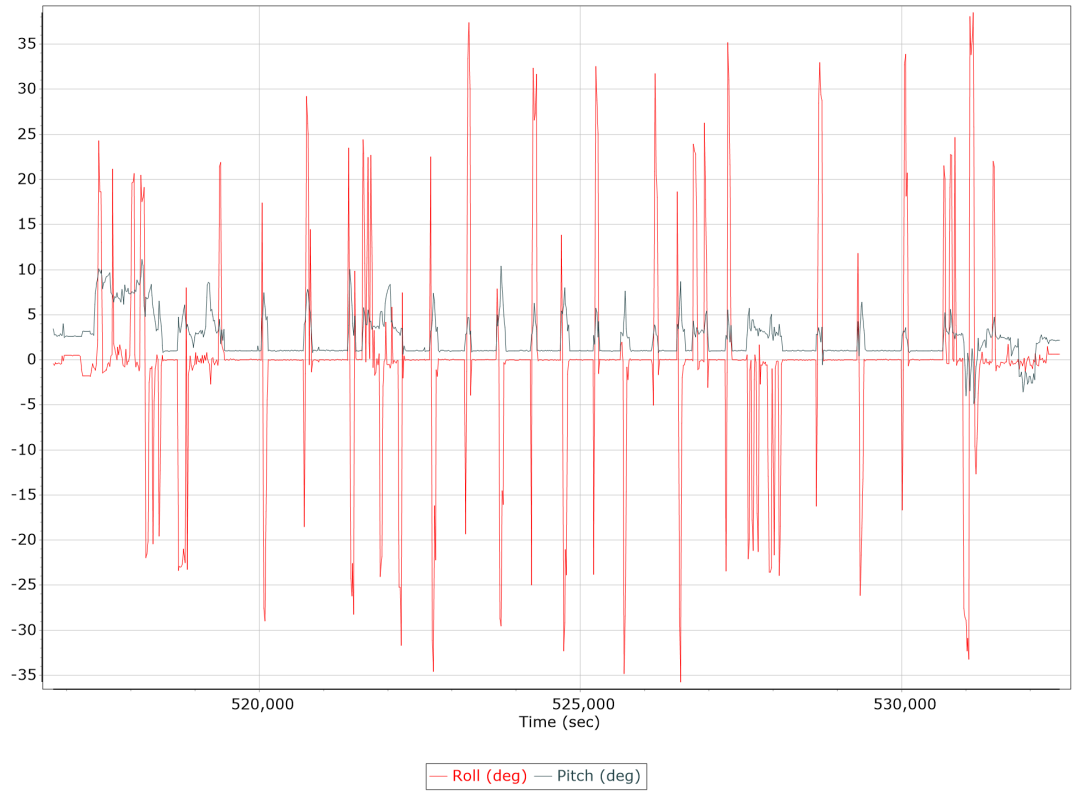
Top View



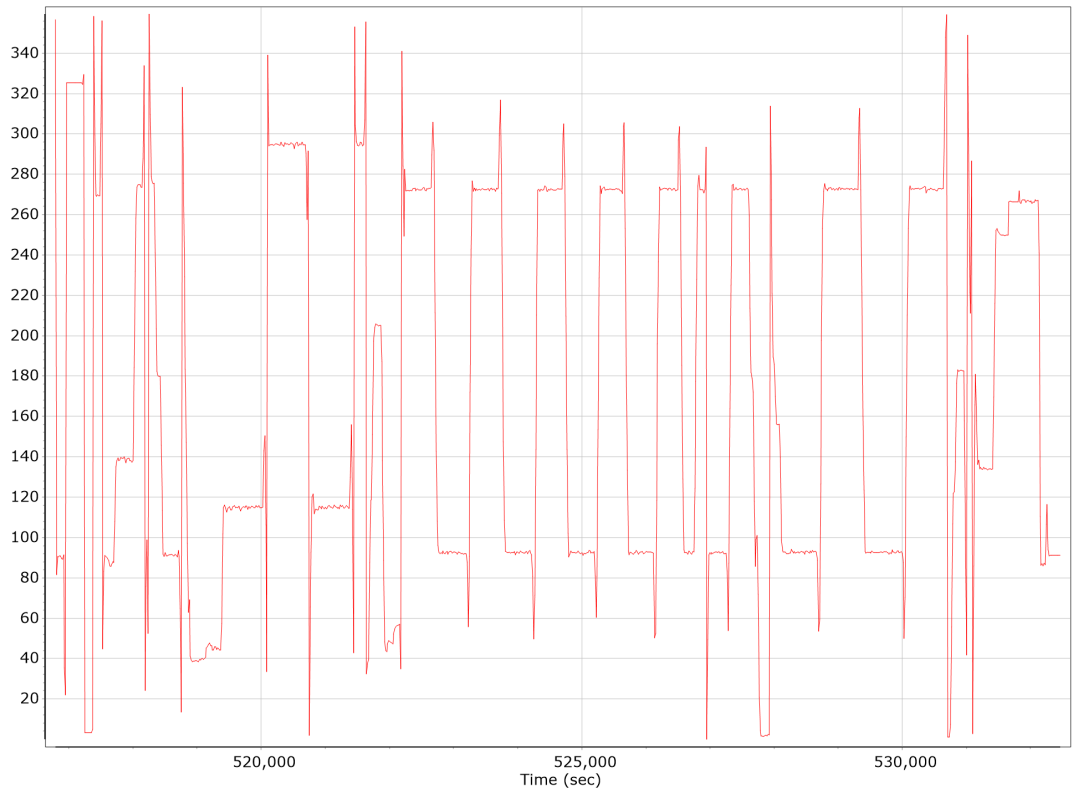
Altitude



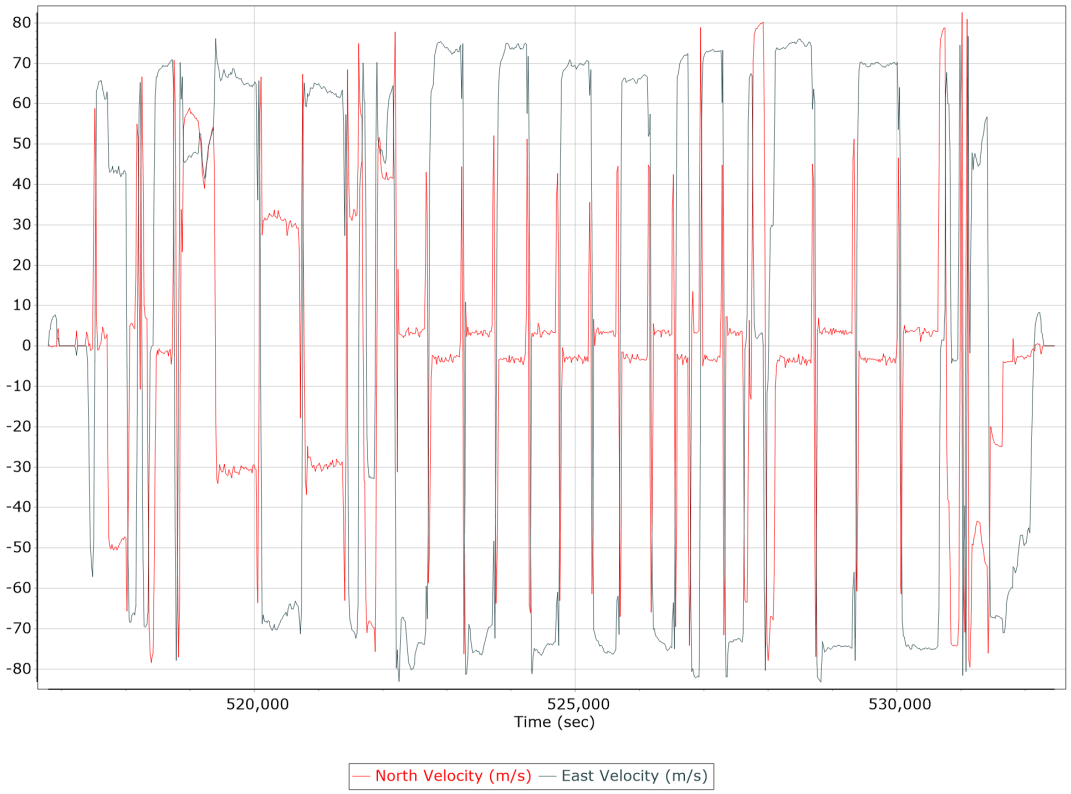
Roll/Pitch



Heading



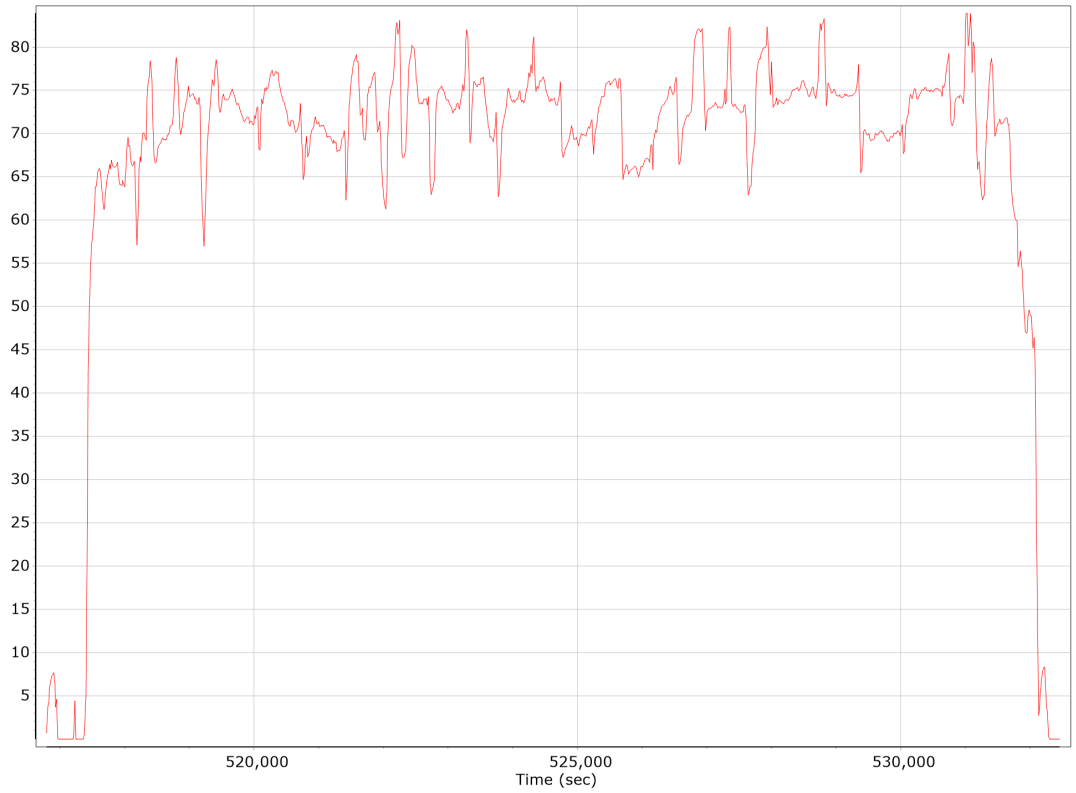
North/East Velocity



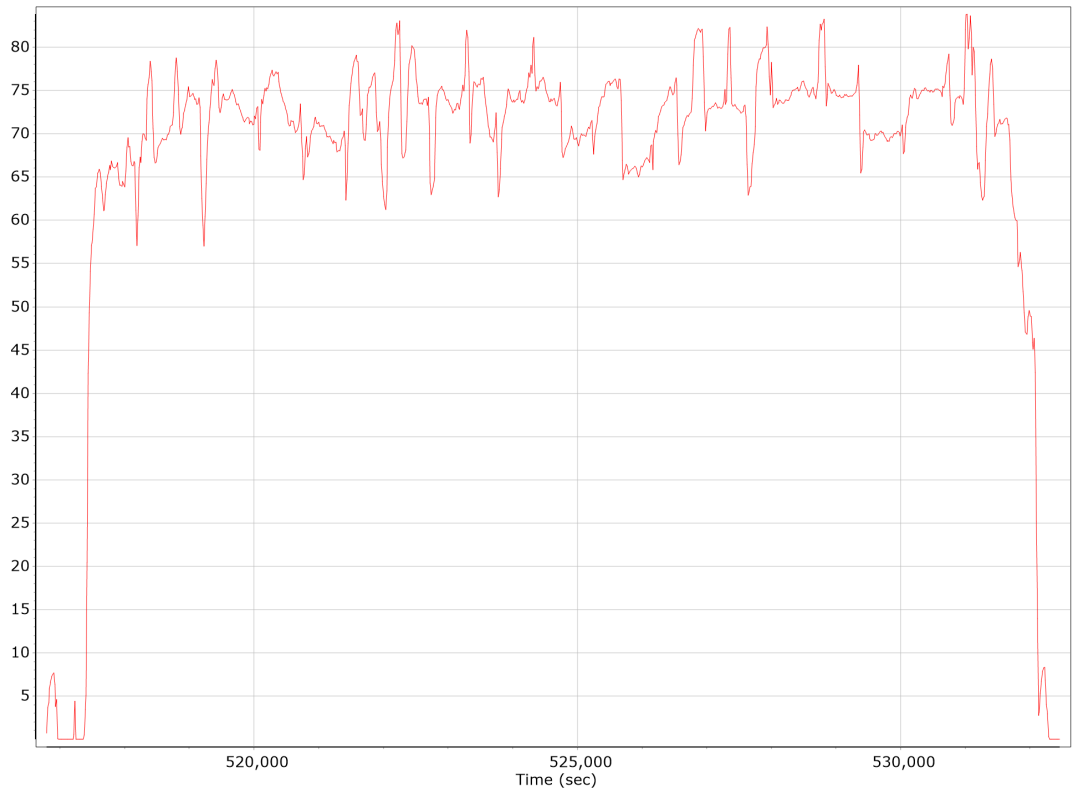
Down Velocity



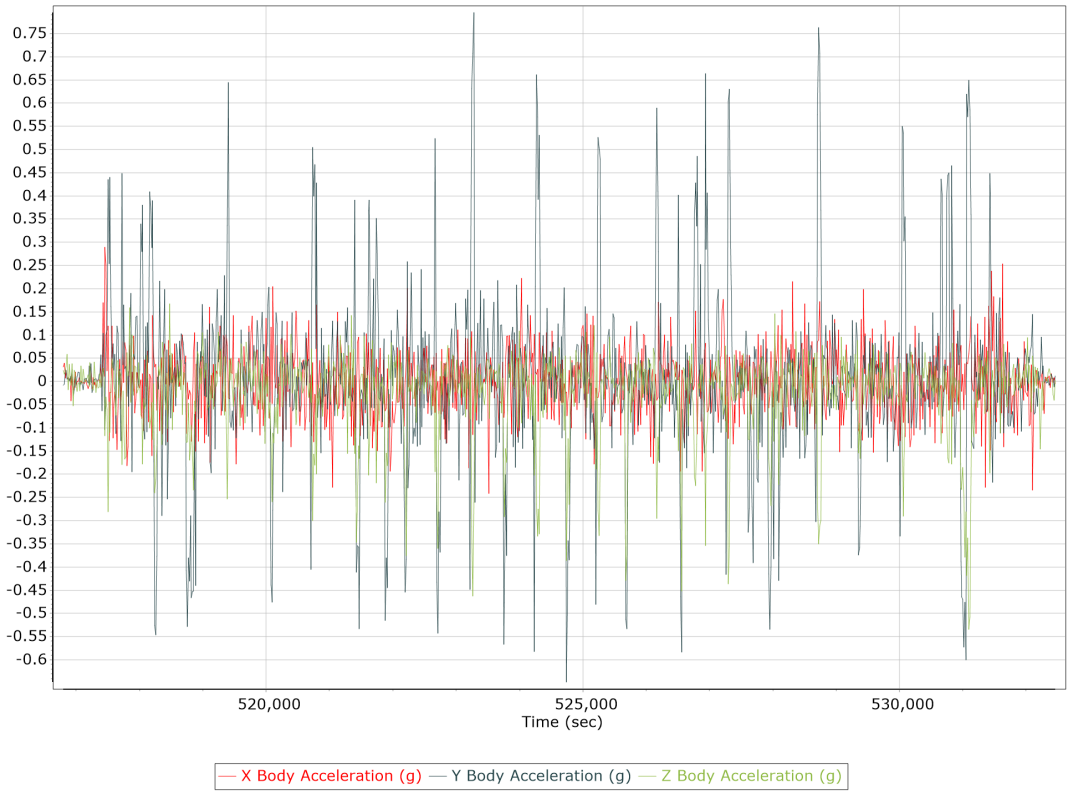
Total Speed



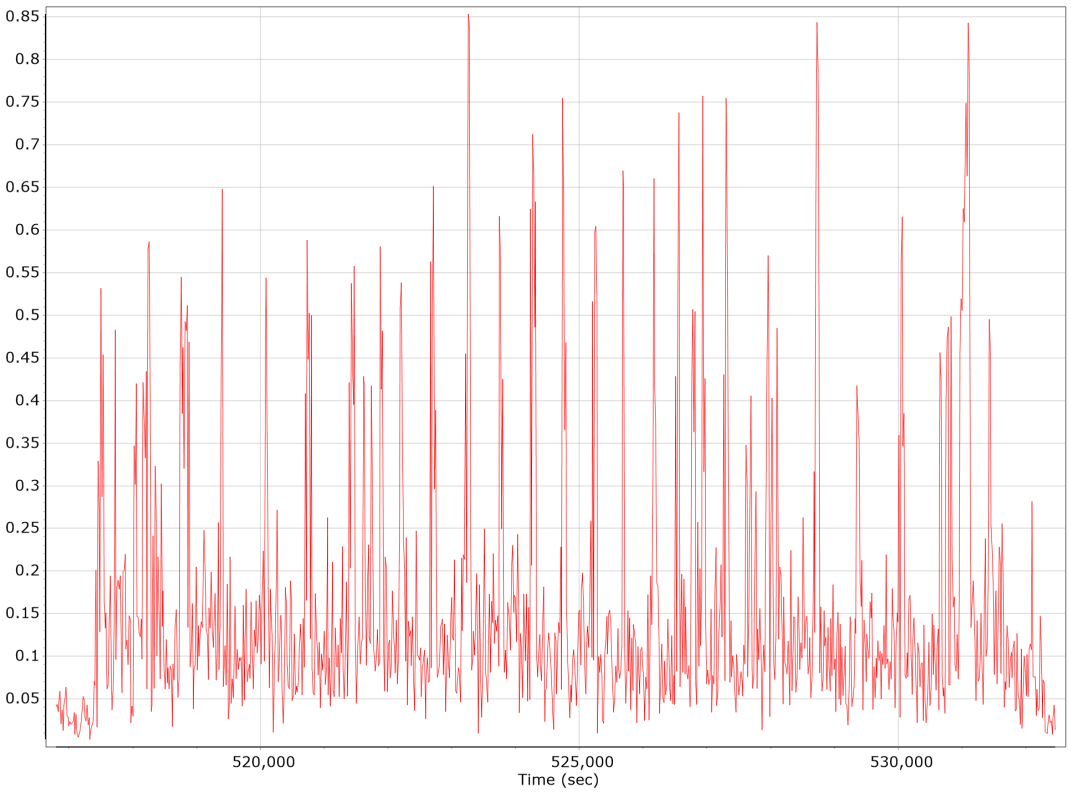
Ground Speed



Body Acceleration



Total Body Acceleration



Body Angular Rate



GNSS QC

GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	6	11	9
Number of GLONASS SV	4	8	6
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	5	8	6
Total number of SV	17	27	22
PDOP	0.89	1.64	1.13
QC Solution Gaps	0.00	0.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	15980.00	0.00	0.00
Percentage	100.00	0.00	0.00

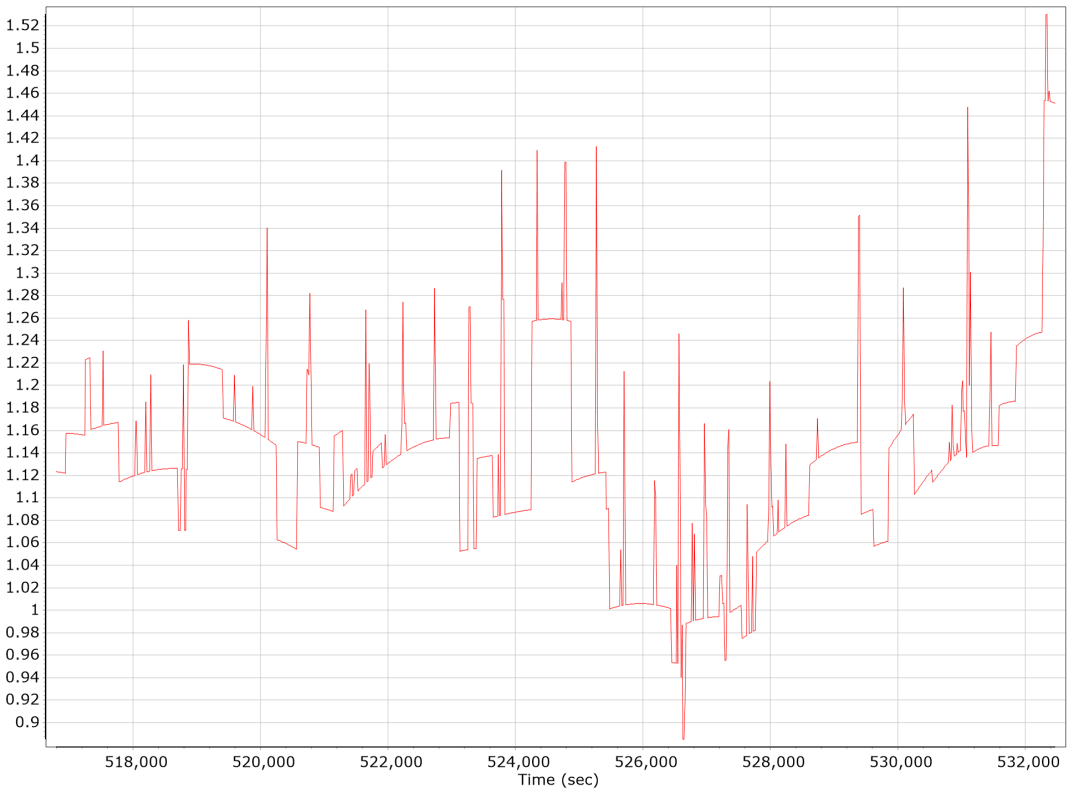
Num SVs in solution



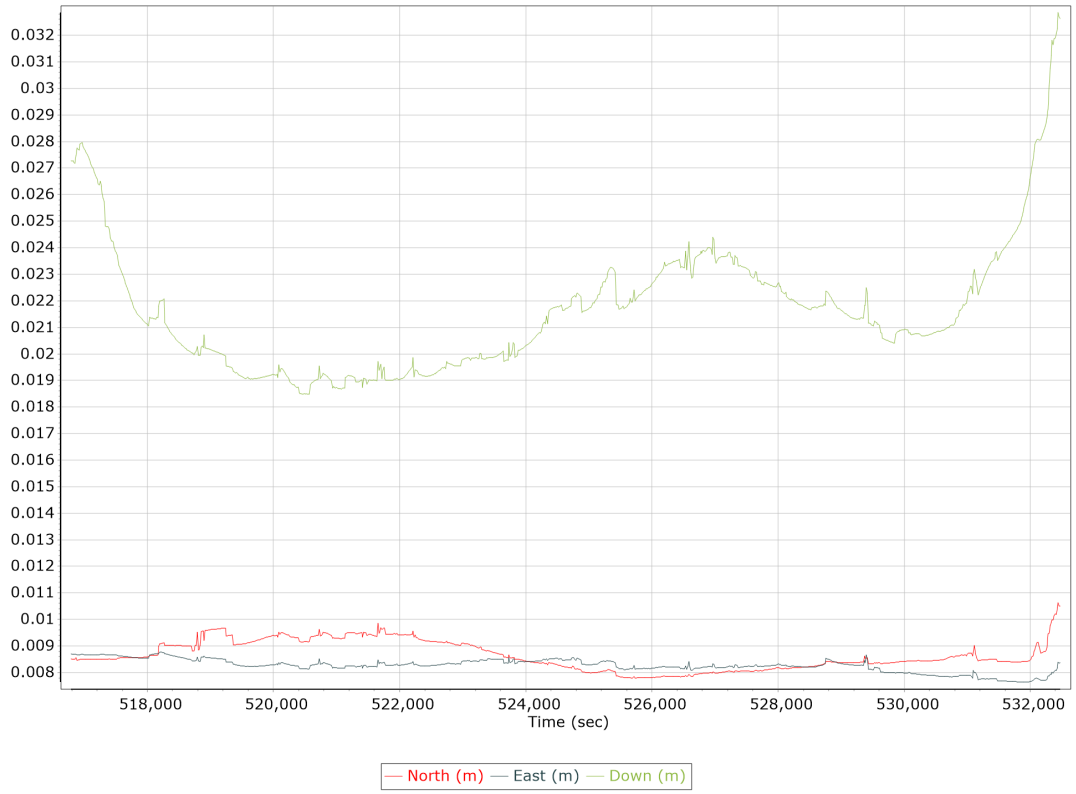
Forward/Reverse Separation



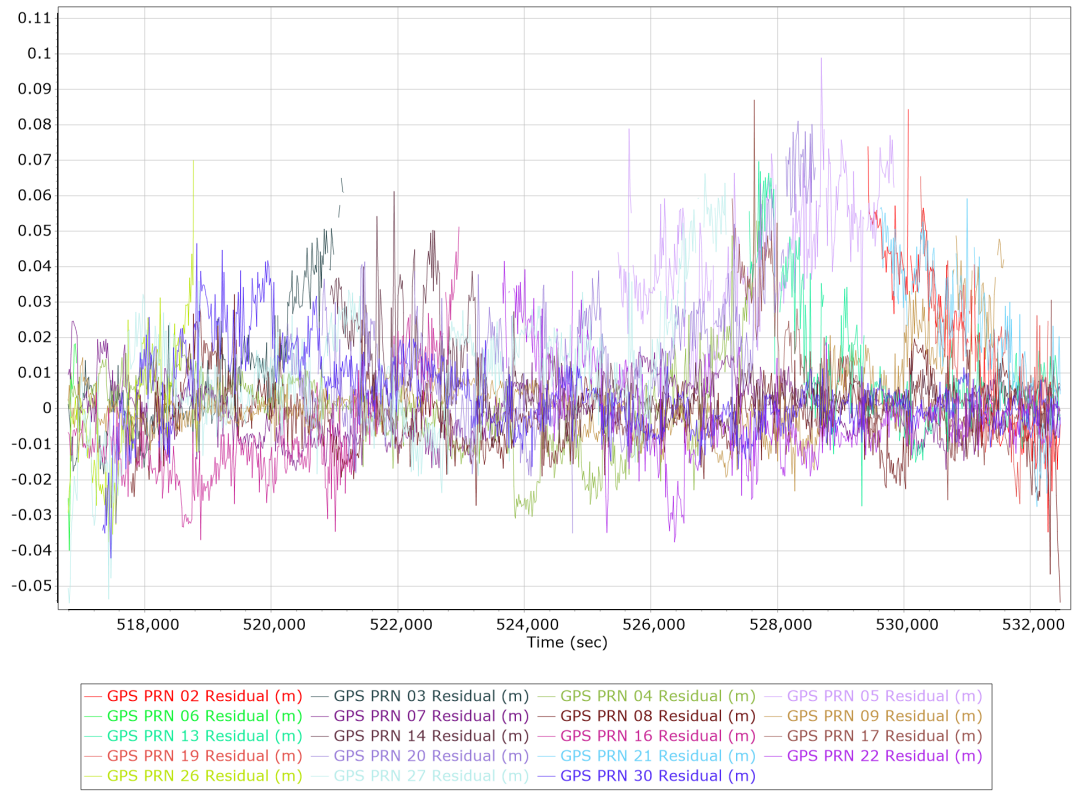
PDOP



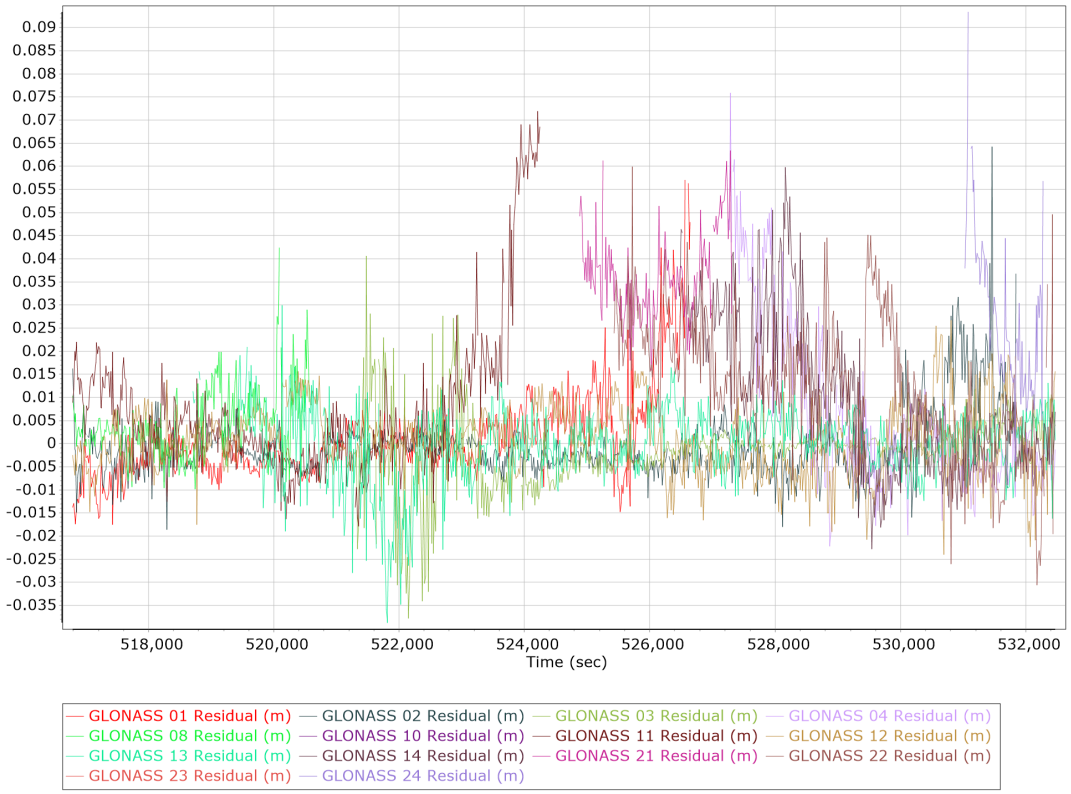
Estimated Position Accuracy



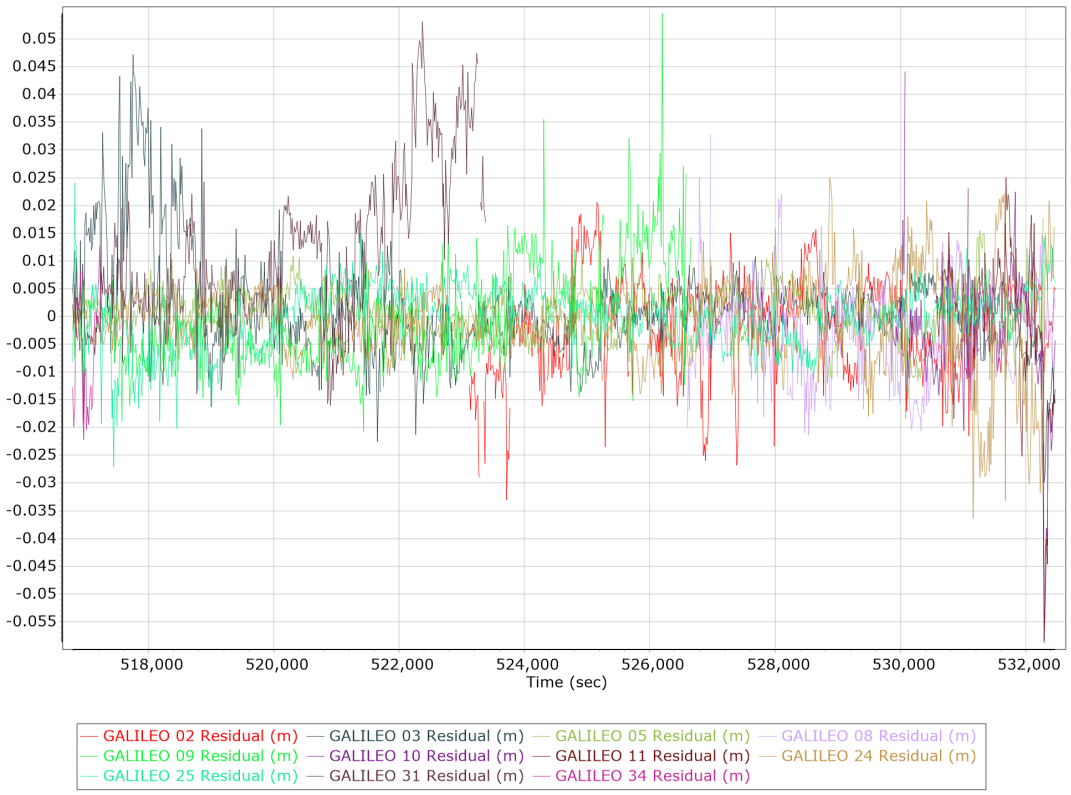
GPS Residuals



GLONASS Residuals



GALILEO Residuals



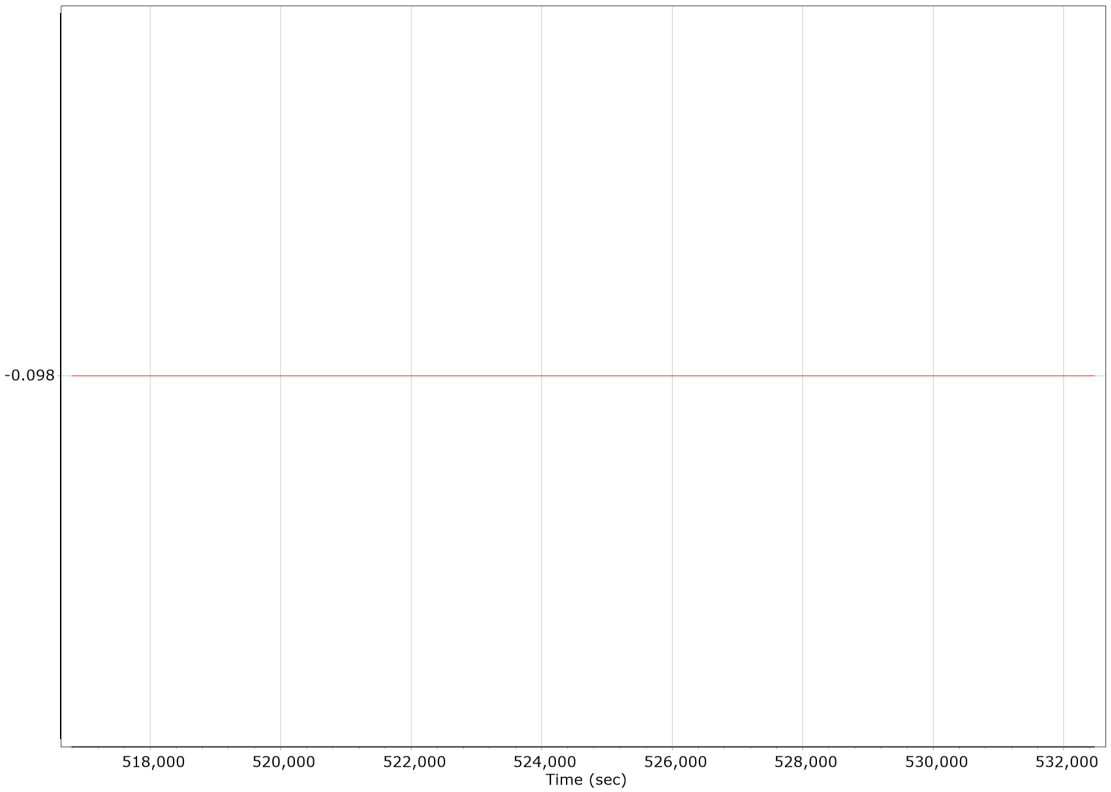
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	516489.000 (10/6/2023 11:28:09 PM)		
Processing end time	532475.000 (10/7/2023 3:54:35 AM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	-0.098	0.057	-1.221
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

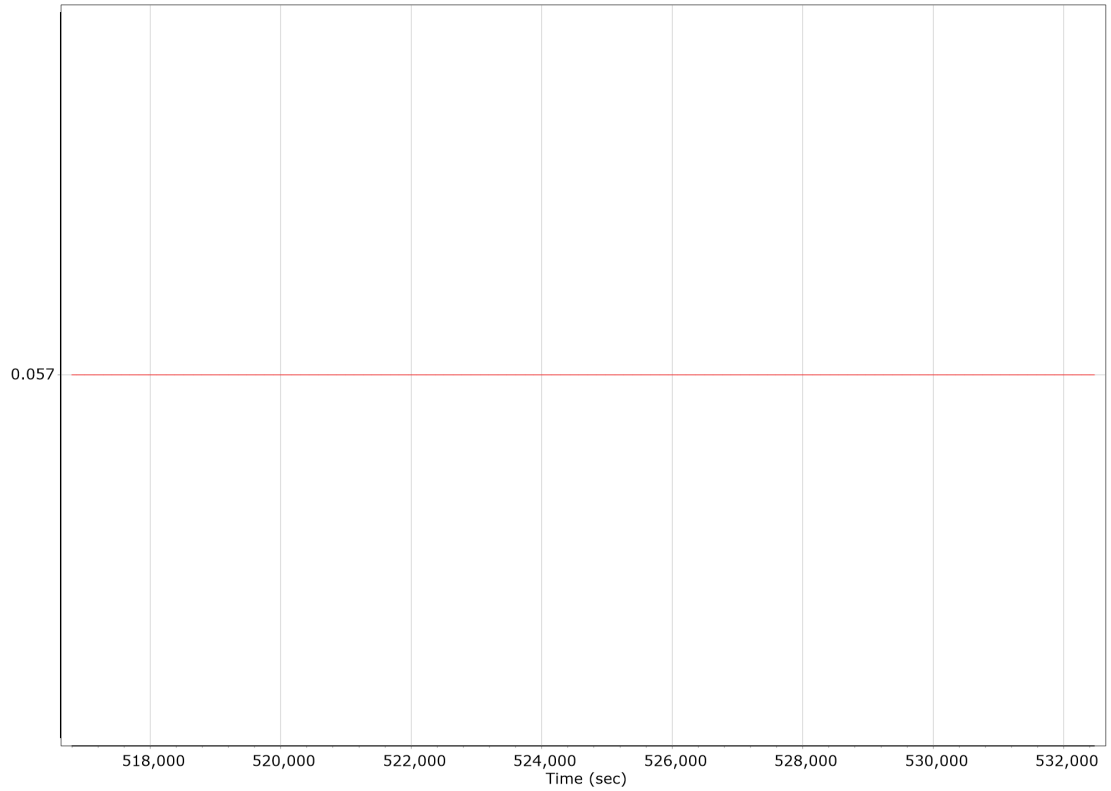
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

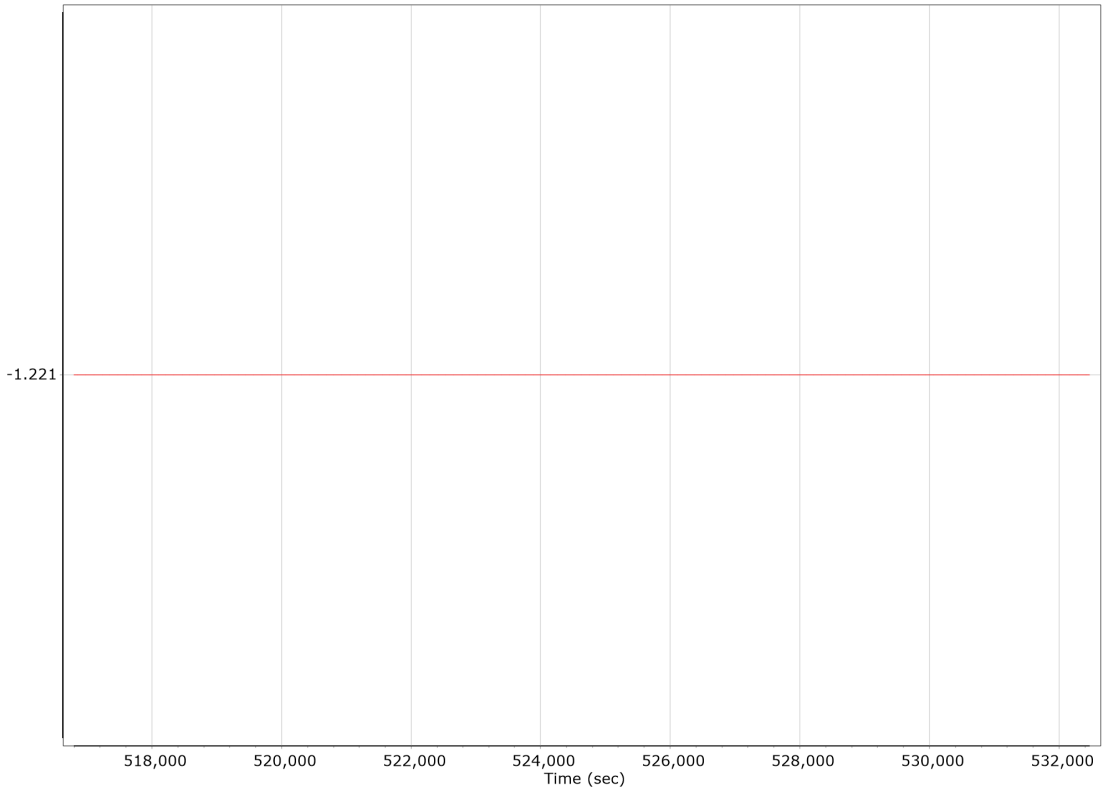
X Reference-Primary GNSS Lever Arm (m)



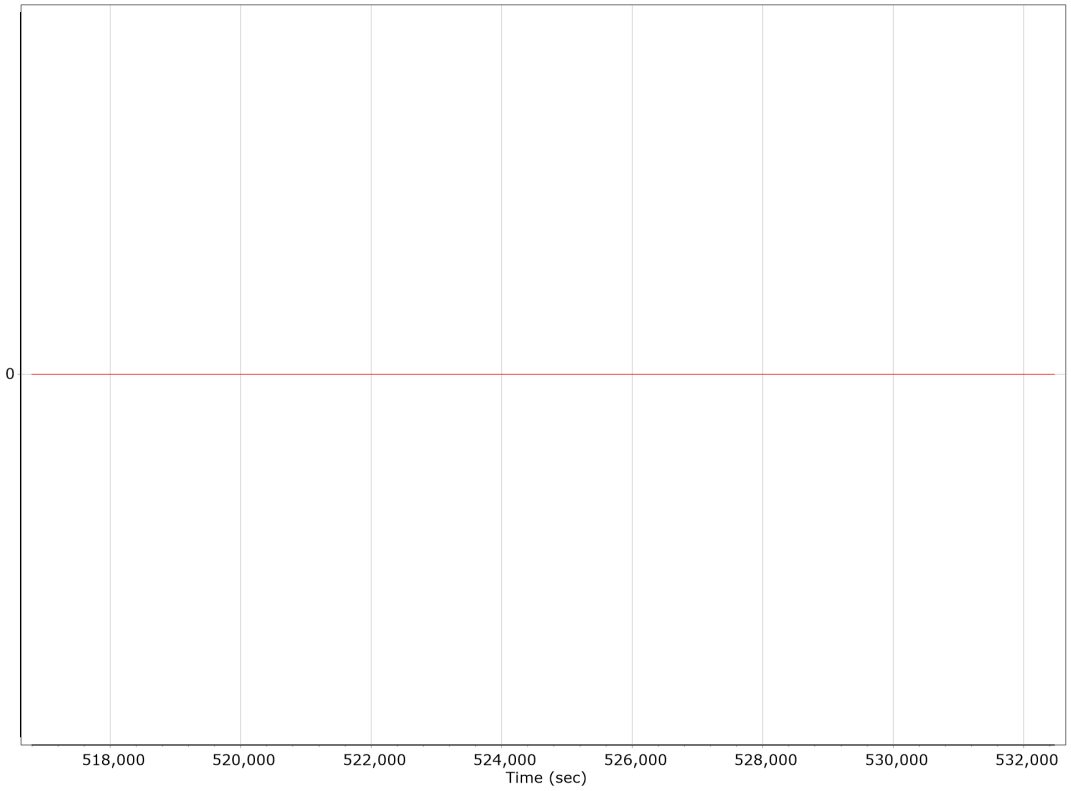
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



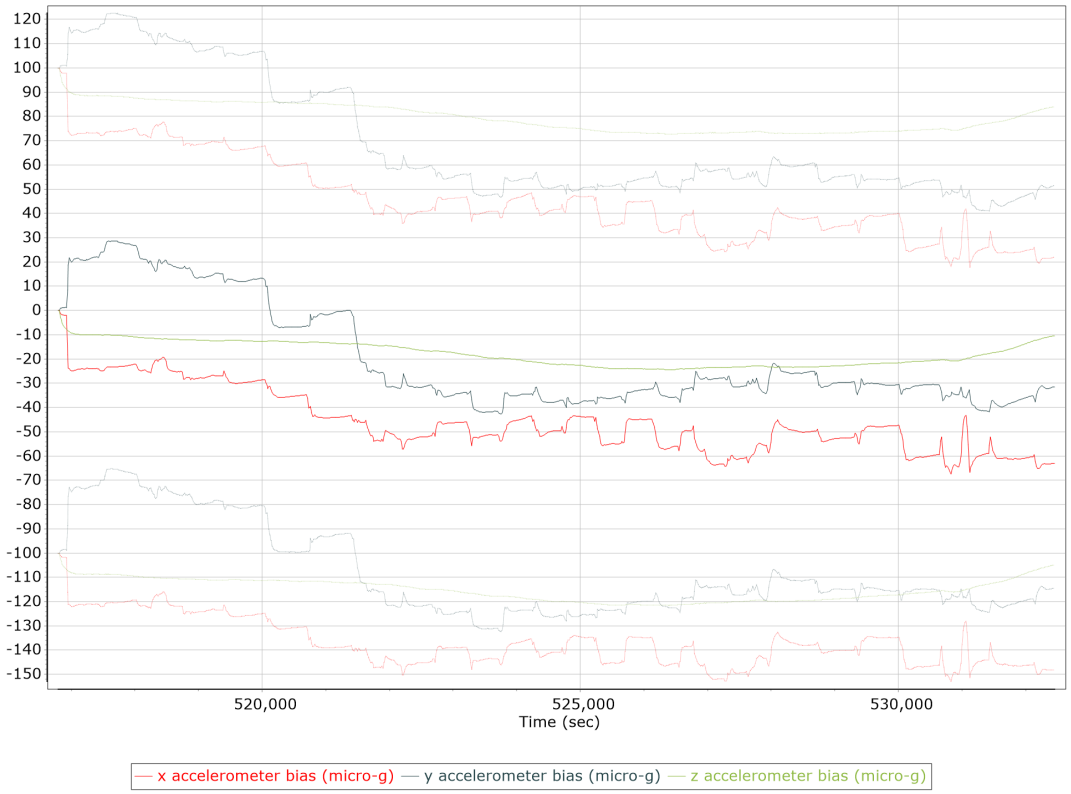
Reference-Primary GNSS Lever Arm Figure of Merit



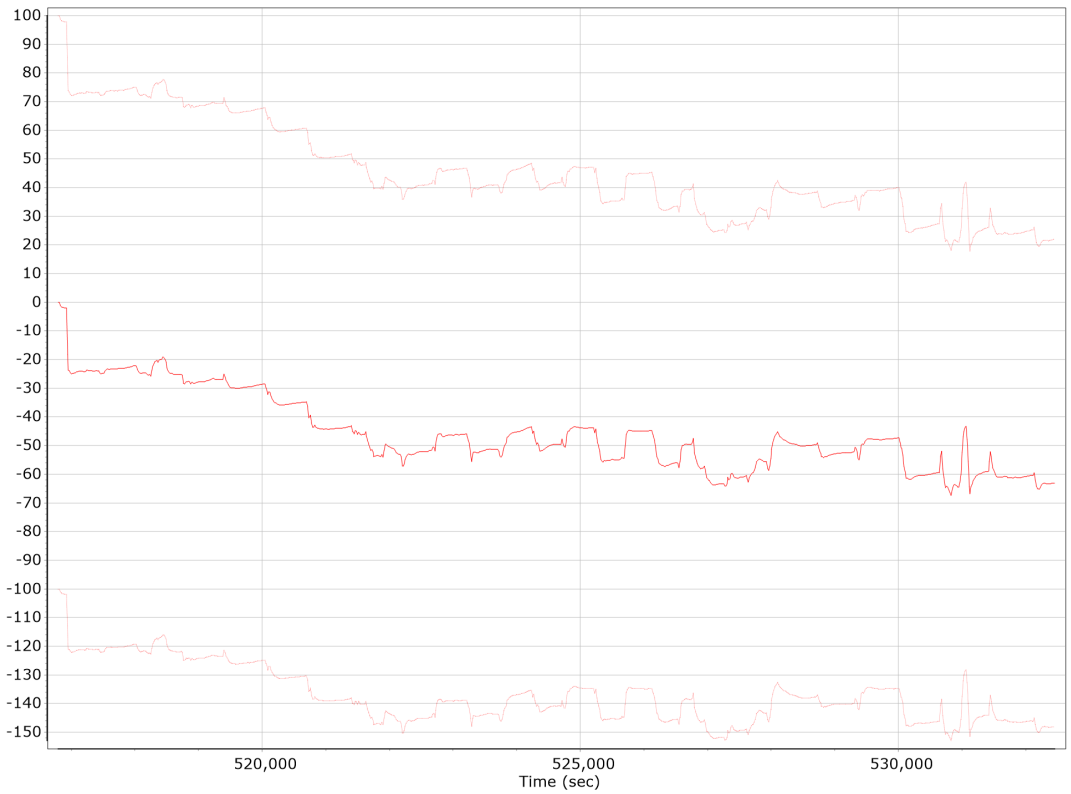
IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

Accelerometer Bias (micro-g)



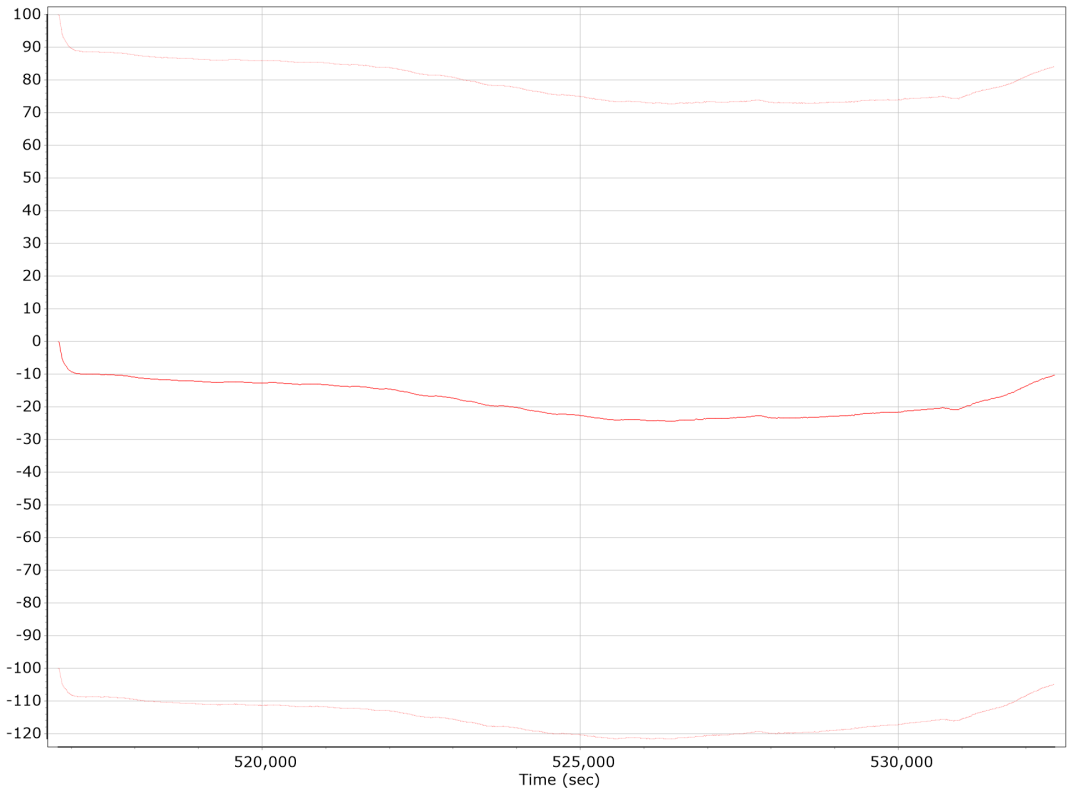
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



X Accelerometer Scale Error (ppm)



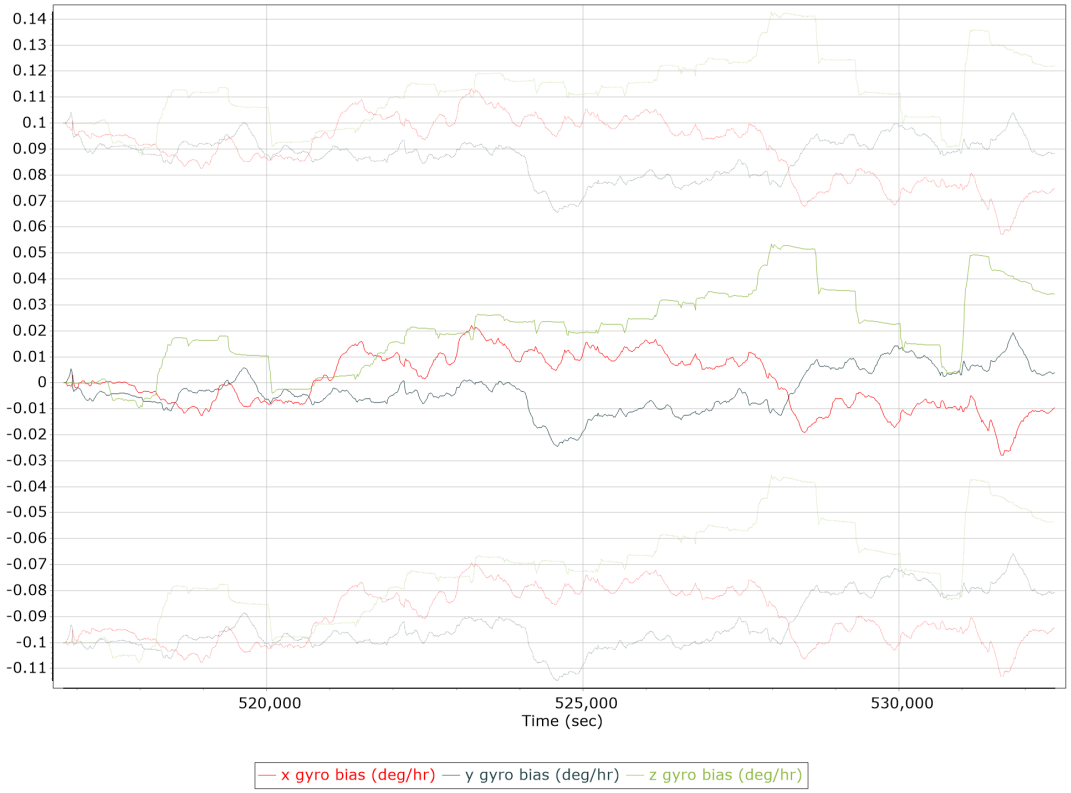
Y Accelerometer Scale Error (ppm)



Z Accelerometer Scale Error (ppm)



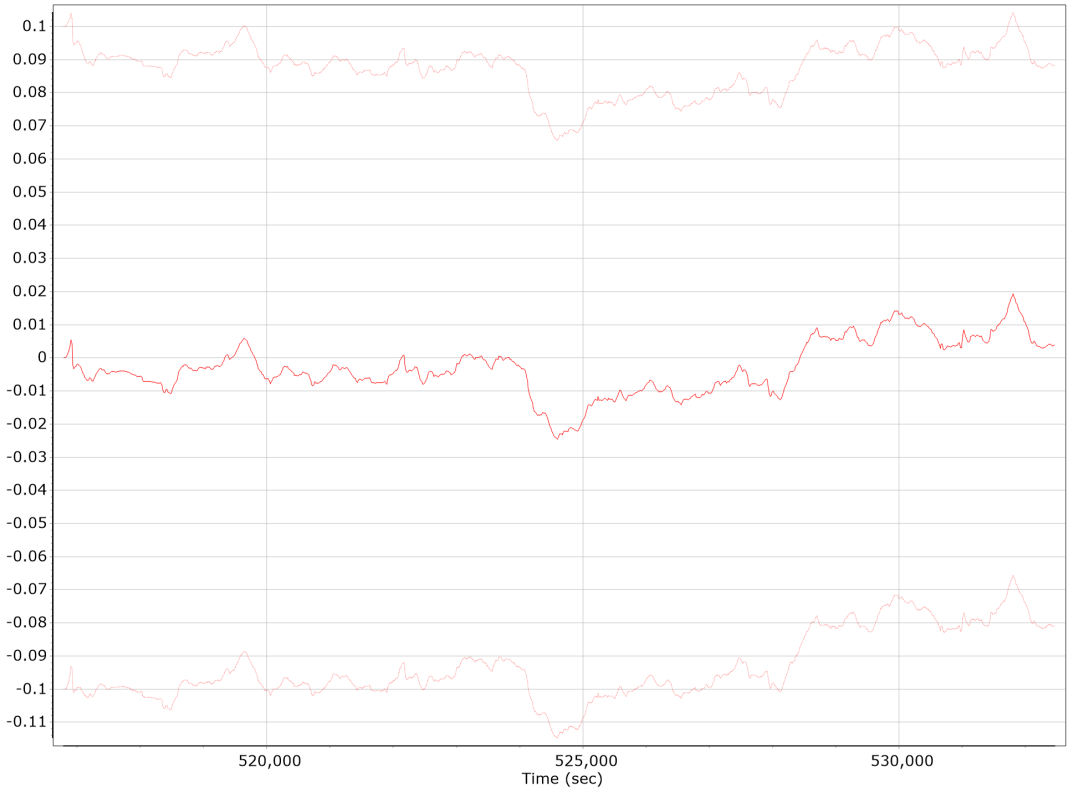
Gyro Bias (deg/h)



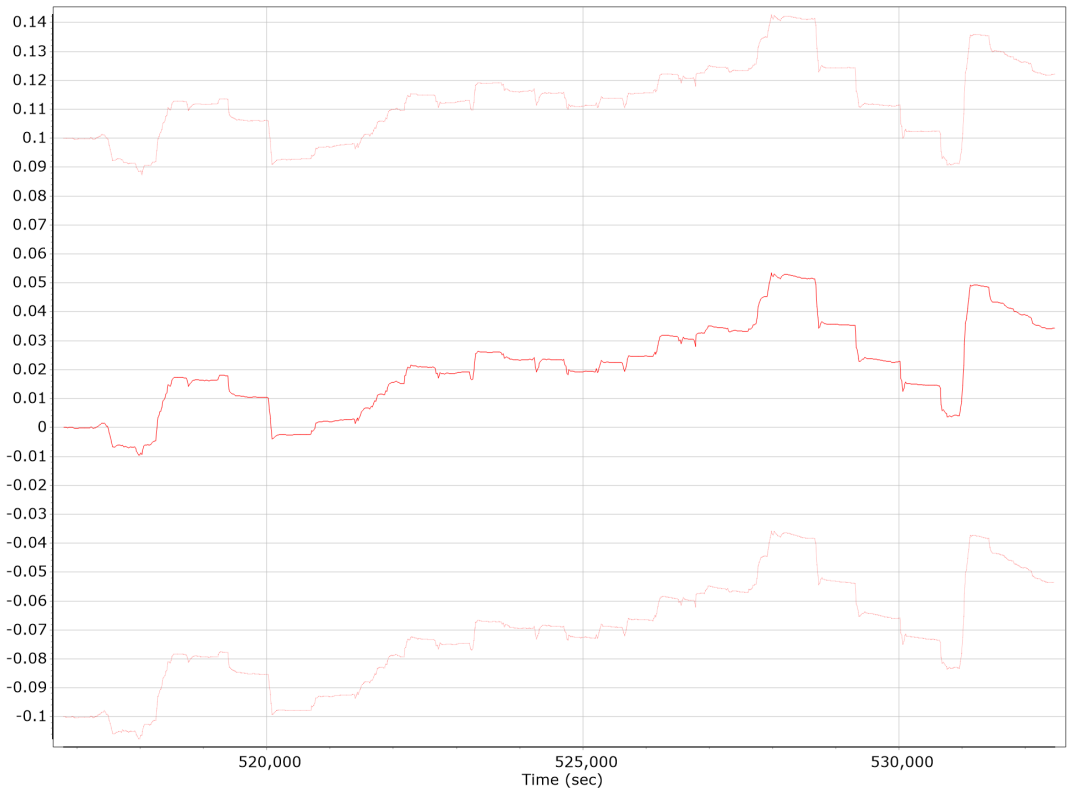
X Gyro Bias (deg/h)



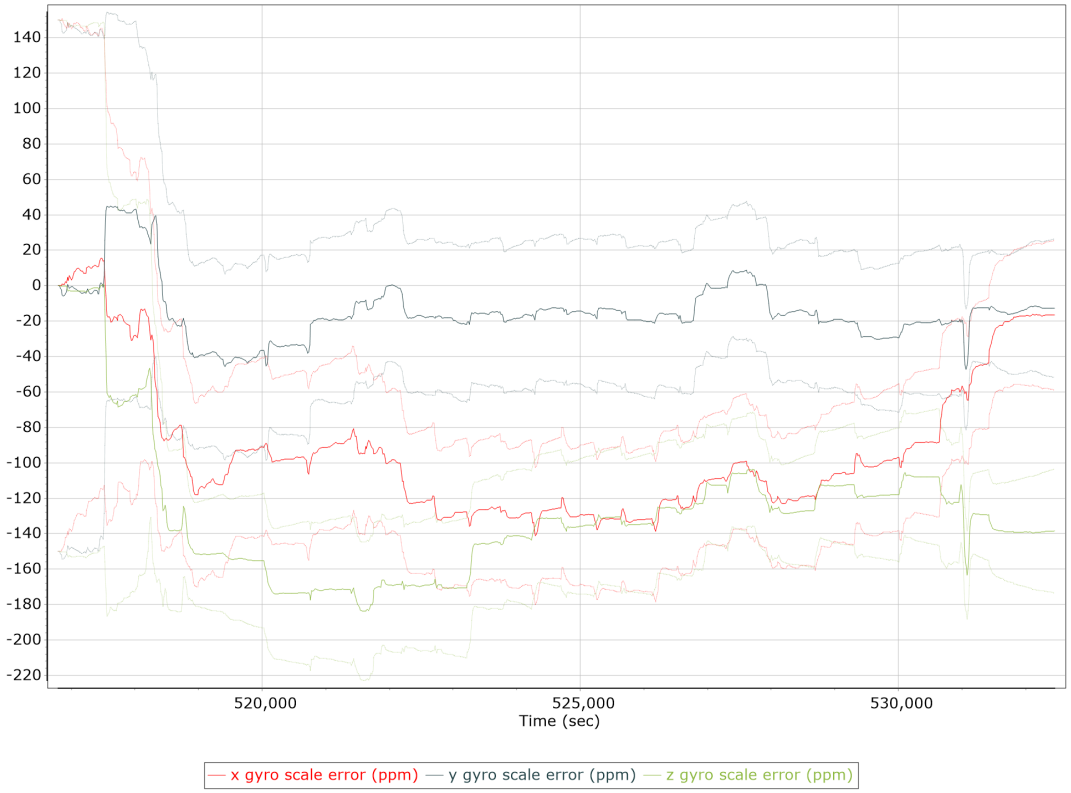
Y Gyro Bias (deg/h)



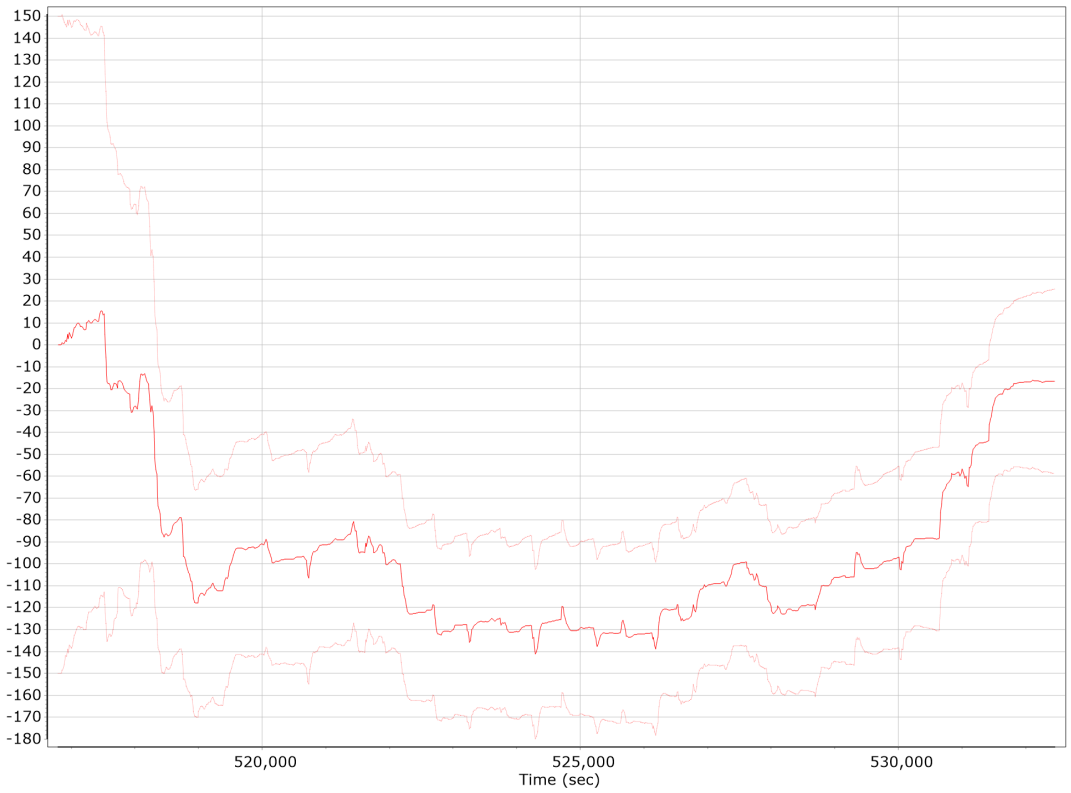
Z Gyro Bias (deg/h)



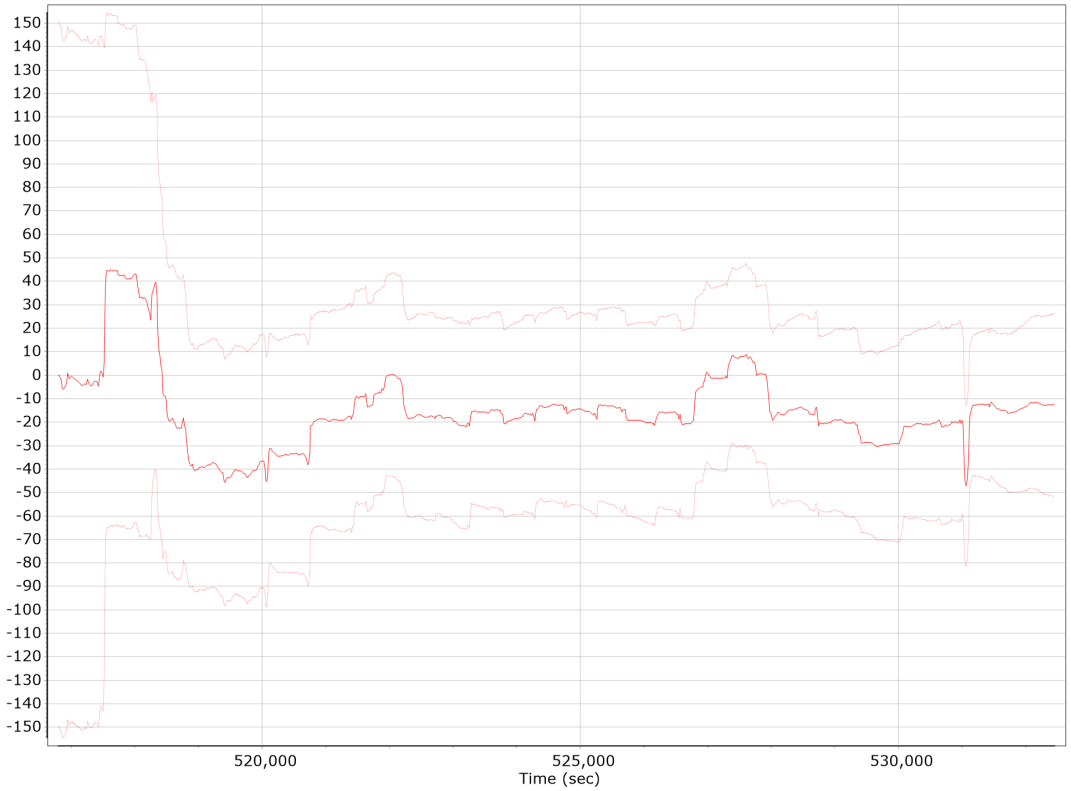
Gyro Scale Error (ppm)



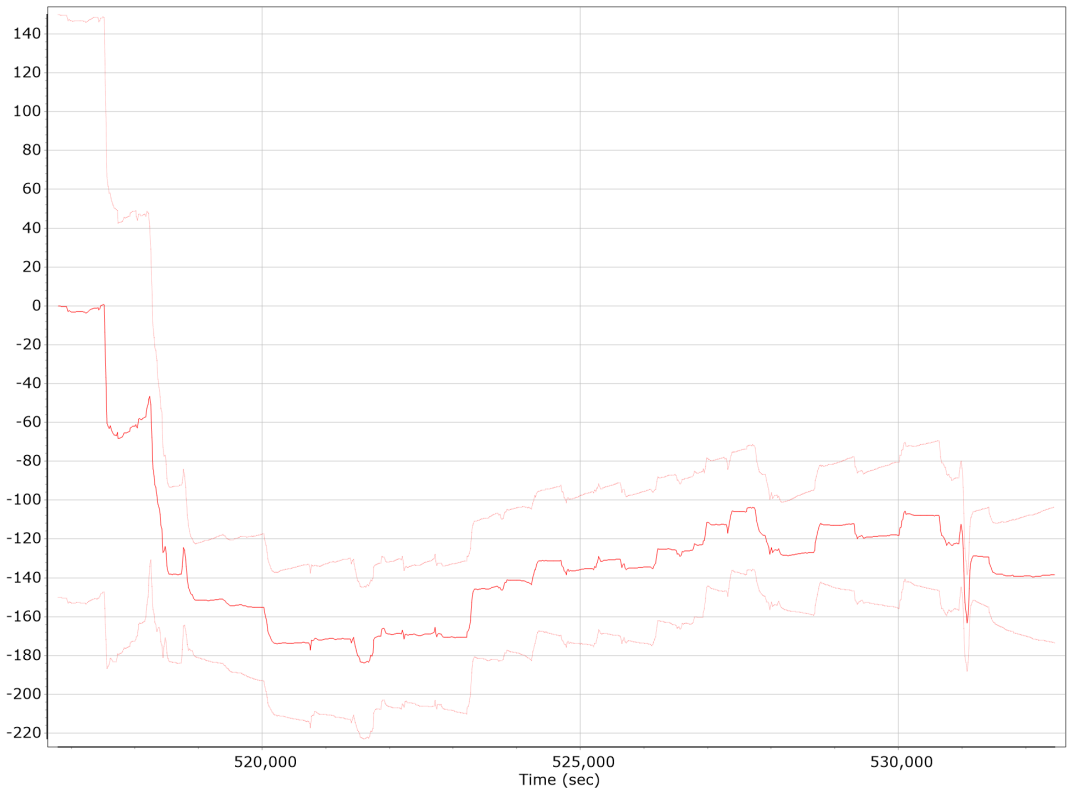
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)

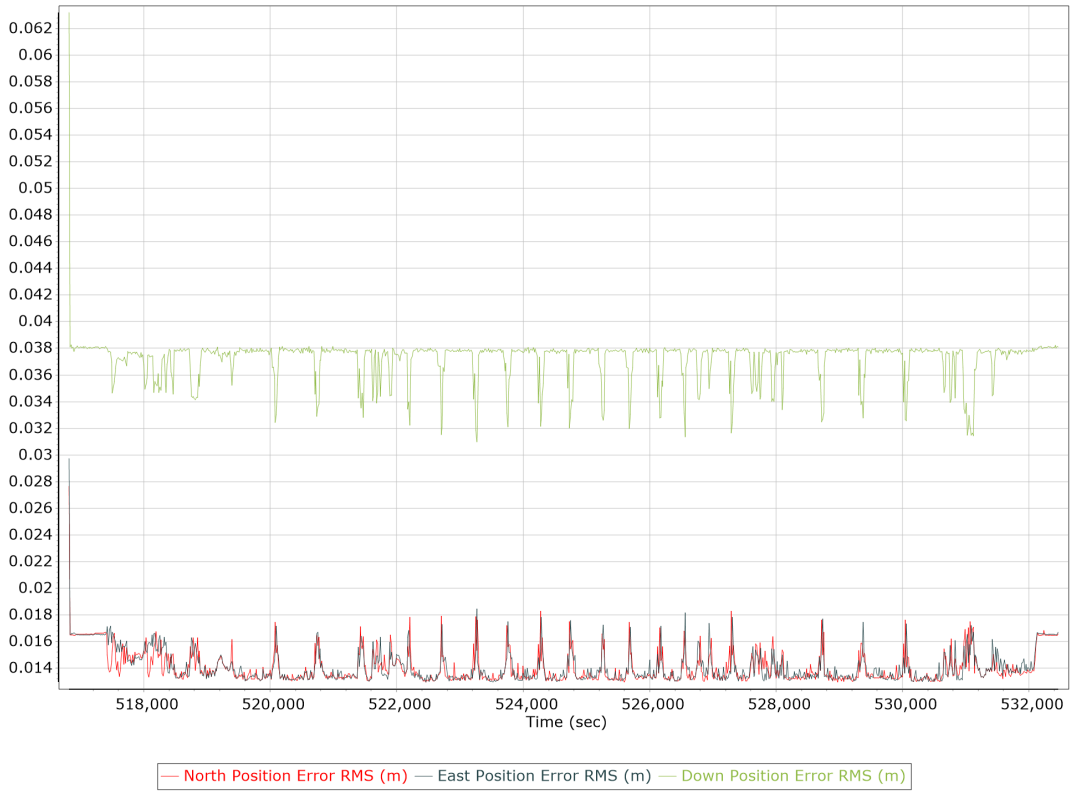


Z Gyro Scale Error (ppm)

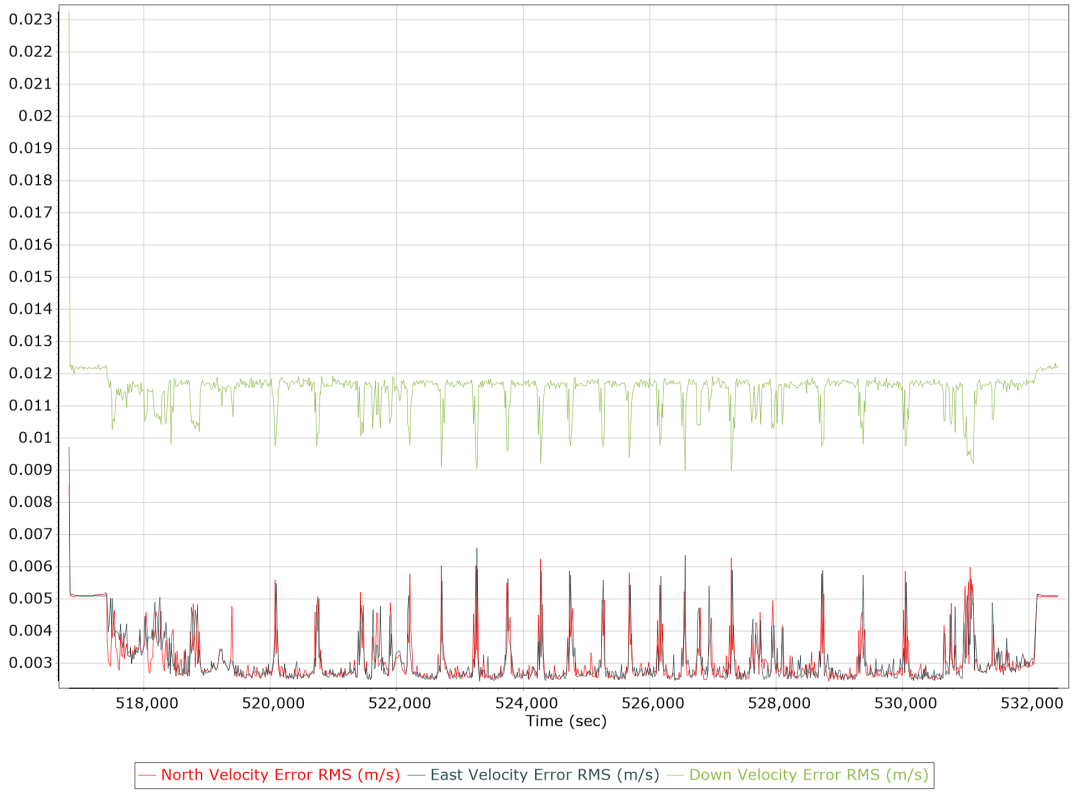


Smoothed Performance Metrics

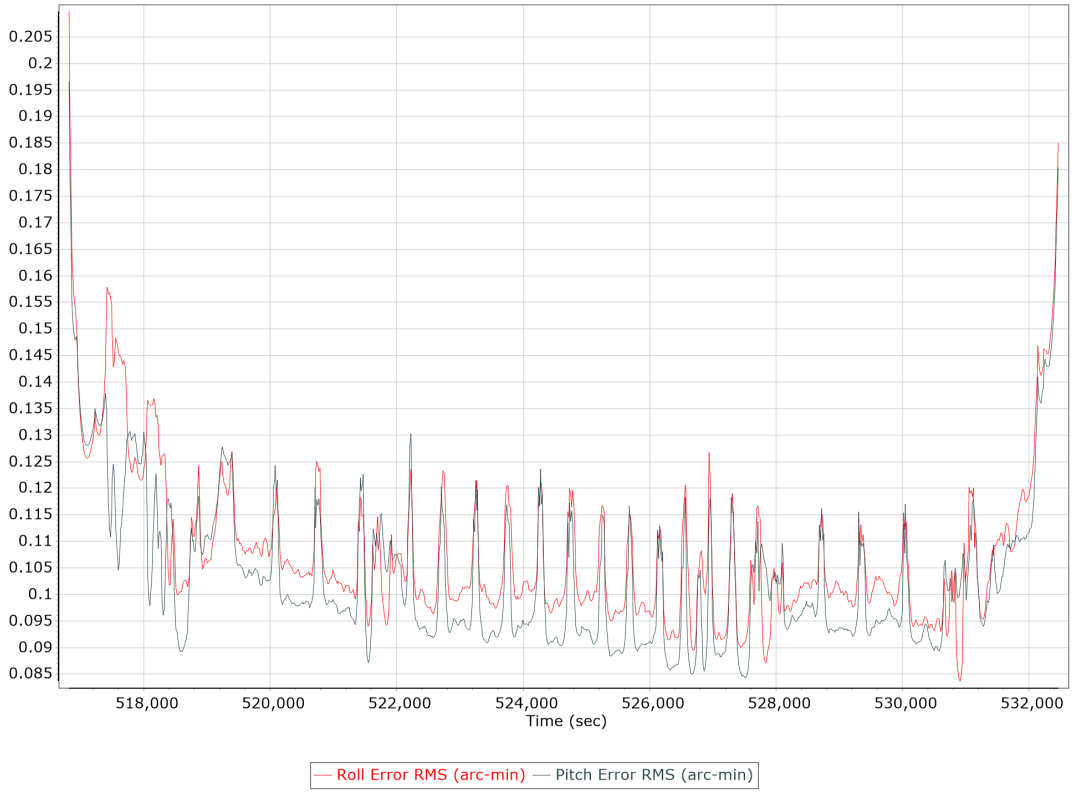
Position Error RMS (m)



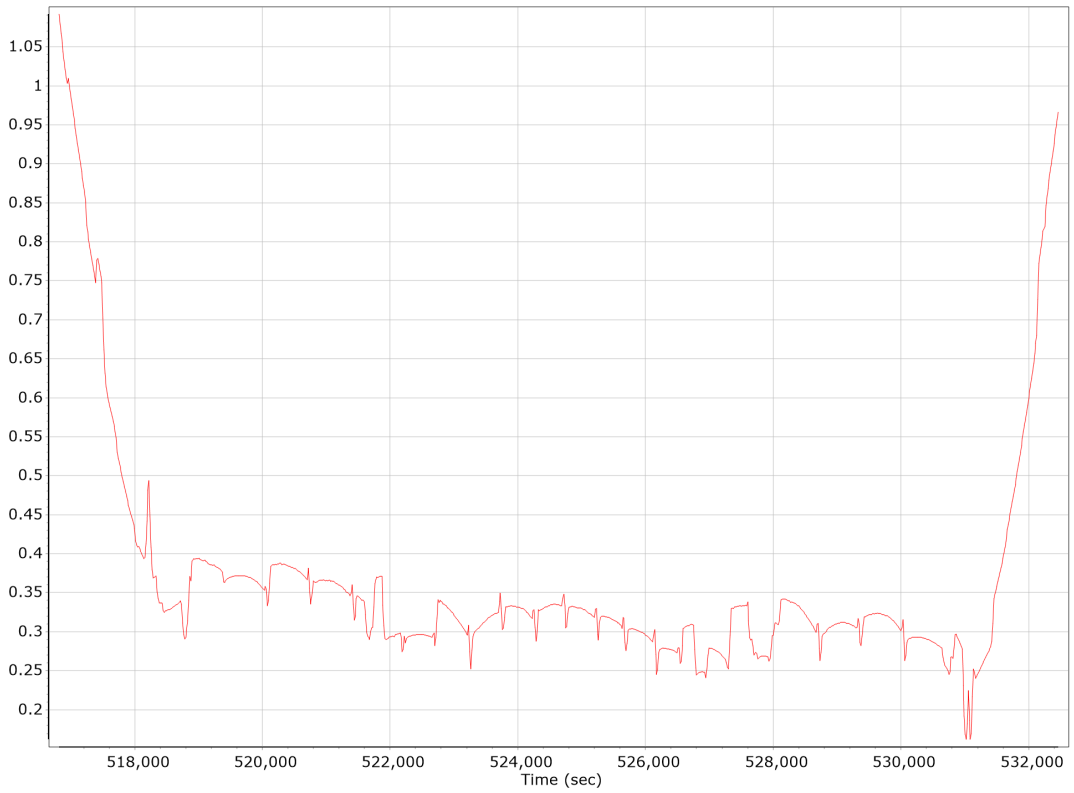
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

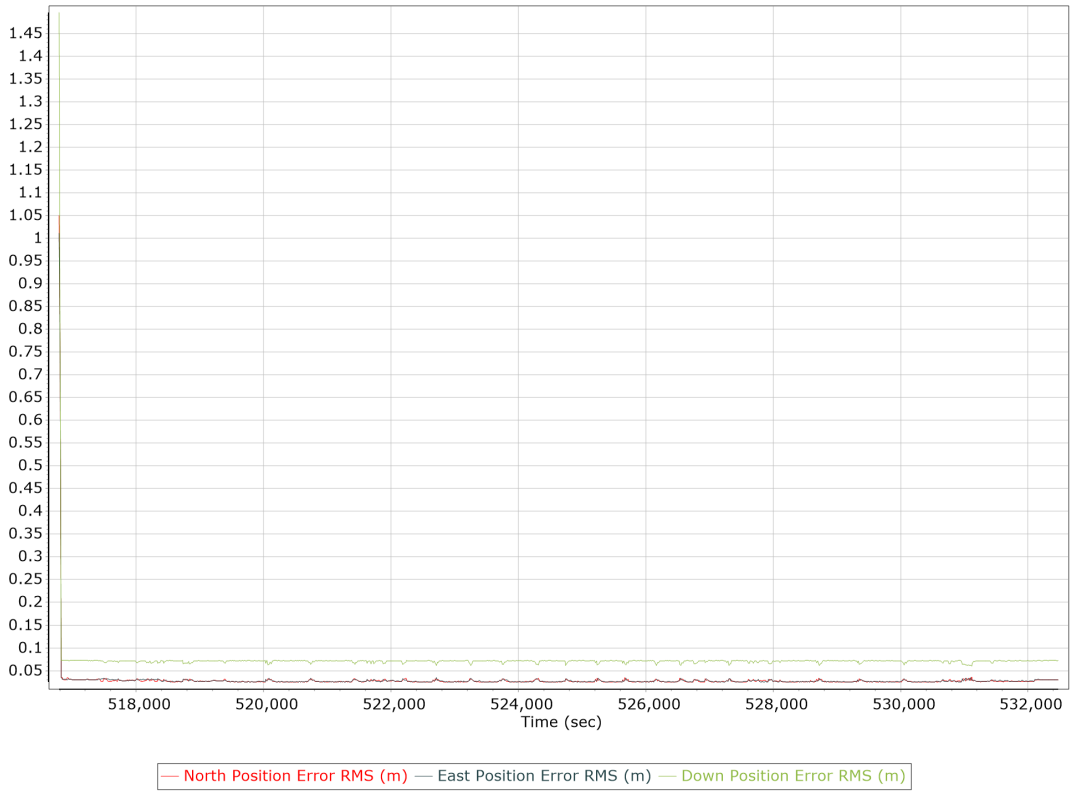


Heading Error RMS (arc-min)



Forward Processed Performance Metrics

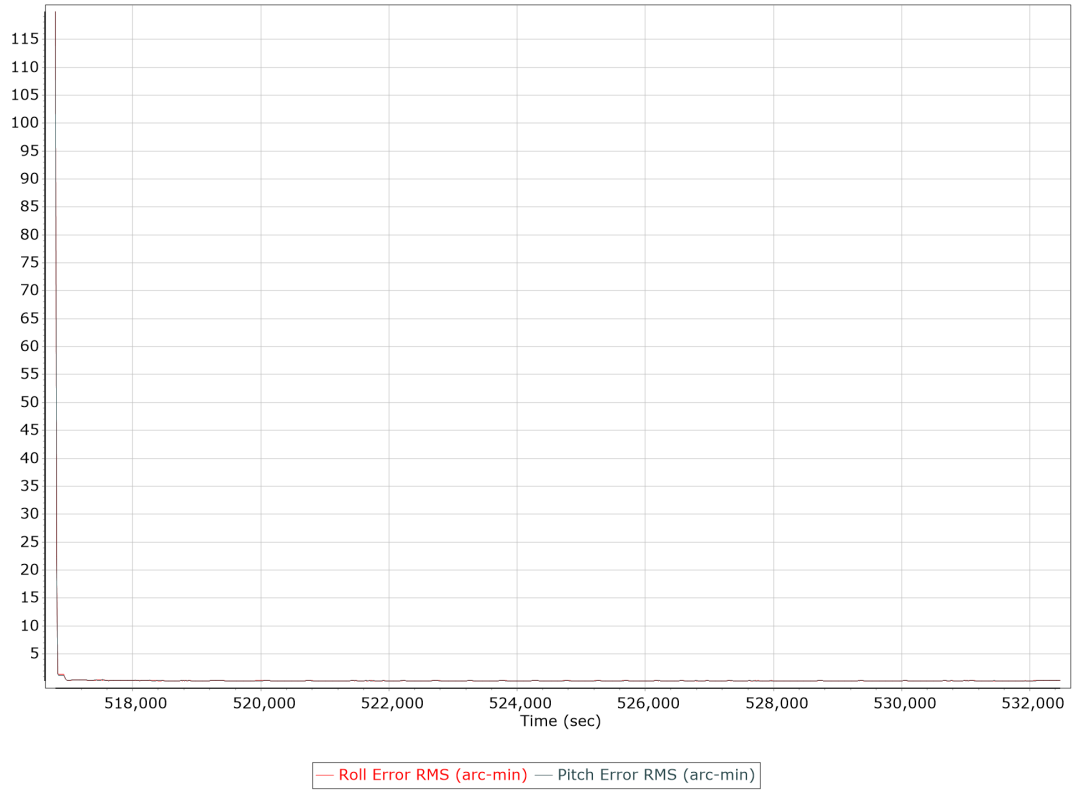
Position Error RMS (m)



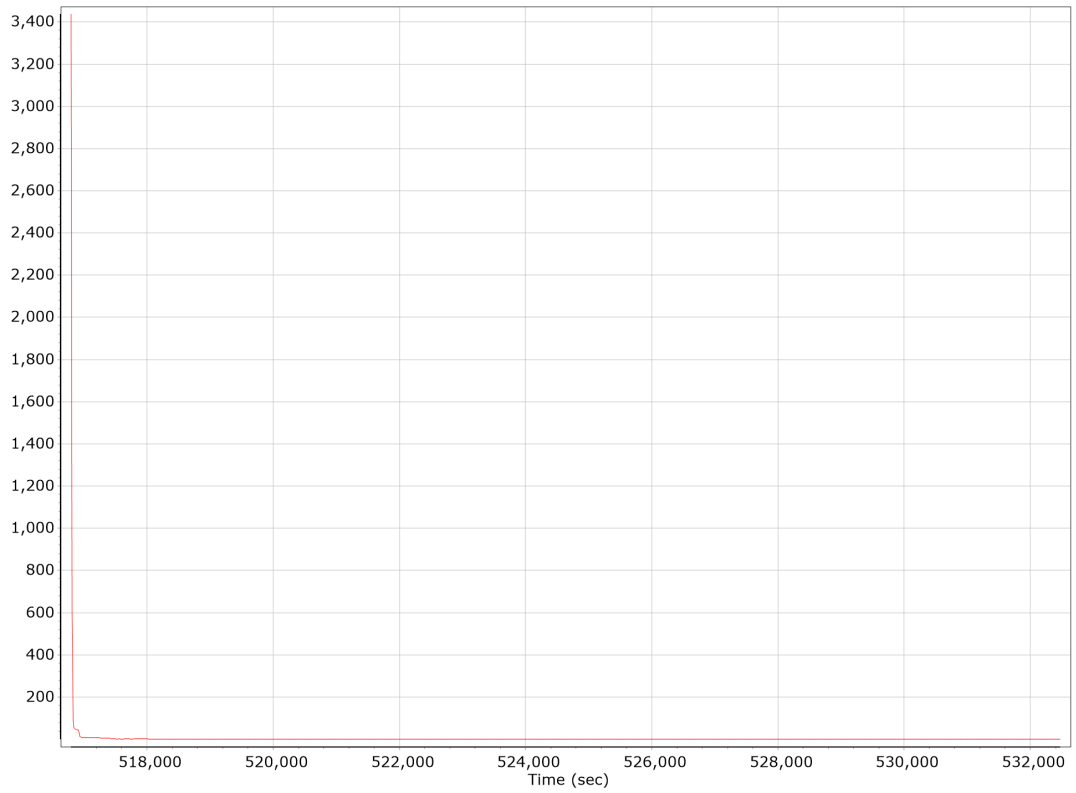
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

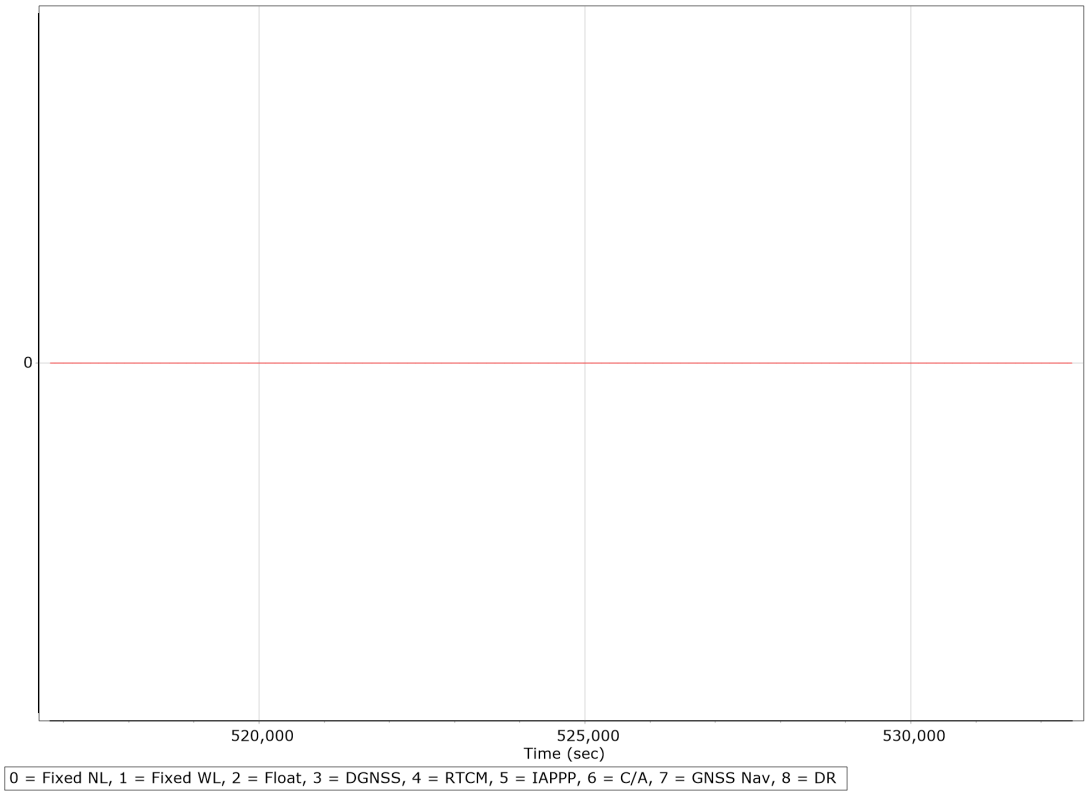


Heading Error RMS (arc-min)

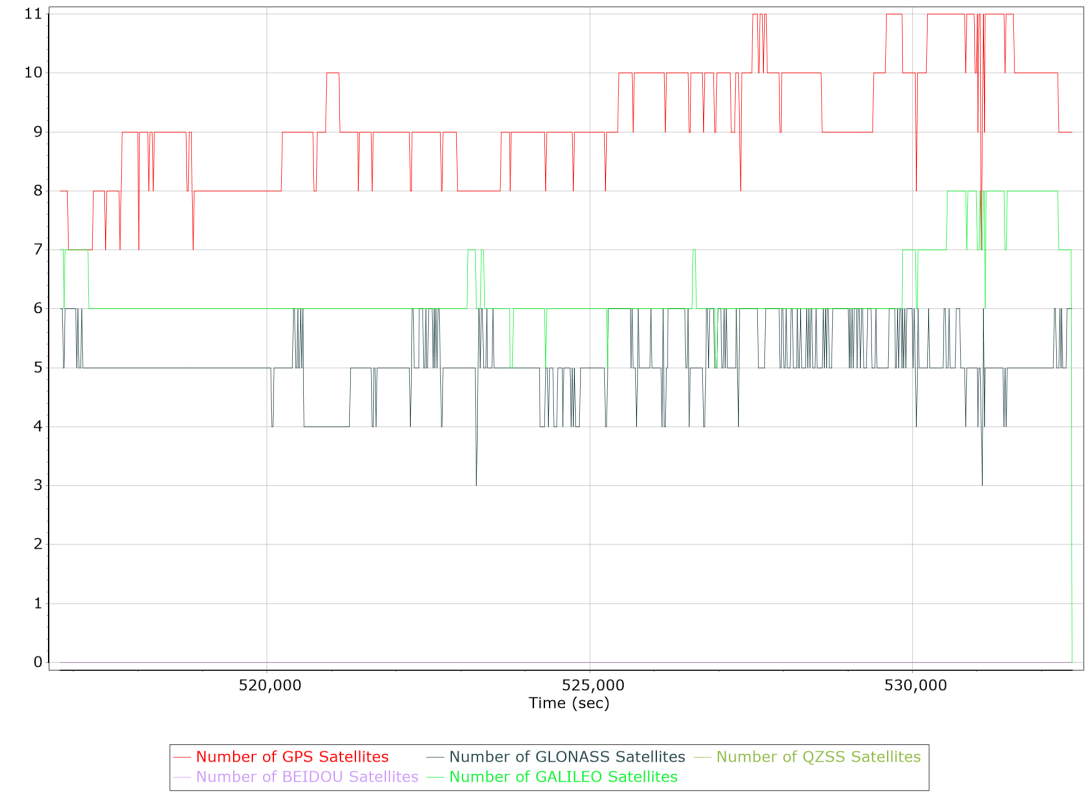


Forward Processed Solution Status

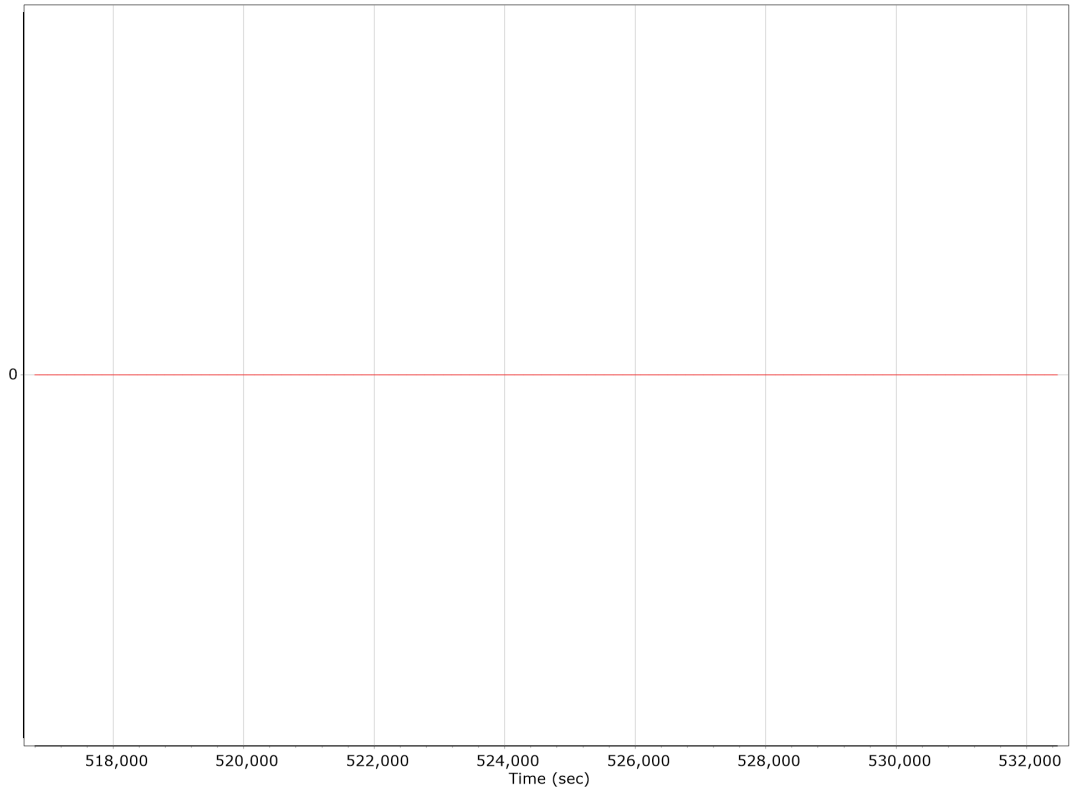
Processing Mode



Number of Satellites



Baseline Length



General Information

Mission Information

Project name	10152023A_4046
Processing date	2024-01-12 16:13:38
Mission date	2023-10-15 06:20:03
Mission duration	03:57:10.800
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N10762
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
231015_061943_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm2880.23g	GLONASS Broadcast Ephemeris
Ephm2880.23n	GPS Broadcast Ephemeris
IGS0OPSFIN_20232870000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232880000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232890000_01D_15M_ORB.SP3	GPS Precise Ephemeris

Output Files

Filename	File type
sbet_10152023A_4046.out	SBET Trajectory File

Rover Data Summary

First raw data file	231015_061943_INS-GPS_1.raw		
Last raw data file	231015_061943_INS-GPS_1.raw		
Start GPS week	2284		
Start time	22784.869 (10/15/2023 6:19:44 AM)		
End time	37015.669 (10/15/2023 10:16:55 AM)		
Start of fine alignment	22899.886 (10/15/2023 6:21:39 AM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	0.000	0.000	0.000
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

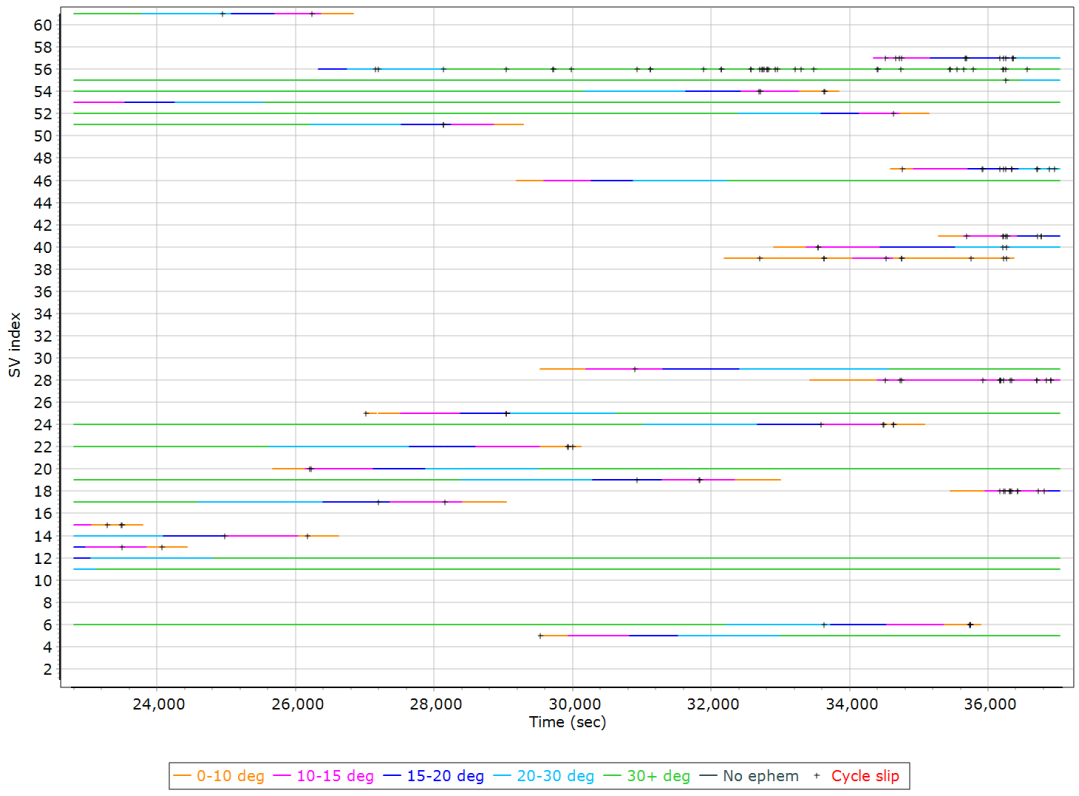
Rover Data QC

Raw IMU Import QC Summary

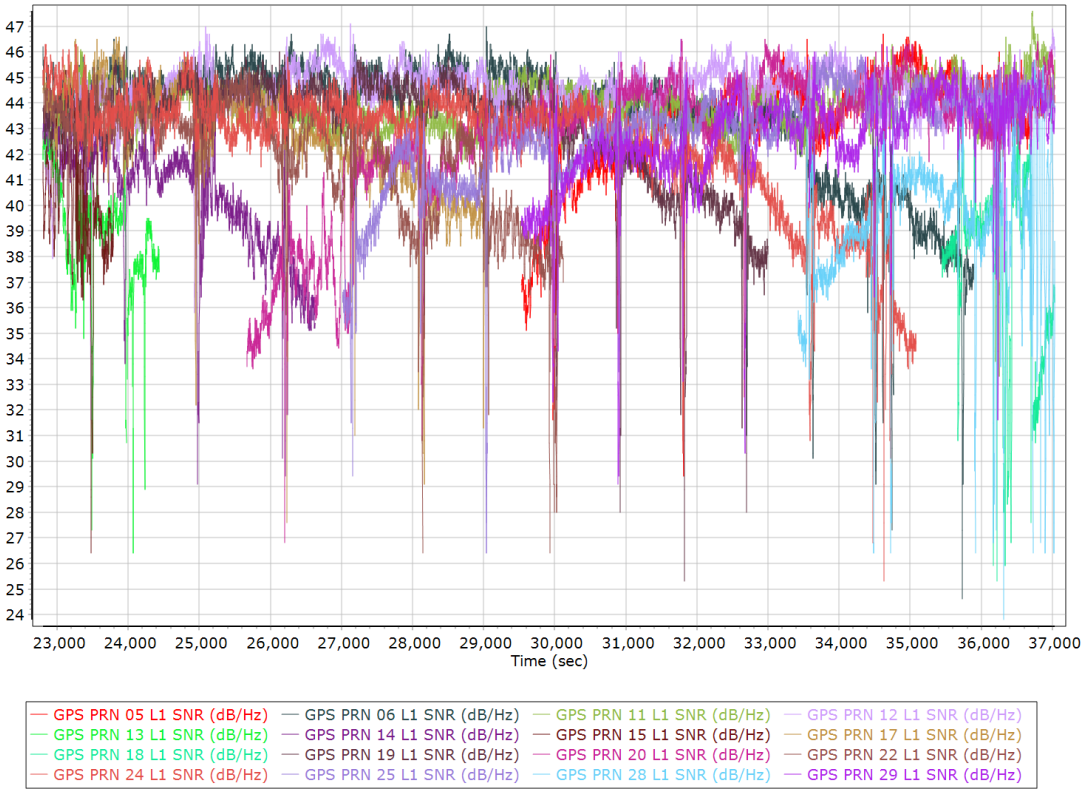
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_10152023A_4046.log
IMU Records Processed	2845806
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

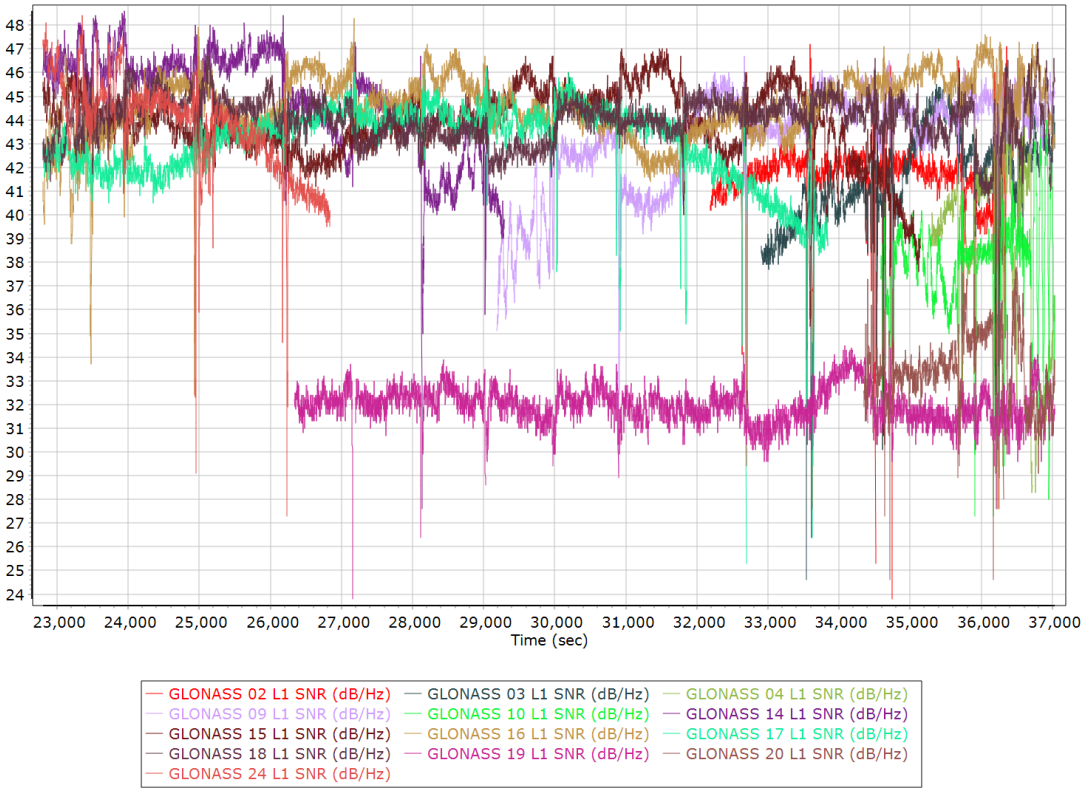
GPS/GLONASS L1 Satellite Lock/Elevation



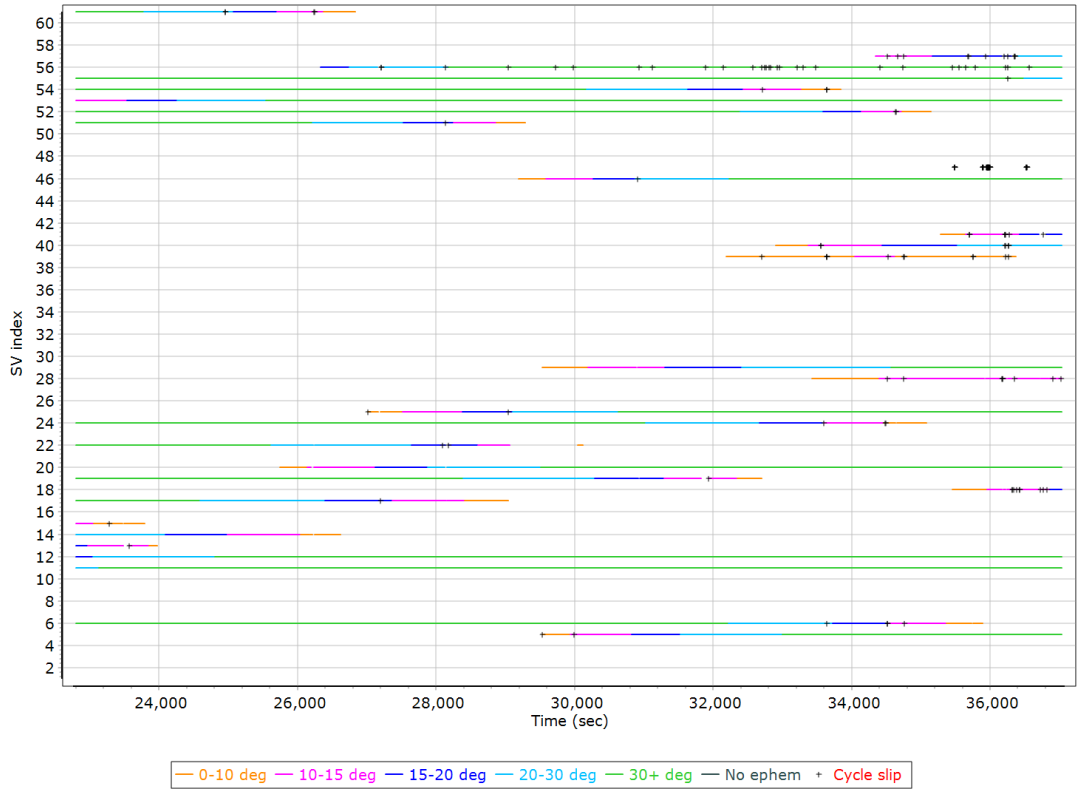
GPS L1 SNR



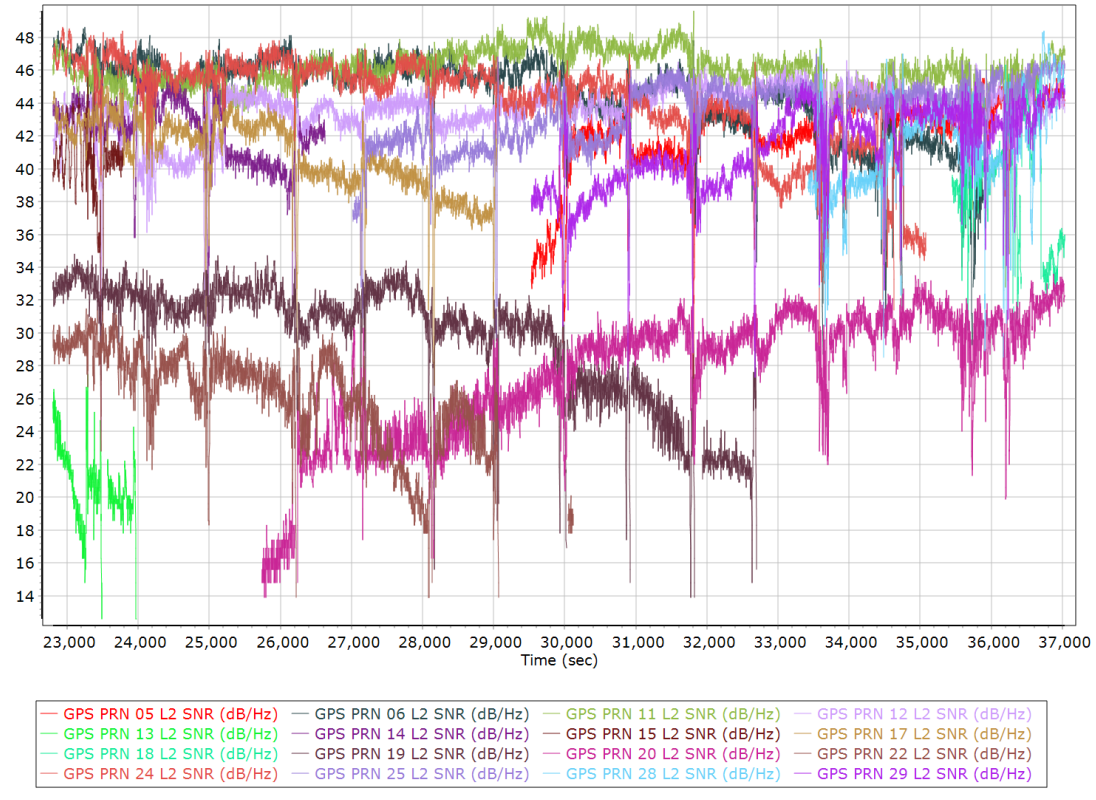
GLONASS L1 SNR



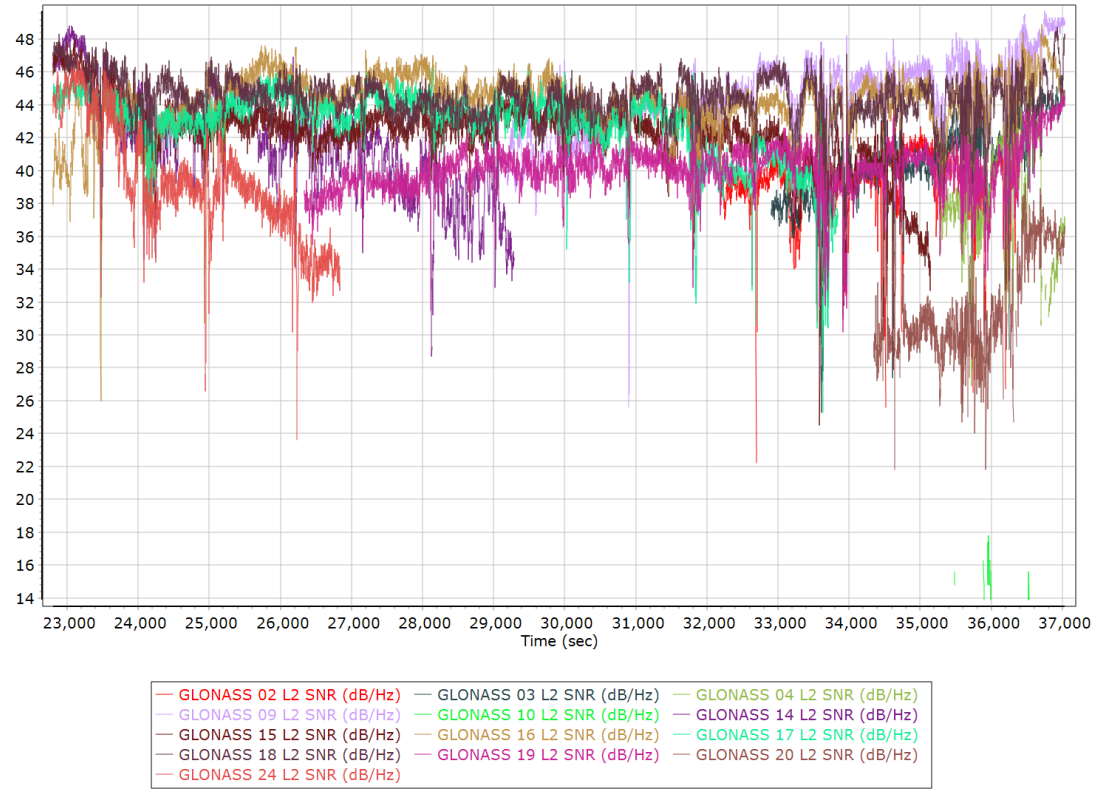
GPS/GLONASS L2 Satellite Lock/Elevation



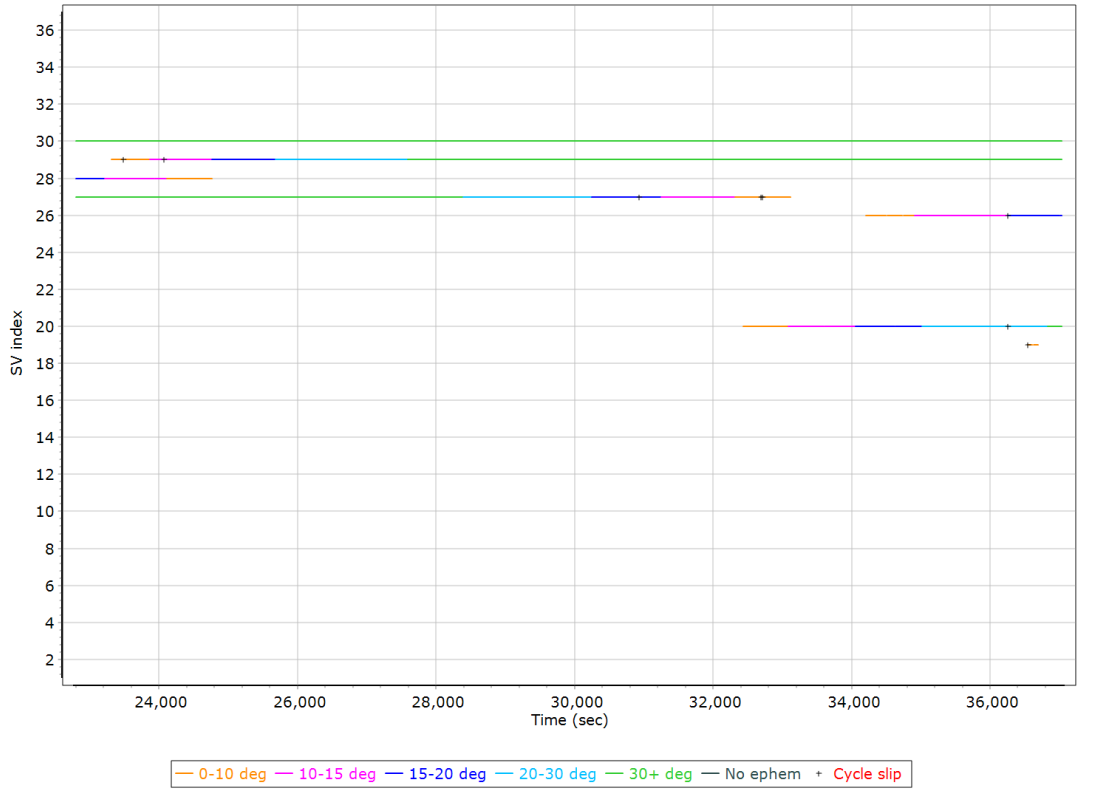
GPS L2 SNR



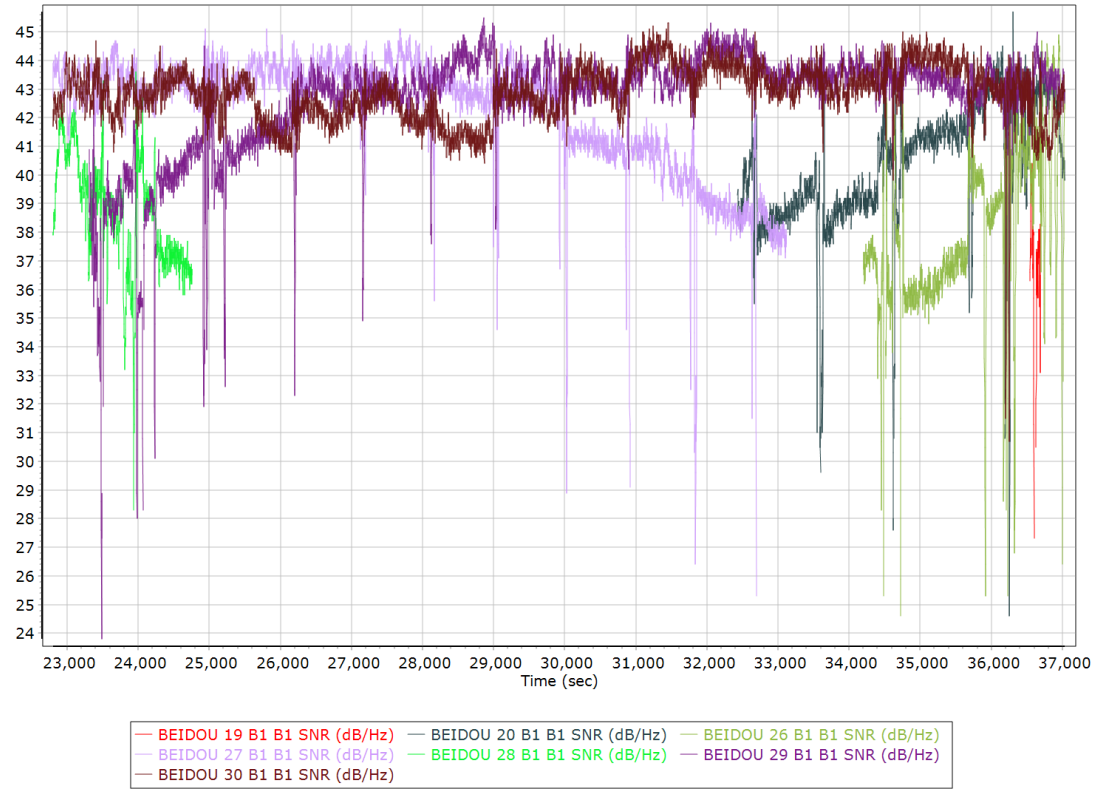
GLONASS L2 SNR



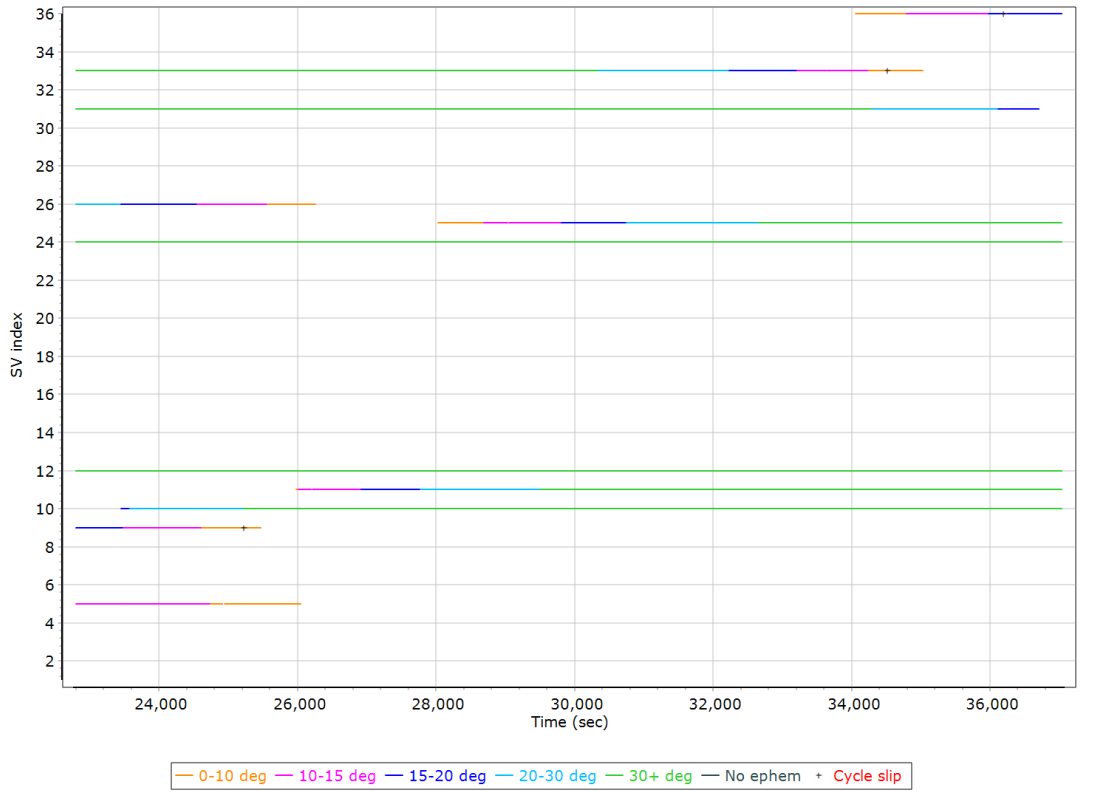
BEIDOU Satellite Lock/Elevation



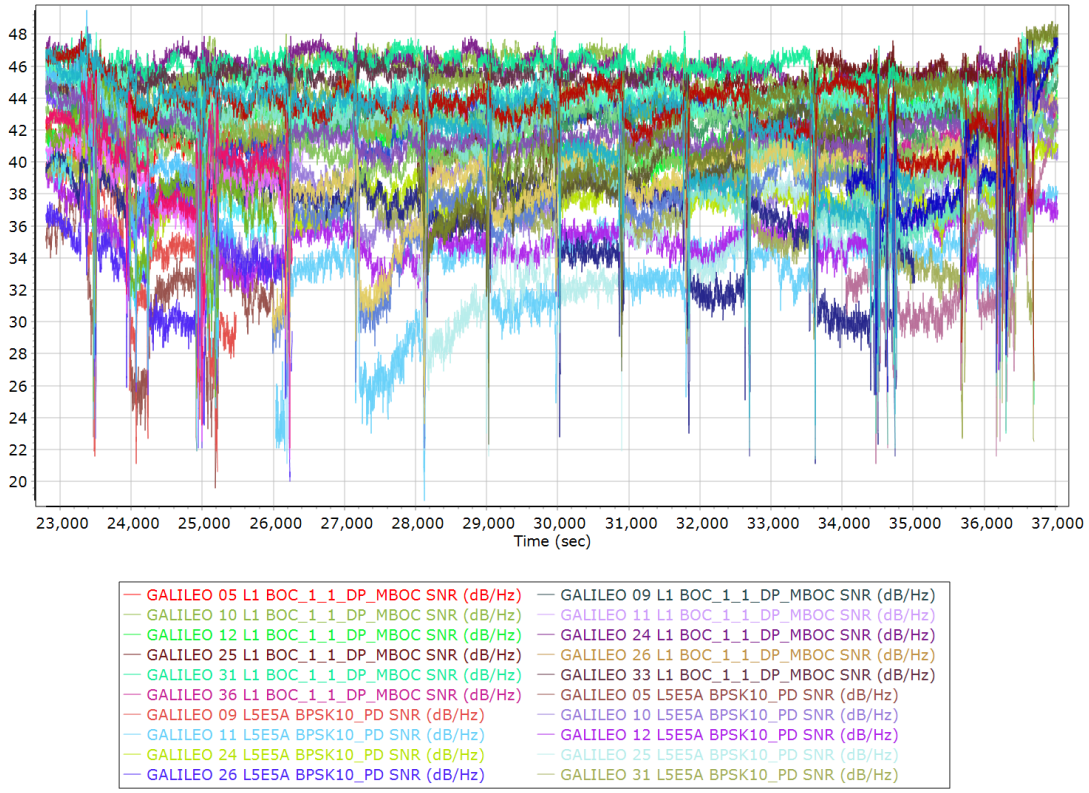
BEIDOU SNR



GALILEO Satellite Lock/Elevation

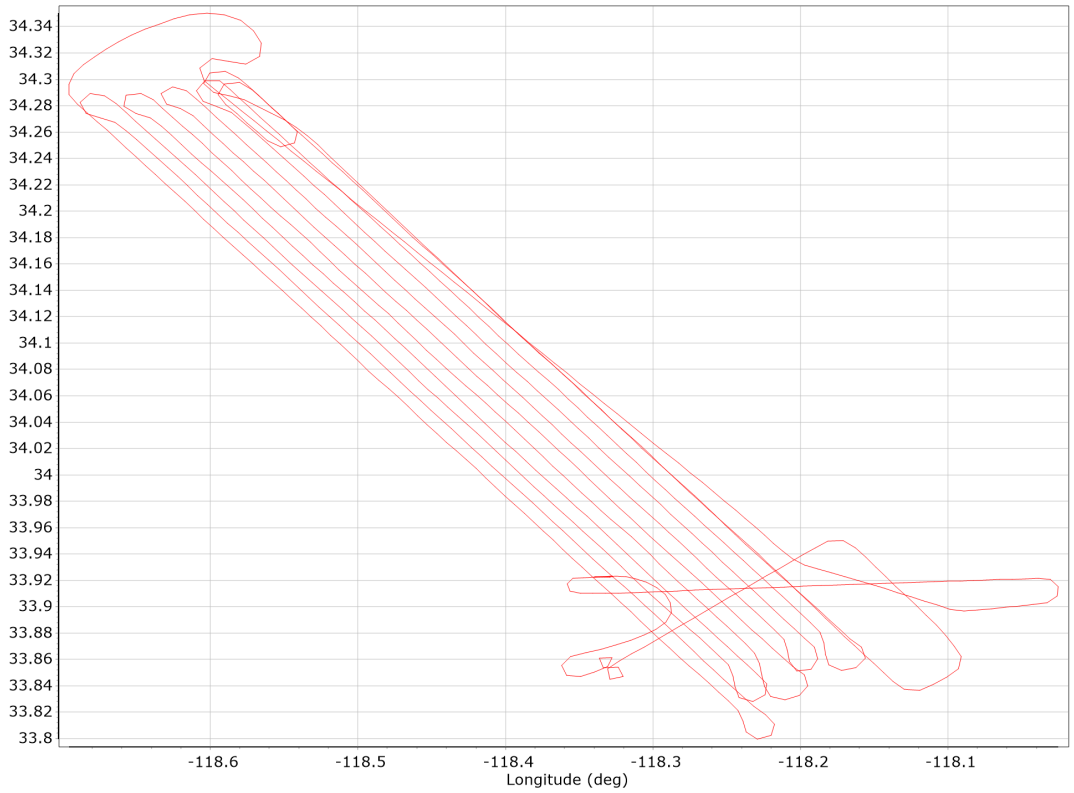


GALILEO SNR

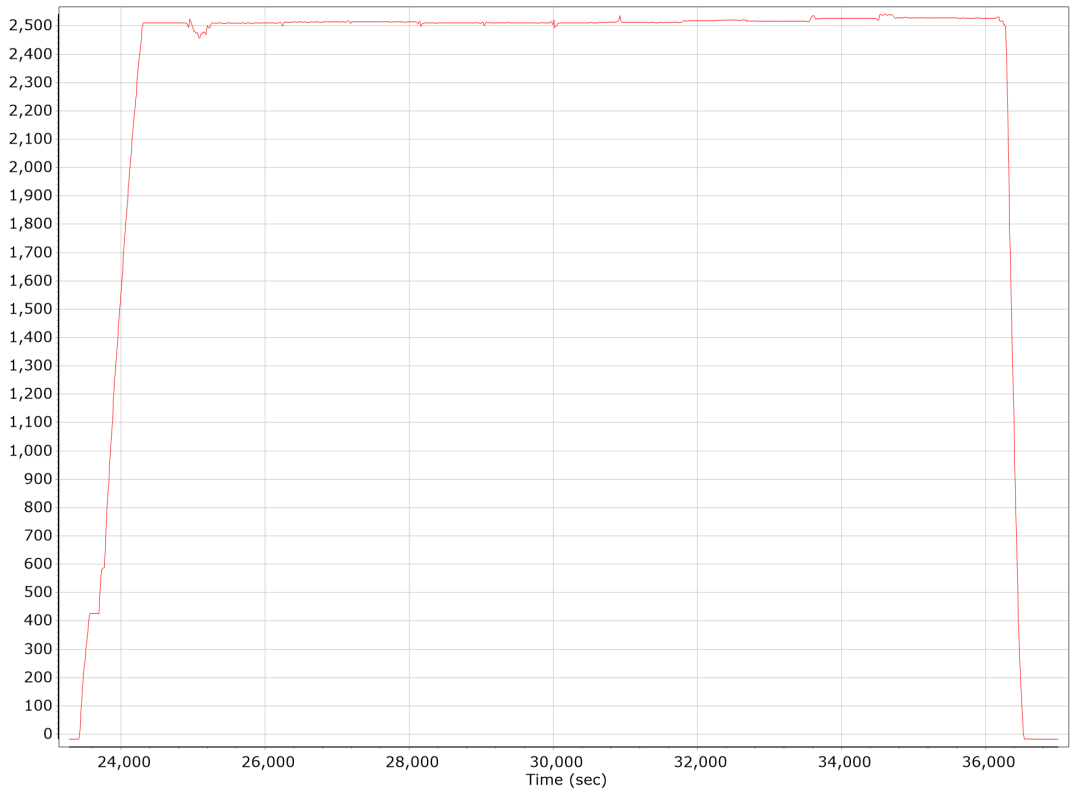

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37,000
Time (sec)
GALILEO 05 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 09 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 10 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 11 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 12 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 24 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 25 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 26 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 31 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 33 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 36 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 05 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 09 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 10 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 11 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 12 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 24 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 25 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 26 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 31 L5E5A BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

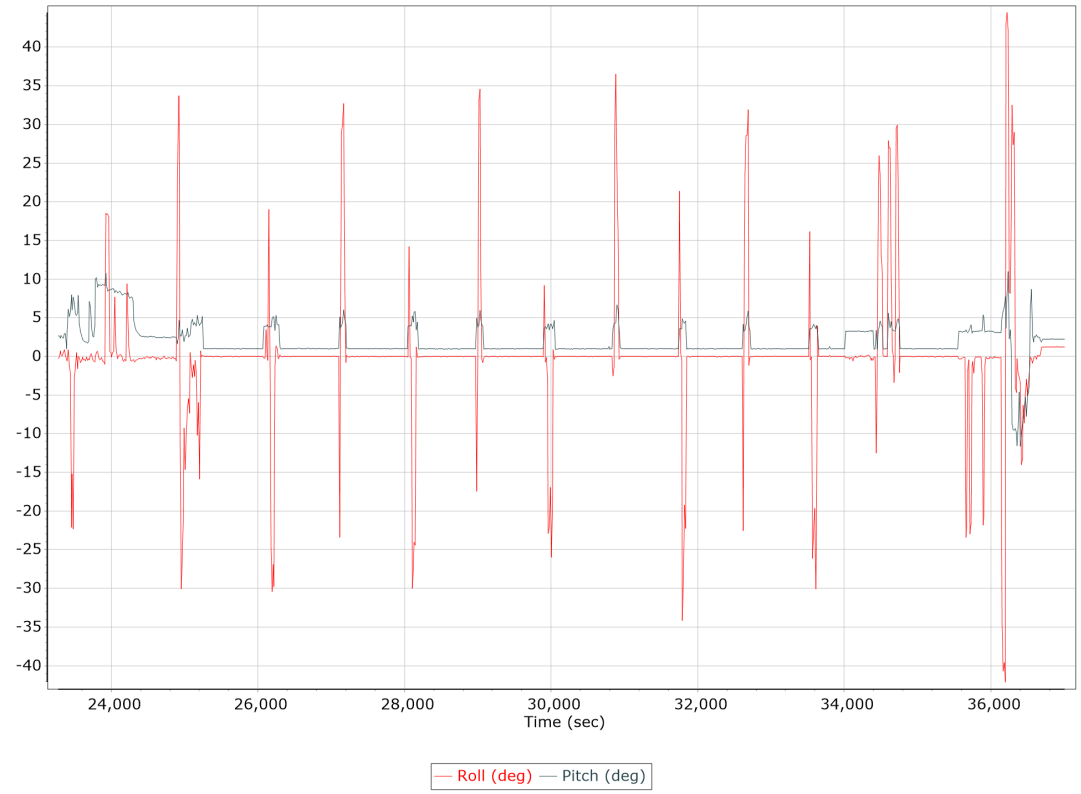
Top View



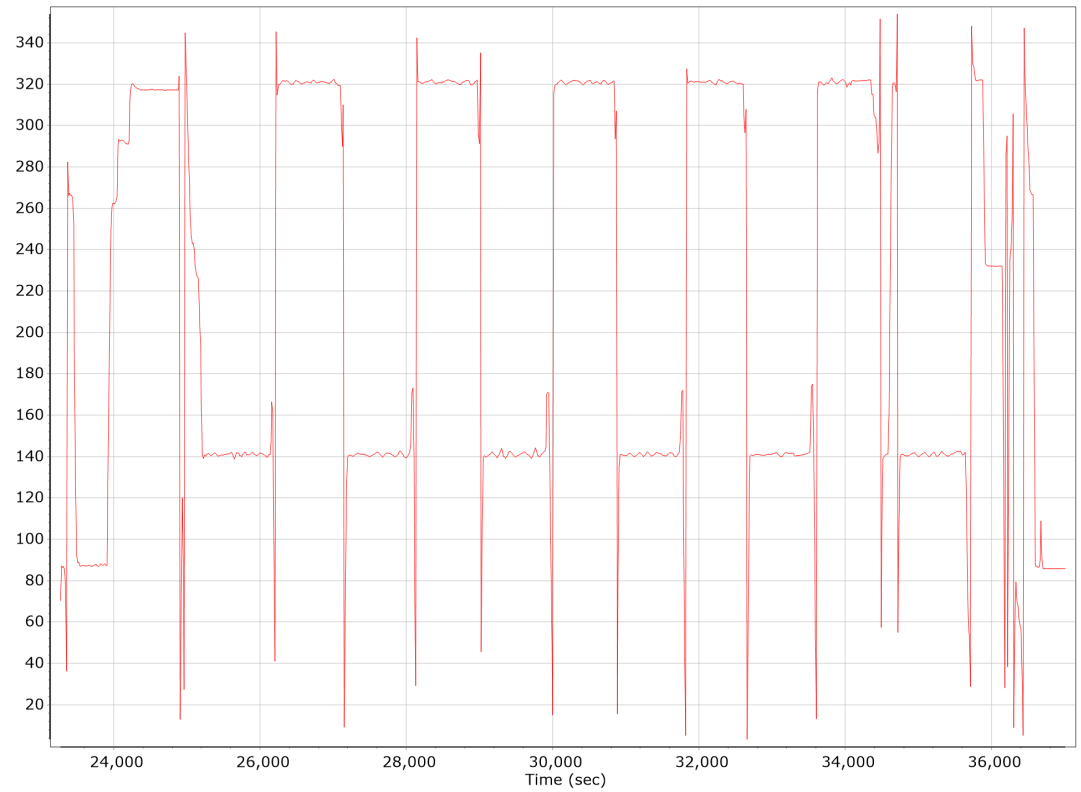
Altitude



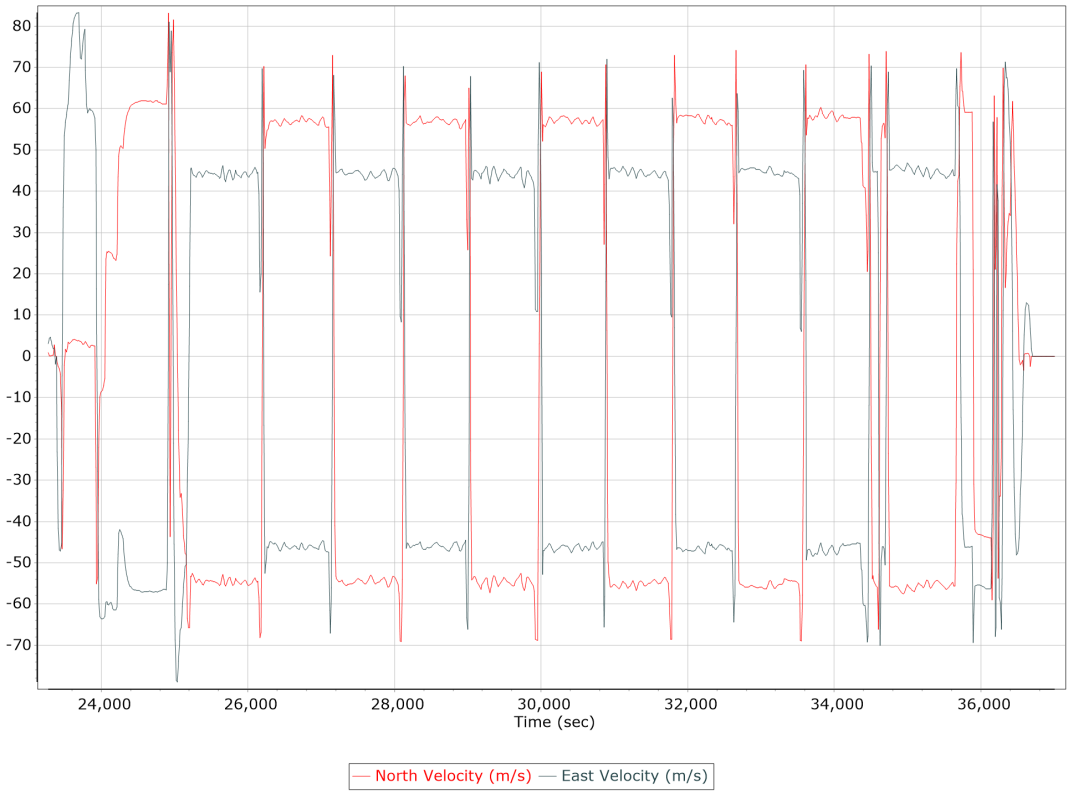
Roll/Pitch



Heading



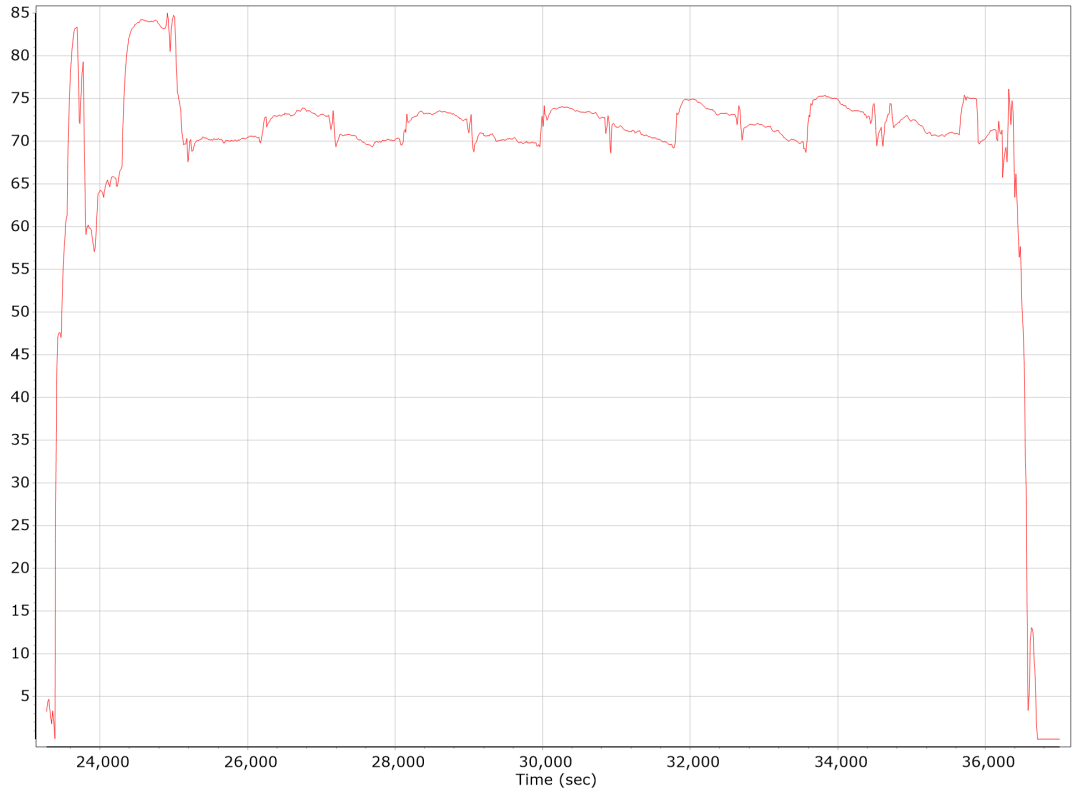
North/East Velocity



Down Velocity



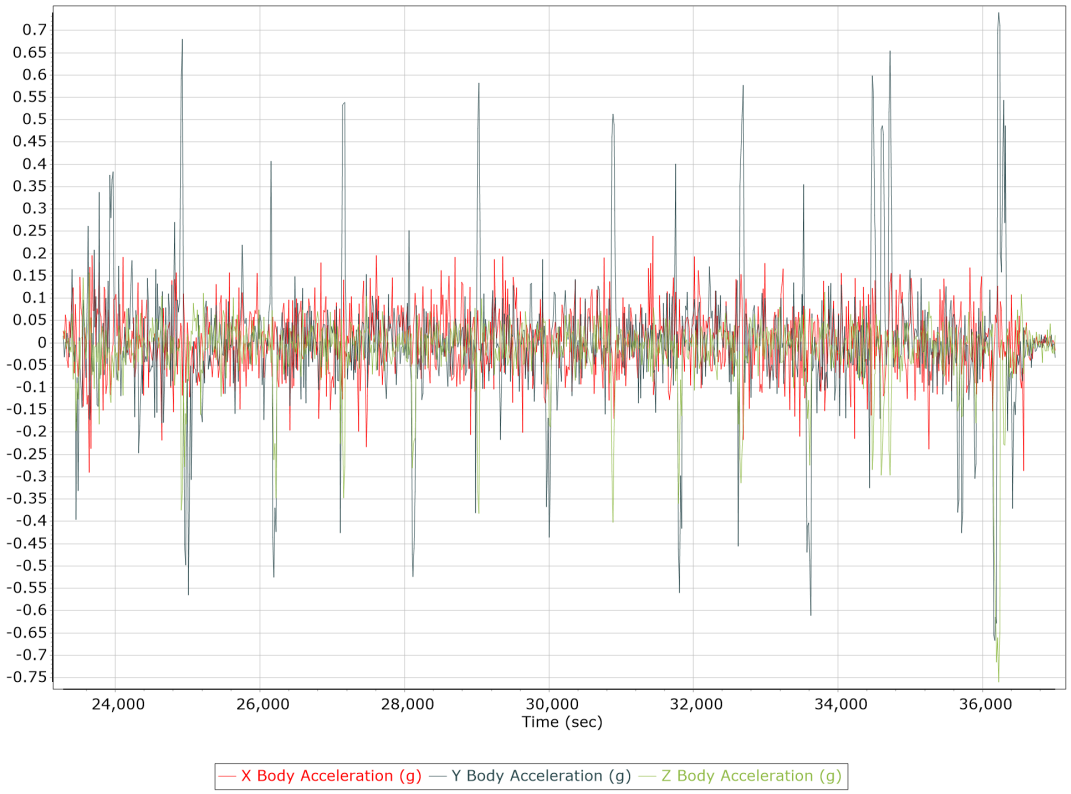
Total Speed



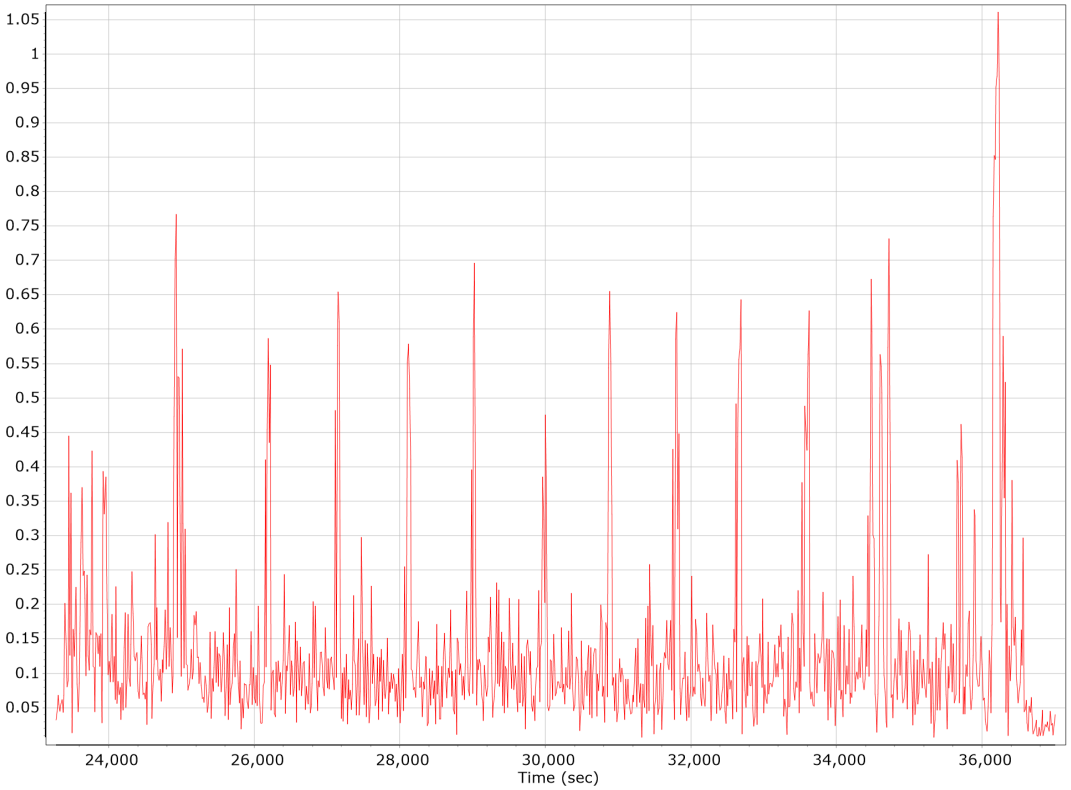
Ground Speed



Body Acceleration



Total Body Acceleration

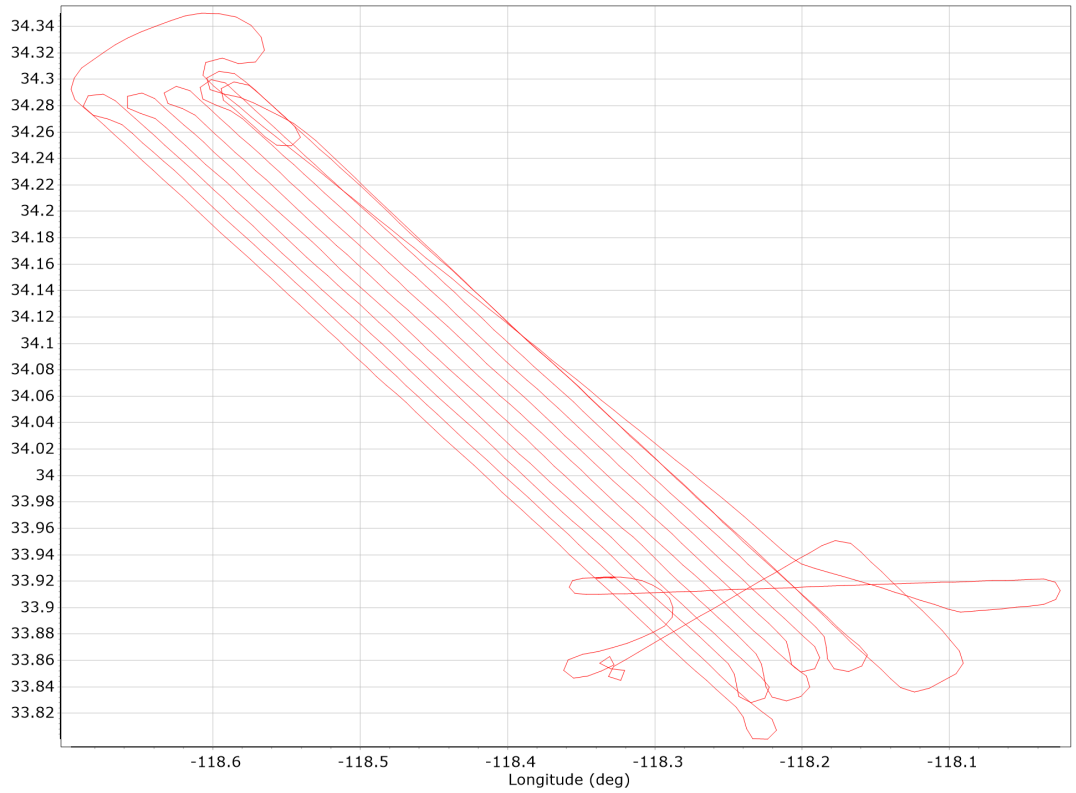


Body Angular Rate

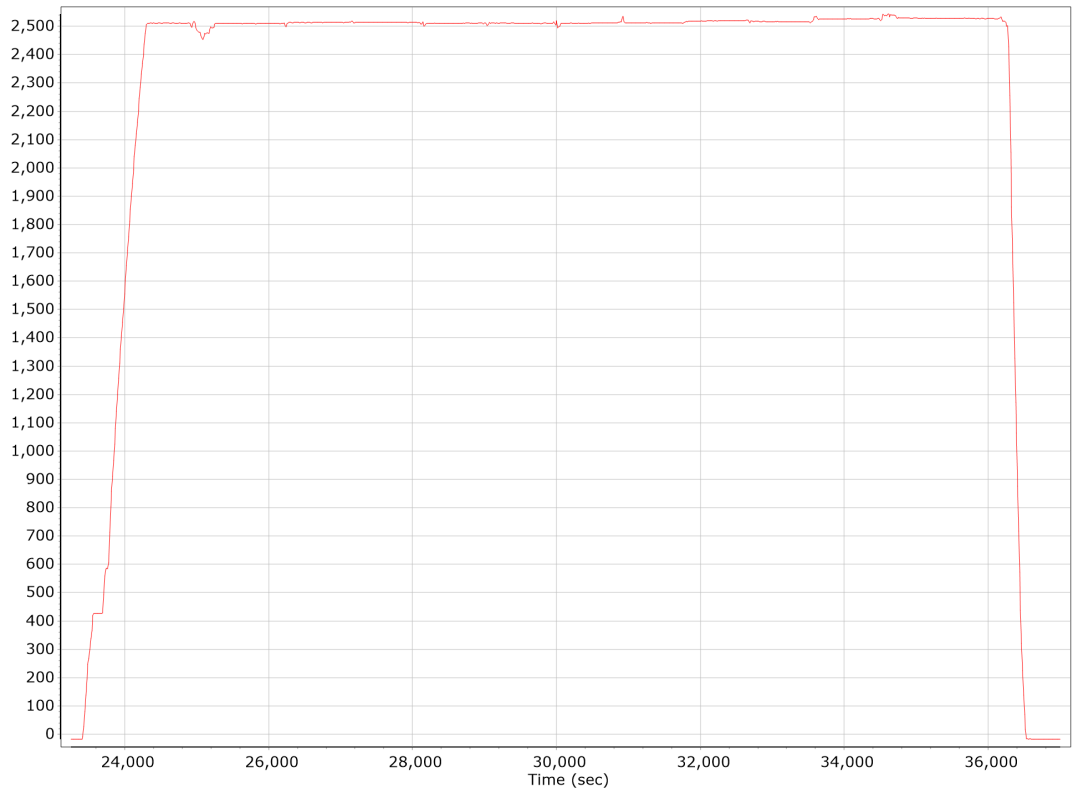


Forward Processed Trajectory Information

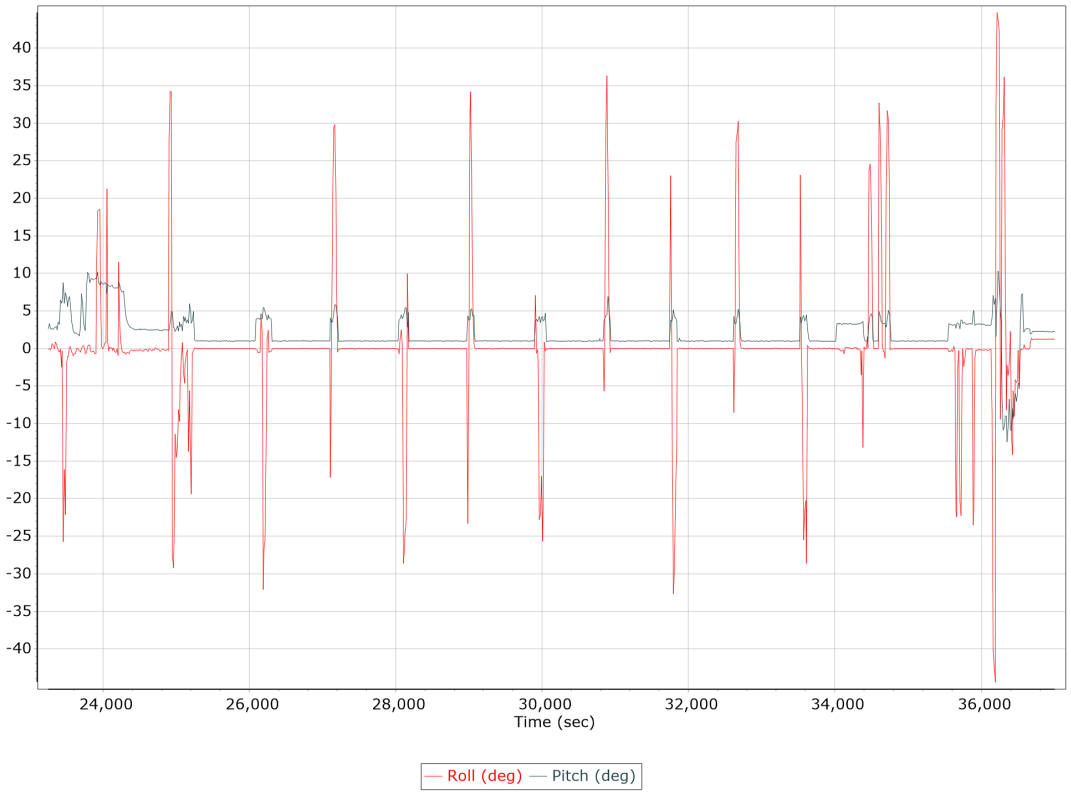
Top View



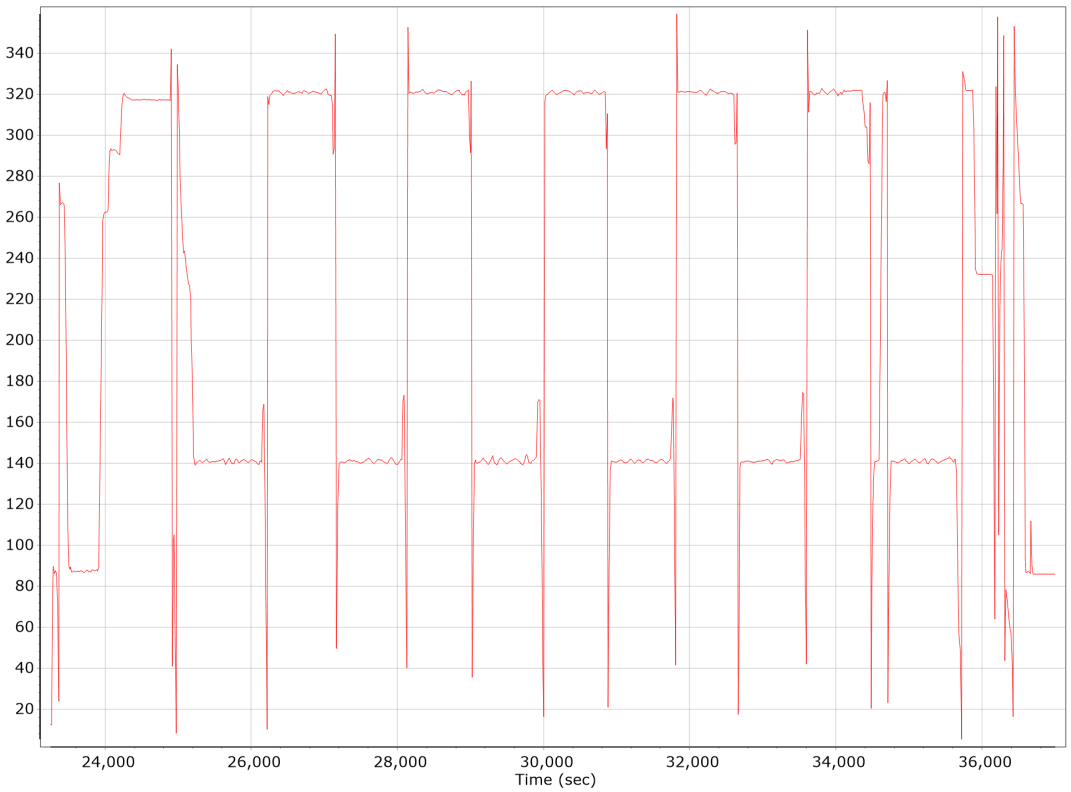
Altitude



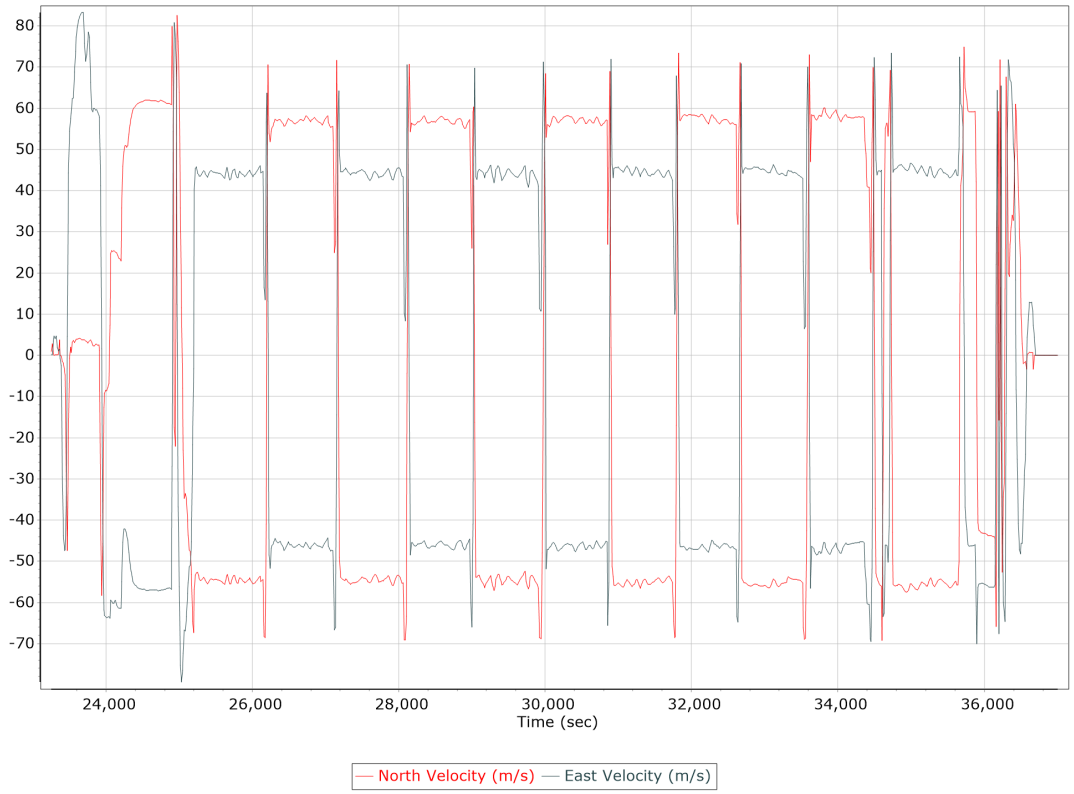
Roll/Pitch



Heading



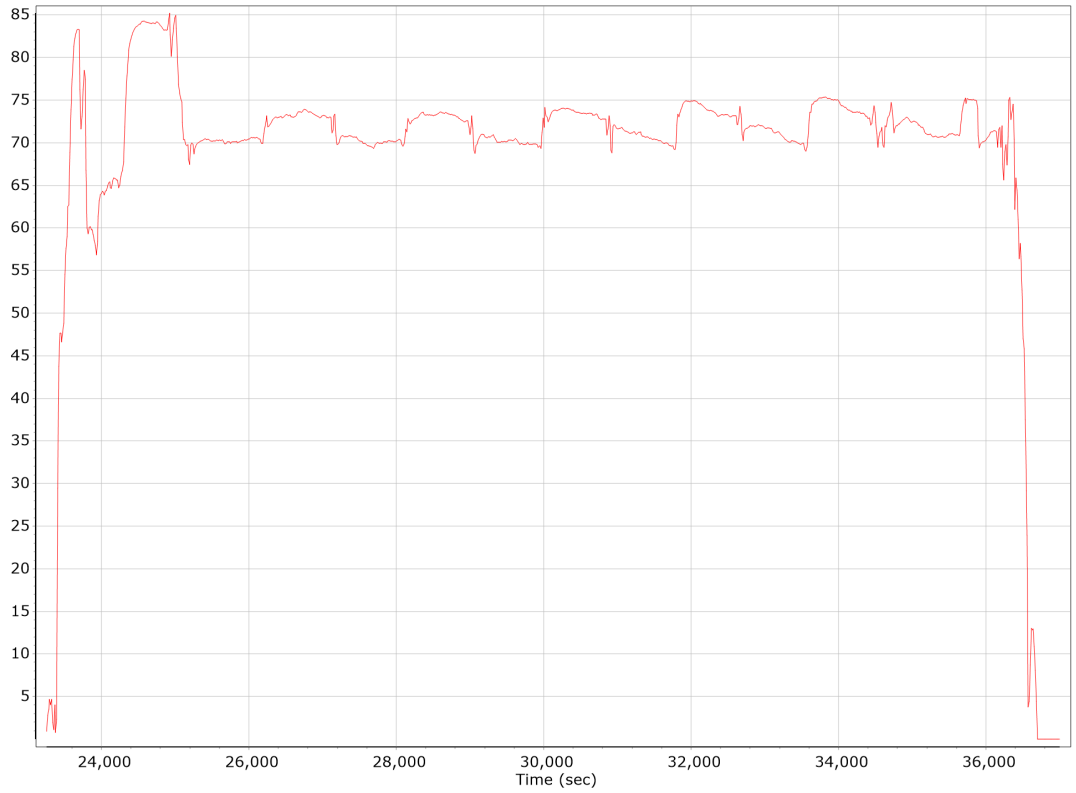
North/East Velocity



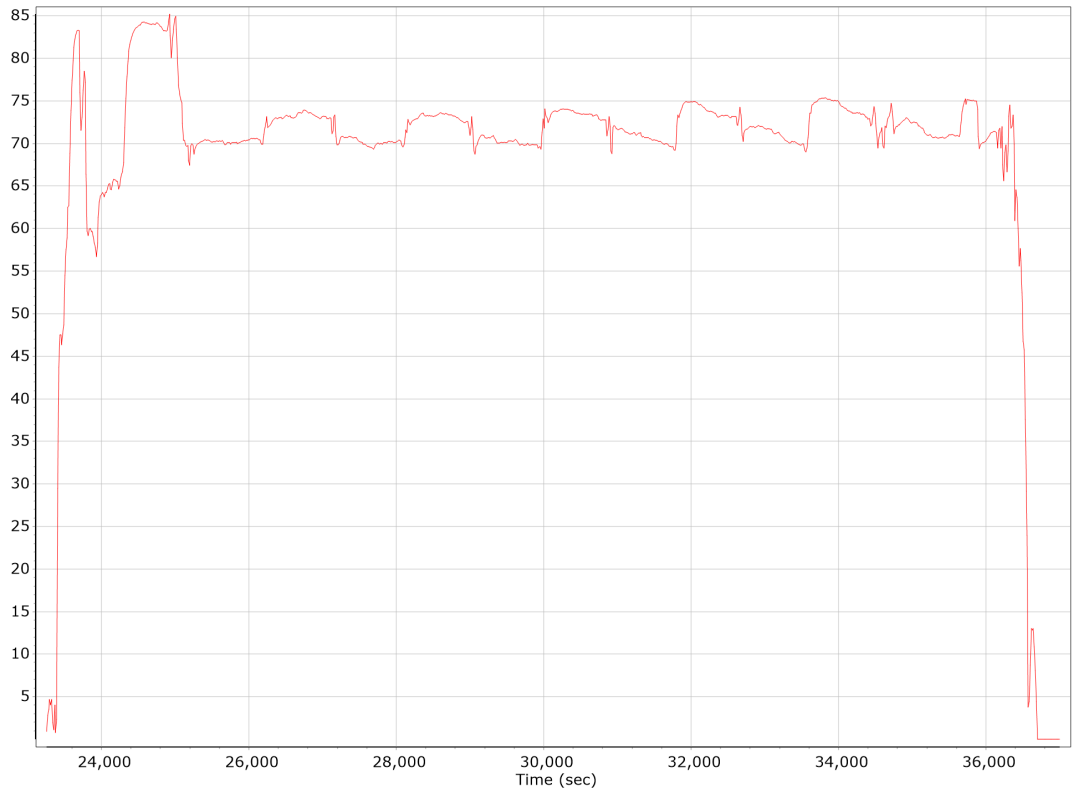
Down Velocity



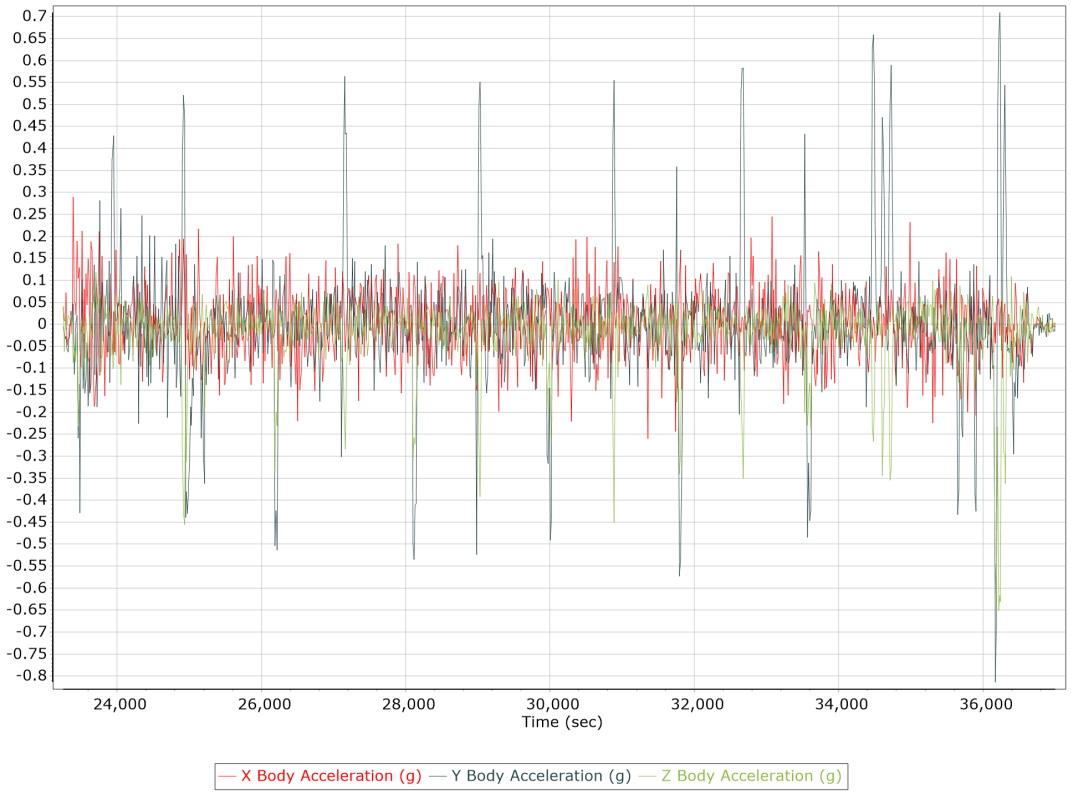
Total Speed



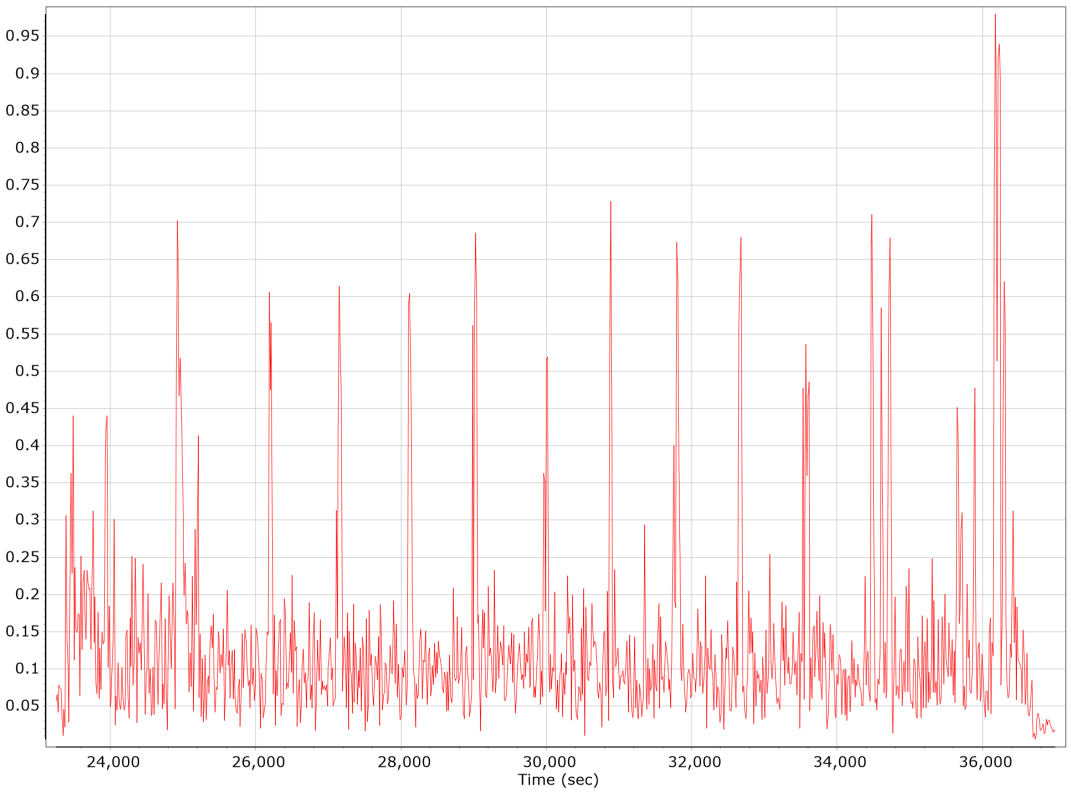
Ground Speed



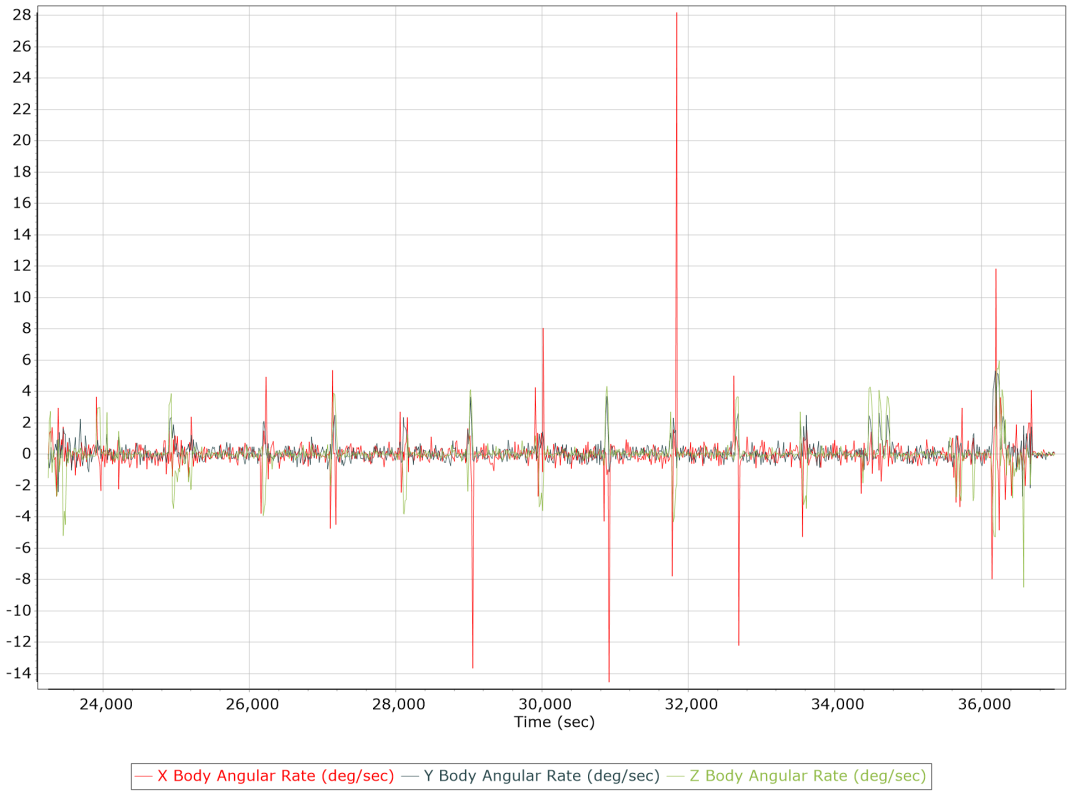
Body Acceleration



Total Body Acceleration



Body Angular Rate

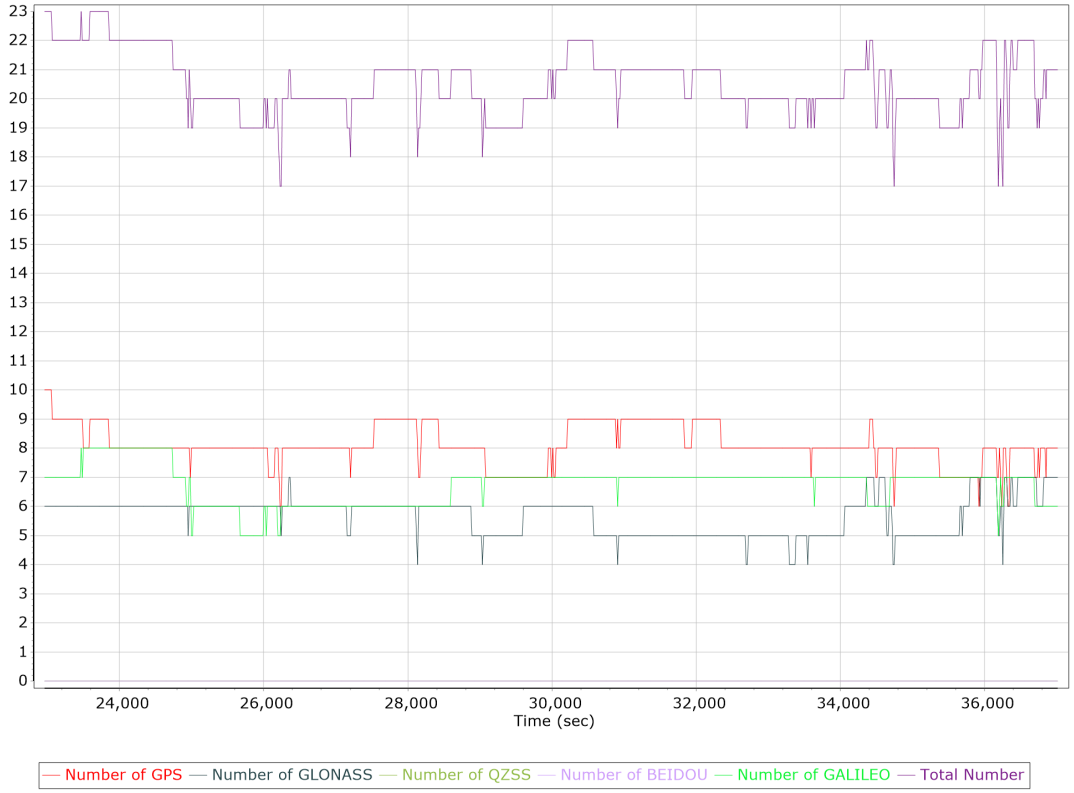


GNSS QC

GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	5	10	8
Number of GLONASS SV	3	7	6
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	5	8	7
Total number of SV	15	23	21
PDOP	1.00	2.04	1.16
QC Solution Gaps	0.00	0.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	14217.00	0.00	0.00
Percentage	100.00	0.00	0.00

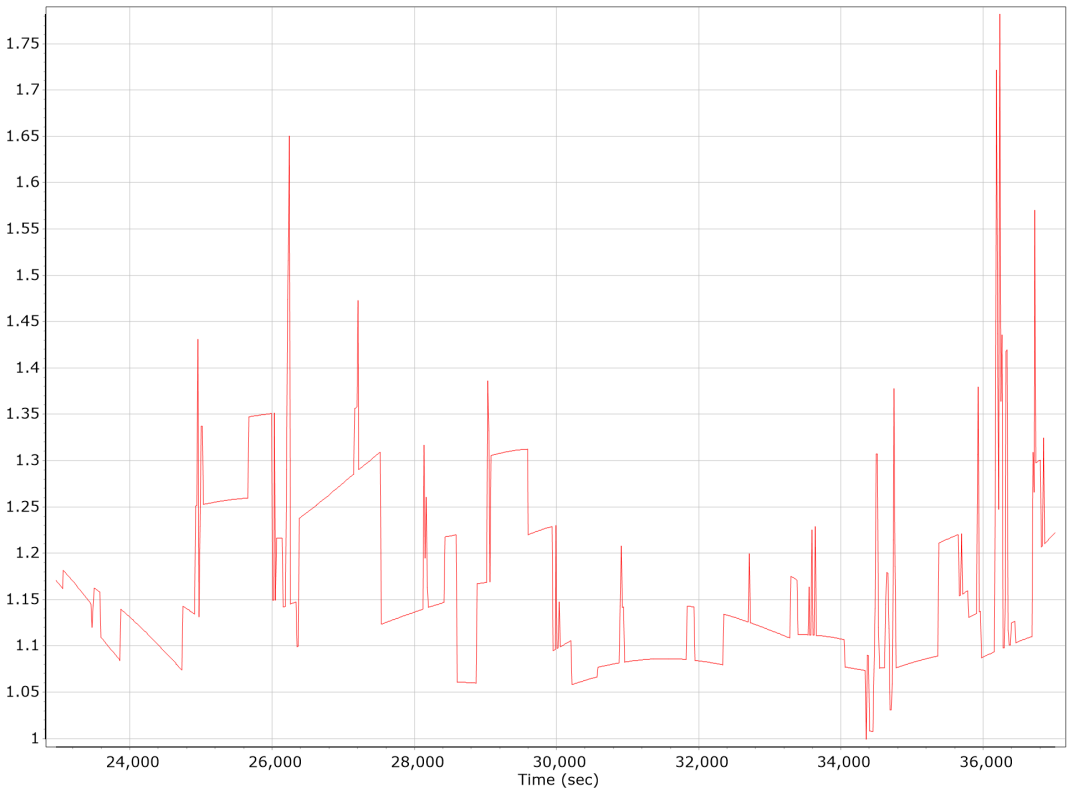
Num SVs in solution



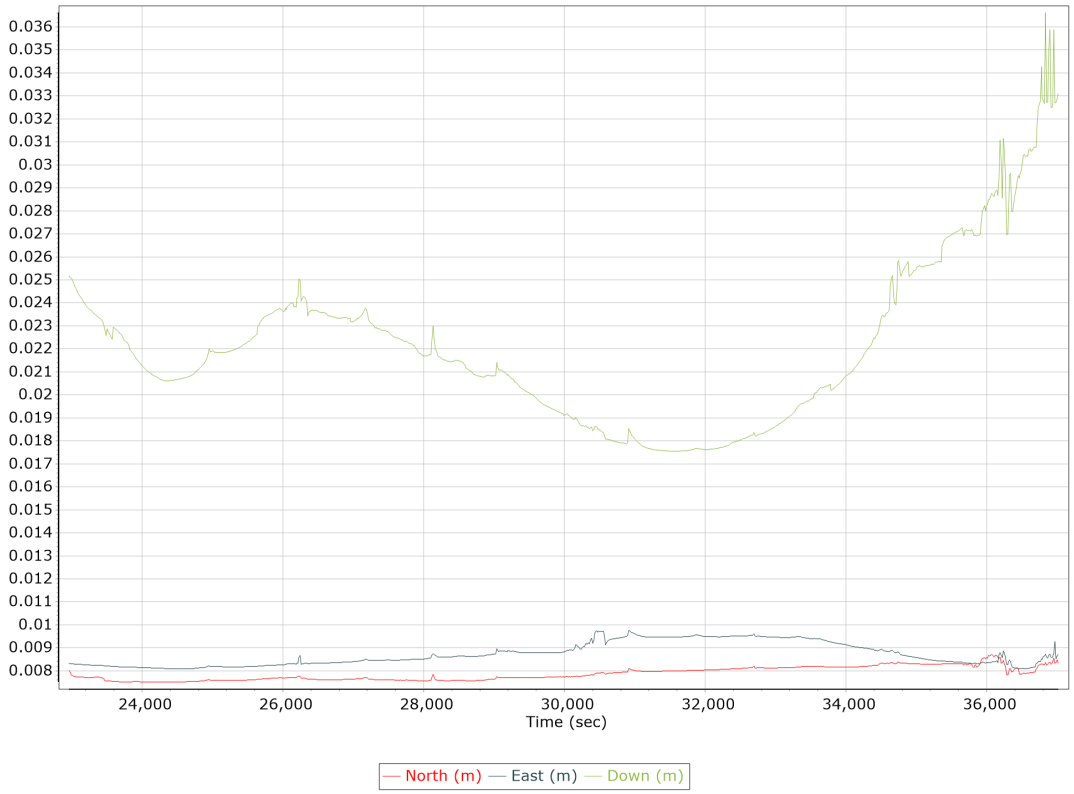
Forward/Reverse Separation



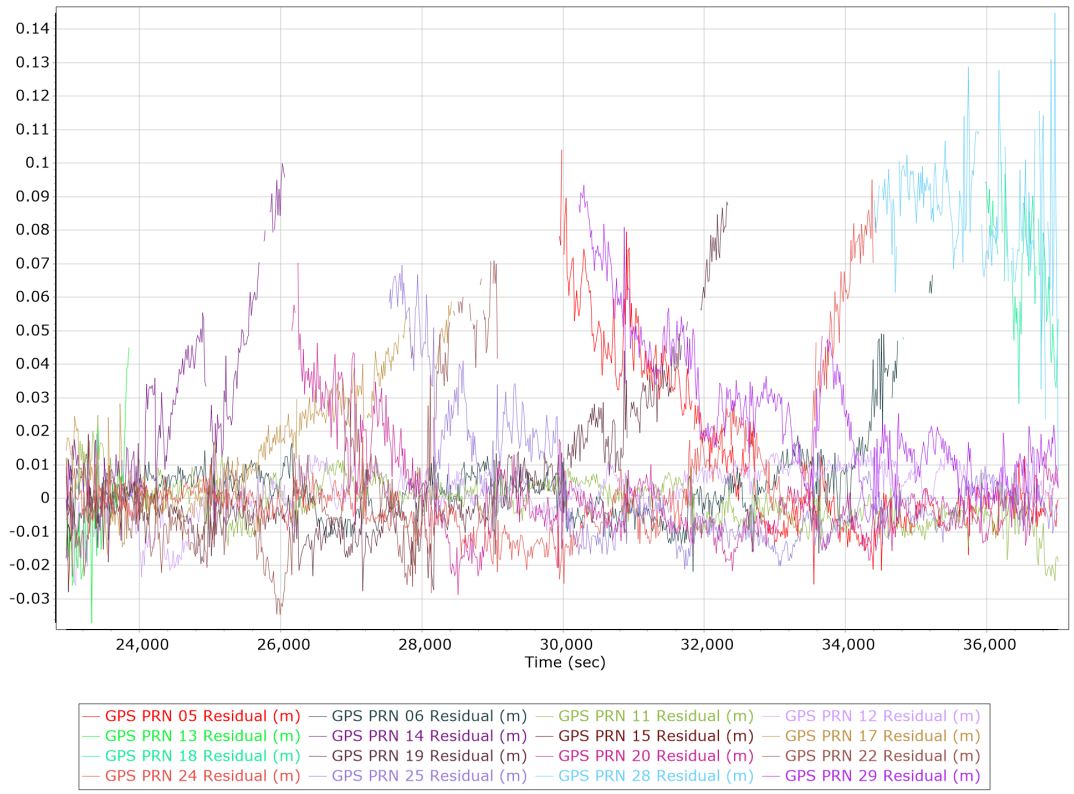
PDOP



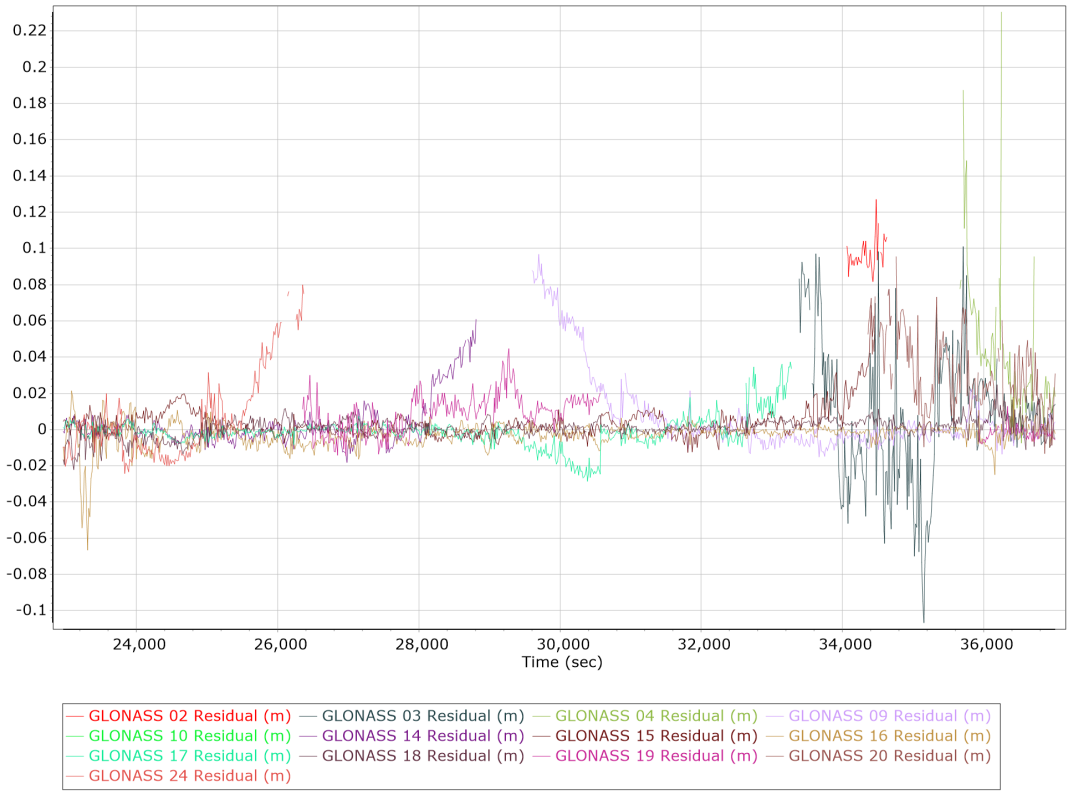
Estimated Position Accuracy



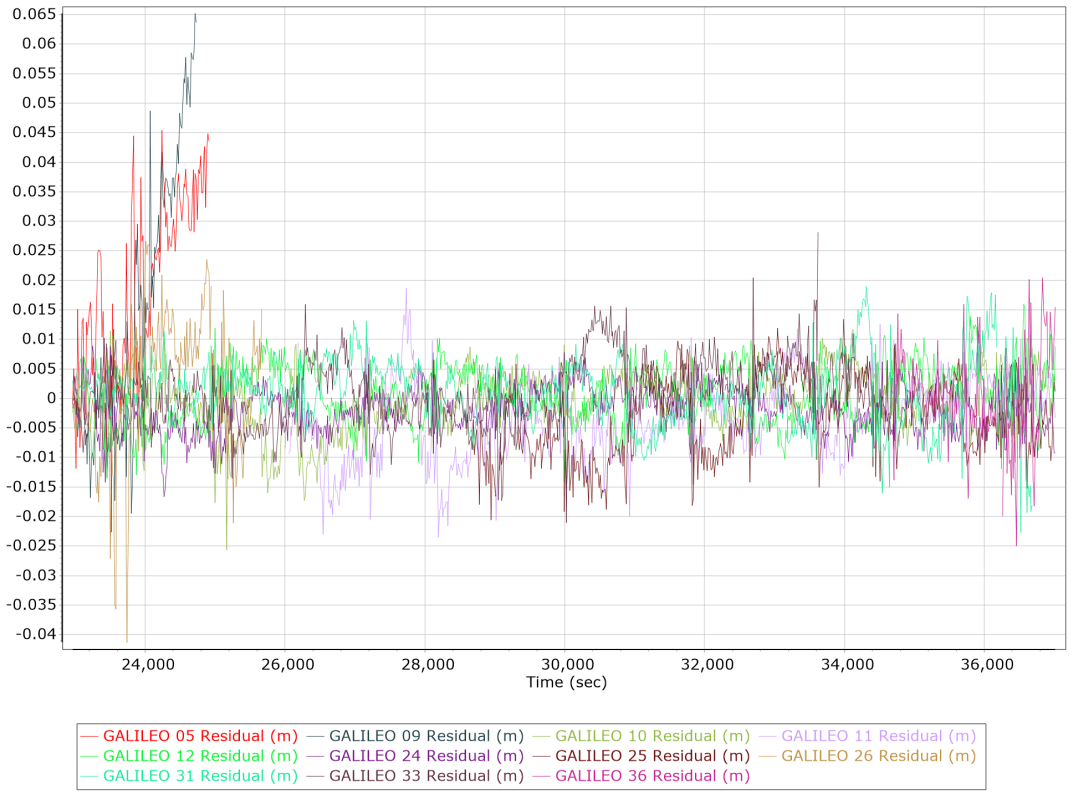
GPS Residuals



GLONASS Residuals



GALILEO Residuals



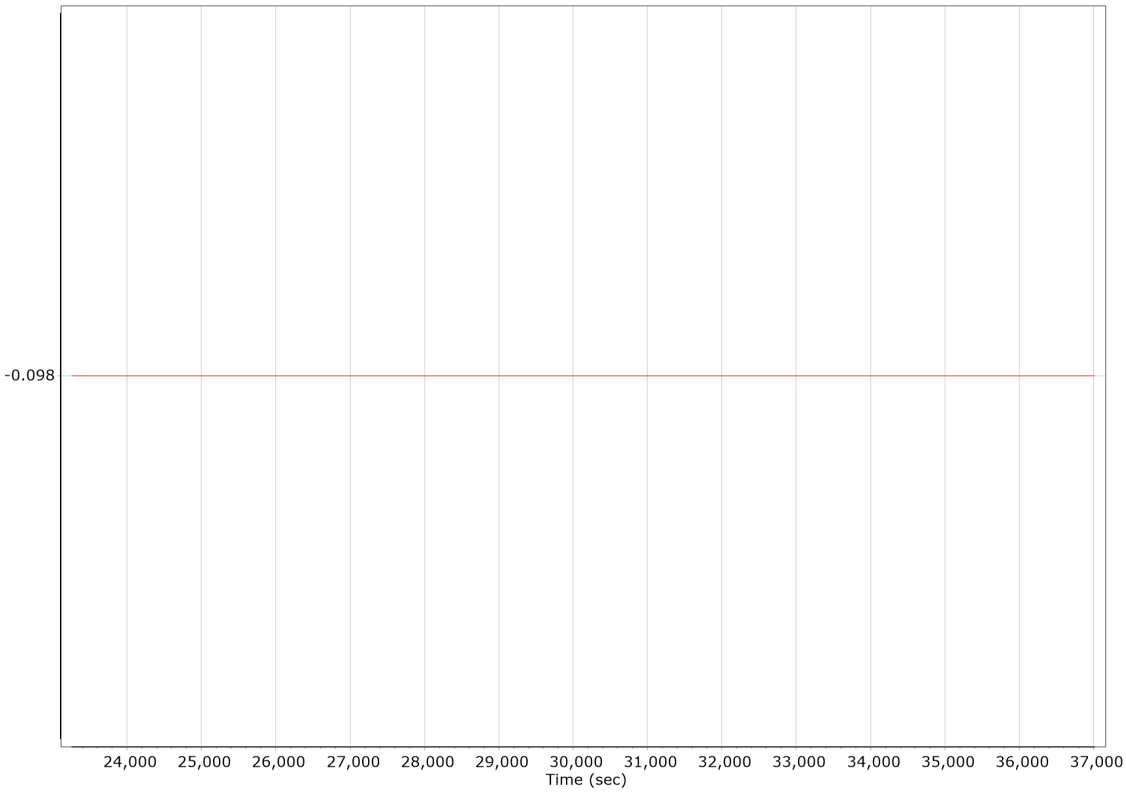
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	22785.000 (10/15/2023 6:19:45 AM)		
Processing end time	37016.000 (10/15/2023 10:16:56 AM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	-0.098	0.057	-1.221
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

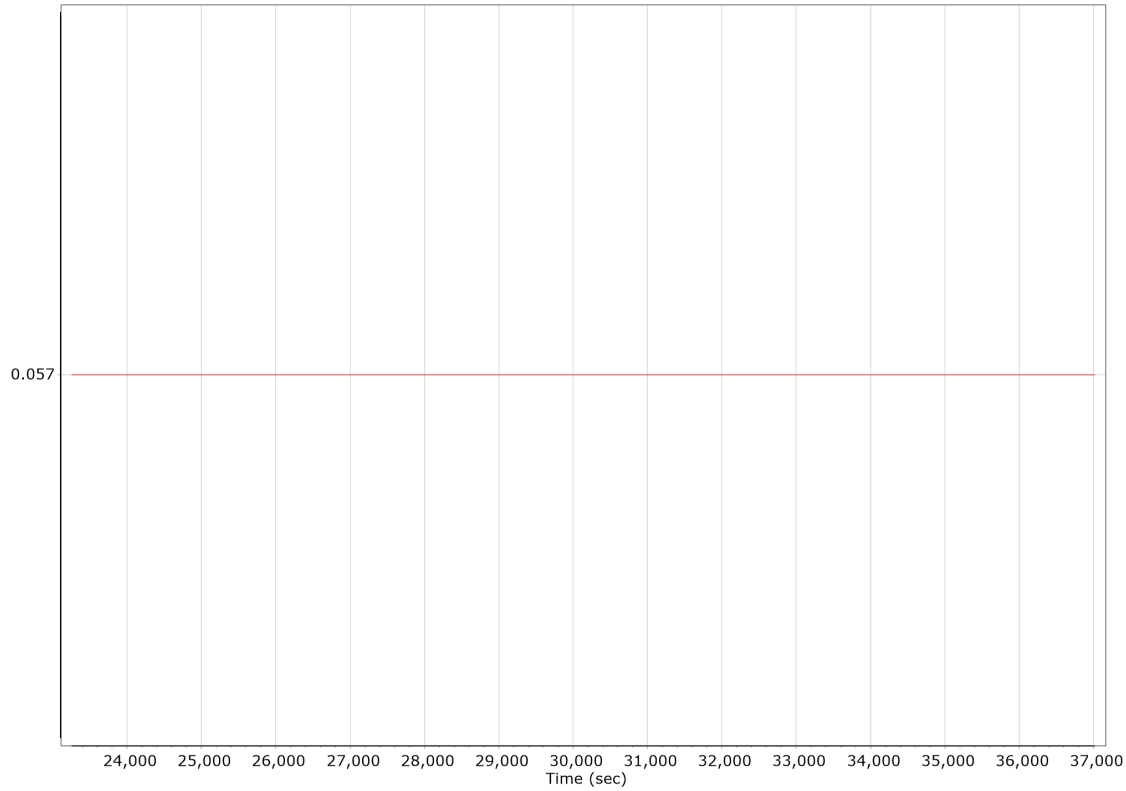
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

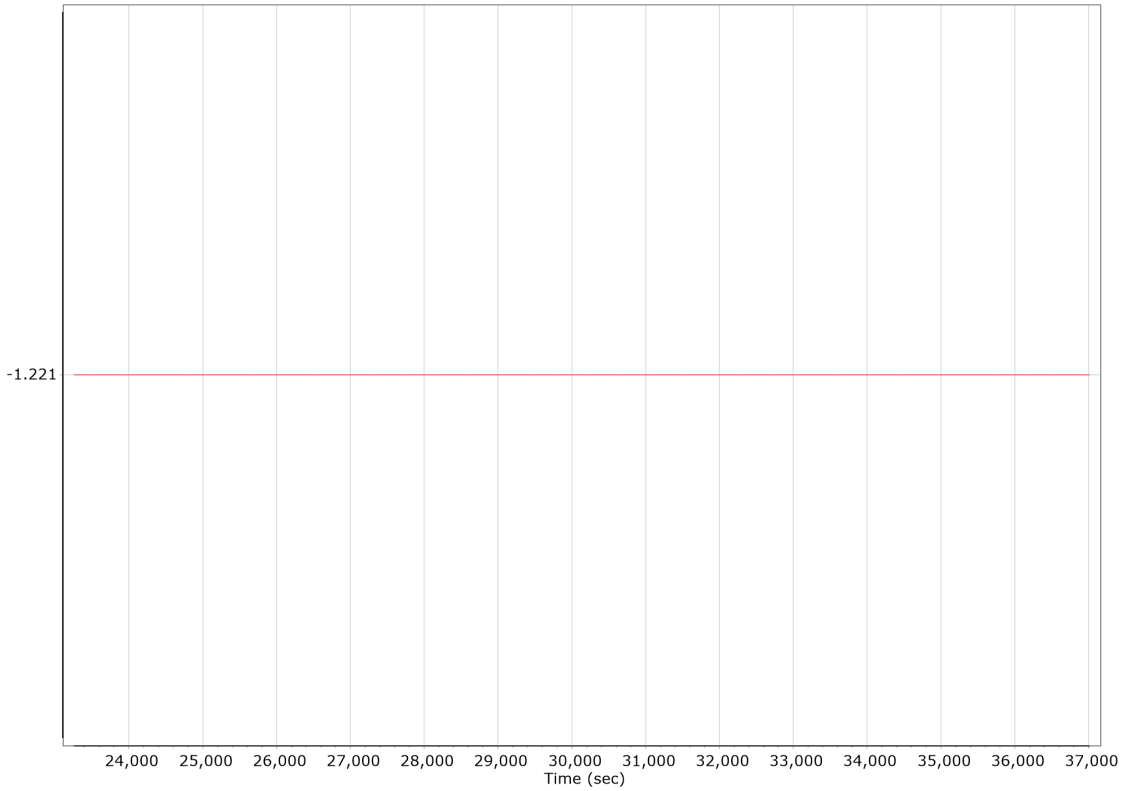
X Reference-Primary GNSS Lever Arm (m)



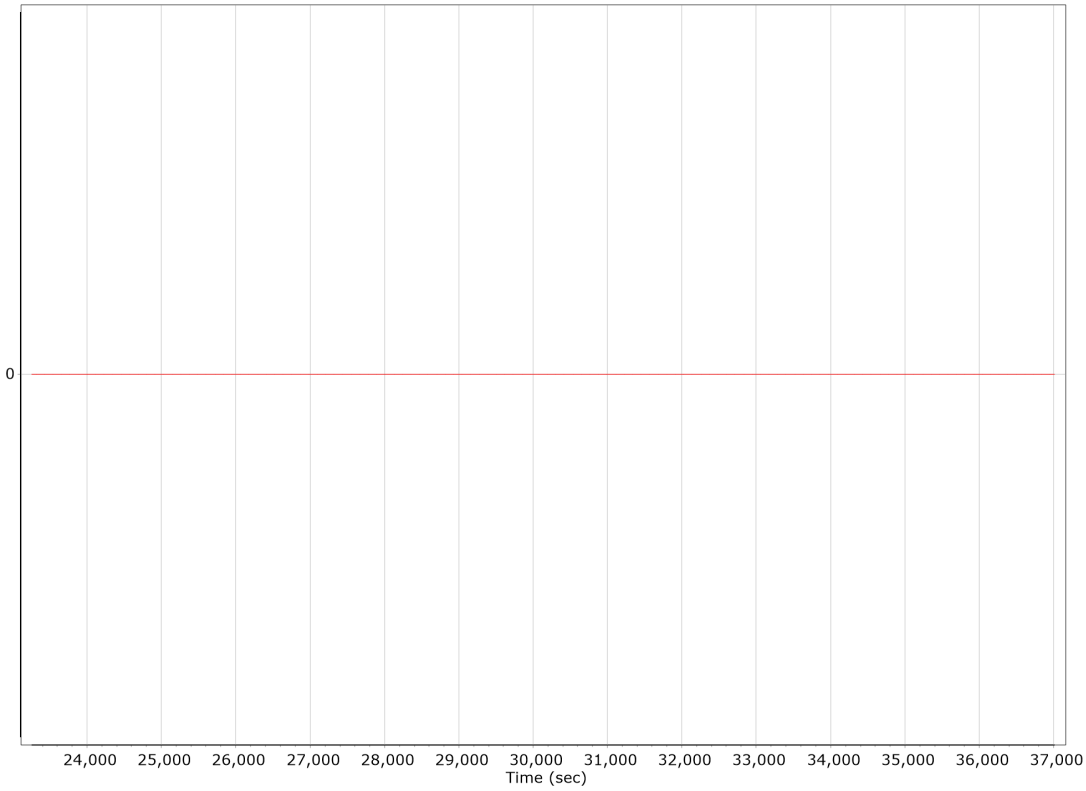
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



Reference-Primary GNSS Lever Arm Figure of Merit



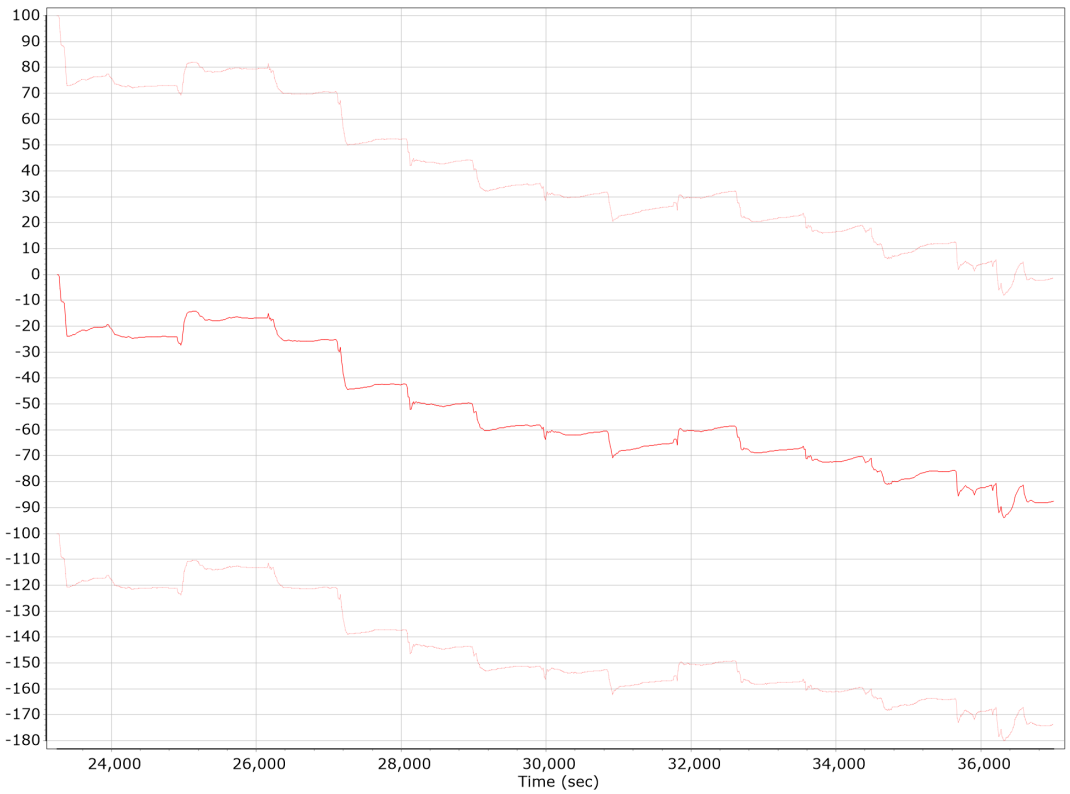
IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

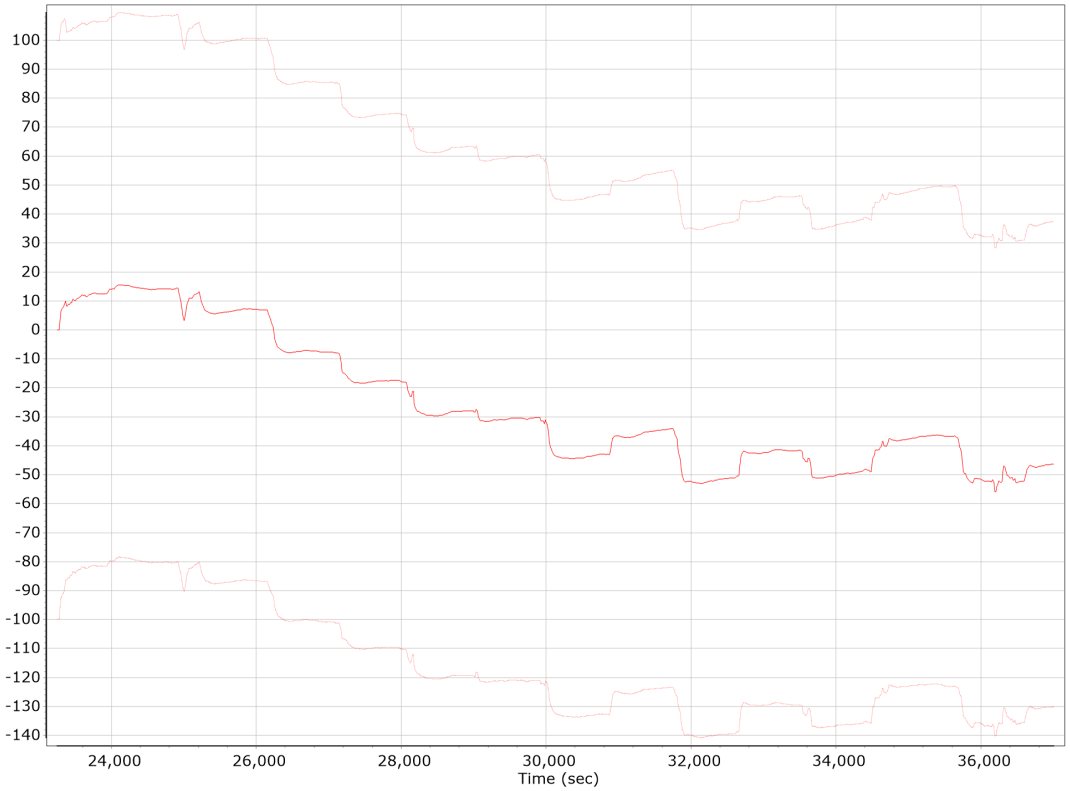
Accelerometer Bias (micro-g)



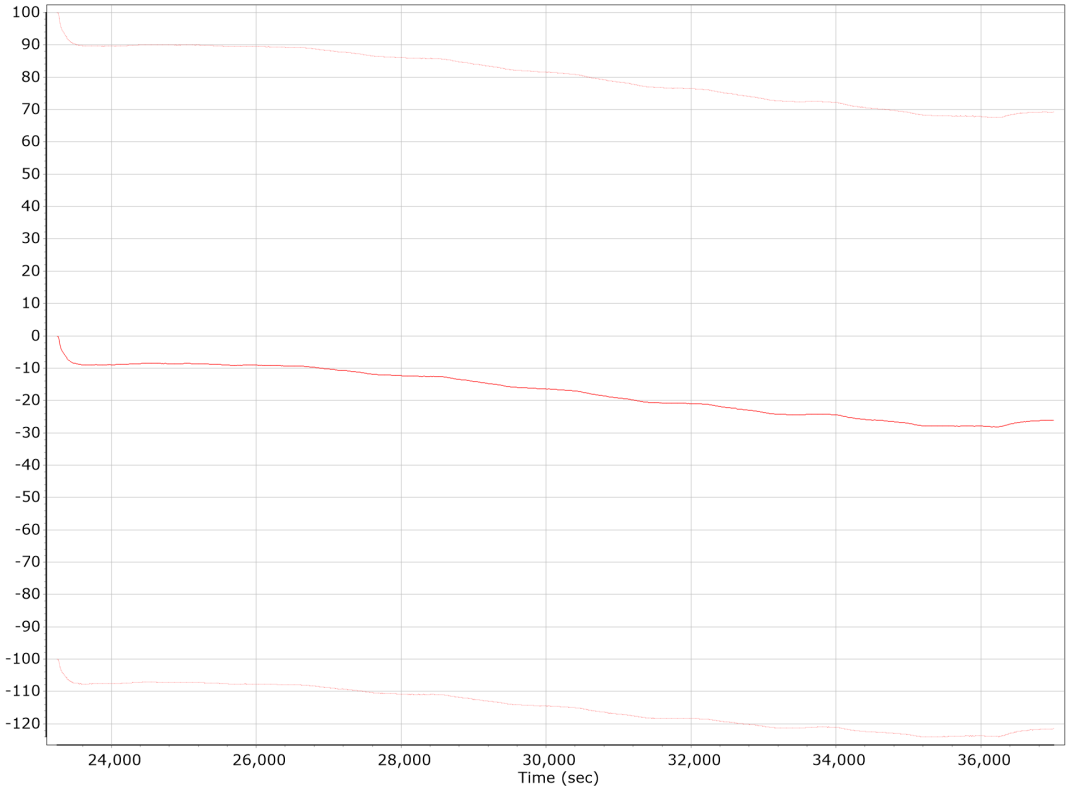
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



X Accelerometer Scale Error (ppm)



Y Accelerometer Scale Error (ppm)



Z Accelerometer Scale Error (ppm)



Gyro Bias (deg/h)



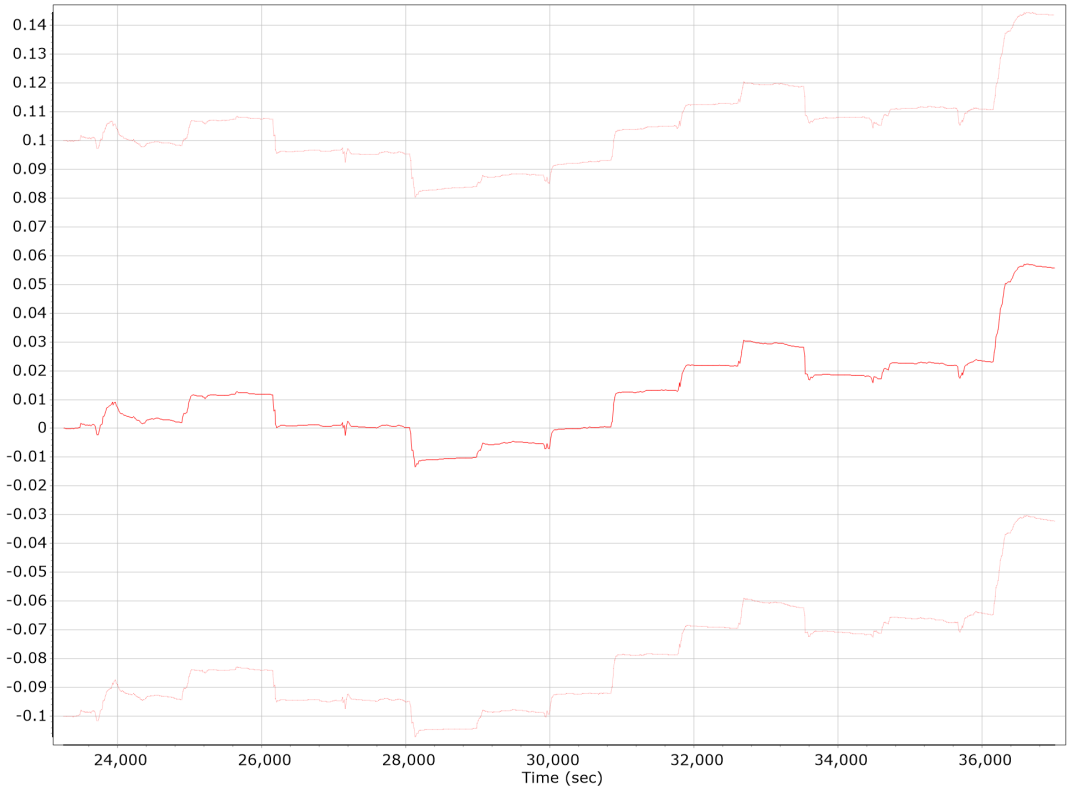
X Gyro Bias (deg/h)



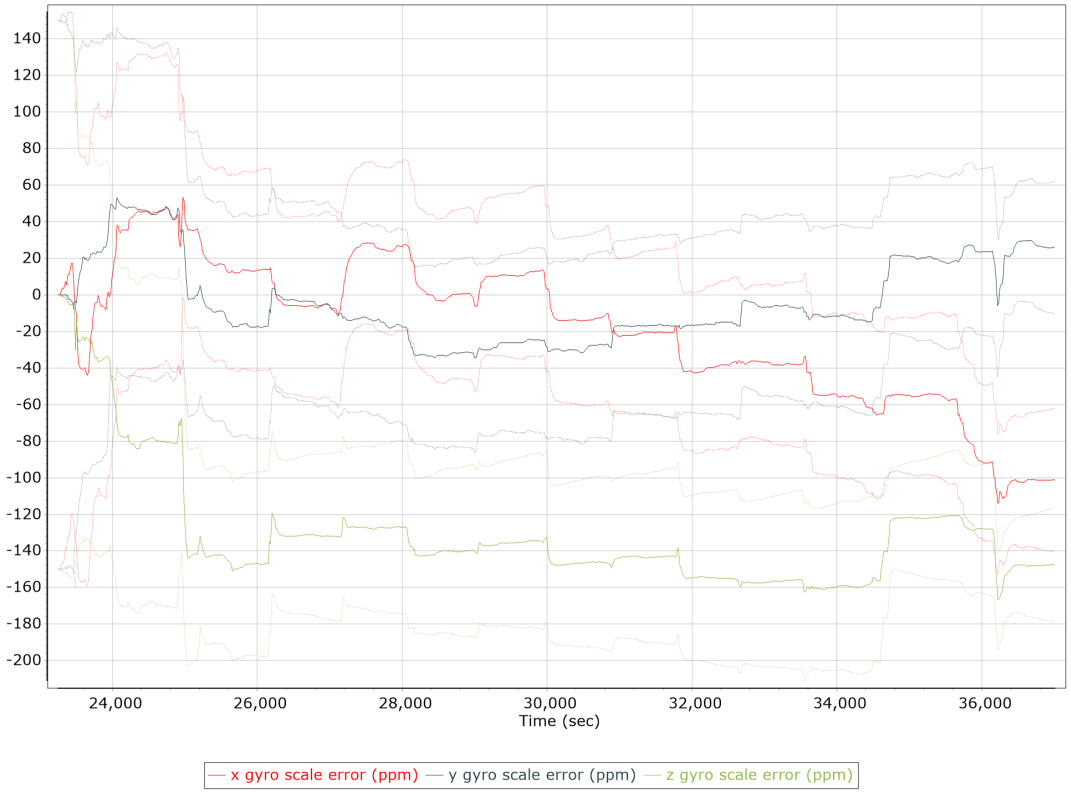
Y Gyro Bias (deg/h)



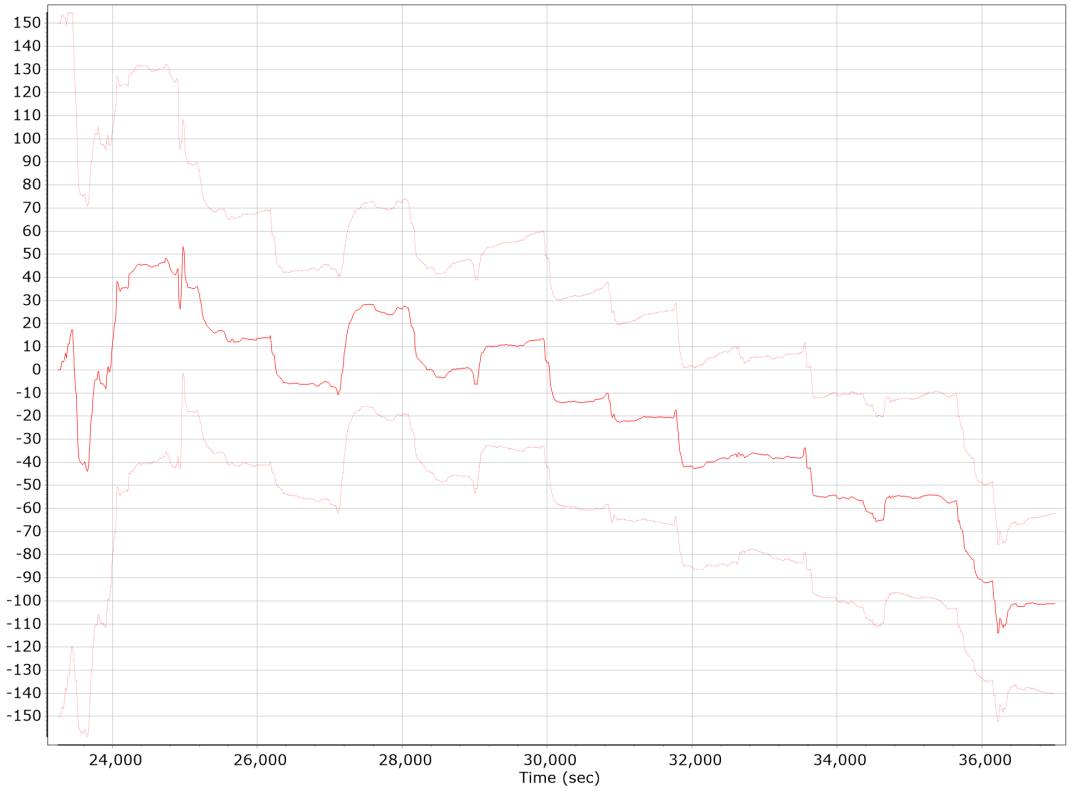
Z Gyro Bias (deg/h)



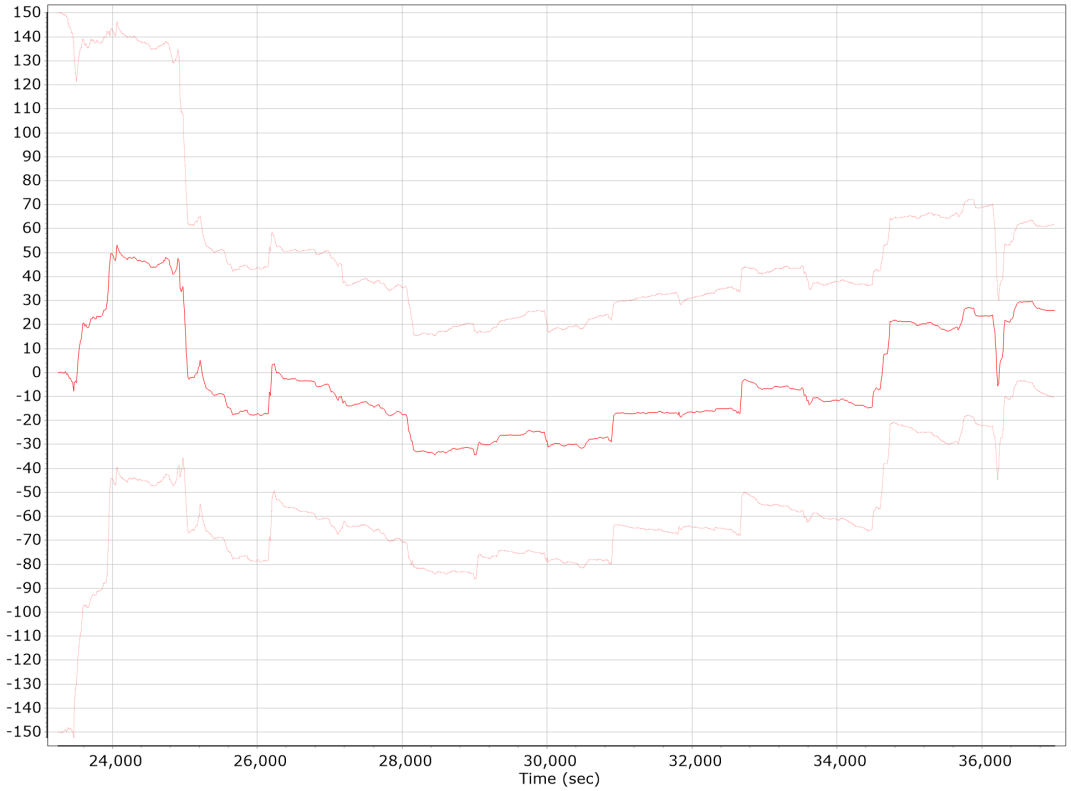
Gyro Scale Error (ppm)



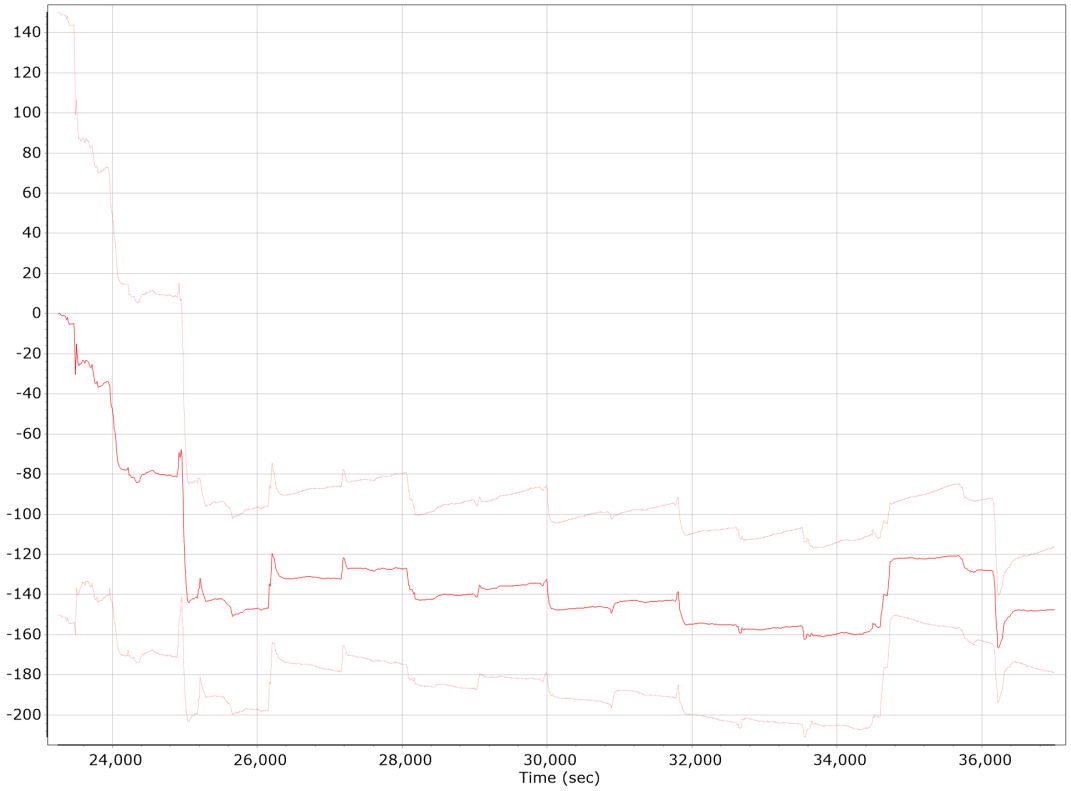
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)

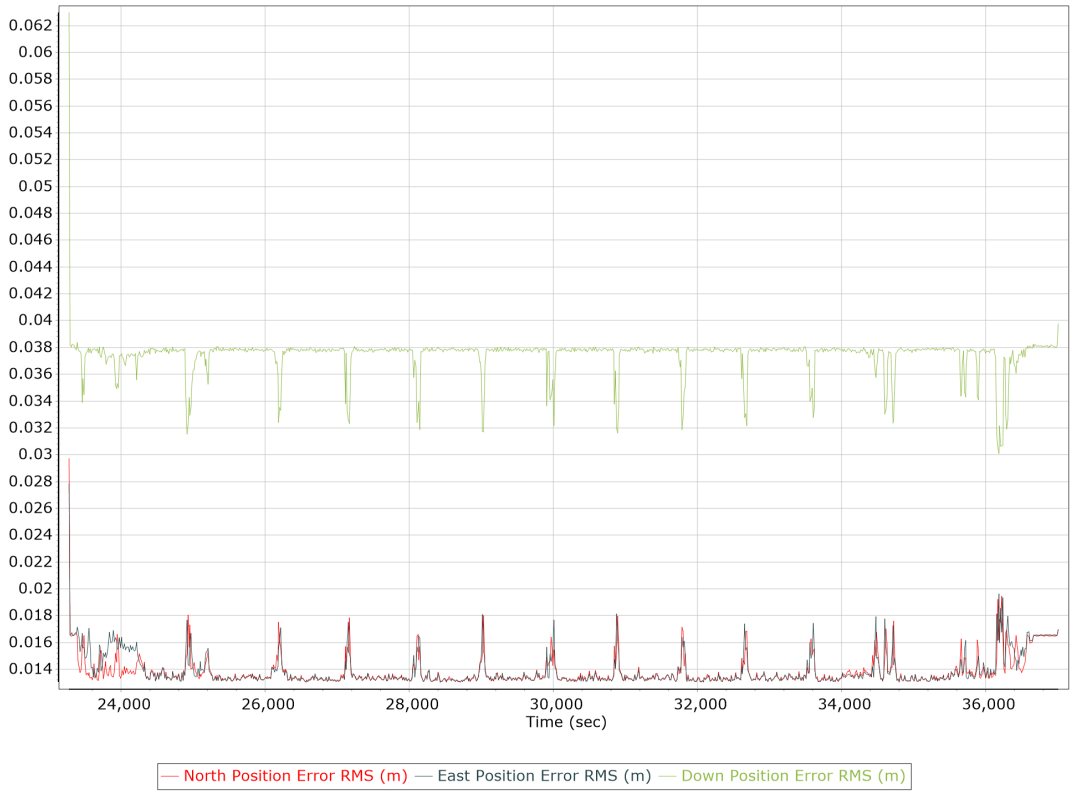


Z Gyro Scale Error (ppm)

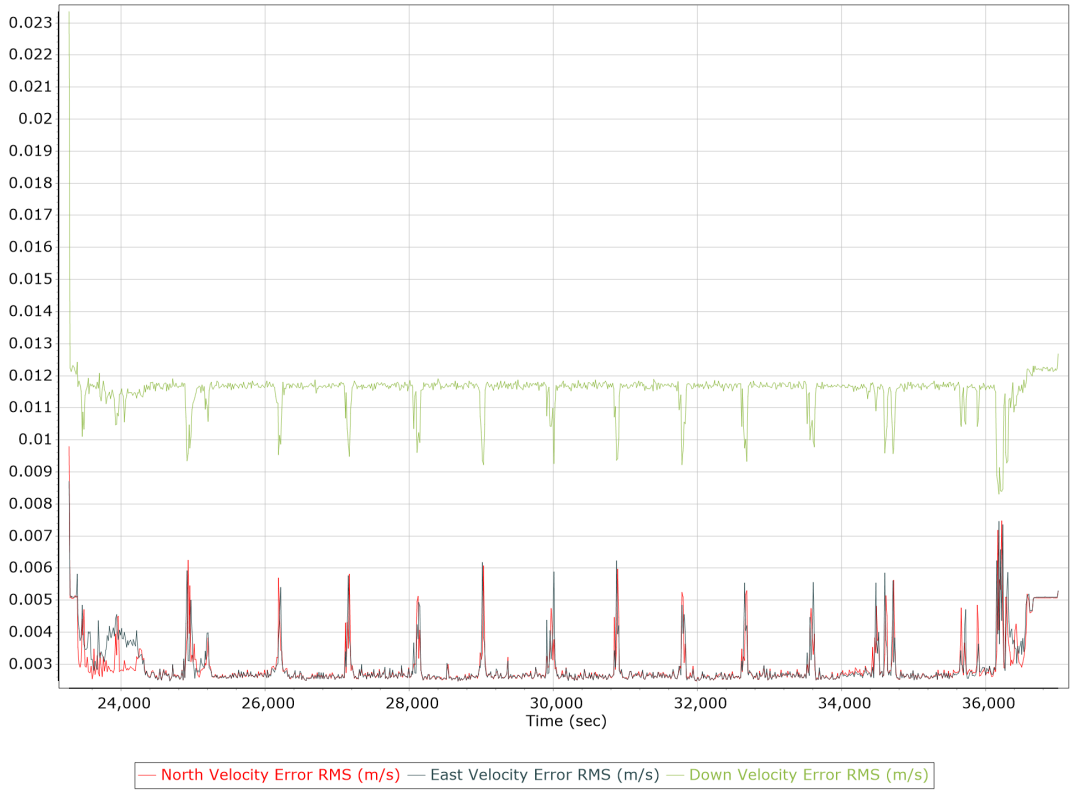


Smoothed Performance Metrics

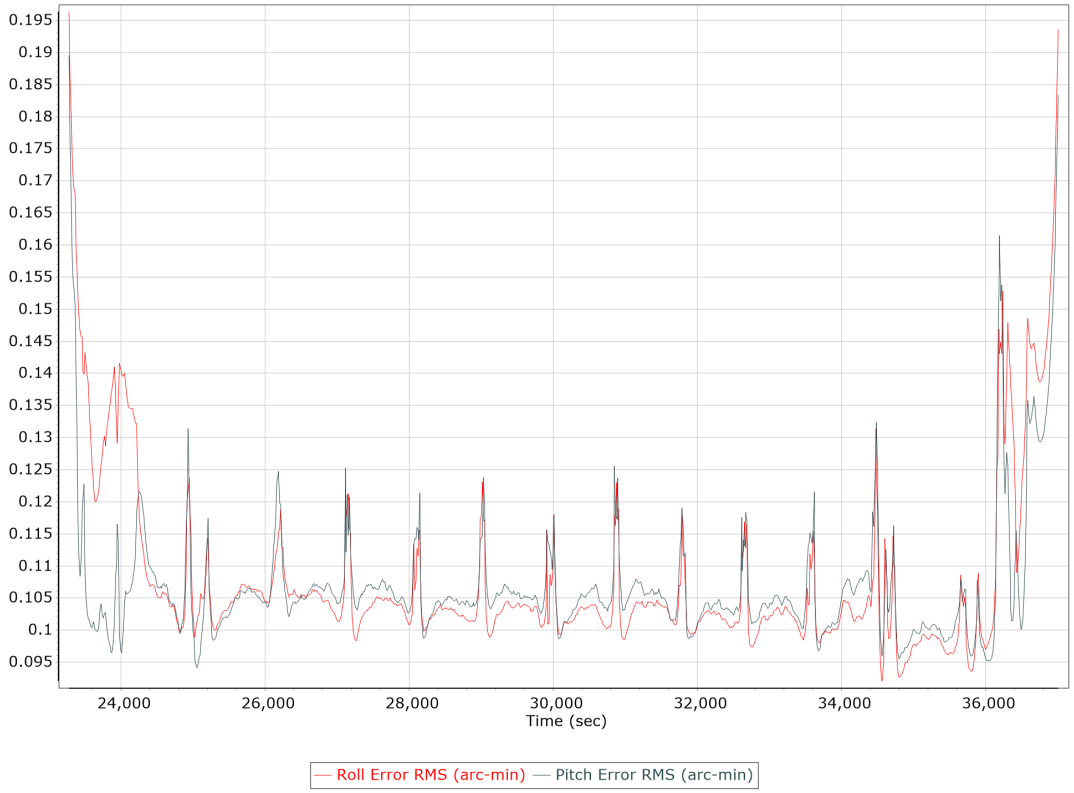
Position Error RMS (m)



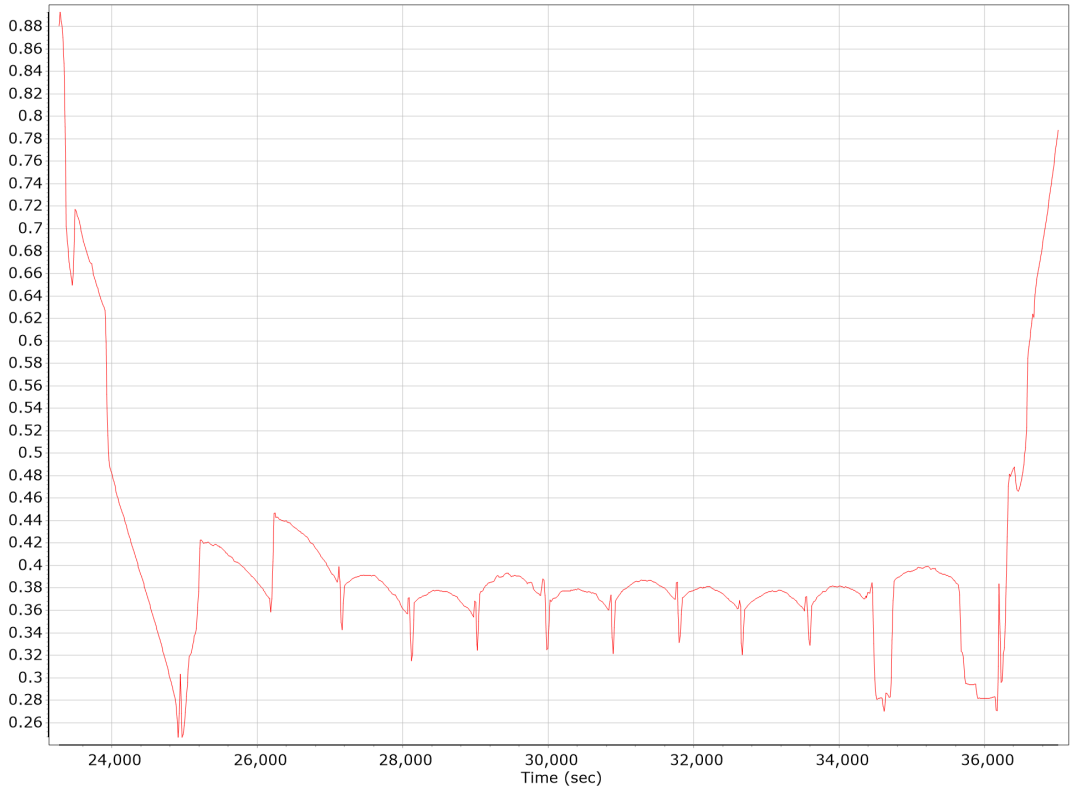
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)



Heading Error RMS (arc-min)

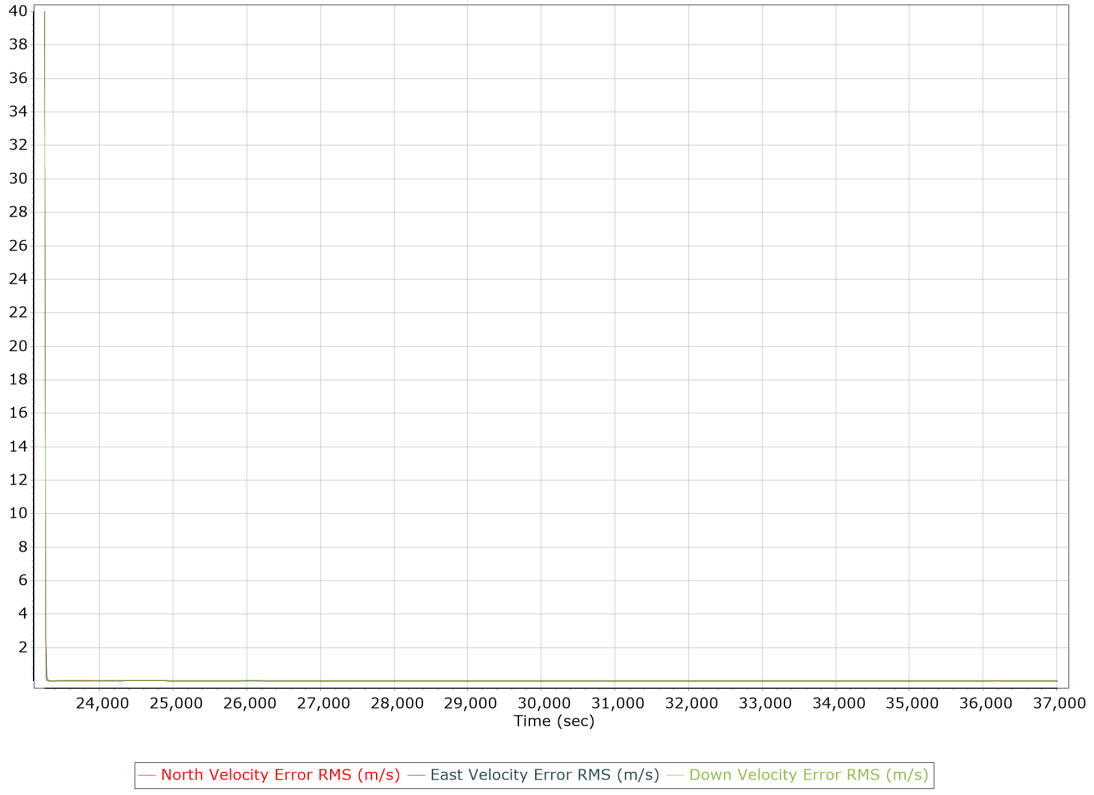


Forward Processed Performance Metrics

Position Error RMS (m)



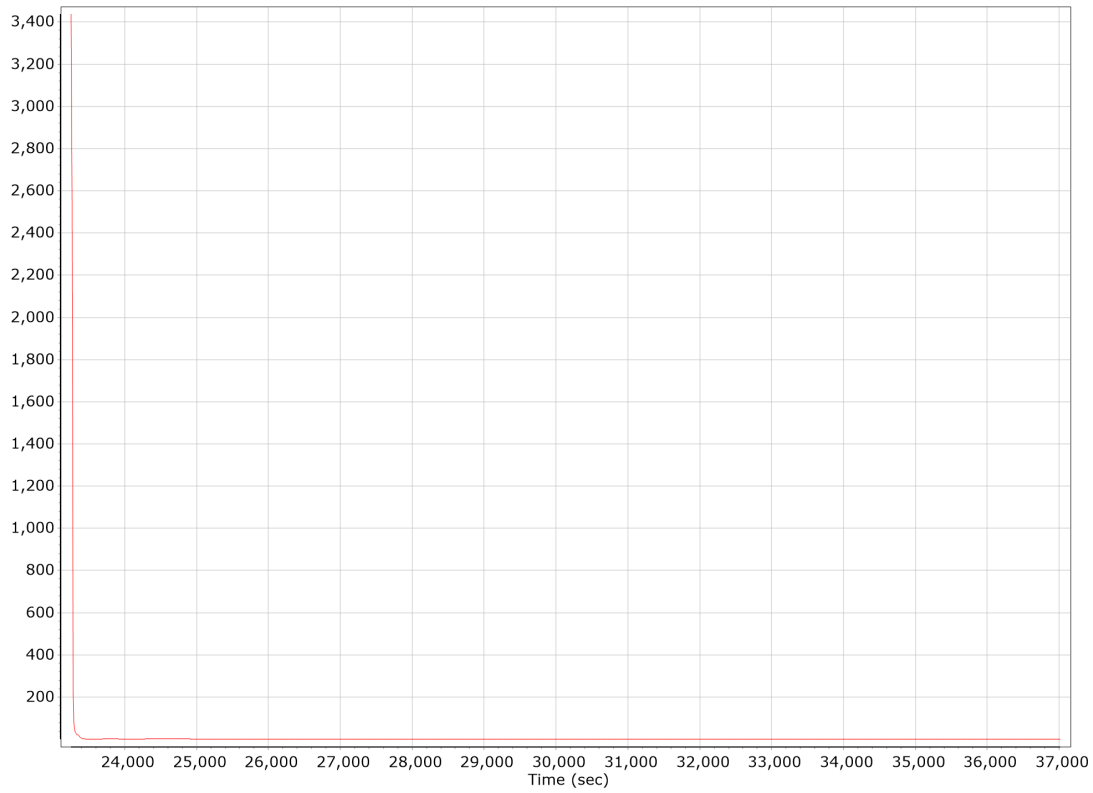
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

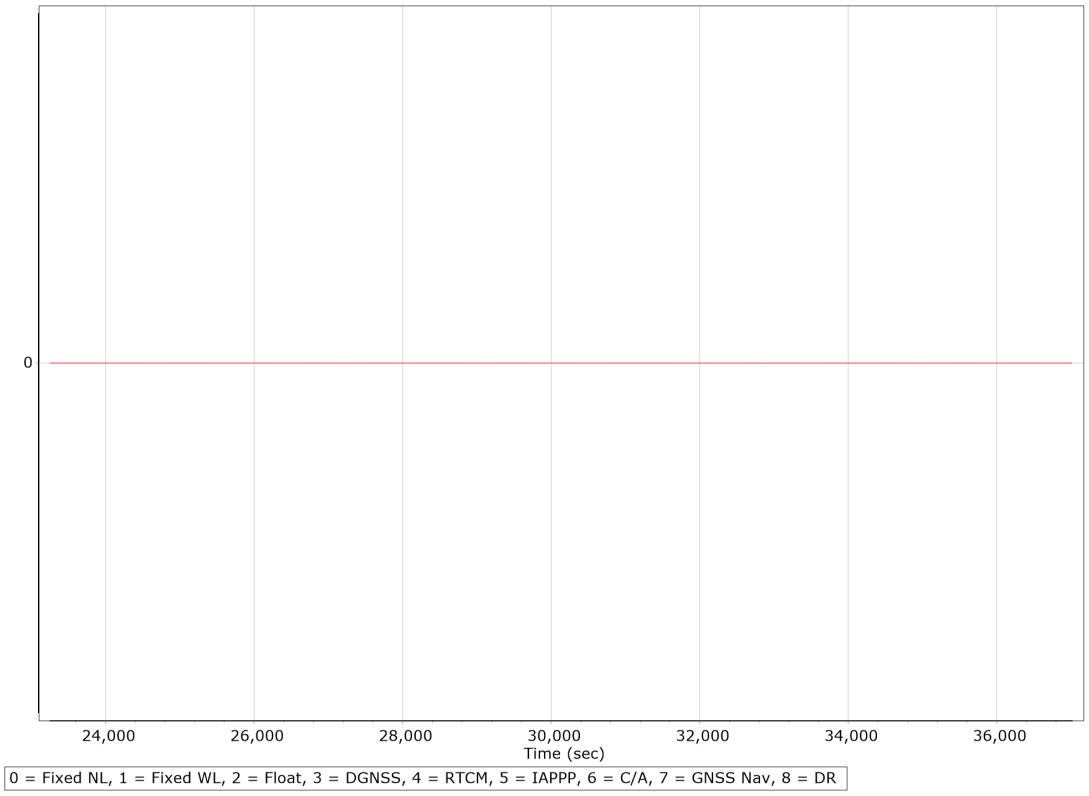


Heading Error RMS (arc-min)

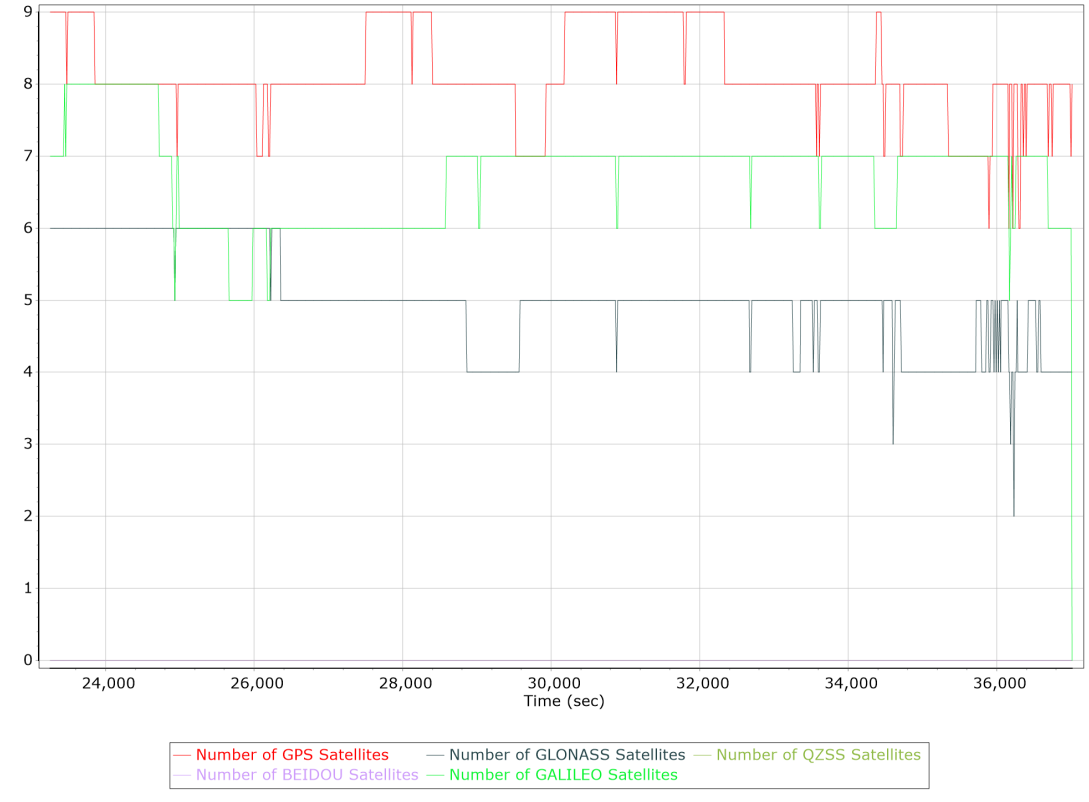


Forward Processed Solution Status

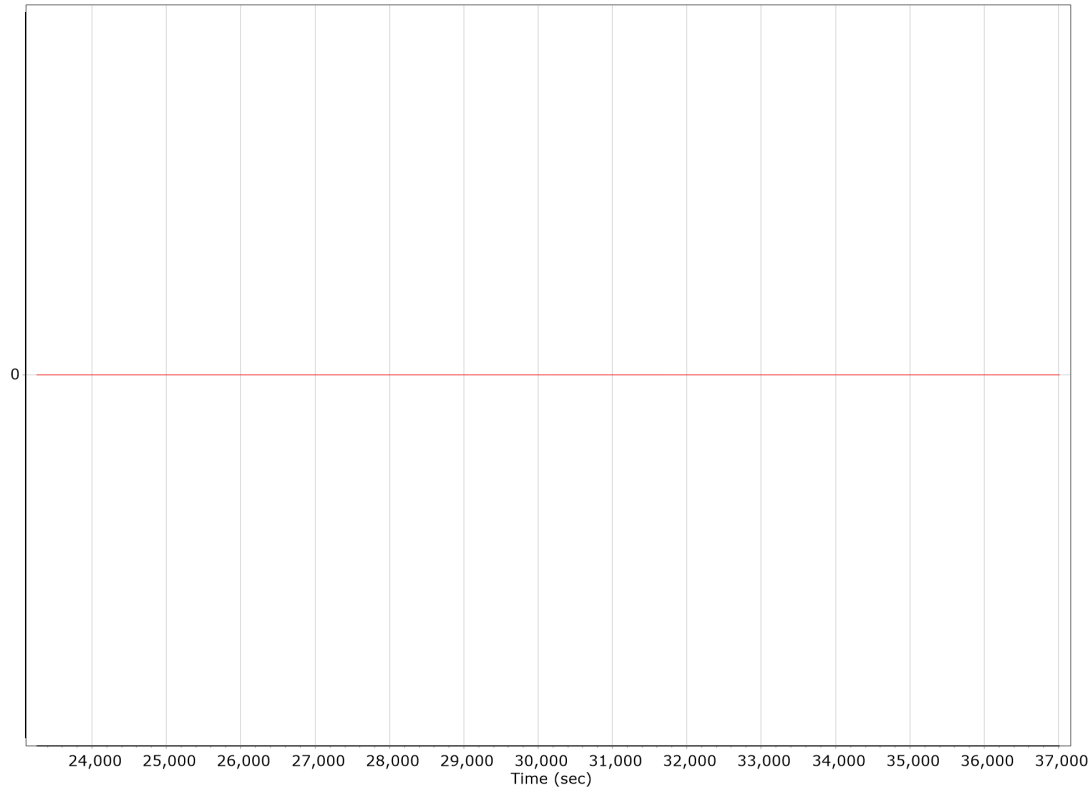
Processing Mode



Number of Satellites



Baseline Length



General Information

Mission Information

Project name	10222023A_4046
Processing date	2024-01-12 16:42:57
Mission date	2023-10-22 05:53:52
Mission duration	02:50:46.001
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N10762
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
231022_055332_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm2950.23g	GLONASS Broadcast Ephemeris
Ephm2950.23n	GPS Broadcast Ephemeris
IGS0OPSFIN_20232940000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232950000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20232960000_01D_15M_ORB.SP3	GPS Precise Ephemeris

Output Files

Filename	File type
sbet_10222023A_4046.out	SBET Trajectory File

Rover Data Summary

First raw data file	231022_055332_INS-GPS_1.raw		
Last raw data file	231022_055332_INS-GPS_1.raw		
Start GPS week	2285		
Start time	21213.112 (10/22/2023 5:53:33 AM)		
End time	31459.113 (10/22/2023 8:44:19 AM)		
Start of fine alignment	21439.855 (10/22/2023 5:57:19 AM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	0.000	0.000	0.000
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

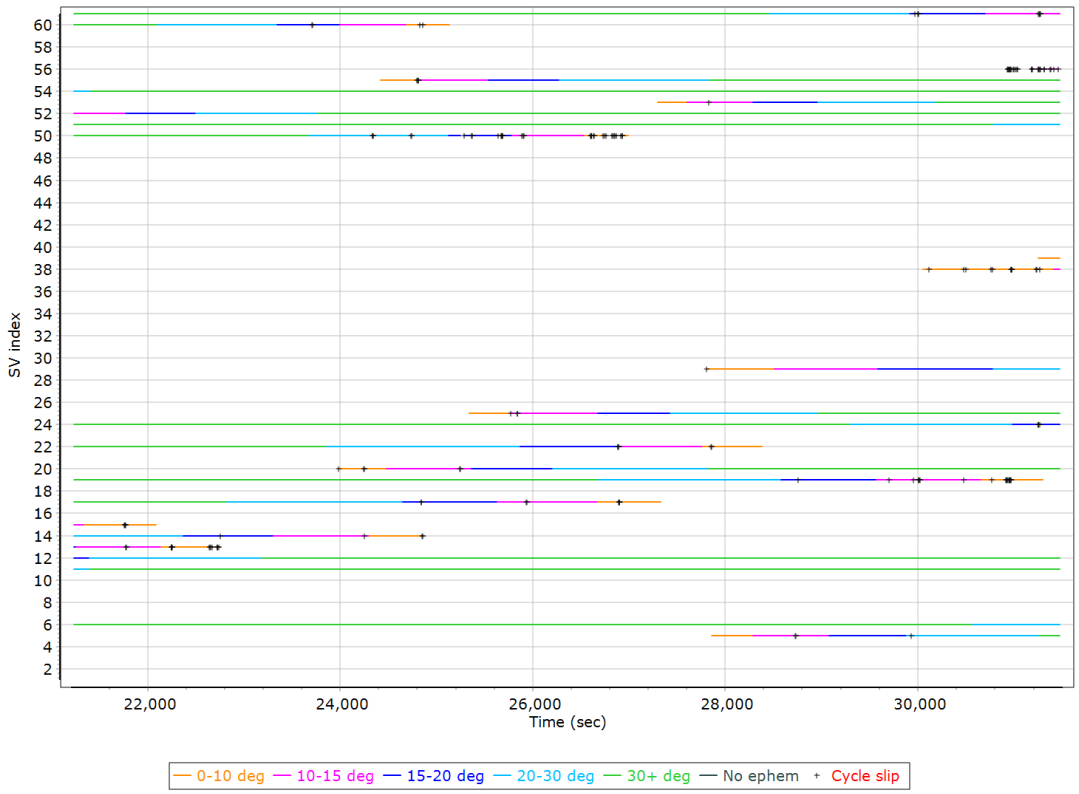
Rover Data QC

Raw IMU Import QC Summary

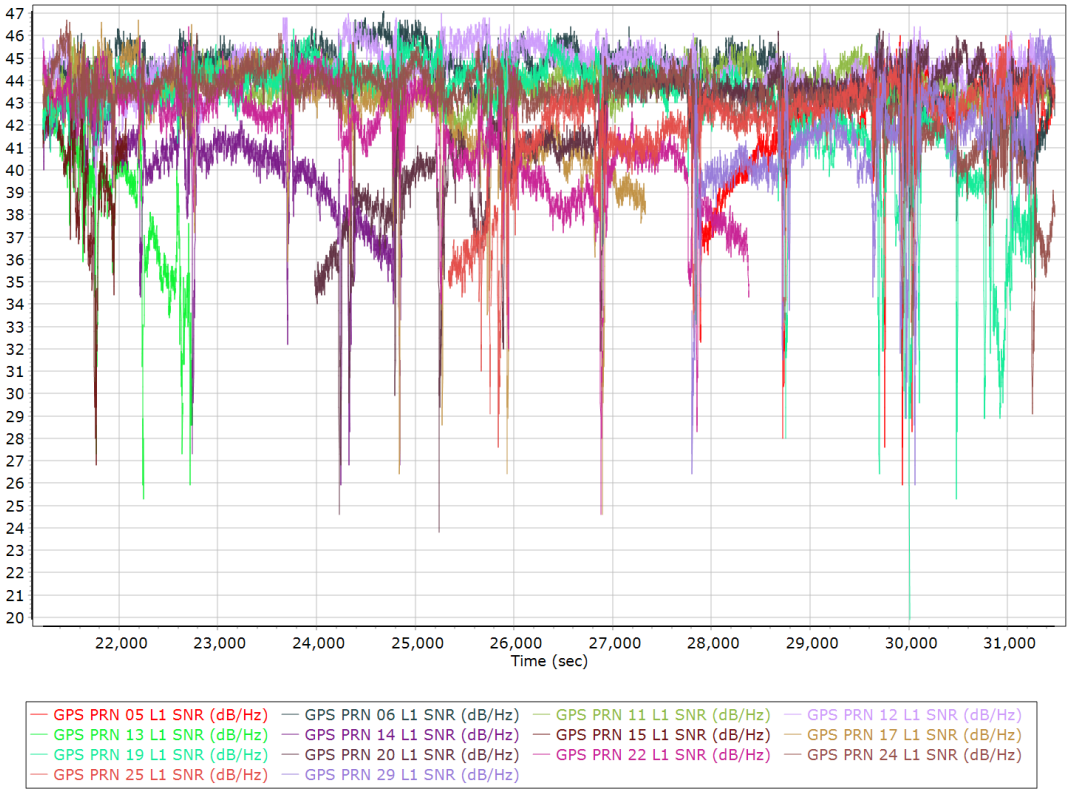
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_10222023A_4046.log
IMU Records Processed	2048915
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

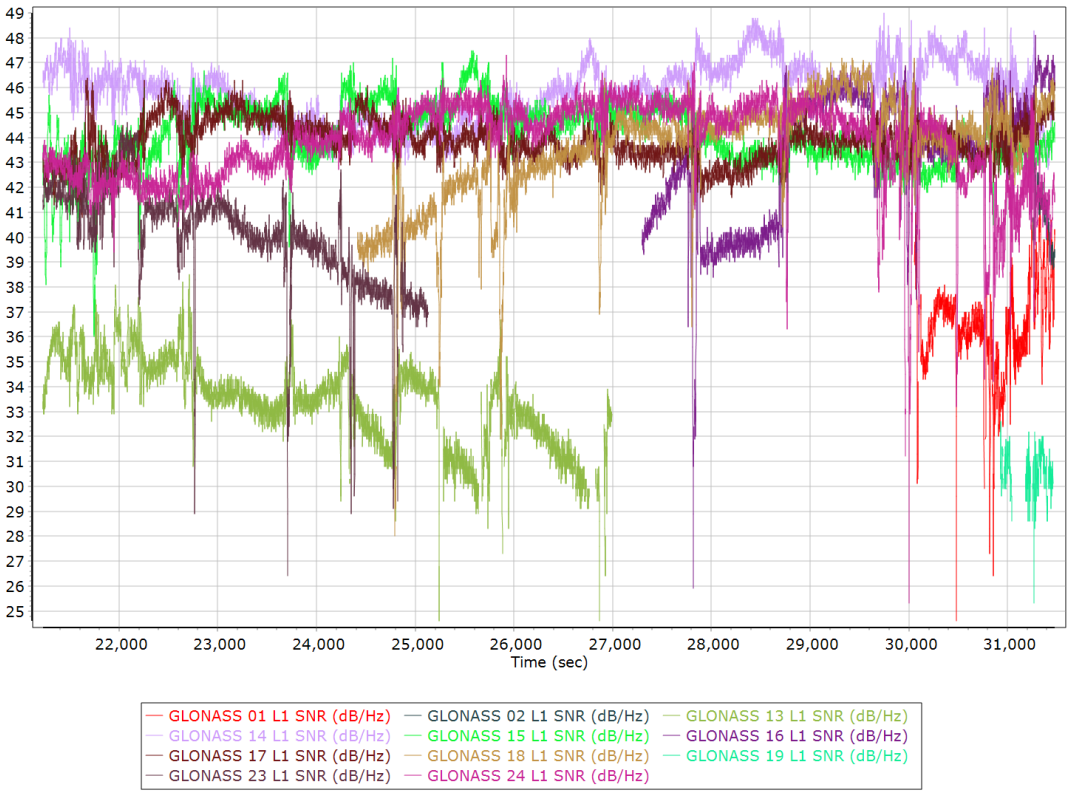
GPS/GLONASS L1 Satellite Lock/Elevation



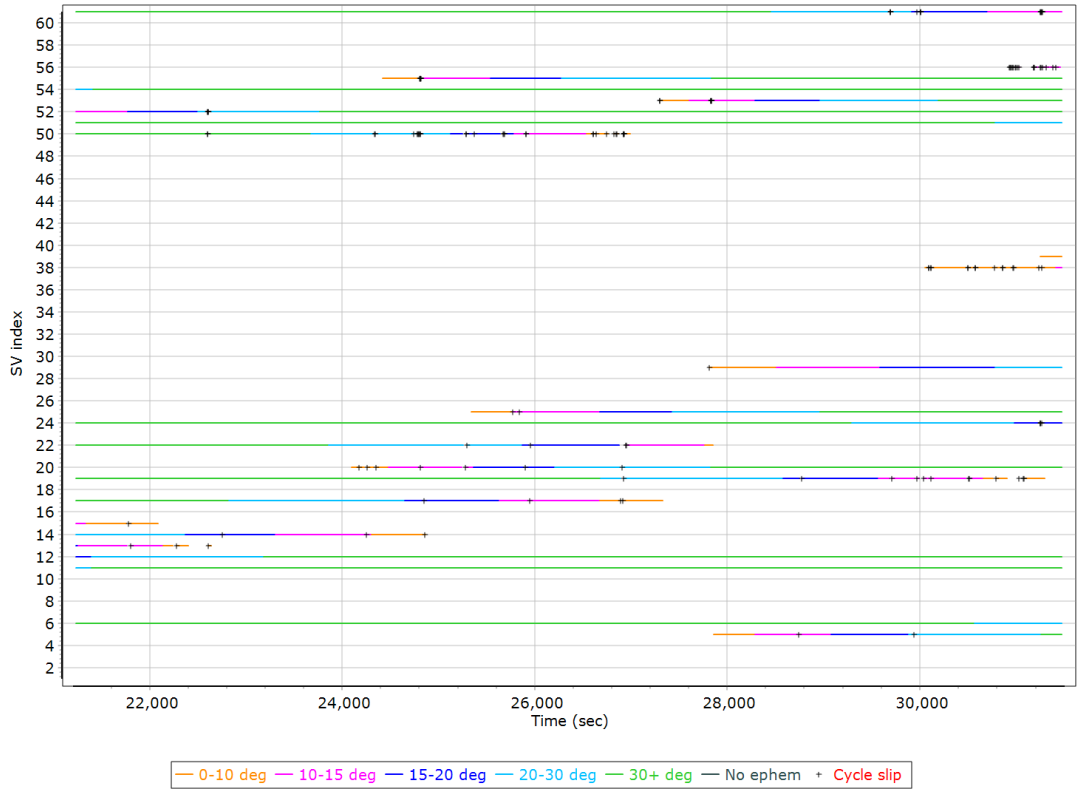
GPS L1 SNR



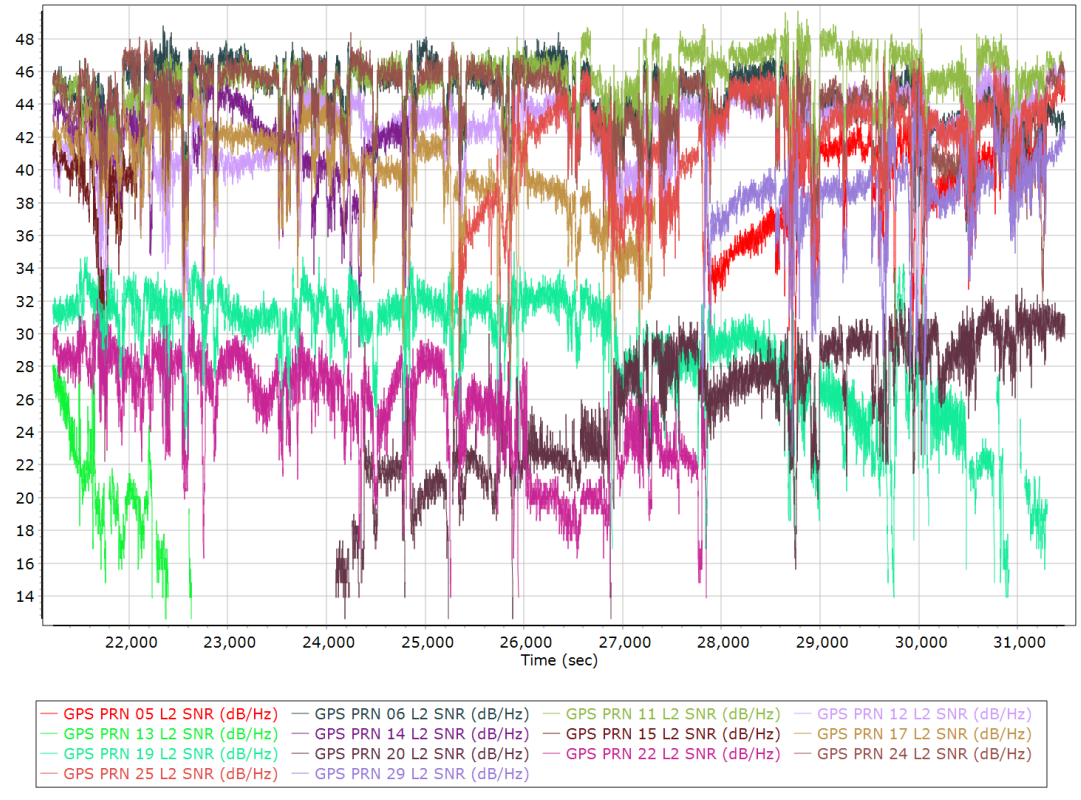
GLONASS L1 SNR



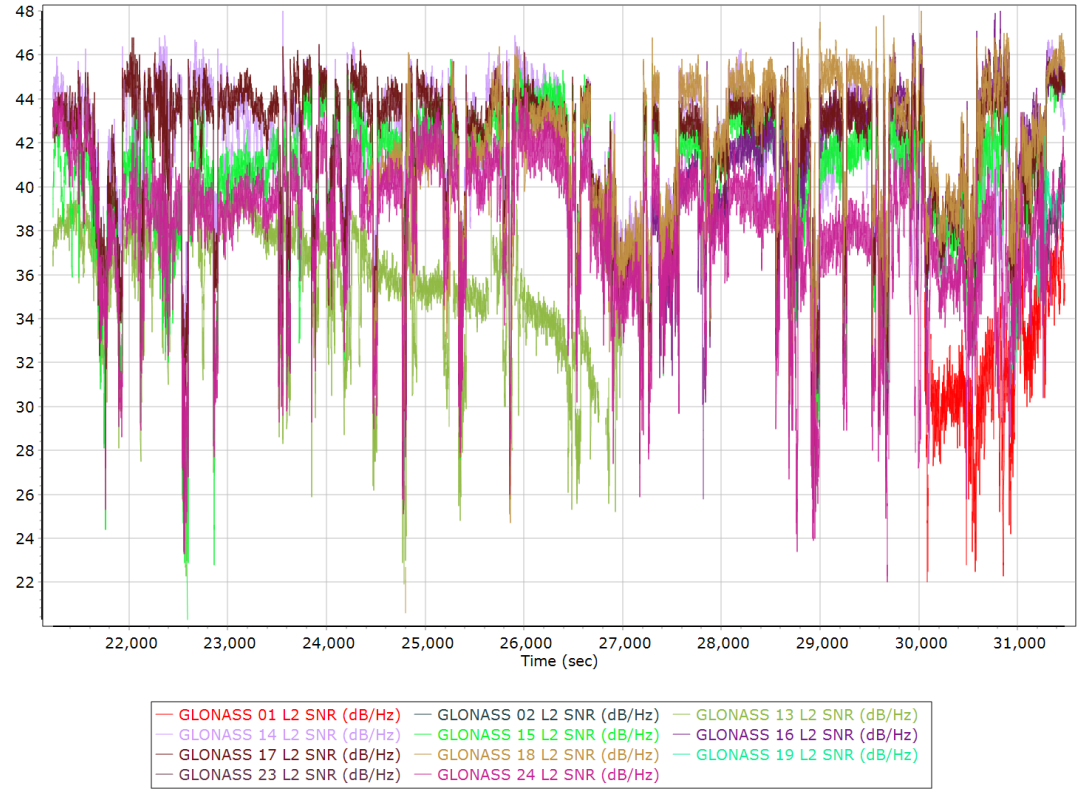
GPS/GLONASS L2 Satellite Lock/Elevation



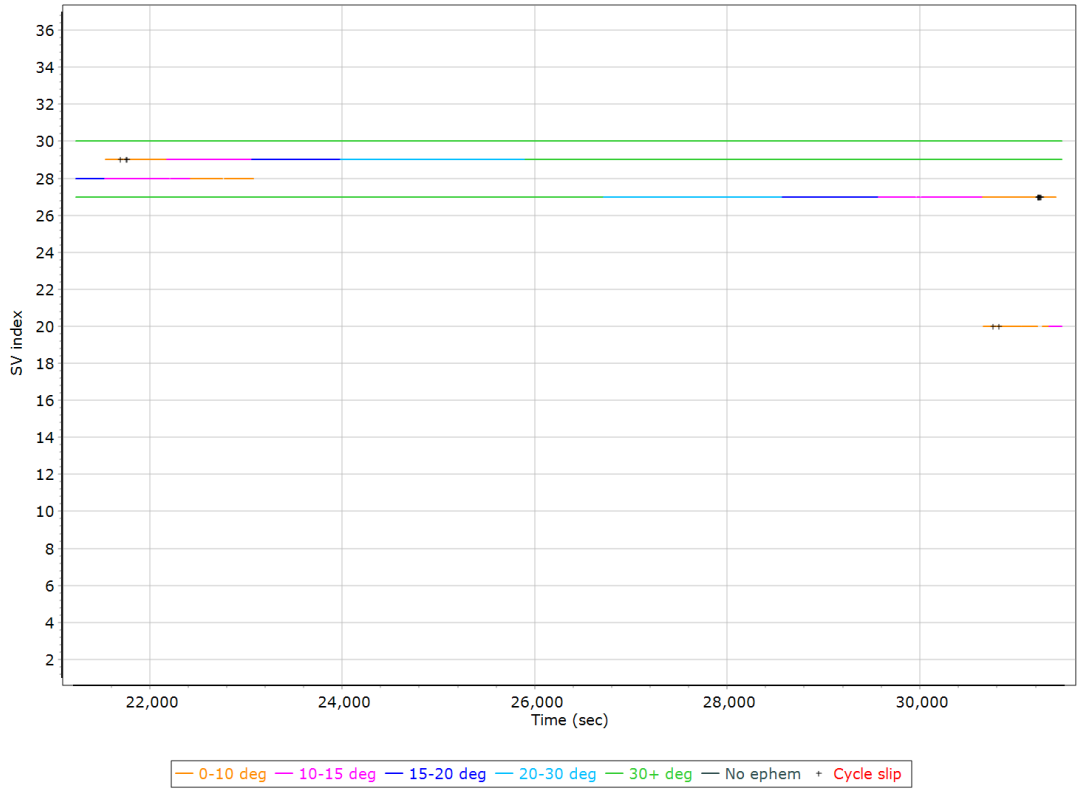
GPS L2 SNR



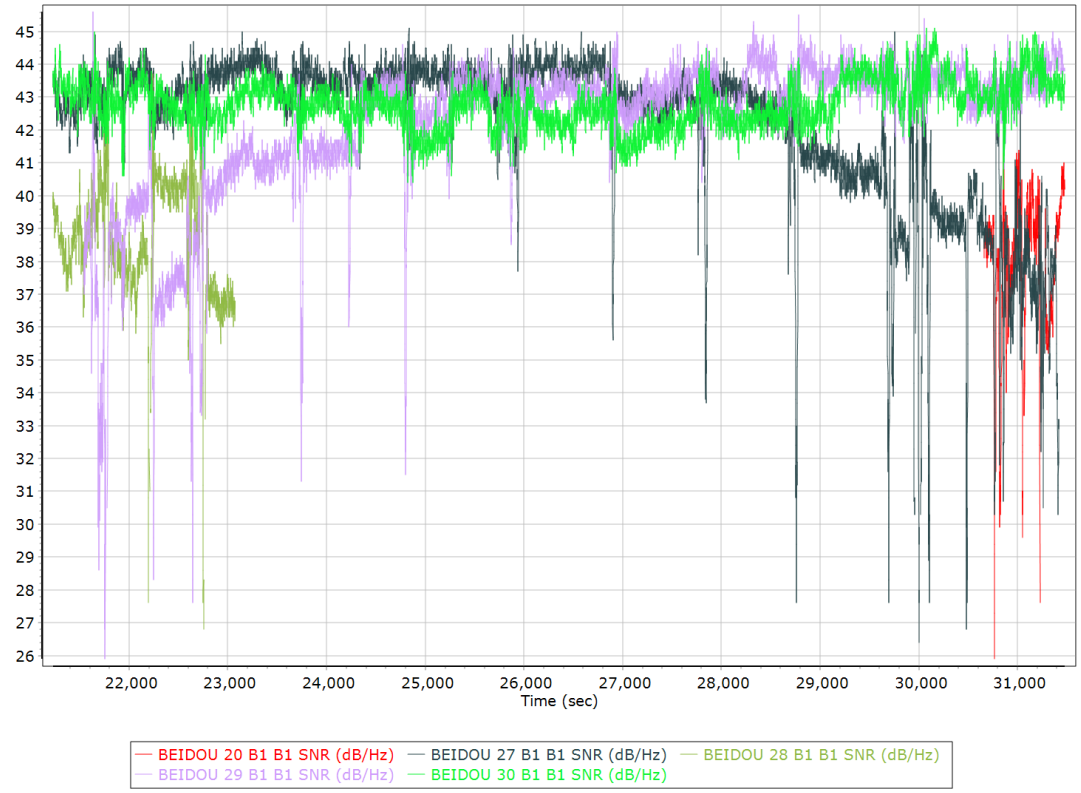
GLONASS L2 SNR



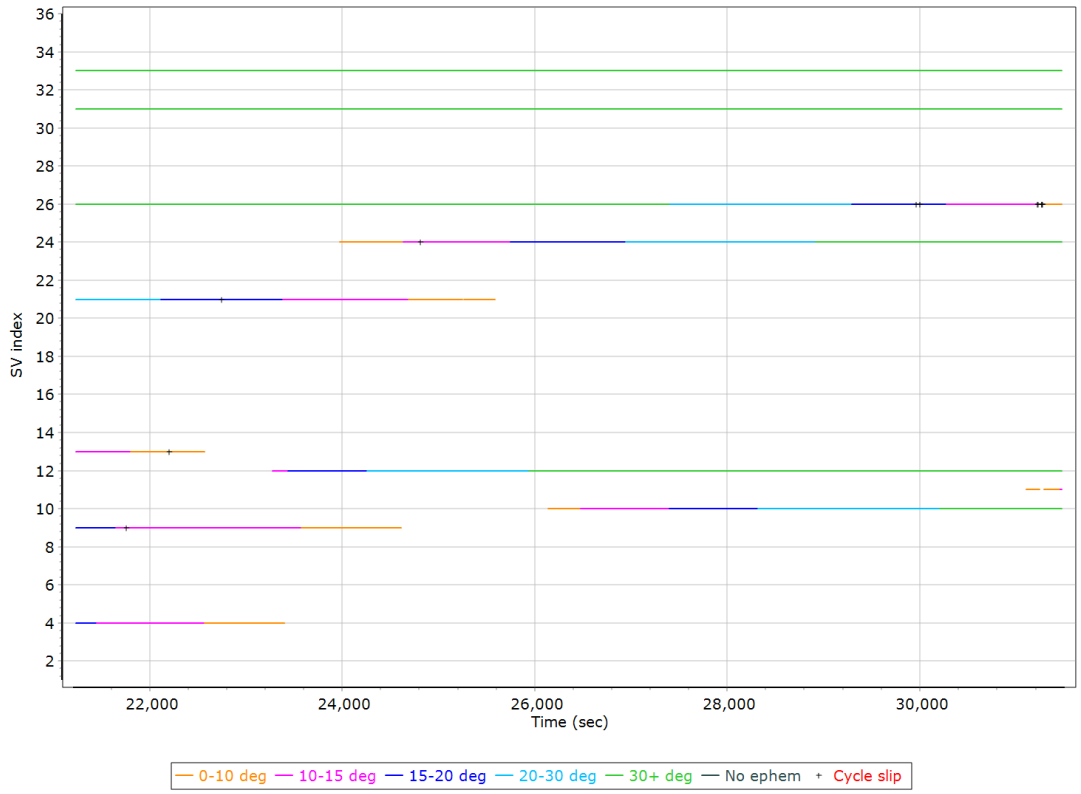
BEIDOU Satellite Lock/Elevation



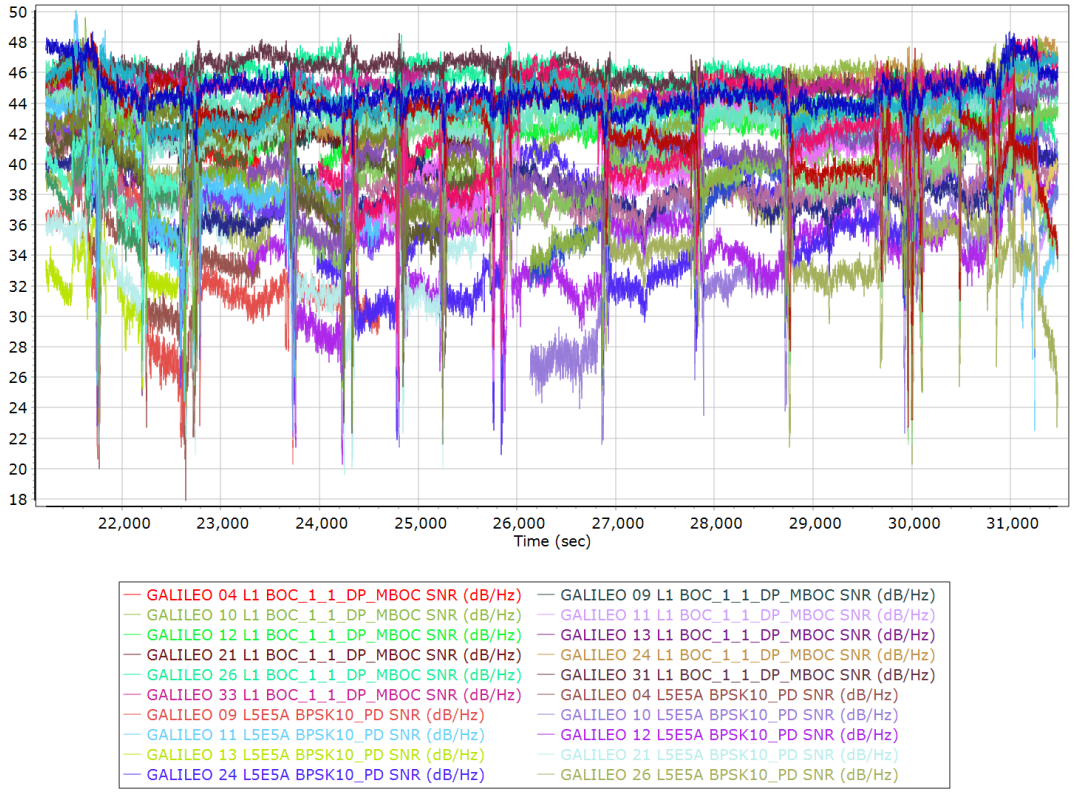
BEIDOU SNR



GALILEO Satellite Lock/Elevation

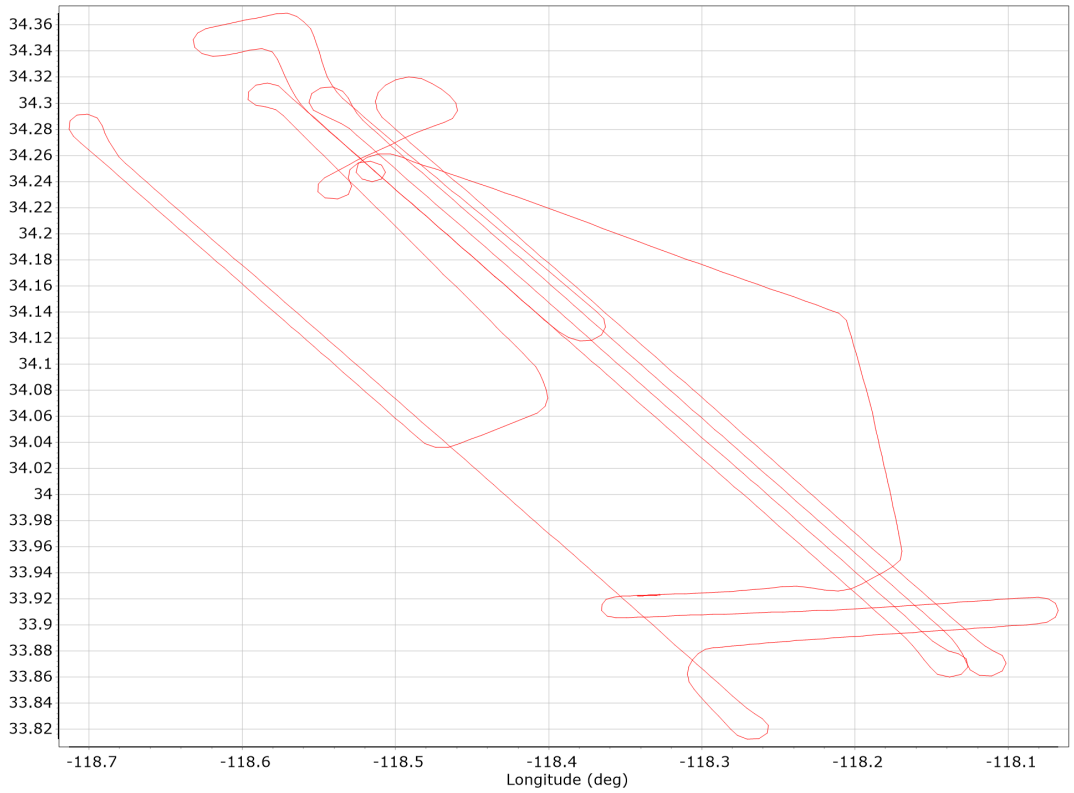


GALILEO SNR

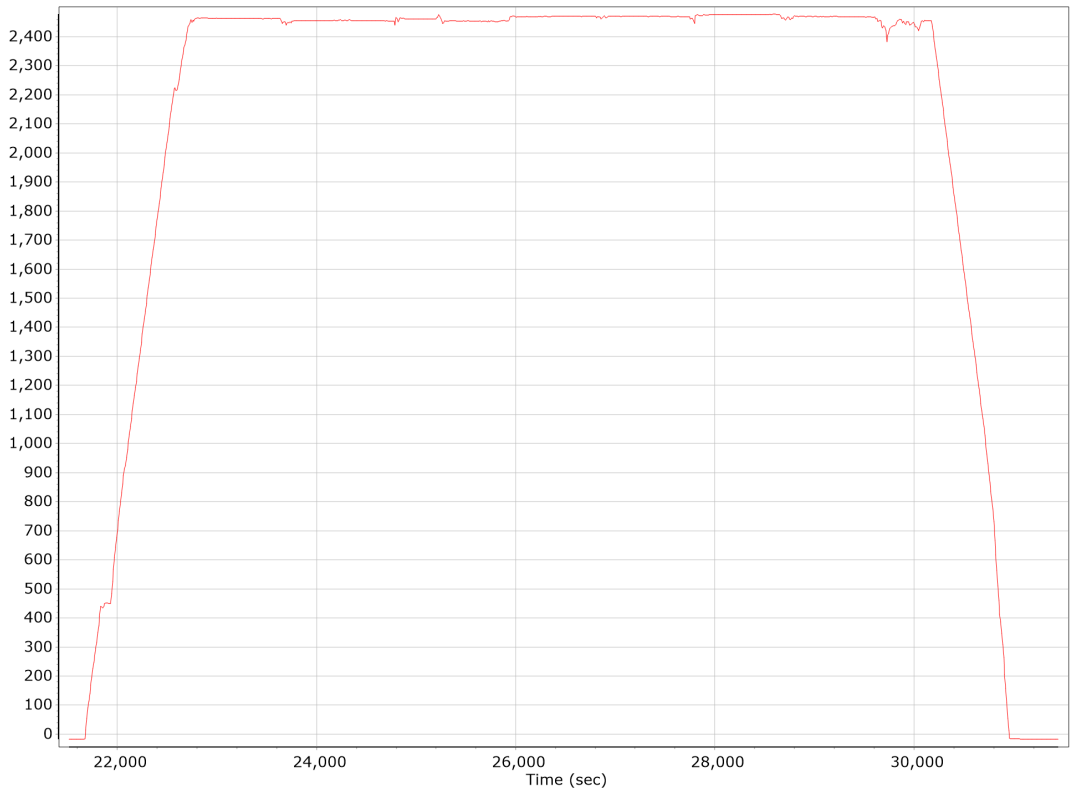

50
48
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18
22,000
23,000
24,000
25,000
26,000
27,000
28,000
29,000
30,000
31,000
Time (sec)
GALILEO 04 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 09 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 10 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 11 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 12 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 13 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 21 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 24 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 26 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 31 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 33 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 04 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 09 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 10 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 11 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 12 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 13 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 21 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 24 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 26 L5E5A BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

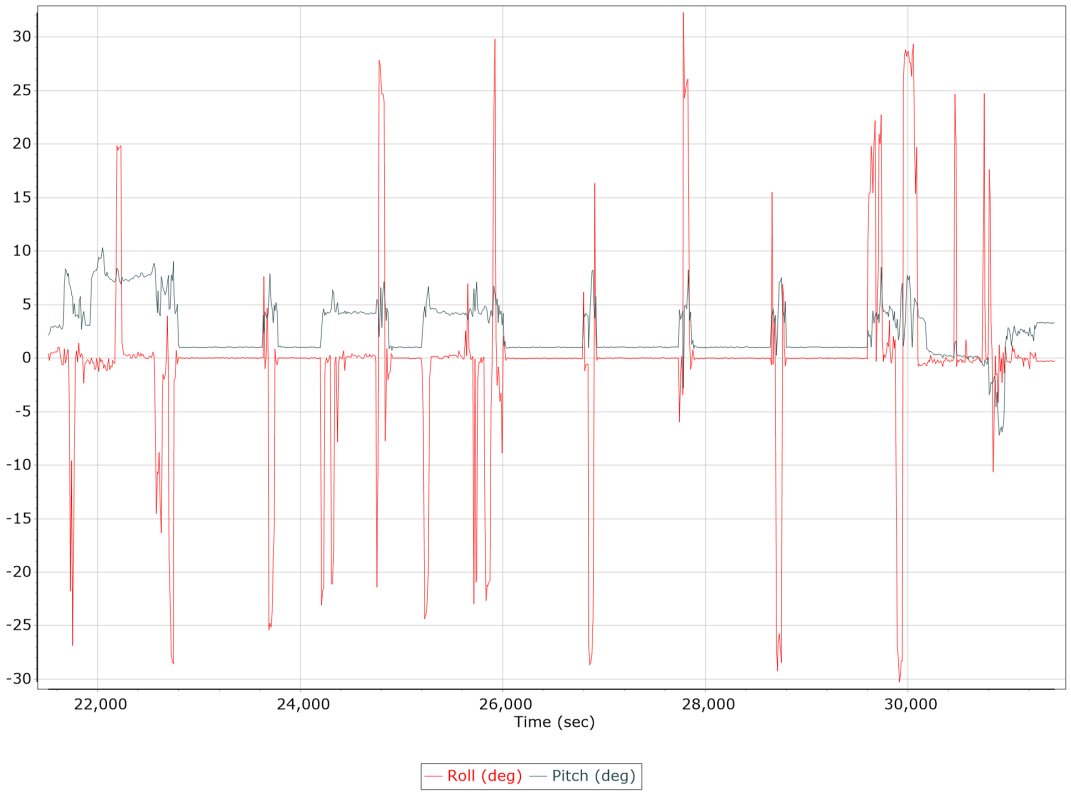
Top View



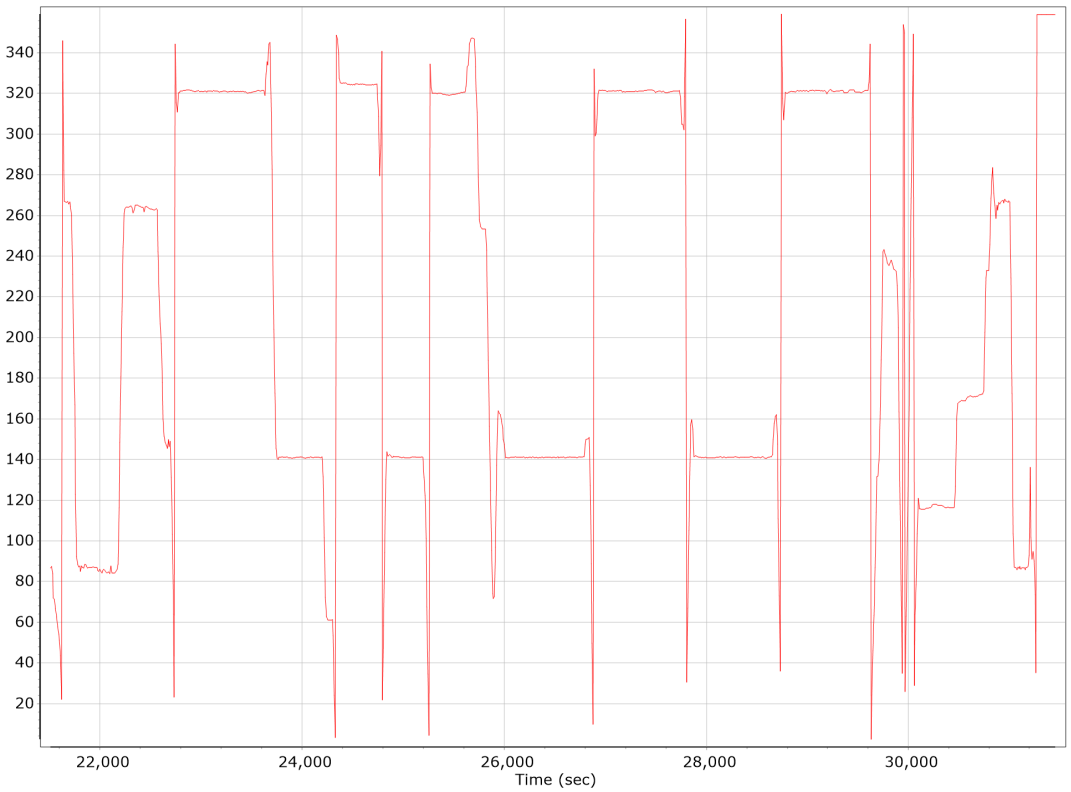
Altitude



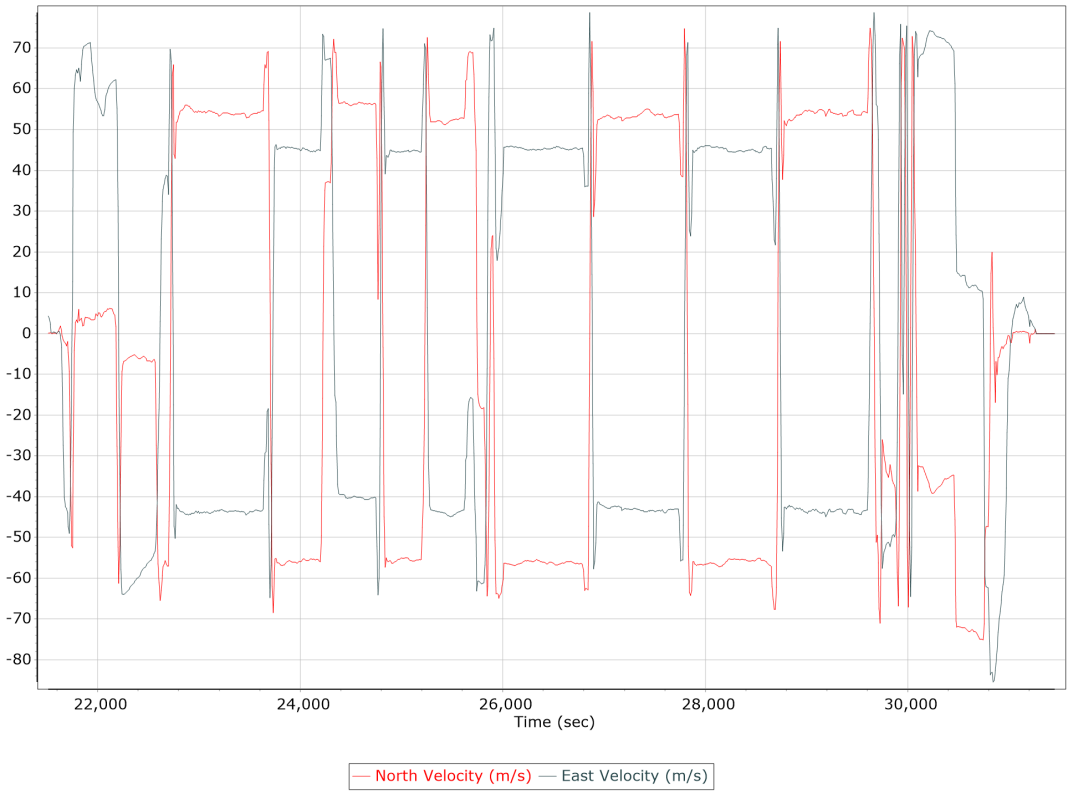
Roll/Pitch



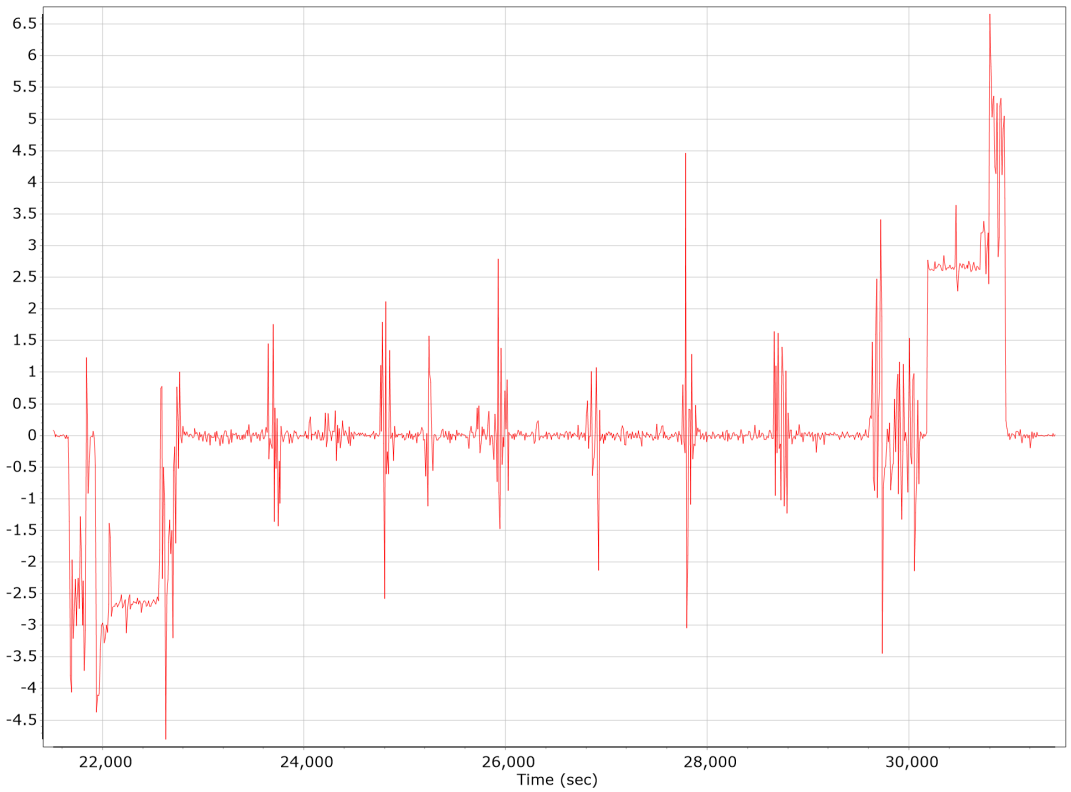
Heading



North/East Velocity



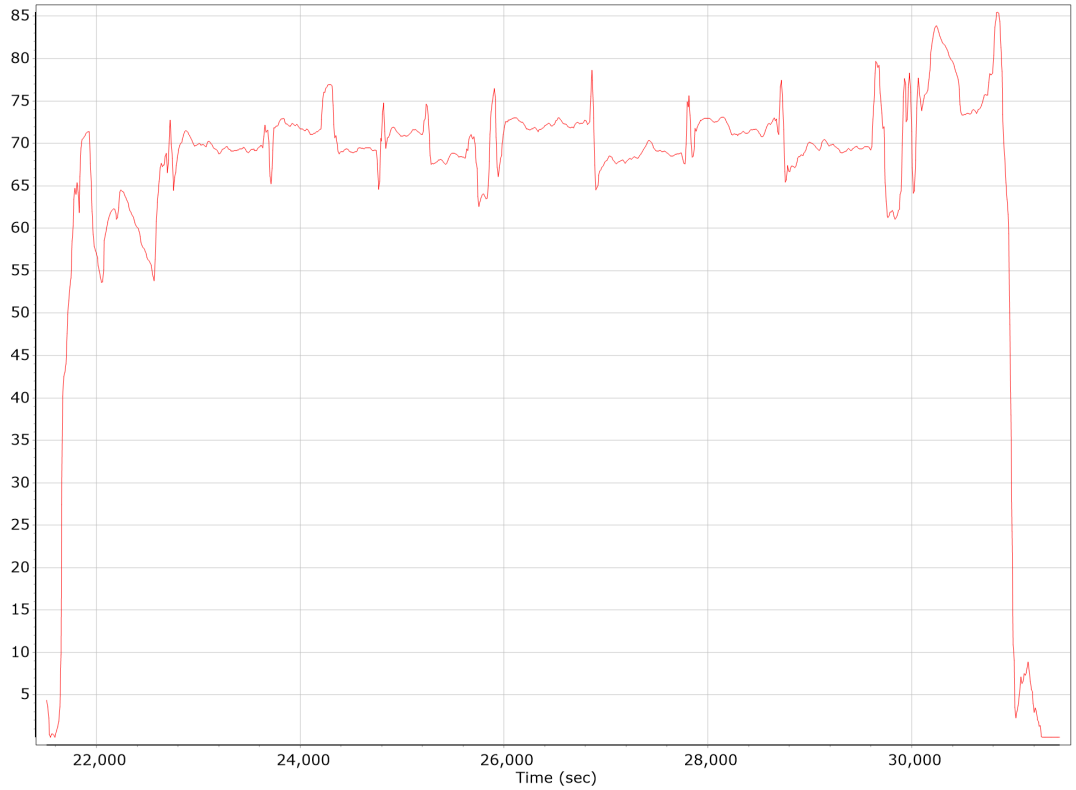
Down Velocity



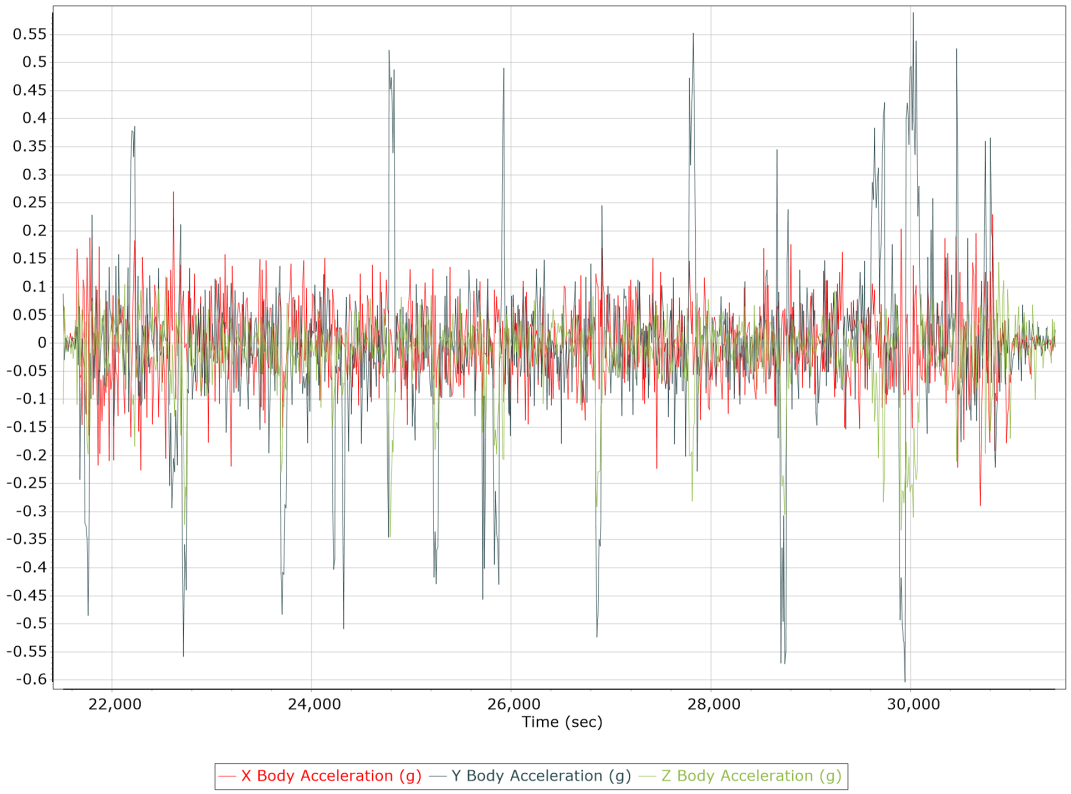
Total Speed



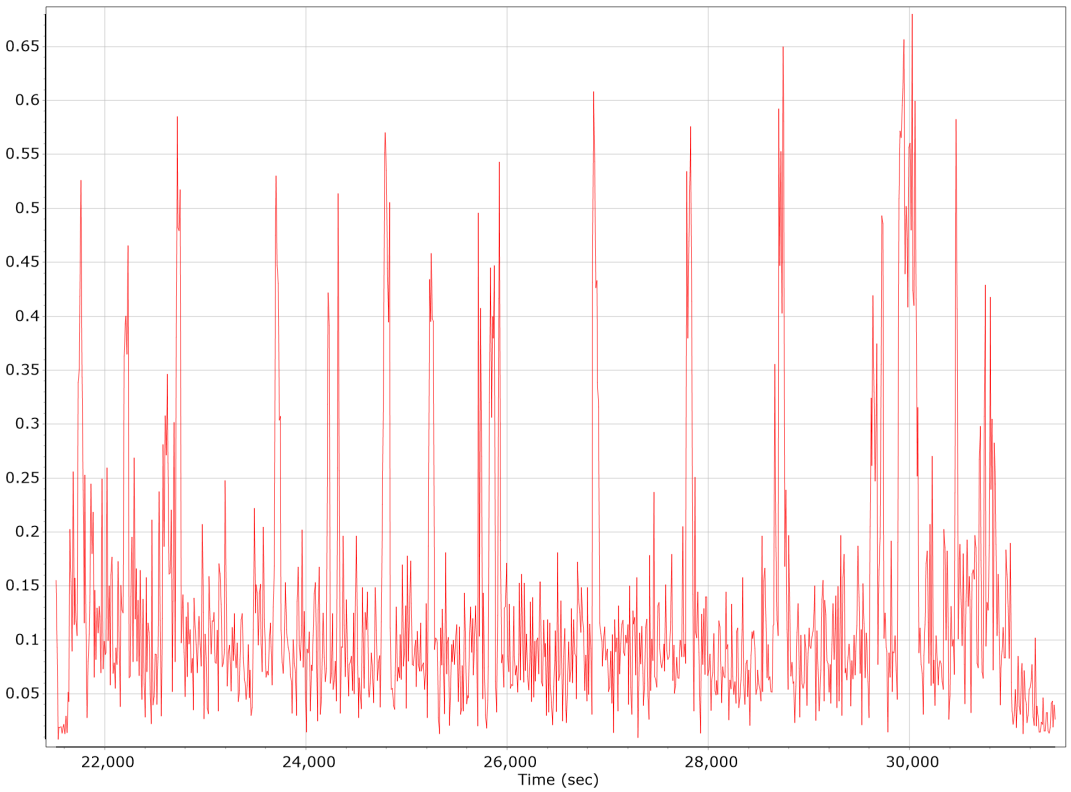
Ground Speed



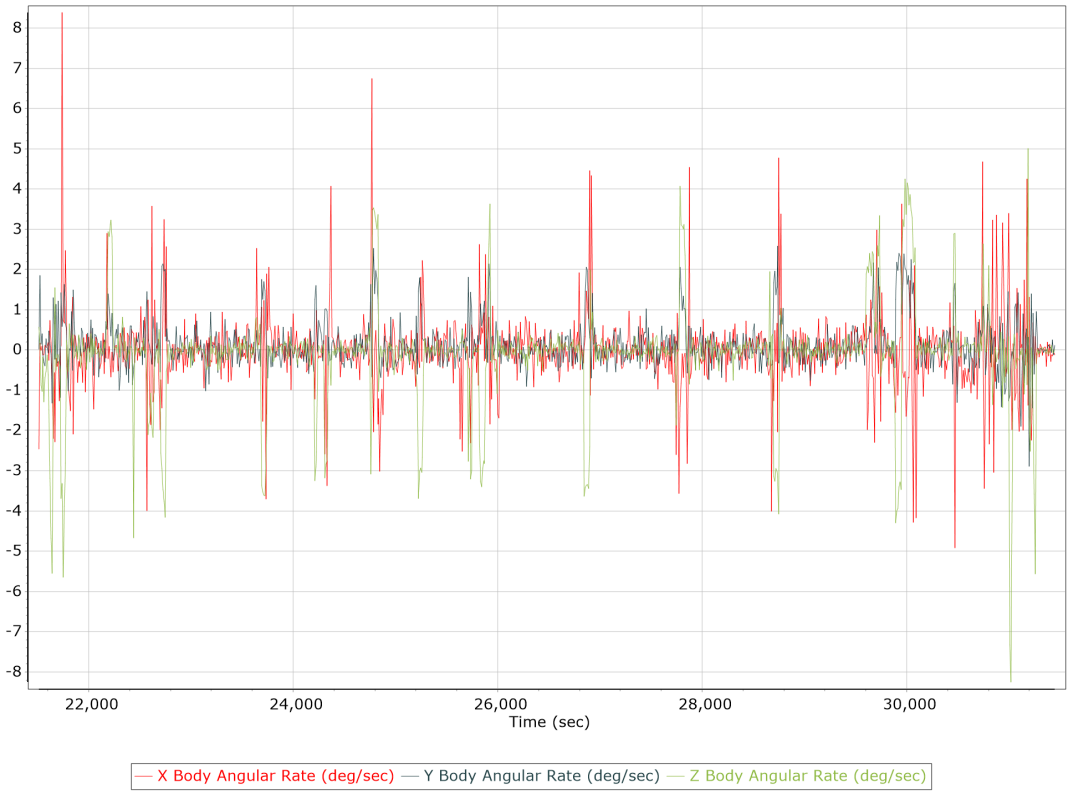
Body Acceleration



Total Body Acceleration

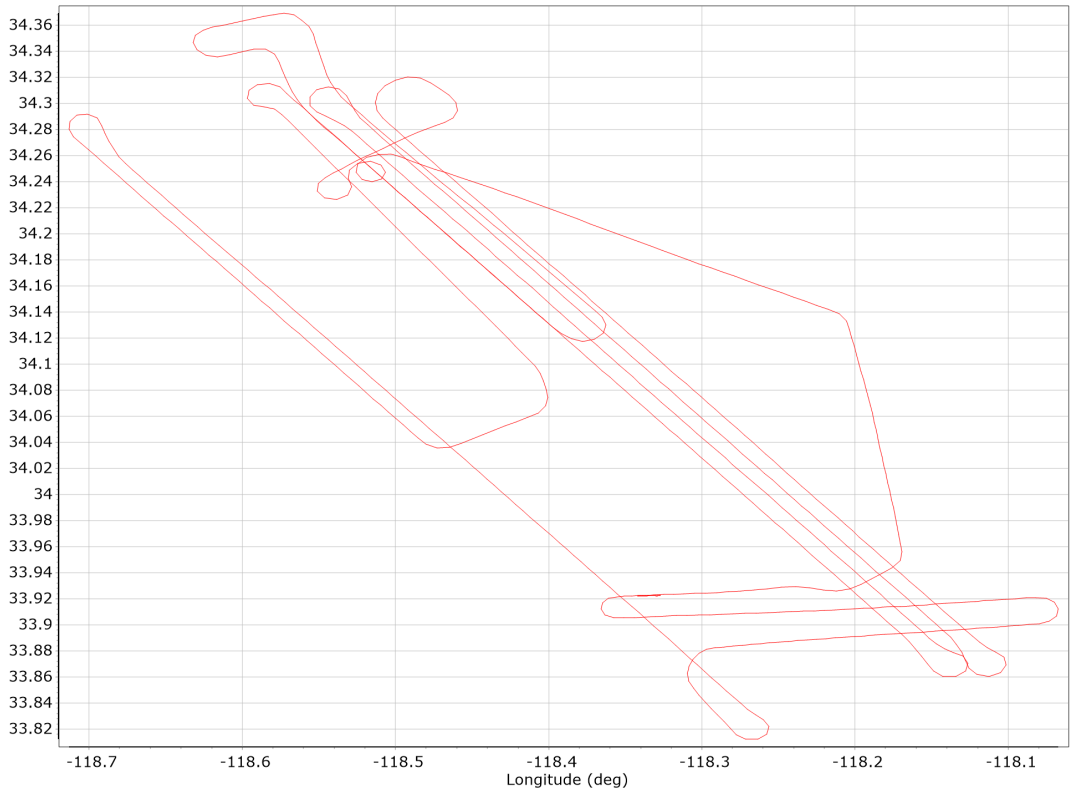


Body Angular Rate

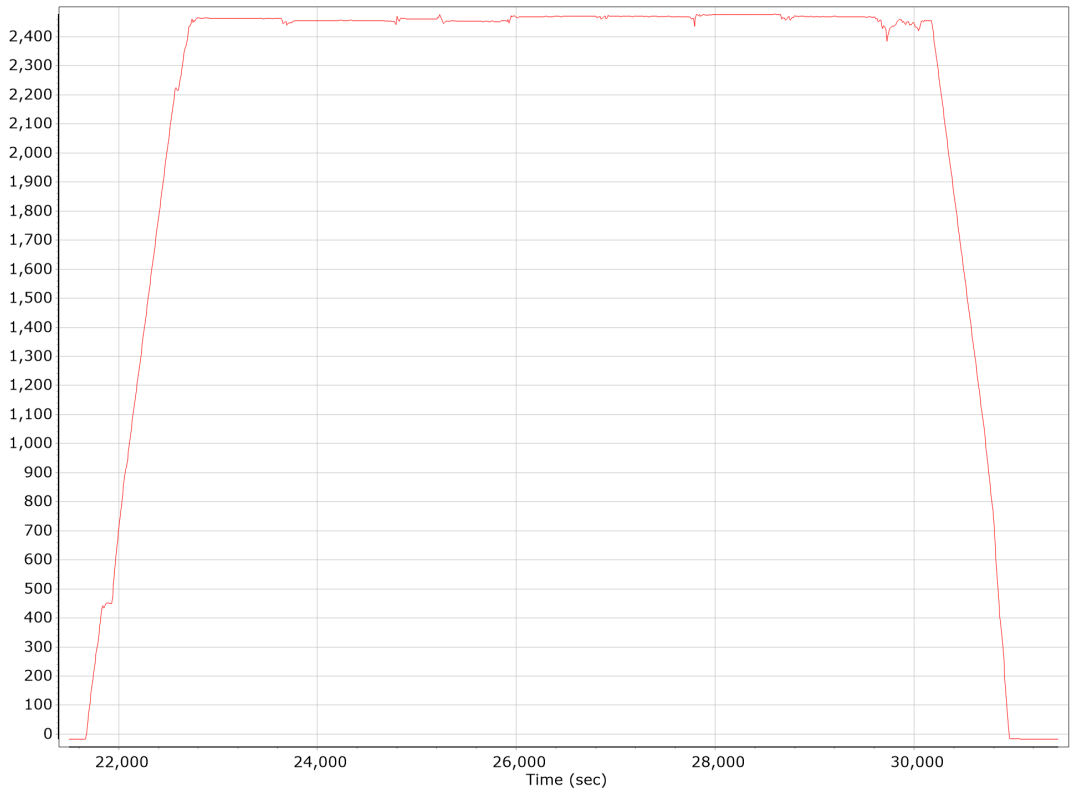


Forward Processed Trajectory Information

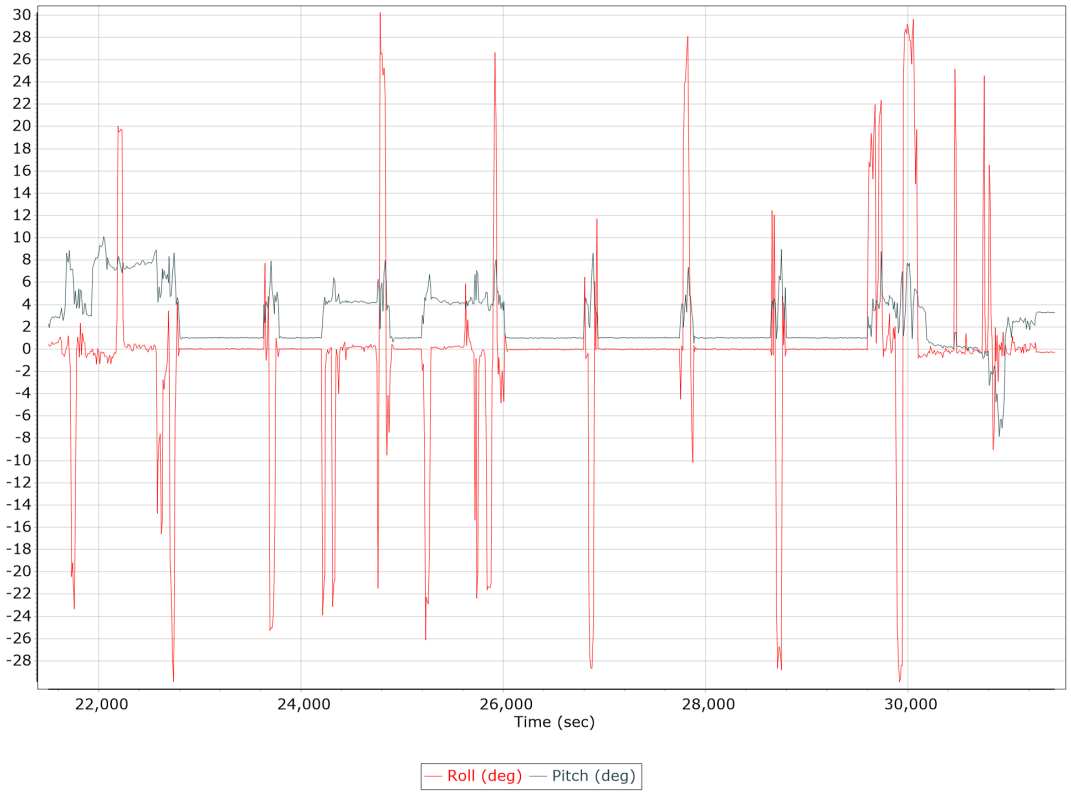
Top View



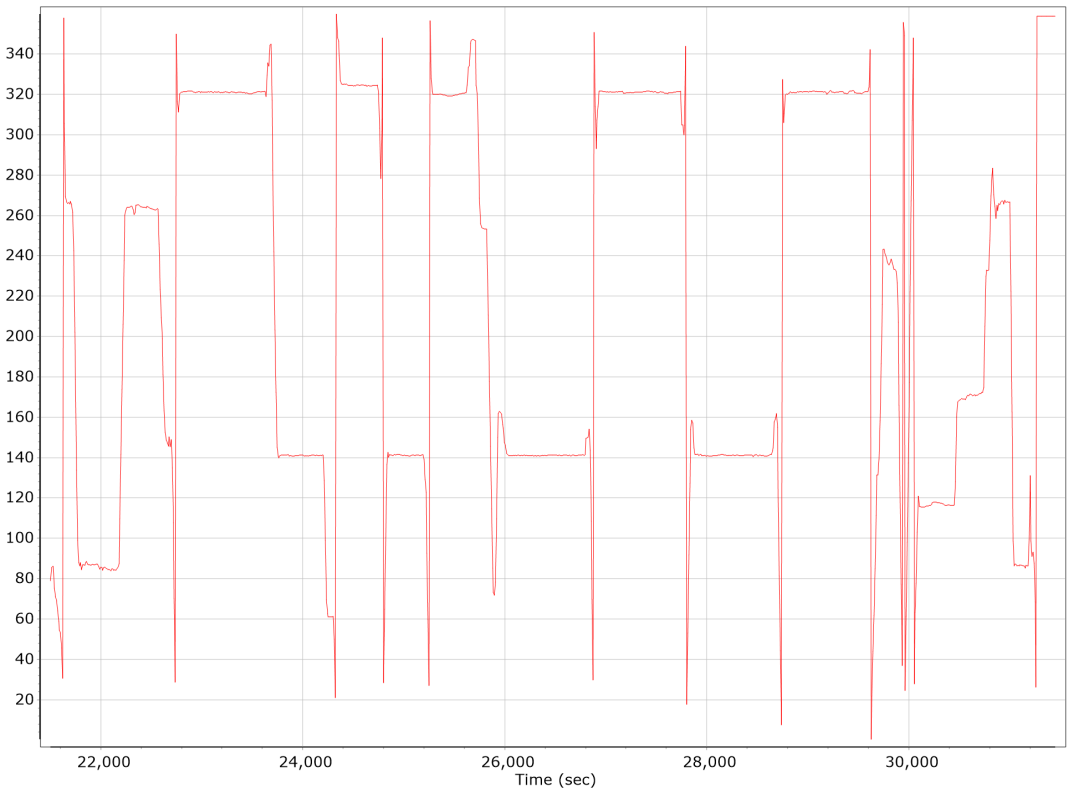
Altitude



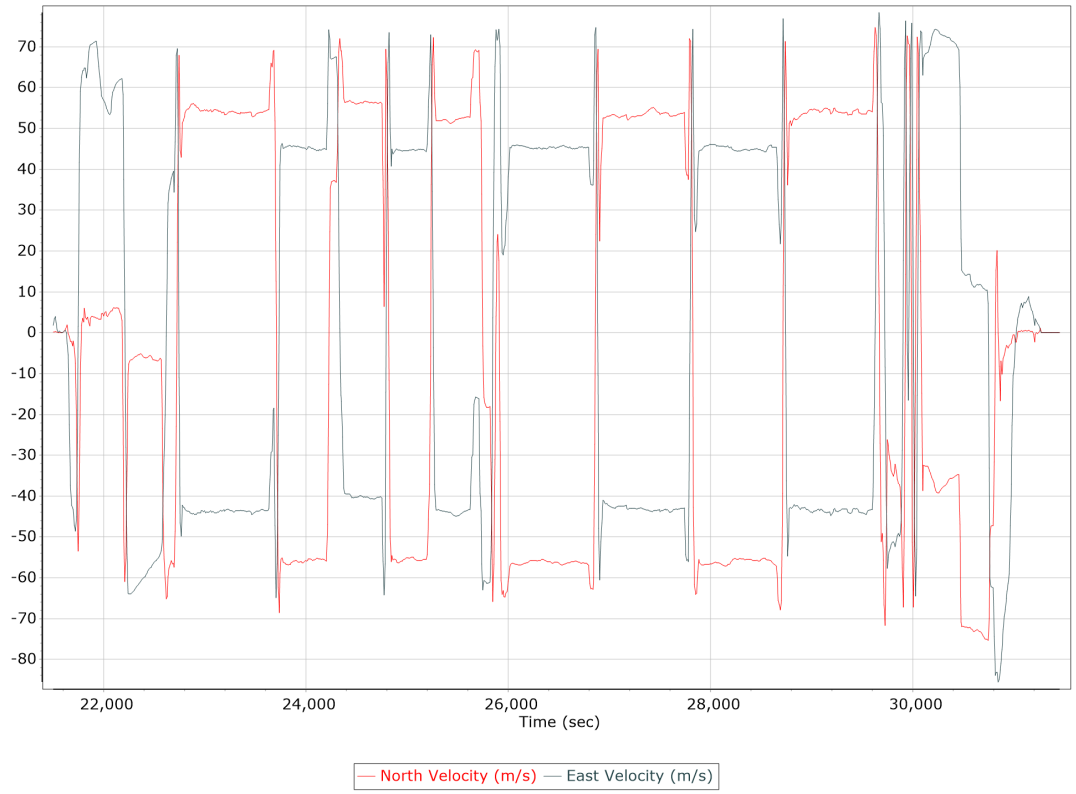
Roll/Pitch



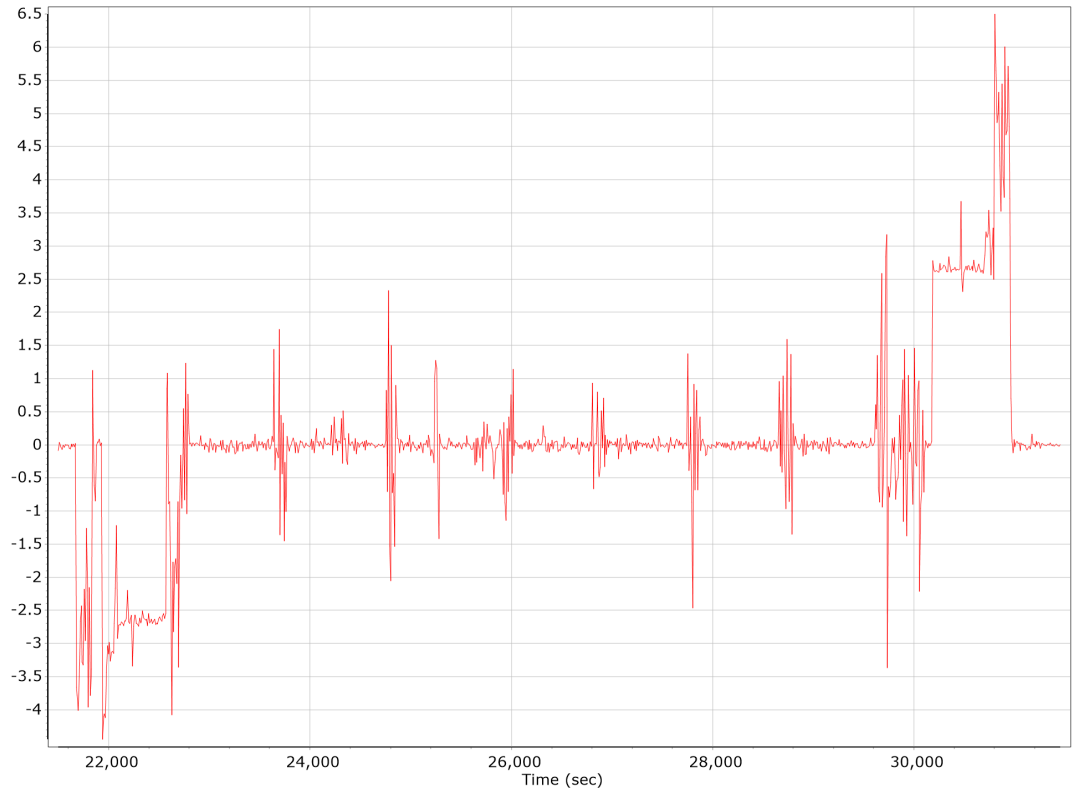
Heading



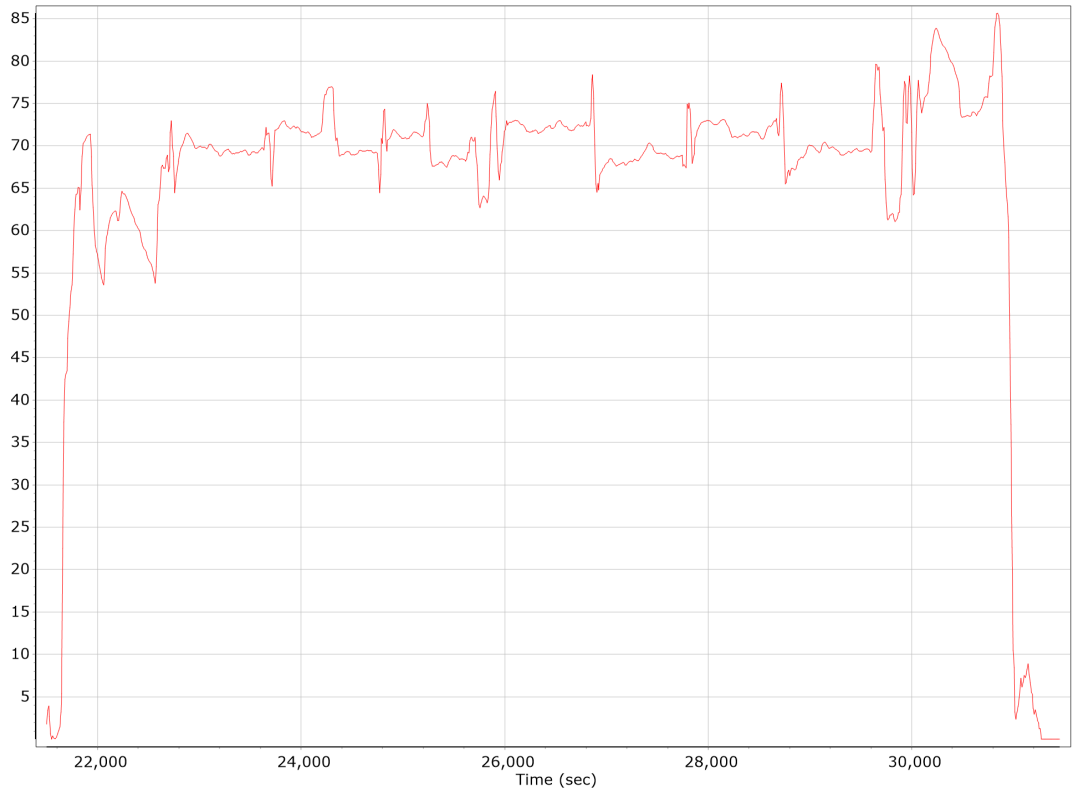
North/East Velocity



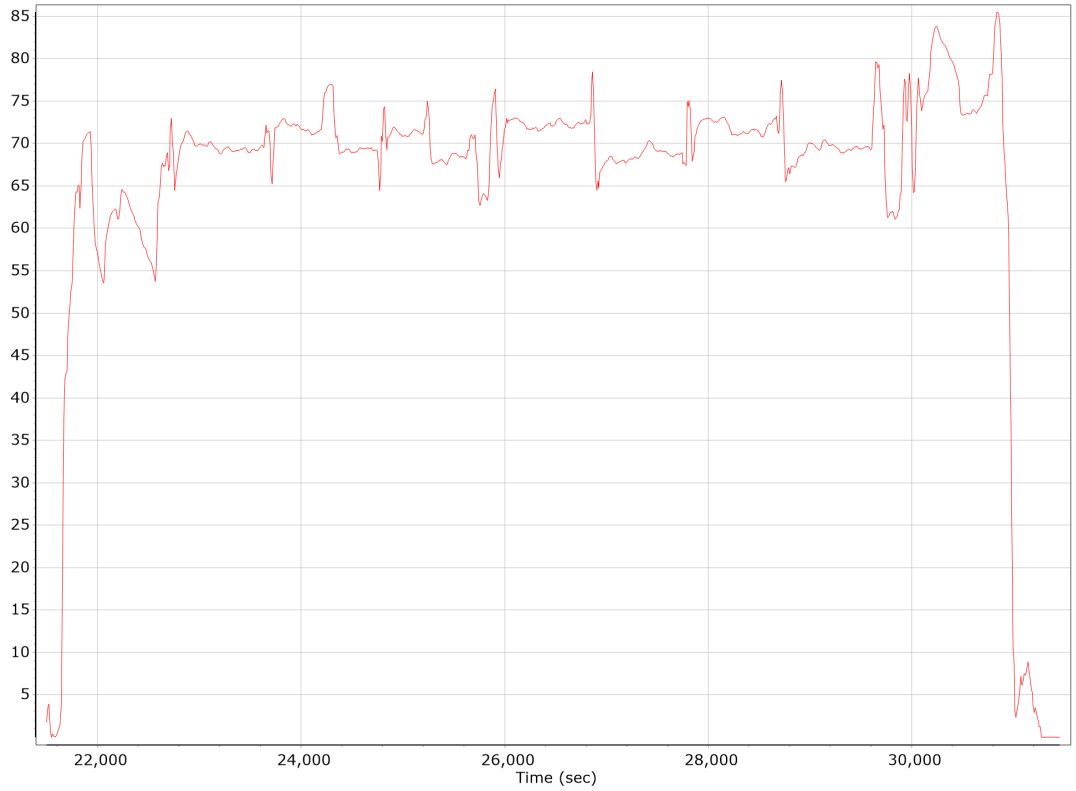
Down Velocity



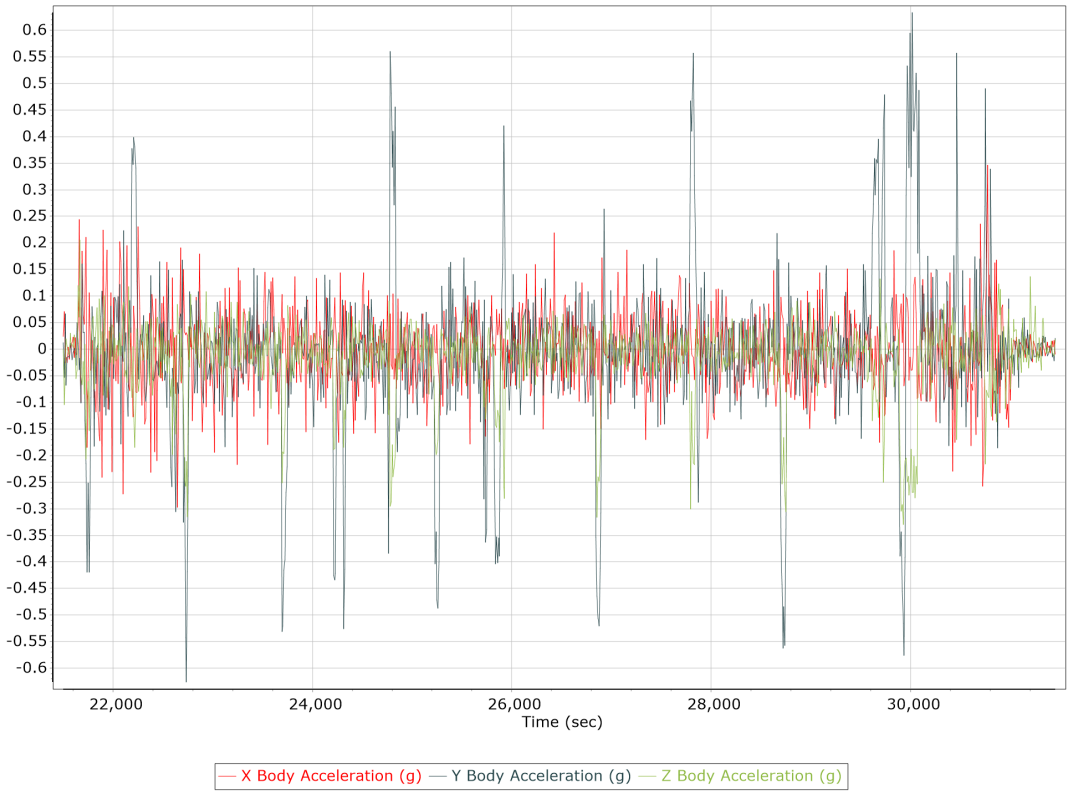
Total Speed



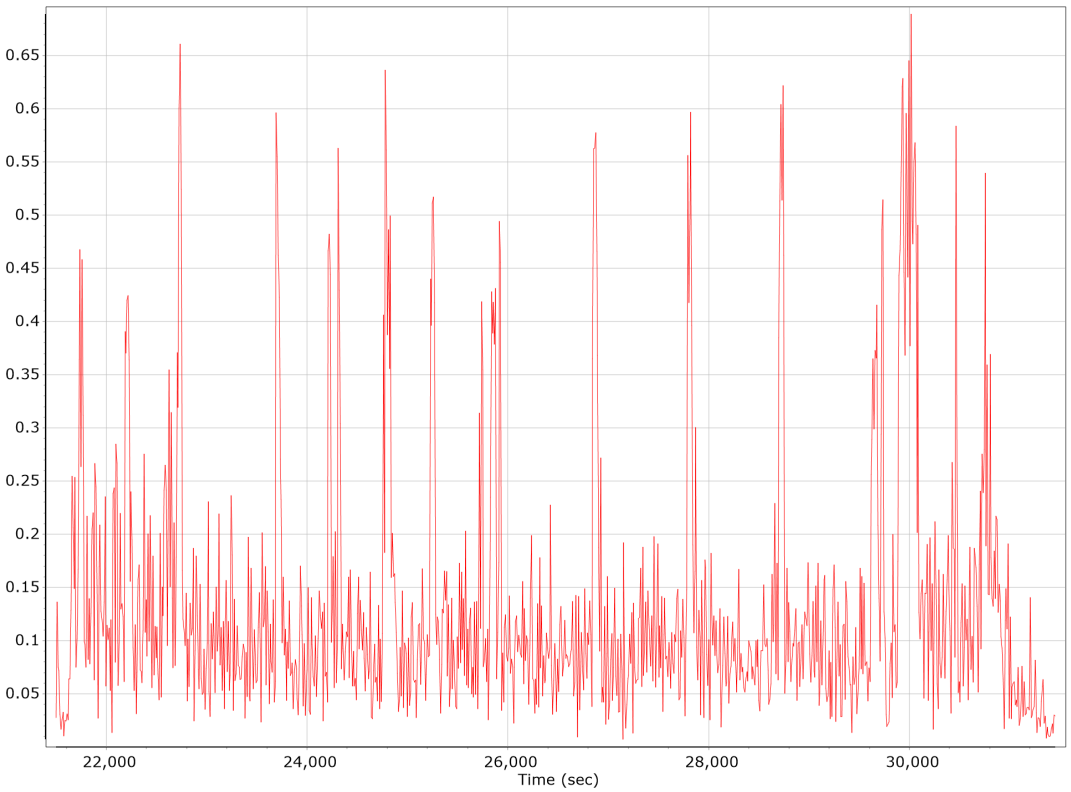
Ground Speed



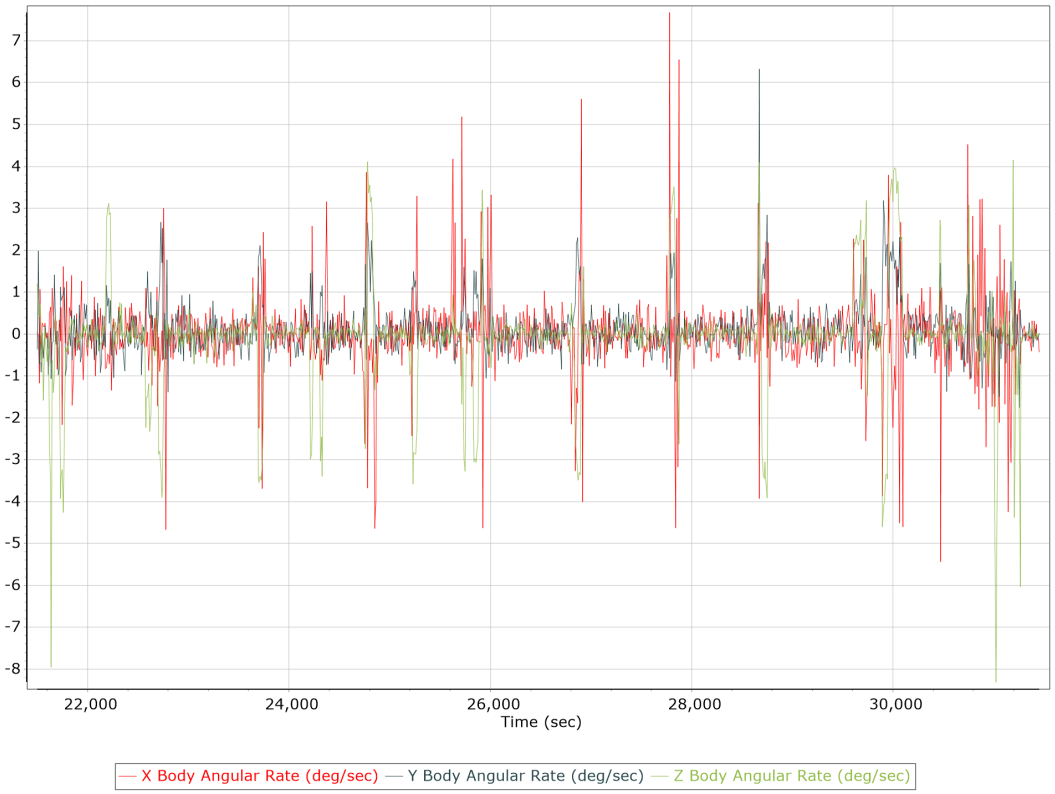
Body Acceleration



Total Body Acceleration



Body Angular Rate

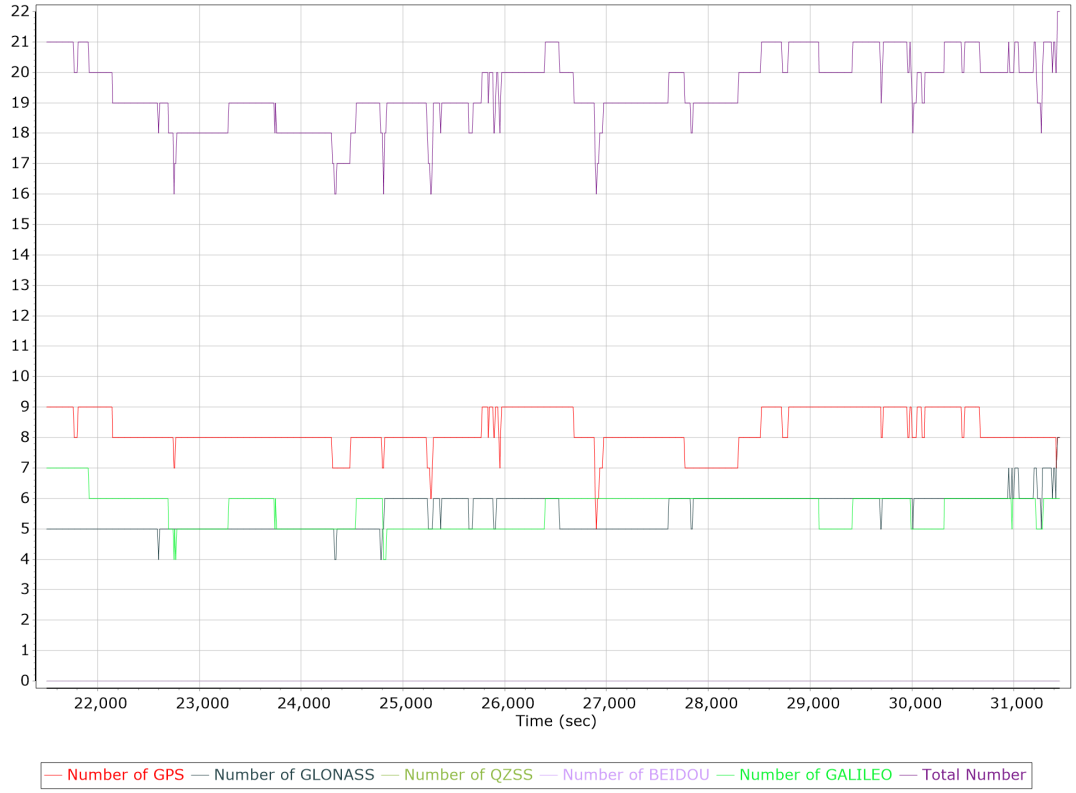


GNSS QC

GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	5	10	8
Number of GLONASS SV	4	8	6
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	4	7	6
Total number of SV	16	22	20
PDOP	1.00	1.64	1.16
QC Solution Gaps	0.00	0.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	10235.00	0.00	0.00
Percentage	100.00	0.00	0.00

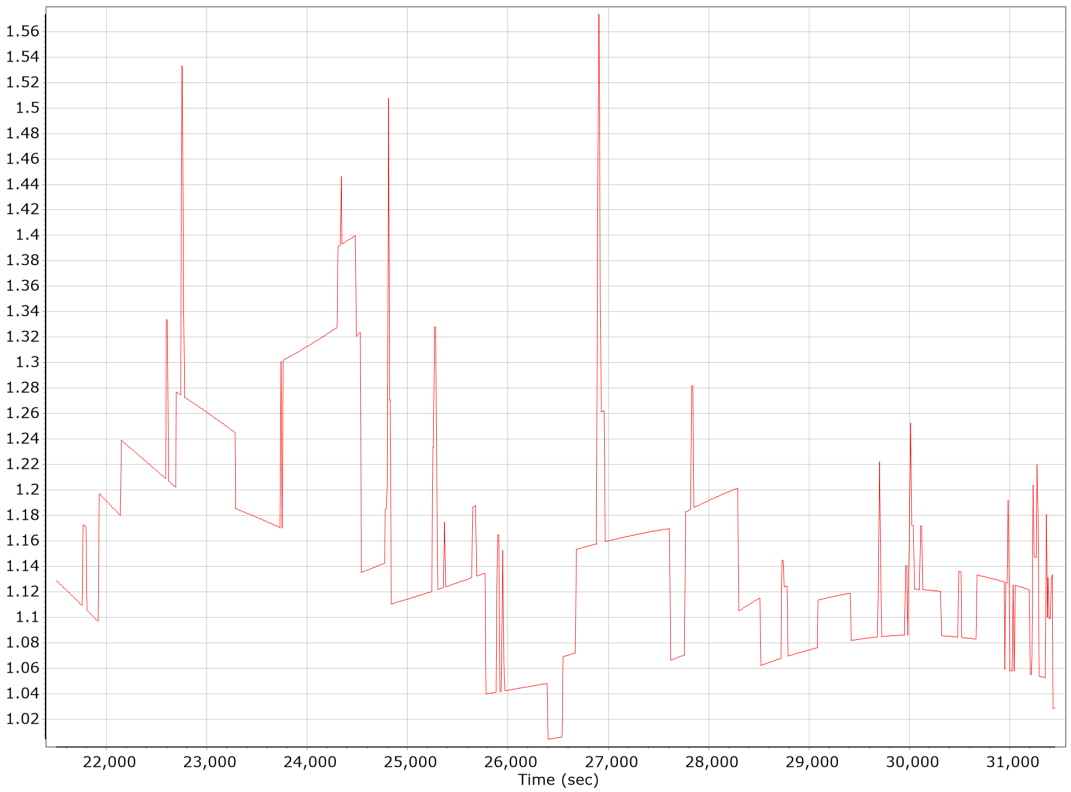
Num SVs in solution



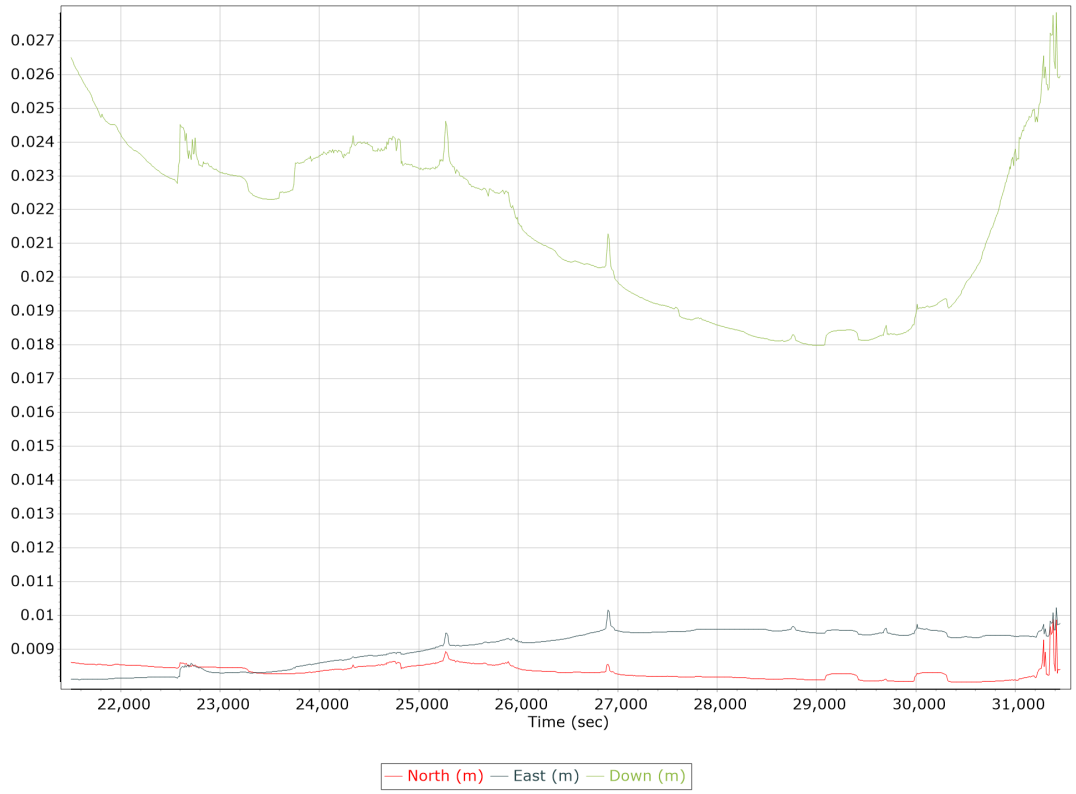
Forward/Reverse Separation



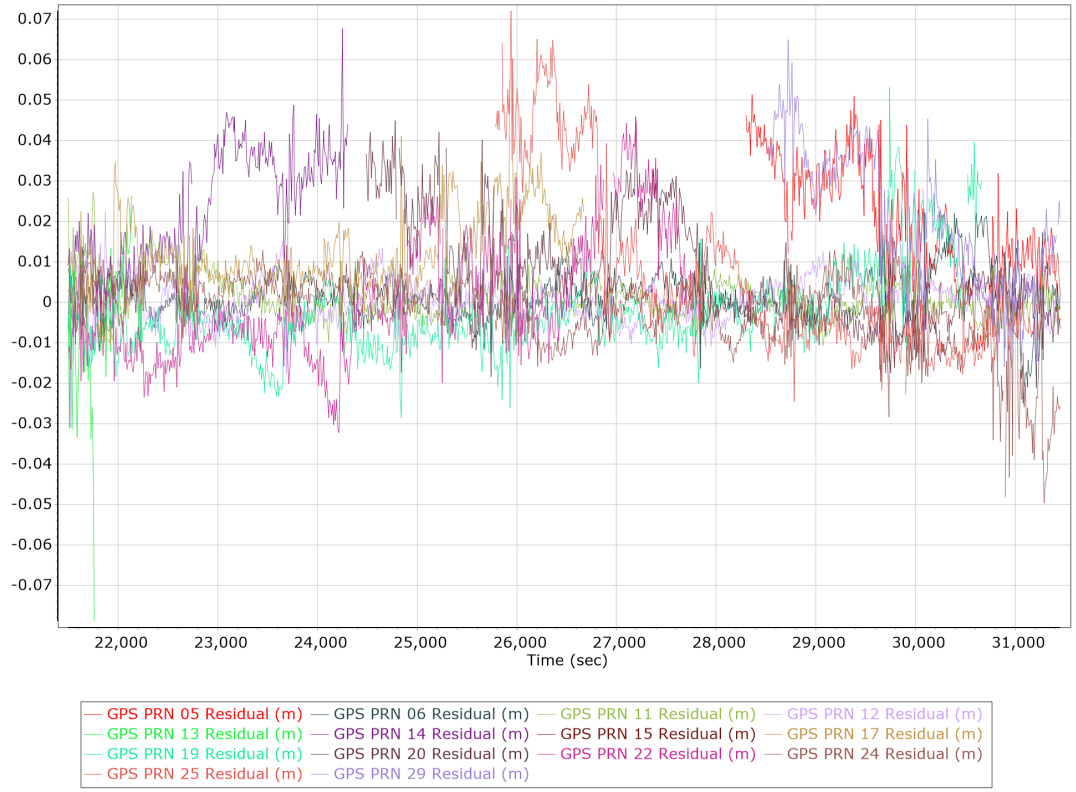
PDOP



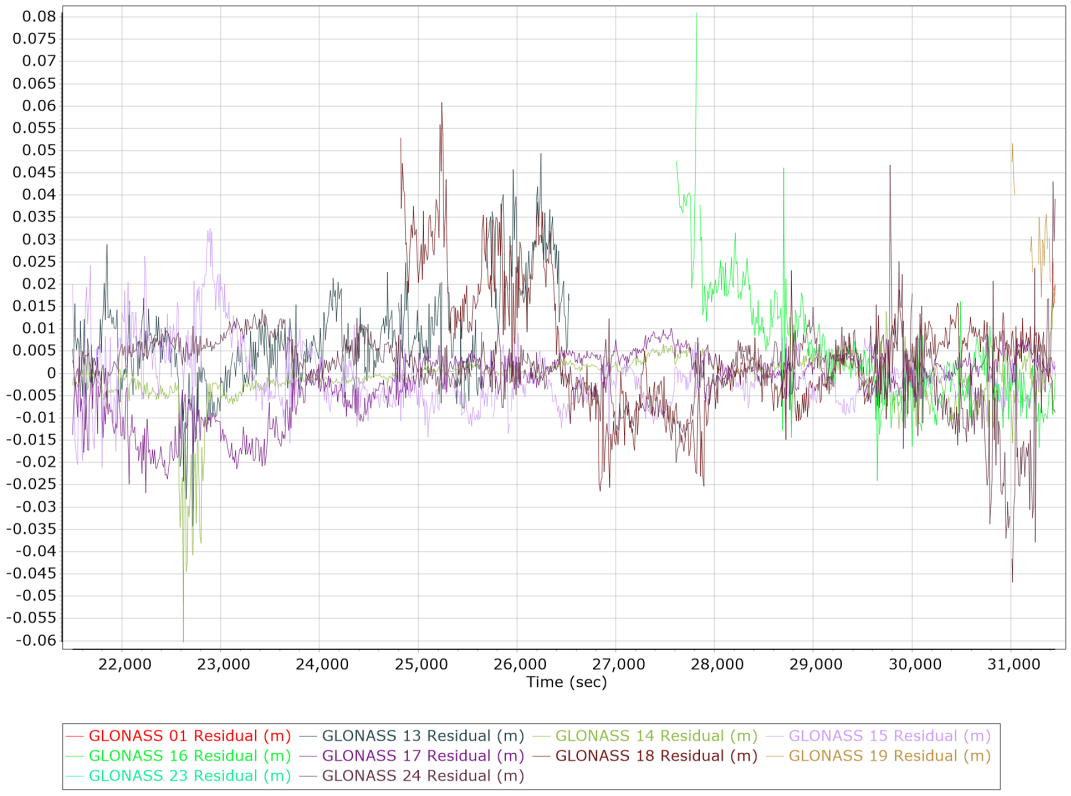
Estimated Position Accuracy



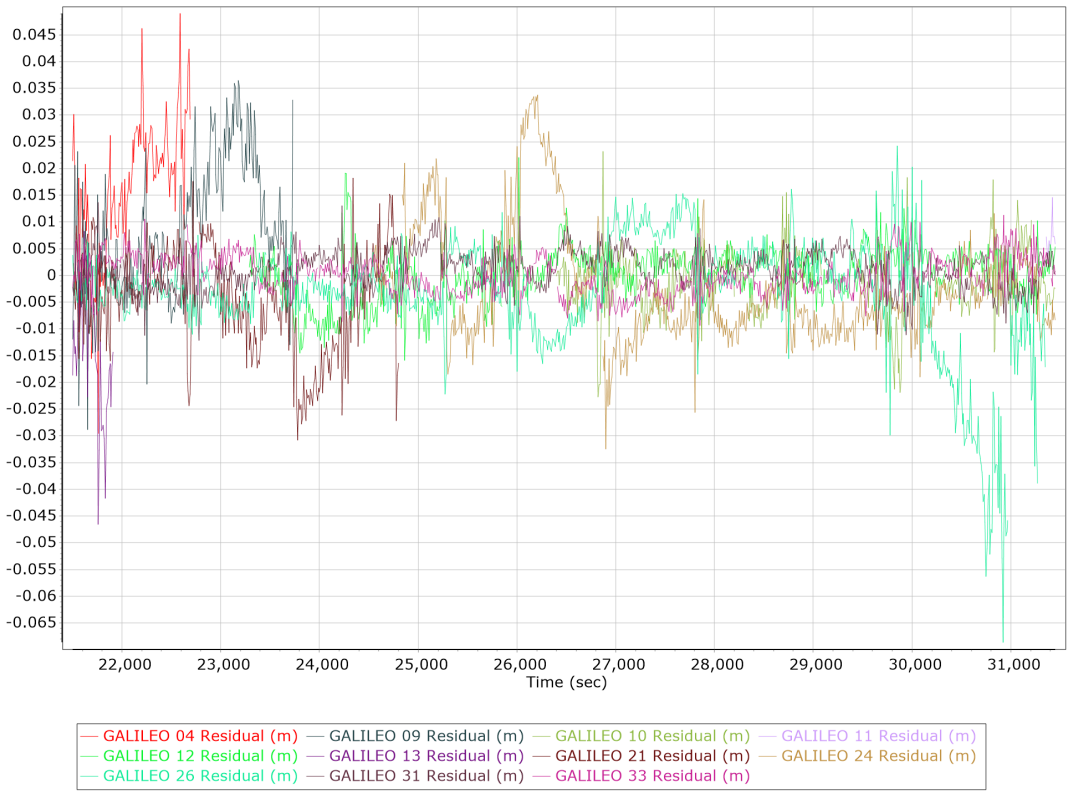
GPS Residuals



GLONASS Residuals



GALILEO Residuals



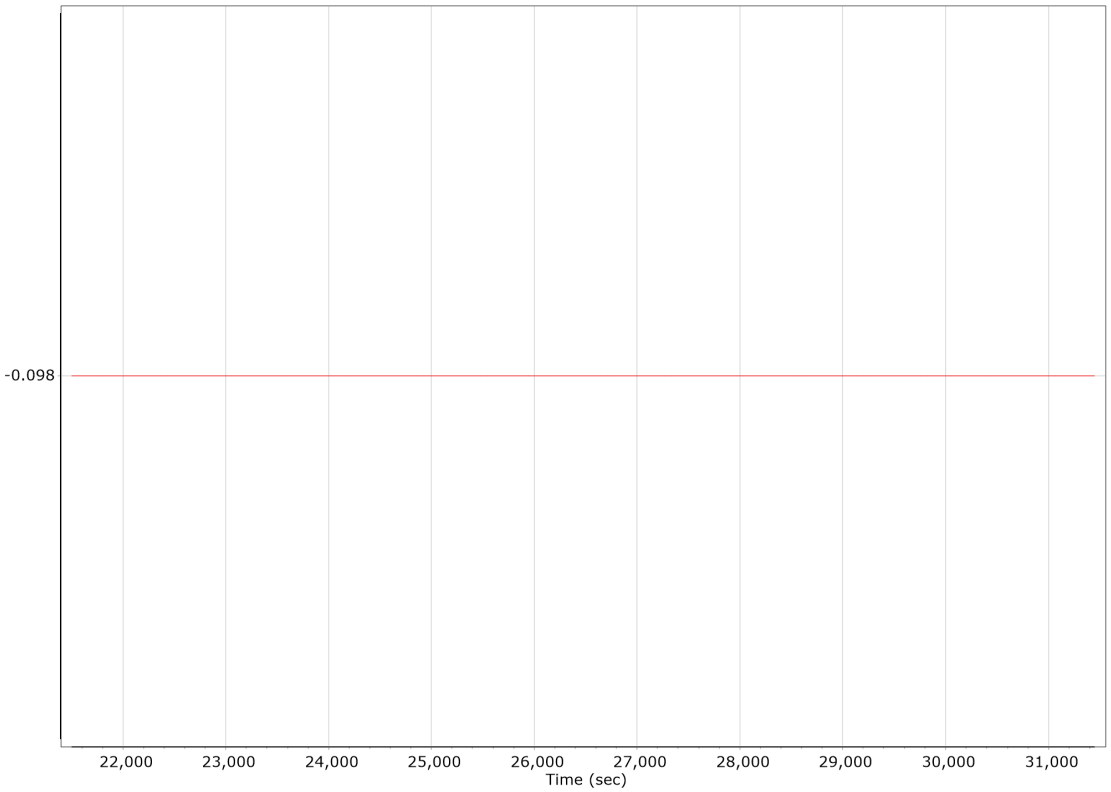
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	21214.000 (10/22/2023 5:53:34 AM)		
Processing end time	31459.000 (10/22/2023 8:44:19 AM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	-0.098	0.057	-1.221
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

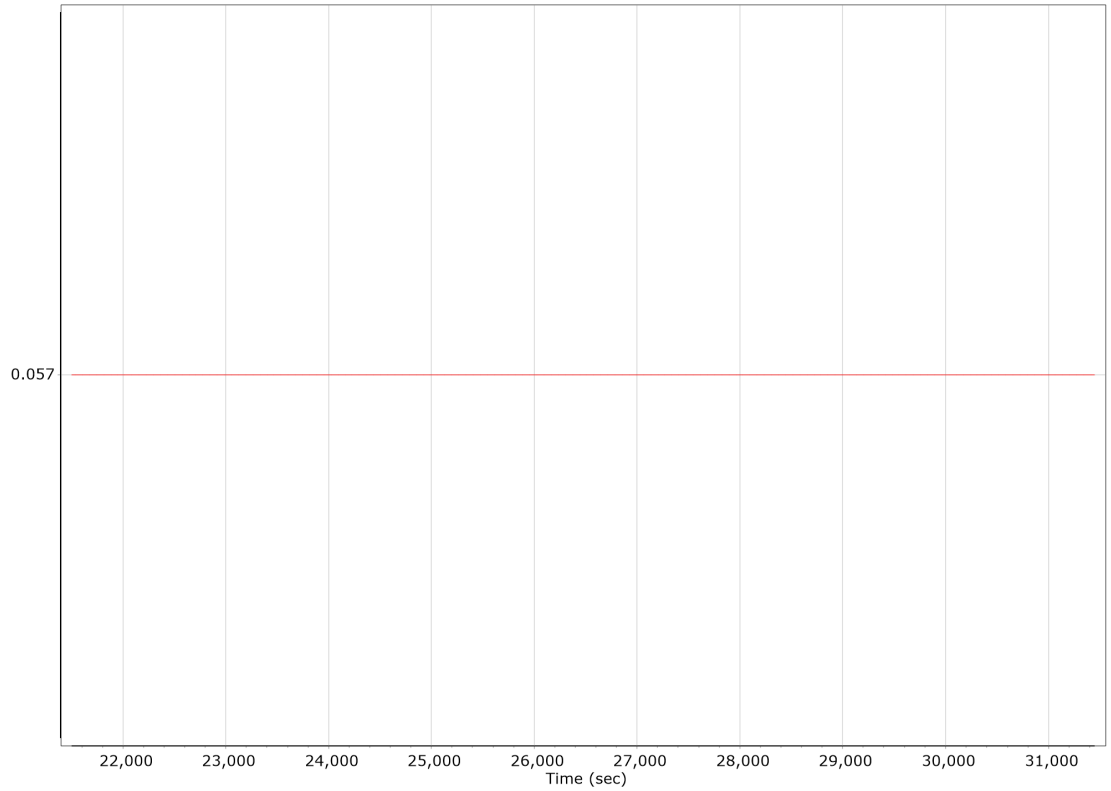
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

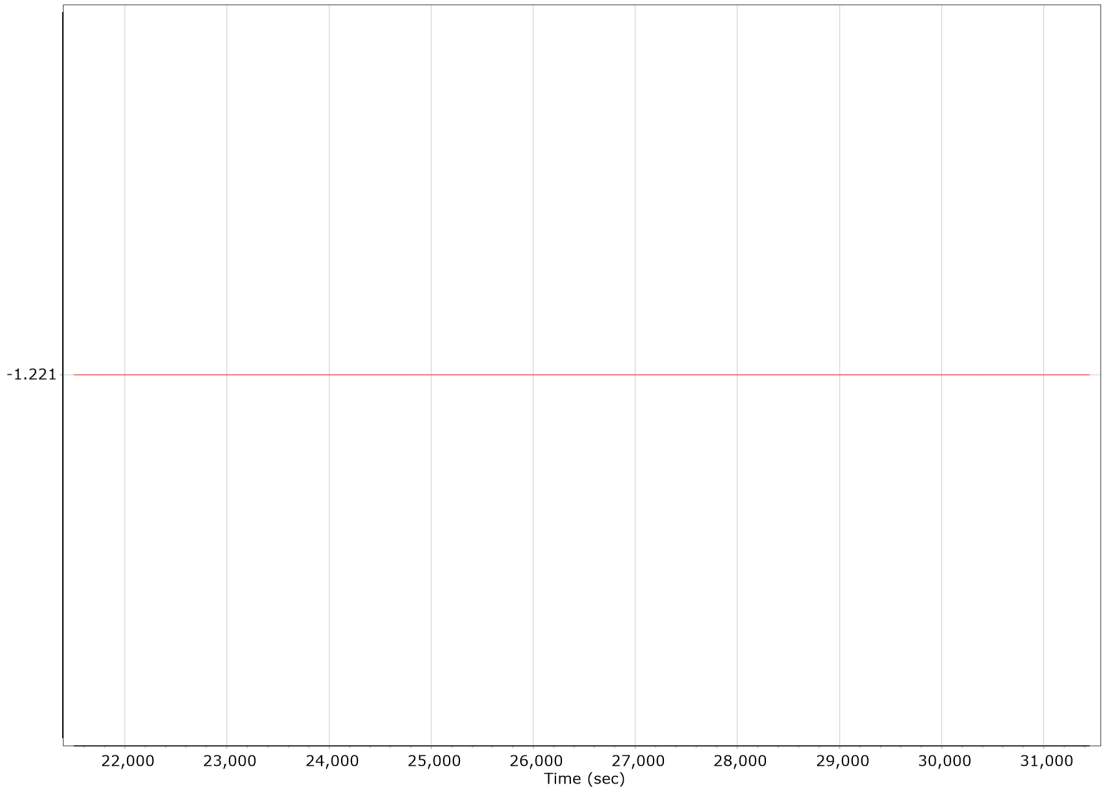
X Reference-Primary GNSS Lever Arm (m)



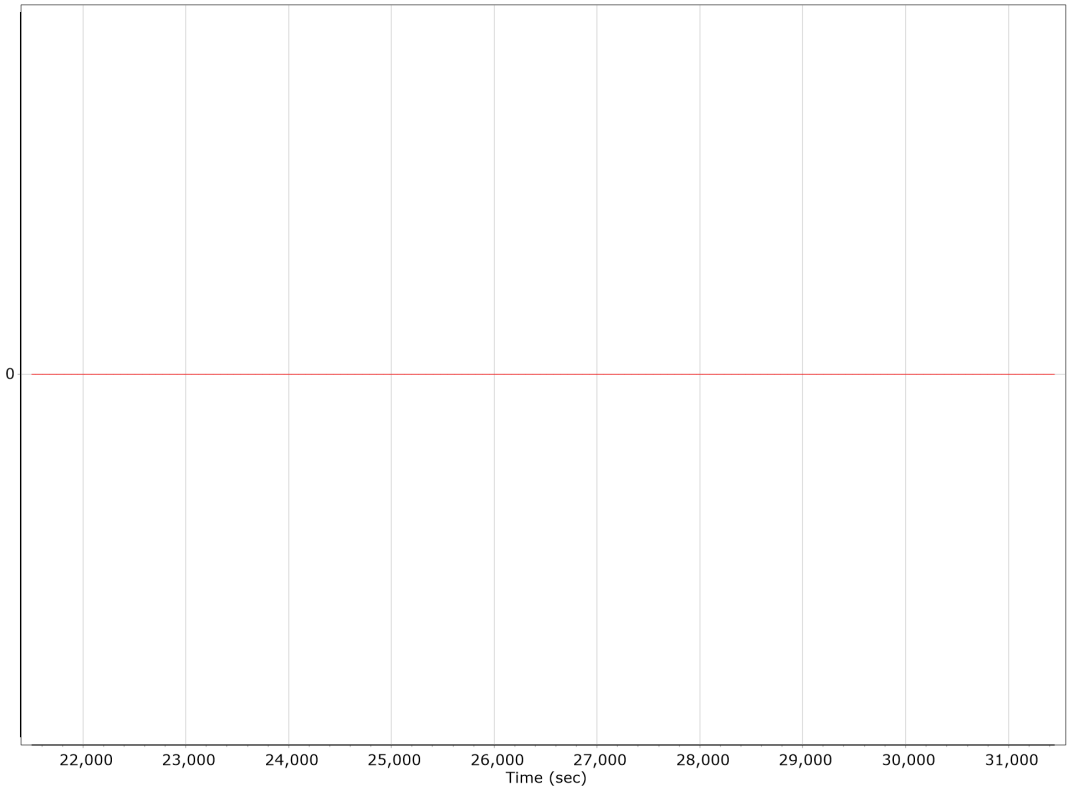
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



Reference-Primary GNSS Lever Arm Figure of Merit



IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

Accelerometer Bias (micro-g)



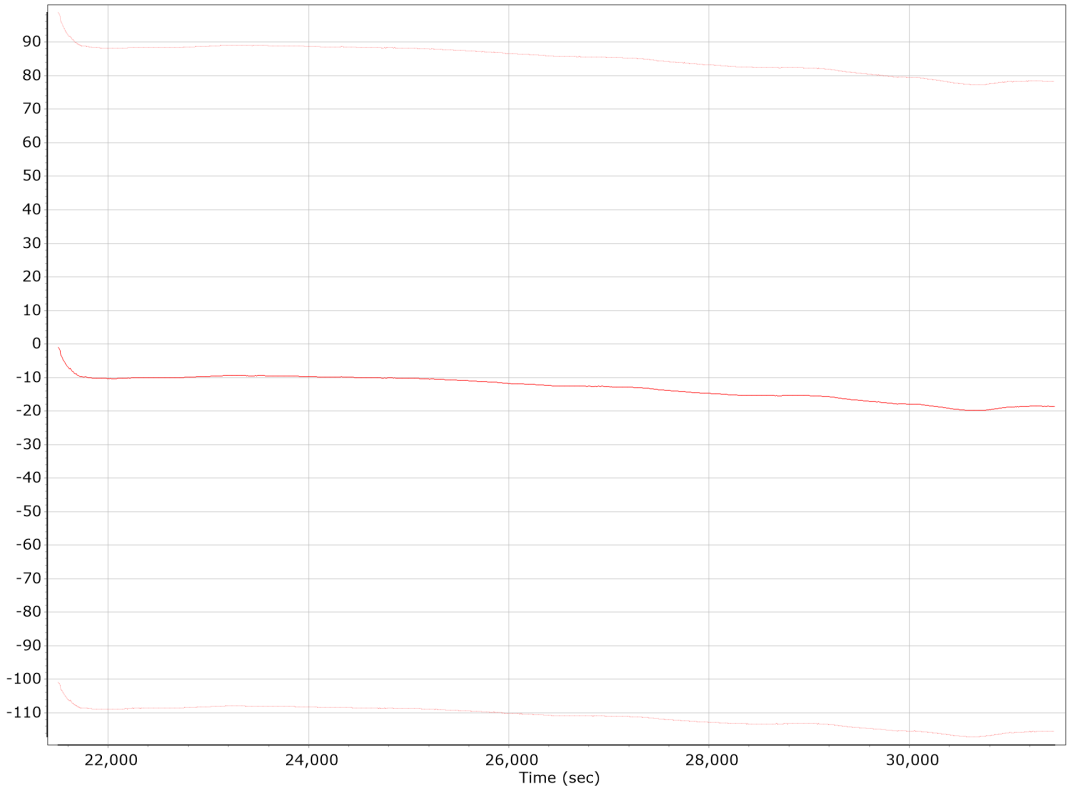
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



X Accelerometer Scale Error (ppm)



Y Accelerometer Scale Error (ppm)



Z Accelerometer Scale Error (ppm)



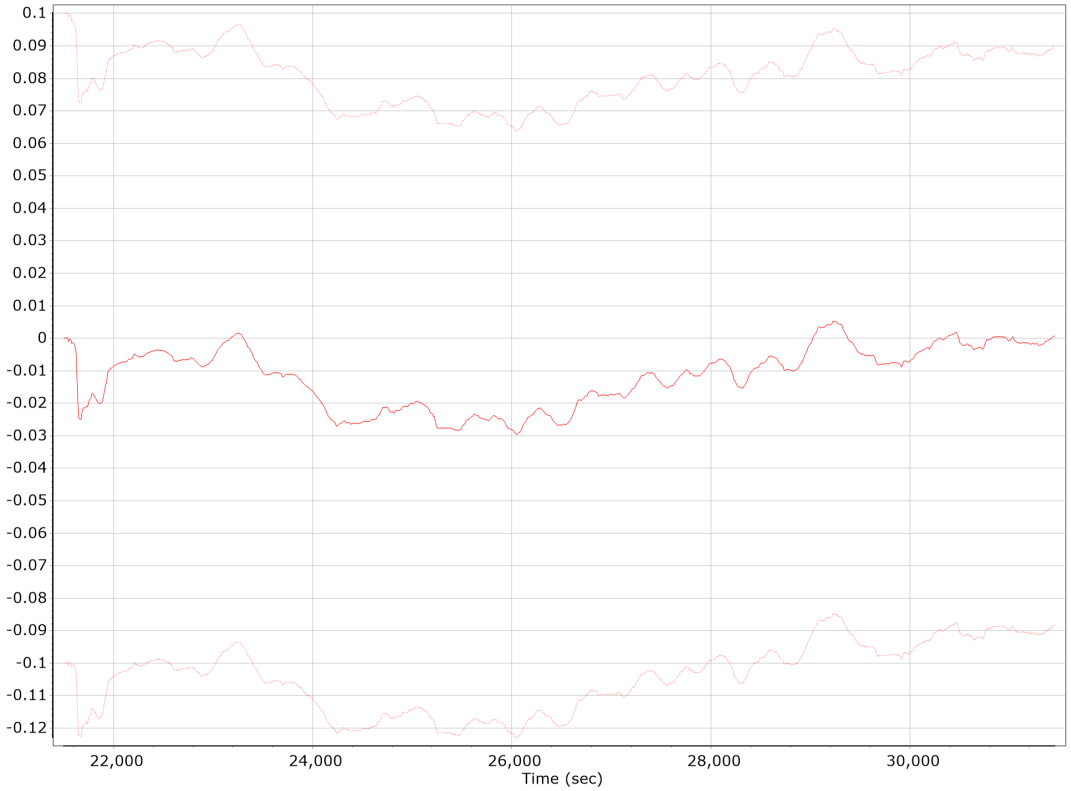
Gyro Bias (deg/h)



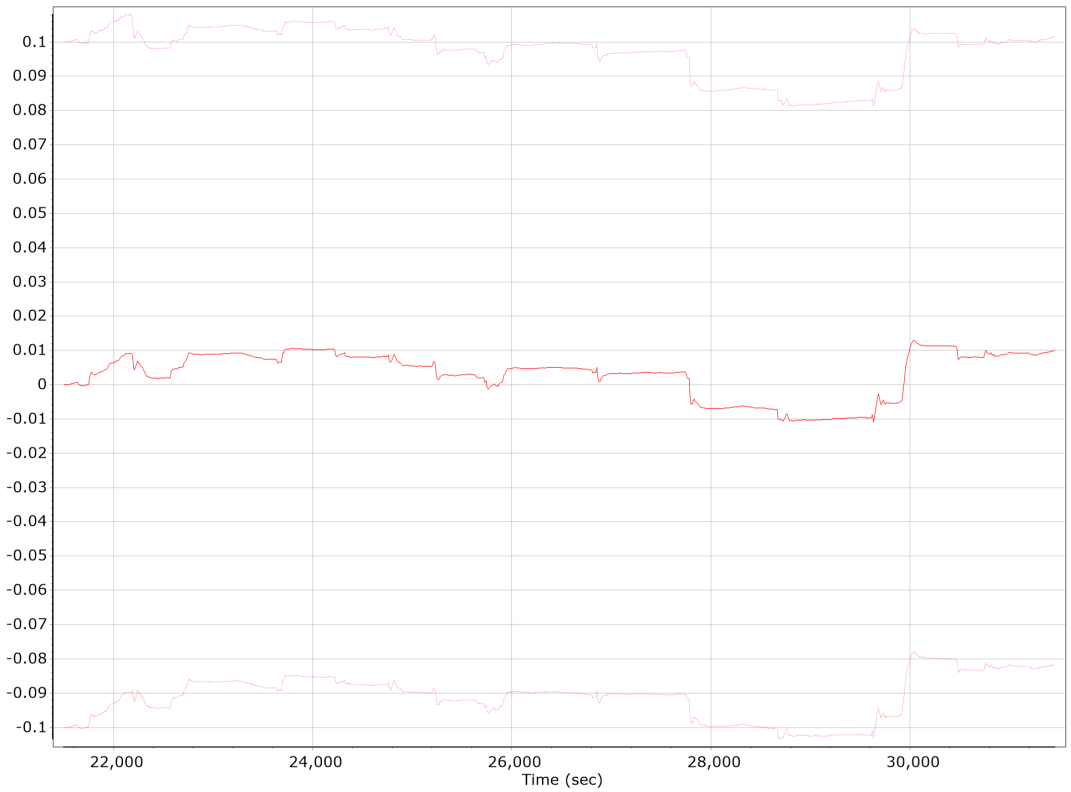
X Gyro Bias (deg/h)



Y Gyro Bias (deg/h)



Z Gyro Bias (deg/h)



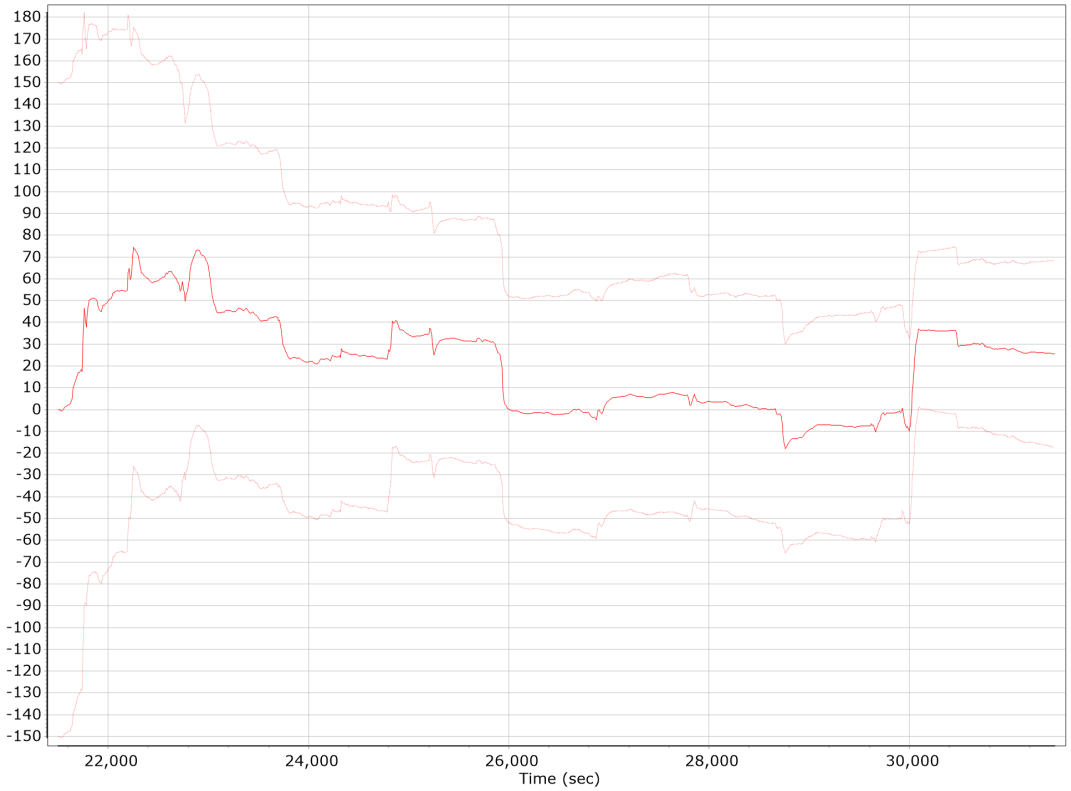
Gyro Scale Error (ppm)



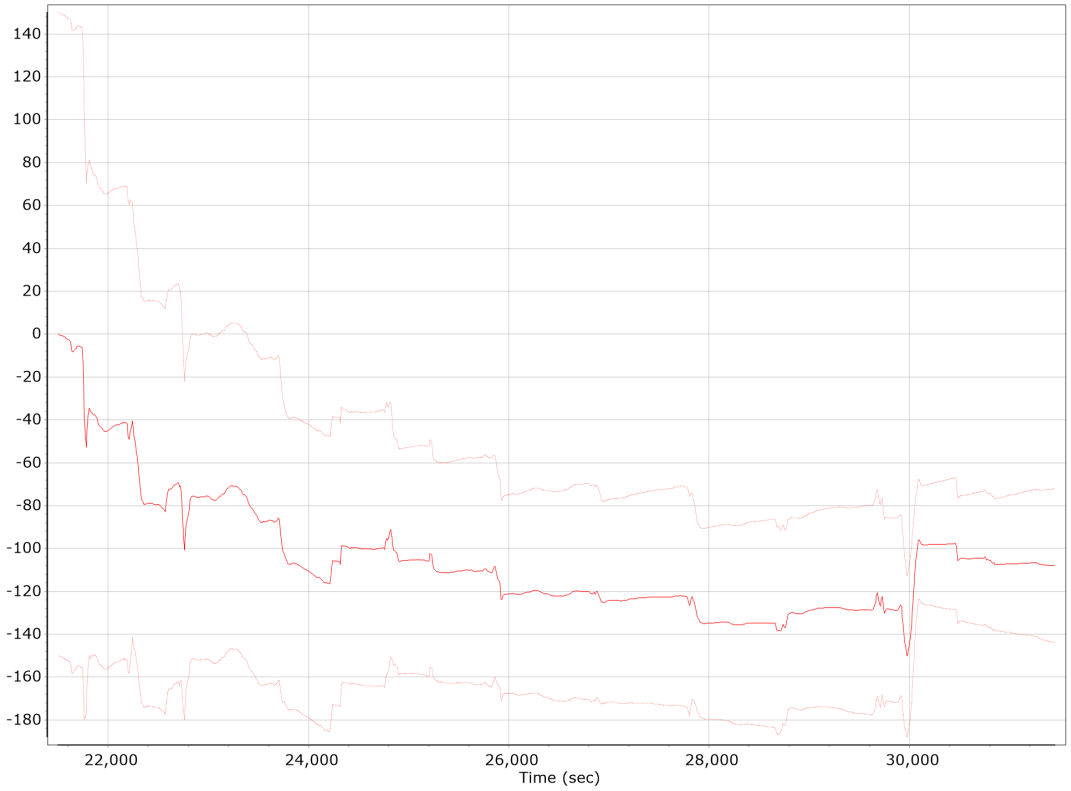
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)



Z Gyro Scale Error (ppm)



Smoothed Performance Metrics

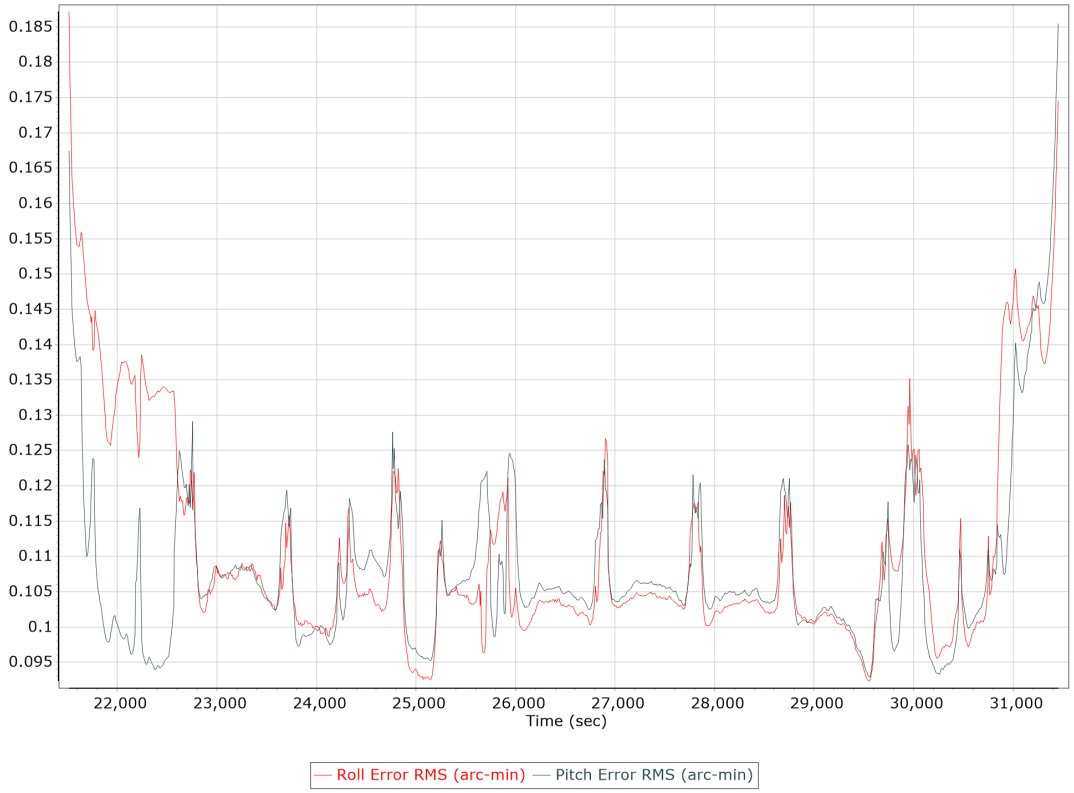
Position Error RMS (m)



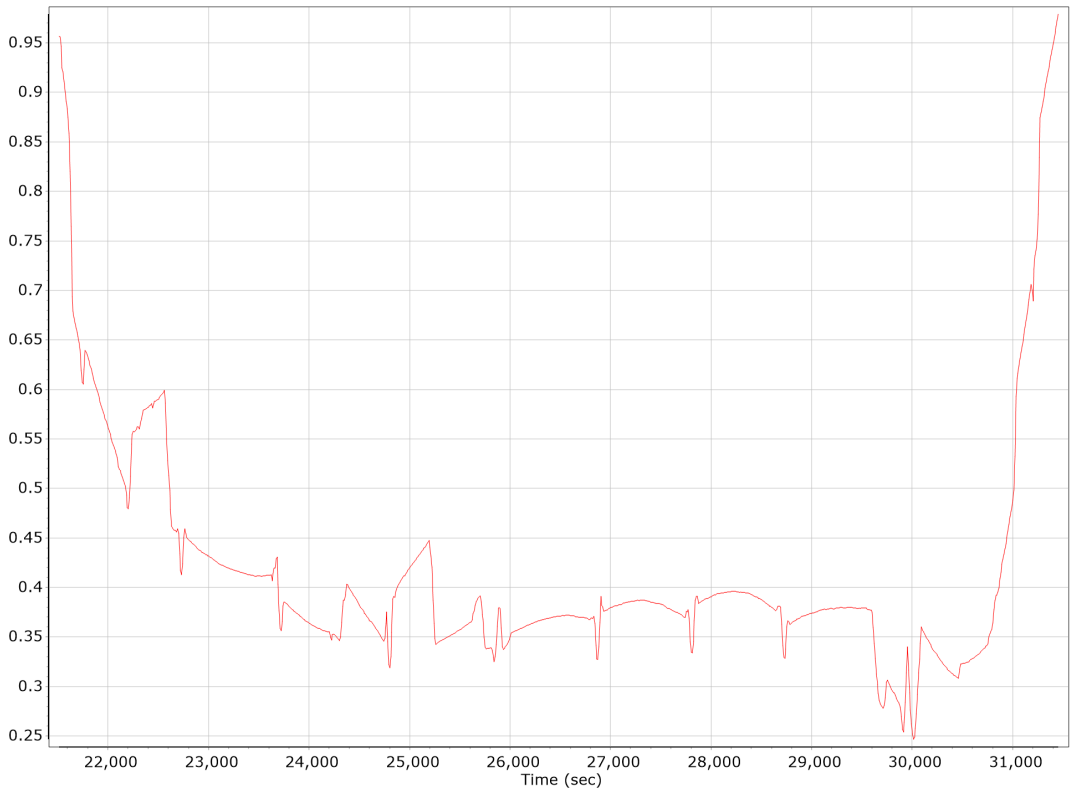
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

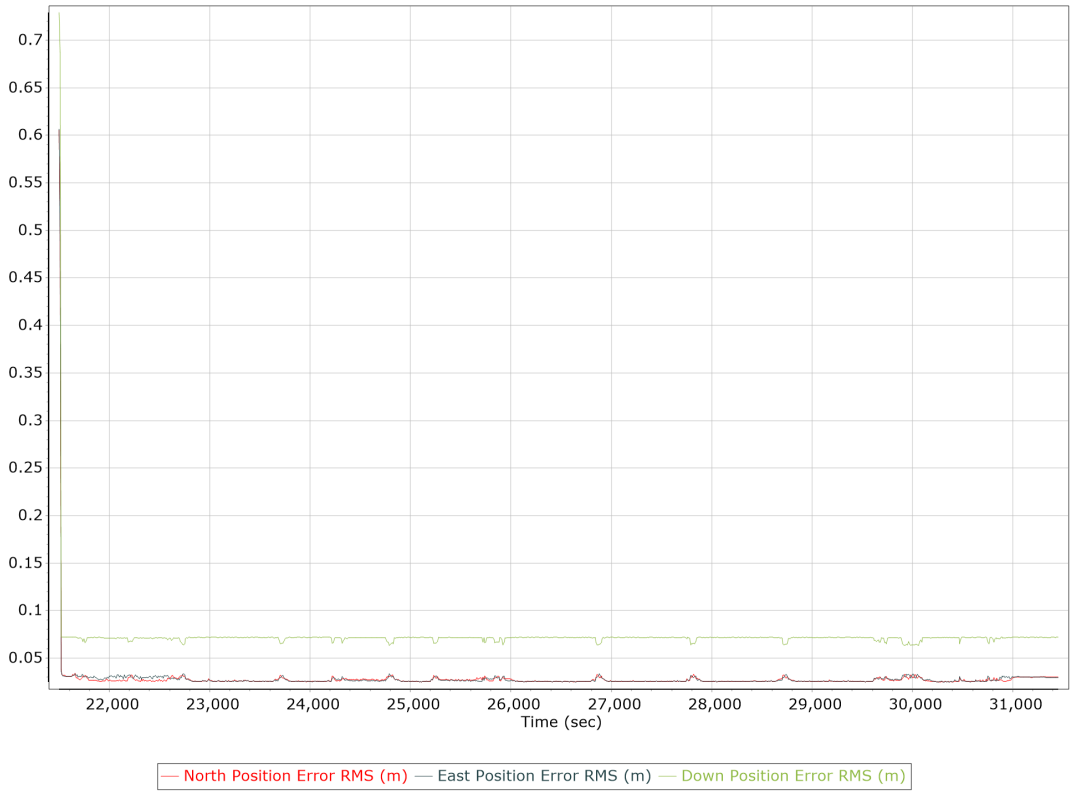


Heading Error RMS (arc-min)

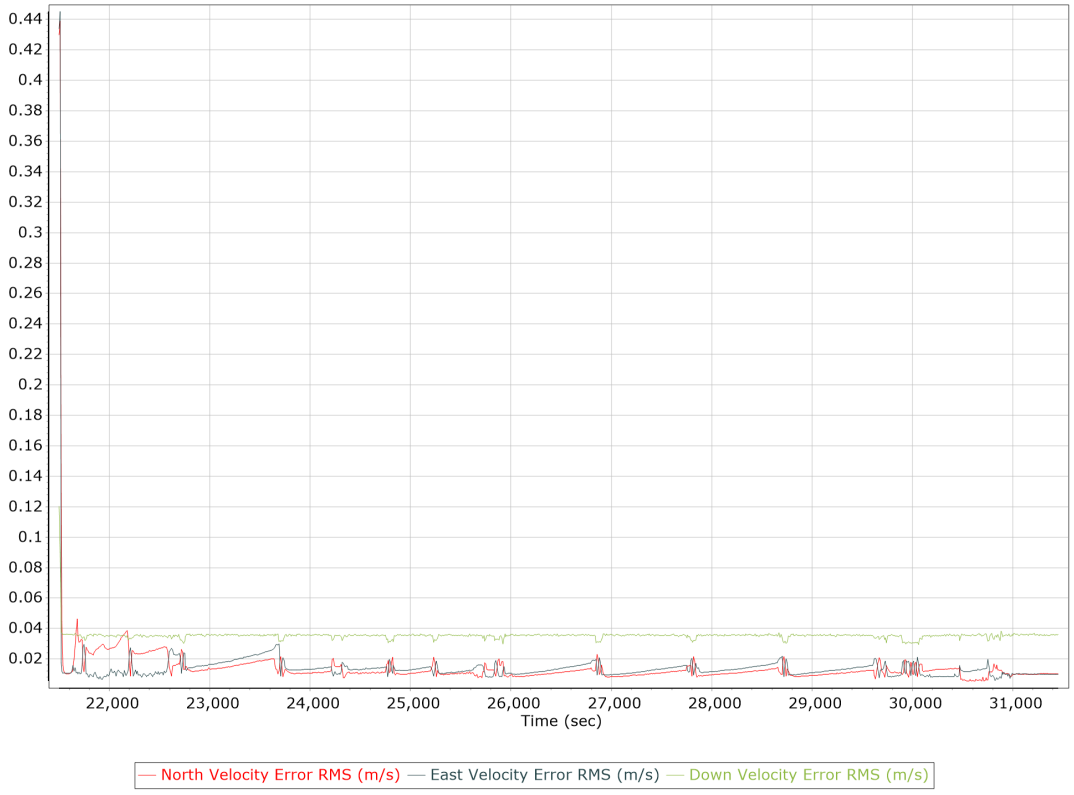


Forward Processed Performance Metrics

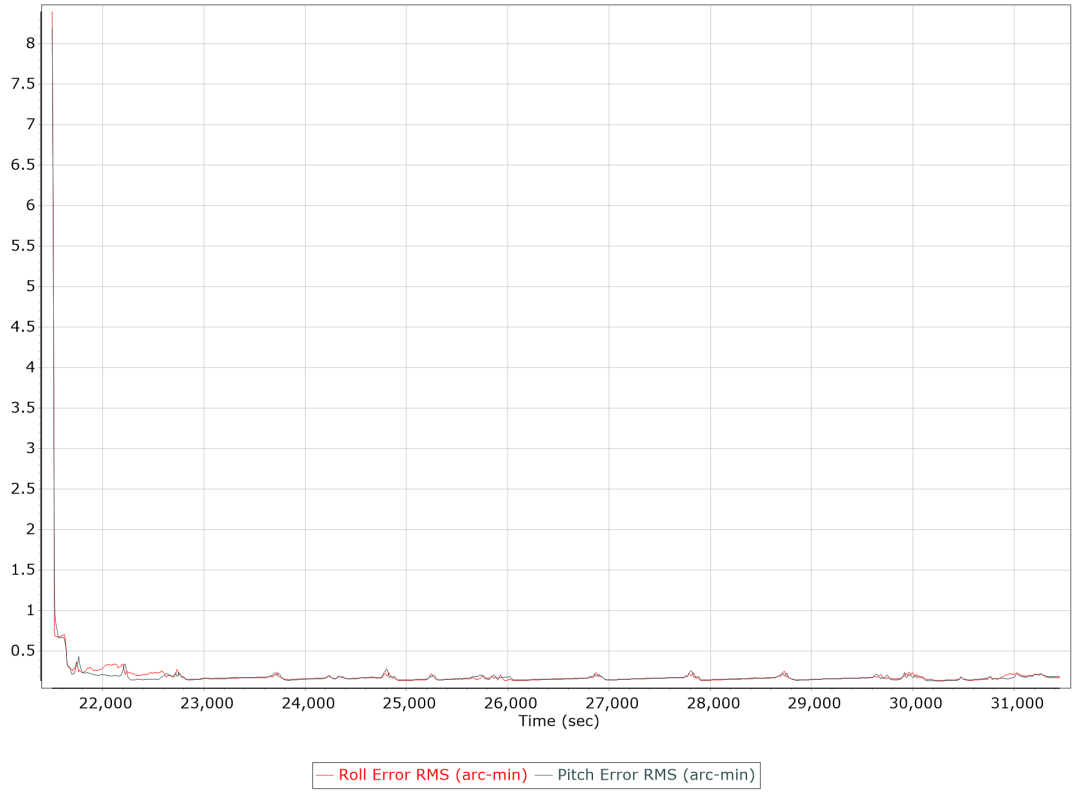
Position Error RMS (m)



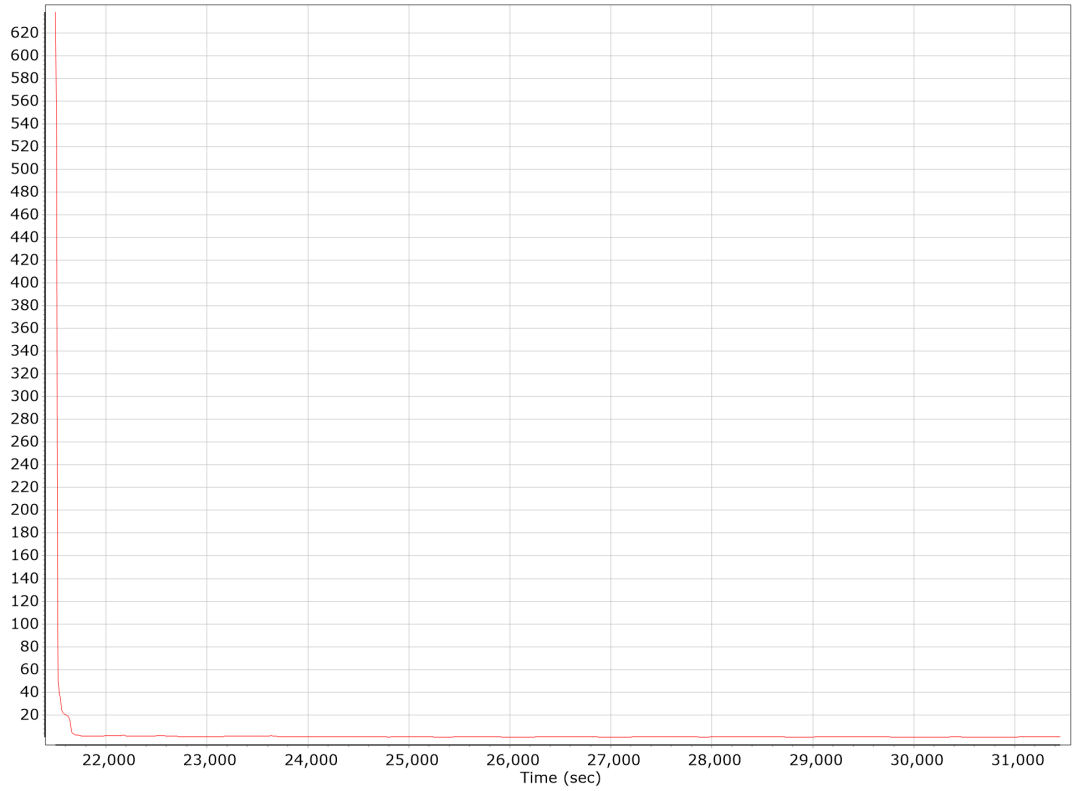
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

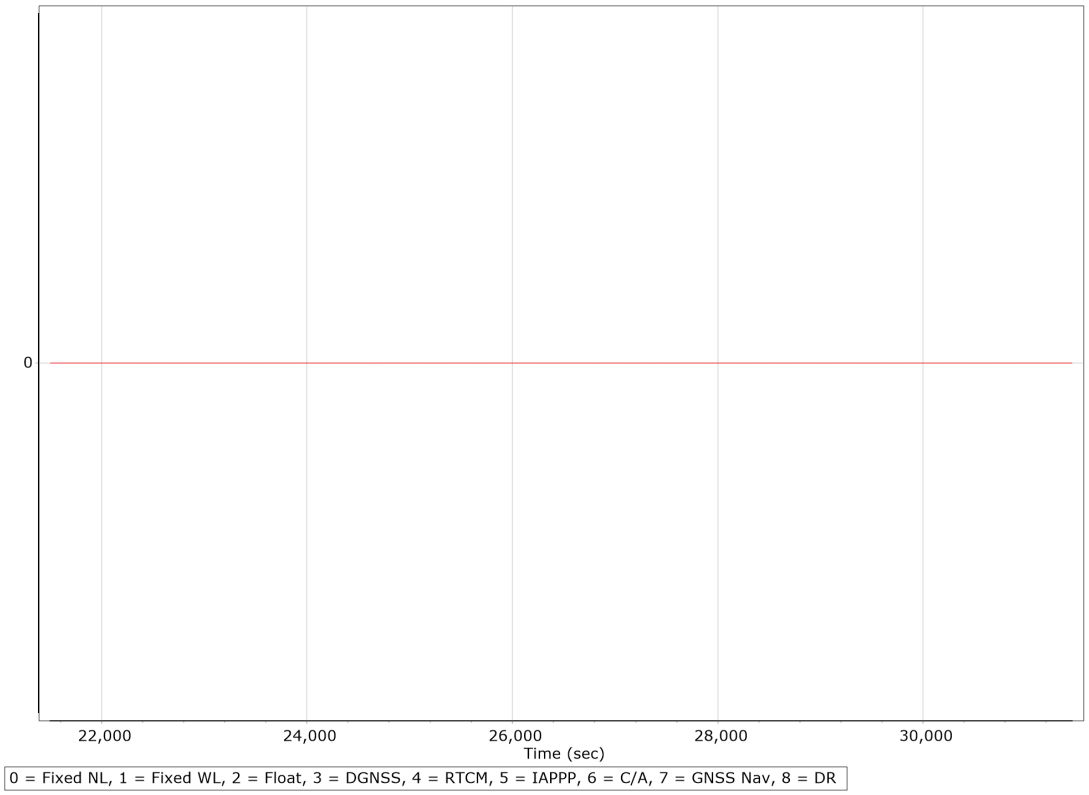


Heading Error RMS (arc-min)

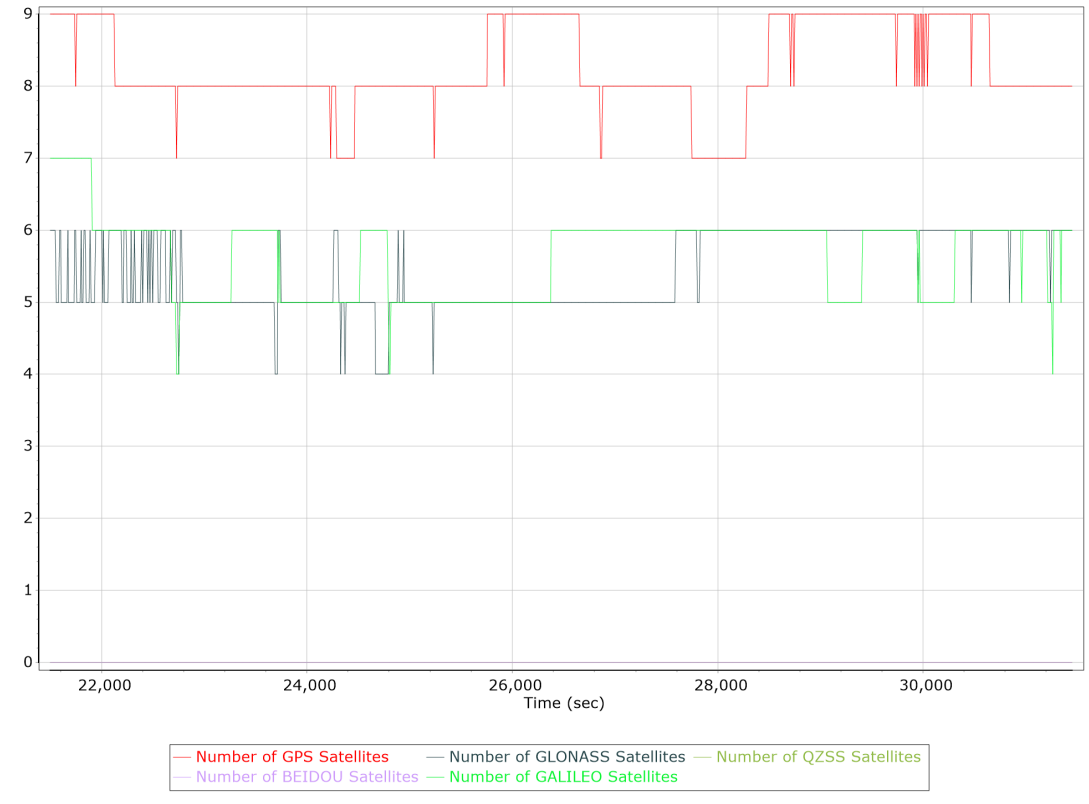


Forward Processed Solution Status

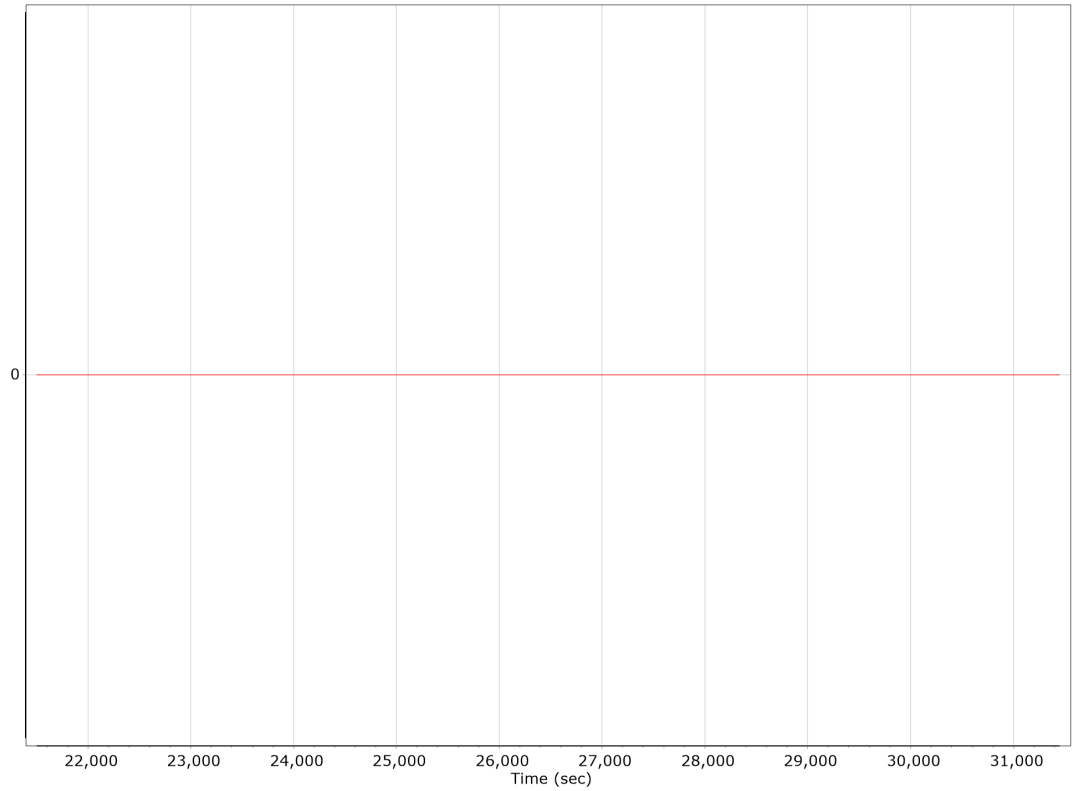
Processing Mode



Number of Satellites



Baseline Length



General Information

Mission Information

Project name	11102023A_3546
Processing date	2024-01-12 20:36:12
Mission date	2023-11-10 19:43:57
Mission duration	03:18:25.309
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N9922
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
231110_194338_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm3140.23g	GLONASS Broadcast Ephemeris
Ephm3140.23n	GPS Broadcast Ephemeris
IGS0OPSFIN_20233130000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20233140000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20233150000_01D_15M_ORB.SP3	GPS Precise Ephemeris

Output Files

Filename	File type
sbet_11102023A_3546.out	SBET Trajectory File

Rover Data Summary

First raw data file	231110_194338_INS-GPS_1.raw		
Last raw data file	231110_194338_INS-GPS_1.raw		
Start GPS week	2287		
Start time	503018.305 (11/10/2023 7:43:38 PM)		
End time	516546.638 (11/10/2023 11:29:06 PM)		
Start of fine alignment	504641.496 (11/10/2023 8:10:41 PM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.205	0.058	-1.282
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

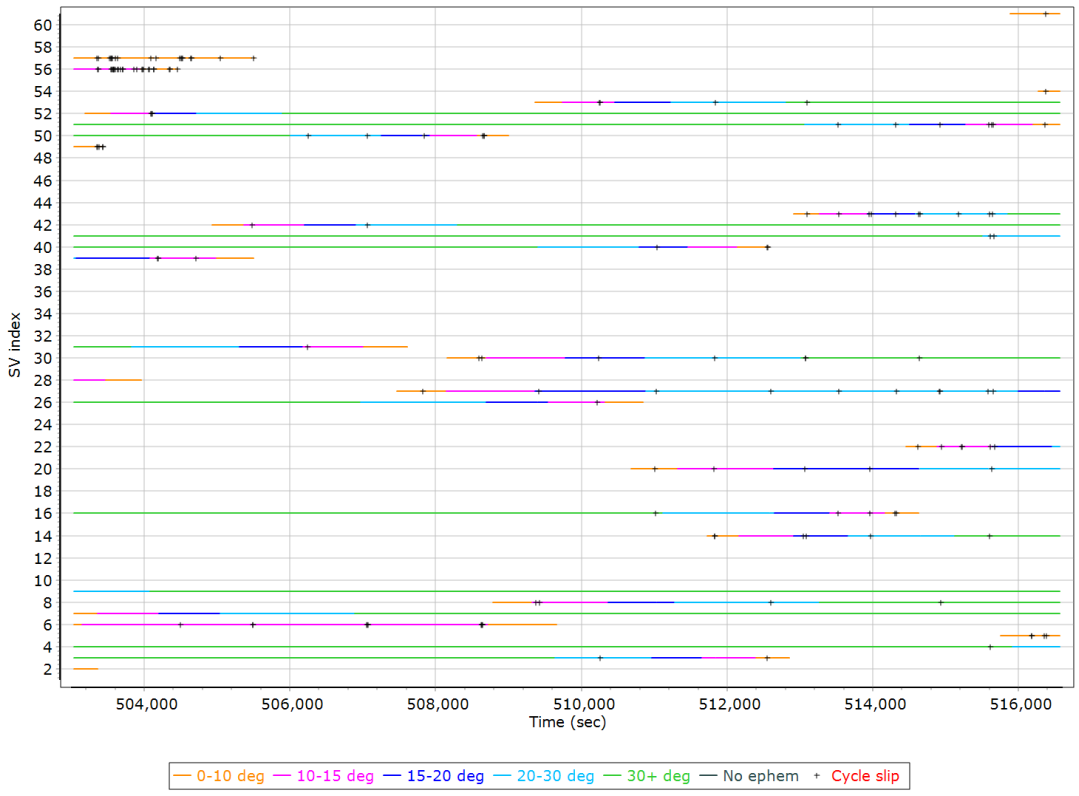
Rover Data QC

Raw IMU Import QC Summary

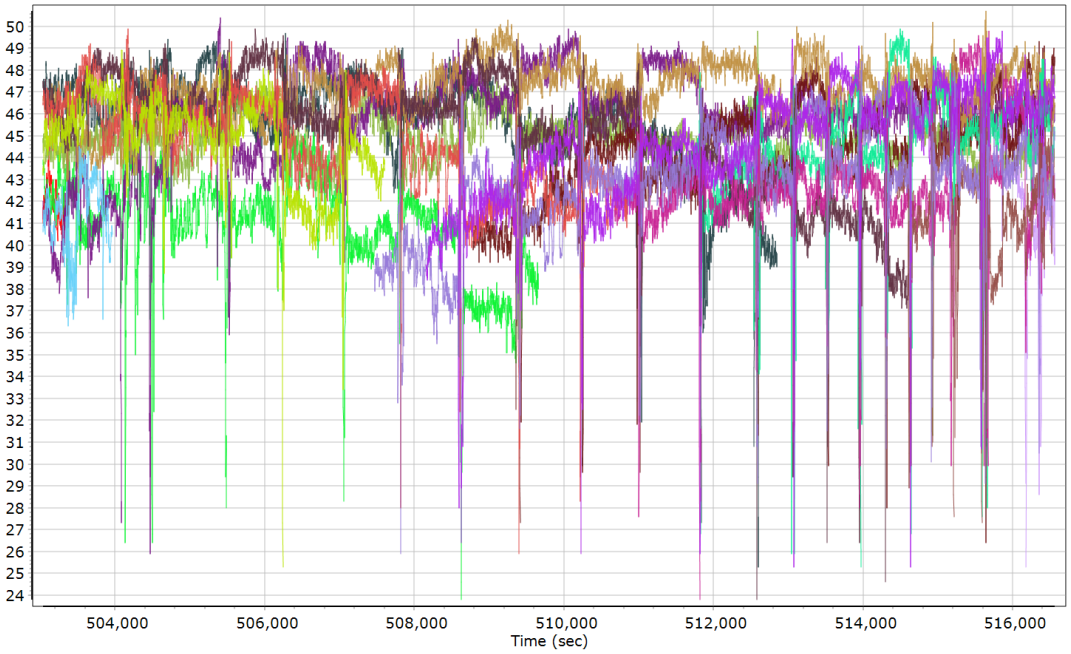
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_11102023A_3546.log
IMU Records Processed	2705046
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

GPS/GLONASS L1 Satellite Lock/Elevation

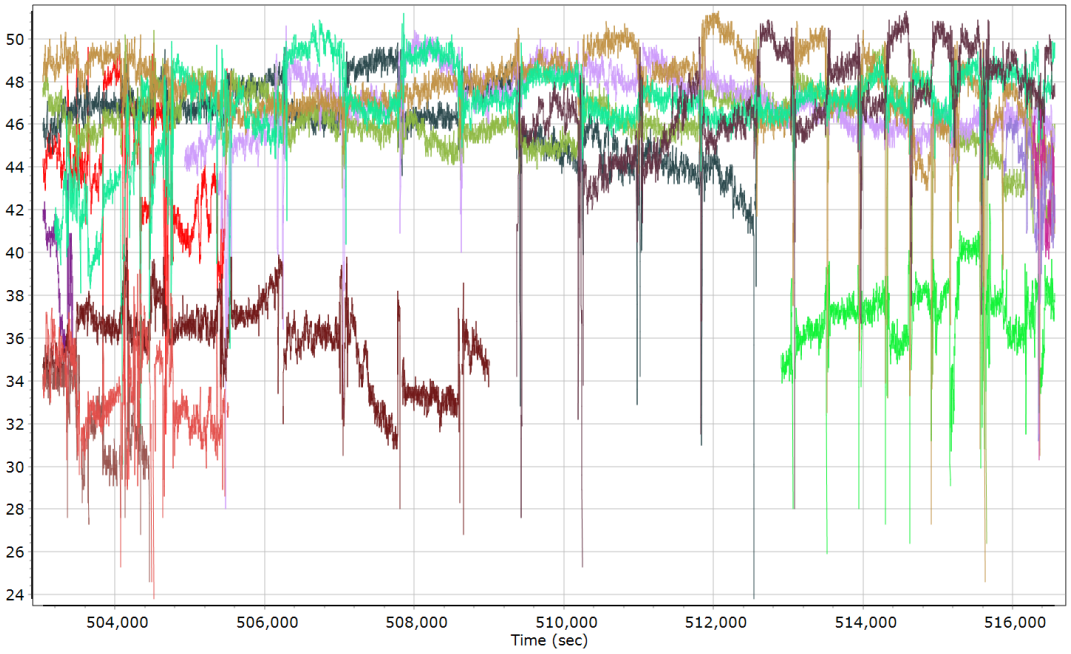


GPS L1 SNR



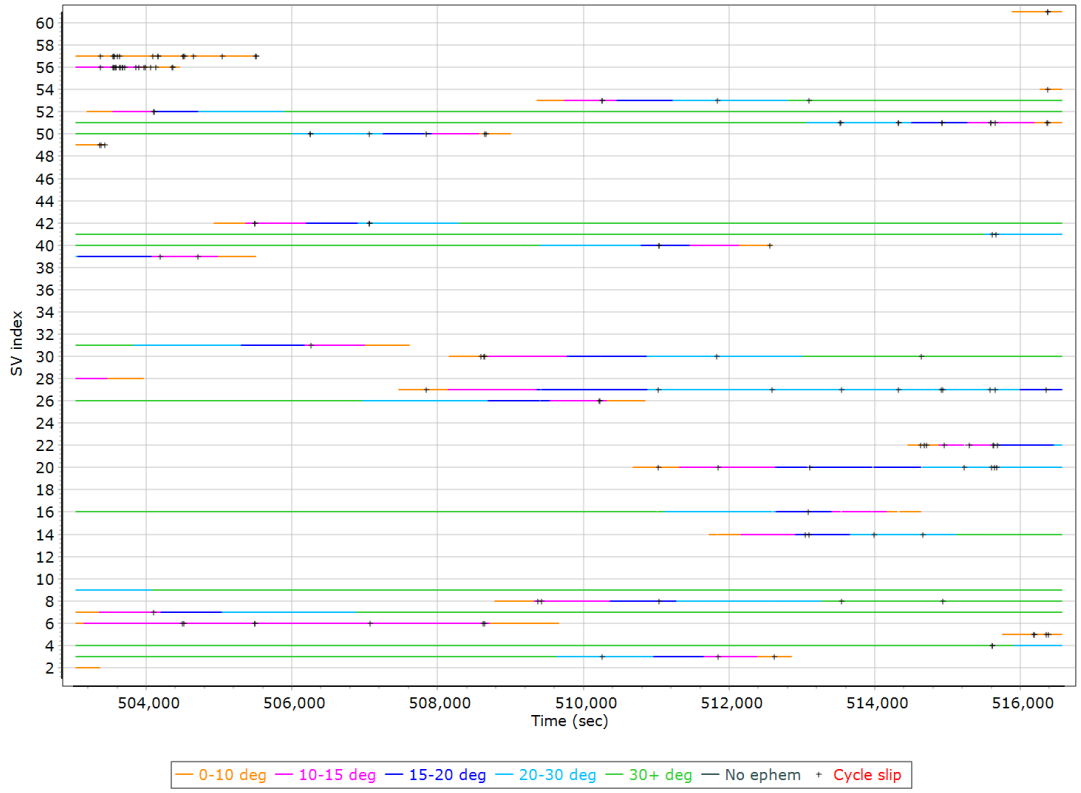
GPS PRN 02 L1 SNR (dB/Hz) — GPS PRN 03 L1 SNR (dB/Hz) — GPS PRN 04 L1 SNR (dB/Hz) — GPS PRN 05 L1 SNR (dB/Hz)
GPS PRN 06 L1 SNR (dB/Hz) — GPS PRN 07 L1 SNR (dB/Hz) — GPS PRN 08 L1 SNR (dB/Hz) — GPS PRN 09 L1 SNR (dB/Hz)
GPS PRN 14 L1 SNR (dB/Hz) — GPS PRN 16 L1 SNR (dB/Hz) — GPS PRN 20 L1 SNR (dB/Hz) — GPS PRN 22 L1 SNR (dB/Hz)
GPS PRN 26 L1 SNR (dB/Hz) — GPS PRN 27 L1 SNR (dB/Hz) — GPS PRN 28 L1 SNR (dB/Hz) — GPS PRN 30 L1 SNR (dB/Hz)
GPS PRN 31 L1 SNR (dB/Hz)

GLONASS L1 SNR

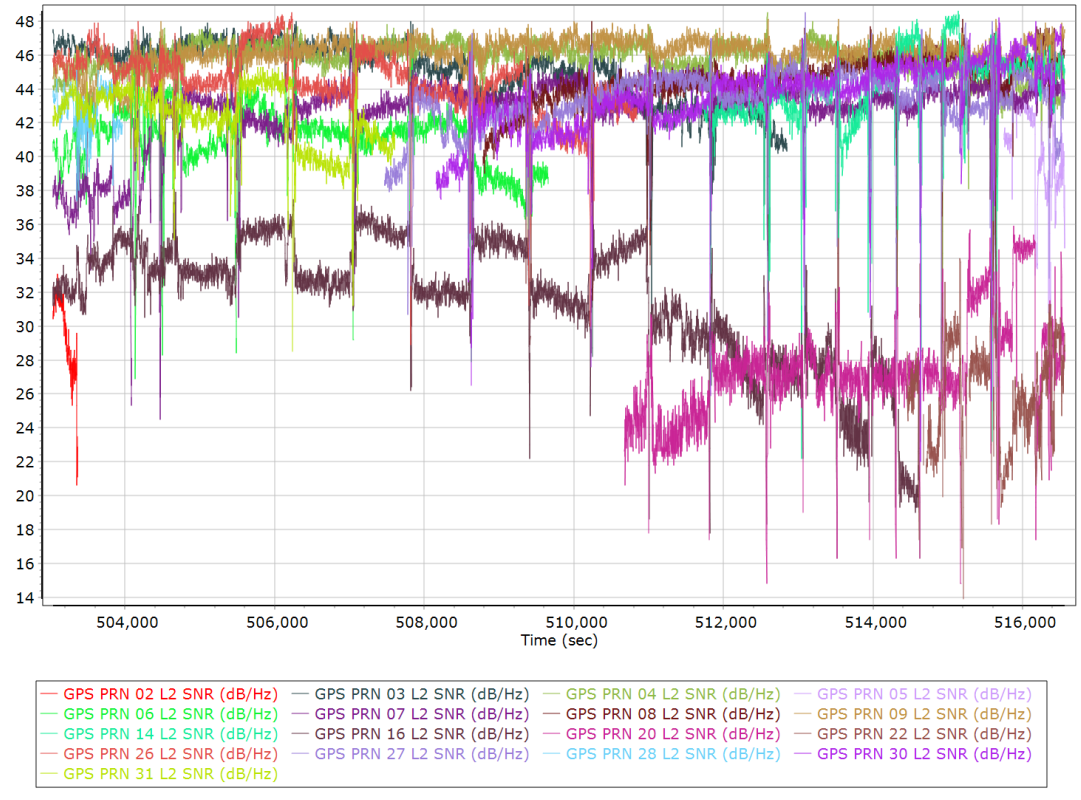


GLONASS 02 L1 SNR (dB/Hz) — GLONASS 03 L1 SNR (dB/Hz) — GLONASS 04 L1 SNR (dB/Hz)
GLONASS 05 L1 SNR (dB/Hz) — GLONASS 06 L1 SNR (dB/Hz) — GLONASS 12 L1 SNR (dB/Hz)
GLONASS 13 L1 SNR (dB/Hz) — GLONASS 14 L1 SNR (dB/Hz) — GLONASS 15 L1 SNR (dB/Hz)
GLONASS 16 L1 SNR (dB/Hz) — GLONASS 17 L1 SNR (dB/Hz) — GLONASS 19 L1 SNR (dB/Hz)
GLONASS 20 L1 SNR (dB/Hz) — GLONASS 24 L1 SNR (dB/Hz)

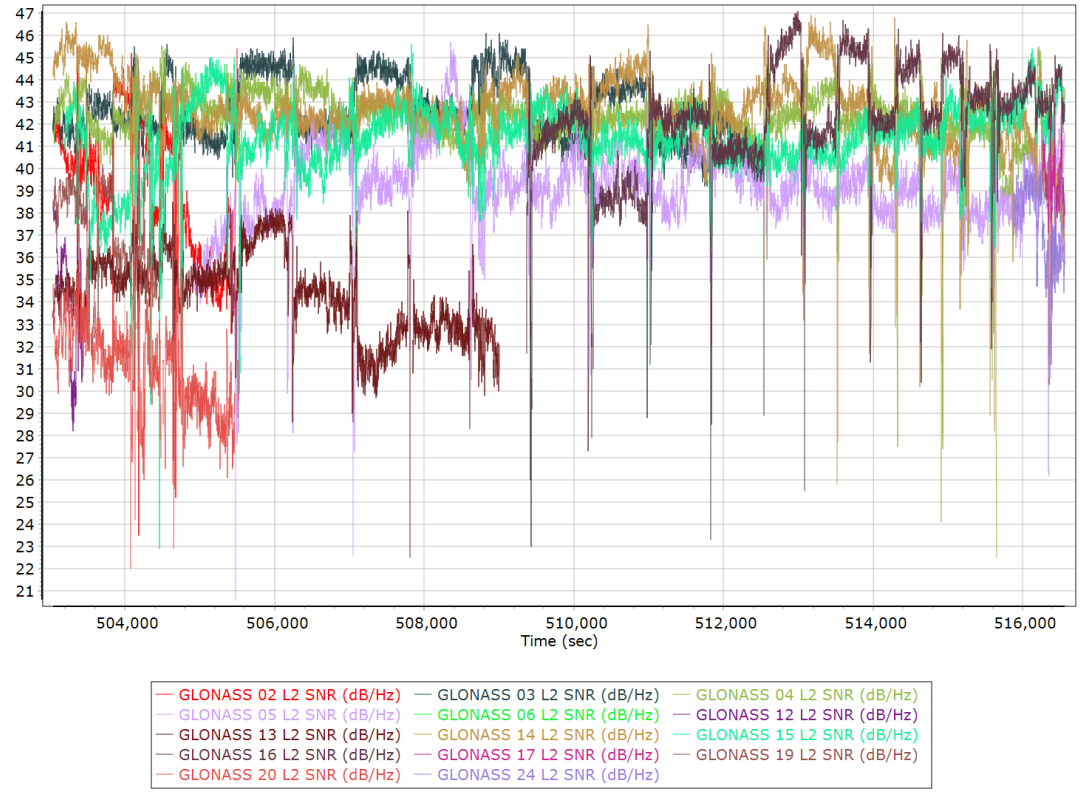
GPS/GLONASS L2 Satellite Lock/Elevation



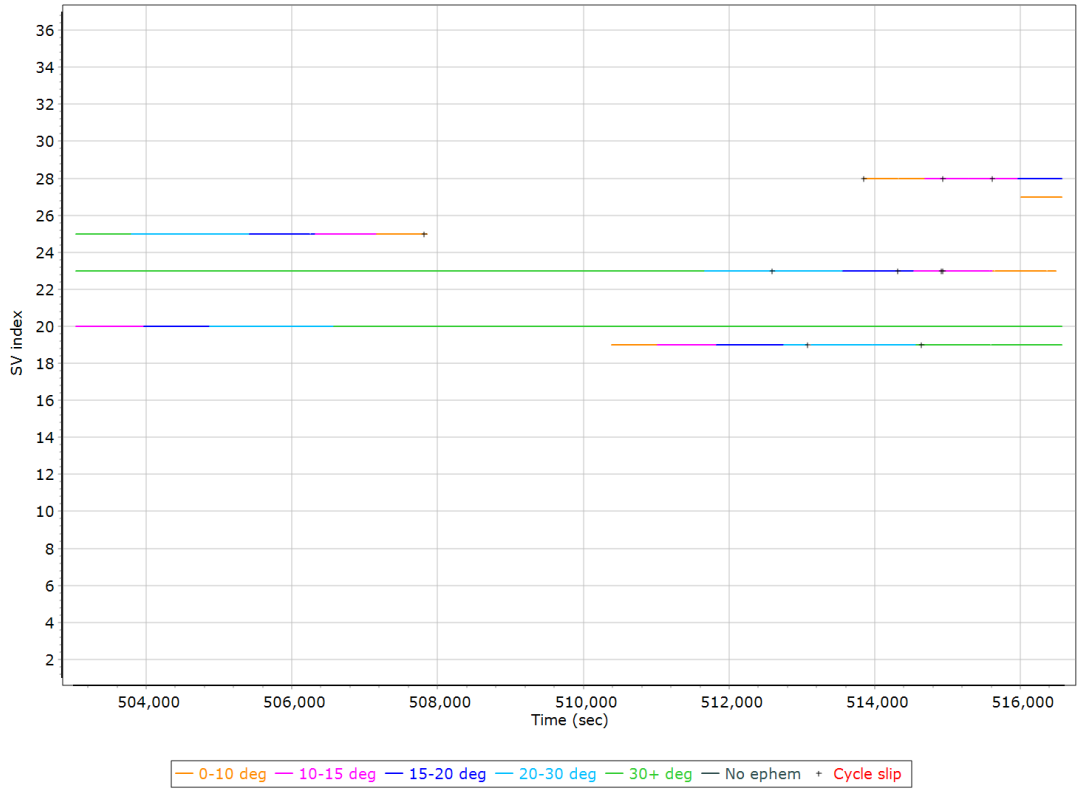
GPS L2 SNR



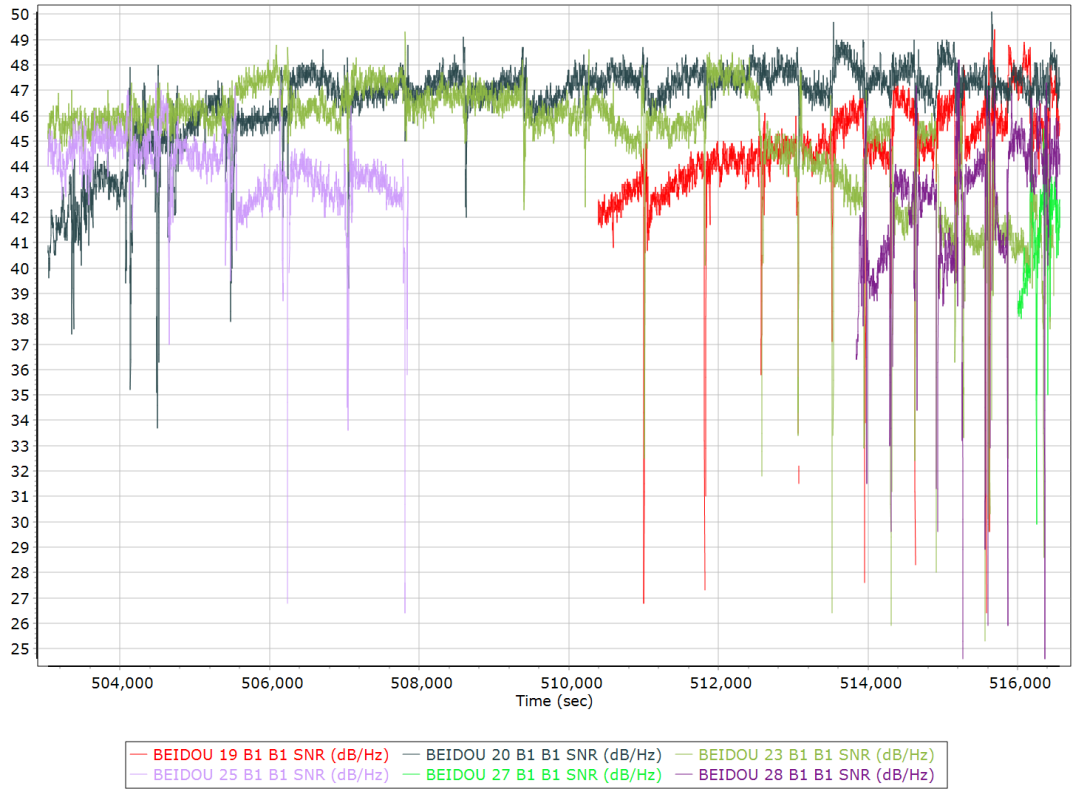
GLONASS L2 SNR



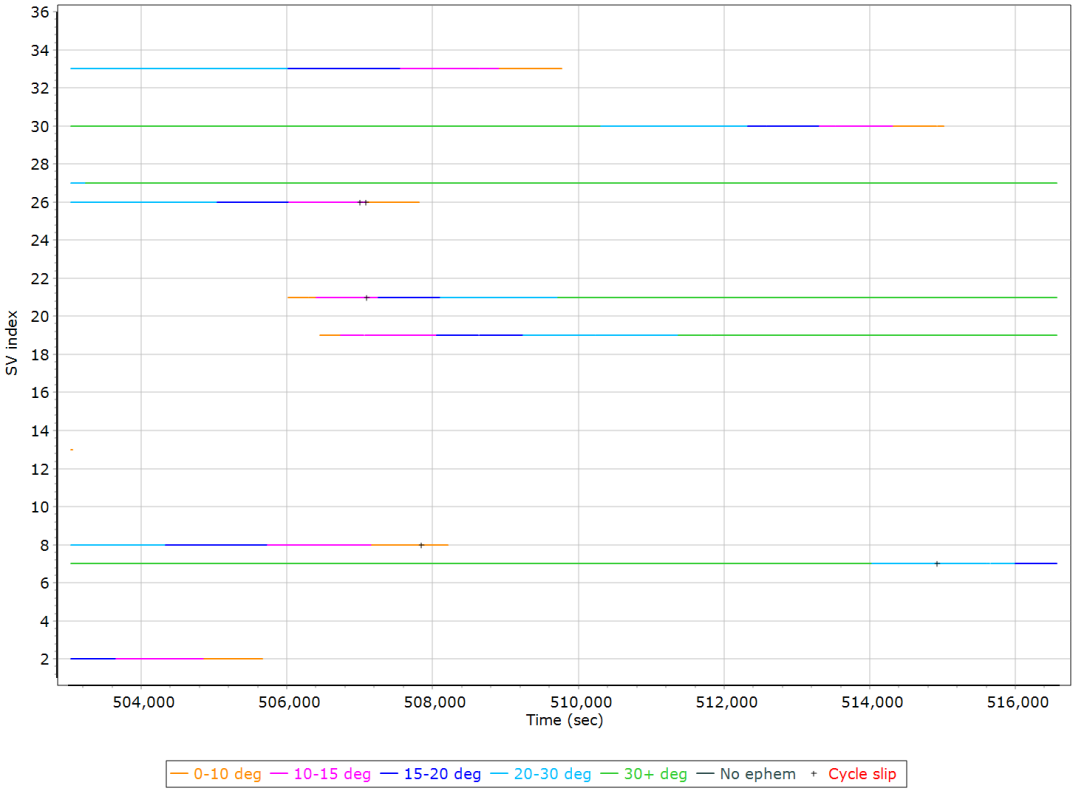
BEIDOU Satellite Lock/Elevation



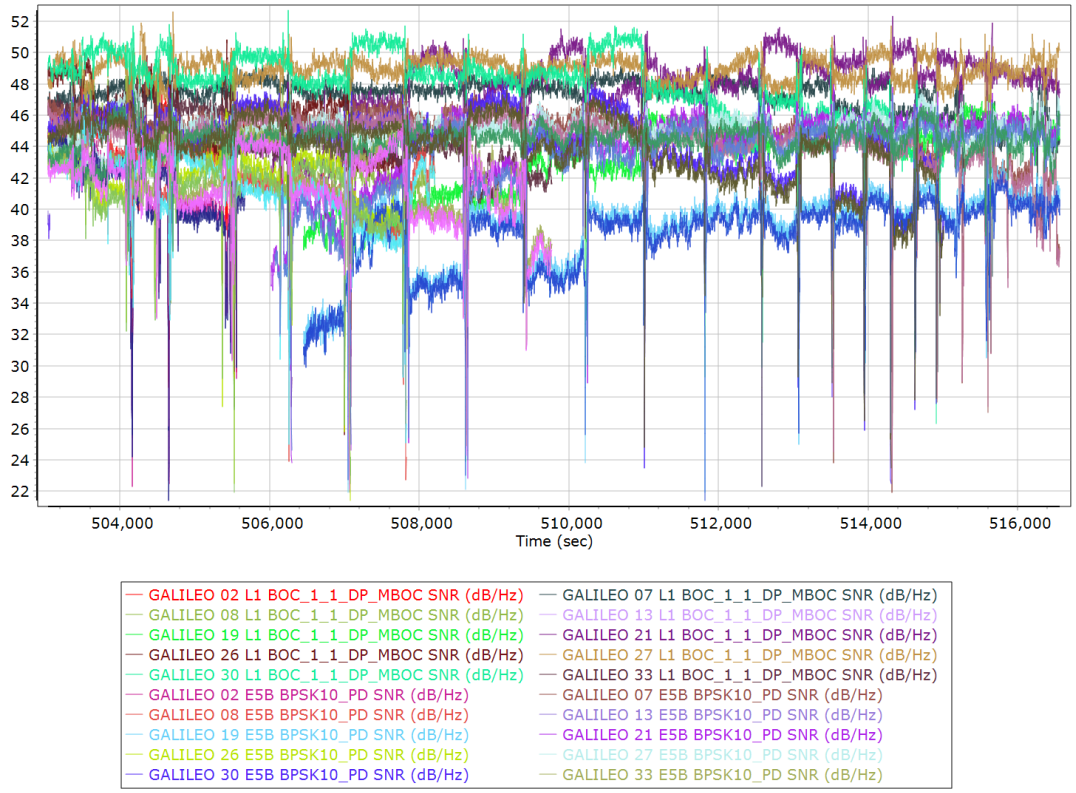
BEIDOU SNR



GALILEO Satellite Lock/Elevation

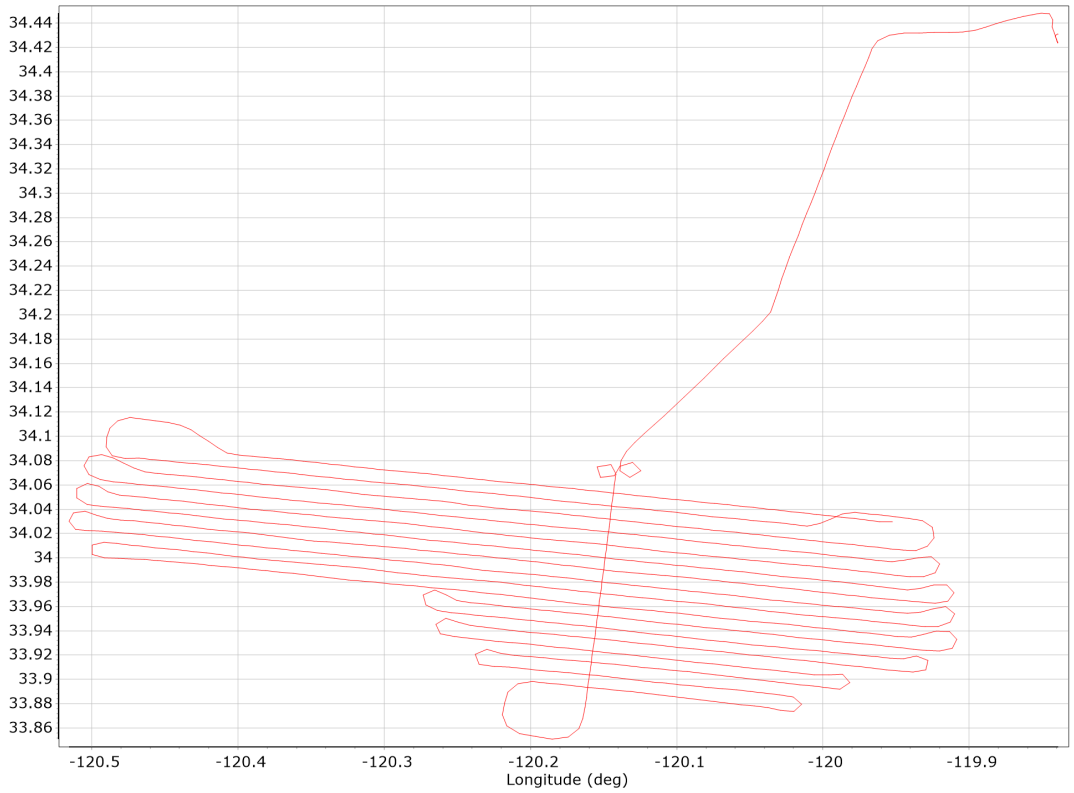


GALILEO SNR


52
50
48
46
44
42
40
38
36
34
32
30
28
26
24
22
504,000
506,000
508,000
510,000
512,000
514,000
516,000
Time (sec)
GALILEO 02 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 07 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 08 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 13 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 19 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 21 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 26 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 27 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 30 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 33 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 02 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 07 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 08 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 13 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 19 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 21 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 26 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 27 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 30 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 33 E5B BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

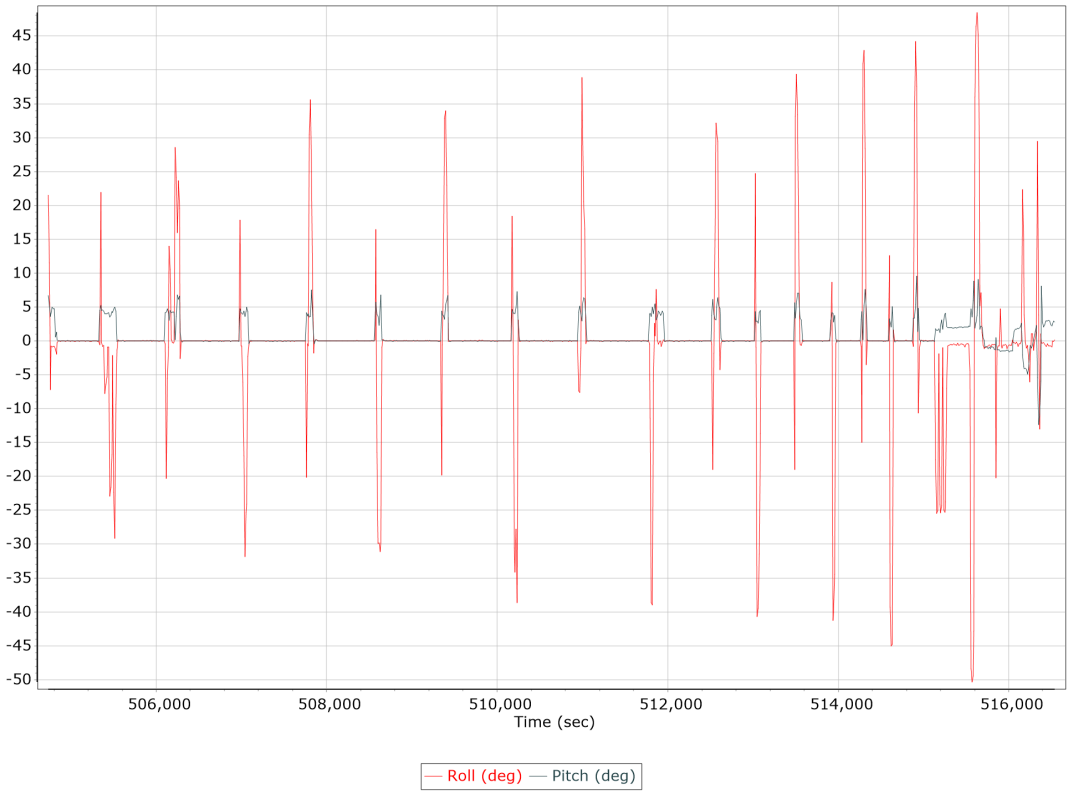
Top View



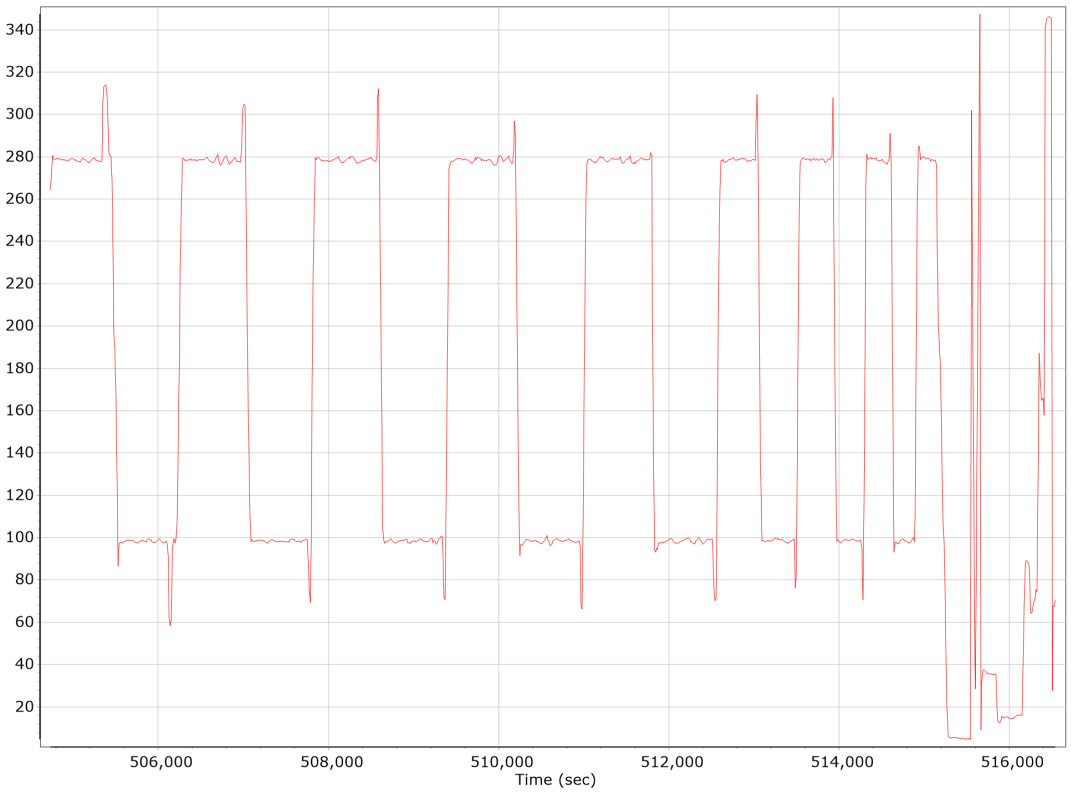
Altitude



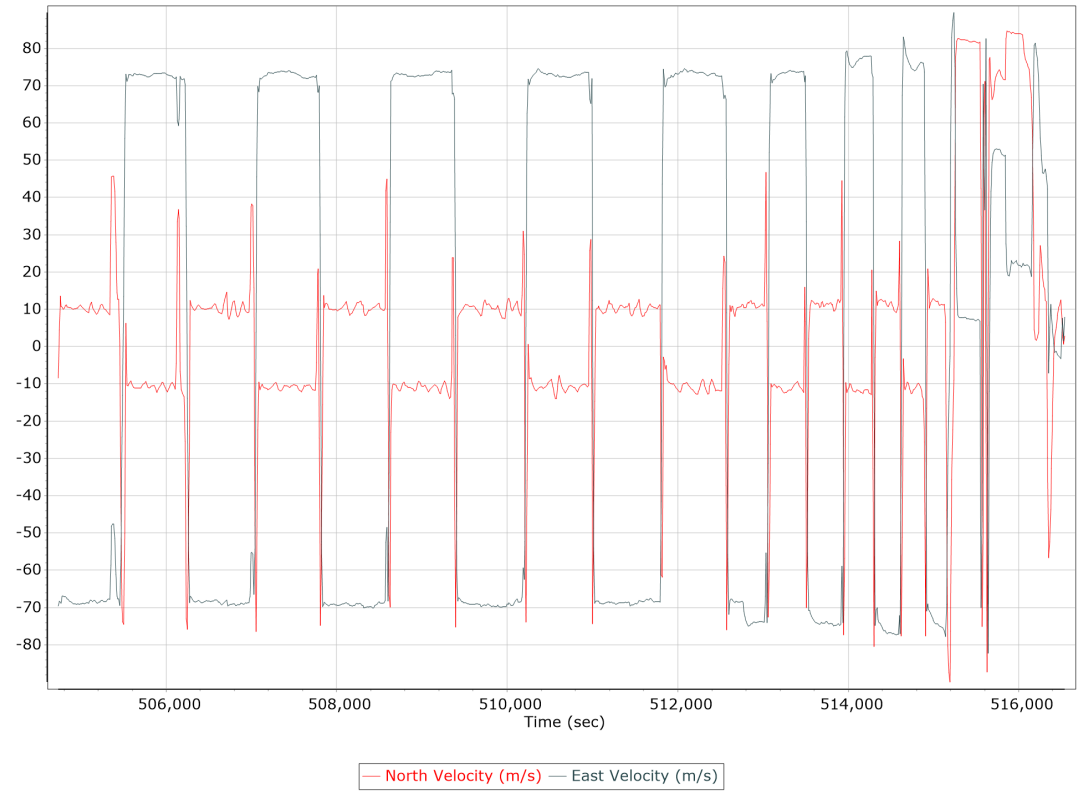
Roll/Pitch



Heading



North/East Velocity



Down Velocity



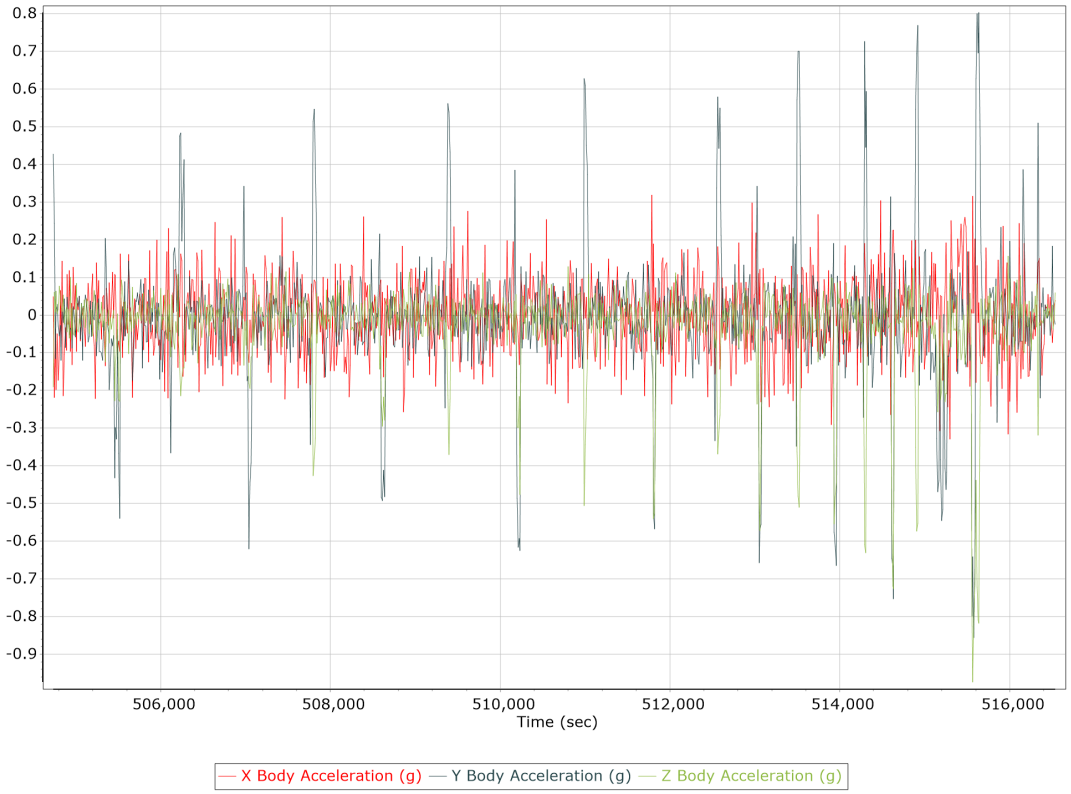
Total Speed



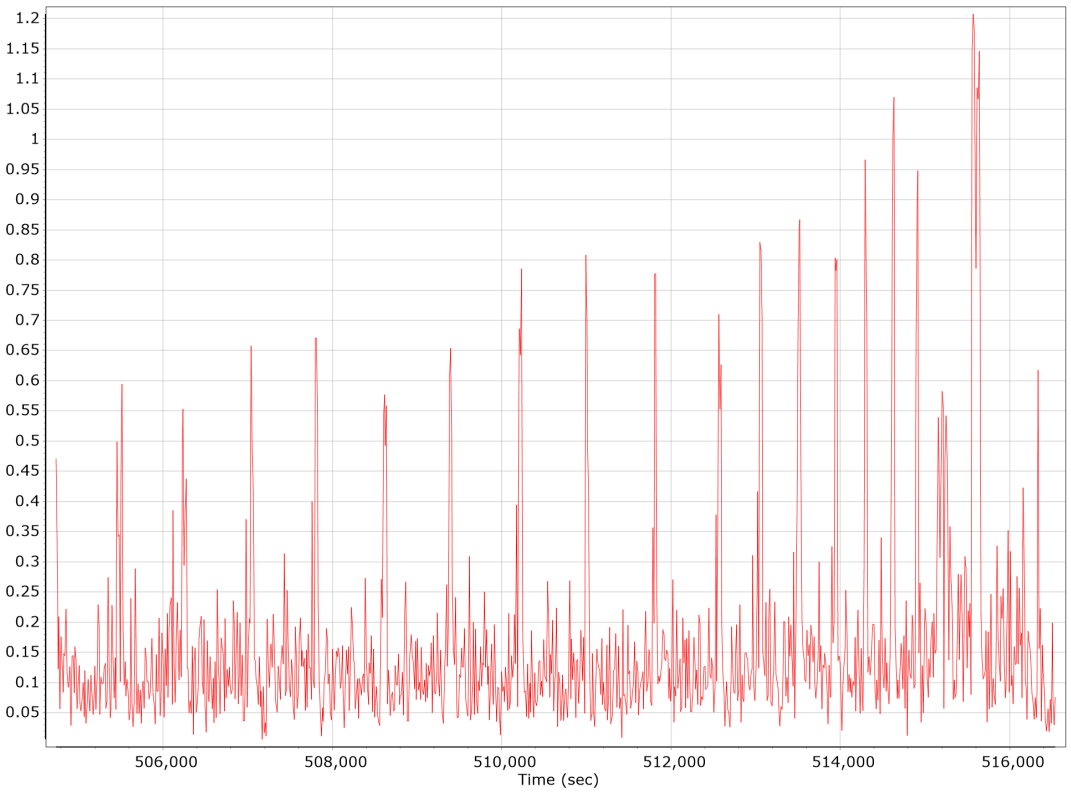
Ground Speed



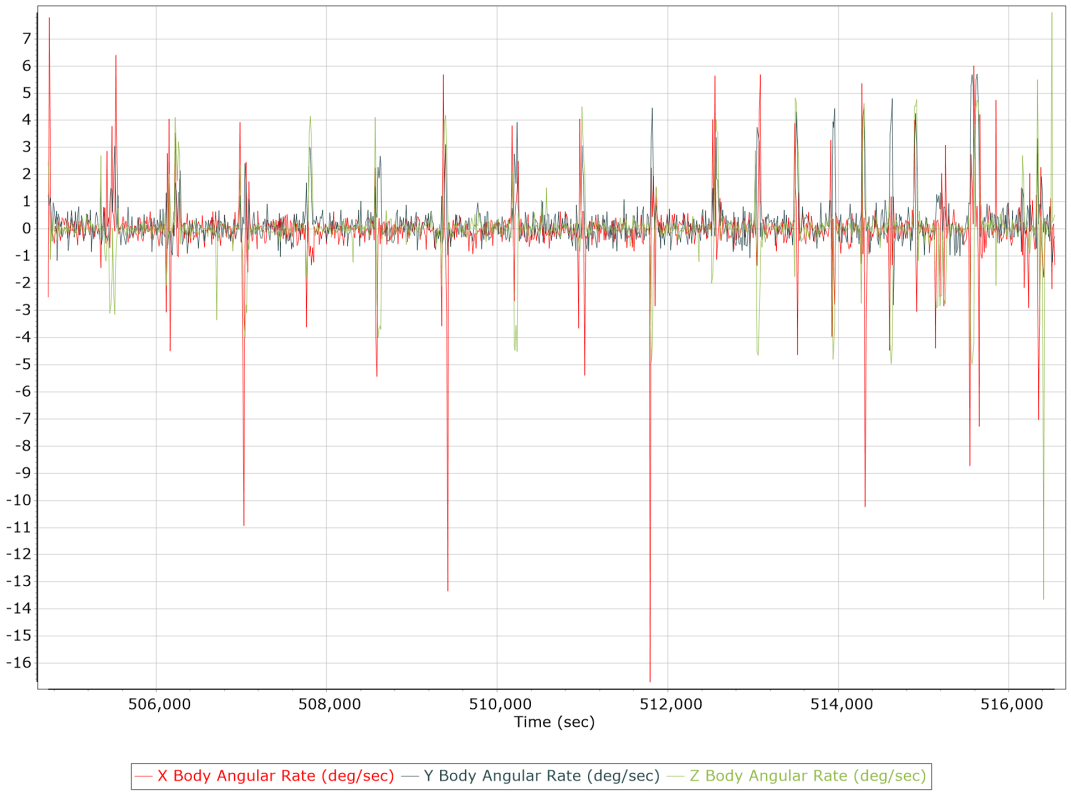
Body Acceleration



Total Body Acceleration

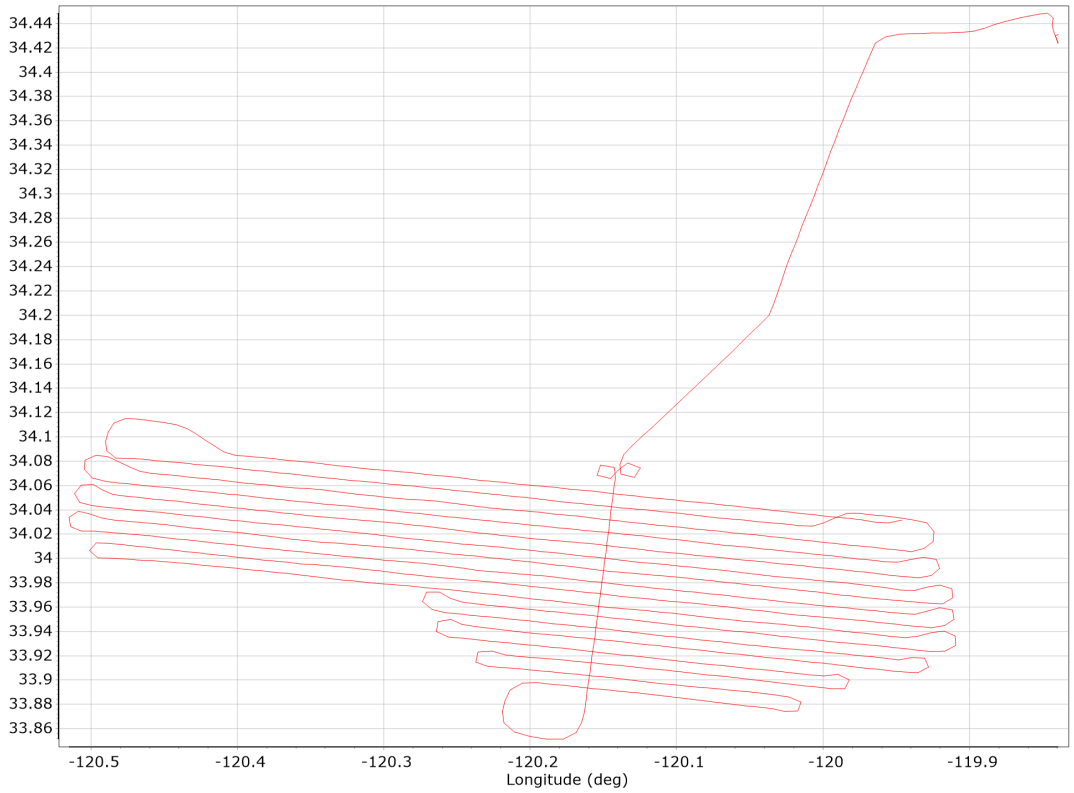


Body Angular Rate

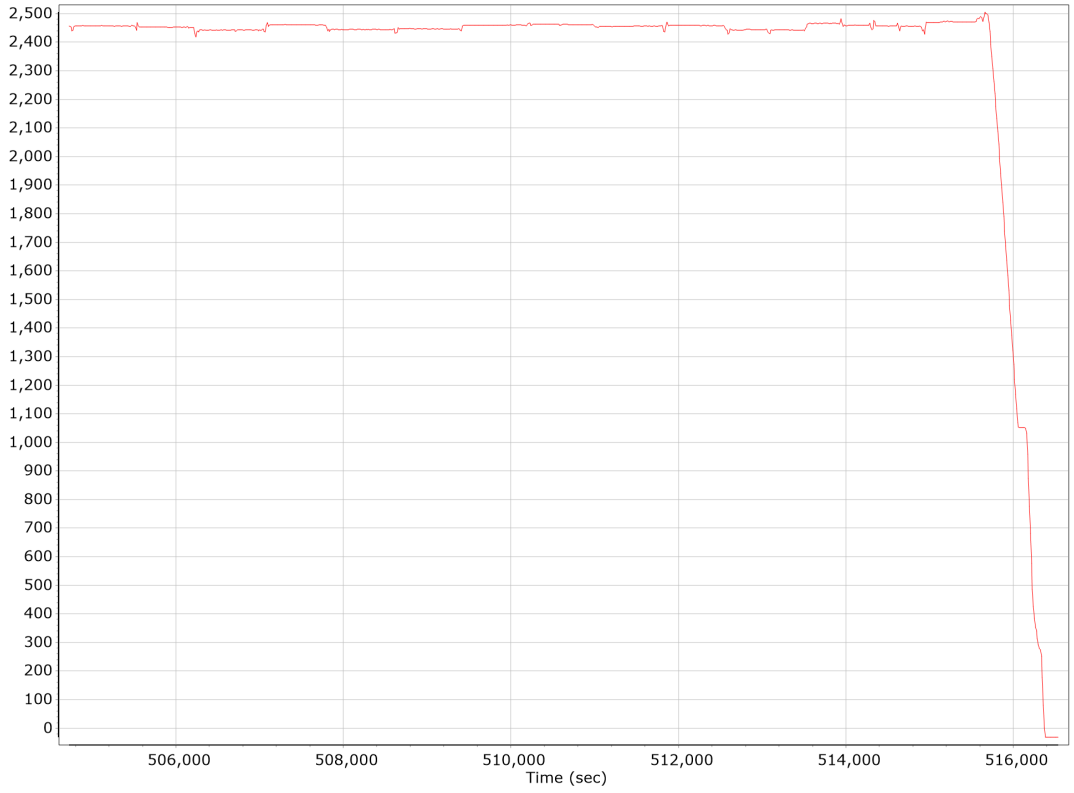


Forward Processed Trajectory Information

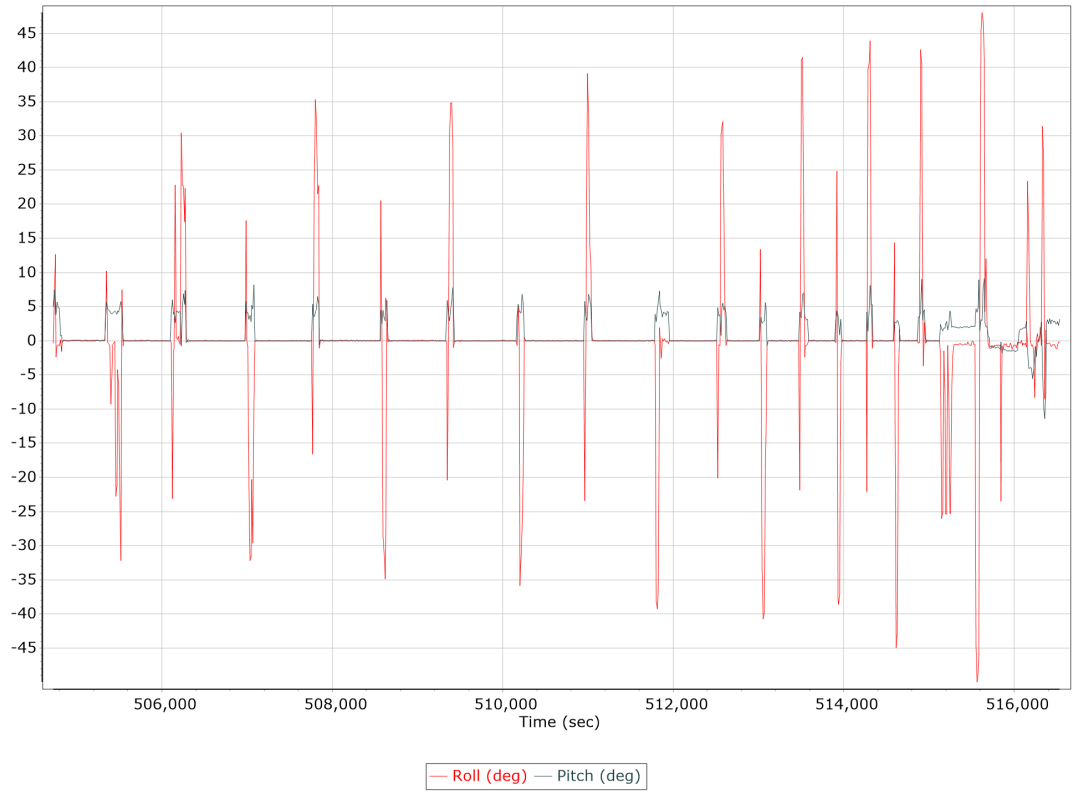
Top View



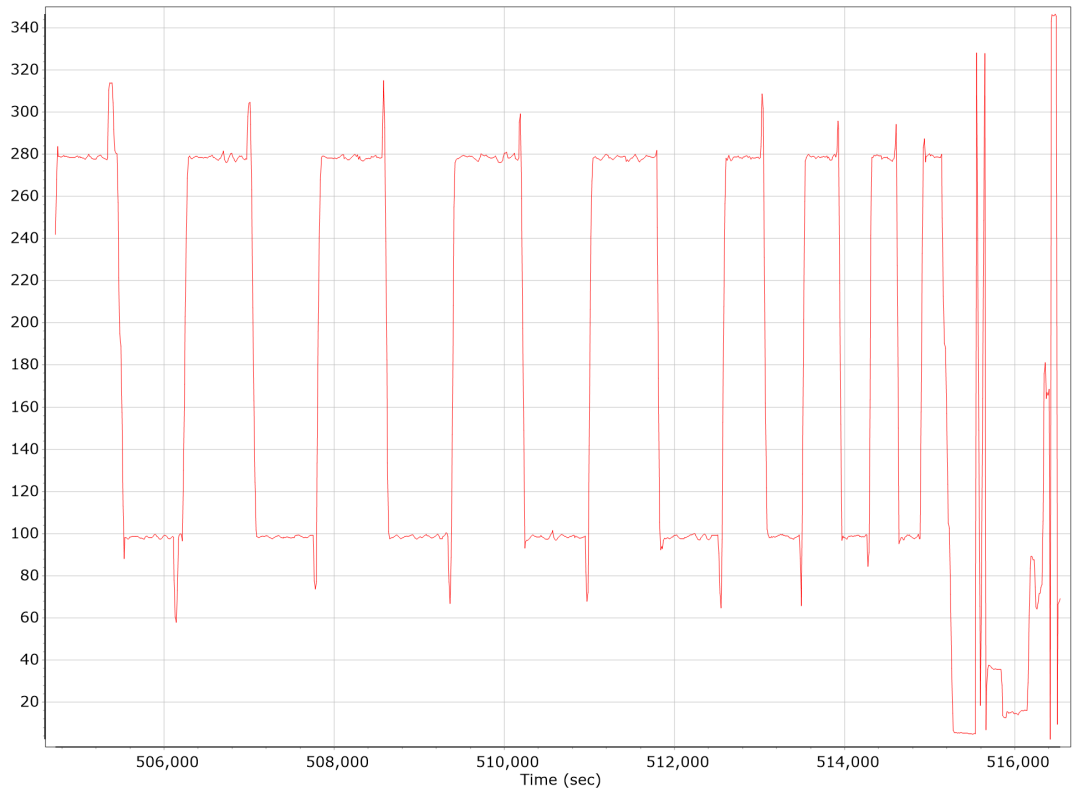
Altitude



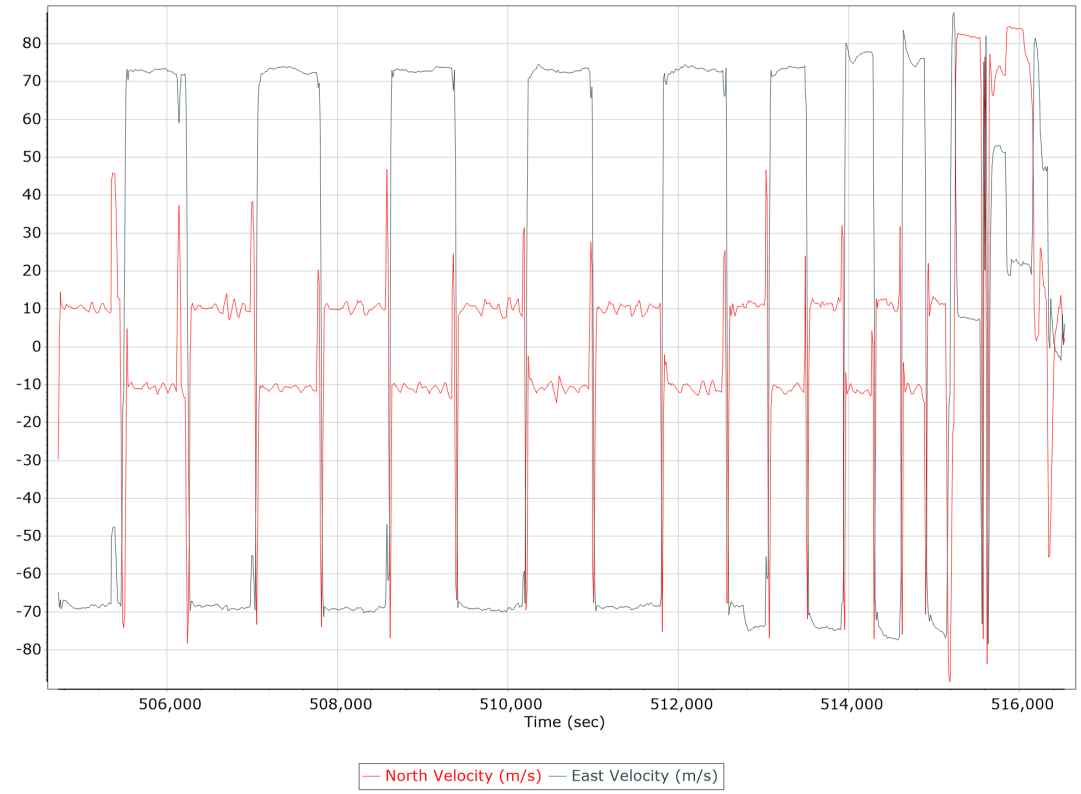
Roll/Pitch



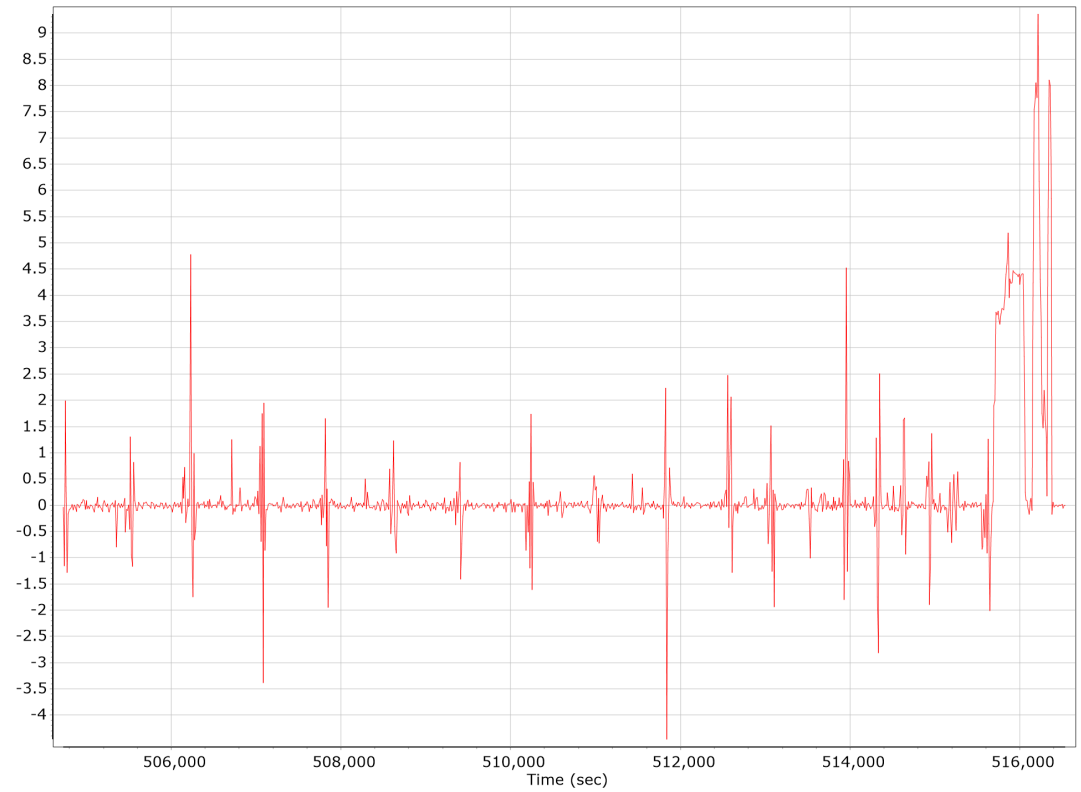
Heading



North/East Velocity



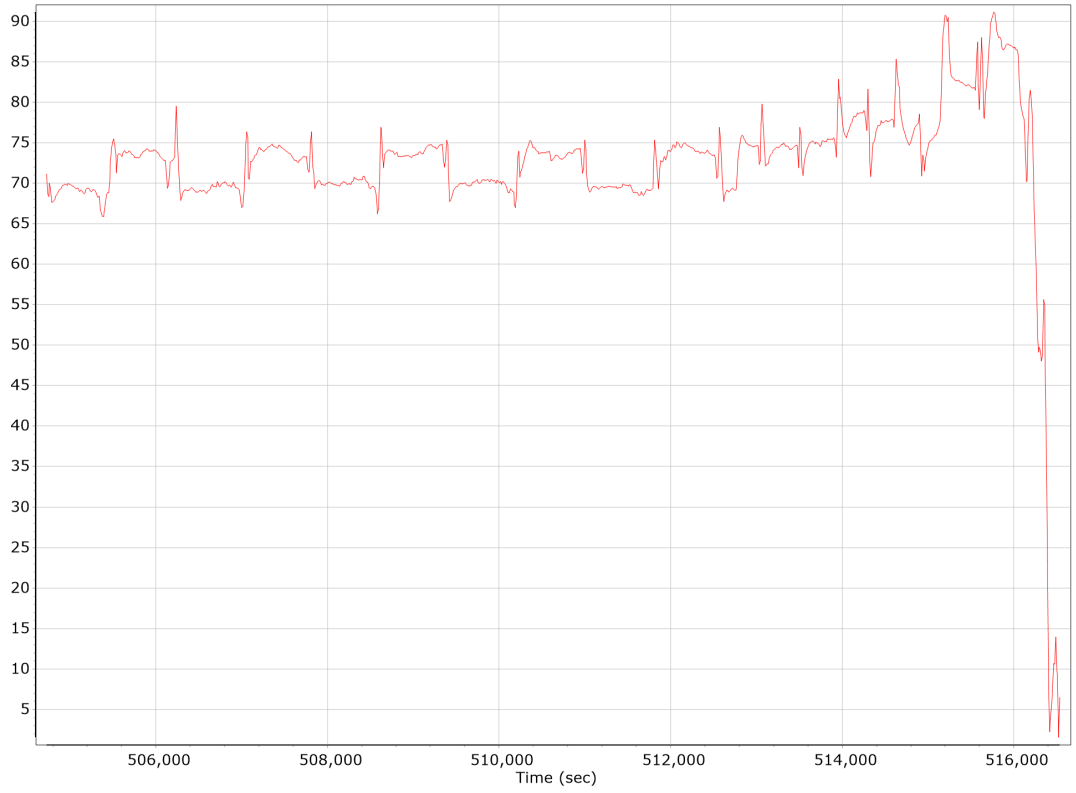
Down Velocity



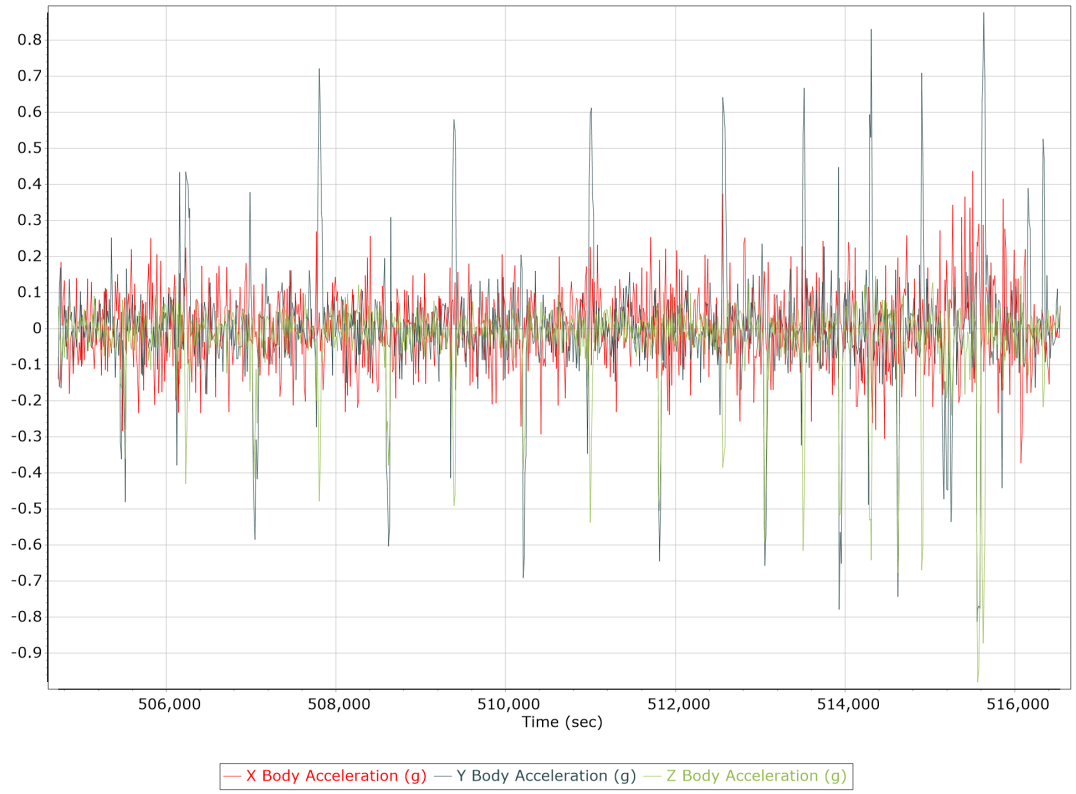
Total Speed



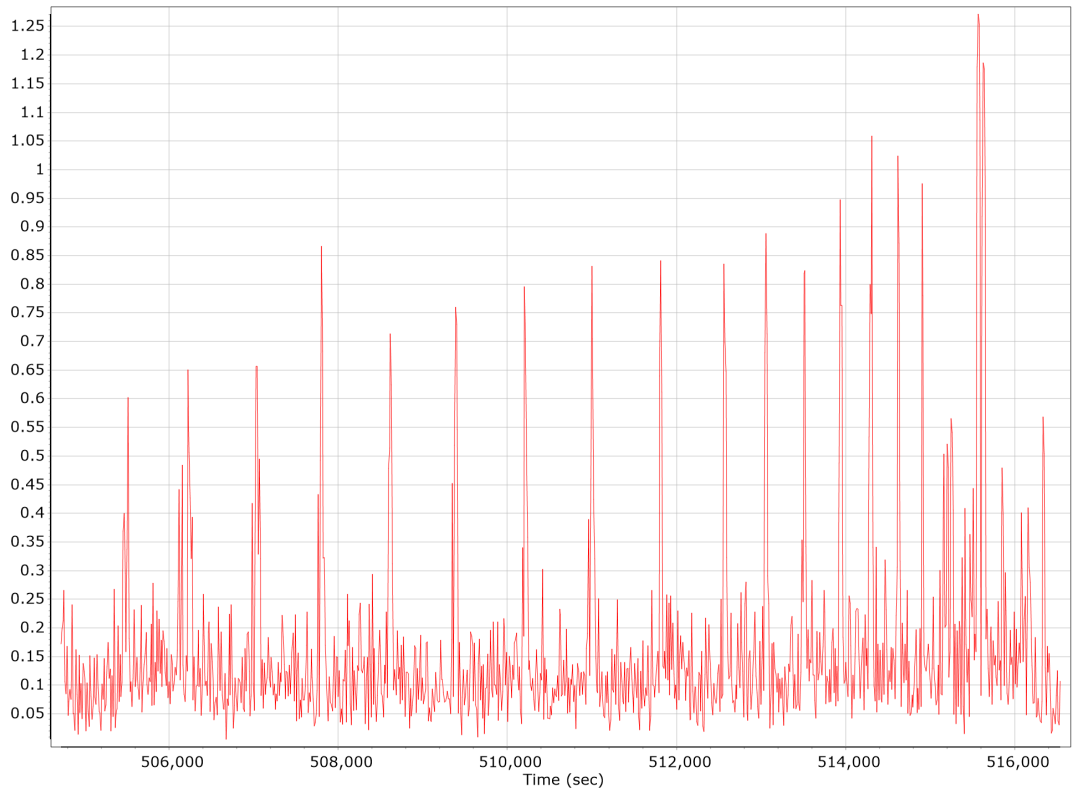
Ground Speed



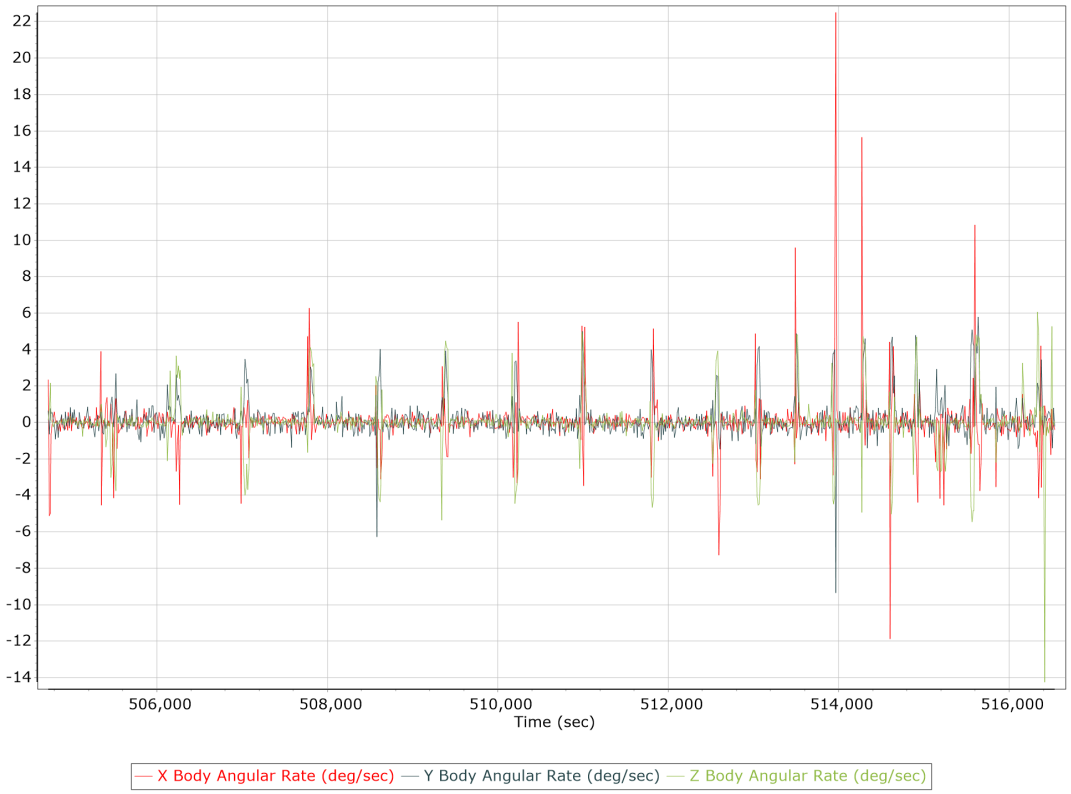
Body Acceleration



Total Body Acceleration



Body Angular Rate



GNSS QC

GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	5	10	8
Number of GLONASS SV	3	6	5
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	3	8	6
Total number of SV	12	22	19
PDOP	1.06	2.46	1.22
QC Solution Gaps	0.00	0.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	13477.00	0.00	0.00
Percentage	100.00	0.00	0.00

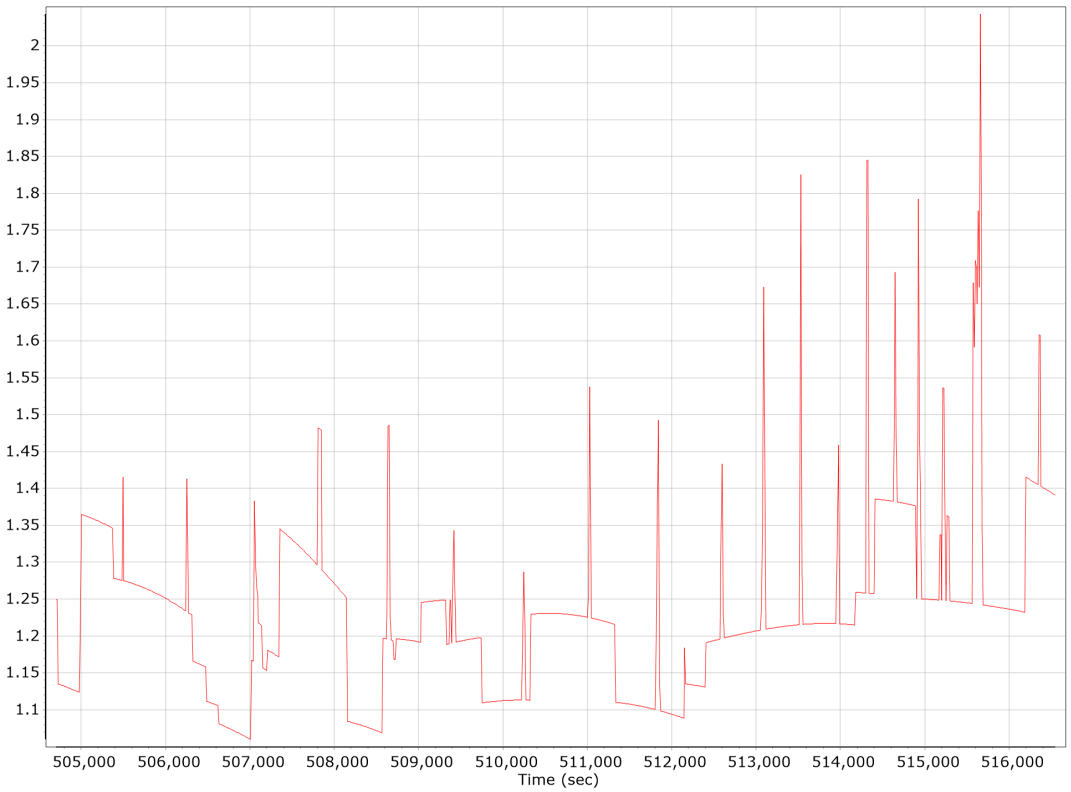
Num SVs in solution



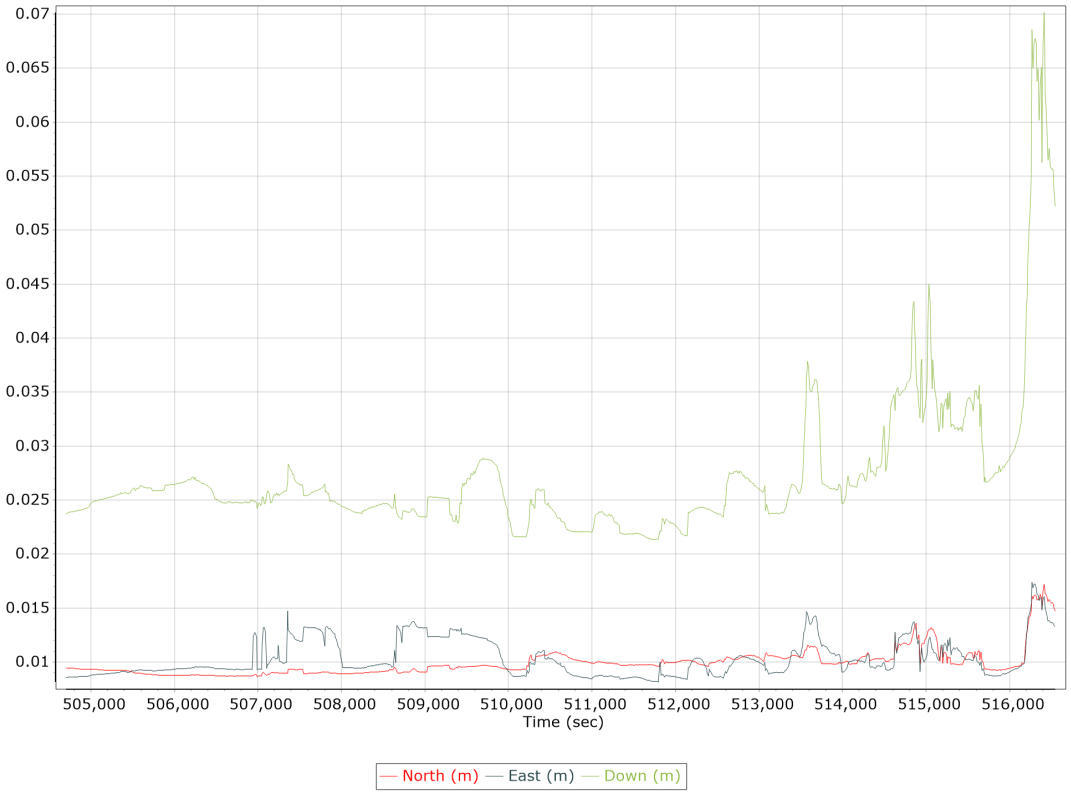
Forward/Reverse Separation



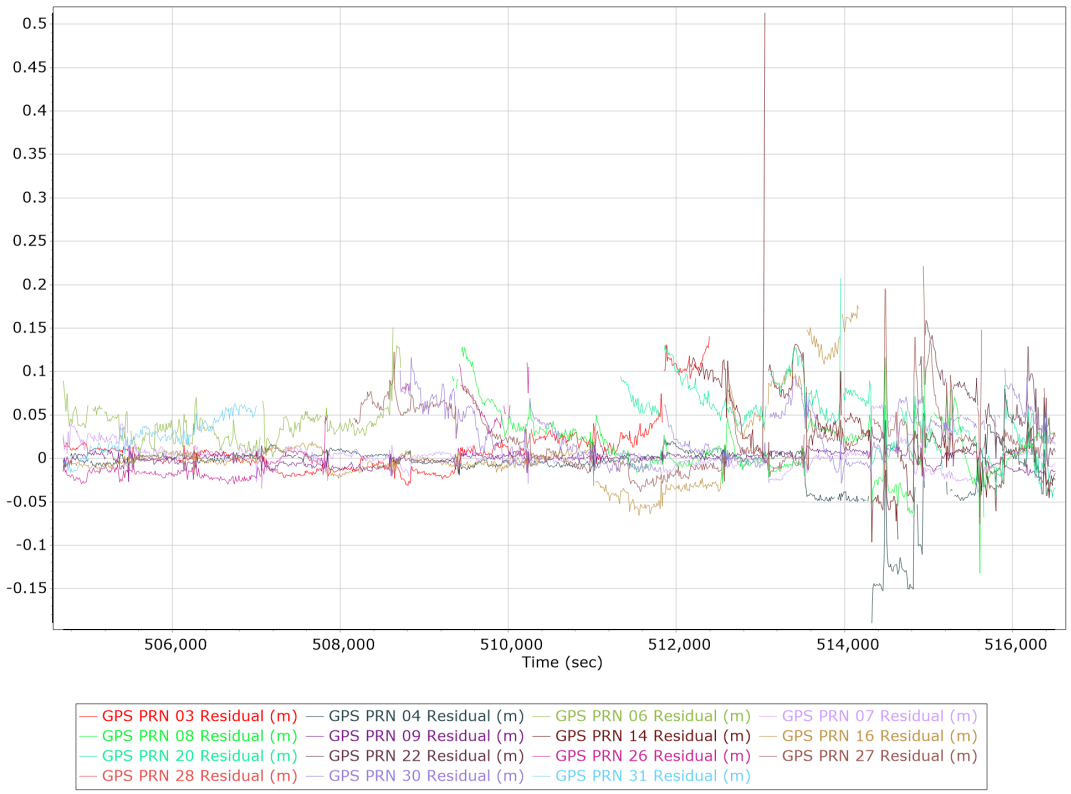
PDOP



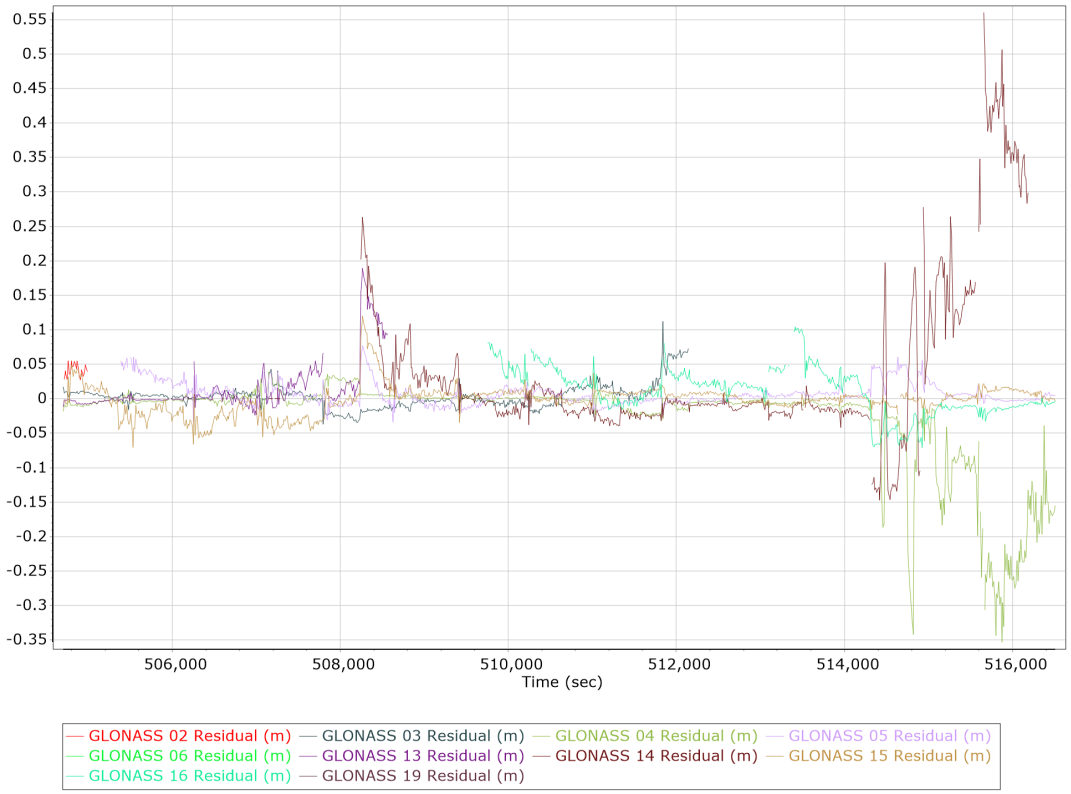
Estimated Position Accuracy



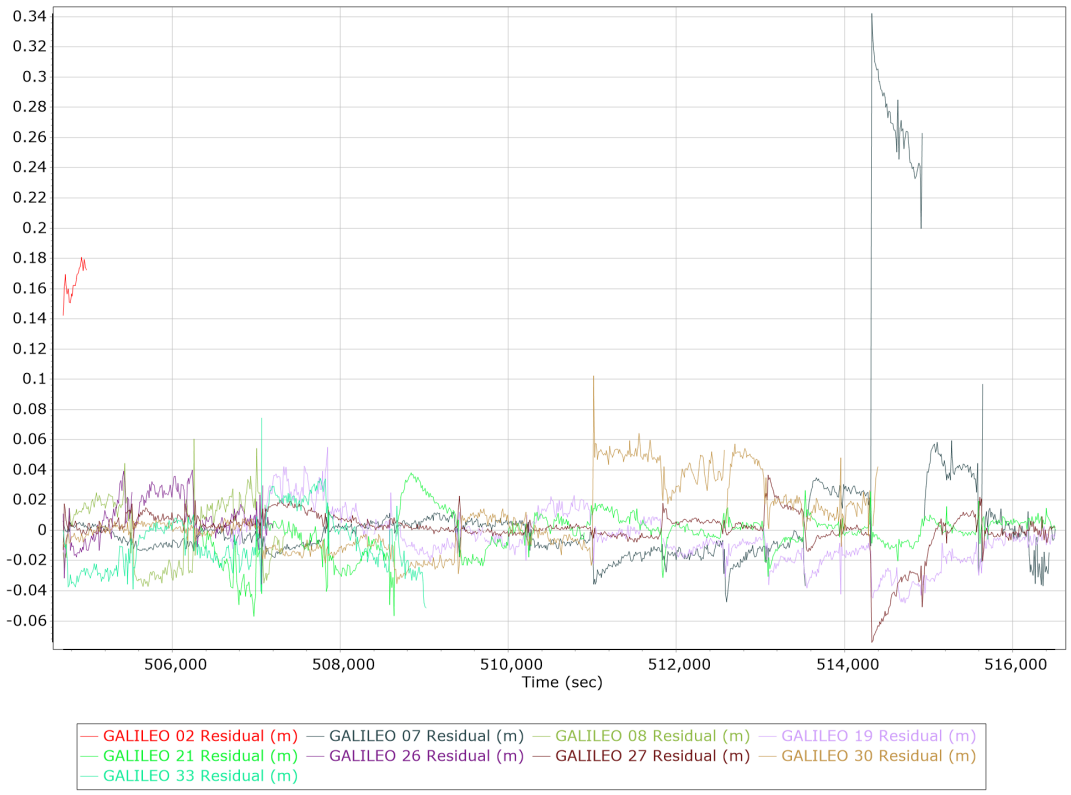
GPS Residuals



GLONASS Residuals



GALILEO Residuals



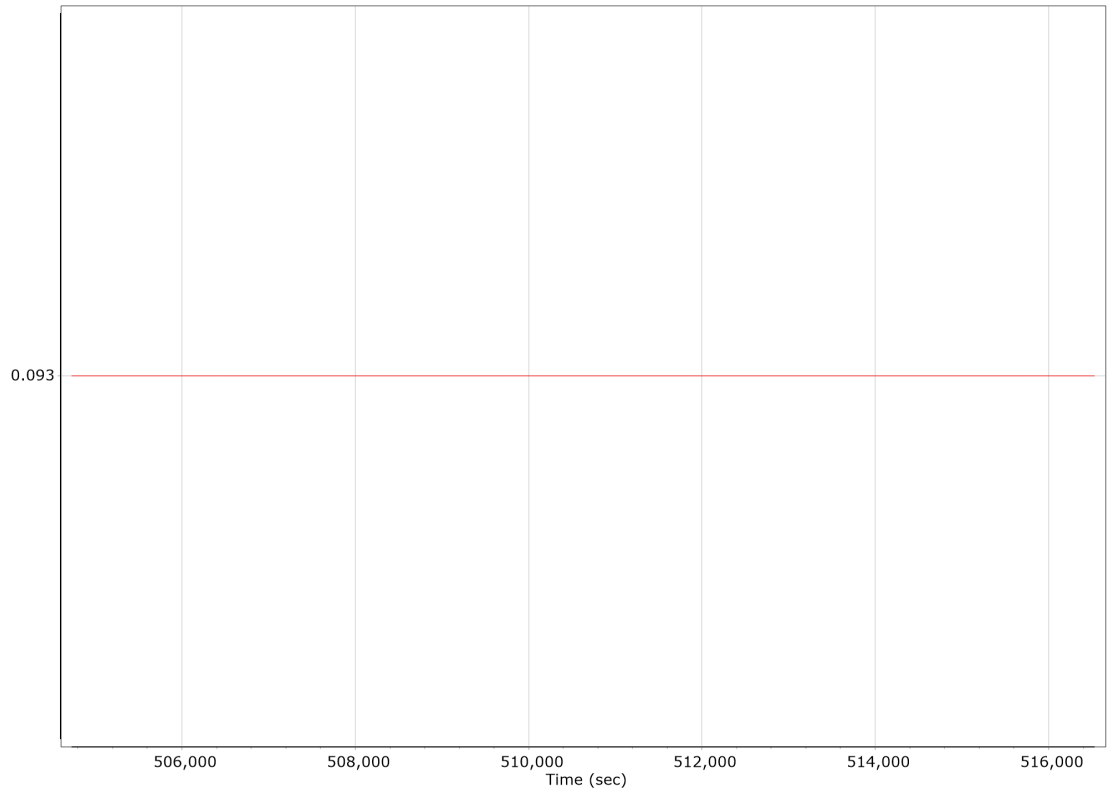
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	504640.691 (11/10/2023 8:10:40 PM)		
Processing end time	516546.000 (11/10/2023 11:29:06 PM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.093	0.062	-1.287
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

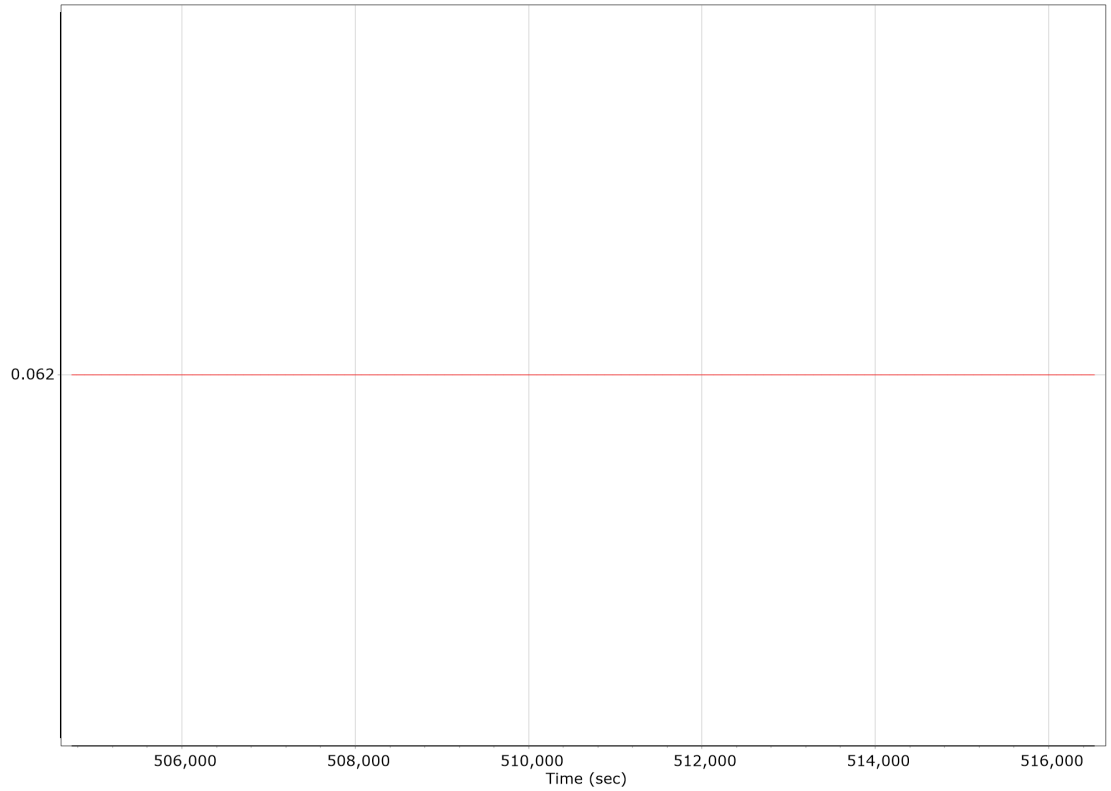
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

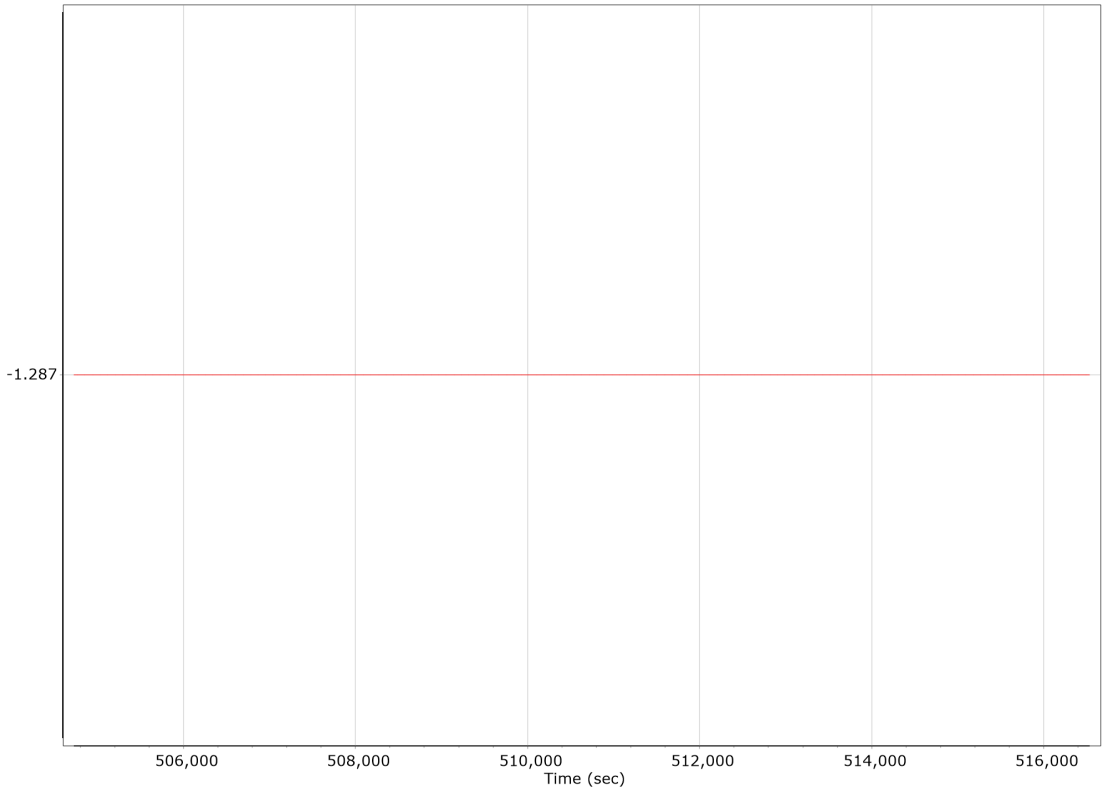
X Reference-Primary GNSS Lever Arm (m)



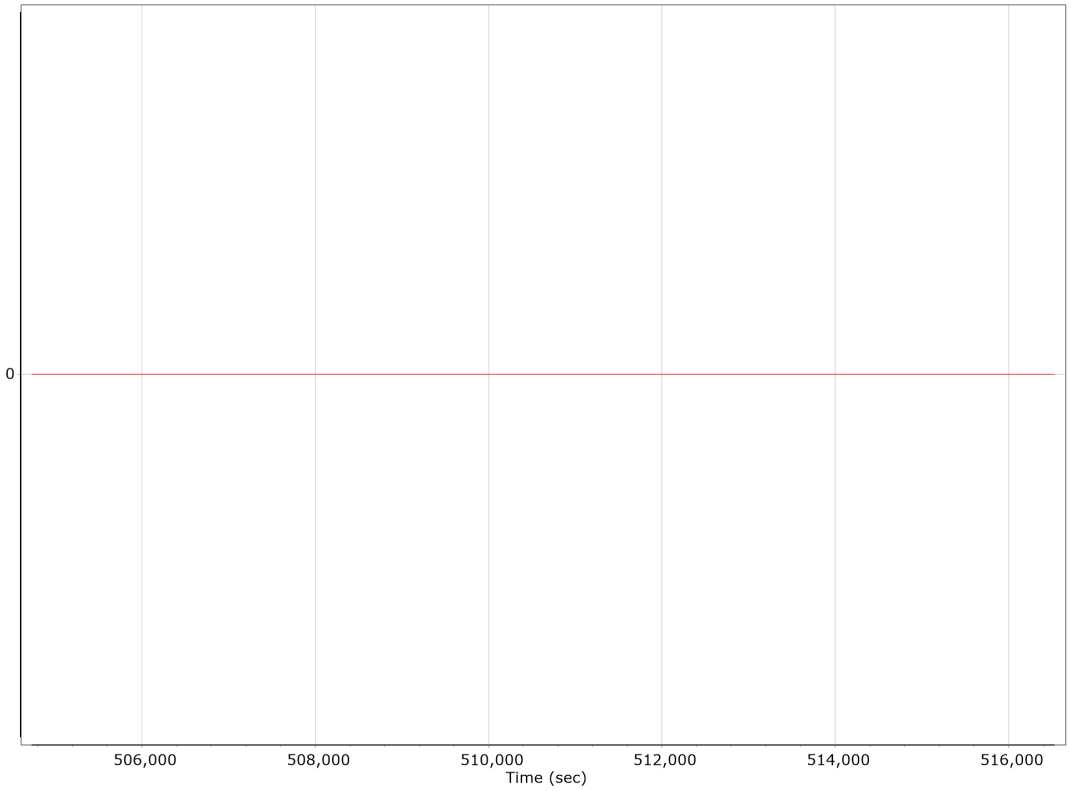
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



Reference-Primary GNSS Lever Arm Figure of Merit



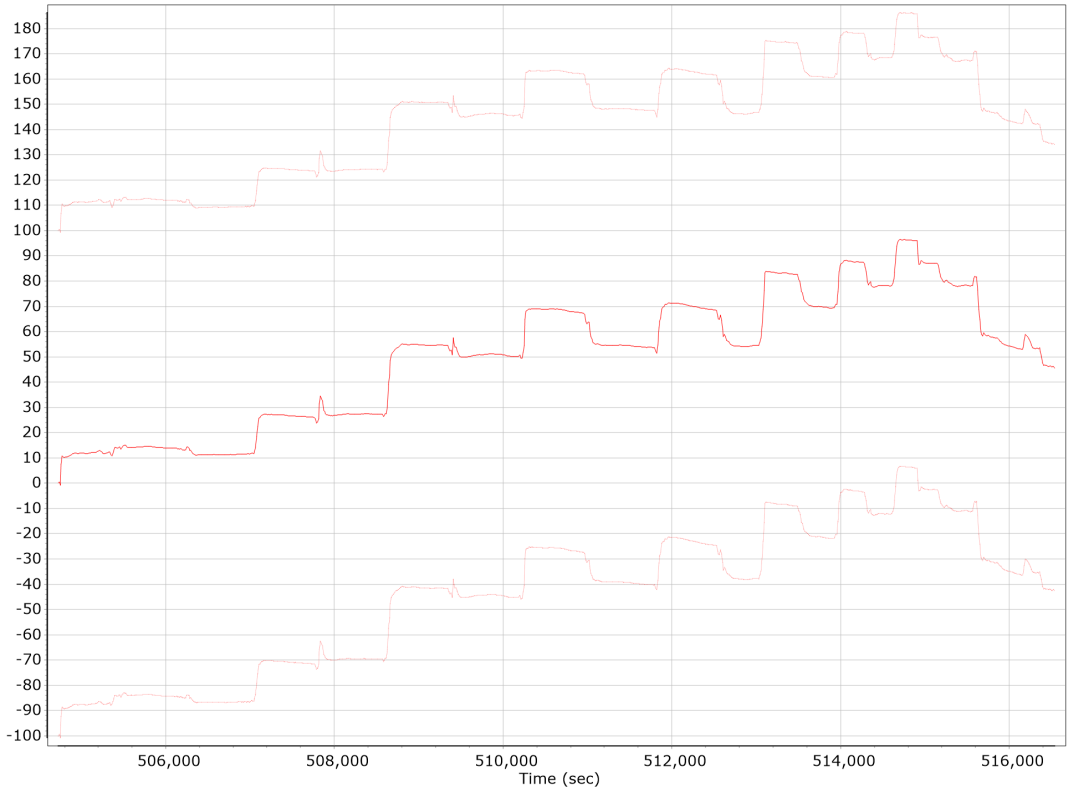
IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

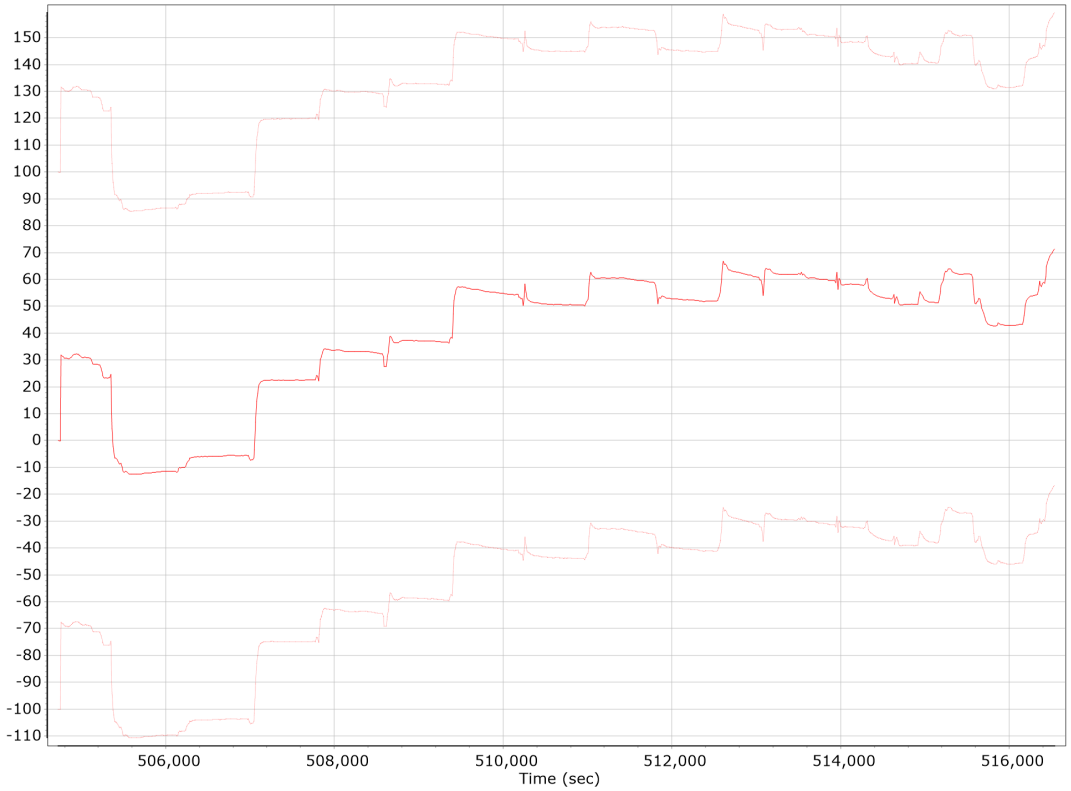
Accelerometer Bias (micro-g)



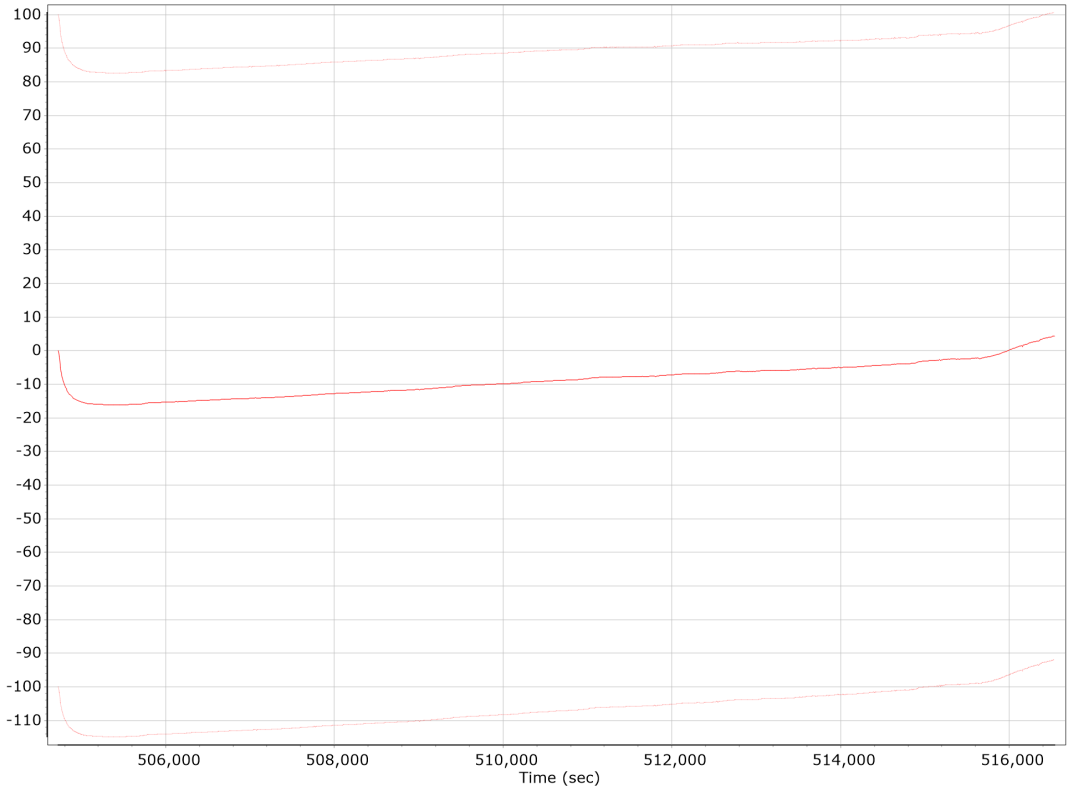
X Accelerometer Bias (micro-g)



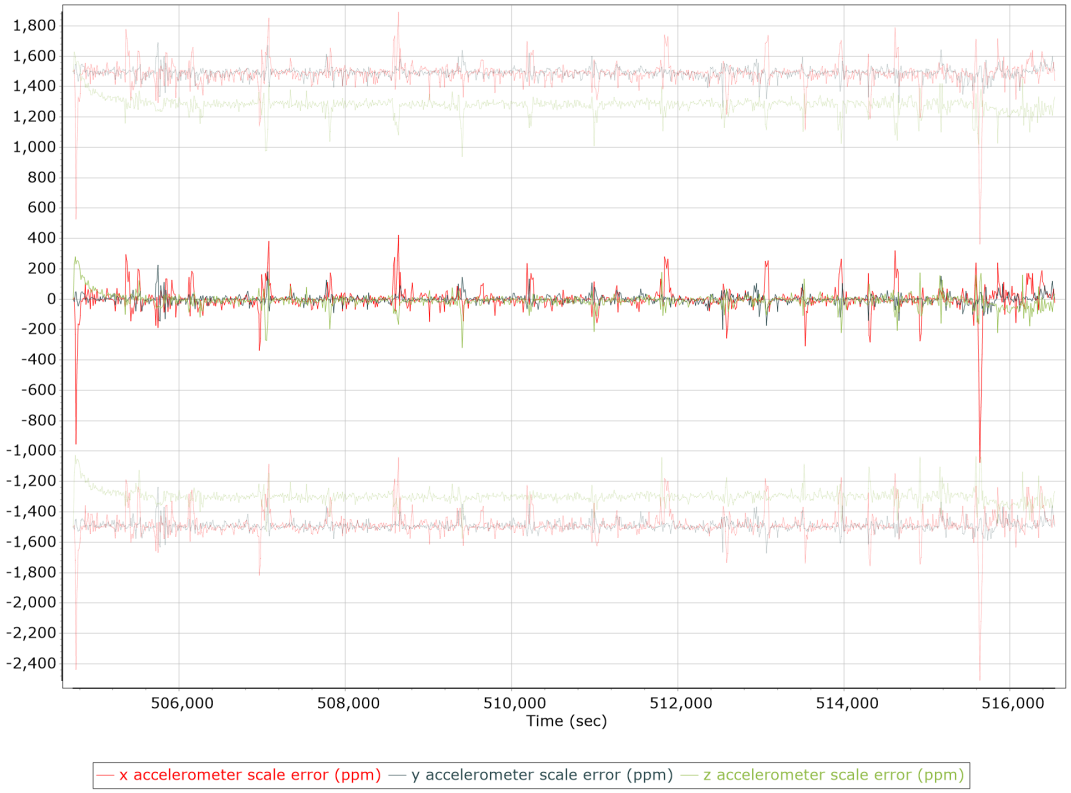
Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



X Accelerometer Scale Error (ppm)



Y Accelerometer Scale Error (ppm)



Z Accelerometer Scale Error (ppm)



Gyro Bias (deg/h)



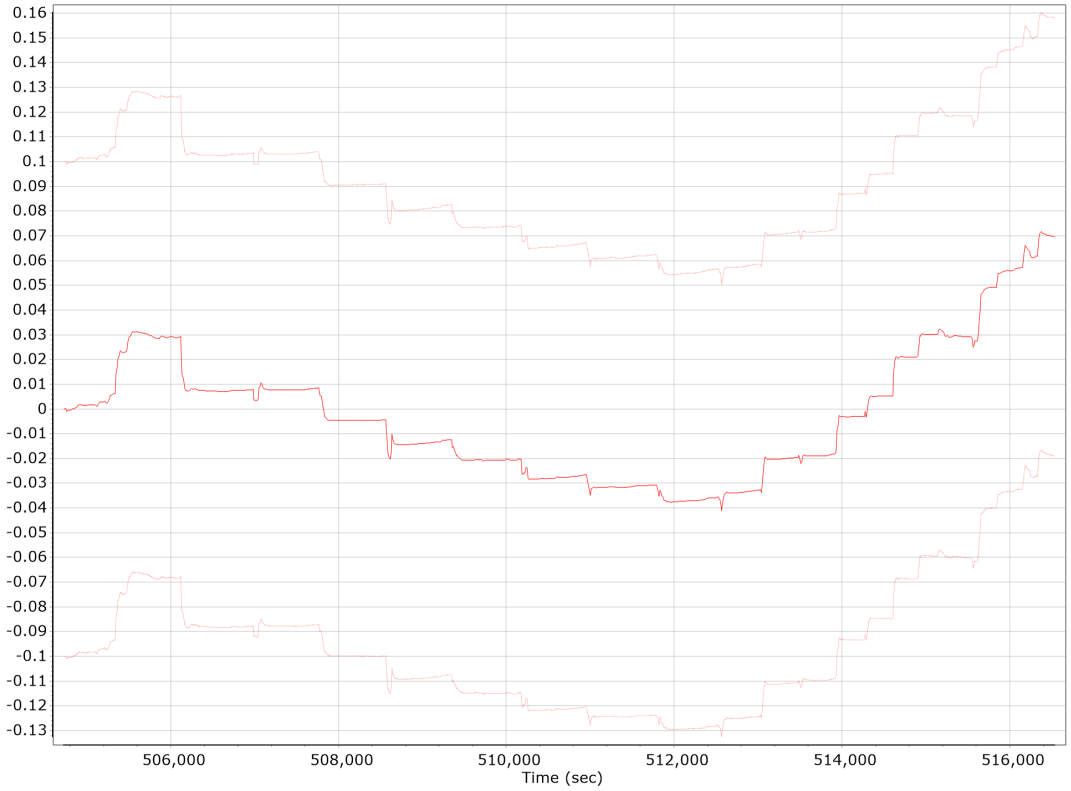
X Gyro Bias (deg/h)



Y Gyro Bias (deg/h)



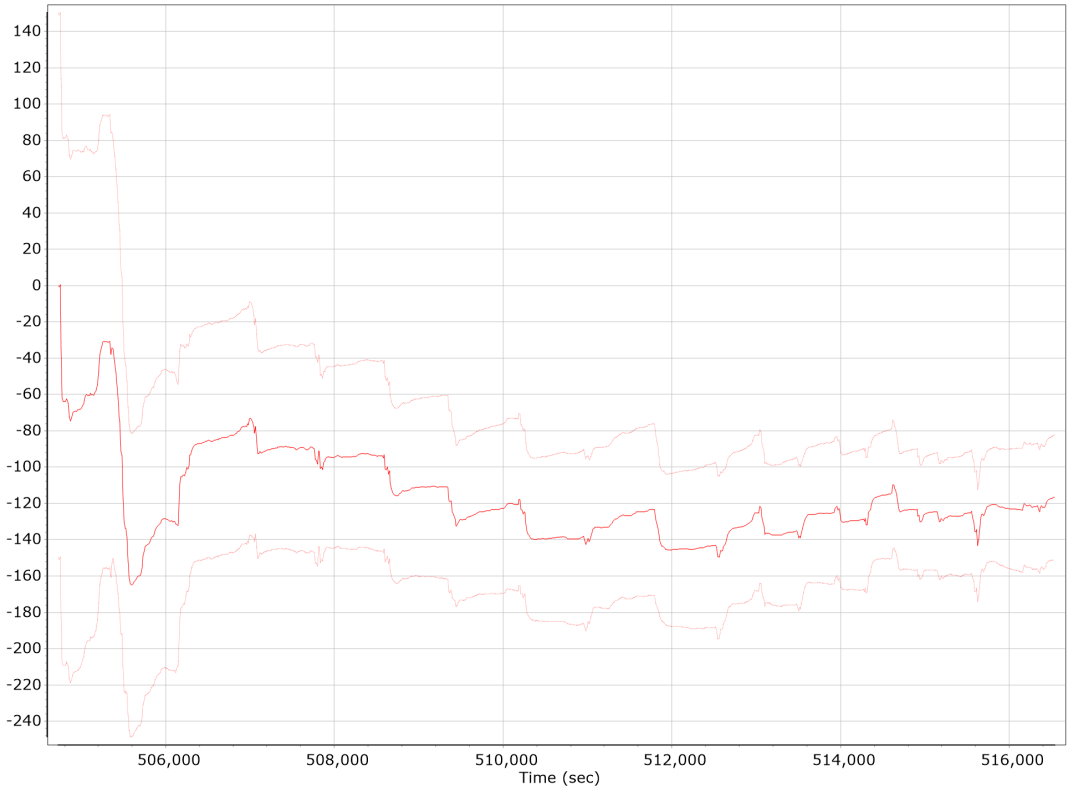
Z Gyro Bias (deg/h)



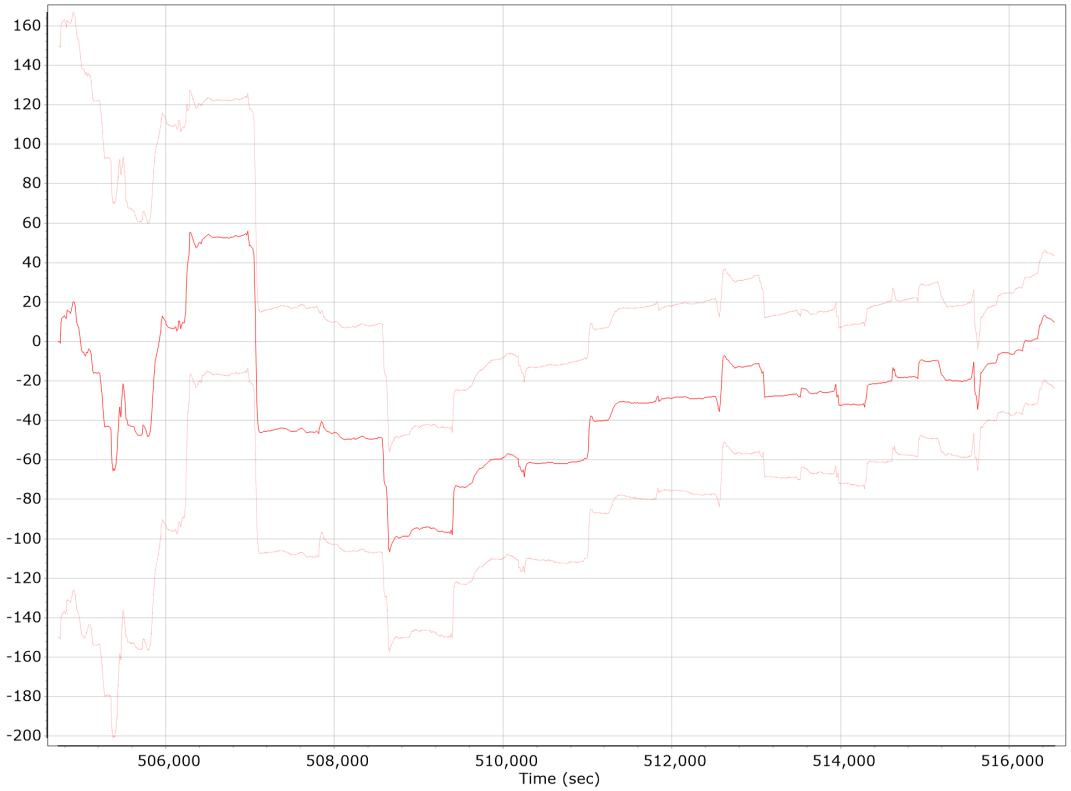
Gyro Scale Error (ppm)



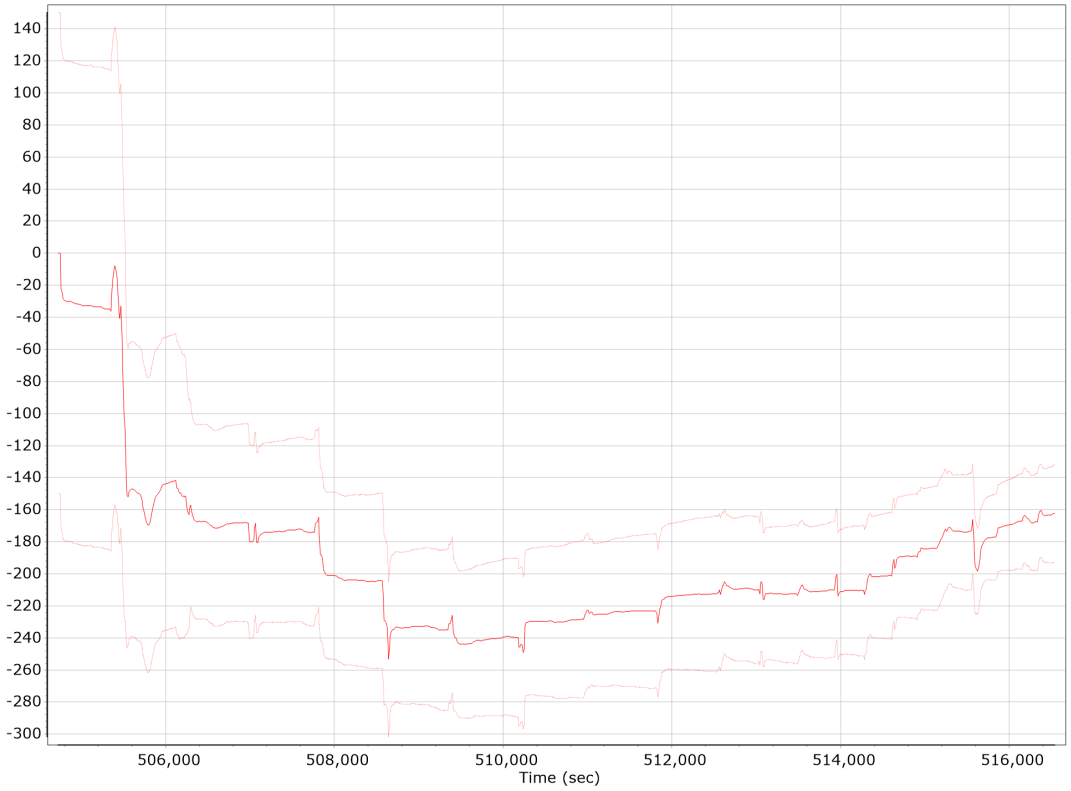
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)



Z Gyro Scale Error (ppm)

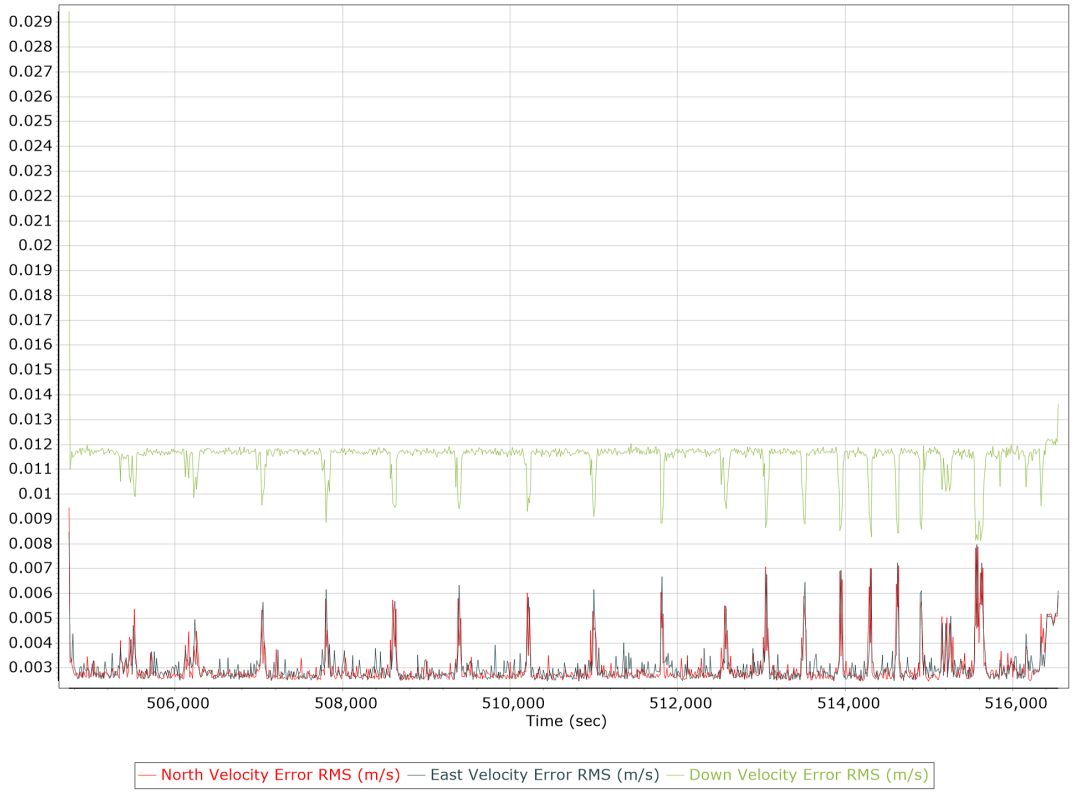


Smoothed Performance Metrics

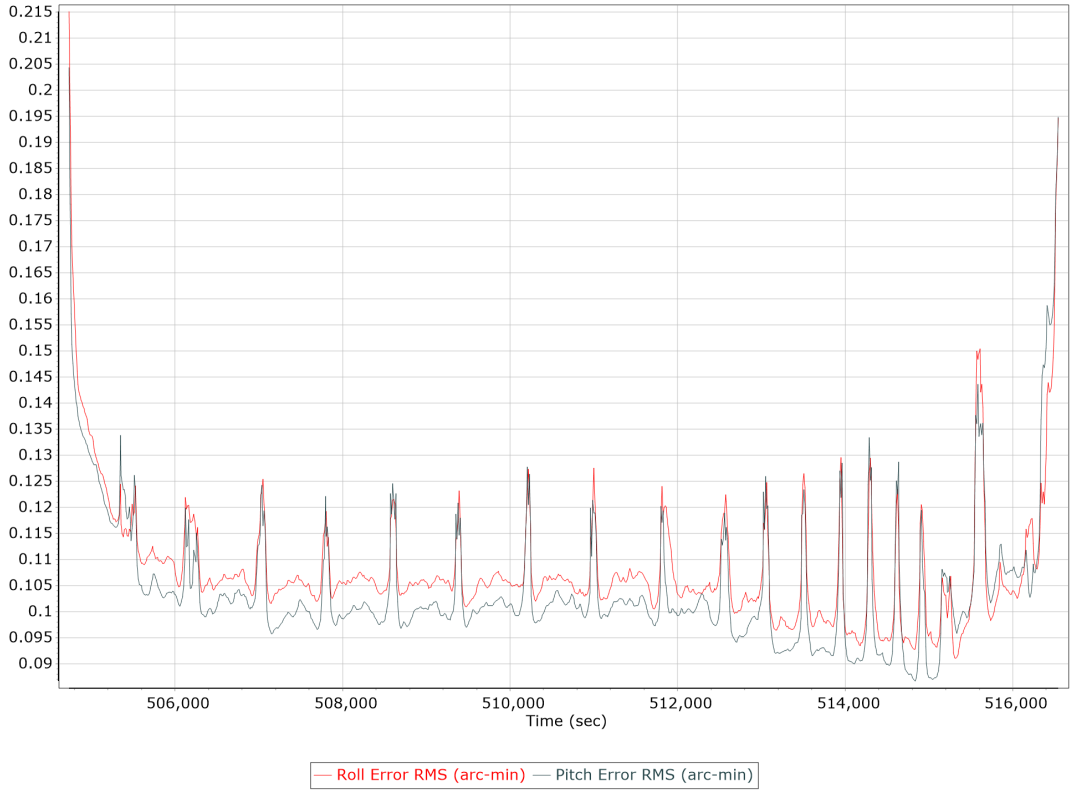
Position Error RMS (m)



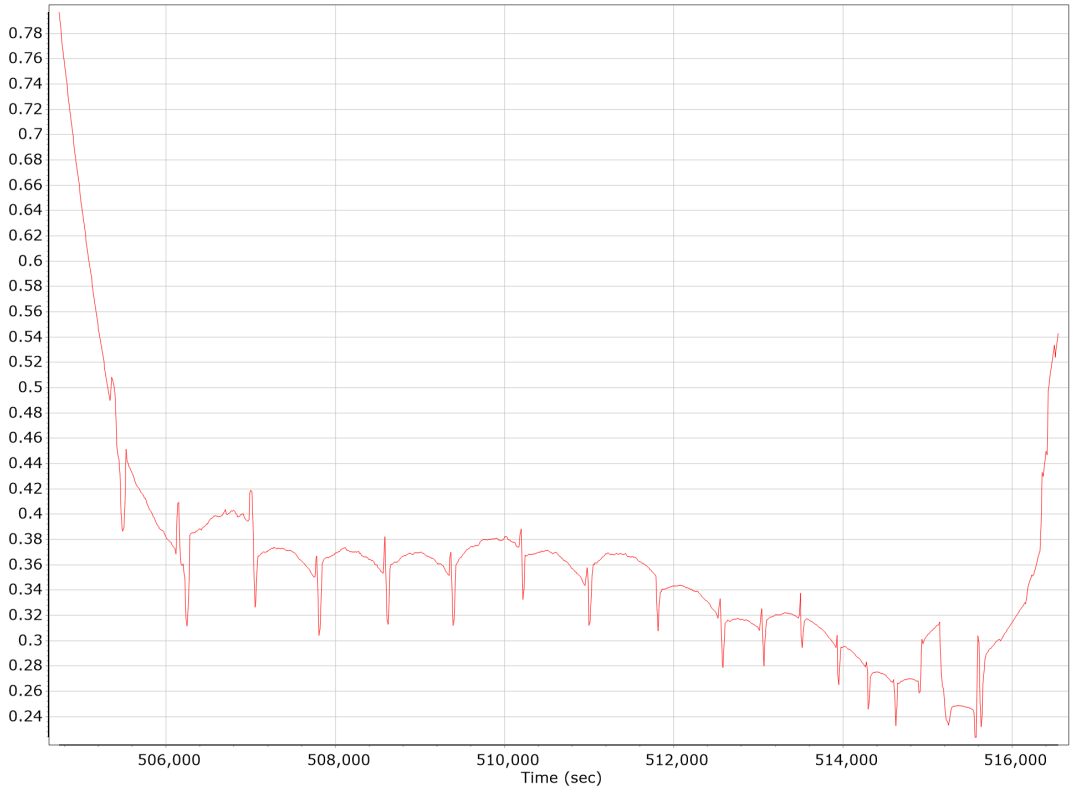
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)



Heading Error RMS (arc-min)



Forward Processed Performance Metrics

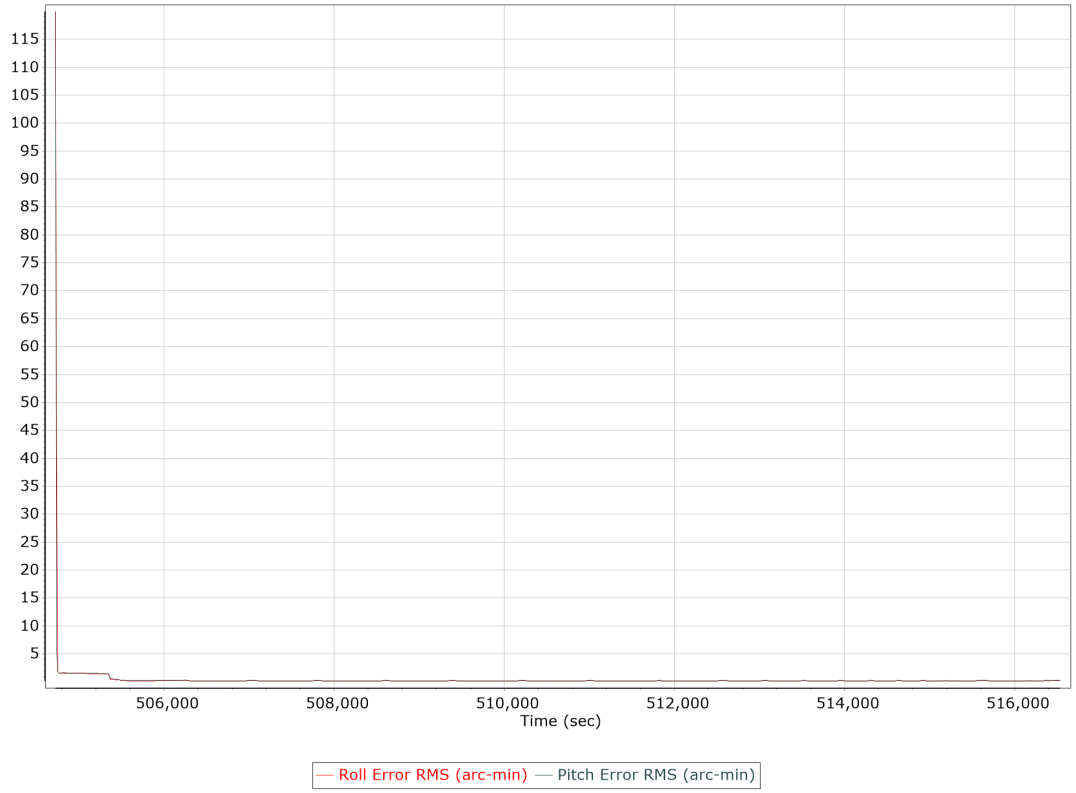
Position Error RMS (m)



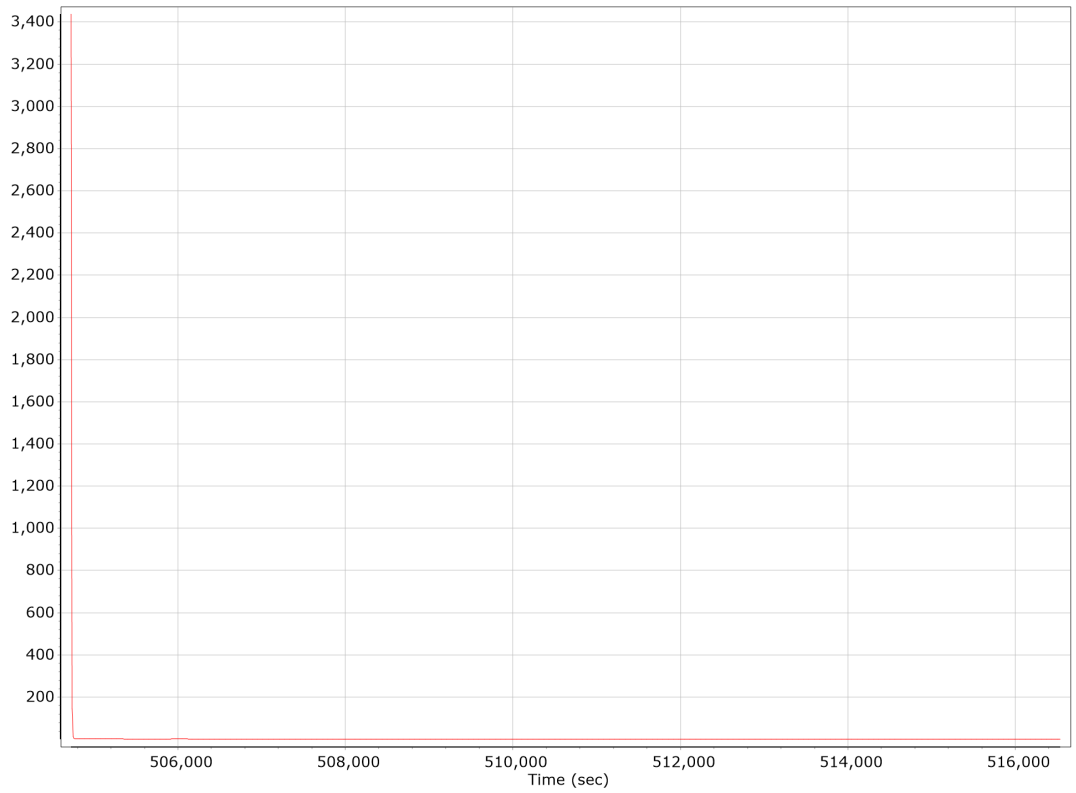
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

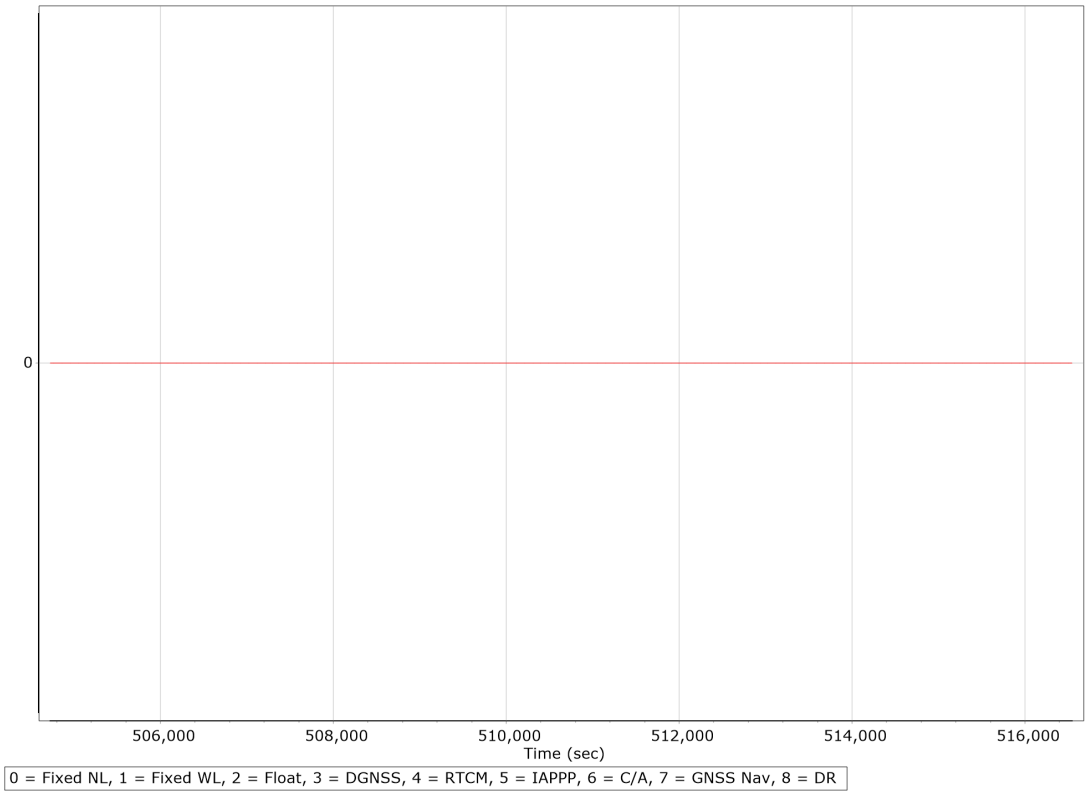


Heading Error RMS (arc-min)



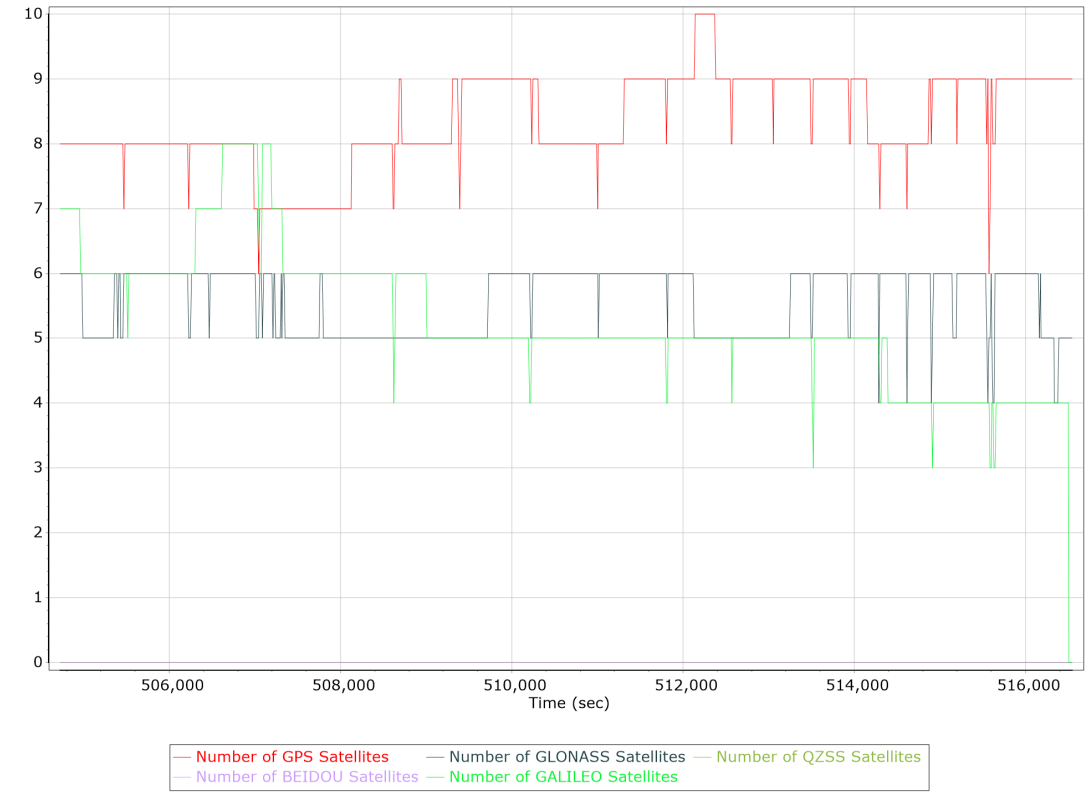
Forward Processed Solution Status

Processing Mode

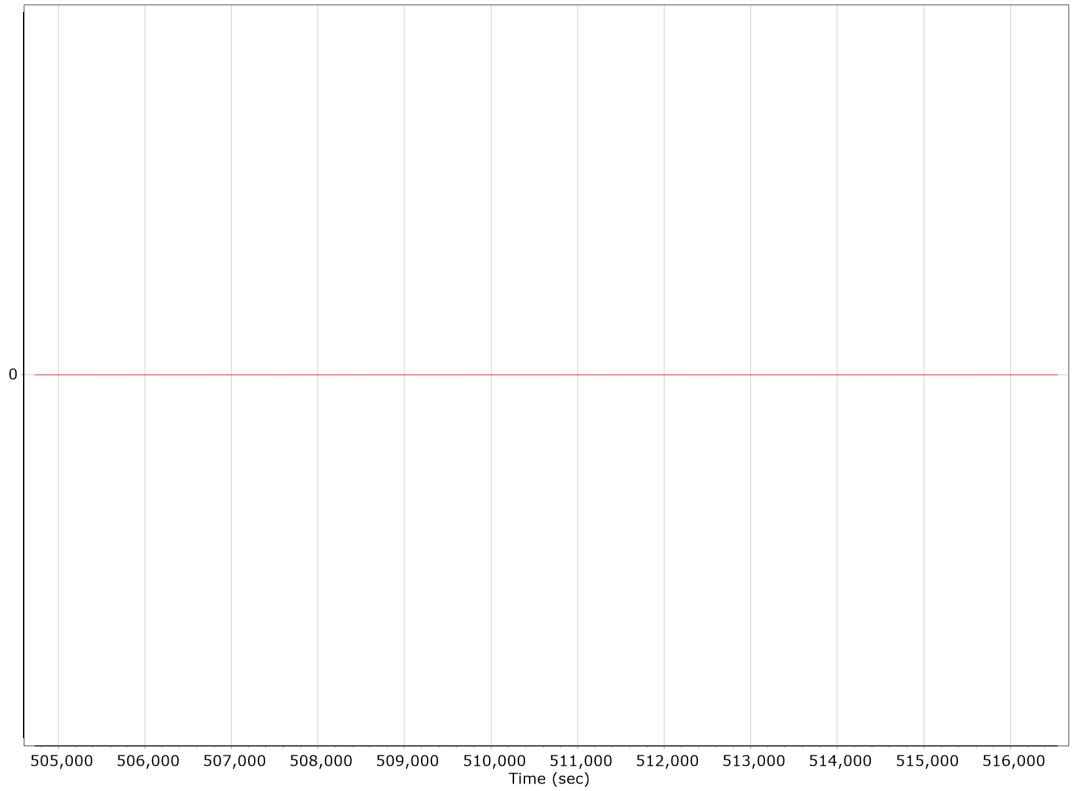


0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGNSS, 4 = RTCM, 5 = IAPPP, 6 = C/A, 7 = GNSS Nav, 8 = DR

Number of Satellites



Baseline Length



General Information

Mission Information

Project name	11112023A_3546
Processing date	2024-01-12 21:02:25
Mission date	2023-11-11 20:06:47
Mission duration	03:18:20.959
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N9922
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
231111_200628_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm3150.23g	GLONASS Broadcast Ephemeris
Ephm3150.23n	GPS Broadcast Ephemeris
IGS0OPSFIN_20233140000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20233150000_01D_15M_ORB.SP3	GPS Precise Ephemeris
IGS0OPSFIN_20233160000_01D_15M_ORB.SP3	GPS Precise Ephemeris

Output Files

Filename	File type
sbet_11112023A_3546.out	SBET Trajectory File

Rover Data Summary

First raw data file	231111_200628_INS-GPS_1.raw		
Last raw data file	231111_200628_INS-GPS_1.raw		
Start GPS week	2287		
Start time	590788.649 (11/11/2023 8:06:28 PM)		
End time	602689.608 (11/11/2023 11:24:49 PM)		
Start of fine alignment	590999.704 (11/11/2023 8:09:59 PM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.205	0.058	-1.282
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

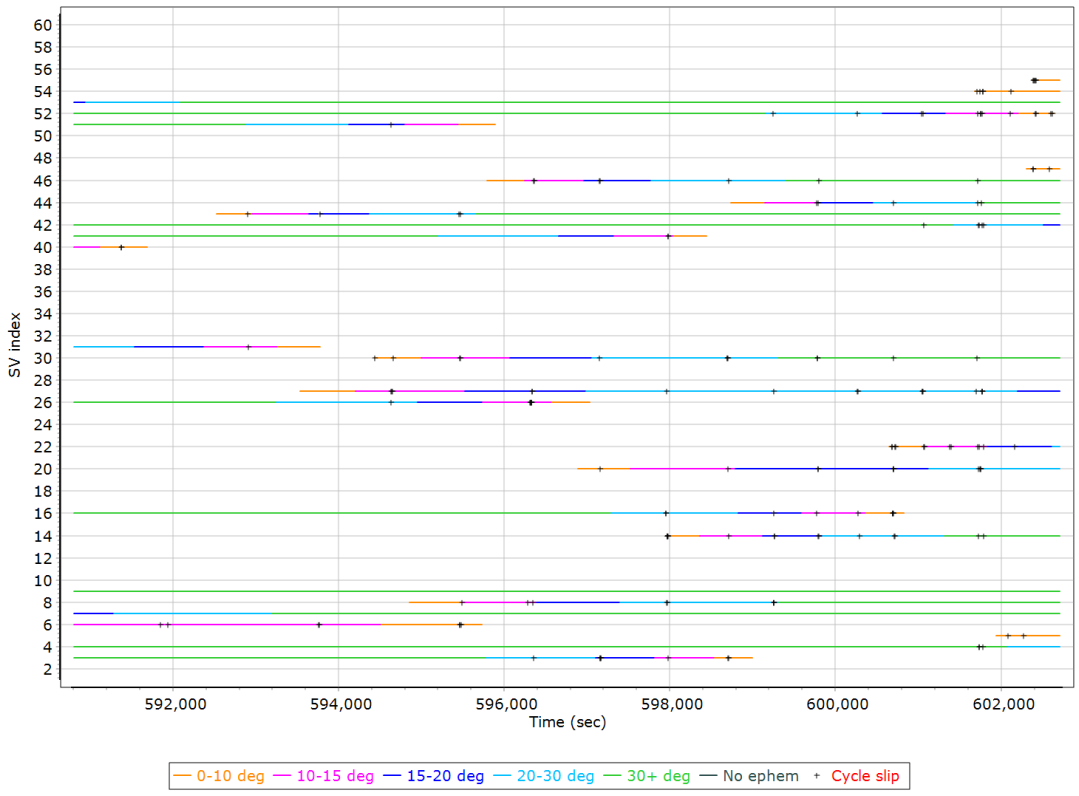
Rover Data QC

Raw IMU Import QC Summary

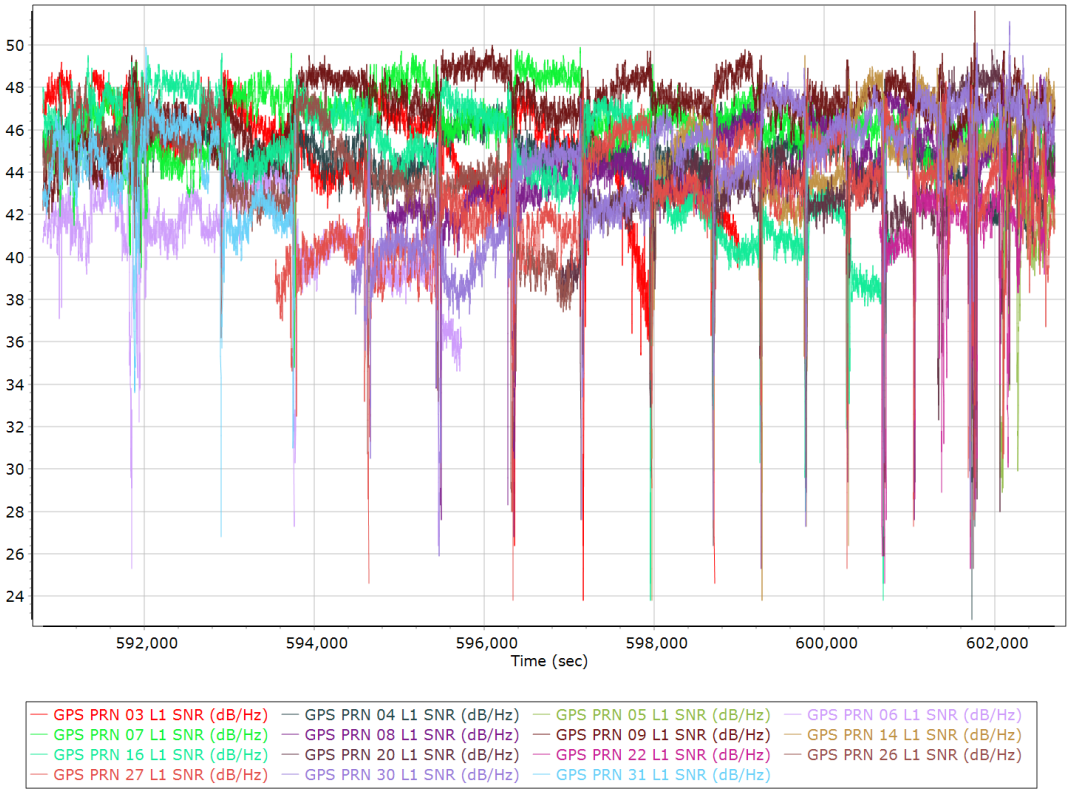
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_11112023A_3546.log
IMU Records Processed	2379774
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

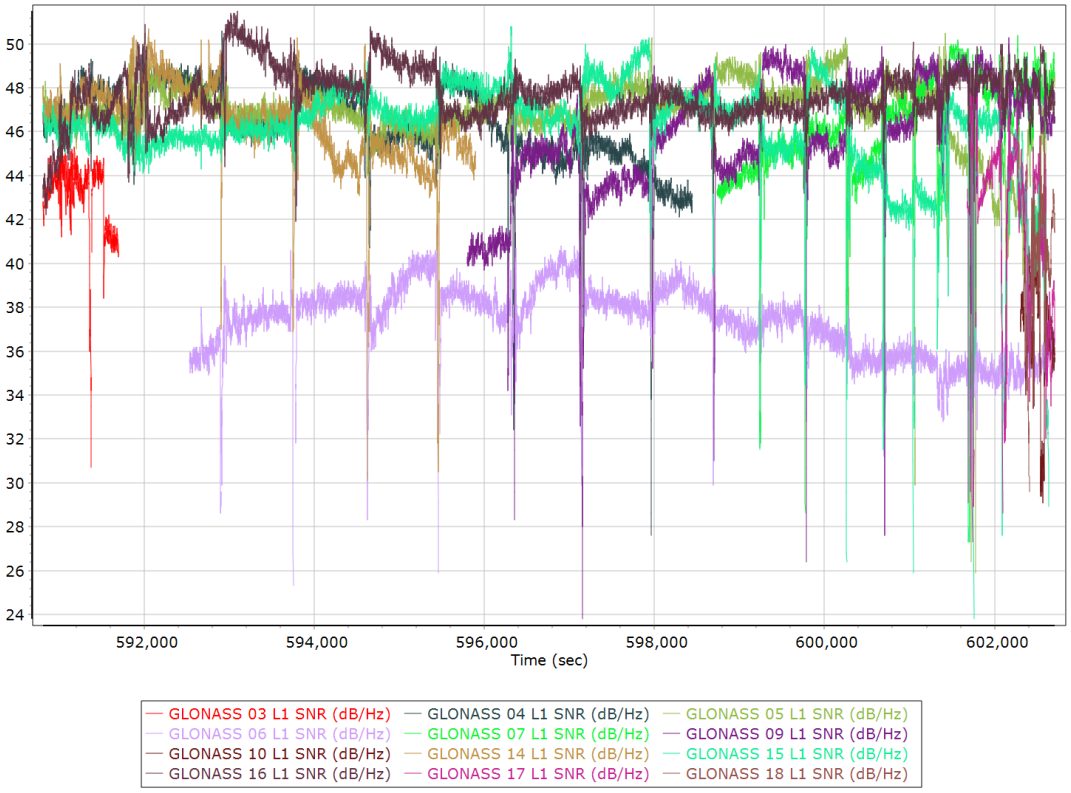
GPS/GLONASS L1 Satellite Lock/Elevation



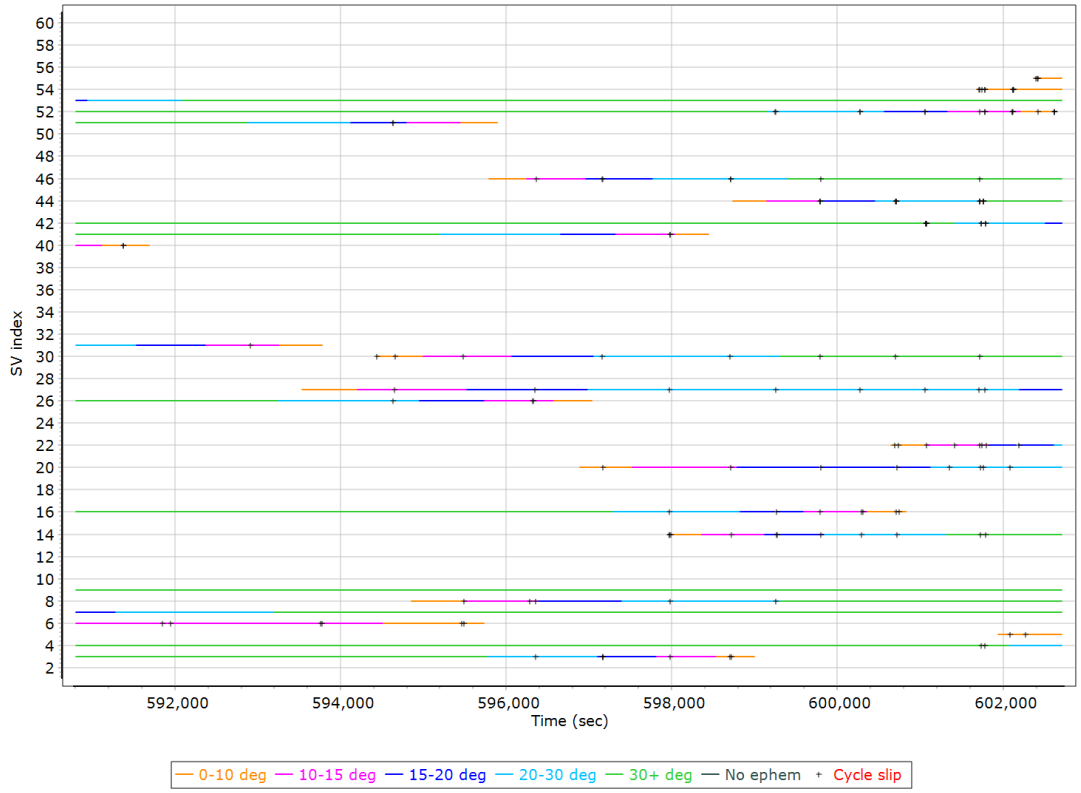
GPS L1 SNR



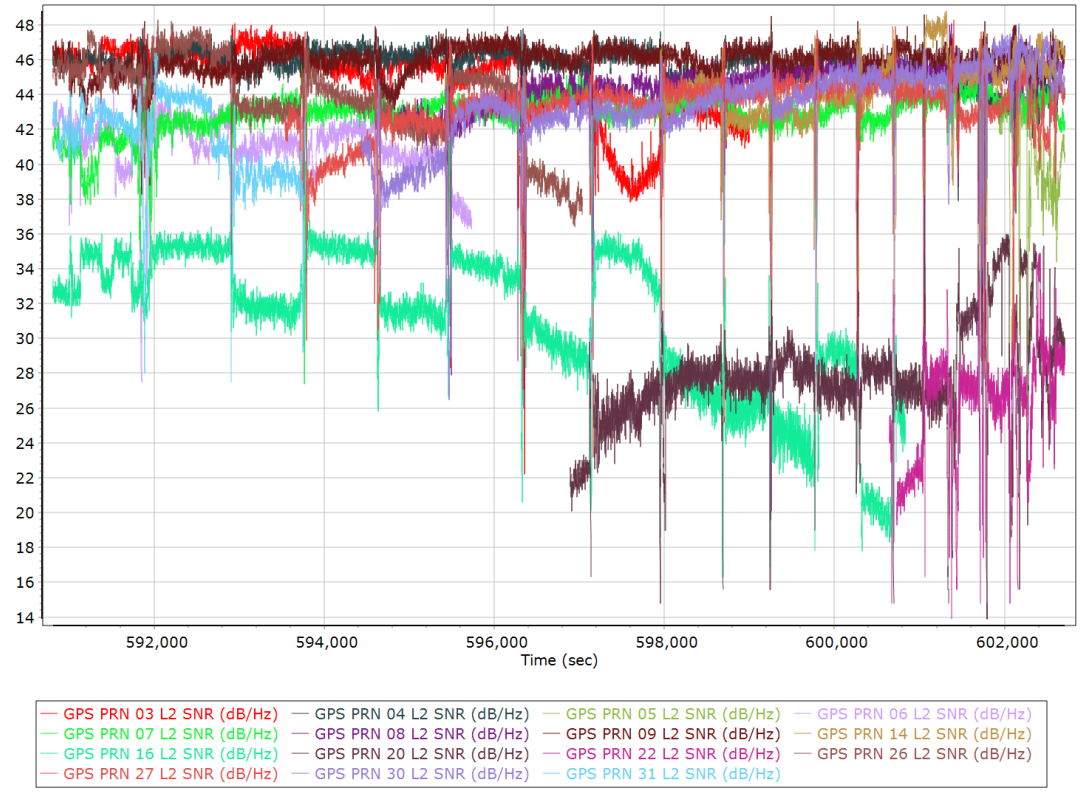
GLONASS L1 SNR



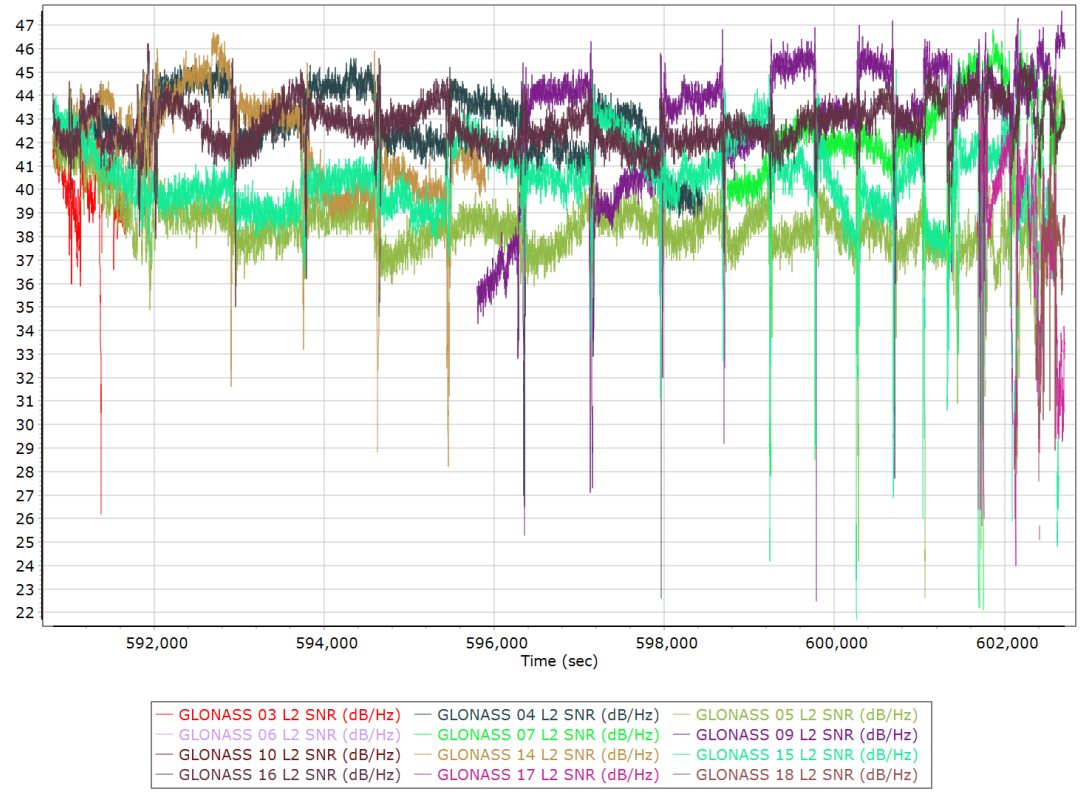
GPS/GLONASS L2 Satellite Lock/Elevation



GPS L2 SNR



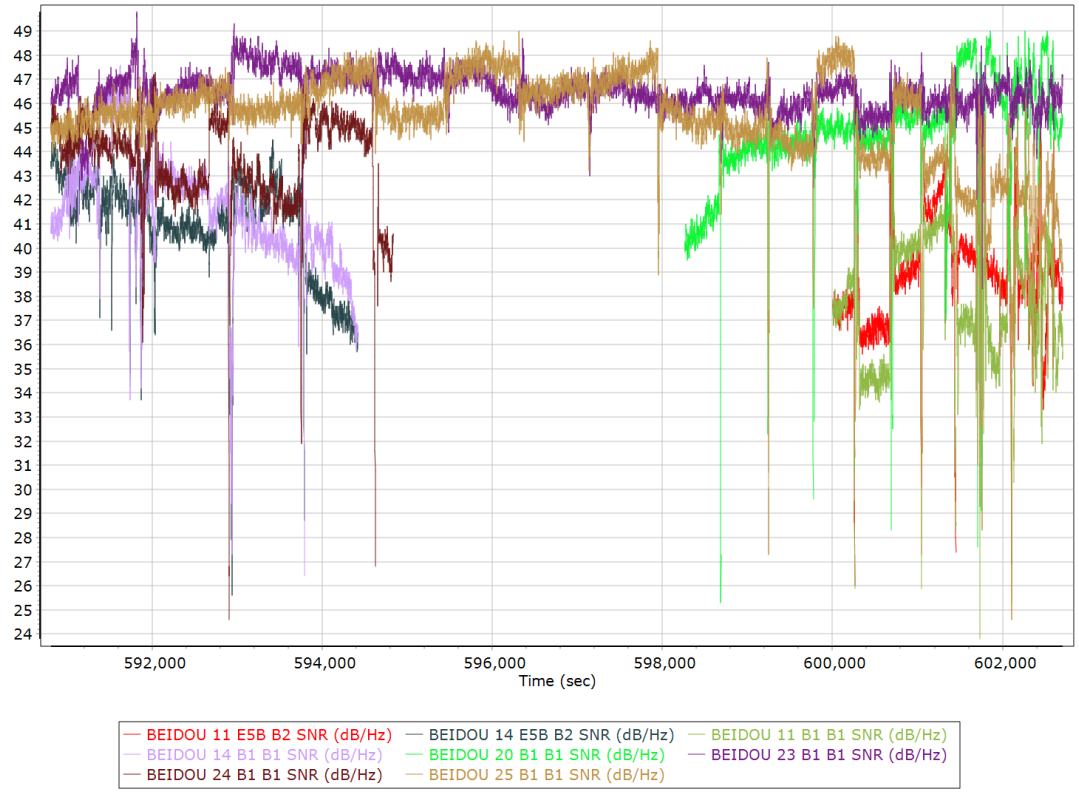
GLONASS L2 SNR



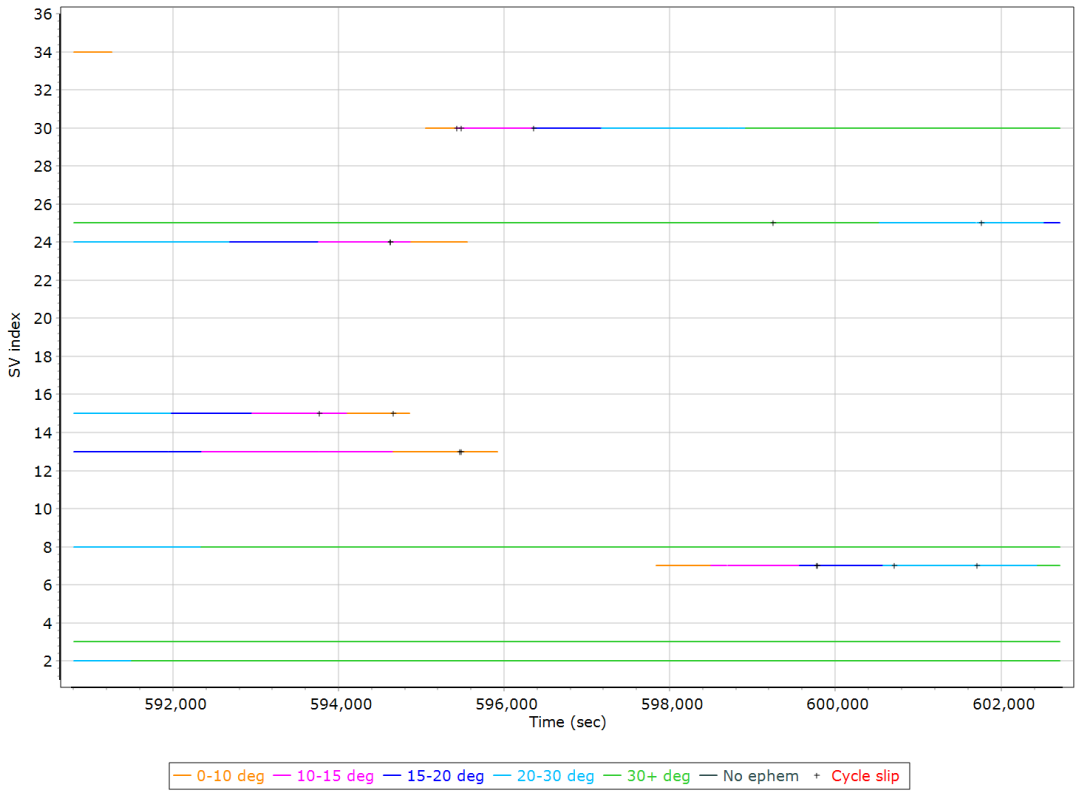
BEIDOU Satellite Lock/Elevation



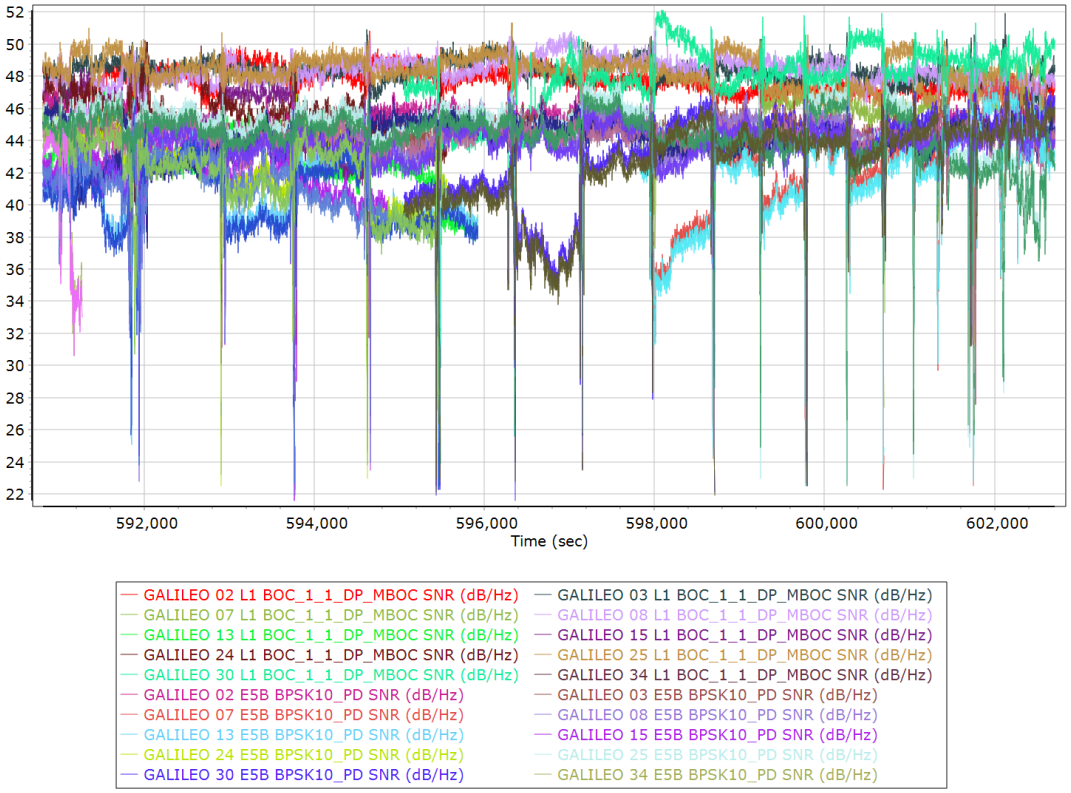
BEIDOU SNR



GALILEO Satellite Lock/Elevation

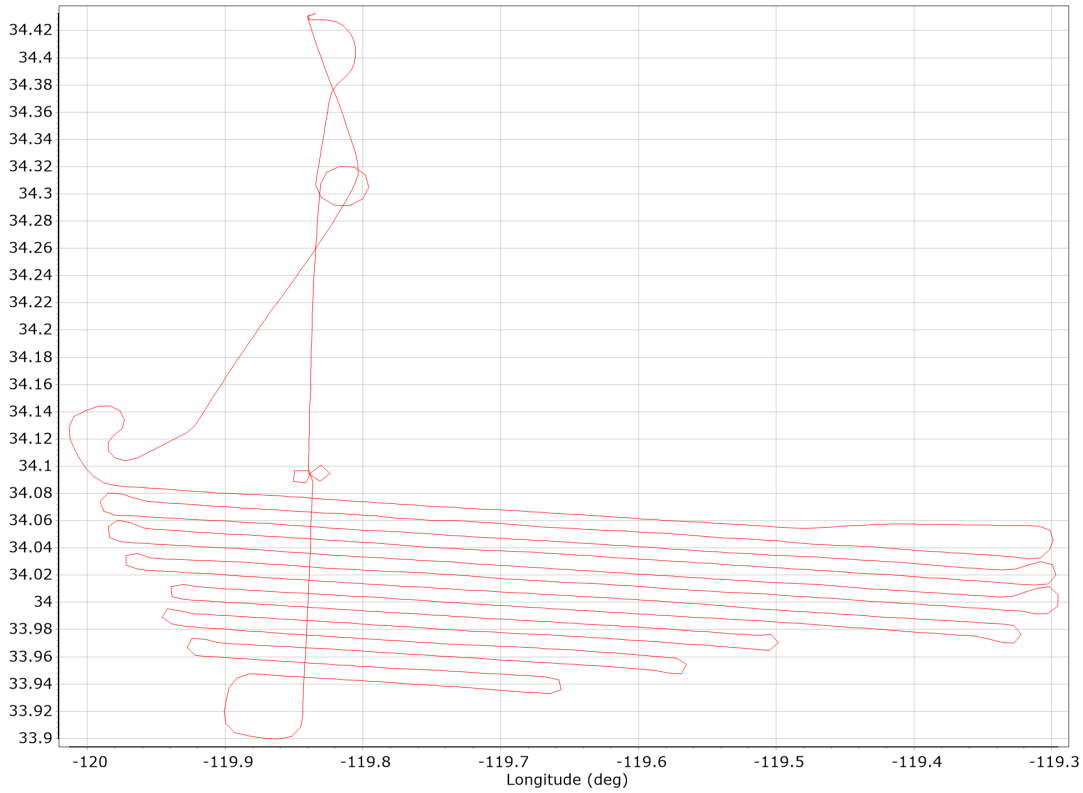


GALILEO SNR

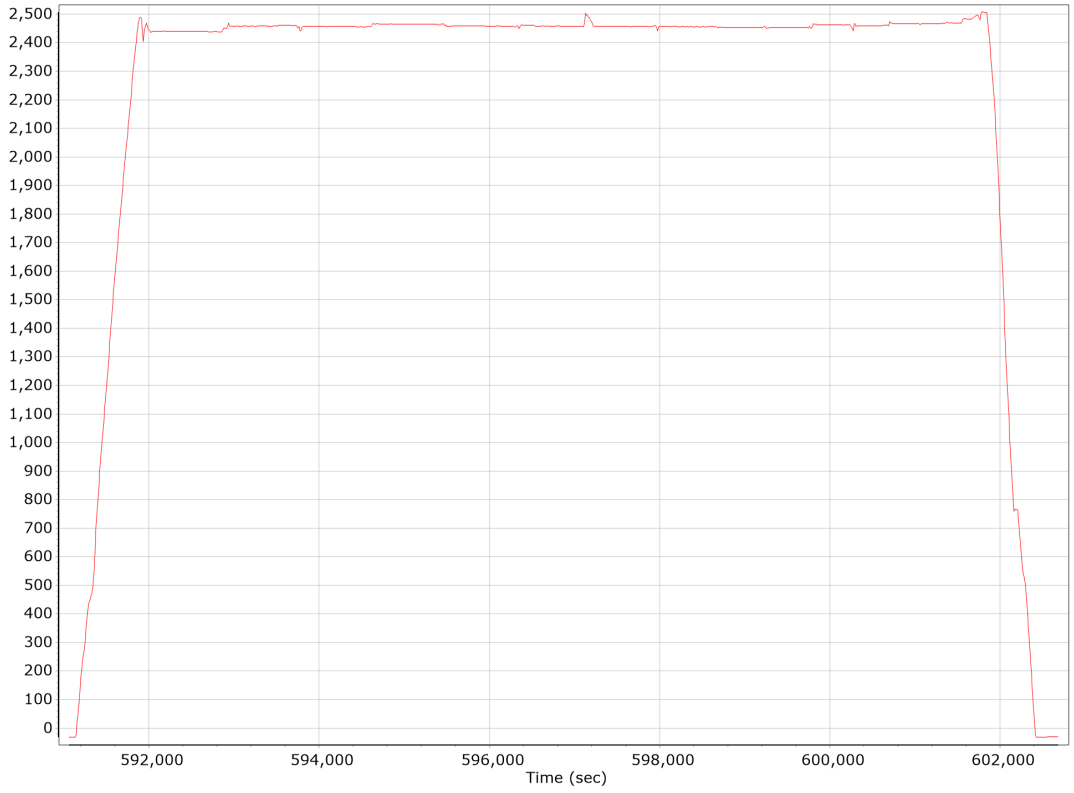

52
50
48
46
44
42
40
38
36
34
32
30
28
26
24
22
592,000
594,000
596,000
598,000
600,000
602,000
Time (sec)
GALILEO 02 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 03 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 07 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 08 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 13 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 15 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 24 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 25 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 30 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 34 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 02 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 03 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 07 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 08 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 13 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 15 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 24 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 25 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 30 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 34 E5B BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

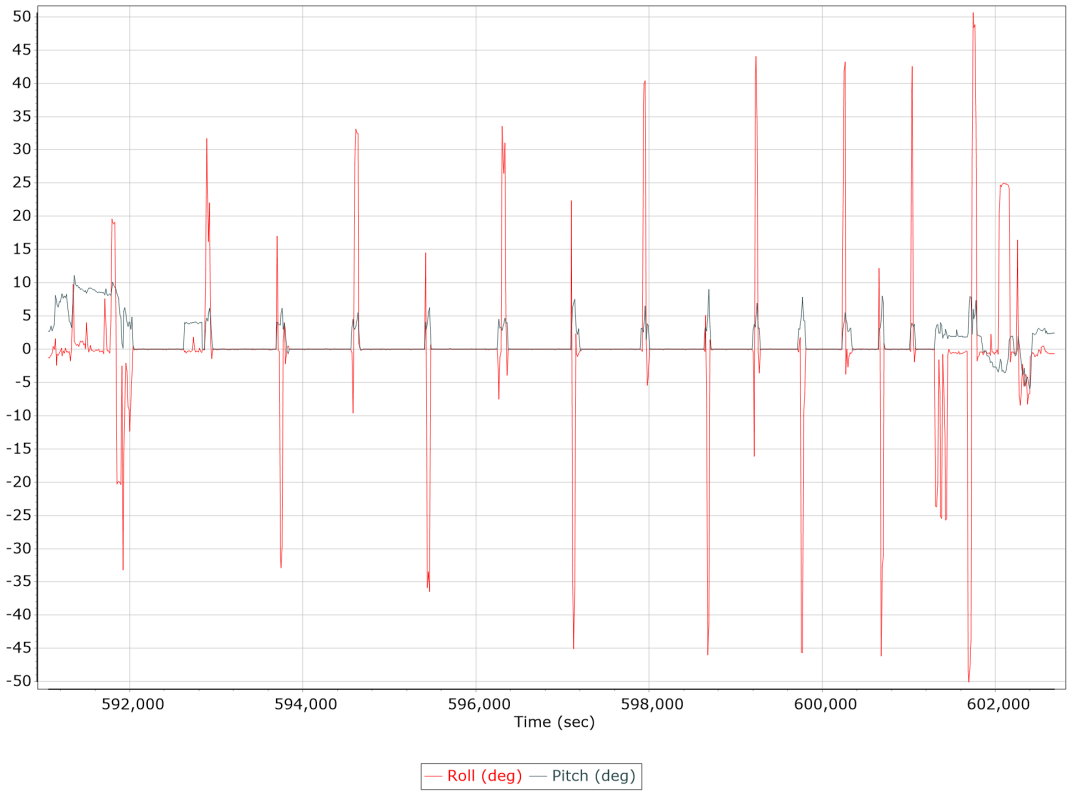
Top View



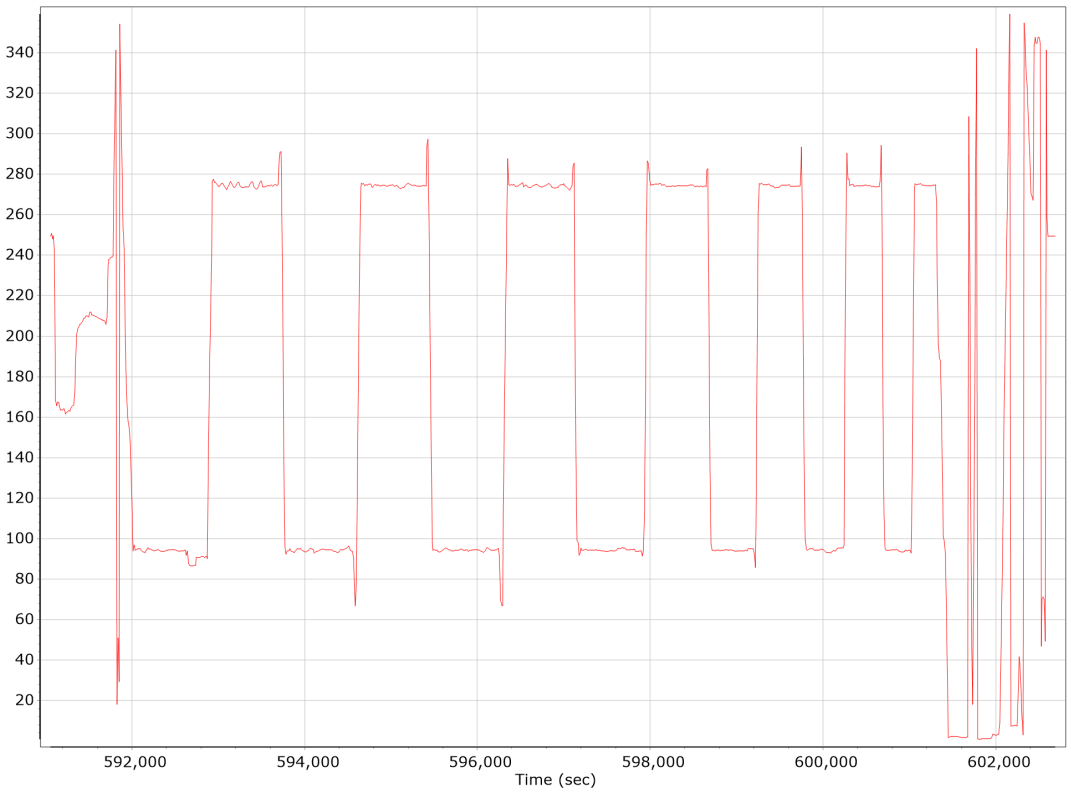
Altitude



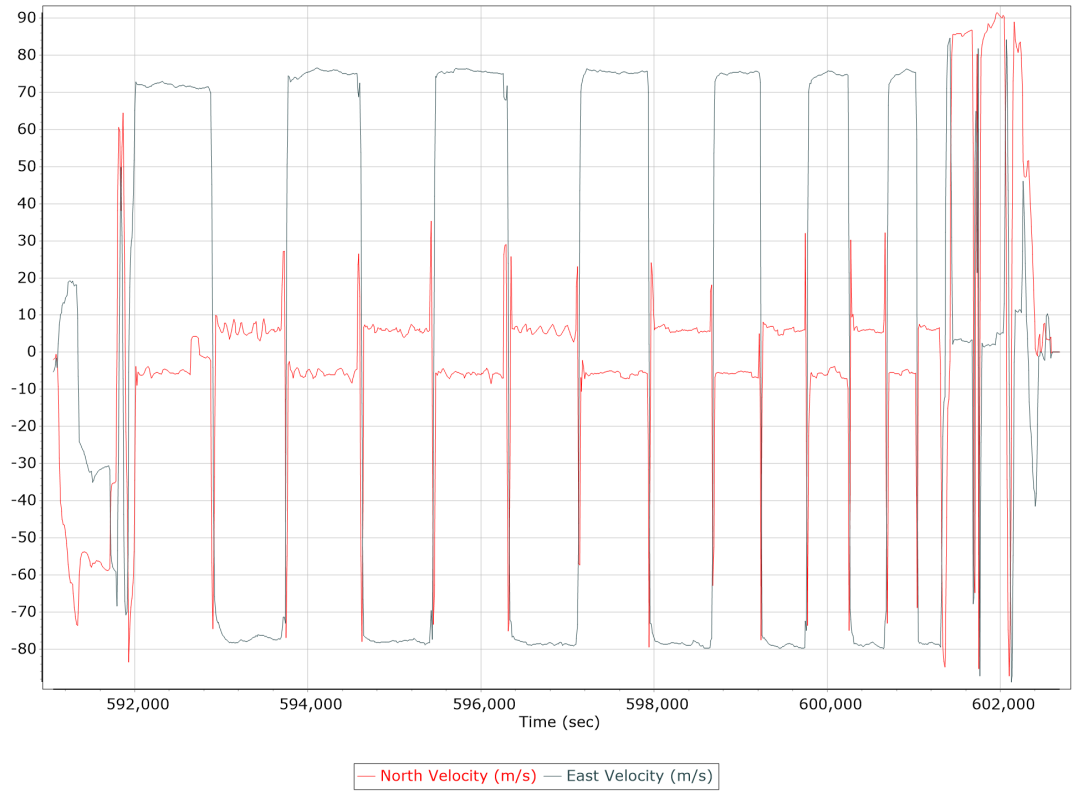
Roll/Pitch



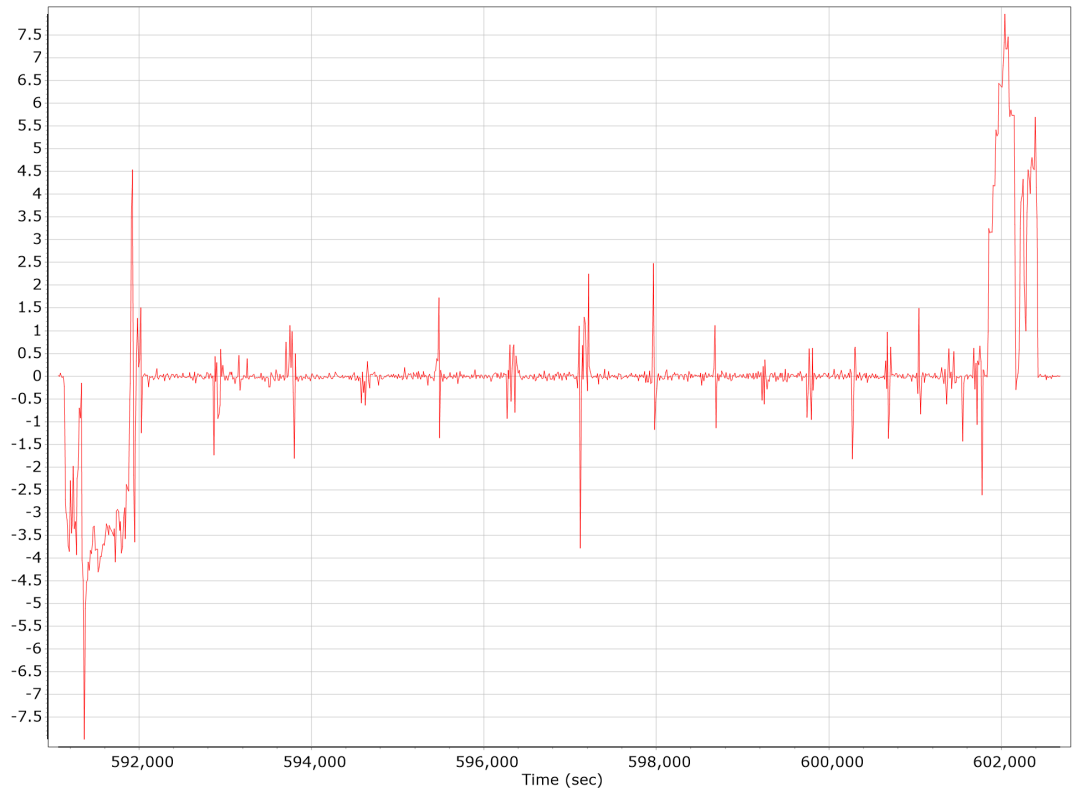
Heading



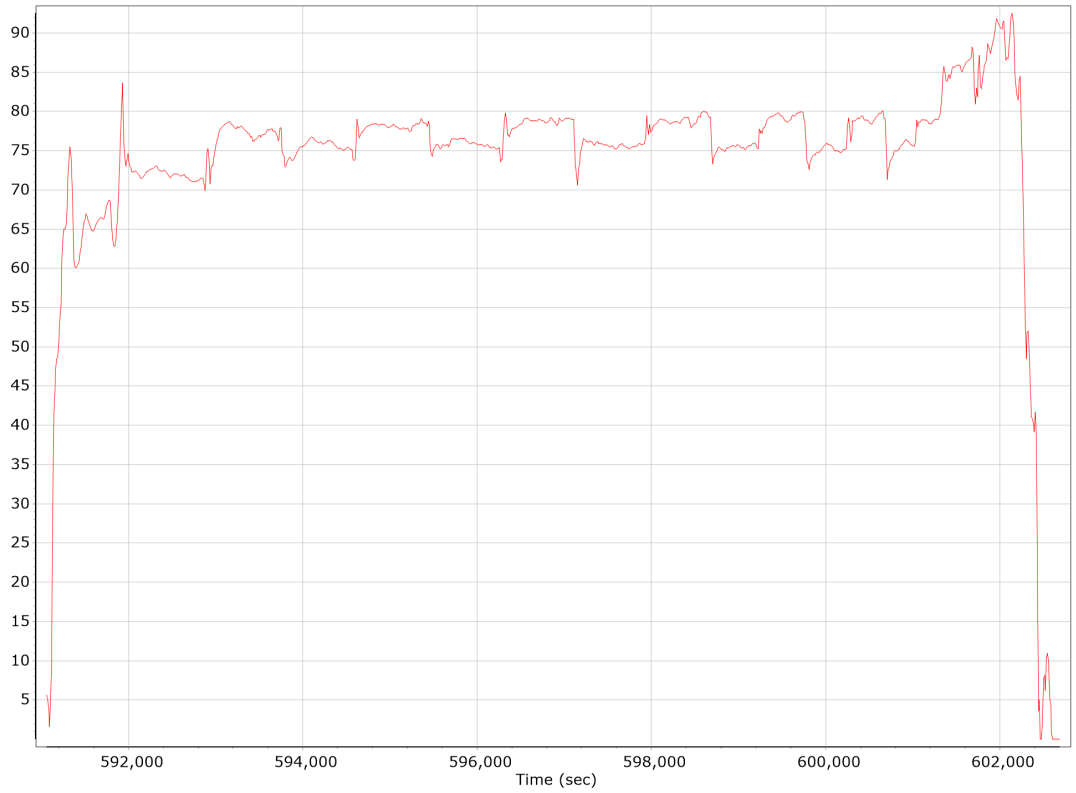
North/East Velocity



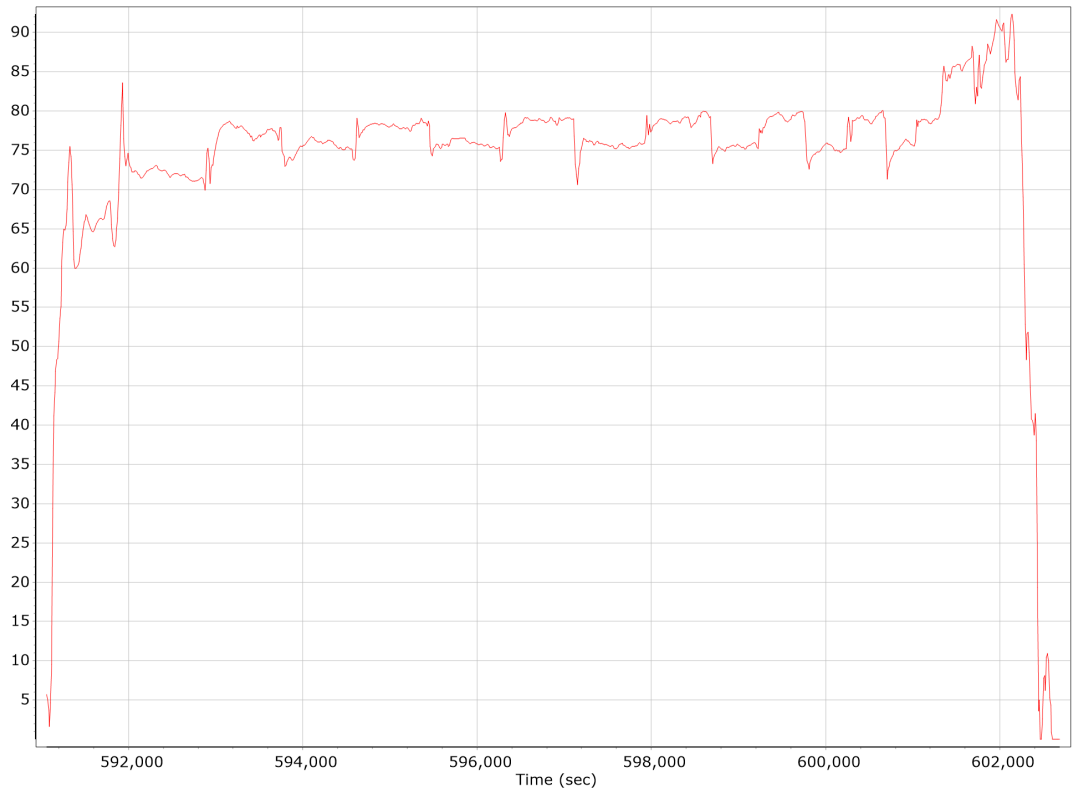
Down Velocity



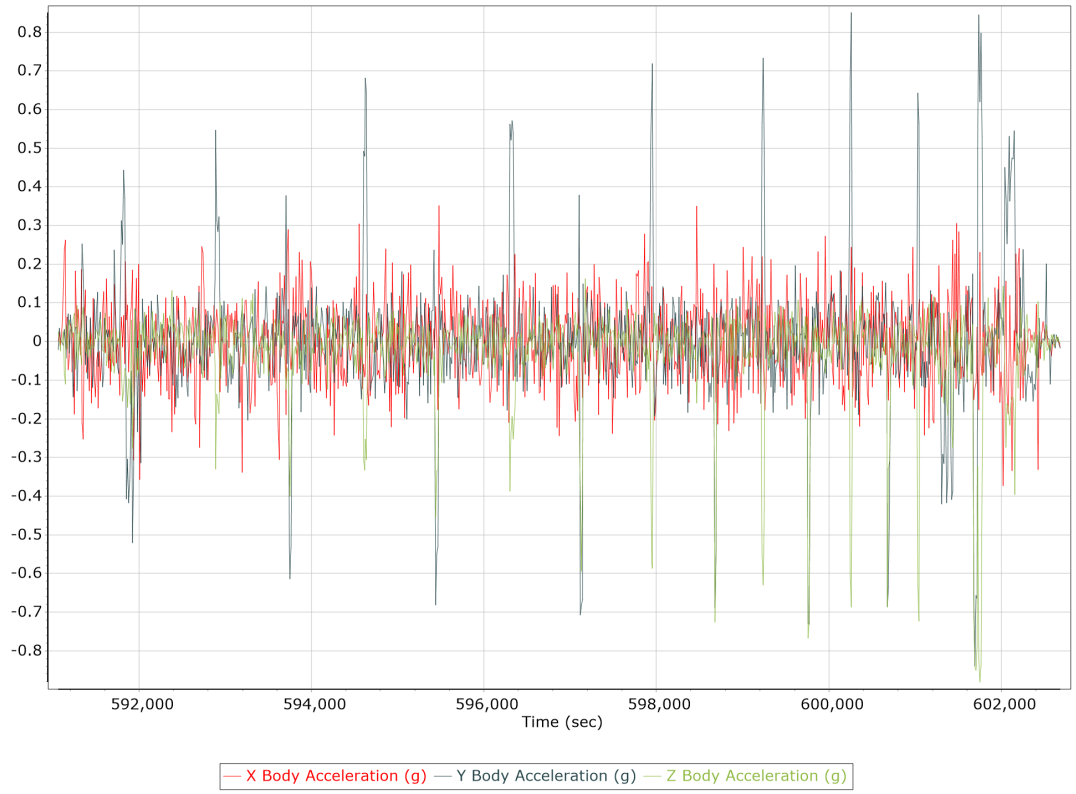
Total Speed



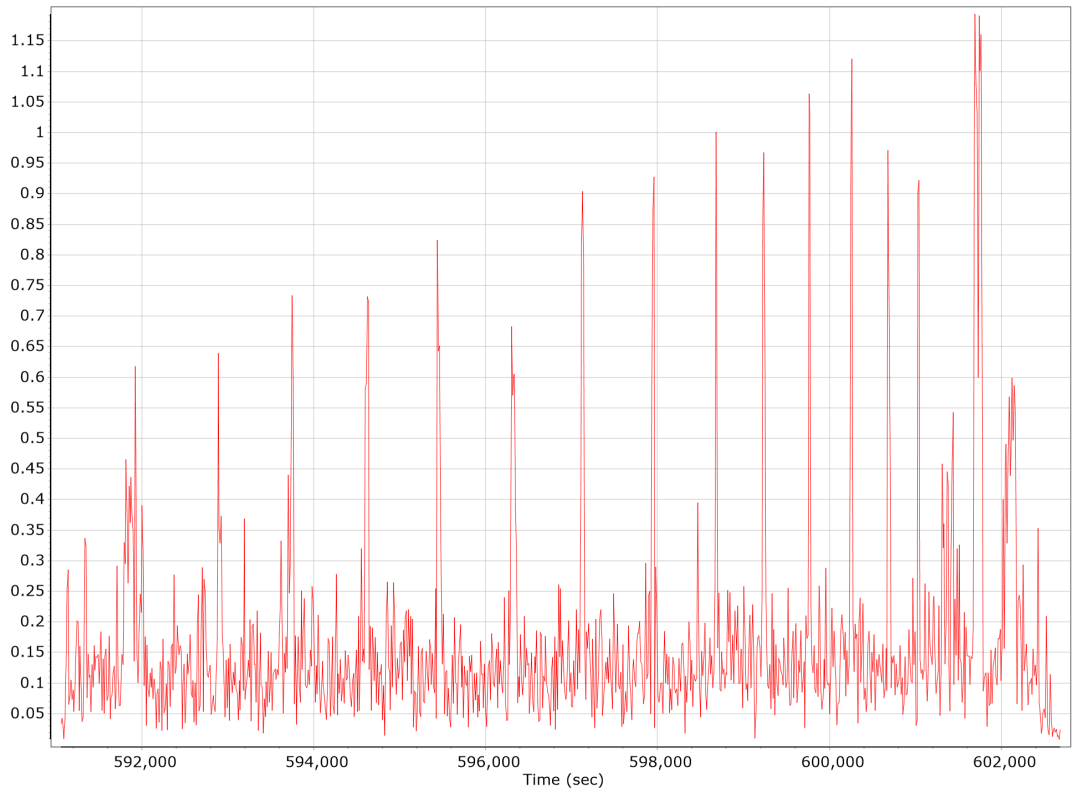
Ground Speed



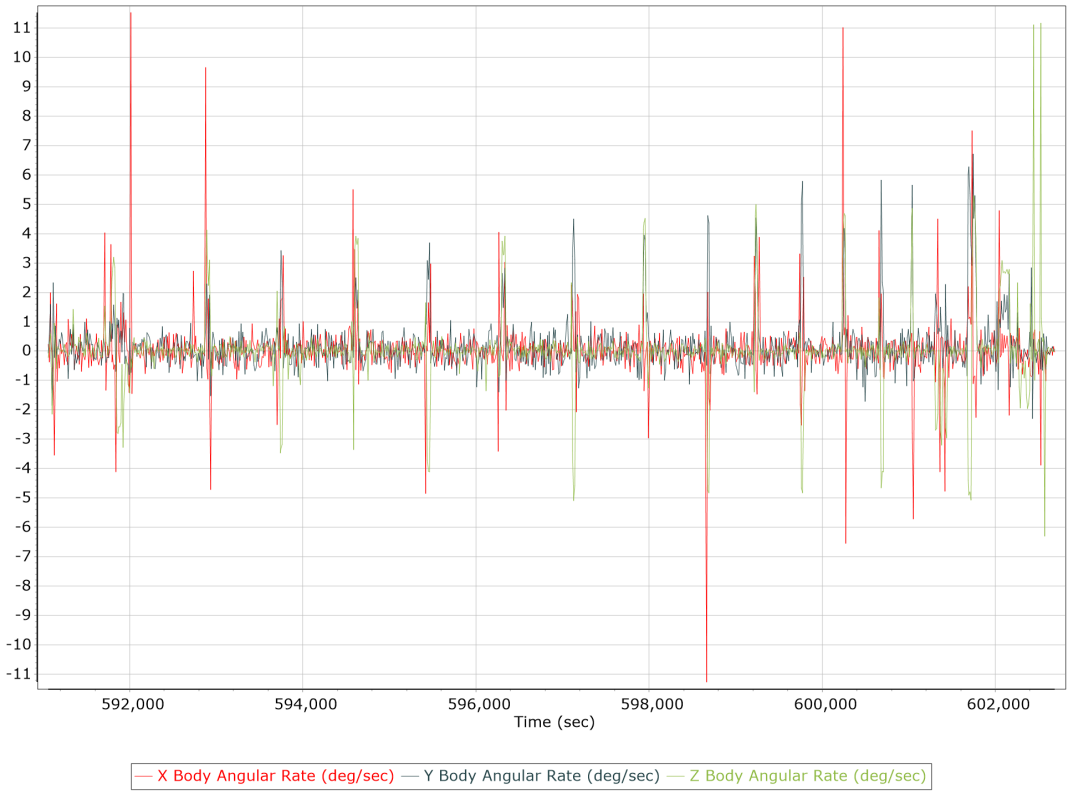
Body Acceleration



Total Body Acceleration

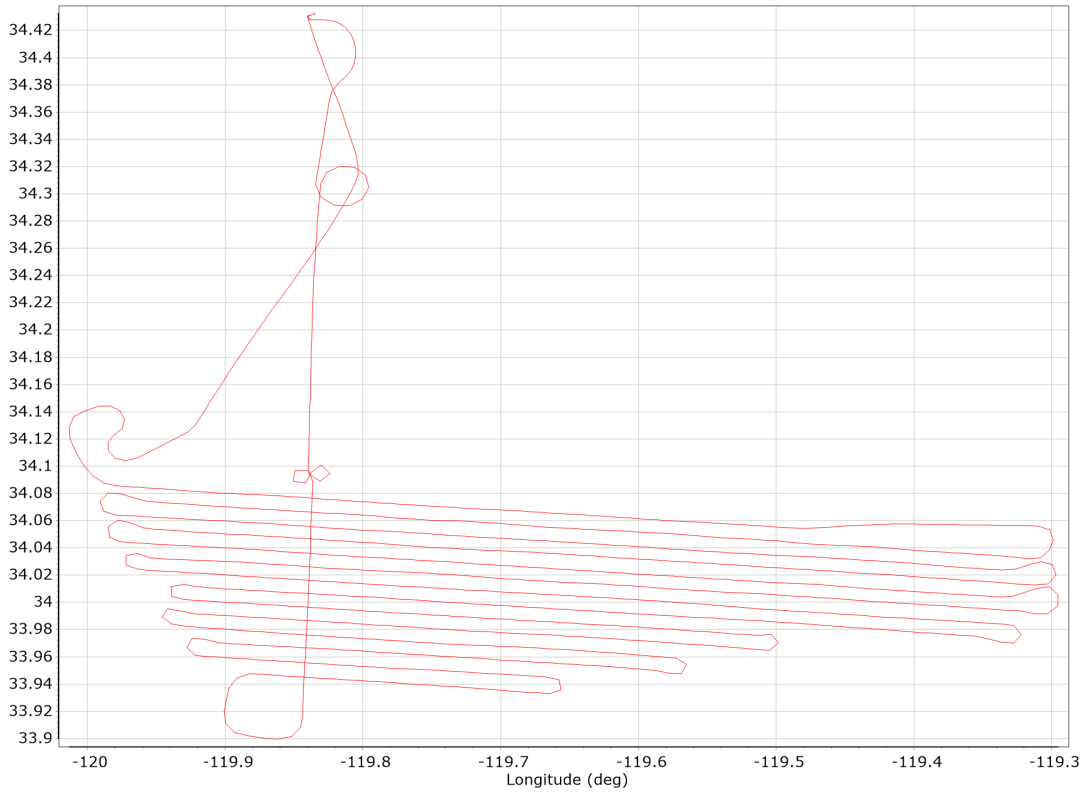


Body Angular Rate

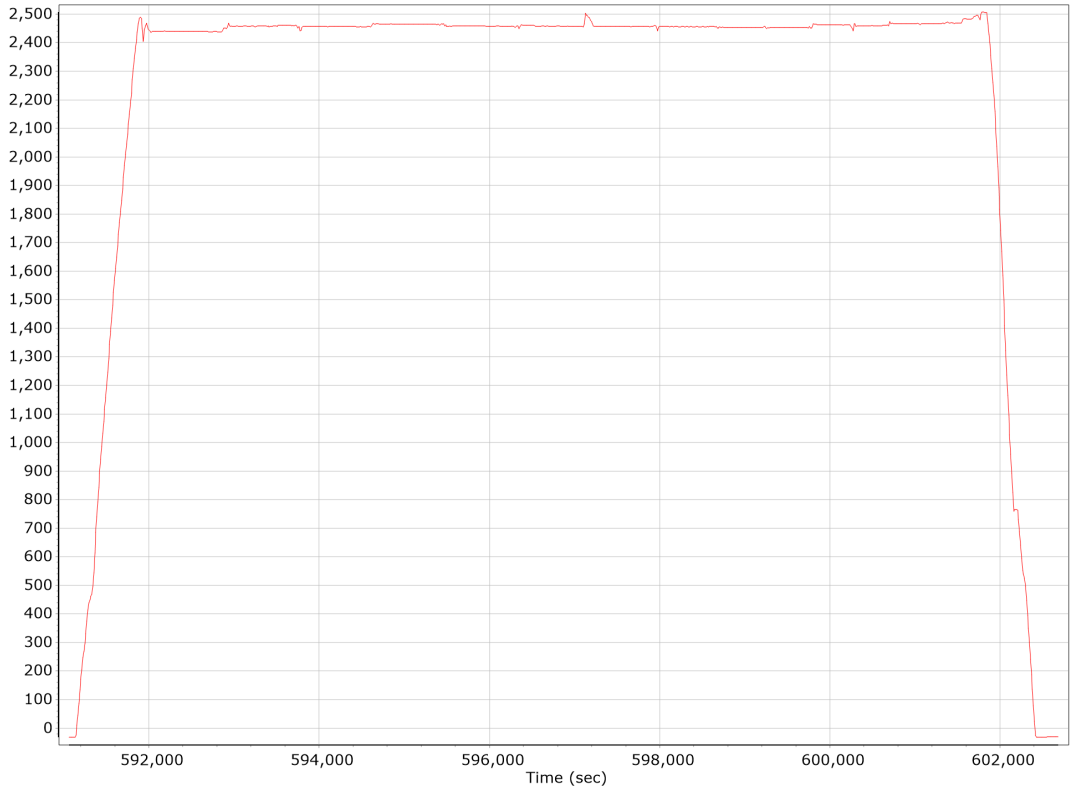


Forward Processed Trajectory Information

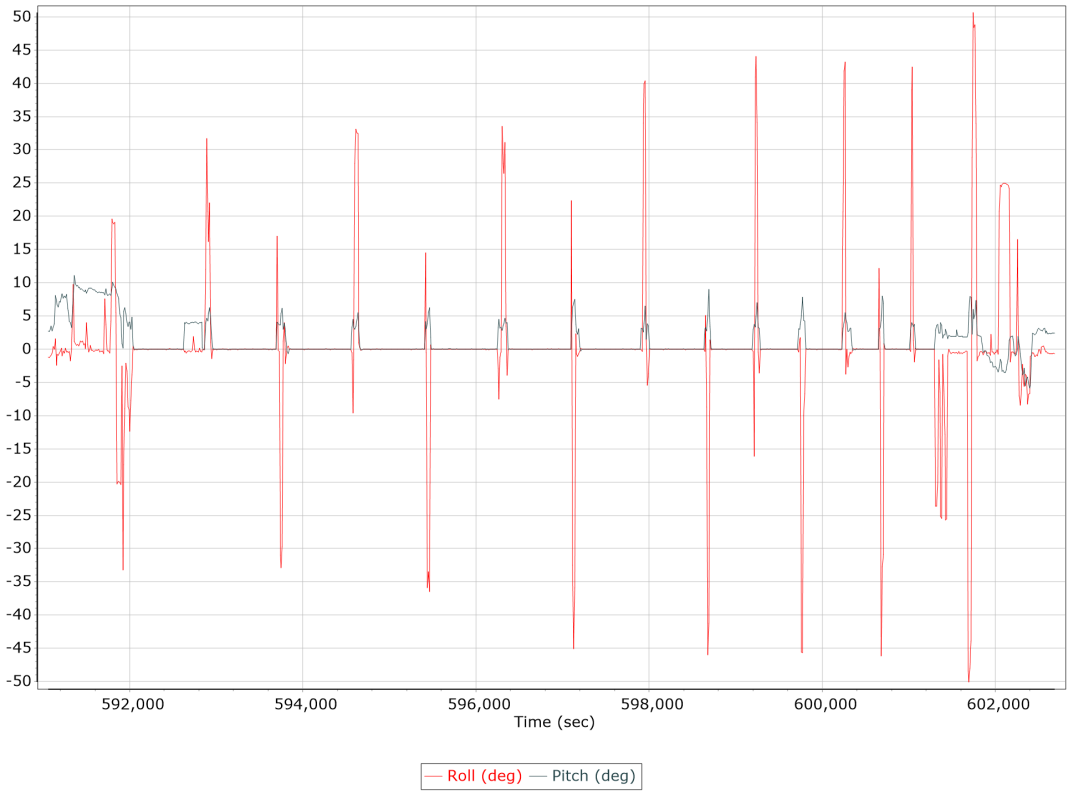
Top View



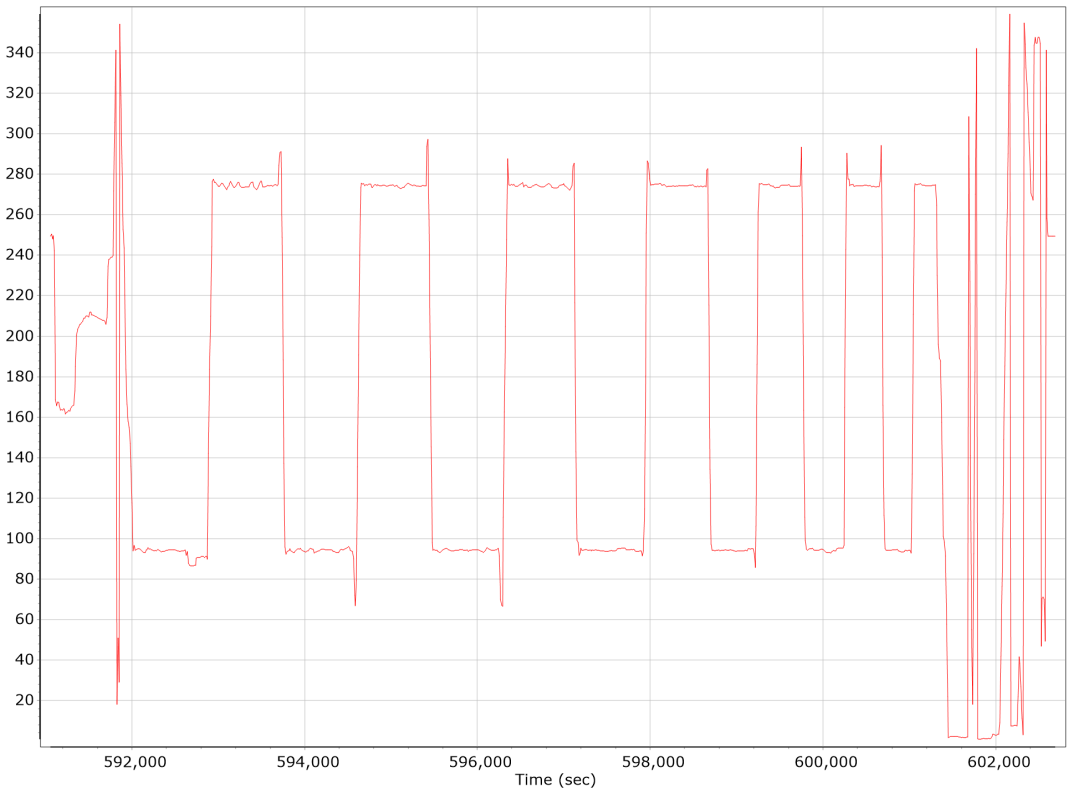
Altitude



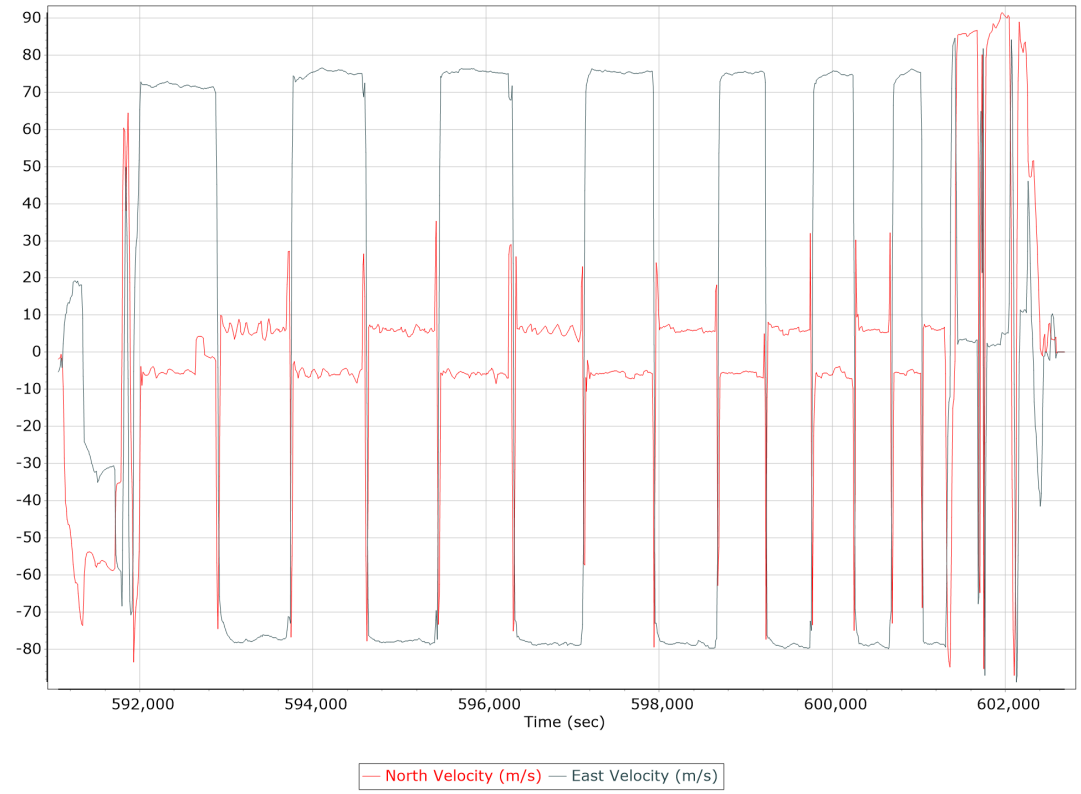
Roll/Pitch



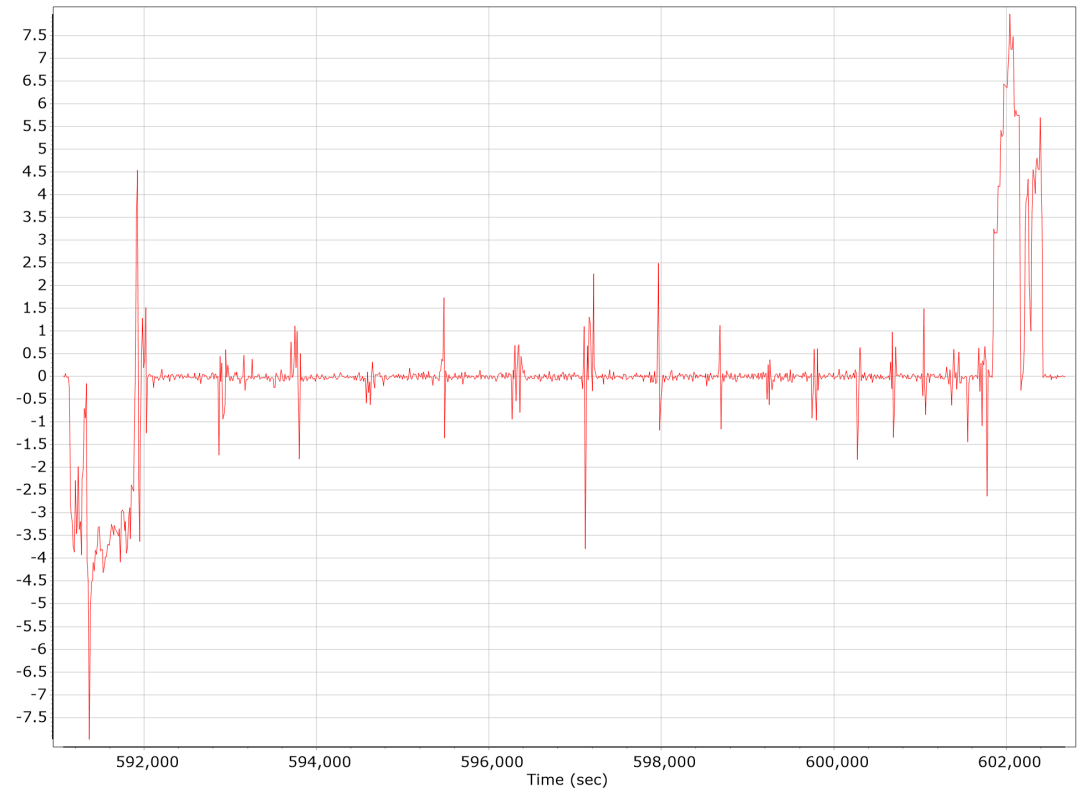
Heading



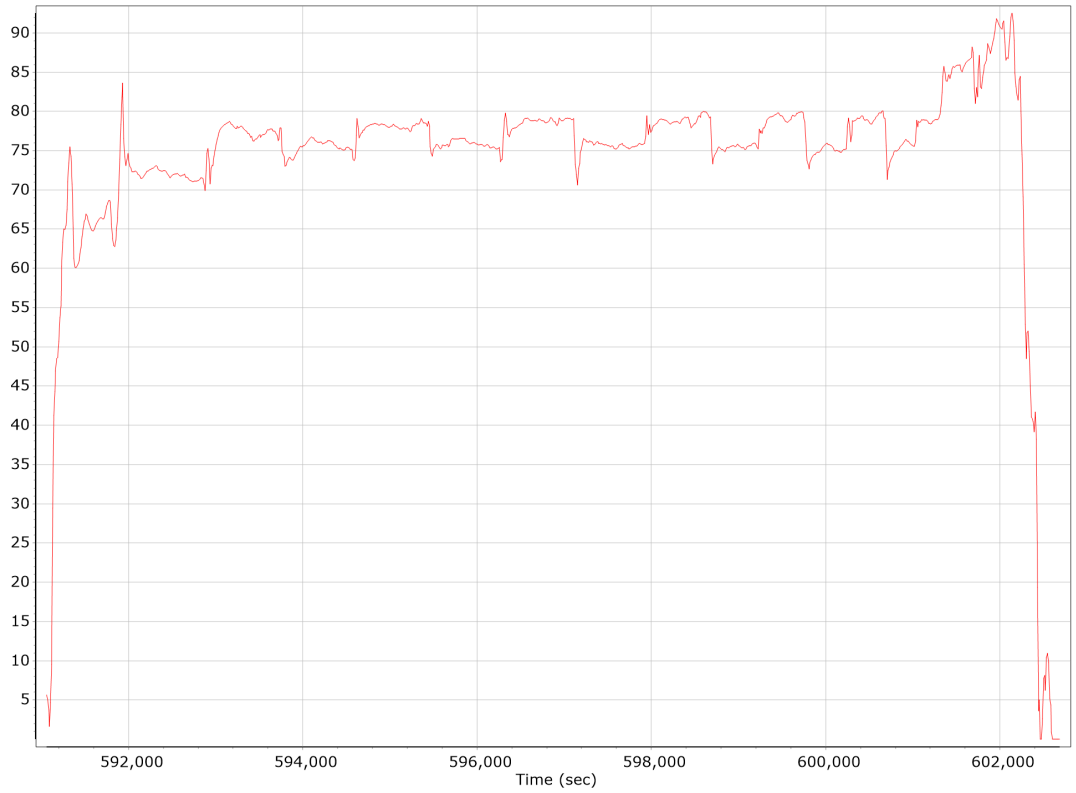
North/East Velocity



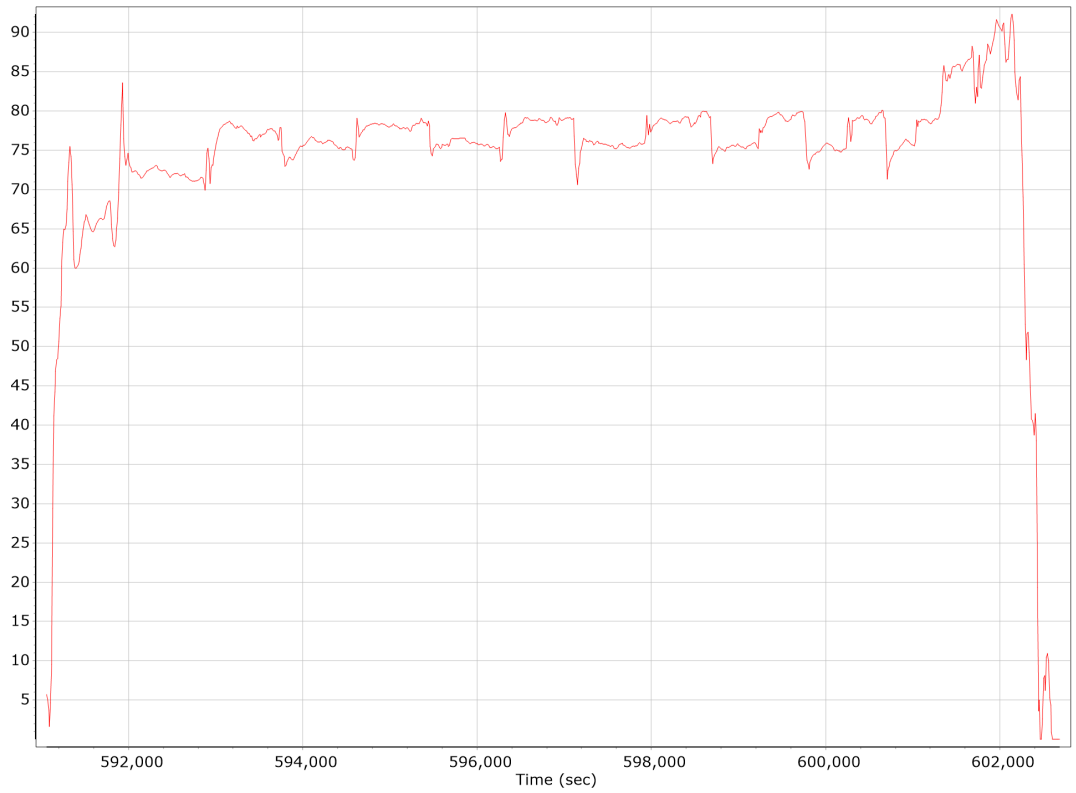
Down Velocity



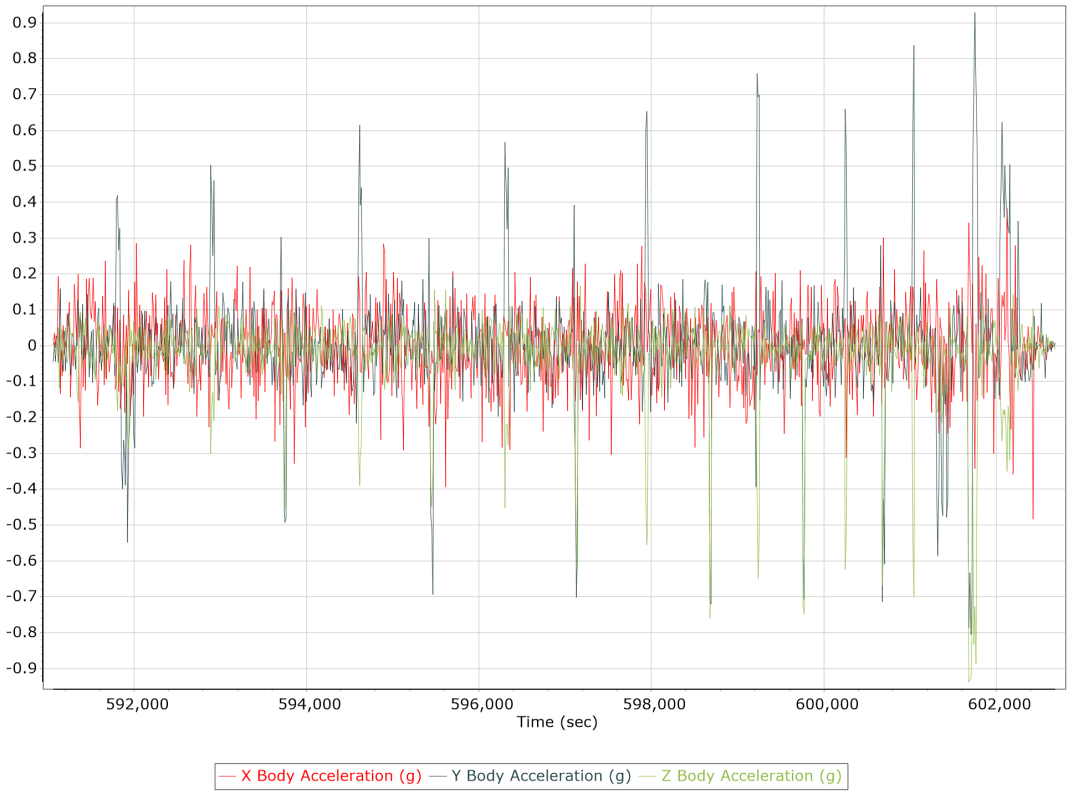
Total Speed



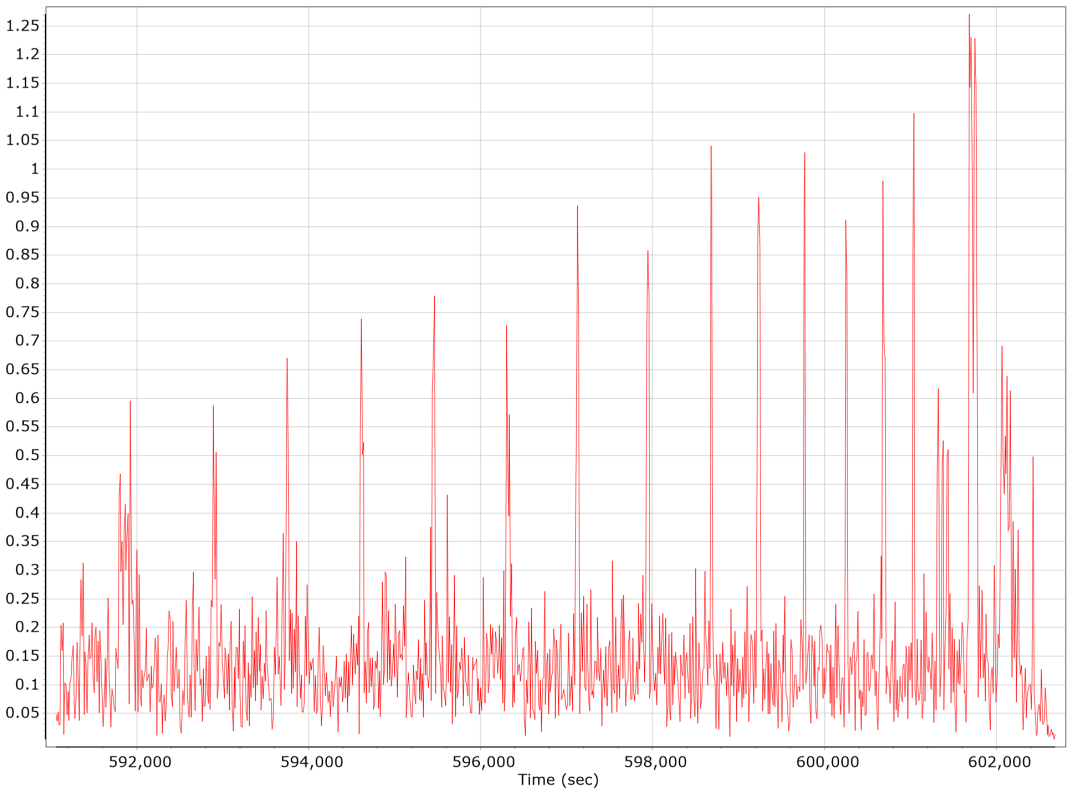
Ground Speed



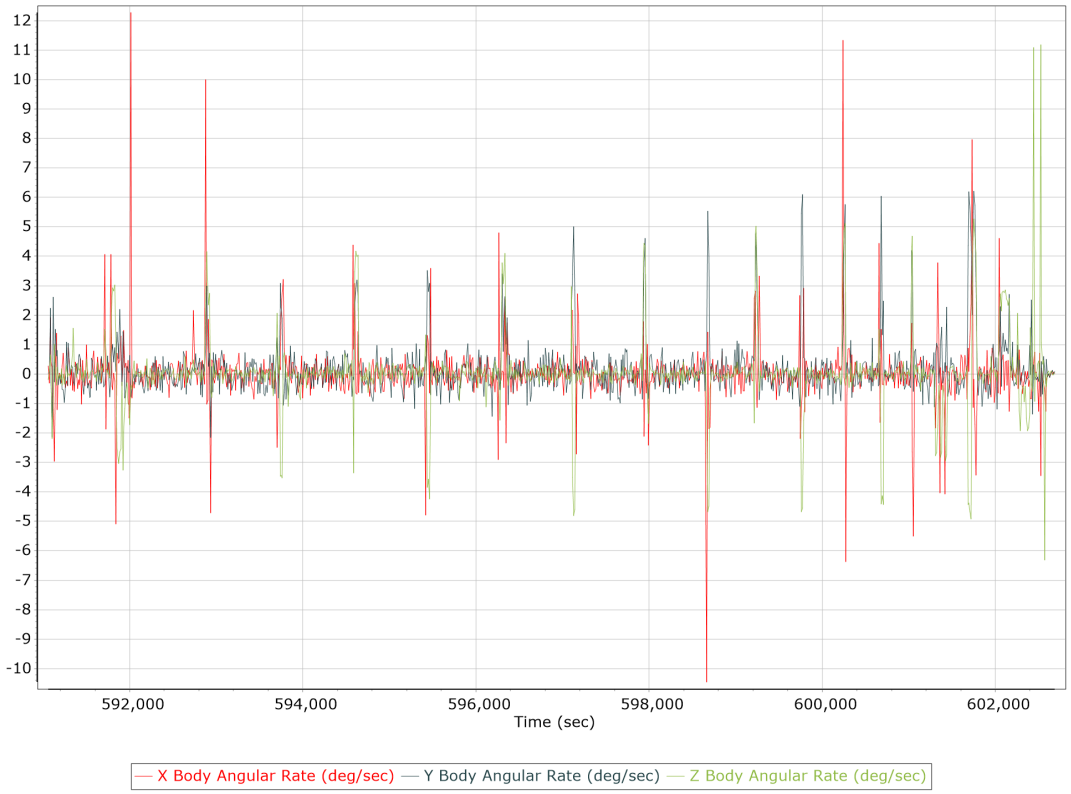
Body Acceleration



Total Body Acceleration



Body Angular Rate



GNSS QC

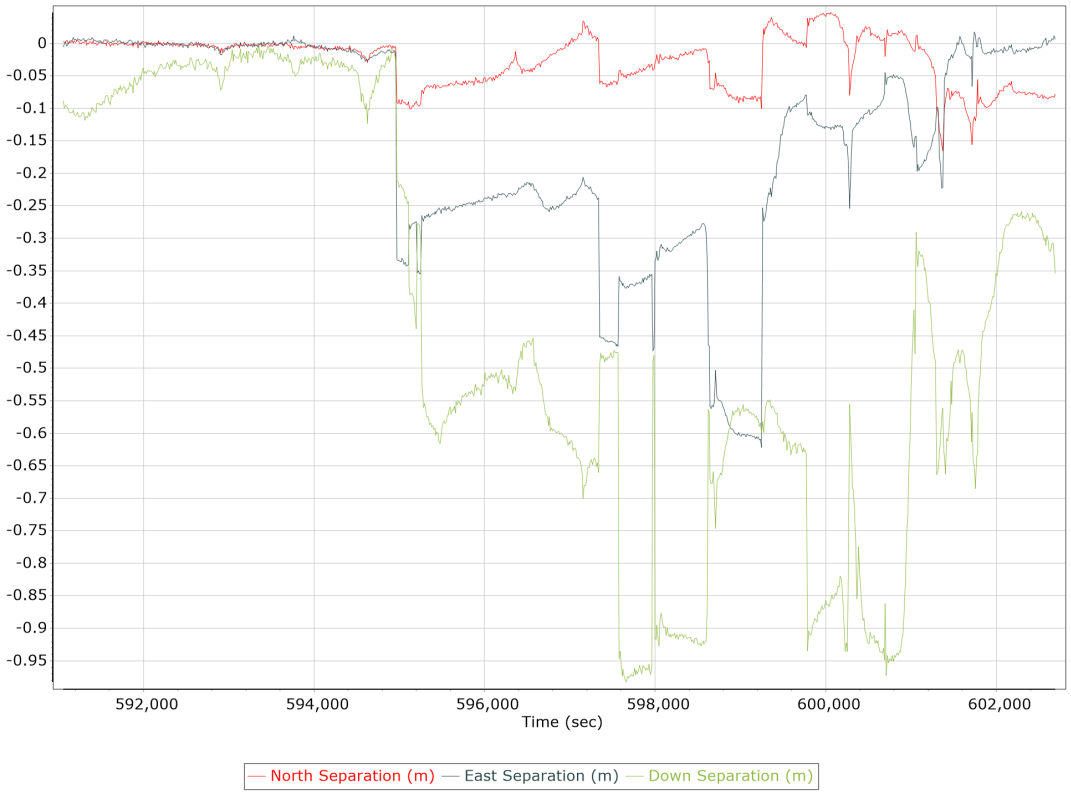
GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	5	10	8
Number of GLONASS SV	2	6	5
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	3	7	6
Total number of SV	13	21	19
PDOP	1.09	3.06	1.25
QC Solution Gaps	0.00	0.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	11884.00	0.00	0.00
Percentage	100.00	0.00	0.00

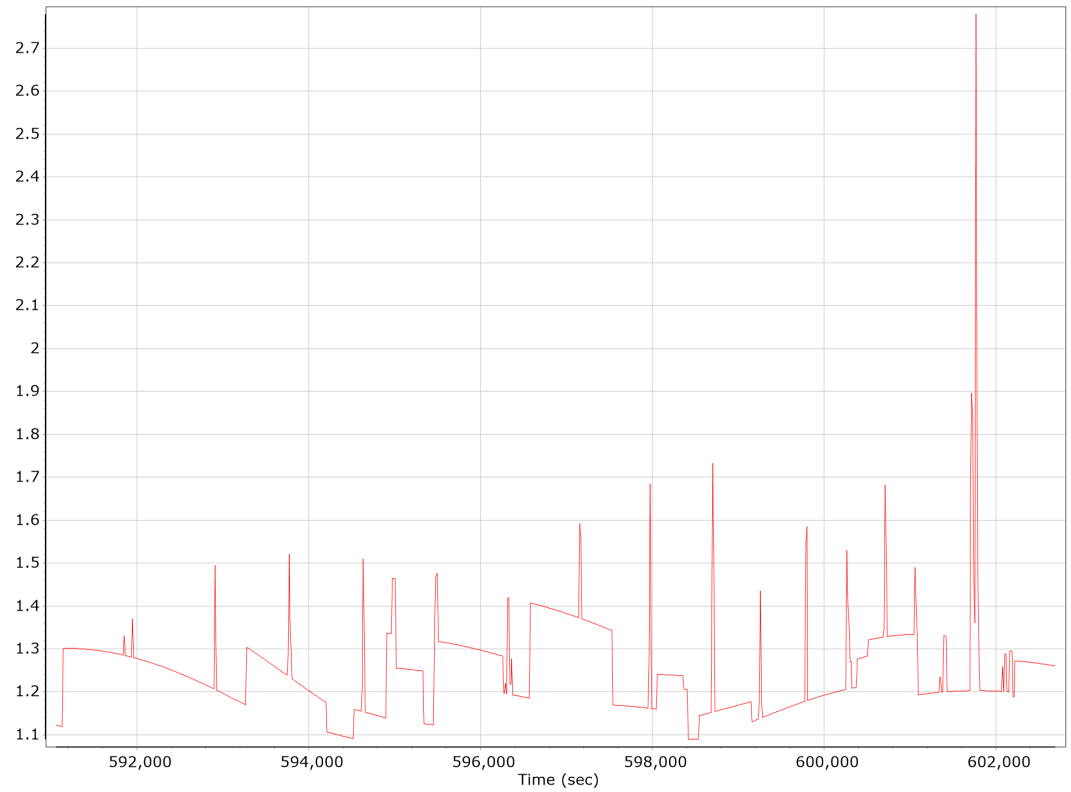
Num SVs in solution



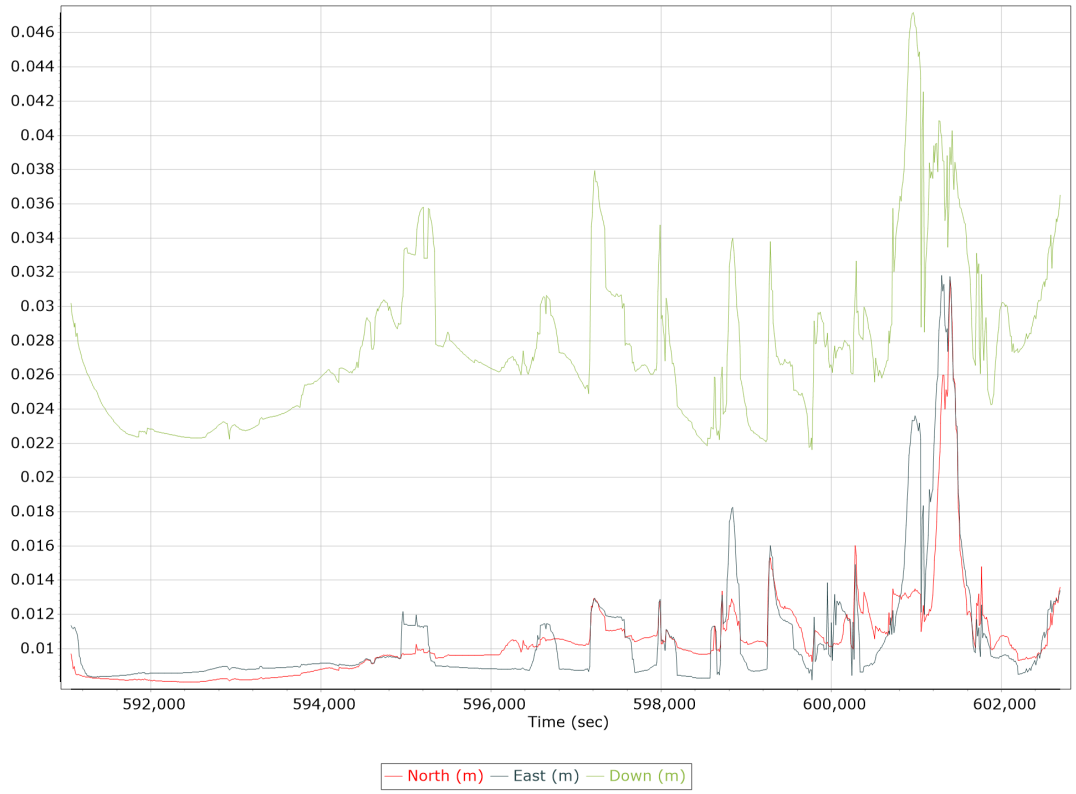
Forward/Reverse Separation



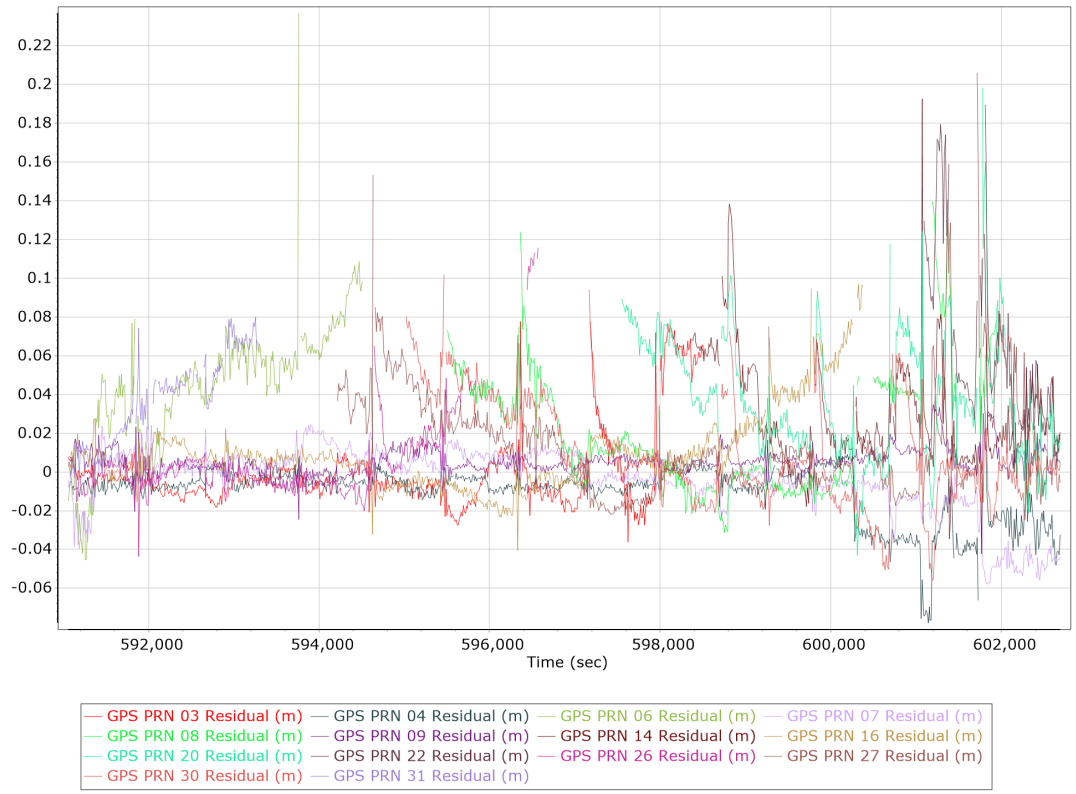
PDOP



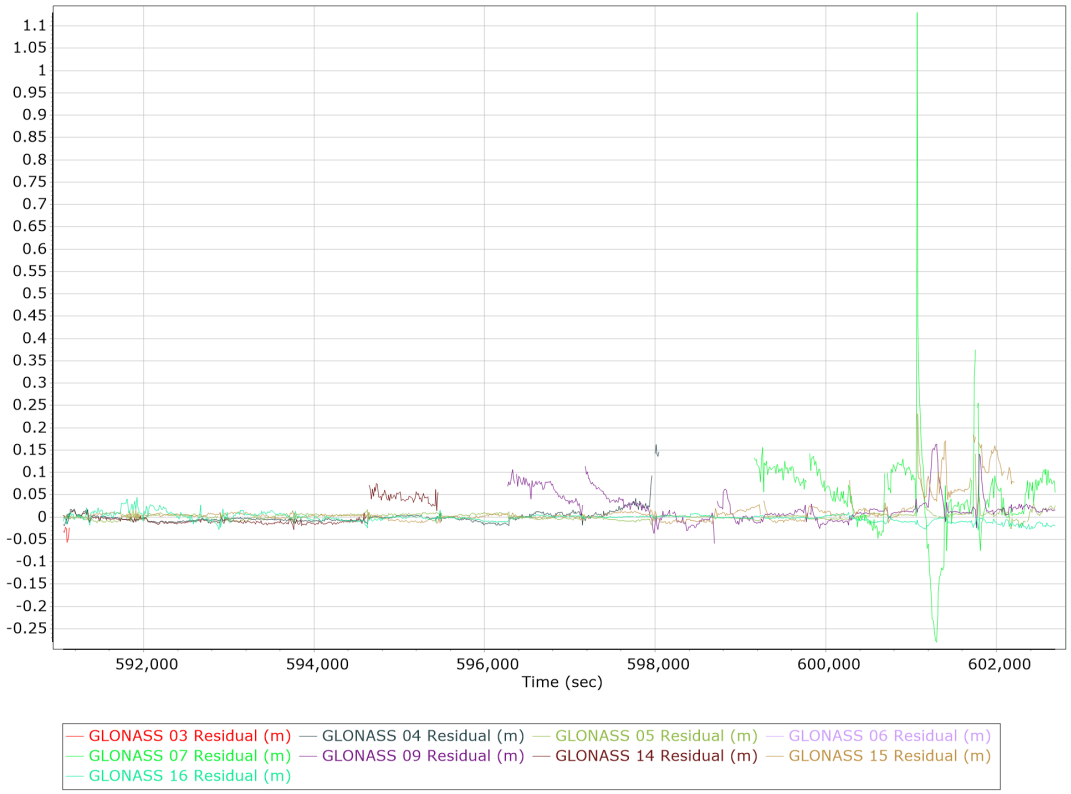
Estimated Position Accuracy



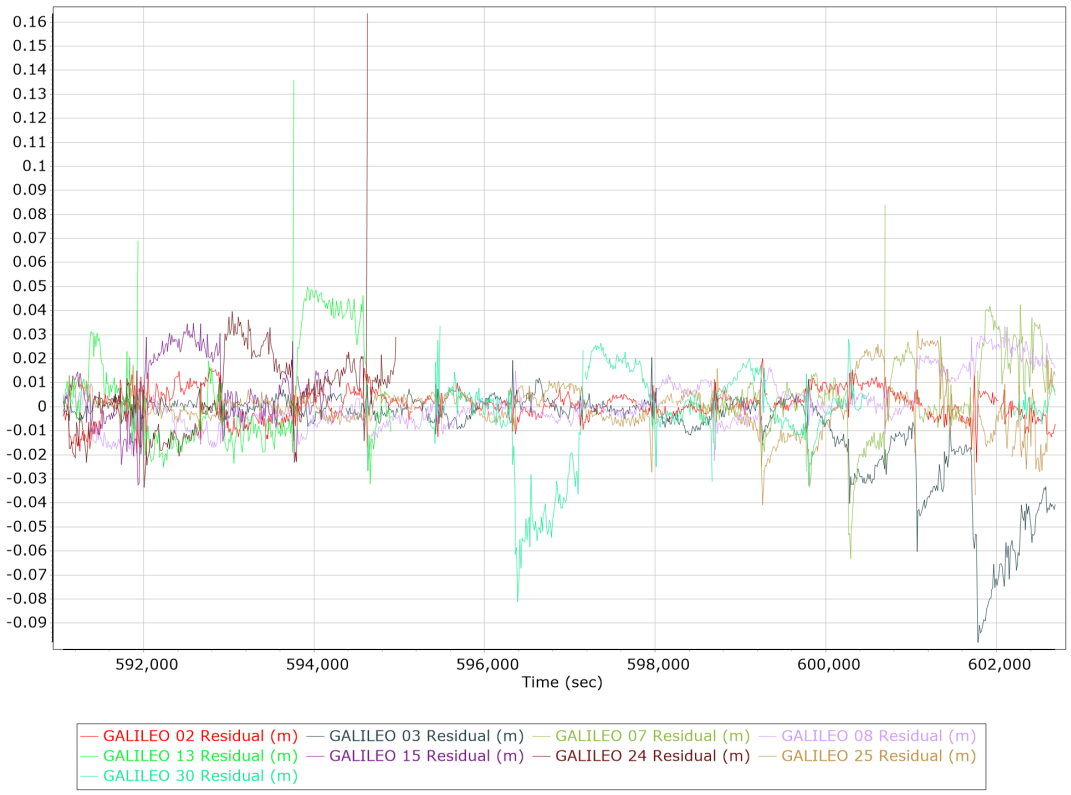
GPS Residuals



GLONASS Residuals



GALILEO Residuals



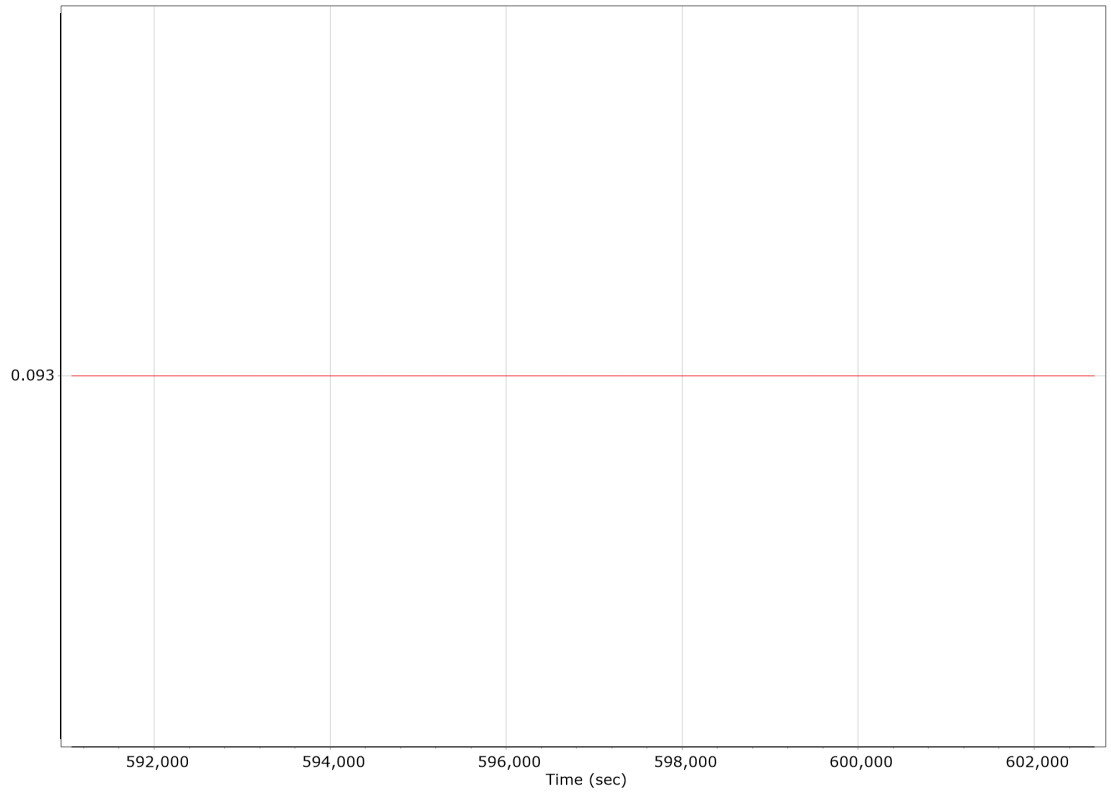
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	590789.000 (11/11/2023 8:06:29 PM)		
Processing end time	602690.000 (11/11/2023 11:24:50 PM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.093	0.062	-1.287
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

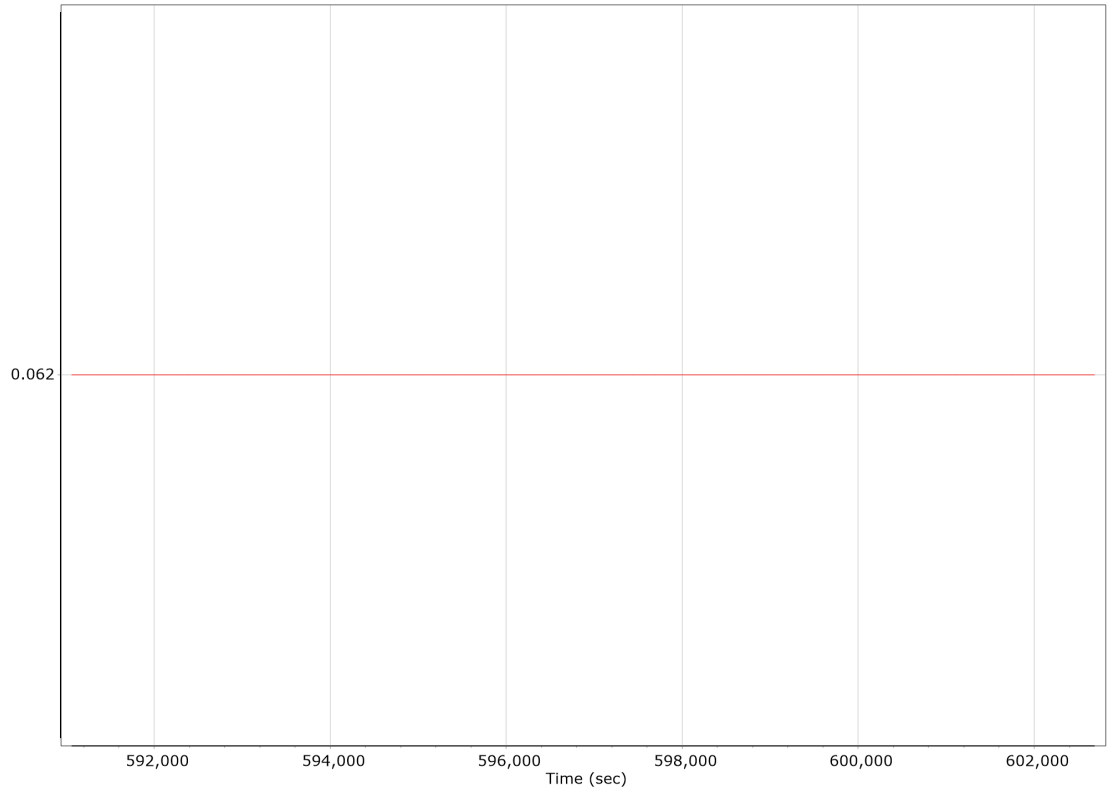
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

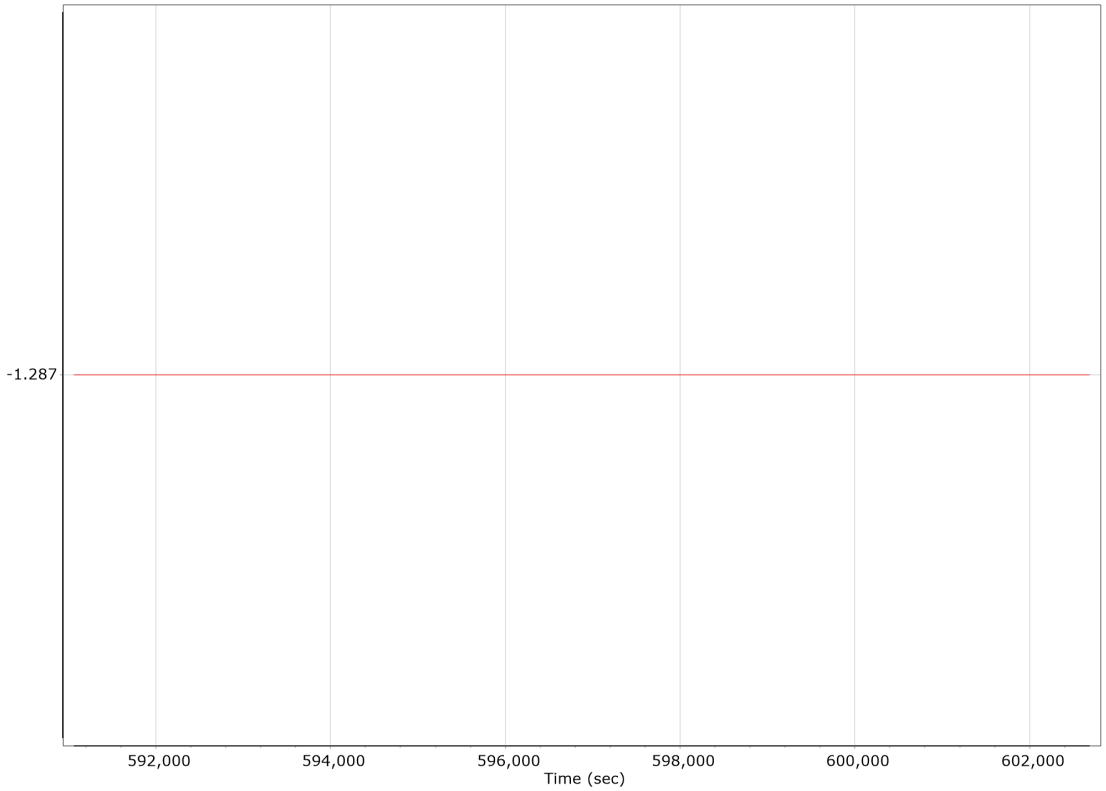
X Reference-Primary GNSS Lever Arm (m)



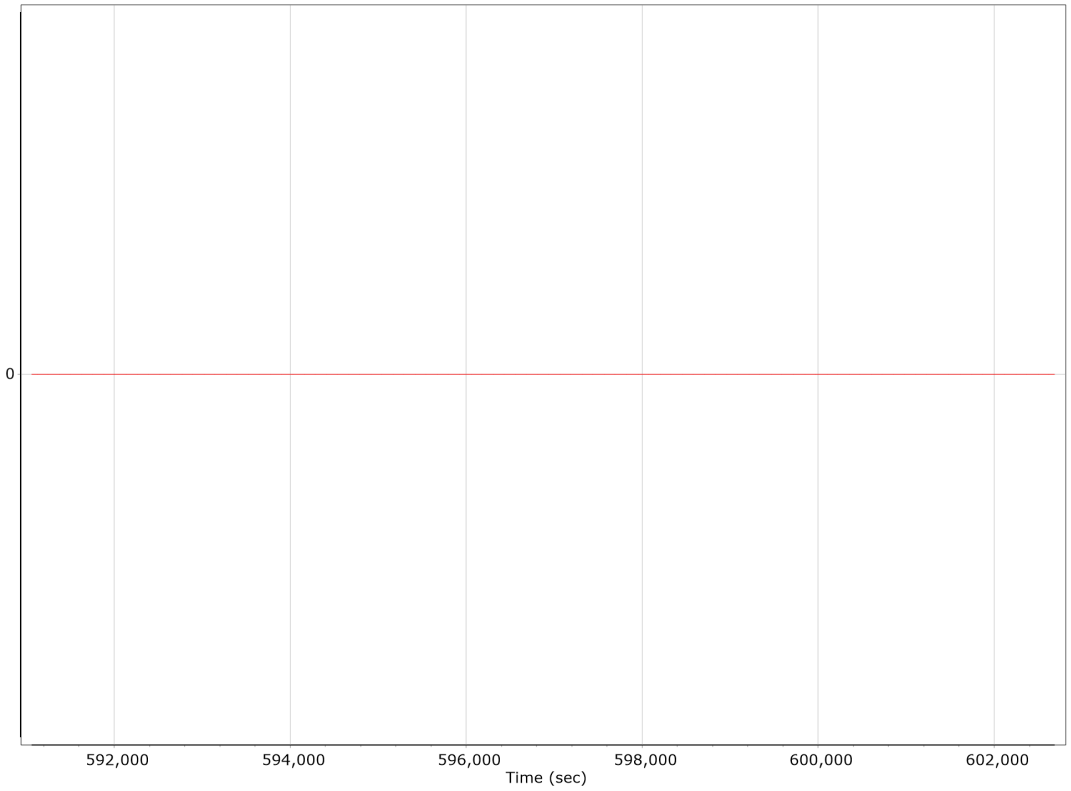
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



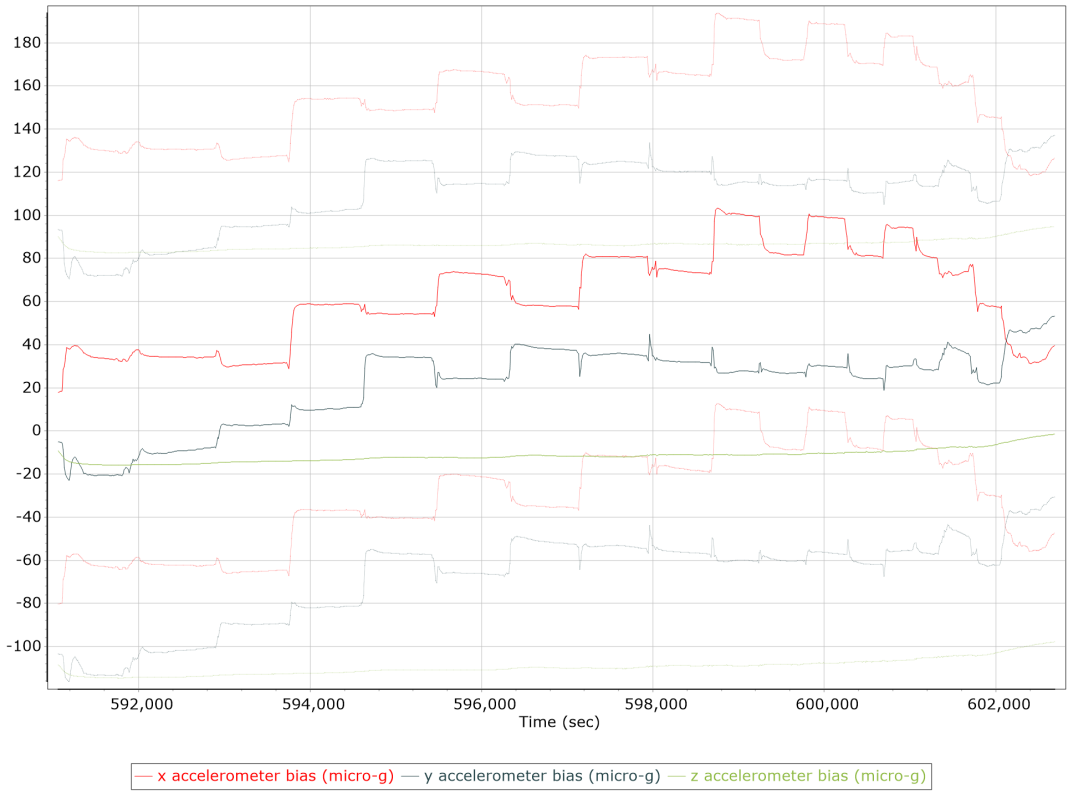
Reference-Primary GNSS Lever Arm Figure of Merit



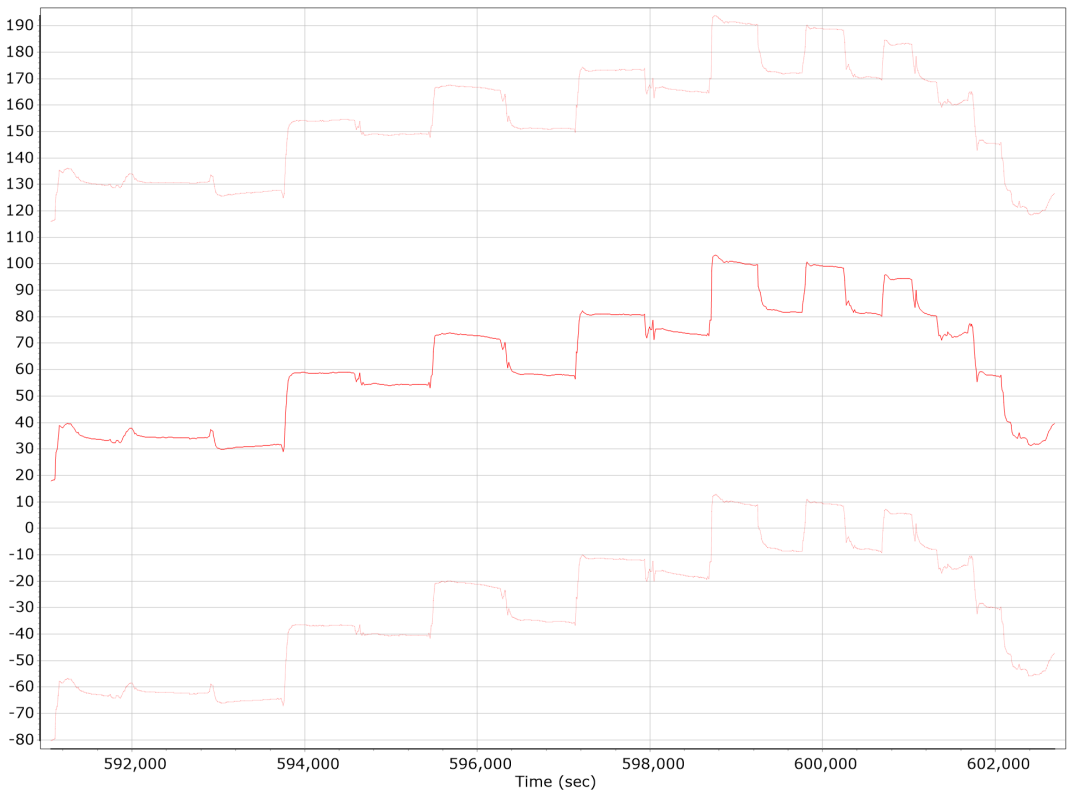
IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

Accelerometer Bias (micro-g)



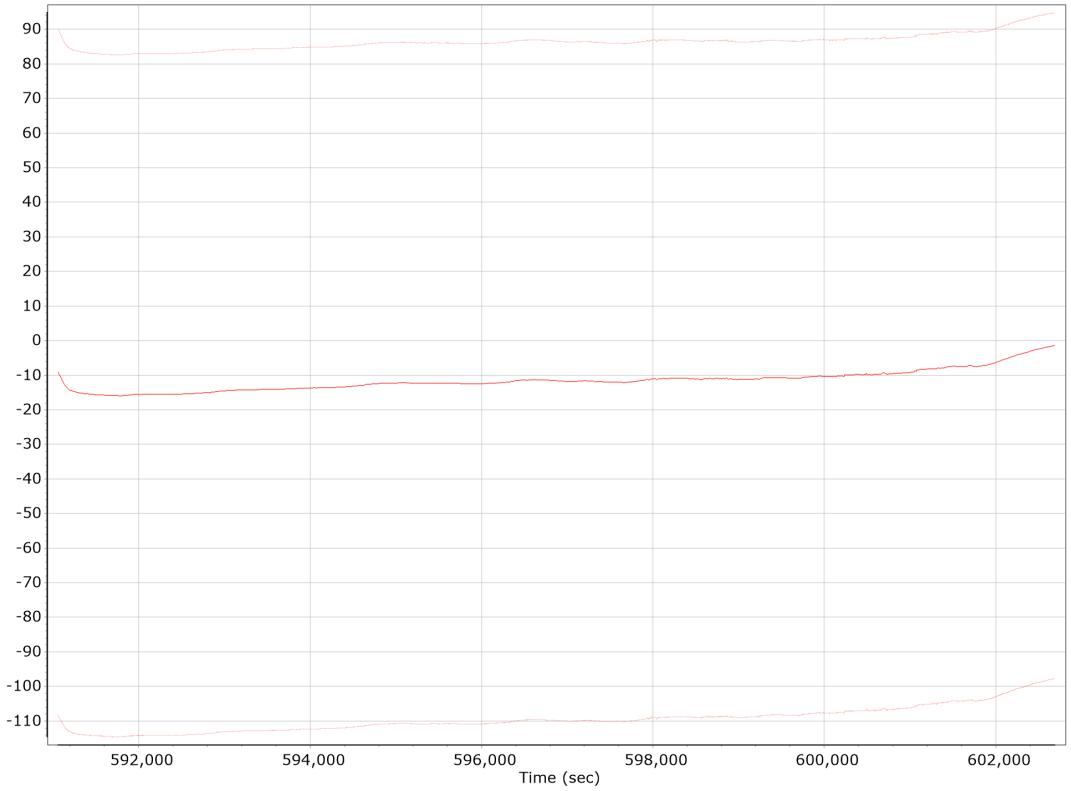
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



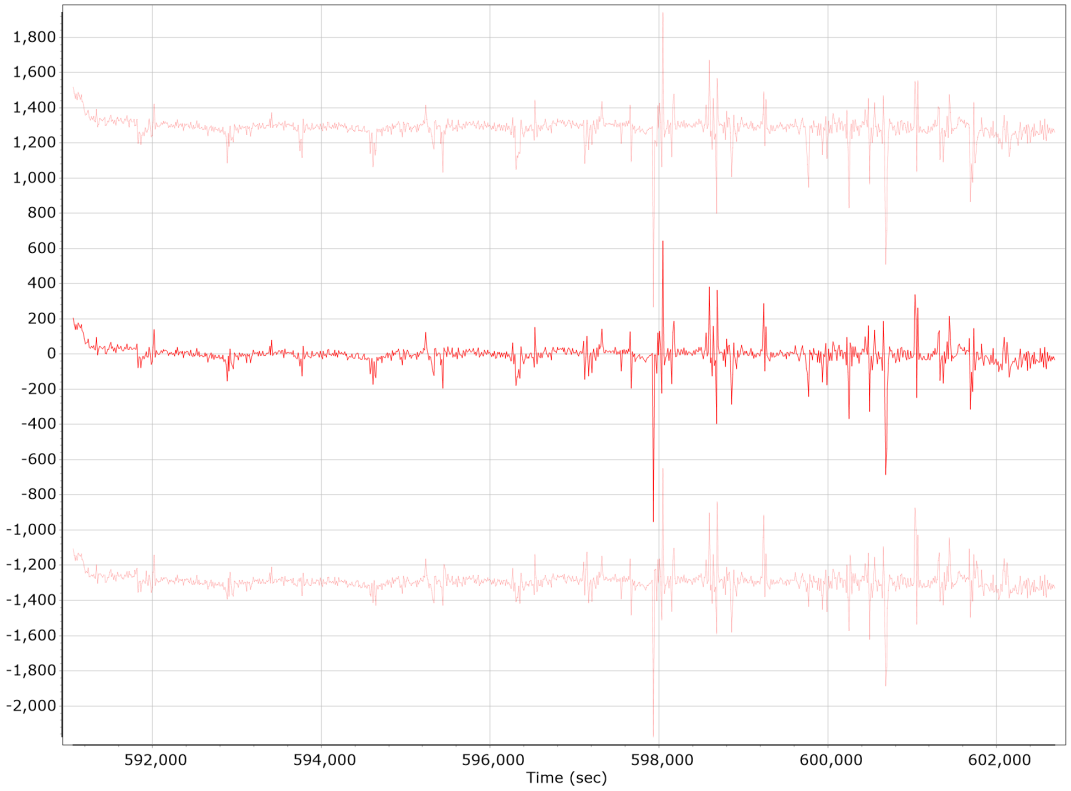
X Accelerometer Scale Error (ppm)



Y Accelerometer Scale Error (ppm)



Z Accelerometer Scale Error (ppm)



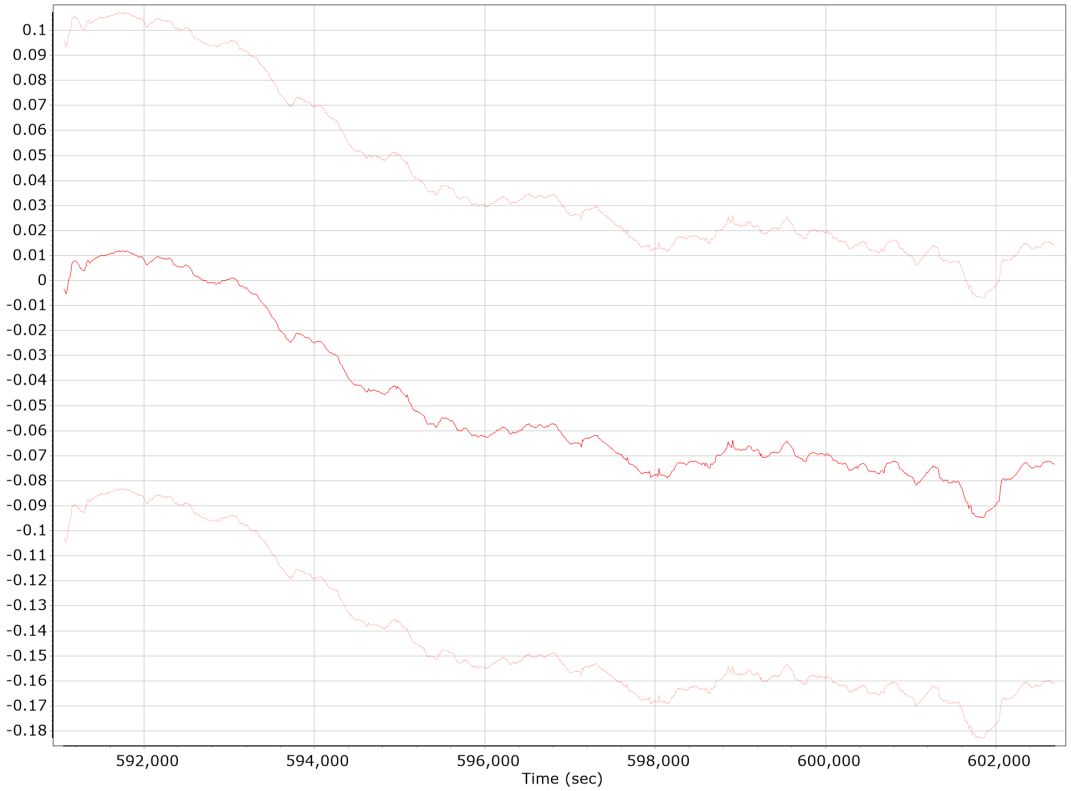
Gyro Bias (deg/h)



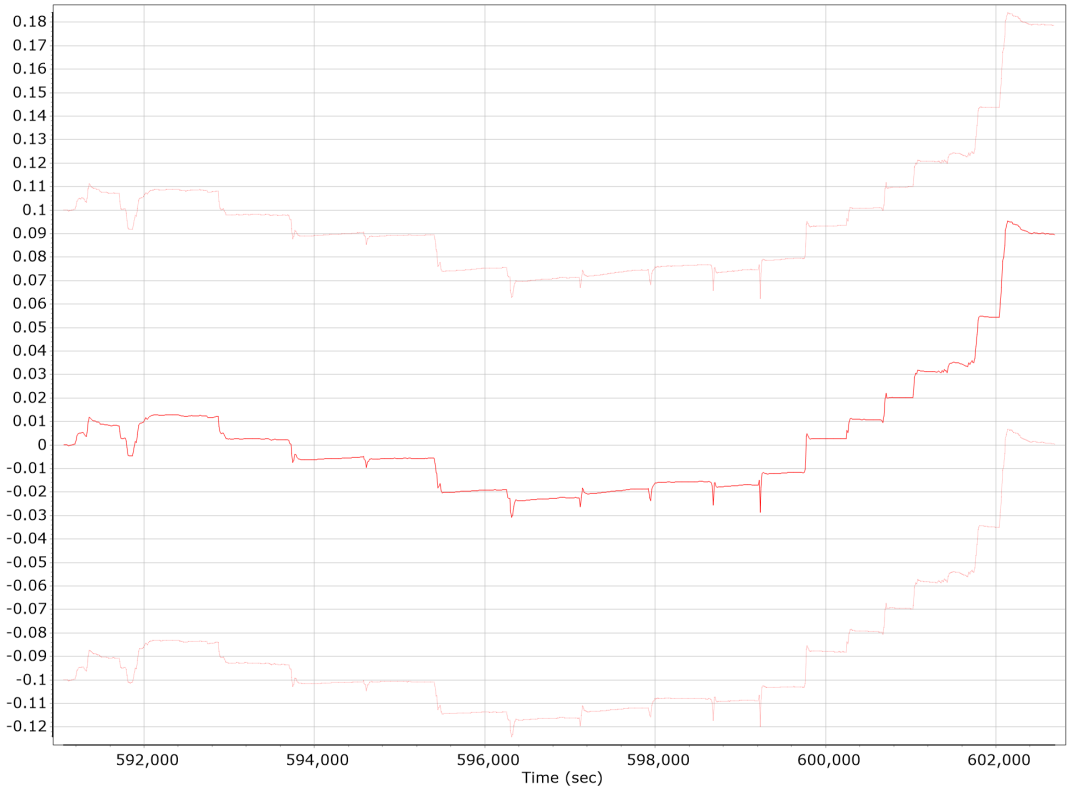
X Gyro Bias (deg/h)



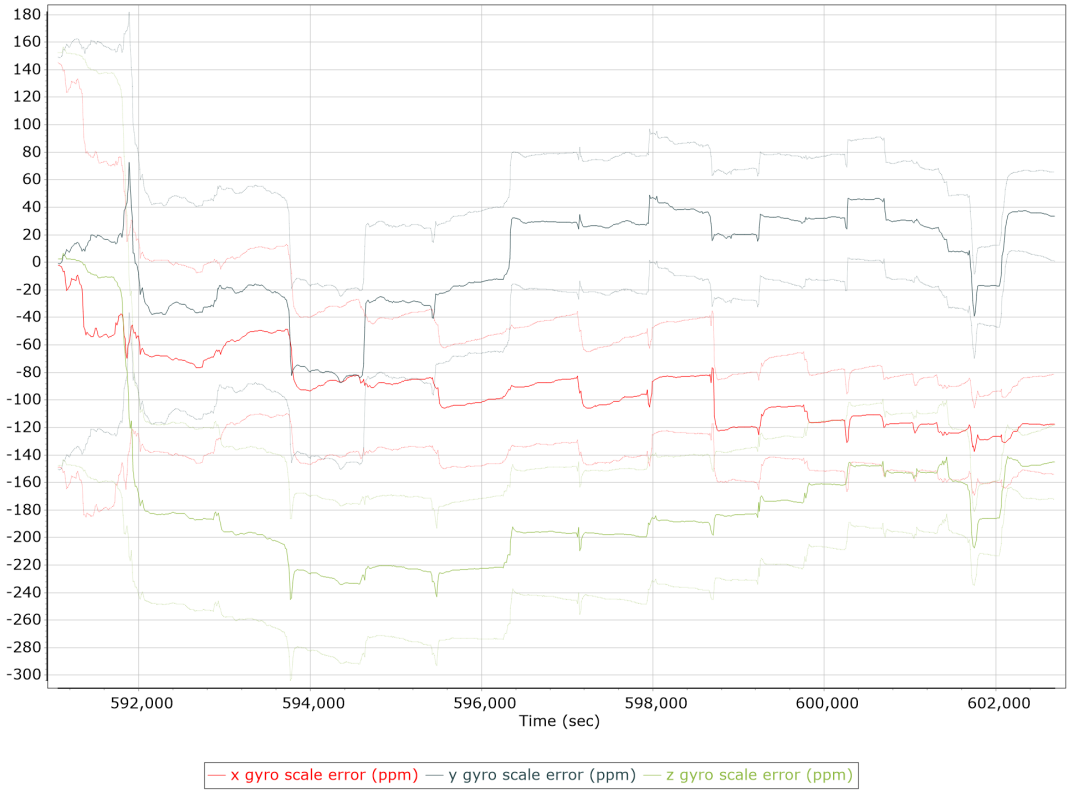
Y Gyro Bias (deg/h)



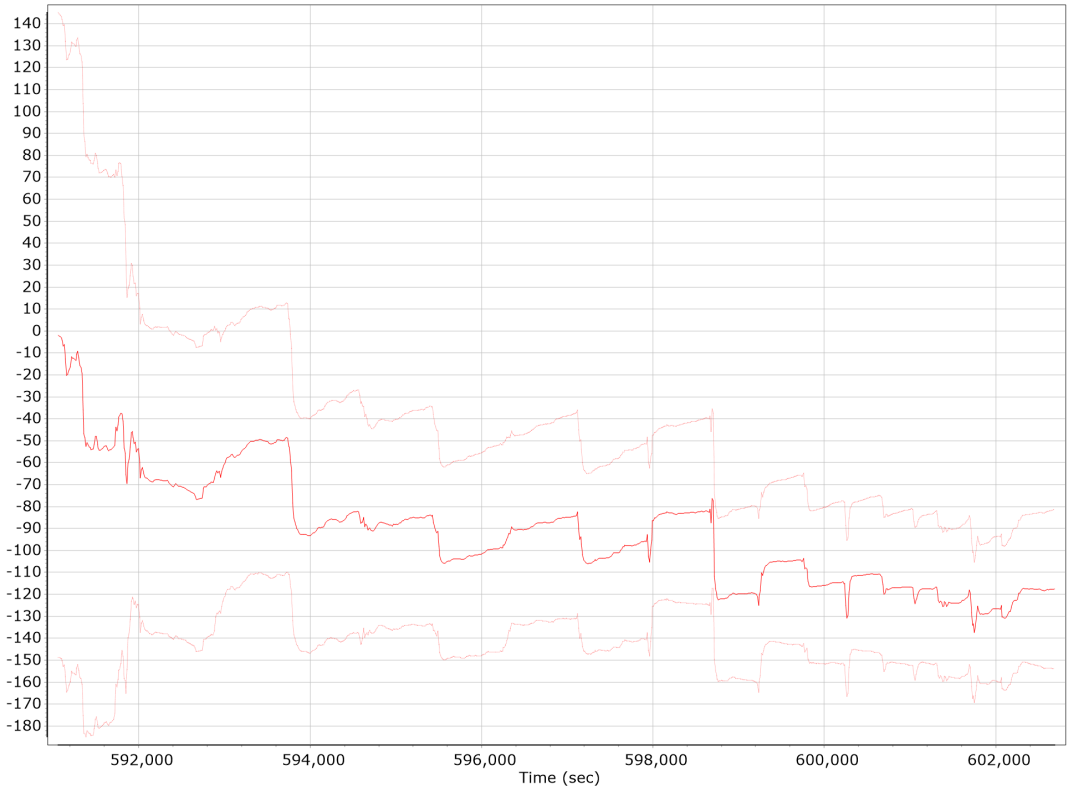
Z Gyro Bias (deg/h)



Gyro Scale Error (ppm)



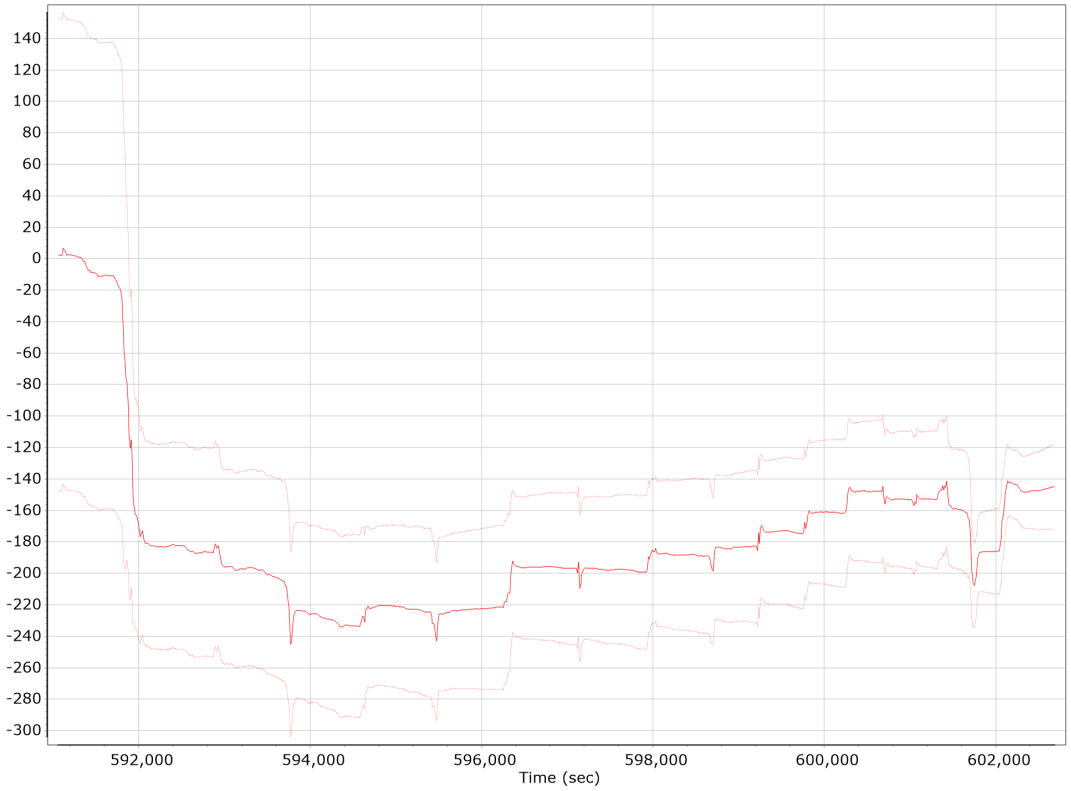
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)



Z Gyro Scale Error (ppm)

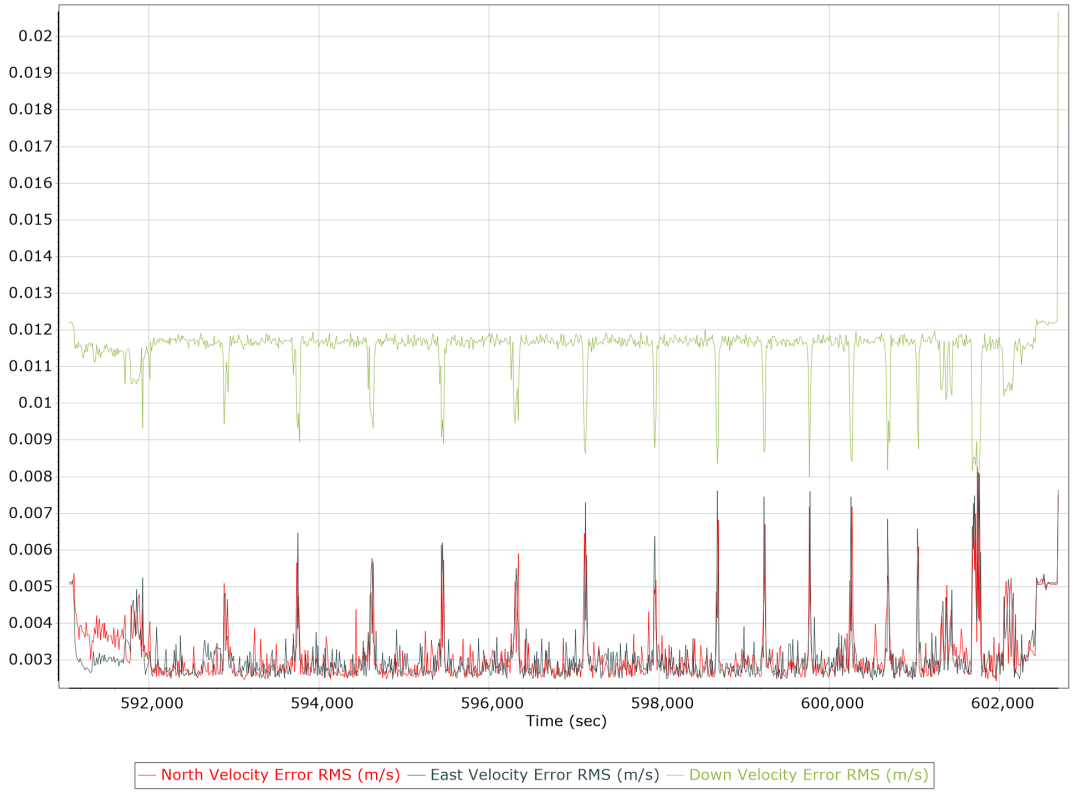


Smoothed Performance Metrics

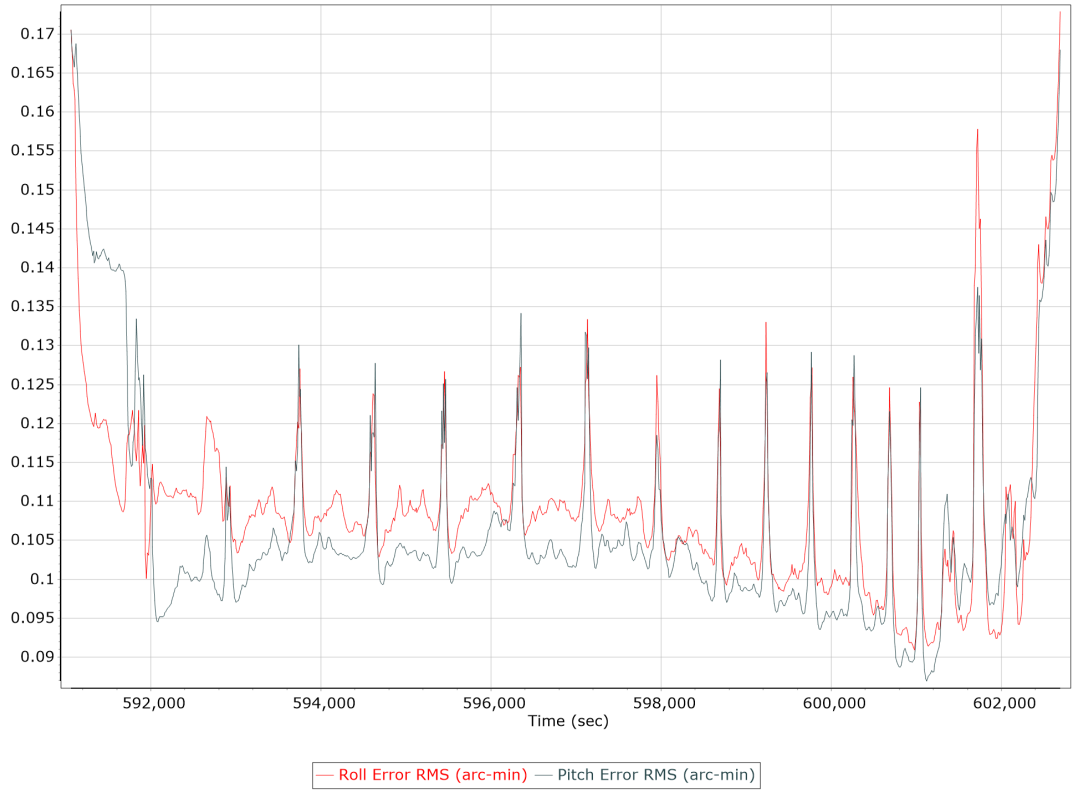
Position Error RMS (m)



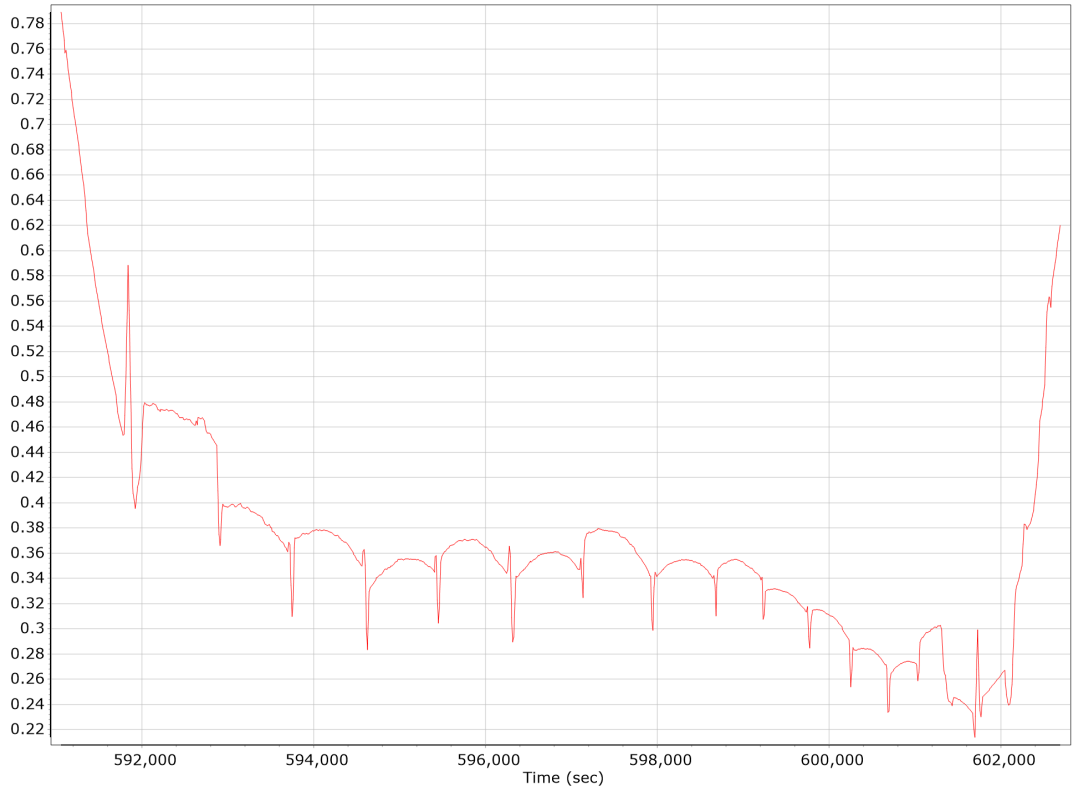
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)



Heading Error RMS (arc-min)

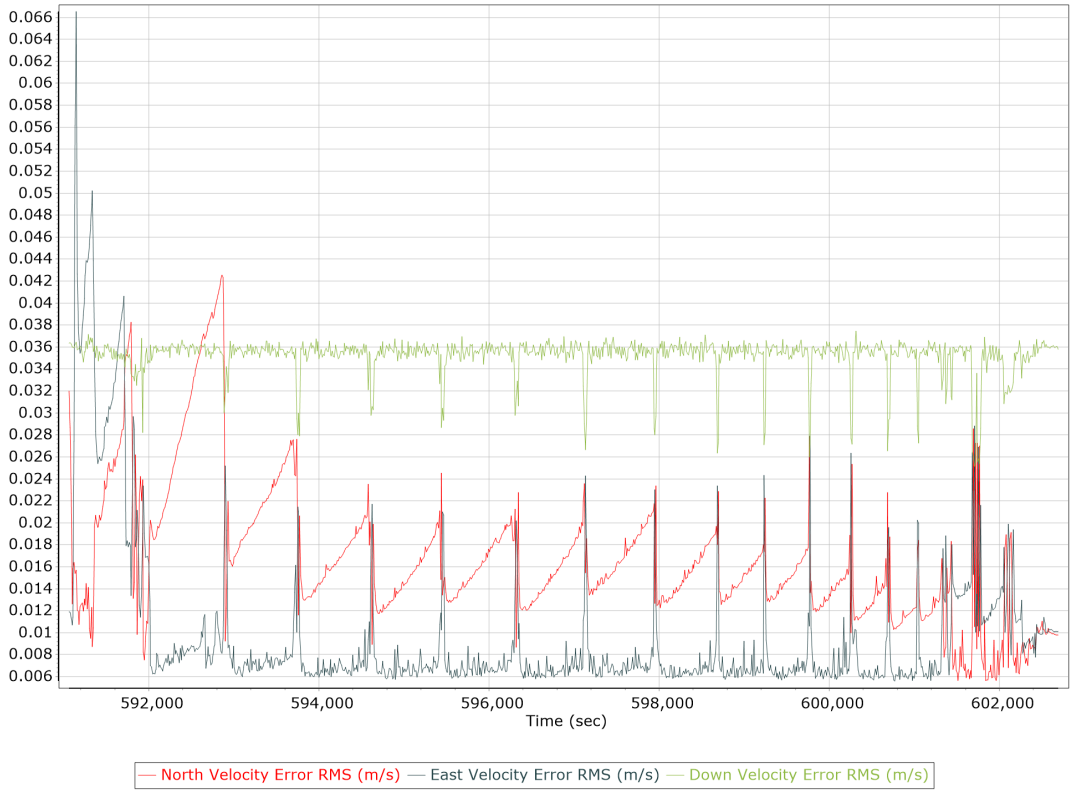


Forward Processed Performance Metrics

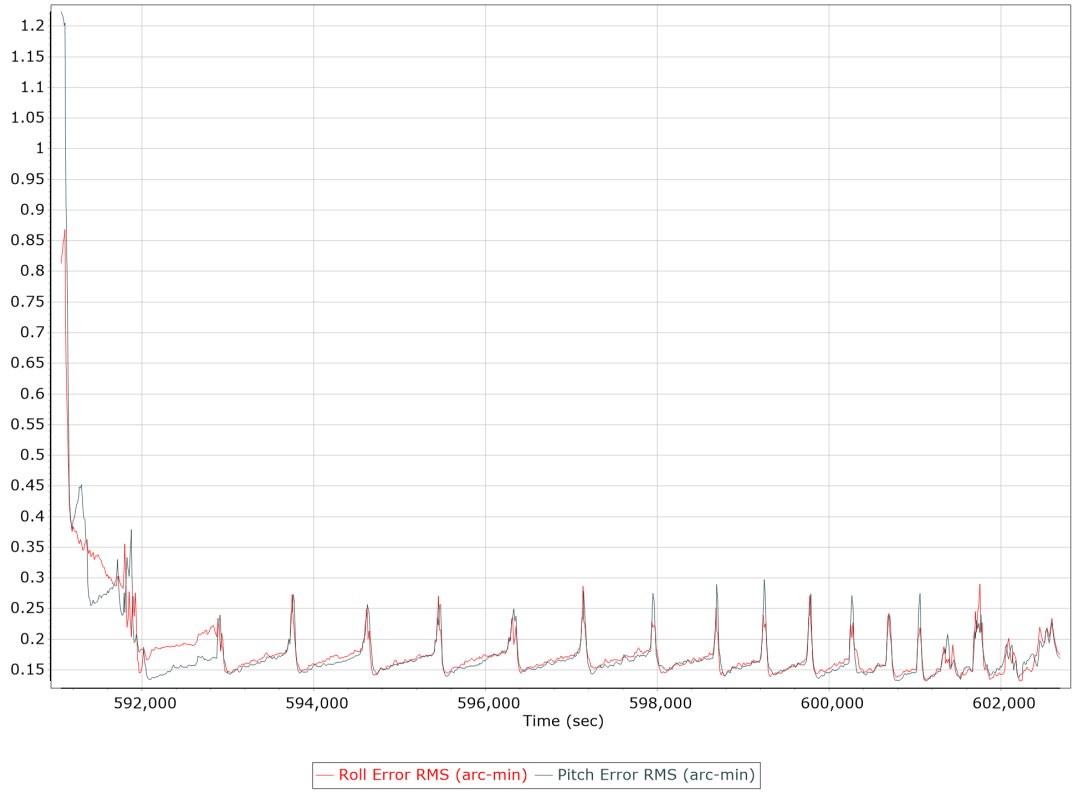
Position Error RMS (m)



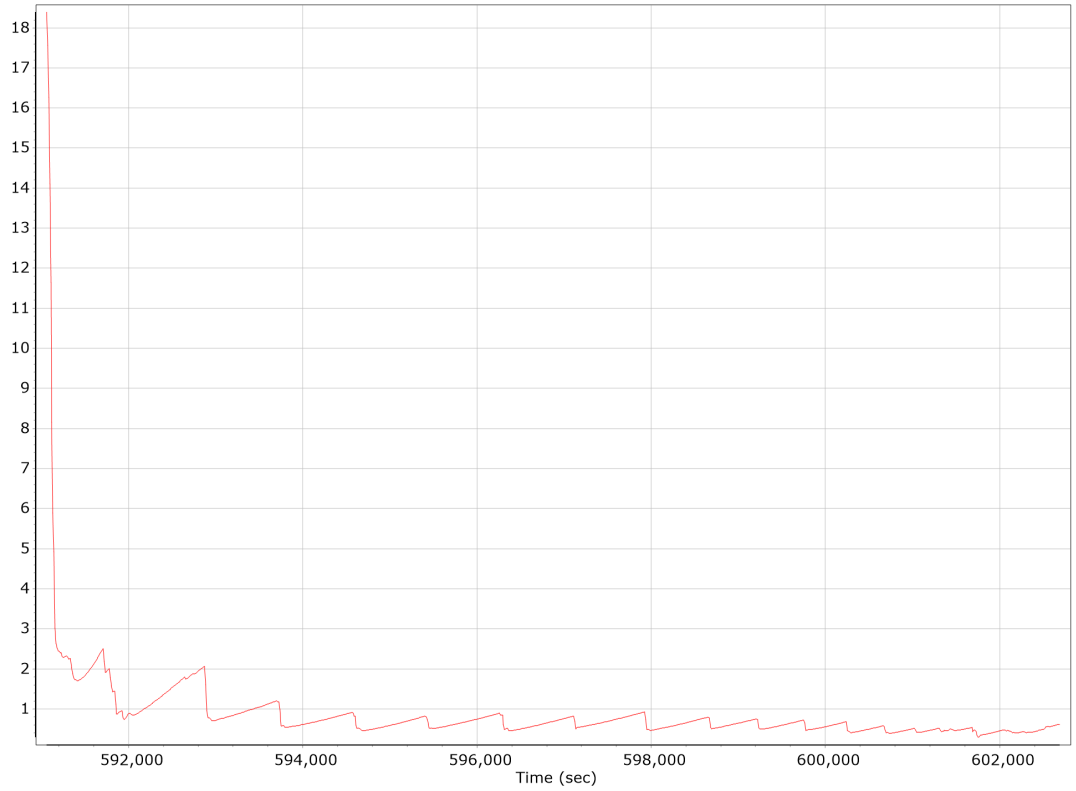
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

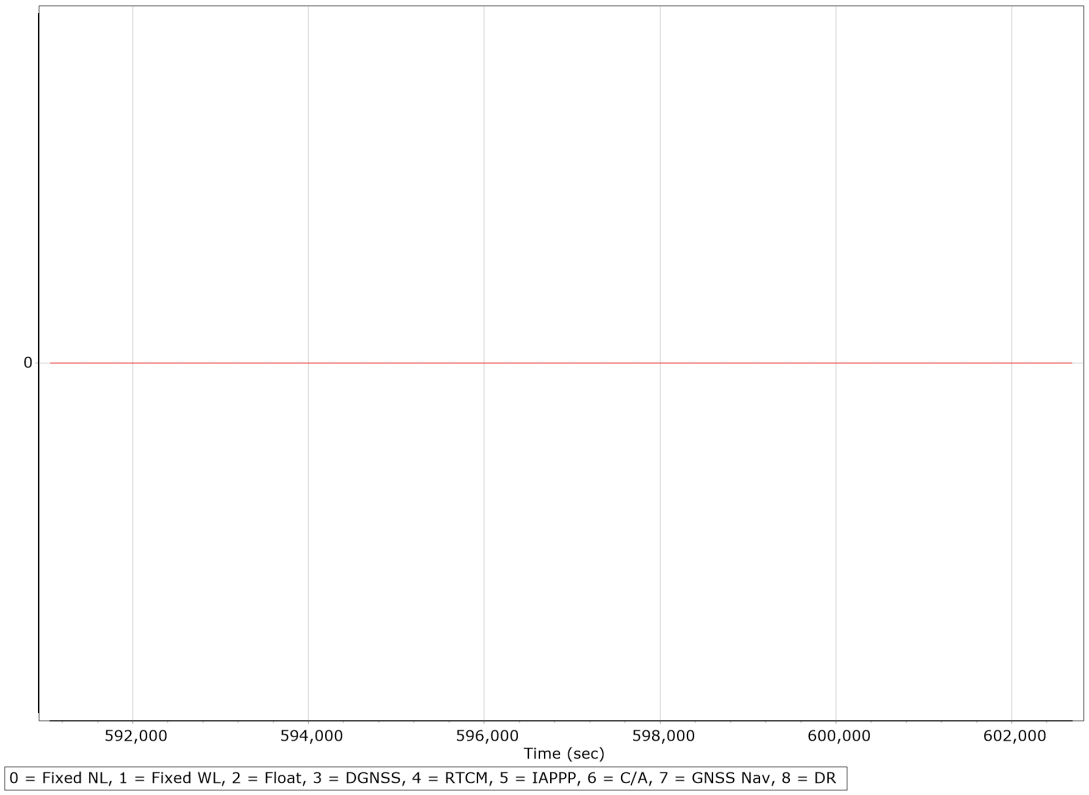


Heading Error RMS (arc-min)

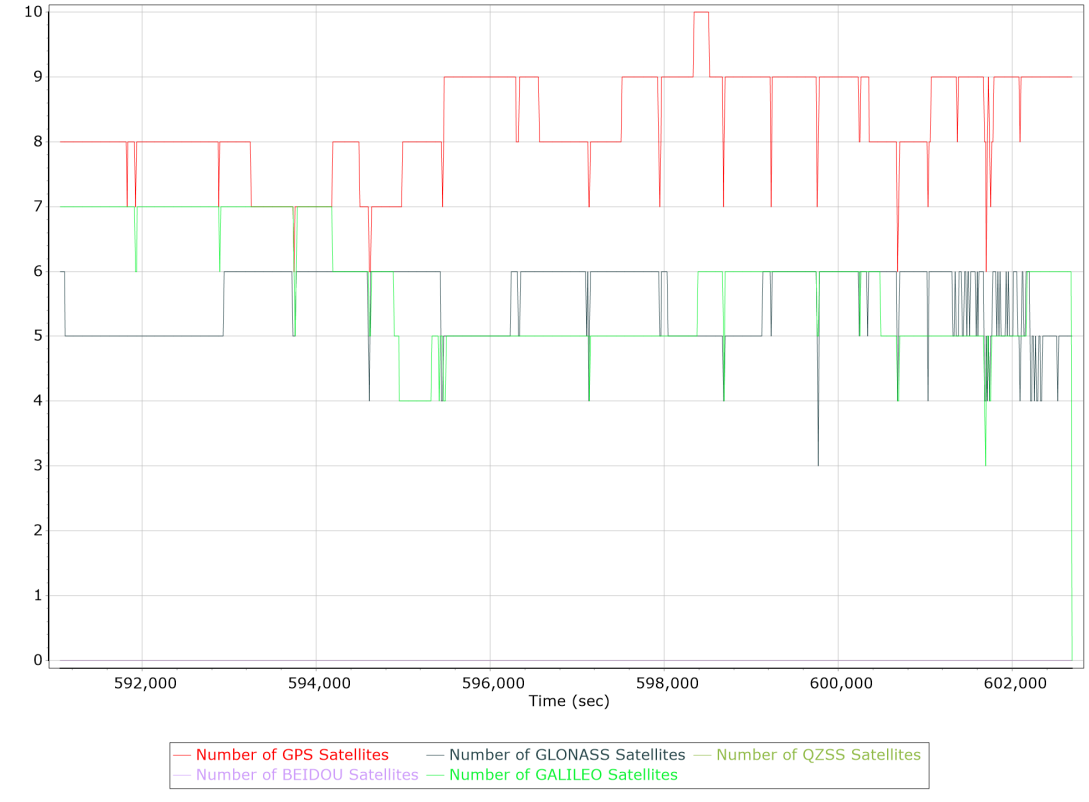


Forward Processed Solution Status

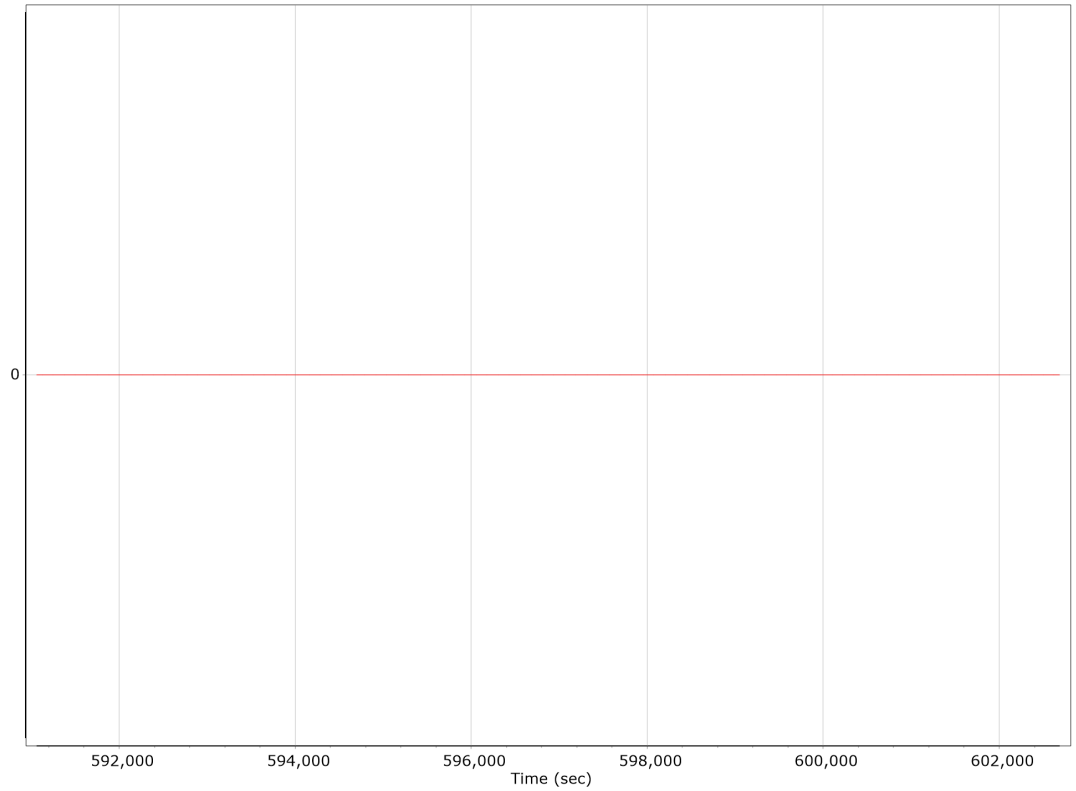
Processing Mode



Number of Satellites



Baseline Length



General Information

Mission Information

Project name	11212023A_3546
Processing date	2023-11-28 19:44:59
Mission date	2023-11-22 06:08:32
Mission duration	05:48:05.161
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N9922
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
231122_060813_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm3260.23g	GLONASS Broadcast Ephemeris
Ephm3260.23n	GPS Broadcast Ephemeris

Output Files

Filename	File type
sbet_11212023A_3546.out	SBET Trajectory File

Rover Data Summary

First raw data file	231122_060813_INS-GPS_1.raw		
Last raw data file	231122_060813_INS-GPS_1.raw		
Start GPS week	2289		
Start time	281293.900 (11/22/2023 6:08:13 AM)		
End time	302179.061 (11/22/2023 11:56:19 AM)		
Start of fine alignment	281565.670 (11/22/2023 6:12:45 AM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.205	0.058	-1.282
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

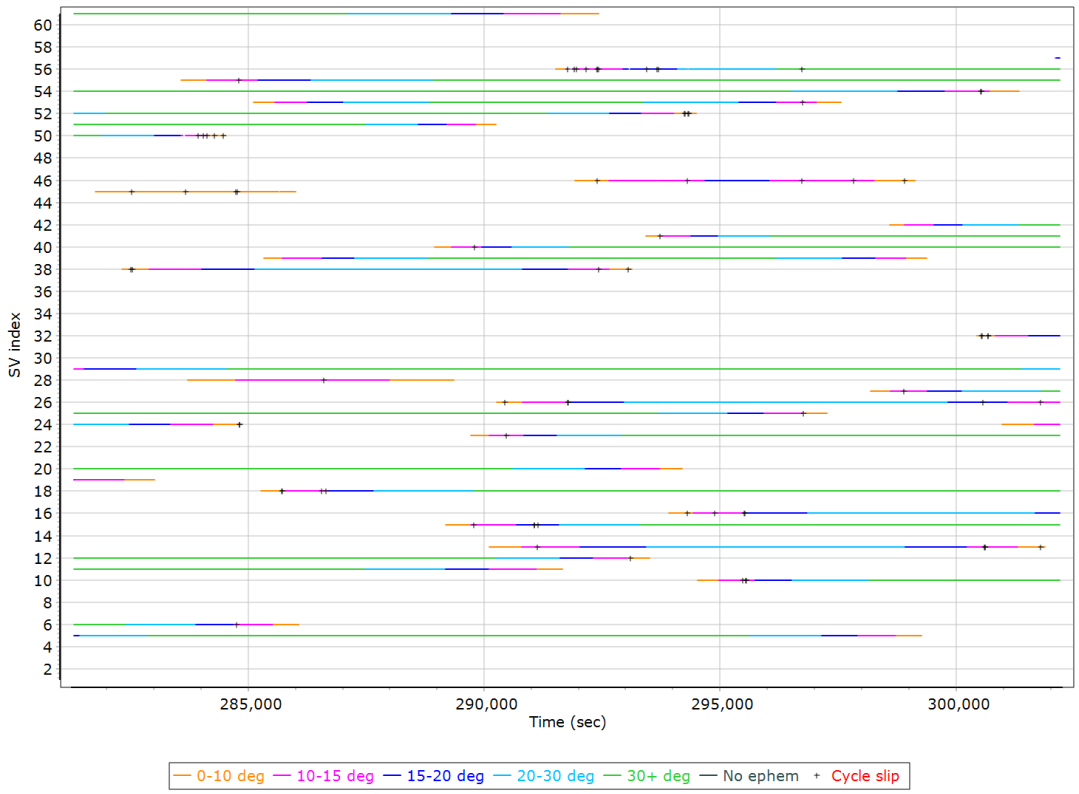
Rover Data QC

Raw IMU Import QC Summary

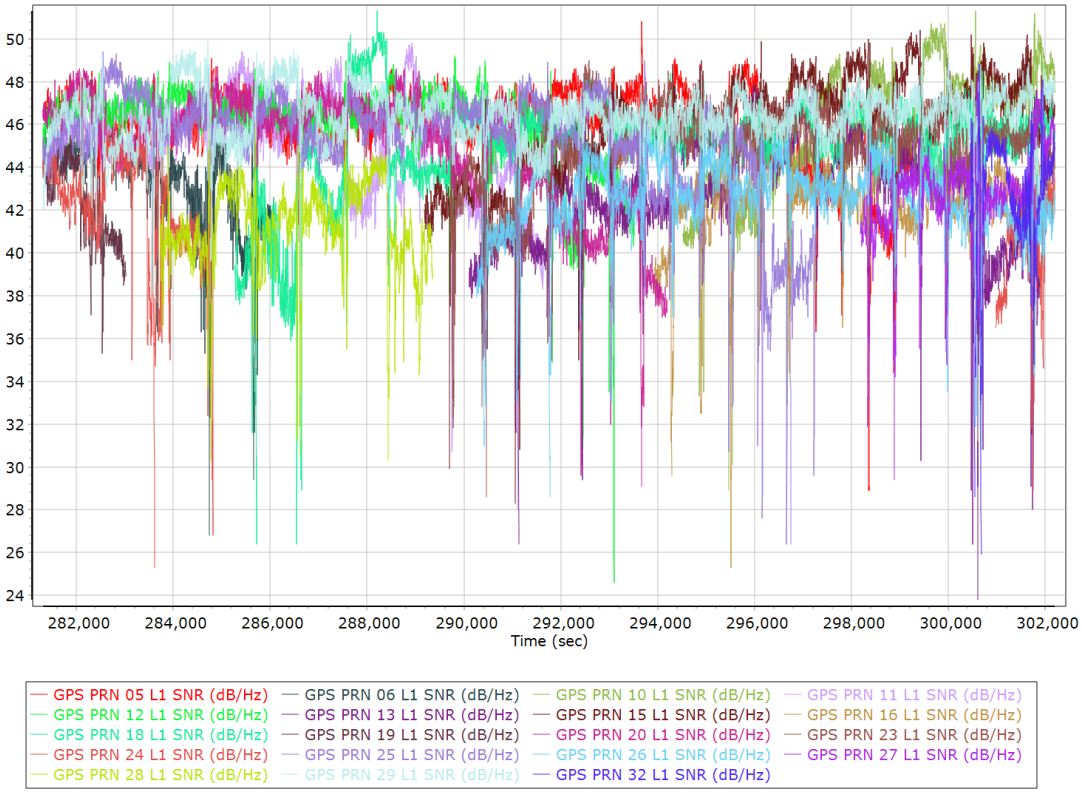
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_11212023A_3546.log
IMU Records Processed	4176153
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

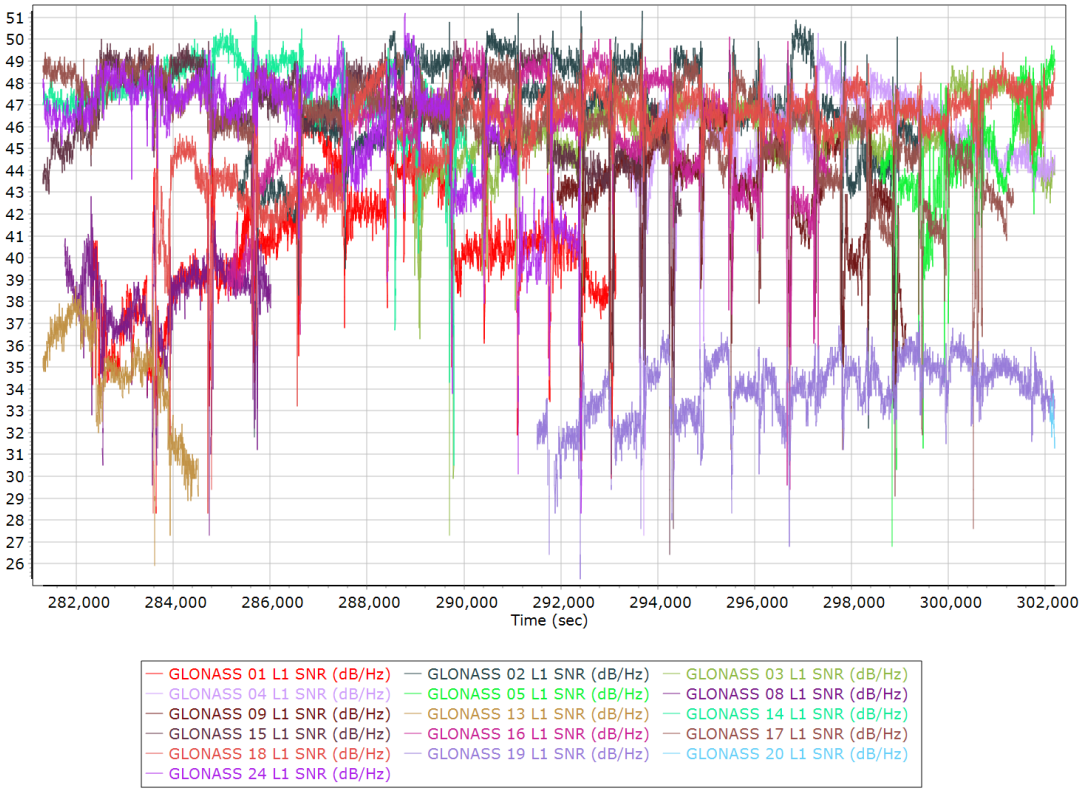
GPS/GLONASS L1 Satellite Lock/Elevation



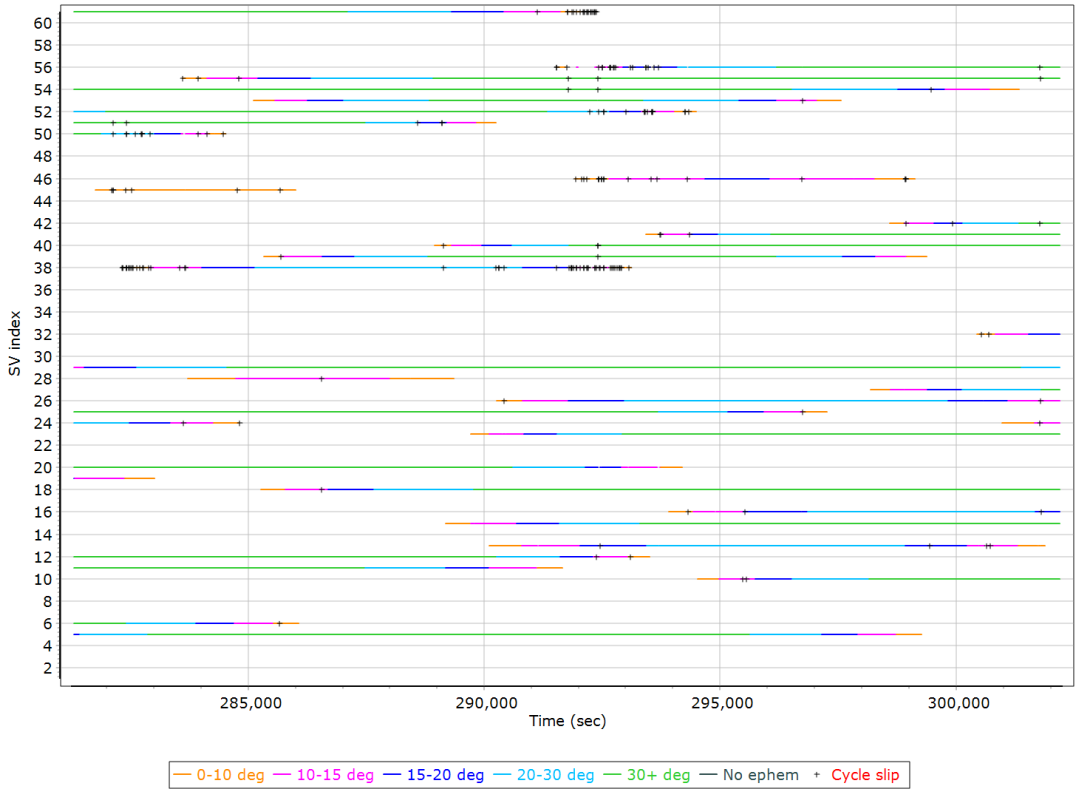
GPS L1 SNR



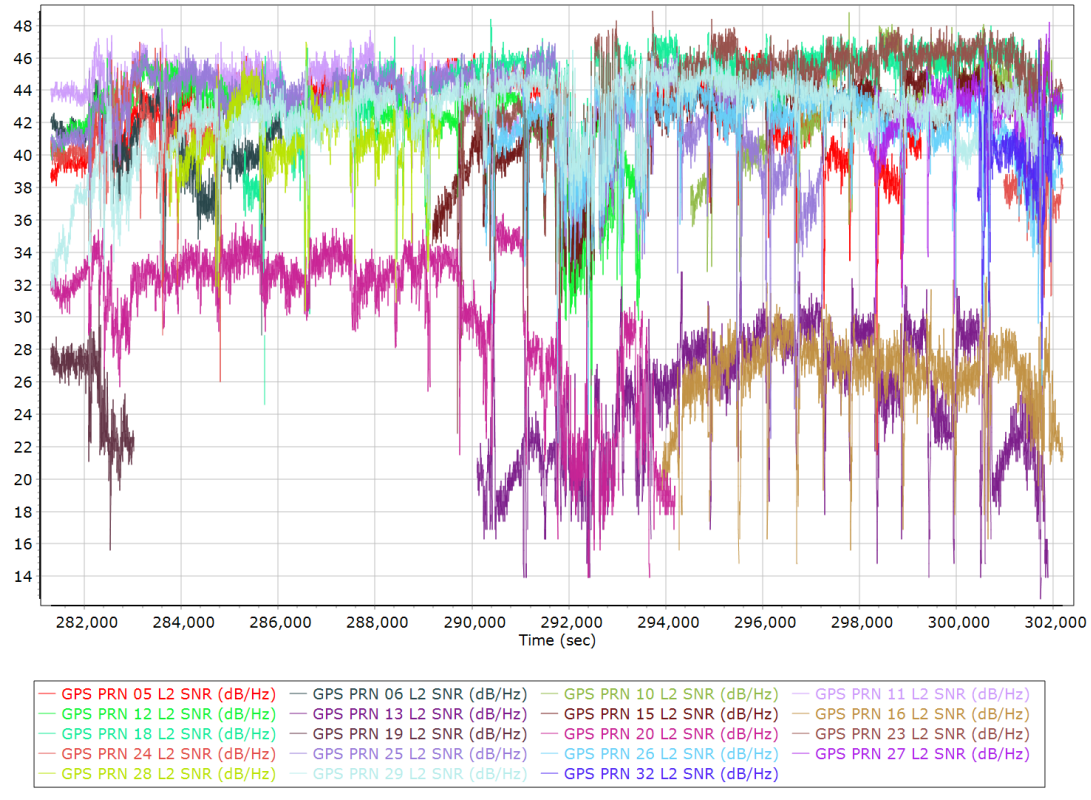
GLONASS L1 SNR



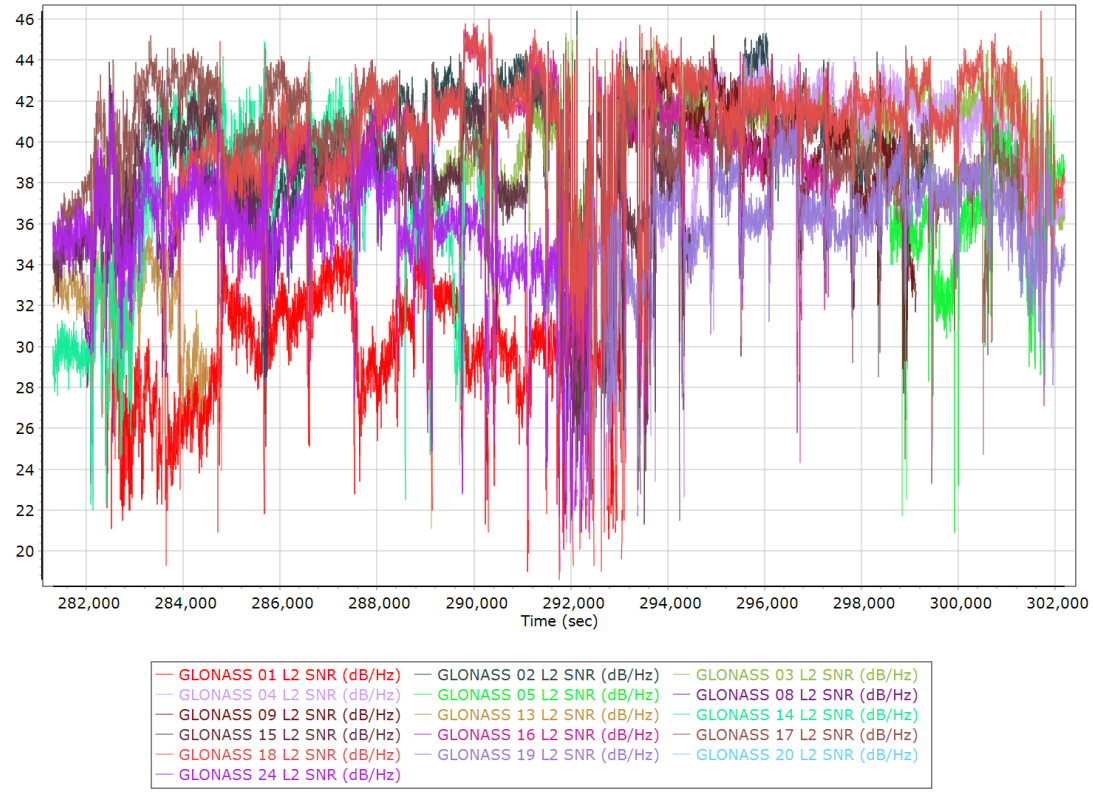
GPS/GLONASS L2 Satellite Lock/Elevation



GPS L2 SNR



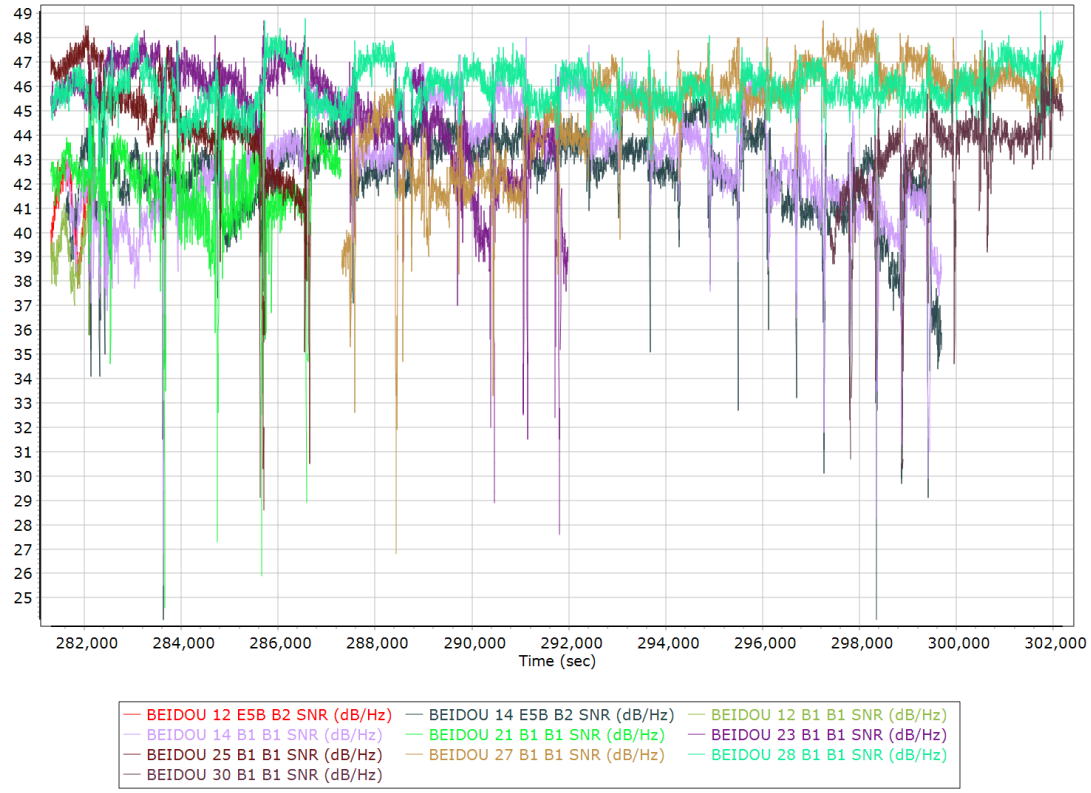
GLONASS L2 SNR



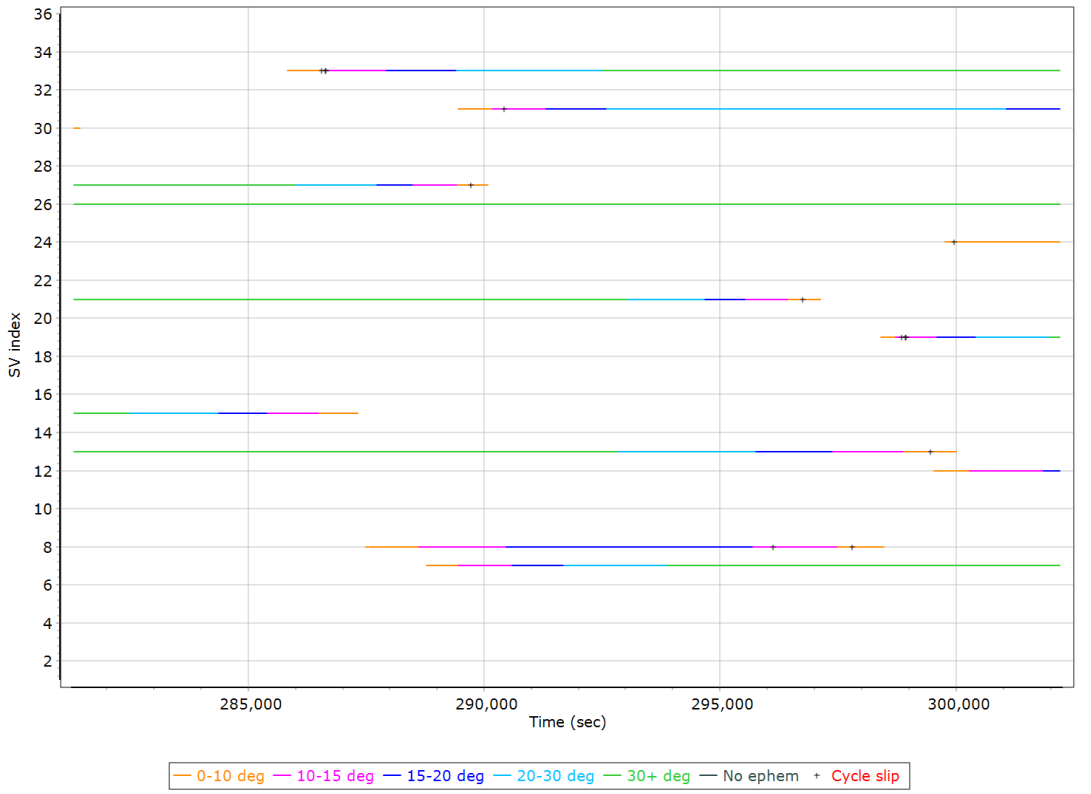
BEIDOU Satellite Lock/Elevation



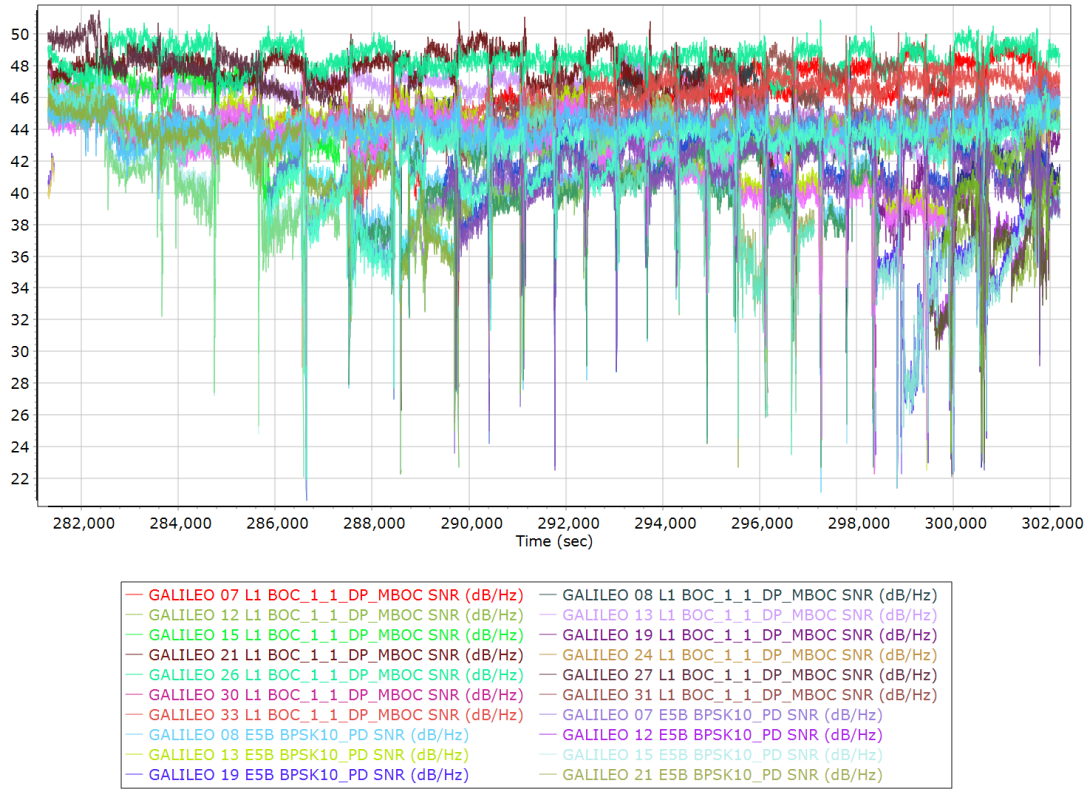
BEIDOU SNR



GALILEO Satellite Lock/Elevation

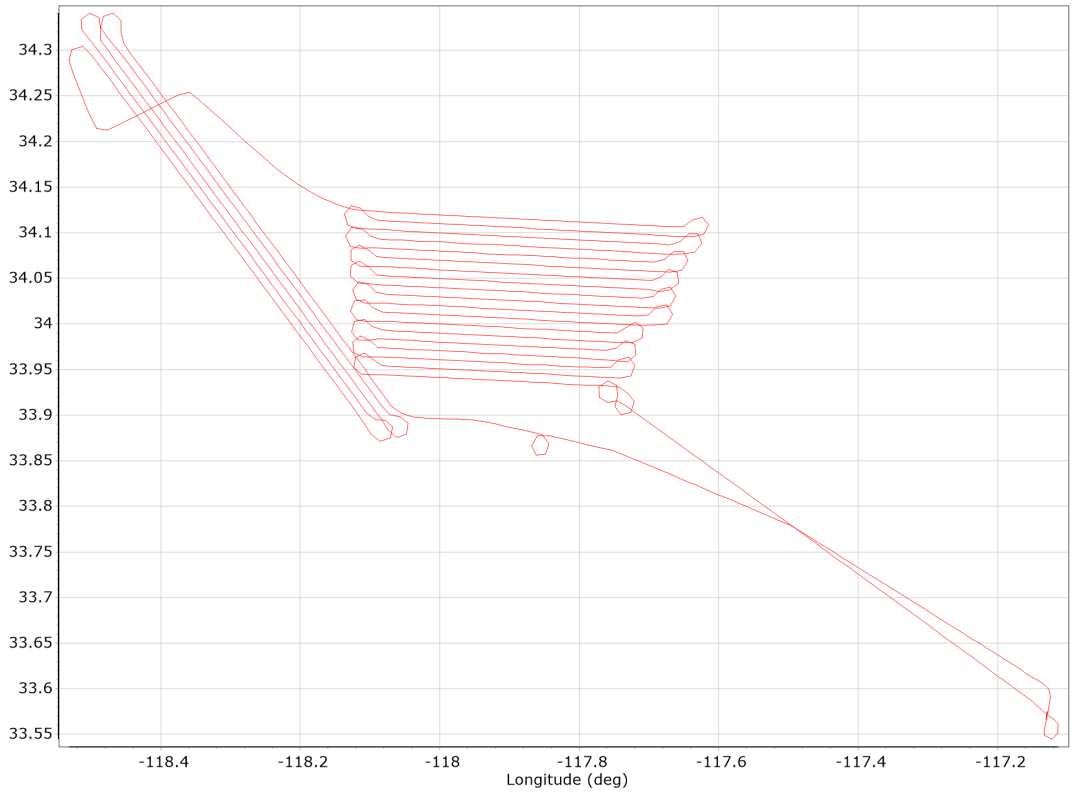


GALILEO SNR

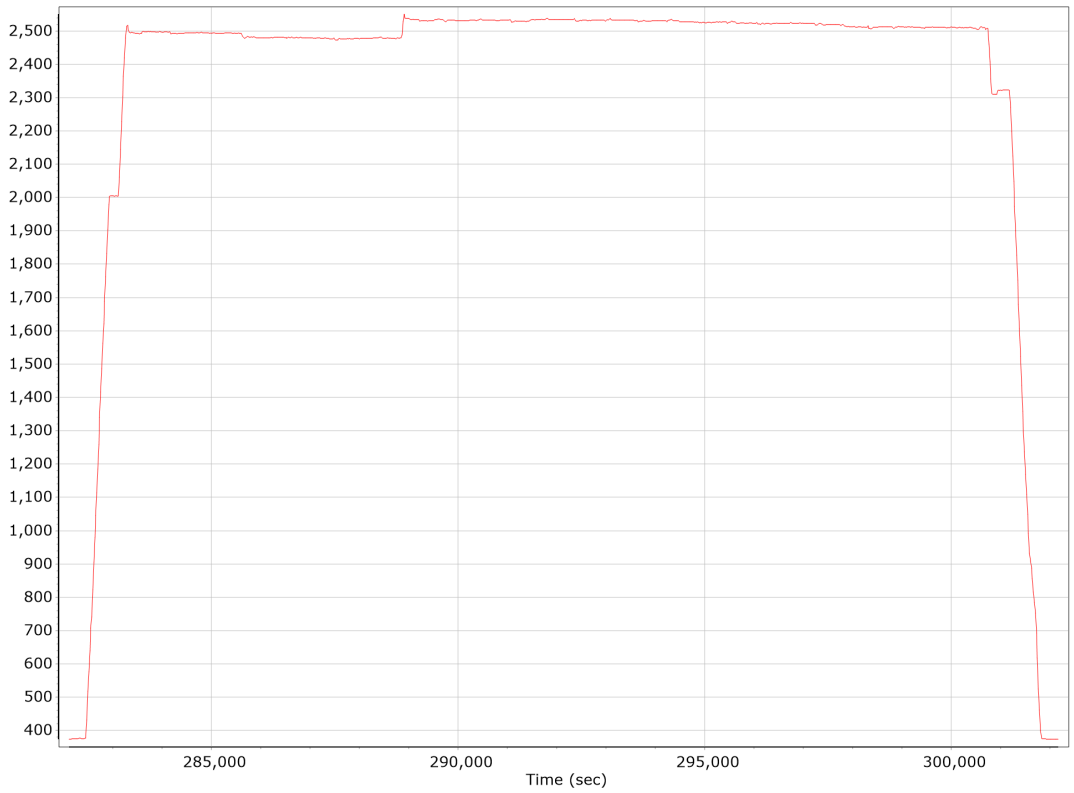

50
48
46
44
42
40
38
36
34
32
30
28
26
24
22
282,000
284,000
286,000
288,000
290,000
292,000
294,000
296,000
298,000
300,000
302,000
Time (sec)
GALILEO 07 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 08 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 12 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 13 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 15 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 19 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 21 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 24 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 26 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 27 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 30 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 31 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 33 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 07 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 08 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 12 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 13 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 15 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 19 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 21 E5B BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

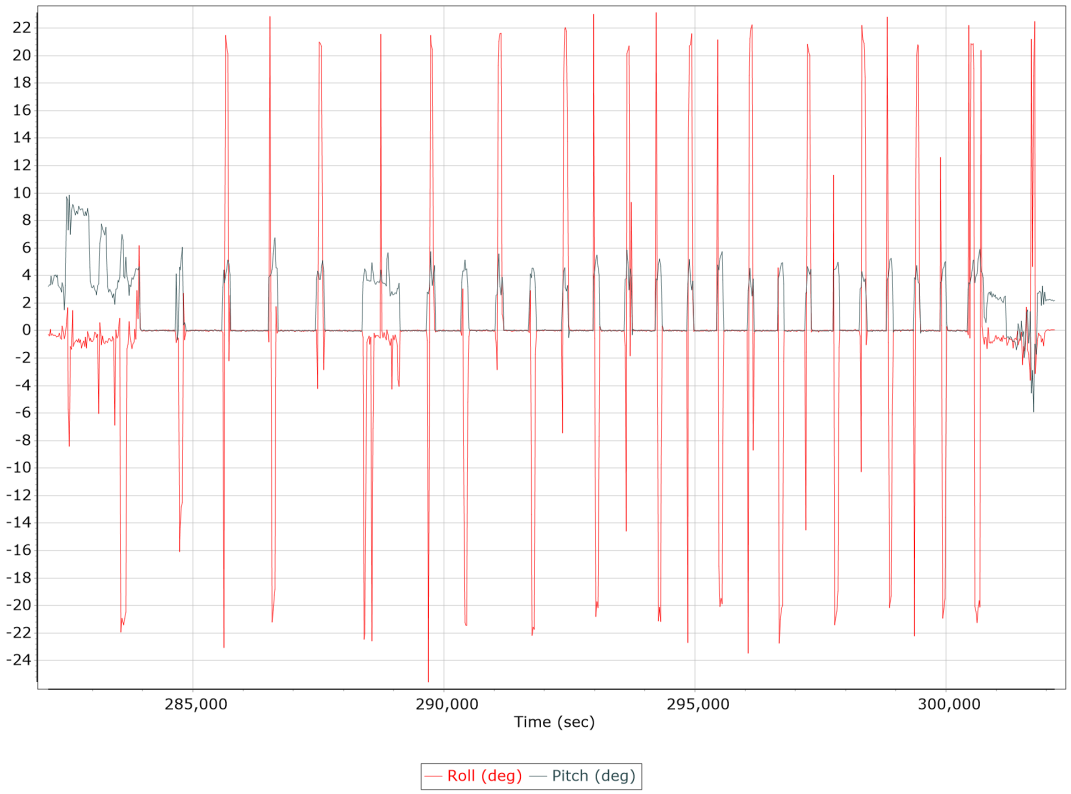
Top View



Altitude



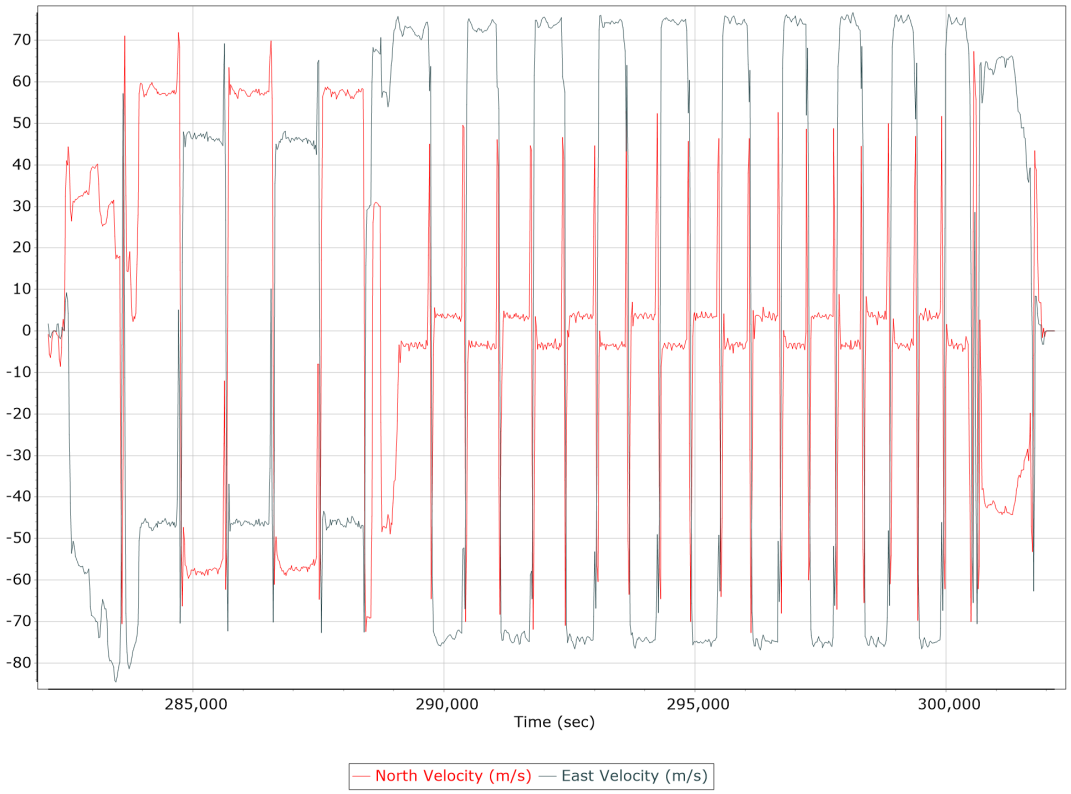
Roll/Pitch



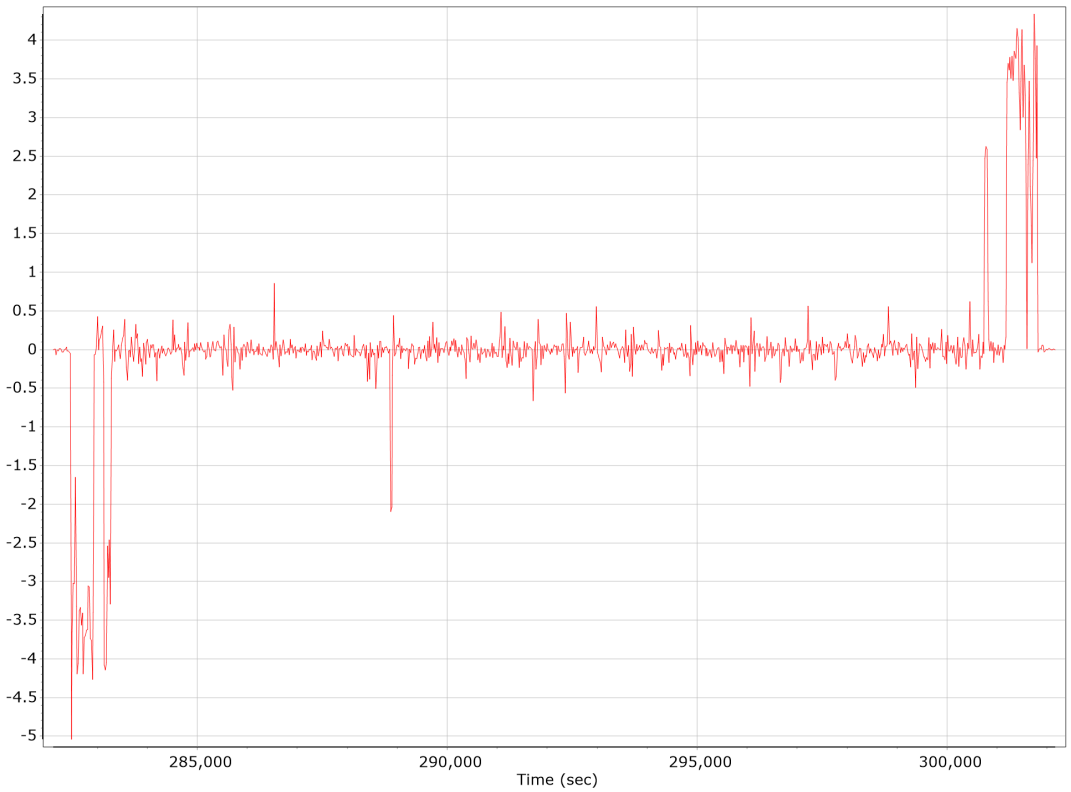
Heading



North/East Velocity



Down Velocity



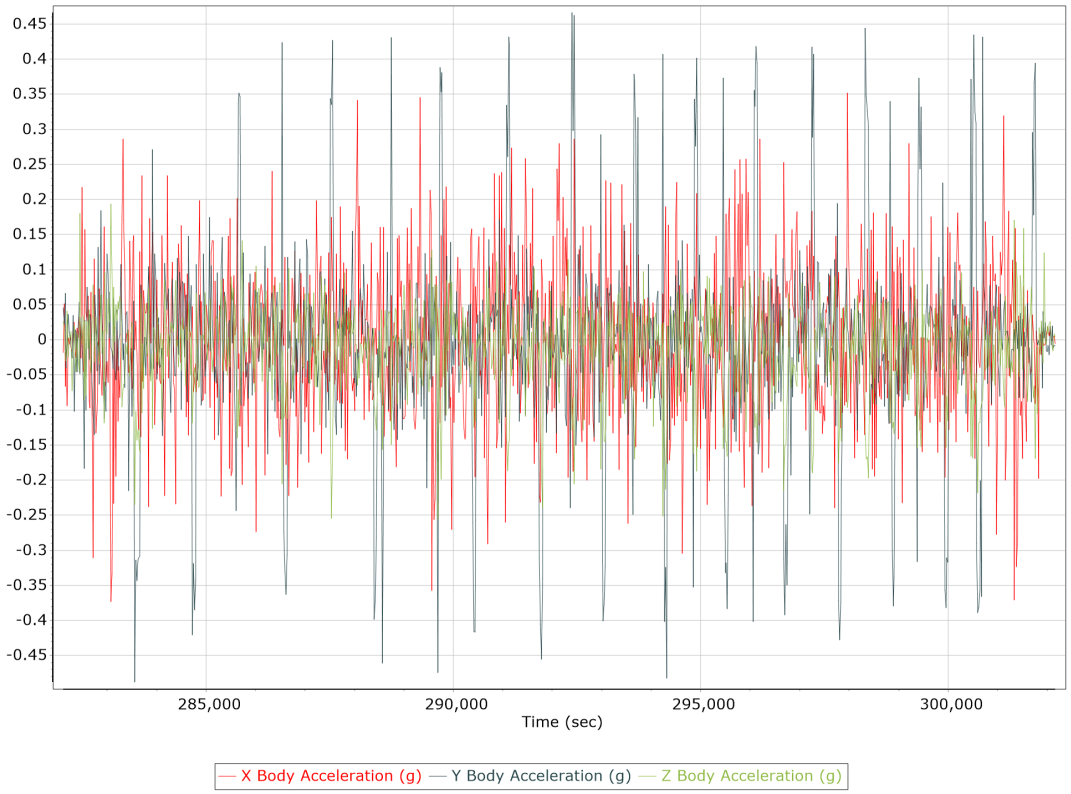
Total Speed



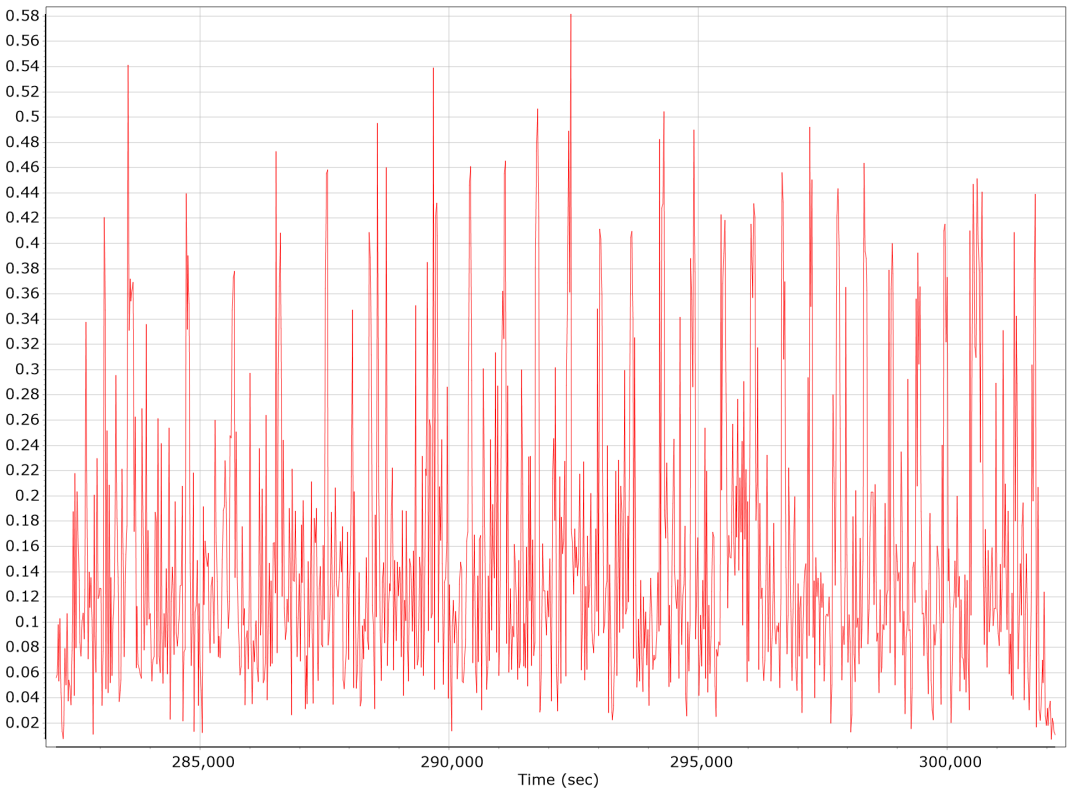
Ground Speed



Body Acceleration



Total Body Acceleration

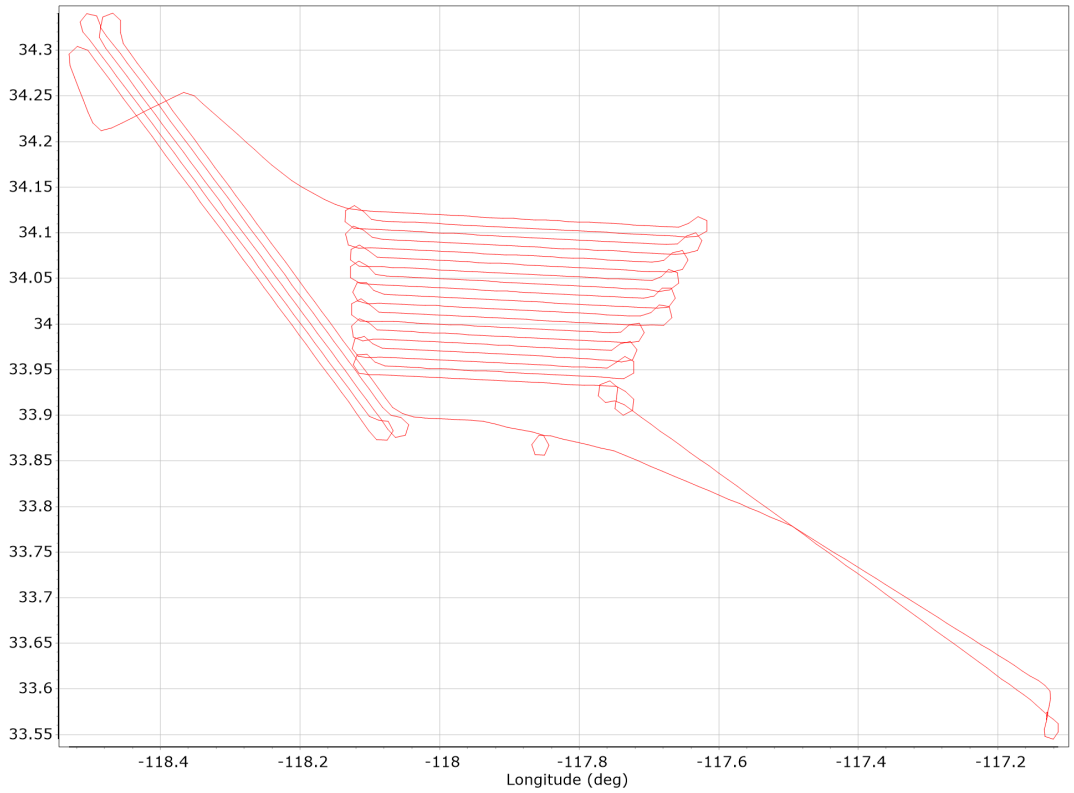


Body Angular Rate

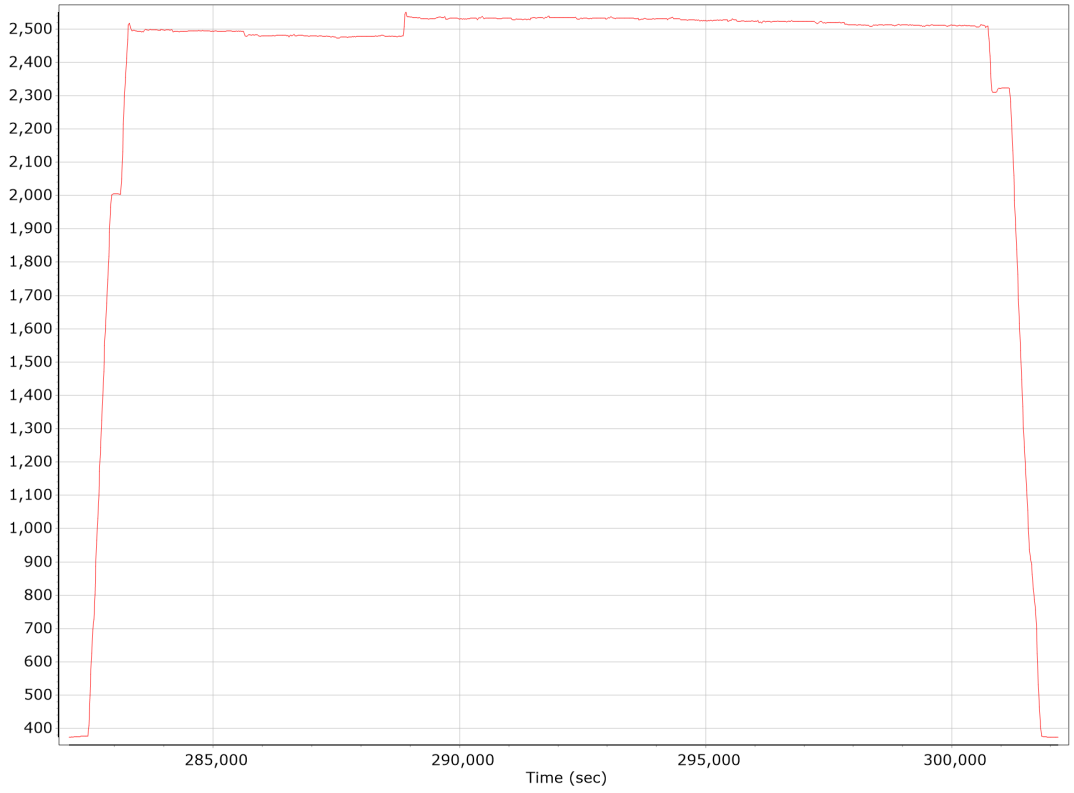


Forward Processed Trajectory Information

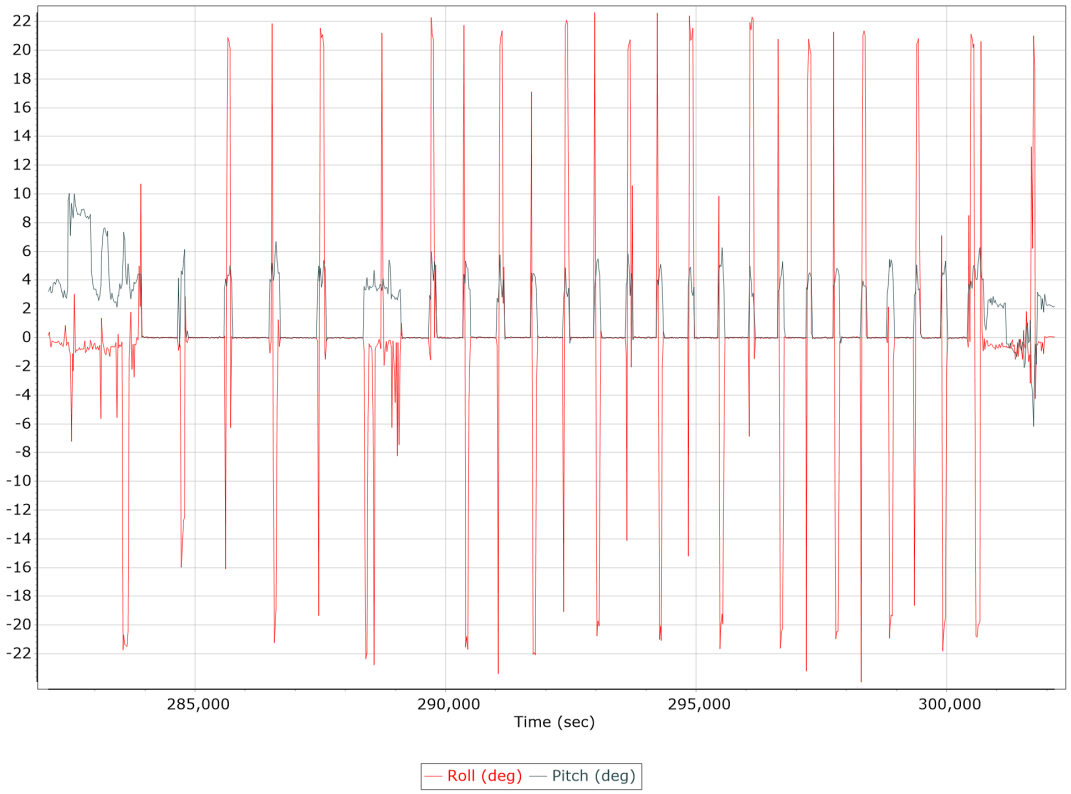
Top View



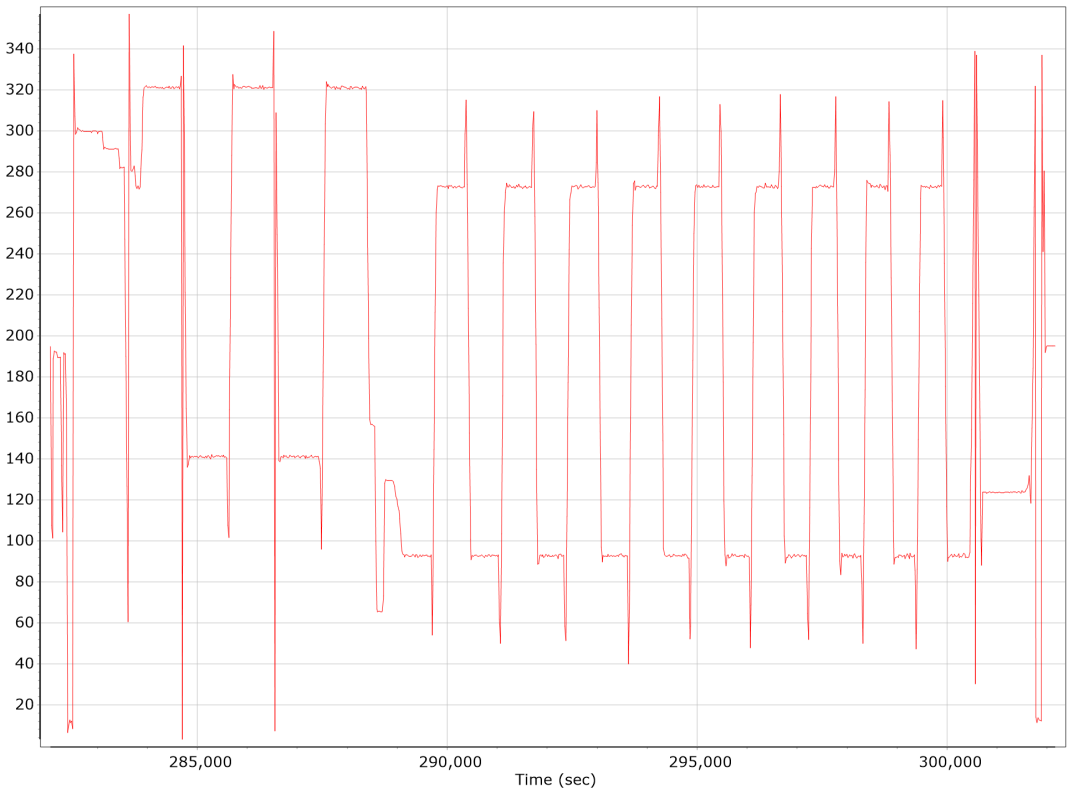
Altitude



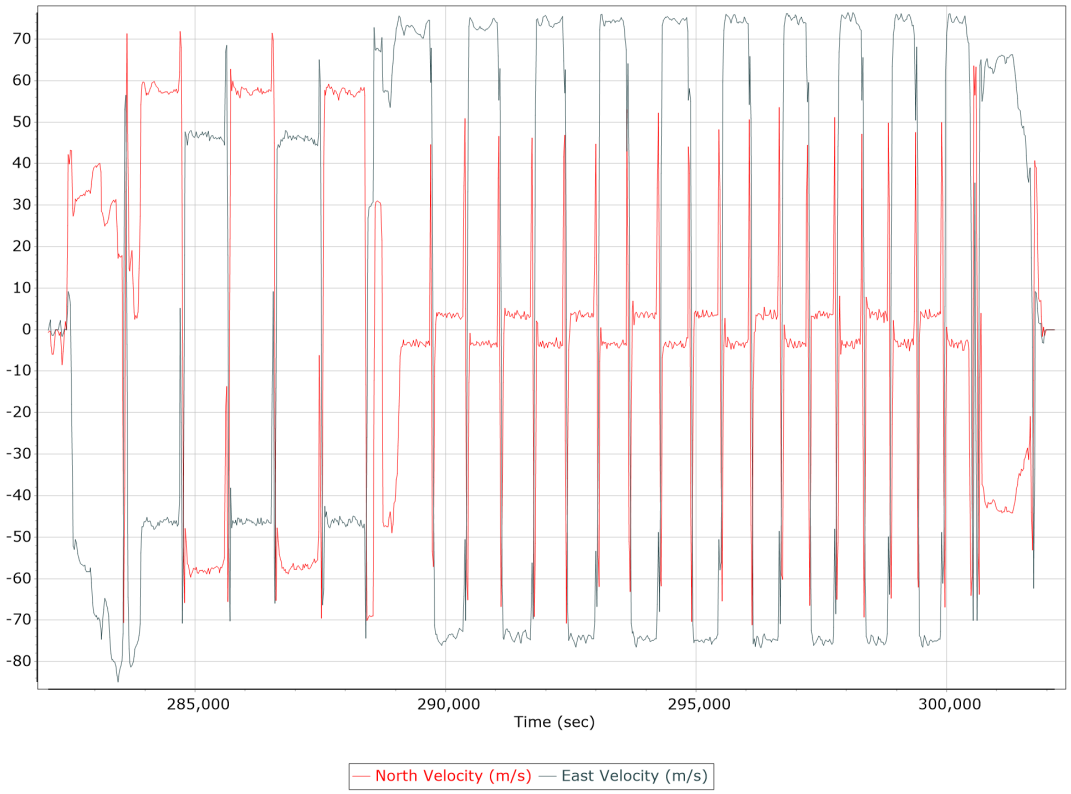
Roll/Pitch



Heading



North/East Velocity



Down Velocity



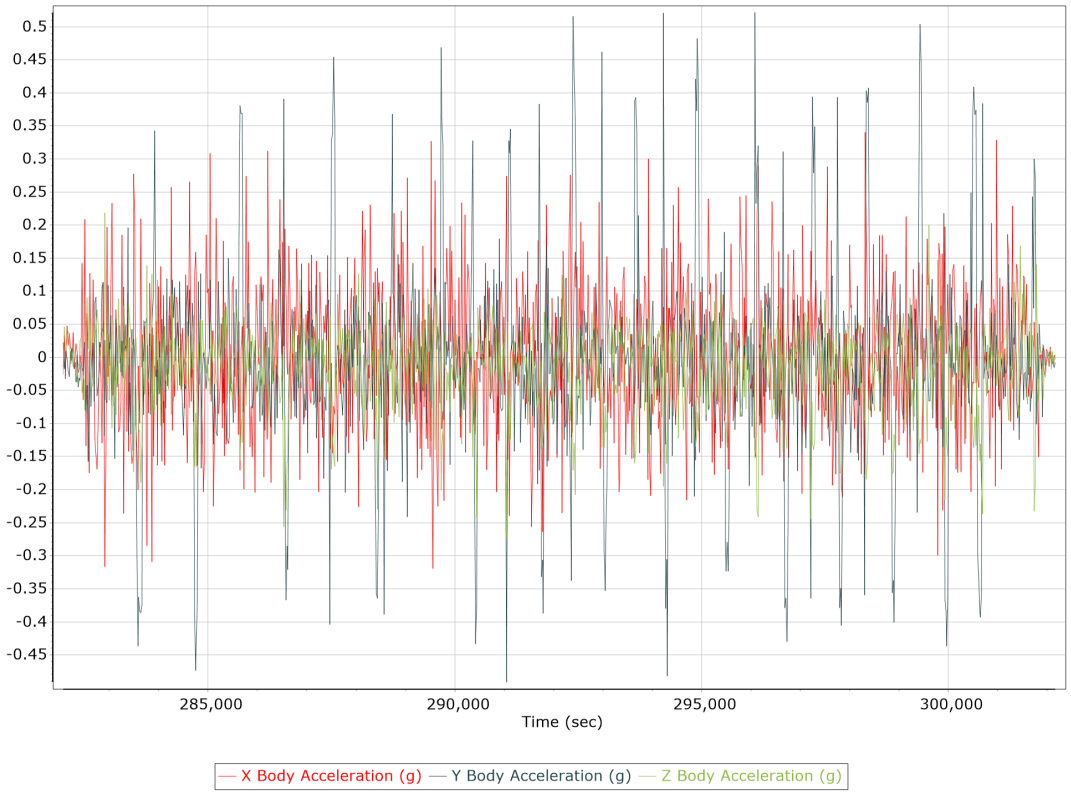
Total Speed



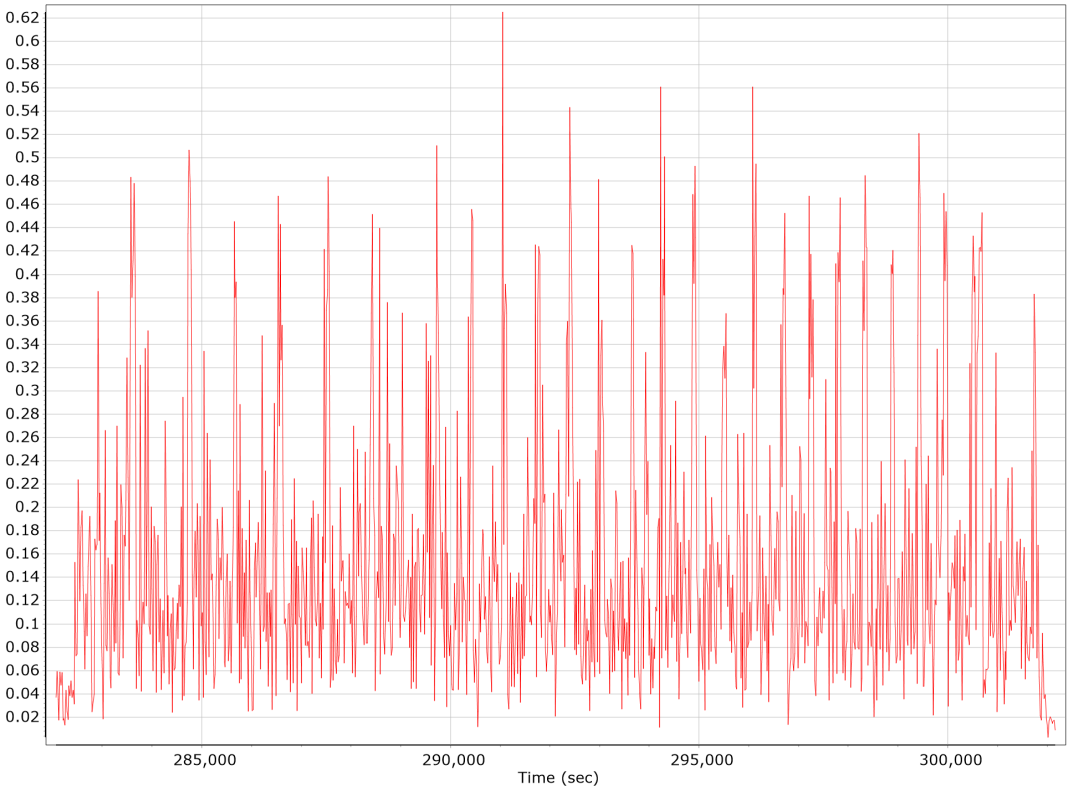
Ground Speed



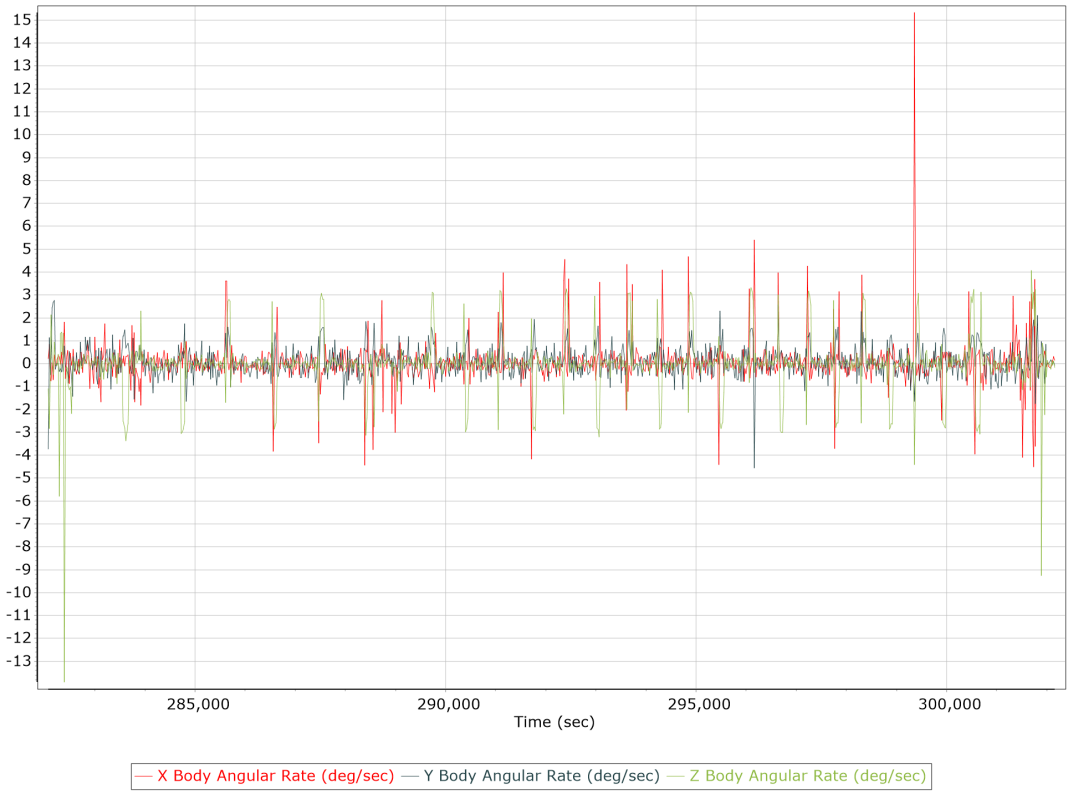
Body Acceleration



Total Body Acceleration



Body Angular Rate

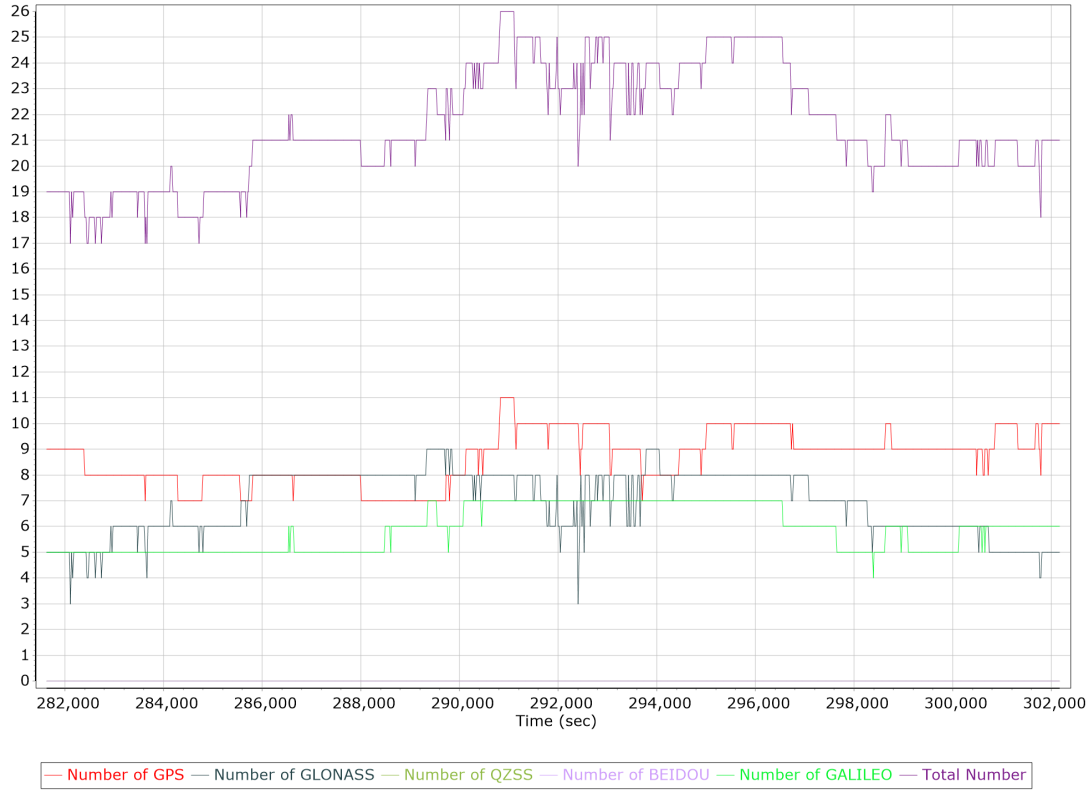


GNSS QC

GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	6	11	9
Number of GLONASS SV	0	9	7
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	4	7	6
Total number of SV	15	26	21
PDOP	1.00	1.76	1.18
QC Solution Gaps	0.00	0.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	20873.00	0.00	0.00
Percentage	100.00	0.00	0.00

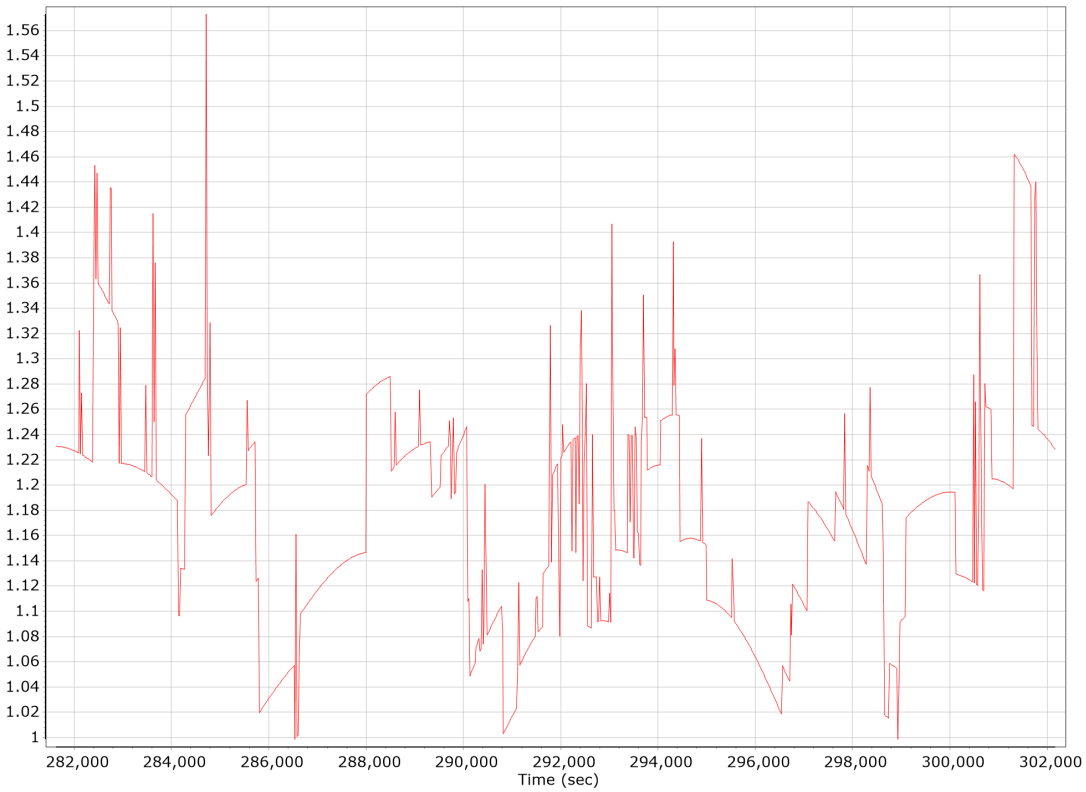
Num SVs in solution



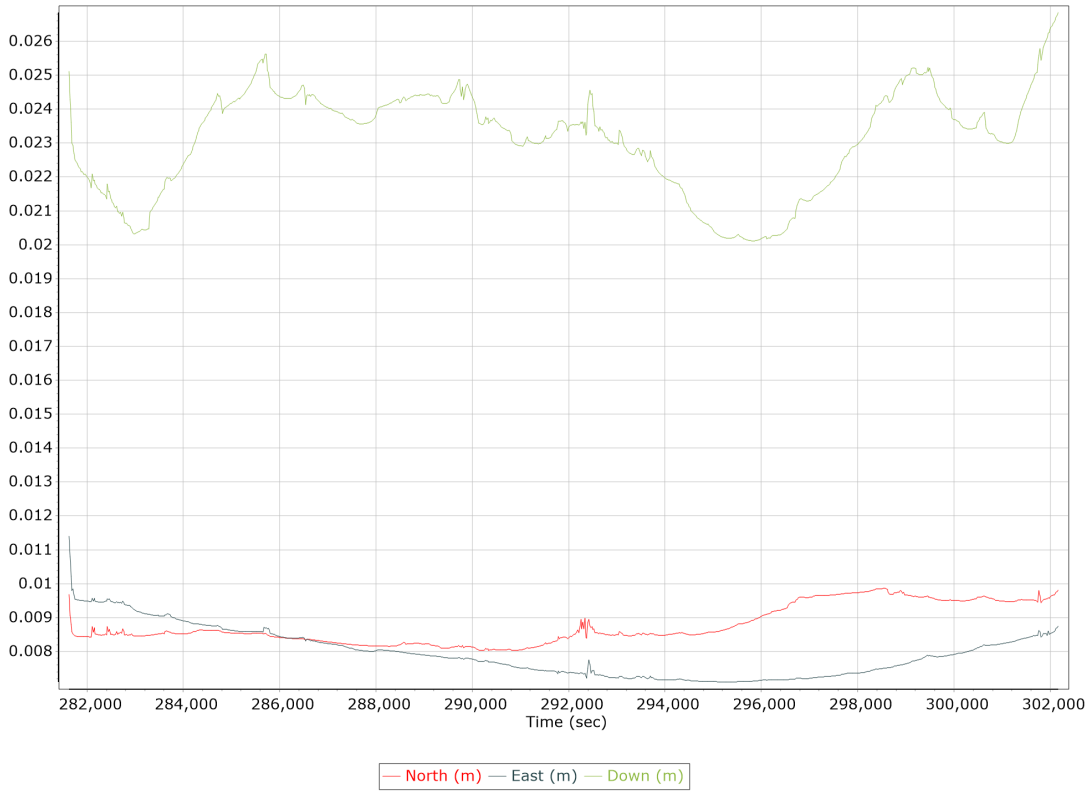
Forward/Reverse Separation



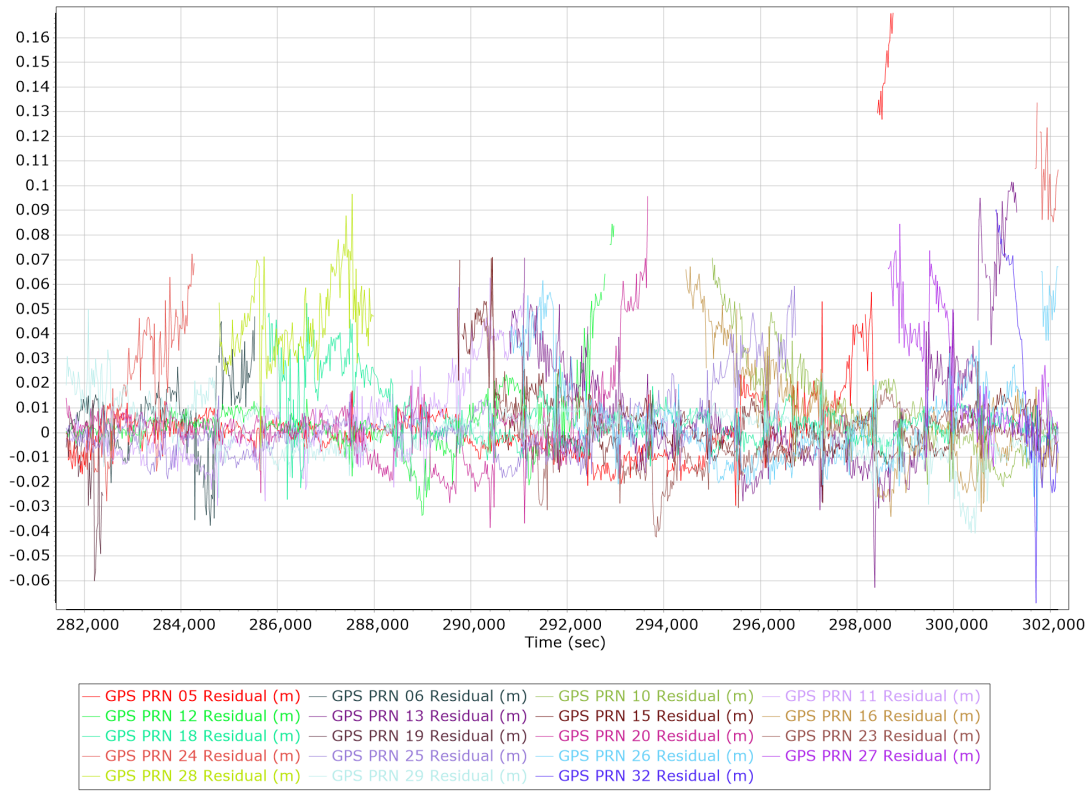
PDOP



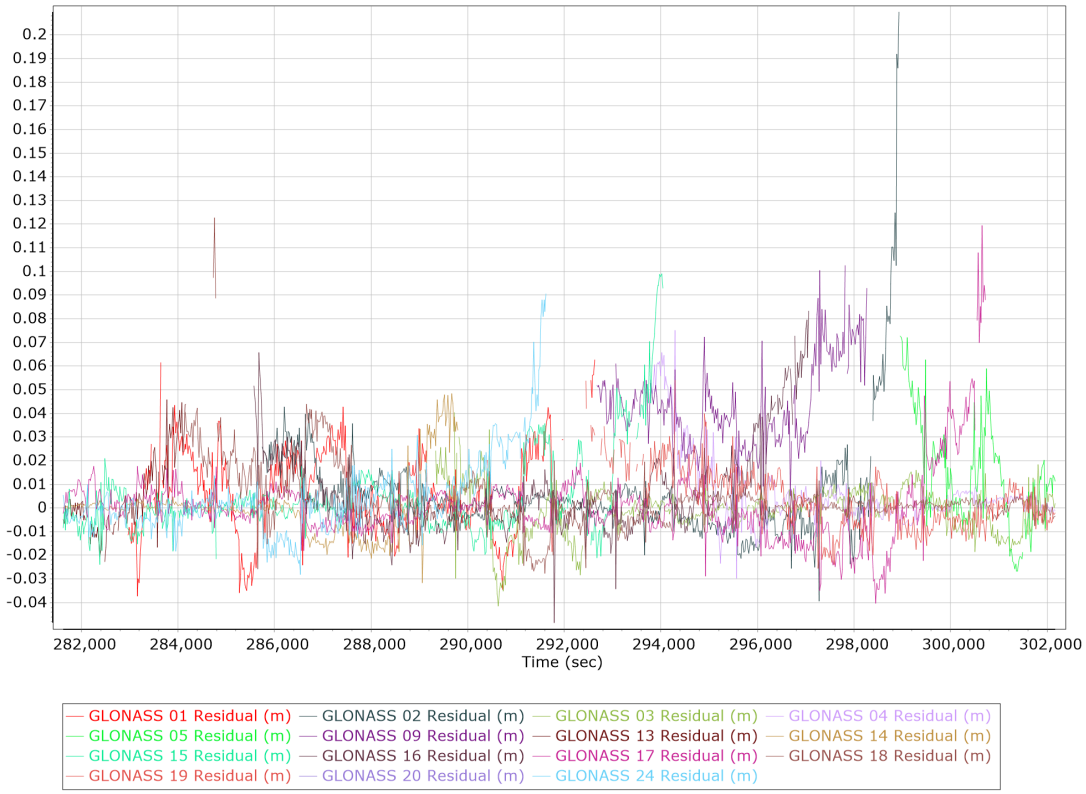
Estimated Position Accuracy



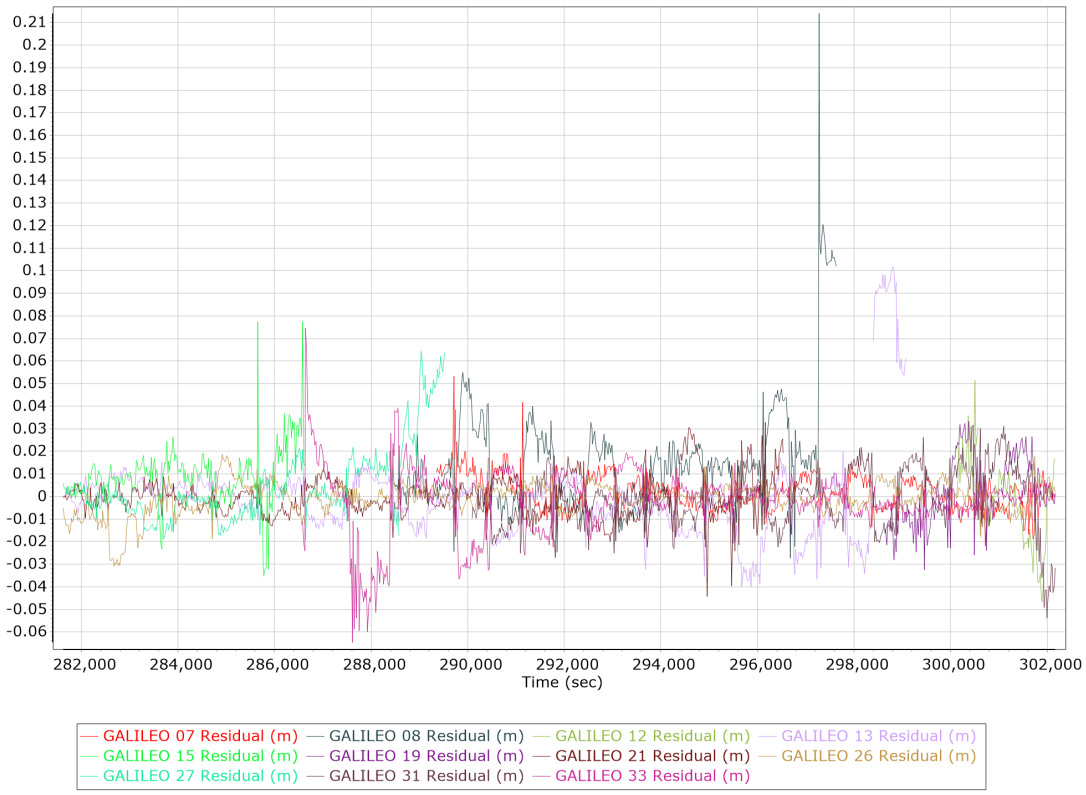
GPS Residuals



GLONASS Residuals



GALILEO Residuals



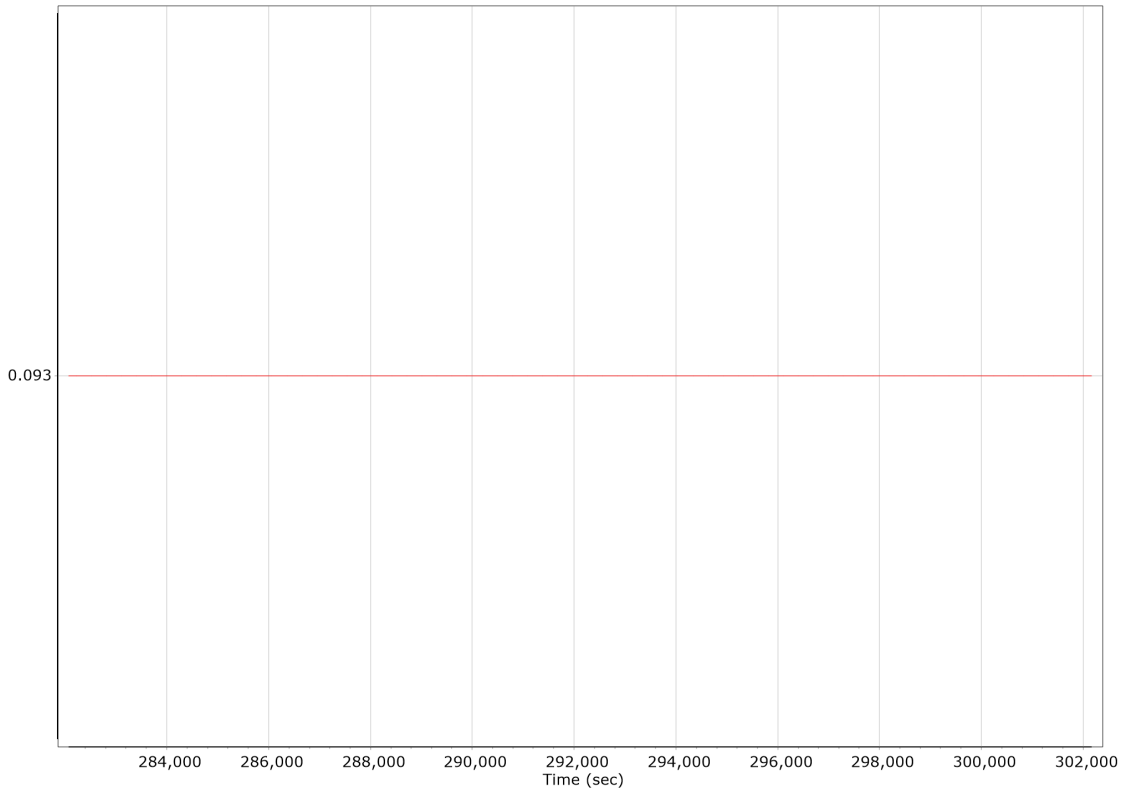
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	281294.000 (11/22/2023 6:08:14 AM)		
Processing end time	302179.000 (11/22/2023 11:56:19 AM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.093	0.062	-1.287
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

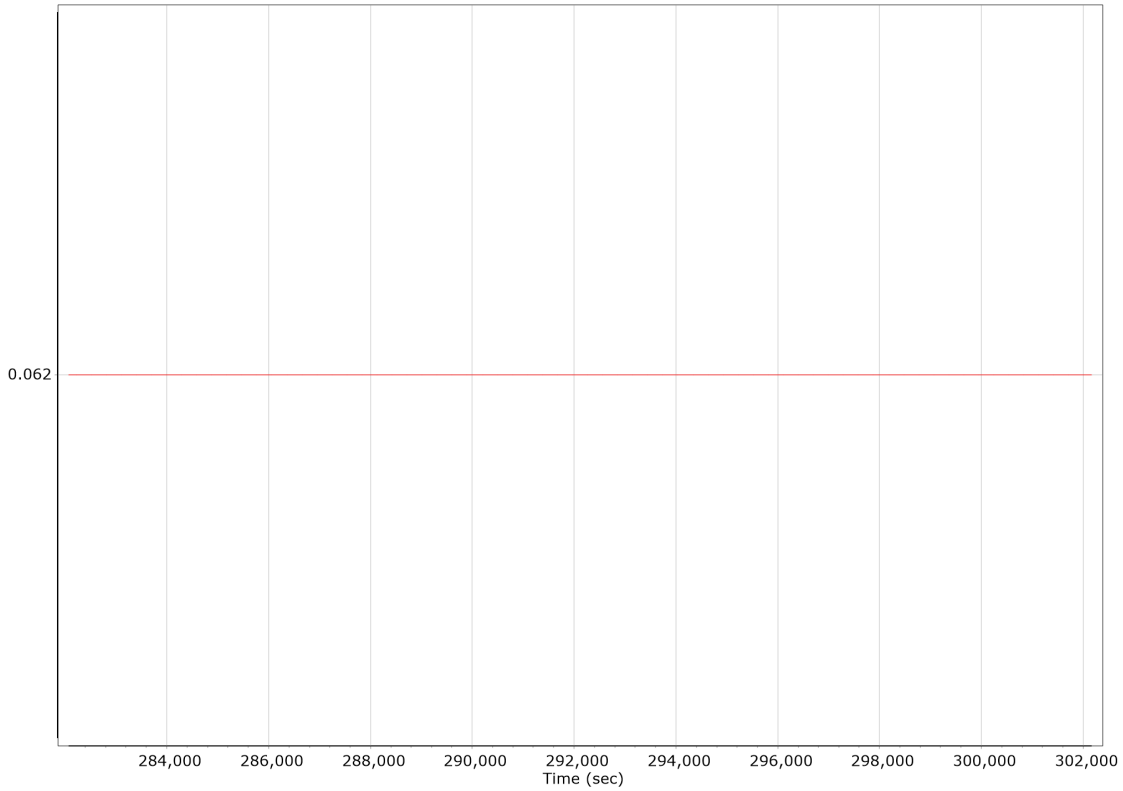
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

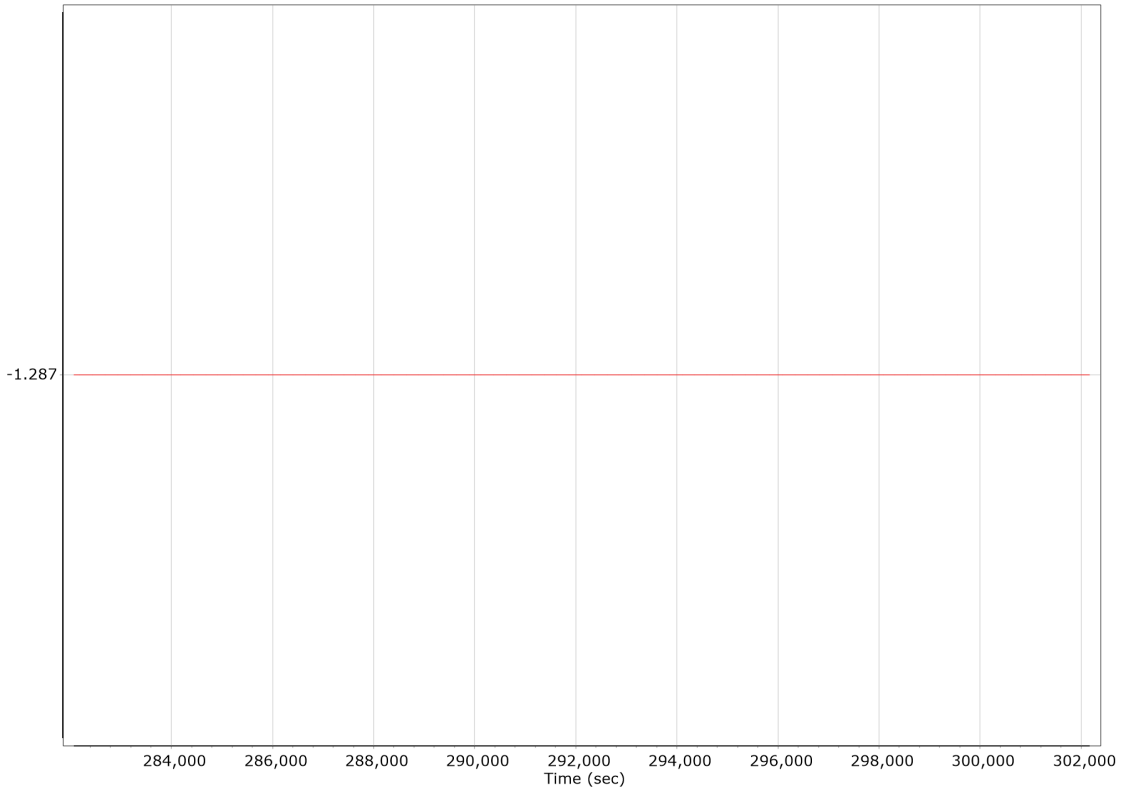
X Reference-Primary GNSS Lever Arm (m)



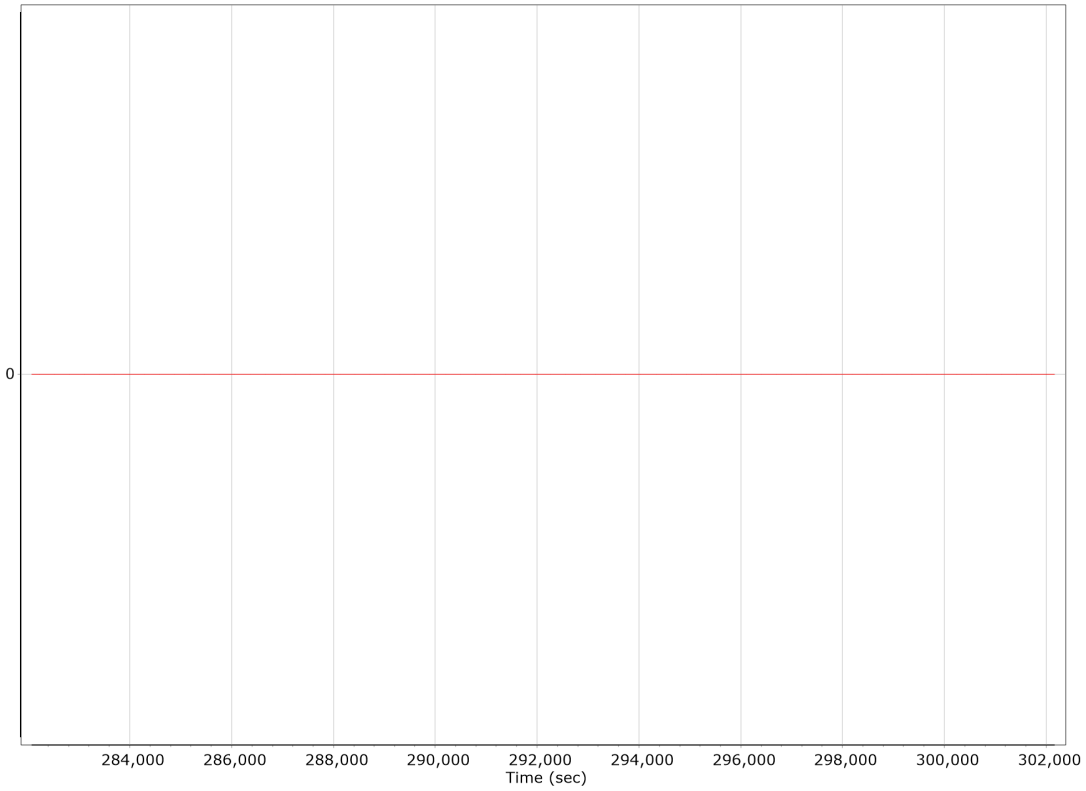
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



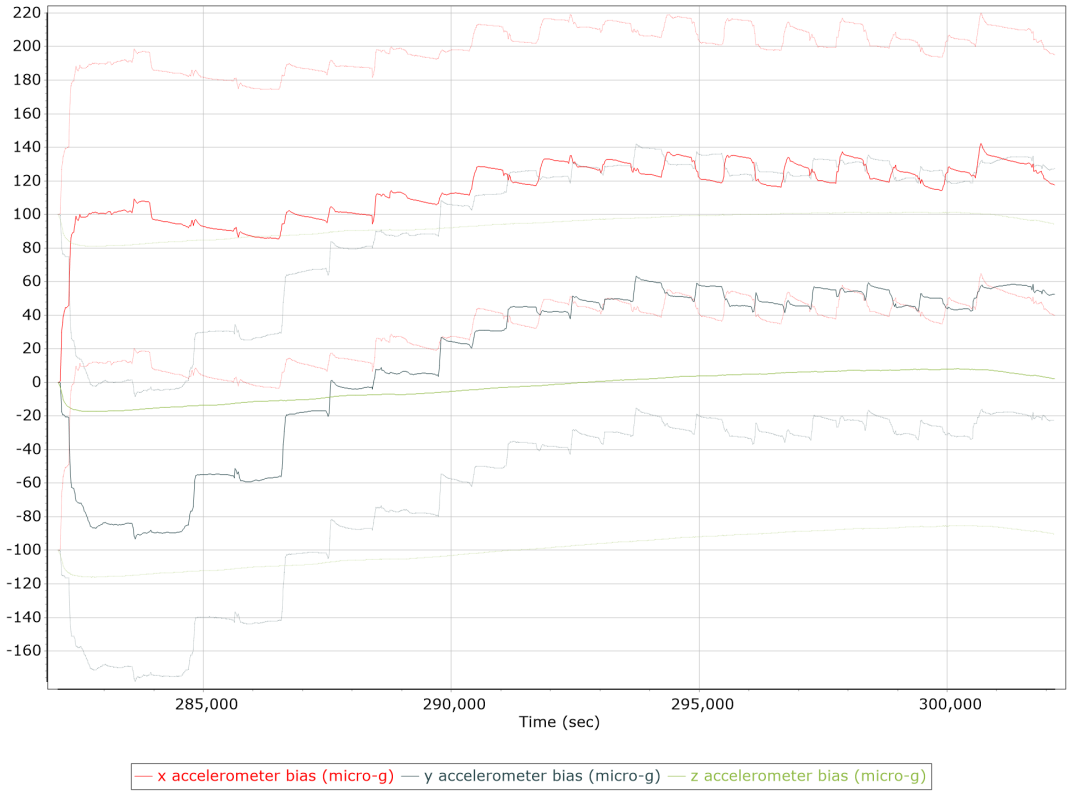
Reference-Primary GNSS Lever Arm Figure of Merit



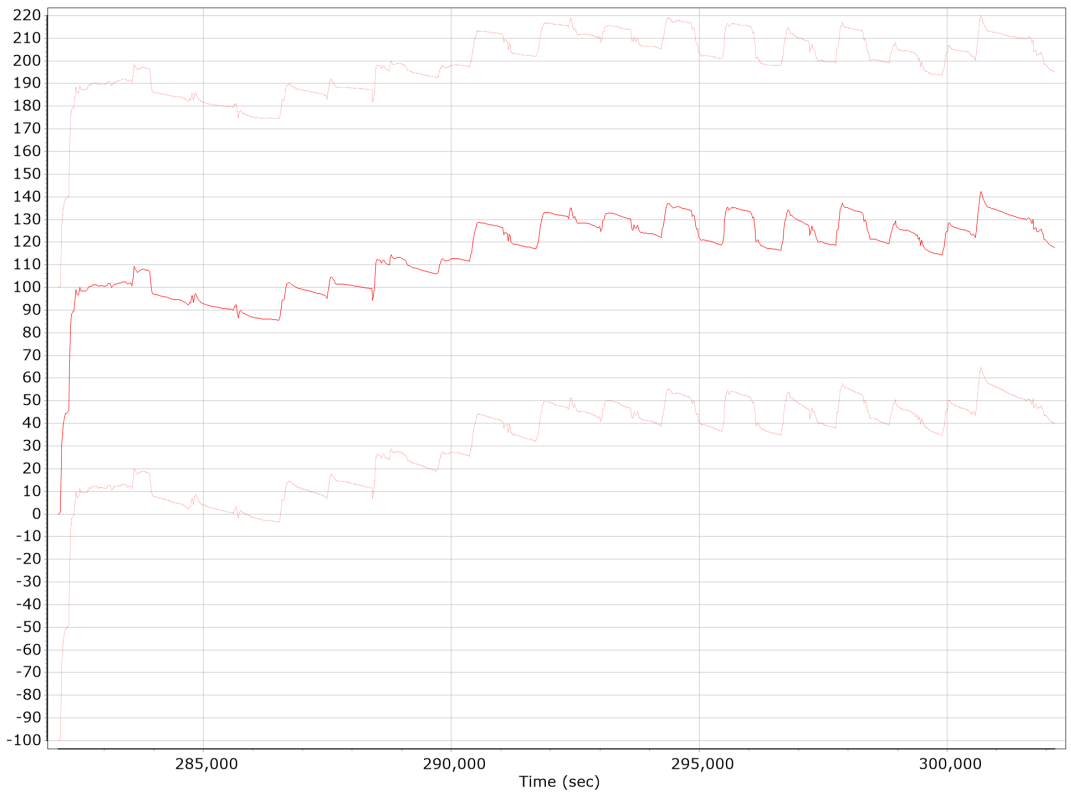
IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

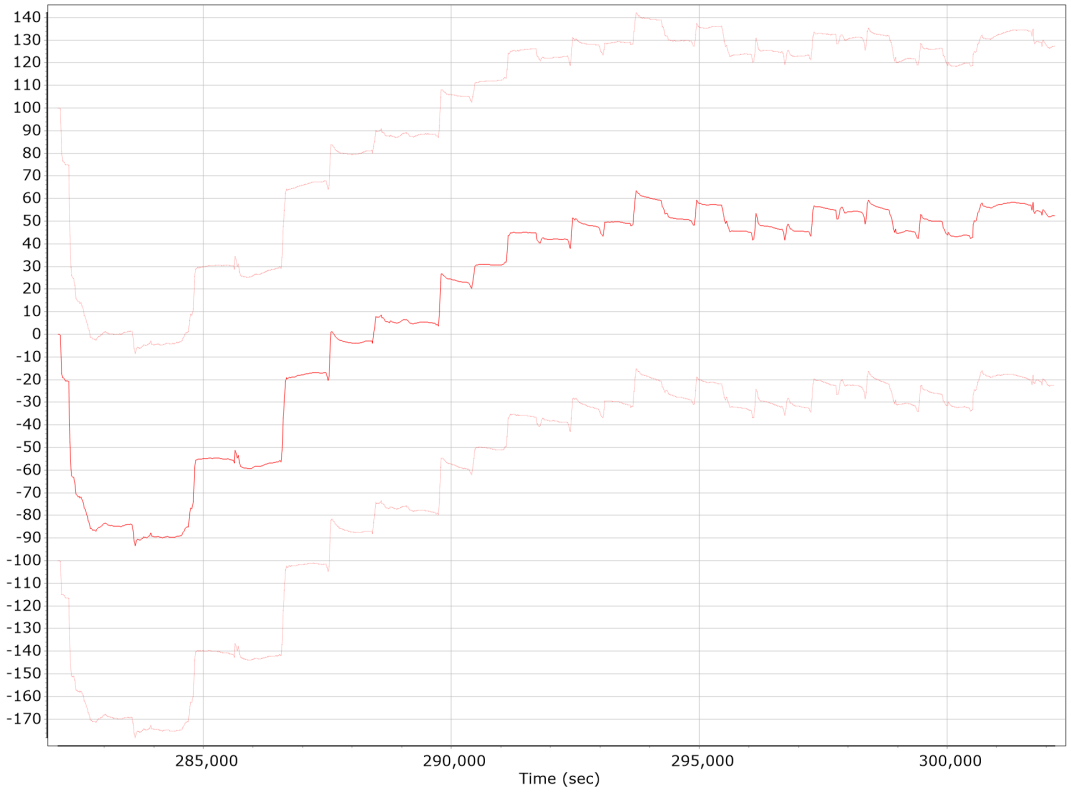
Accelerometer Bias (micro-g)



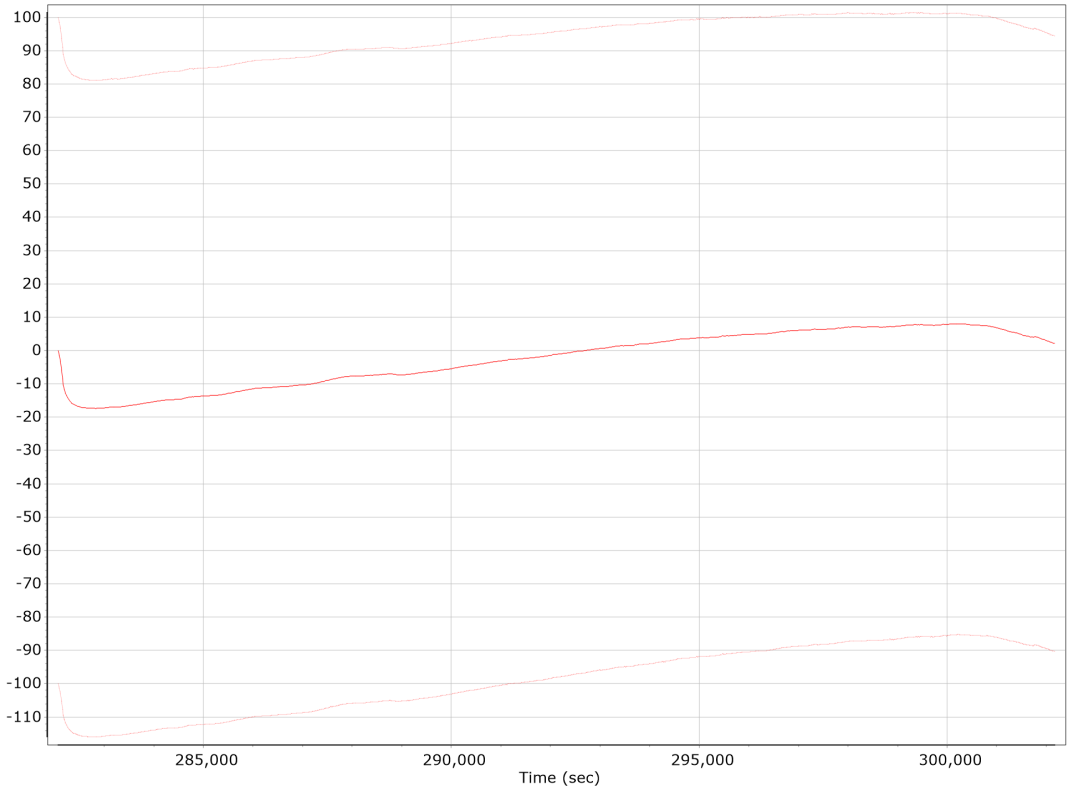
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



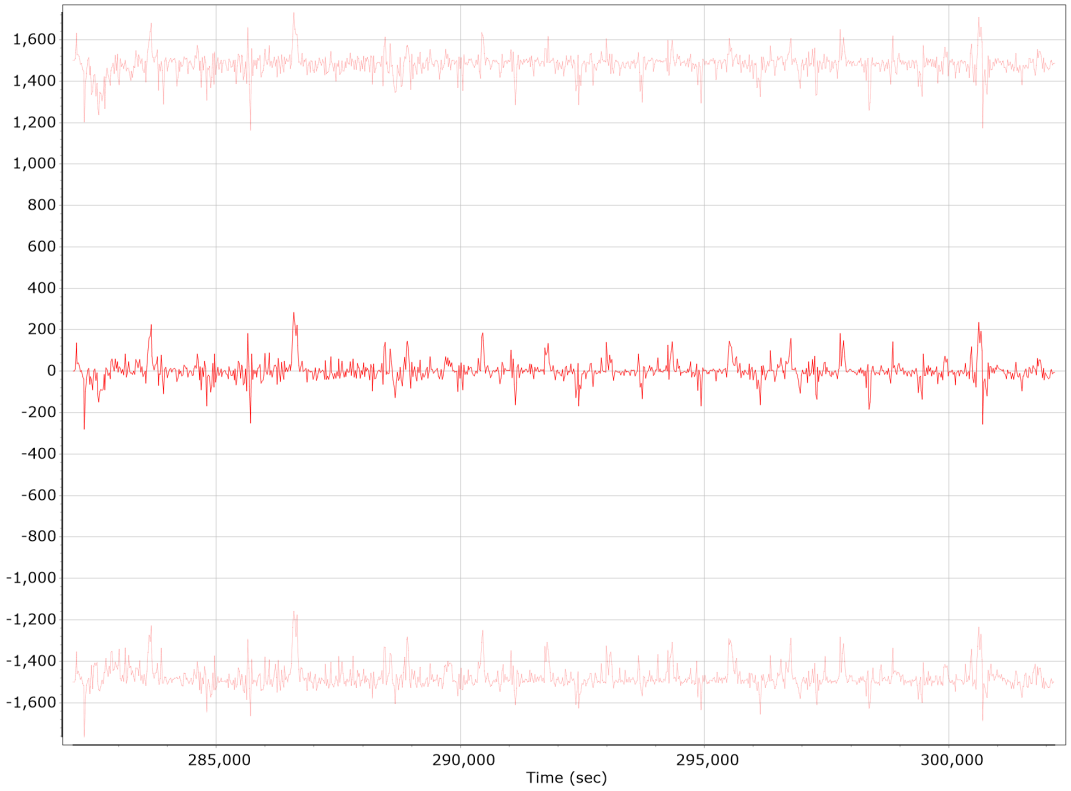
Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



X Accelerometer Scale Error (ppm)



Y Accelerometer Scale Error (ppm)



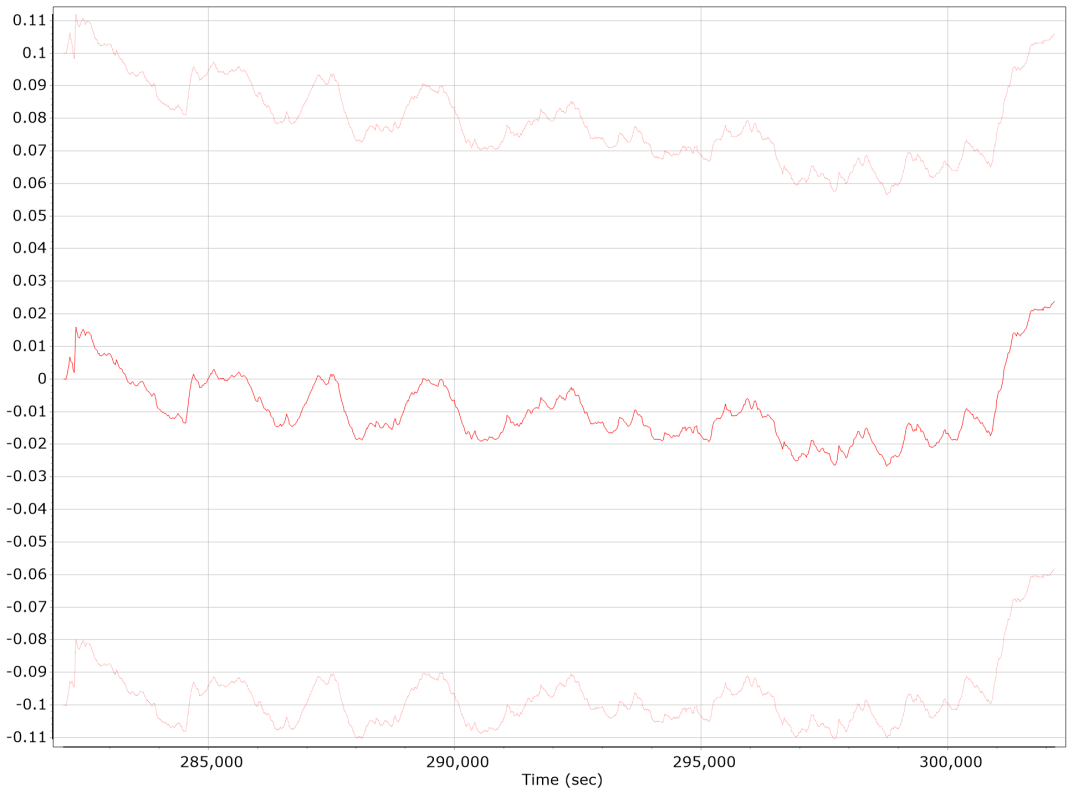
Z Accelerometer Scale Error (ppm)



Gyro Bias (deg/h)



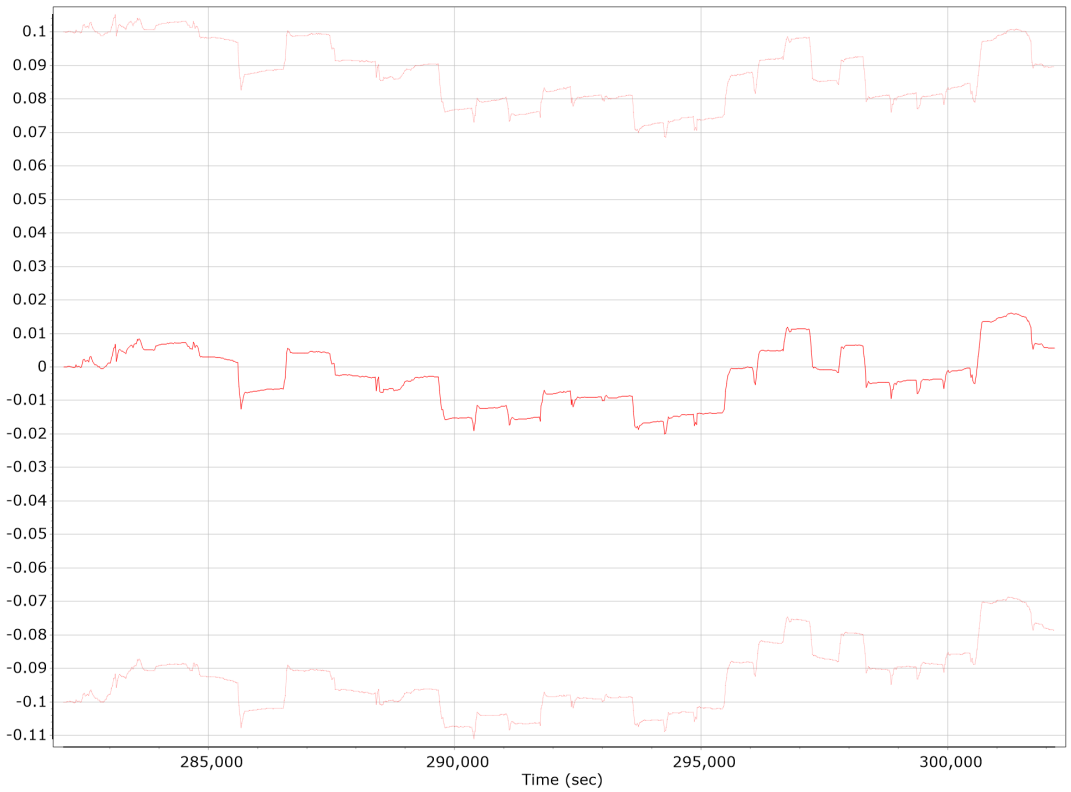
X Gyro Bias (deg/h)



Y Gyro Bias (deg/h)



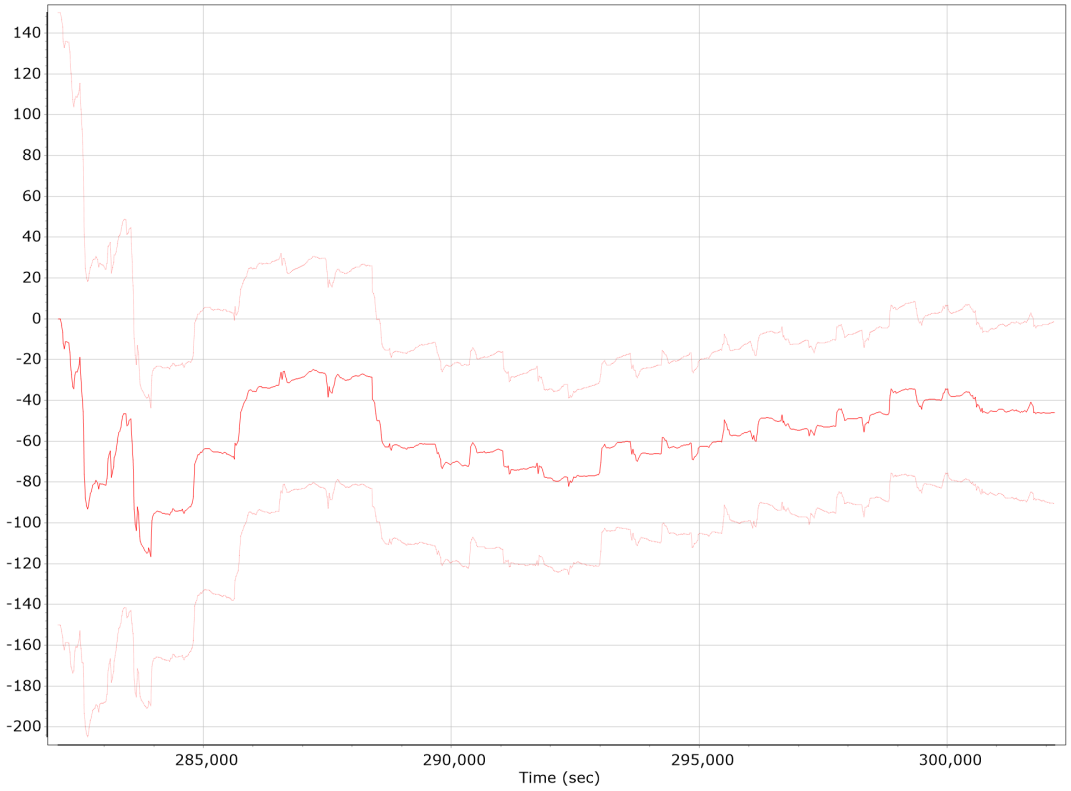
Z Gyro Bias (deg/h)



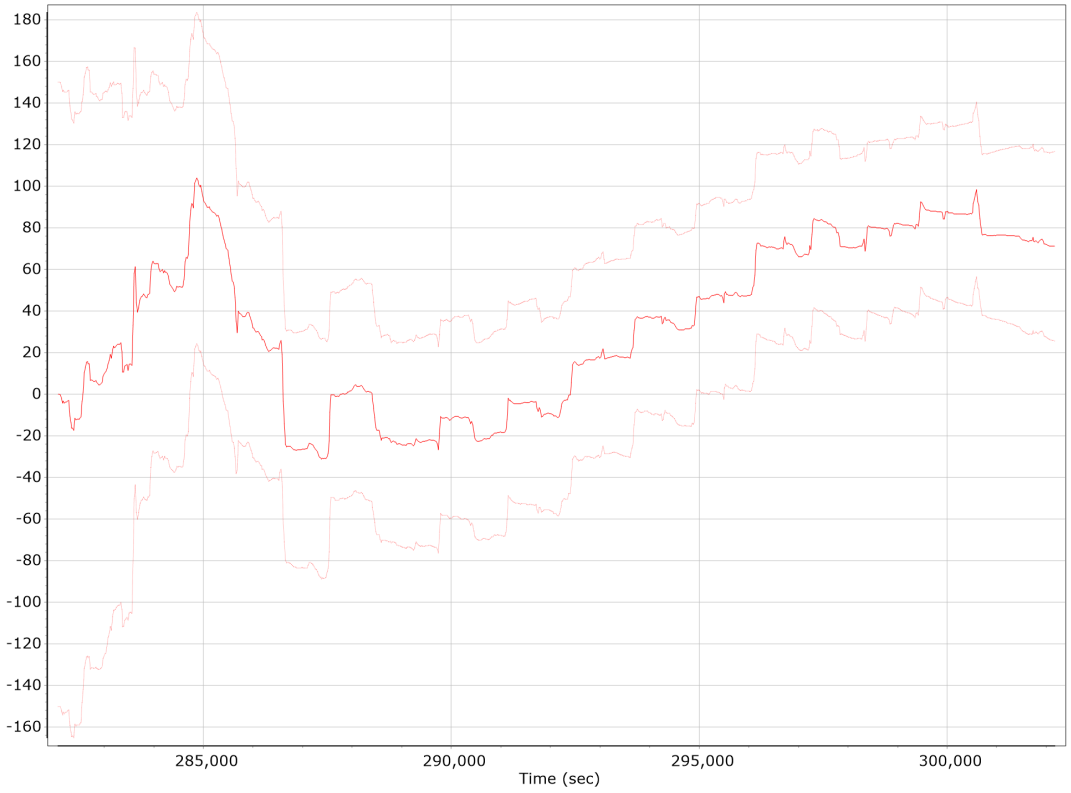
Gyro Scale Error (ppm)



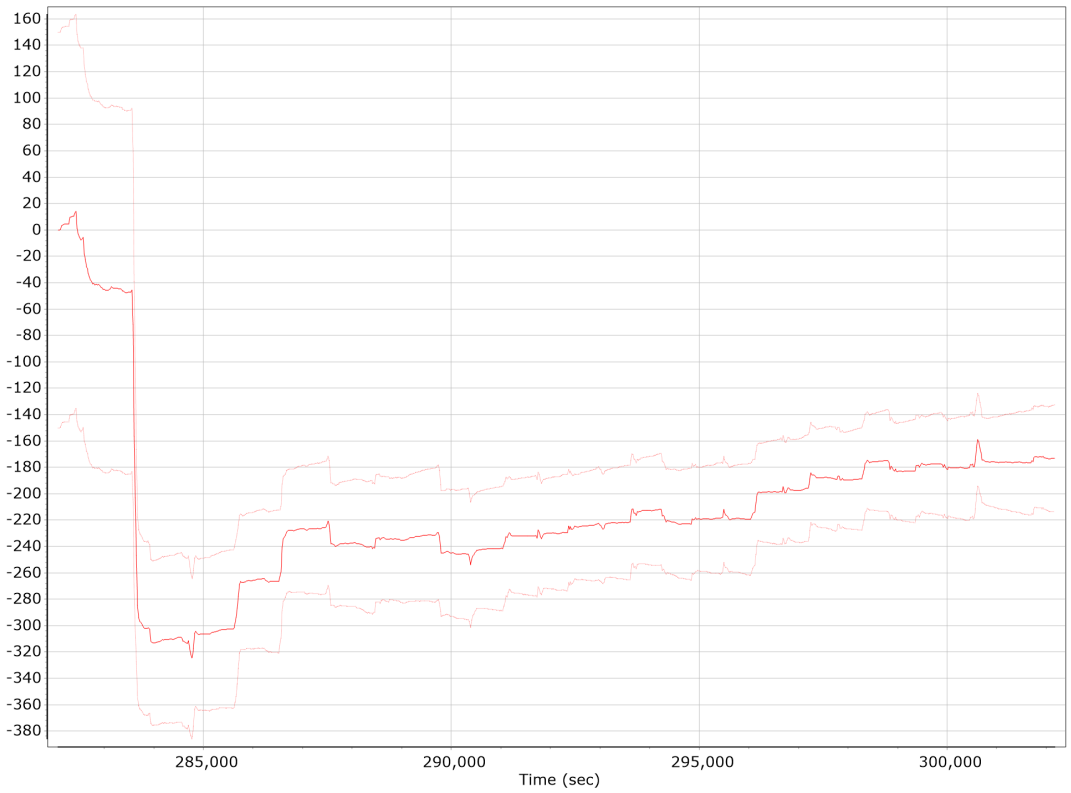
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)

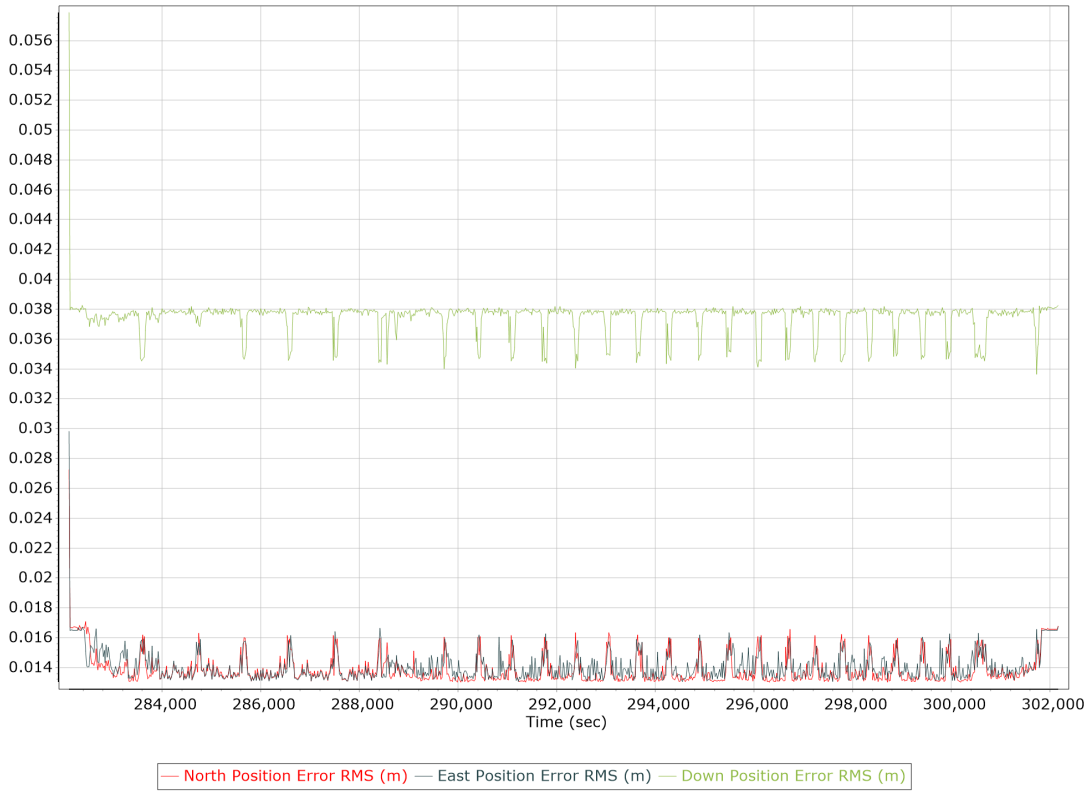


Z Gyro Scale Error (ppm)

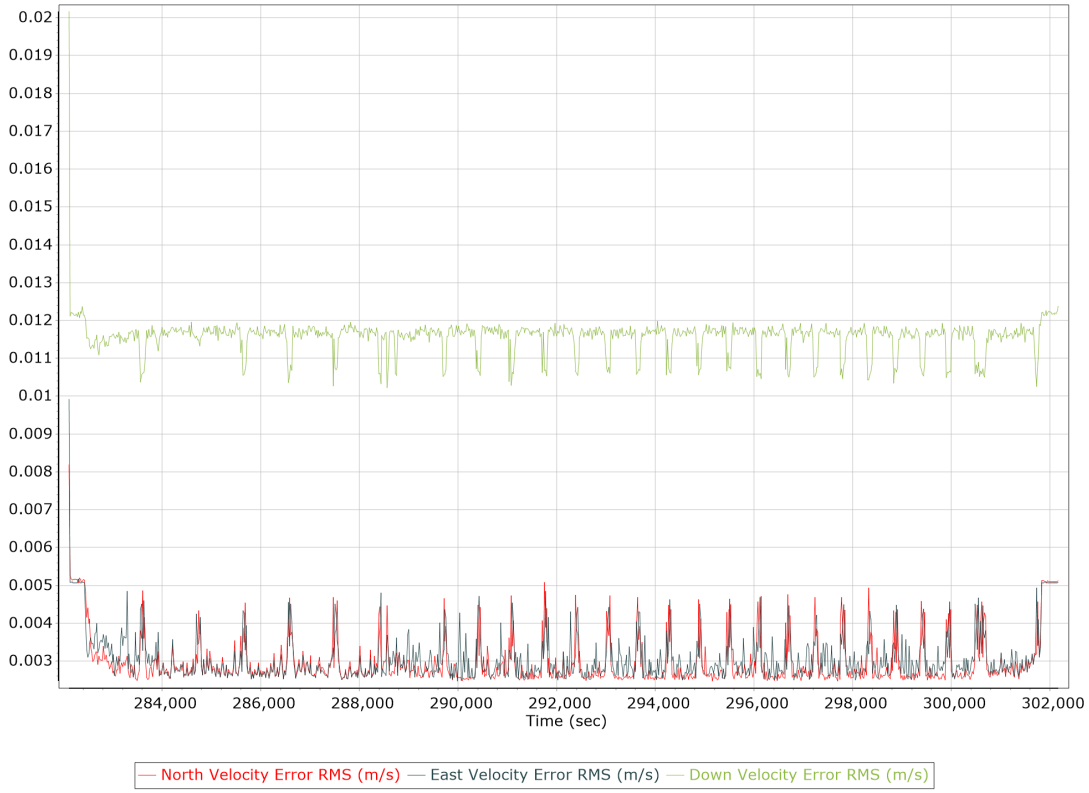


Smoothed Performance Metrics

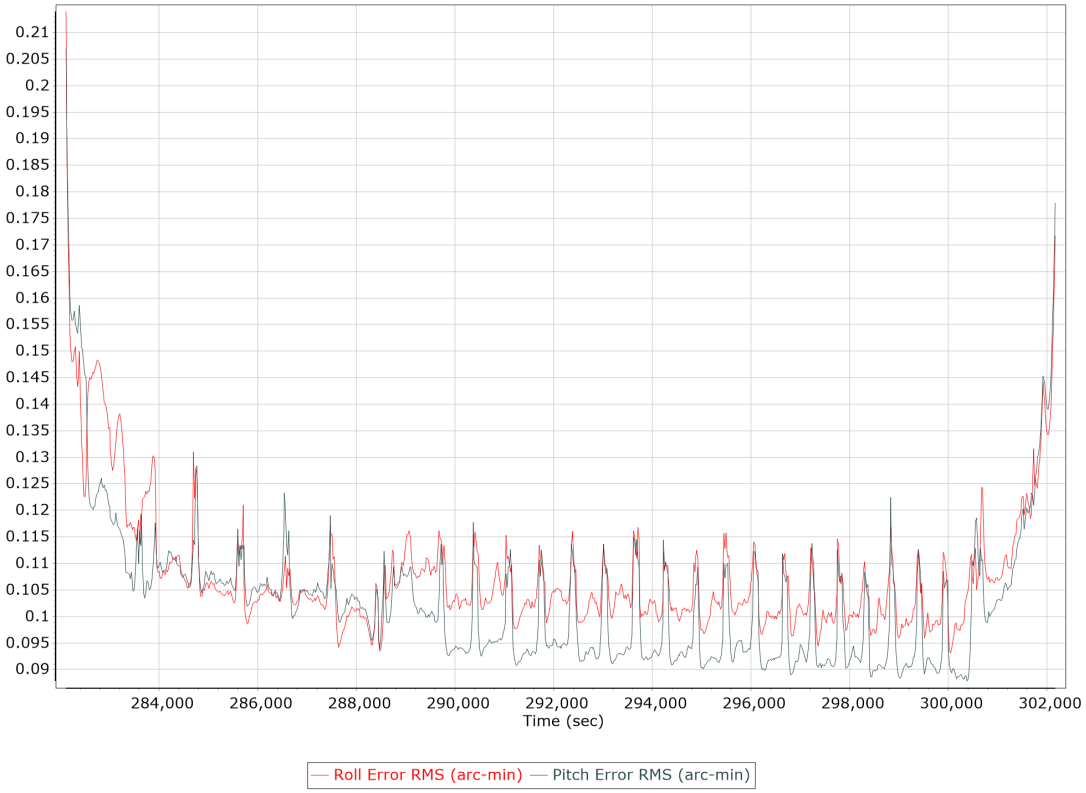
Position Error RMS (m)



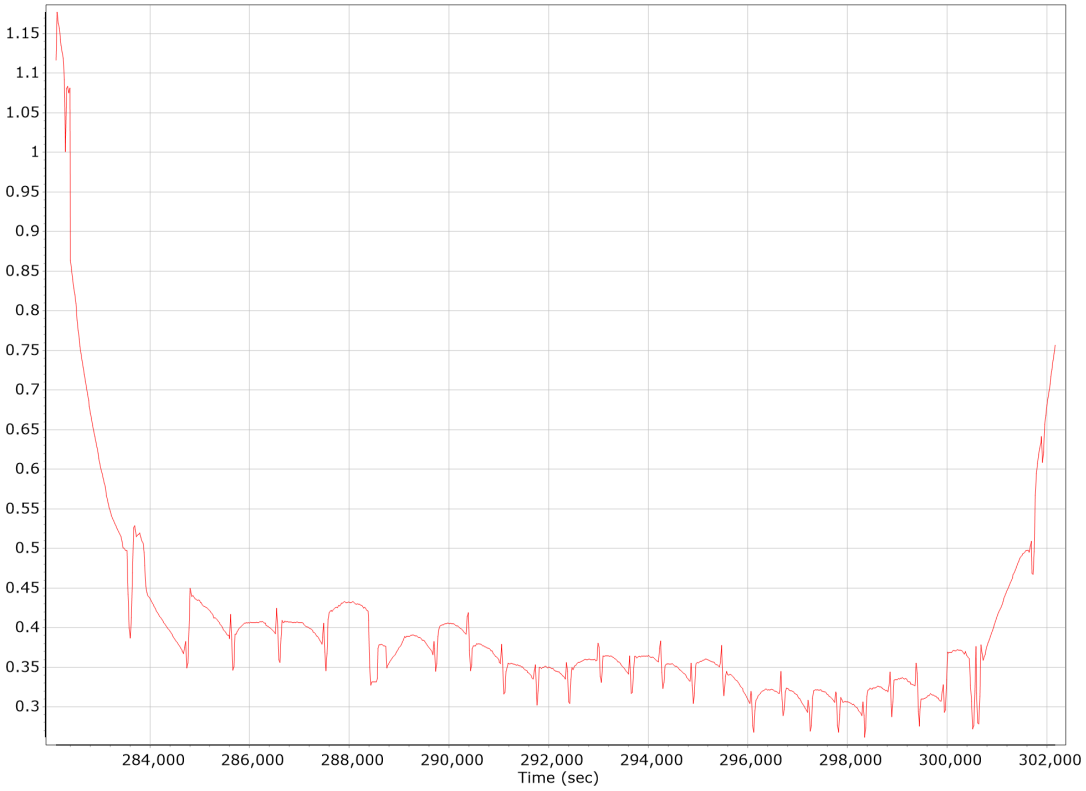
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)



Heading Error RMS (arc-min)



Forward Processed Performance Metrics

Position Error RMS (m)



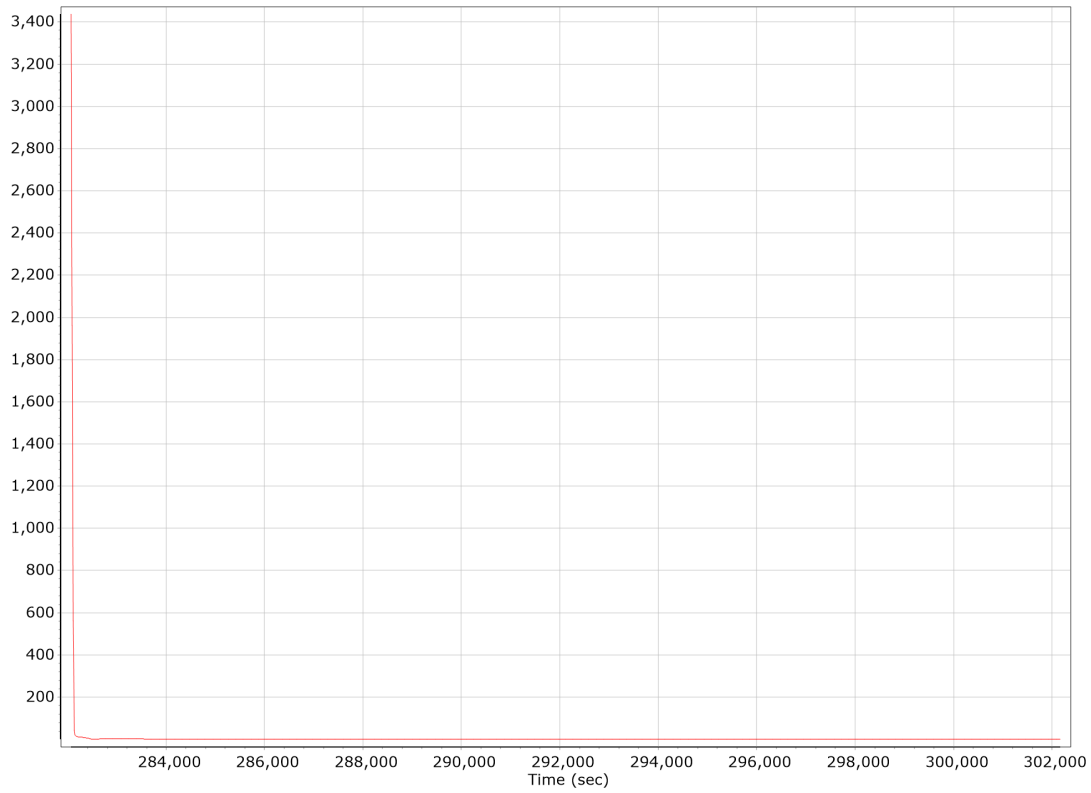
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

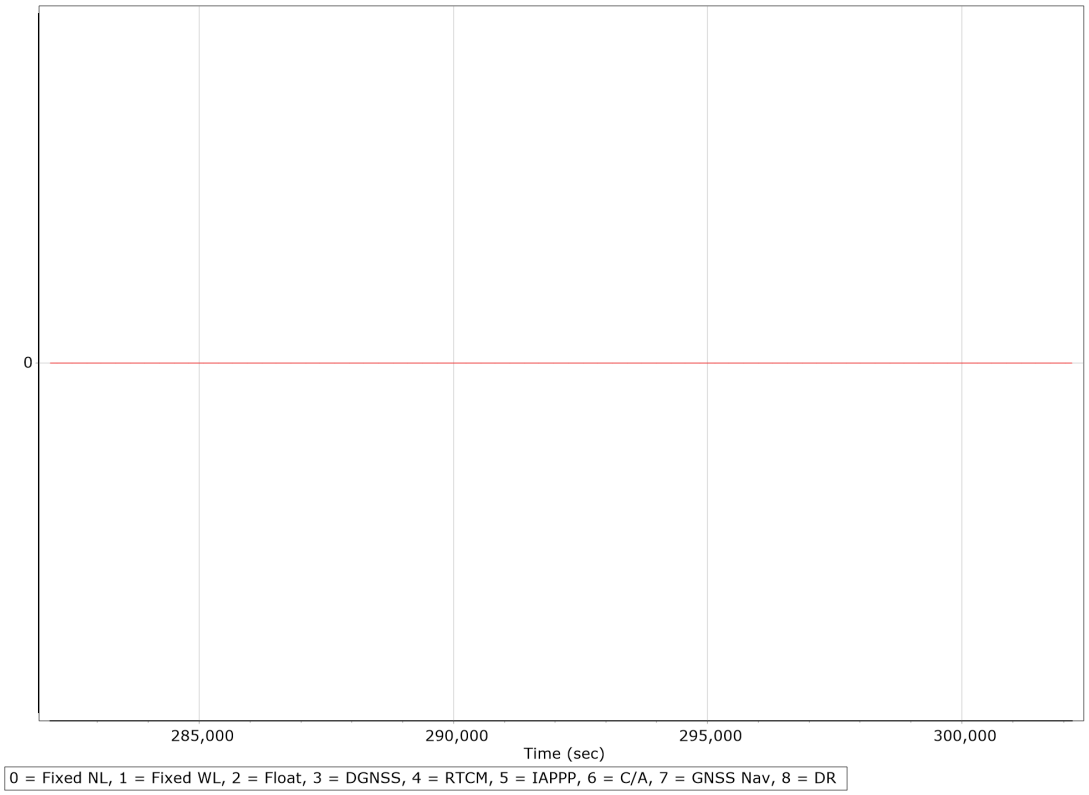


Heading Error RMS (arc-min)



Forward Processed Solution Status

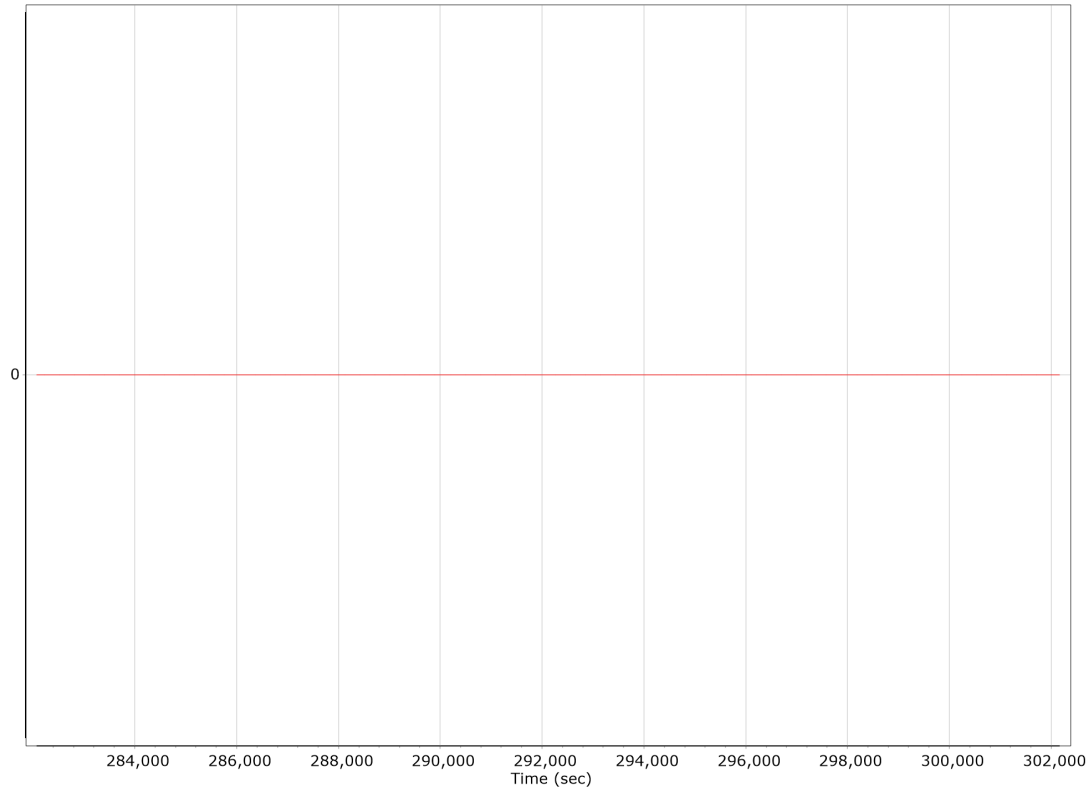
Processing Mode



Number of Satellites



Baseline Length



General Information

Mission Information

Project name	11232023A_3546
Processing date	2023-11-28 17:14:46
Mission date	2023-11-23 08:19:23
Mission duration	01:45:47.573
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N9922
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
231123_081904_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm3270.23g	GLONASS Broadcast Ephemeris
Ephm3270.23n	GPS Broadcast Ephemeris

Output Files

Filename	File type
sbet_11232023A_3546.out	SBET Trajectory File

Rover Data Summary

First raw data file	231123_081904_INS-GPS_1.raw		
Last raw data file	231123_081904_INS-GPS_1.raw		
Start GPS week	2289		
Start time	375544.082 (11/23/2023 8:19:04 AM)		
End time	381891.655 (11/23/2023 10:04:51 AM)		
Start of fine alignment	375776.045 (11/23/2023 8:22:56 AM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.205	0.058	-1.282
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

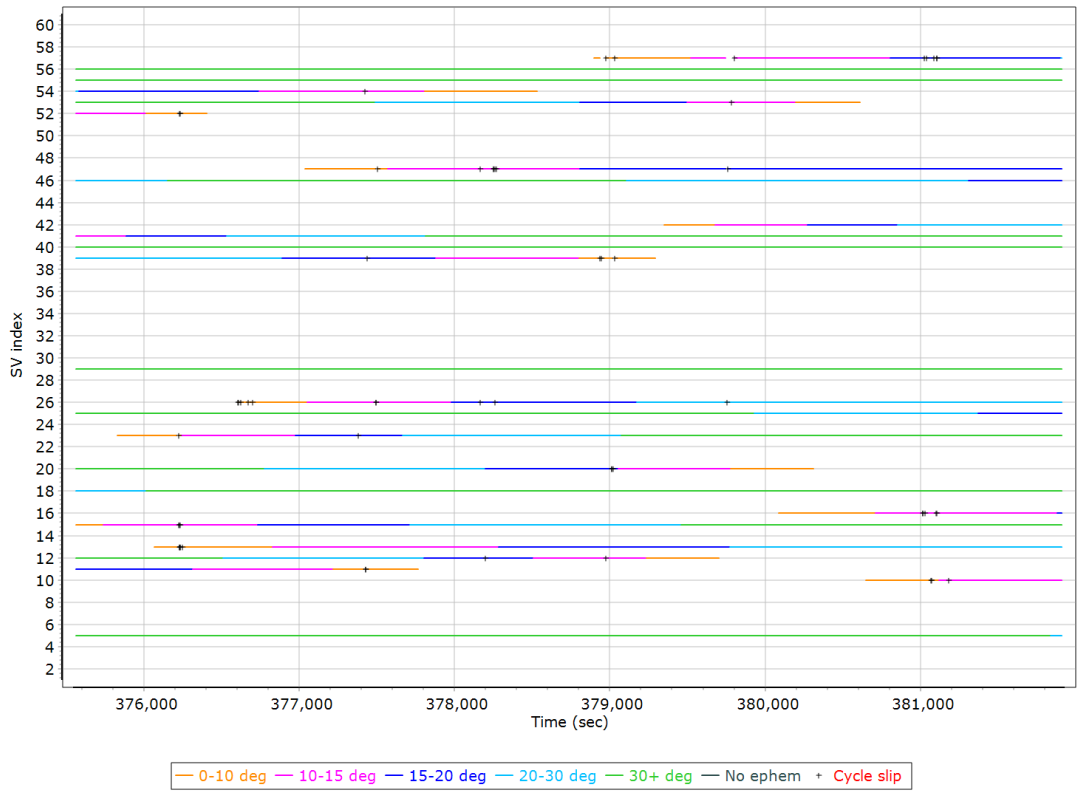
Rover Data QC

Raw IMU Import QC Summary

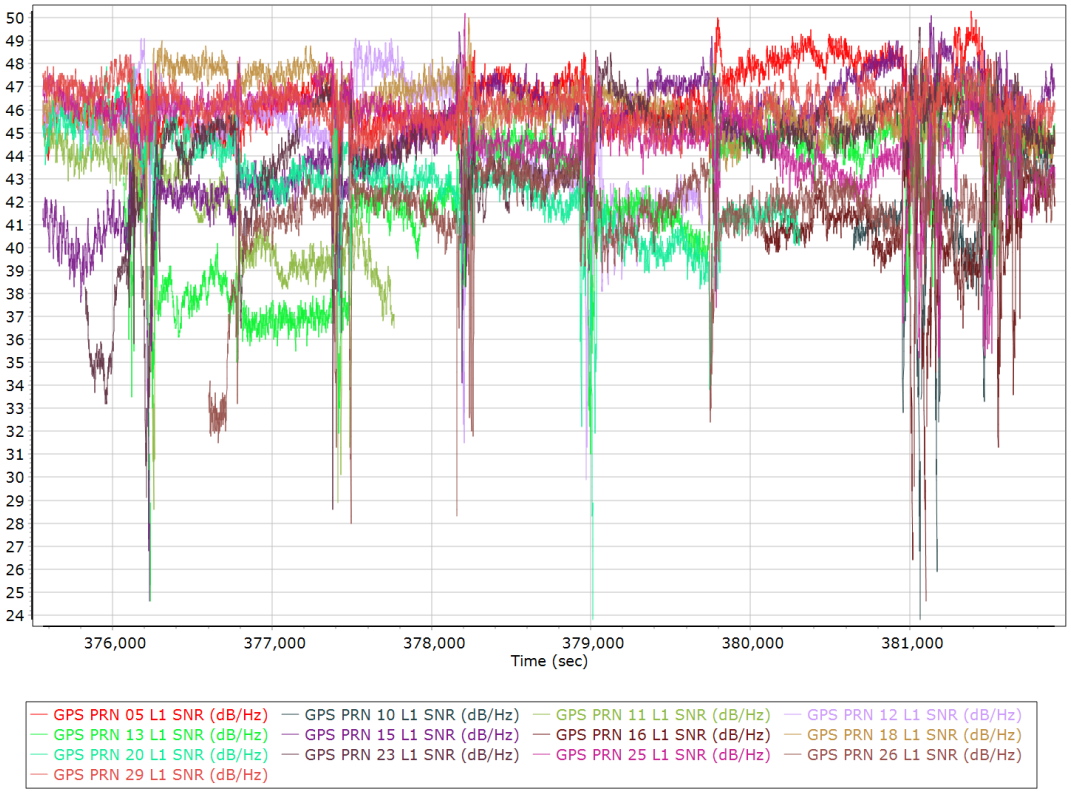
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_11232023A_3546.log
IMU Records Processed	1269279
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

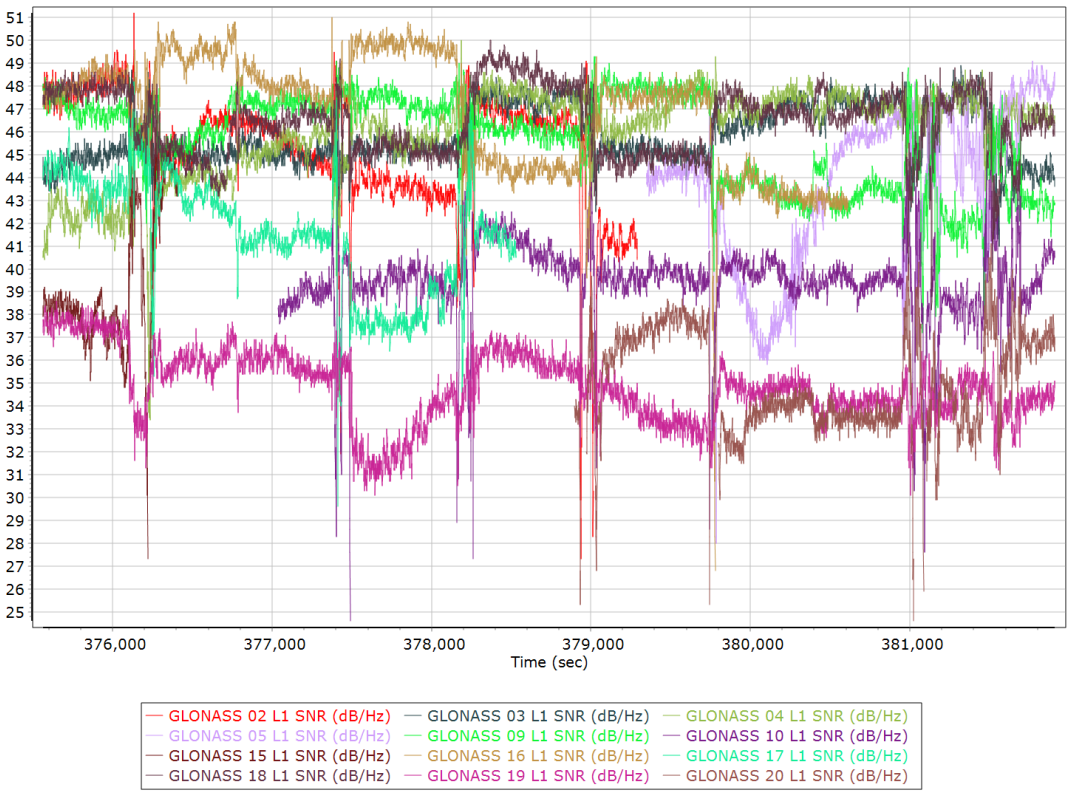
GPS/GLONASS L1 Satellite Lock/Elevation



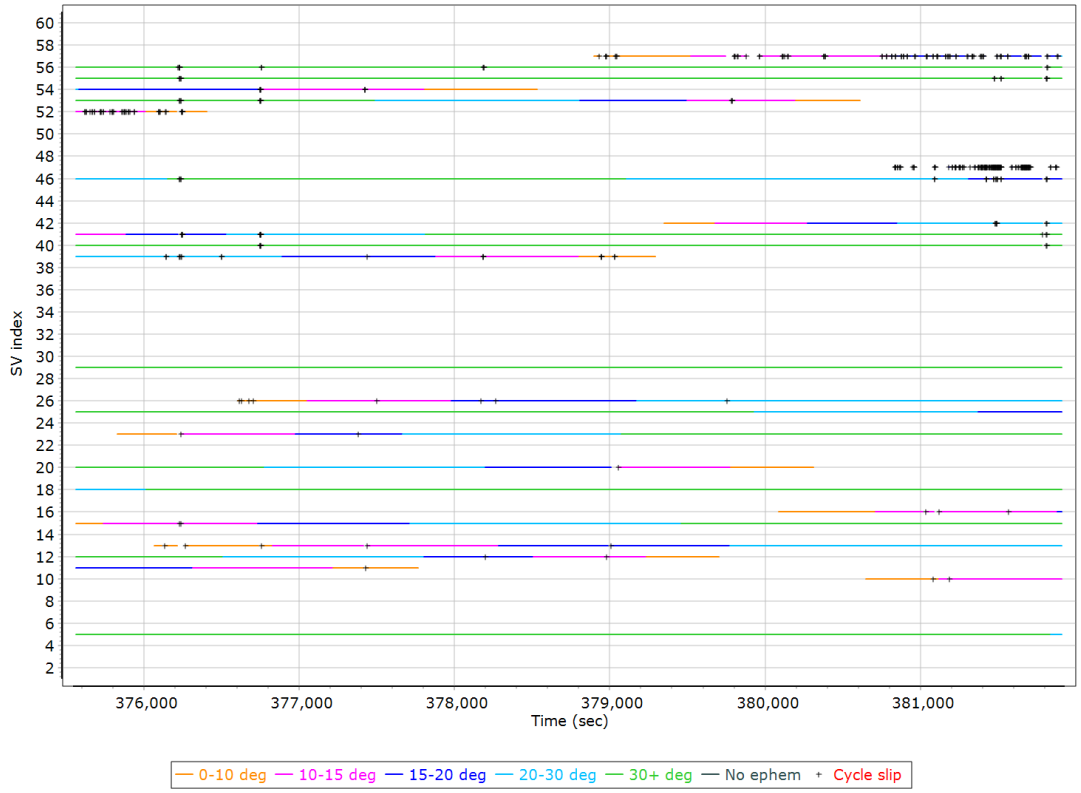
GPS L1 SNR



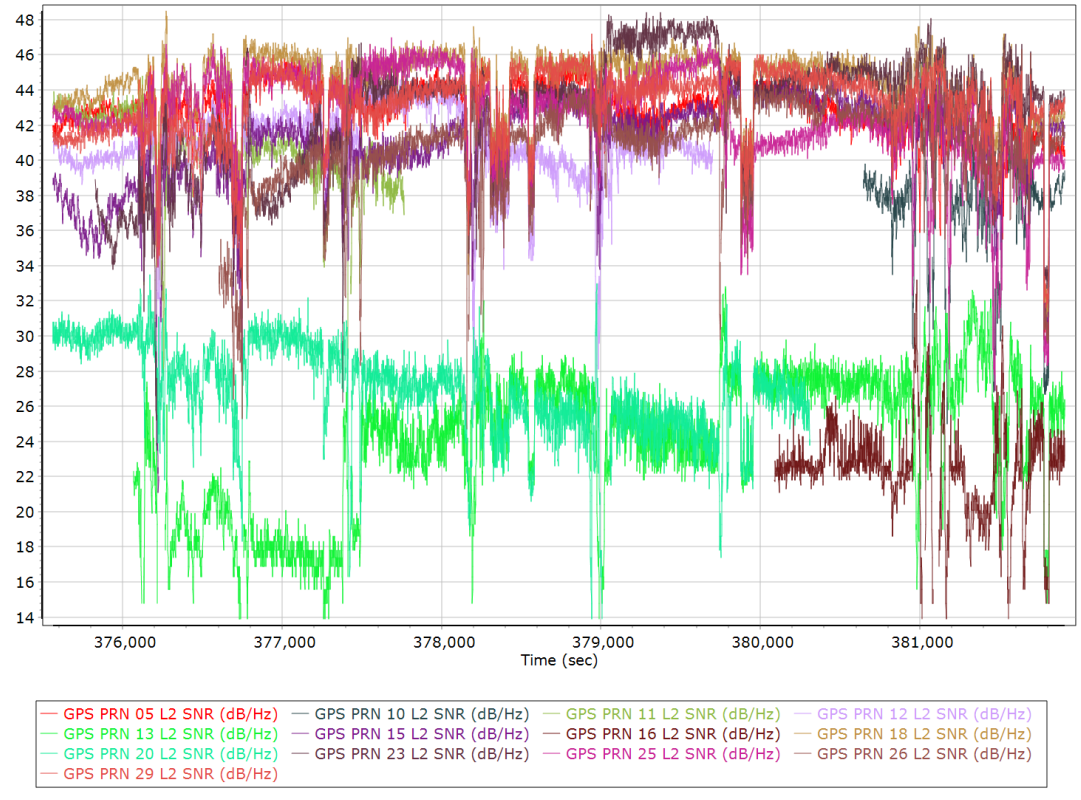
GLONASS L1 SNR



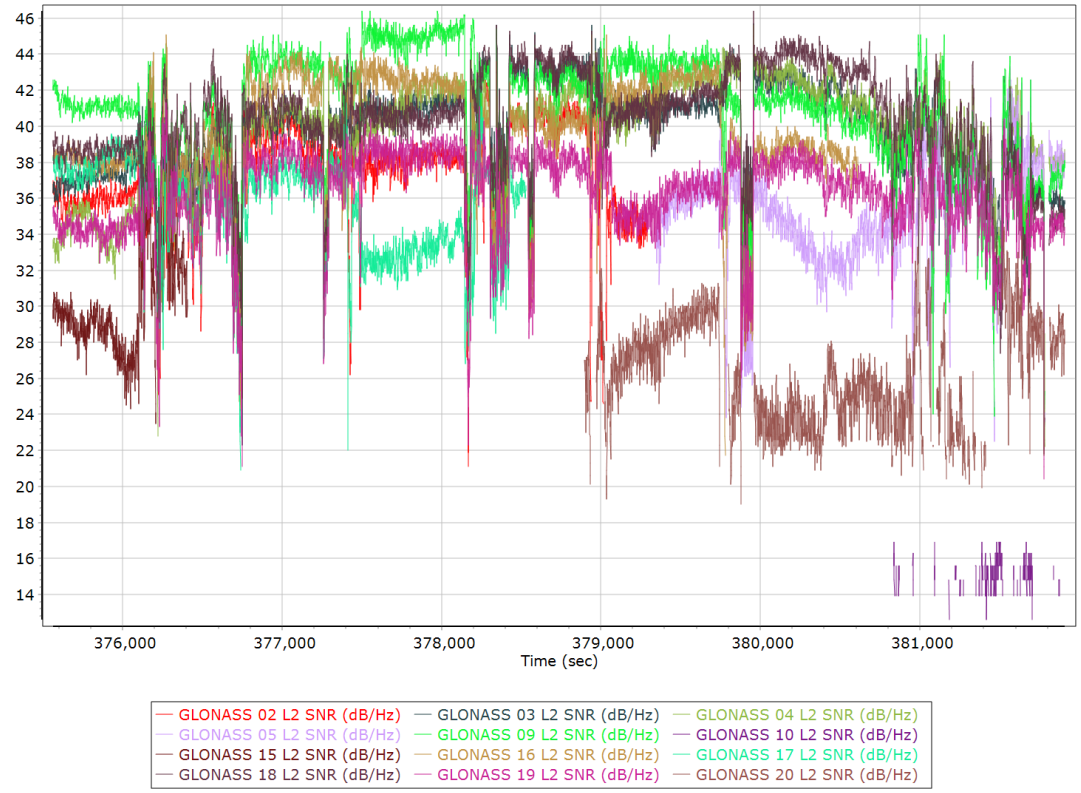
GPS/GLONASS L2 Satellite Lock/Elevation



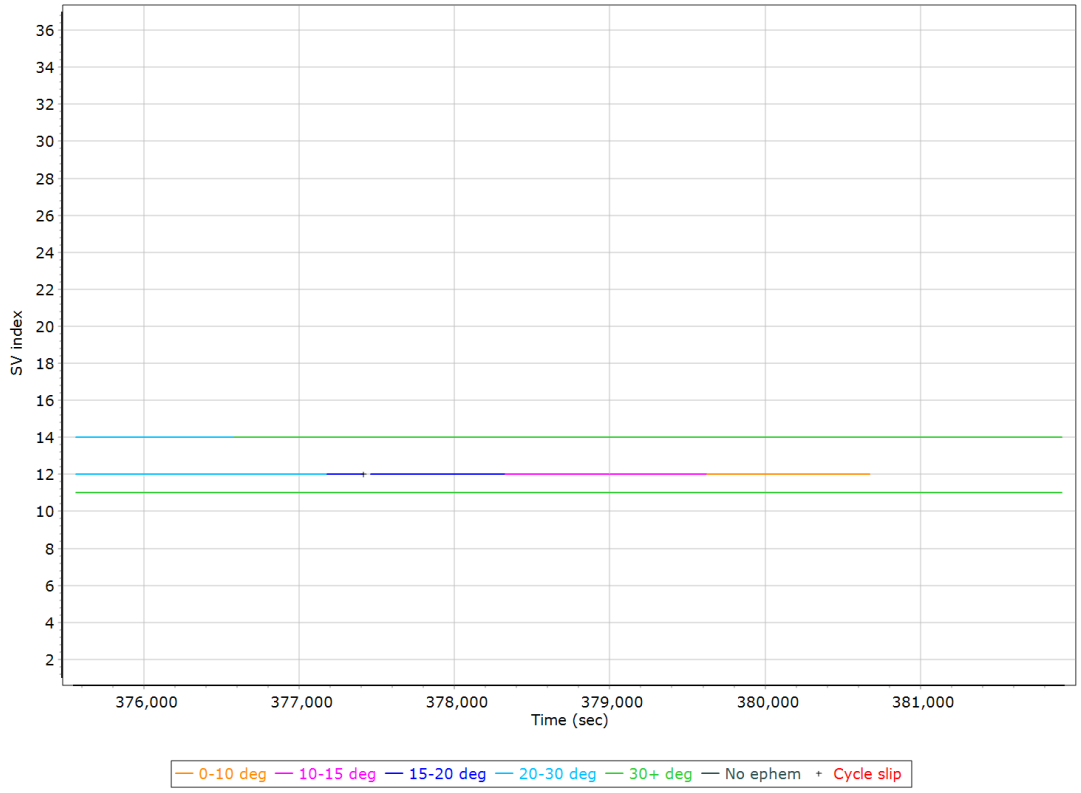
GPS L2 SNR



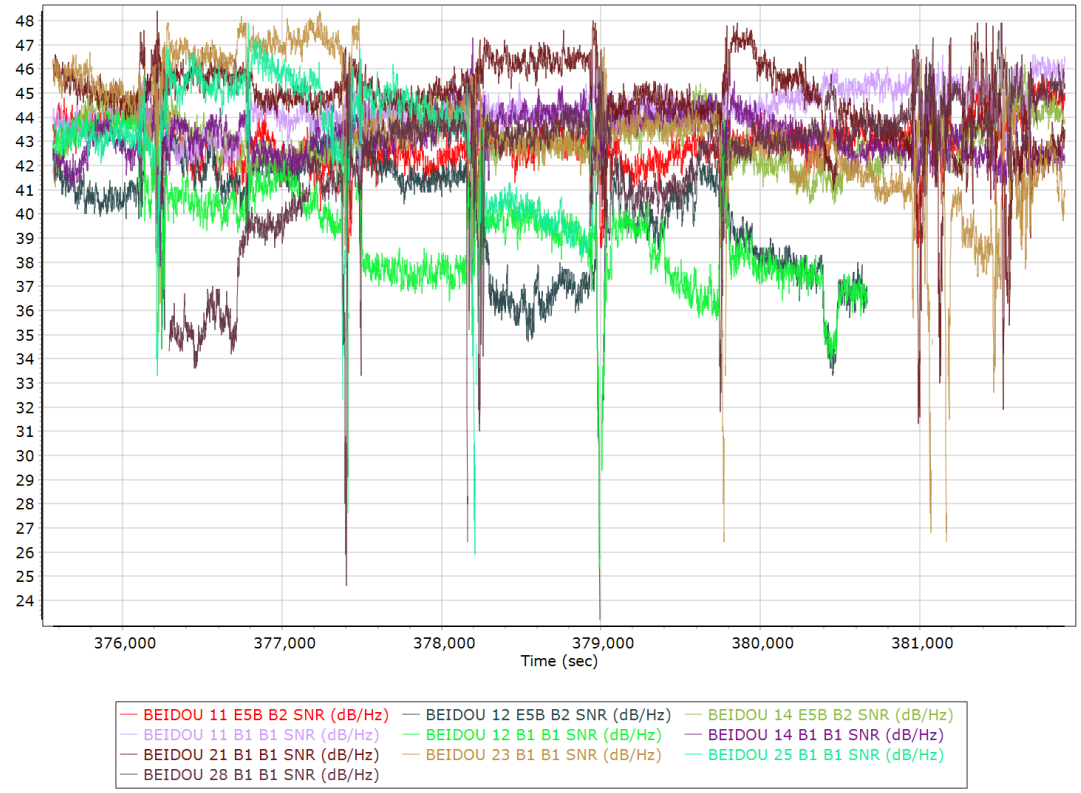
GLONASS L2 SNR



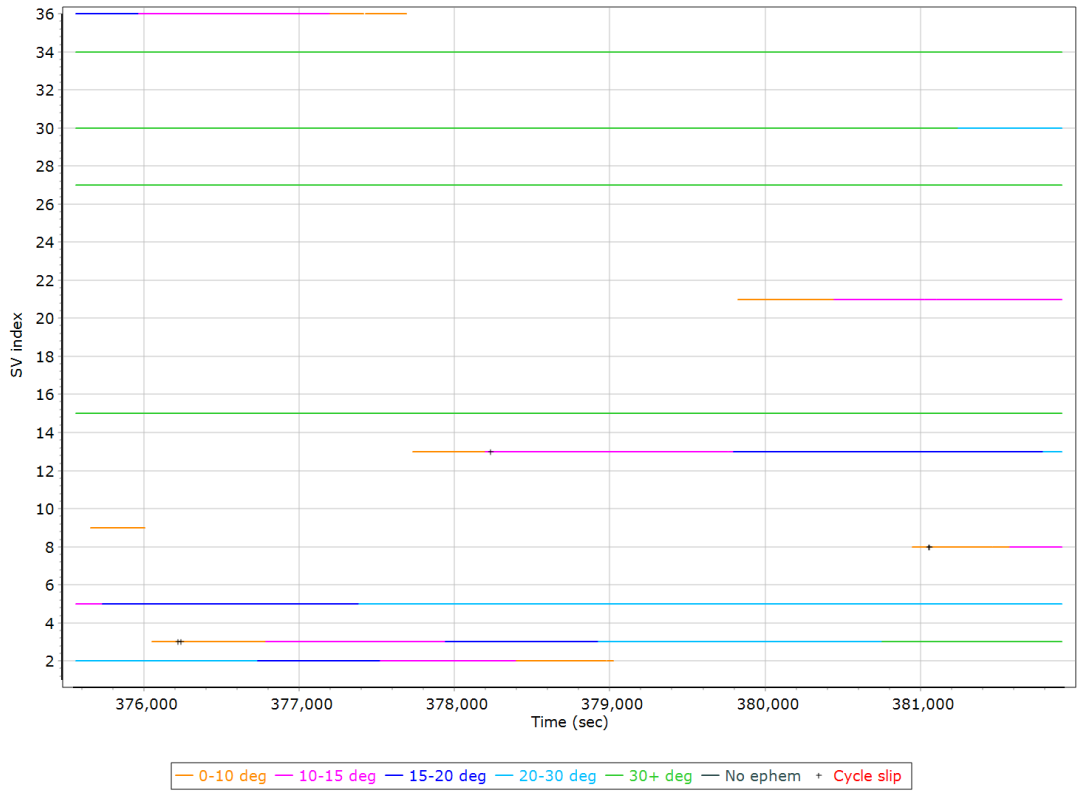
BEIDOU Satellite Lock/Elevation



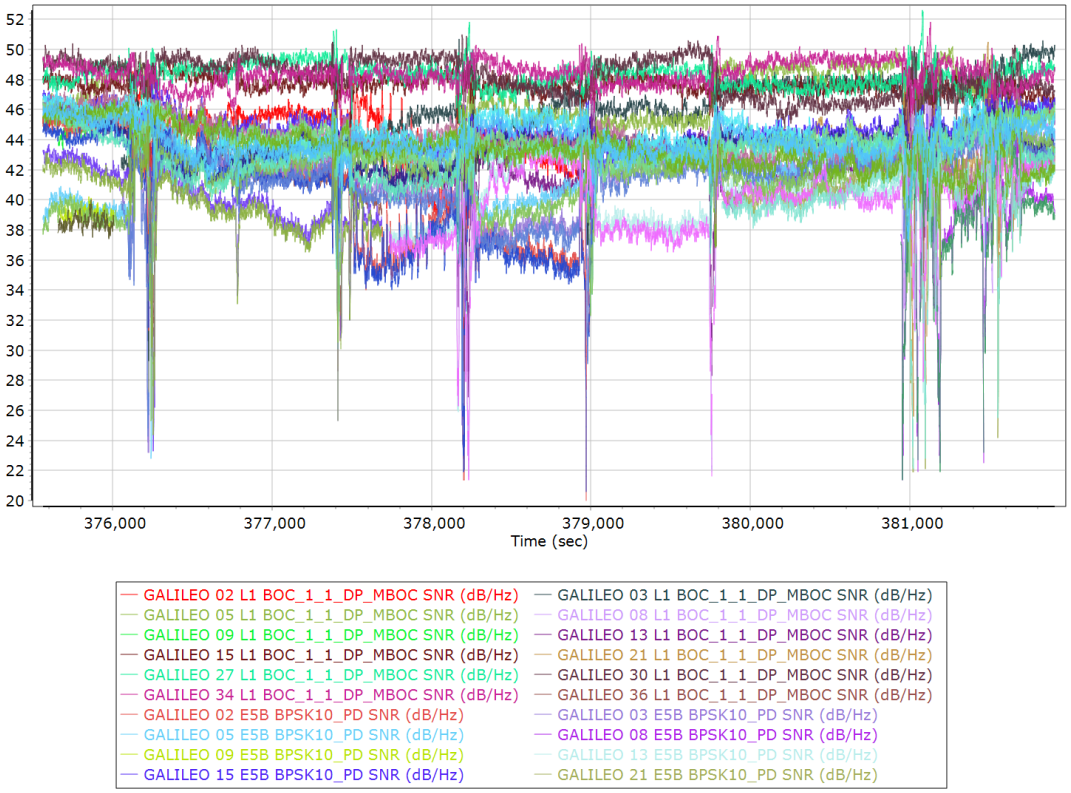
BEIDOU SNR



GALILEO Satellite Lock/Elevation

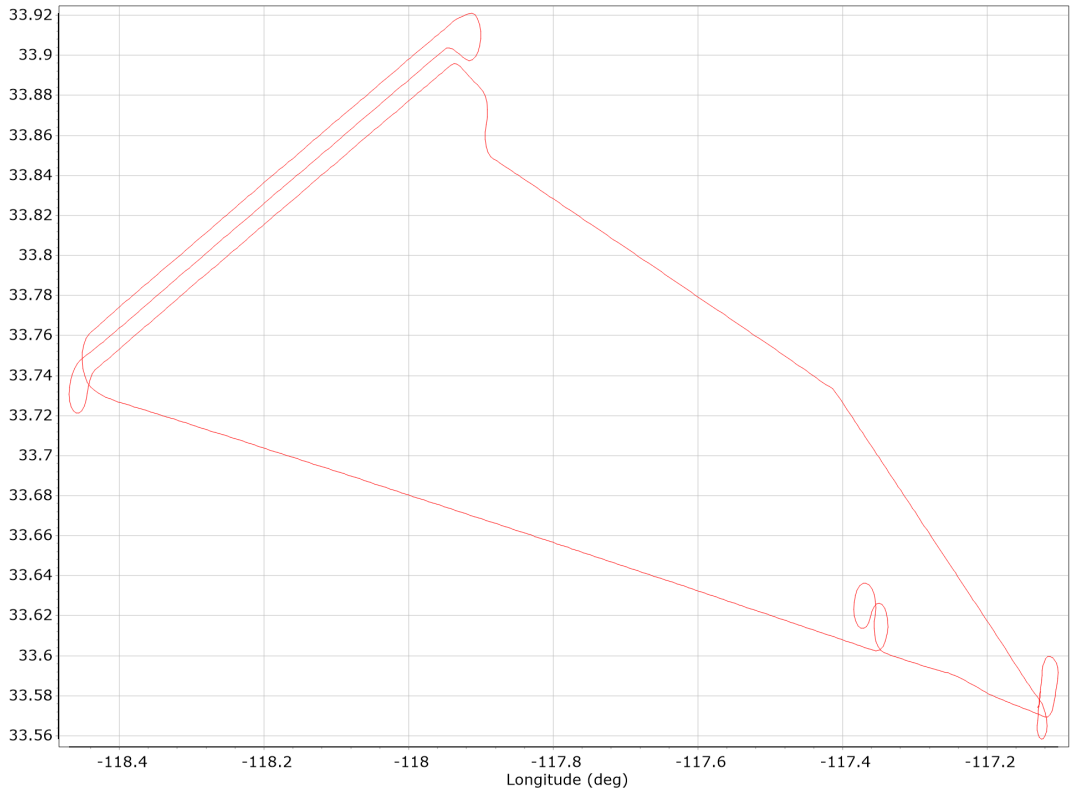


GALILEO SNR


52
50
48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
376,000
377,000
378,000
379,000
380,000
381,000
Time (sec)
GALILEO 02 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 03 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 05 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 08 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 09 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 13 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 15 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 21 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 27 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 30 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 34 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 36 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 02 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 03 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 05 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 08 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 09 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 13 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 15 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 21 E5B BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

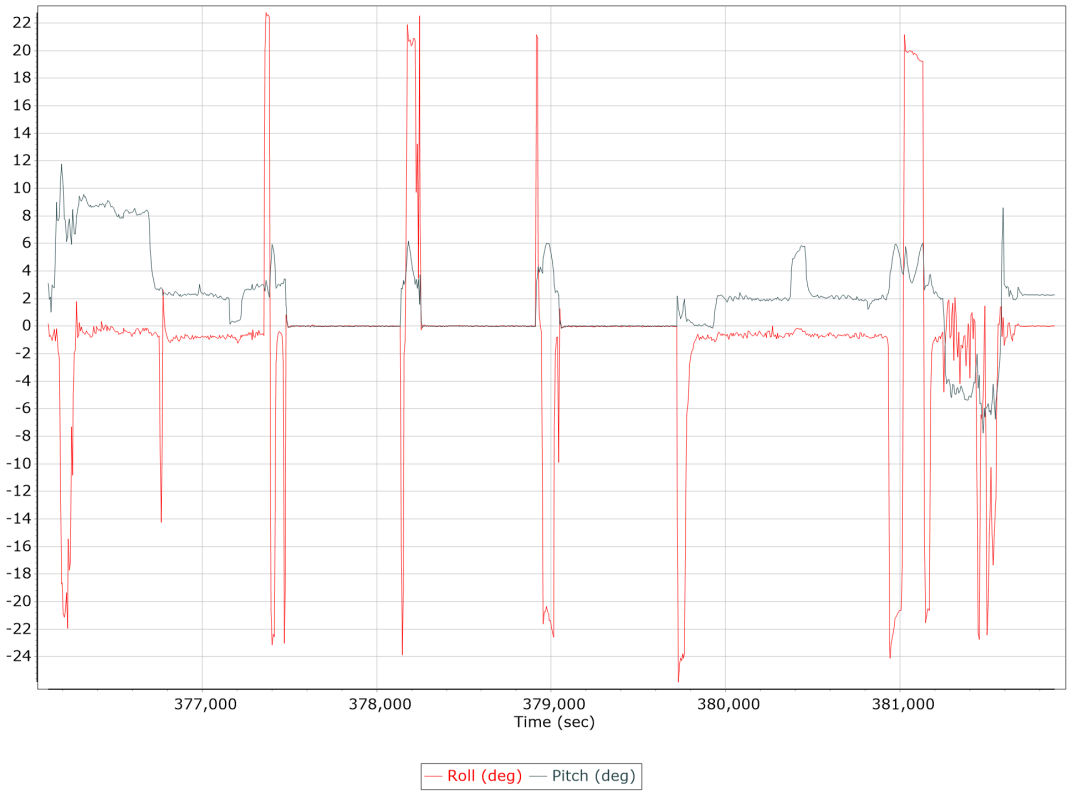
Top View



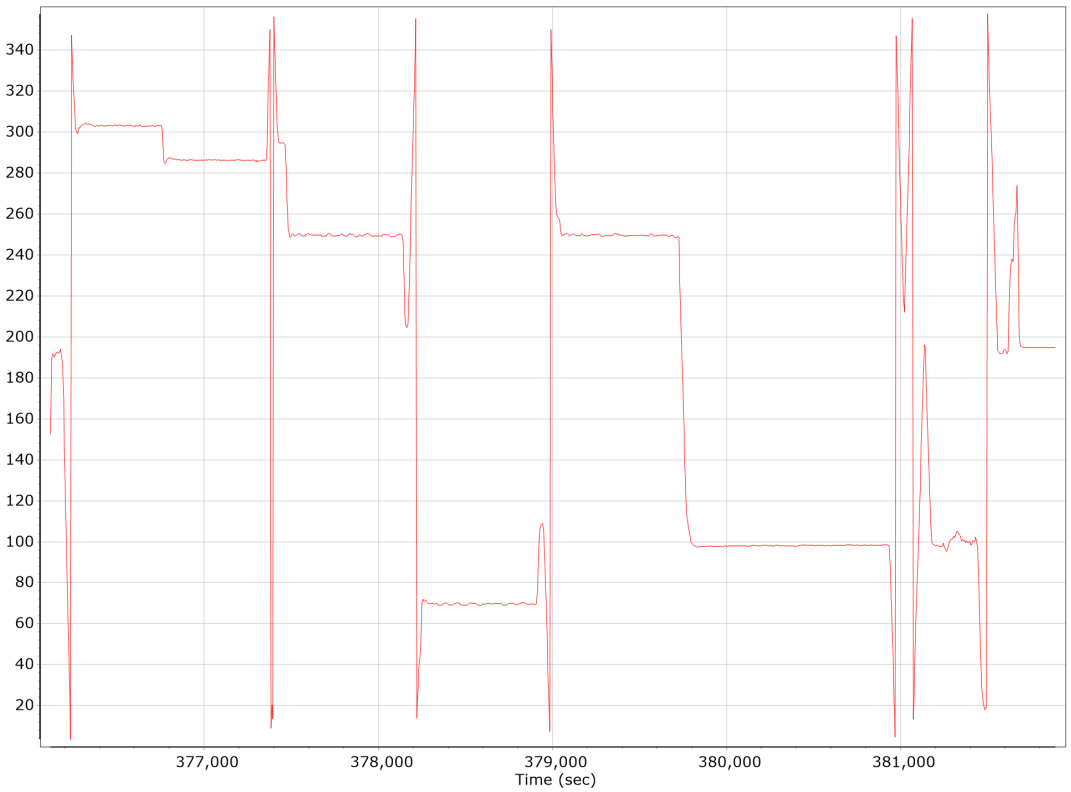
Altitude



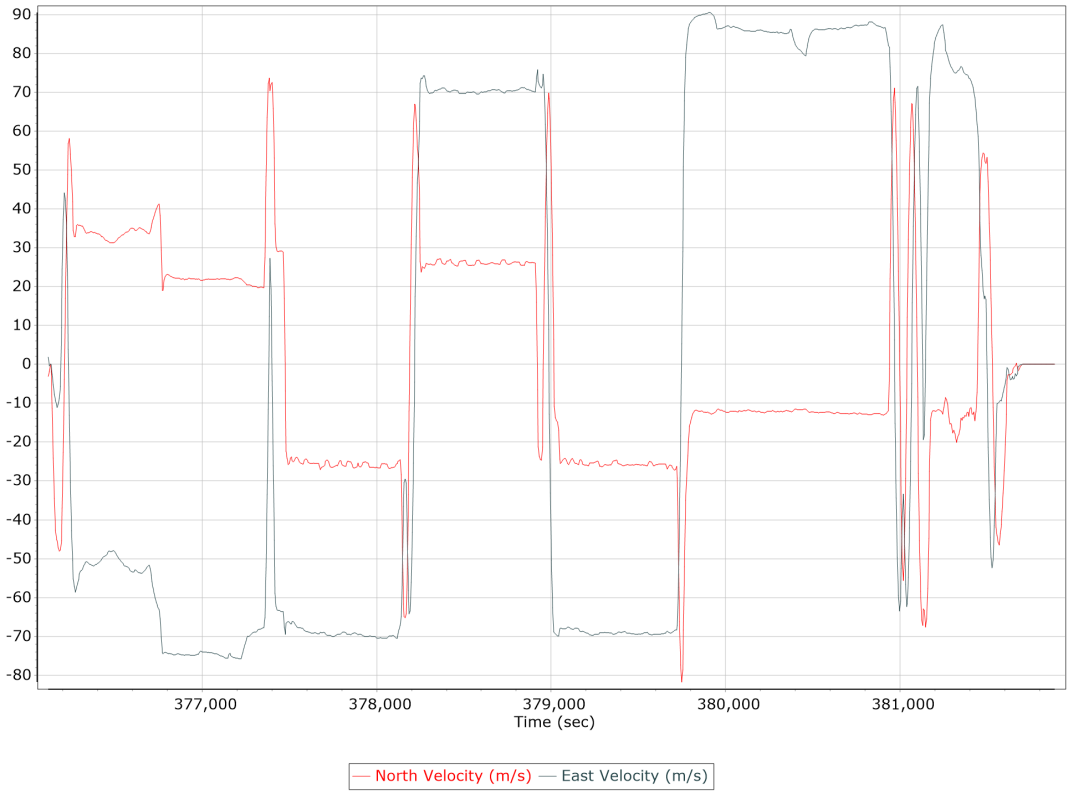
Roll/Pitch



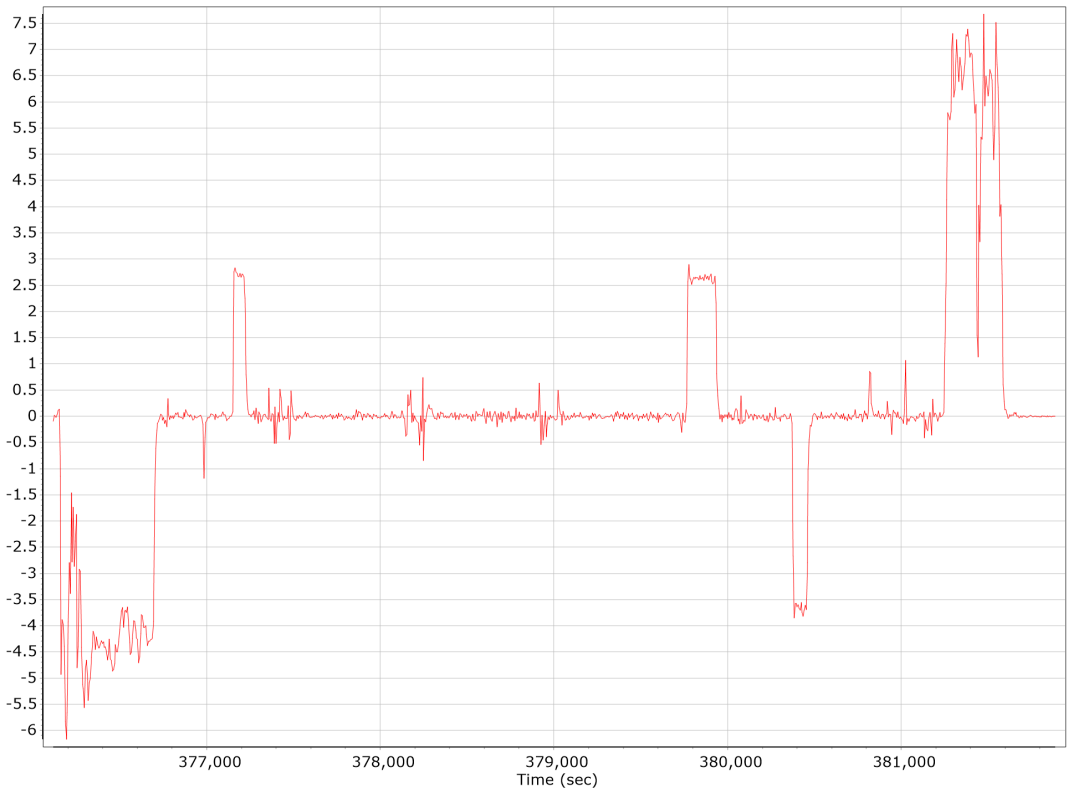
Heading



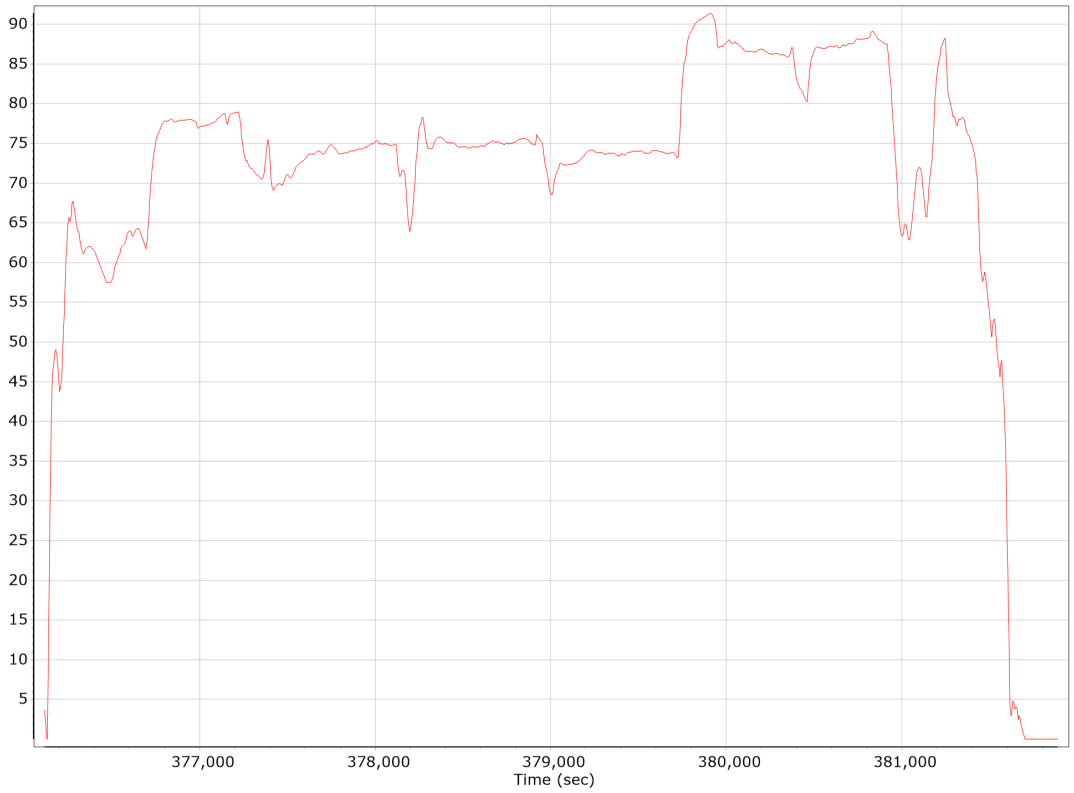
North/East Velocity



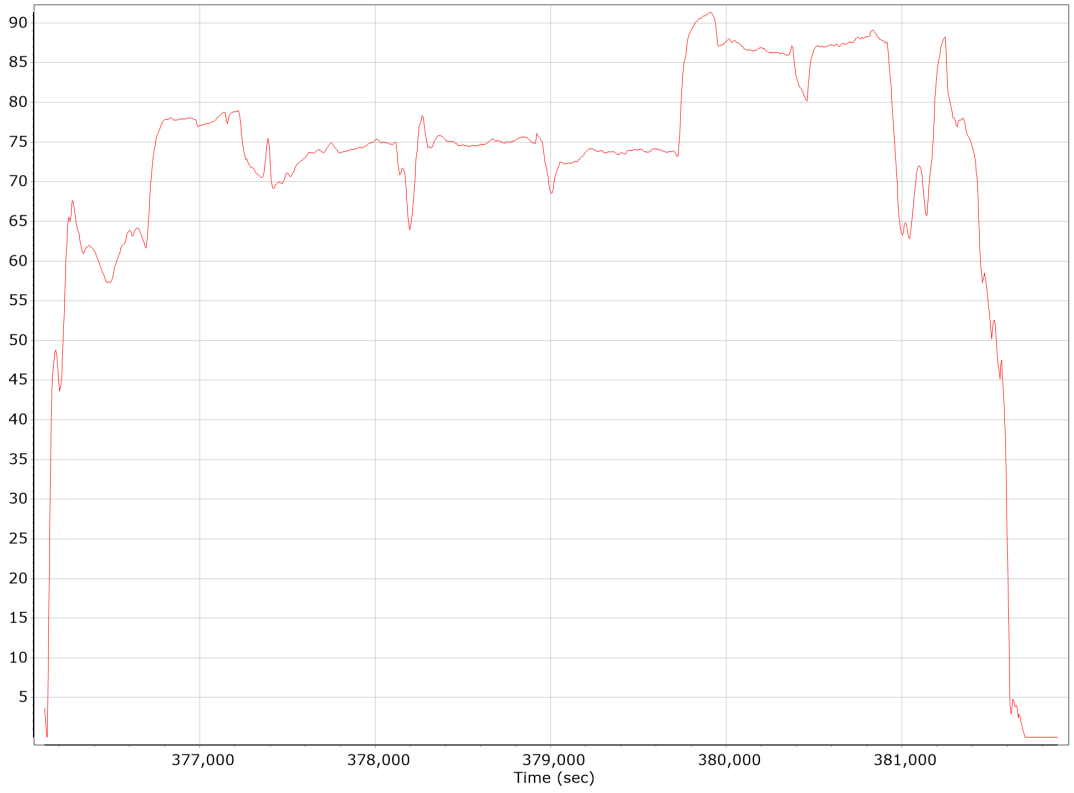
Down Velocity



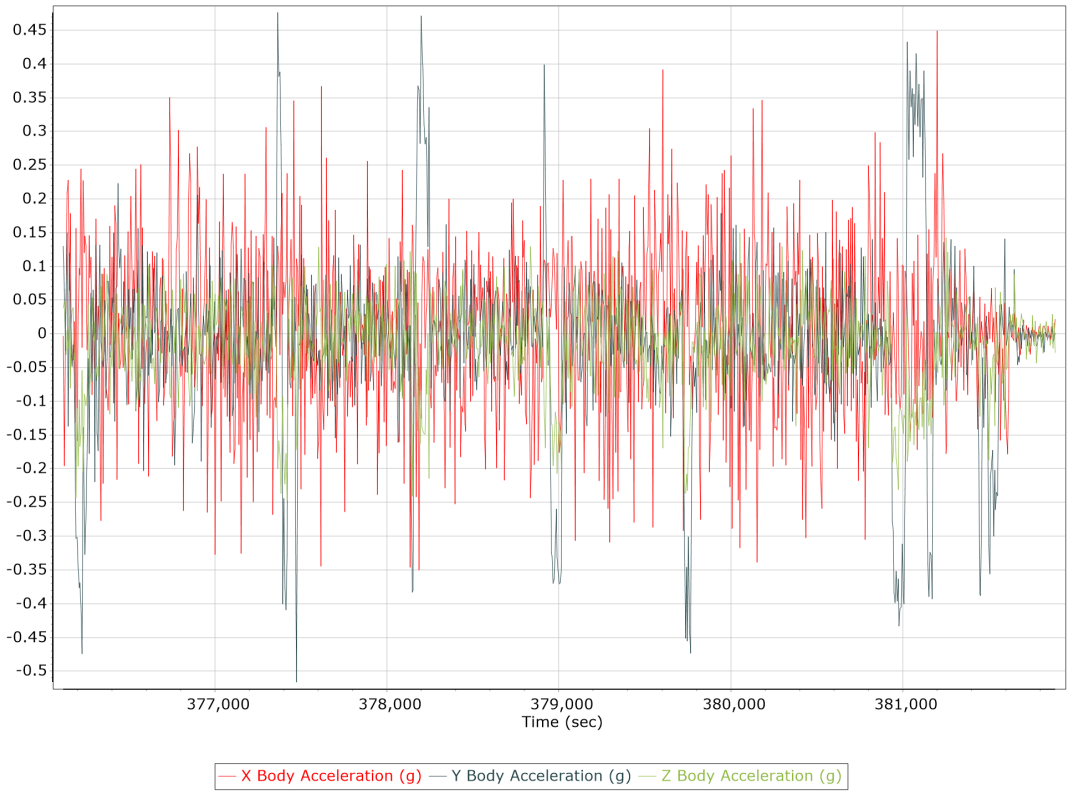
Total Speed



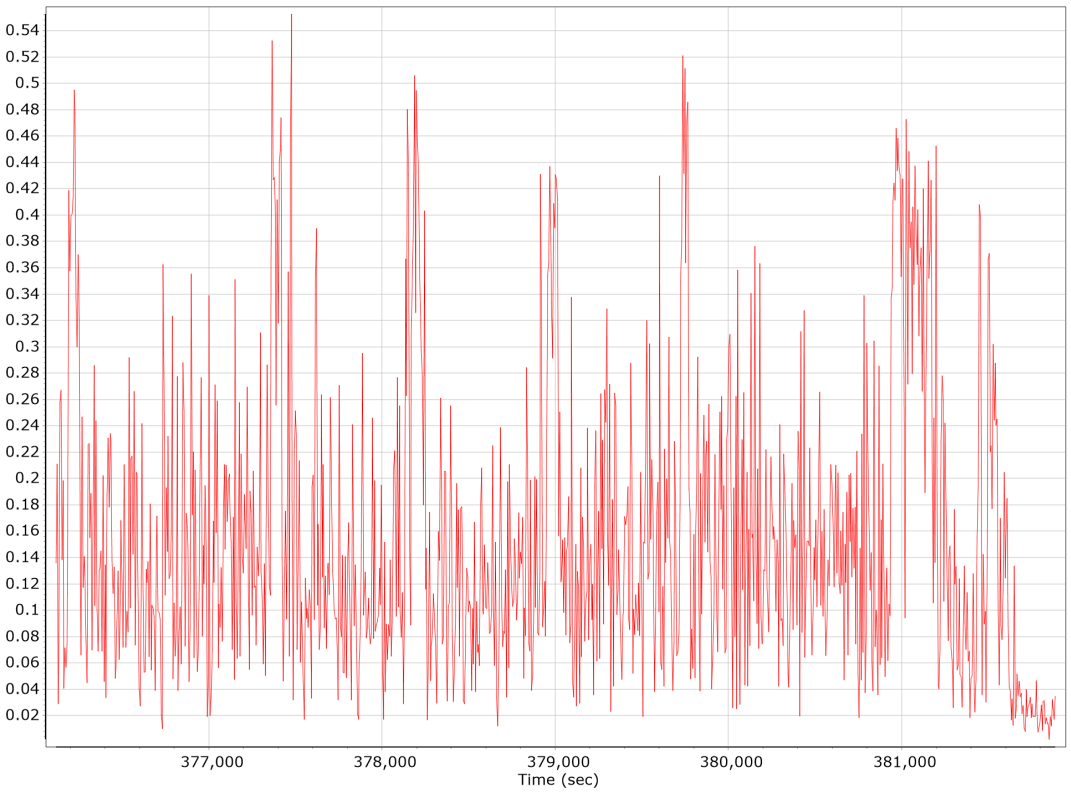
Ground Speed



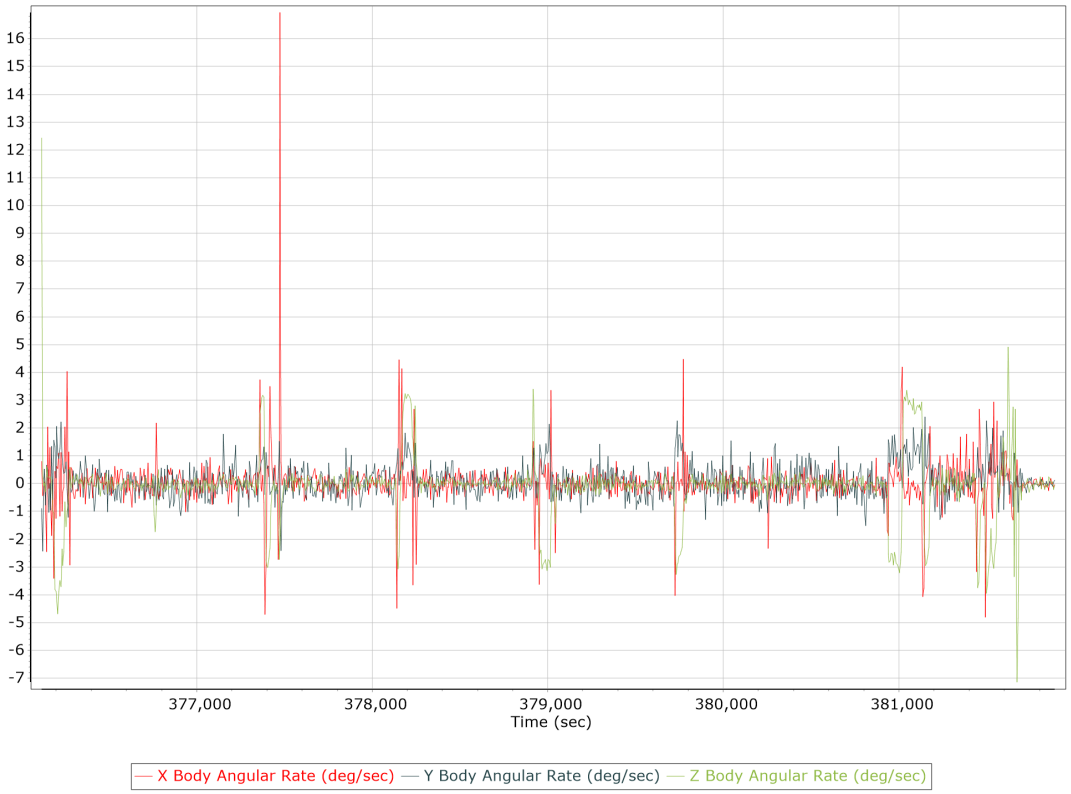
Body Acceleration



Total Body Acceleration

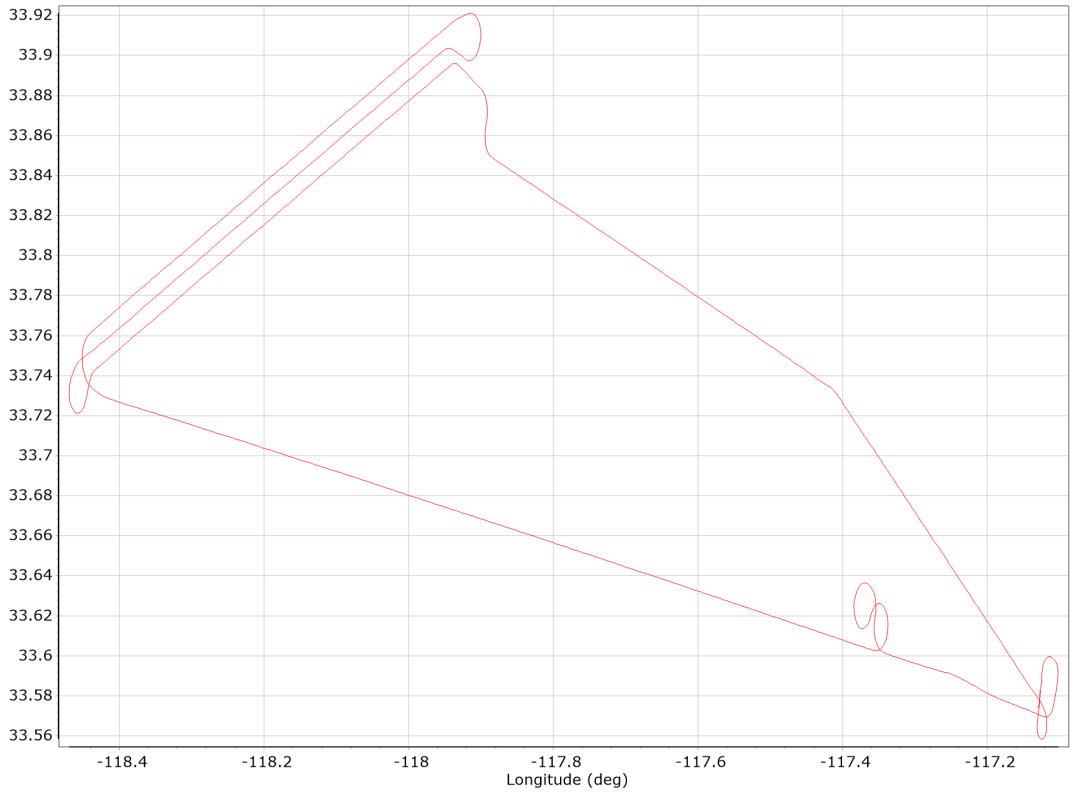


Body Angular Rate



Forward Processed Trajectory Information

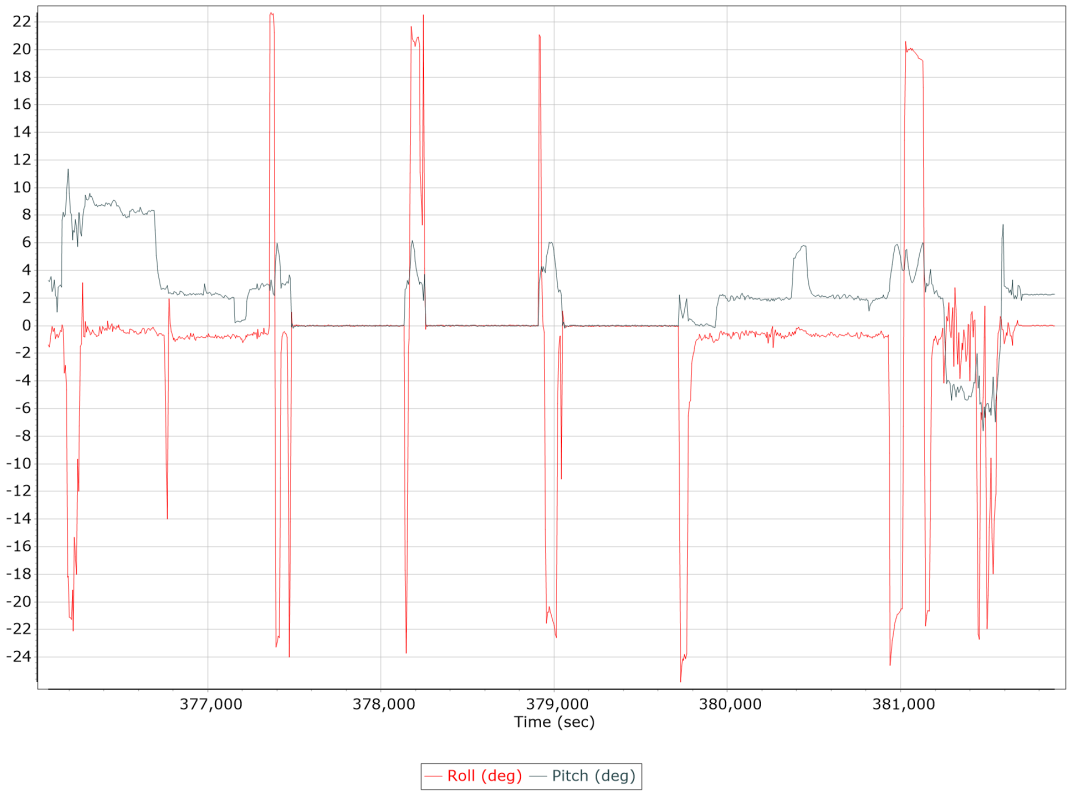
Top View



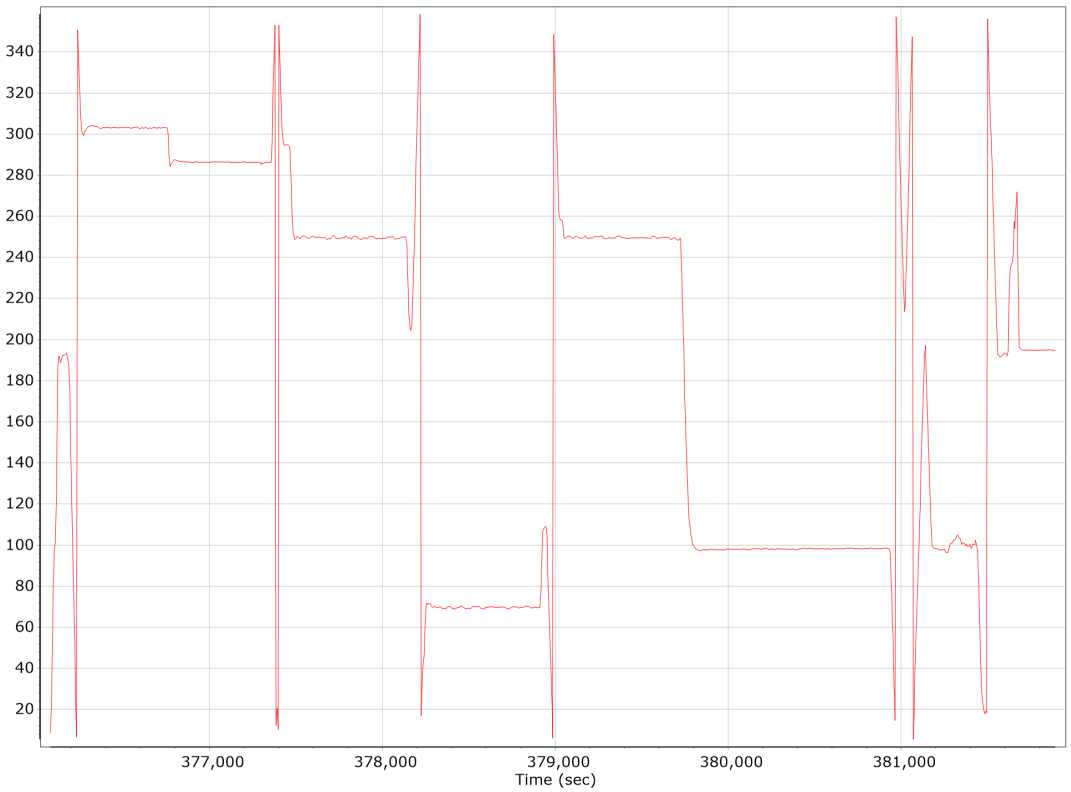
Altitude



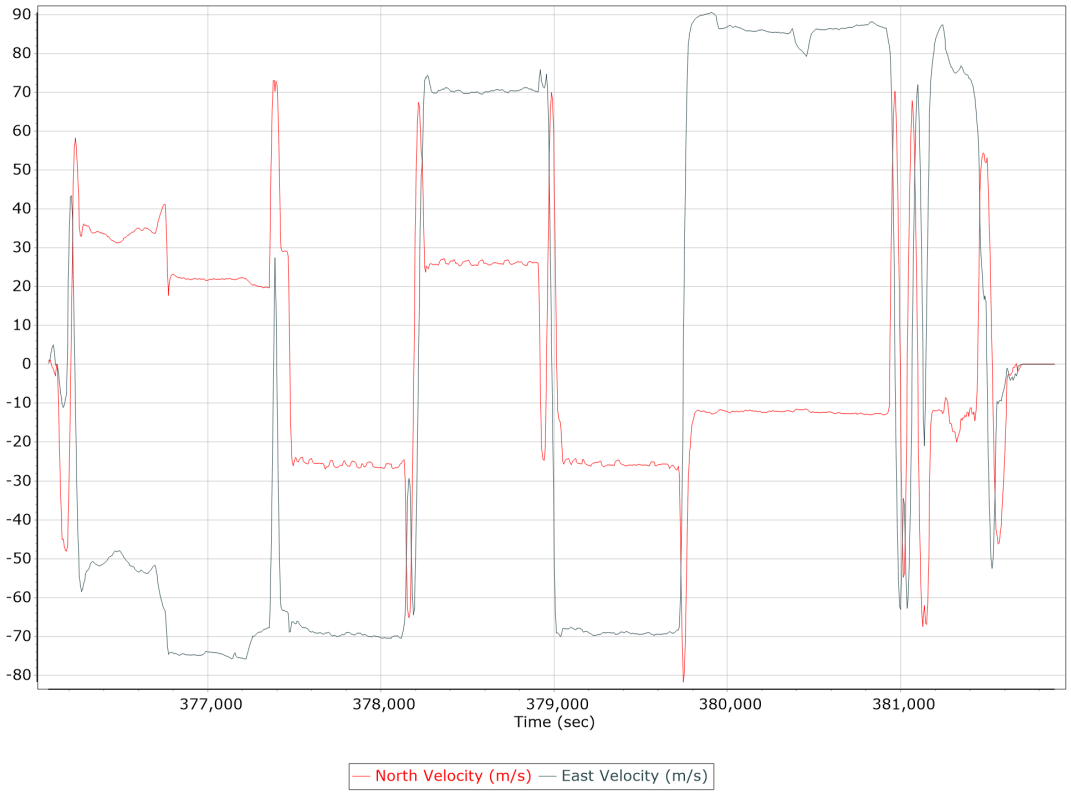
Roll/Pitch



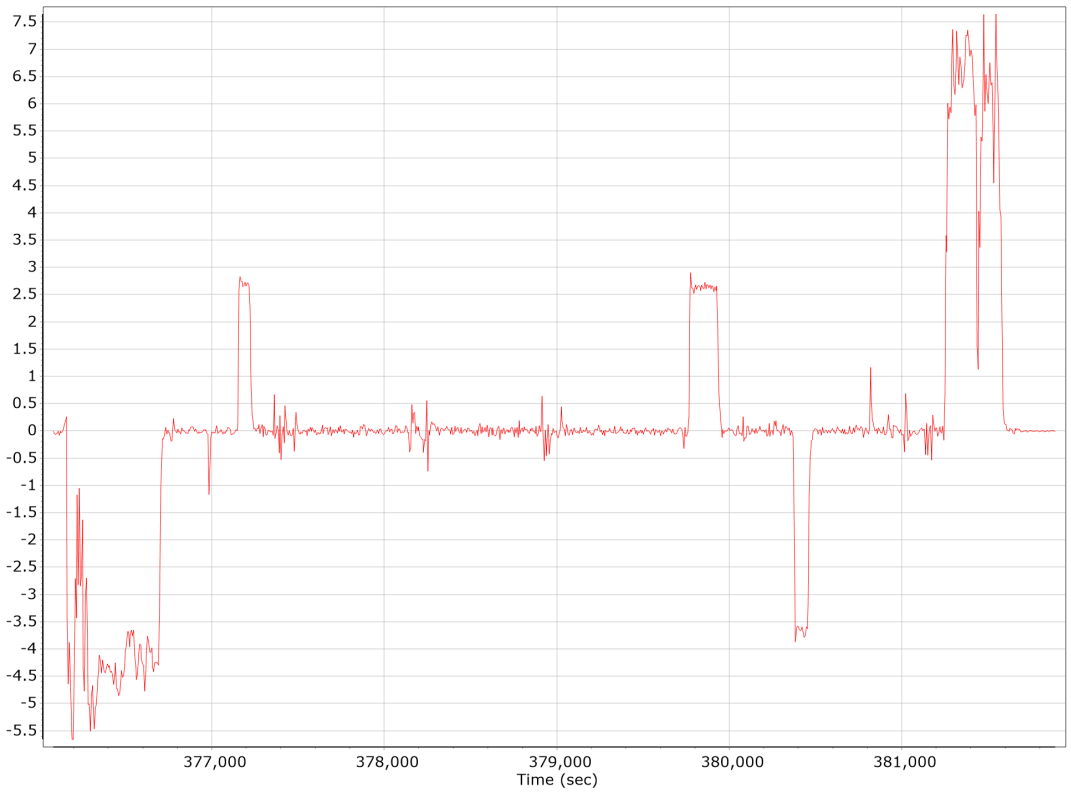
Heading



North/East Velocity



Down Velocity



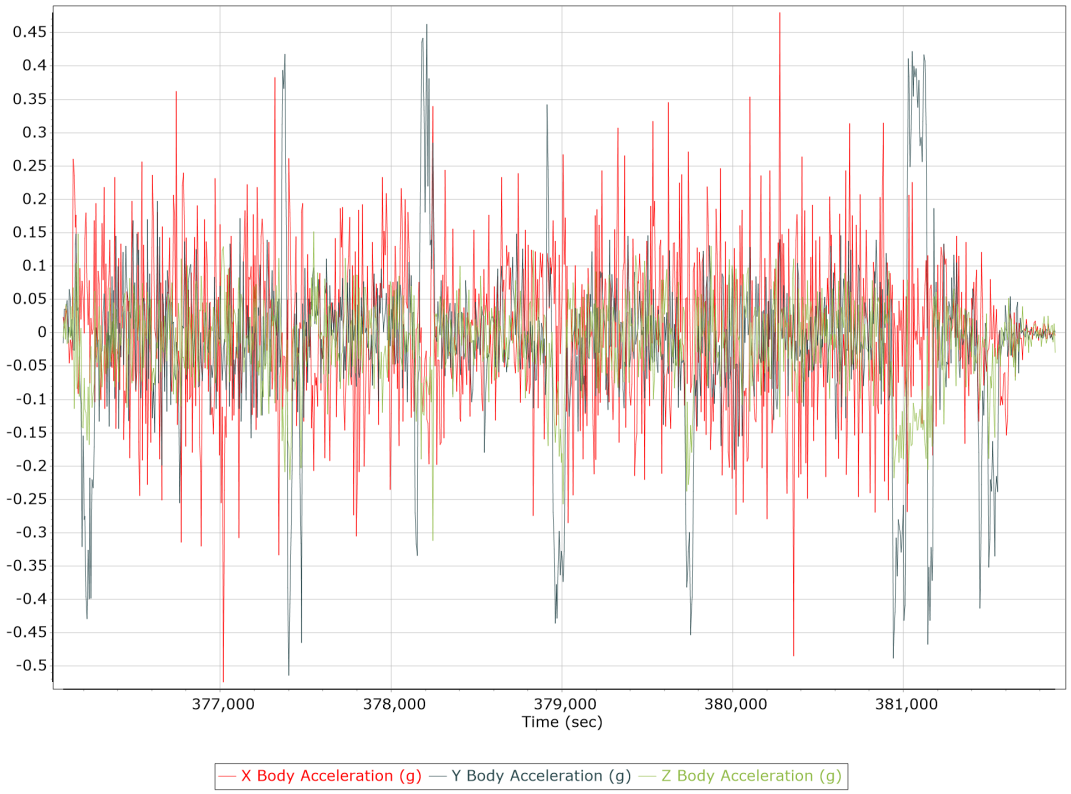
Total Speed



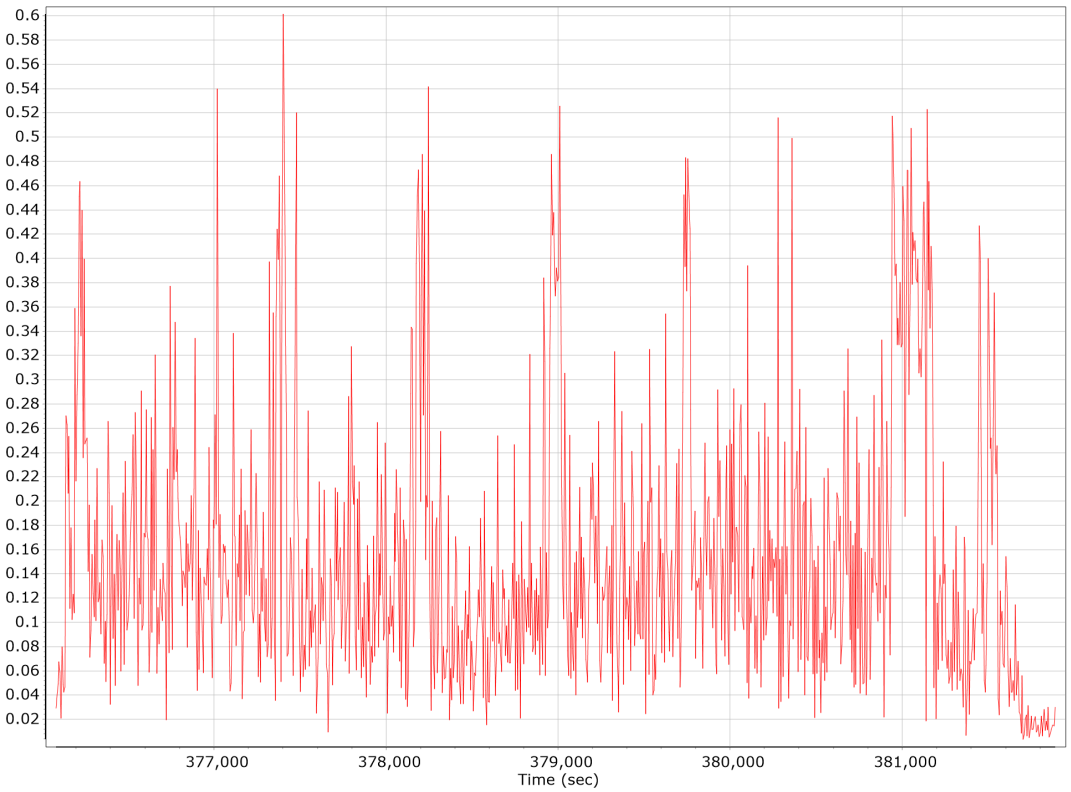
Ground Speed



Body Acceleration



Total Body Acceleration



Body Angular Rate

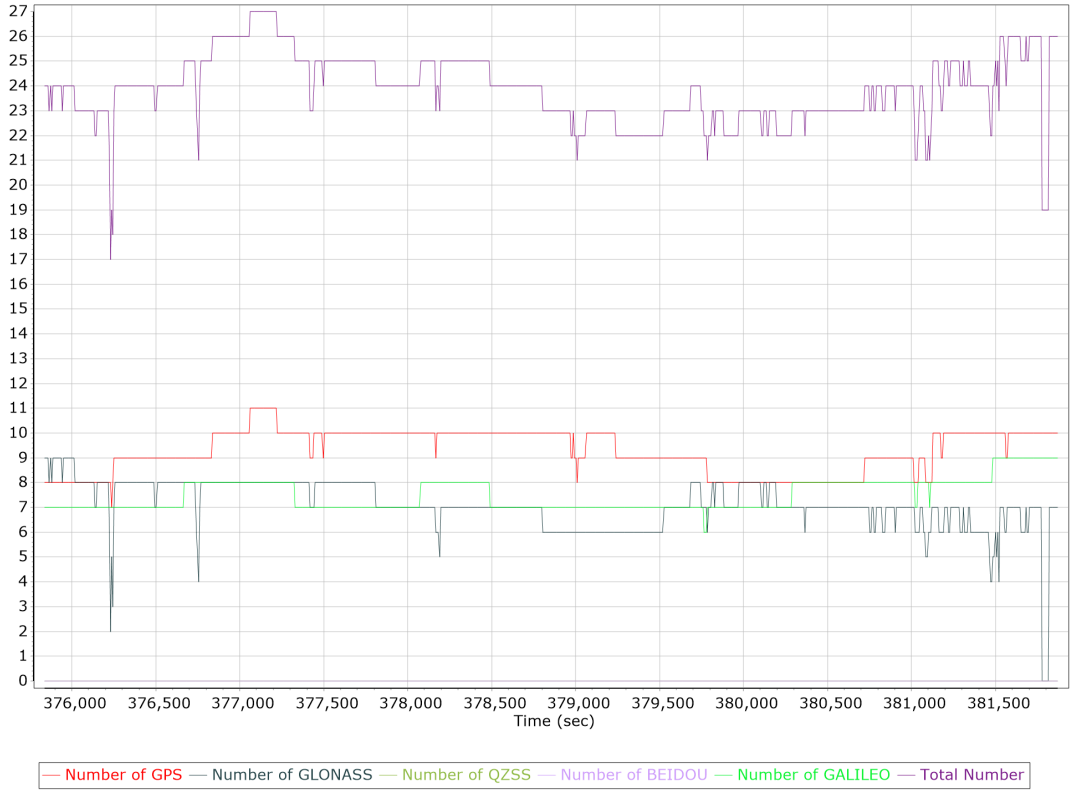


GNSS QC

GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	7	11	9
Number of GLONASS SV	0	9	7
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	6	9	7
Total number of SV	16	27	24
PDOP	1.04	1.53	1.19
QC Solution Gaps	0.00	0.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	6309.00	0.00	0.00
Percentage	100.00	0.00	0.00

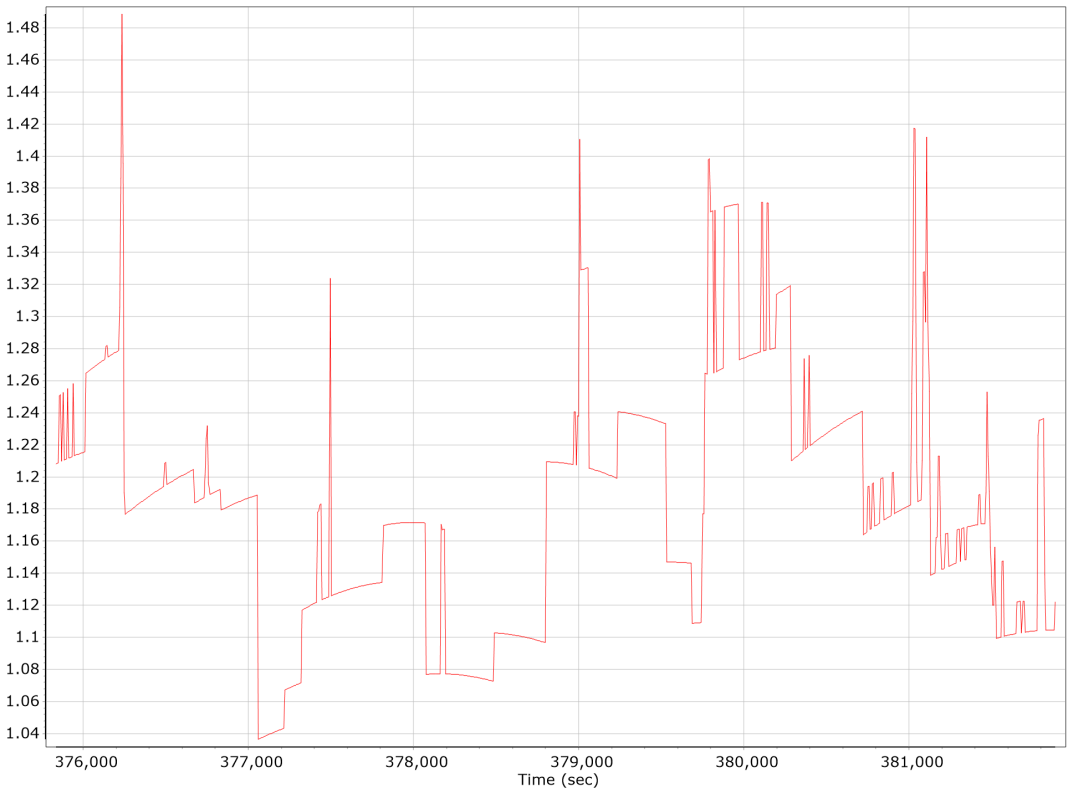
Num SVs in solution



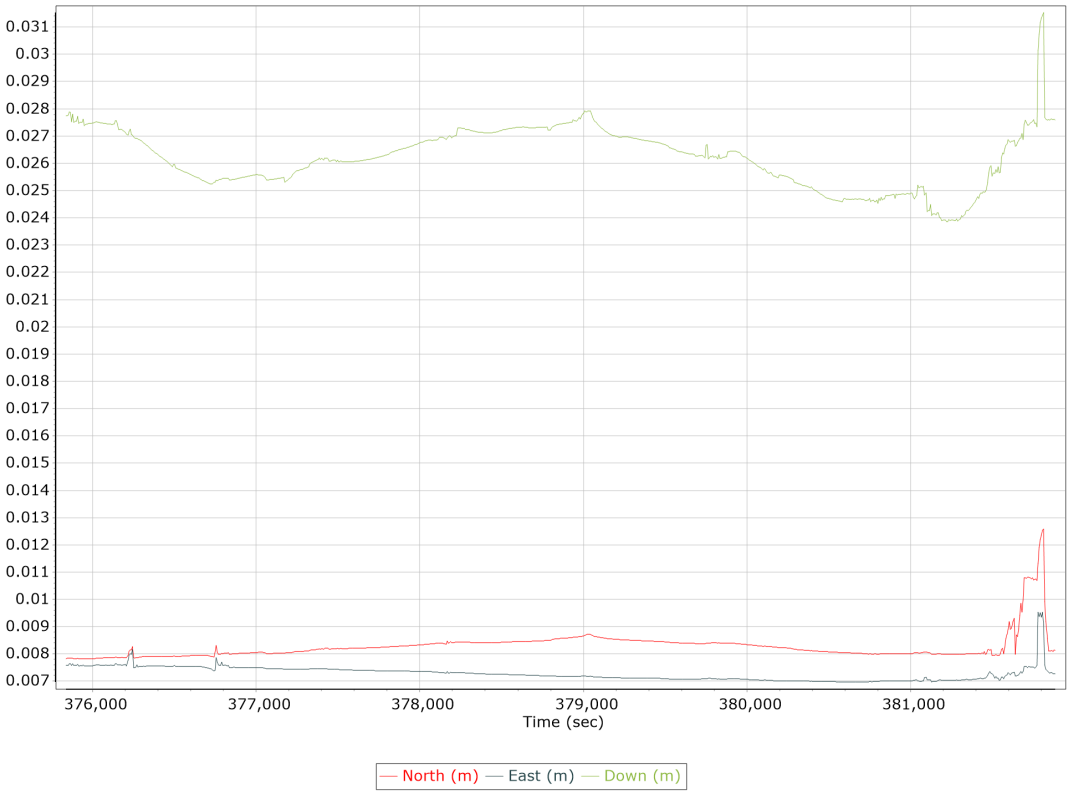
Forward/Reverse Separation



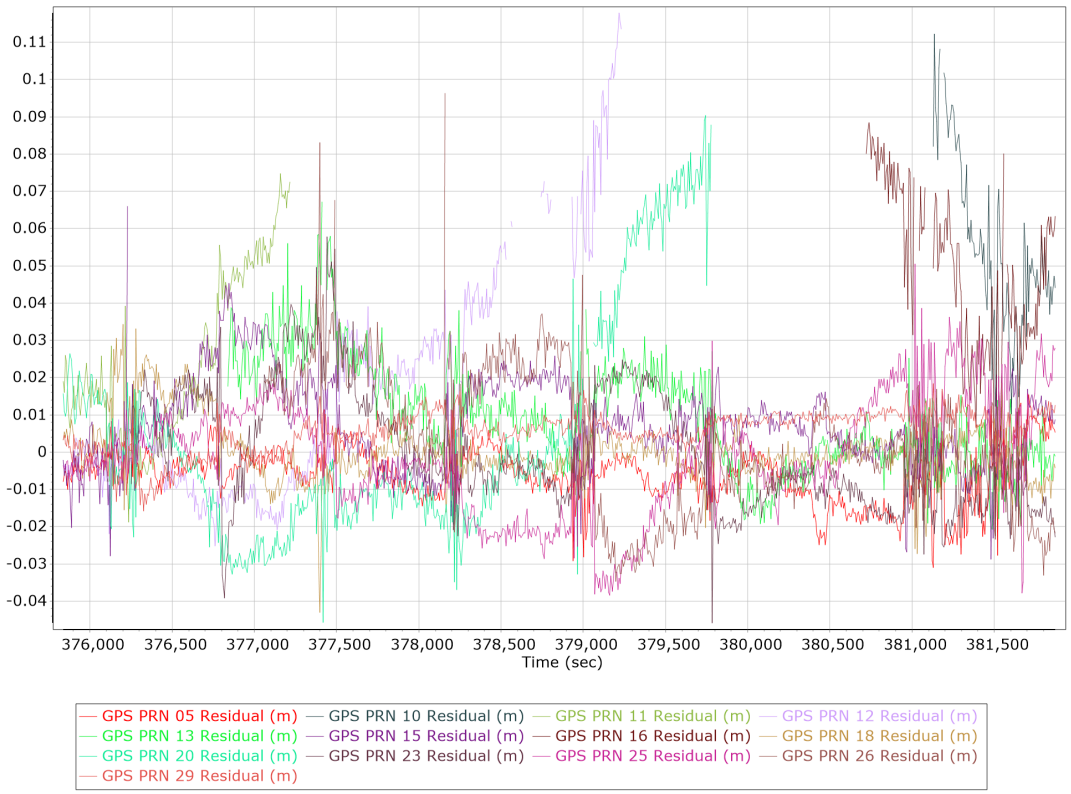
PDOP



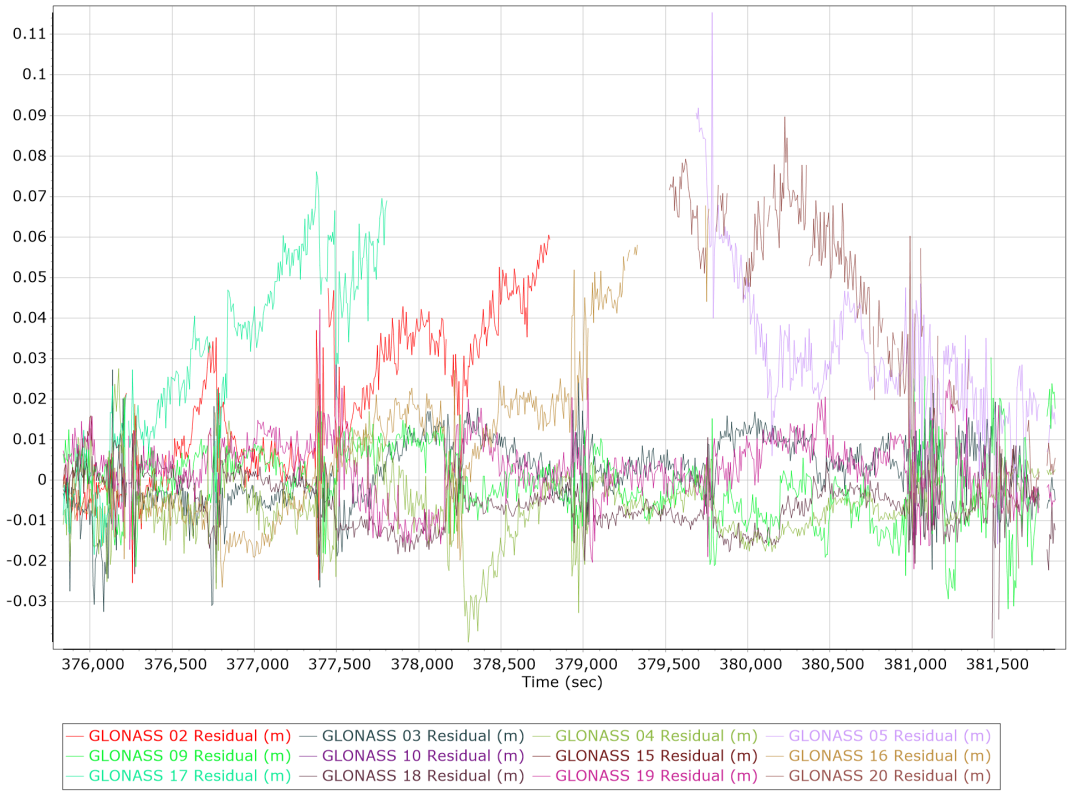
Estimated Position Accuracy



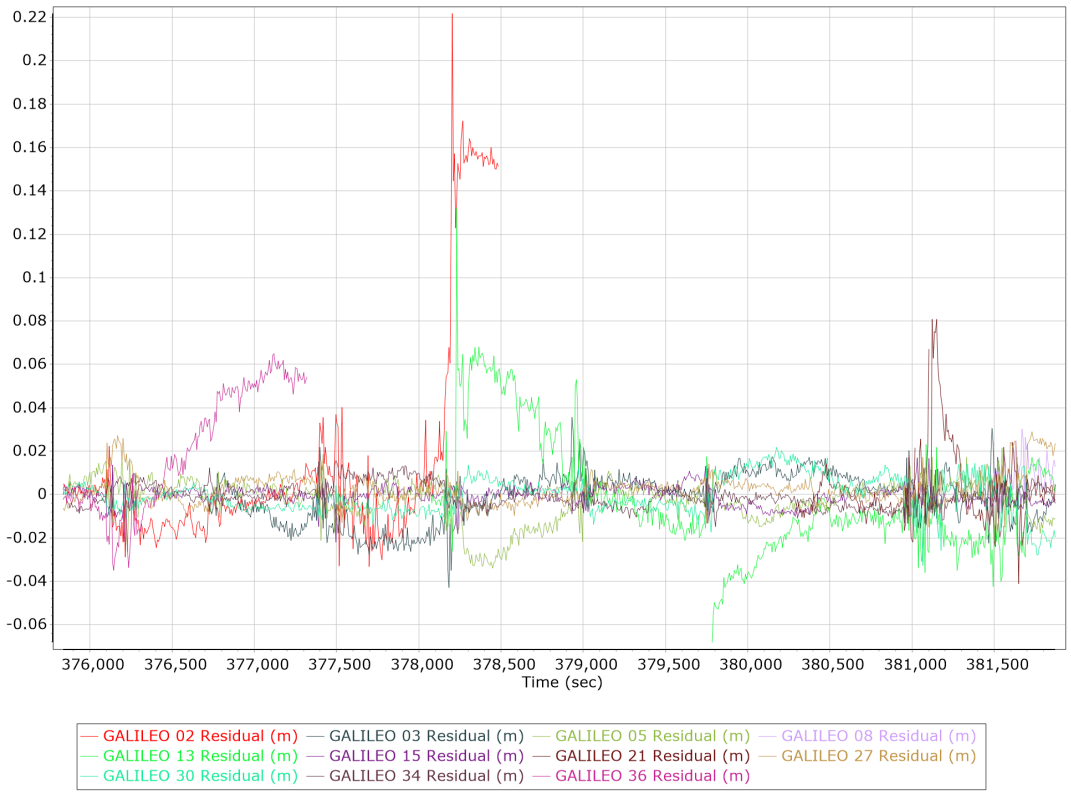
GPS Residuals



GLONASS Residuals



GALILEO Residuals



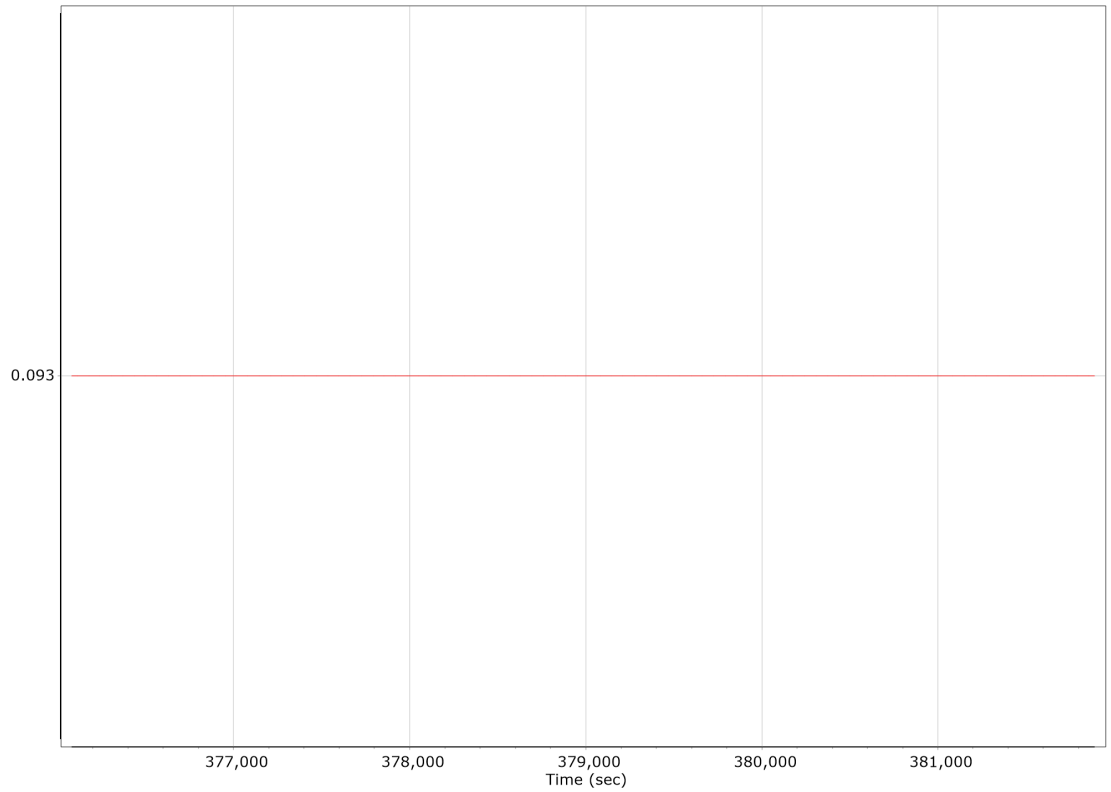
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	375545.000 (11/23/2023 8:19:05 AM)		
Processing end time	381891.000 (11/23/2023 10:04:51 AM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.093	0.062	-1.287
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

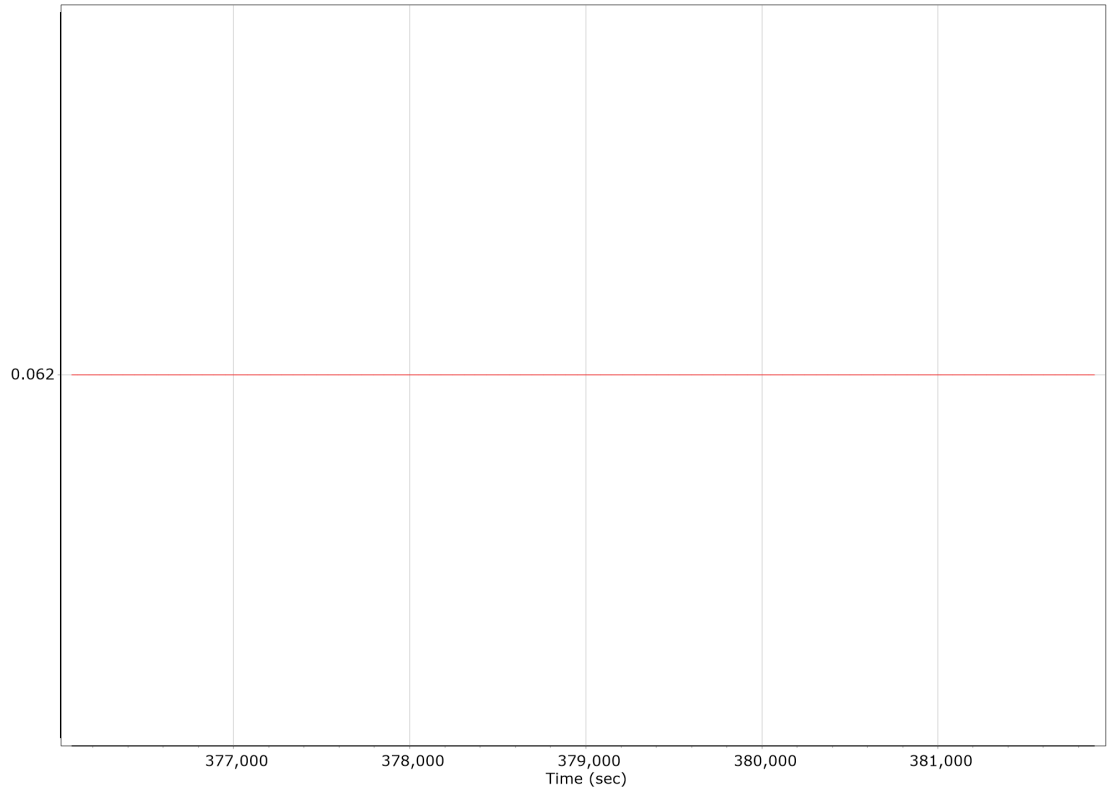
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

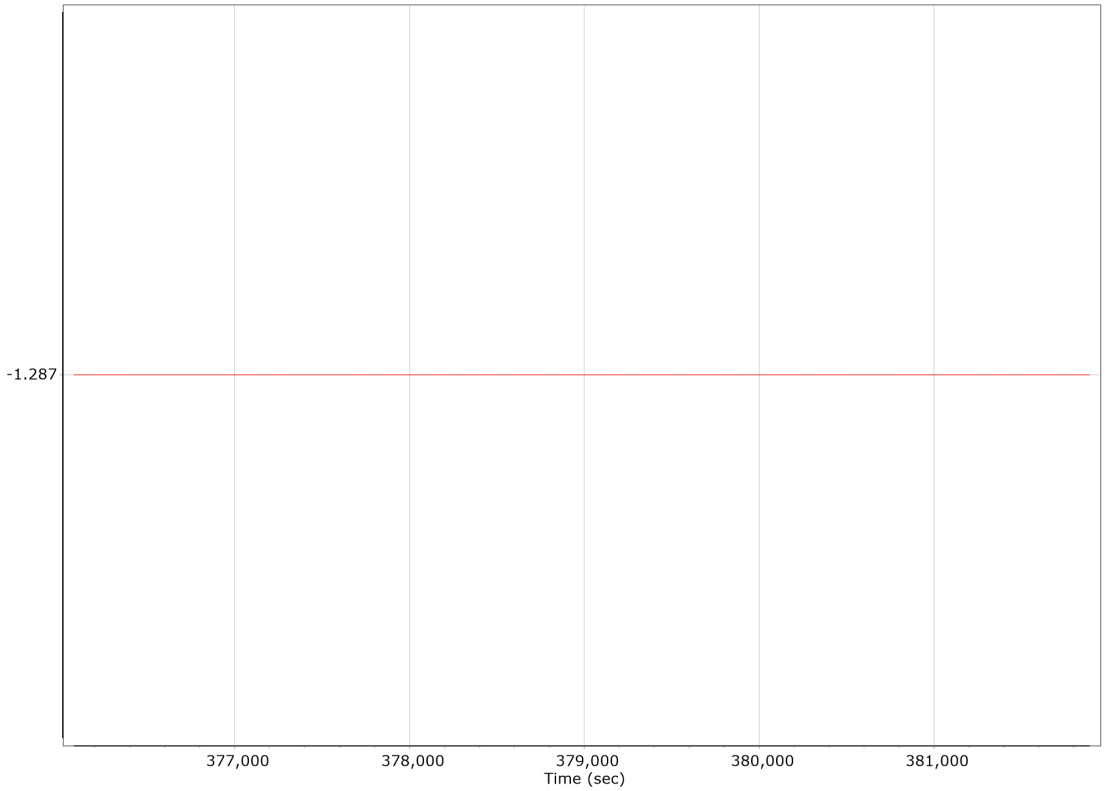
X Reference-Primary GNSS Lever Arm (m)



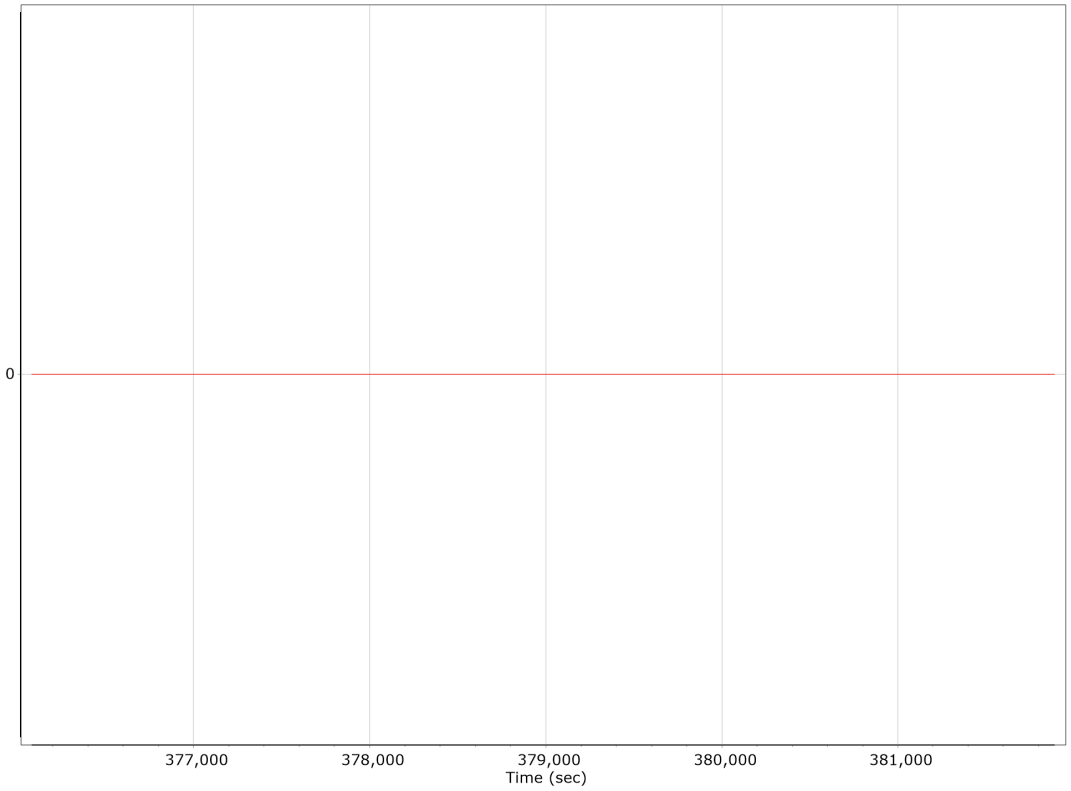
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



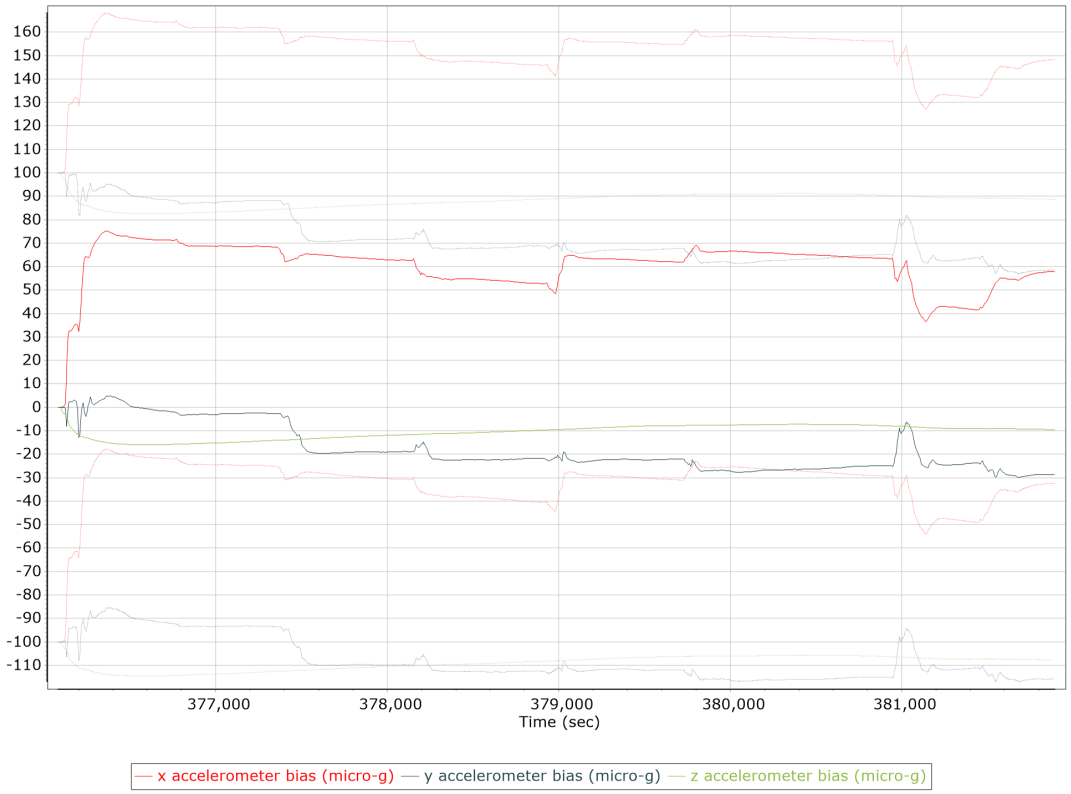
Reference-Primary GNSS Lever Arm Figure of Merit



IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

Accelerometer Bias (micro-g)



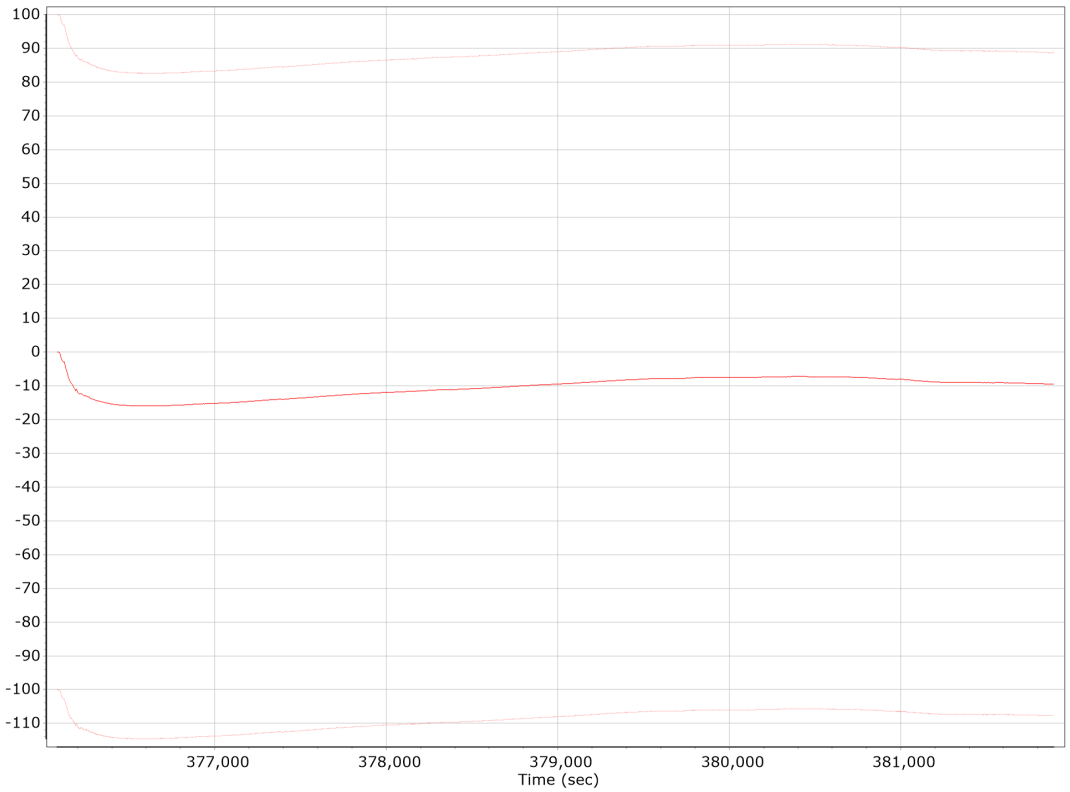
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



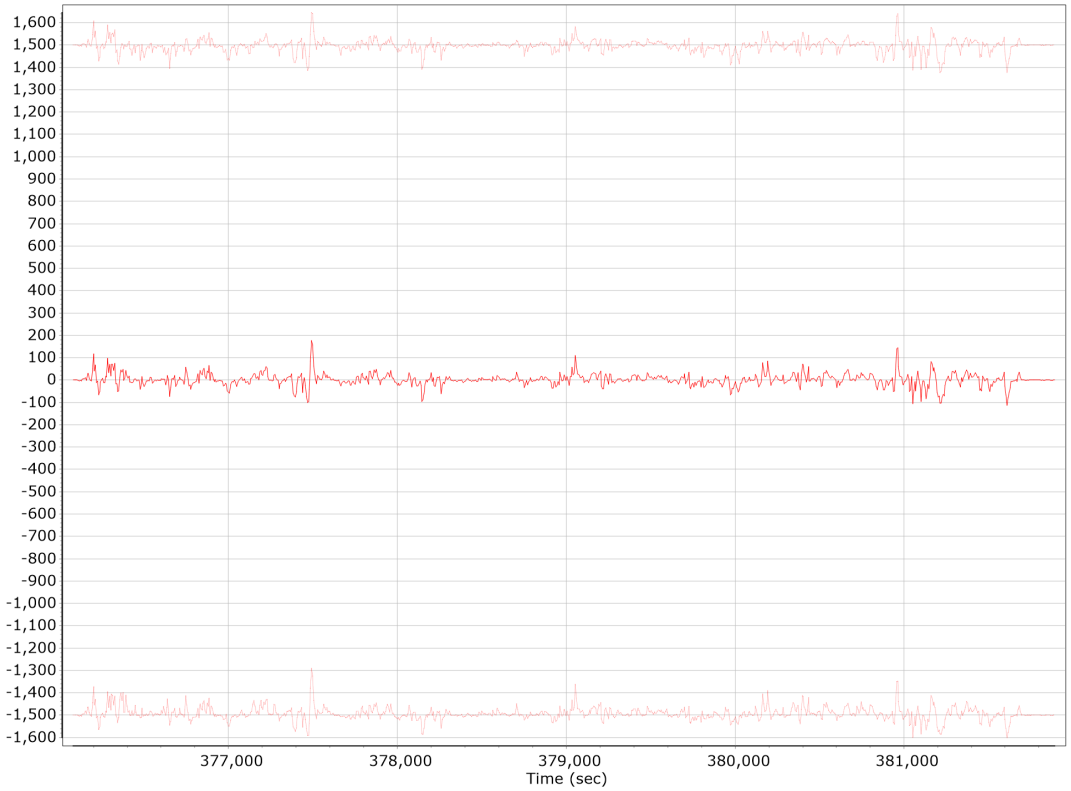
Accelerometer Scale Error (ppm)



X Accelerometer Scale Error (ppm)



Y Accelerometer Scale Error (ppm)



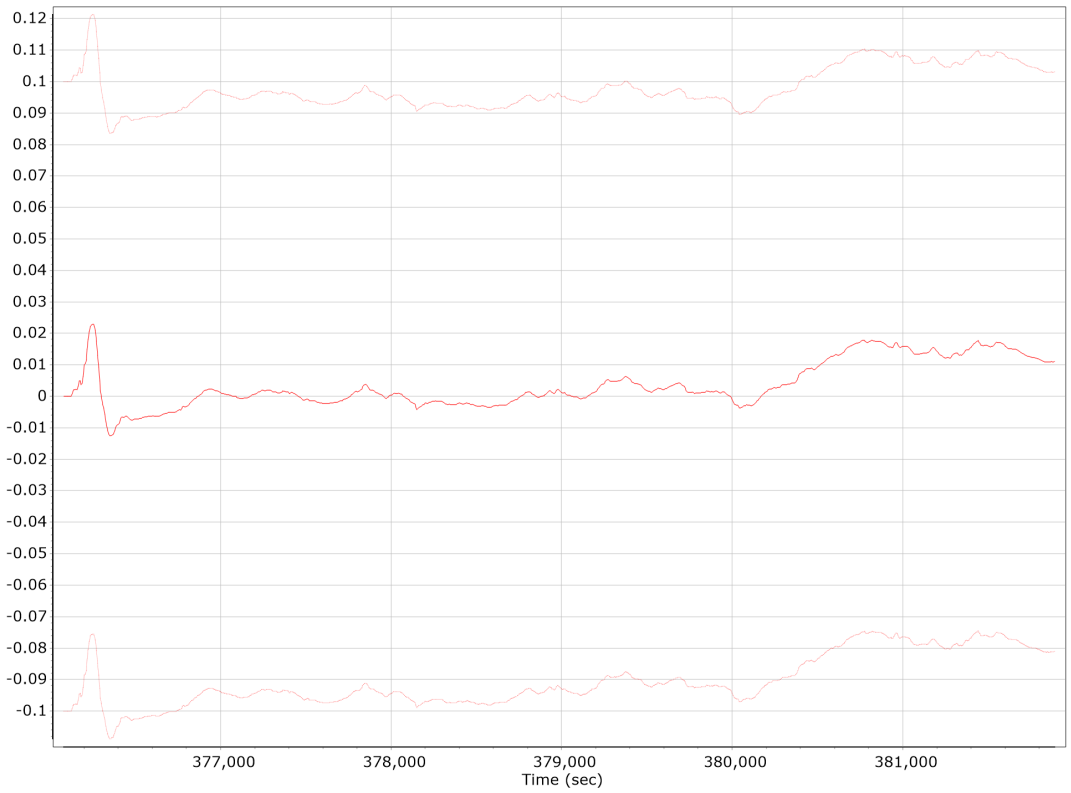
Z Accelerometer Scale Error (ppm)



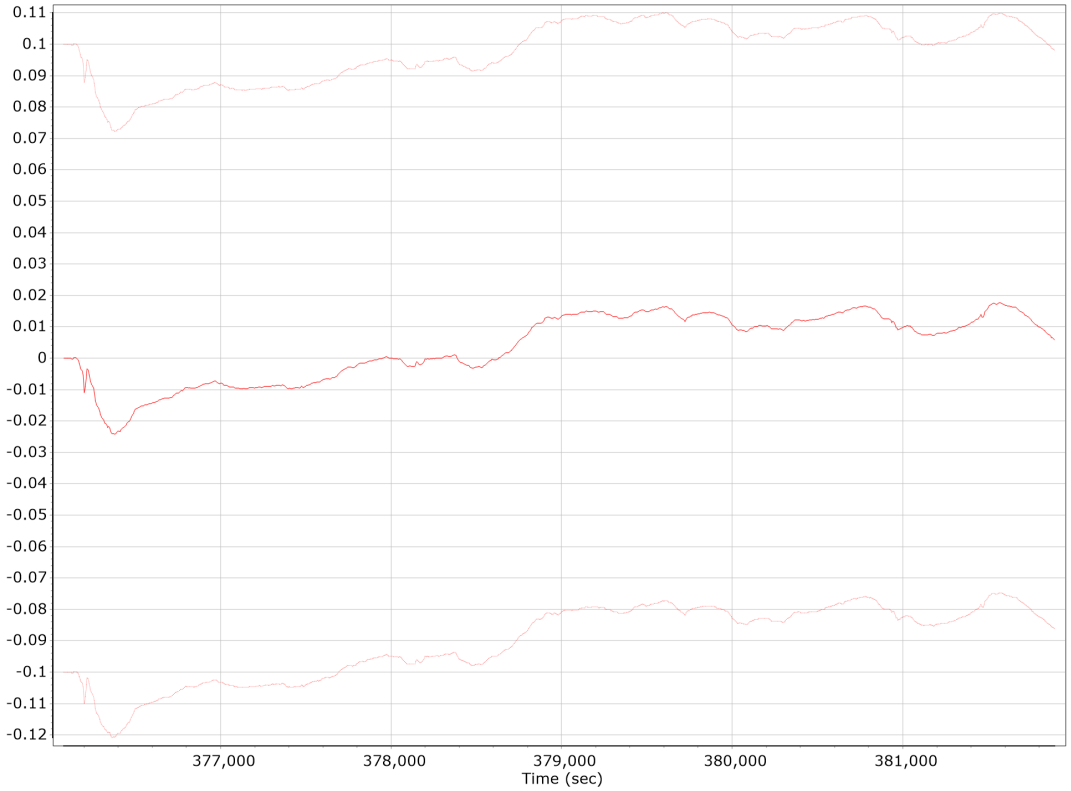
Gyro Bias (deg/h)



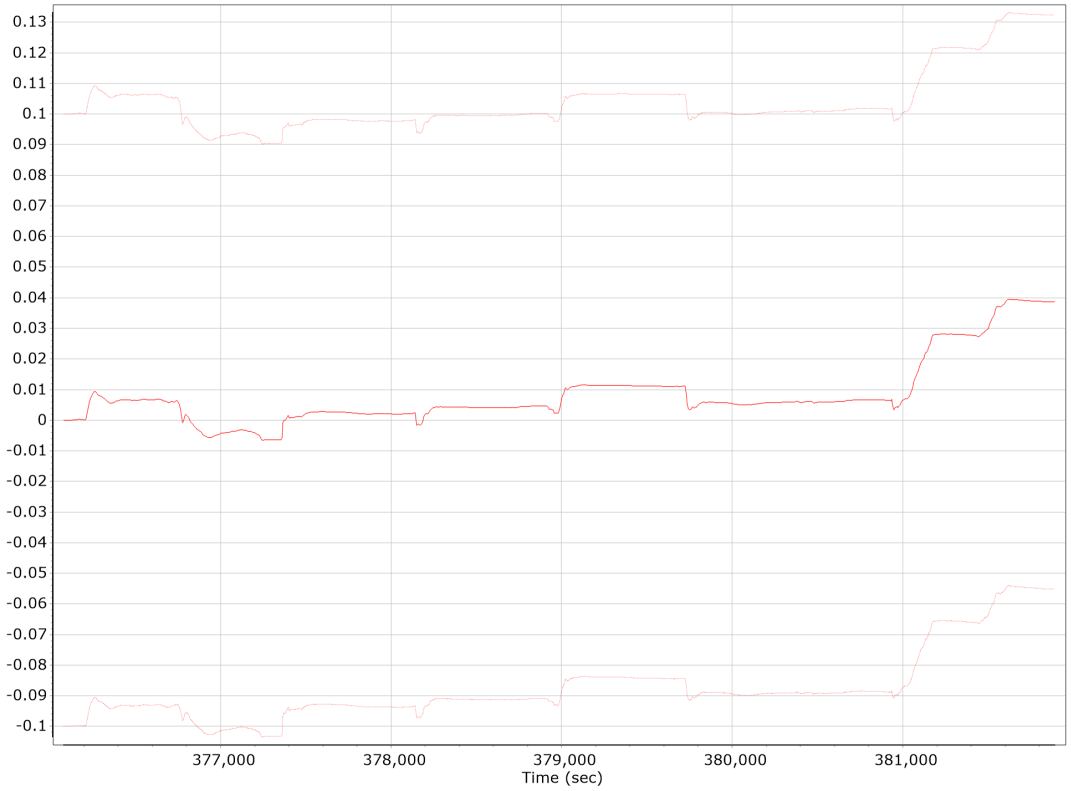
X Gyro Bias (deg/h)



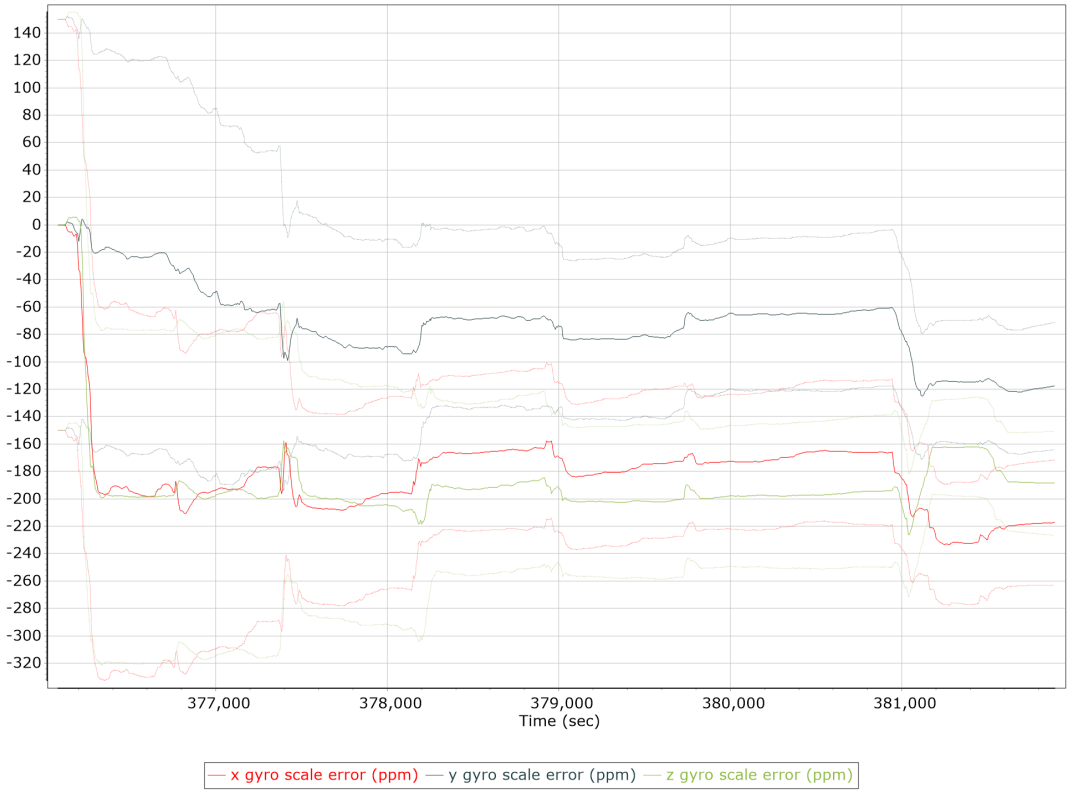
Y Gyro Bias (deg/h)



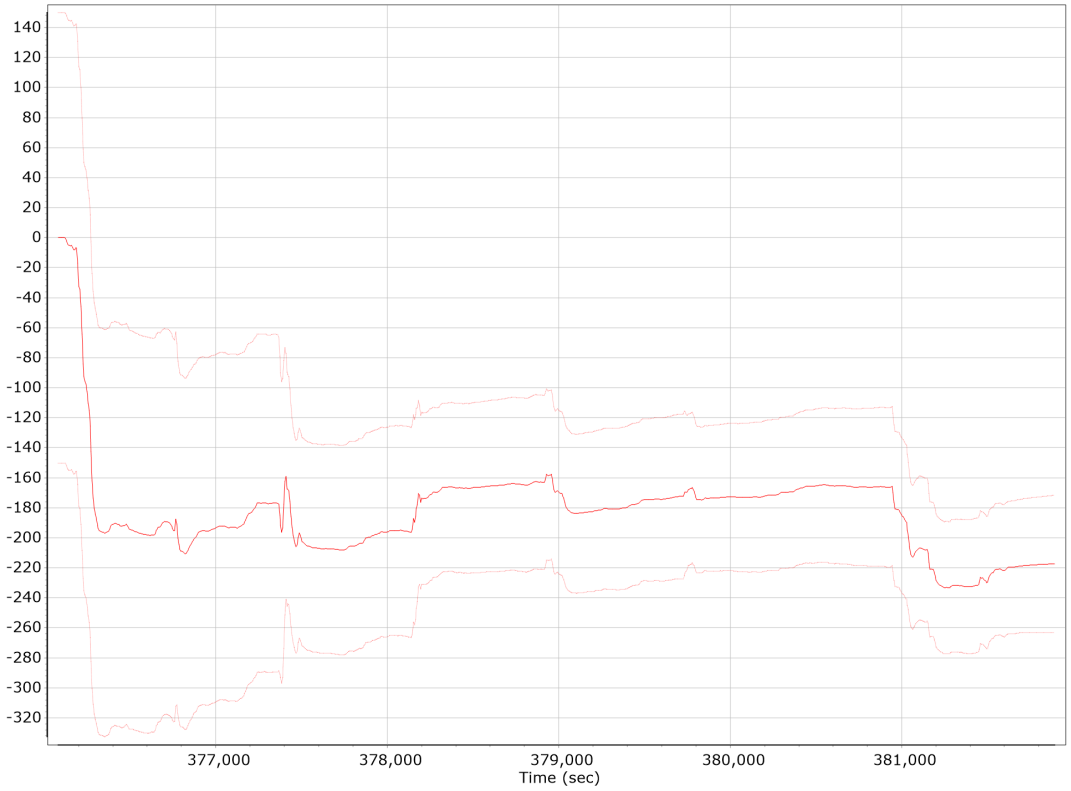
Z Gyro Bias (deg/h)



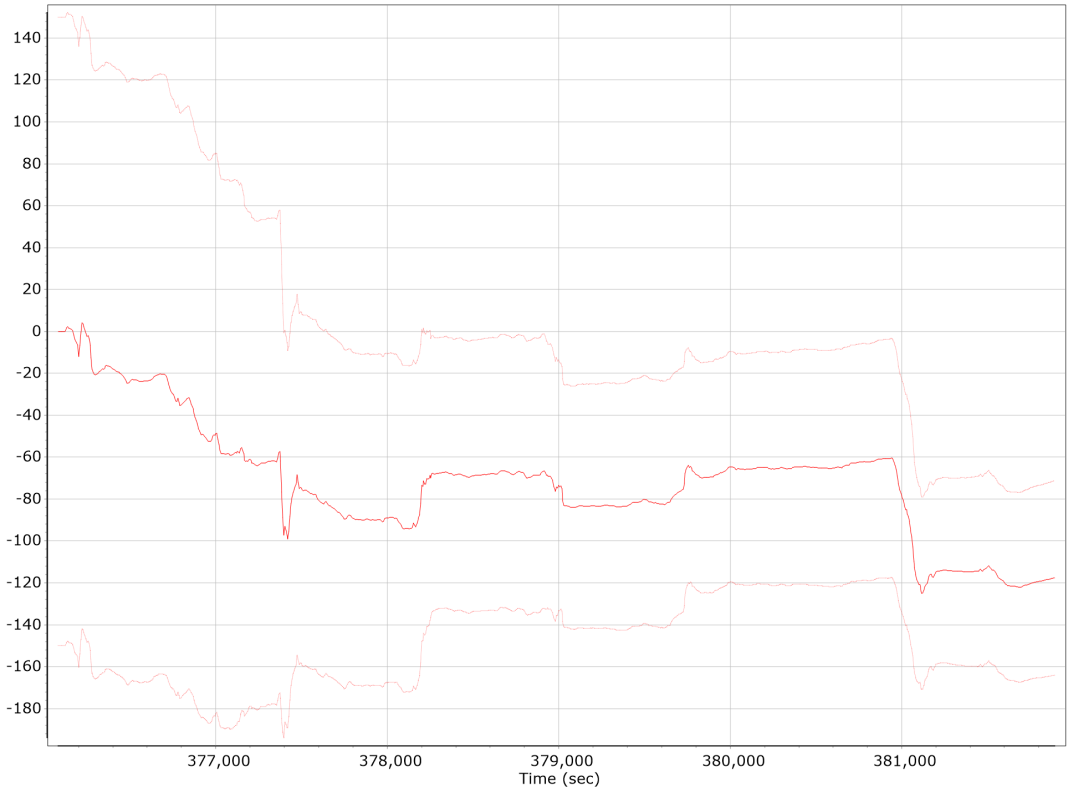
Gyro Scale Error (ppm)



X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)



Z Gyro Scale Error (ppm)

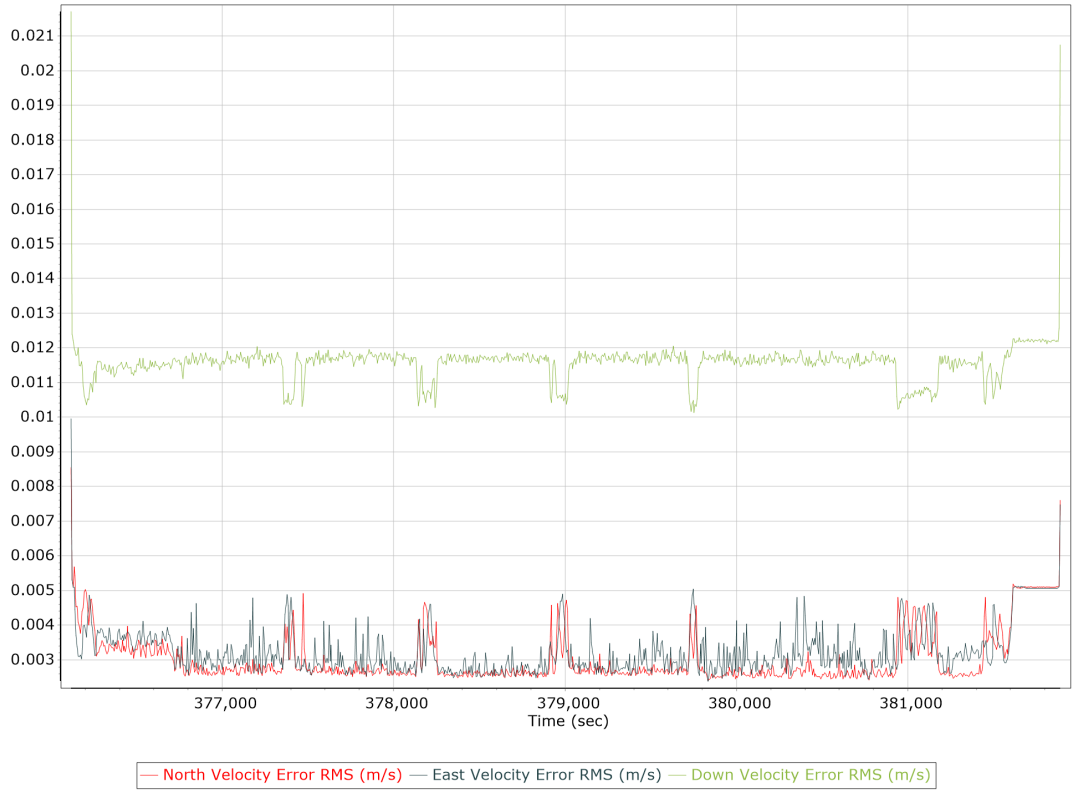


Smoothed Performance Metrics

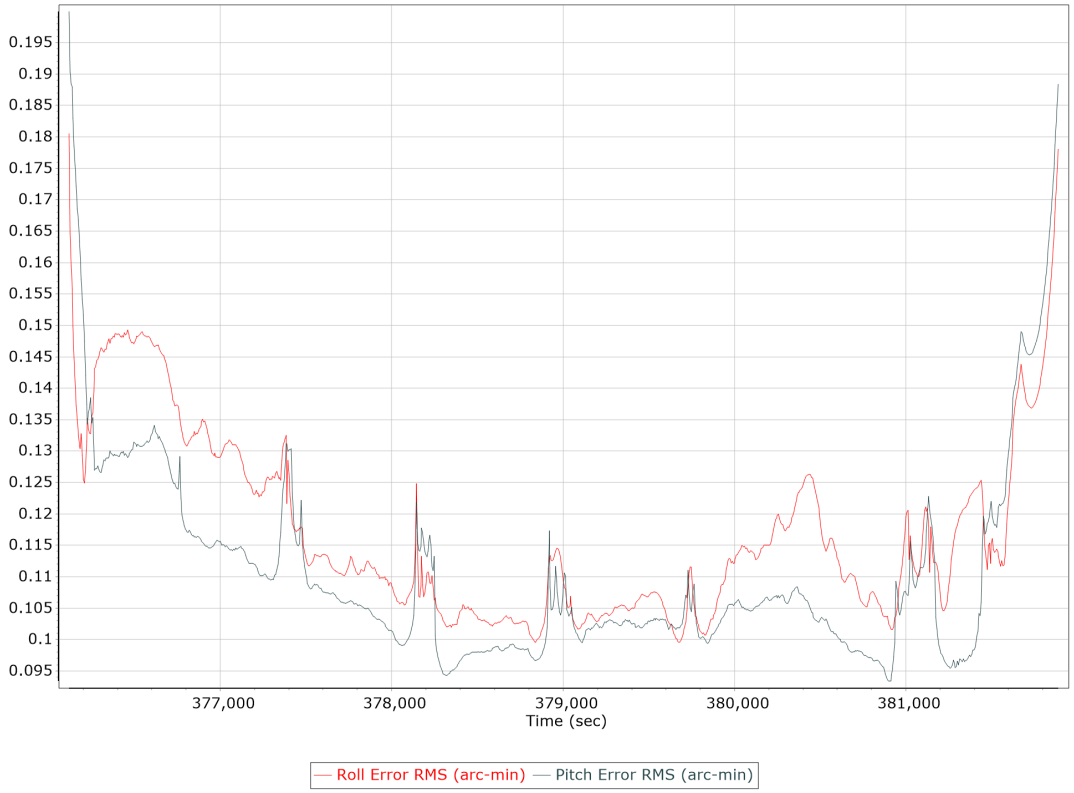
Position Error RMS (m)



Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)



Heading Error RMS (arc-min)



Forward Processed Performance Metrics

Position Error RMS (m)



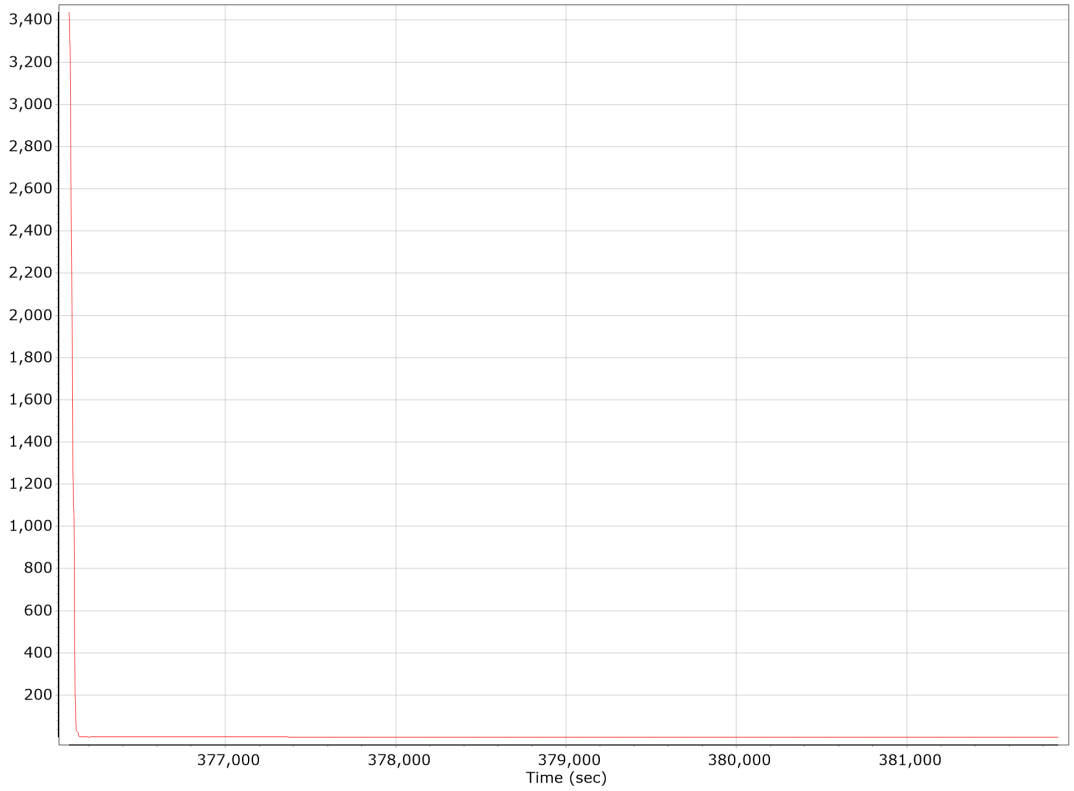
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

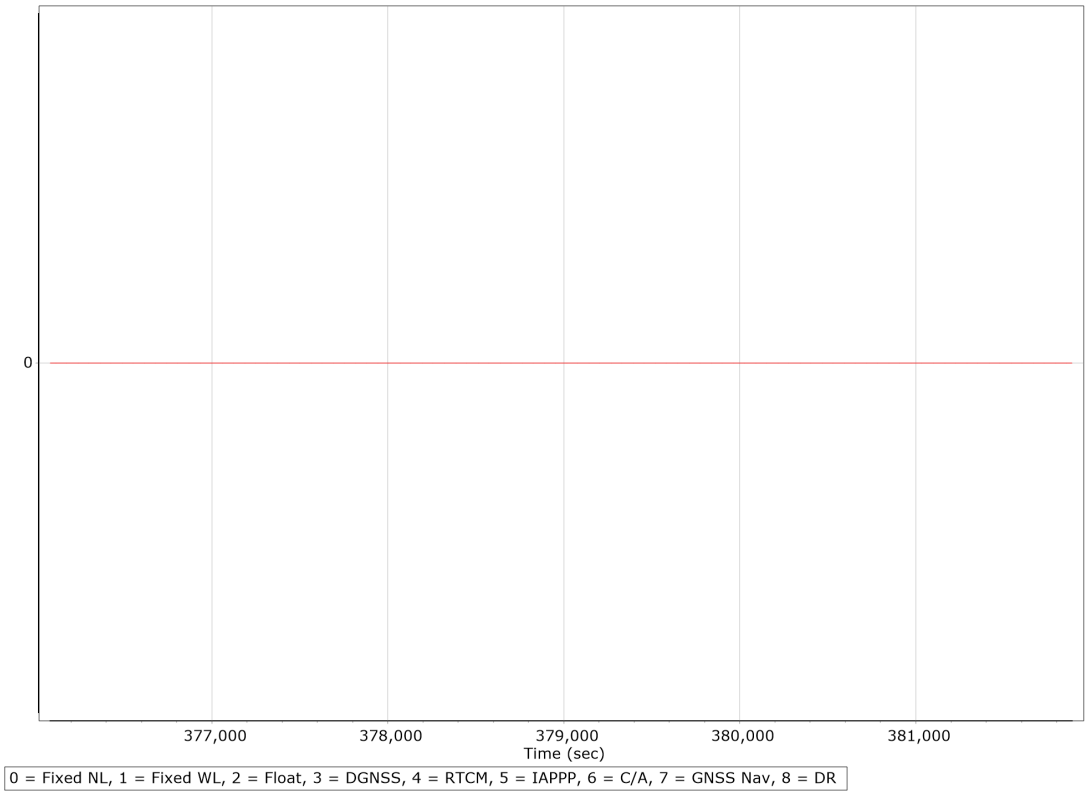


Heading Error RMS (arc-min)



Forward Processed Solution Status

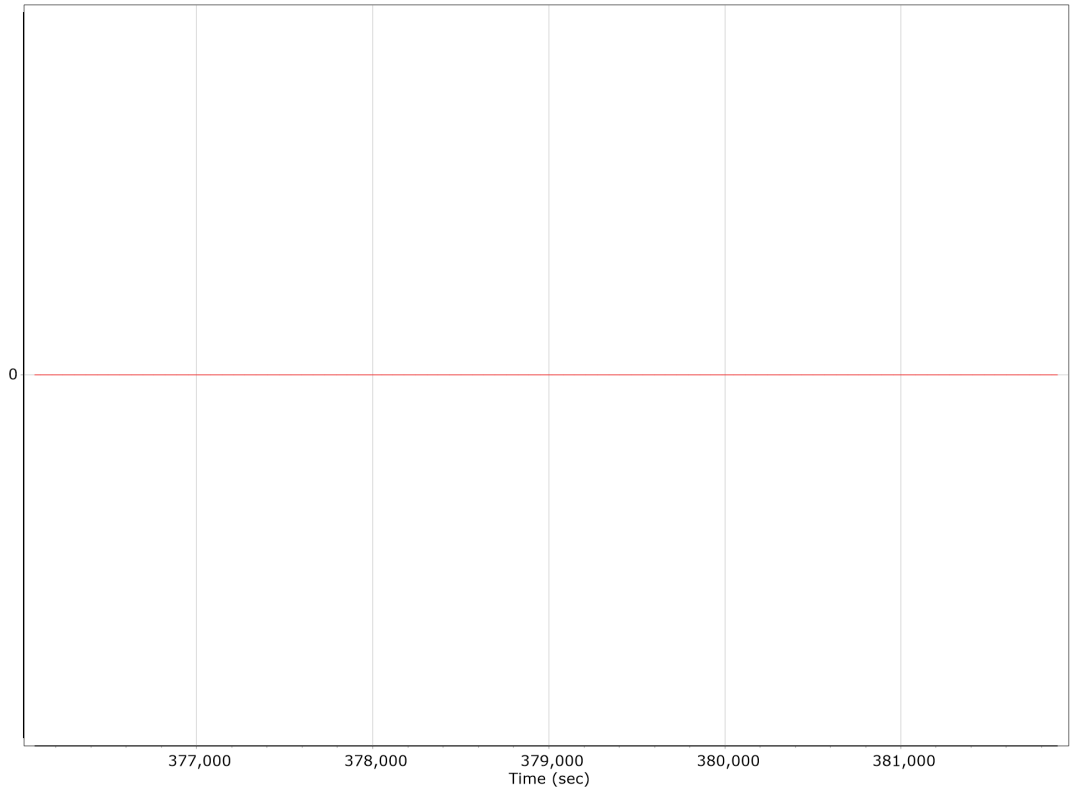
Processing Mode



Number of Satellites



Baseline Length



General Information

Mission Information

Project name	11302023A_3061
Processing date	2023-12-04 18:52:54
Mission date	2023-11-30 23:27:08
Mission duration	02:42:49.300
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N8902
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
231130_232650_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm3340.23g	GLONASS Broadcast Ephemeris
Ephm3340.23n	GPS Broadcast Ephemeris
Ephm3350.23g	GLONASS Broadcast Ephemeris
Ephm3350.23n	GPS Broadcast Ephemeris

Output Files

Filename	File type
sbet_11302023A_3061.out	SBET Trajectory File

Rover Data Summary

First raw data file	231130_232650_INS-GPS_1.raw		
Last raw data file	231130_232650_INS-GPS_1.raw		
Start GPS week	2290		
Start time	430010.009 (11/30/2023 11:26:50 PM)		
End time	439779.309 (12/1/2023 2:09:39 AM)		
Start of fine alignment	430150.546 (11/30/2023 11:29:10 PM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	0.000	0.000	0.000
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

Rover Data QC

Raw IMU Import QC Summary

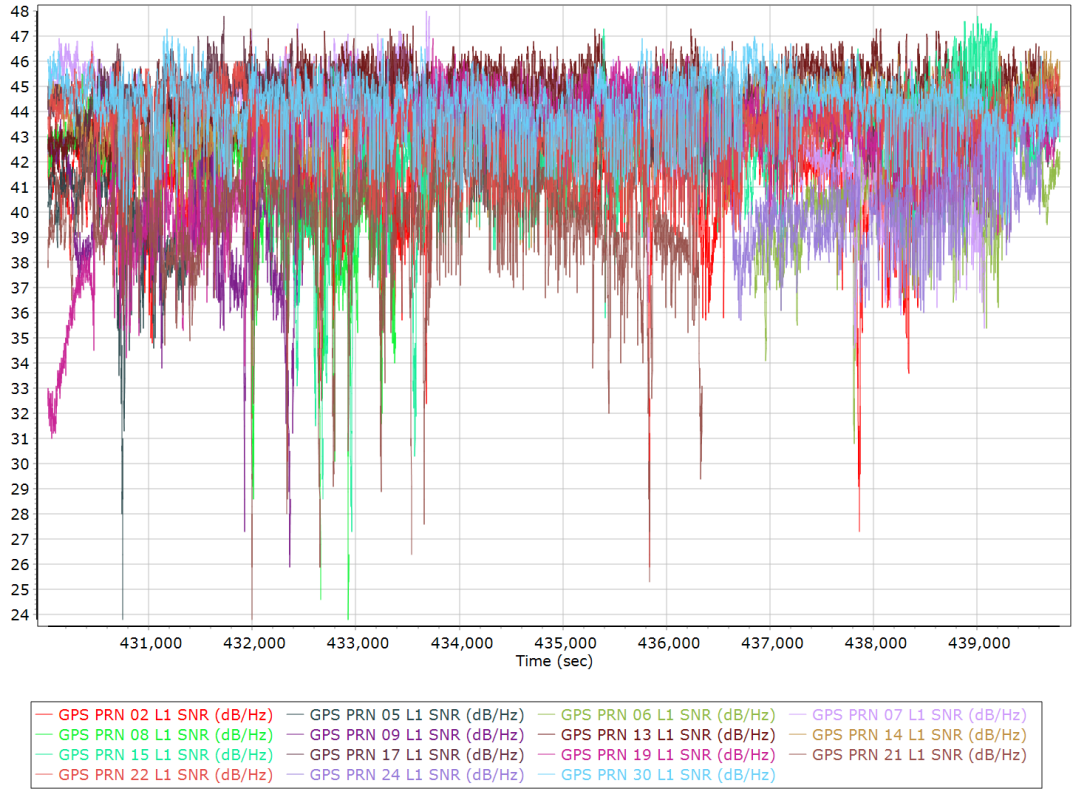
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_11302023A_3061.log
IMU Records Processed	1953525
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

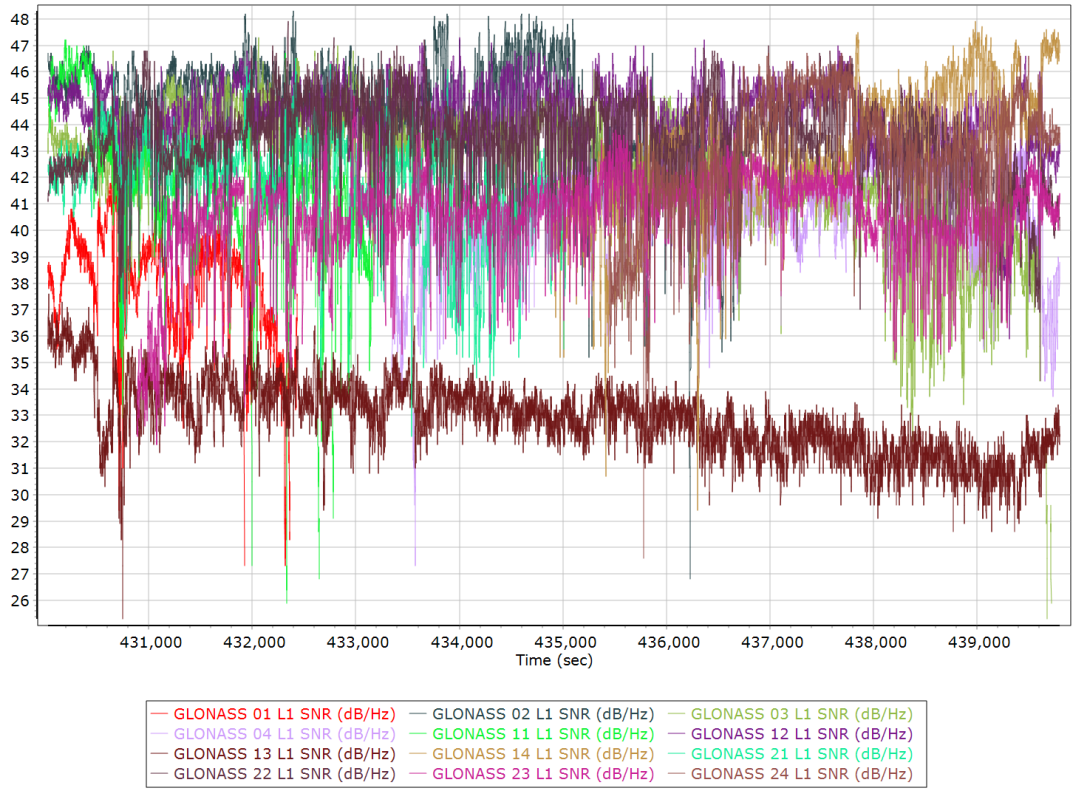
GPS/GLONASS L1 Satellite Lock/Elevation



GPS L1 SNR



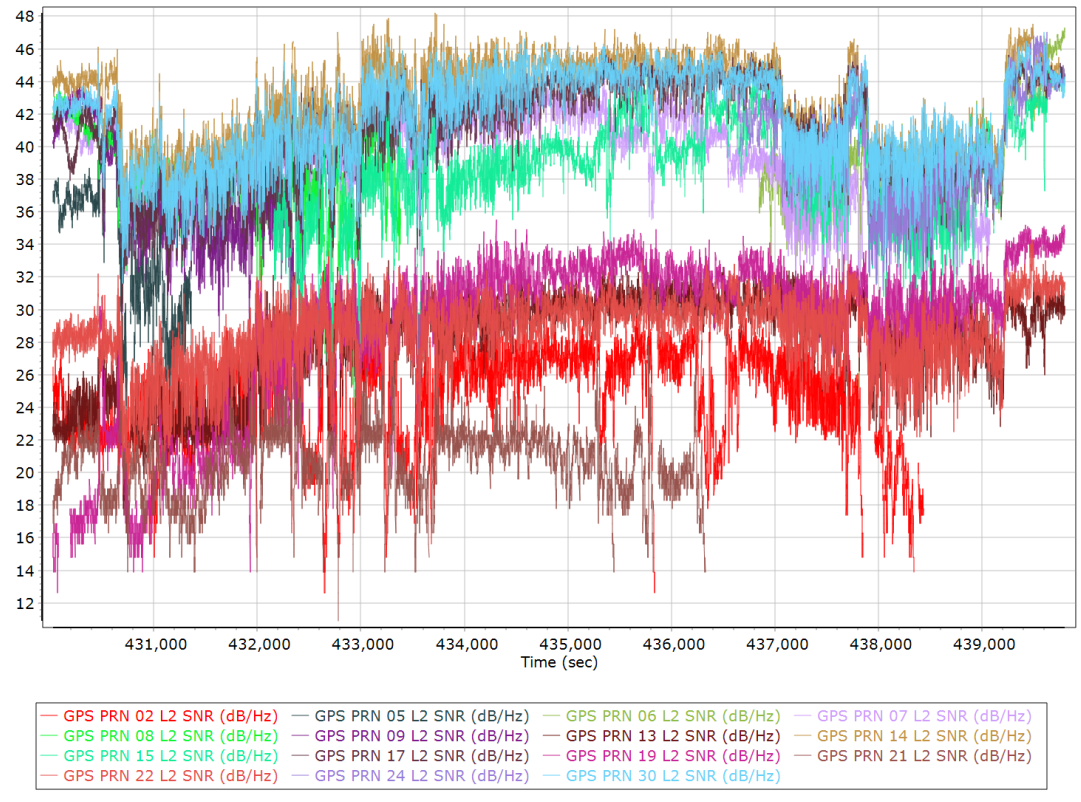
GLONASS L1 SNR



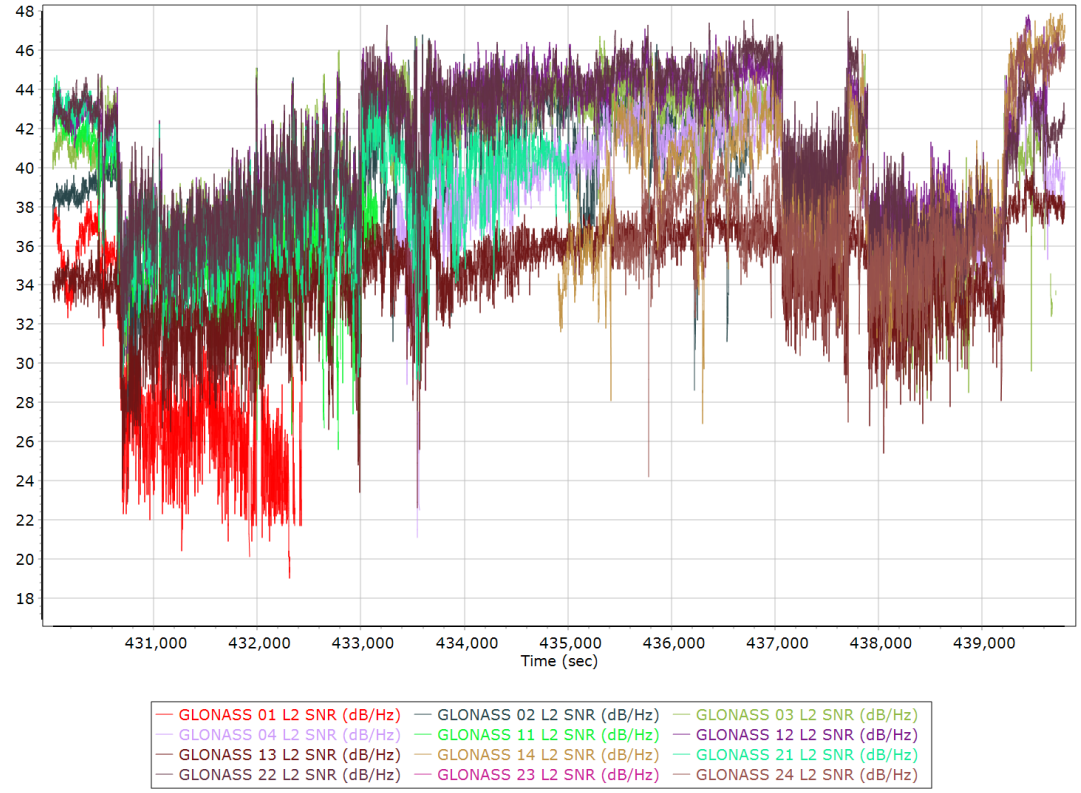
GPS/GLONASS L2 Satellite Lock/Elevation



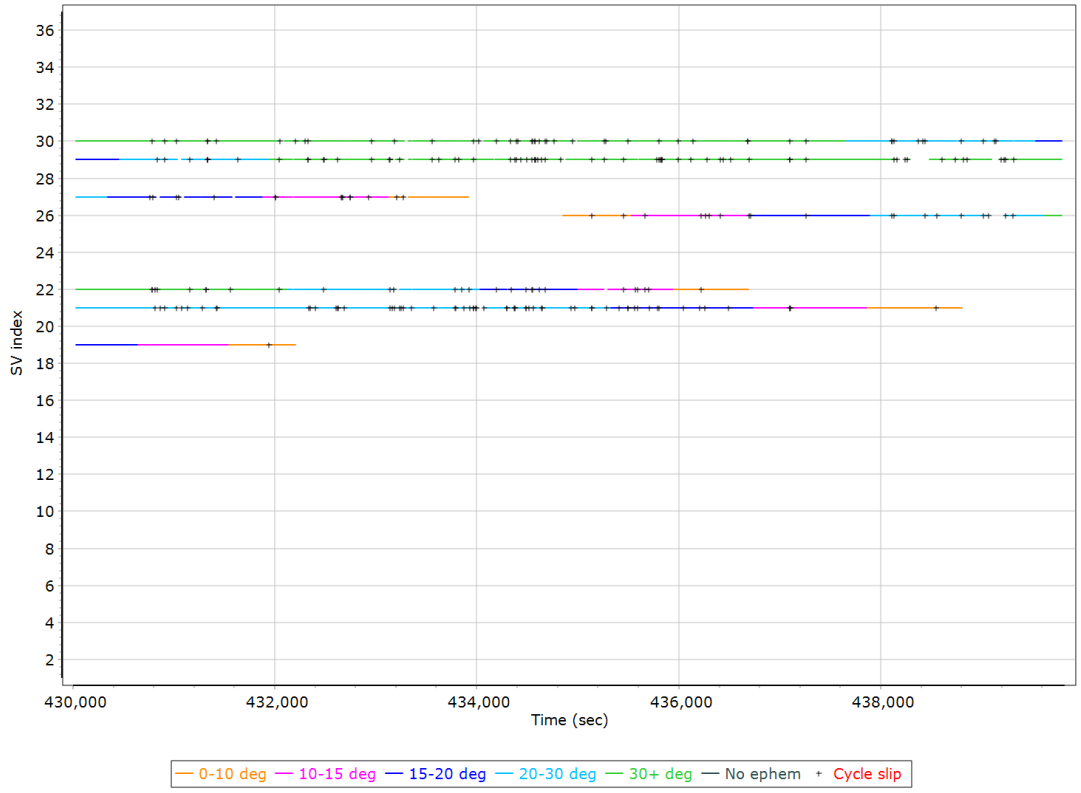
GPS L2 SNR



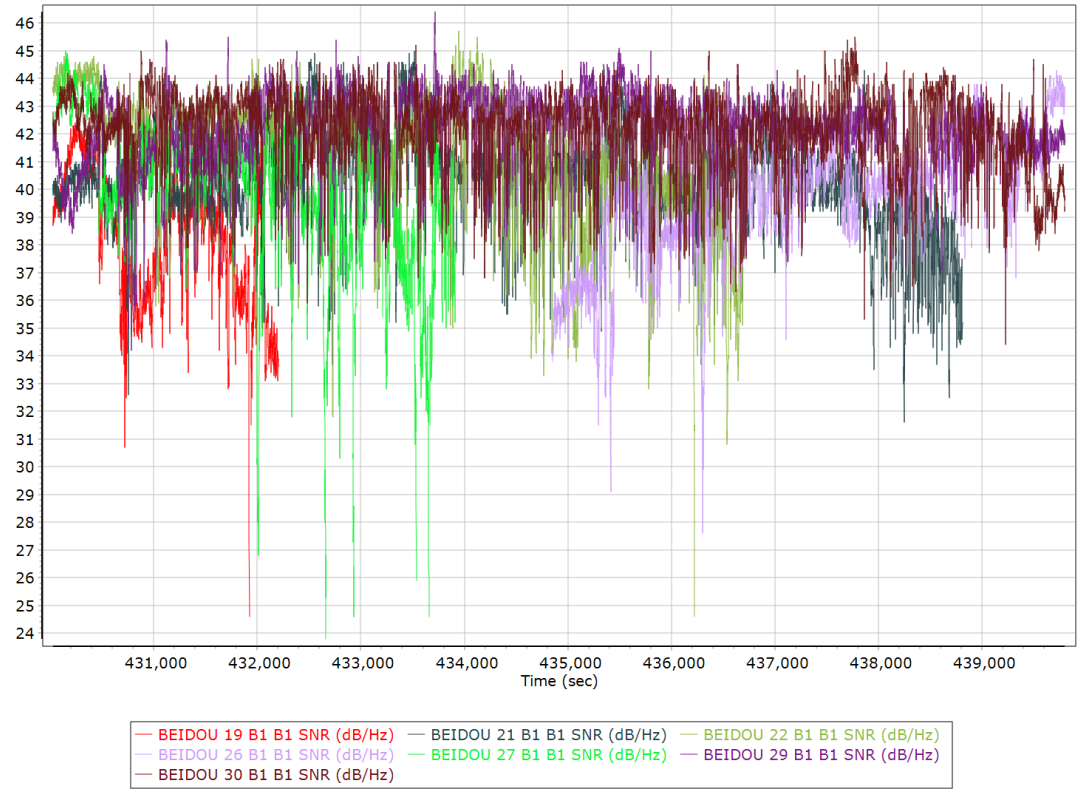
GLONASS L2 SNR



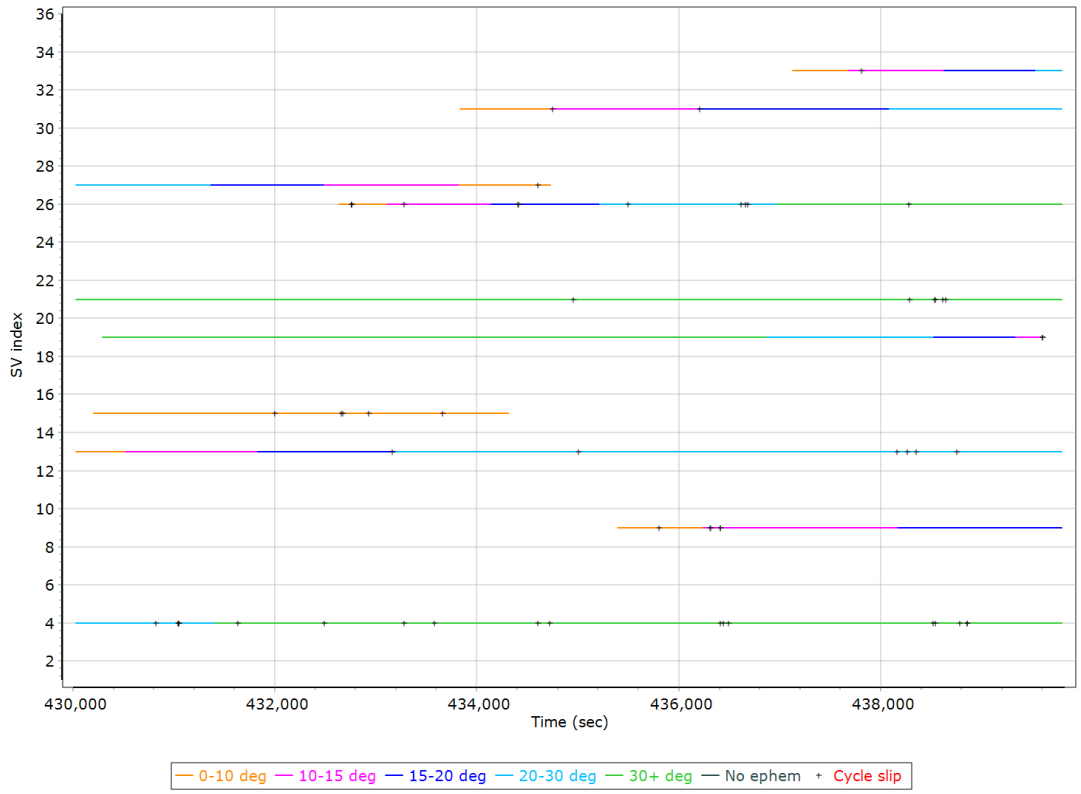
BEIDOU Satellite Lock/Elevation



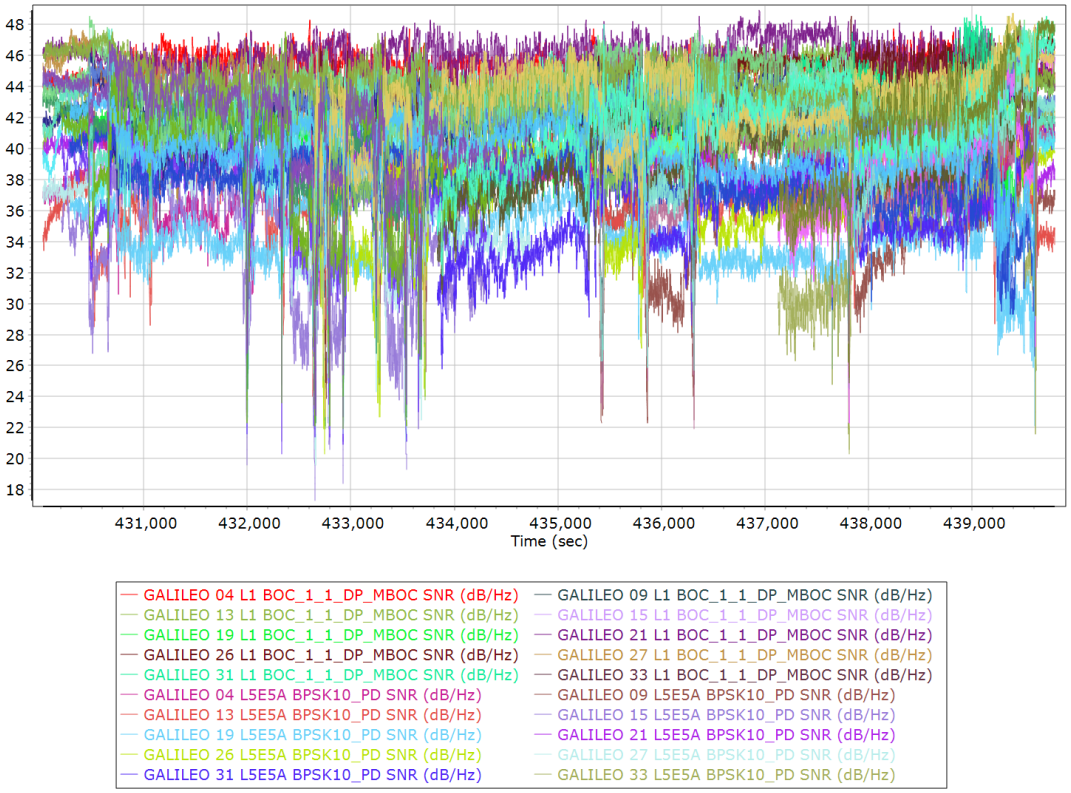
BEIDOU SNR



GALILEO Satellite Lock/Elevation



GALILEO SNR

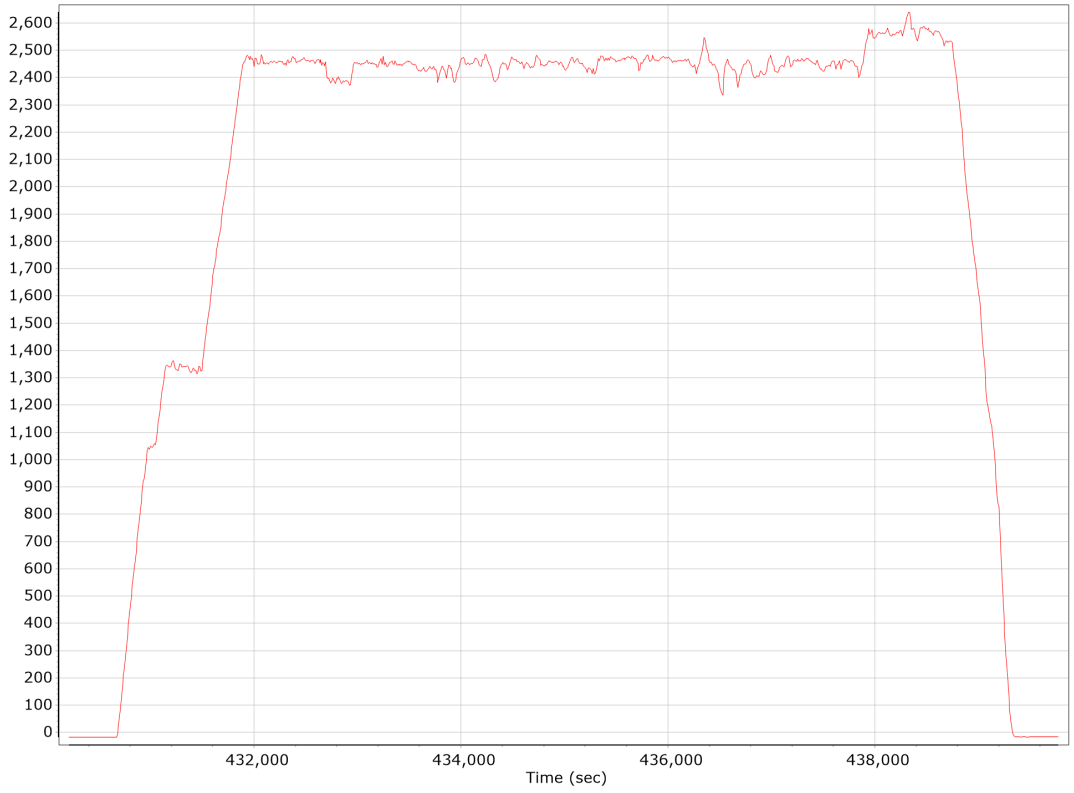

48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
18
431,000
432,000
433,000
434,000
435,000
436,000
437,000
438,000
439,000
Time (sec)
GALILEO 04 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 09 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 13 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 15 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 19 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 21 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 26 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 27 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 31 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 33 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 04 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 09 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 13 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 15 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 19 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 21 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 26 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 27 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 31 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 33 L5E5A BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

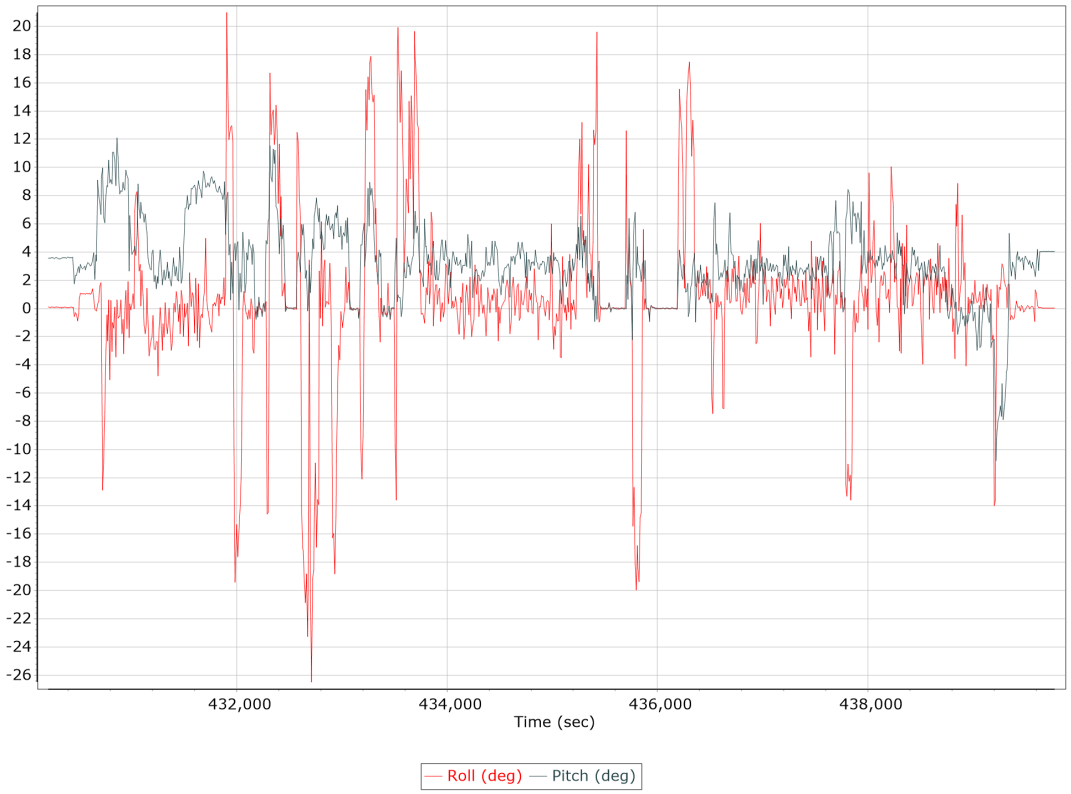
Top View



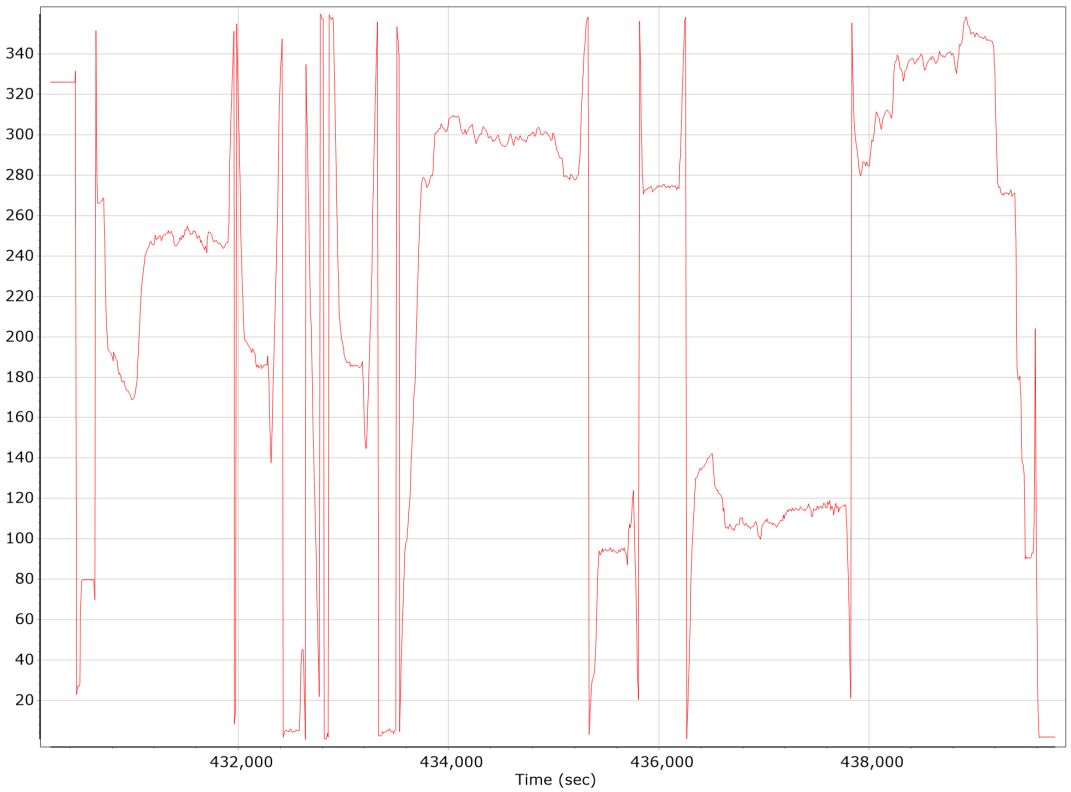
Altitude



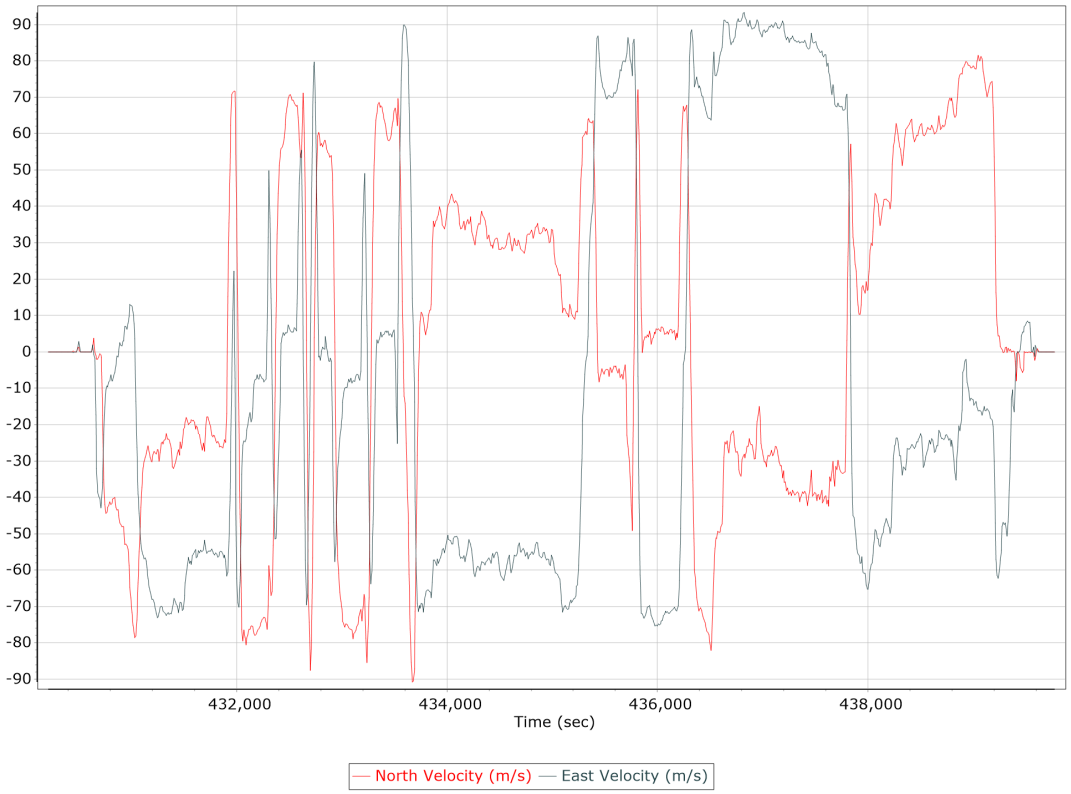
Roll/Pitch



Heading



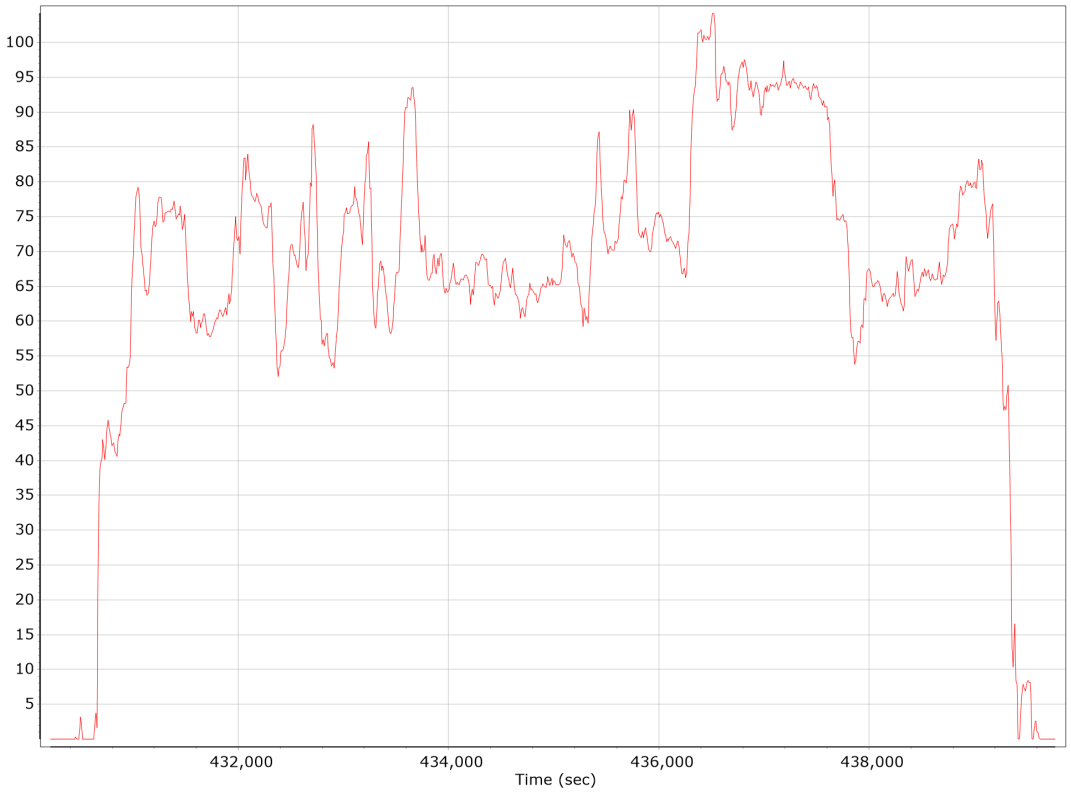
North/East Velocity



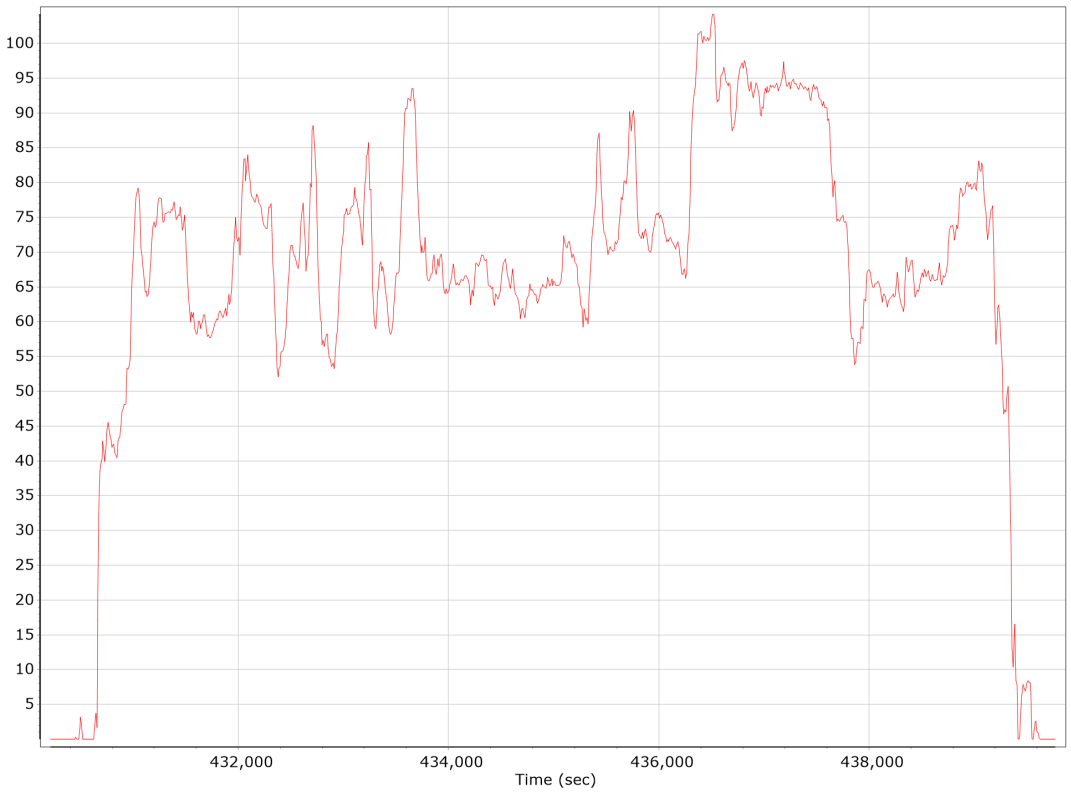
Down Velocity



Total Speed



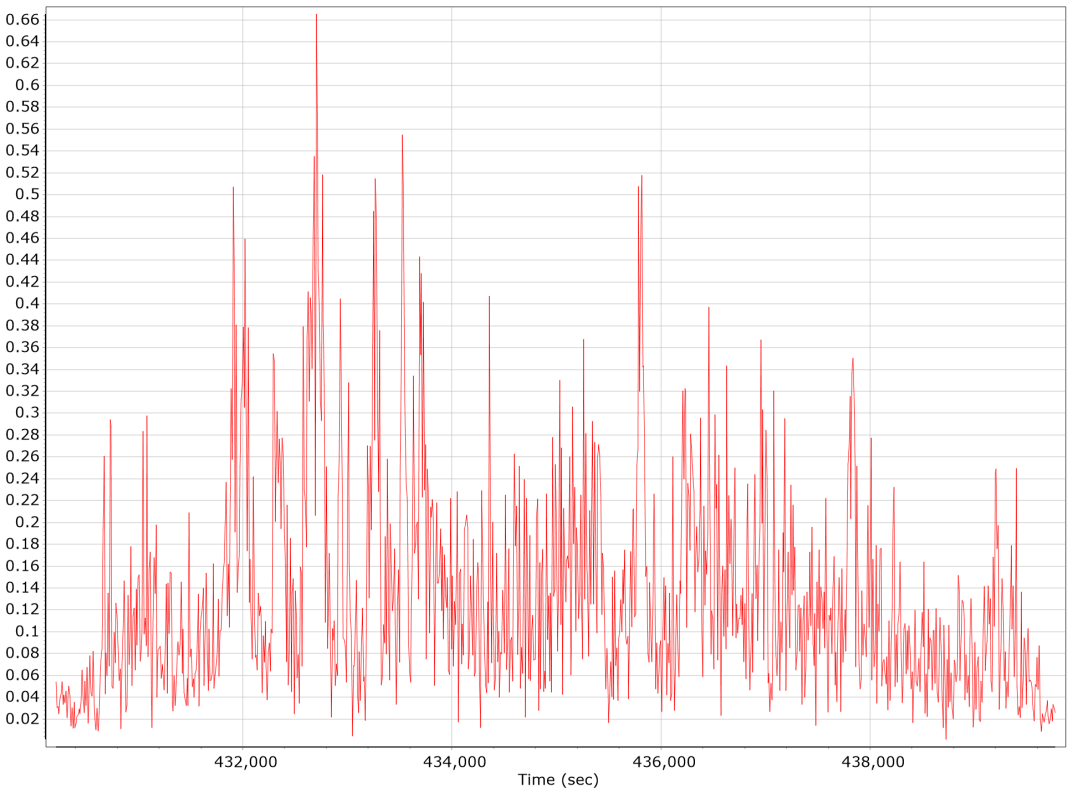
Ground Speed



Body Acceleration



Total Body Acceleration



Body Angular Rate

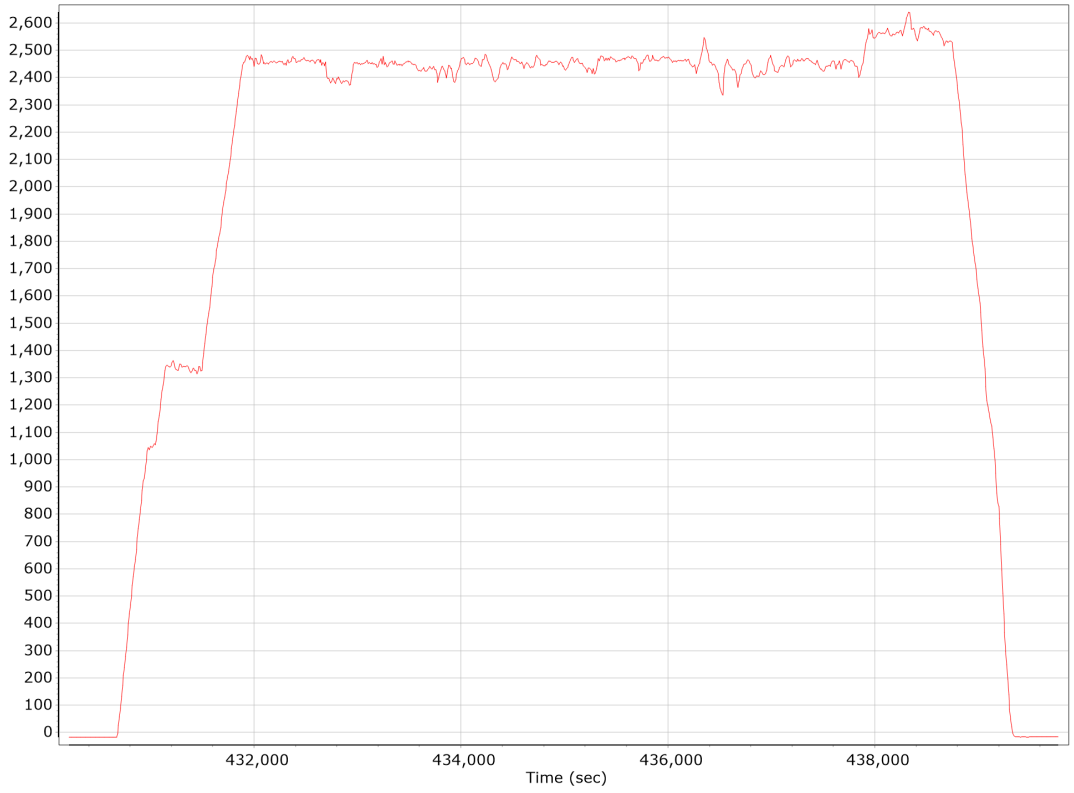


Forward Processed Trajectory Information

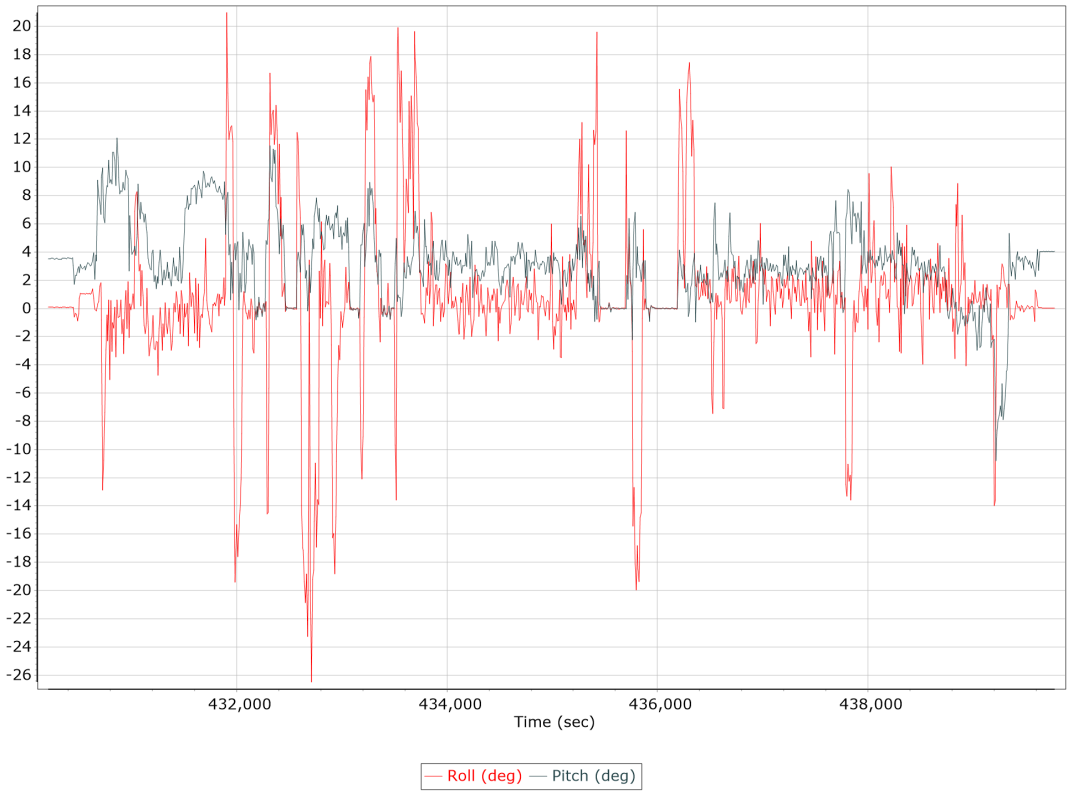
Top View



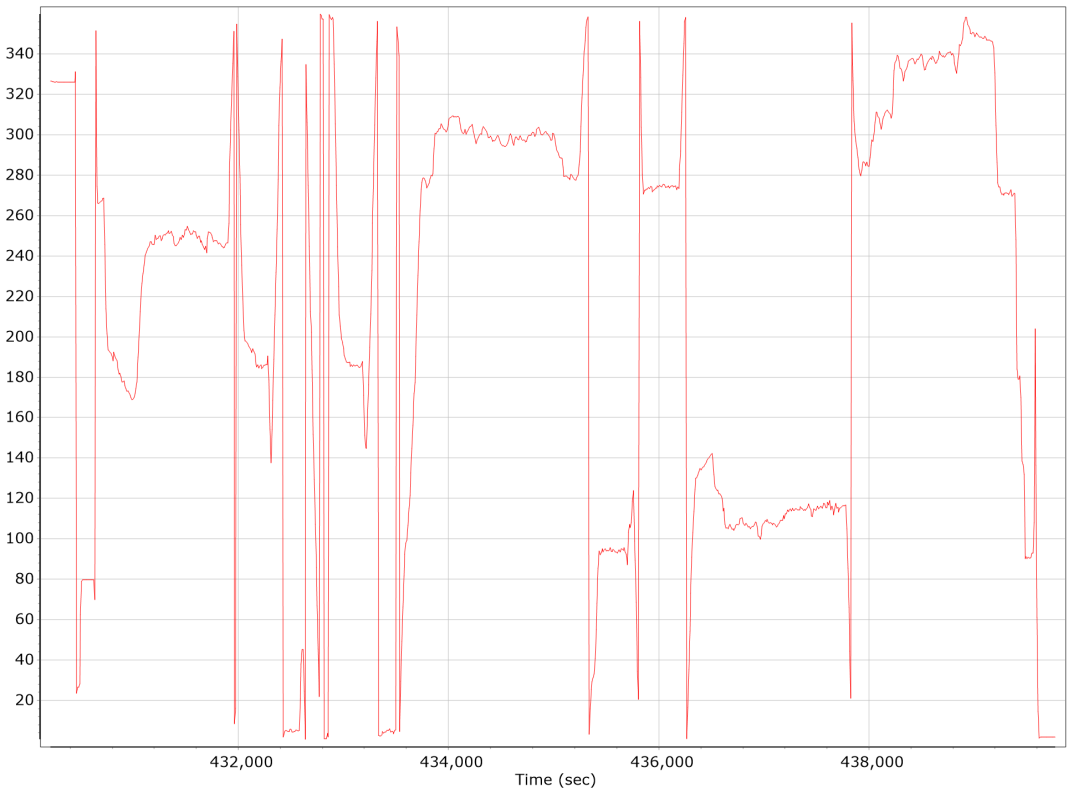
Altitude



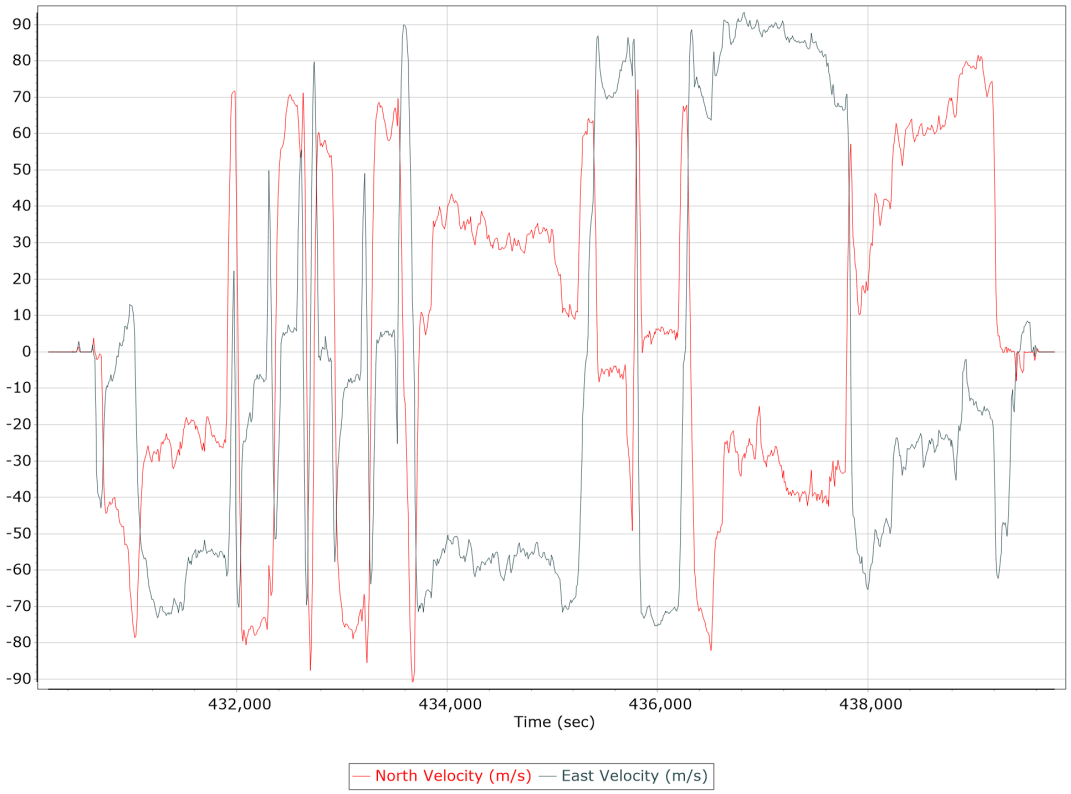
Roll/Pitch



Heading



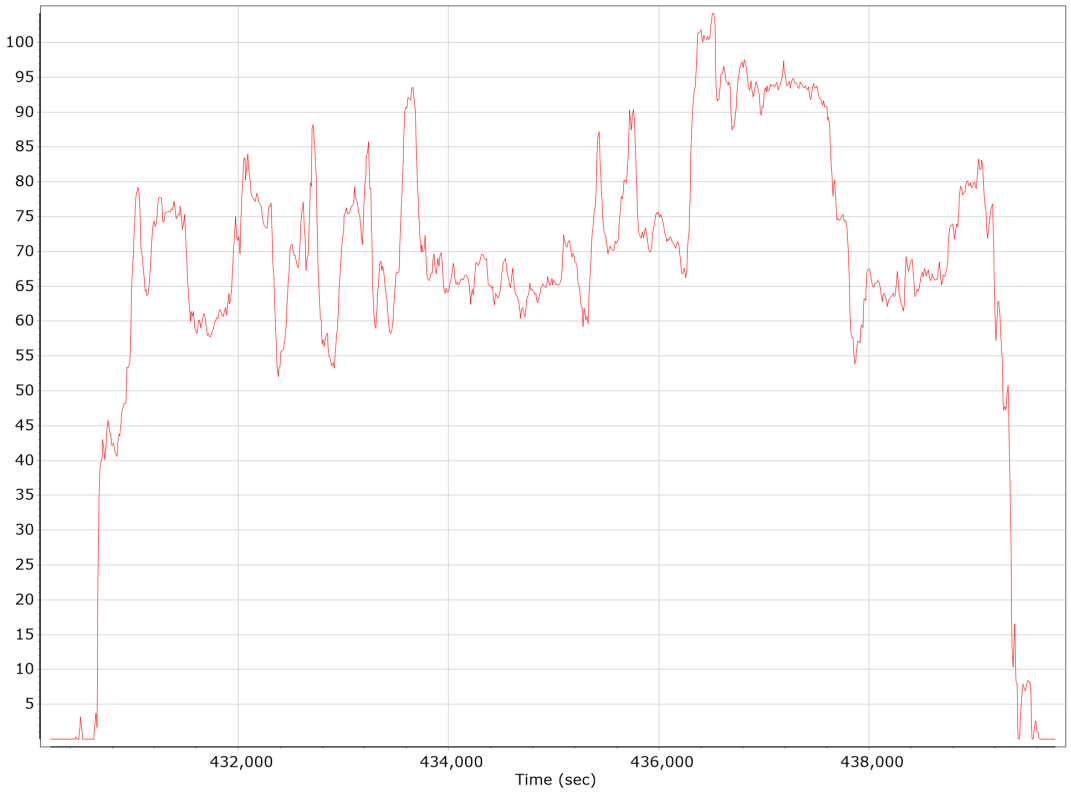
North/East Velocity



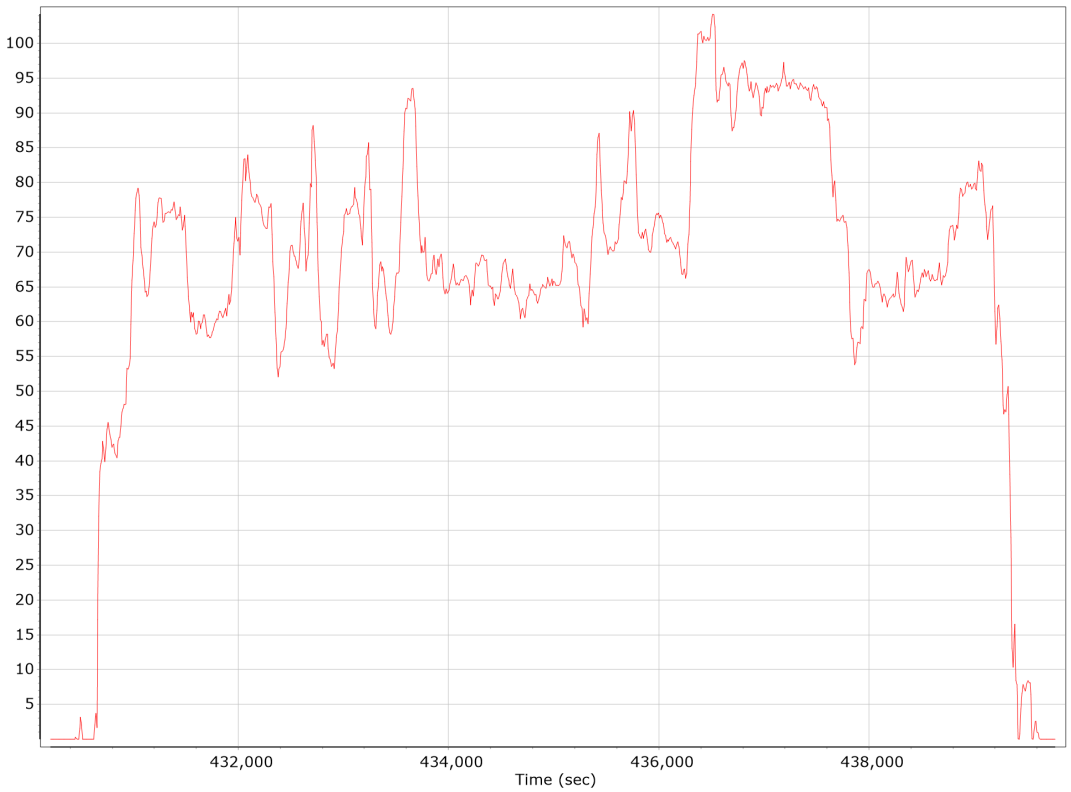
Down Velocity



Total Speed



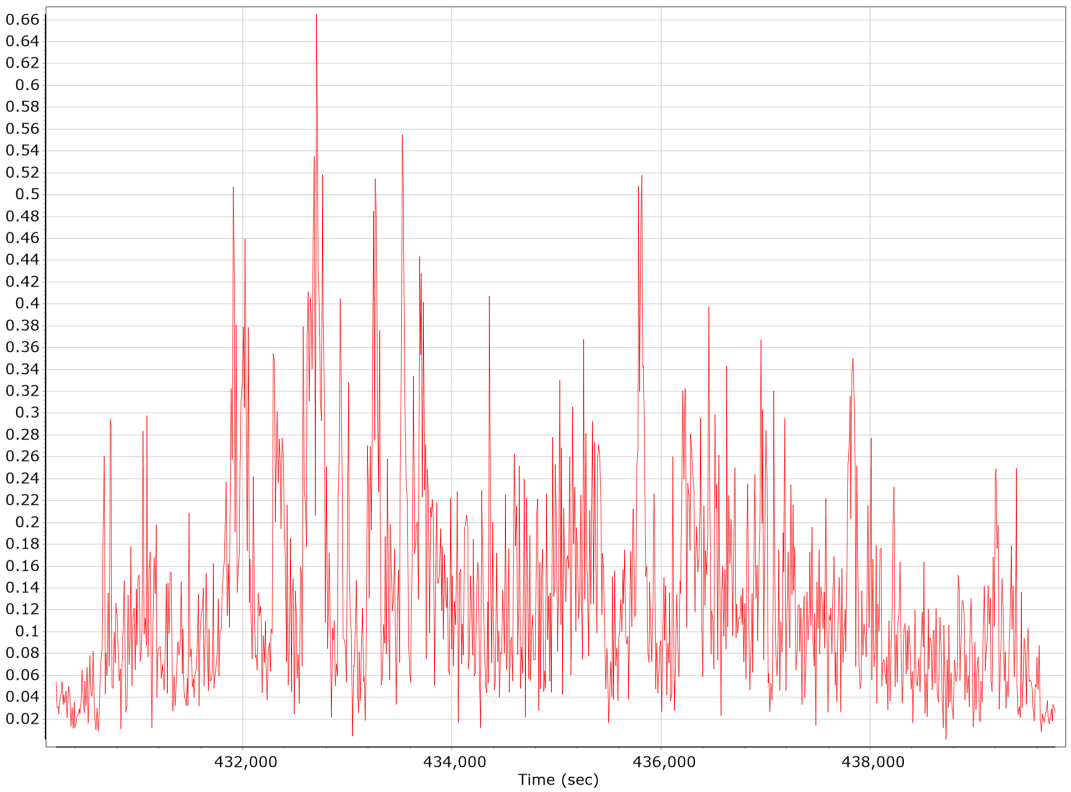
Ground Speed



Body Acceleration



Total Body Acceleration



Body Angular Rate

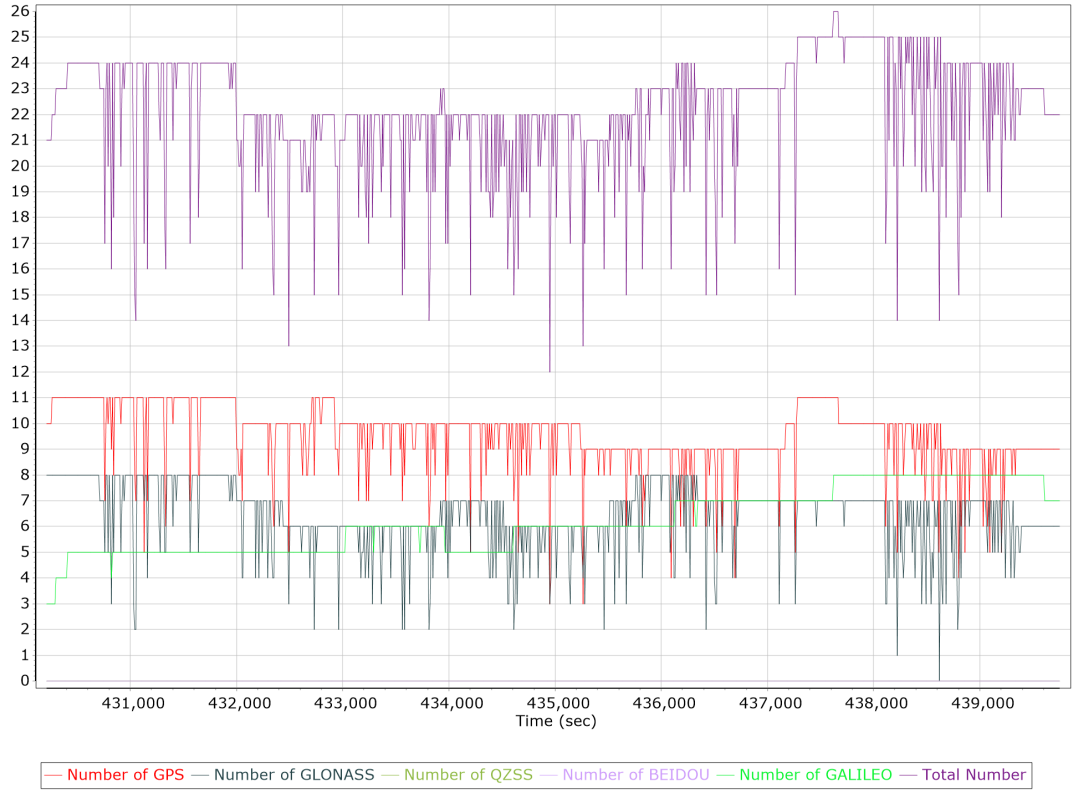


GNSS QC

GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	2	11	10
Number of GLONASS SV	0	8	6
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	3	8	6
Total number of SV	9	26	22
PDOP	0.99	2.89	1.21
QC Solution Gaps	1.00	2.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	9720.00	0.00	3.00
Percentage	99.97	0.00	0.03

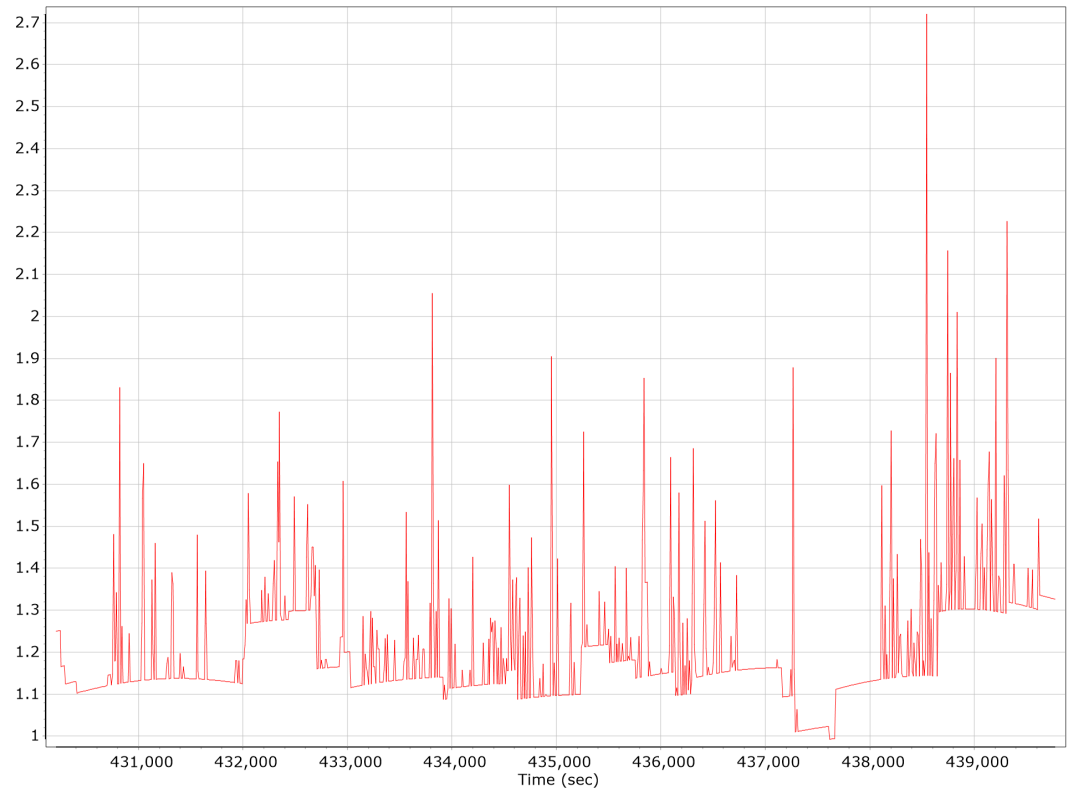
Num SVs in solution



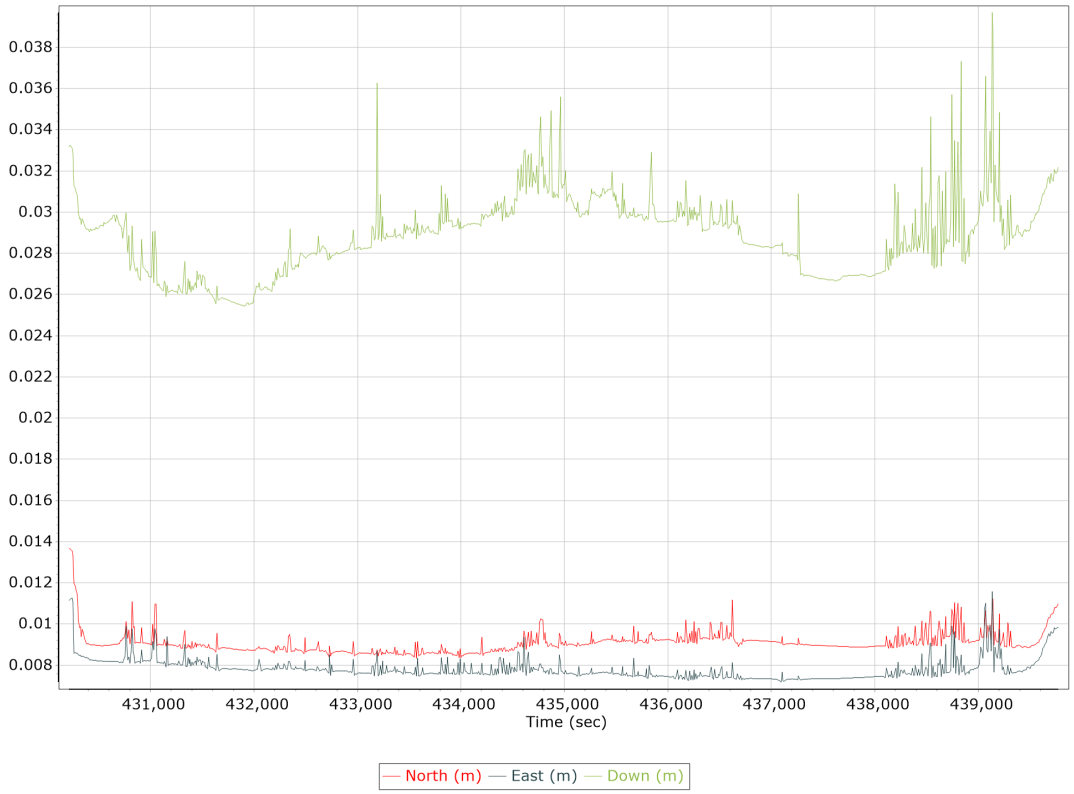
Forward/Reverse Separation



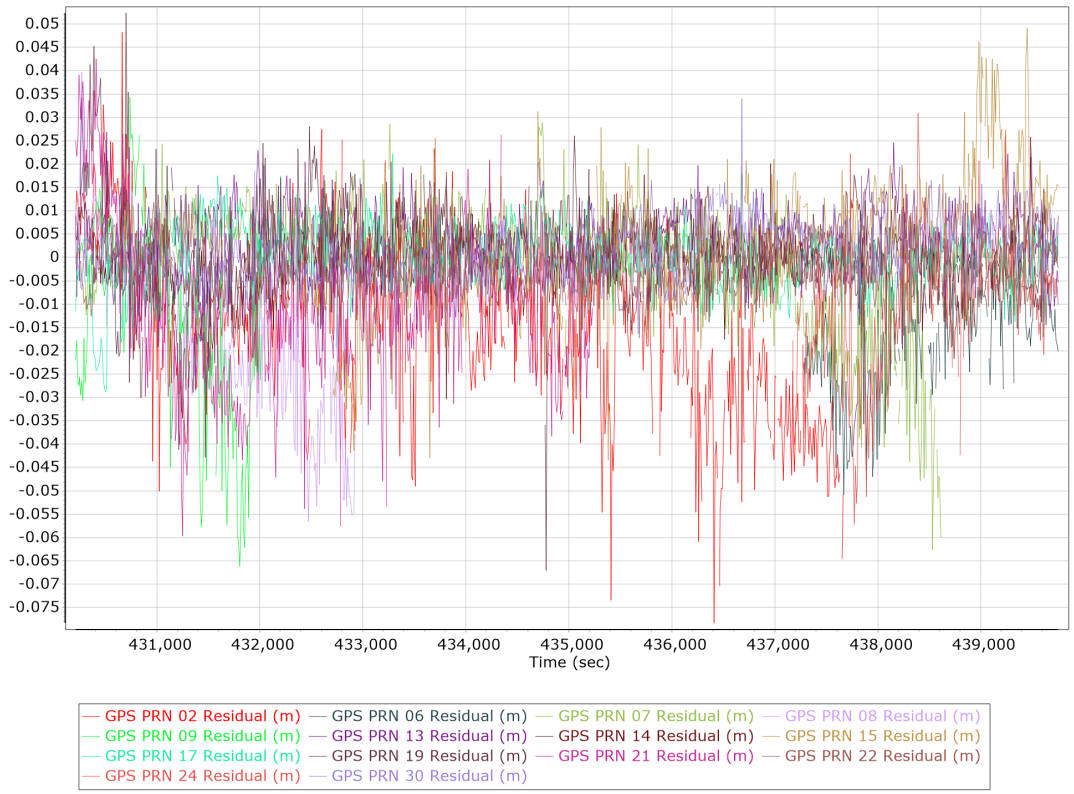
PDOP



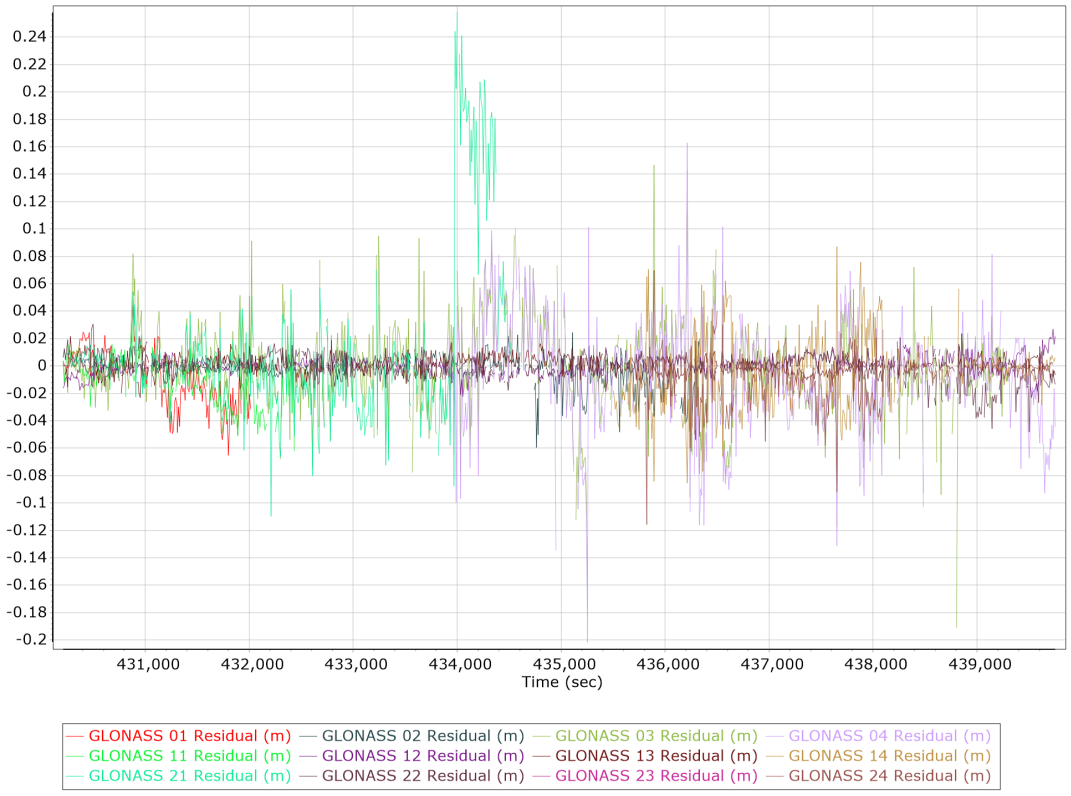
Estimated Position Accuracy



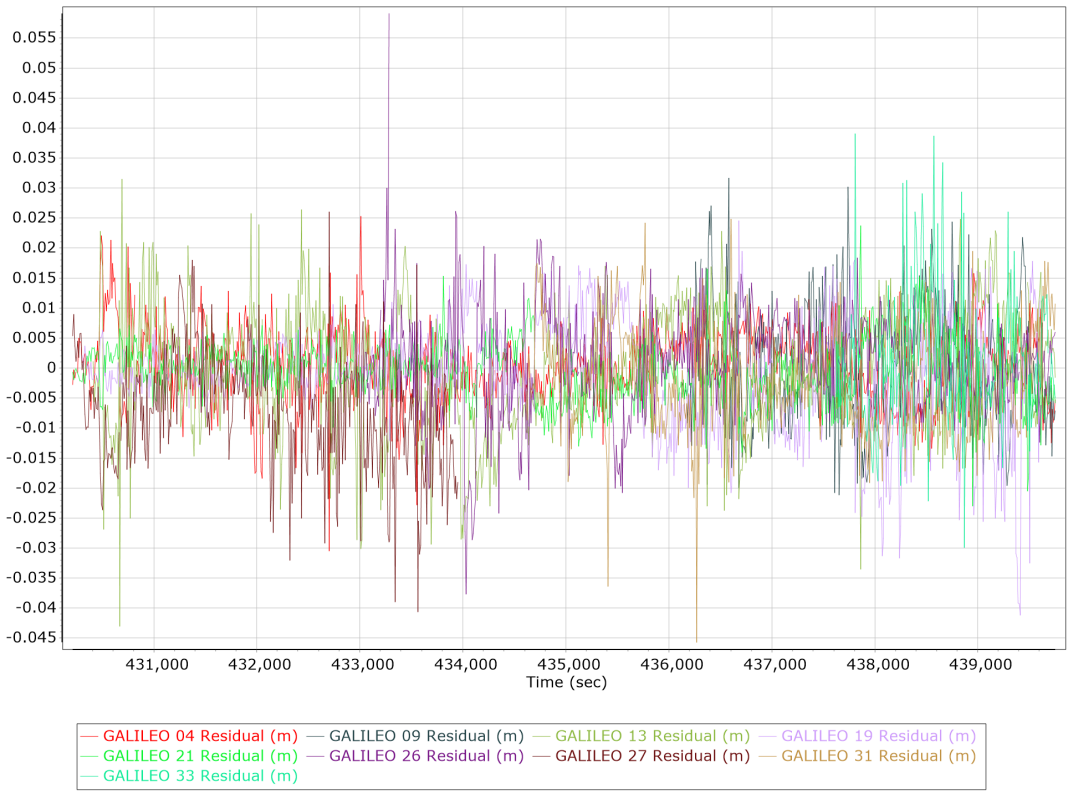
GPS Residuals



GLONASS Residuals



GALILEO Residuals



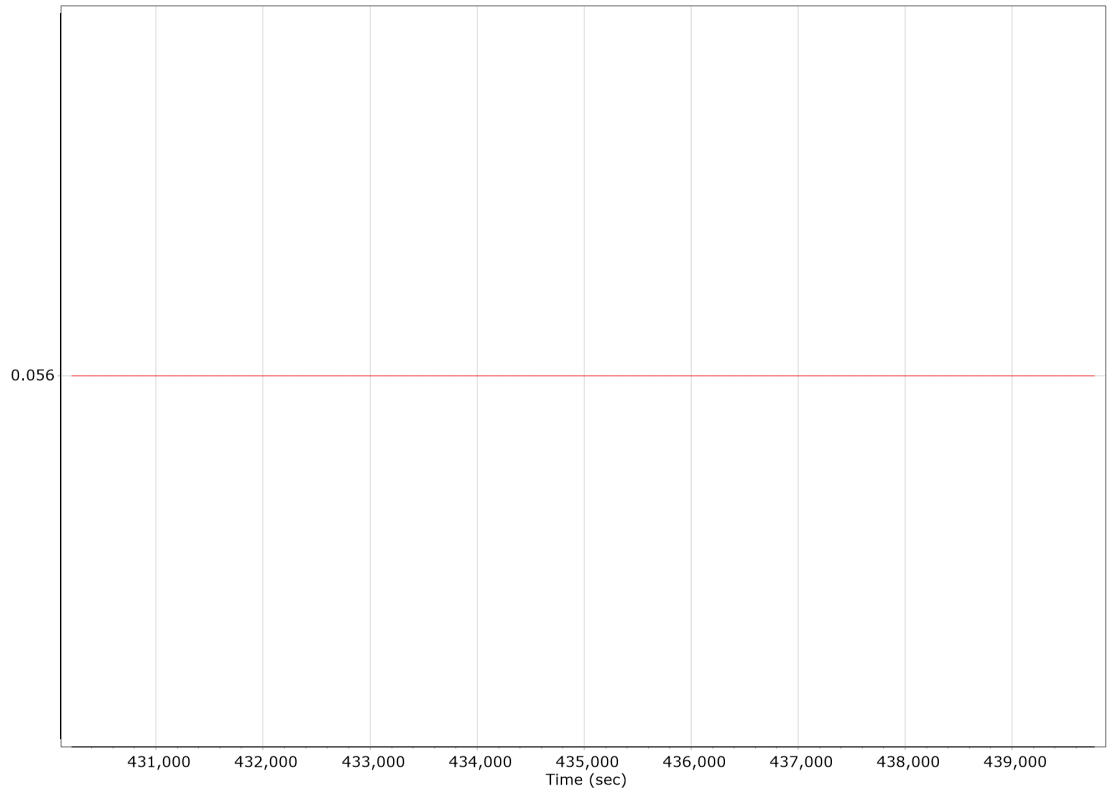
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	430010.000 (11/30/2023 11:26:50 PM)		
Processing end time	439779.000 (12/1/2023 2:09:39 AM)		
Initial attitude source	Real-Time VNAV/RNAV Attitude		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.056	0.055	-1.294
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

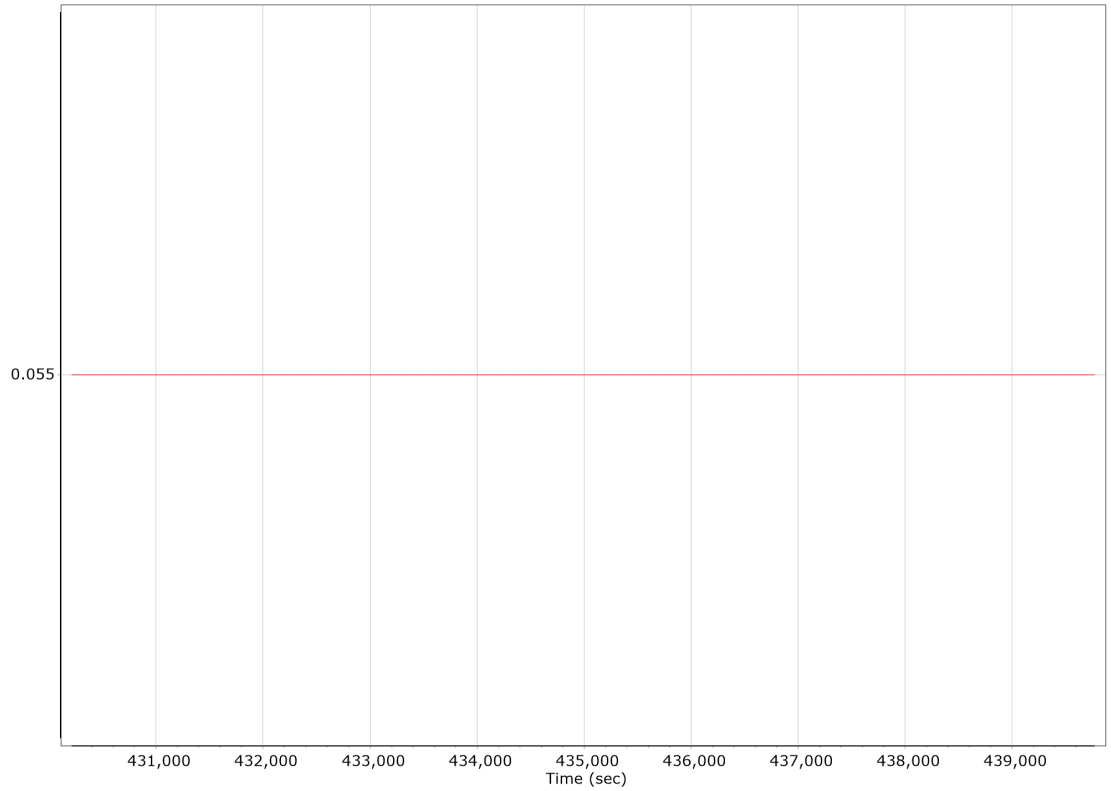
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

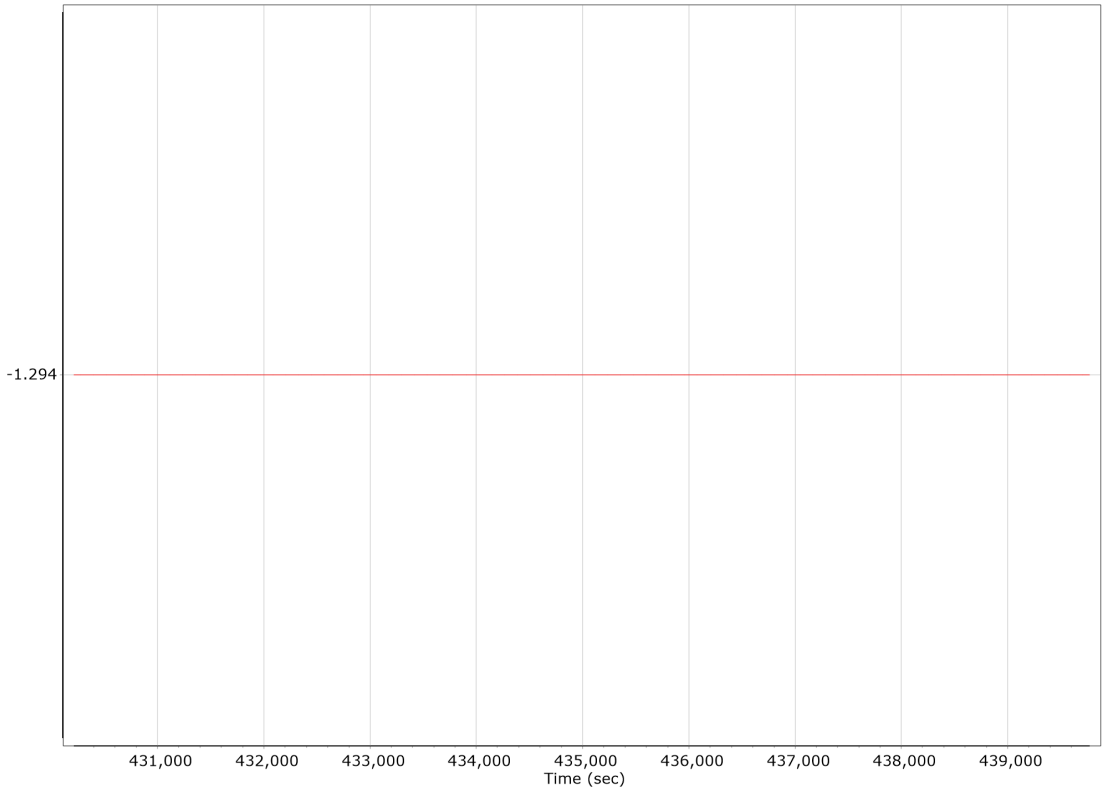
X Reference-Primary GNSS Lever Arm (m)



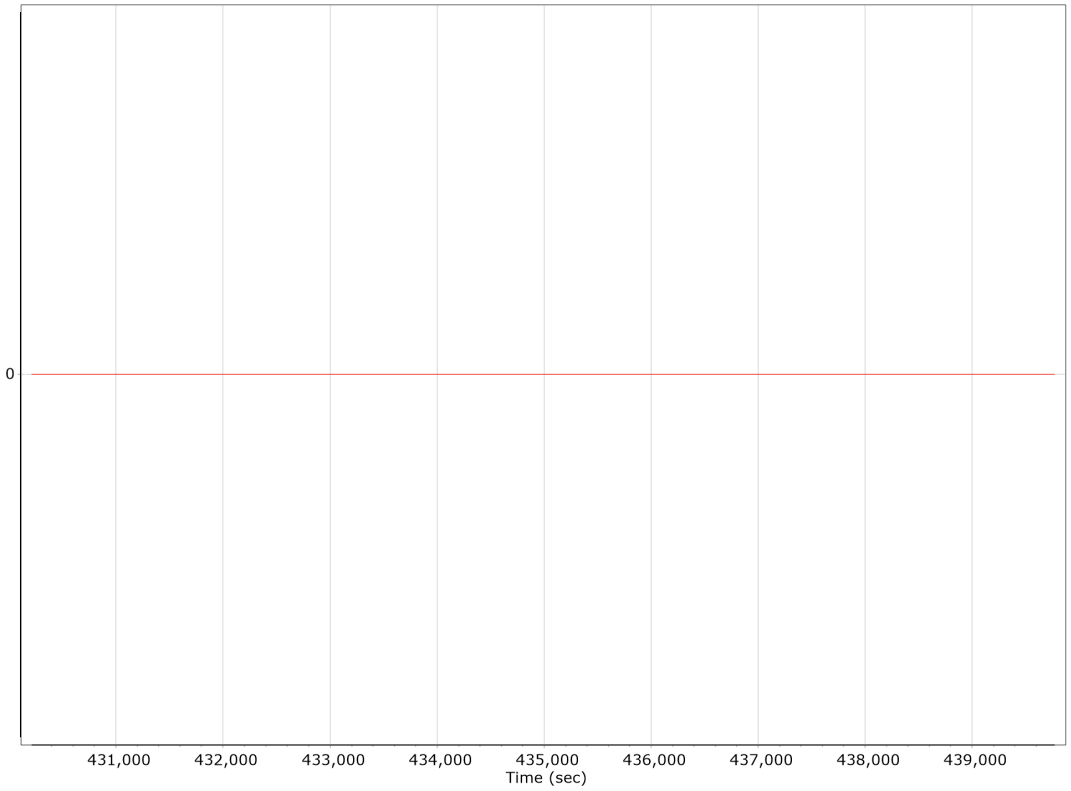
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



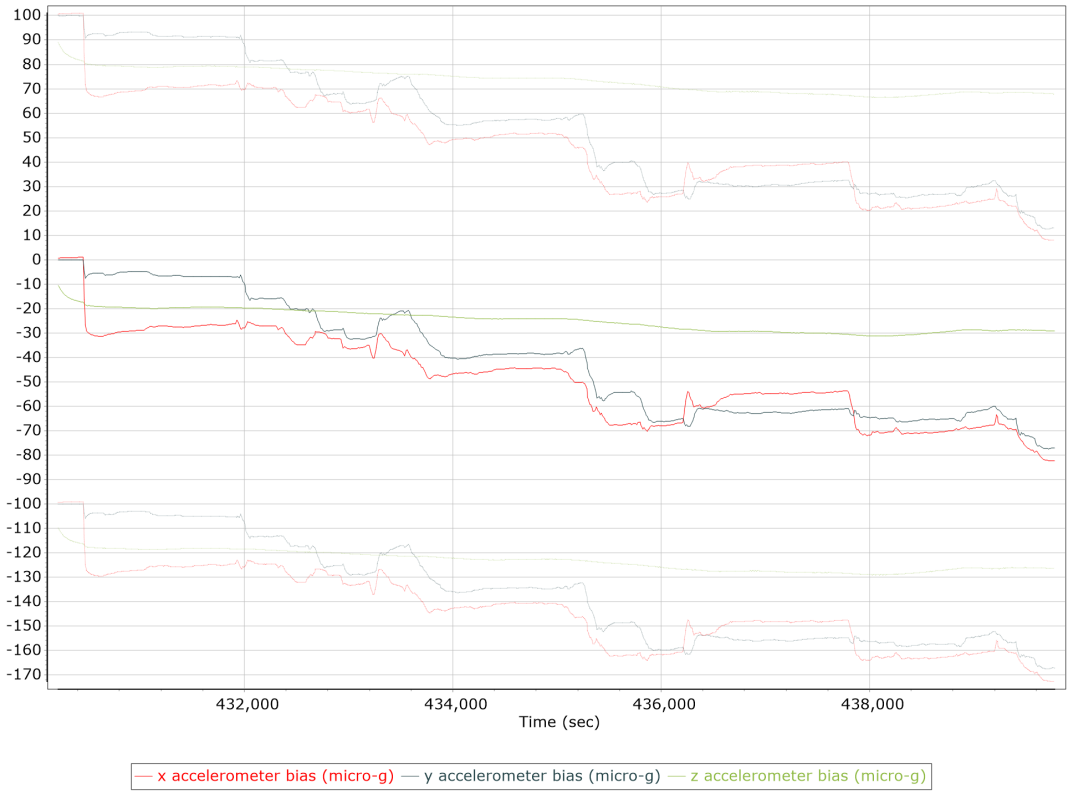
Reference-Primary GNSS Lever Arm Figure of Merit



IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

Accelerometer Bias (micro-g)



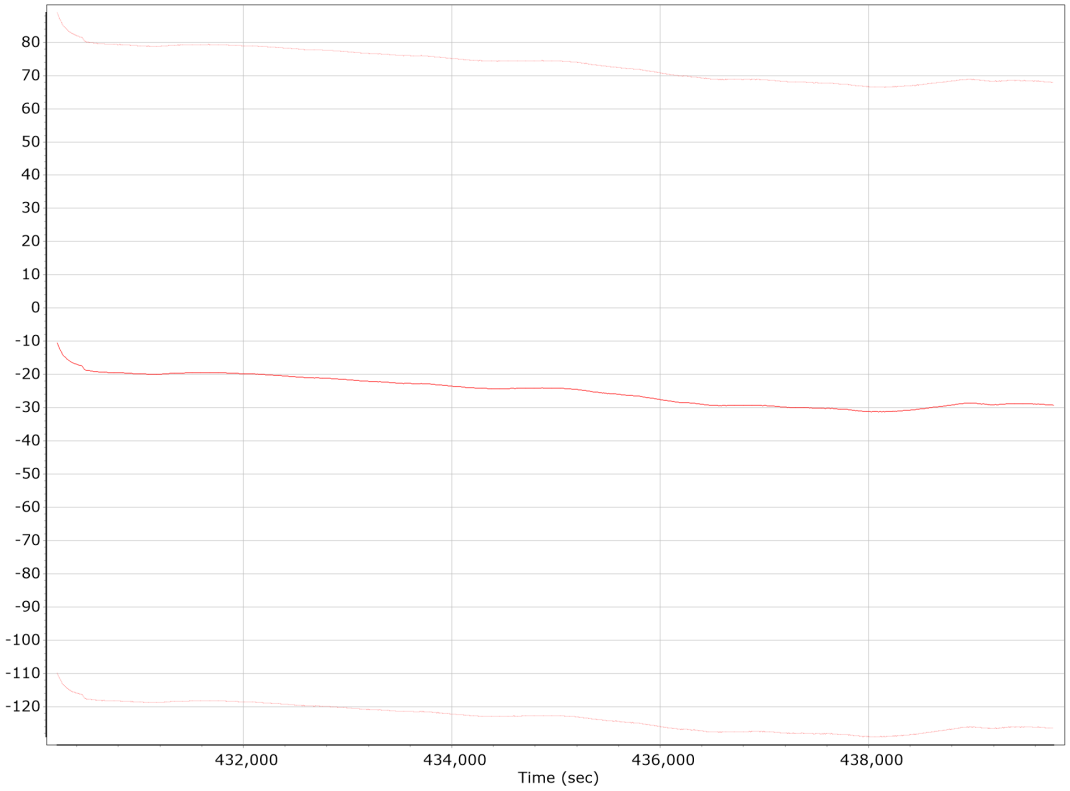
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



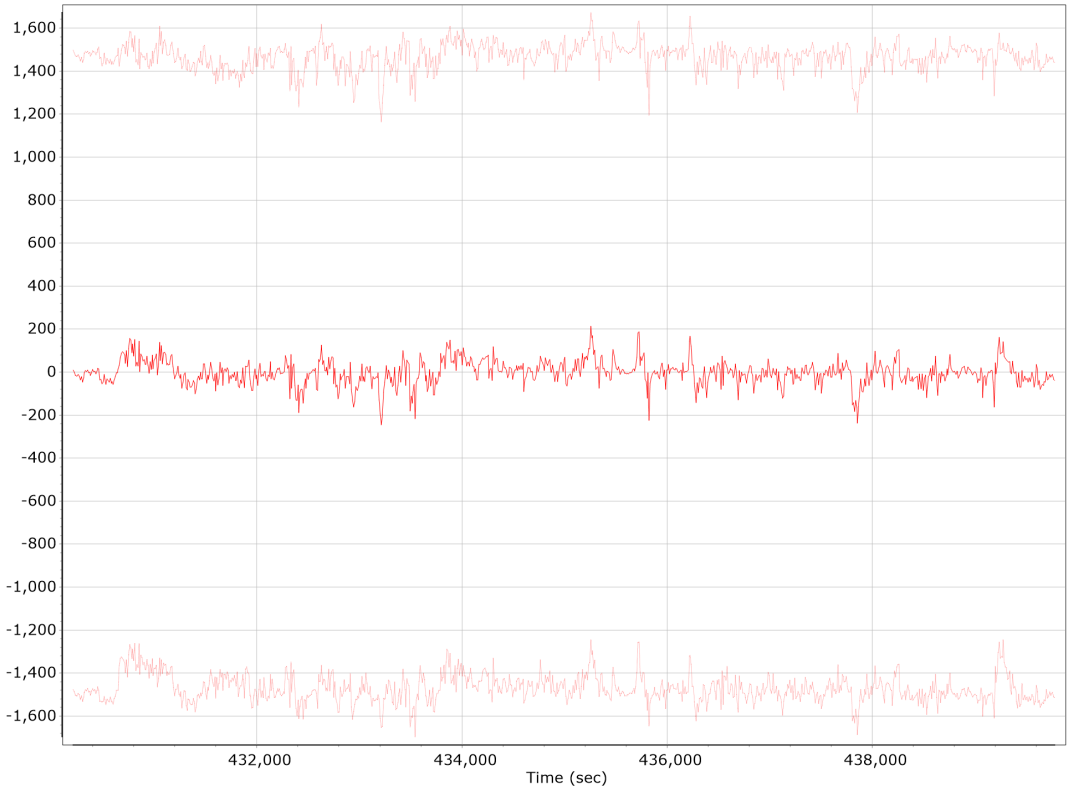
Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



X Accelerometer Scale Error (ppm)



Y Accelerometer Scale Error (ppm)



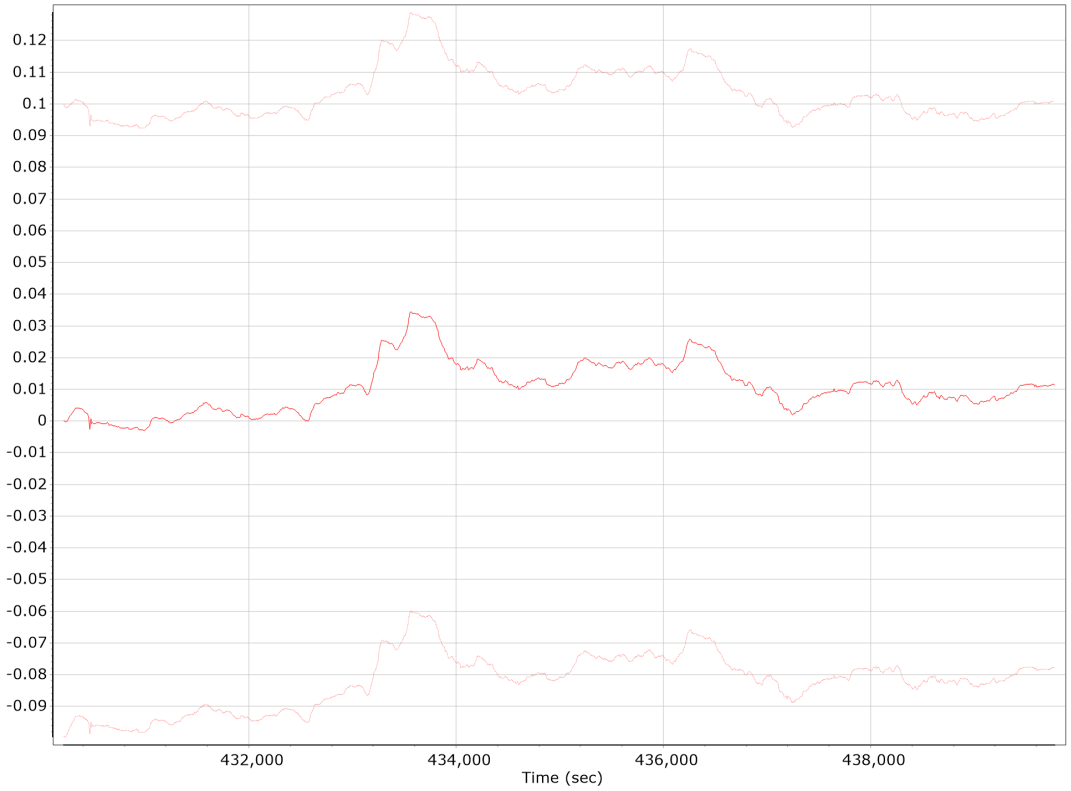
Z Accelerometer Scale Error (ppm)



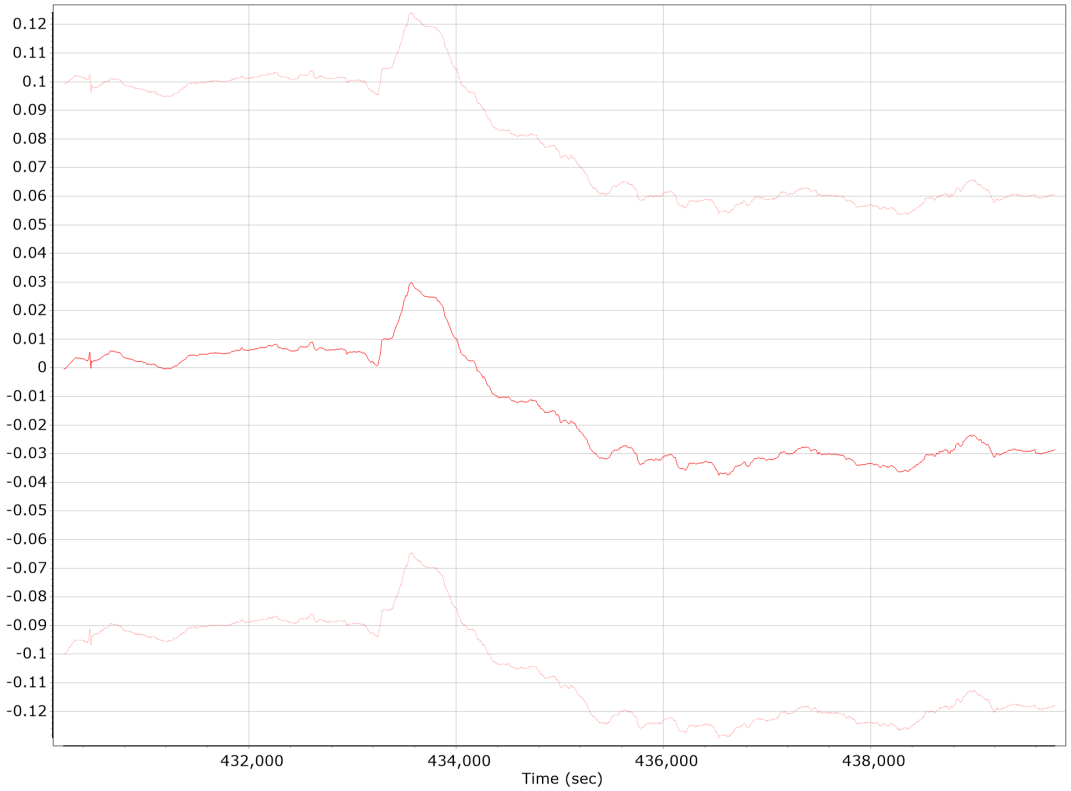
Gyro Bias (deg/h)



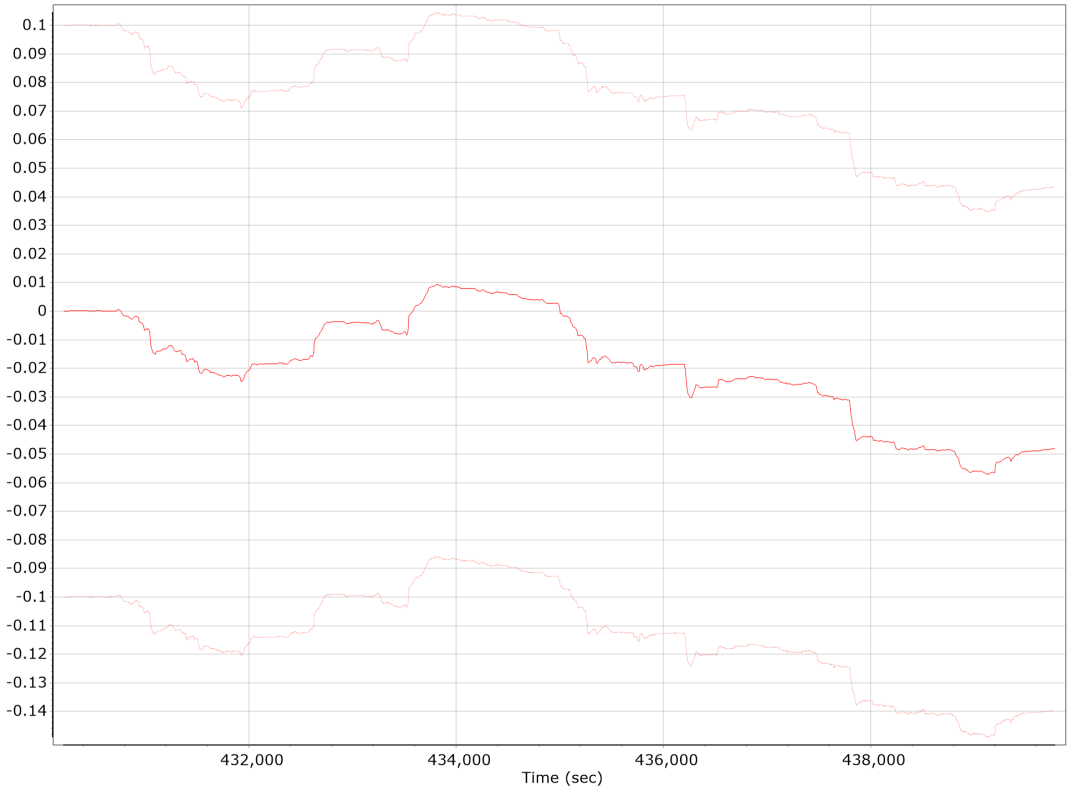
X Gyro Bias (deg/h)



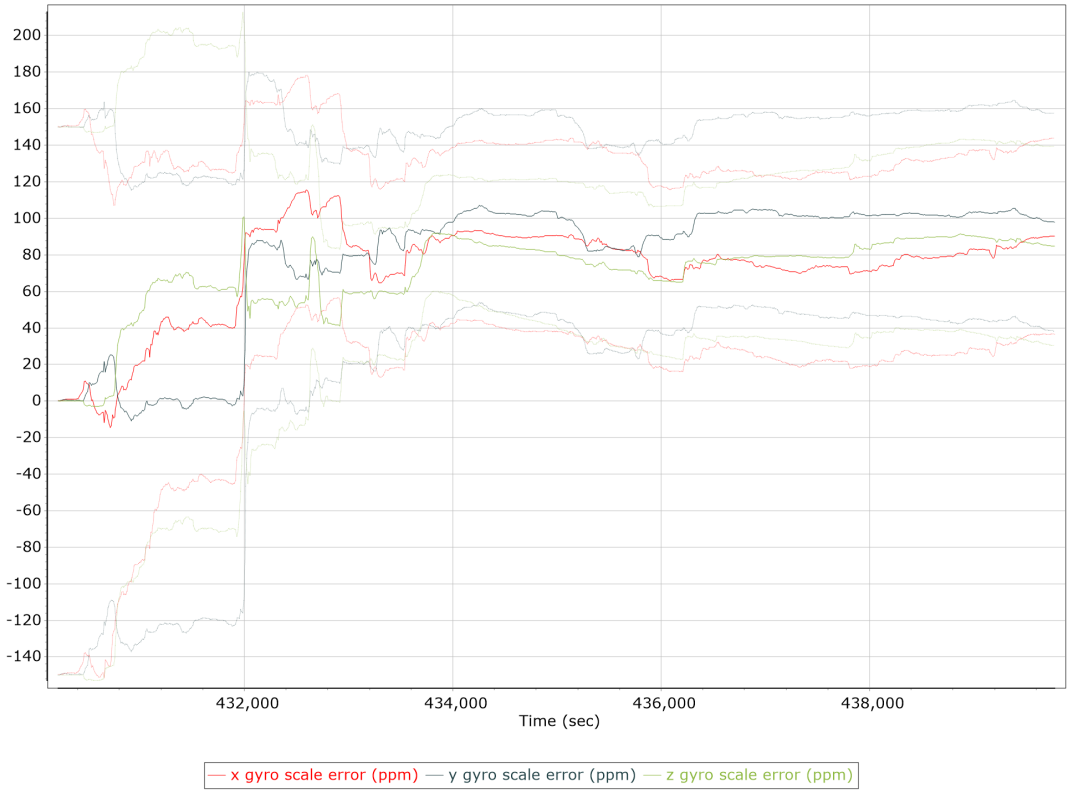
Y Gyro Bias (deg/h)



Z Gyro Bias (deg/h)



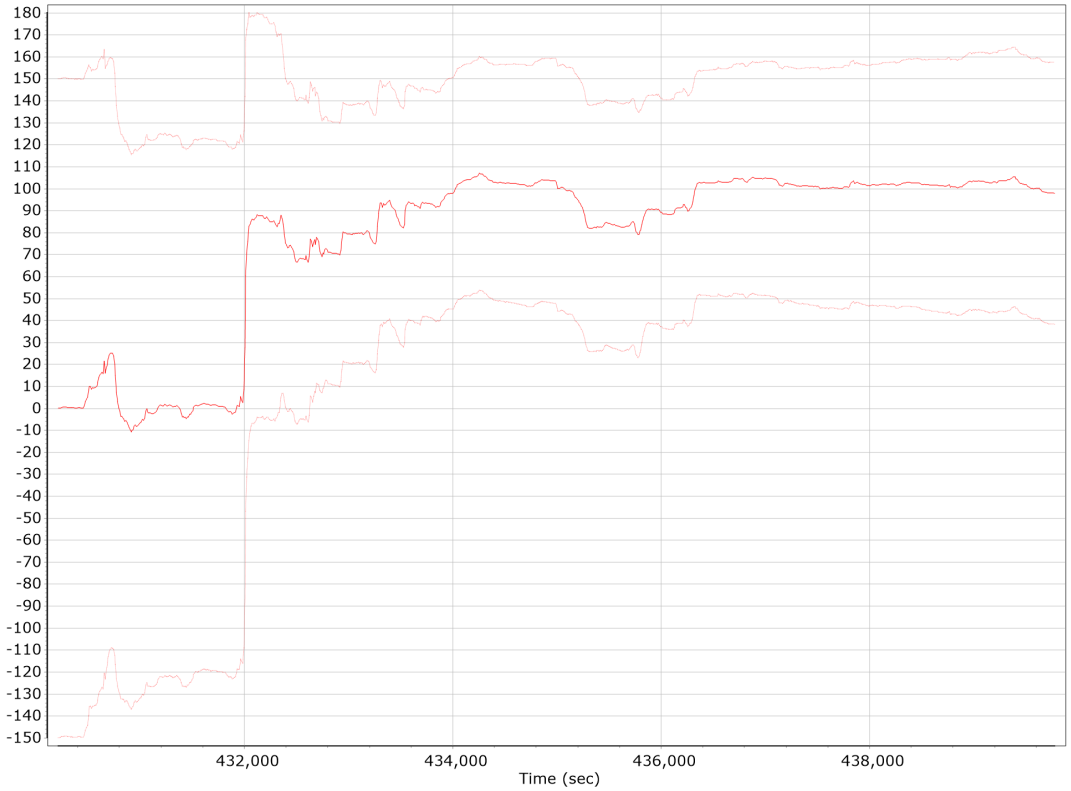
Gyro Scale Error (ppm)



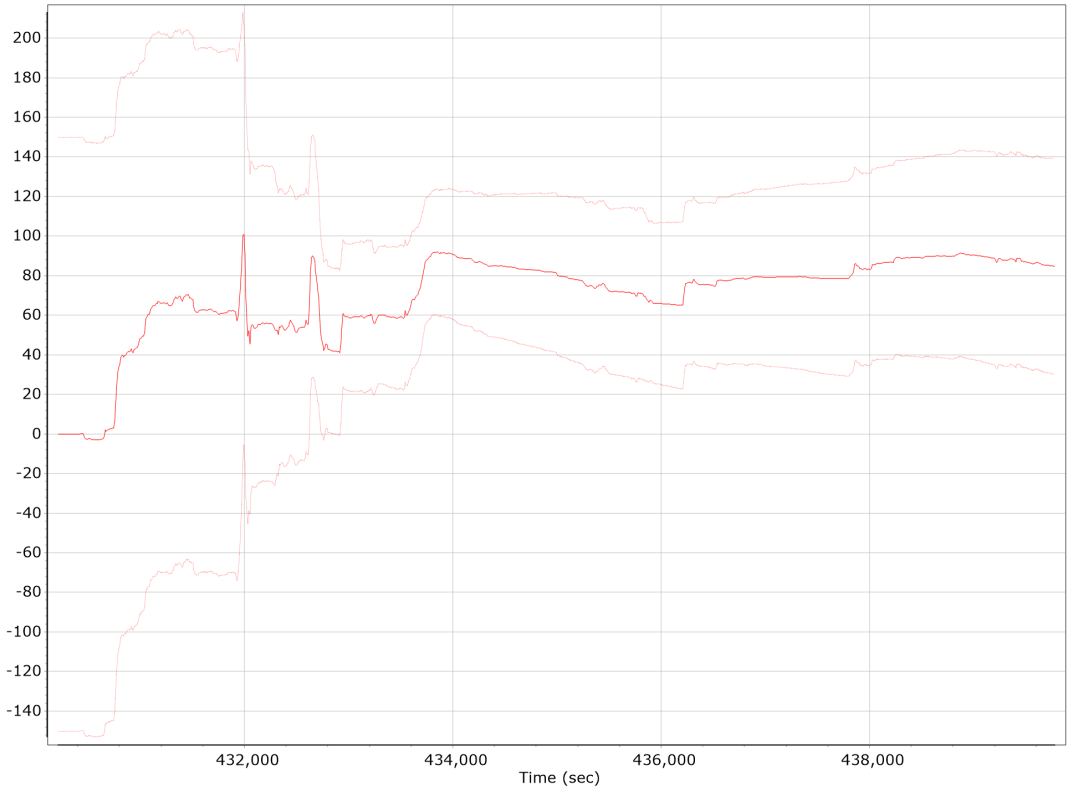
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)



Z Gyro Scale Error (ppm)

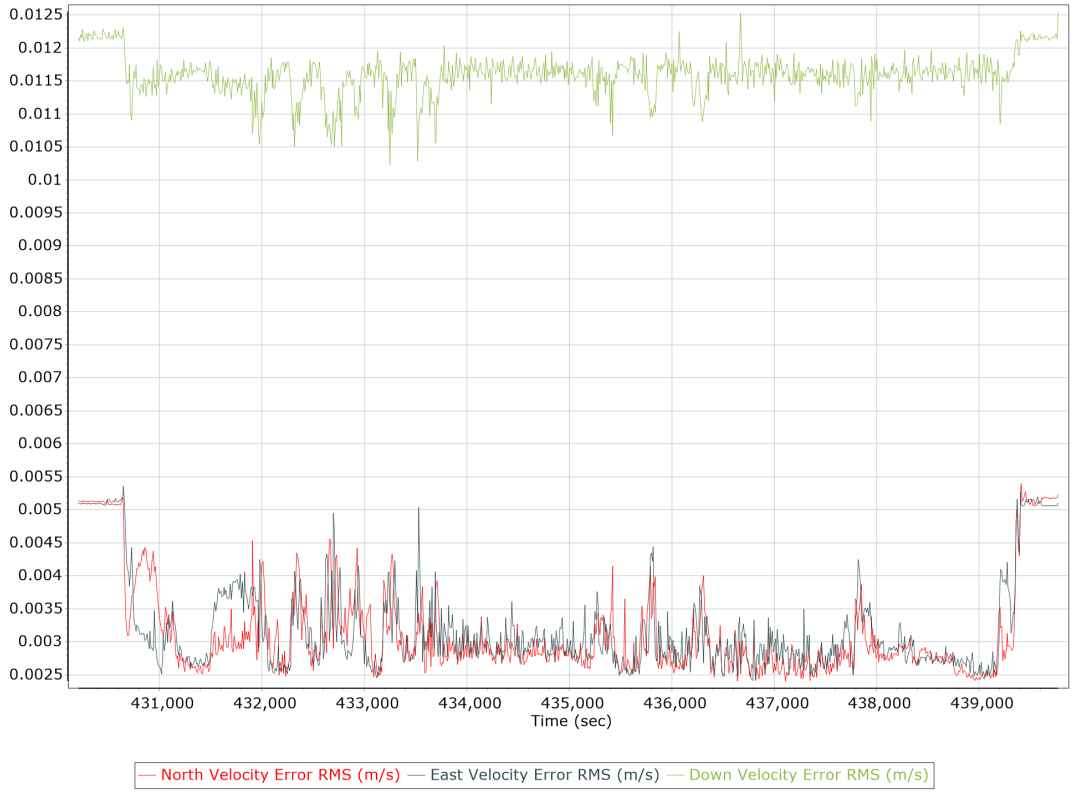


Smoothed Performance Metrics

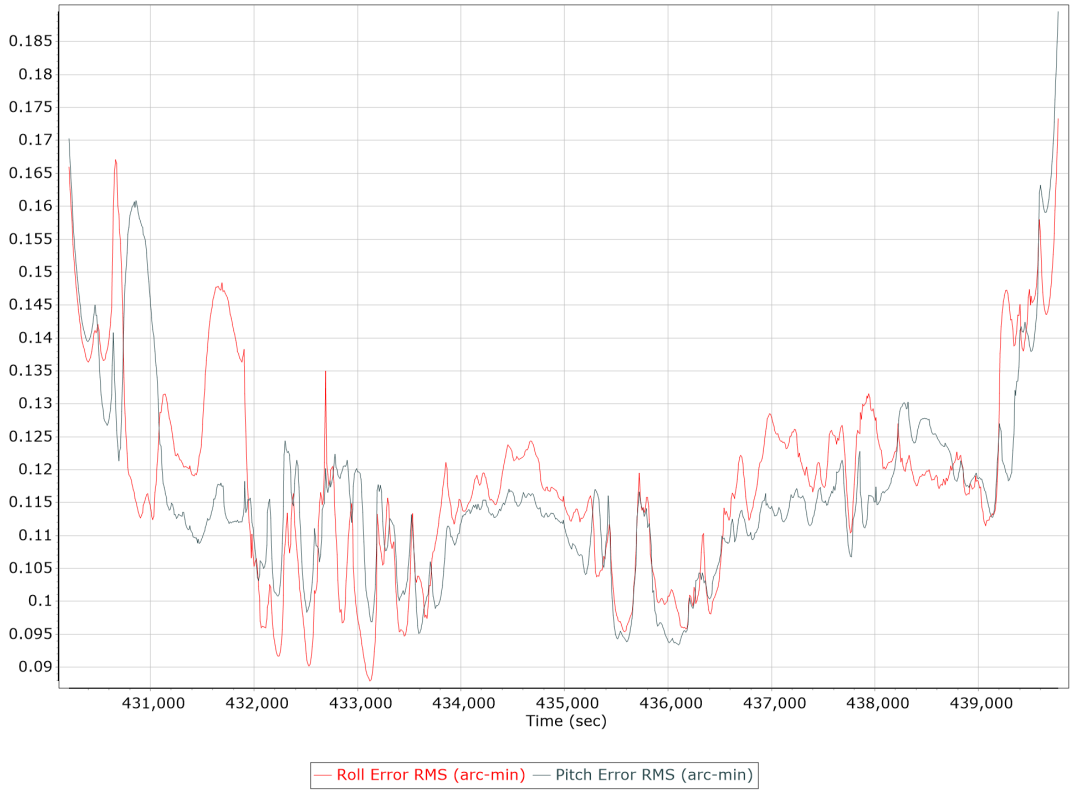
Position Error RMS (m)



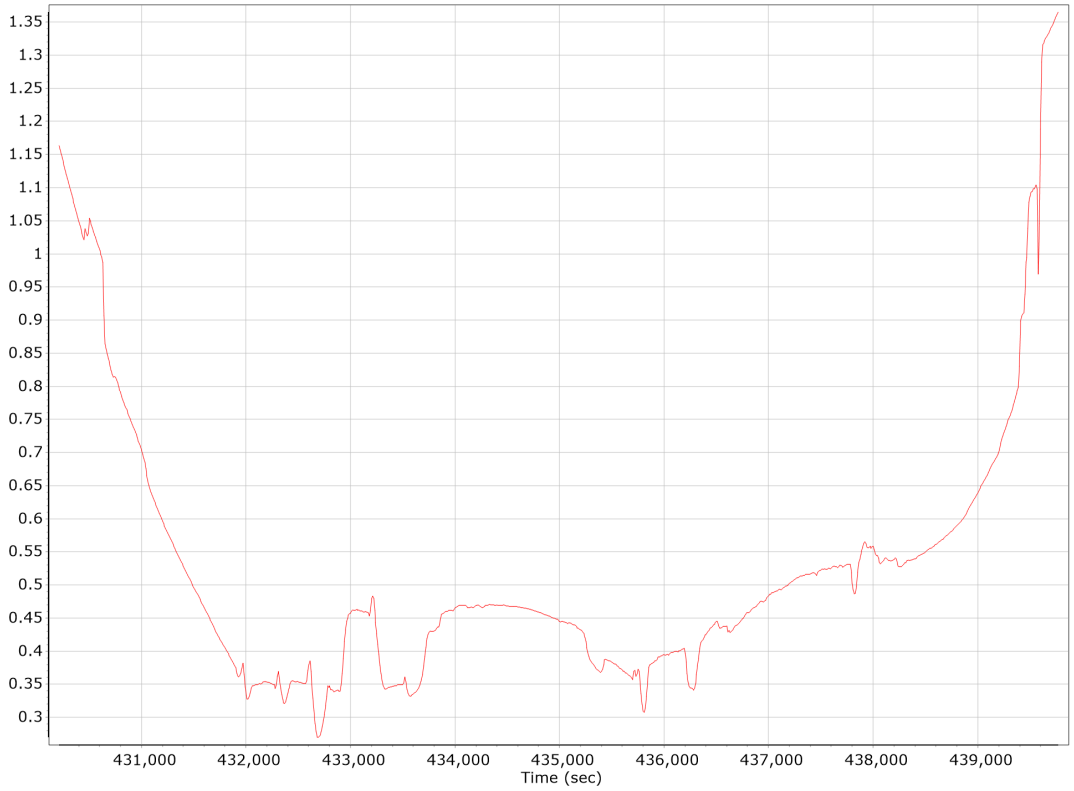
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

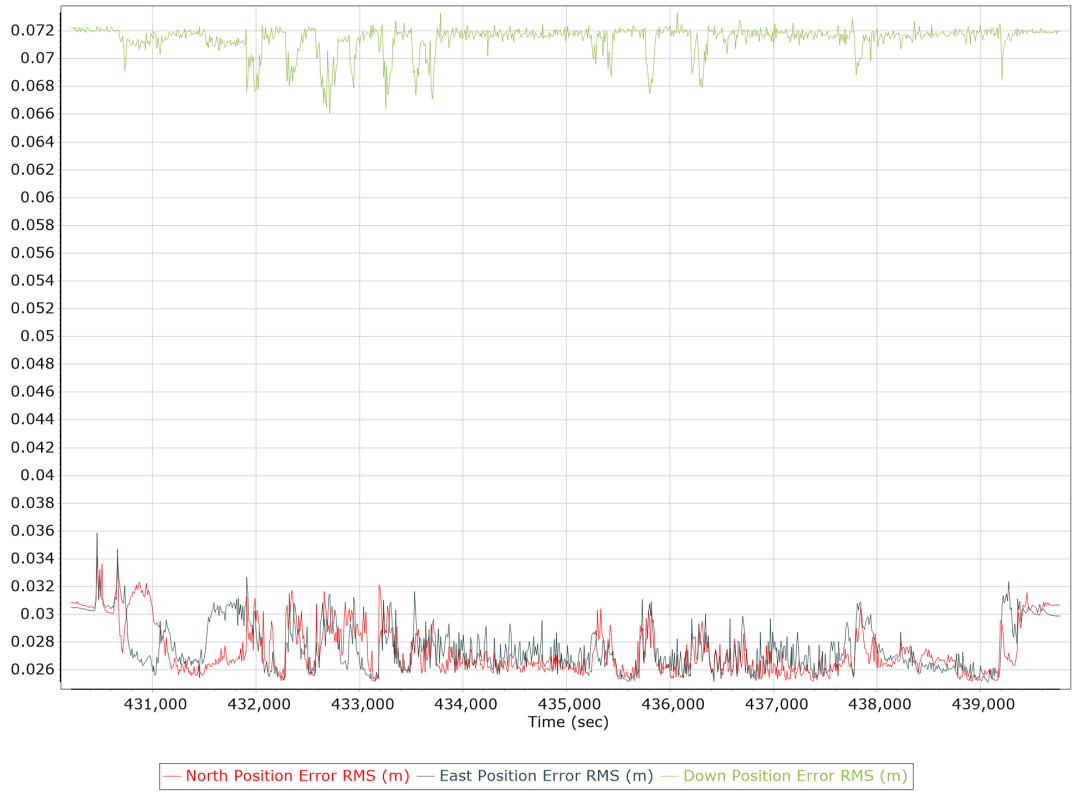


Heading Error RMS (arc-min)



Forward Processed Performance Metrics

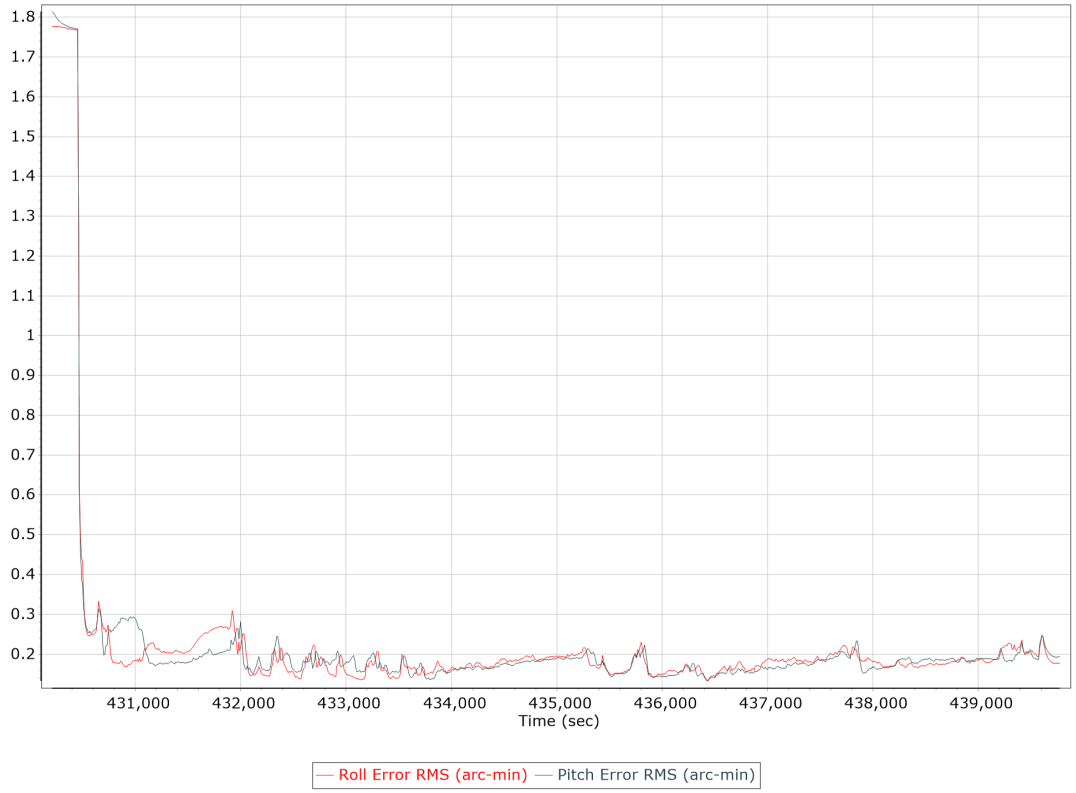
Position Error RMS (m)



Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

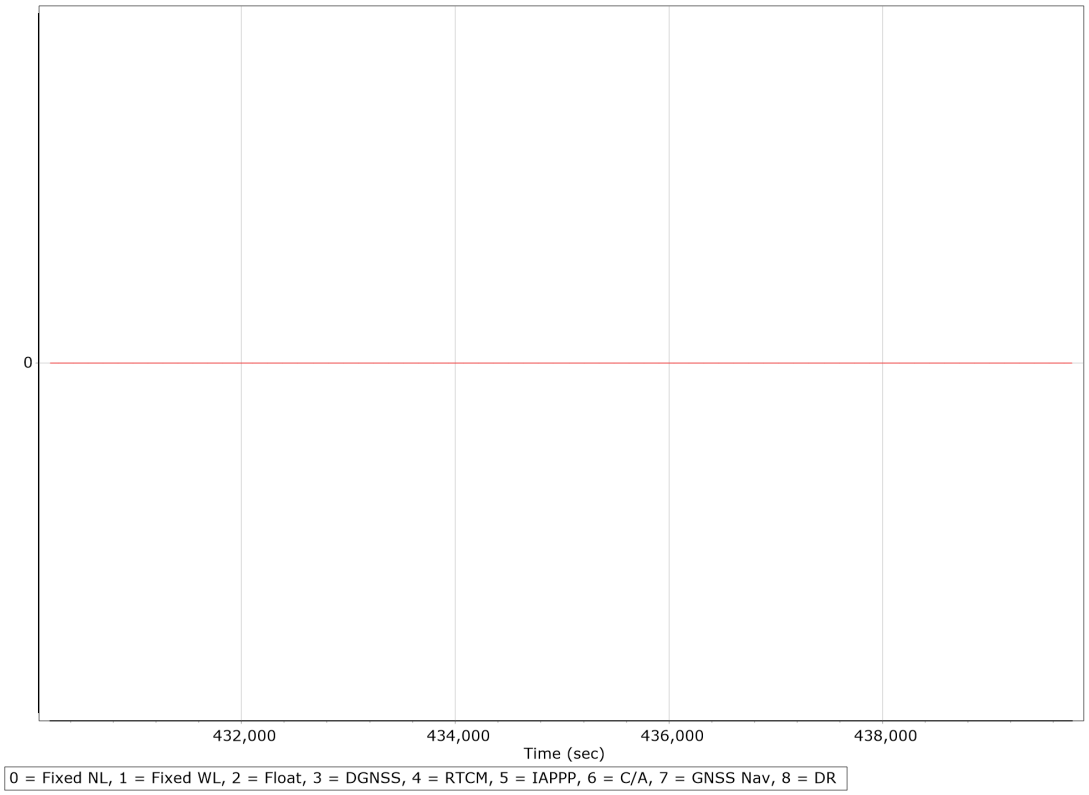


Heading Error RMS (arc-min)



Forward Processed Solution Status

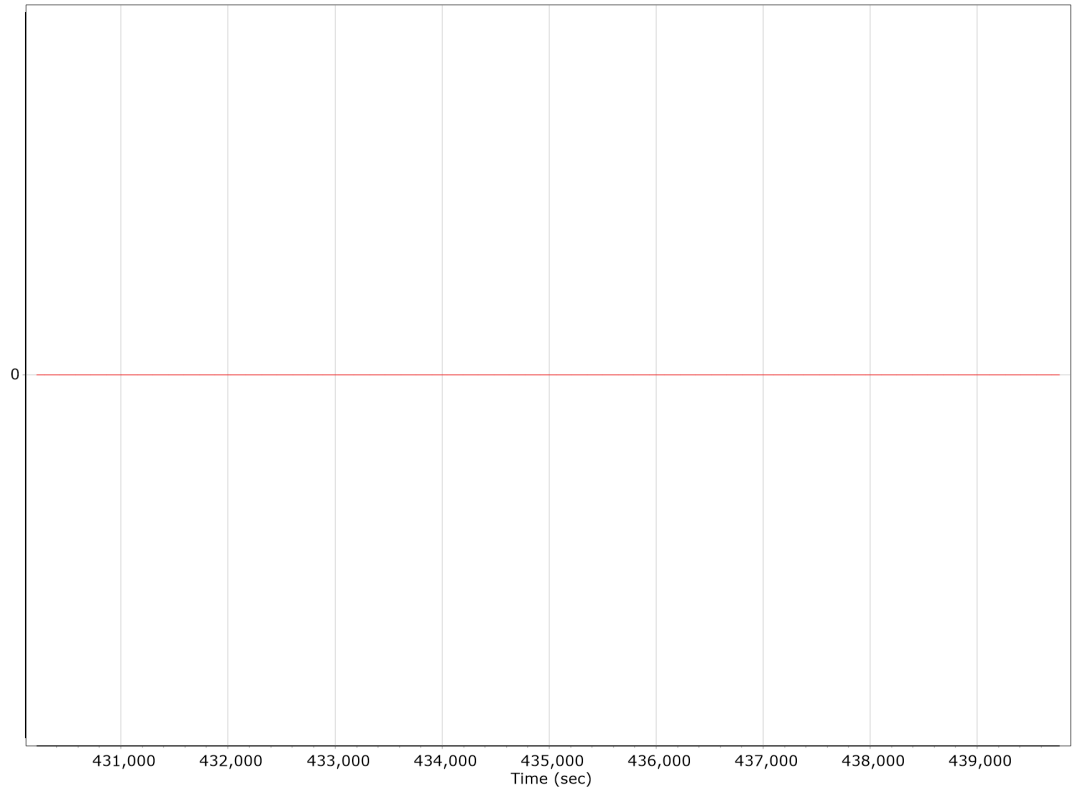
Processing Mode



Number of Satellites



Baseline Length



General Information

Mission Information

Project name	12022023A_3061
Processing date	2023-12-05 17:53:15
Mission date	2023-12-03 03:19:22
Mission duration	03:01:58.559
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N8902
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
231203_031433_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm3370.23g	GLONASS Broadcast Ephemeris
Ephm3370.23n	GPS Broadcast Ephemeris

Output Files

Filename	File type
sbet_12022023A_3061.out	SBET Trajectory File

Rover Data Summary

First raw data file	231203_031433_INS-GPS_1.raw		
Last raw data file	231203_031433_INS-GPS_1.raw		
Start GPS week	2291		
Start time	11943.072 (12/3/2023 3:19:03 AM)		
End time	22861.631 (12/3/2023 6:21:01 AM)		
Start of fine alignment	12147.328 (12/3/2023 3:22:27 AM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	0.000	0.000	0.000
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

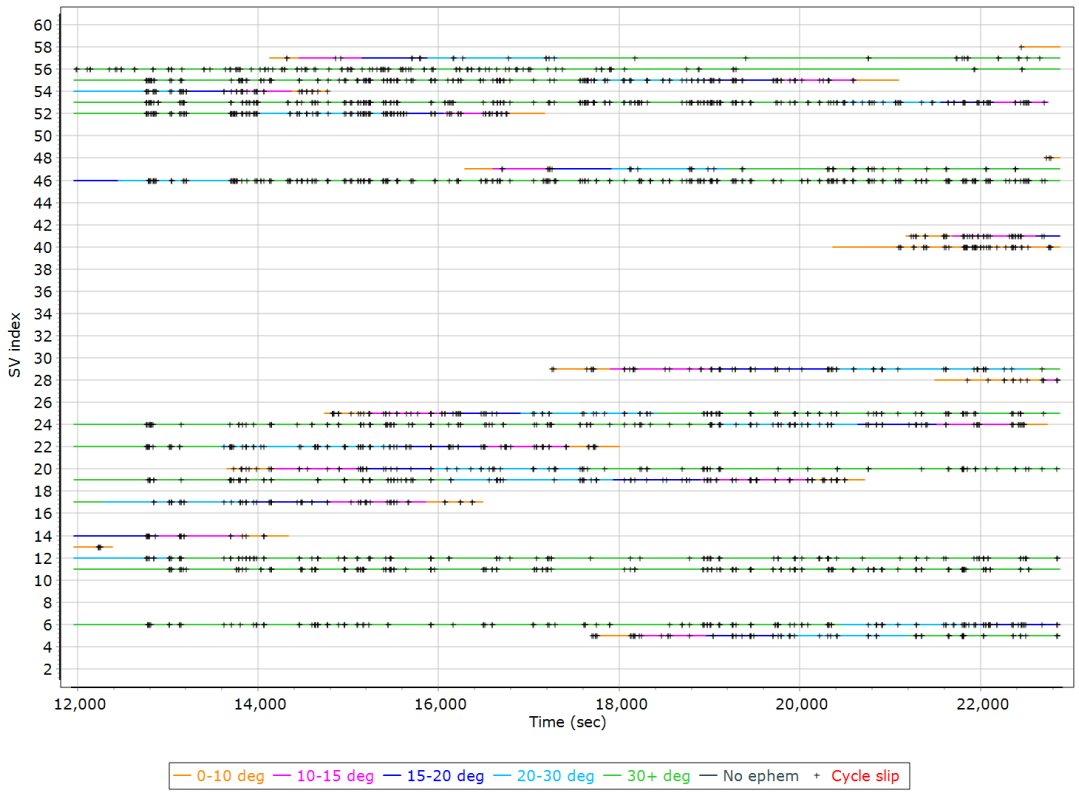
Rover Data QC

Raw IMU Import QC Summary

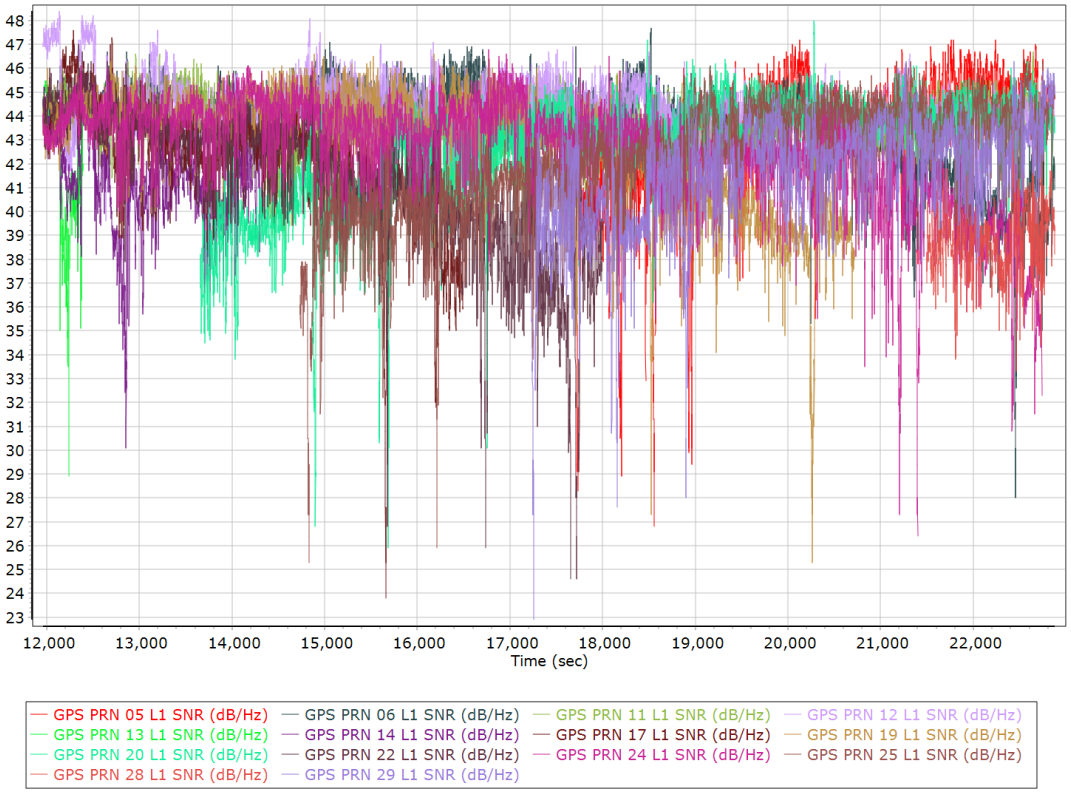
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_12022023A_3061.log
IMU Records Processed	2183267
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

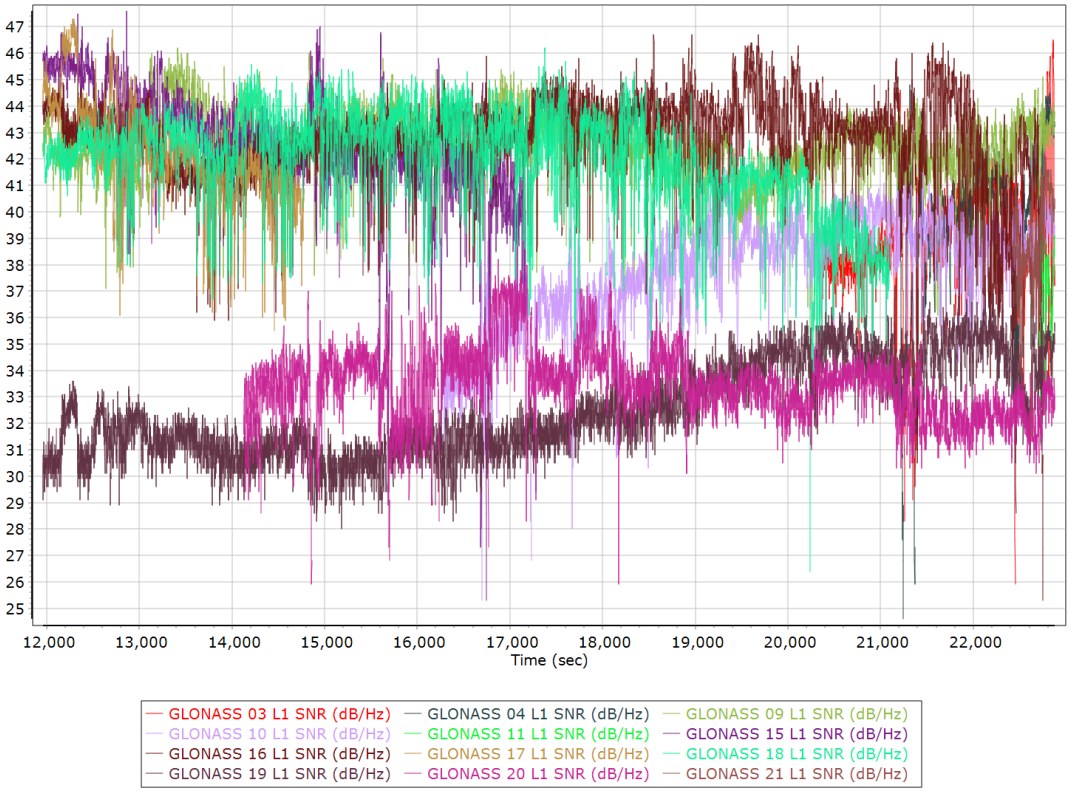
GPS/GLONASS L1 Satellite Lock/Elevation



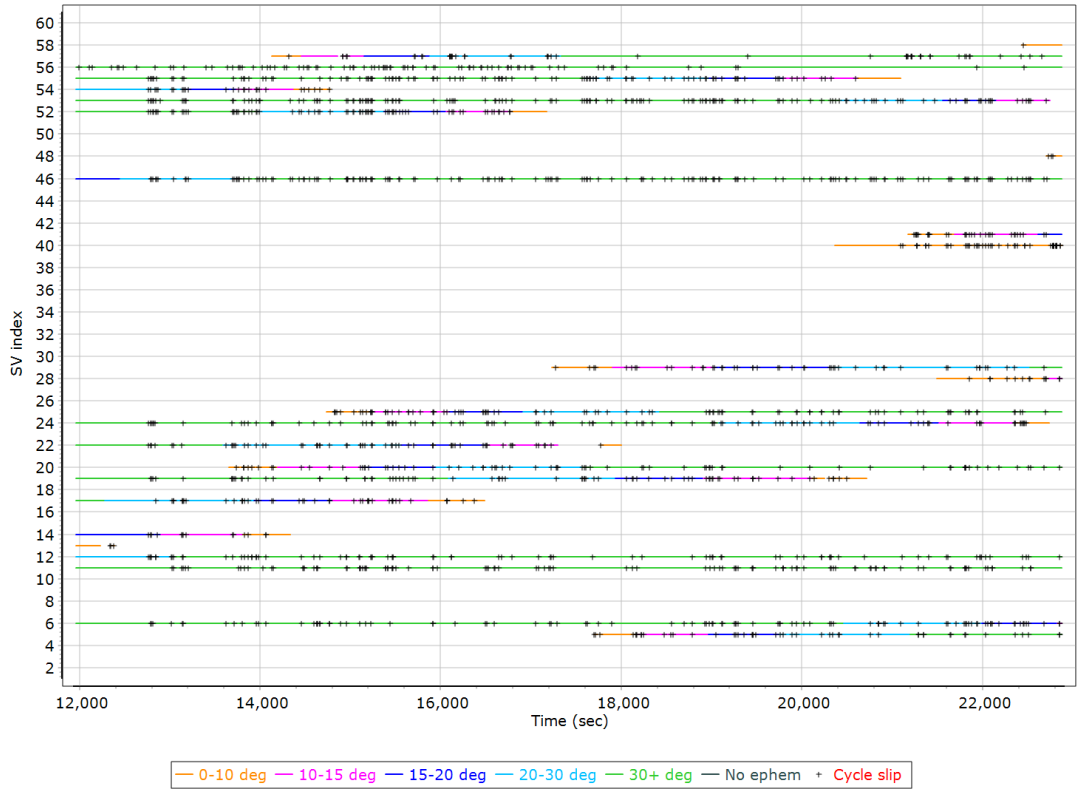
GPS L1 SNR



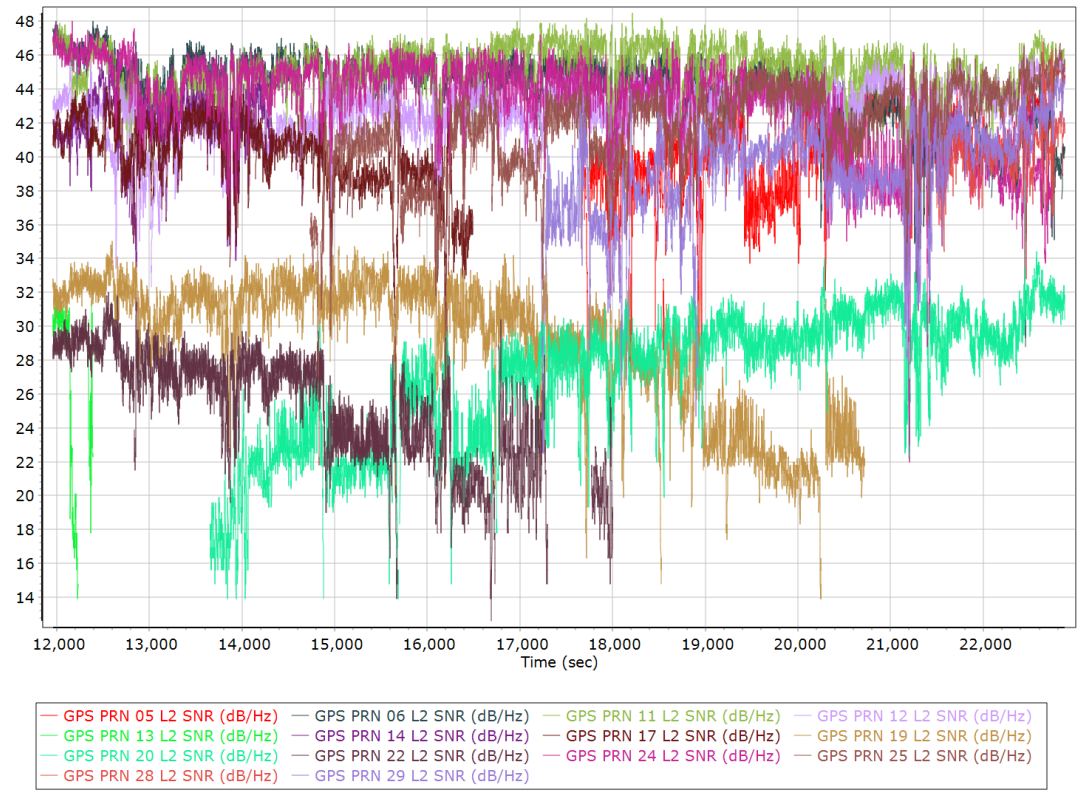
GLONASS L1 SNR



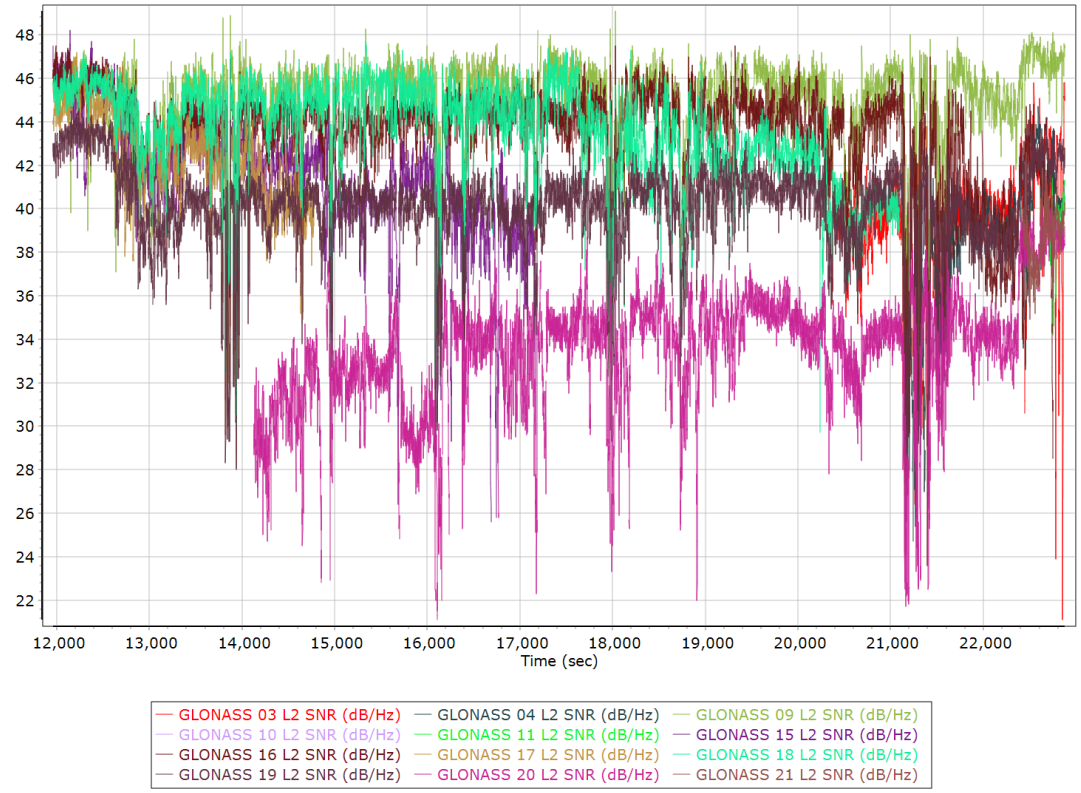
GPS/GLONASS L2 Satellite Lock/Elevation



GPS L2 SNR



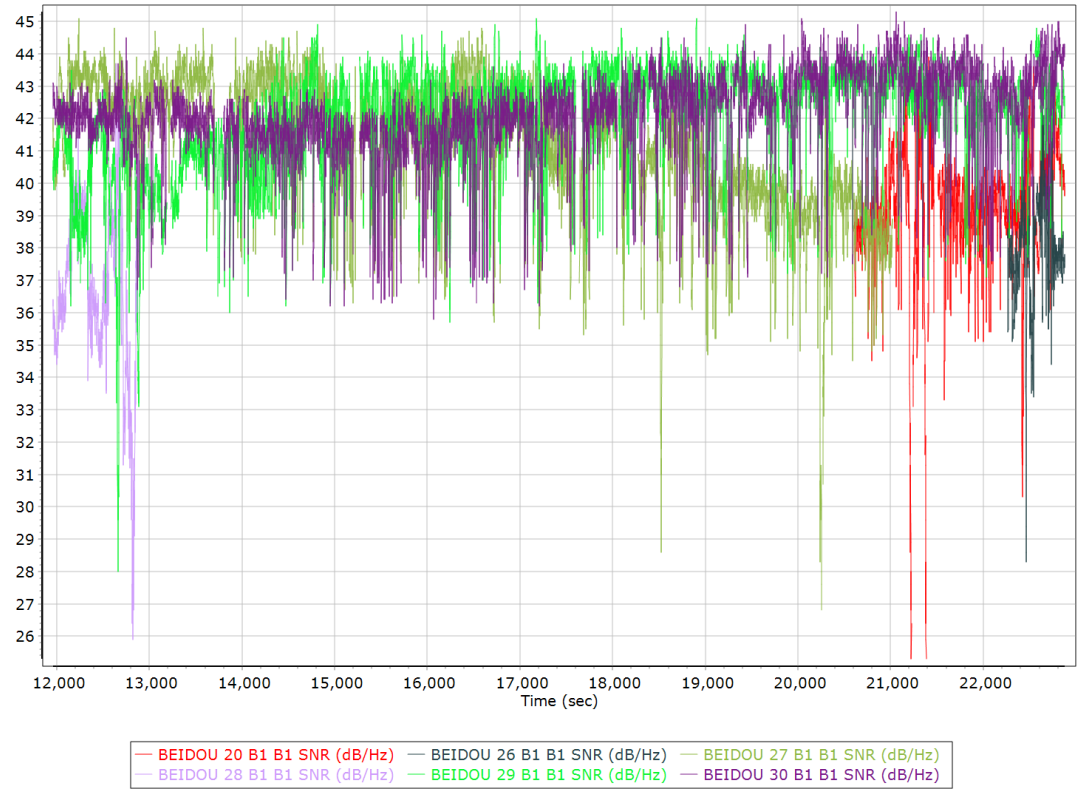
GLONASS L2 SNR



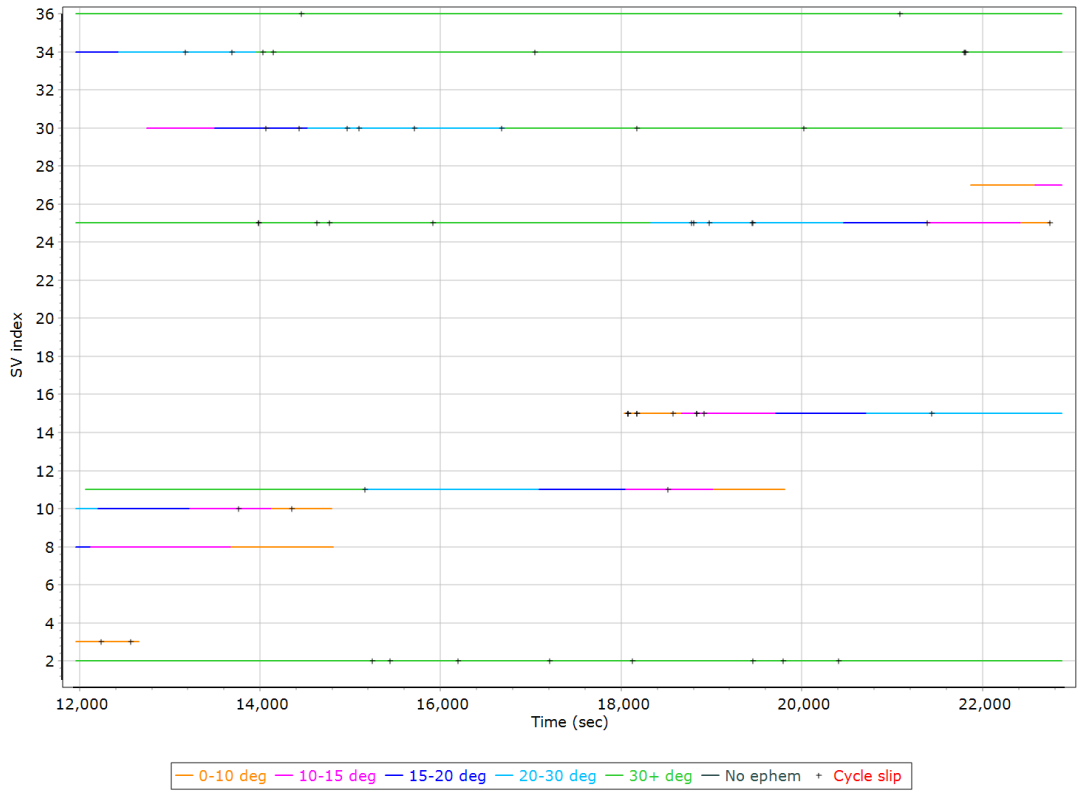
BEIDOU Satellite Lock/Elevation



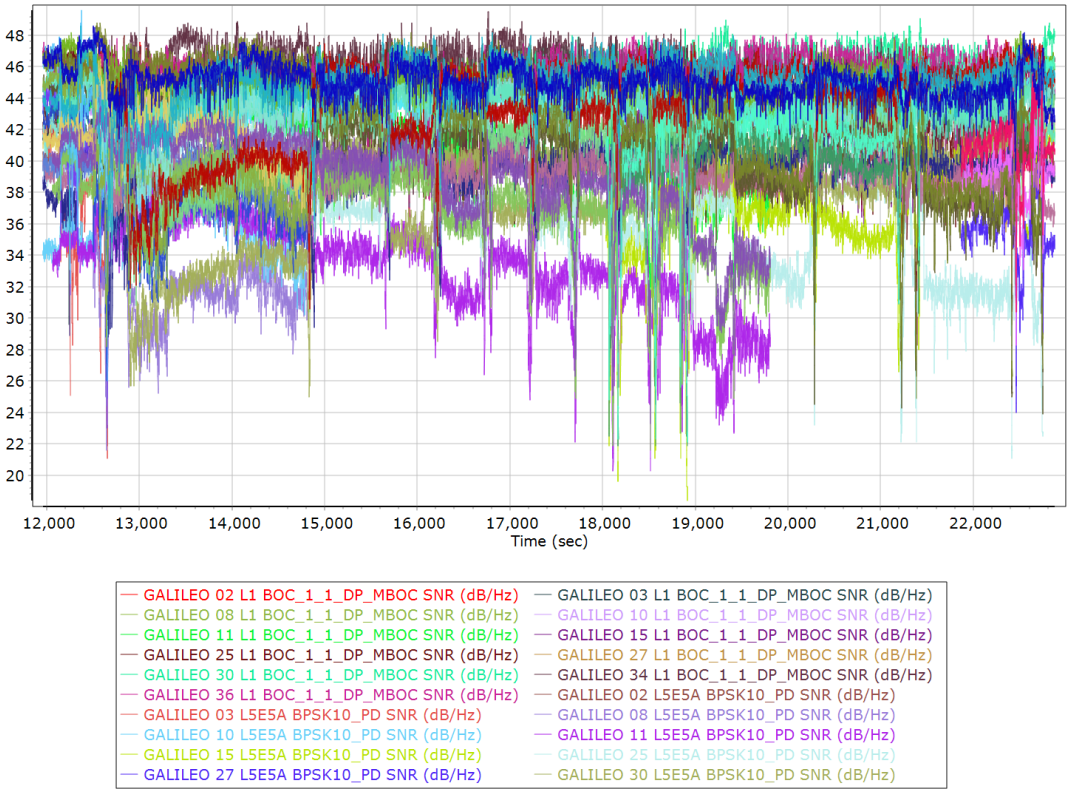
BEIDOU SNR



GALILEO Satellite Lock/Elevation

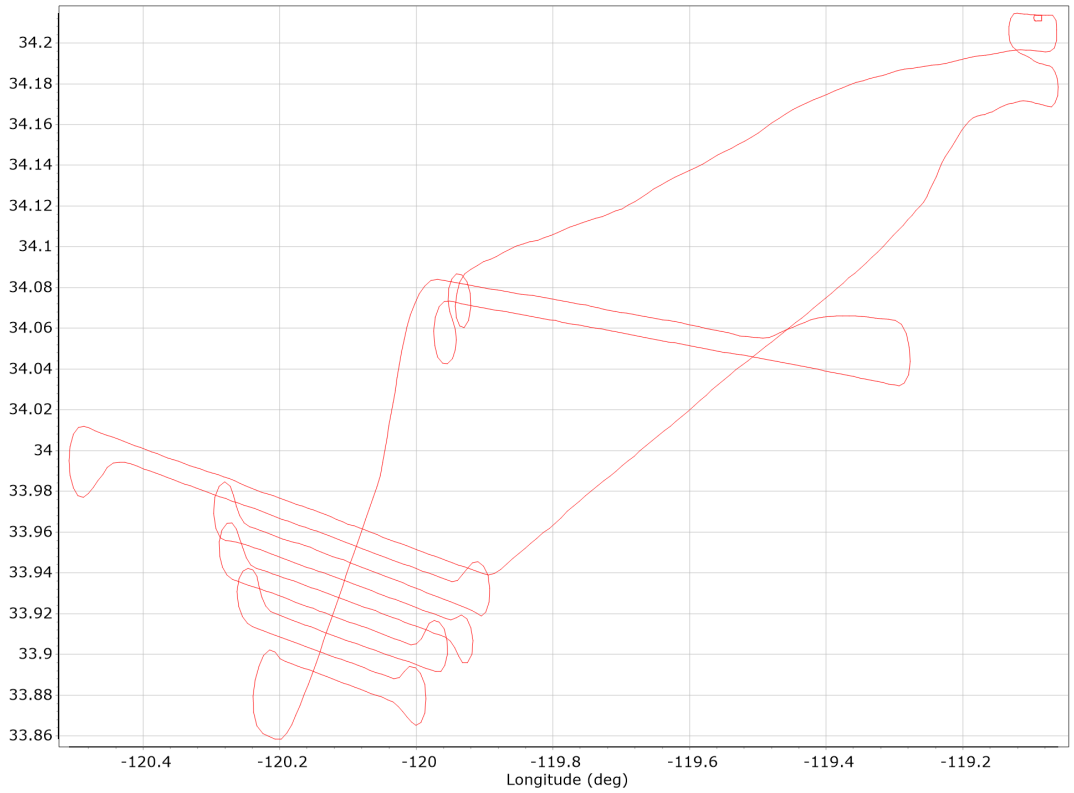


GALILEO SNR


48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
12,000
13,000
14,000
15,000
16,000
17,000
18,000
19,000
20,000
21,000
22,000
Time (sec)
GALILEO 02 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 03 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 08 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 10 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 11 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 15 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 25 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 27 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 30 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 34 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 36 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 02 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 03 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 08 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 10 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 11 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 15 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 25 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 27 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 30 L5E5A BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

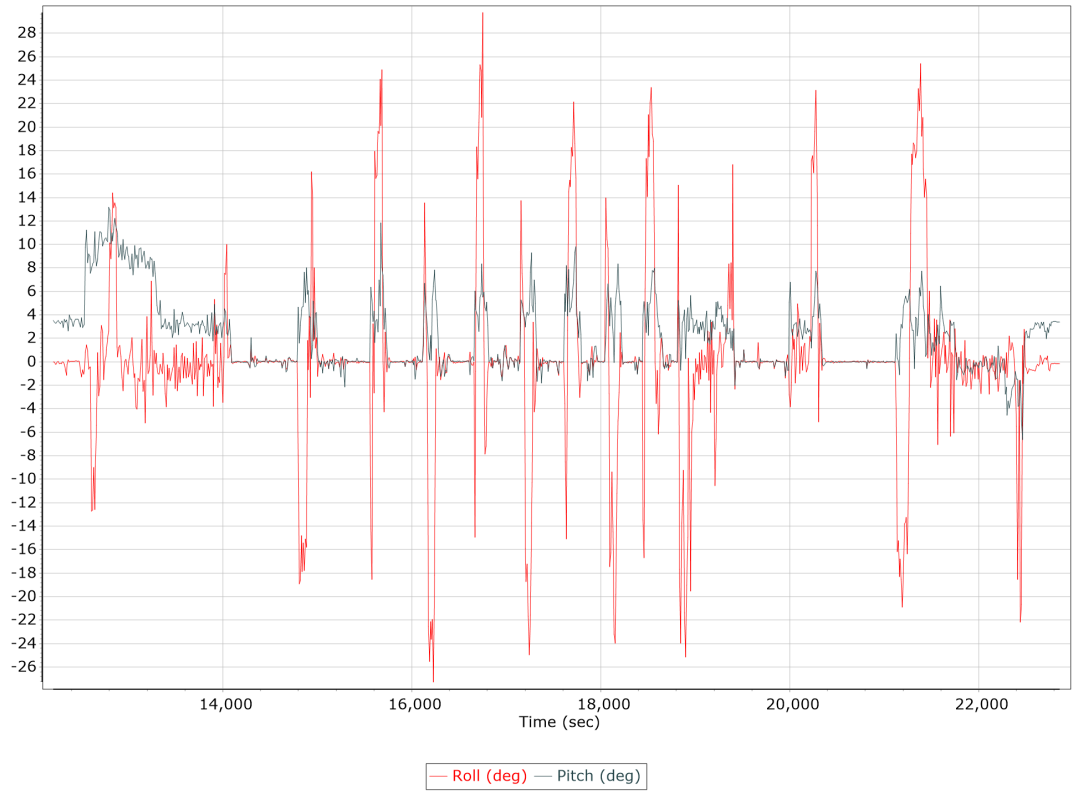
Top View



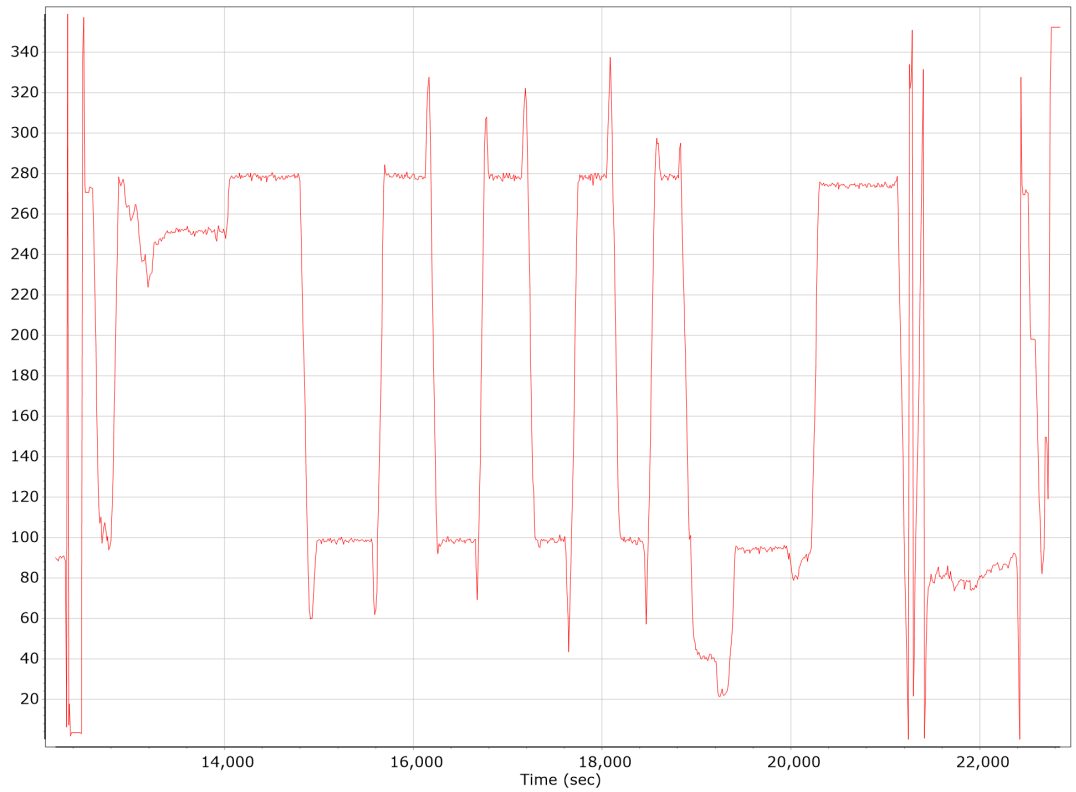
Altitude



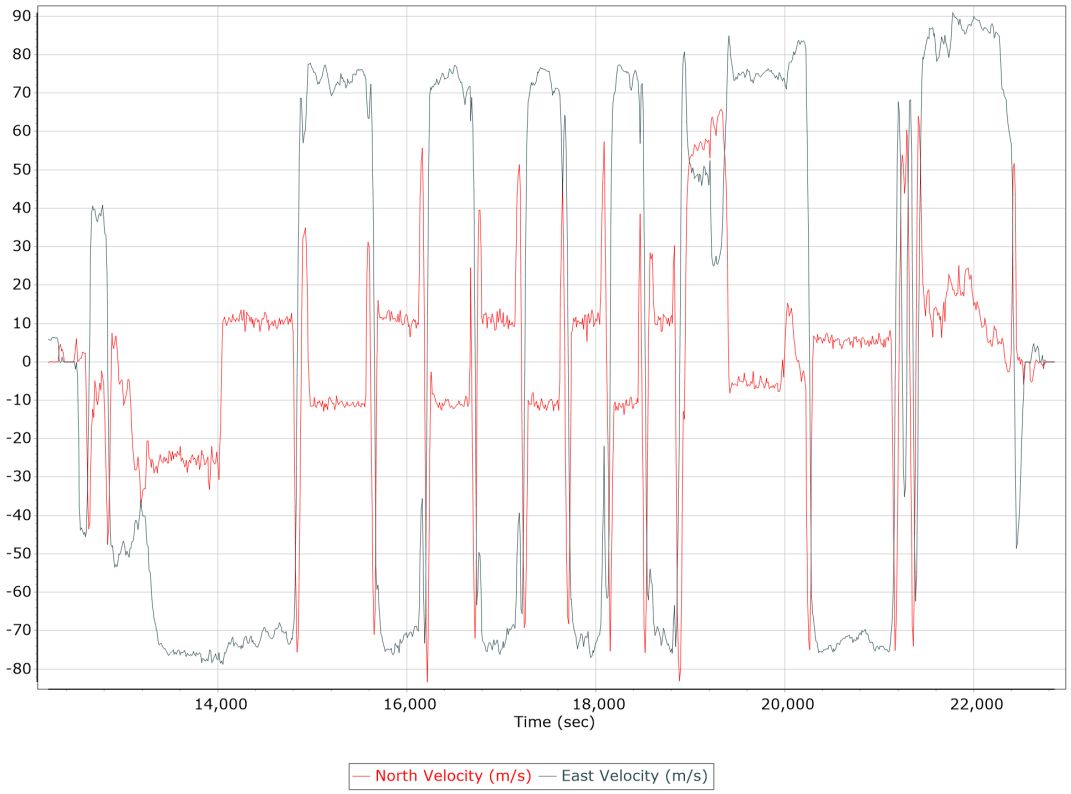
Roll/Pitch



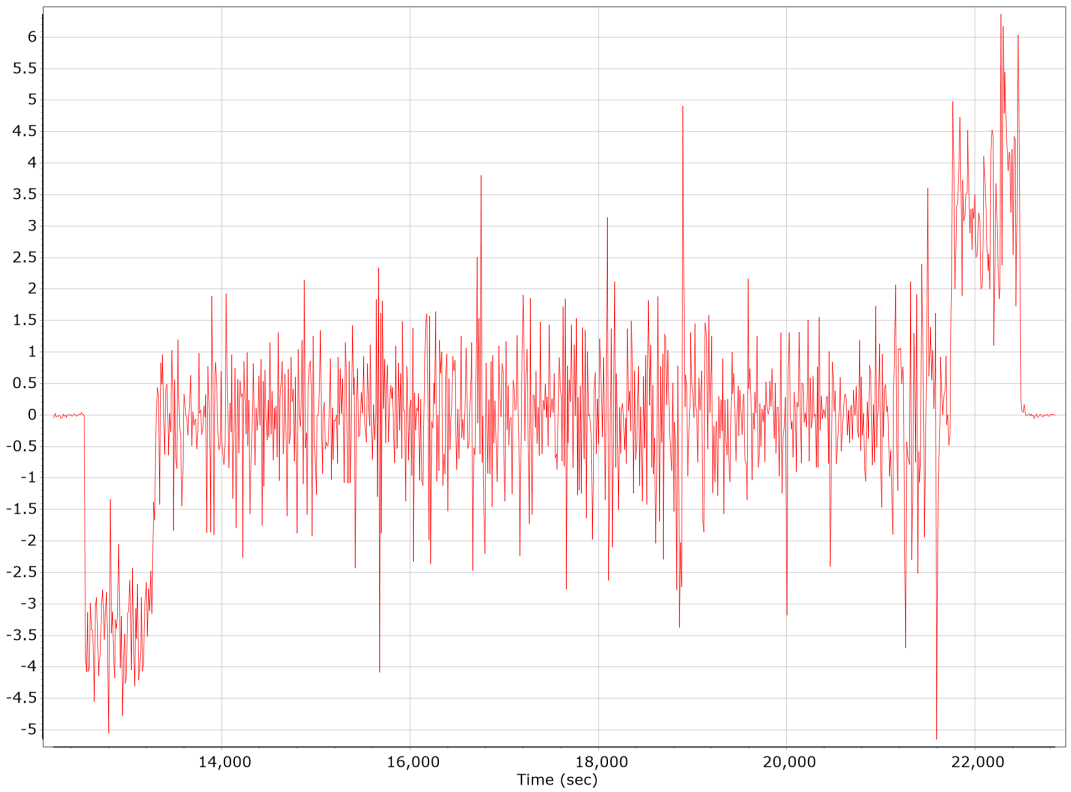
Heading



North/East Velocity



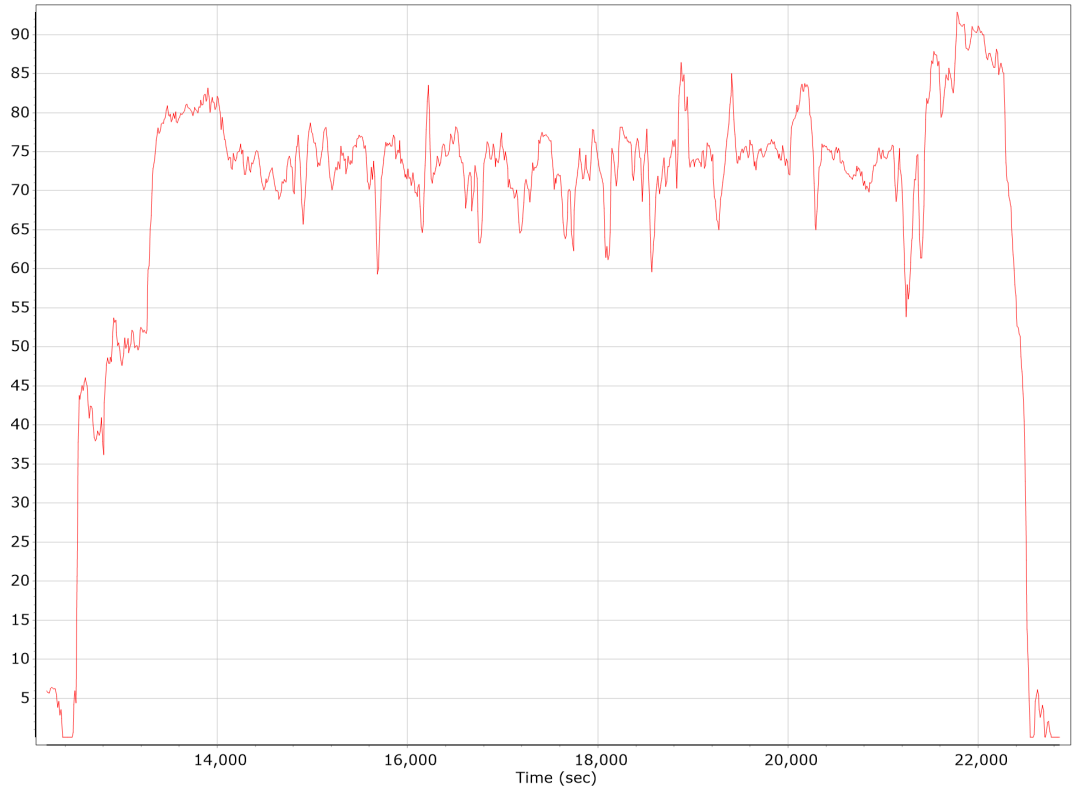
Down Velocity



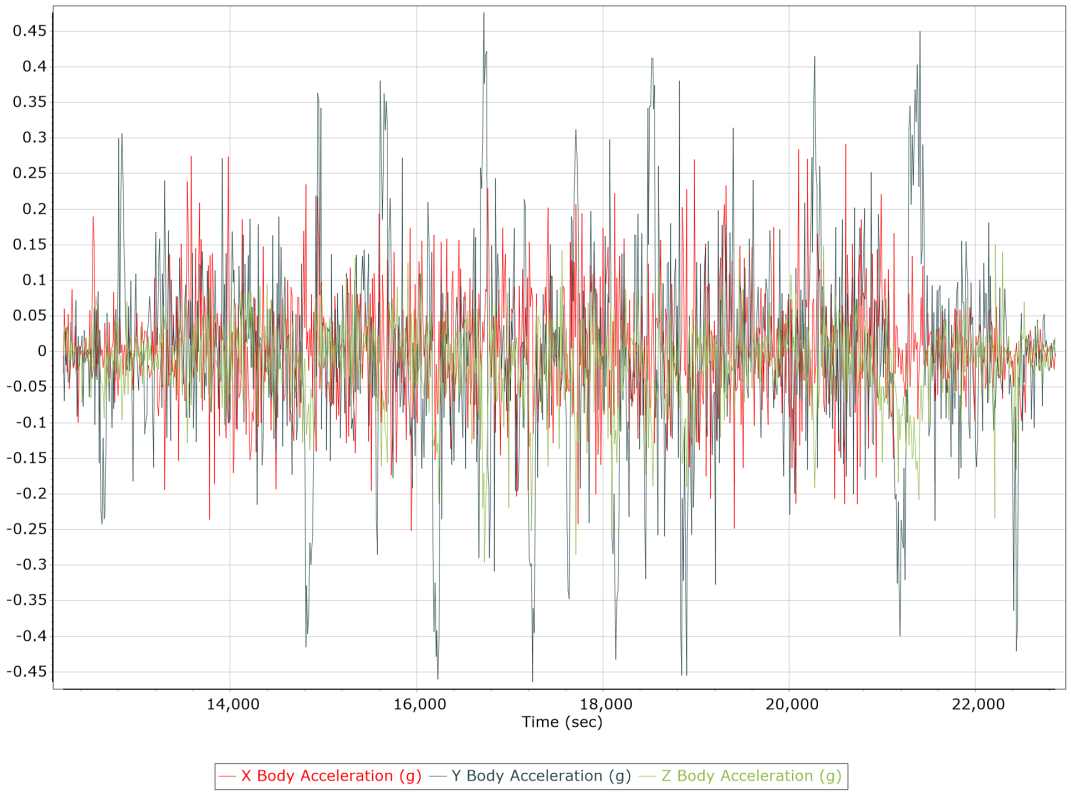
Total Speed



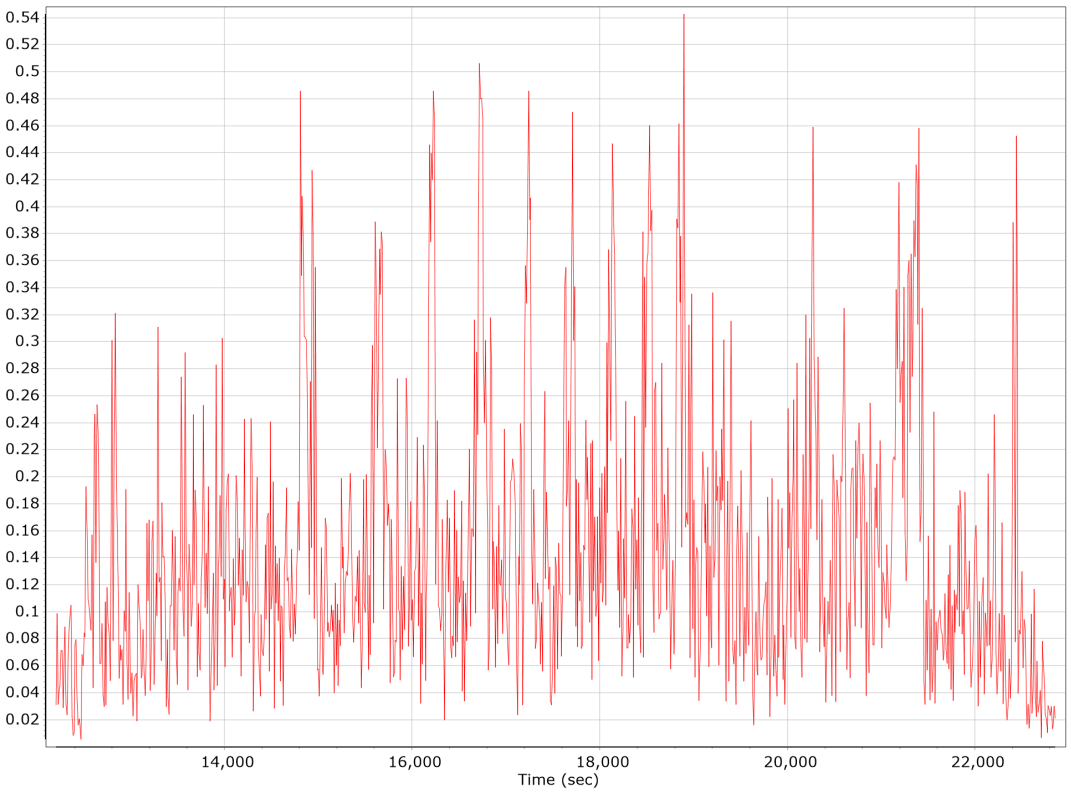
Ground Speed



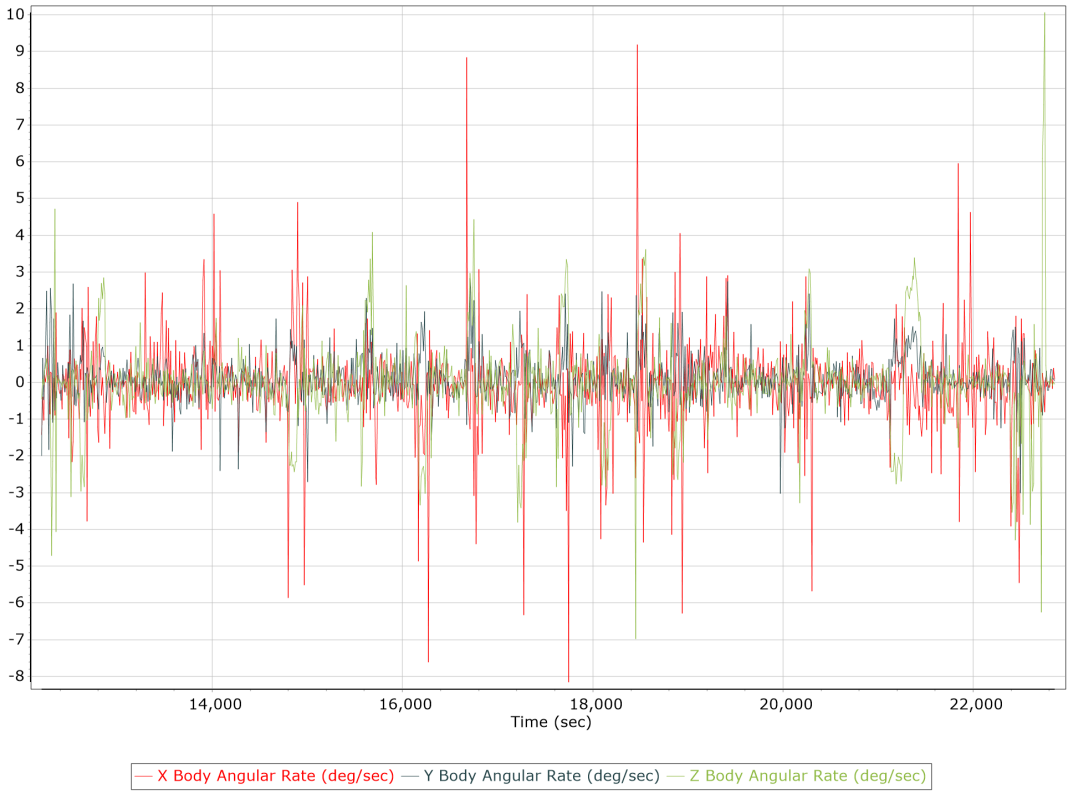
Body Acceleration



Total Body Acceleration

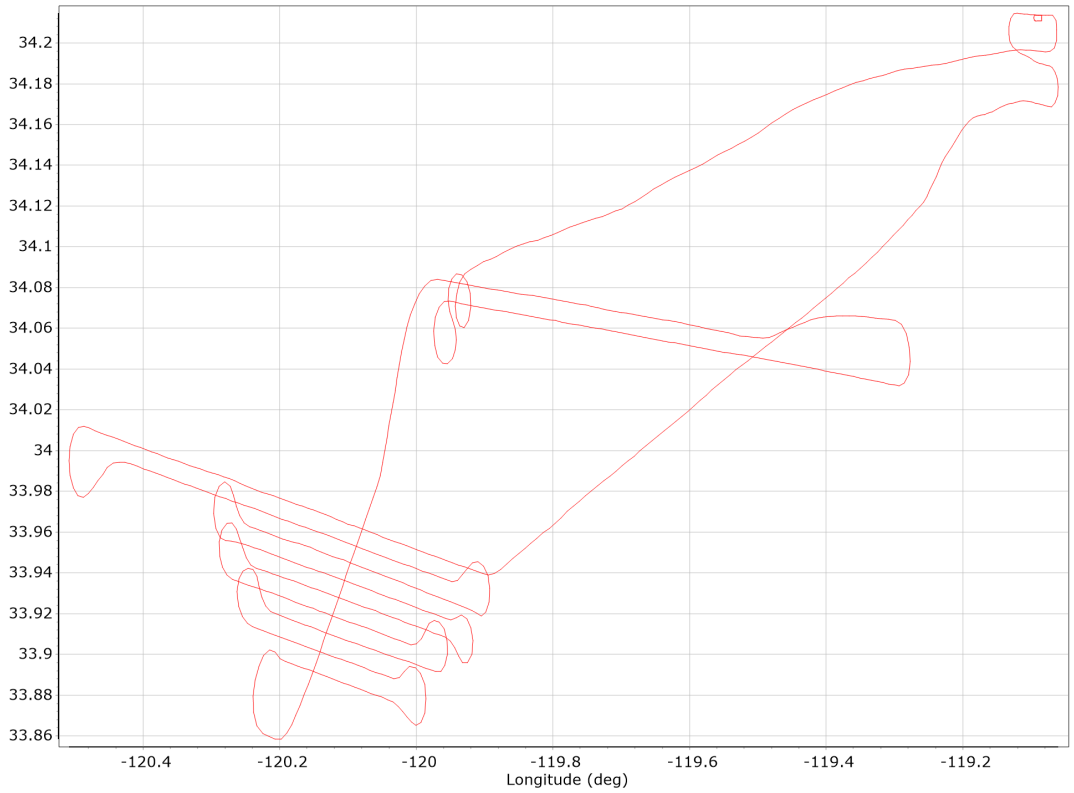


Body Angular Rate



Forward Processed Trajectory Information

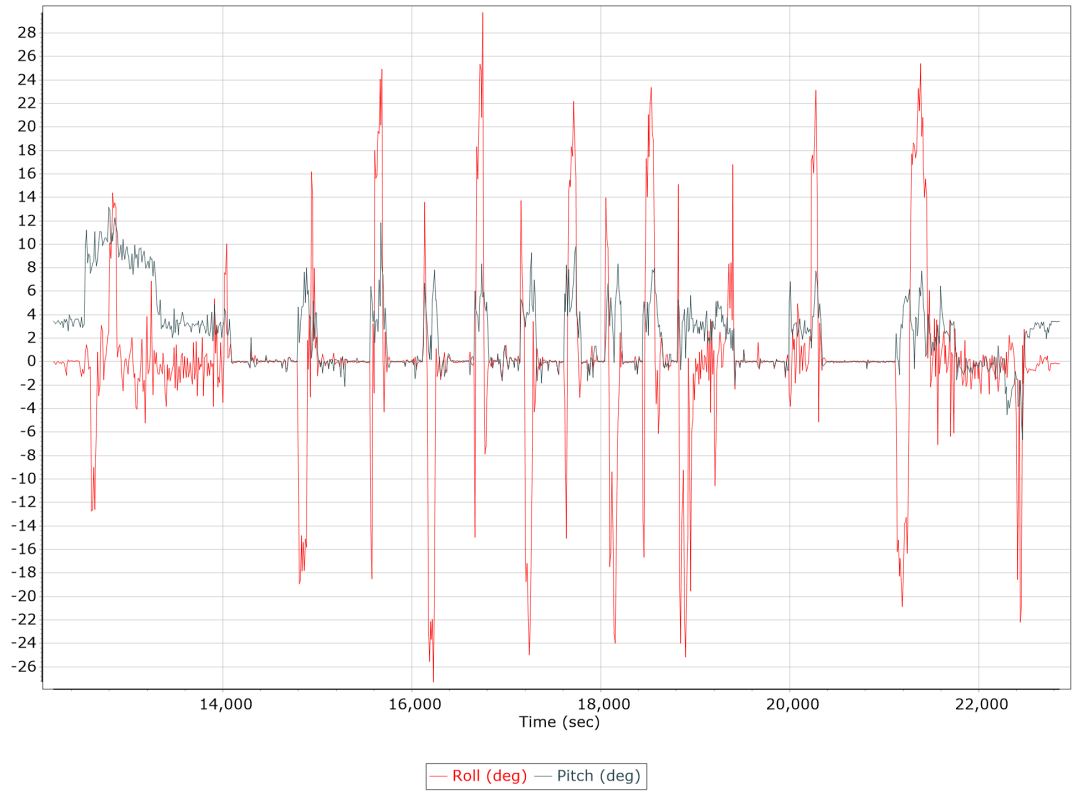
Top View



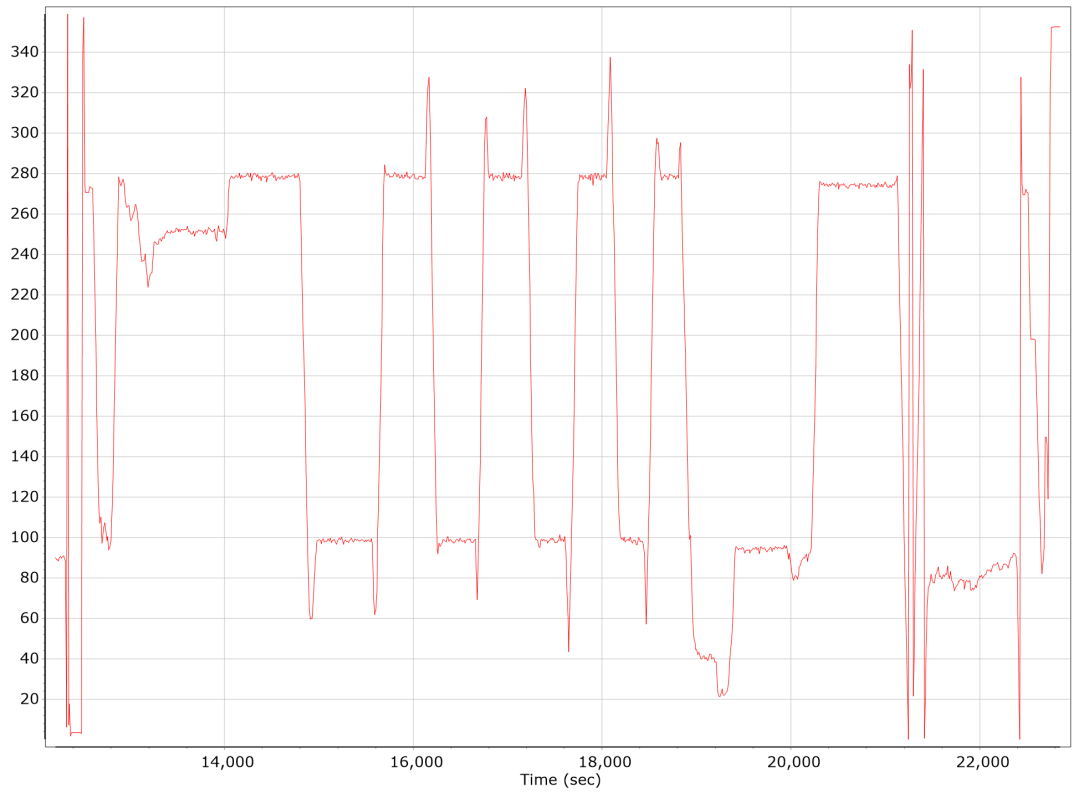
Altitude



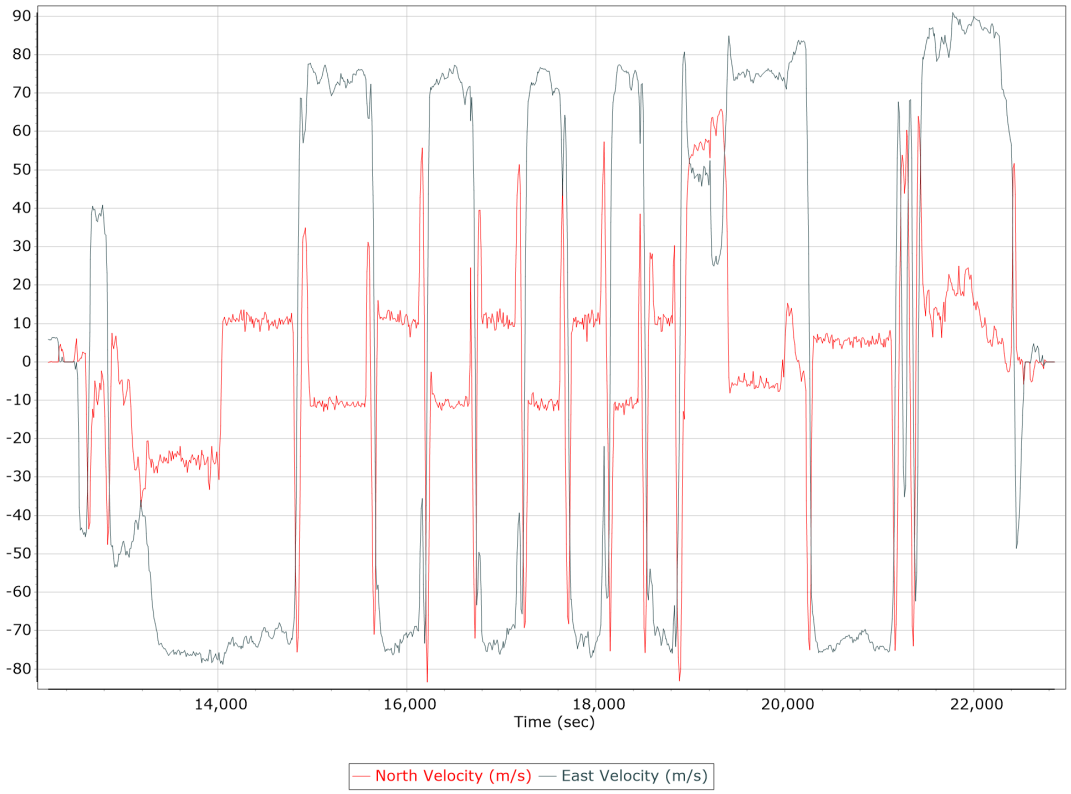
Roll/Pitch



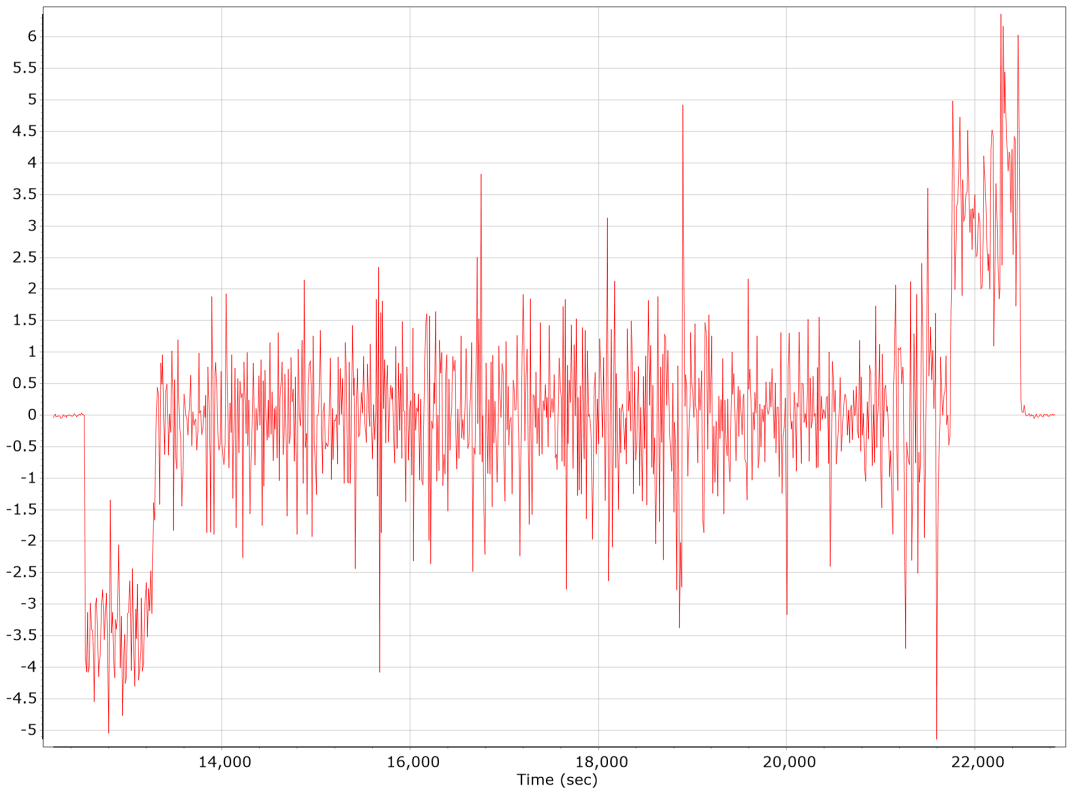
Heading



North/East Velocity



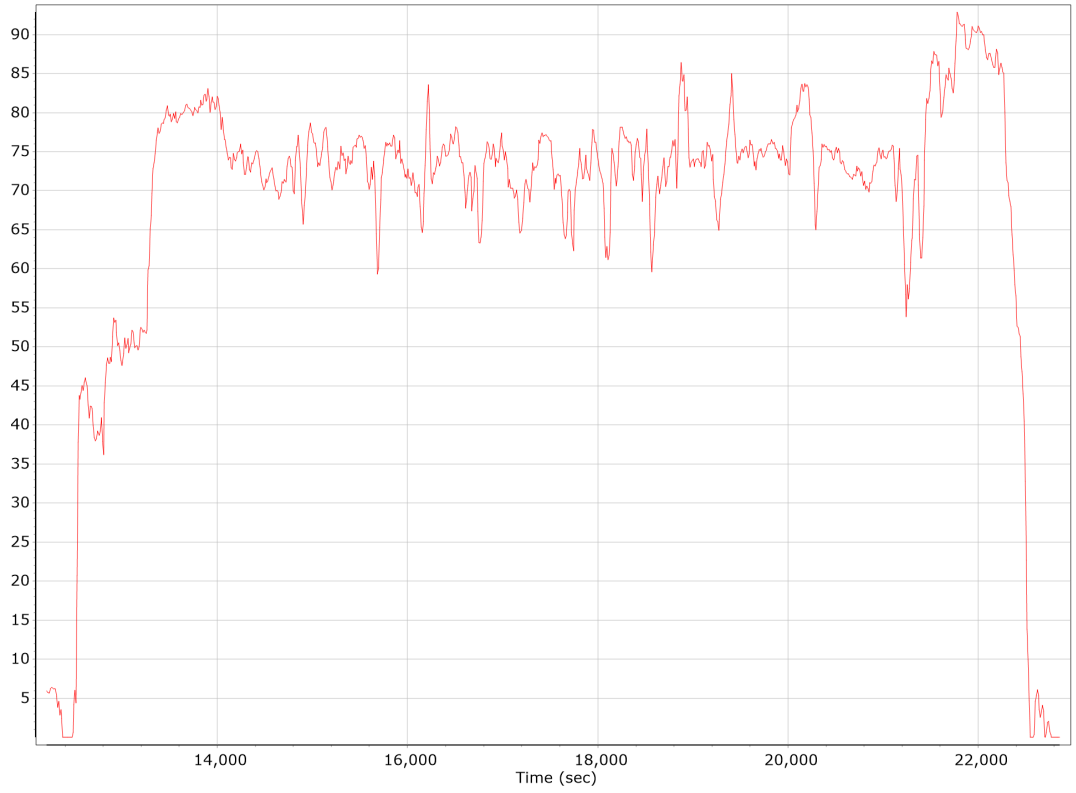
Down Velocity



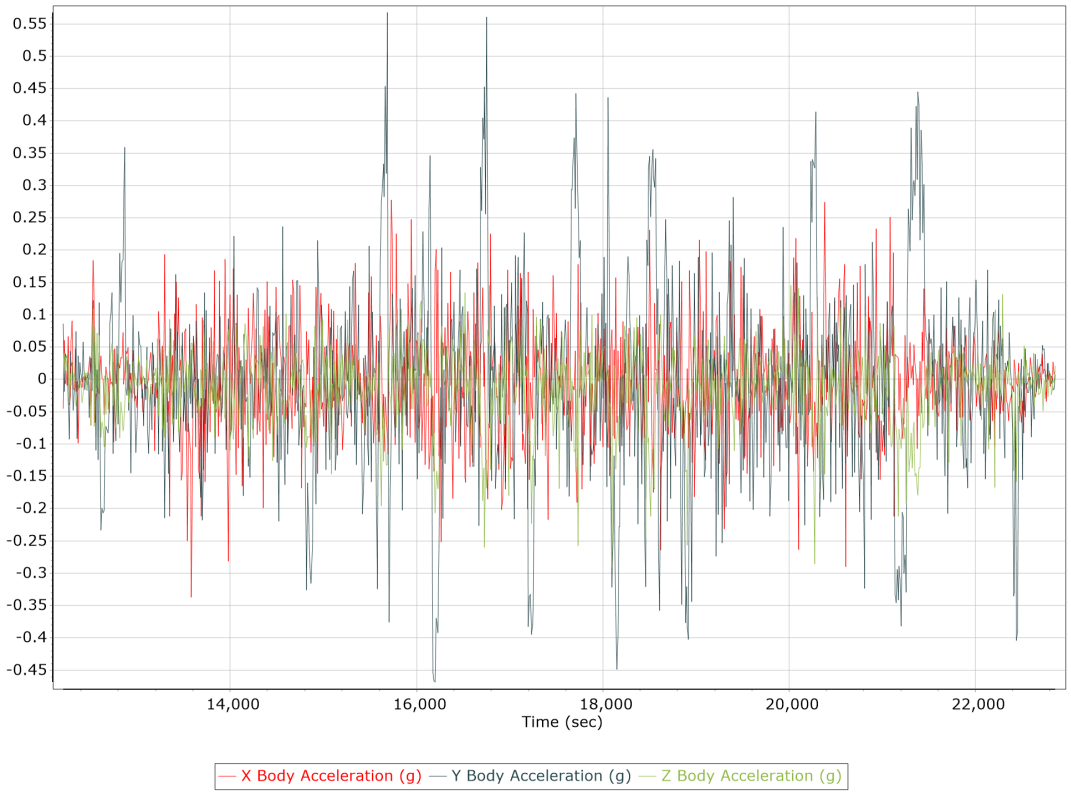
Total Speed



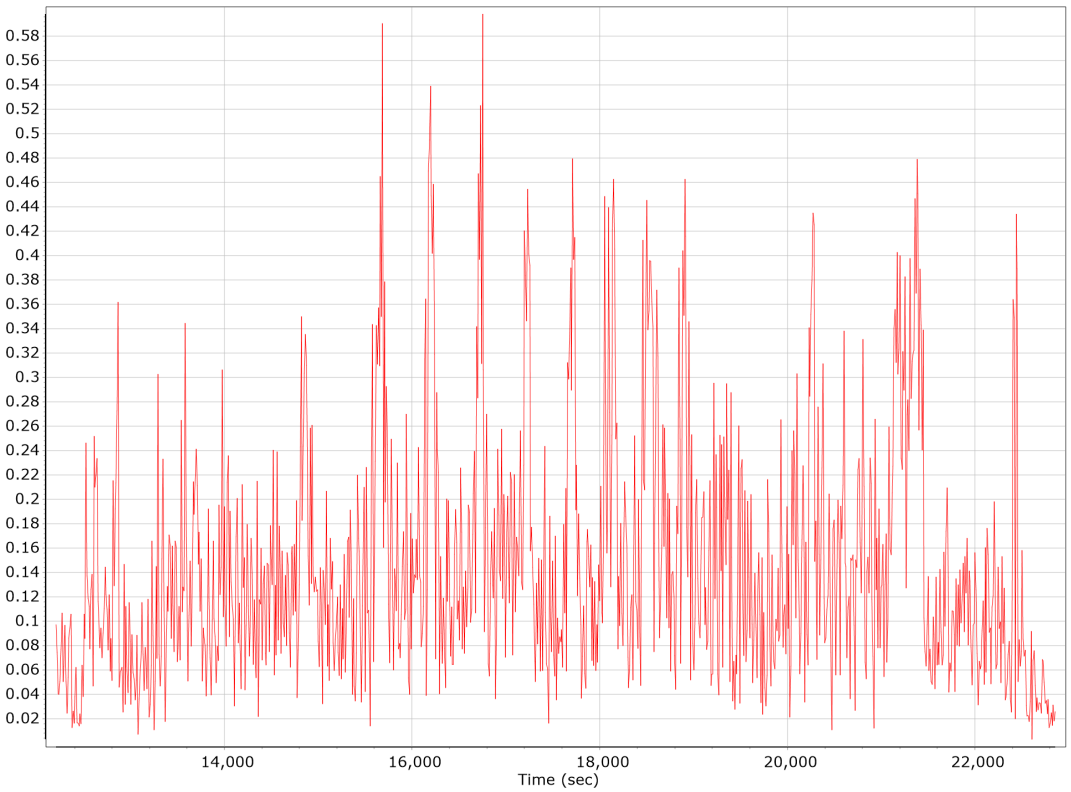
Ground Speed



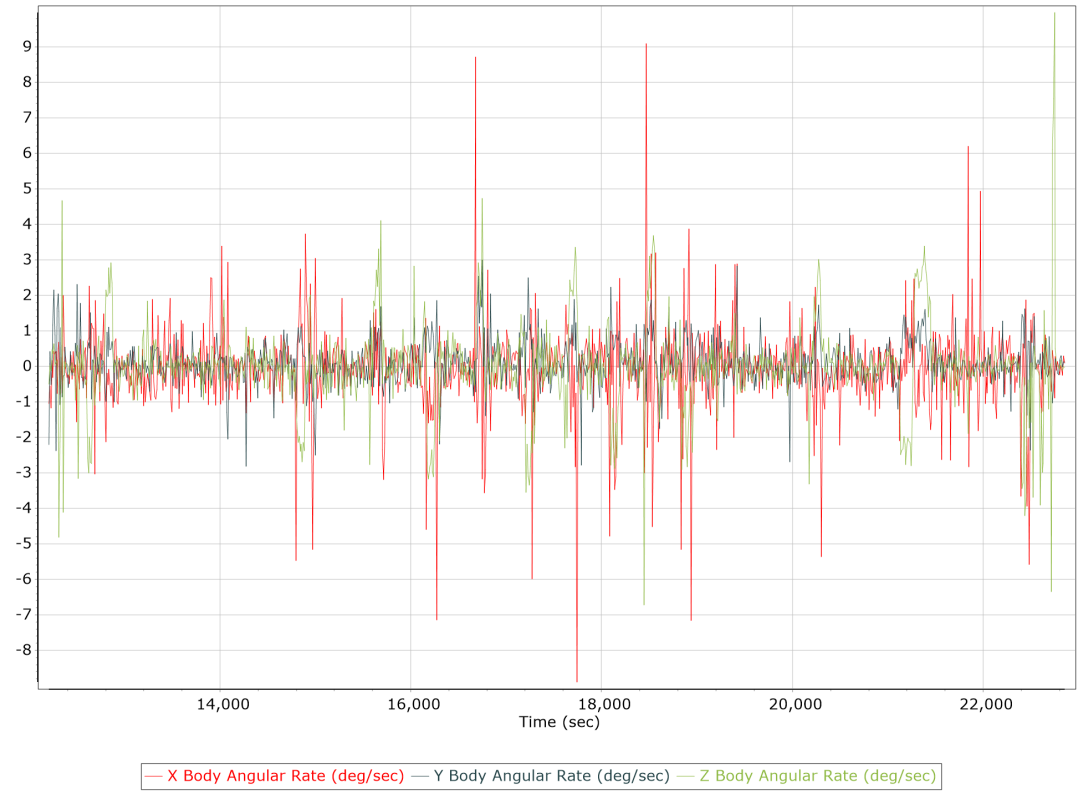
Body Acceleration



Total Body Acceleration



Body Angular Rate

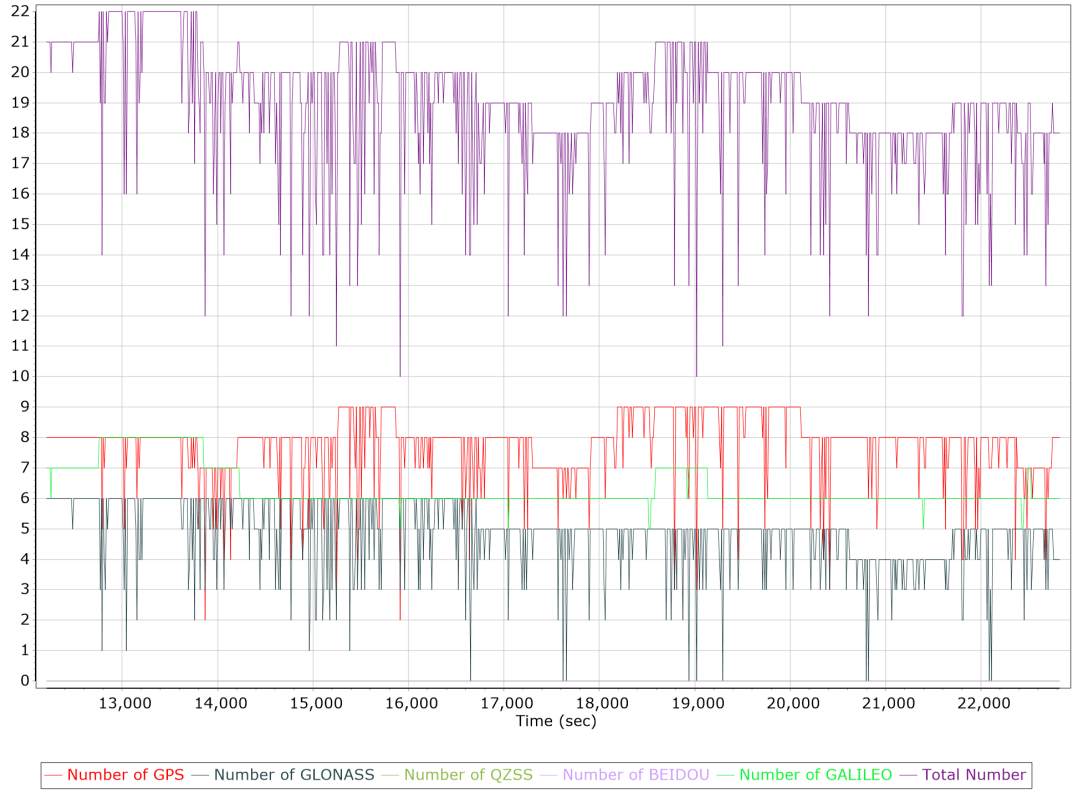


GNSS QC

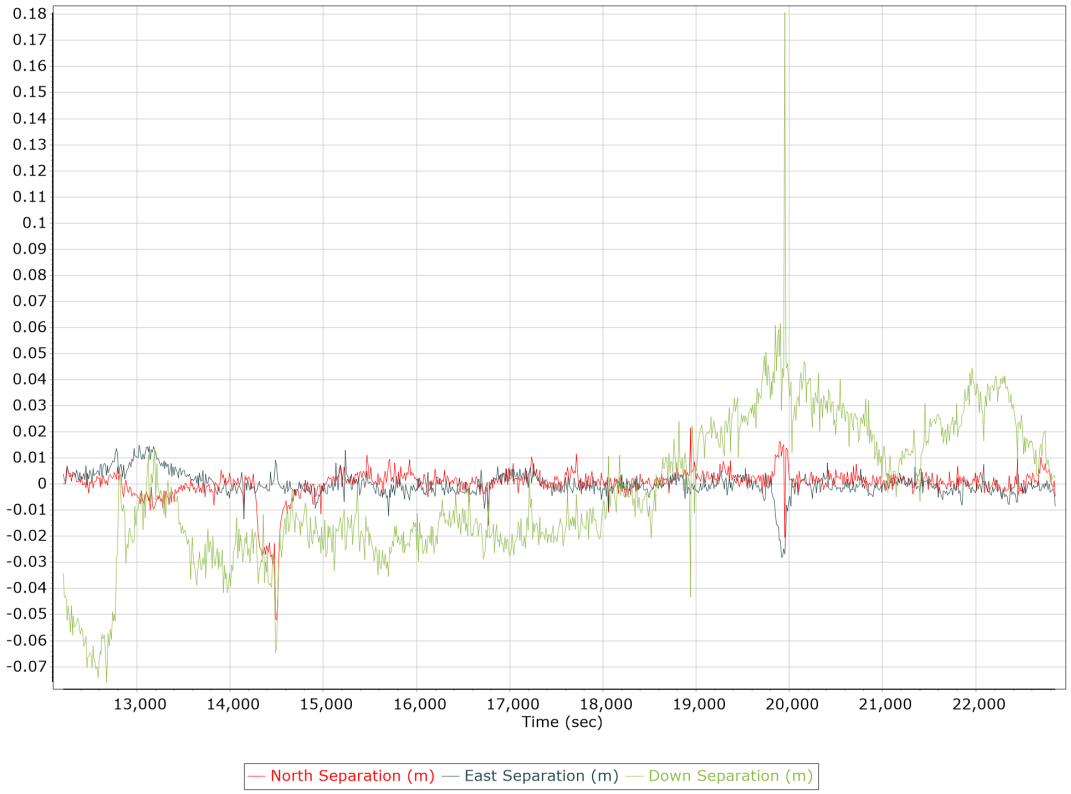
GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	2	9	8
Number of GLONASS SV	0	6	5
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	5	8	6
Total number of SV	10	22	19
PDOP	1.02	2.30	1.21
QC Solution Gaps	2.00	2.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	10858.00	0.00	2.00
Percentage	99.98	0.00	0.02

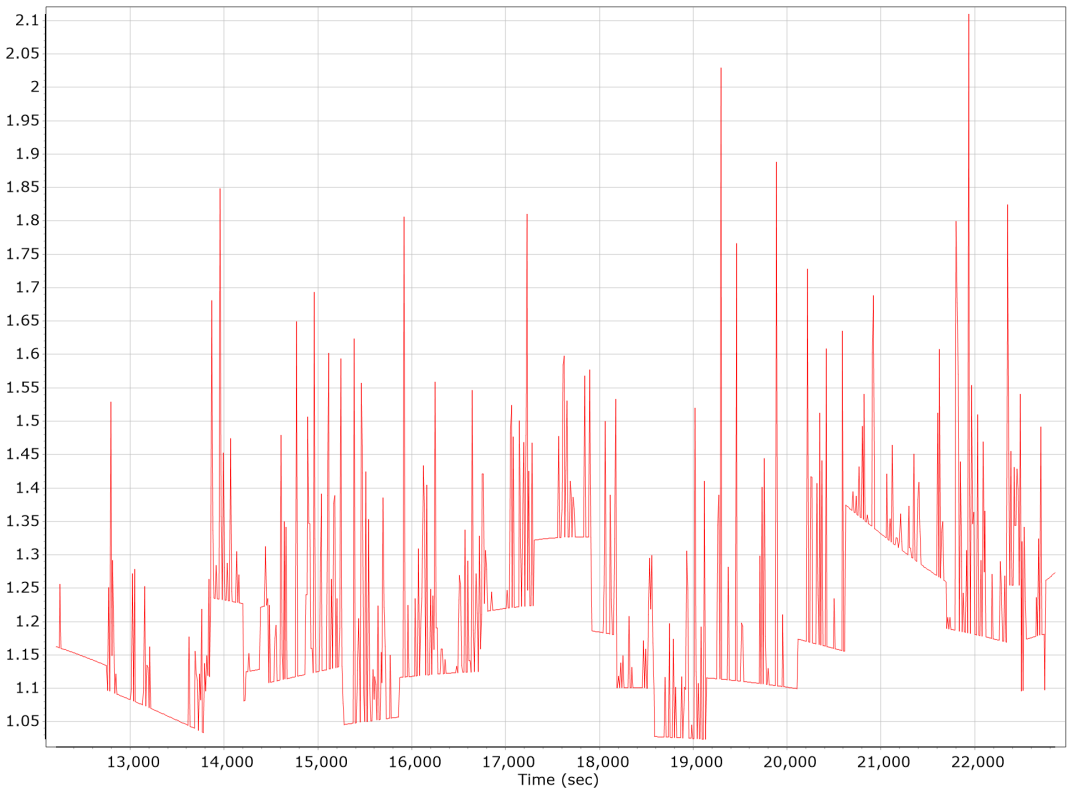
Num SVs in solution



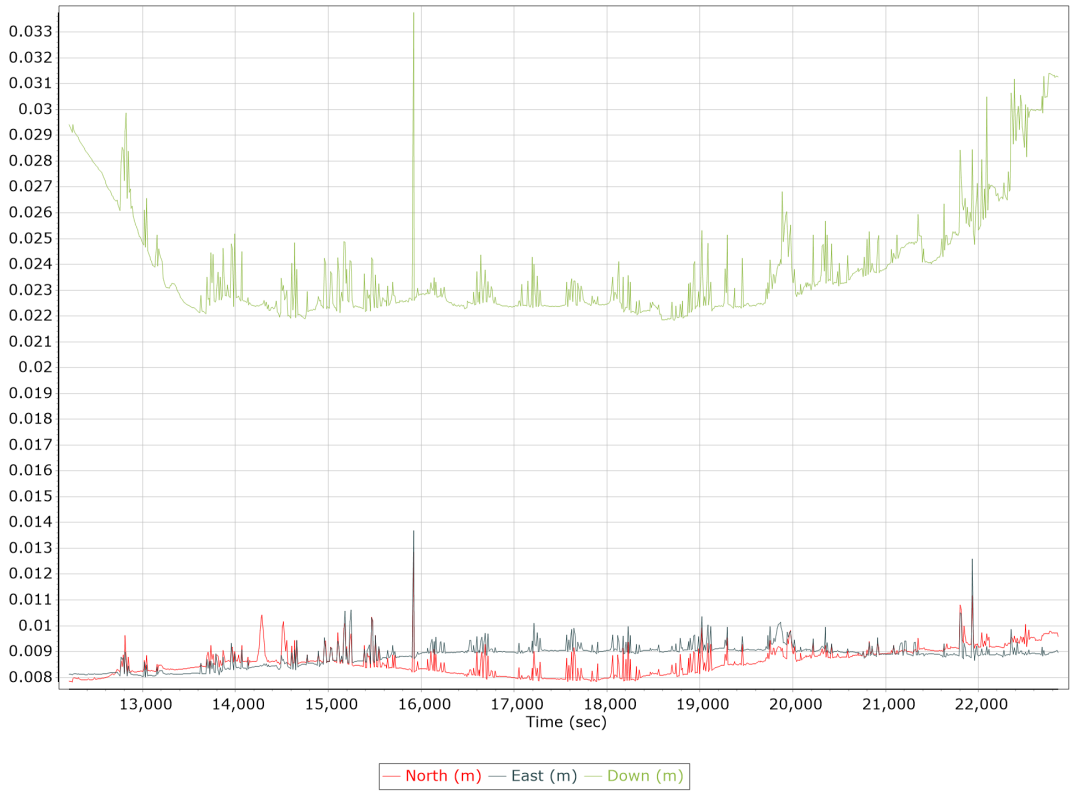
Forward/Reverse Separation



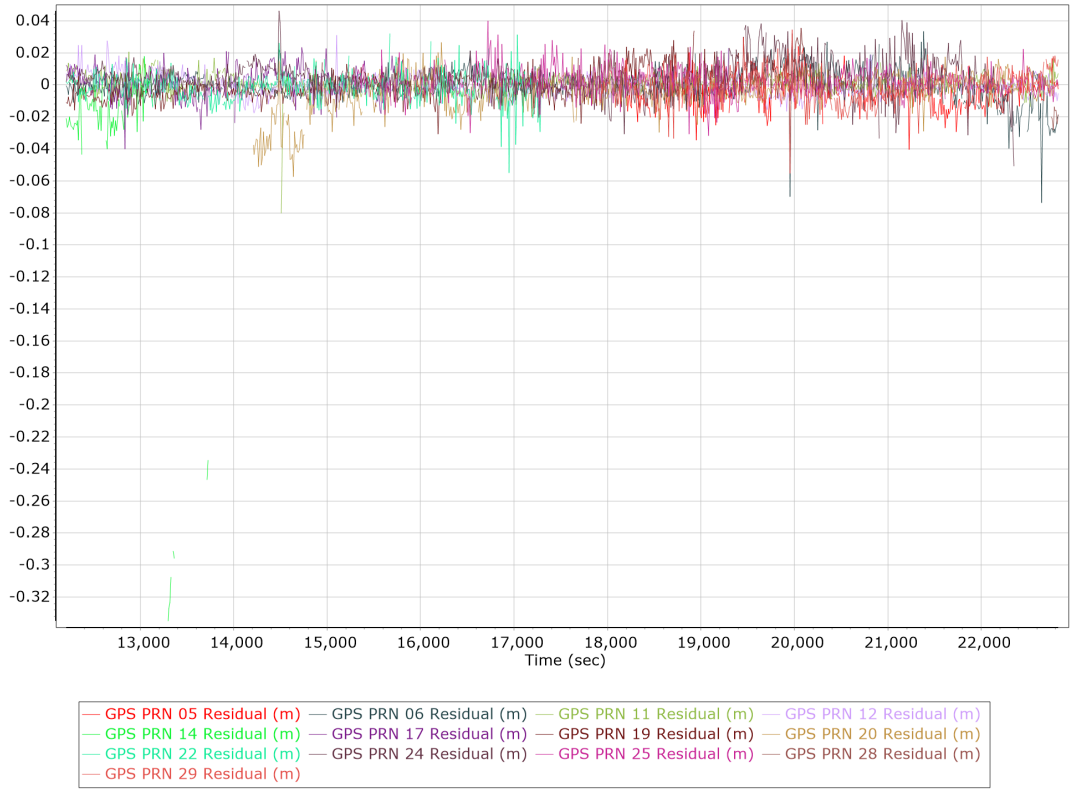
PDOP



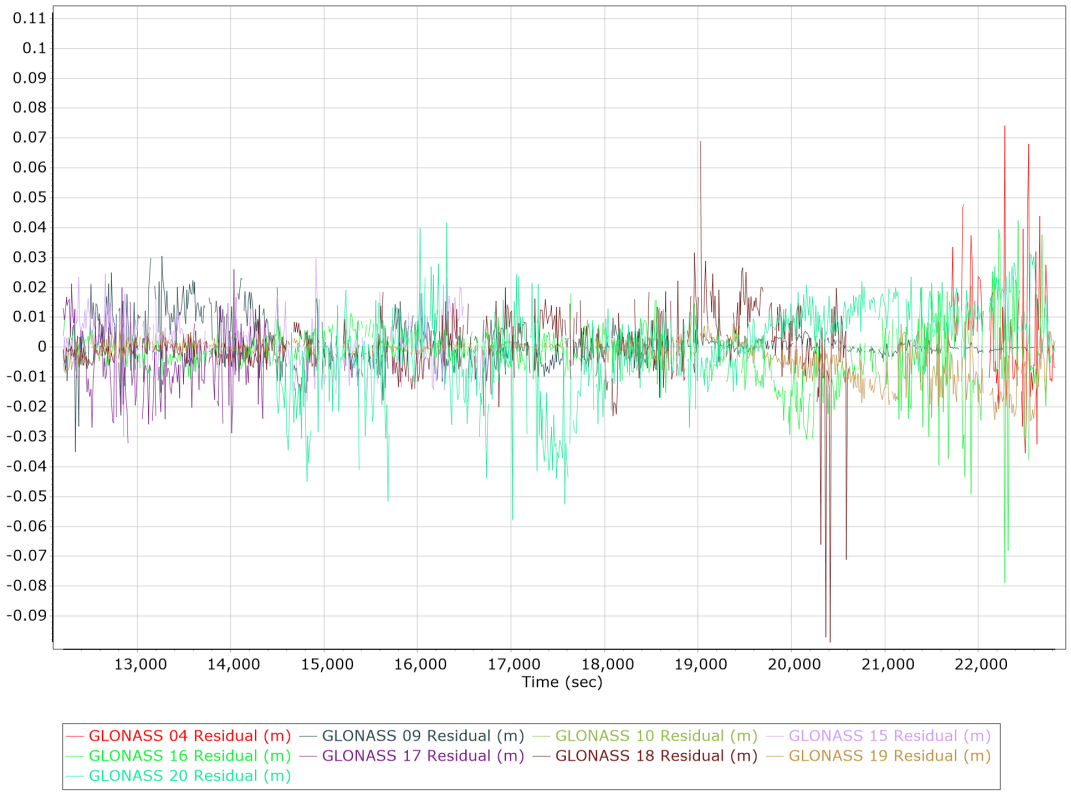
Estimated Position Accuracy



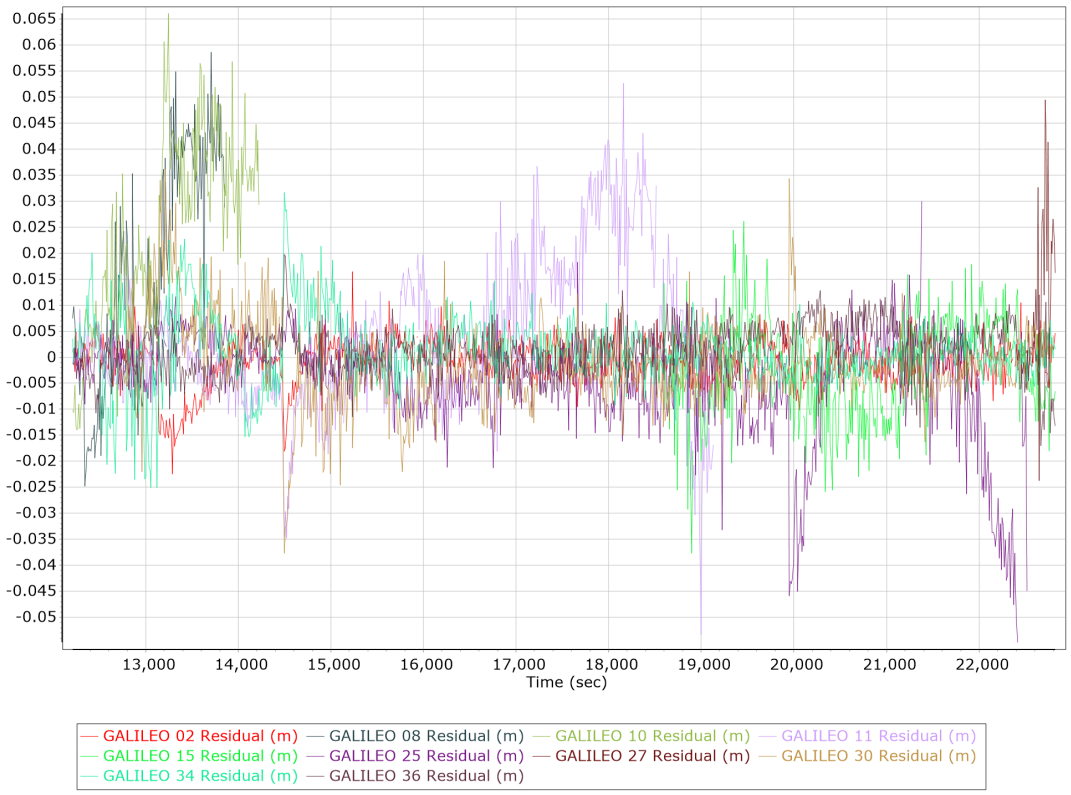
GPS Residuals



GLONASS Residuals



GALILEO Residuals



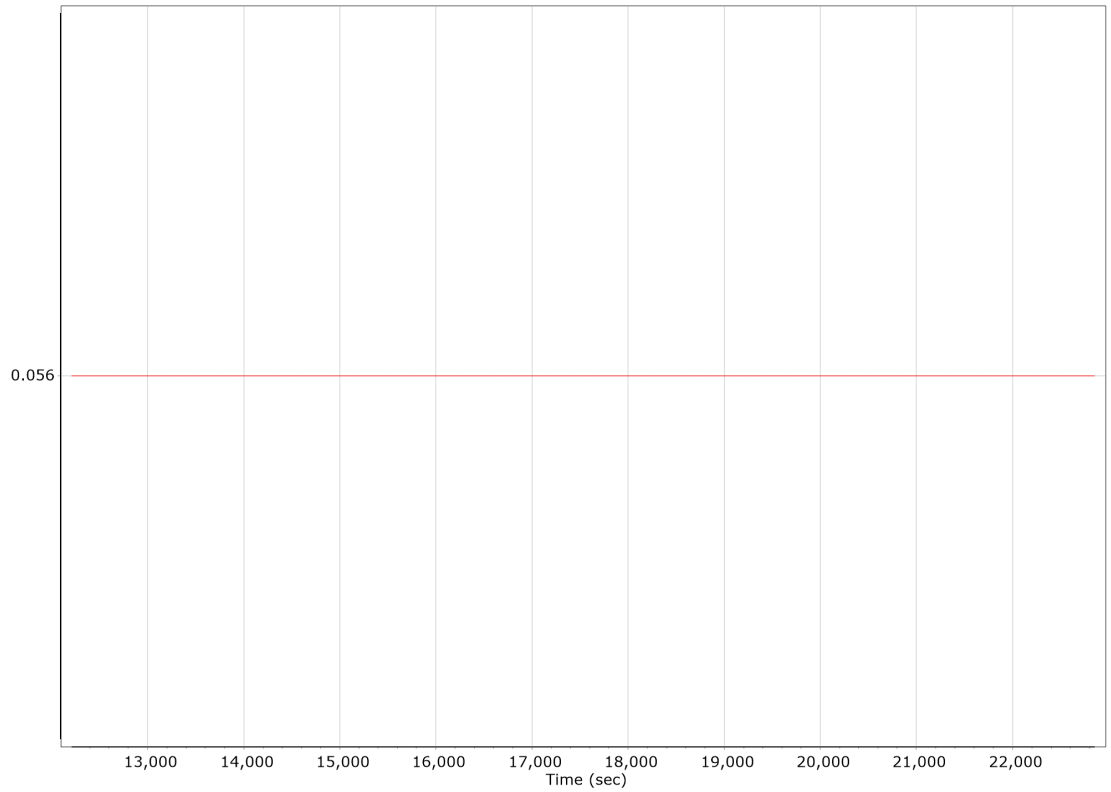
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	11944.000 (12/3/2023 3:19:04 AM)		
Processing end time	22861.000 (12/3/2023 6:21:01 AM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.056	0.055	-1.294
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

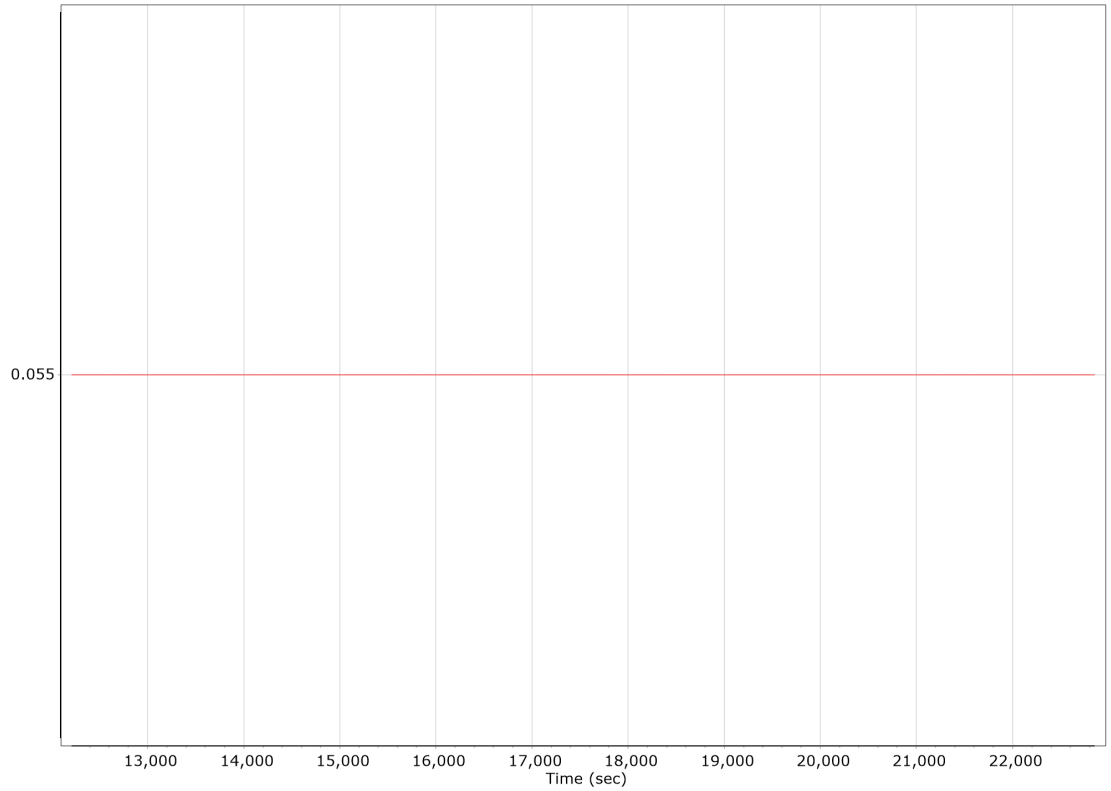
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

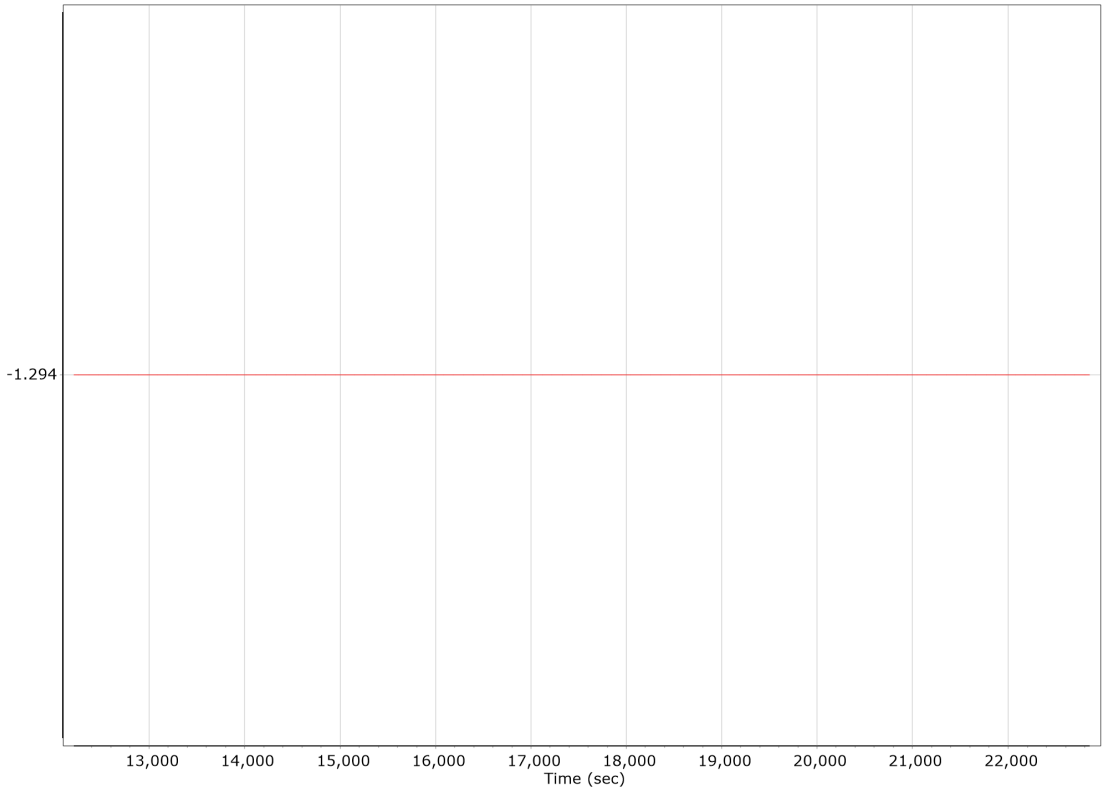
X Reference-Primary GNSS Lever Arm (m)



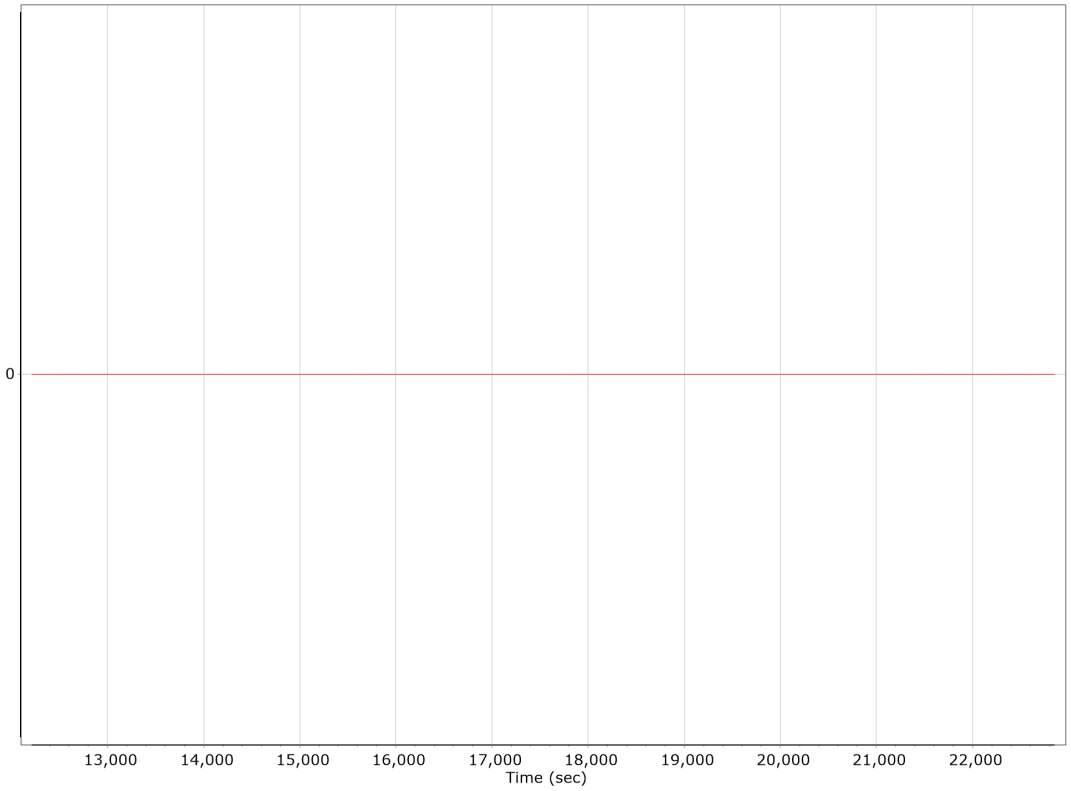
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



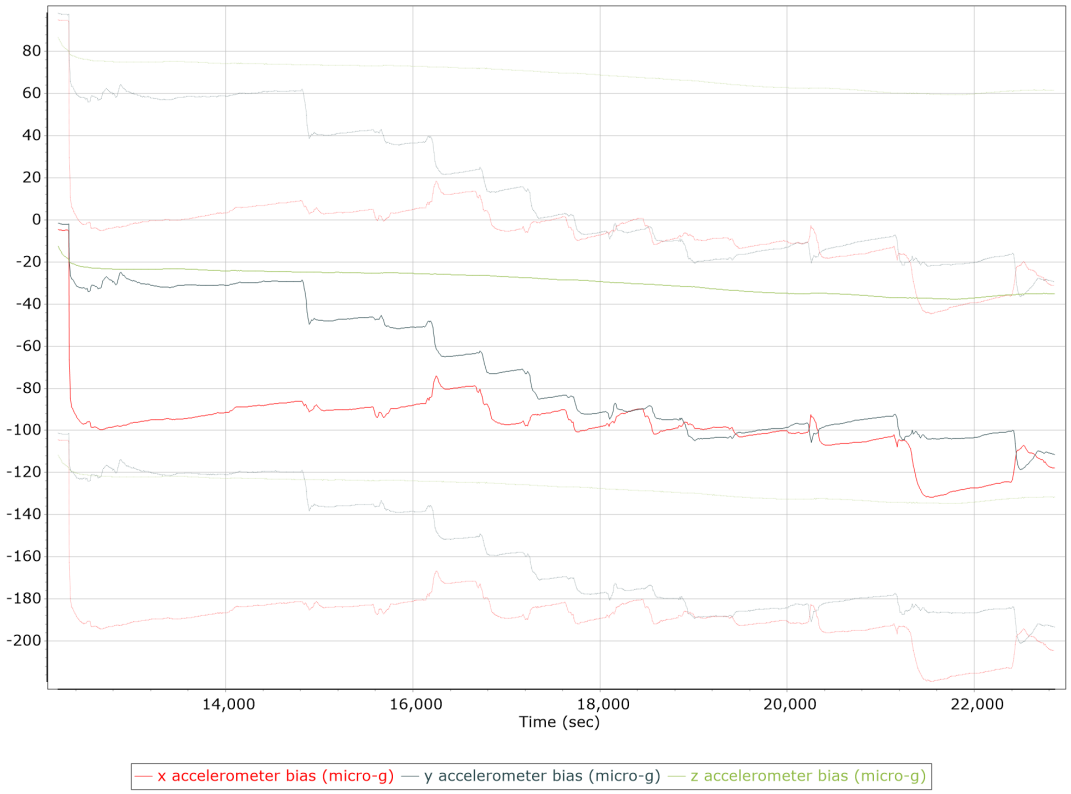
Reference-Primary GNSS Lever Arm Figure of Merit



IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

Accelerometer Bias (micro-g)



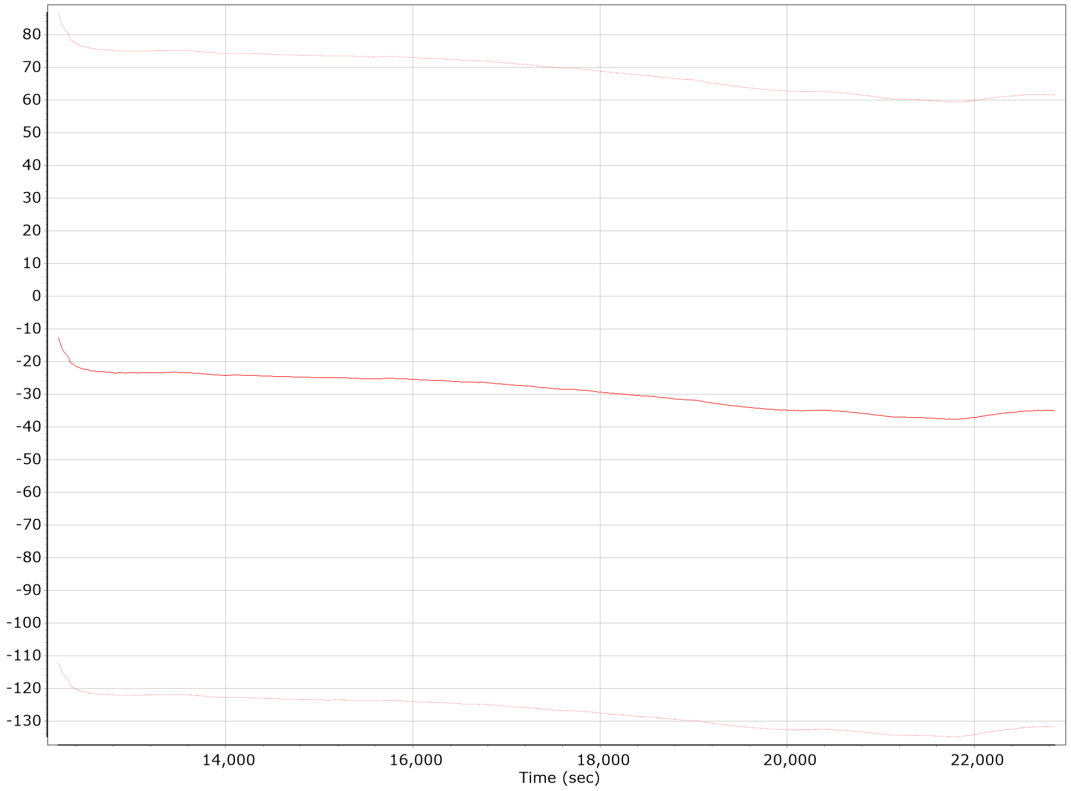
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



X Accelerometer Scale Error (ppm)



Y Accelerometer Scale Error (ppm)



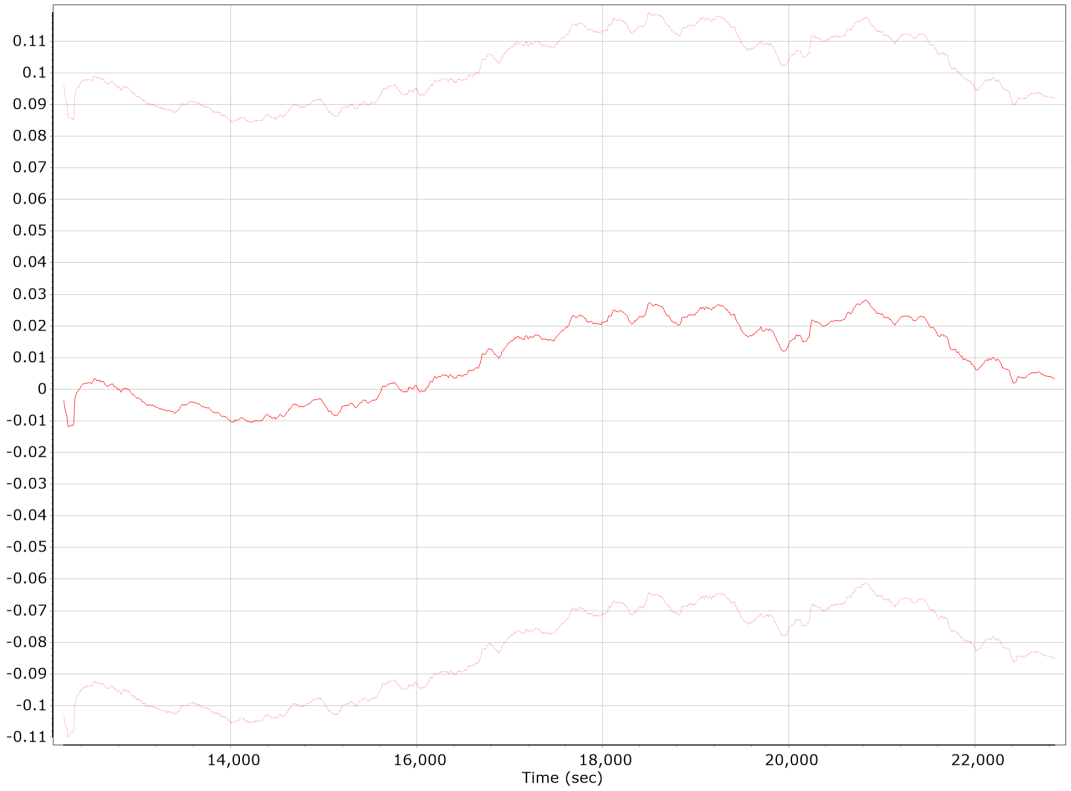
Z Accelerometer Scale Error (ppm)



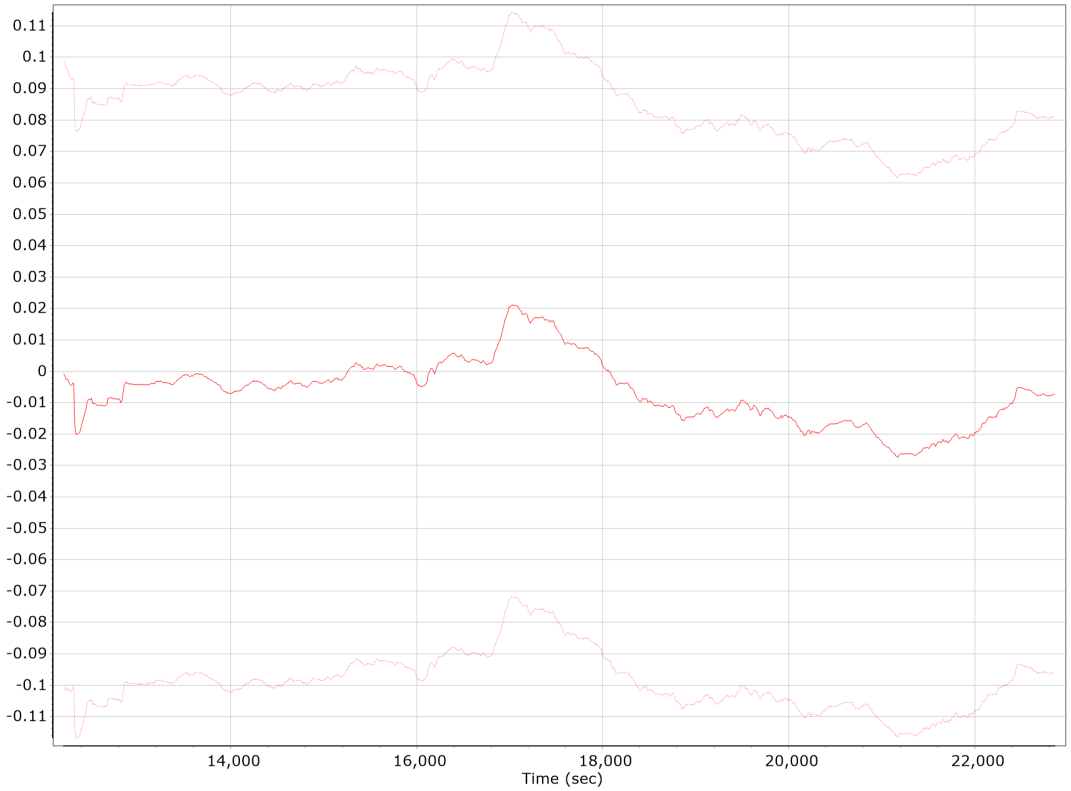
Gyro Bias (deg/h)



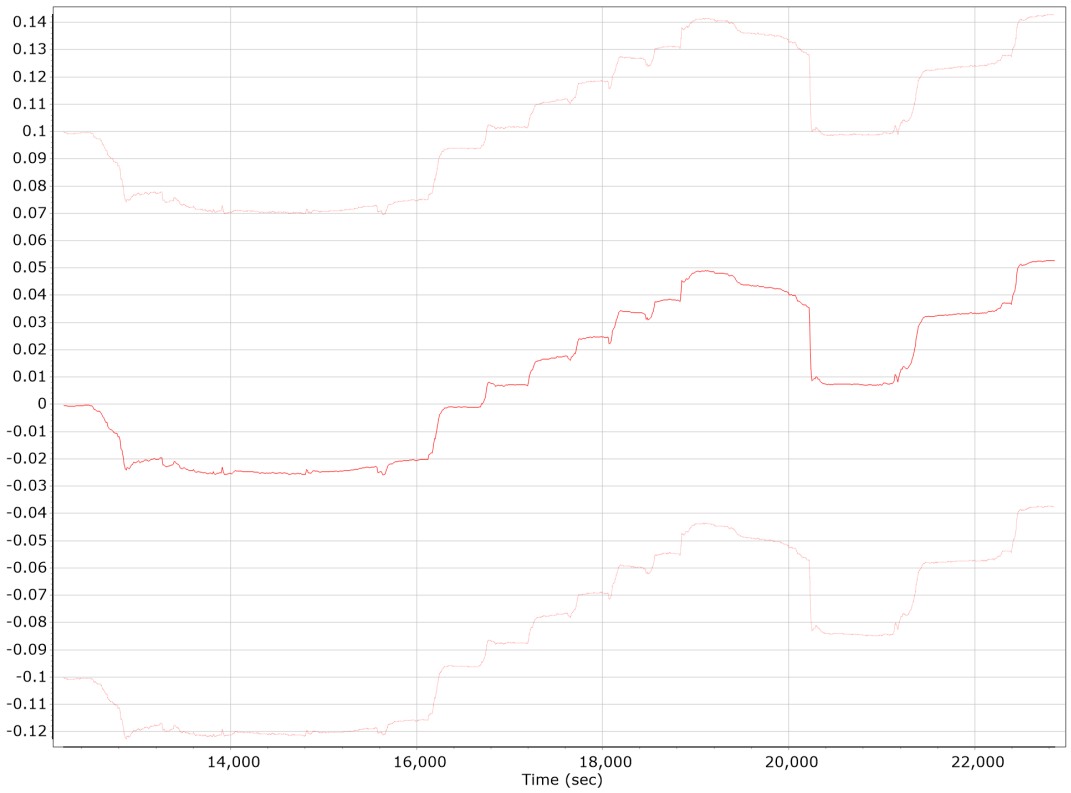
X Gyro Bias (deg/h)



Y Gyro Bias (deg/h)



Z Gyro Bias (deg/h)



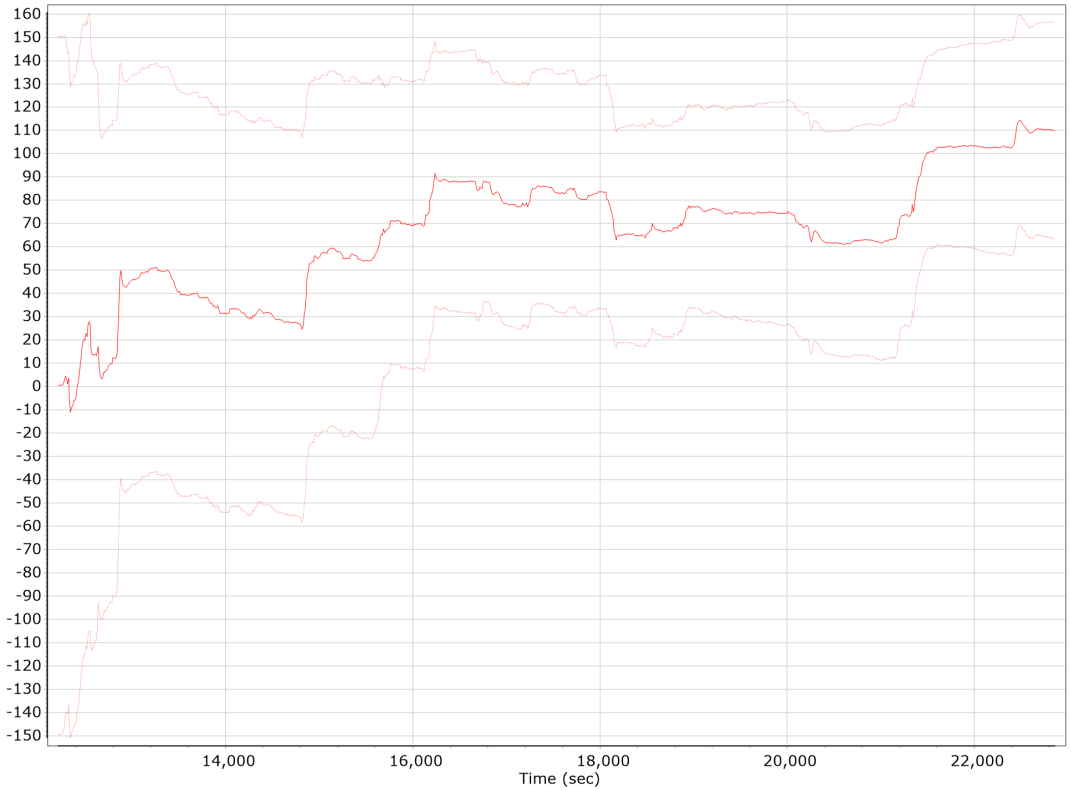
Gyro Scale Error (ppm)



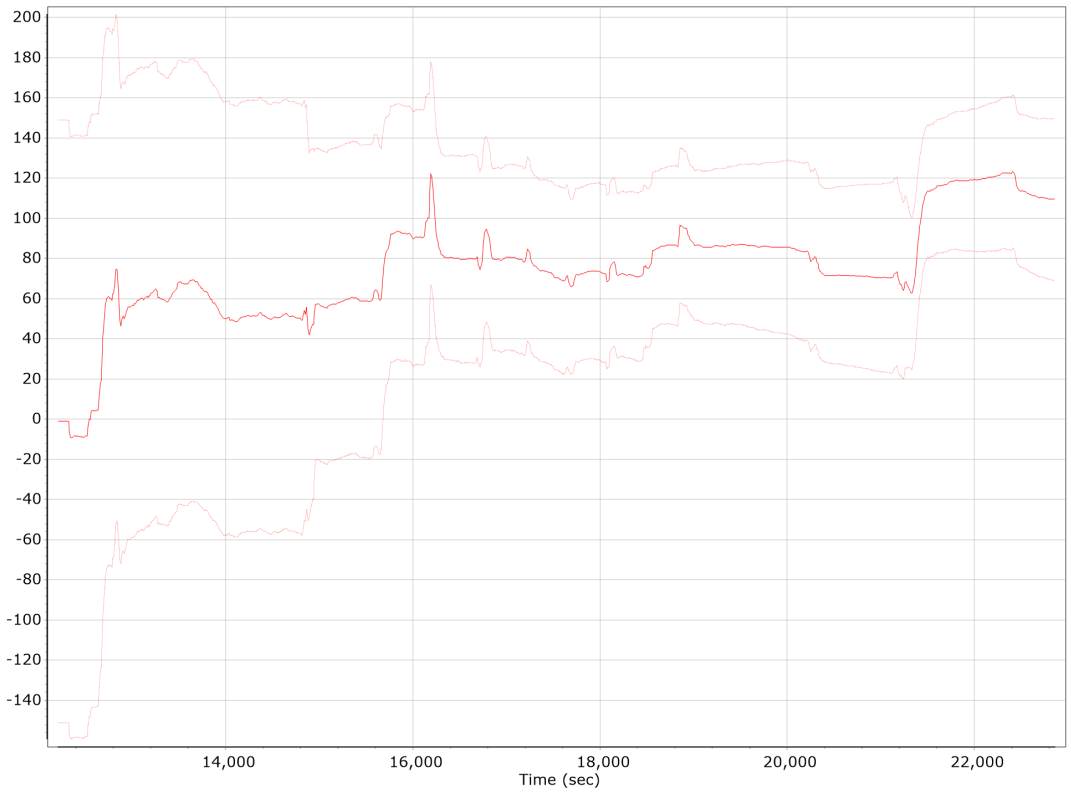
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)

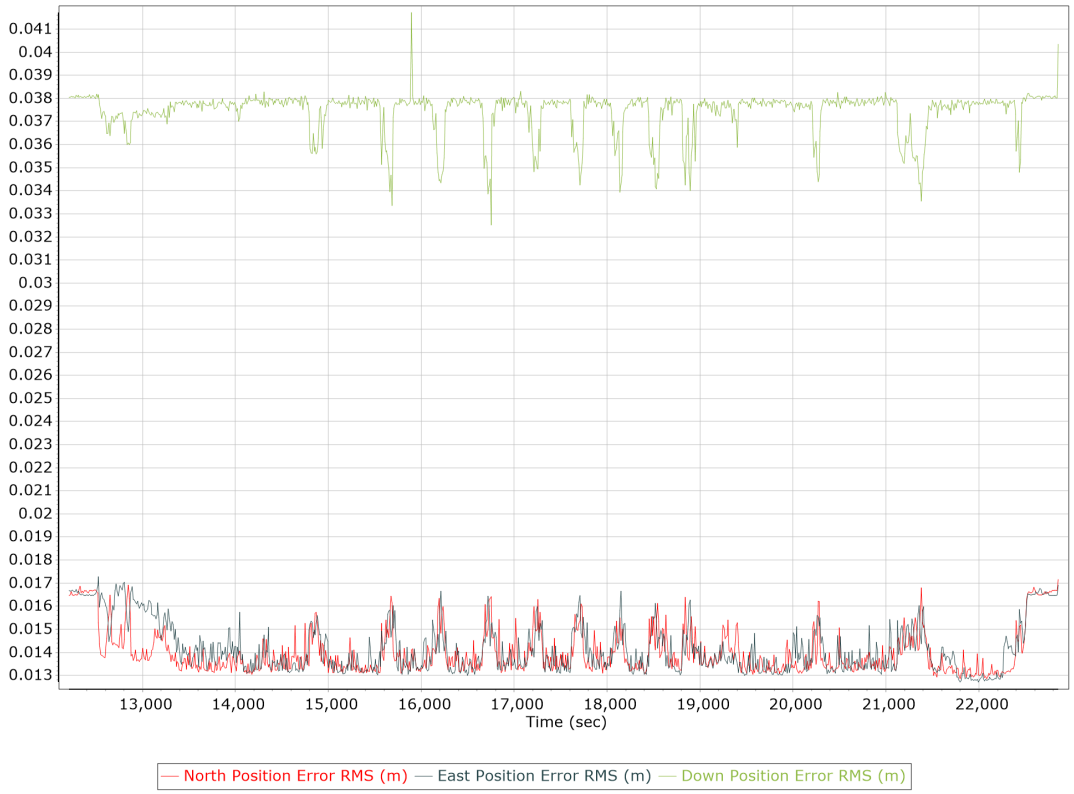


Z Gyro Scale Error (ppm)

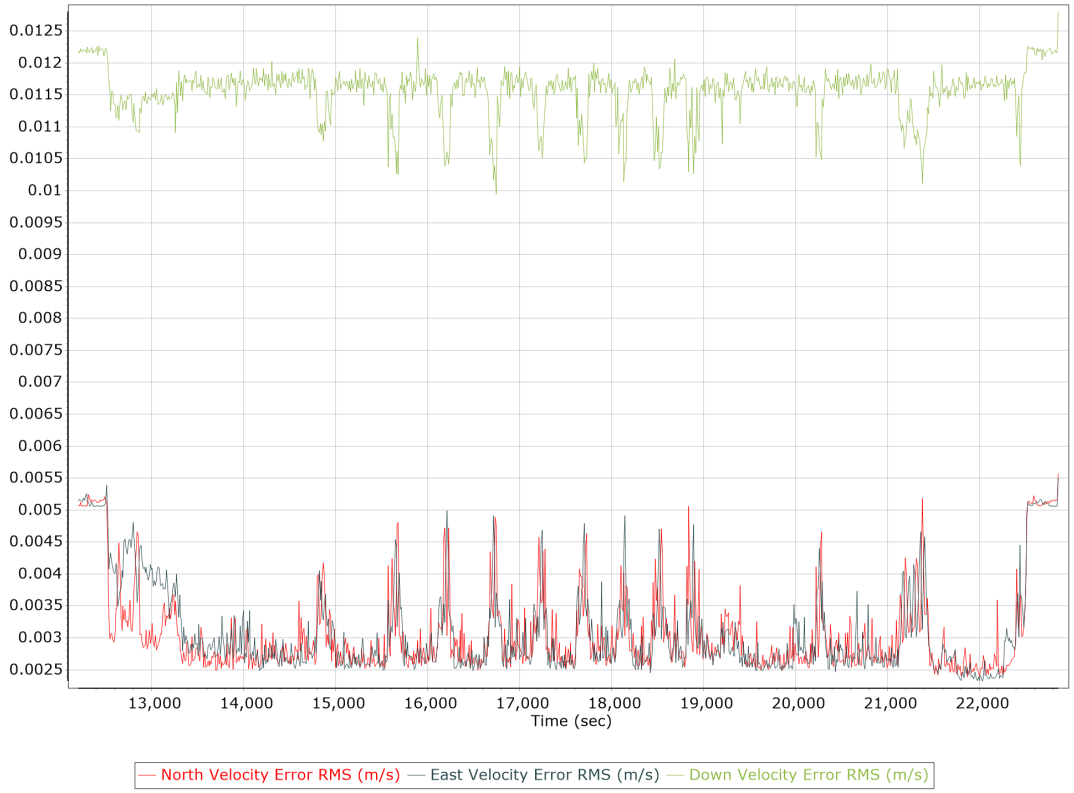


Smoothed Performance Metrics

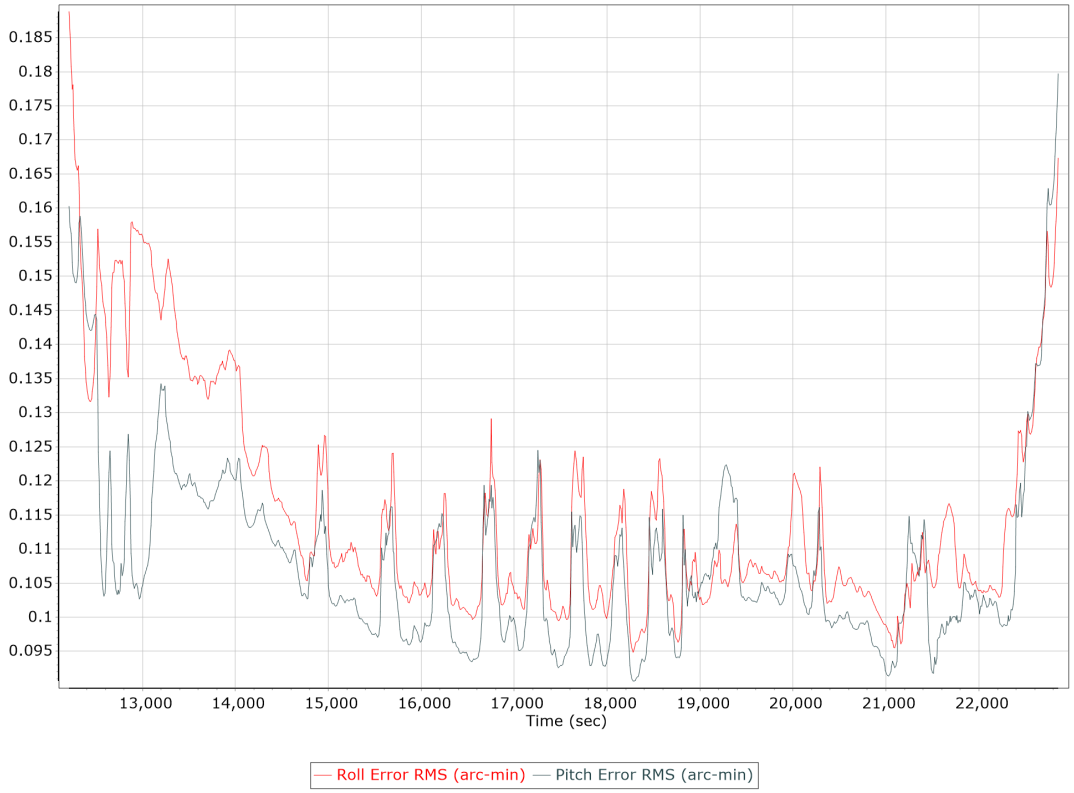
Position Error RMS (m)



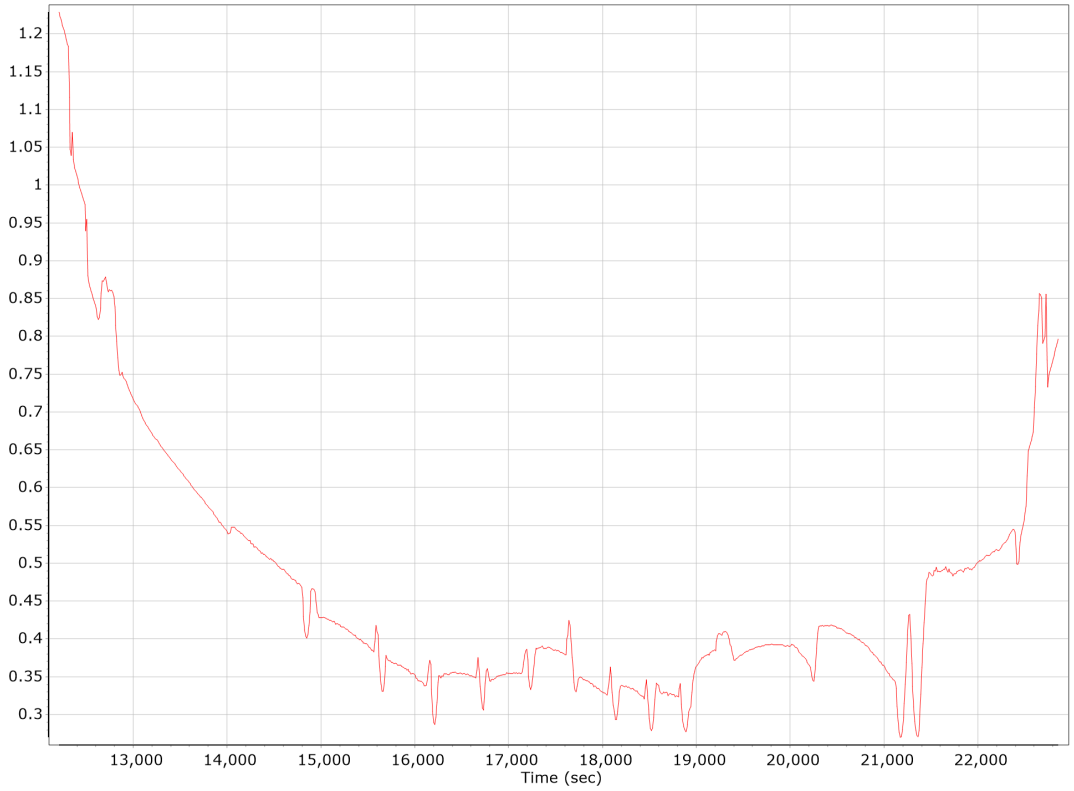
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

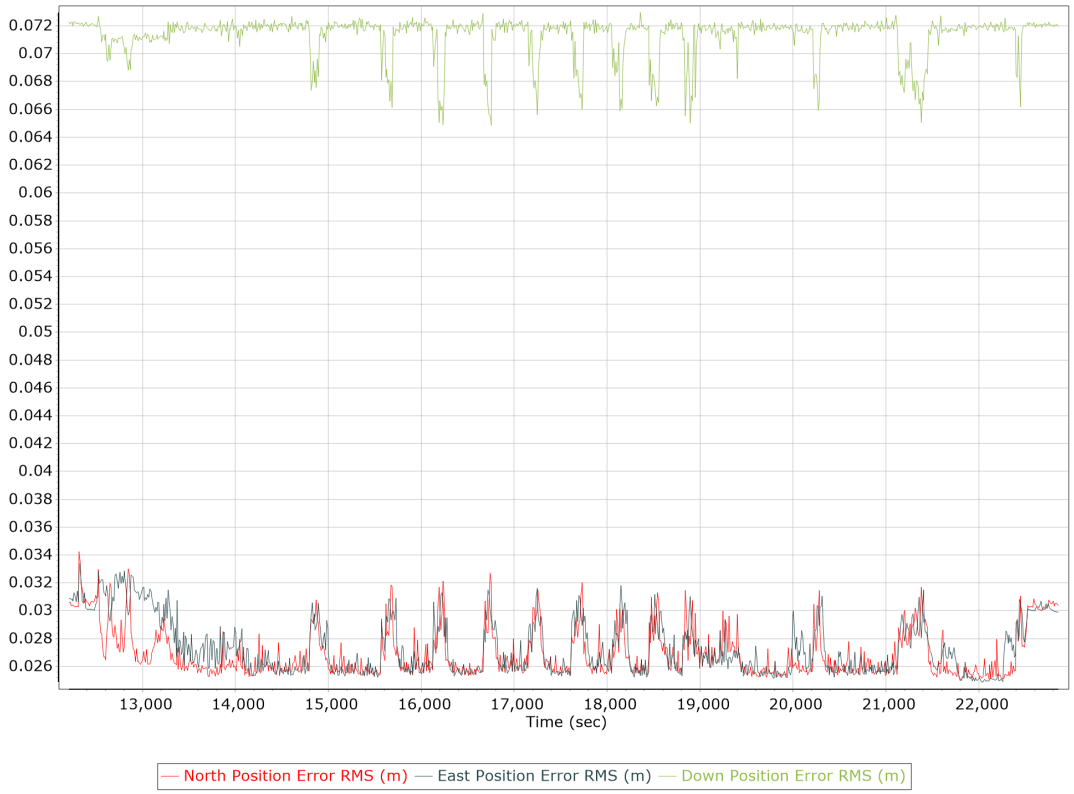


Heading Error RMS (arc-min)



Forward Processed Performance Metrics

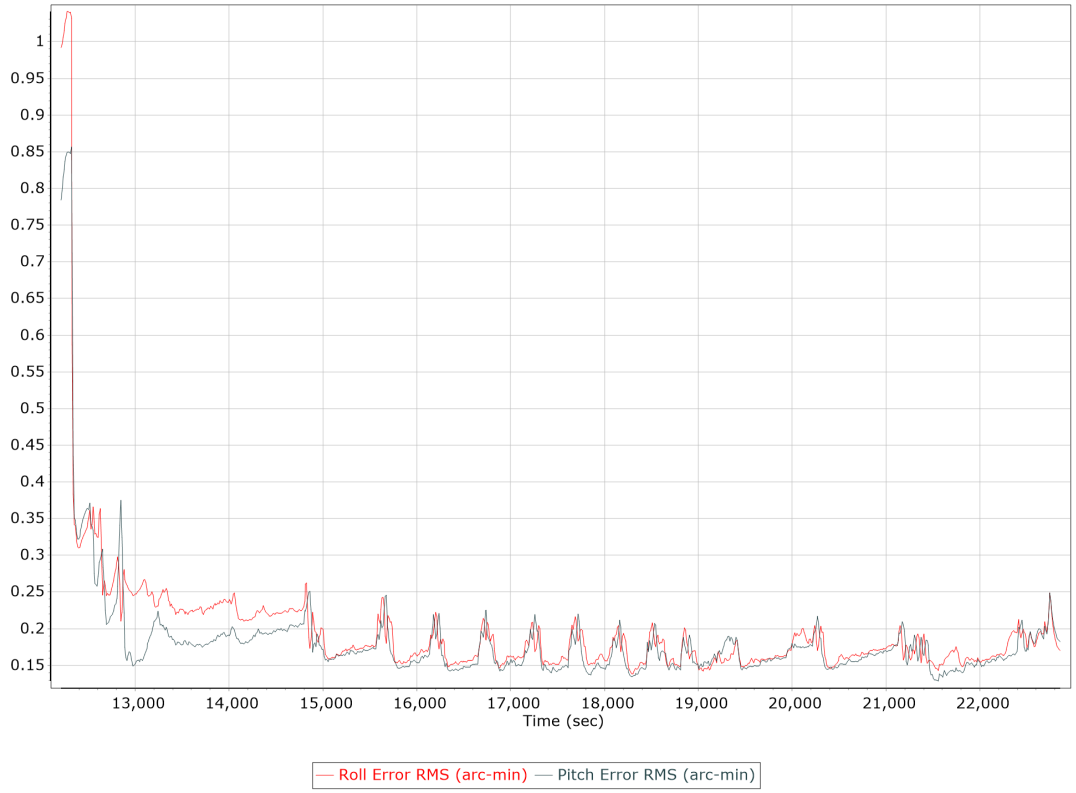
Position Error RMS (m)



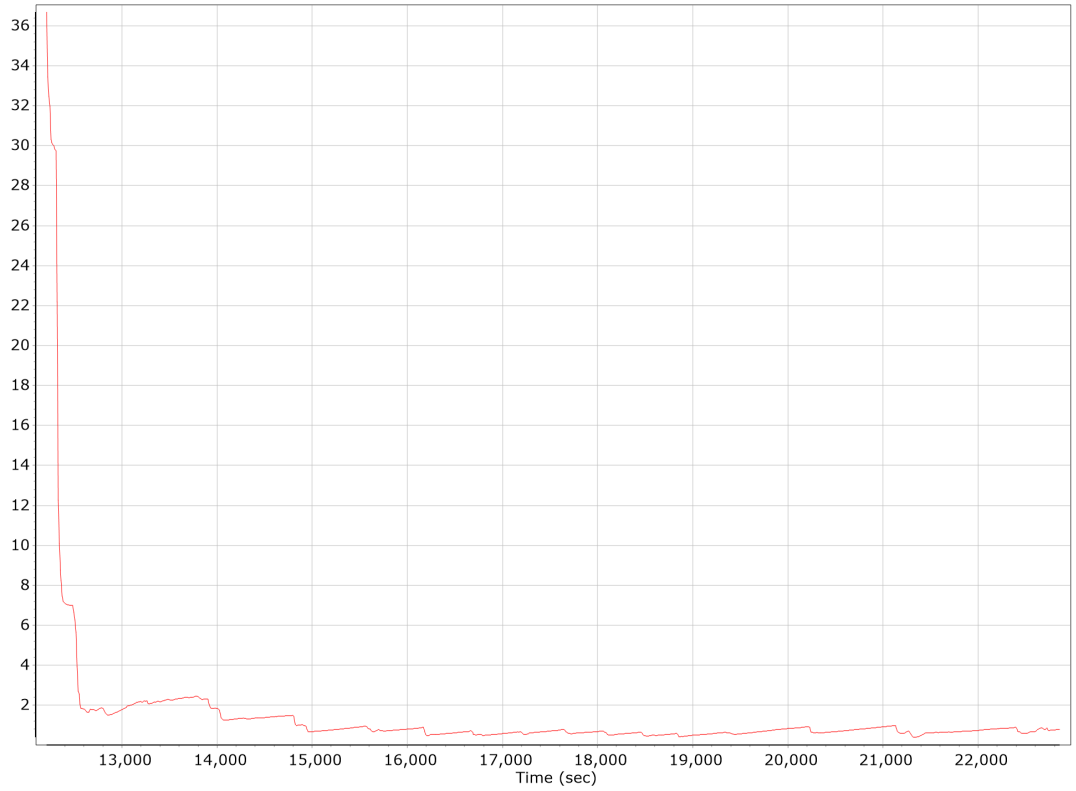
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

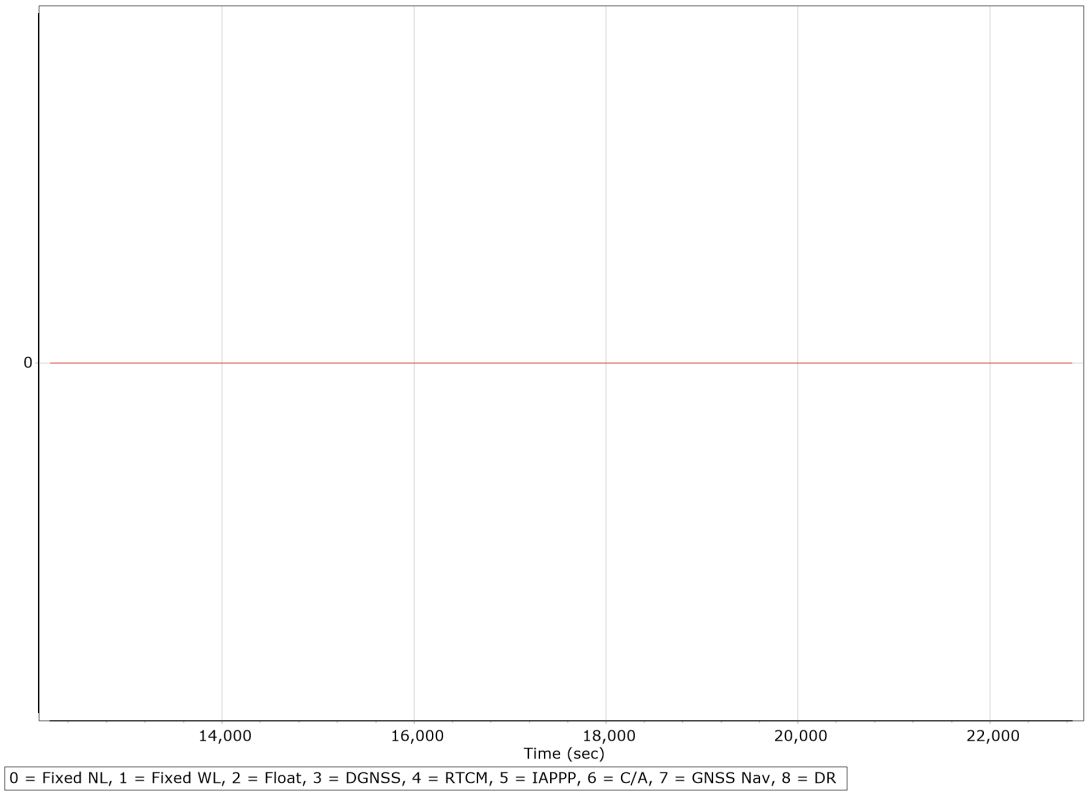


Heading Error RMS (arc-min)

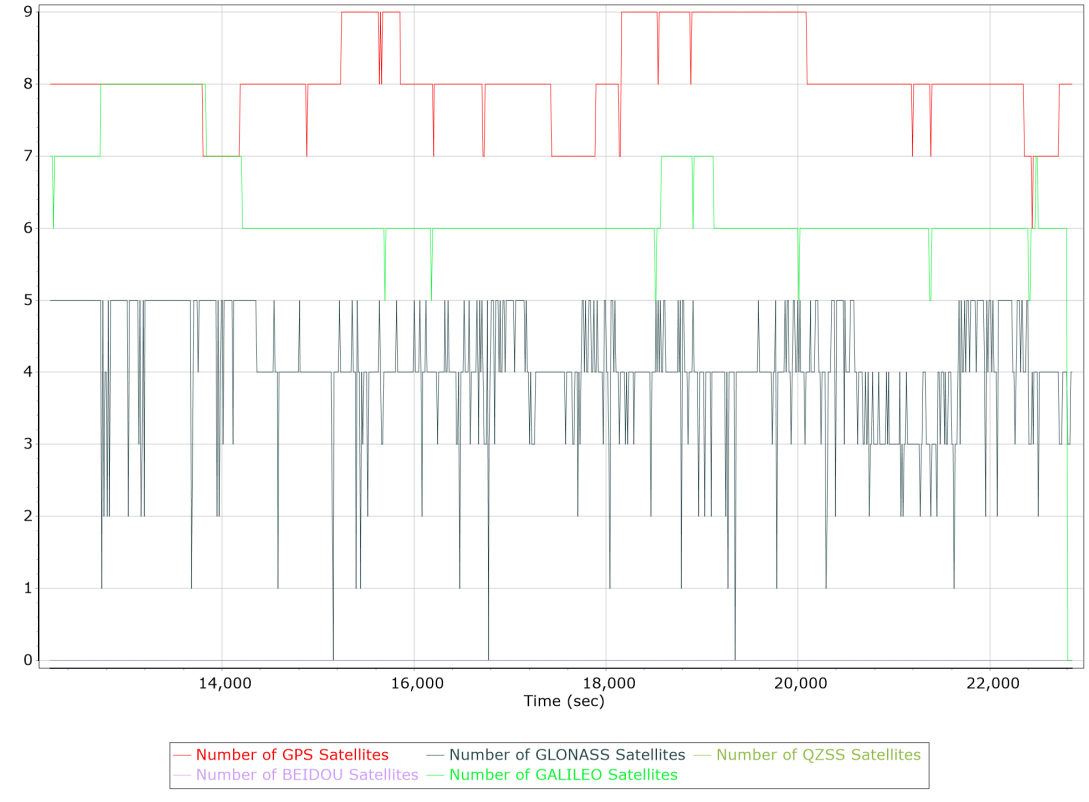


Forward Processed Solution Status

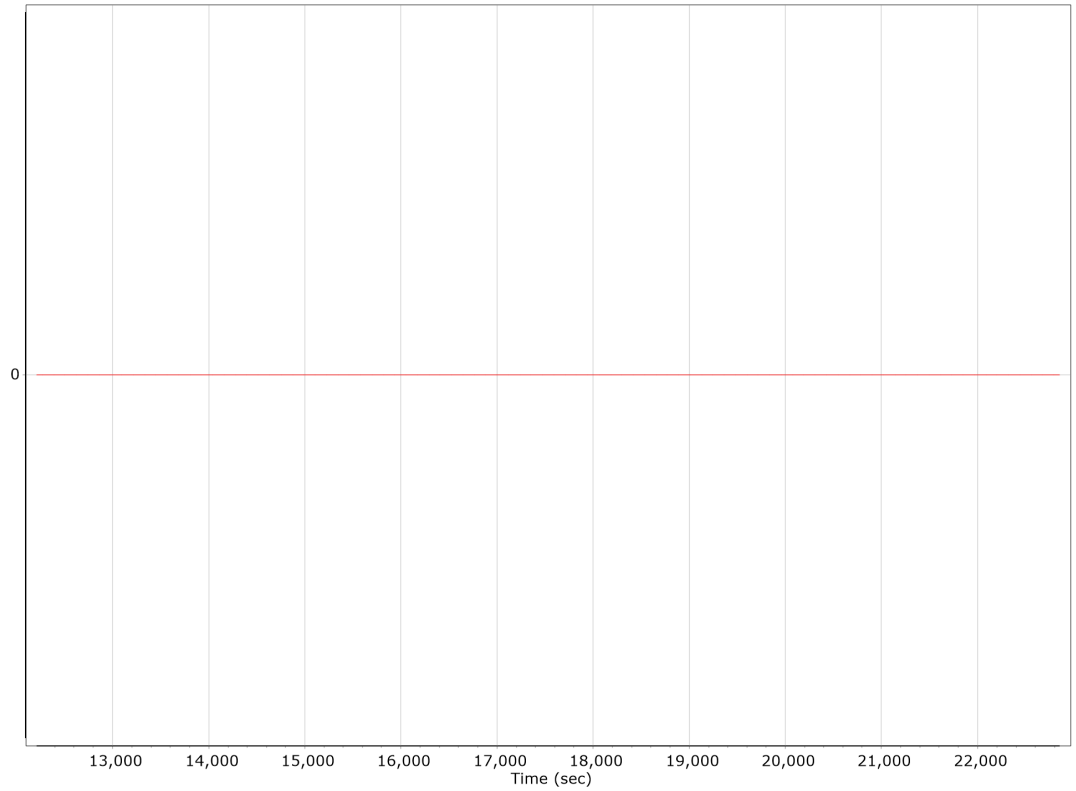
Processing Mode



Number of Satellites



Baseline Length



General Information

Mission Information

Project name	12022023B_3061
Processing date	2023-12-05 18:22:48
Mission date	2023-12-03 07:13:35
Mission duration	04:53:46.202
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N8902
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
231203_071316_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm3370.23g	GLONASS Broadcast Ephemeris
Ephm3370.23n	GPS Broadcast Ephemeris

Output Files

Filename	File type
sbet_12022023B_3061.out	SBET Trajectory File

Rover Data Summary

First raw data file	231203_071316_INS-GPS_1.raw		
Last raw data file	231203_071316_INS-GPS_1.raw		
Start GPS week	2291		
Start time	25996.527 (12/3/2023 7:13:16 AM)		
End time	43622.729 (12/3/2023 12:07:02 PM)		
Start of fine alignment	26229.586 (12/3/2023 7:17:09 AM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	0.000	0.000	0.000
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

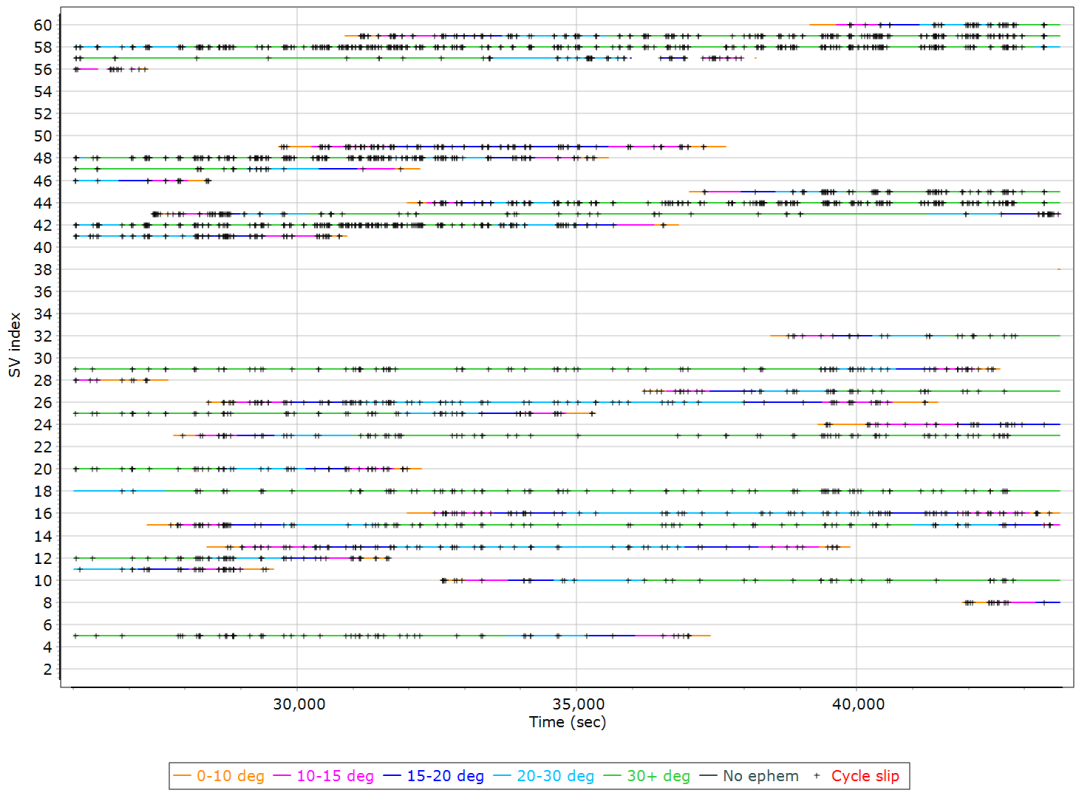
Rover Data QC

Raw IMU Import QC Summary

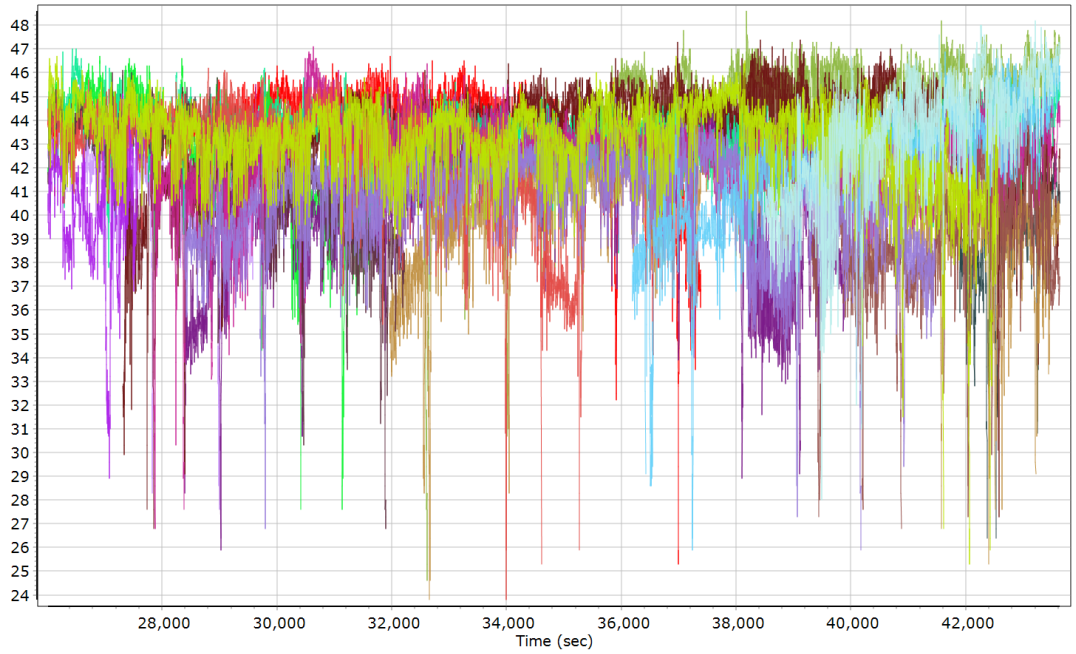
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_12022023B_3061.log
IMU Records Processed	3524477
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

GPS/GLONASS L1 Satellite Lock/Elevation

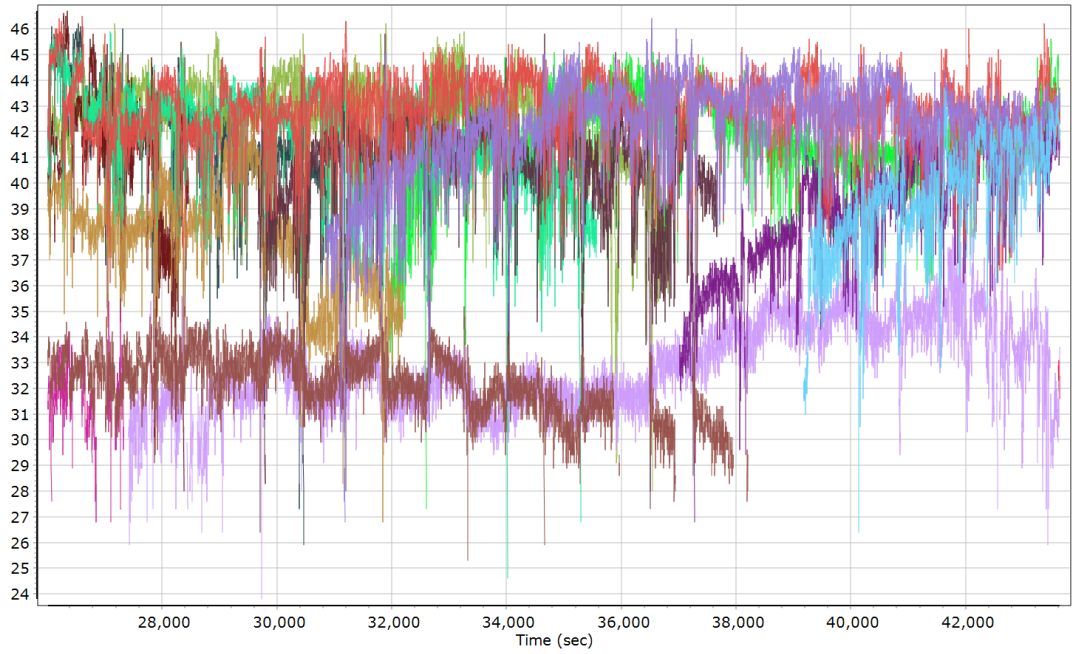


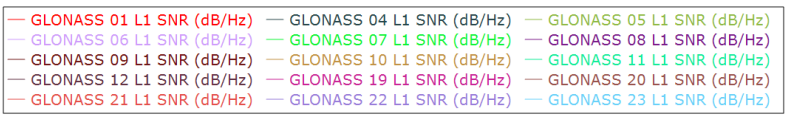
GPS L1 SNR



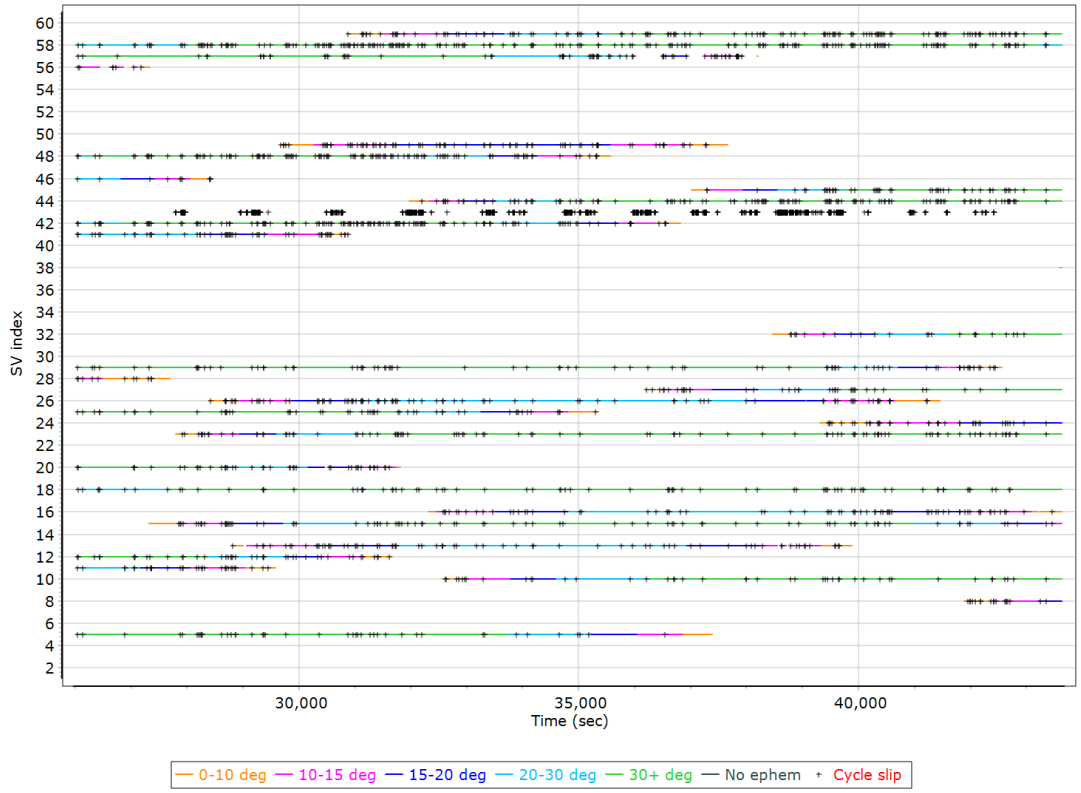


GLONASS L1 SNR

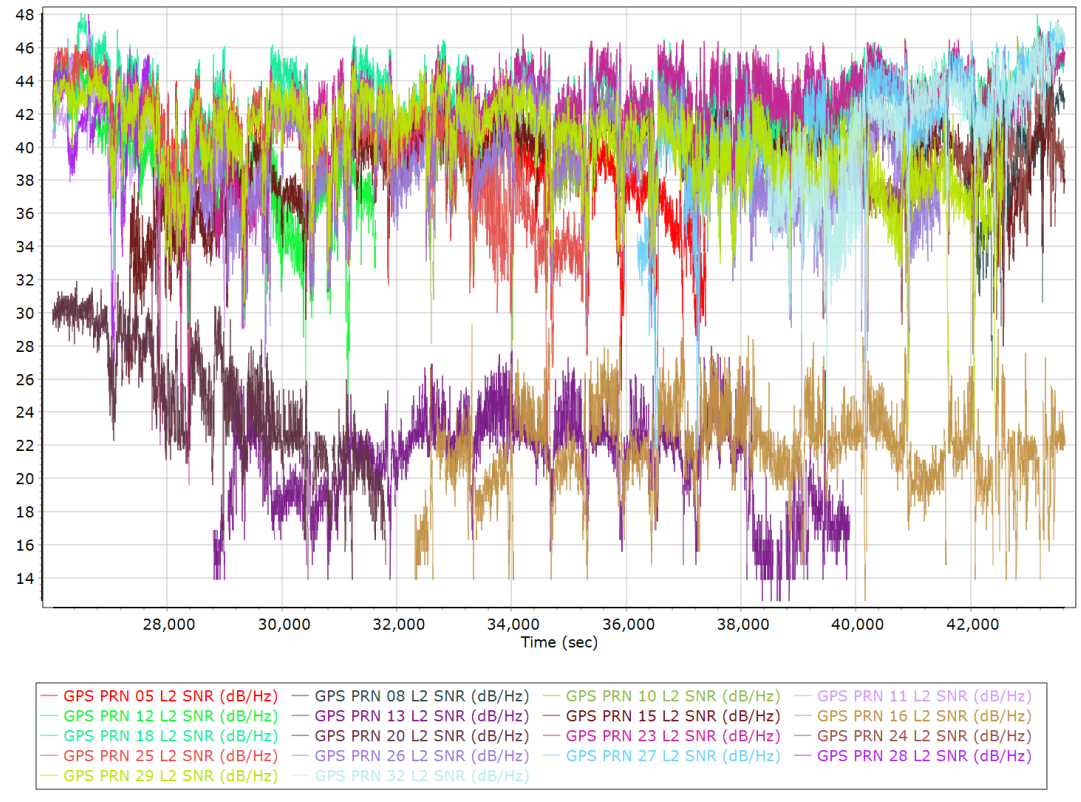




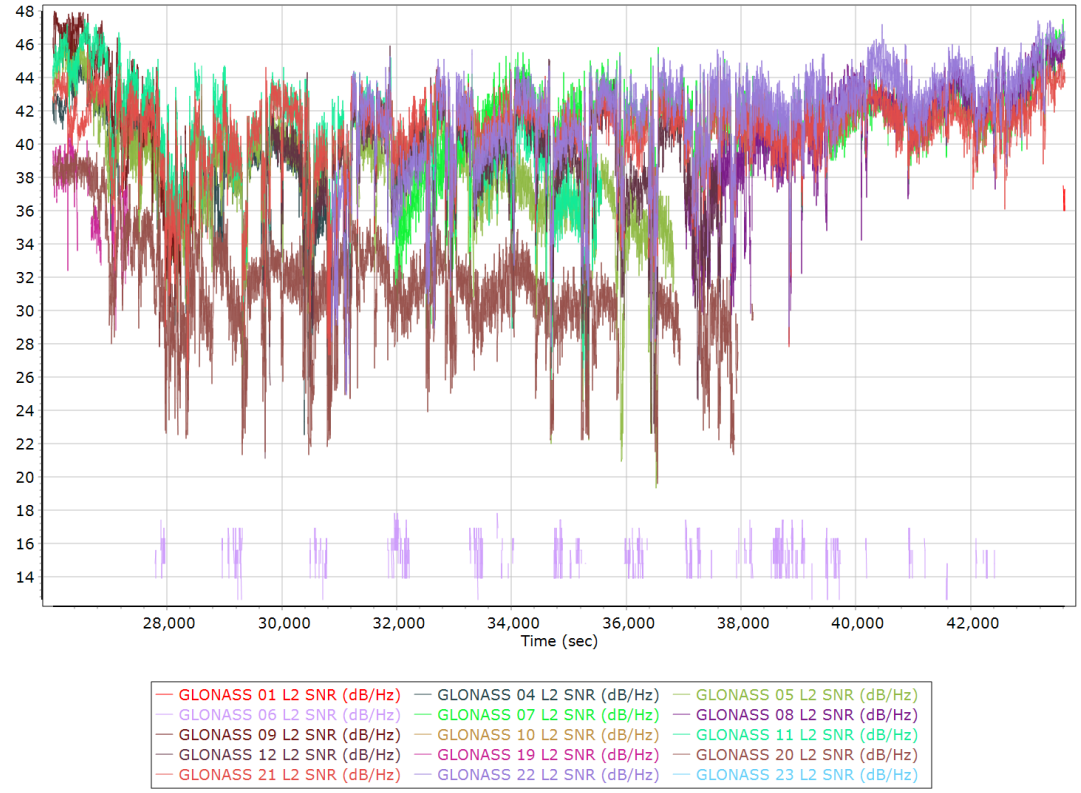
GPS/GLONASS L2 Satellite Lock/Elevation



GPS L2 SNR



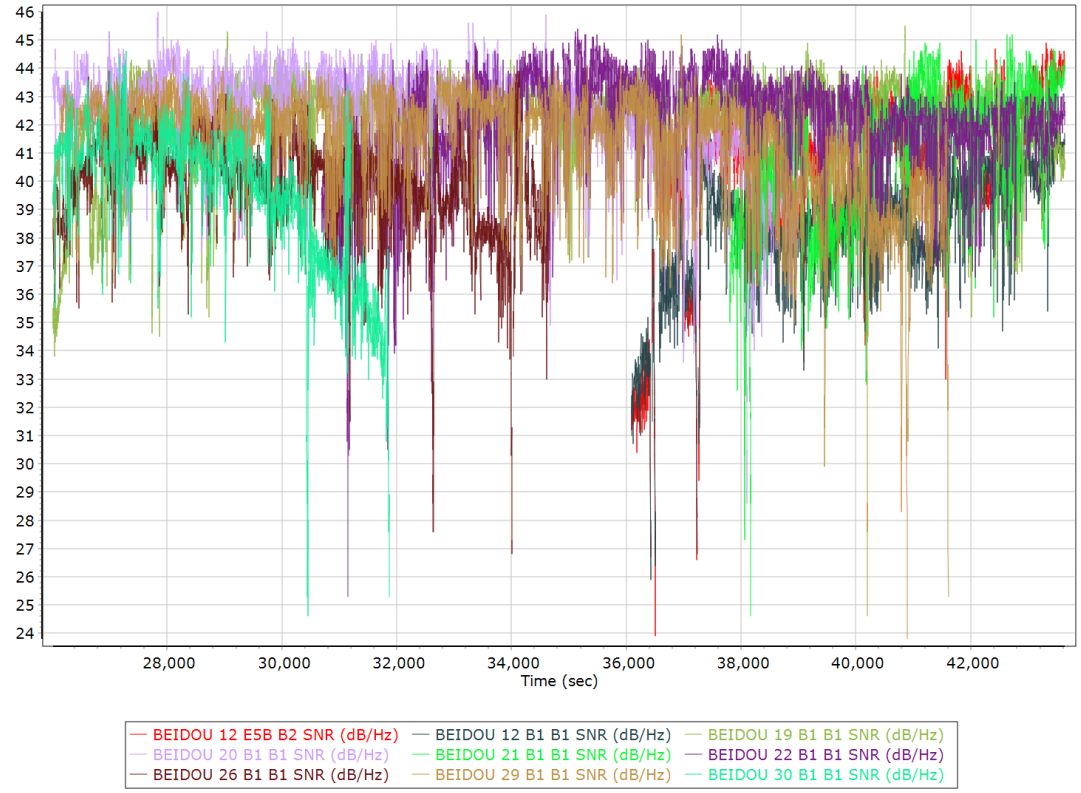
GLONASS L2 SNR



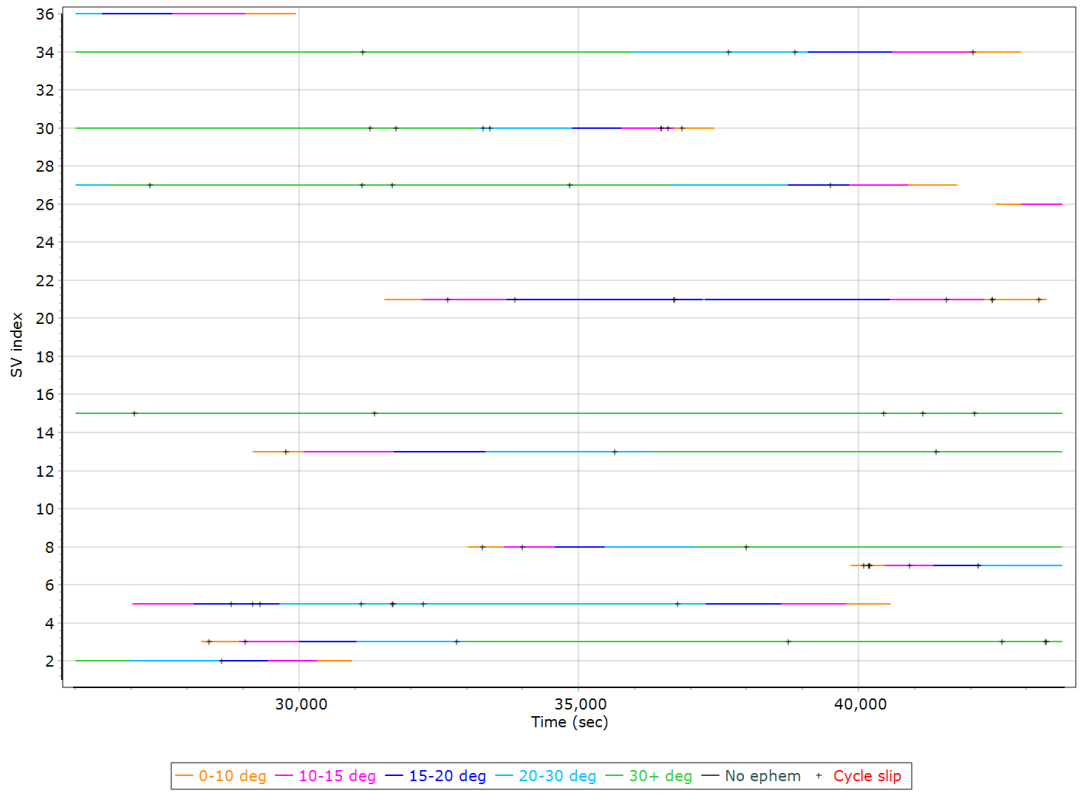
BEIDOU Satellite Lock/Elevation



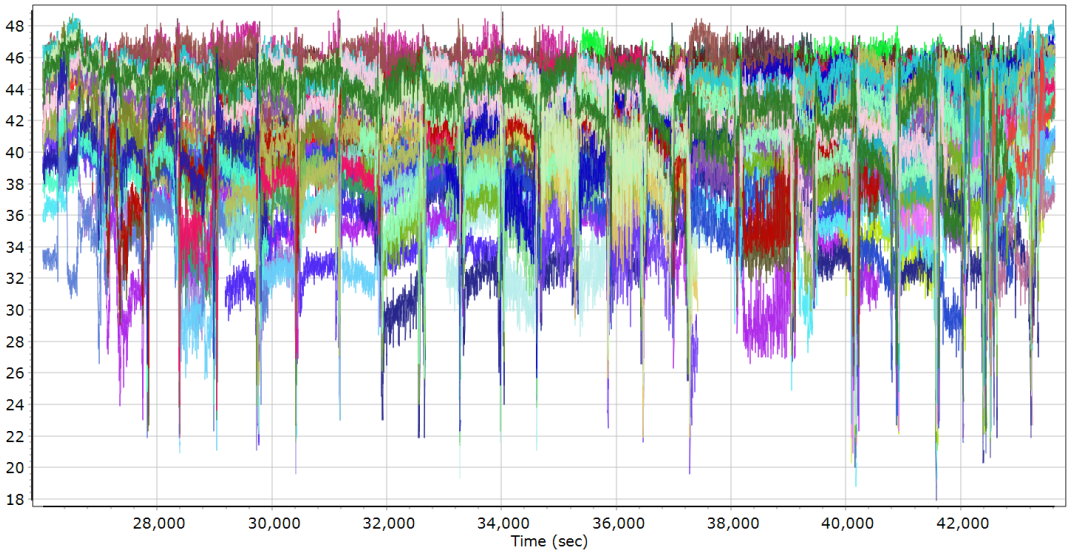
BEIDOU SNR



GALILEO Satellite Lock/Elevation



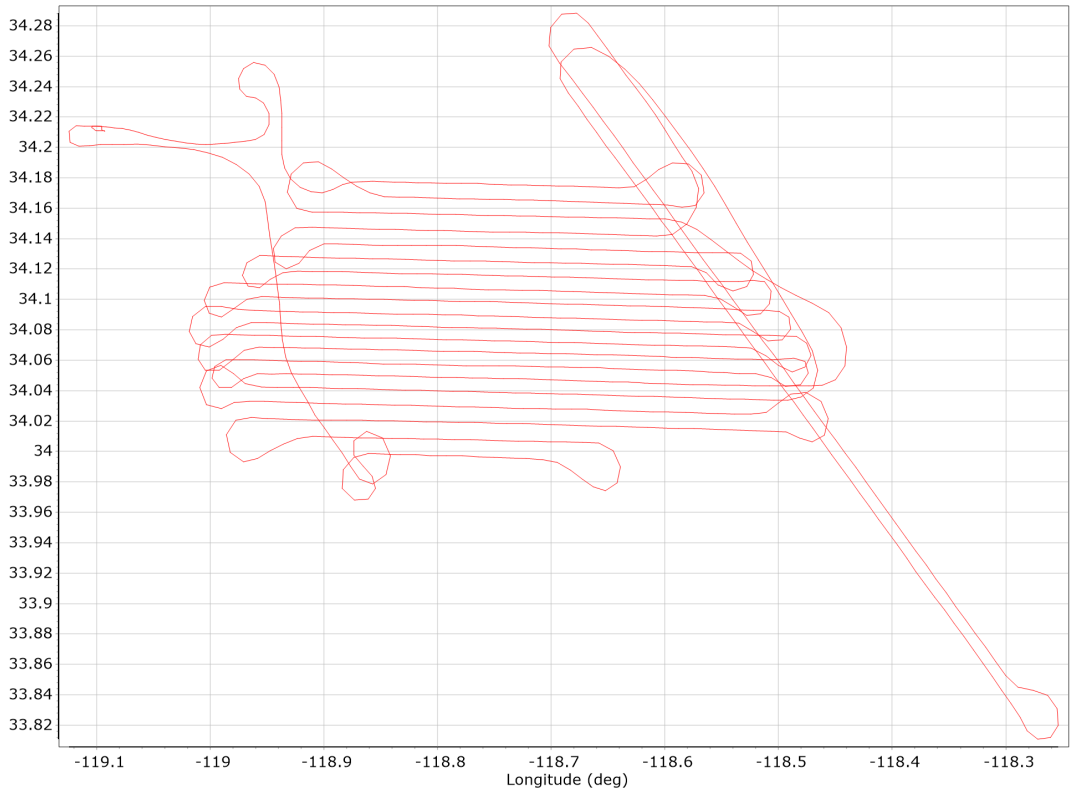
GALILEO SNR



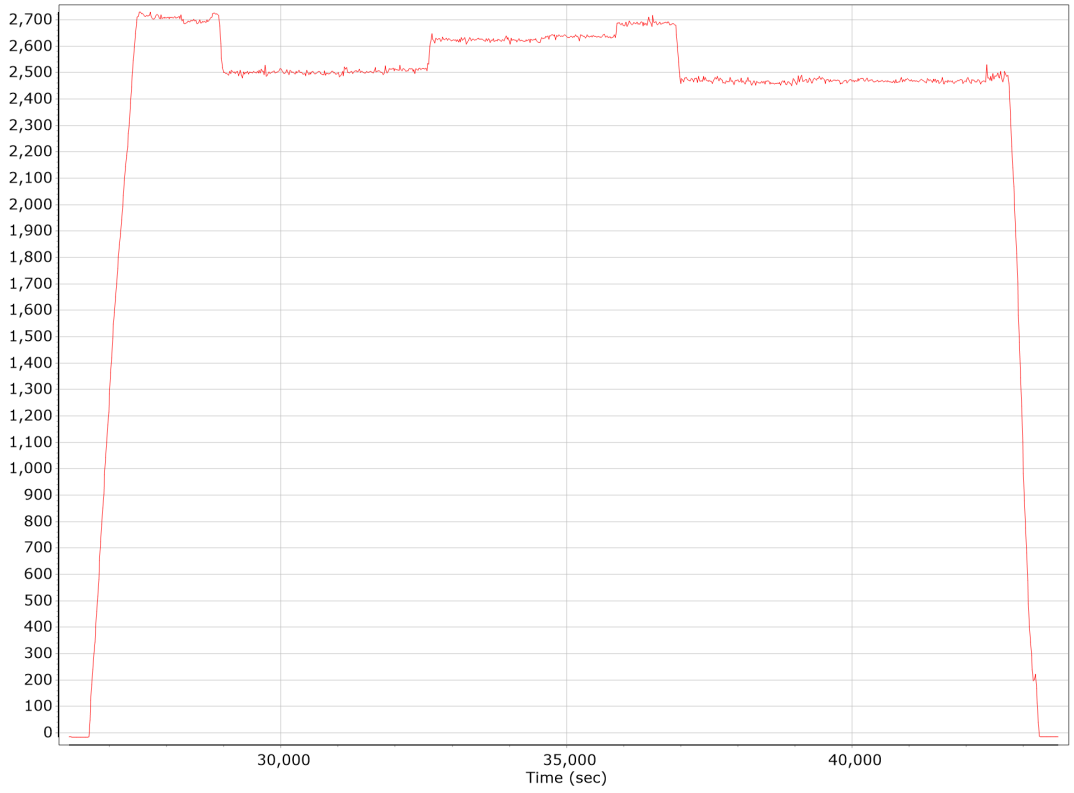
GALILEO 02 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 03 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 05 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 07 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 08 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 13 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 15 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 21 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 26 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 27 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 30 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 34 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 36 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 02 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 03 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 05 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 07 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 08 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 13 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 15 L5E5A BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

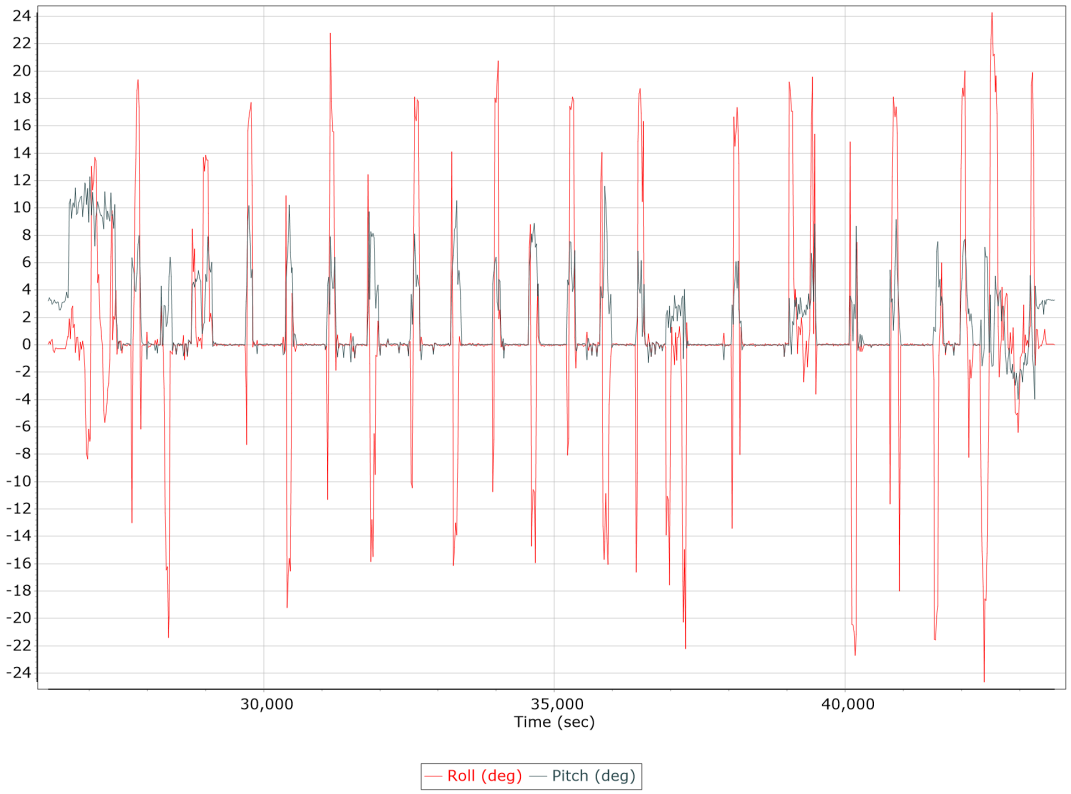
Top View



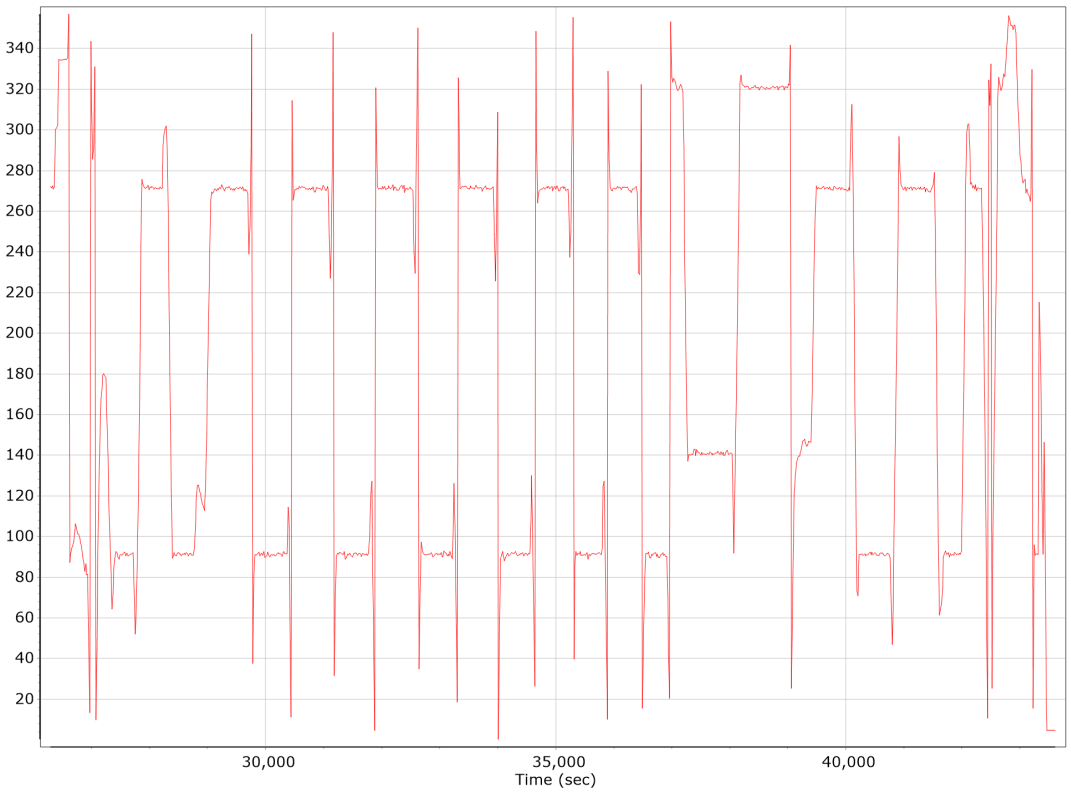
Altitude



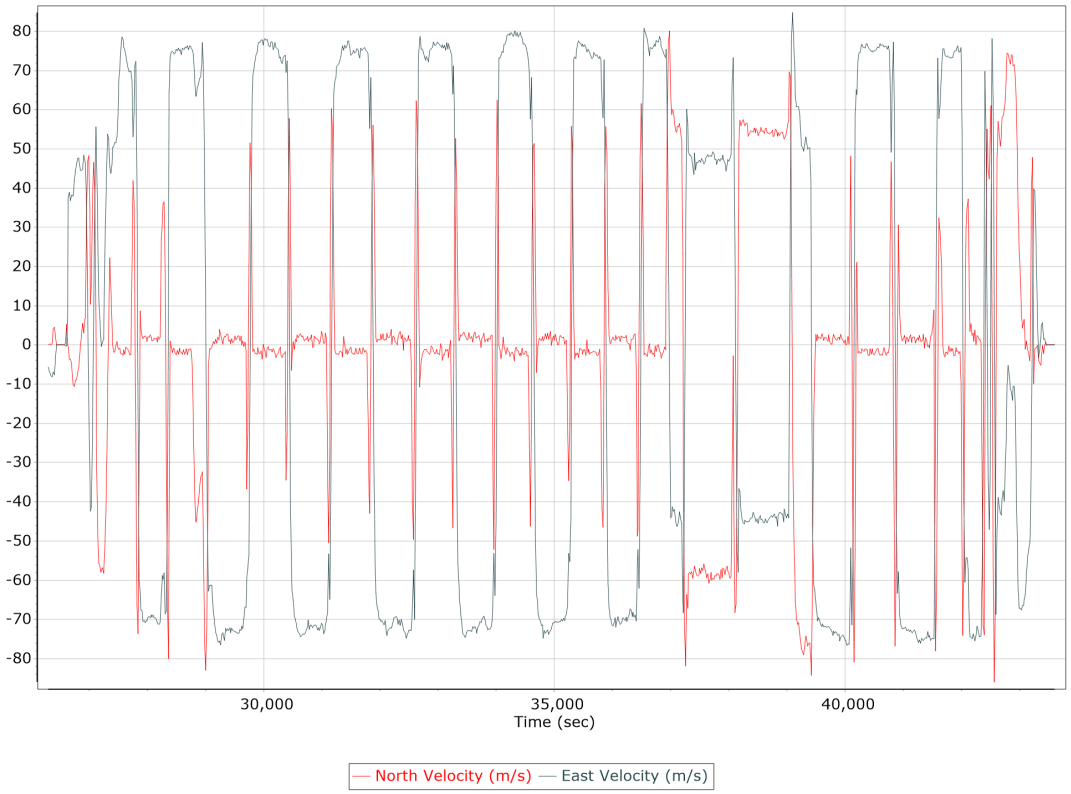
Roll/Pitch



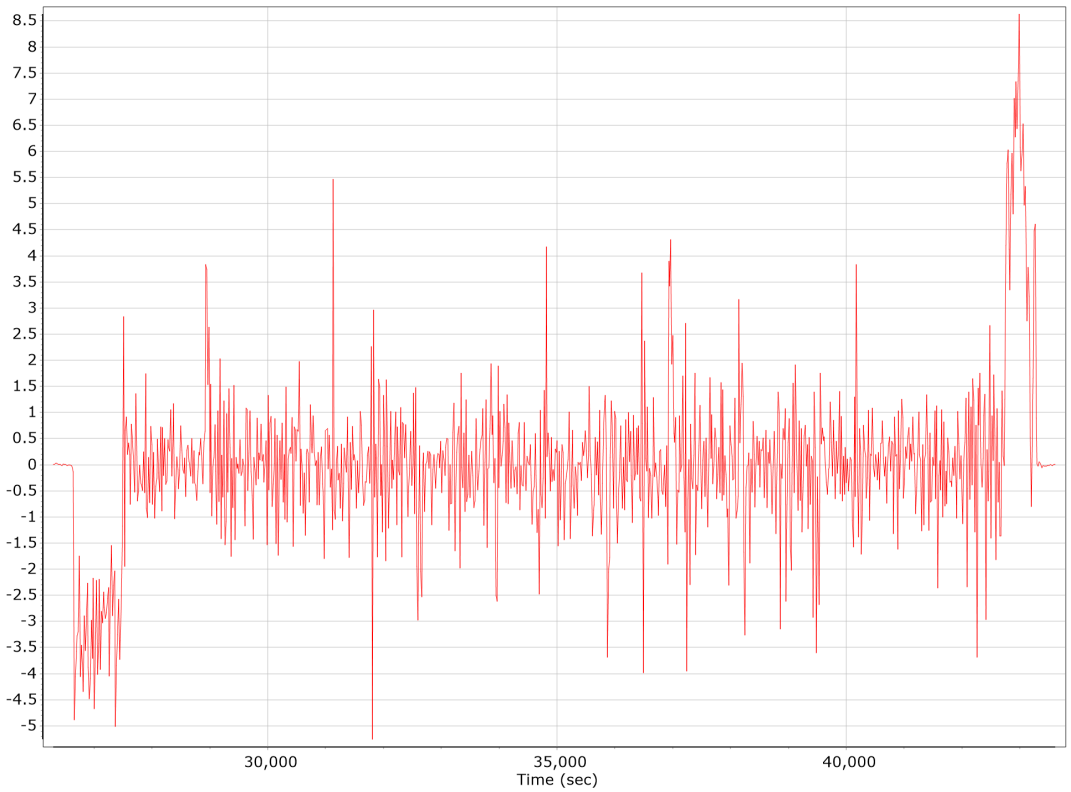
Heading



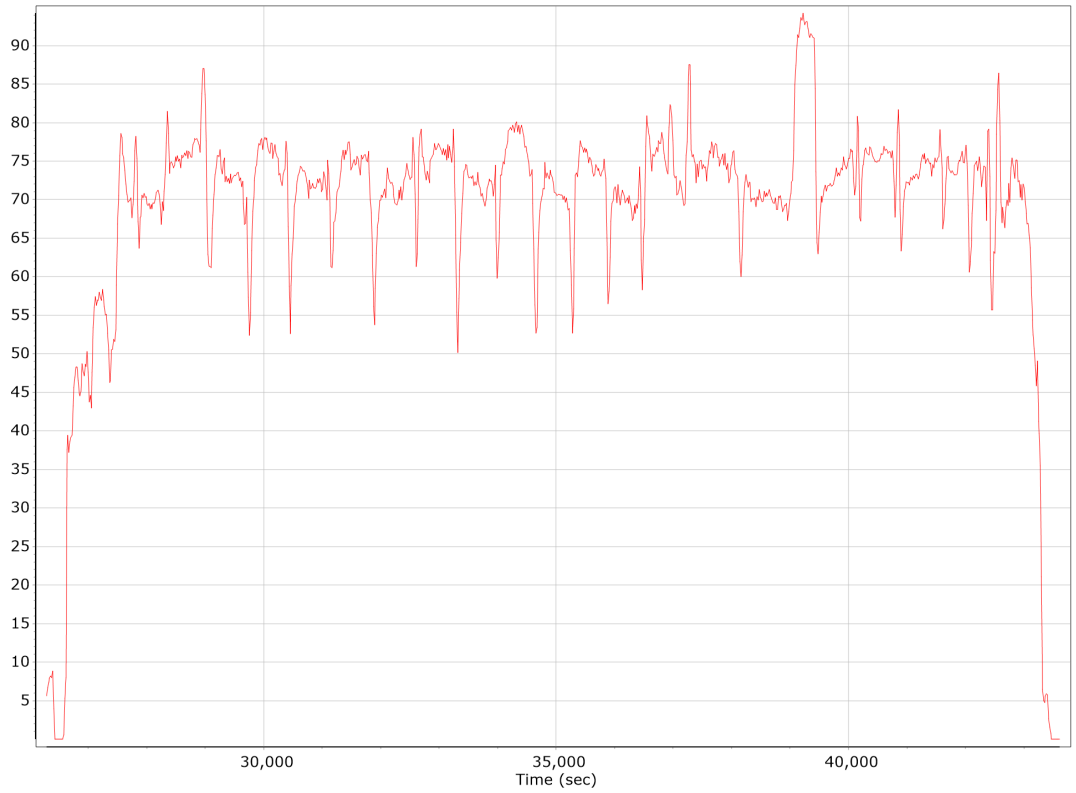
North/East Velocity



Down Velocity



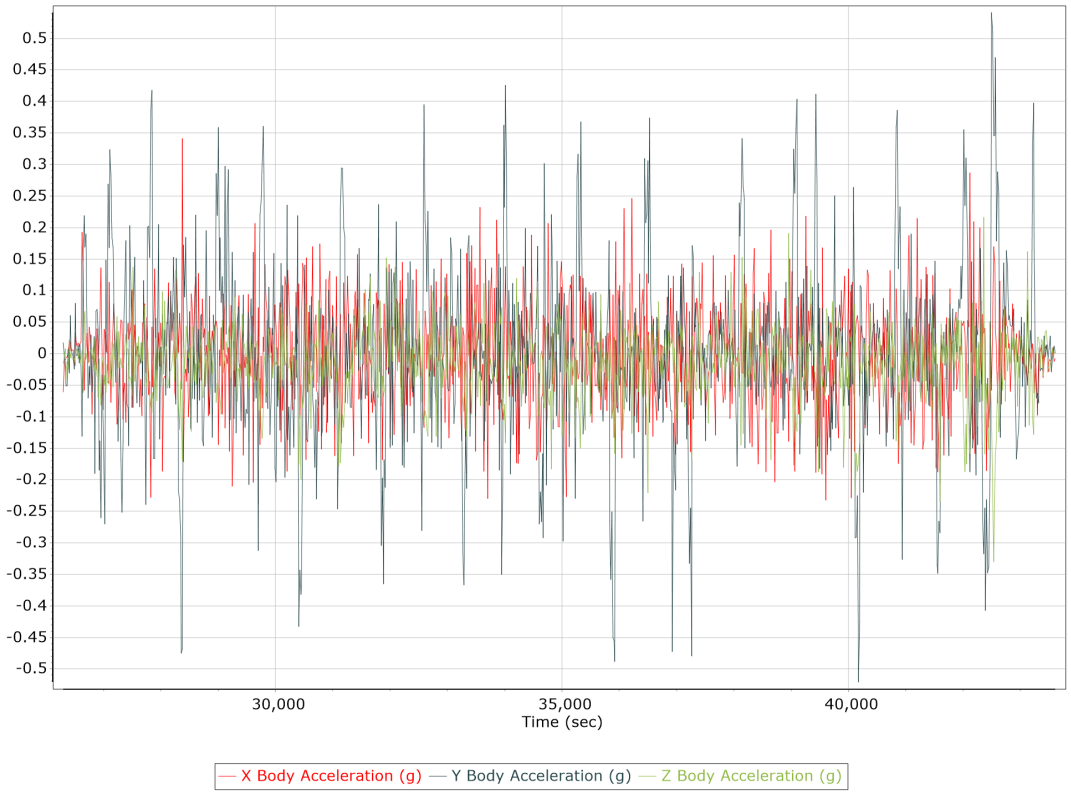
Total Speed



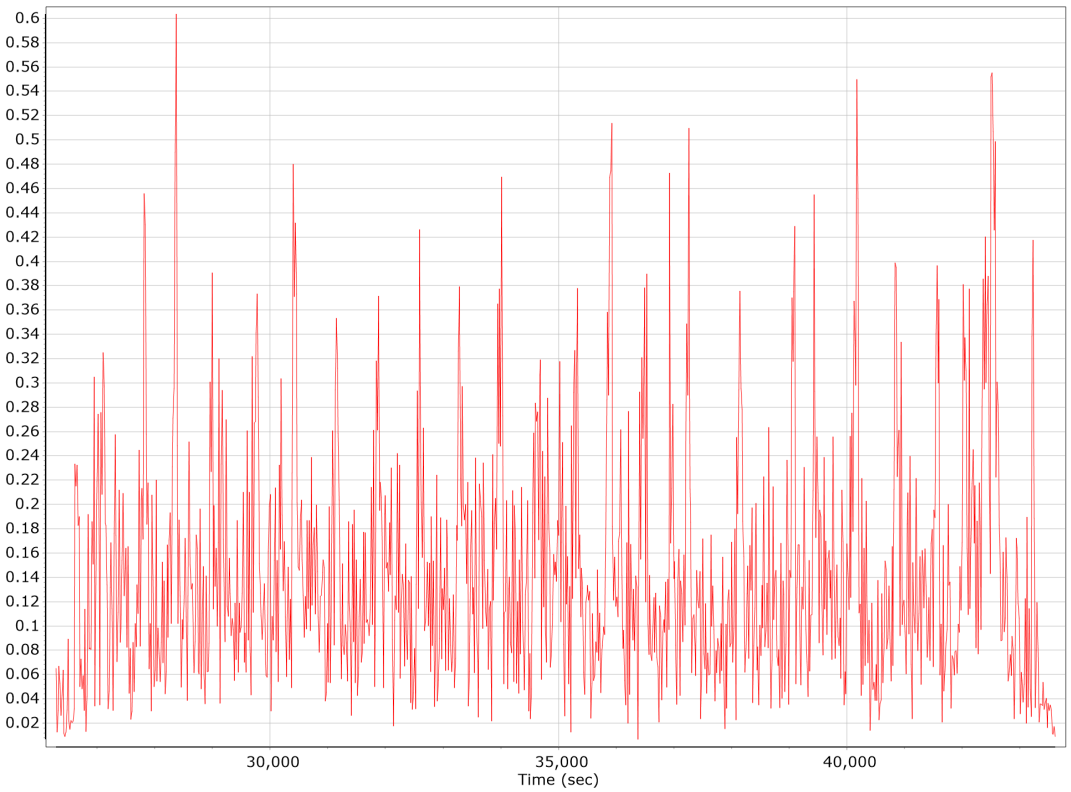
Ground Speed



Body Acceleration



Total Body Acceleration

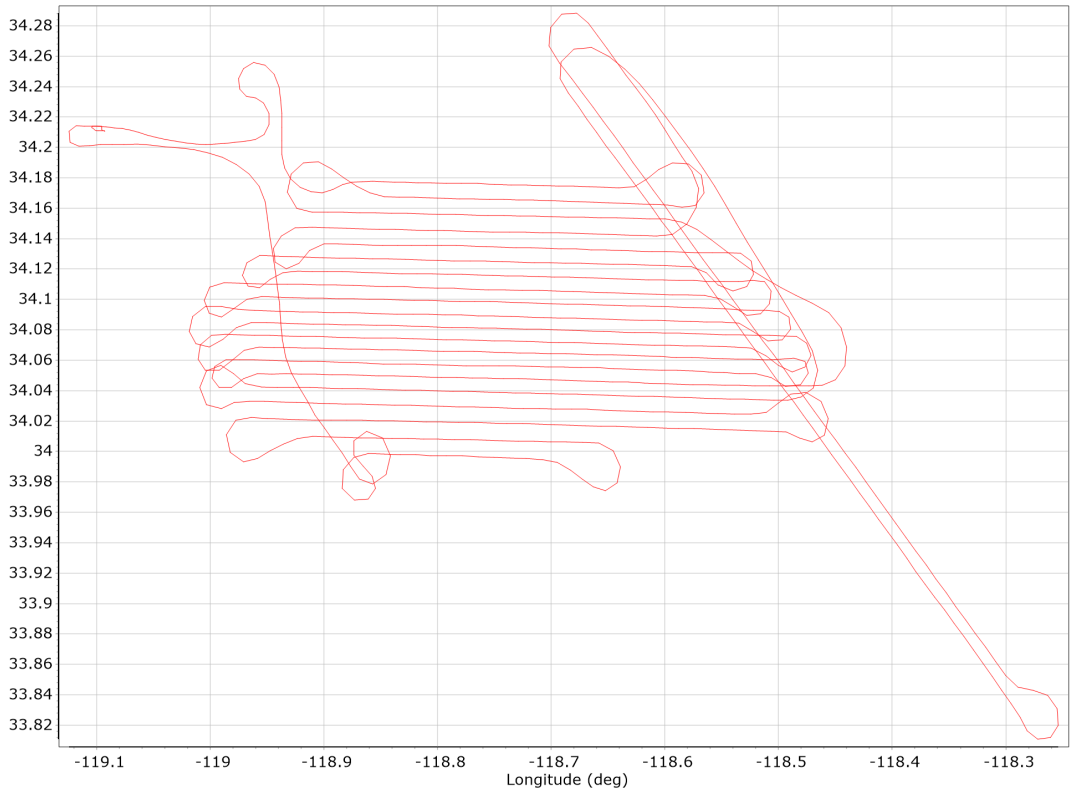


Body Angular Rate

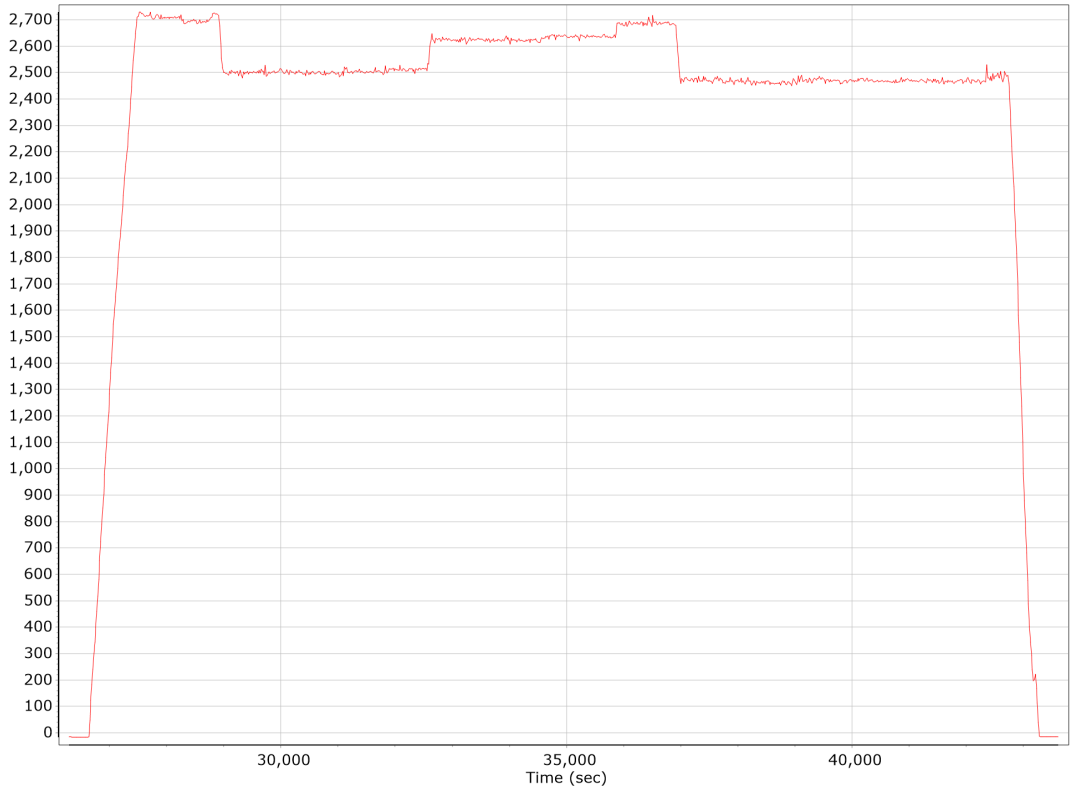


Forward Processed Trajectory Information

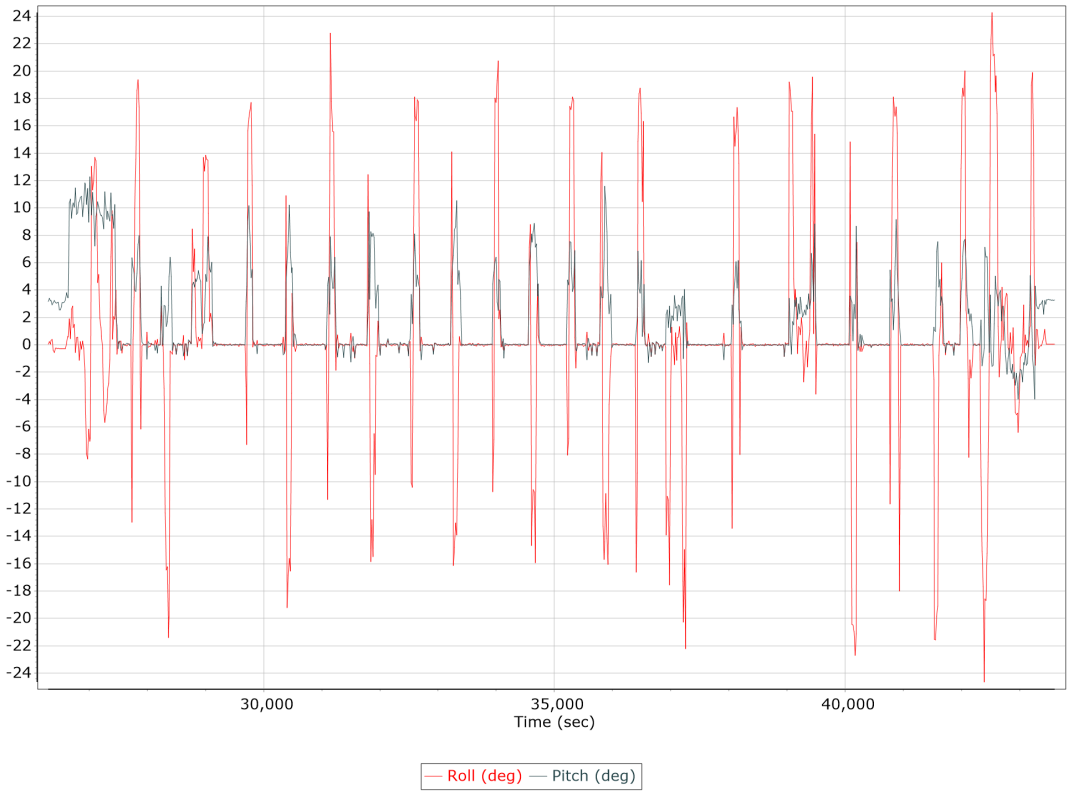
Top View



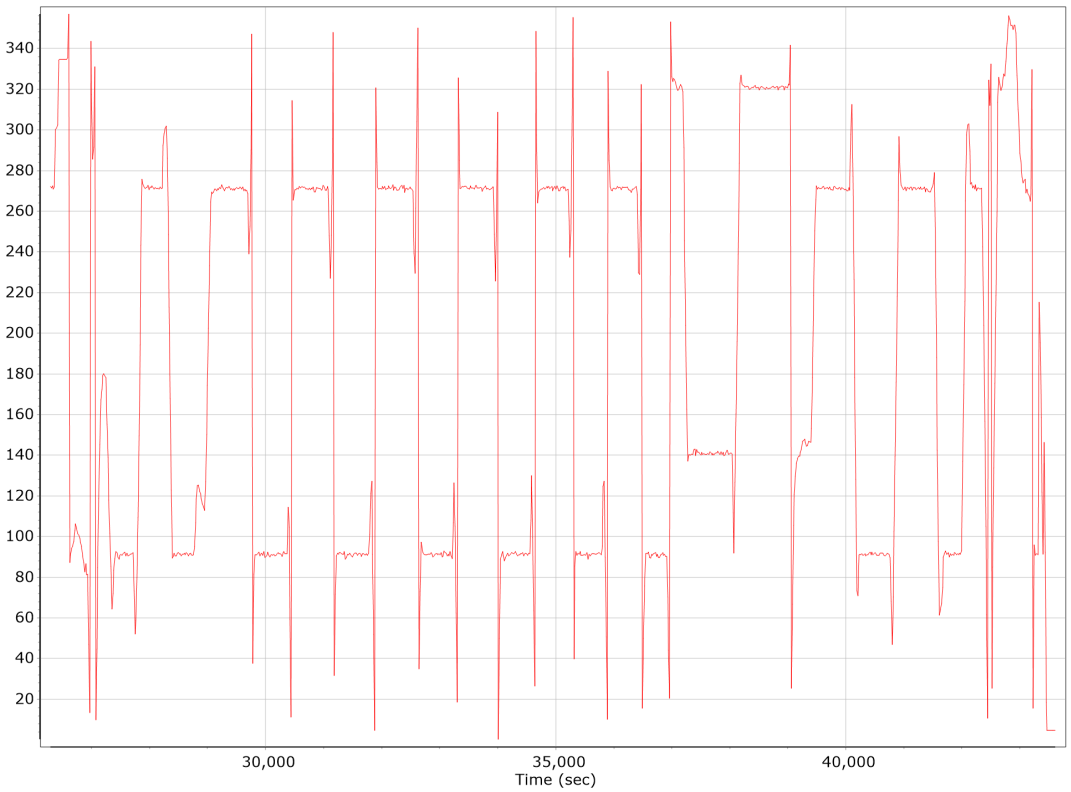
Altitude



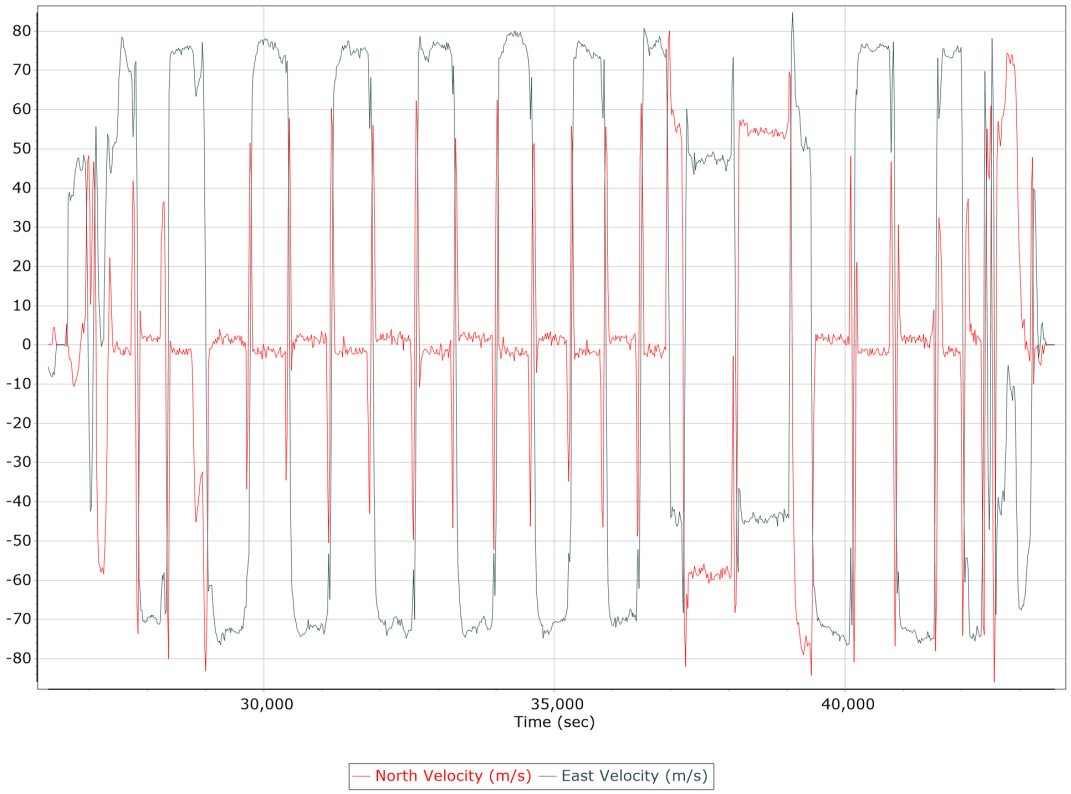
Roll/Pitch



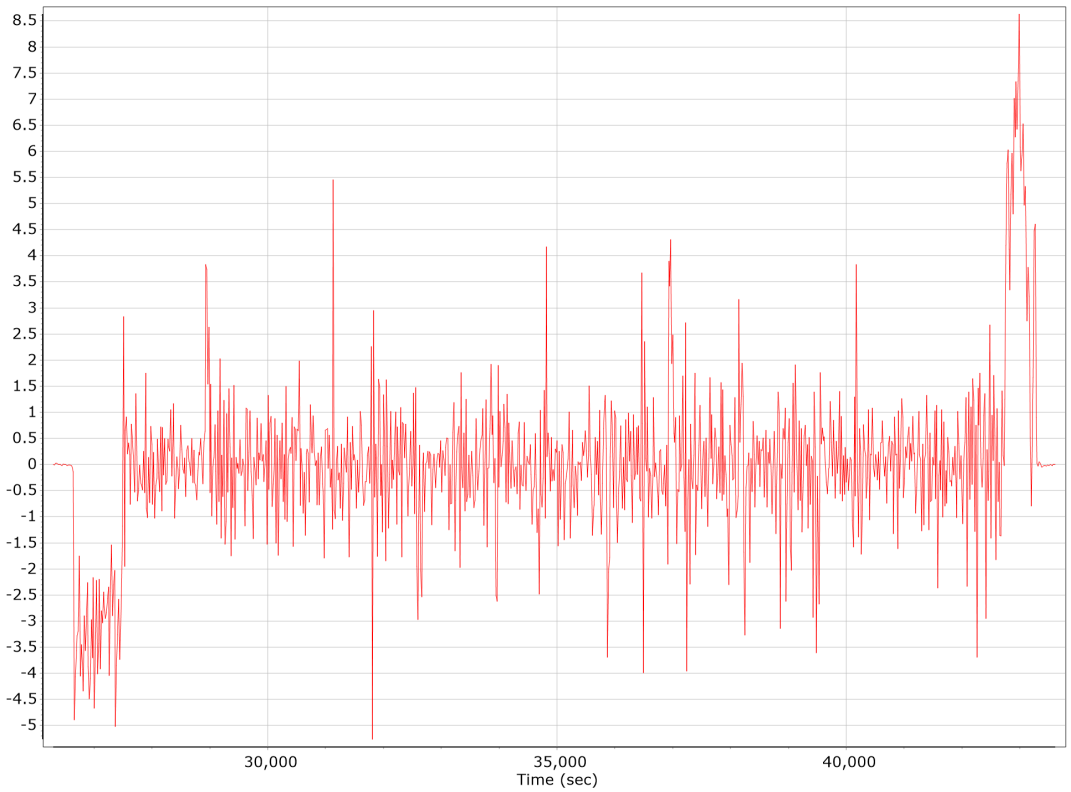
Heading



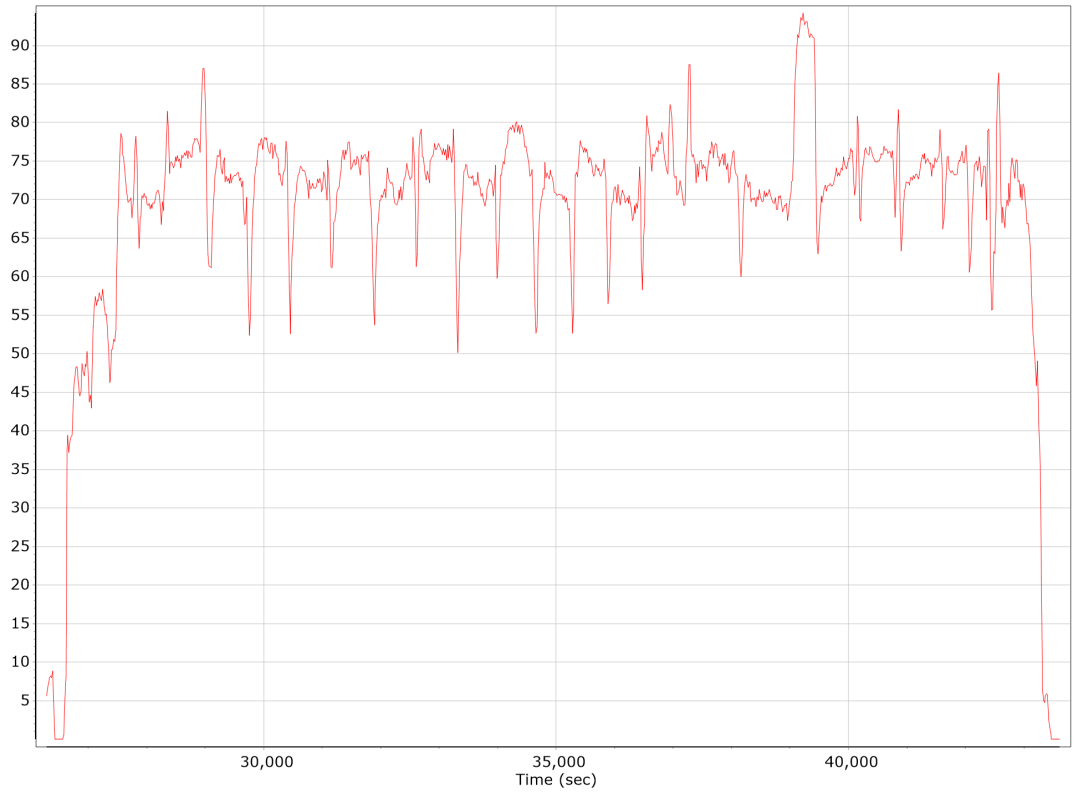
North/East Velocity



Down Velocity



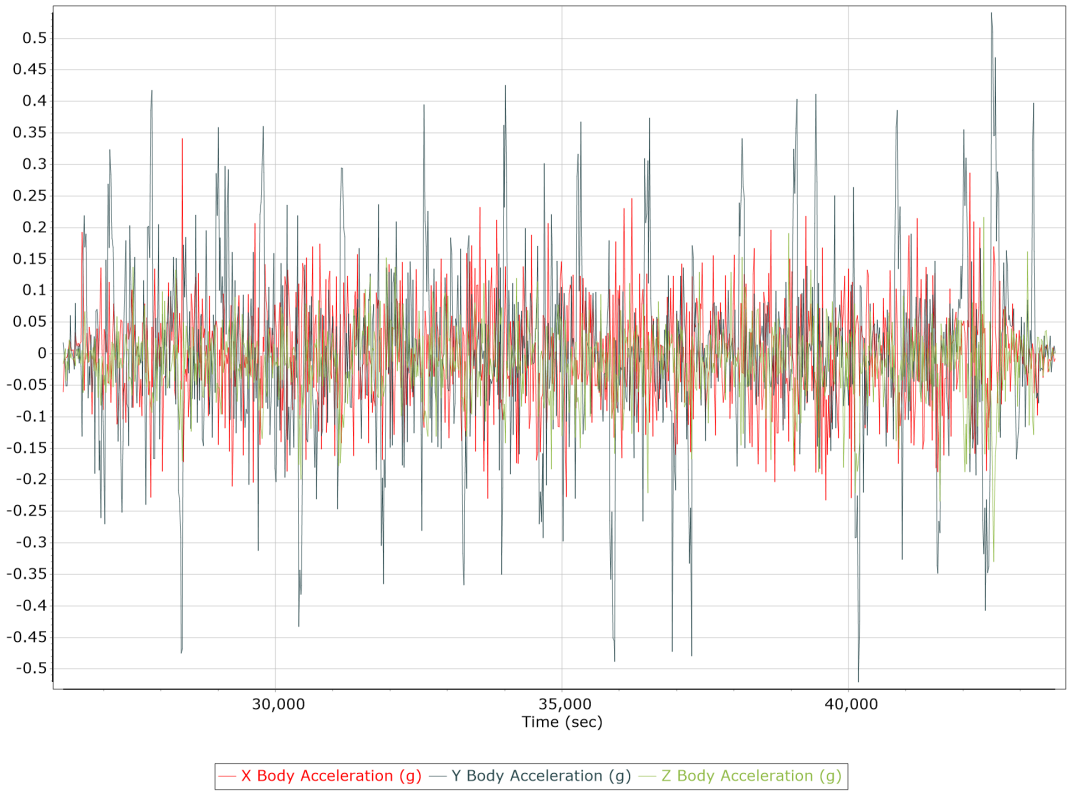
Total Speed



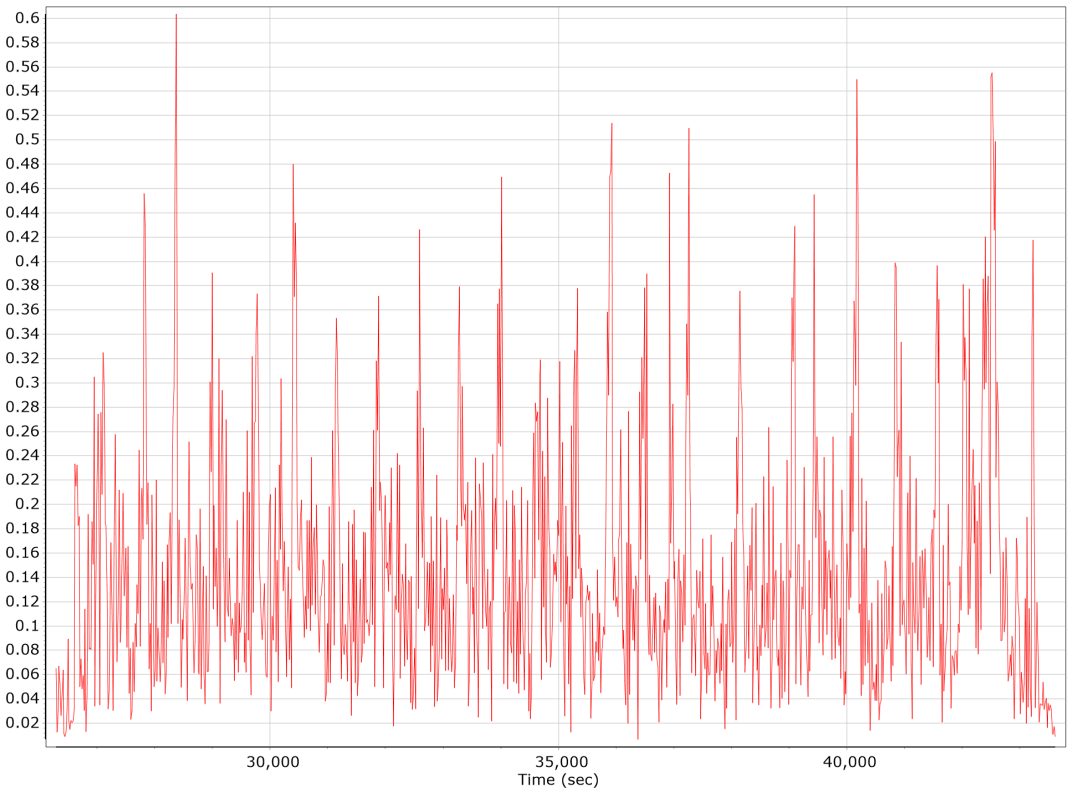
Ground Speed



Body Acceleration



Total Body Acceleration



Body Angular Rate



GNSS QC

GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	1	10	8
Number of GLONASS SV	0	7	5
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	5	9	8
Total number of SV	9	26	21
PDOP	1.01	3.16	1.25
QC Solution Gaps	2.00	2.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	17569.00	0.00	4.00
Percentage	99.98	0.00	0.02

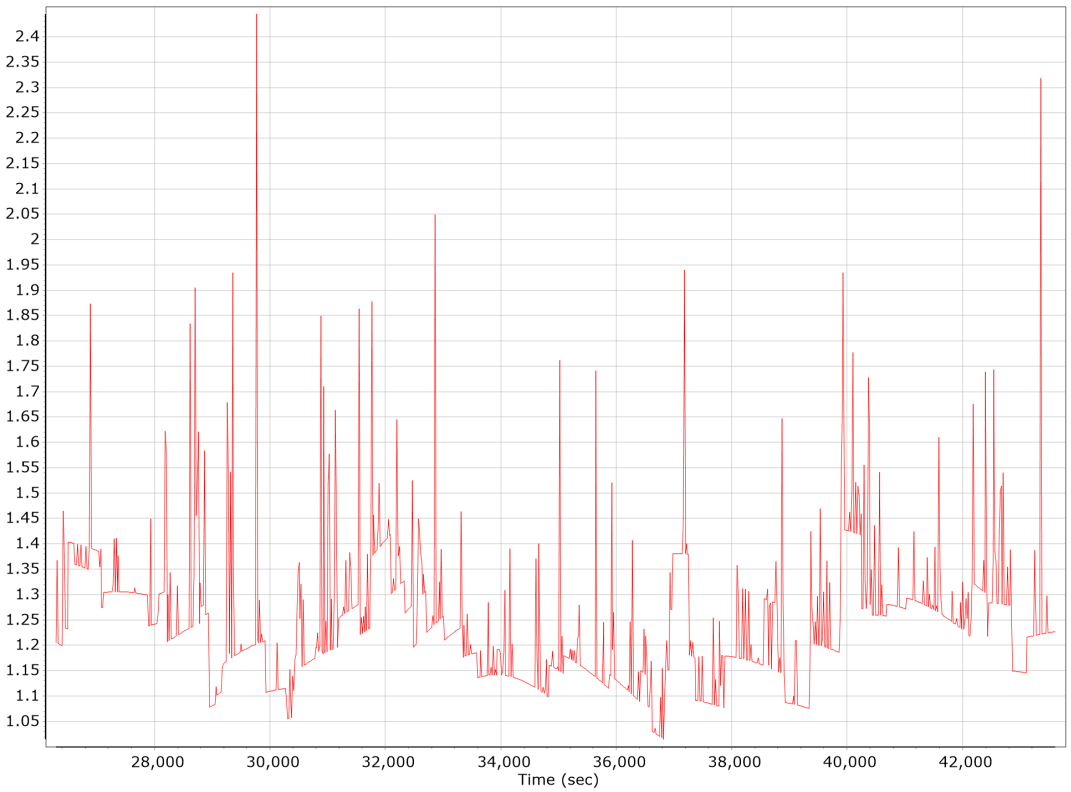
Num SVs in solution



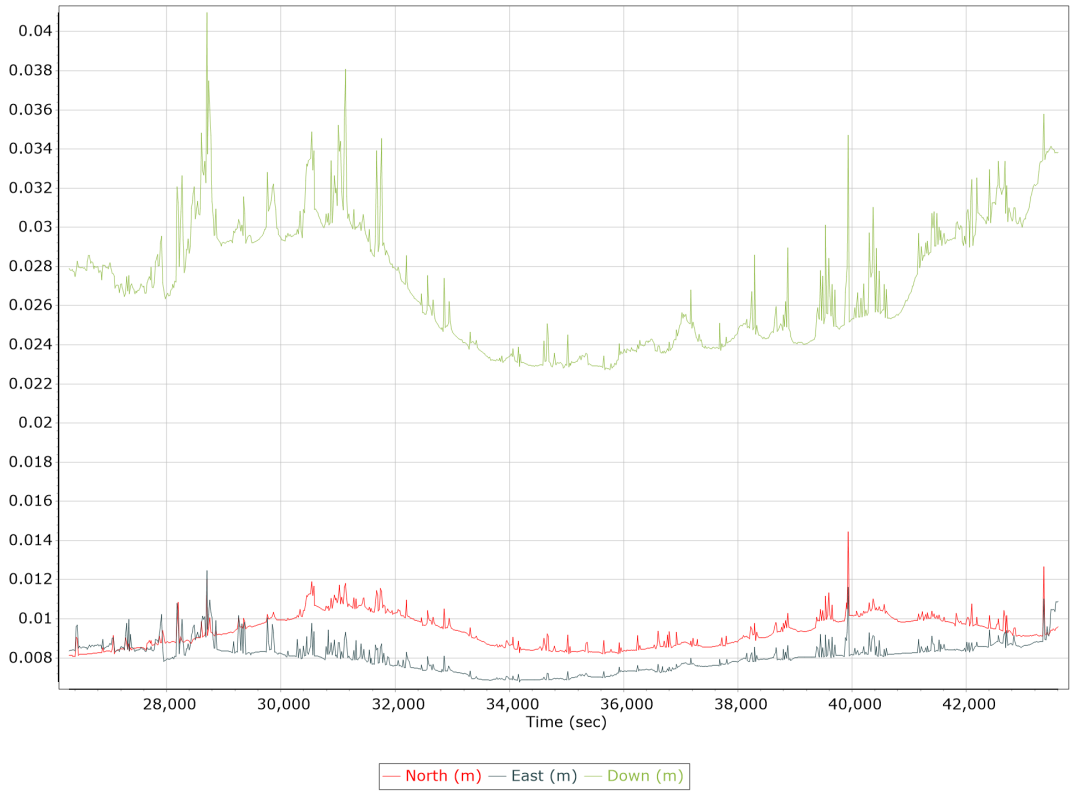
Forward/Reverse Separation



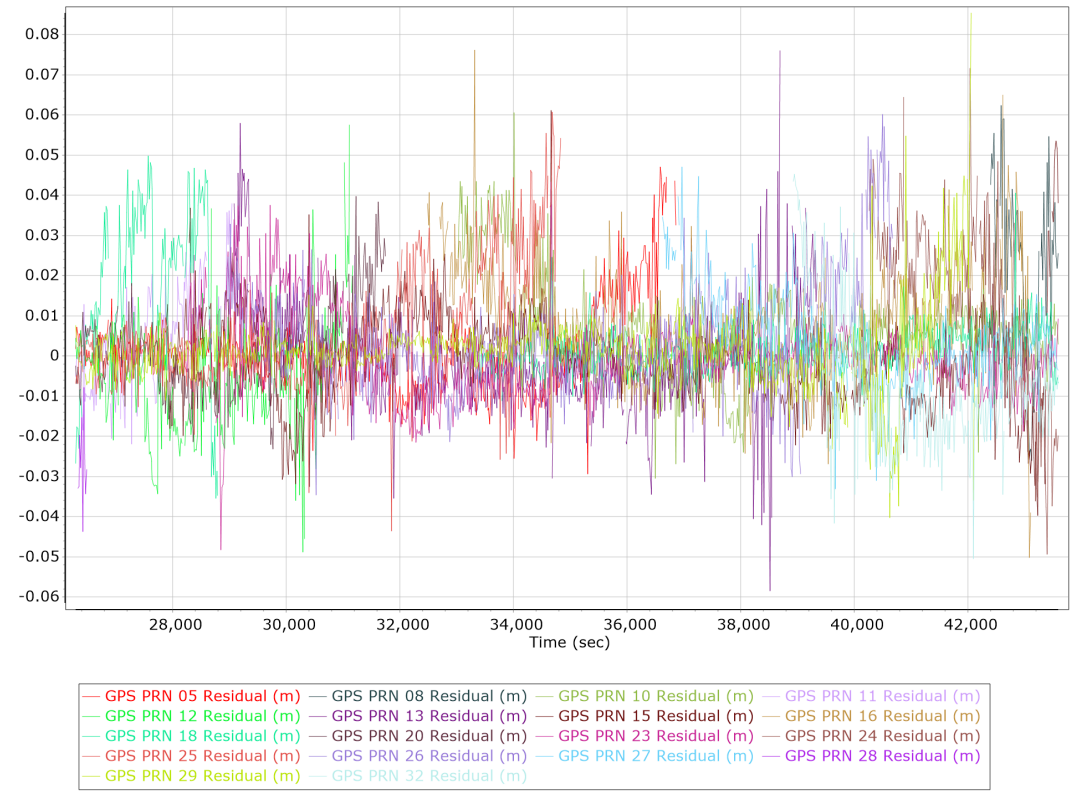
PDOP



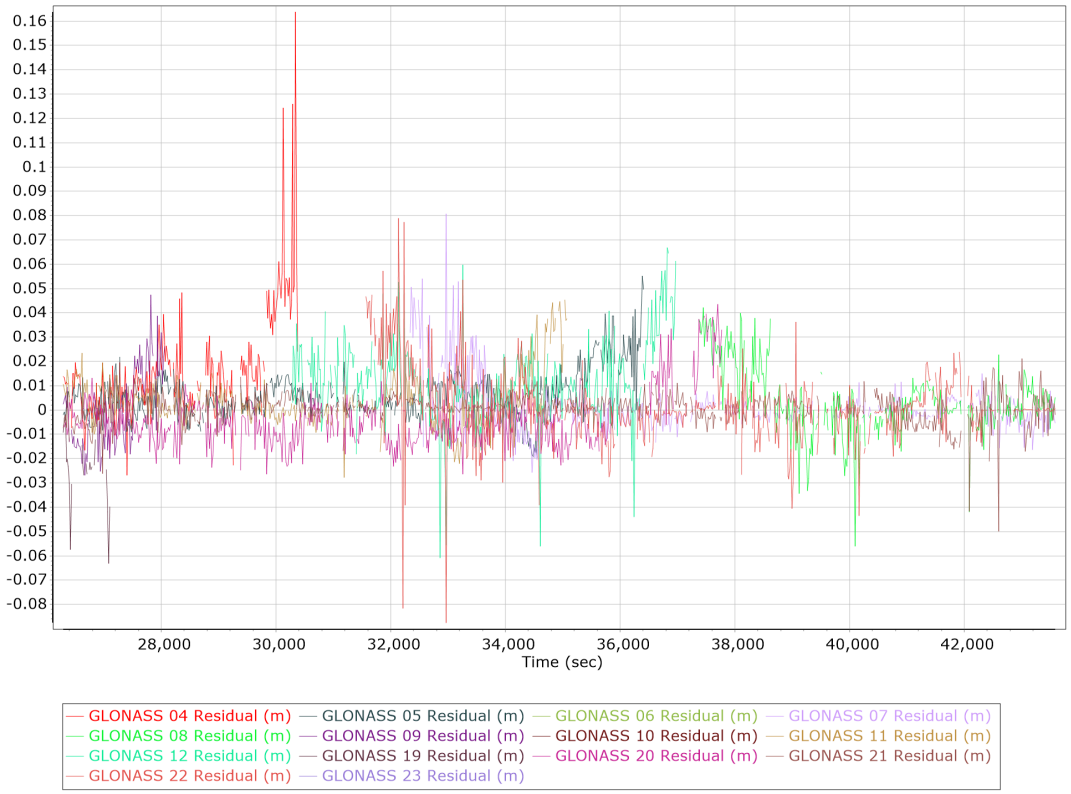
Estimated Position Accuracy



GPS Residuals



GLONASS Residuals



GALILEO Residuals



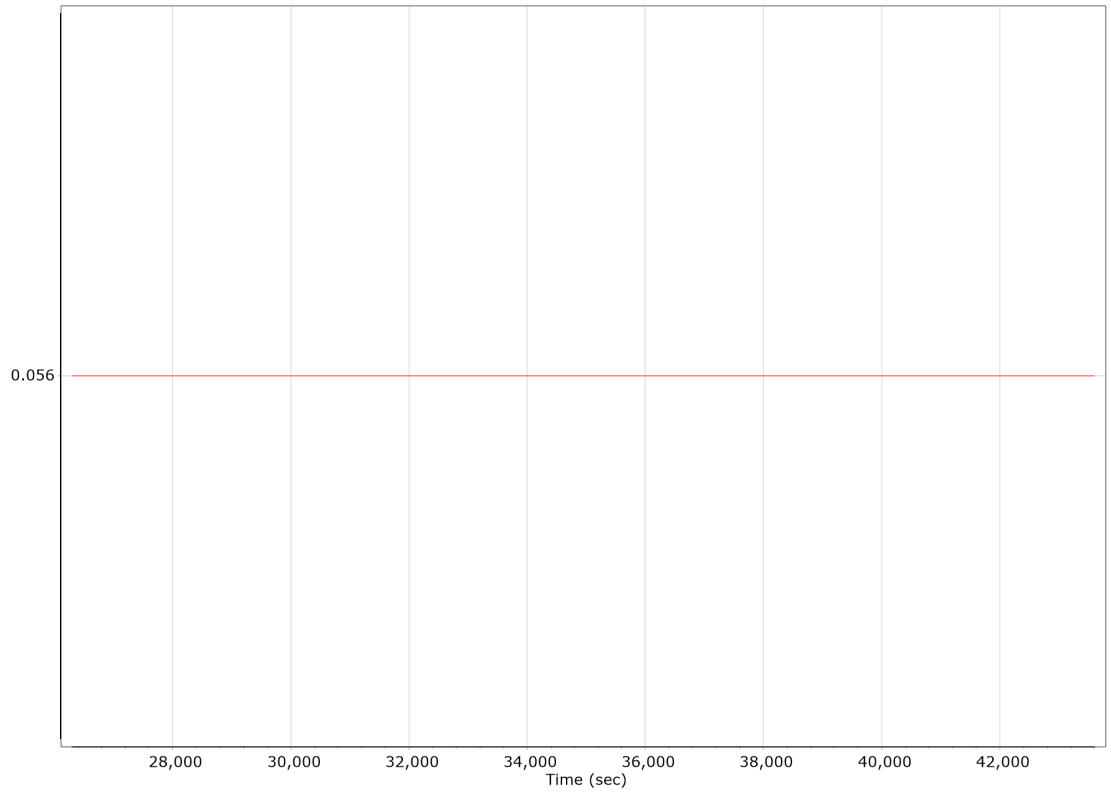
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	25997.000 (12/3/2023 7:13:17 AM)		
Processing end time	43622.000 (12/3/2023 12:07:02 PM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.056	0.055	-1.294
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

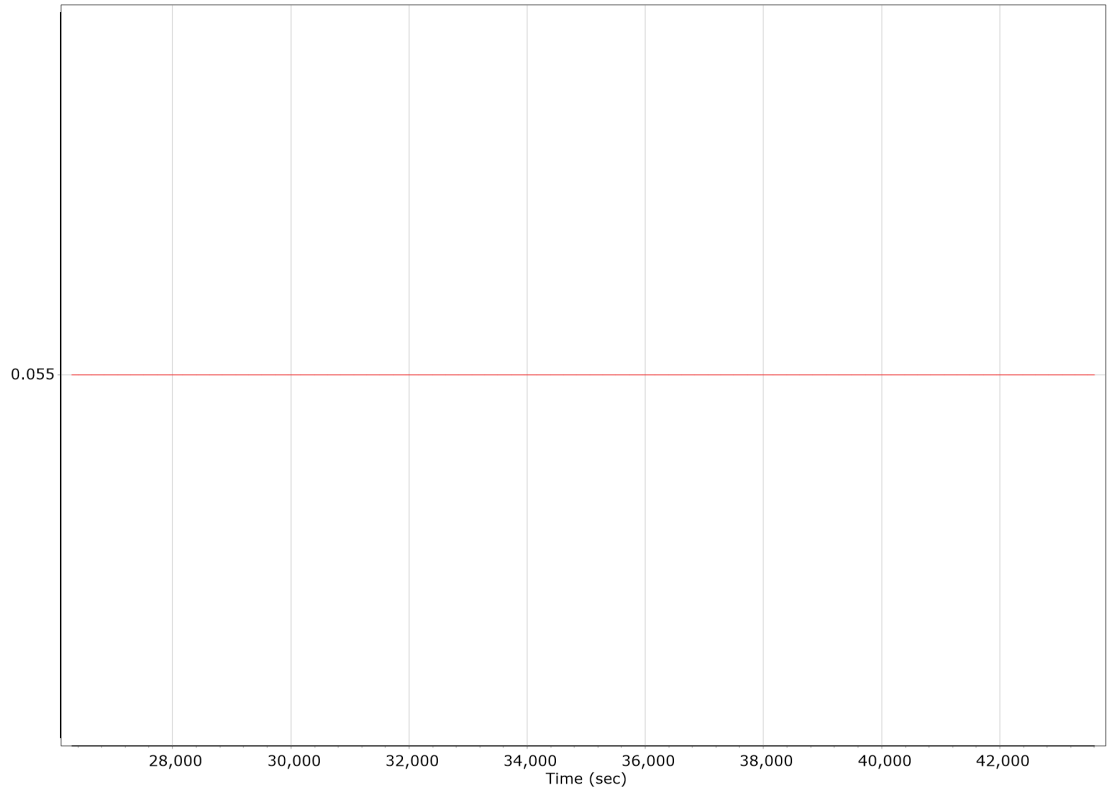
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

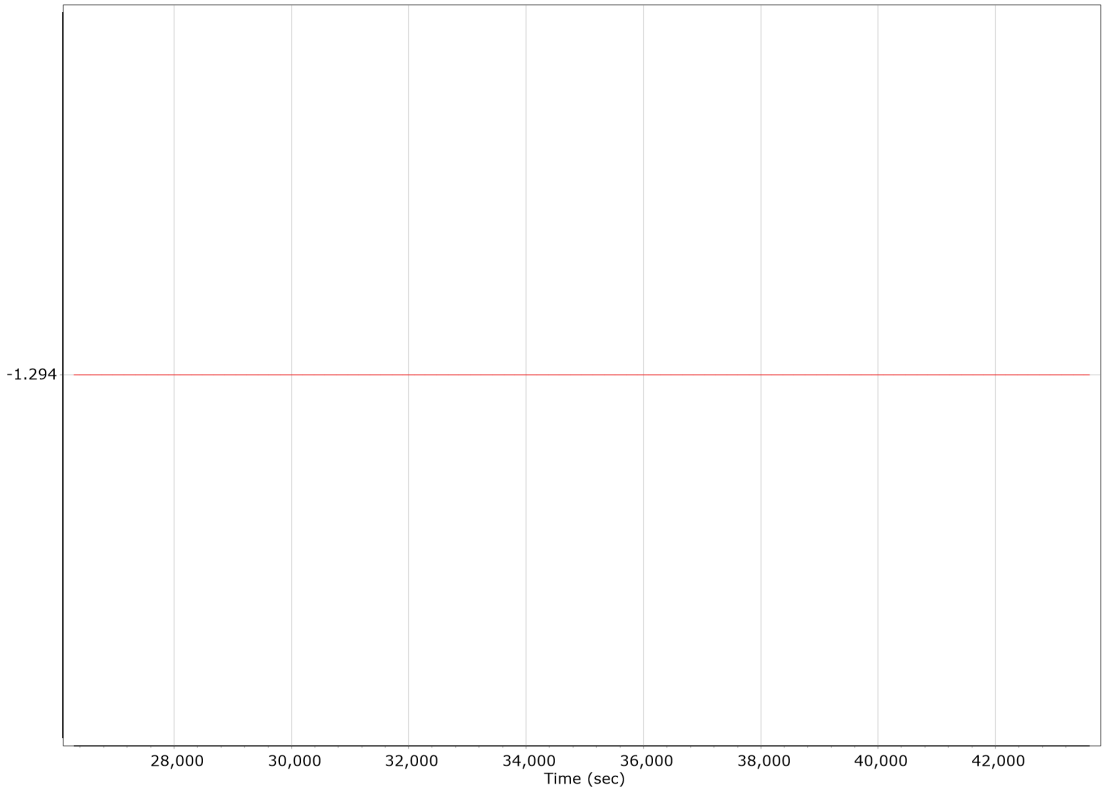
X Reference-Primary GNSS Lever Arm (m)



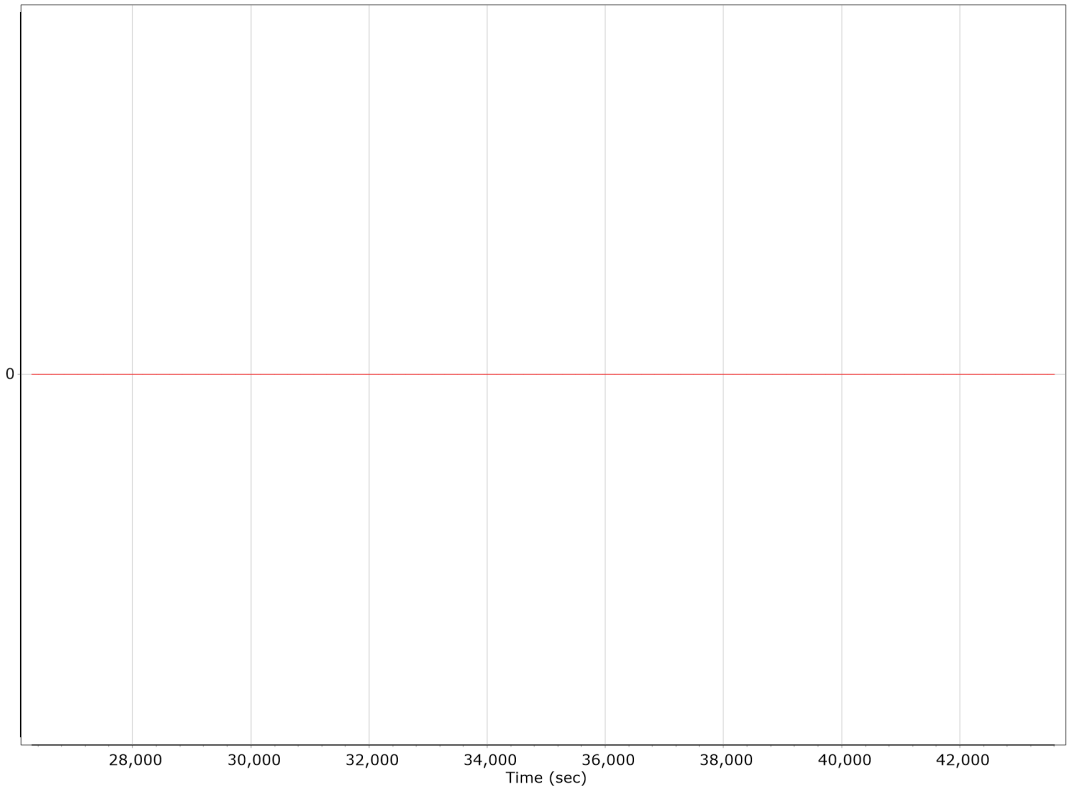
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



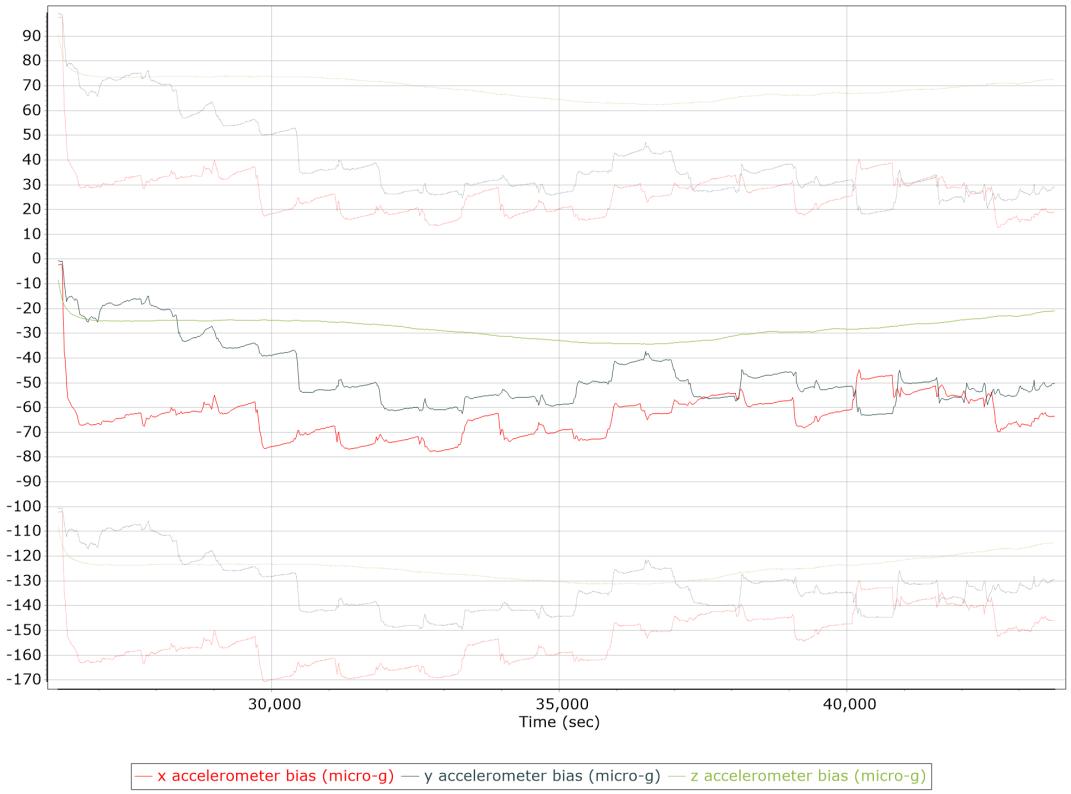
Reference-Primary GNSS Lever Arm Figure of Merit



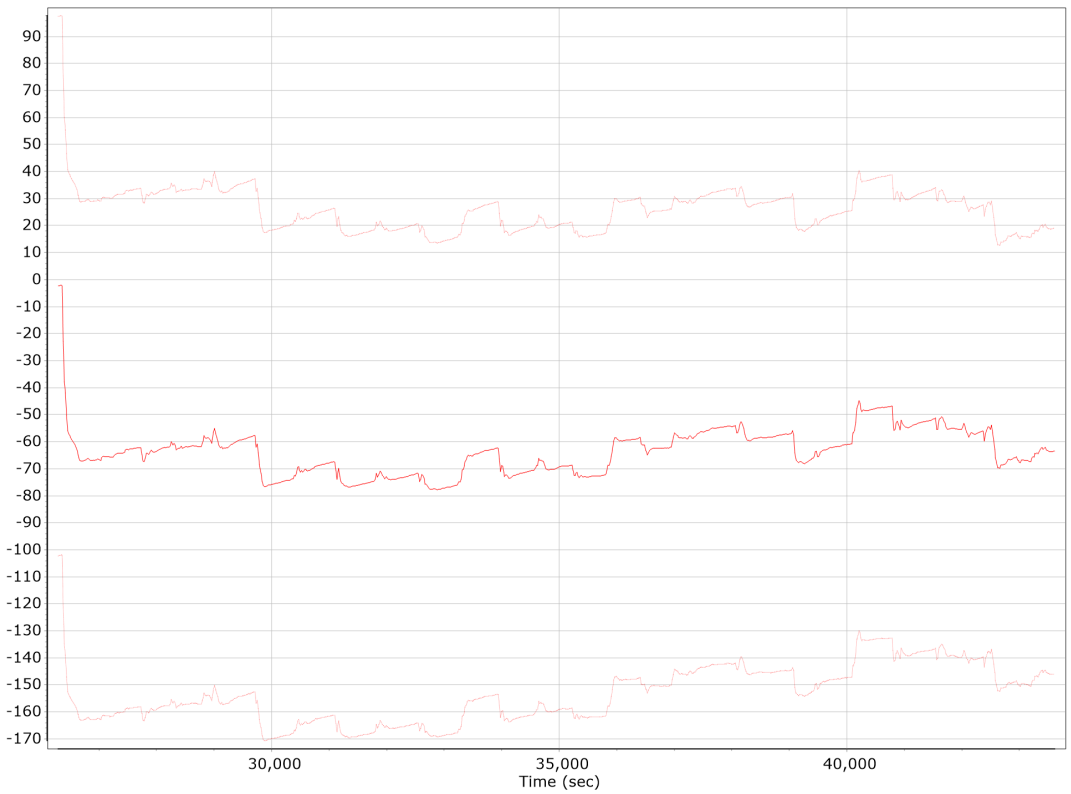
IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

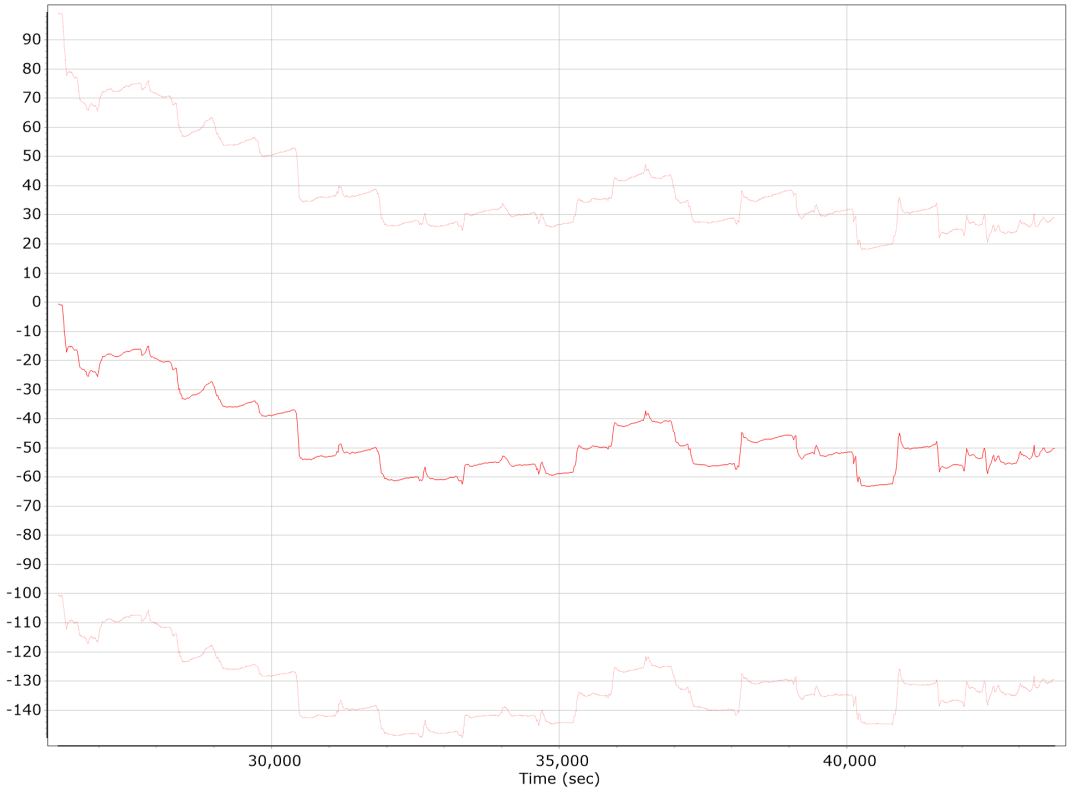
Accelerometer Bias (micro-g)



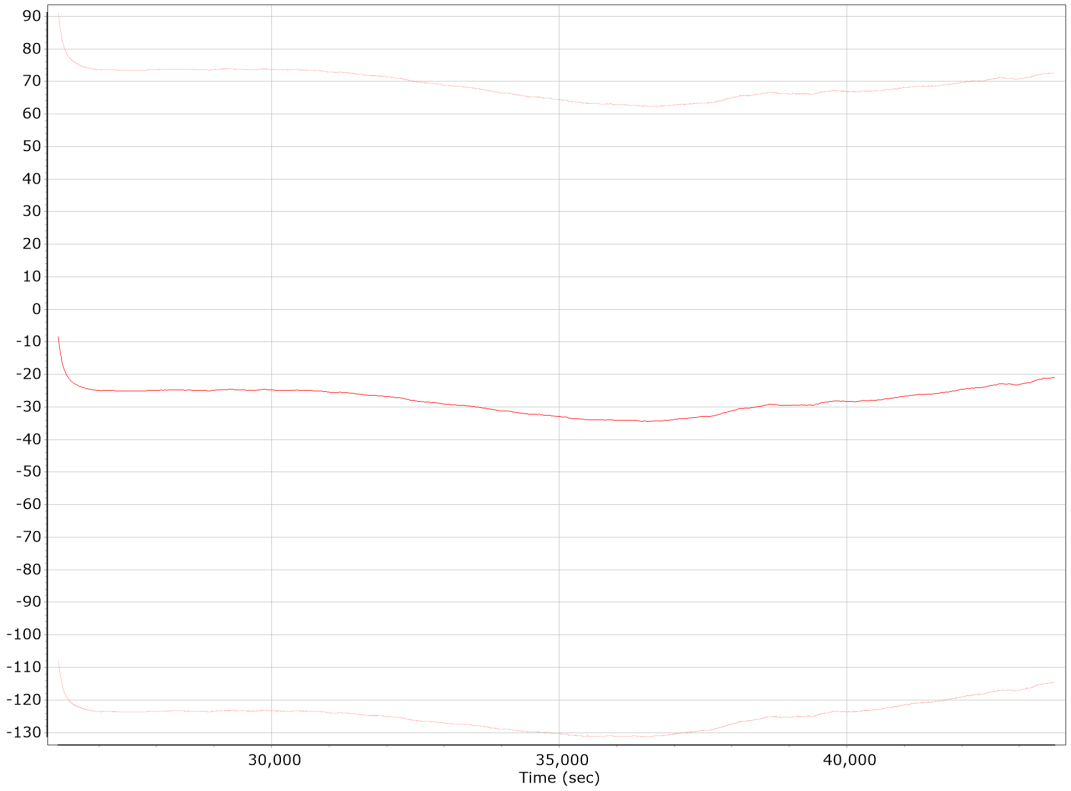
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



X Accelerometer Scale Error (ppm)



Y Accelerometer Scale Error (ppm)



Z Accelerometer Scale Error (ppm)



Gyro Bias (deg/h)



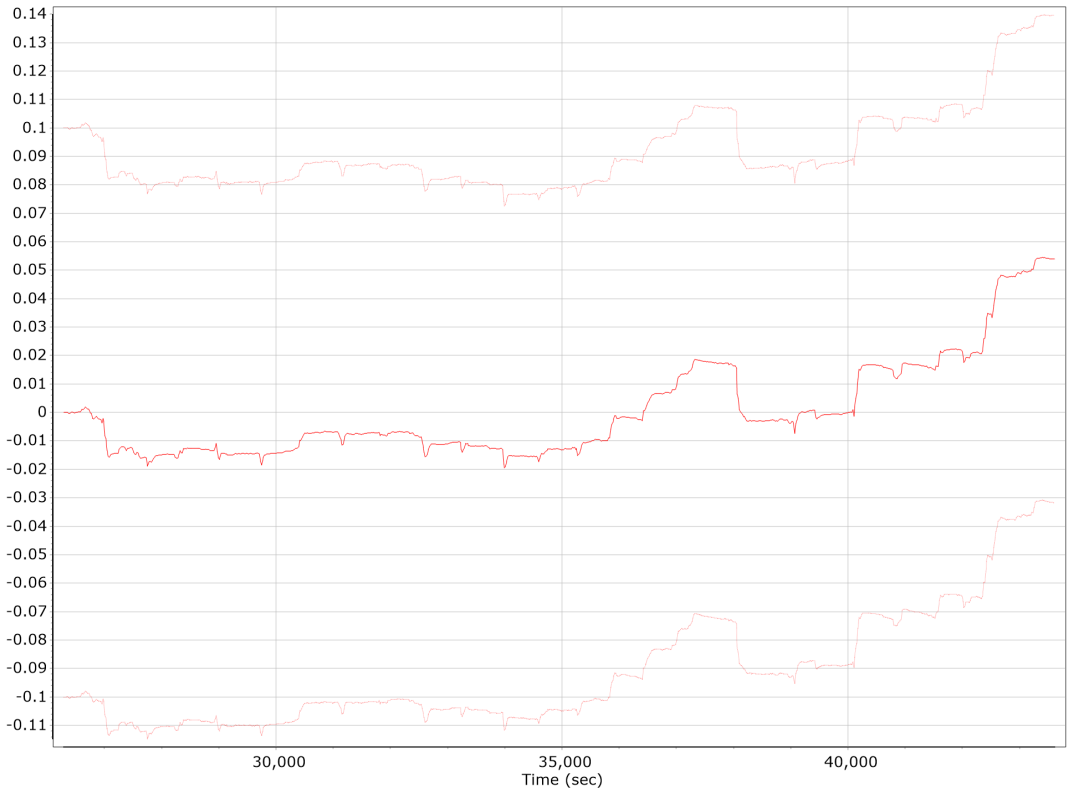
X Gyro Bias (deg/h)



Y Gyro Bias (deg/h)



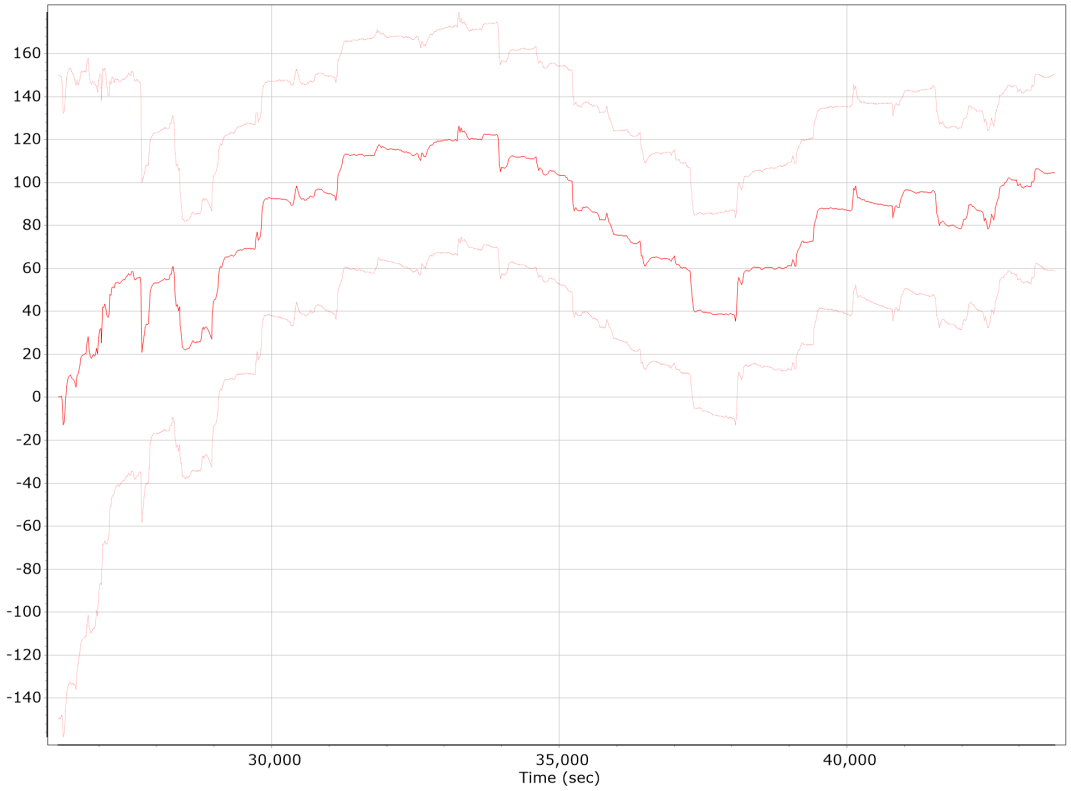
Z Gyro Bias (deg/h)



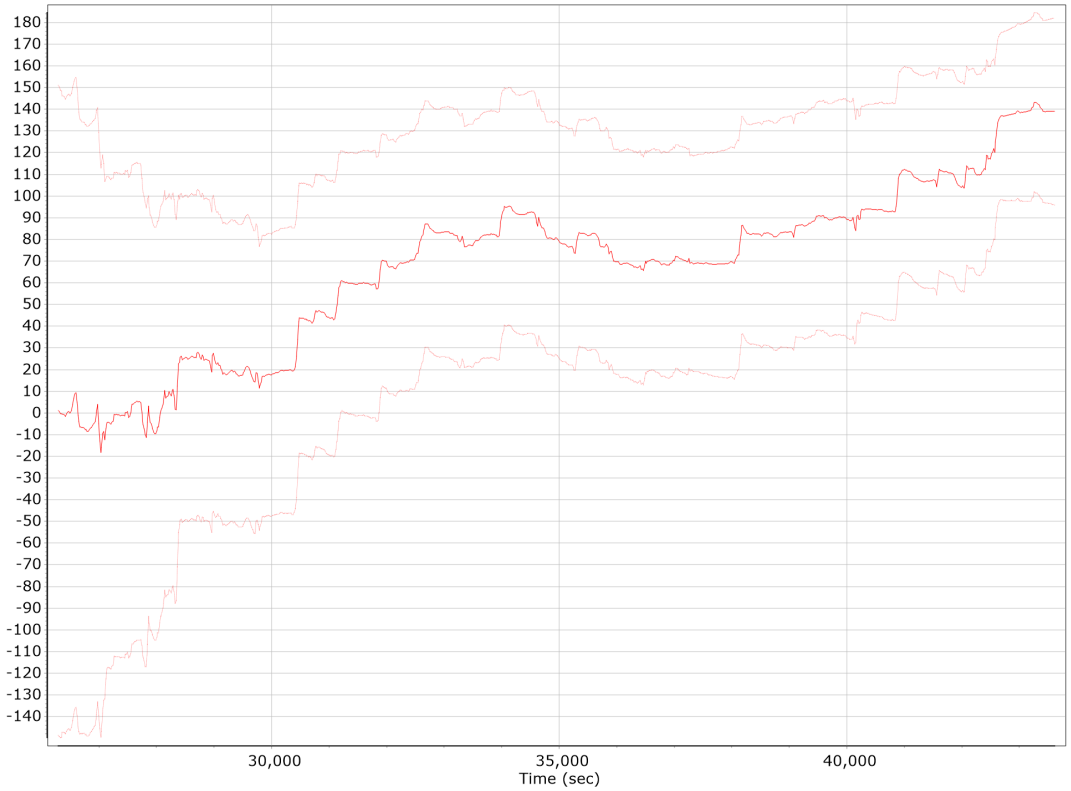
Gyro Scale Error (ppm)



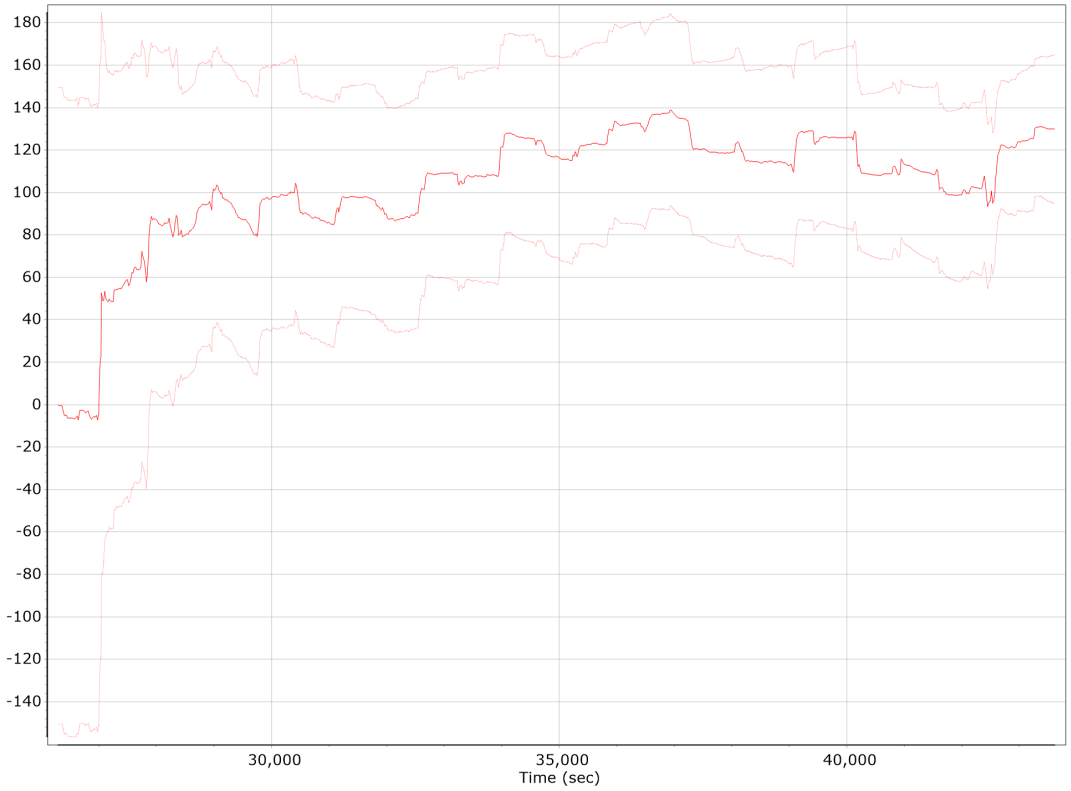
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)

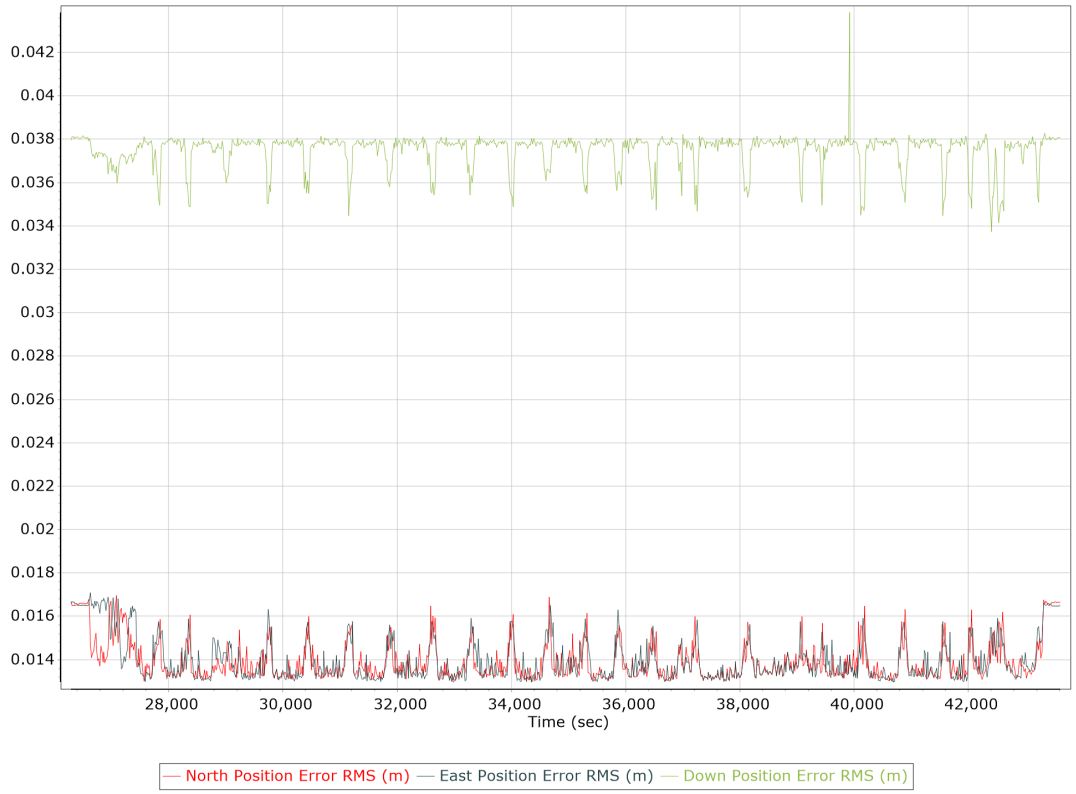


Z Gyro Scale Error (ppm)

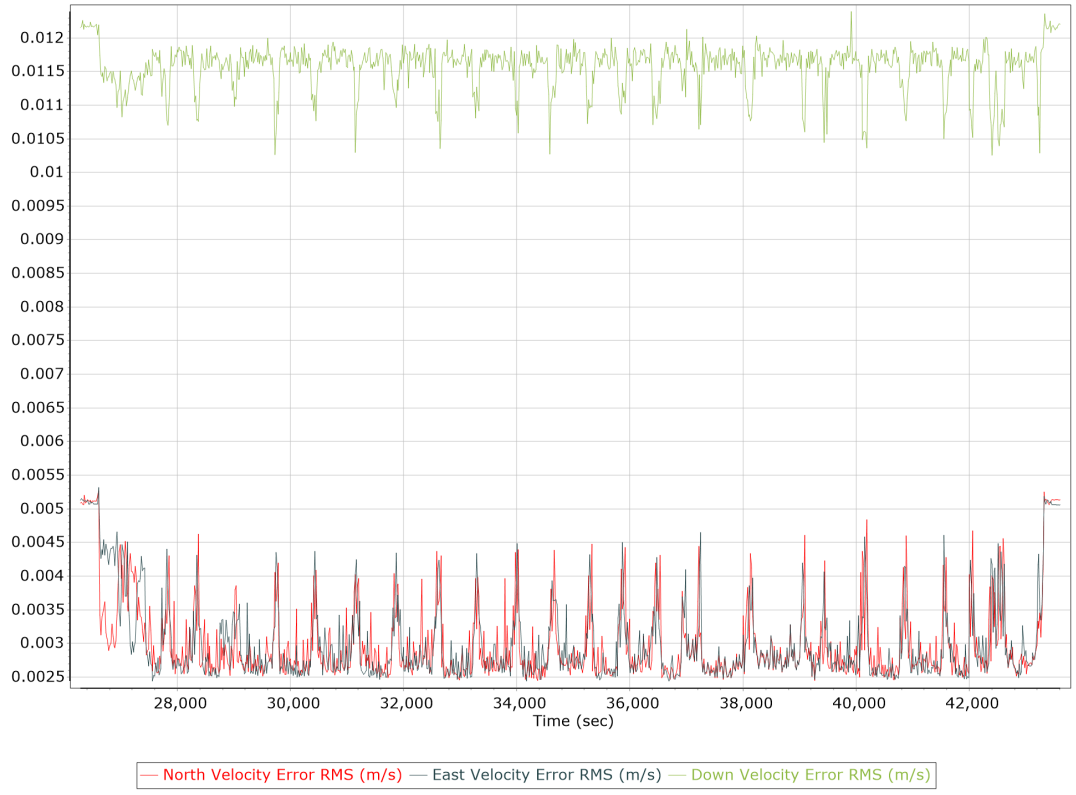


Smoothed Performance Metrics

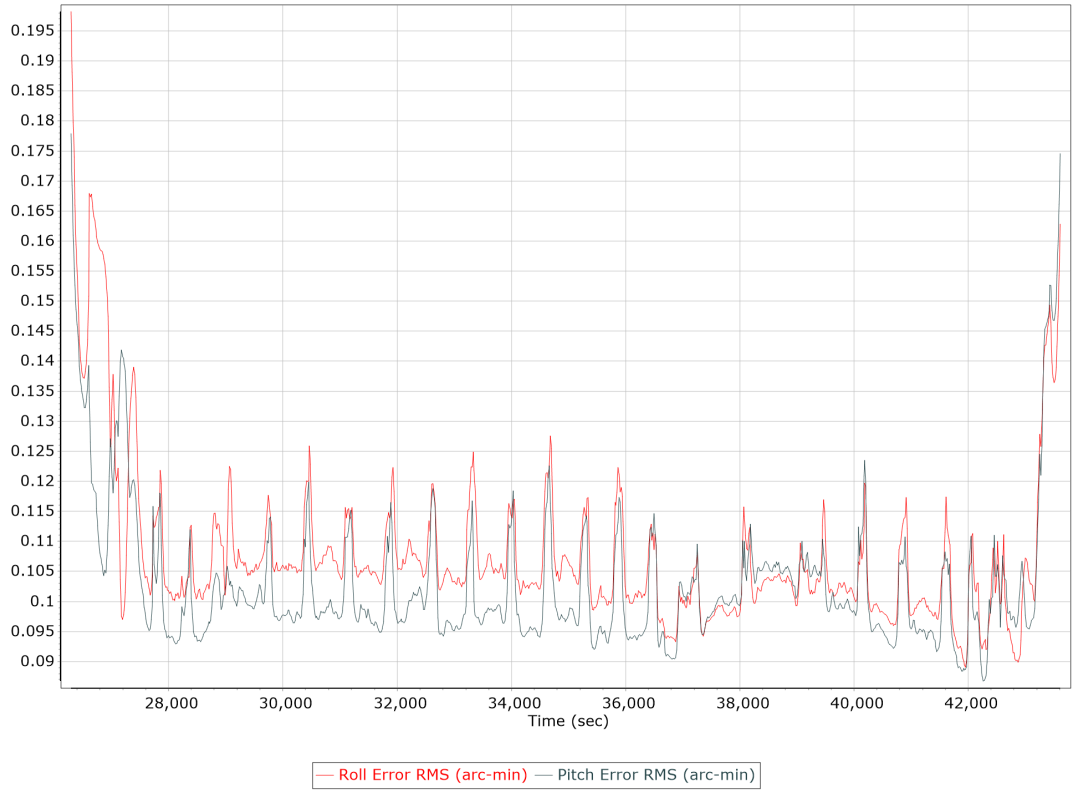
Position Error RMS (m)



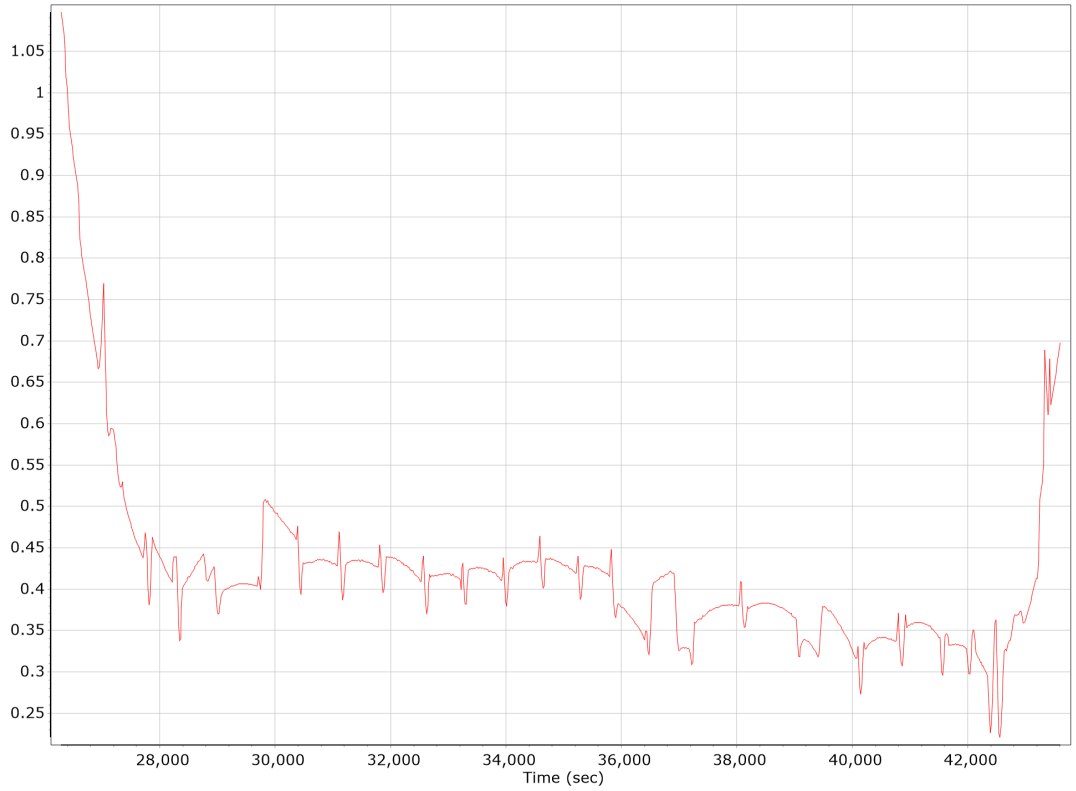
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

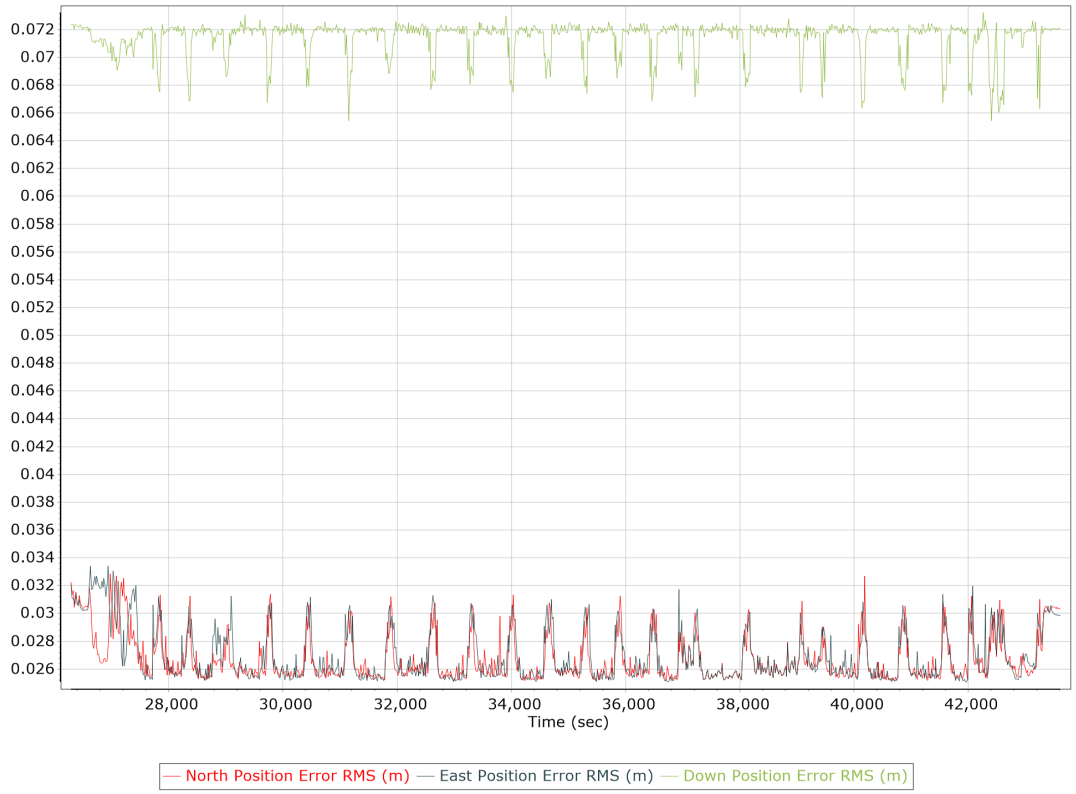


Heading Error RMS (arc-min)

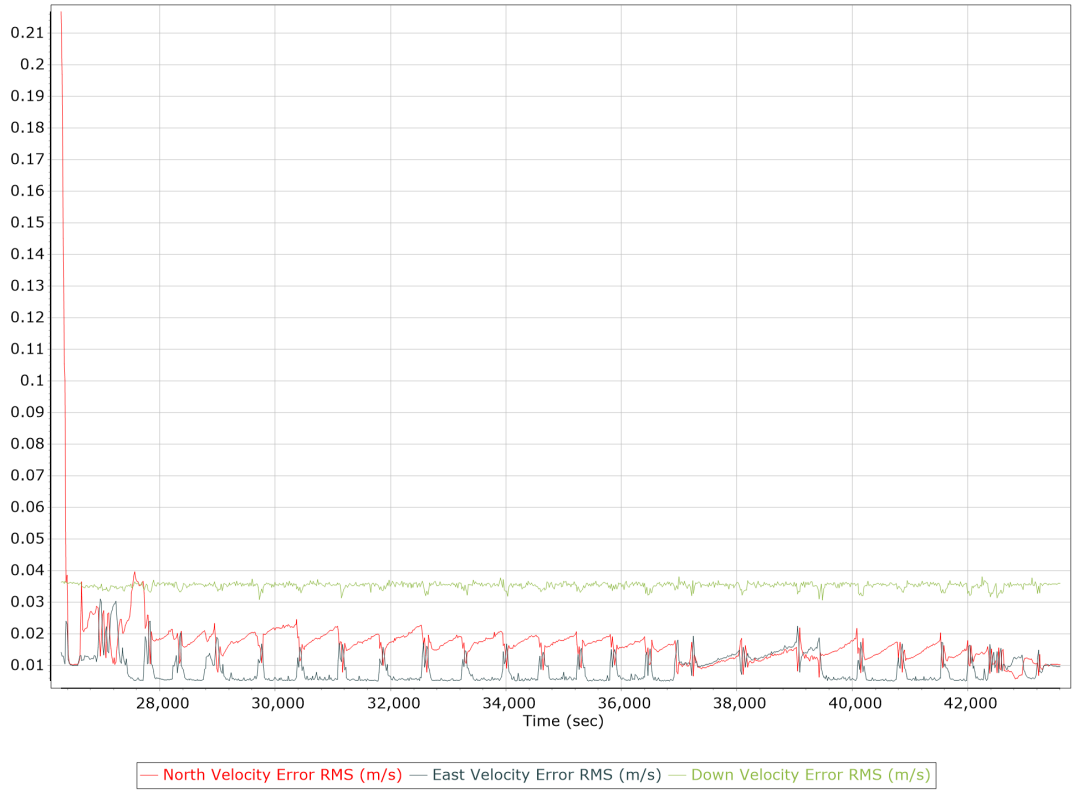


Forward Processed Performance Metrics

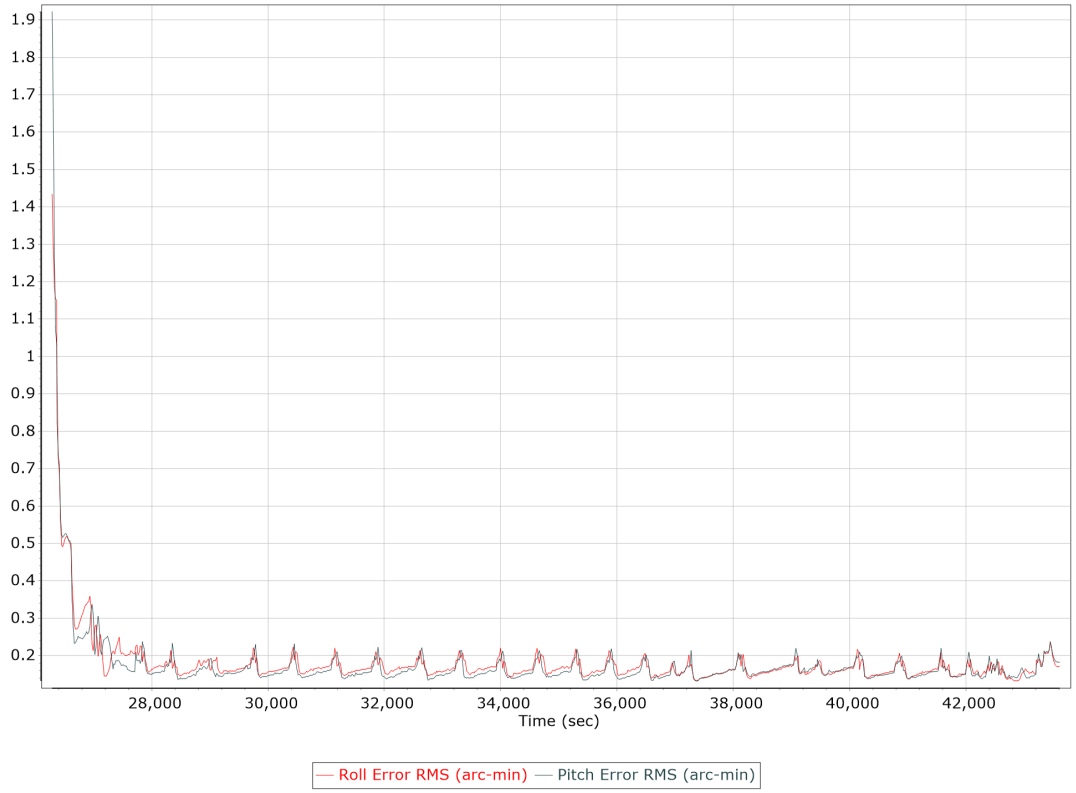
Position Error RMS (m)



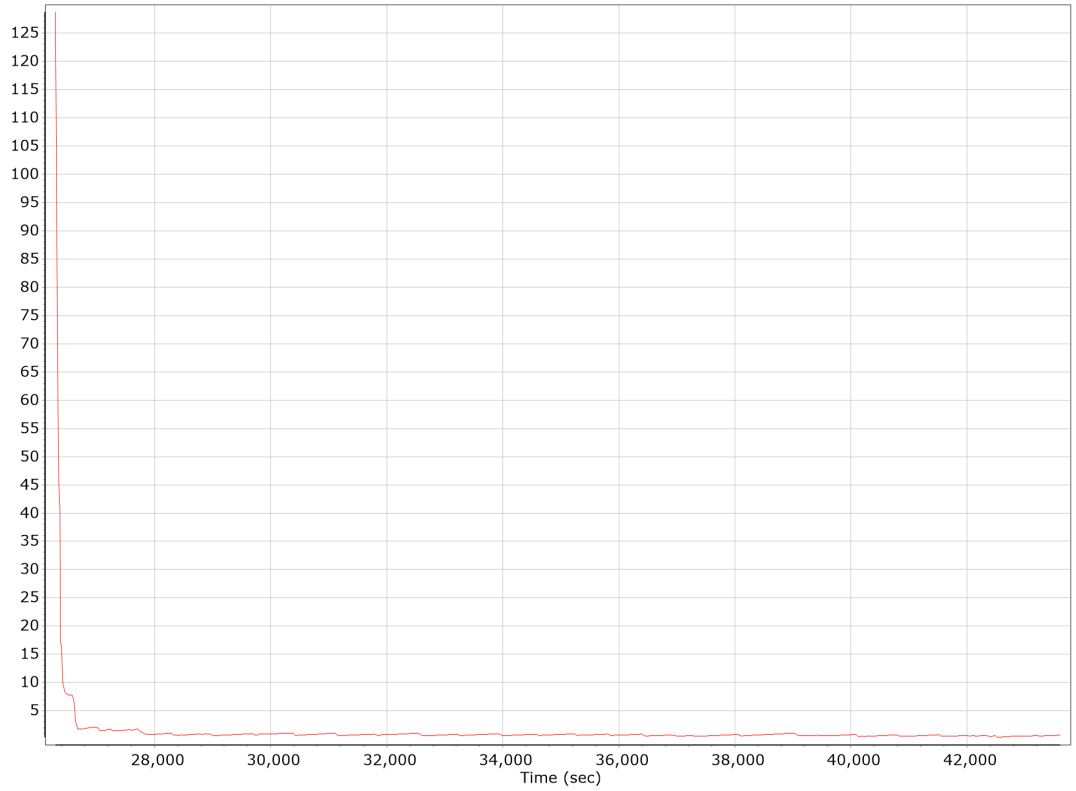
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

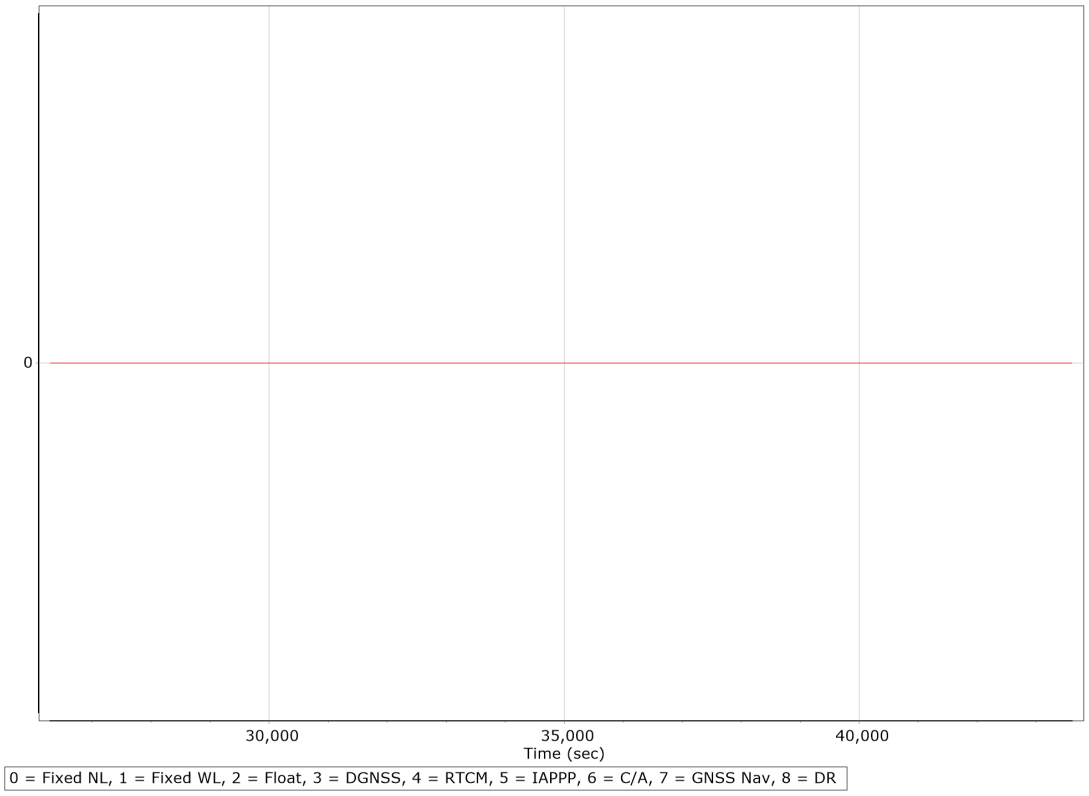


Heading Error RMS (arc-min)



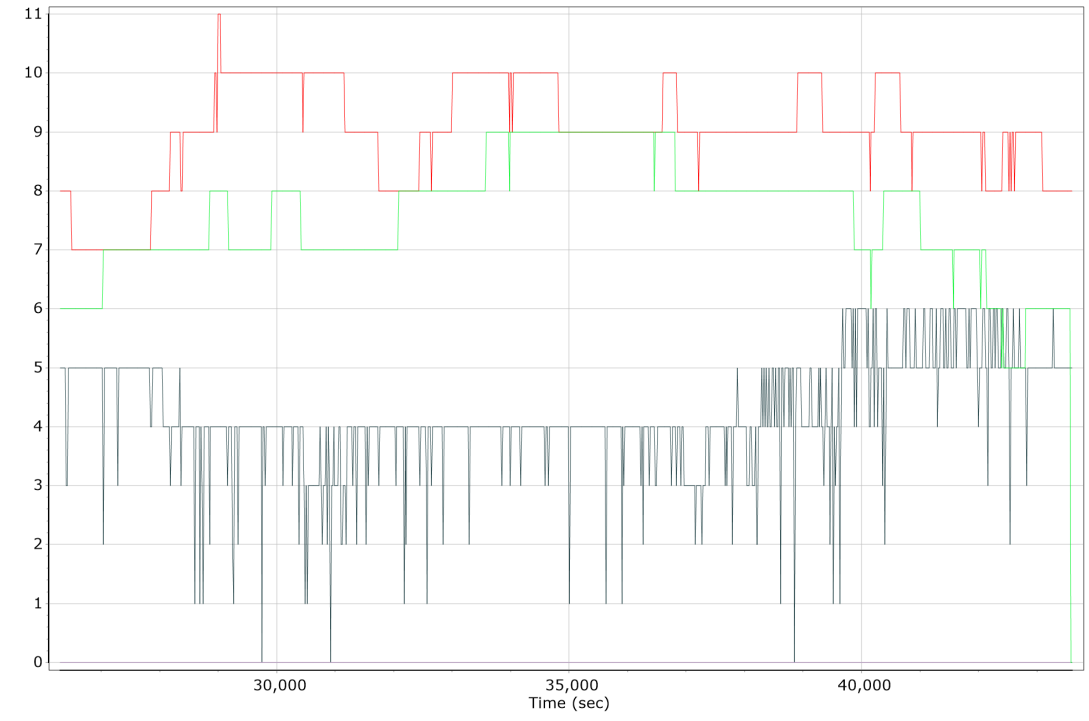
Forward Processed Solution Status

Processing Mode

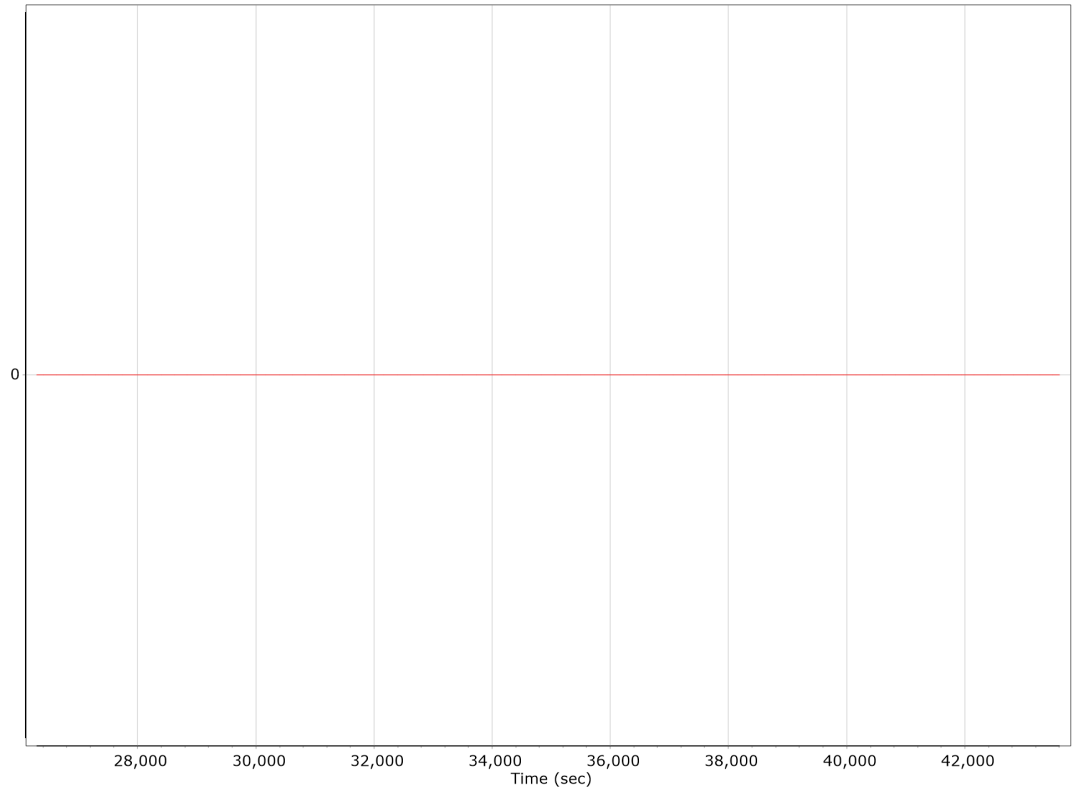


0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGNSS, 4 = RTCM, 5 = IAPPP, 6 = C/A, 7 = GNSS Nav, 8 = DR

Number of Satellites



Baseline Length



General Information

Mission Information

Project name	12032023A_3061
Processing date	2023-12-05 18:51:41
Mission date	2023-12-04 02:29:19
Mission duration	04:26:48.000
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N8902
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
231204_022900_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm3380.23g	GLONASS Broadcast Ephemeris
Ephm3380.23n	GPS Broadcast Ephemeris

Output Files

Filename	File type
sbet_12032023A_3061.out	SBET Trajectory File

Rover Data Summary

First raw data file	231204_022900_INS-GPS_1.raw		
Last raw data file	231204_022900_INS-GPS_1.raw		
Start GPS week	2291		
Start time	95340.906 (12/4/2023 2:29:00 AM)		
End time	111348.690 (12/4/2023 6:55:48 AM)		
Start of fine alignment	95610.672 (12/4/2023 2:33:30 AM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	0.000	0.000	0.000
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

Rover Data QC

Raw IMU Import QC Summary

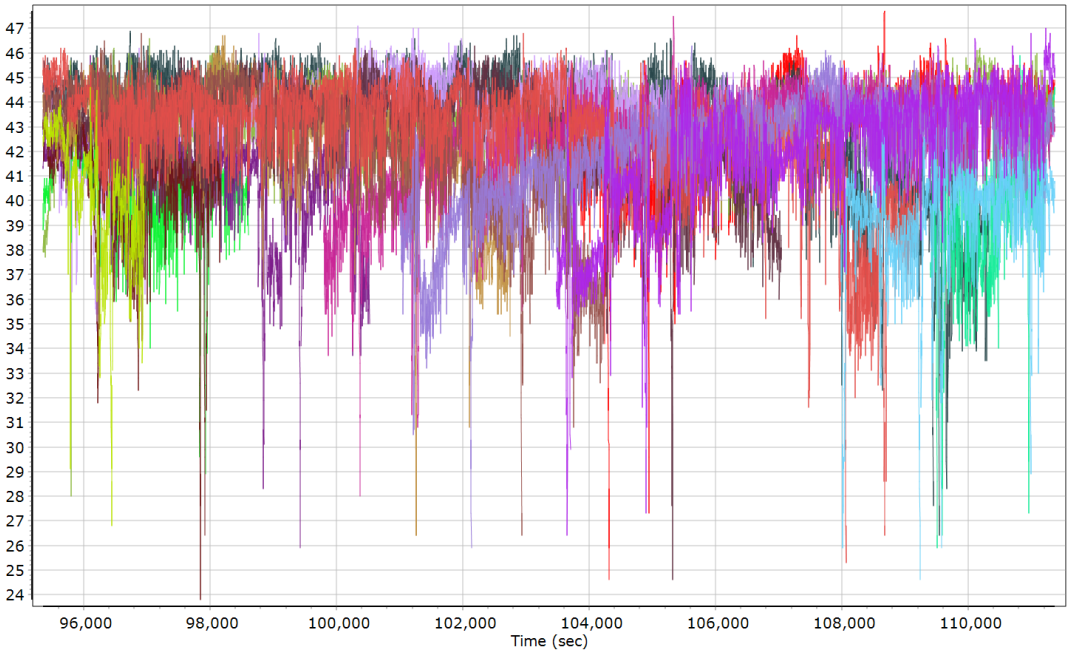
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_12032023A_3061.log
IMU Records Processed	3200962
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

GPS/GLONASS L1 Satellite Lock/Elevation

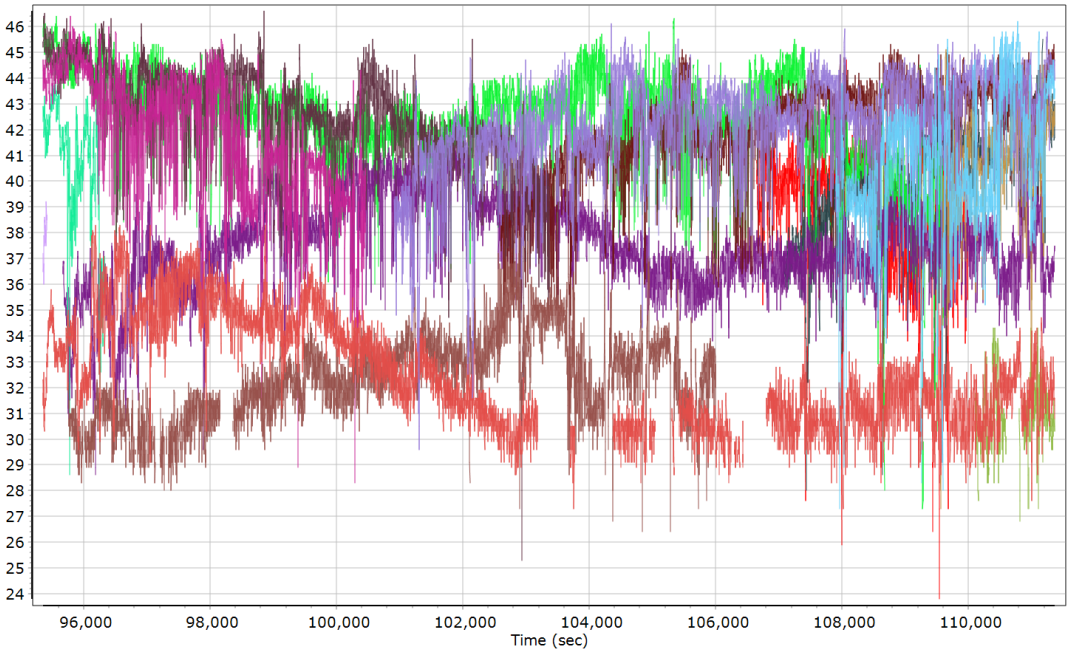


GPS L1 SNR



GPS PRN 05 L1 SNR (dB/Hz) — GPS PRN 06 L1 SNR (dB/Hz) — GPS PRN 11 L1 SNR (dB/Hz) — GPS PRN 12 L1 SNR (dB/Hz)
GPS PRN 13 L1 SNR (dB/Hz) — GPS PRN 14 L1 SNR (dB/Hz) — GPS PRN 15 L1 SNR (dB/Hz) — GPS PRN 17 L1 SNR (dB/Hz)
GPS PRN 18 L1 SNR (dB/Hz) — GPS PRN 19 L1 SNR (dB/Hz) — GPS PRN 20 L1 SNR (dB/Hz) — GPS PRN 22 L1 SNR (dB/Hz)
GPS PRN 24 L1 SNR (dB/Hz) — GPS PRN 25 L1 SNR (dB/Hz) — GPS PRN 28 L1 SNR (dB/Hz) — GPS PRN 29 L1 SNR (dB/Hz)
GPS PRN 30 L1 SNR (dB/Hz)

GLONASS L1 SNR

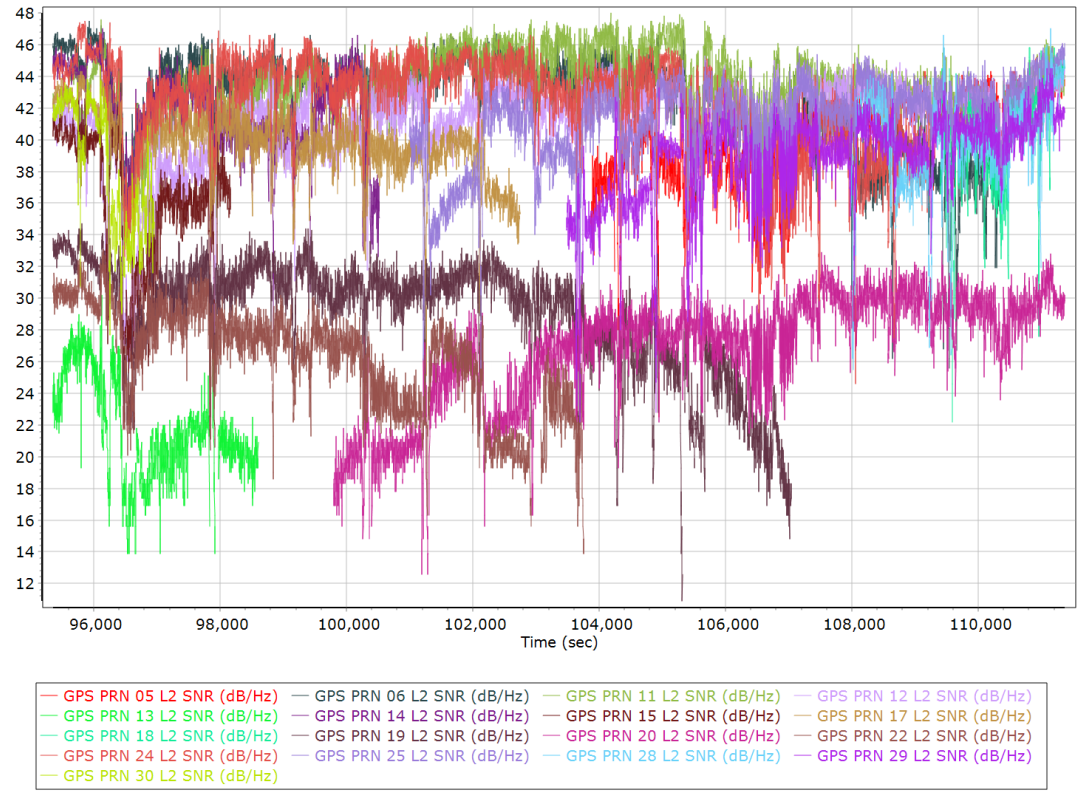


GLONASS 04 L1 SNR (dB/Hz) — GLONASS 05 L1 SNR (dB/Hz) — GLONASS 06 L1 SNR (dB/Hz)
GLONASS 07 L1 SNR (dB/Hz) — GLONASS 09 L1 SNR (dB/Hz) — GLONASS 10 L1 SNR (dB/Hz)
GLONASS 11 L1 SNR (dB/Hz) — GLONASS 12 L1 SNR (dB/Hz) — GLONASS 15 L1 SNR (dB/Hz)
GLONASS 16 L1 SNR (dB/Hz) — GLONASS 18 L1 SNR (dB/Hz) — GLONASS 19 L1 SNR (dB/Hz)
GLONASS 20 L1 SNR (dB/Hz) — GLONASS 21 L1 SNR (dB/Hz) — GLONASS 22 L1 SNR (dB/Hz)

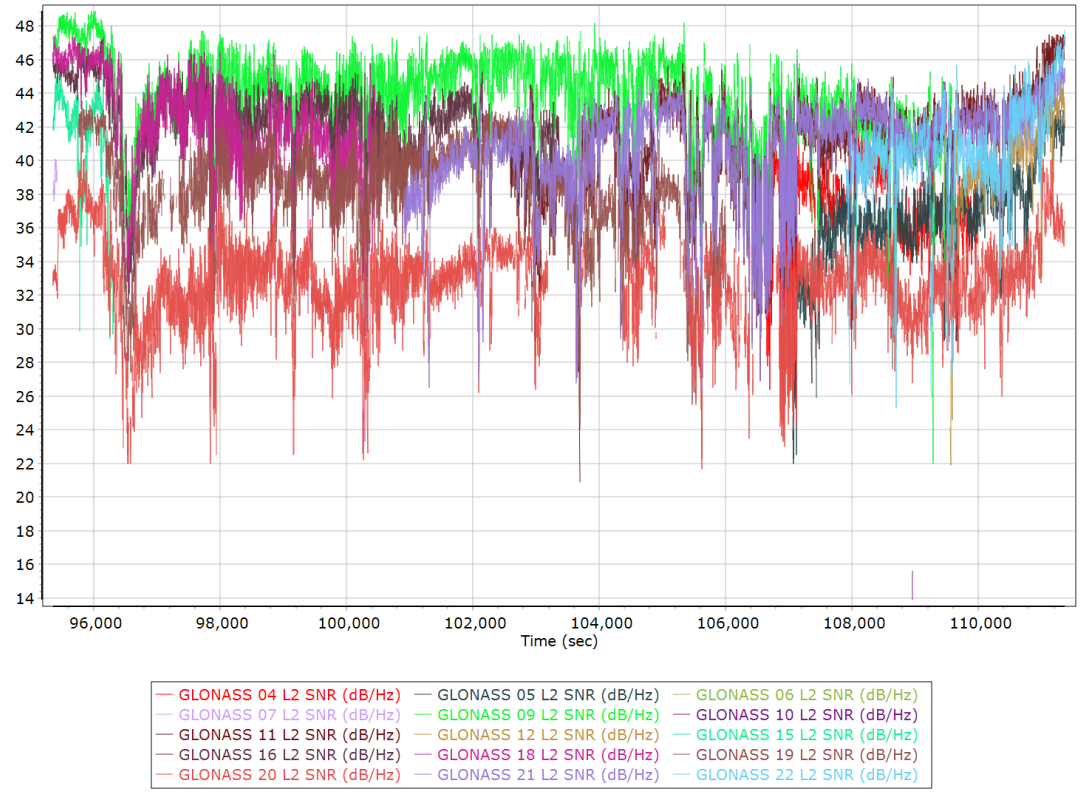
GPS/GLONASS L2 Satellite Lock/Elevation



GPS L2 SNR



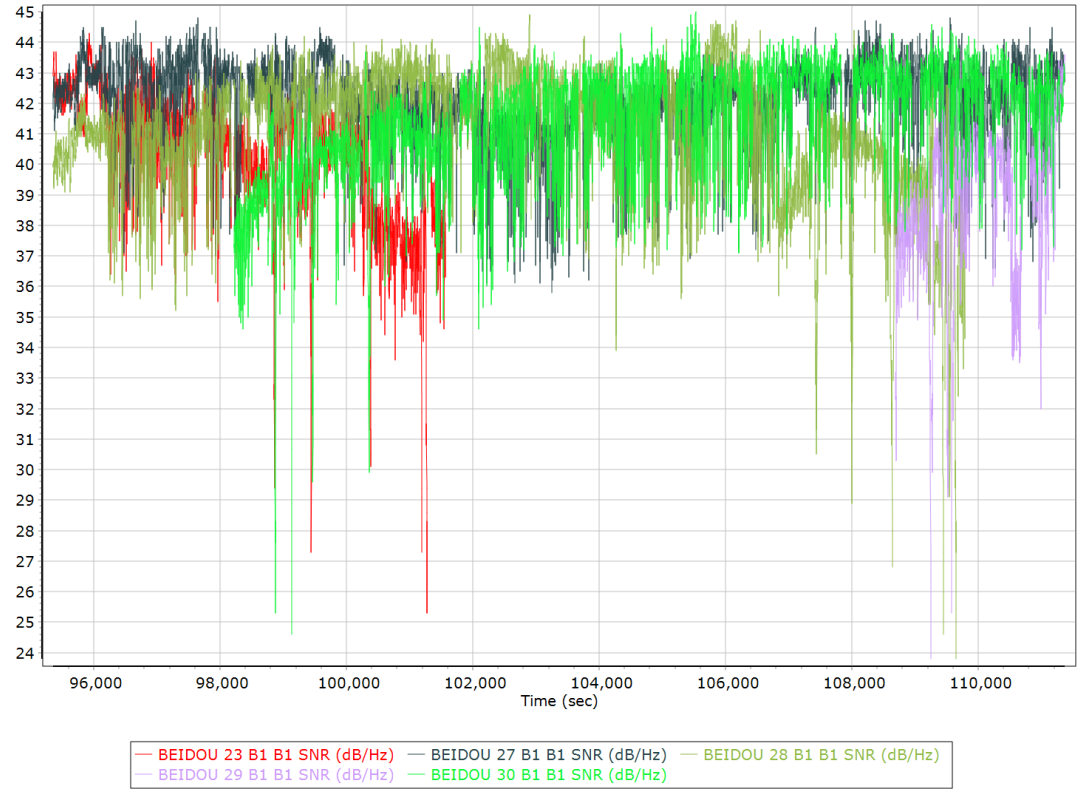
GLONASS L2 SNR



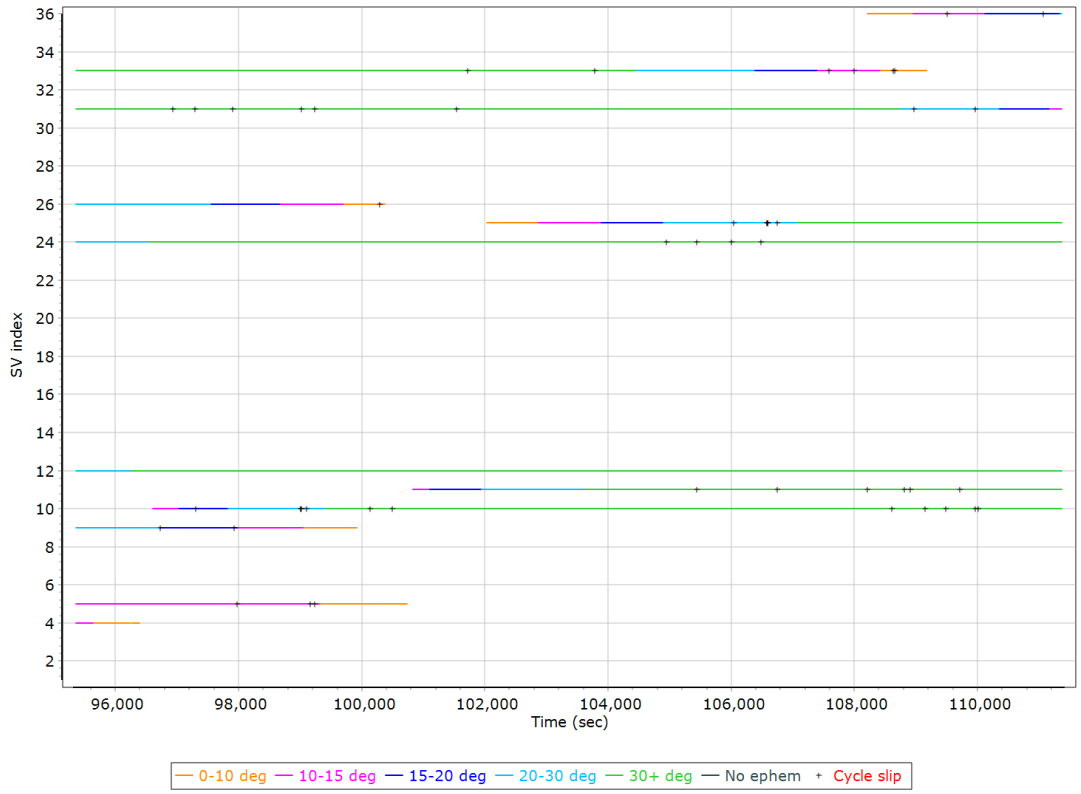
BEIDOU Satellite Lock/Elevation



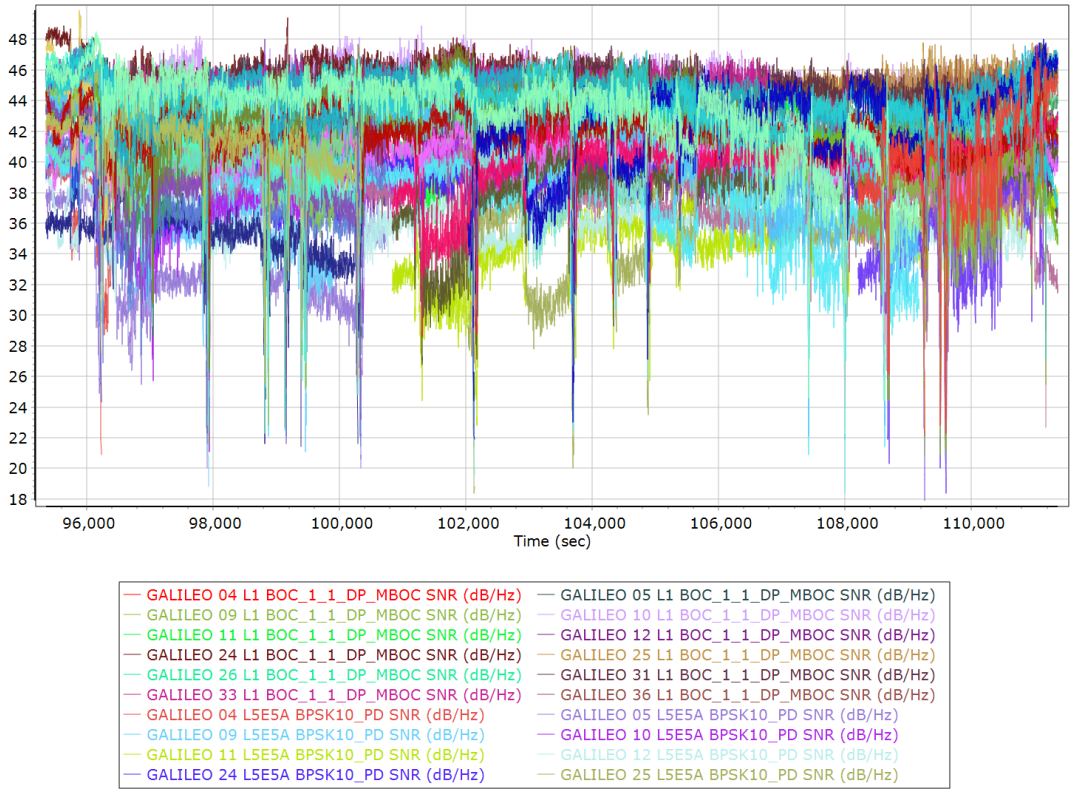
BEIDOU SNR



GALILEO Satellite Lock/Elevation

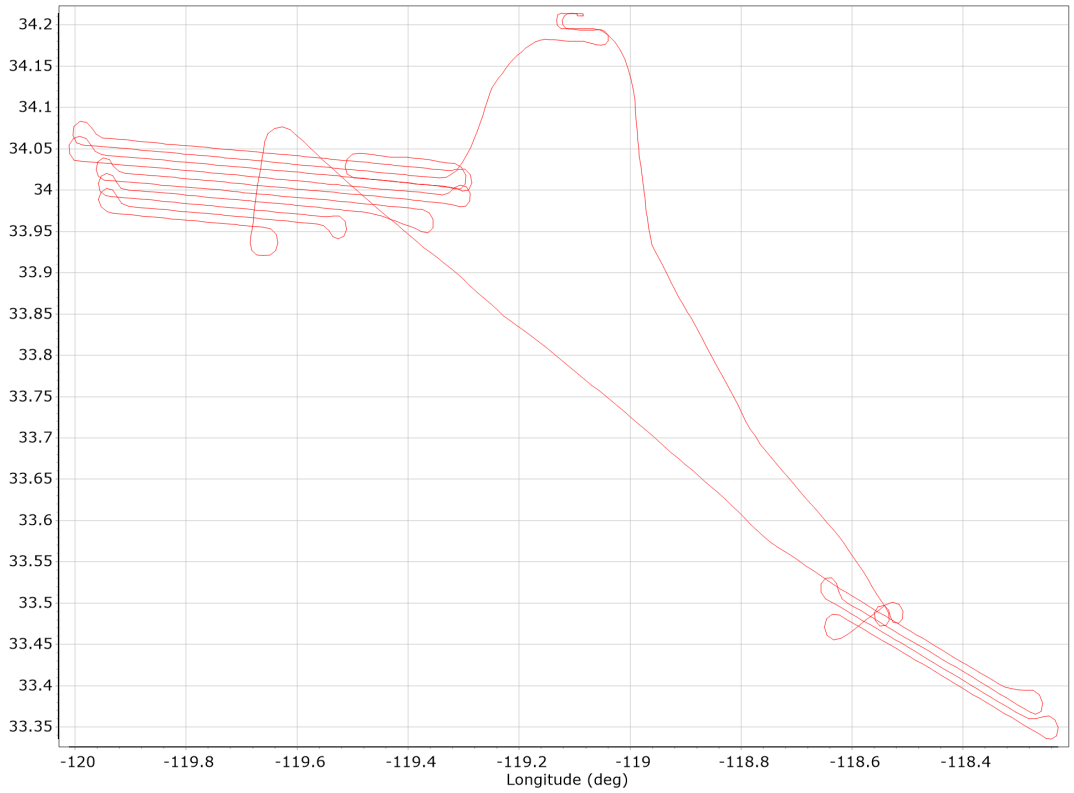


GALILEO SNR


48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
18
96,000
98,000
100,000
102,000
104,000
106,000
108,000
110,000
Time (sec)
GALILEO 04 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 05 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 09 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 10 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 11 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 12 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 24 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 25 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 26 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 31 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 33 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 36 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 04 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 05 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 09 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 10 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 11 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 12 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 24 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 25 L5E5A BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

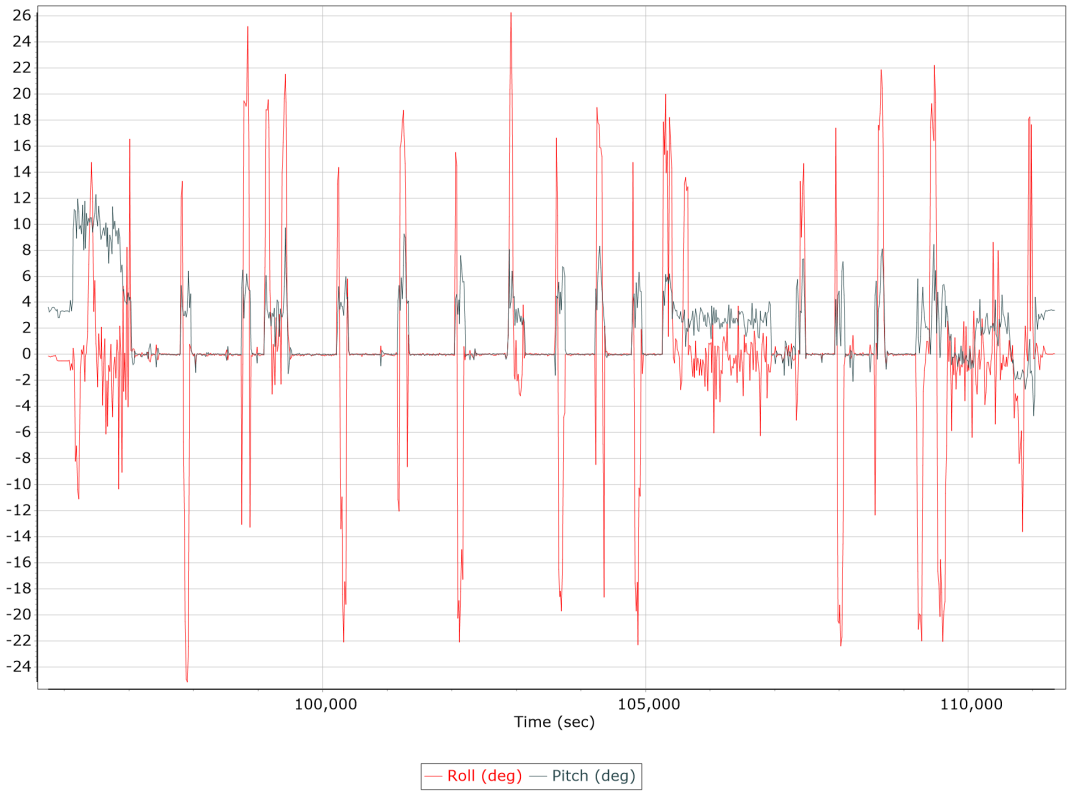
Top View



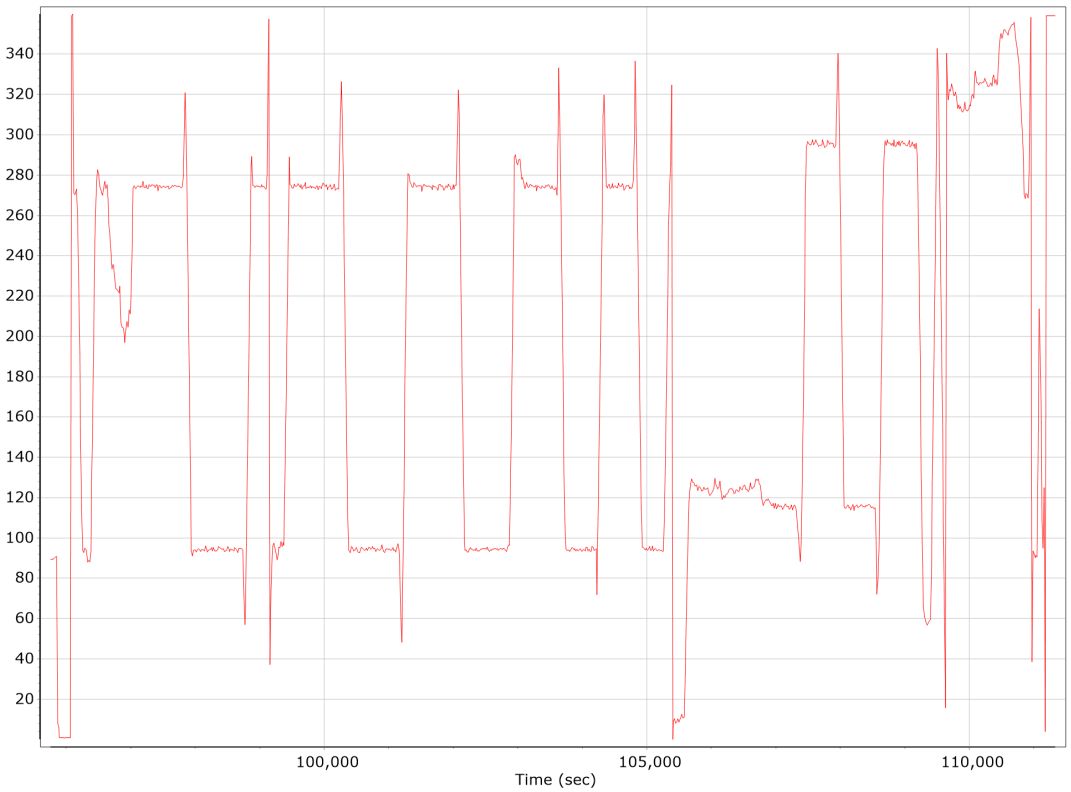
Altitude



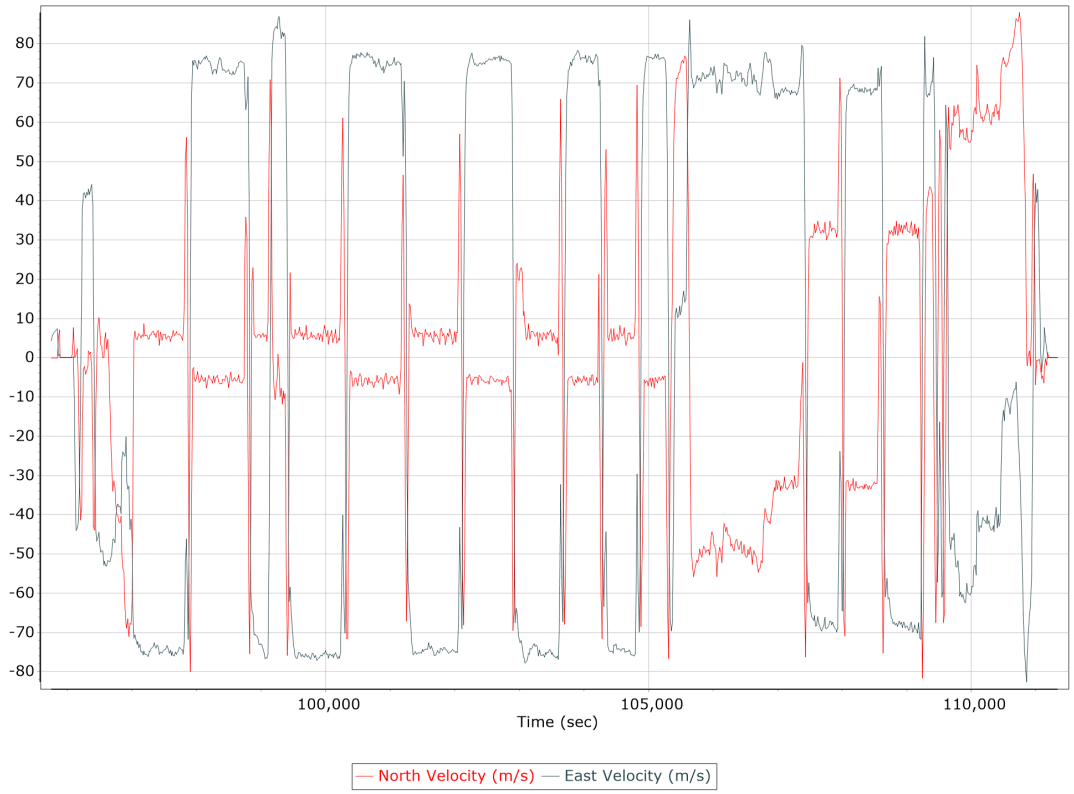
Roll/Pitch



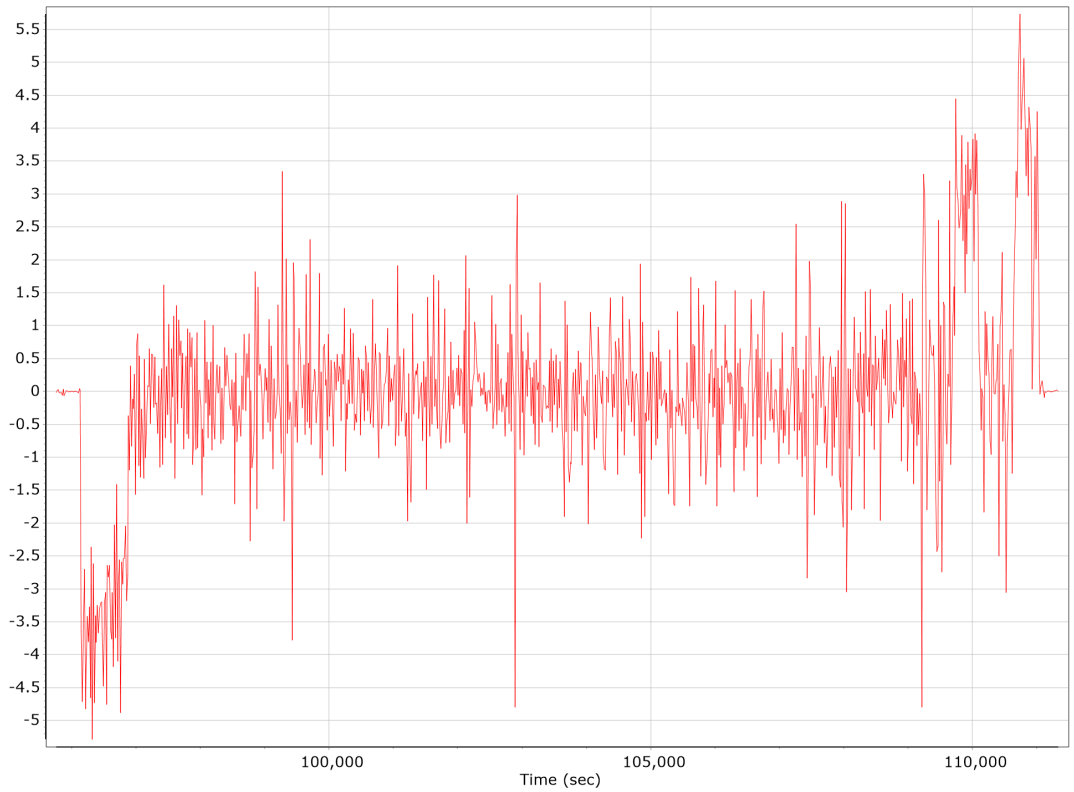
Heading



North/East Velocity



Down Velocity



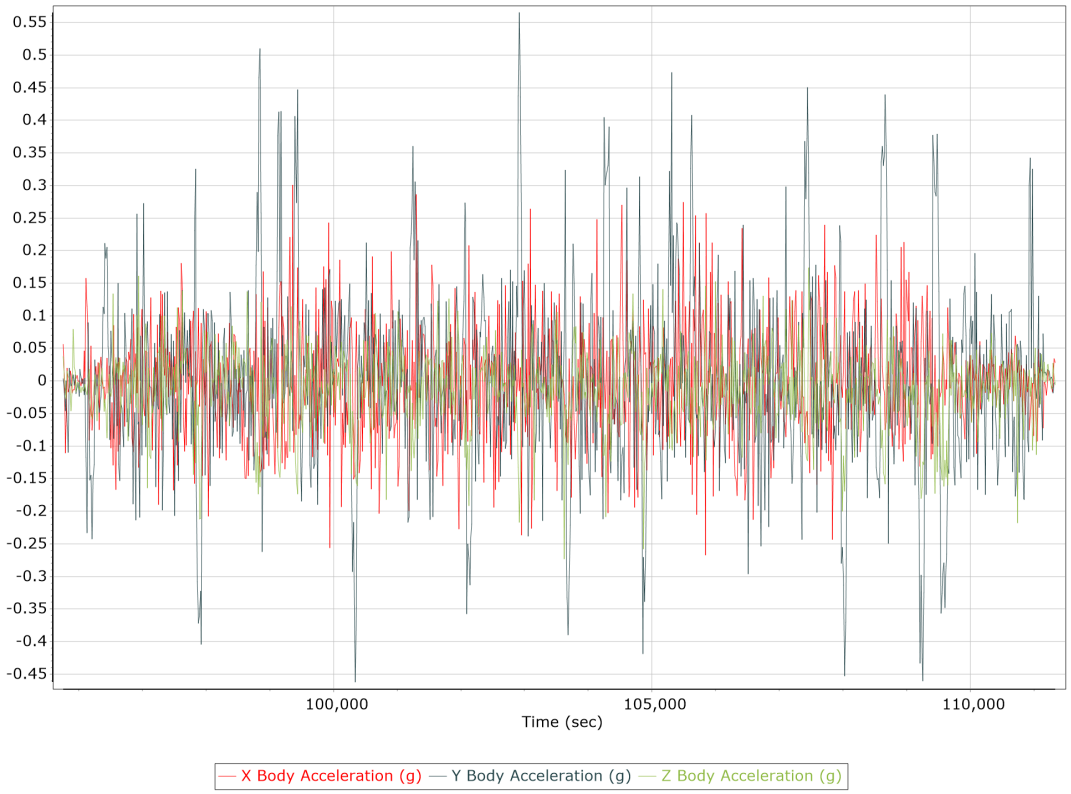
Total Speed



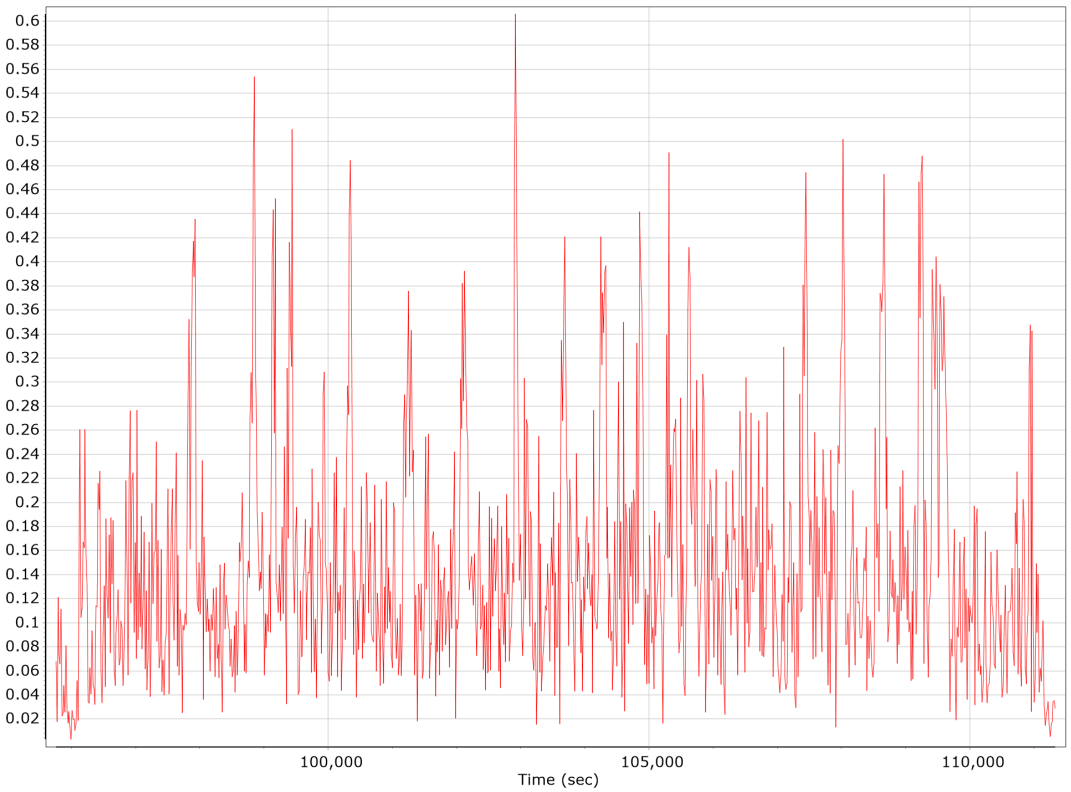
Ground Speed



Body Acceleration



Total Body Acceleration

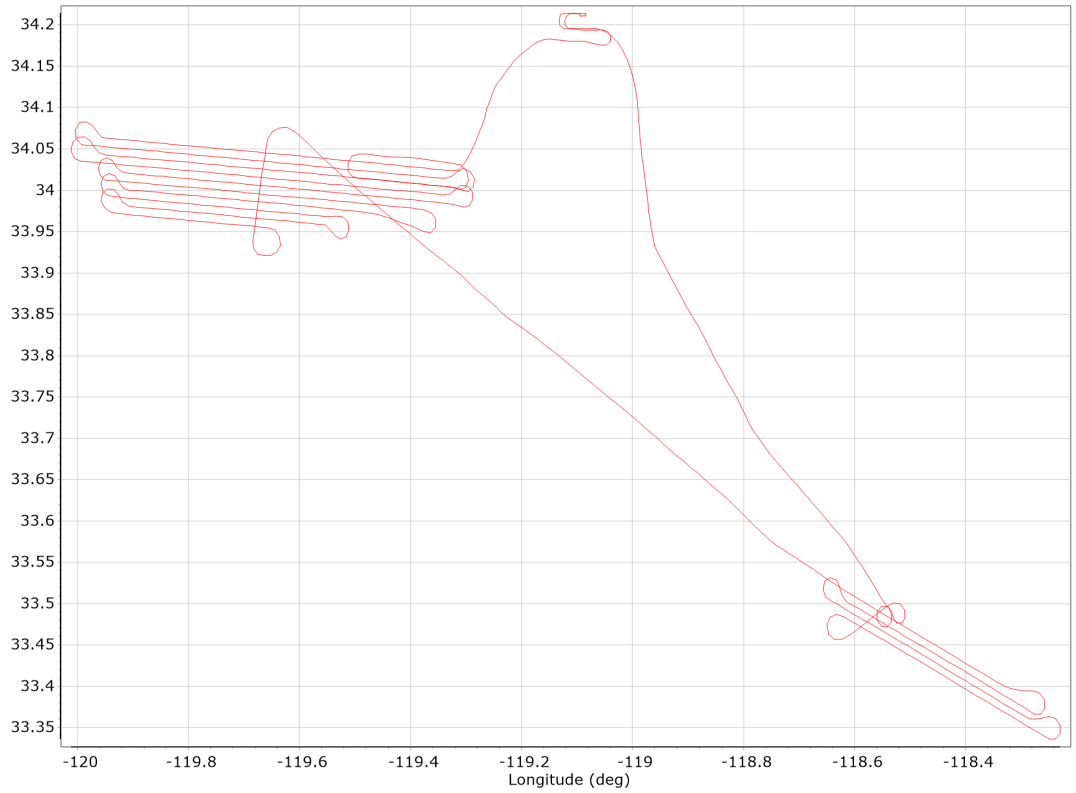


Body Angular Rate



Forward Processed Trajectory Information

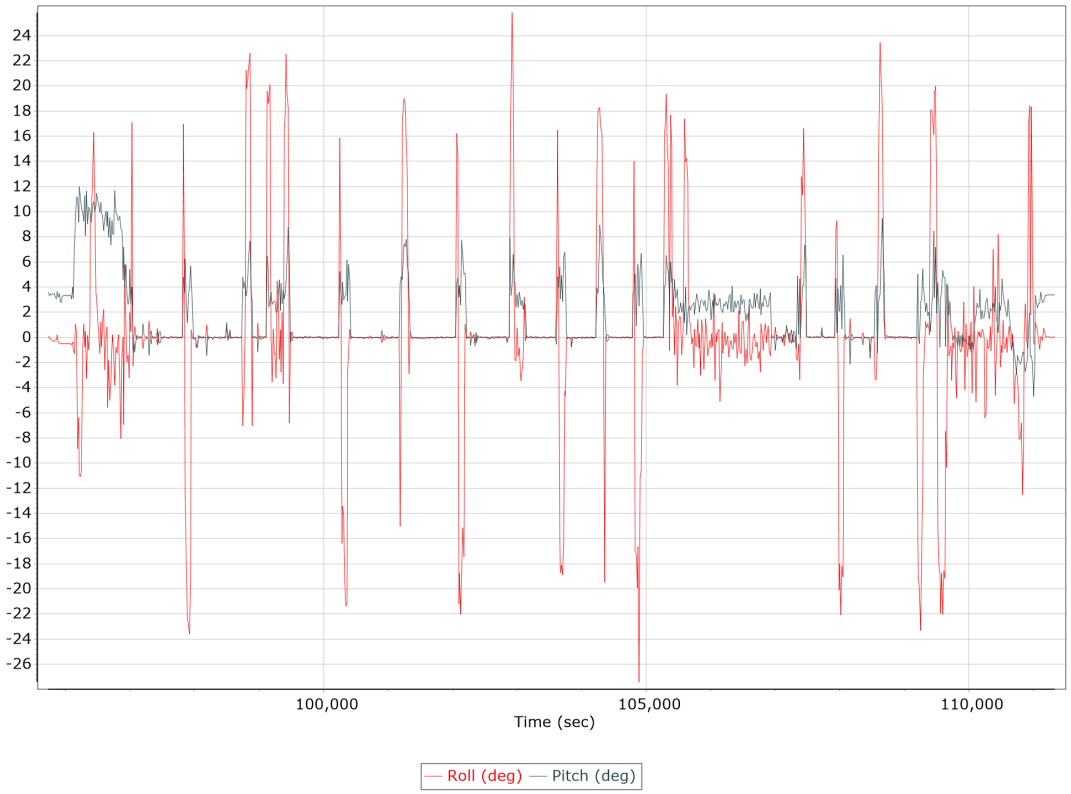
Top View



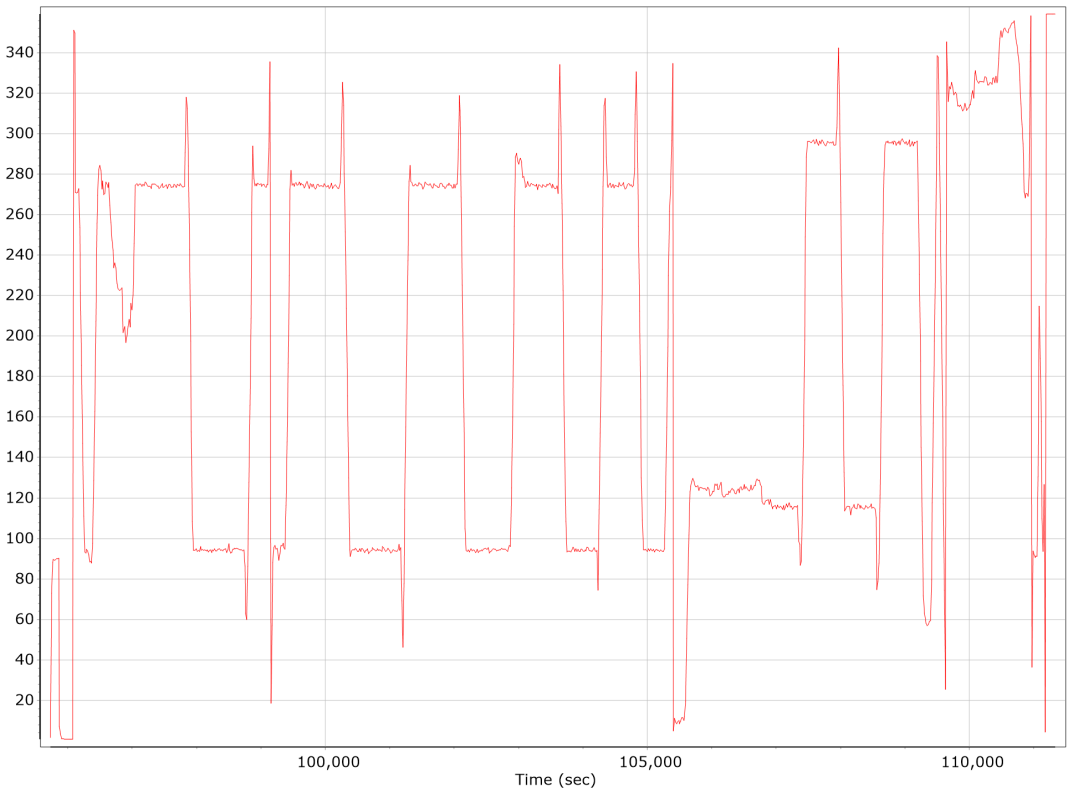
Altitude



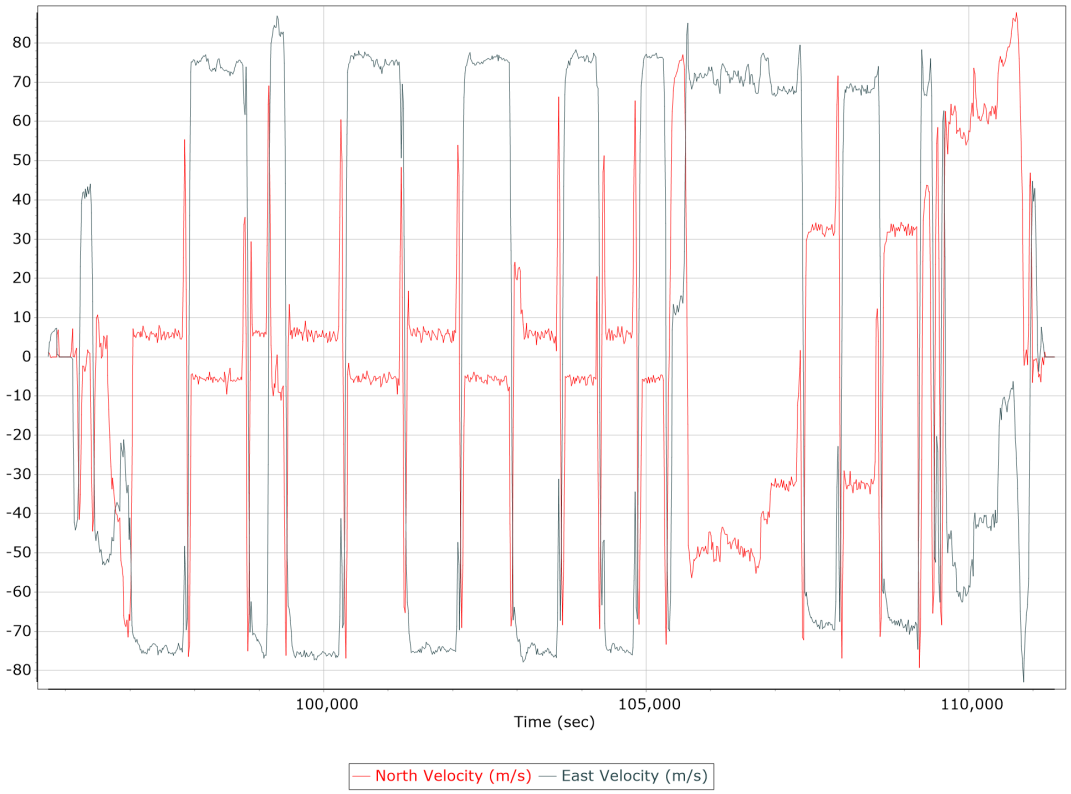
Roll/Pitch



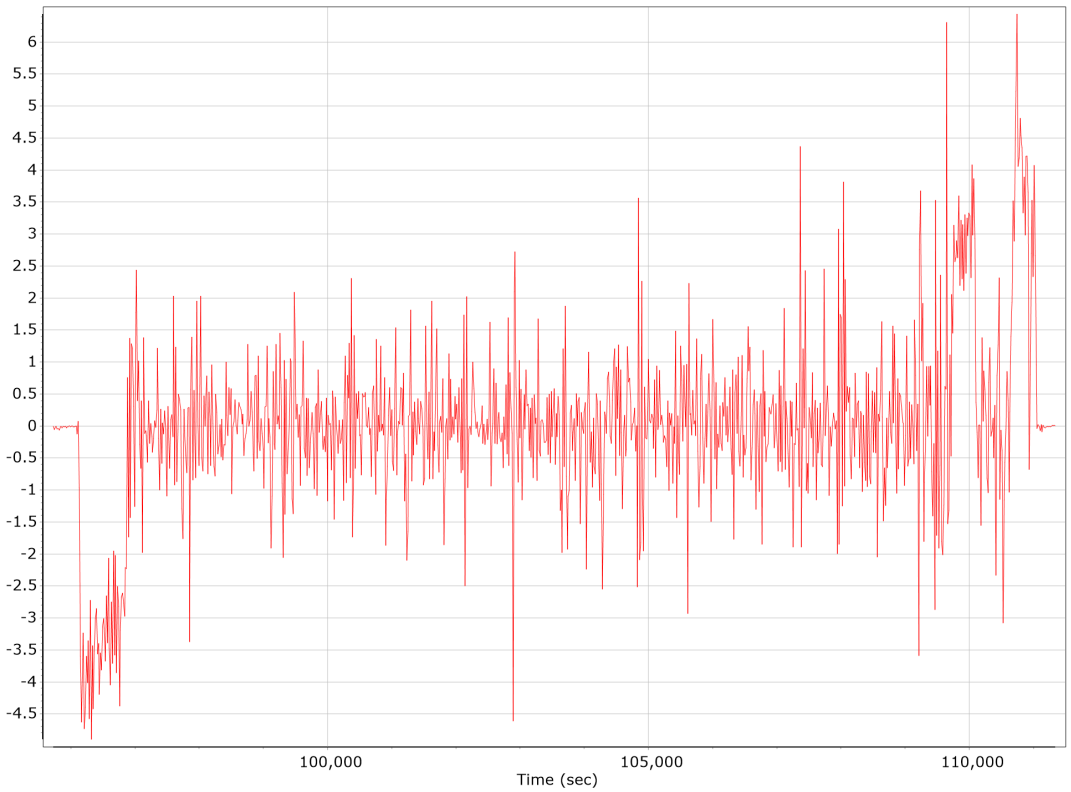
Heading



North/East Velocity



Down Velocity



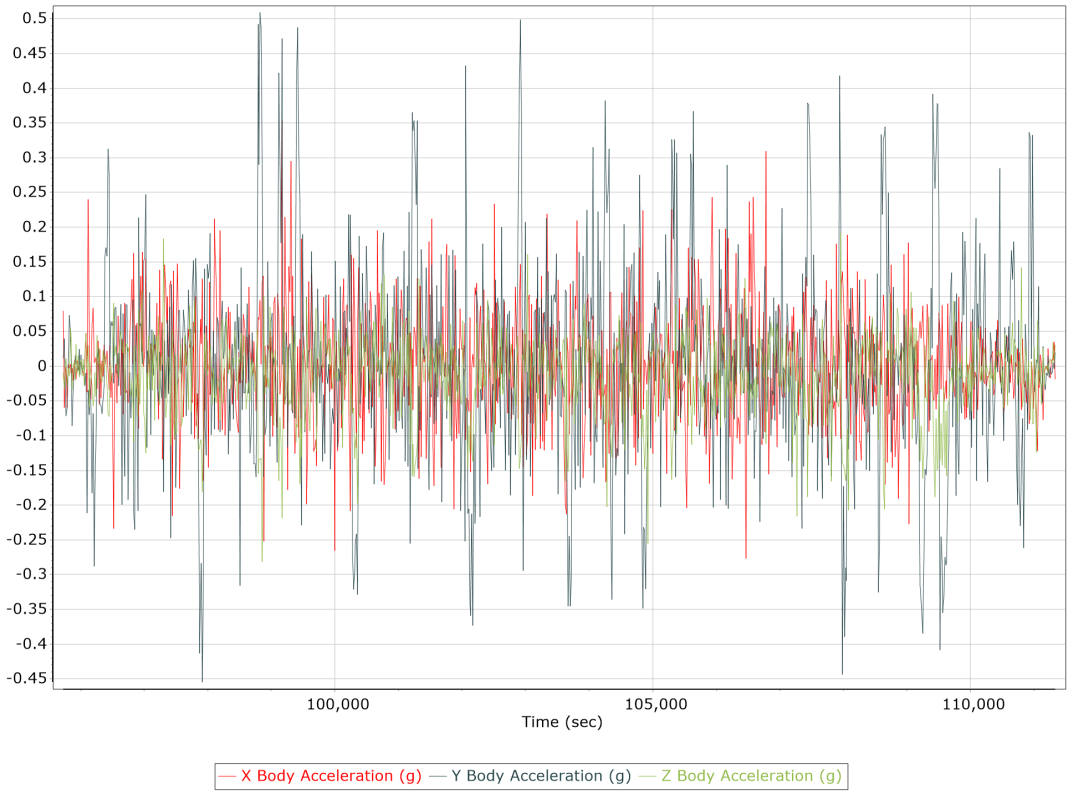
Total Speed



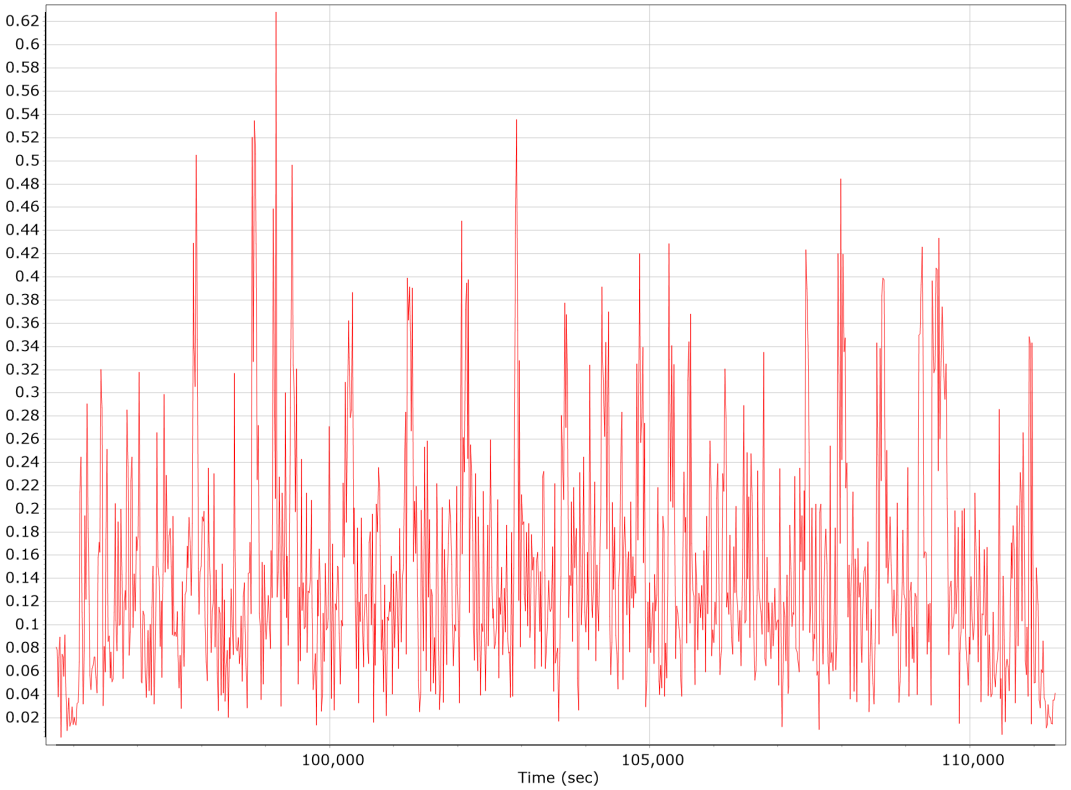
Ground Speed



Body Acceleration



Total Body Acceleration



Body Angular Rate

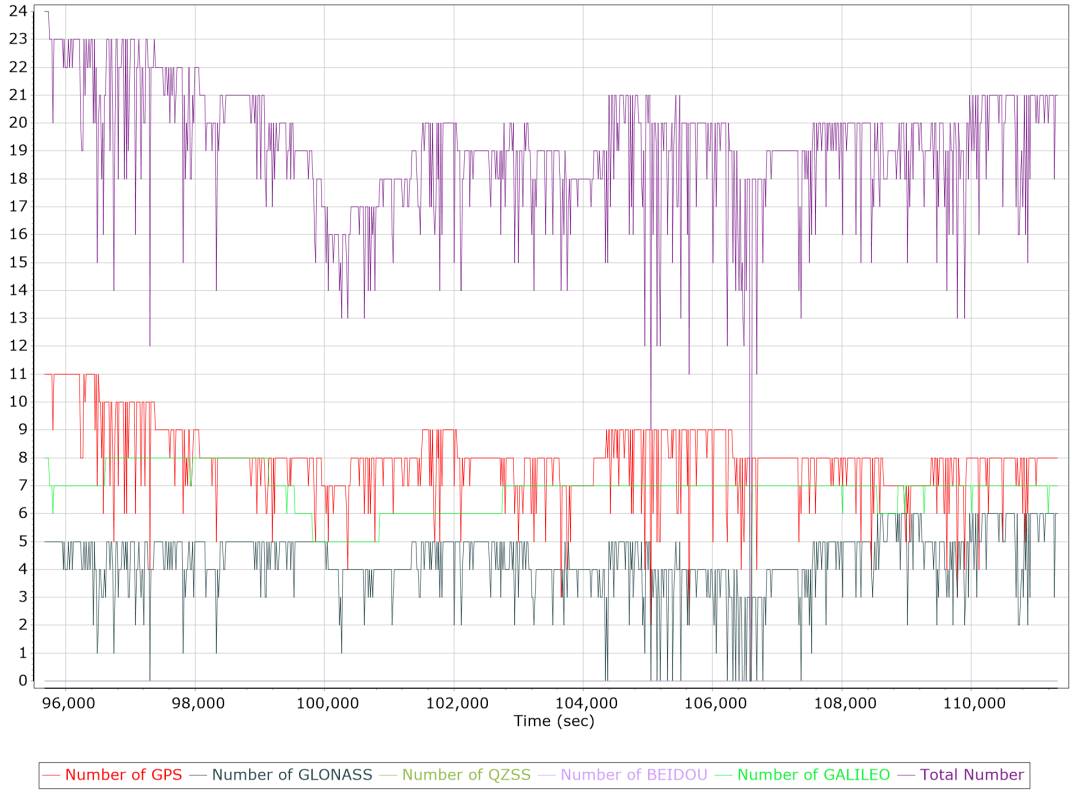


GNSS QC

GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	2	11	8
Number of GLONASS SV	0	6	4
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	5	8	7
Total number of SV	8	24	19
PDOP	1.04	4.04	1.26
QC Solution Gaps	2.00	17.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	15957.00	0.00	23.00
Percentage	99.86	0.00	0.14

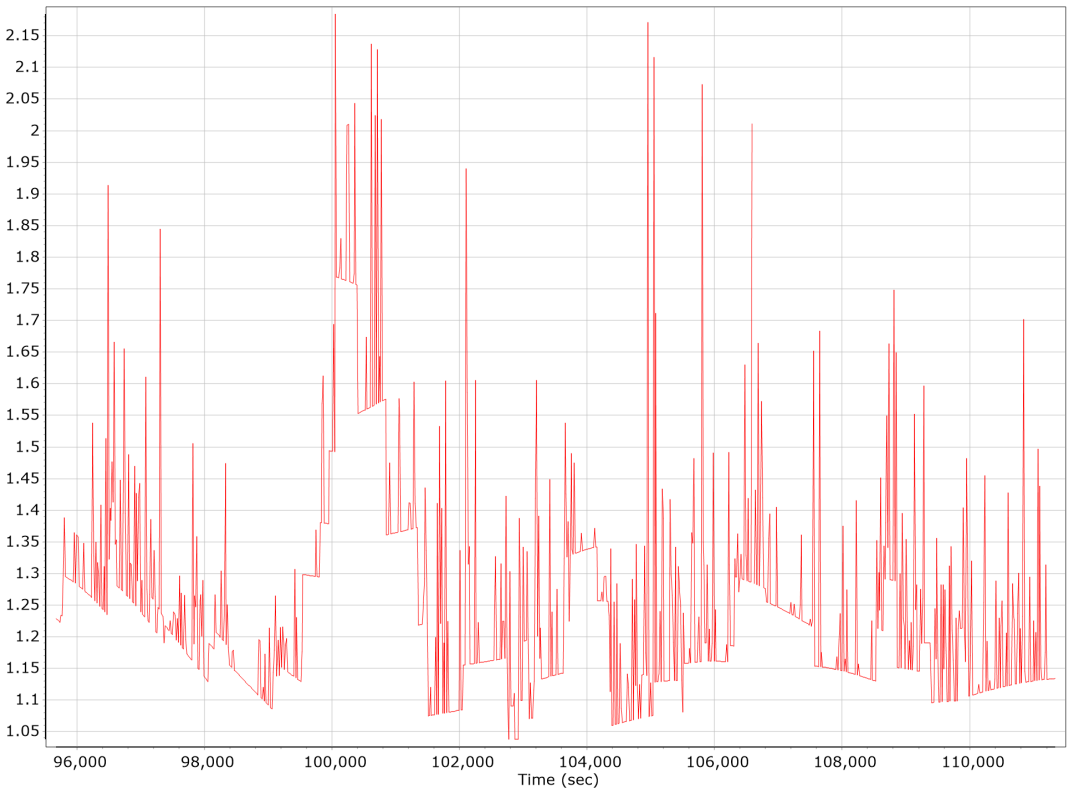
Num SVs in solution



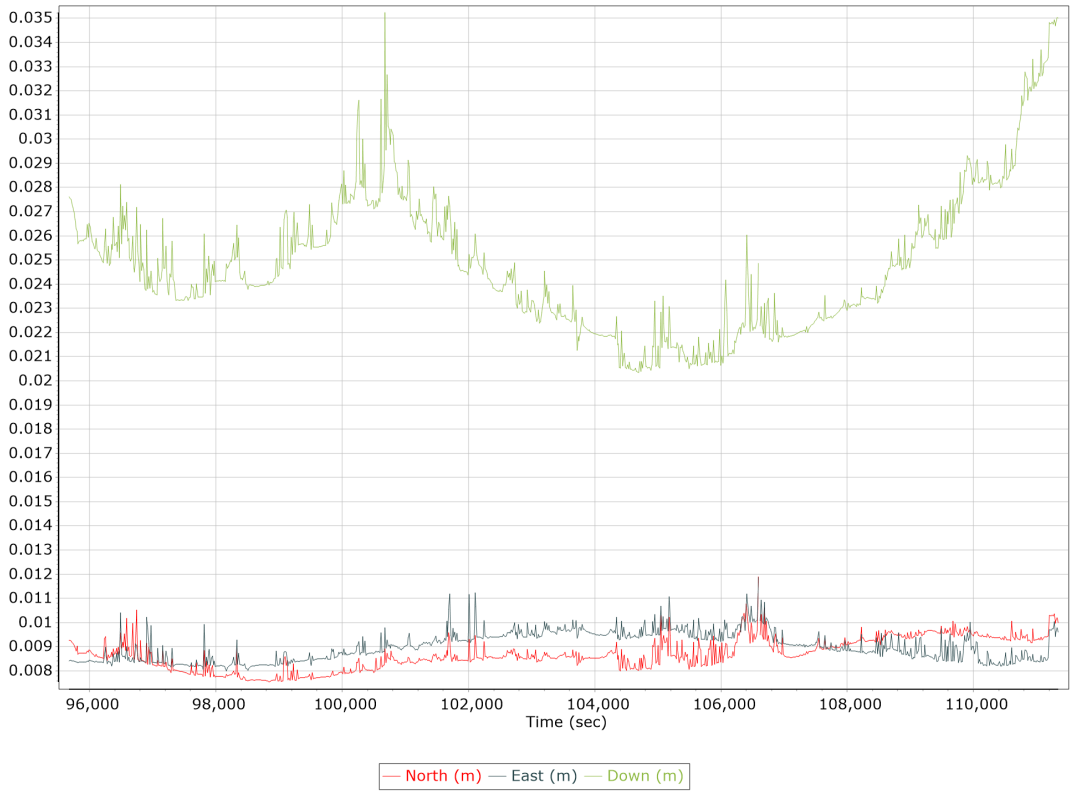
Forward/Reverse Separation



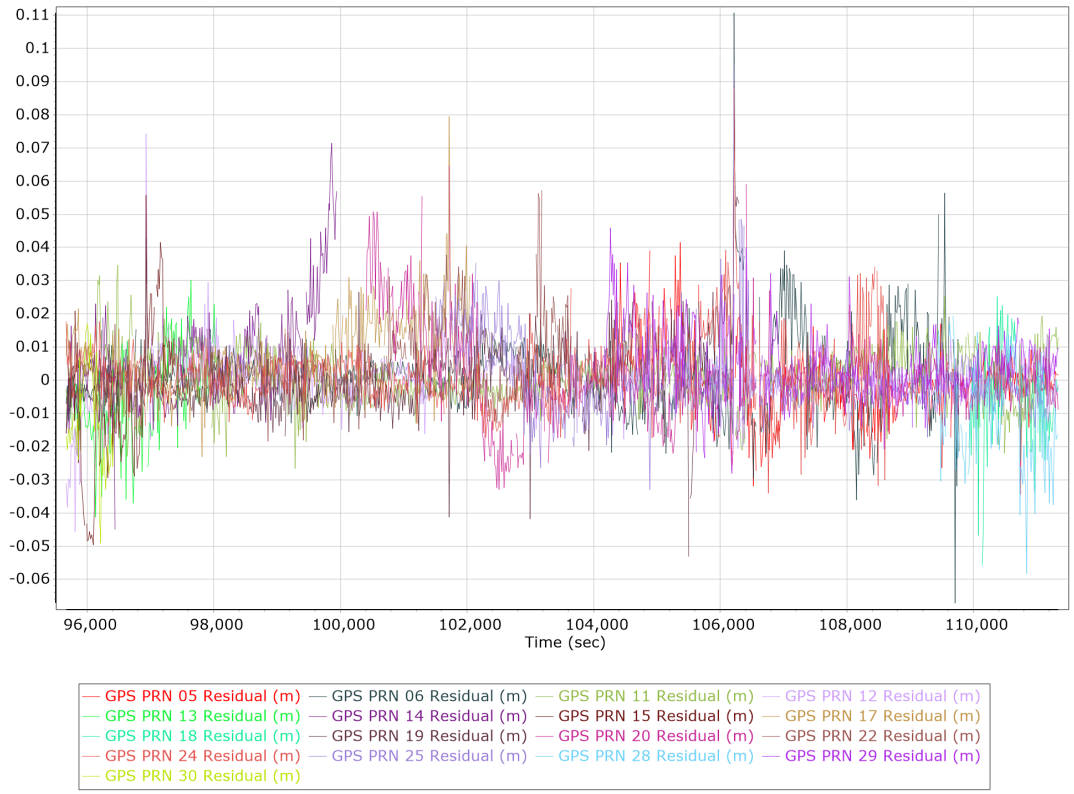
PDOP



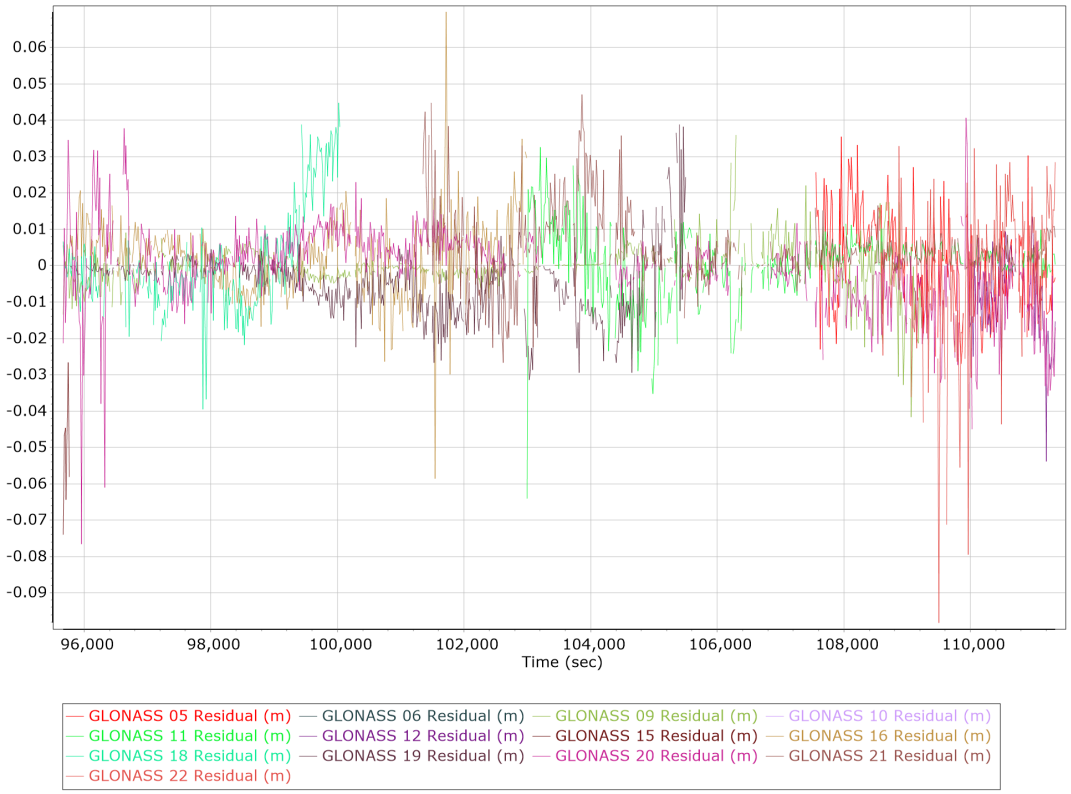
Estimated Position Accuracy



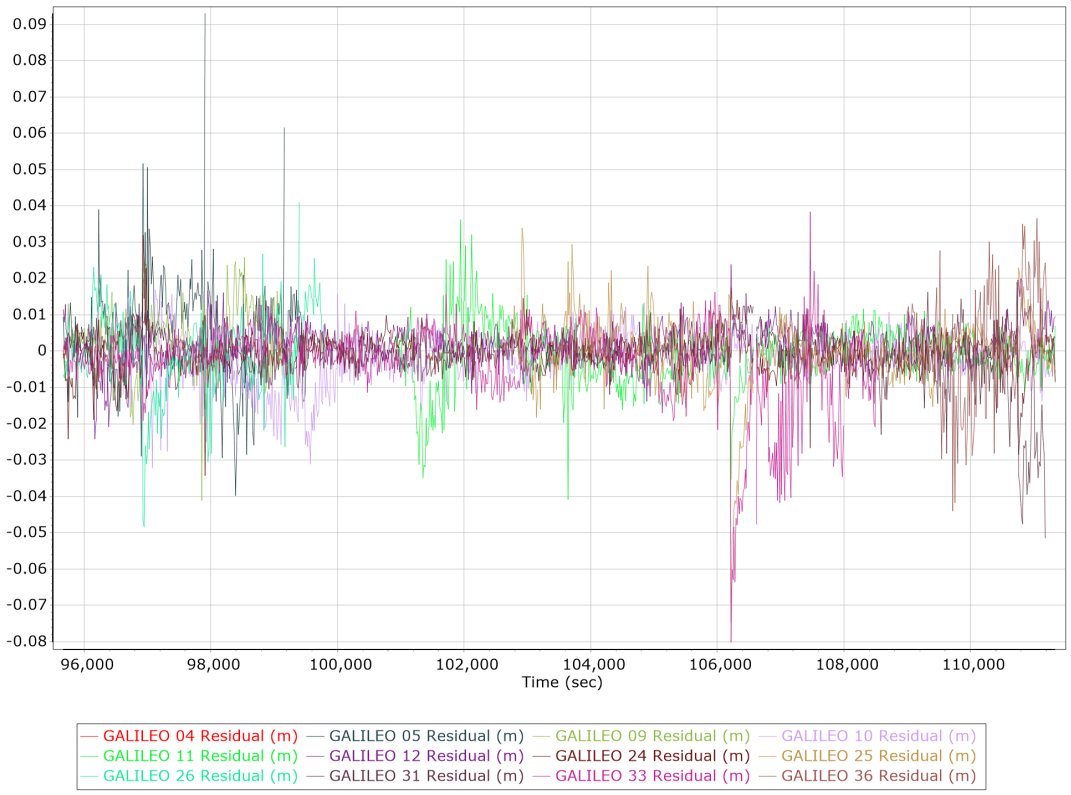
GPS Residuals



GLONASS Residuals



GALILEO Residuals



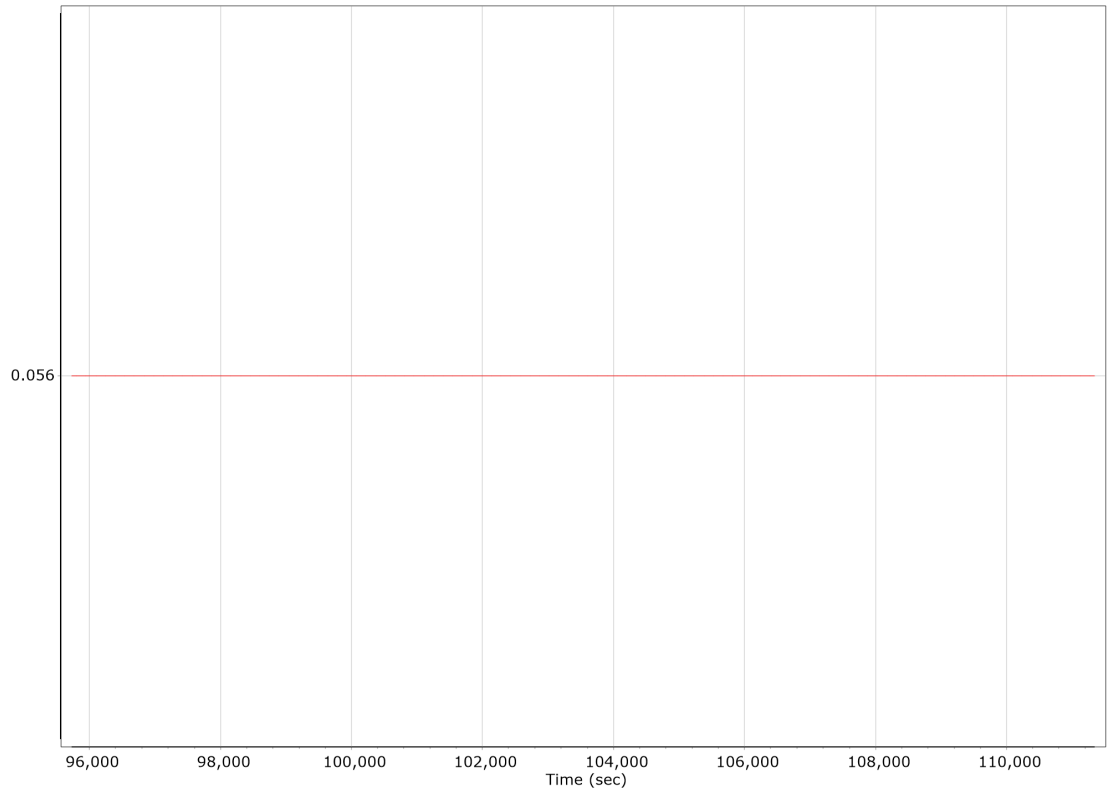
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	95341.000 (12/4/2023 2:29:01 AM)		
Processing end time	111349.000 (12/4/2023 6:55:49 AM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.056	0.055	-1.294
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

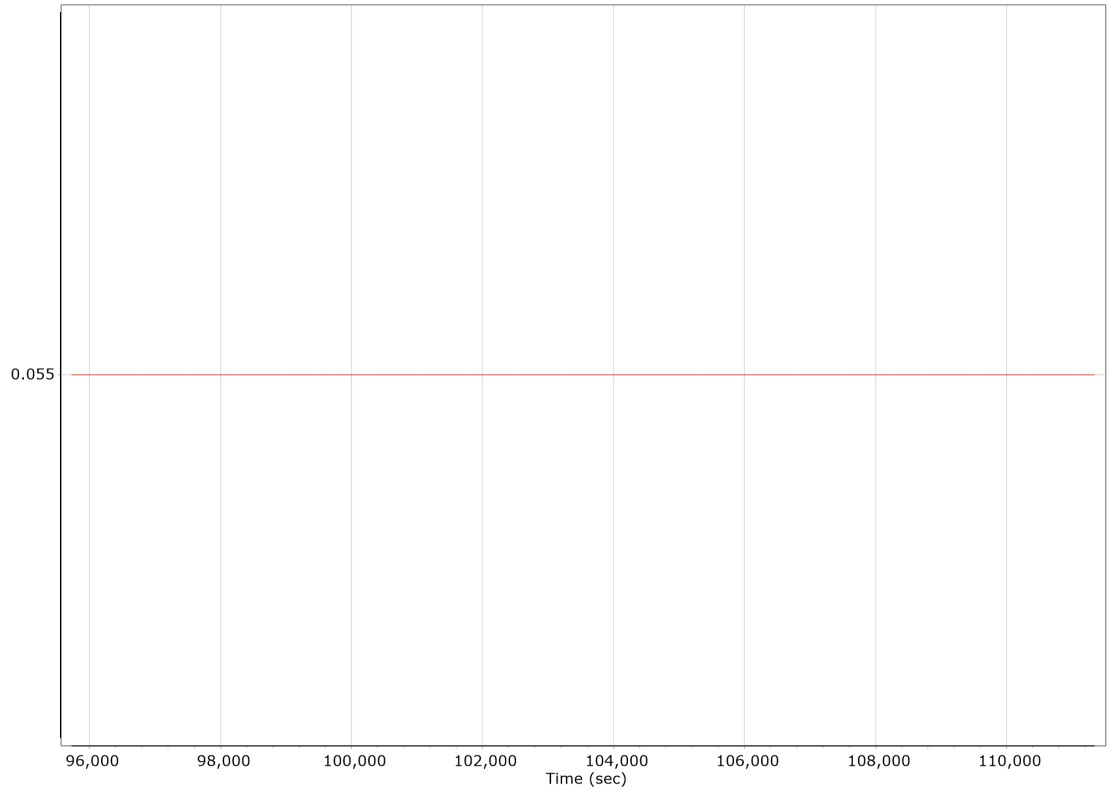
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

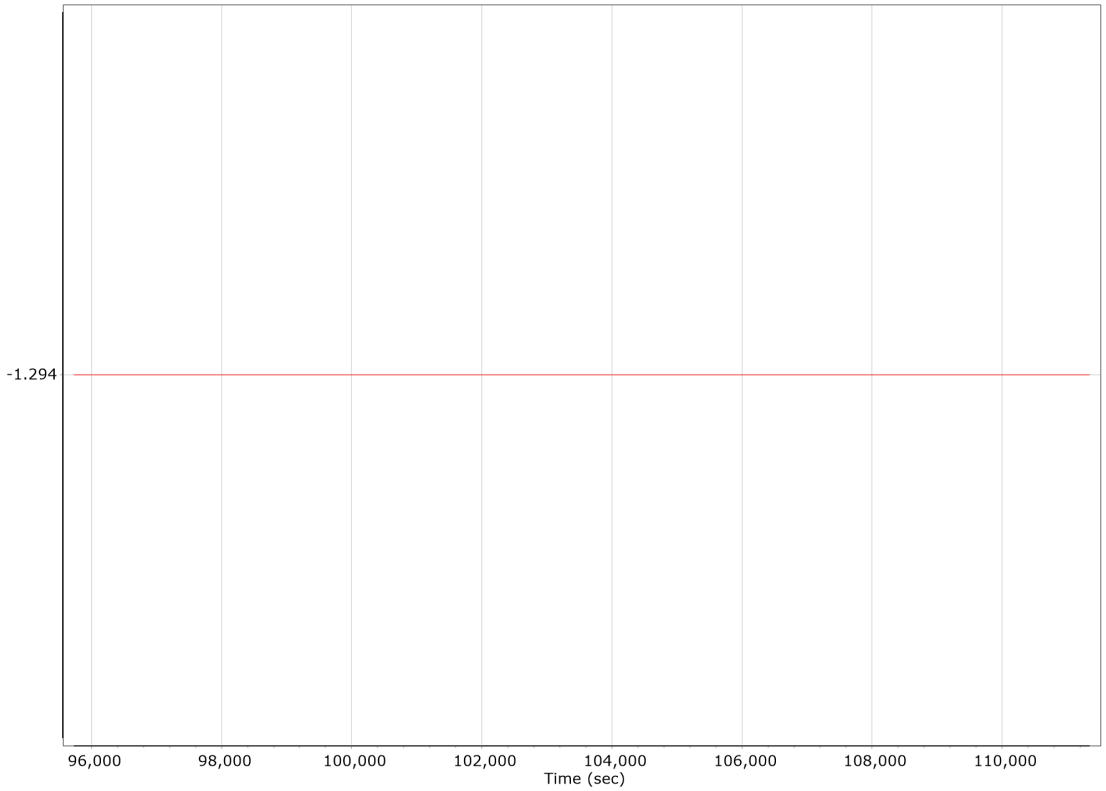
X Reference-Primary GNSS Lever Arm (m)



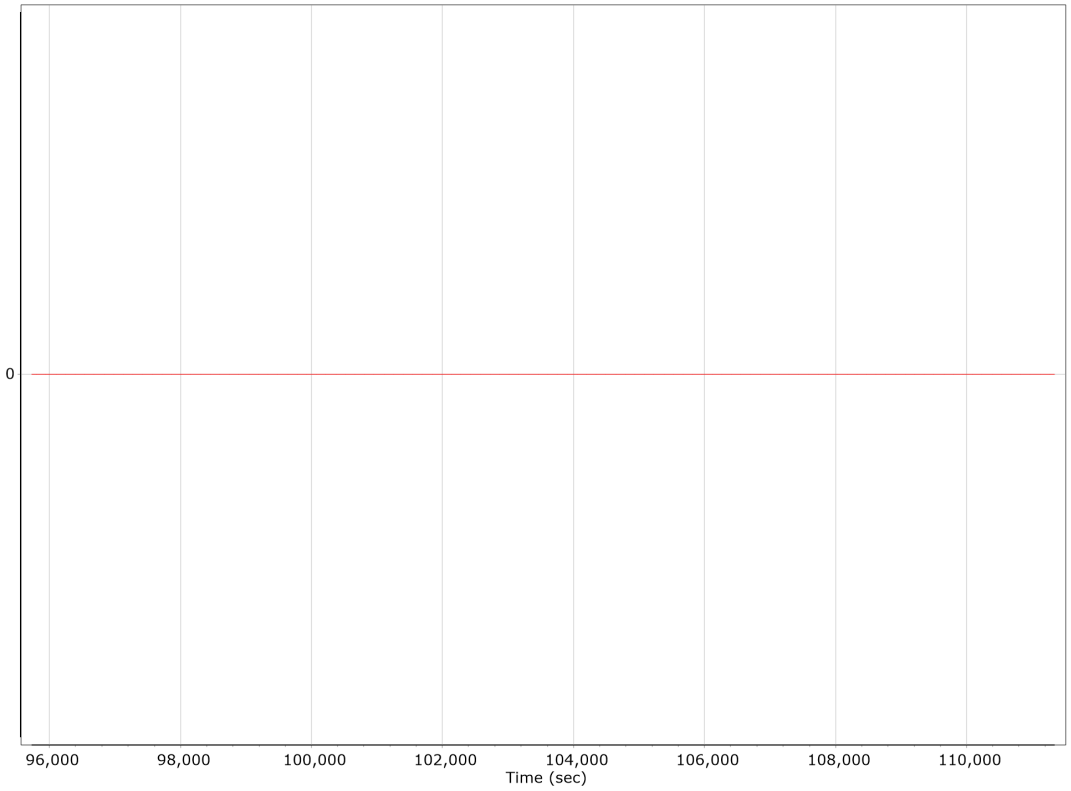
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



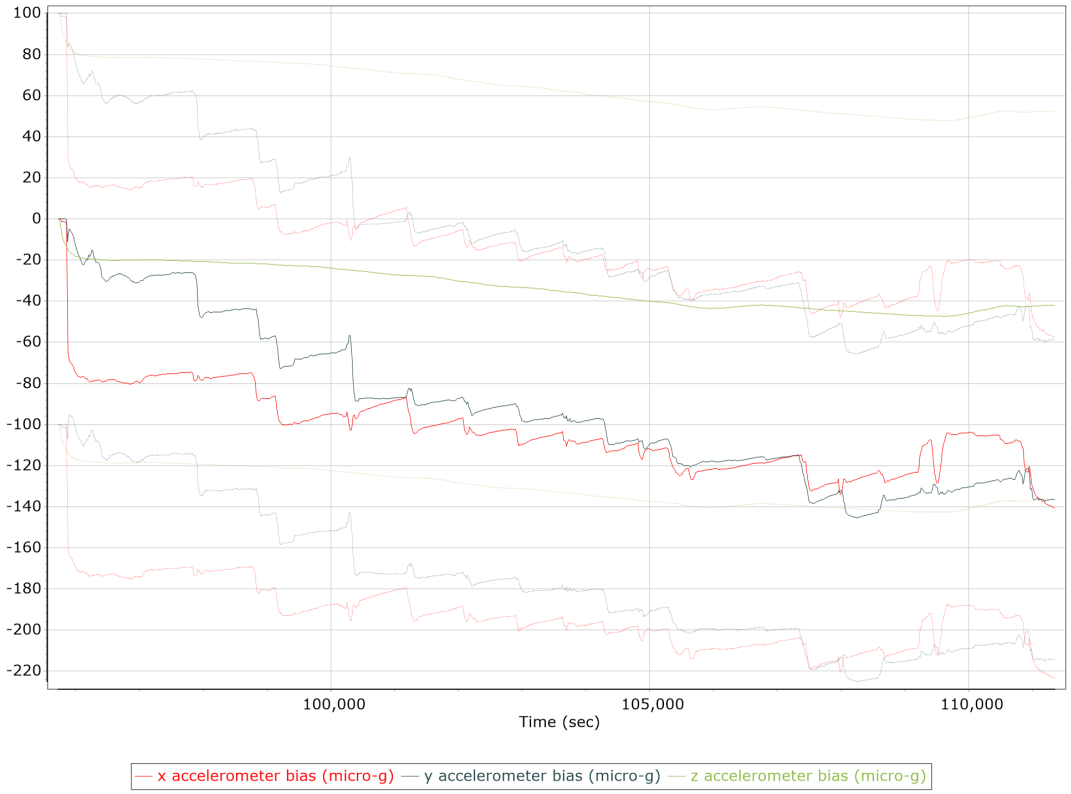
Reference-Primary GNSS Lever Arm Figure of Merit



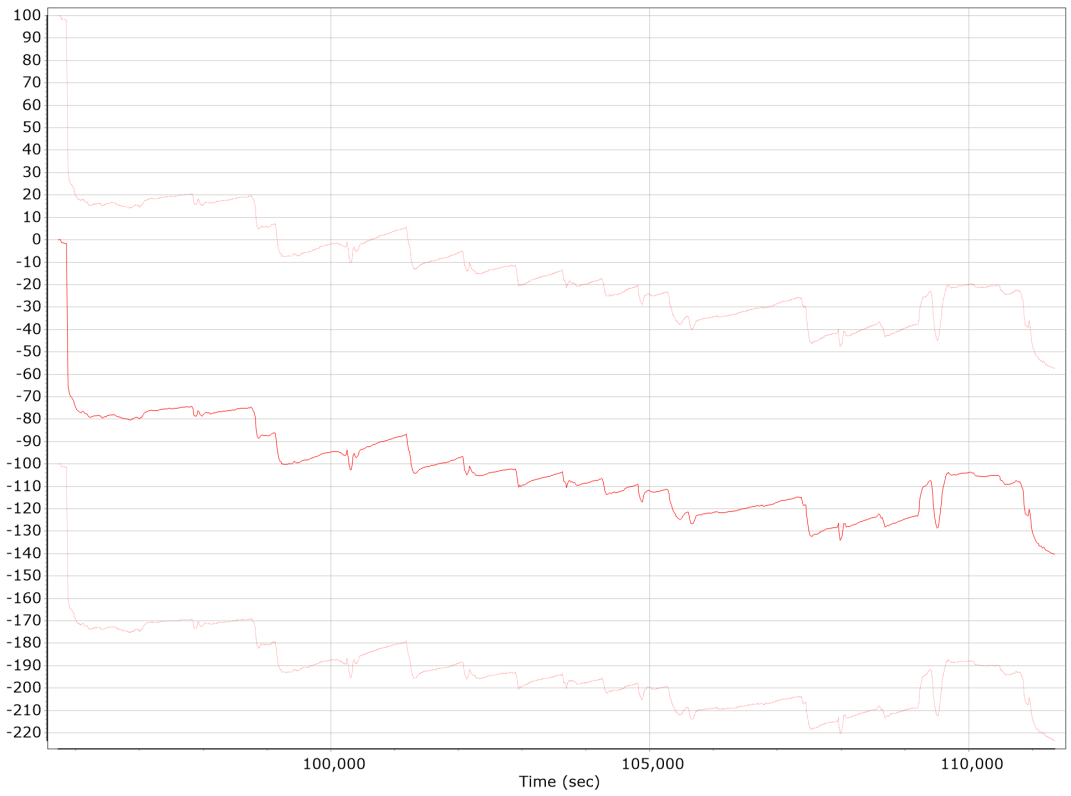
IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

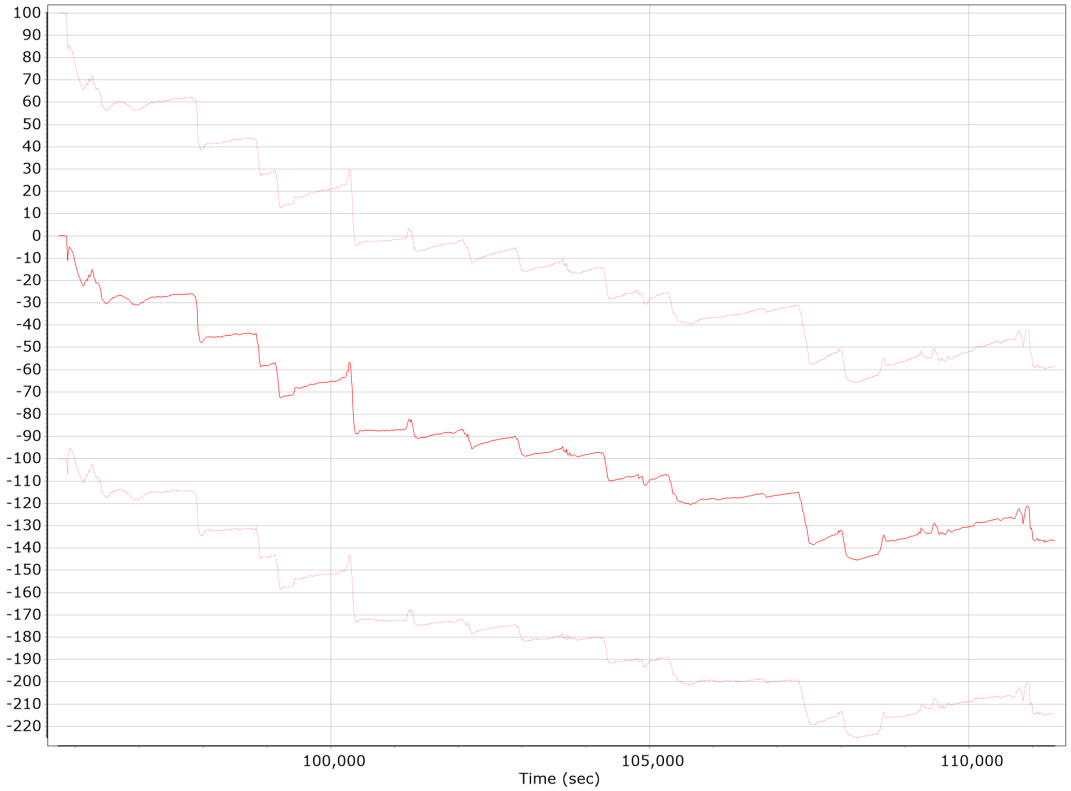
Accelerometer Bias (micro-g)



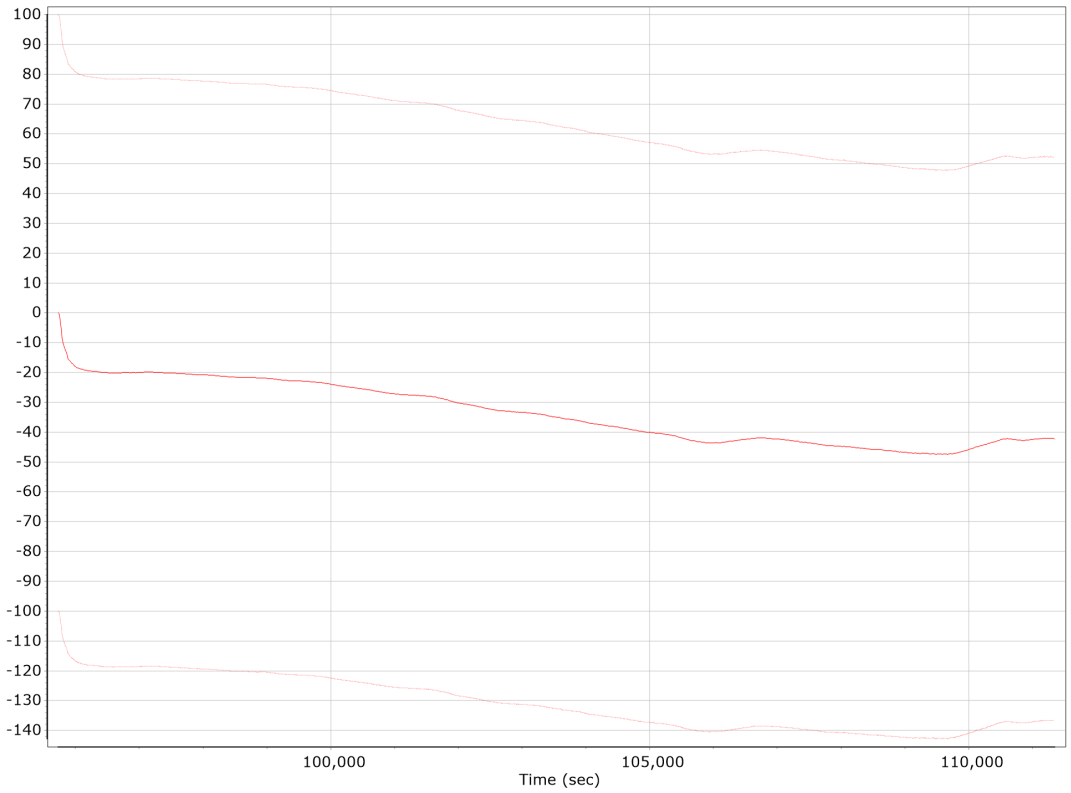
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



X Accelerometer Scale Error (ppm)



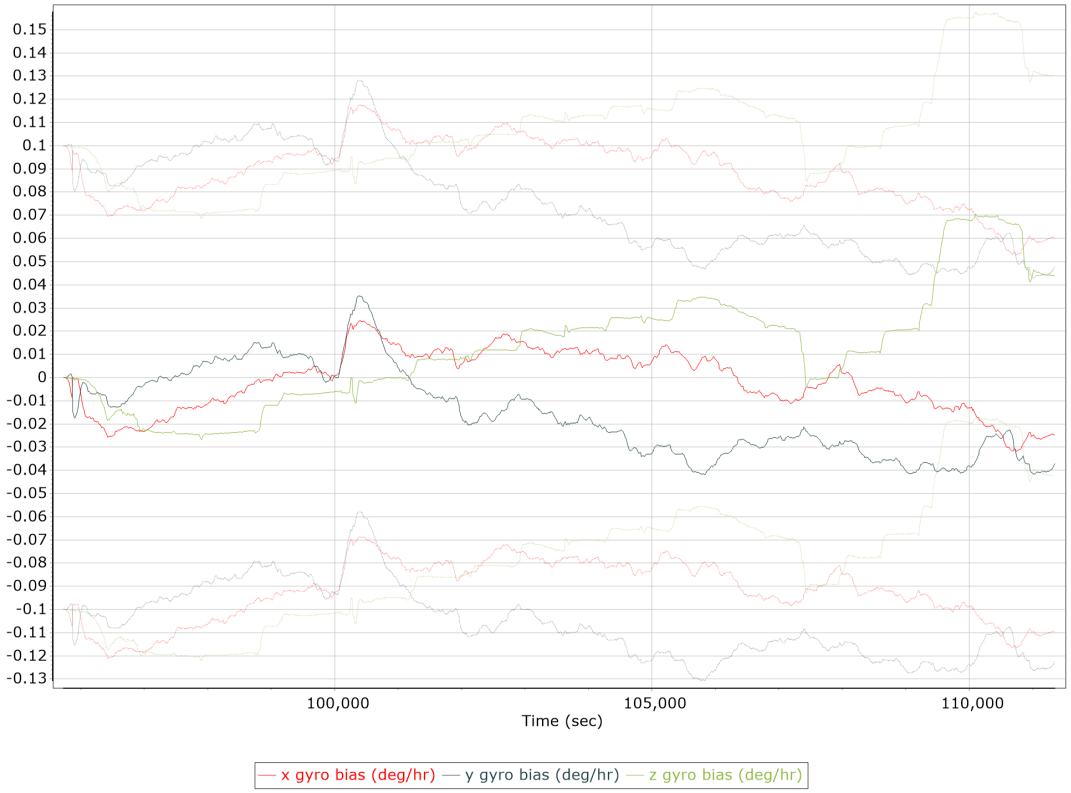
Y Accelerometer Scale Error (ppm)



Z Accelerometer Scale Error (ppm)



Gyro Bias (deg/h)



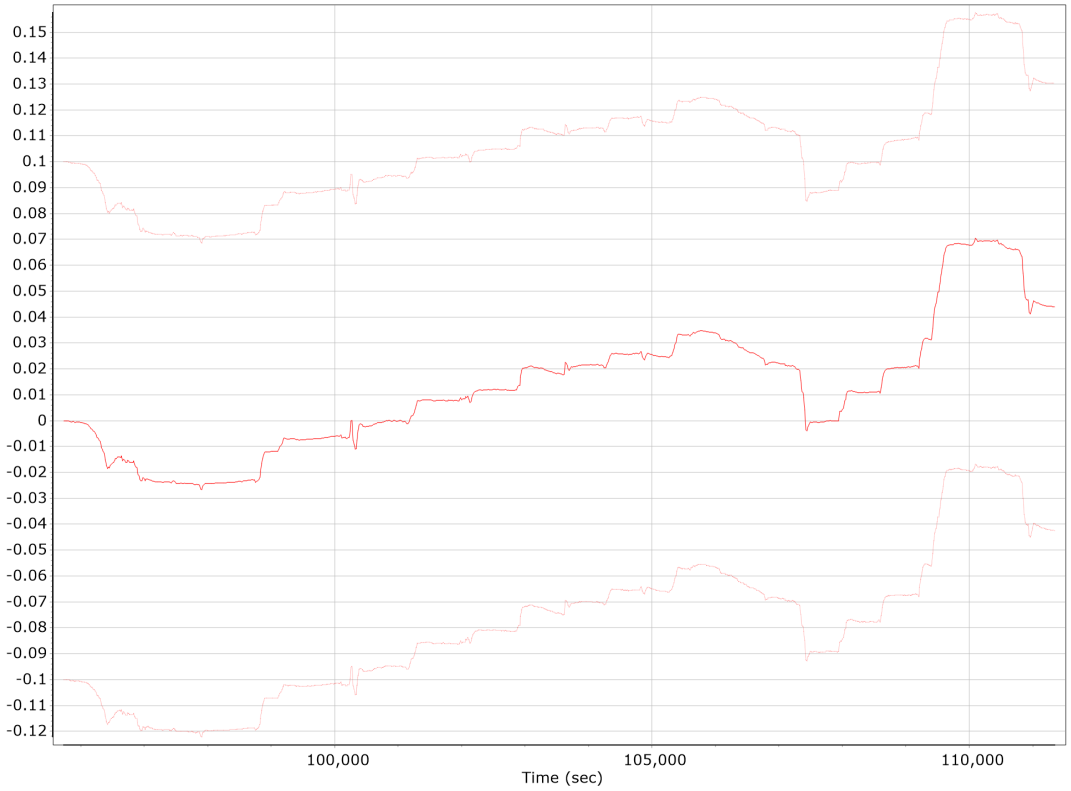
X Gyro Bias (deg/h)



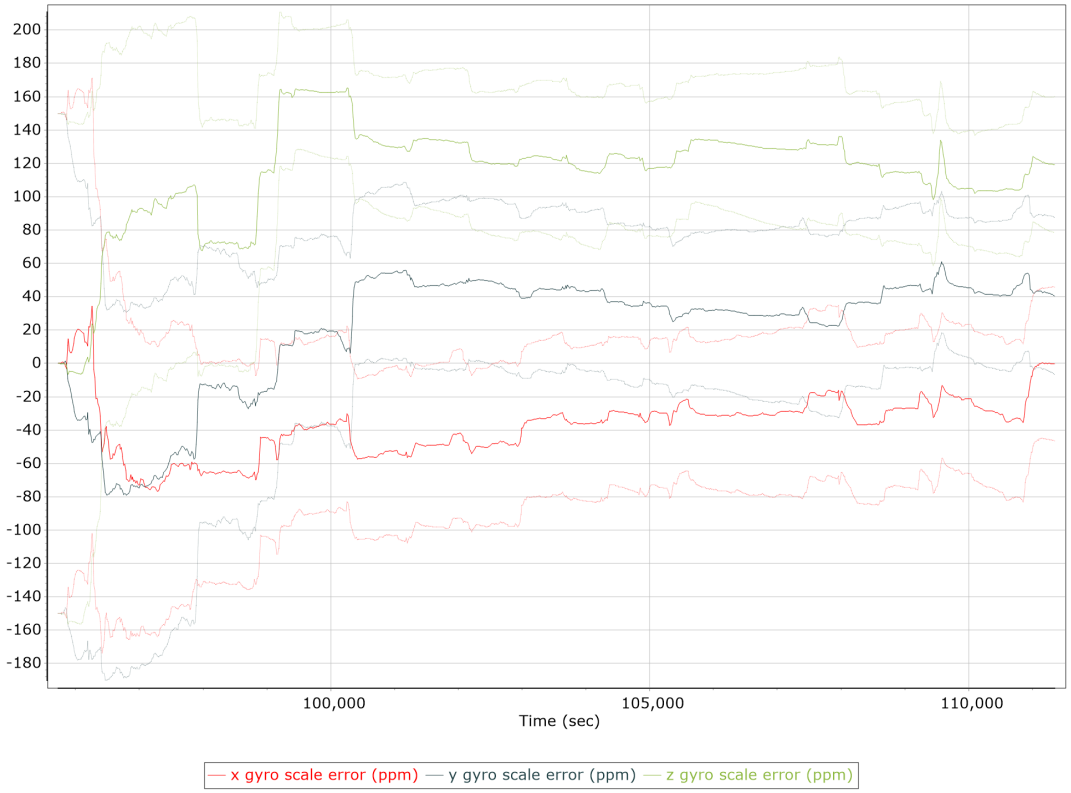
Y Gyro Bias (deg/h)



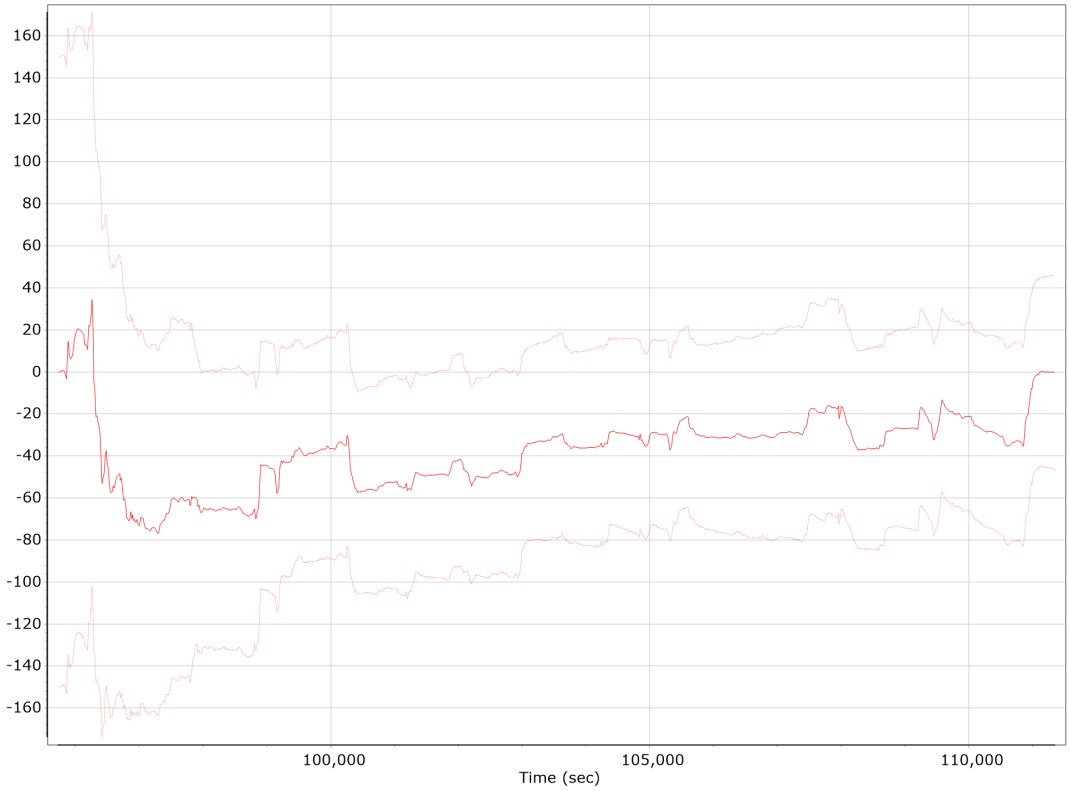
Z Gyro Bias (deg/h)



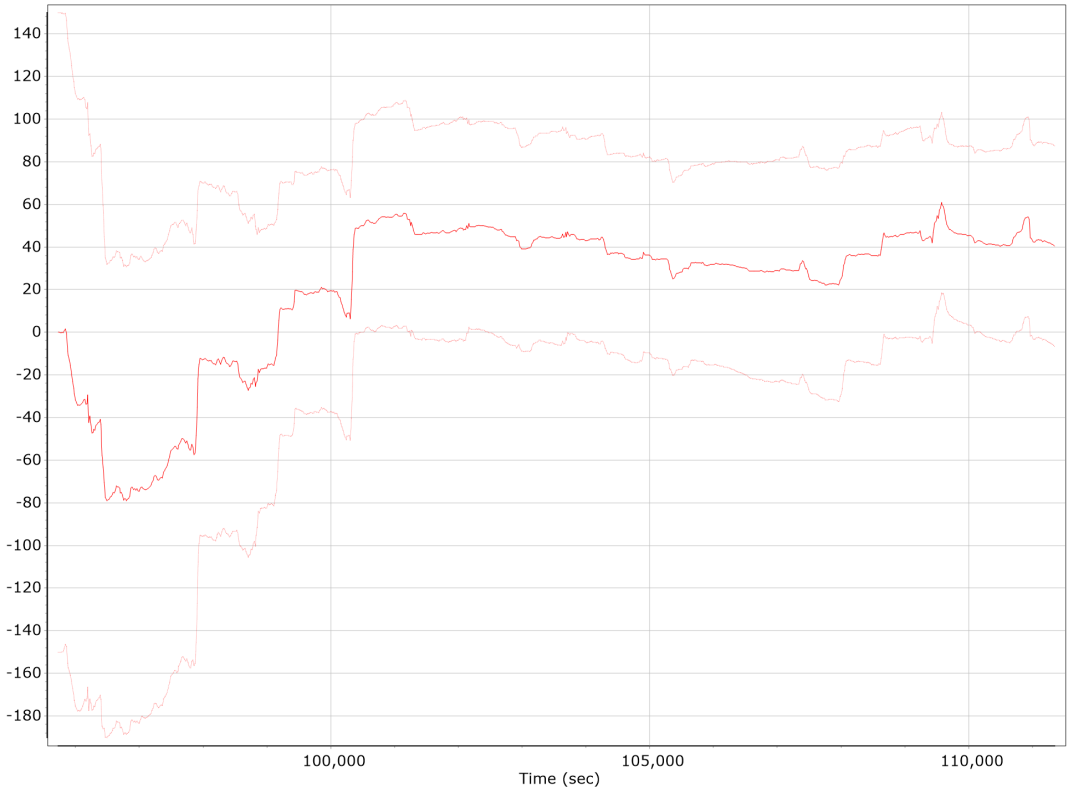
Gyro Scale Error (ppm)



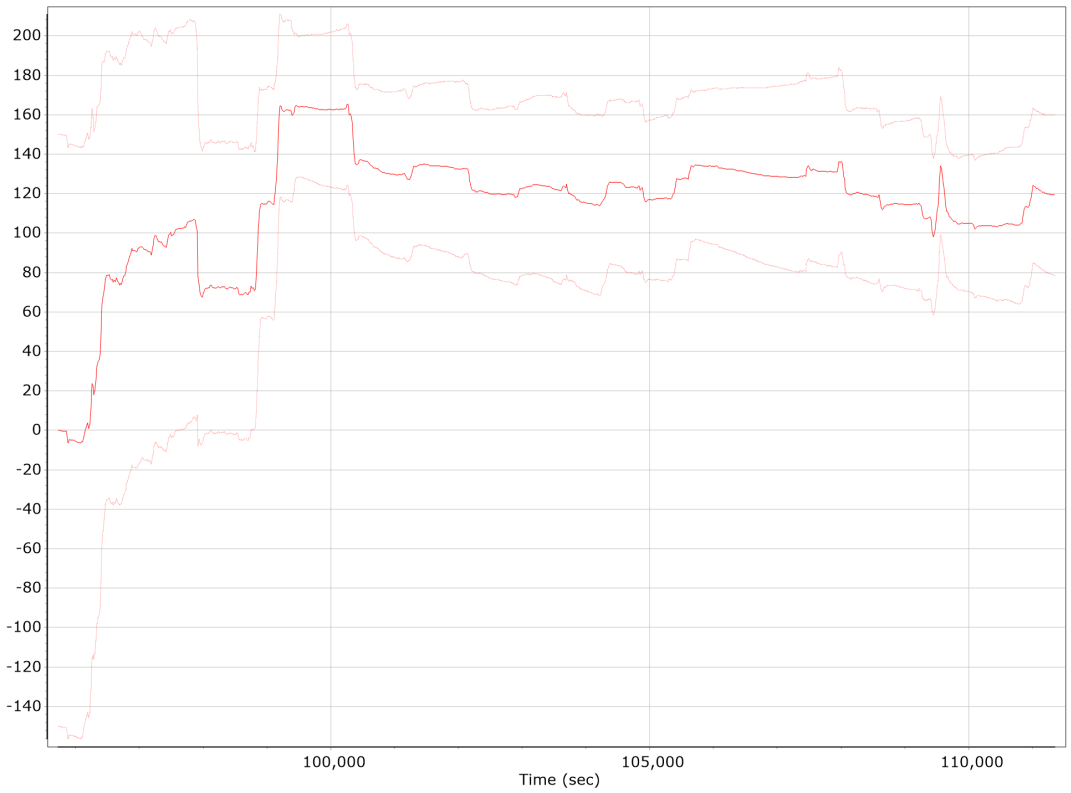
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)



Z Gyro Scale Error (ppm)



Smoothed Performance Metrics

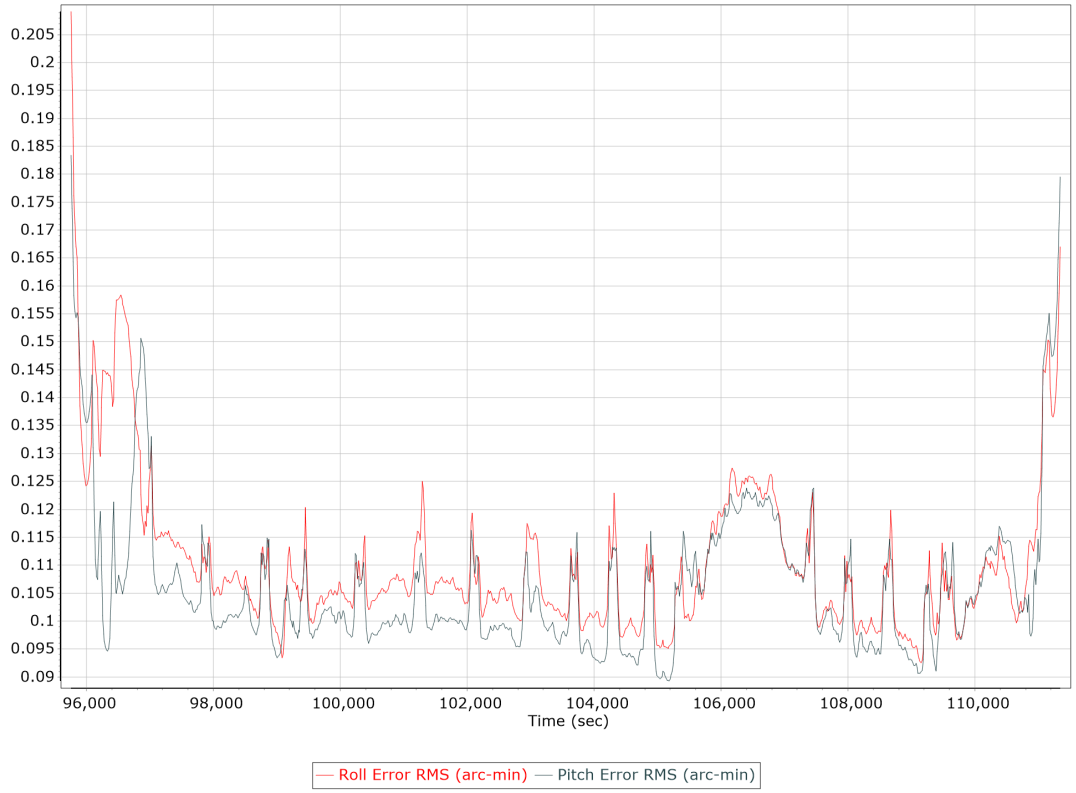
Position Error RMS (m)



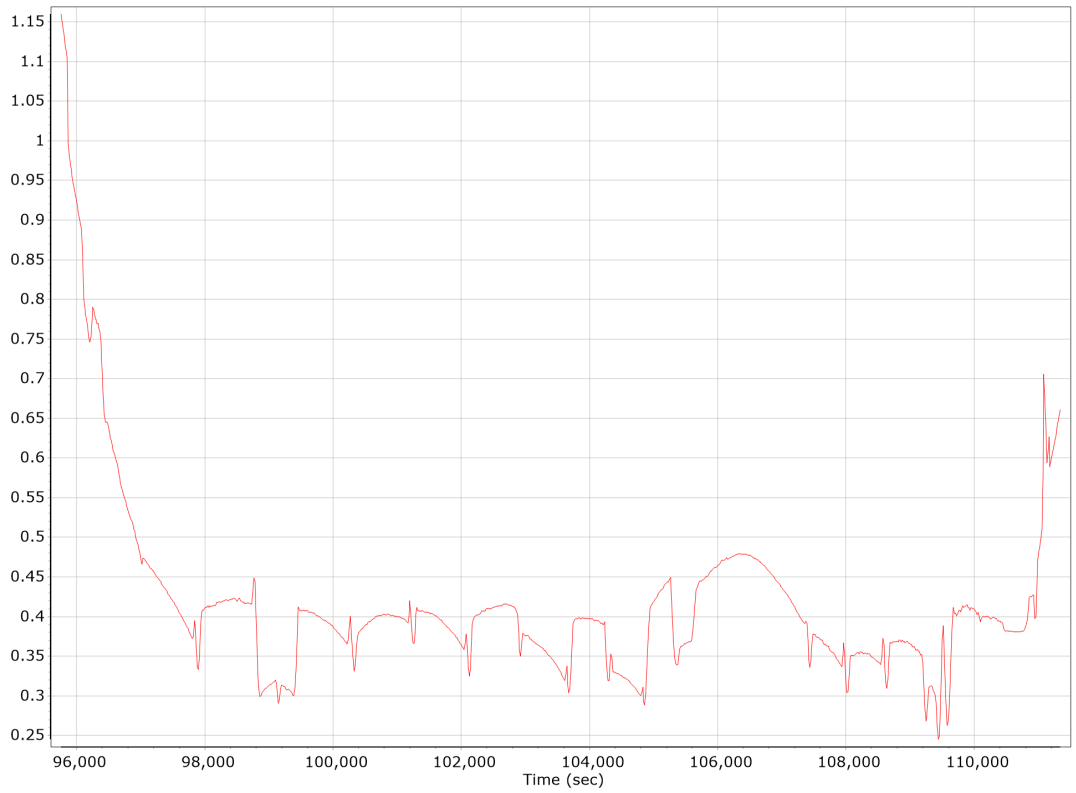
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)



Heading Error RMS (arc-min)

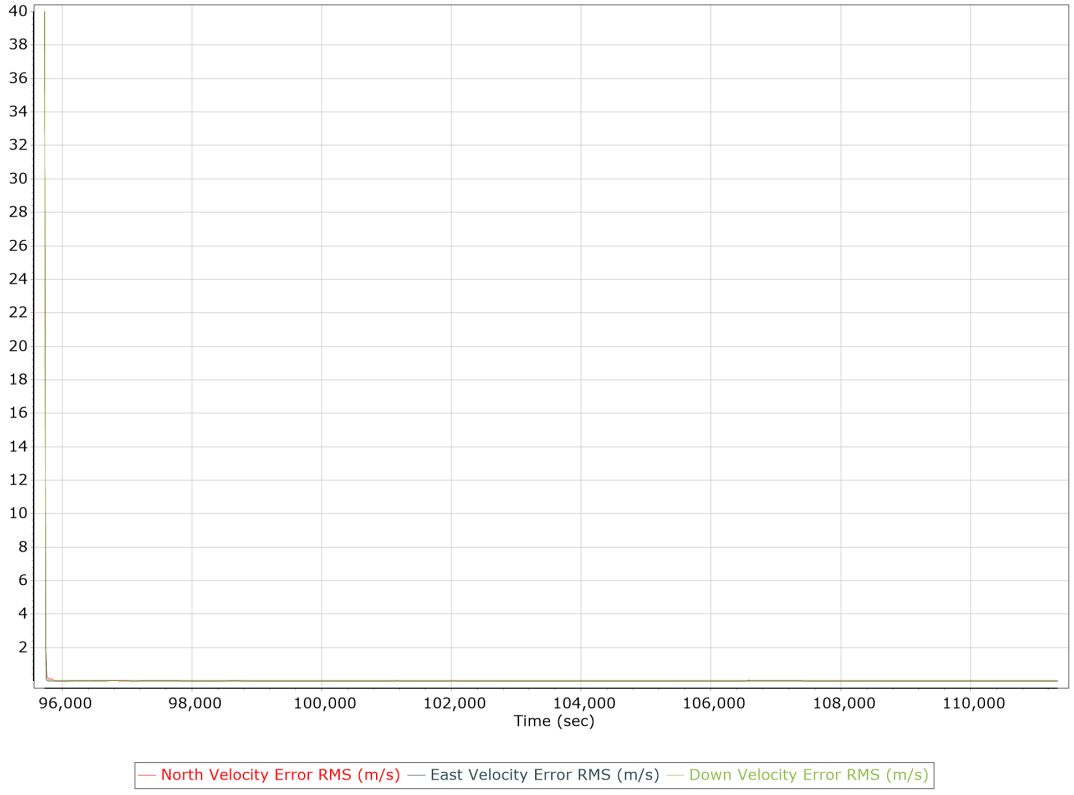


Forward Processed Performance Metrics

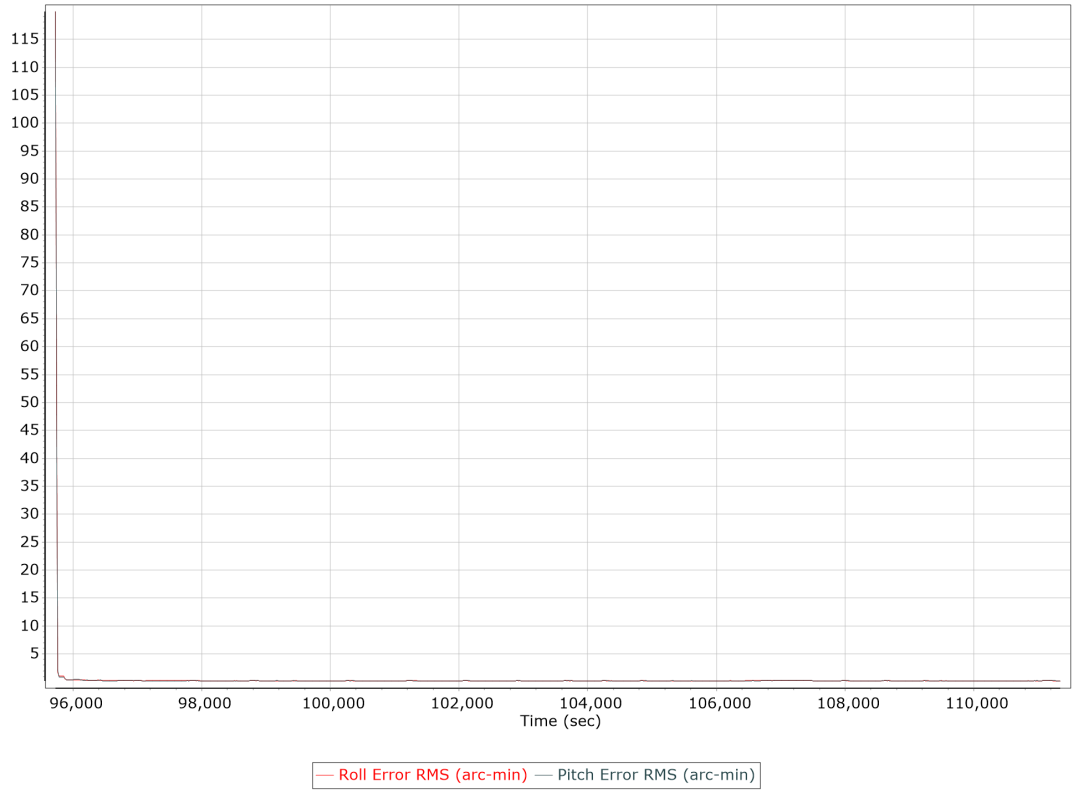
Position Error RMS (m)



Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

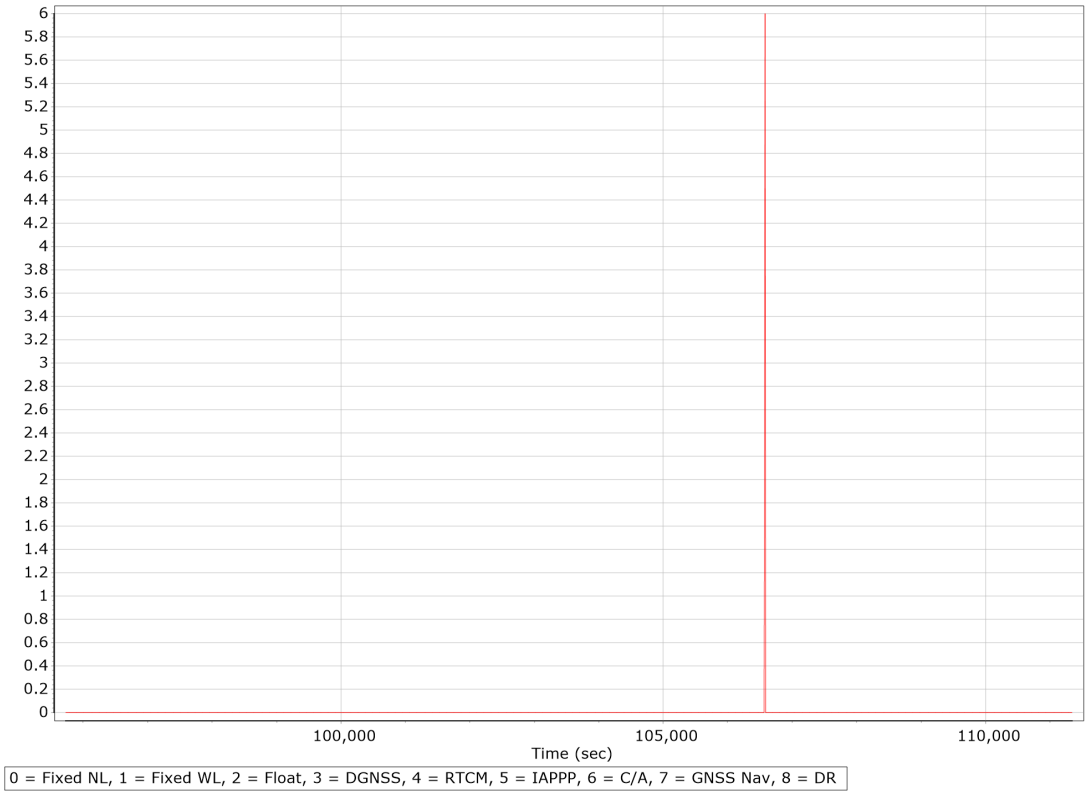


Heading Error RMS (arc-min)



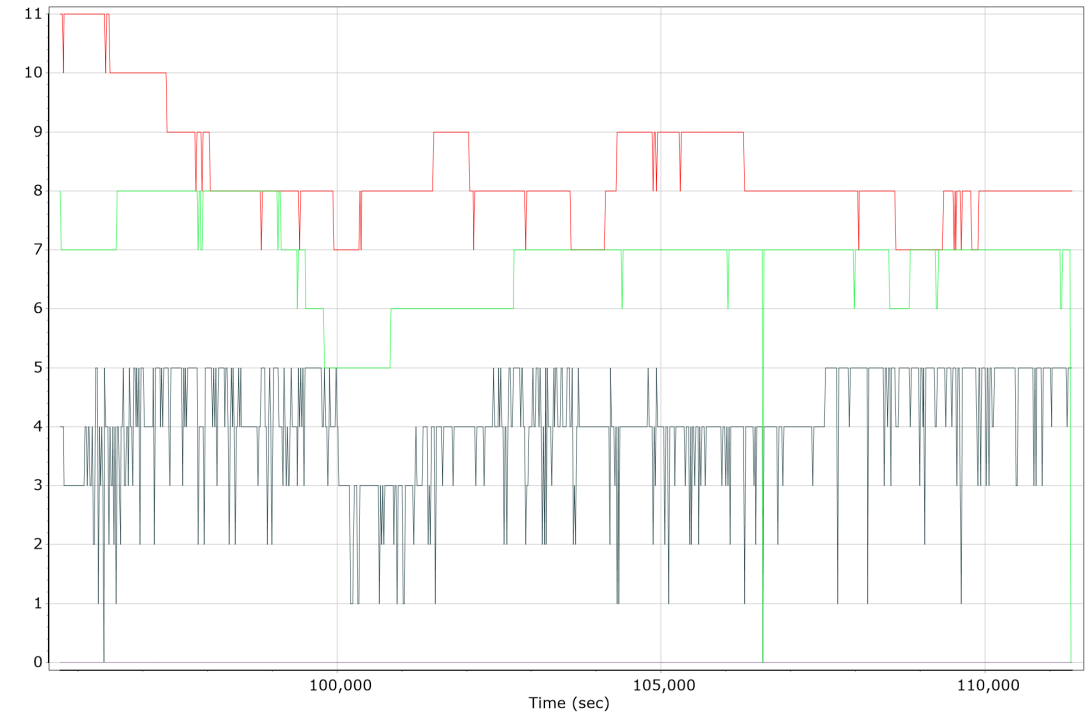
Forward Processed Solution Status

Processing Mode

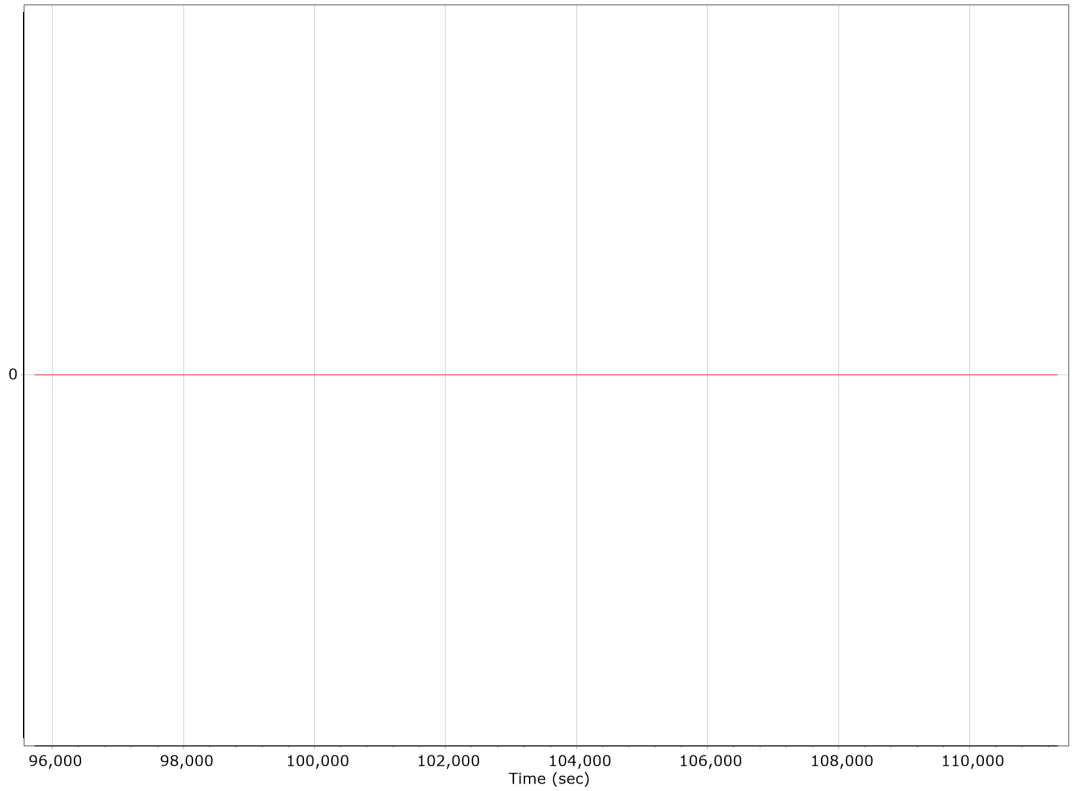


0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGNSS, 4 = RTCM, 5 = IAPPP, 6 = C/A, 7 = GNSS Nav, 8 = DR

Number of Satellites



Baseline Length



General Information

Mission Information

Project name	12042023B_3061
Processing date	2023-12-06 17:55:09
Mission date	2023-12-05 05:09:42
Mission duration	02:45:25.343
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N8902
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
231205_050452_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm3390.23g	GLONASS Broadcast Ephemeris
Ephm3390.23n	GPS Broadcast Ephemeris

Output Files

Filename	File type
sbet_12042023B_3061.out	SBET Trajectory File

Rover Data Summary

First raw data file	231205_050452_INS-GPS_1.raw		
Last raw data file	231205_050452_INS-GPS_1.raw		
Start GPS week	2291		
Start time	191363.615 (12/5/2023 5:09:23 AM)		
End time	201288.958 (12/5/2023 7:54:48 AM)		
Start of fine alignment	191606.476 (12/5/2023 5:13:26 AM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	0.000	0.000	0.000
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

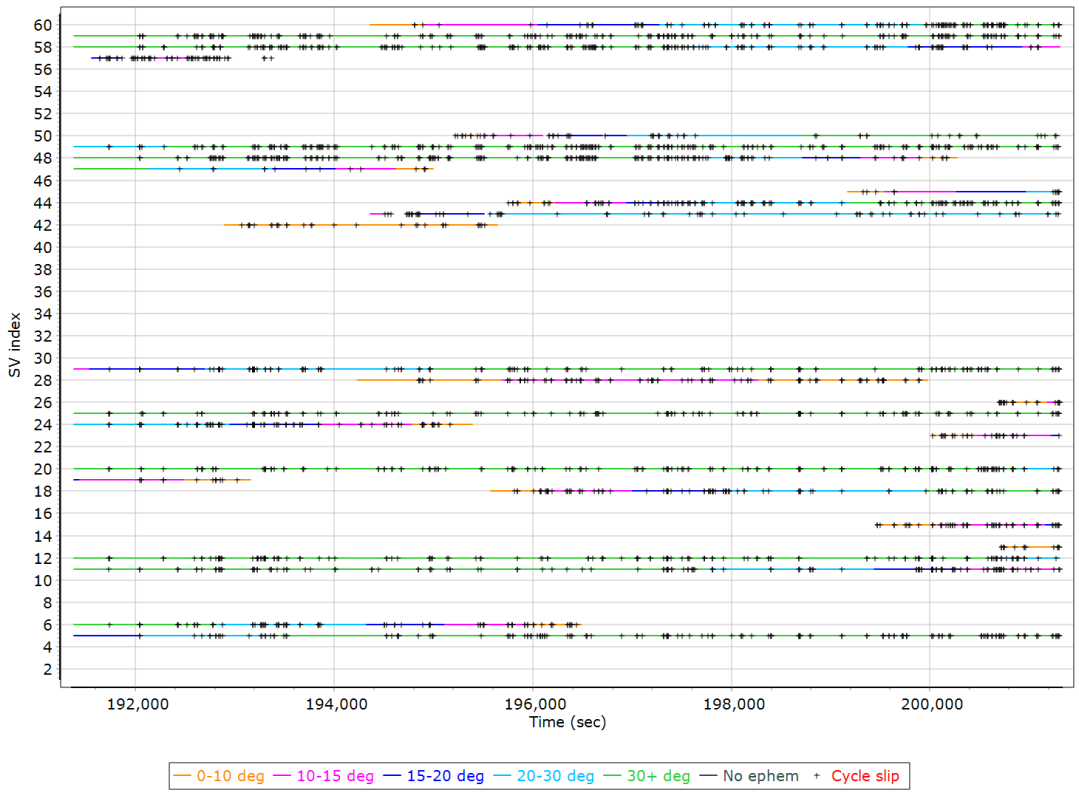
Rover Data QC

Raw IMU Import QC Summary

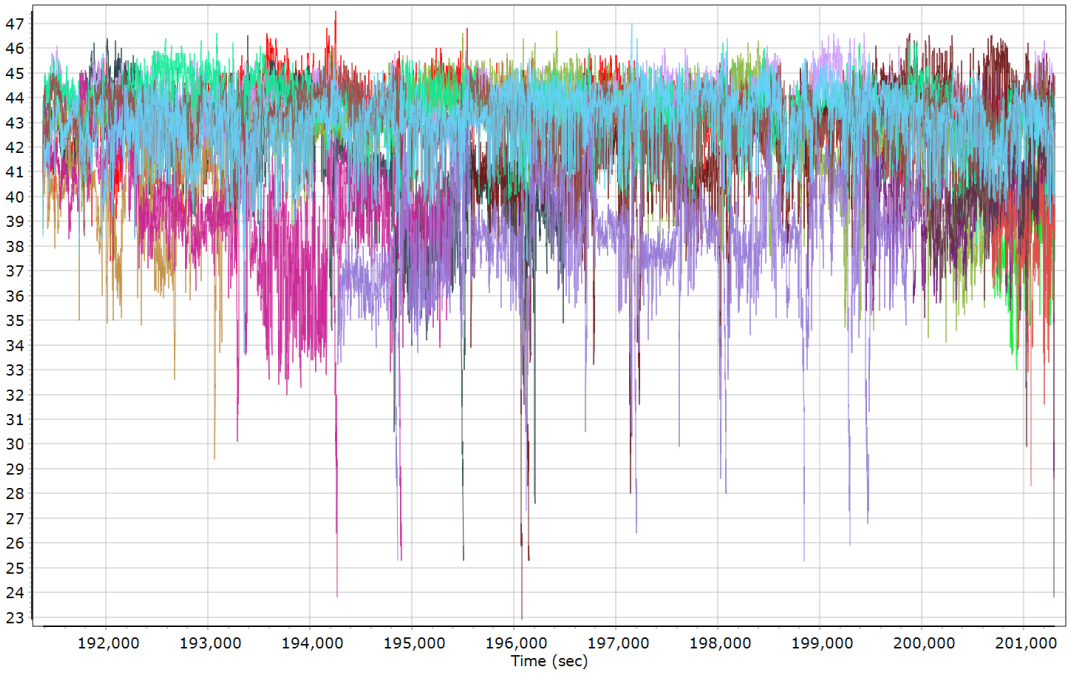
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_12042023B_3061.log
IMU Records Processed	1984659
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

GPS/GLONASS L1 Satellite Lock/Elevation

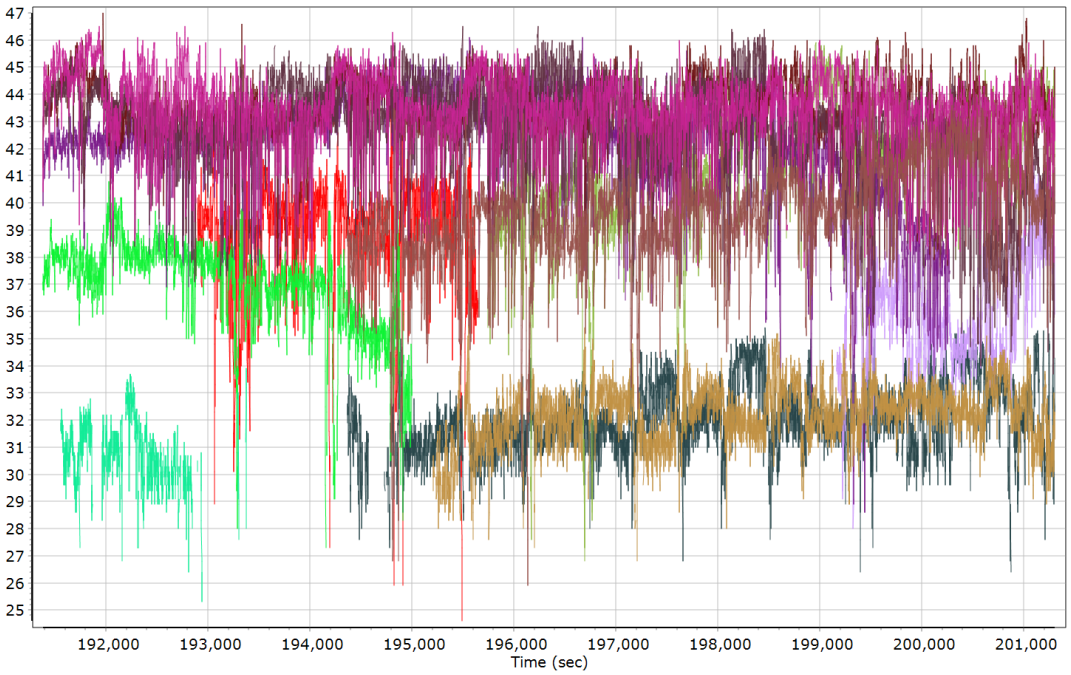


GPS L1 SNR



GPS PRN 05 L1 SNR (dB/Hz) GPS PRN 06 L1 SNR (dB/Hz) GPS PRN 11 L1 SNR (dB/Hz) GPS PRN 12 L1 SNR (dB/Hz)
GPS PRN 13 L1 SNR (dB/Hz) GPS PRN 15 L1 SNR (dB/Hz) GPS PRN 18 L1 SNR (dB/Hz) GPS PRN 19 L1 SNR (dB/Hz)
GPS PRN 20 L1 SNR (dB/Hz) GPS PRN 23 L1 SNR (dB/Hz) GPS PRN 24 L1 SNR (dB/Hz) GPS PRN 25 L1 SNR (dB/Hz)
GPS PRN 26 L1 SNR (dB/Hz) GPS PRN 28 L1 SNR (dB/Hz) GPS PRN 29 L1 SNR (dB/Hz)

GLONASS L1 SNR

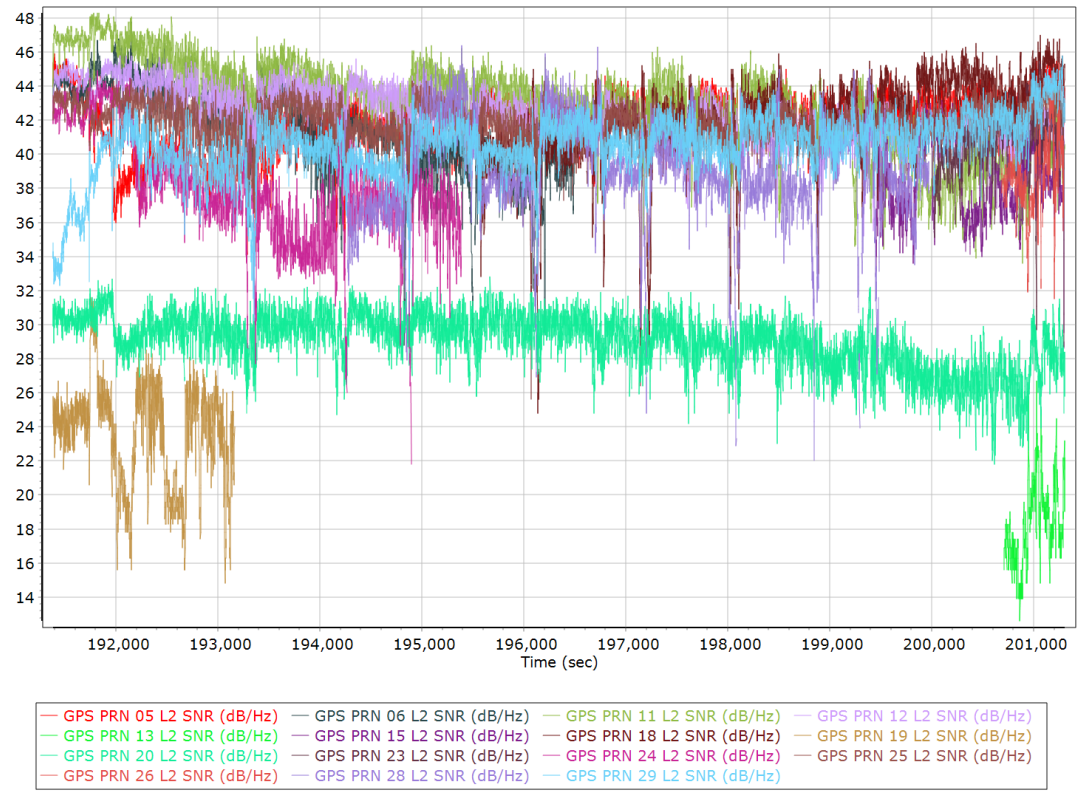


GLONASS 05 L1 SNR (dB/Hz) GLONASS 06 L1 SNR (dB/Hz) GLONASS 07 L1 SNR (dB/Hz)
GLONASS 08 L1 SNR (dB/Hz) GLONASS 10 L1 SNR (dB/Hz) GLONASS 11 L1 SNR (dB/Hz)
GLONASS 12 L1 SNR (dB/Hz) GLONASS 13 L1 SNR (dB/Hz) GLONASS 20 L1 SNR (dB/Hz)
GLONASS 21 L1 SNR (dB/Hz) GLONASS 22 L1 SNR (dB/Hz) GLONASS 23 L1 SNR (dB/Hz)

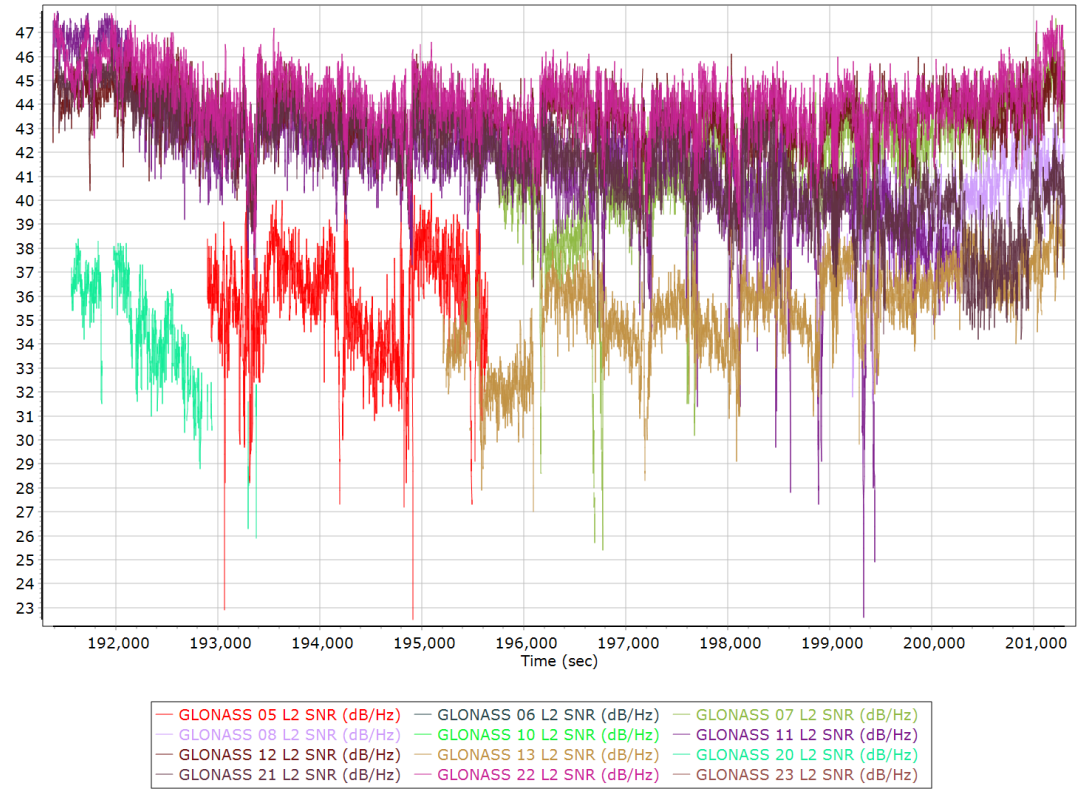
GPS/GLONASS L2 Satellite Lock/Elevation



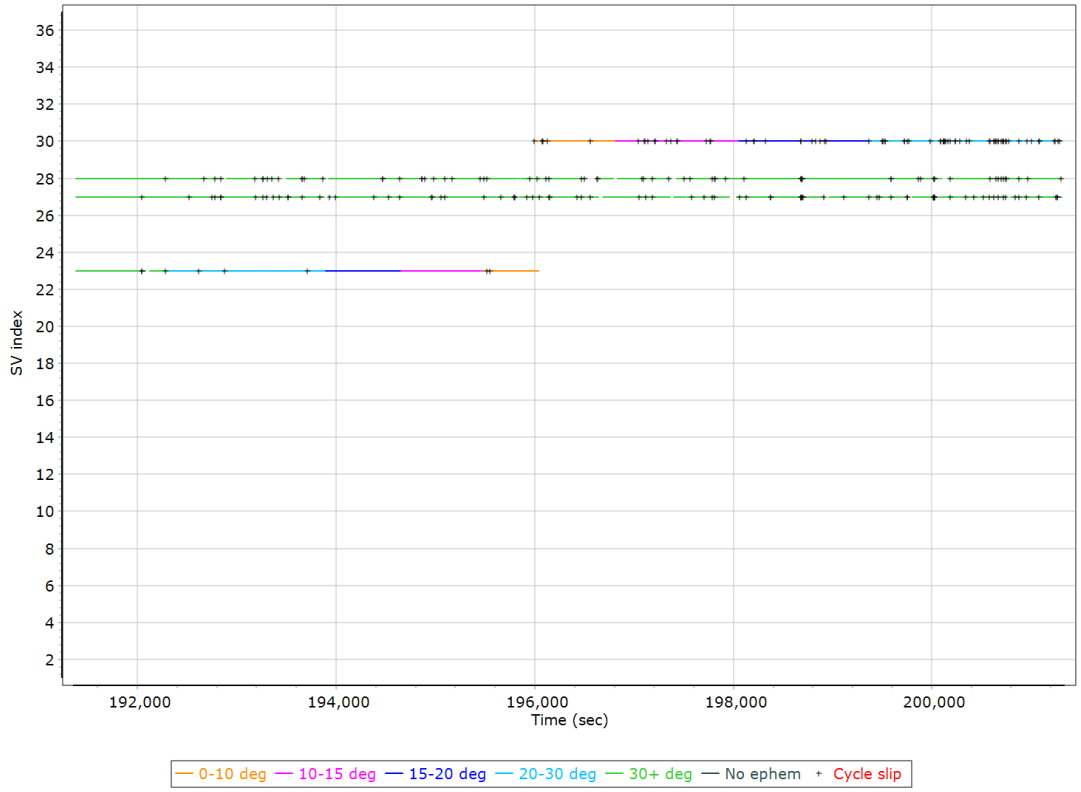
GPS L2 SNR



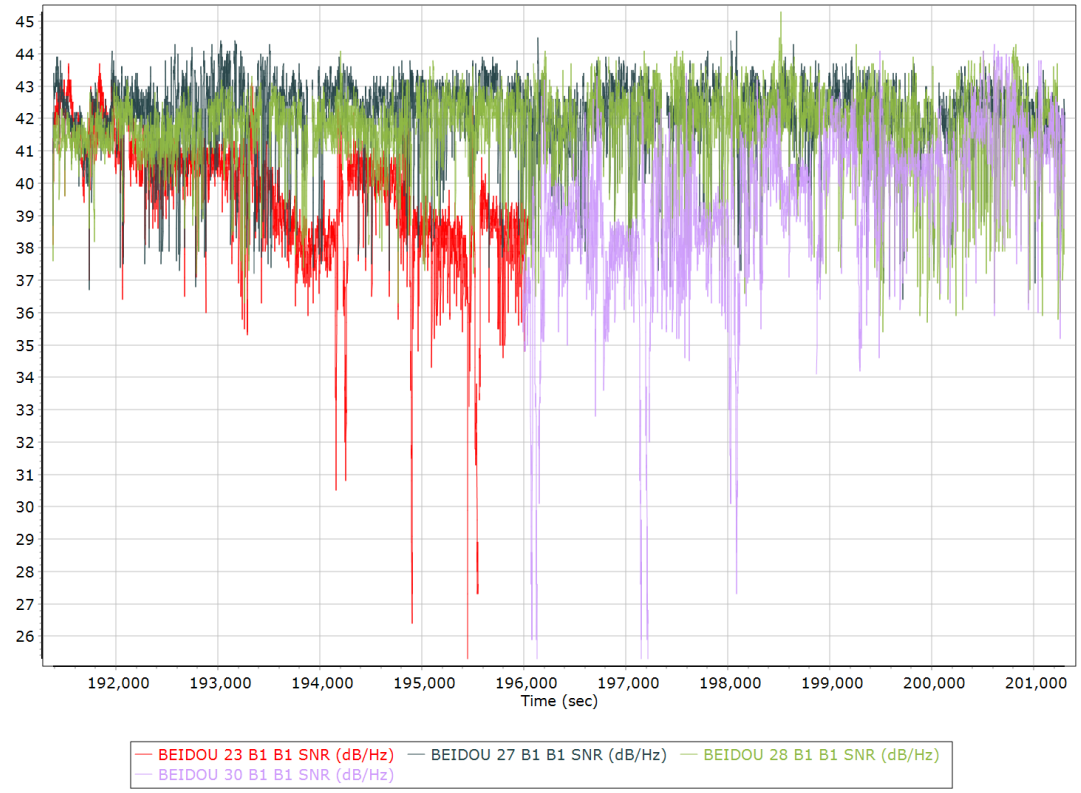
GLONASS L2 SNR



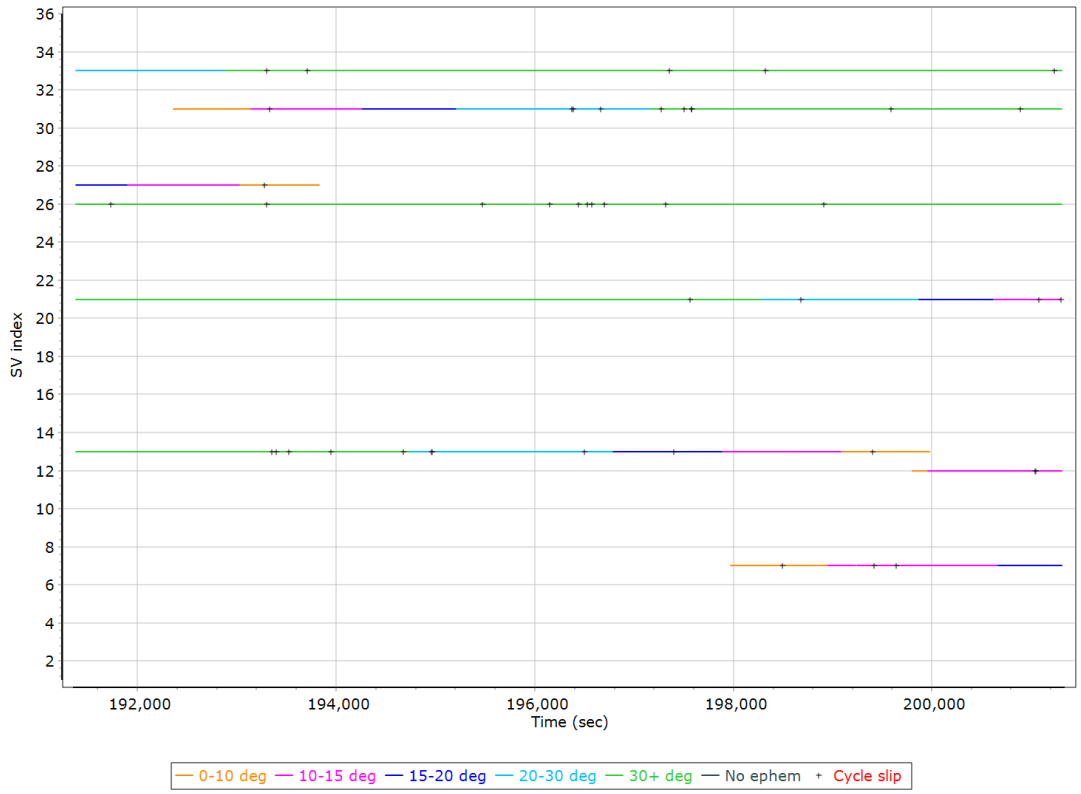
BEIDOU Satellite Lock/Elevation



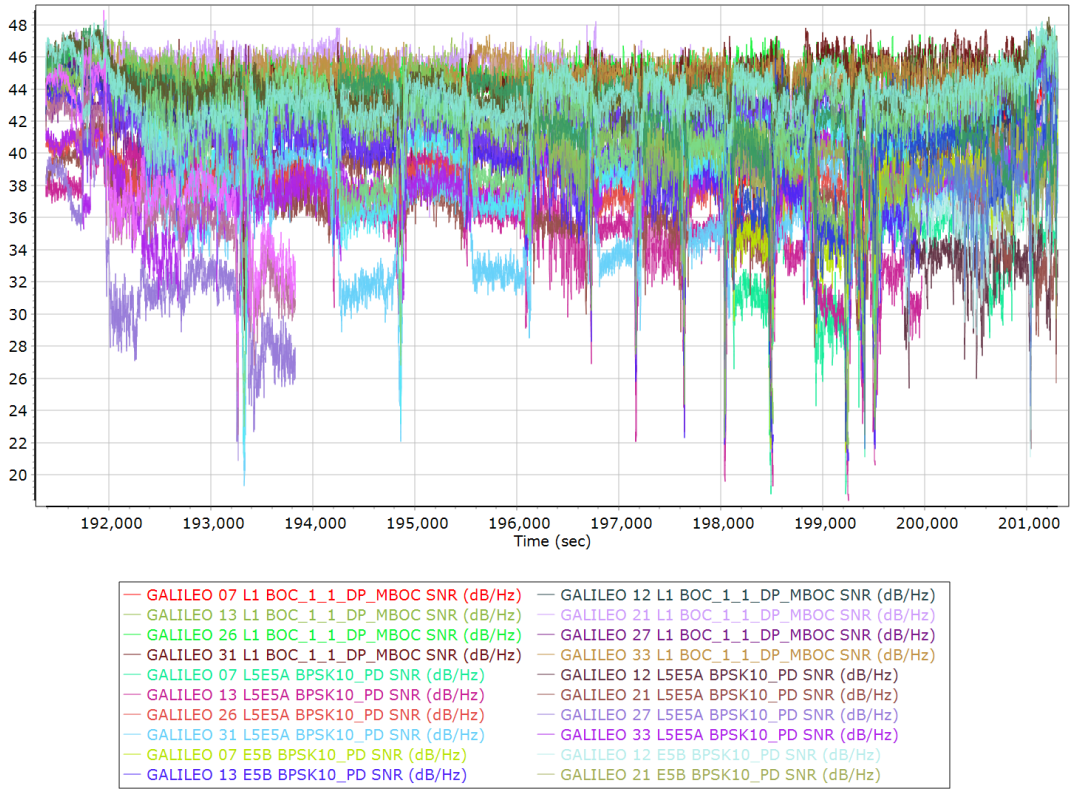
BEIDOU SNR



GALILEO Satellite Lock/Elevation

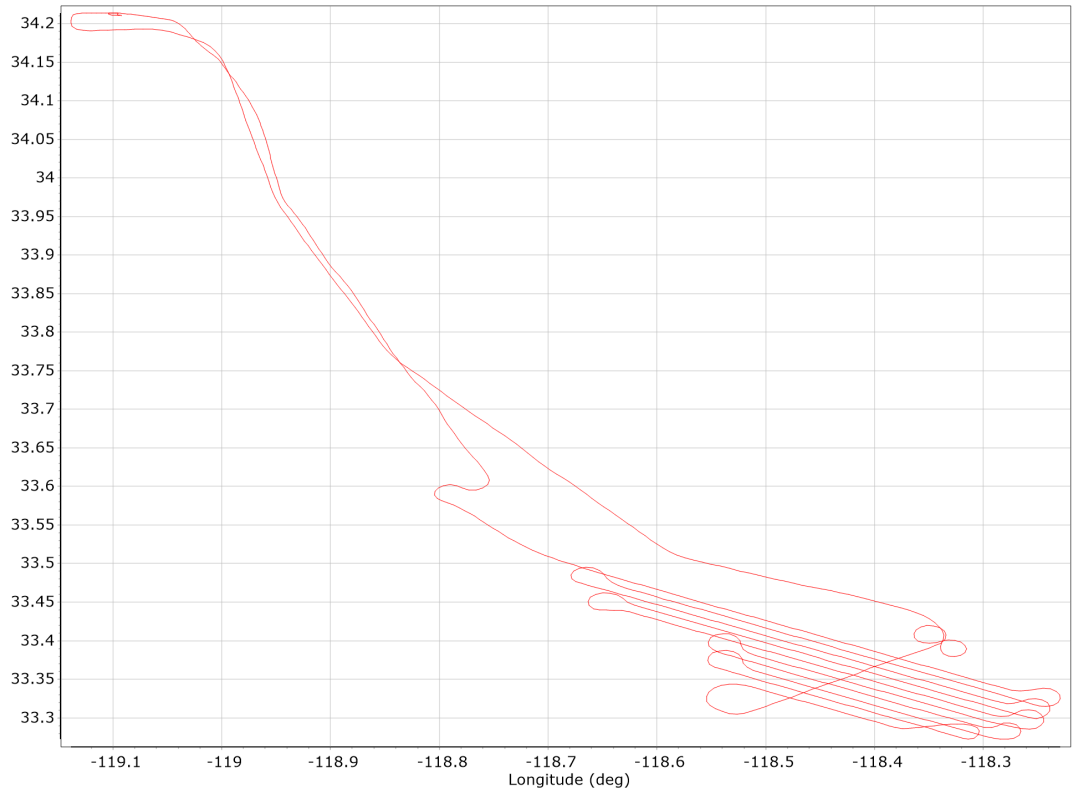


GALILEO SNR

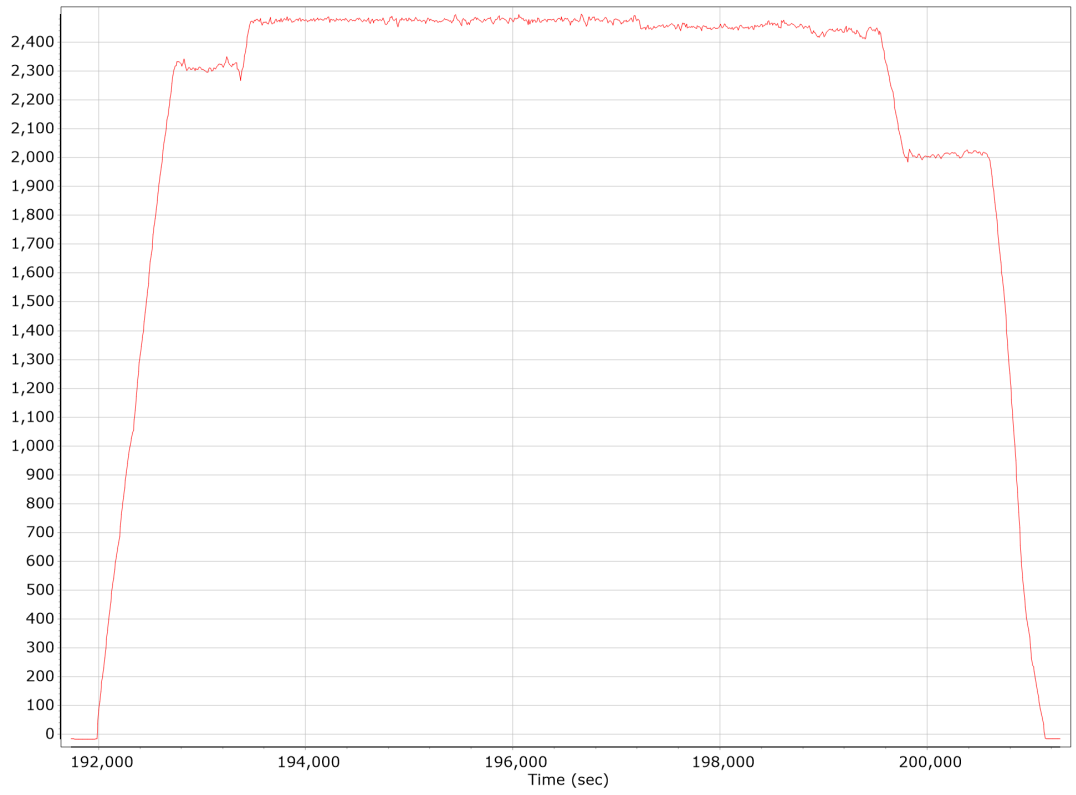

48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
192,000
193,000
194,000
195,000
196,000
197,000
198,000
199,000
200,000
201,000
Time (sec)
GALILEO 07 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 12 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 13 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 21 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 26 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 27 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 31 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 33 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 07 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 12 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 13 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 21 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 26 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 27 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 31 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 33 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 07 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 12 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 13 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 21 E5B BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

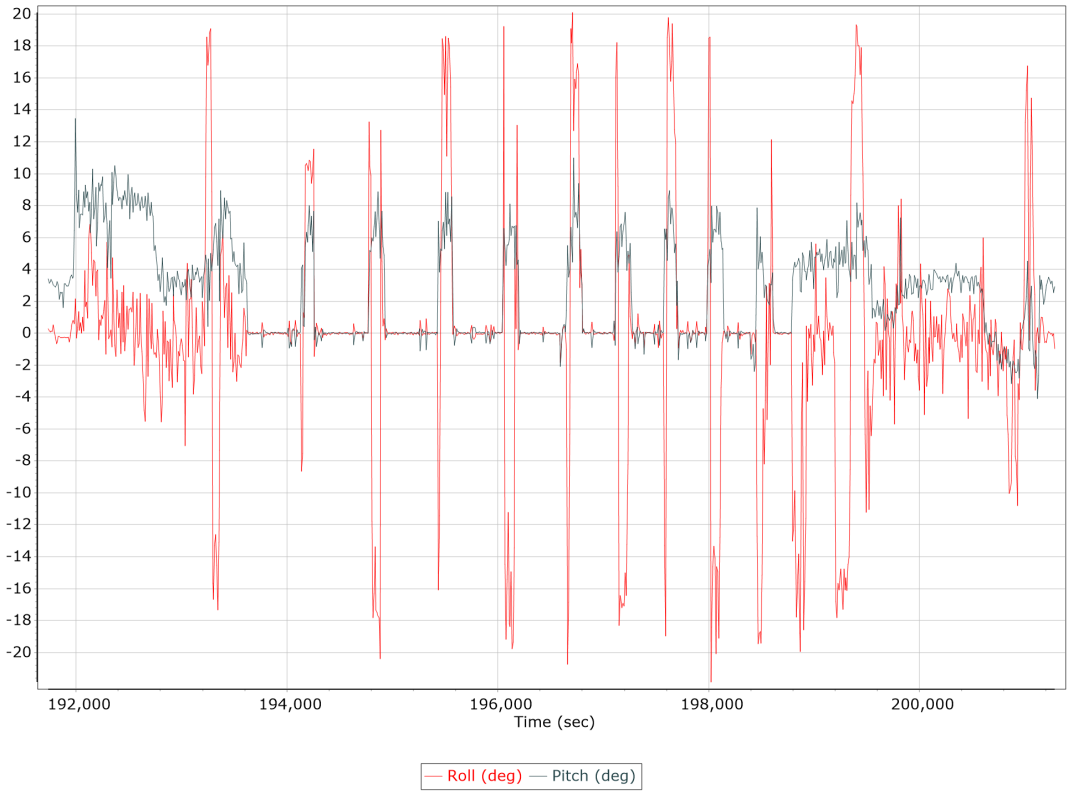
Top View



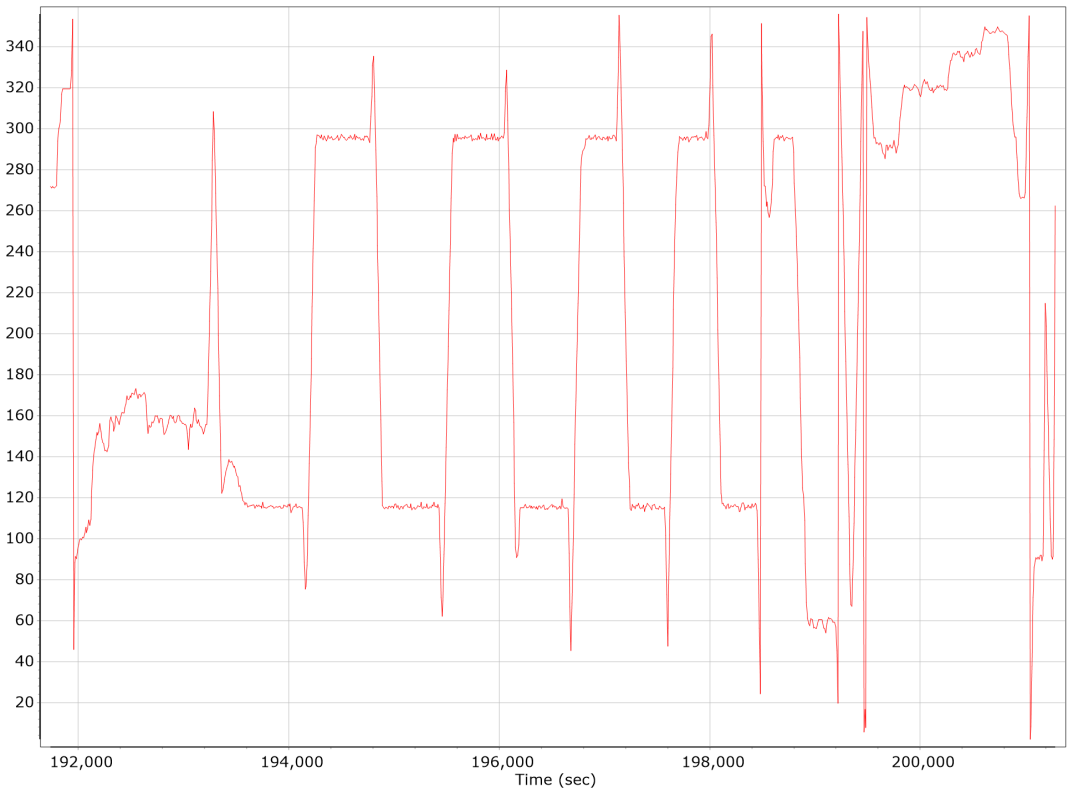
Altitude



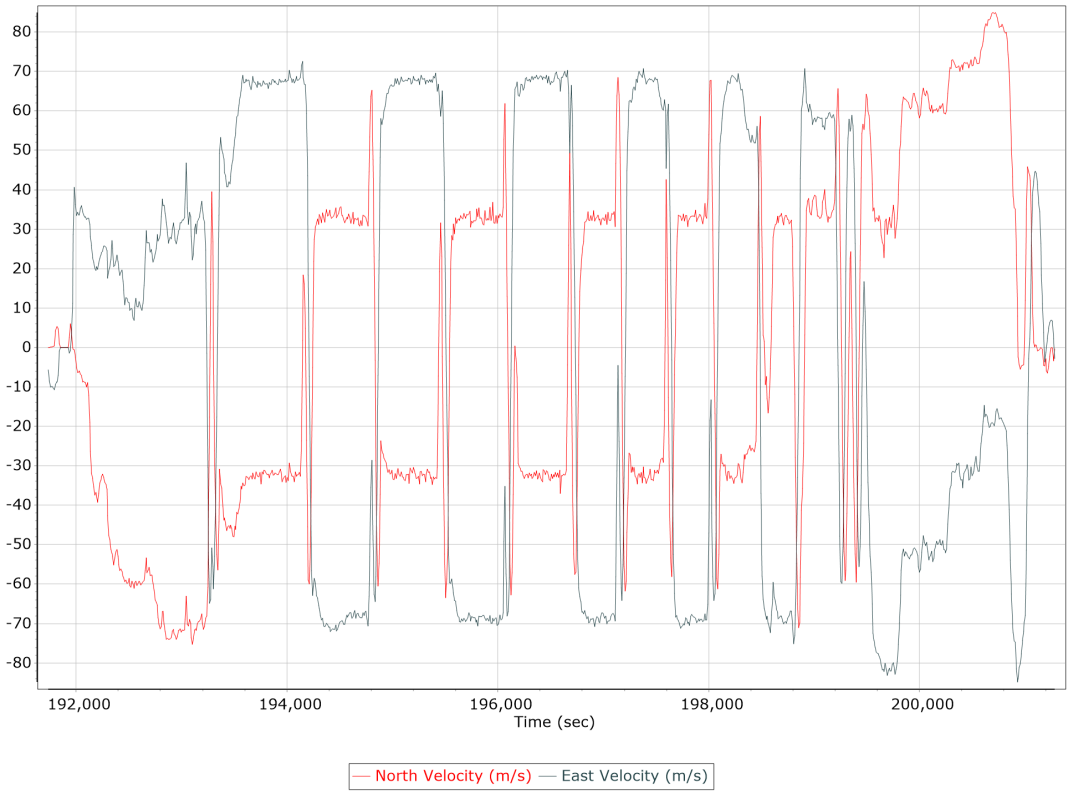
Roll/Pitch



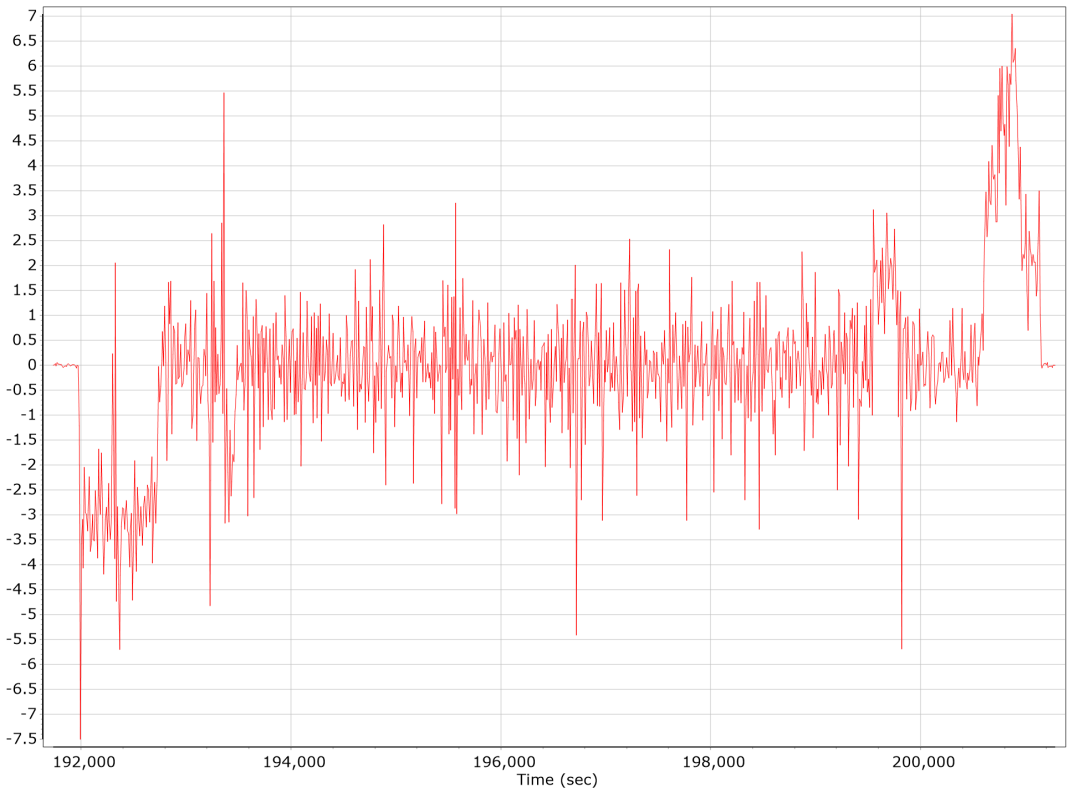
Heading



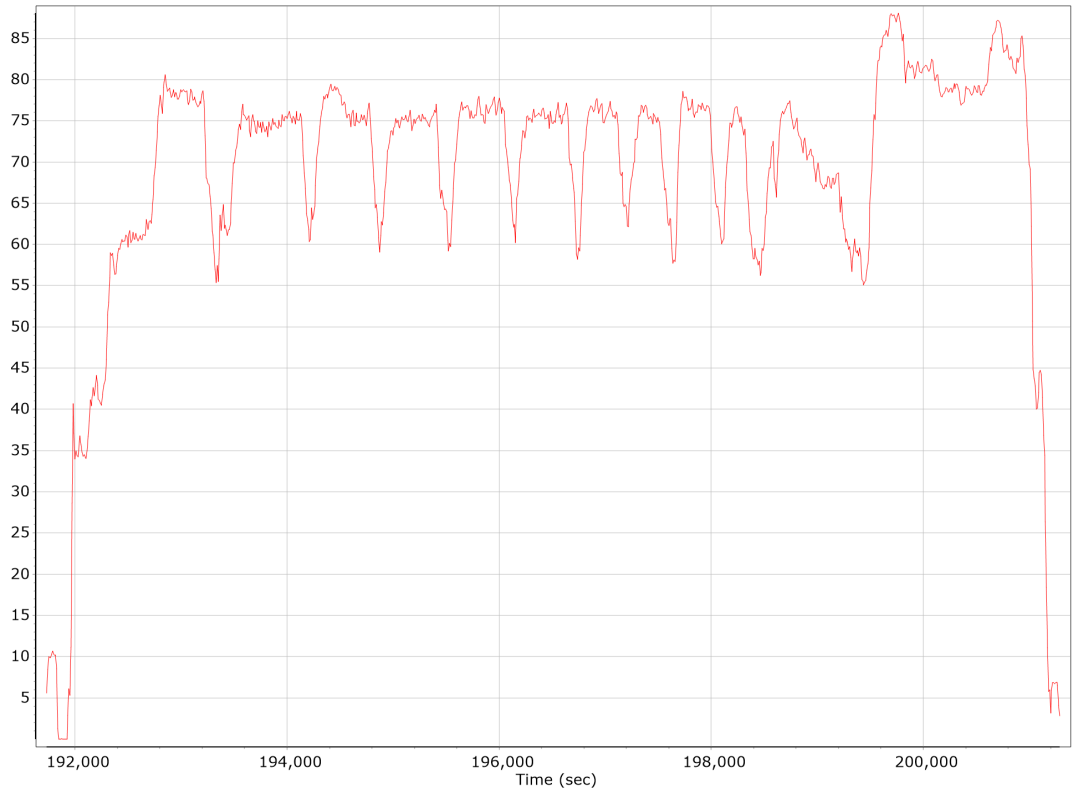
North/East Velocity



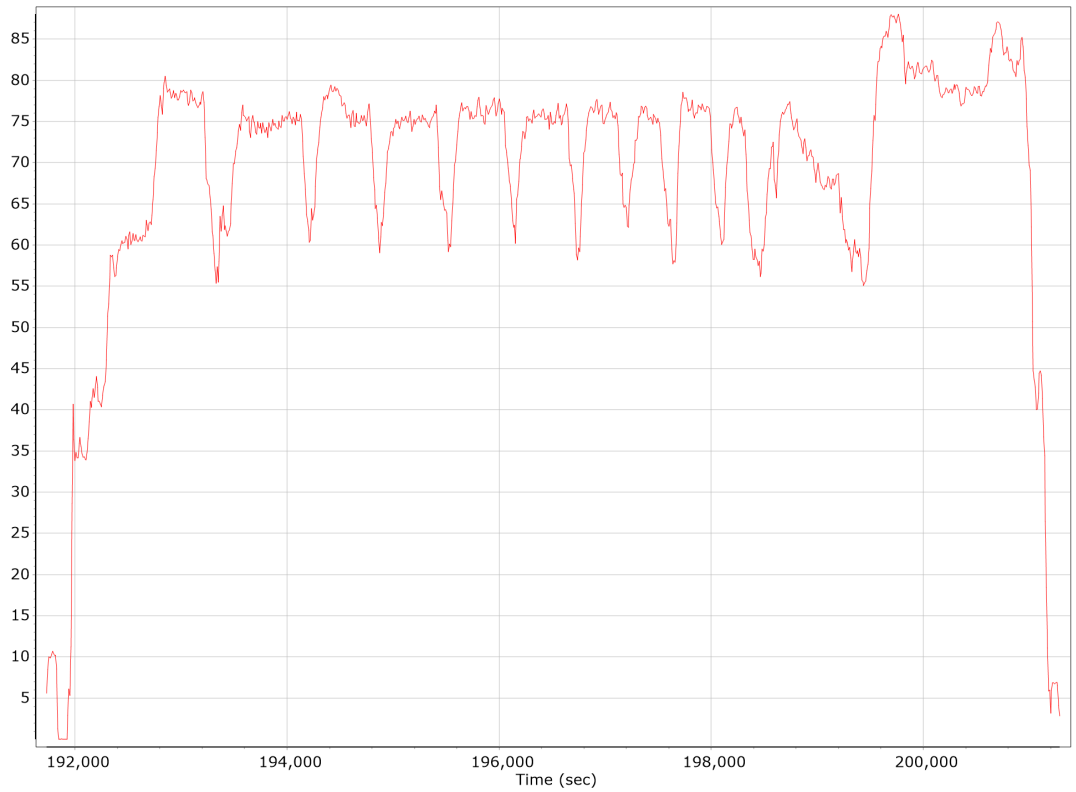
Down Velocity



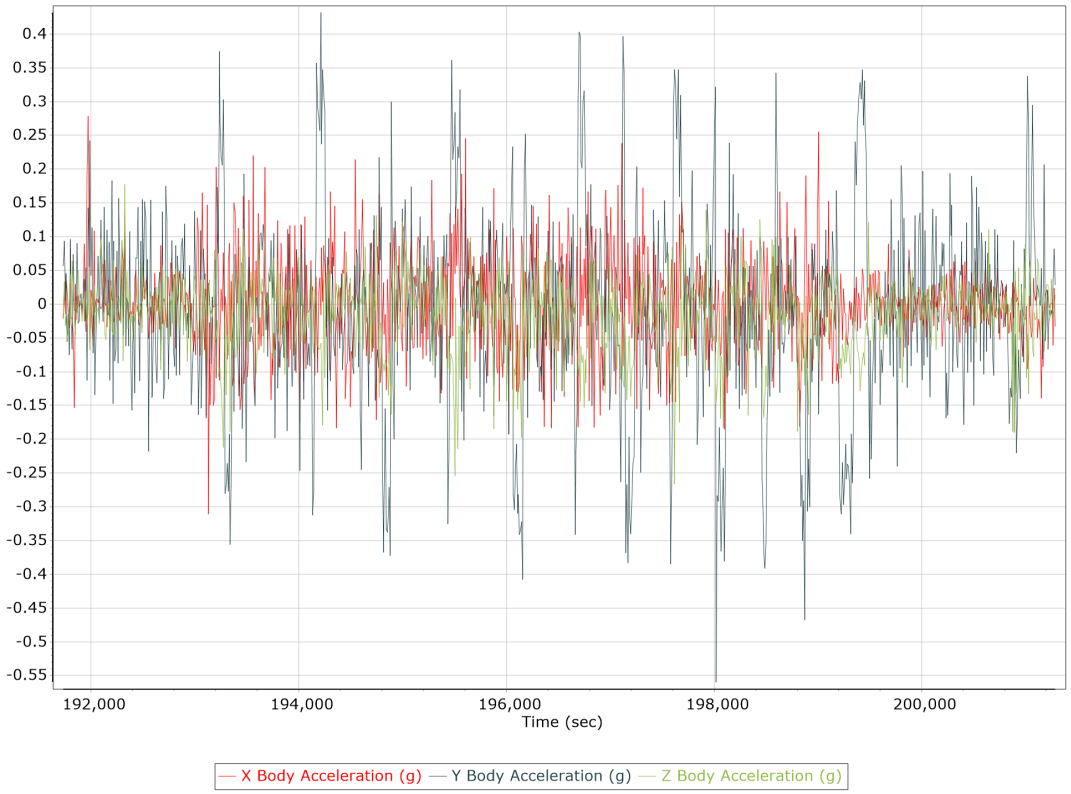
Total Speed



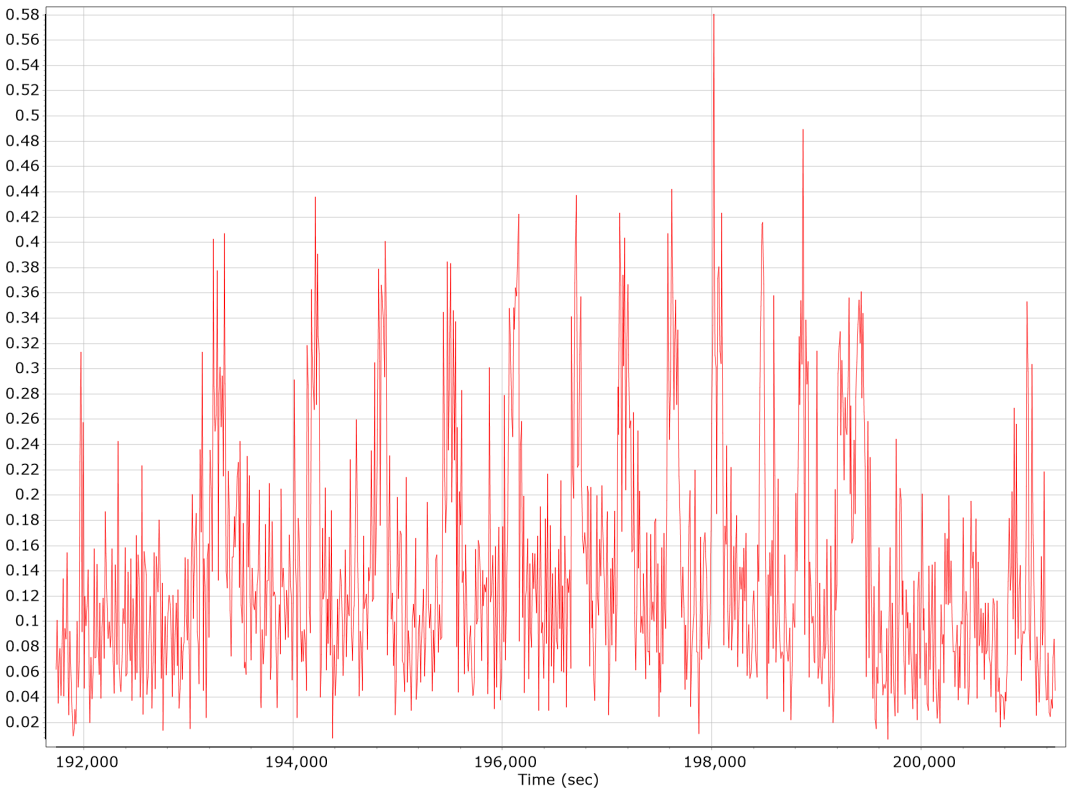
Ground Speed



Body Acceleration



Total Body Acceleration

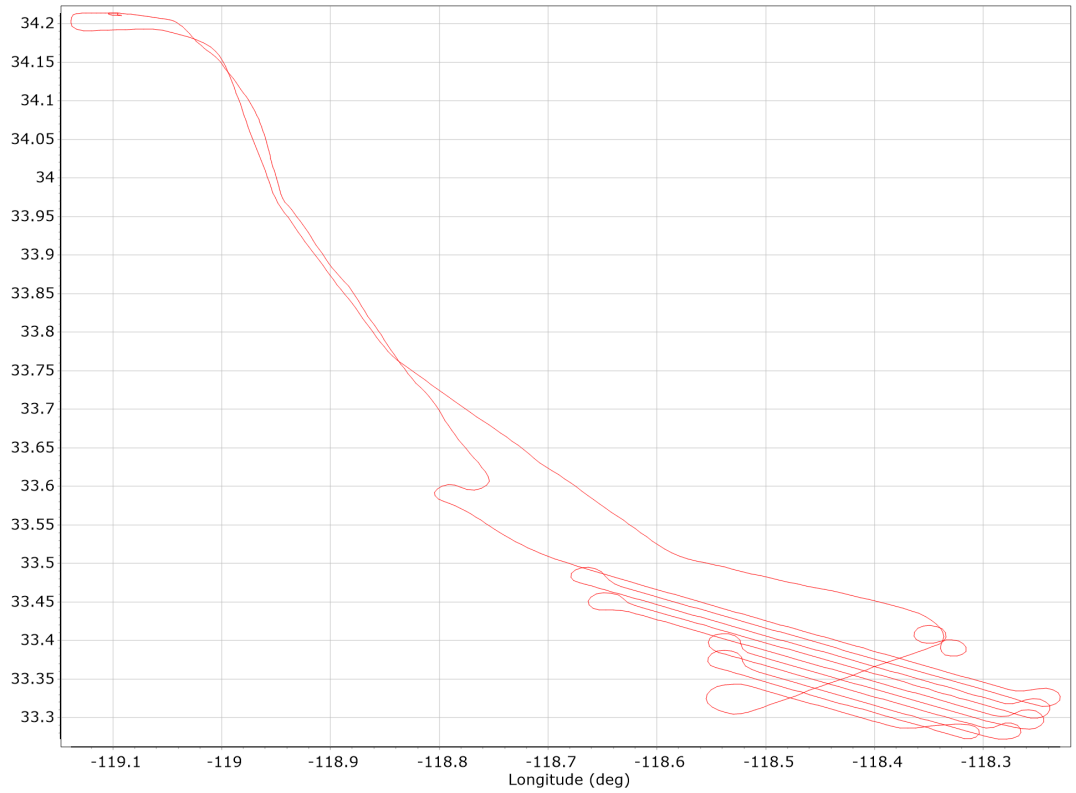


Body Angular Rate

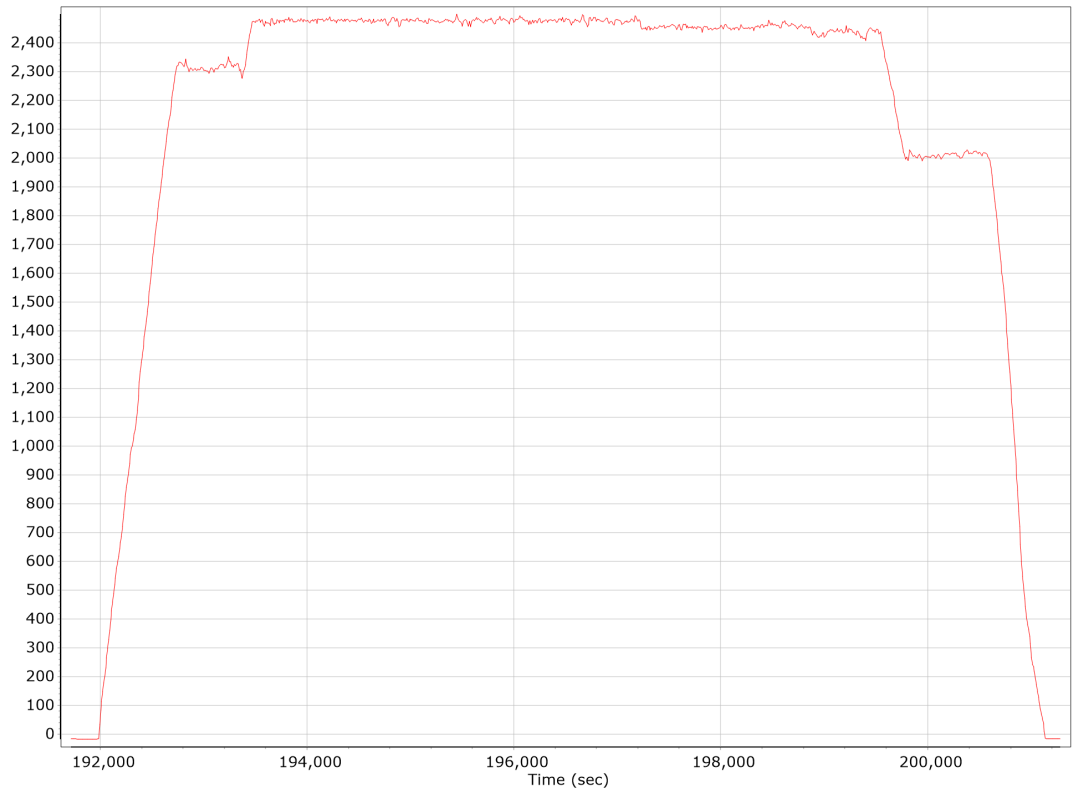


Forward Processed Trajectory Information

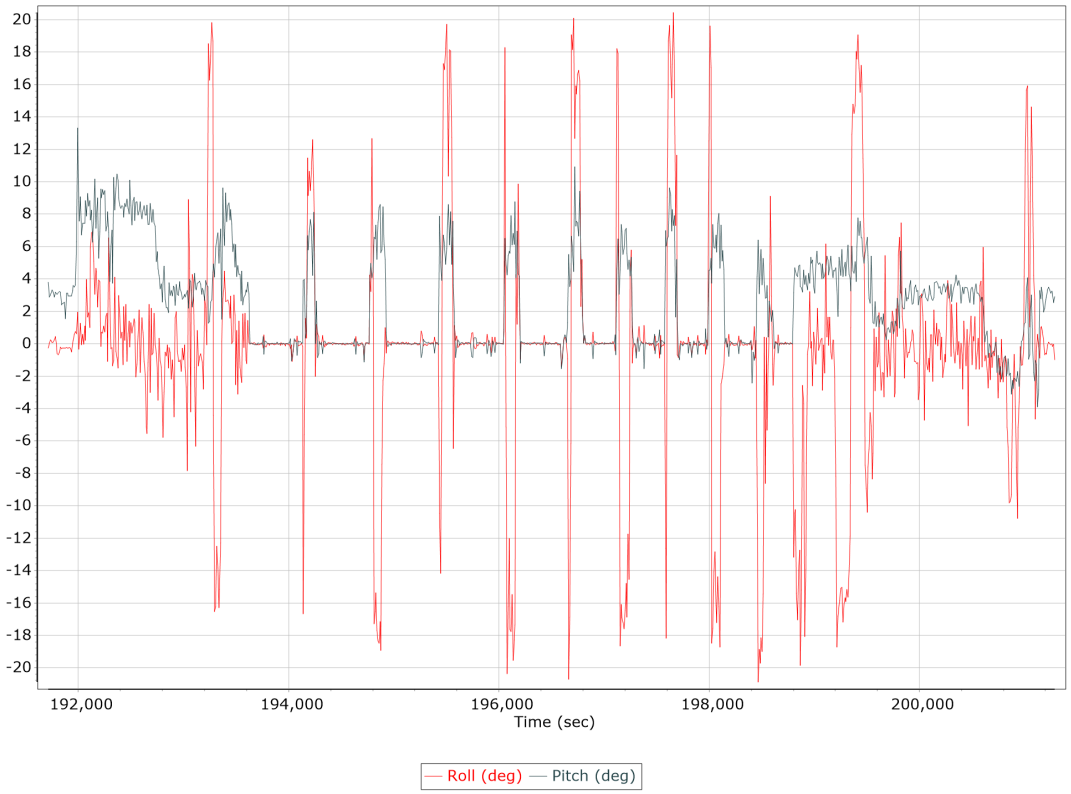
Top View



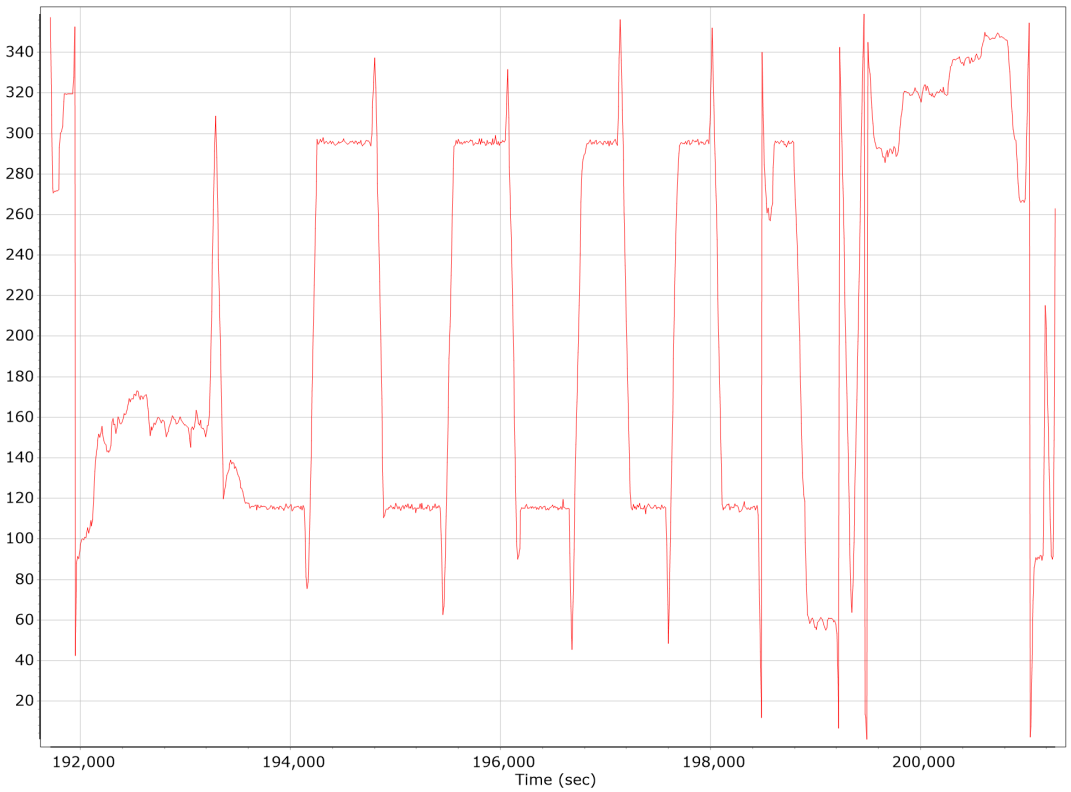
Altitude



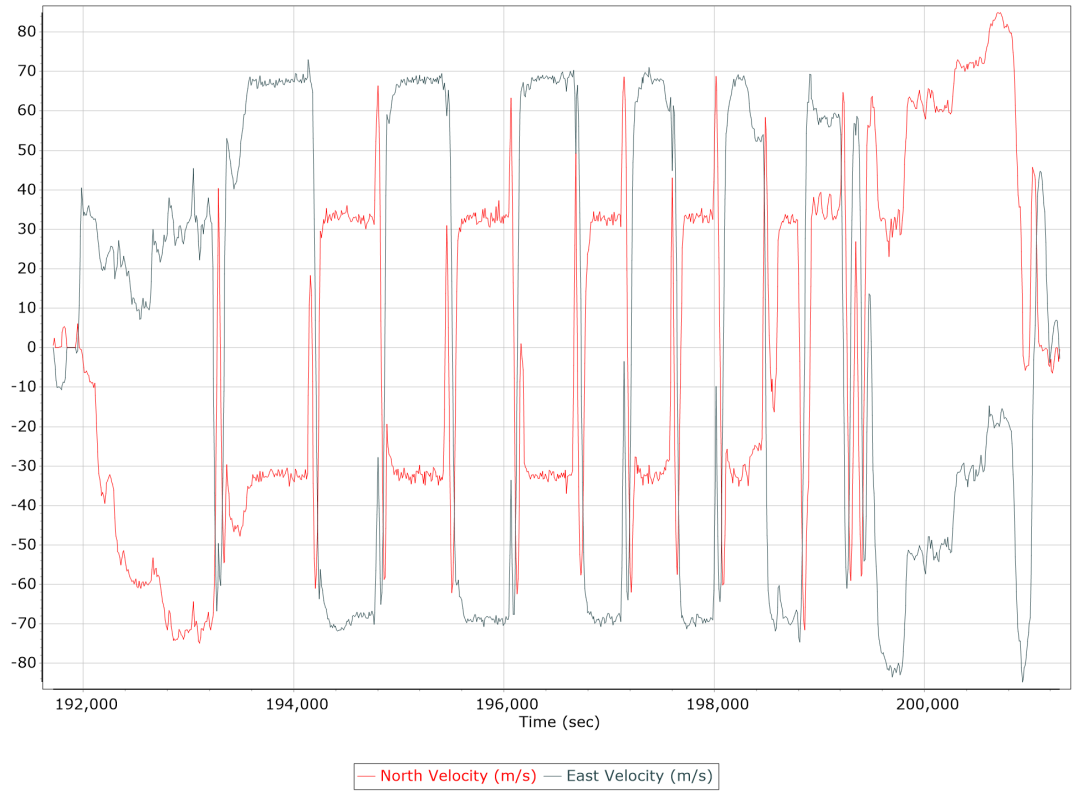
Roll/Pitch



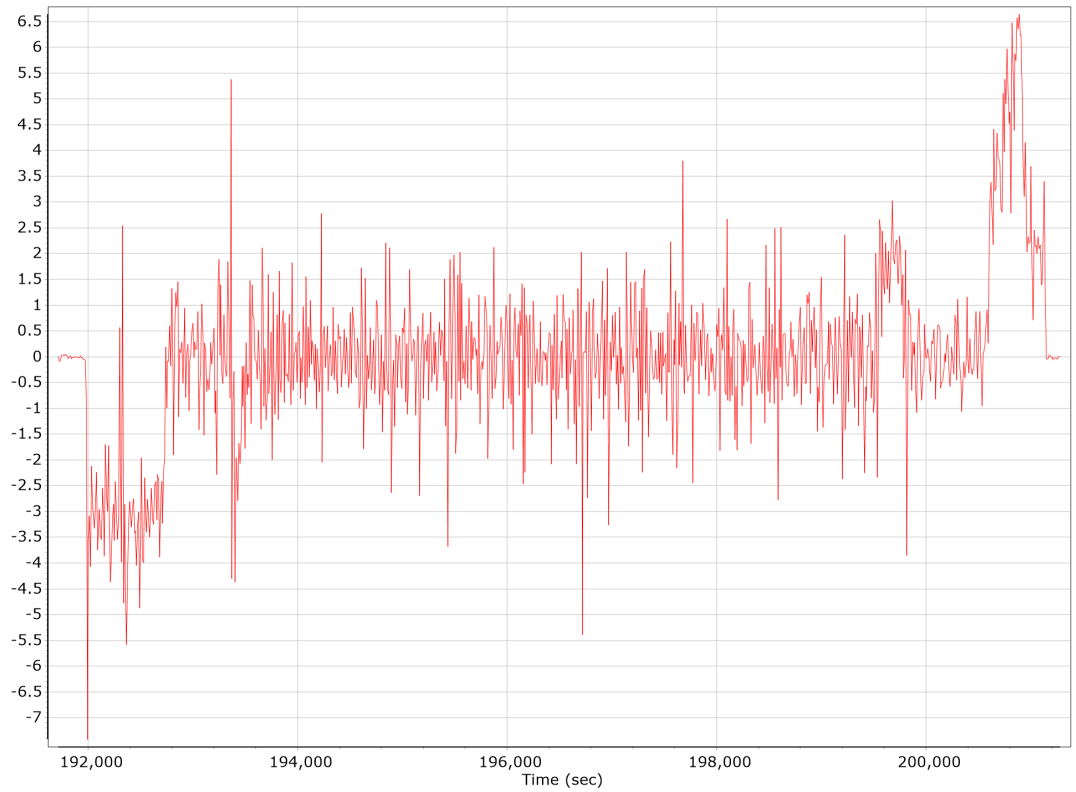
Heading



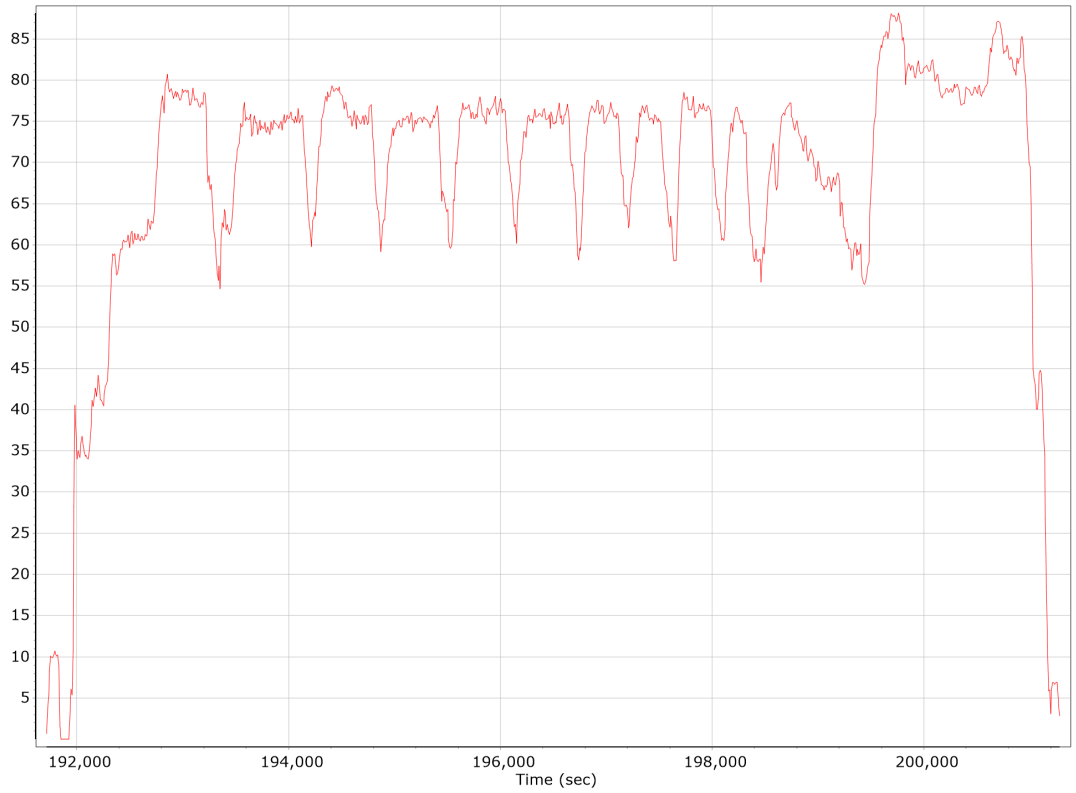
North/East Velocity



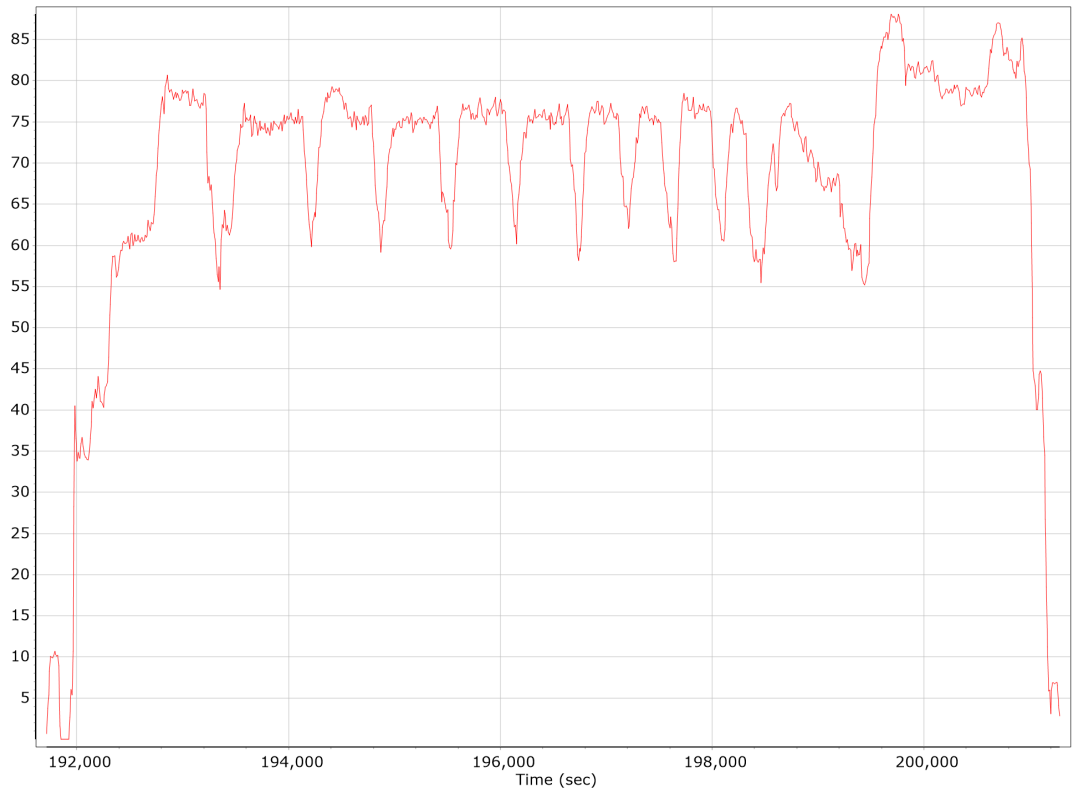
Down Velocity



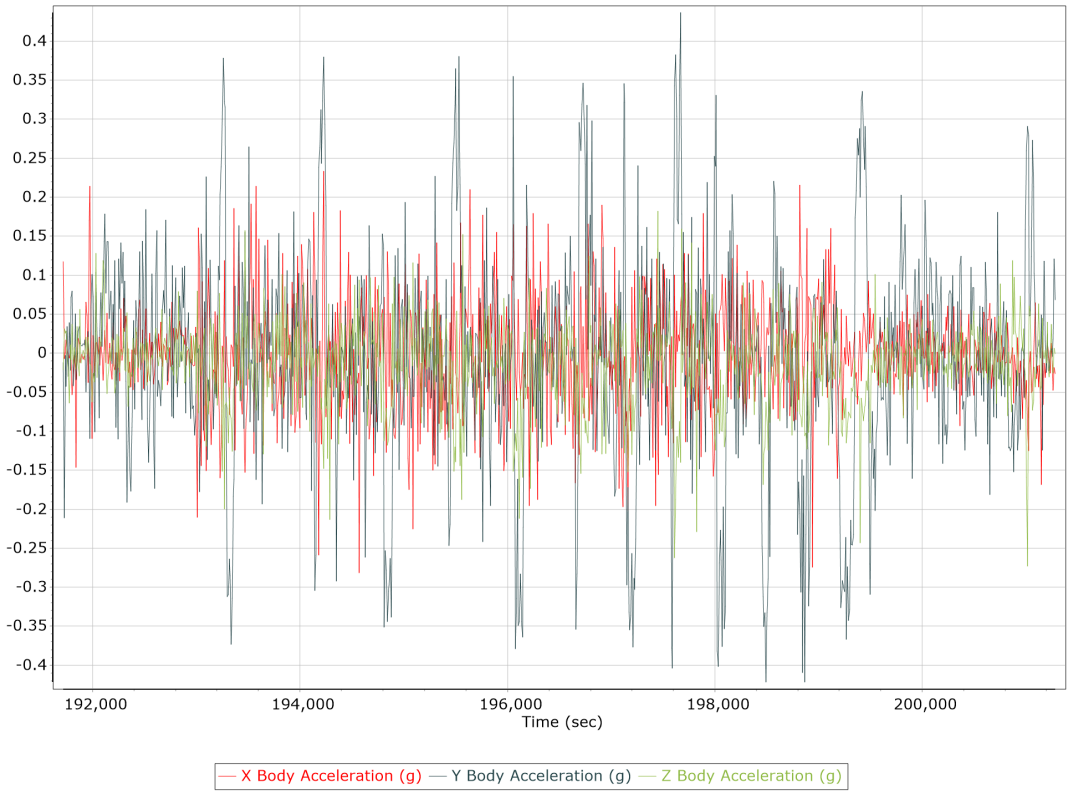
Total Speed



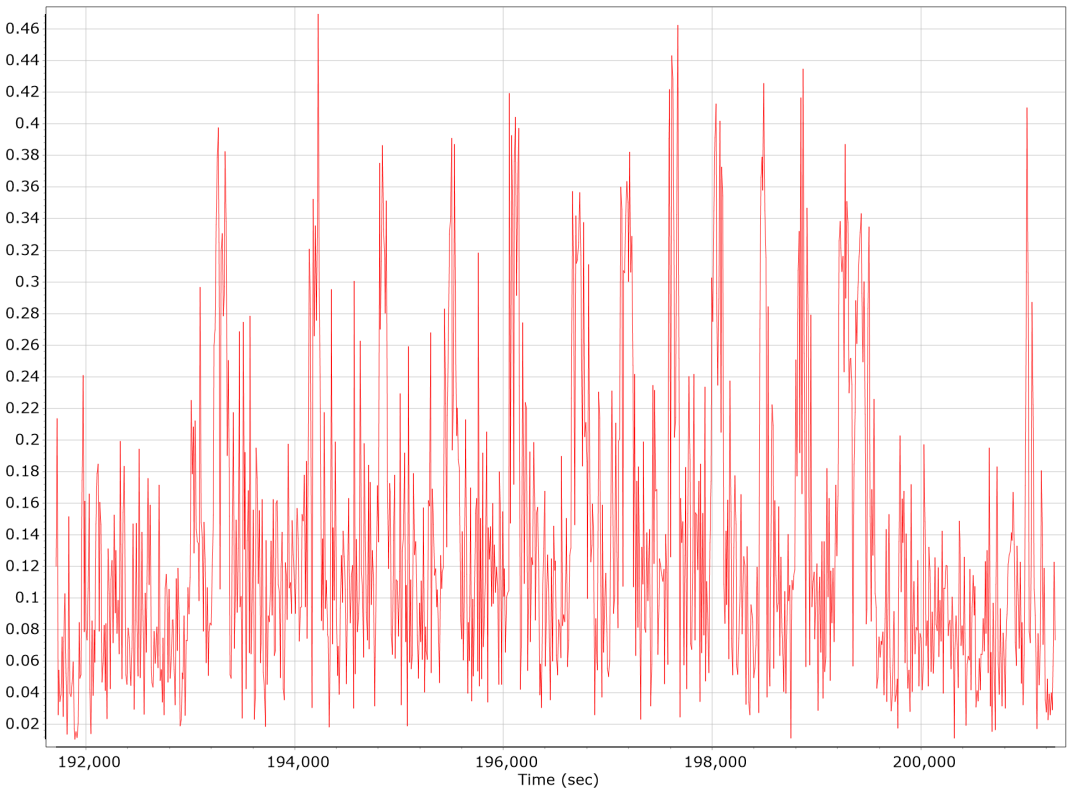
Ground Speed



Body Acceleration



Total Body Acceleration



Body Angular Rate

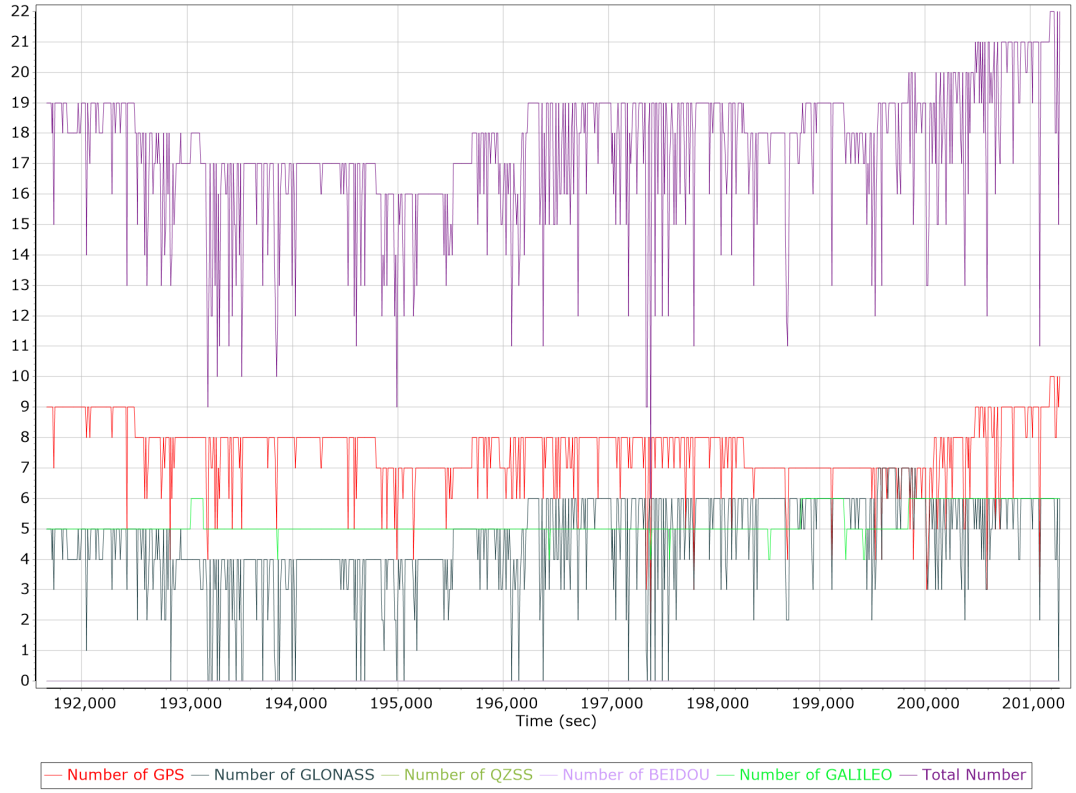


GNSS QC

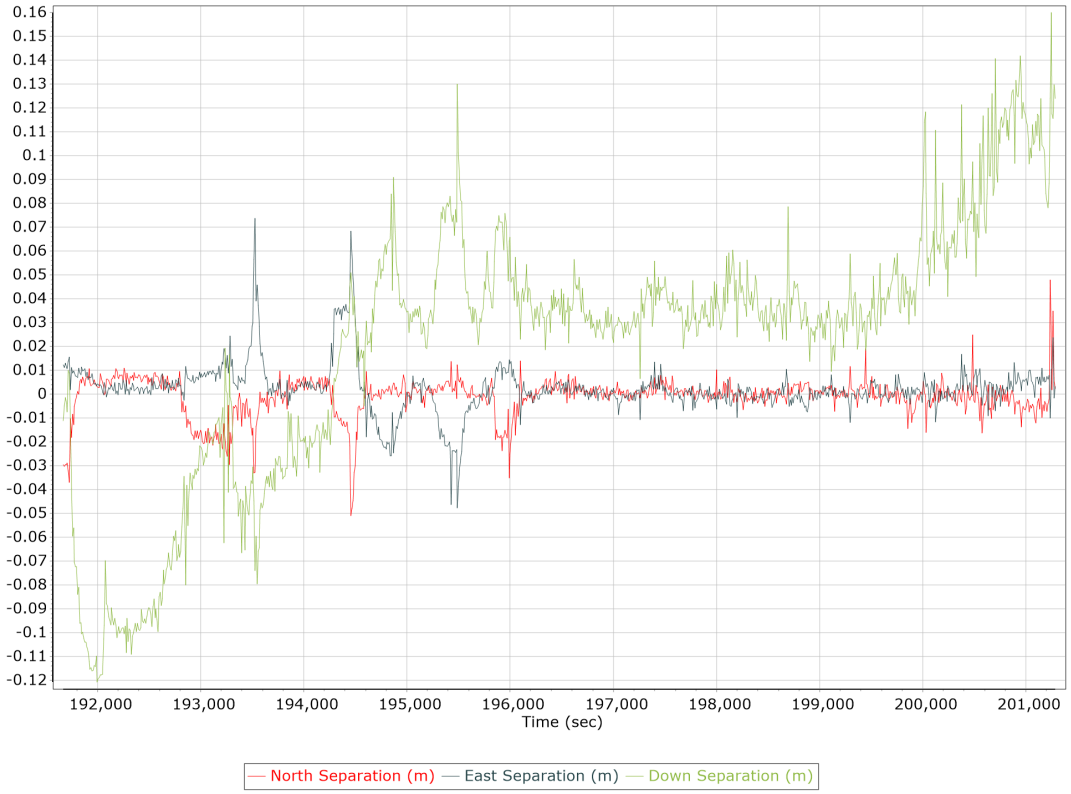
GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	2	10	8
Number of GLONASS SV	0	7	5
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	4	6	5
Total number of SV	6	22	17
PDOP	1.07	3.14	1.38
QC Solution Gaps	1.00	3.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	9889.00	0.00	4.00
Percentage	99.96	0.00	0.04

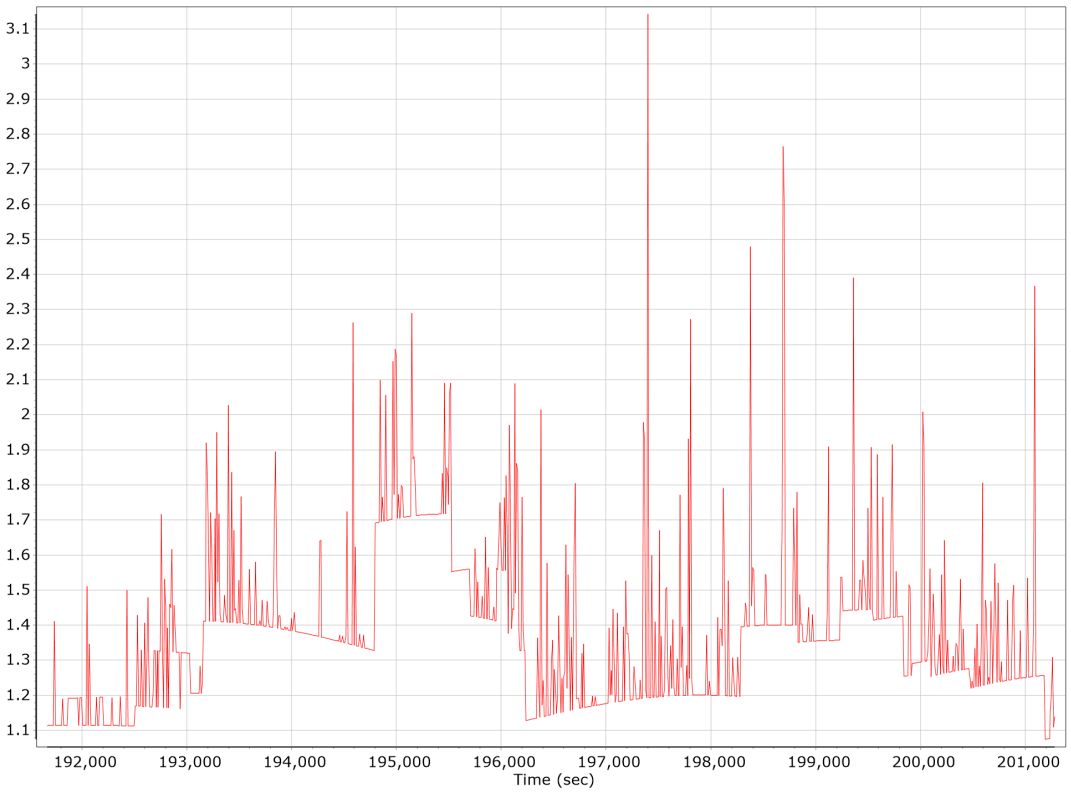
Num SVs in solution



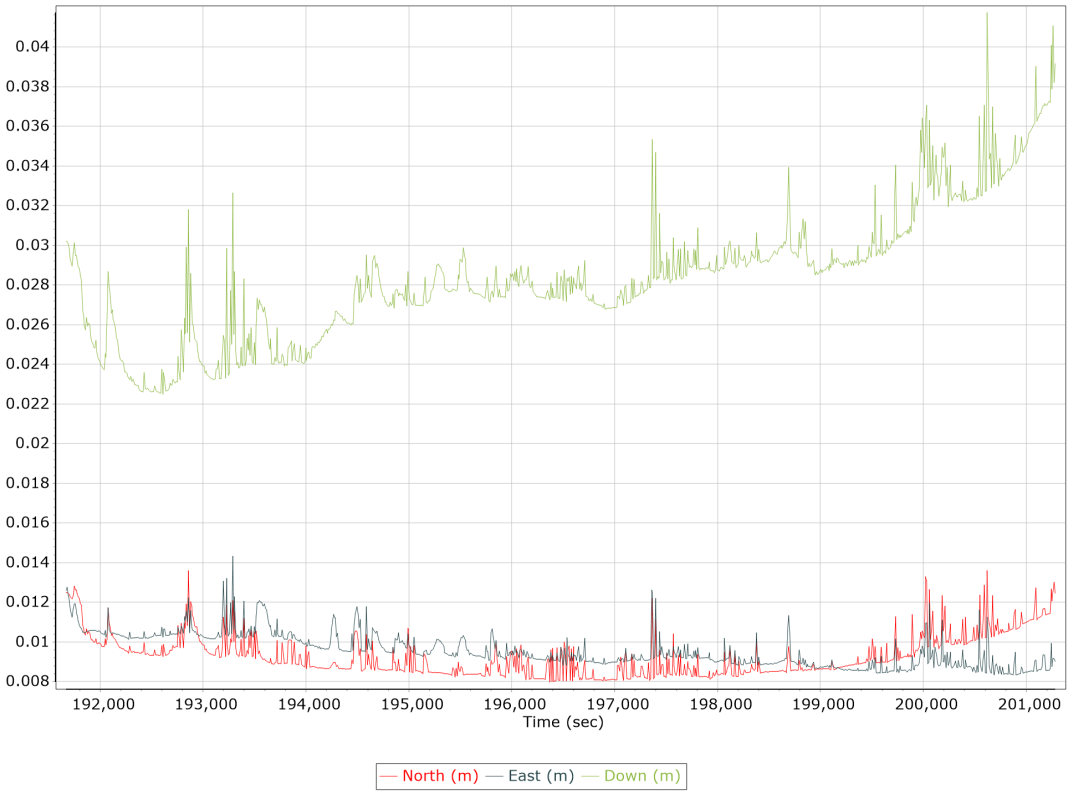
Forward/Reverse Separation



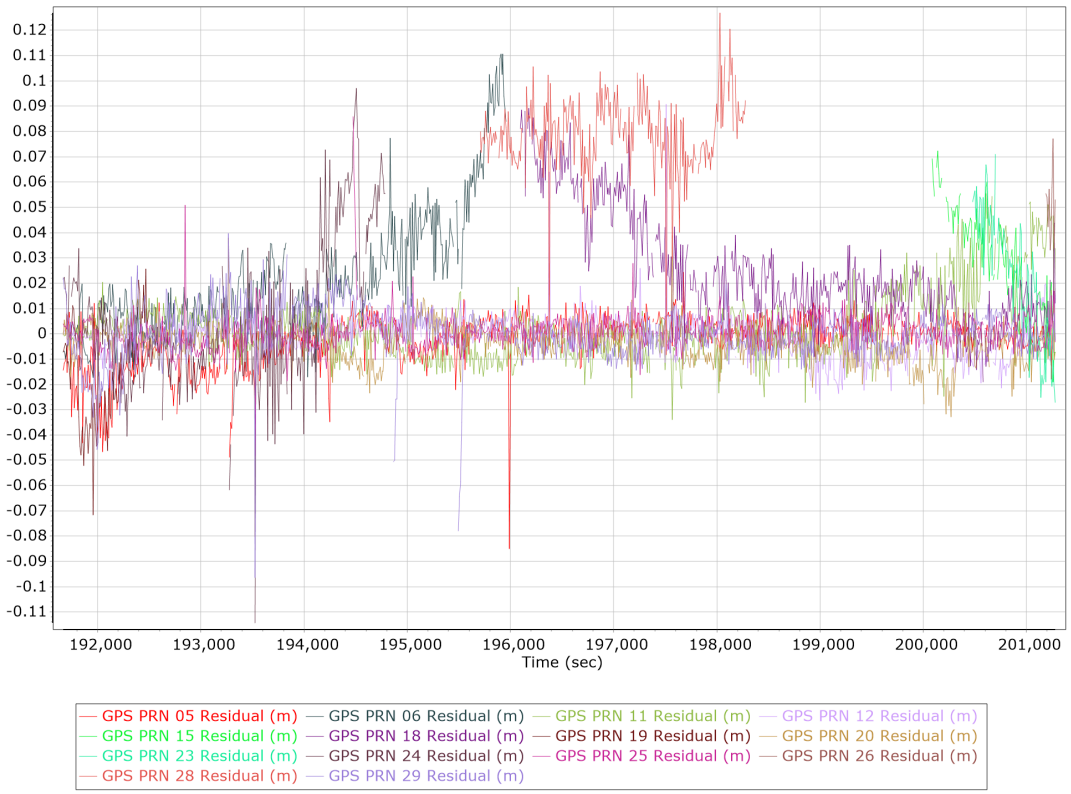
PDOP



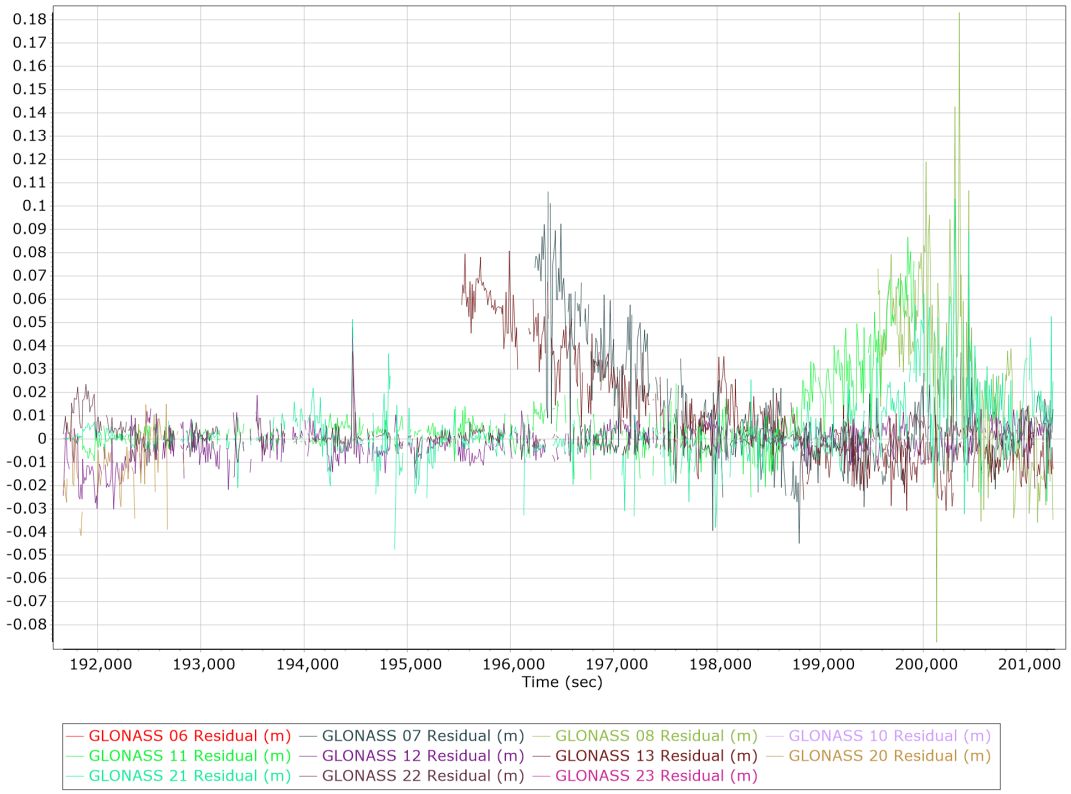
Estimated Position Accuracy



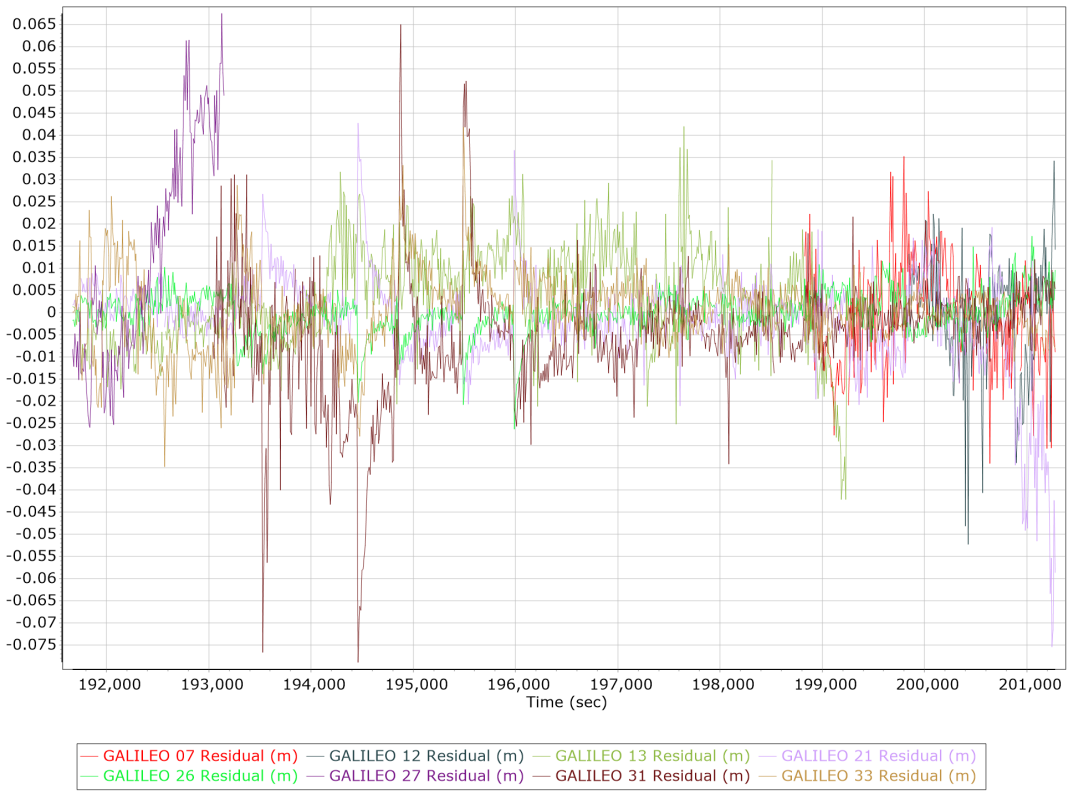
GPS Residuals



GLONASS Residuals



GALILEO Residuals



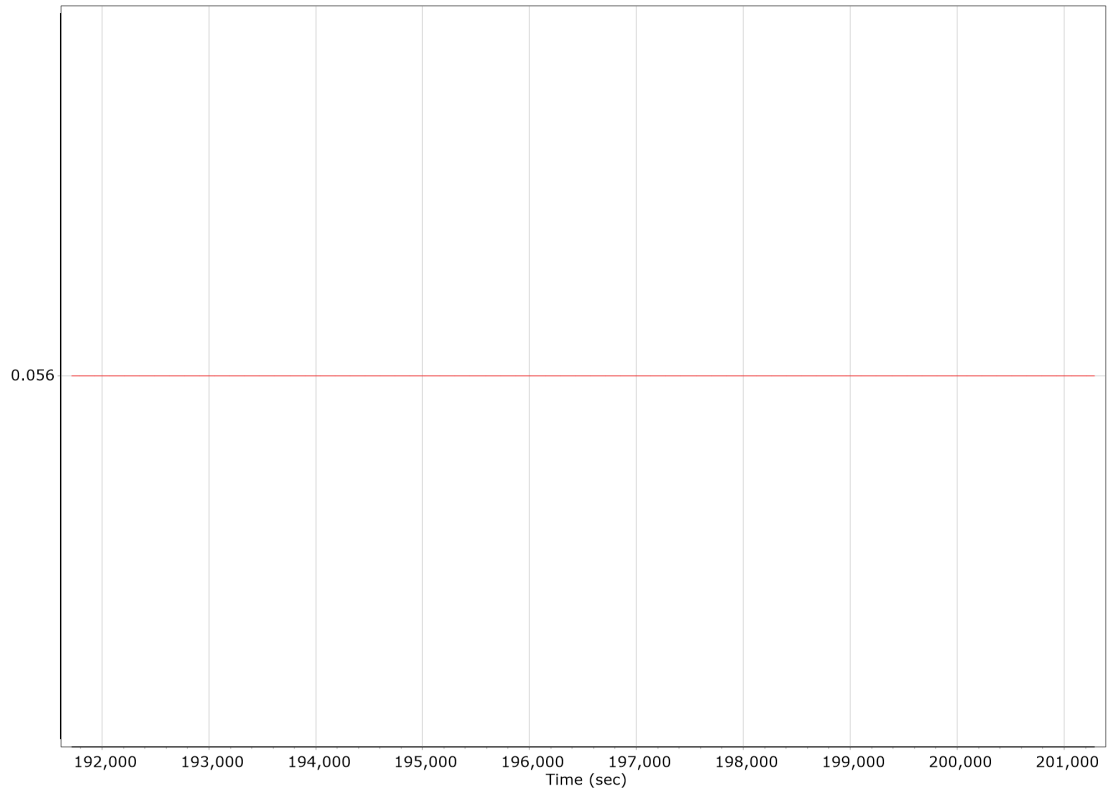
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	191364.000 (12/5/2023 5:09:24 AM)		
Processing end time	201288.000 (12/5/2023 7:54:48 AM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.056	0.055	-1.294
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

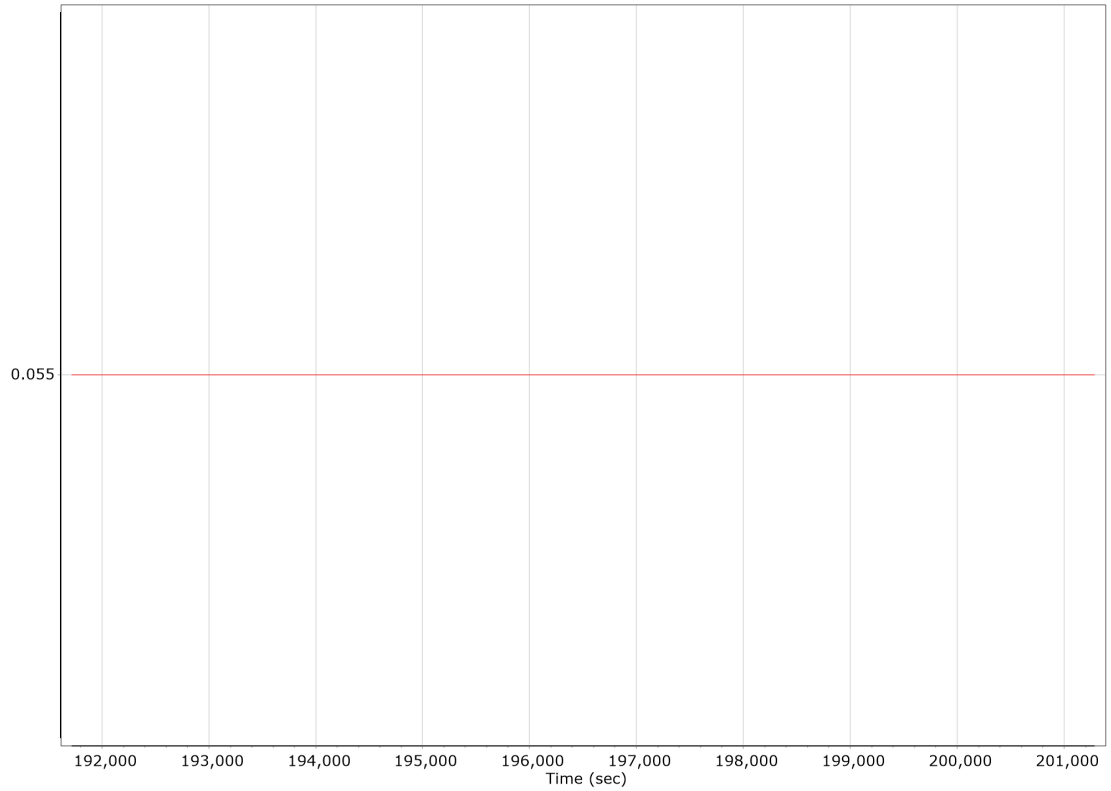
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

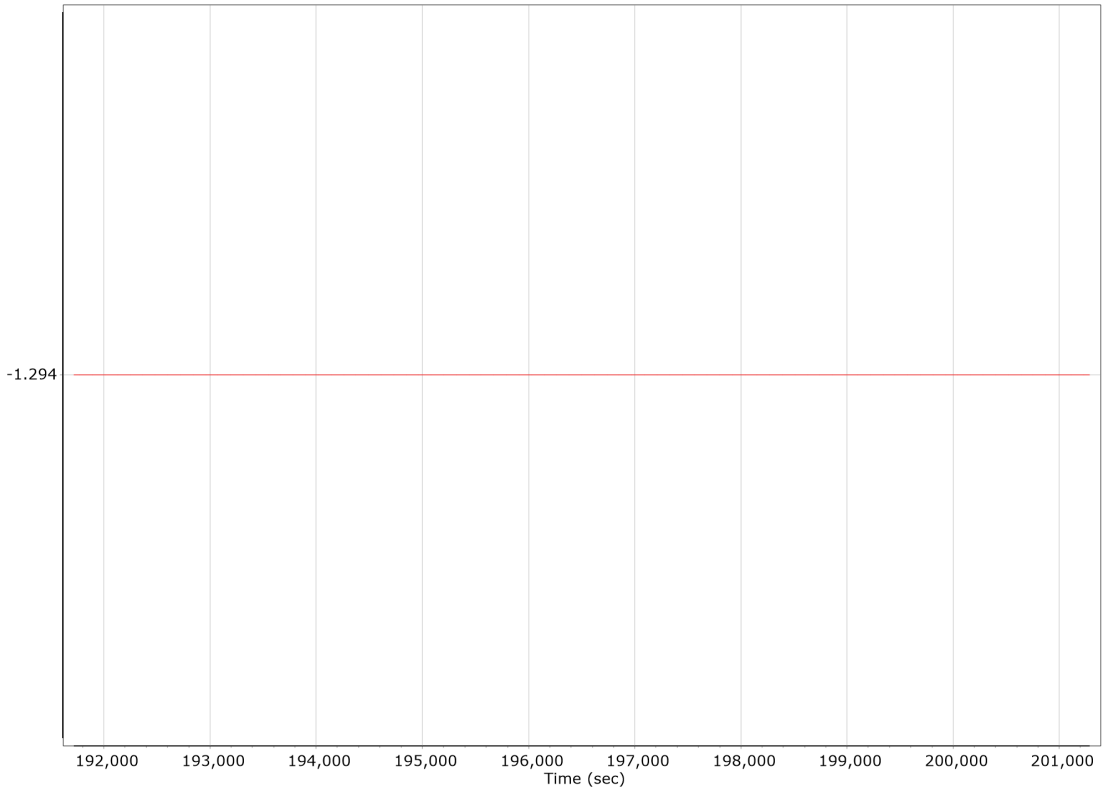
X Reference-Primary GNSS Lever Arm (m)



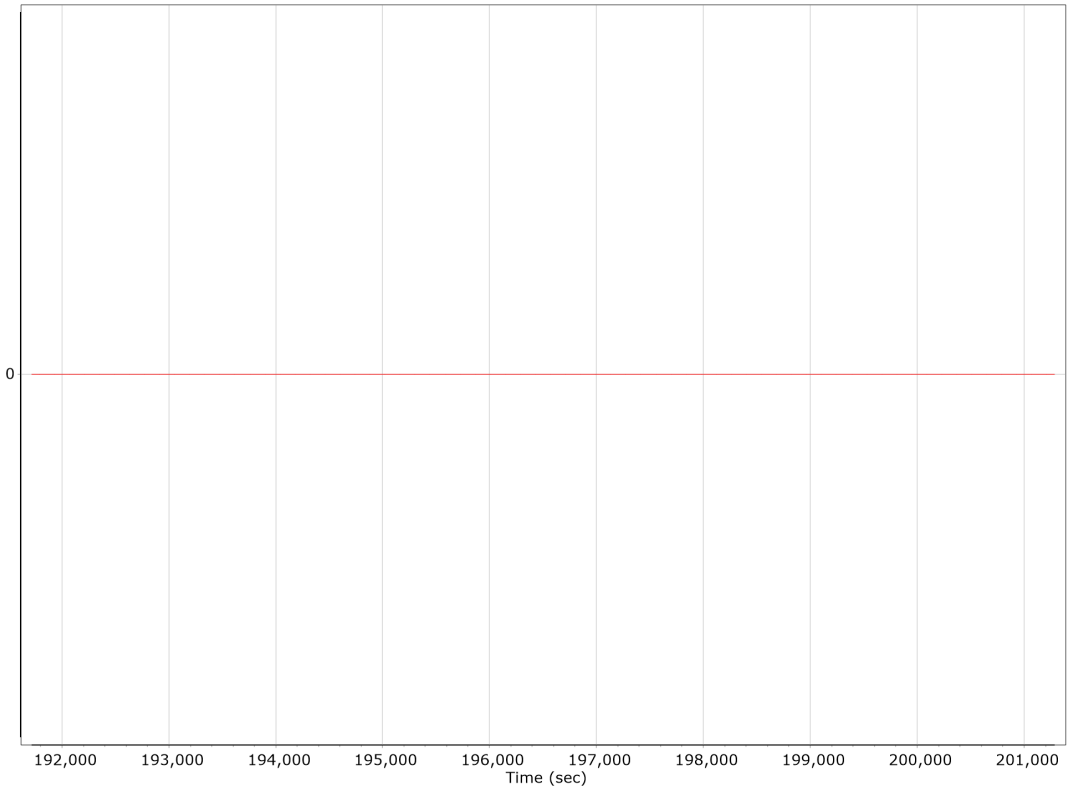
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



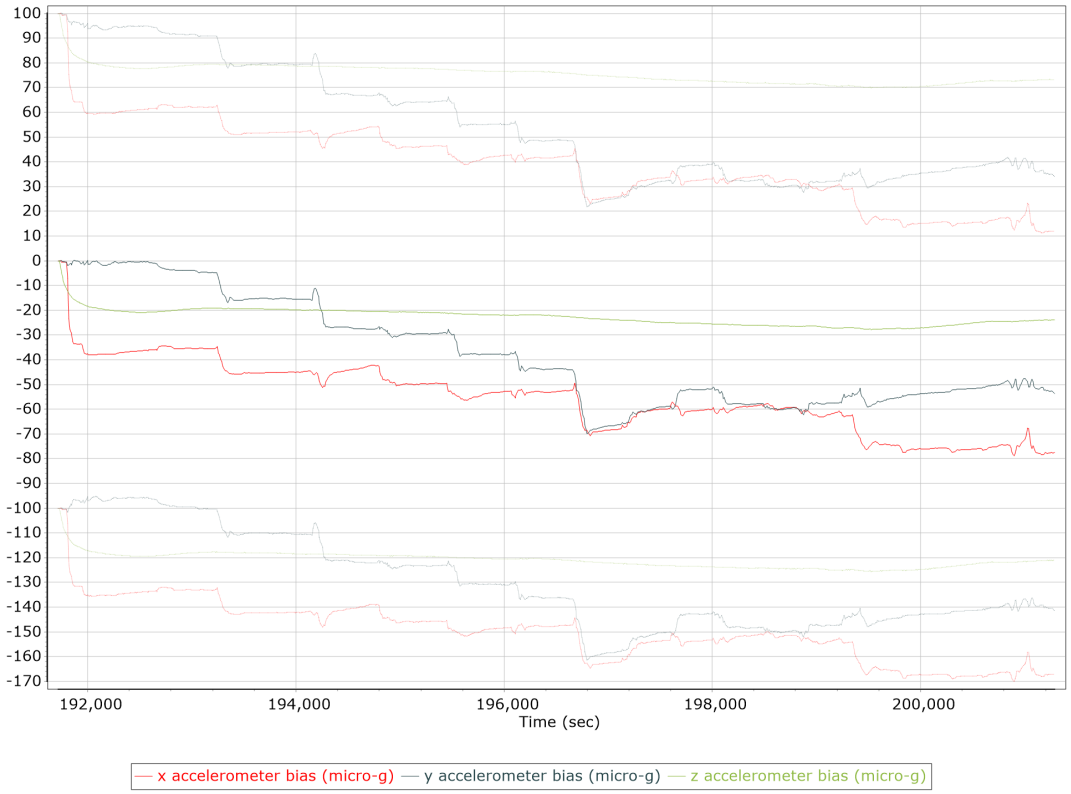
Reference-Primary GNSS Lever Arm Figure of Merit



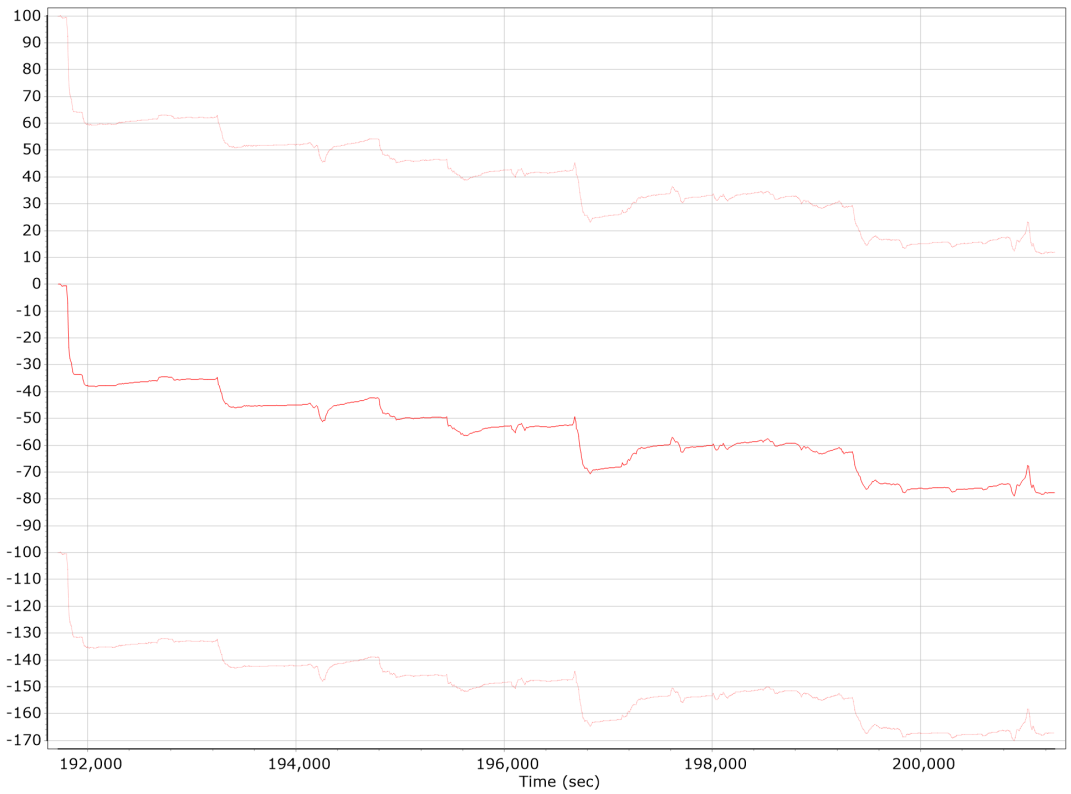
IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

Accelerometer Bias (micro-g)



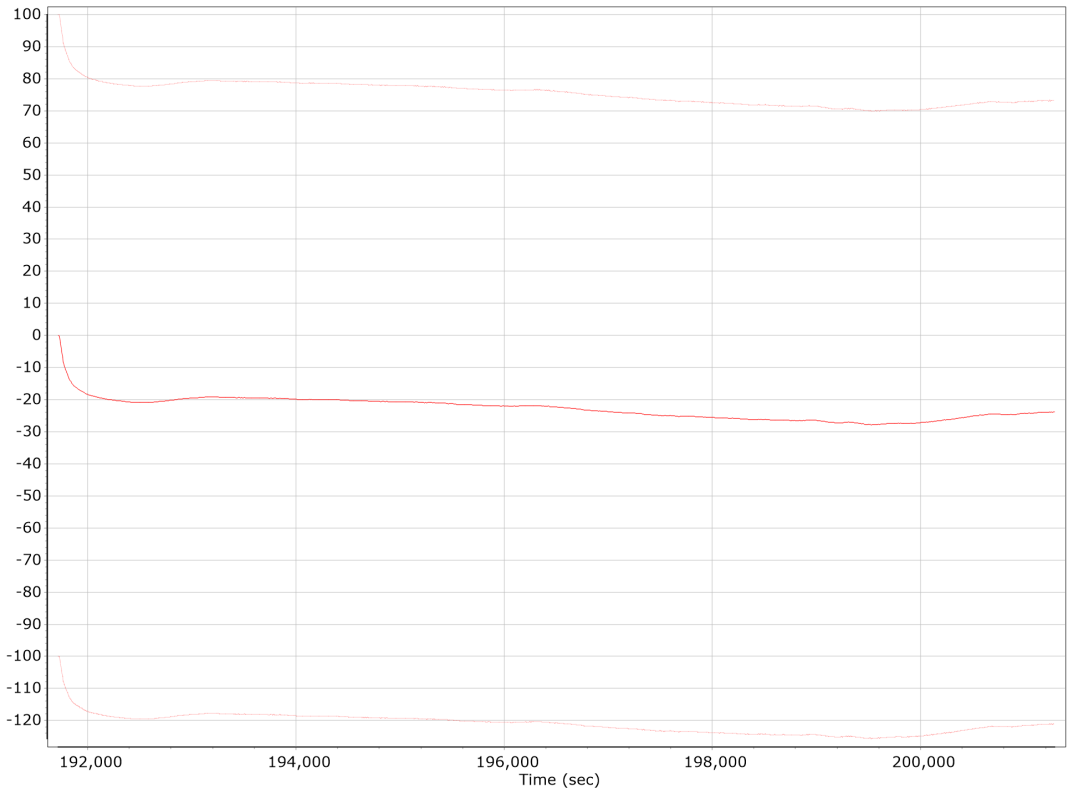
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



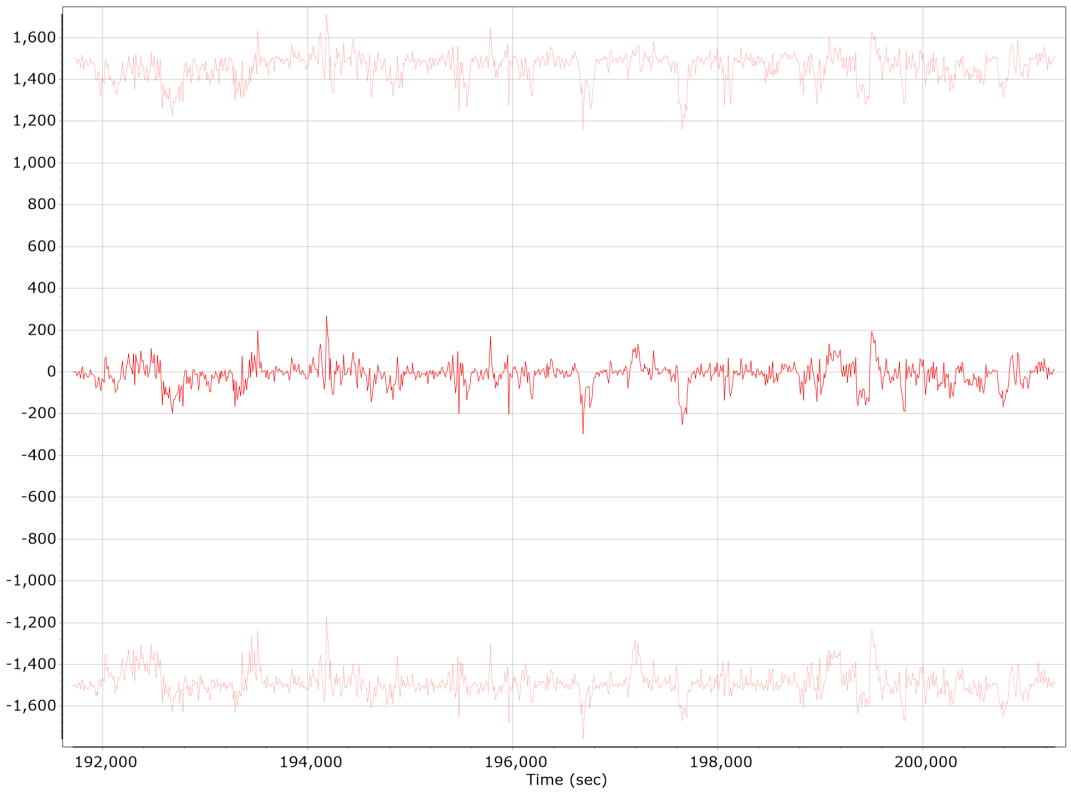
Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



X Accelerometer Scale Error (ppm)



Y Accelerometer Scale Error (ppm)



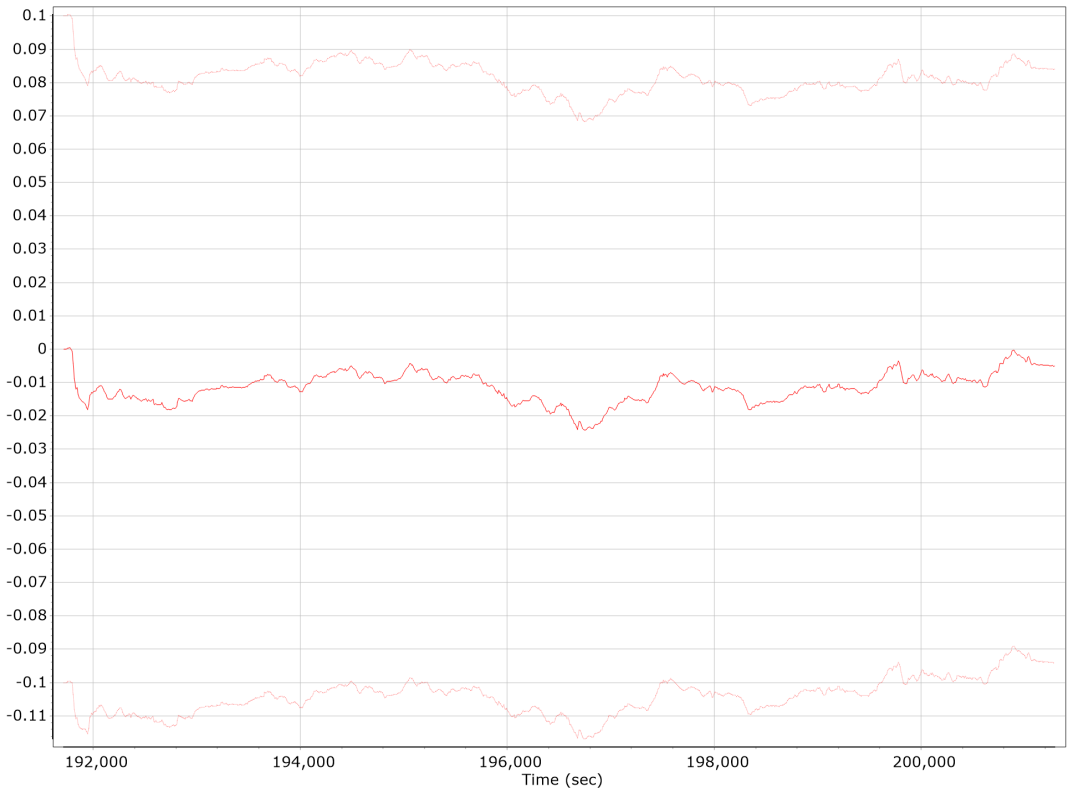
Z Accelerometer Scale Error (ppm)



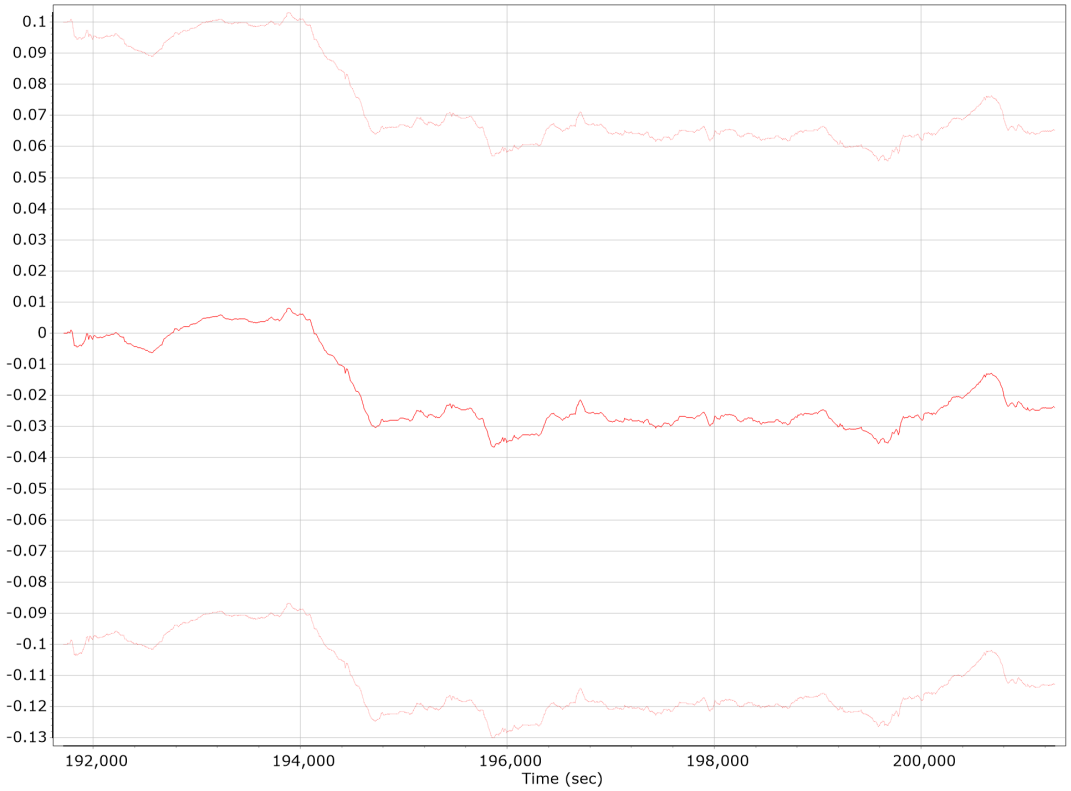
Gyro Bias (deg/h)



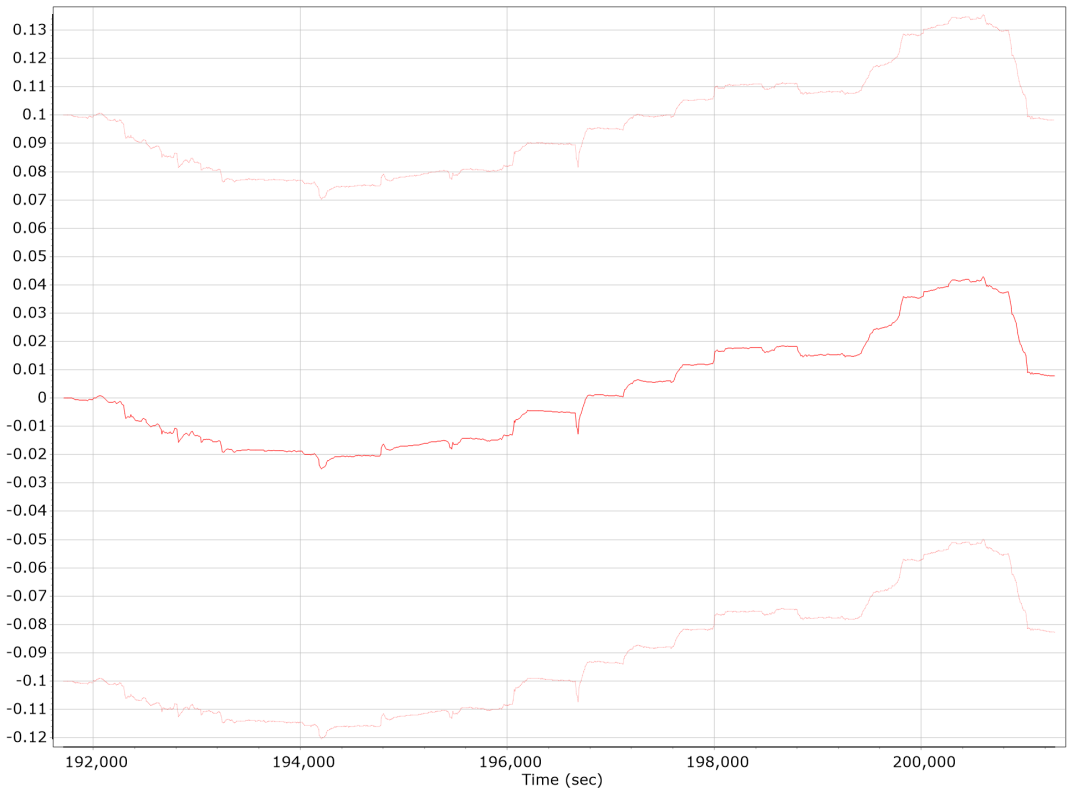
X Gyro Bias (deg/h)



Y Gyro Bias (deg/h)



Z Gyro Bias (deg/h)



Gyro Scale Error (ppm)



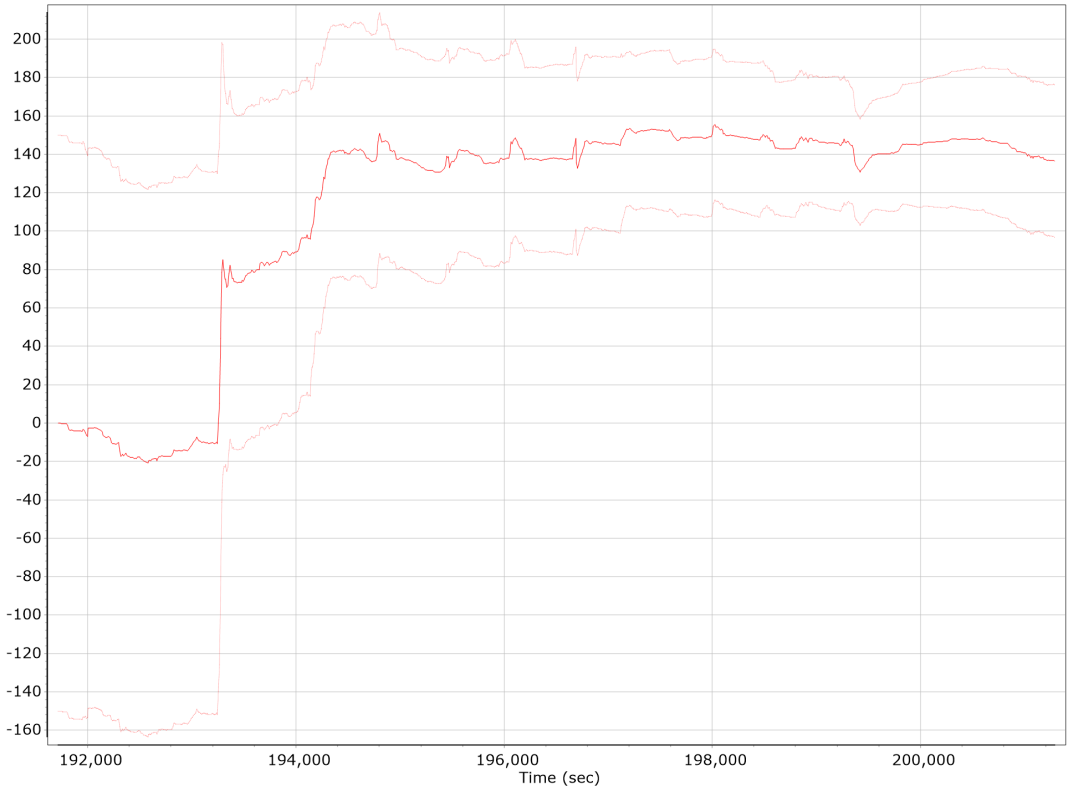
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)



Z Gyro Scale Error (ppm)

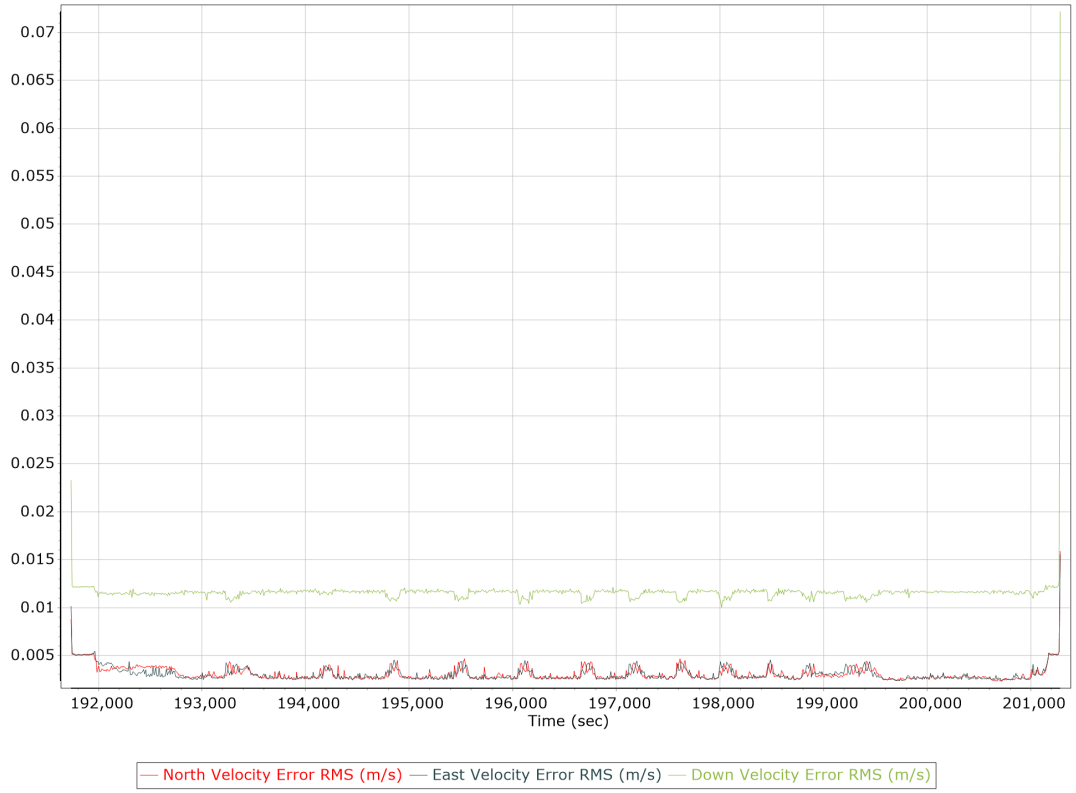


Smoothed Performance Metrics

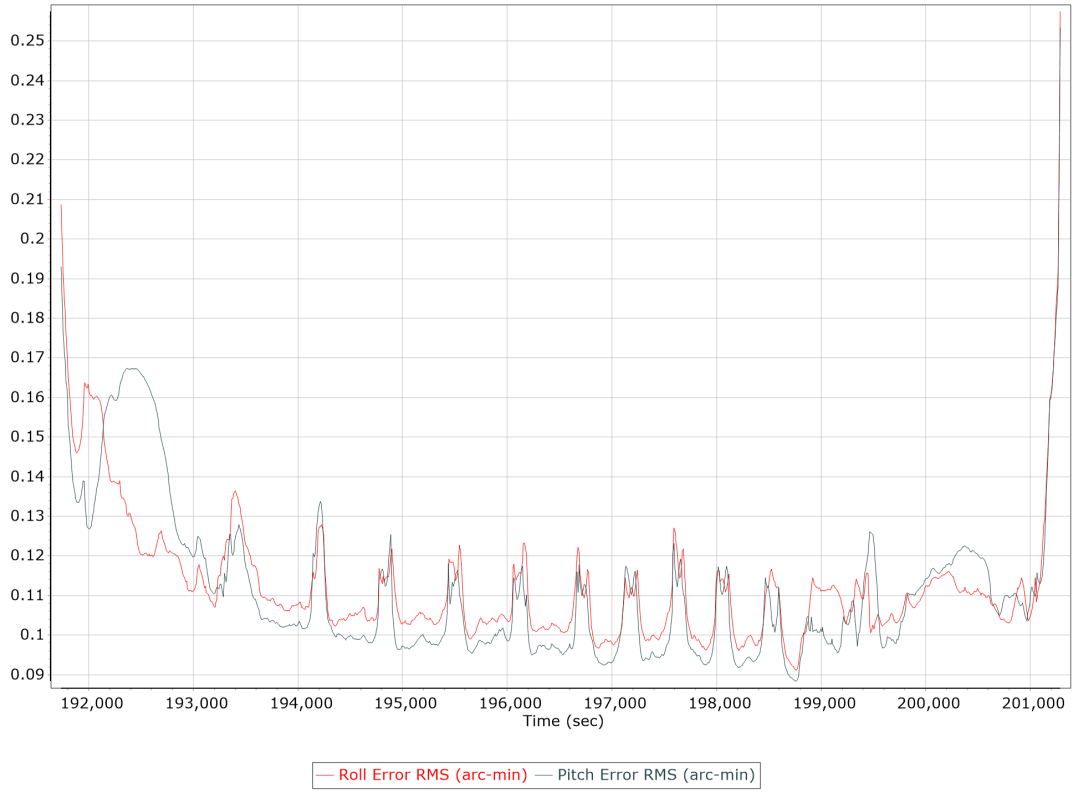
Position Error RMS (m)



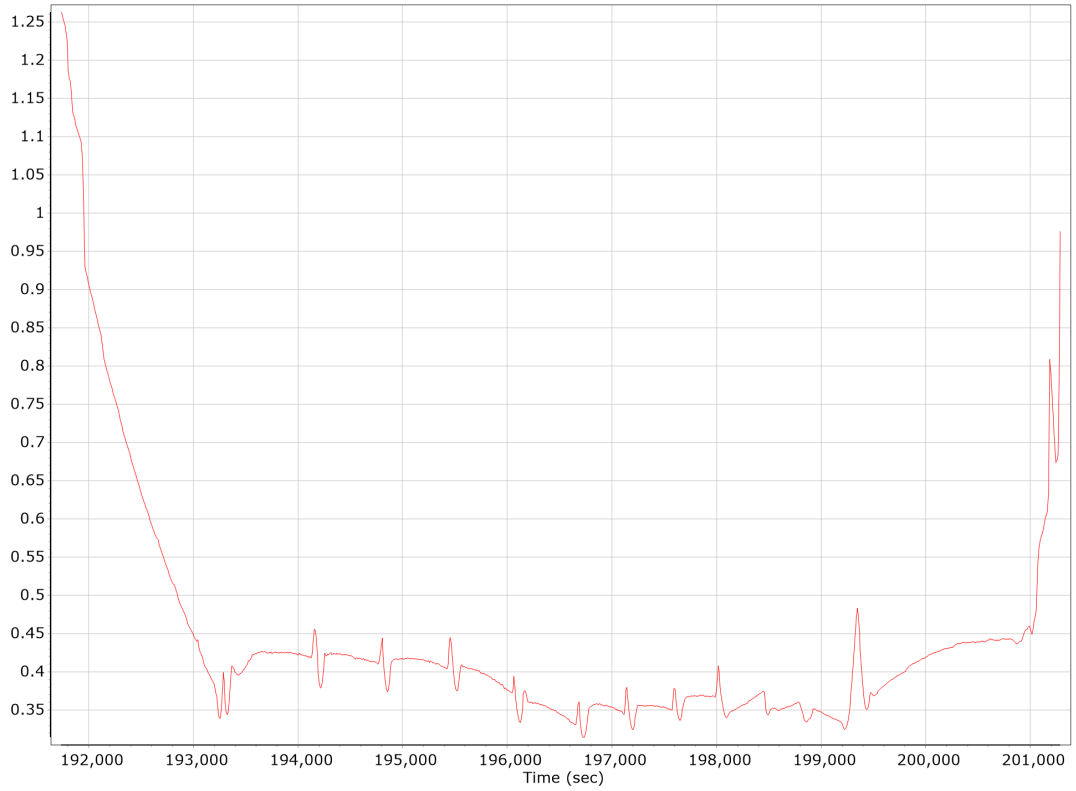
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)



Heading Error RMS (arc-min)



Forward Processed Performance Metrics

Position Error RMS (m)



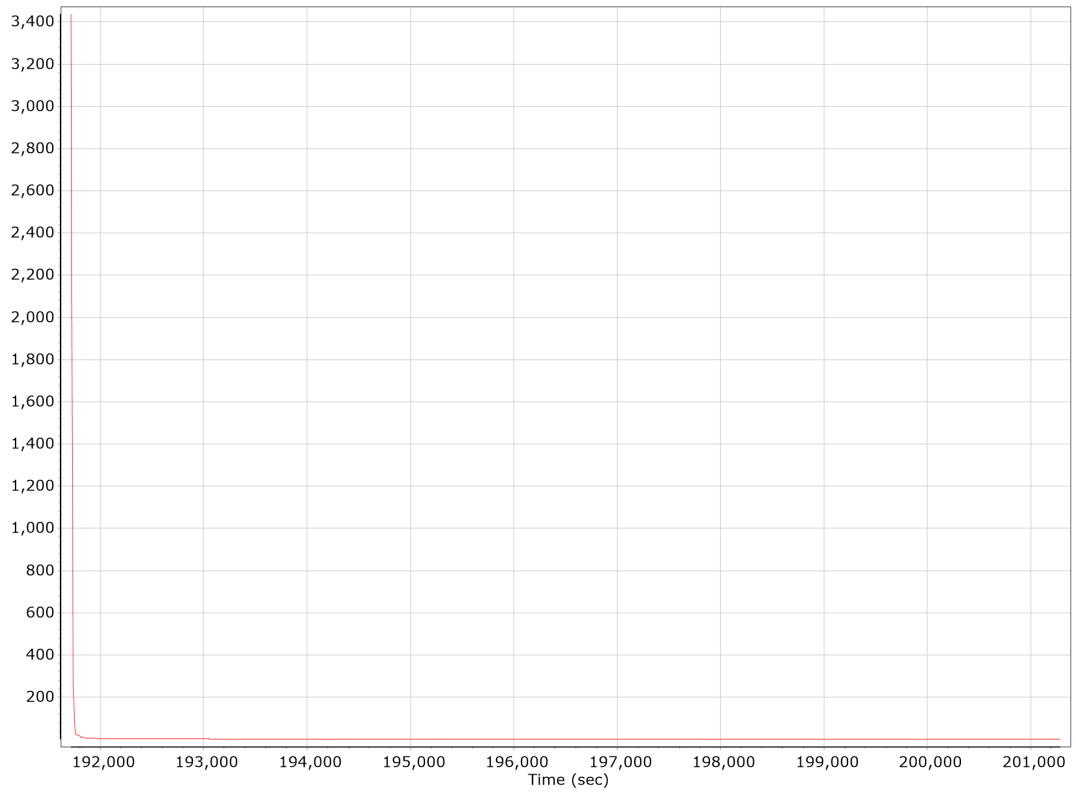
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

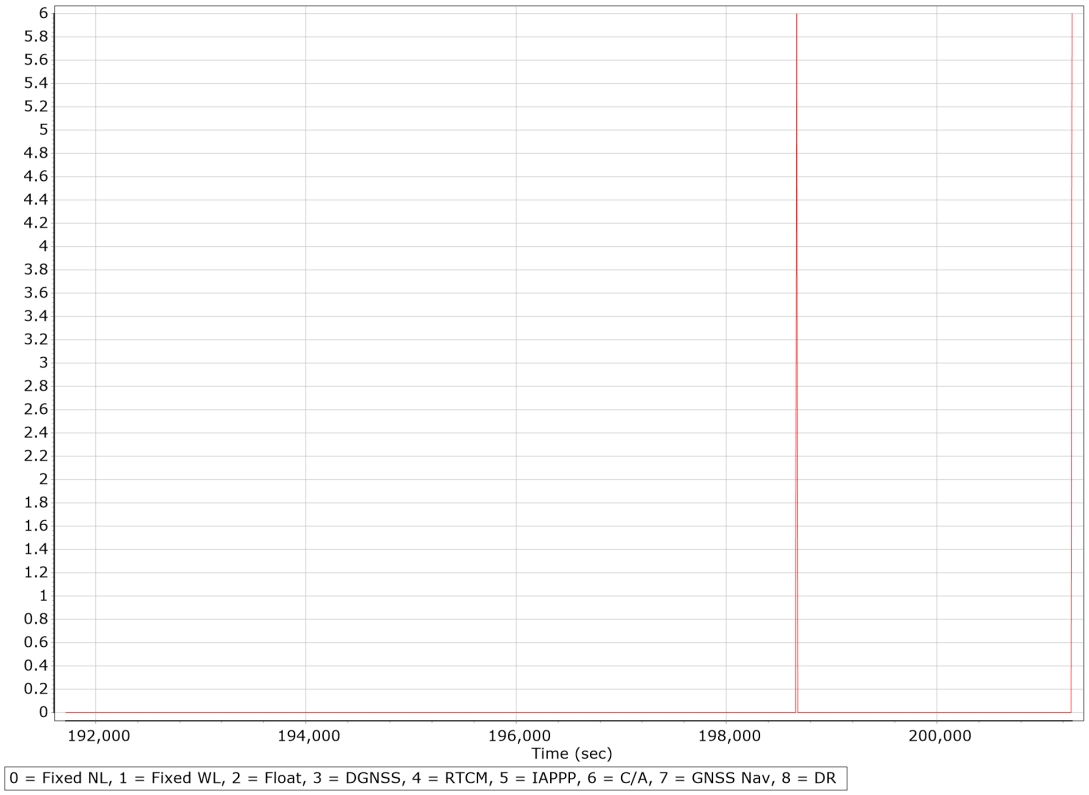


Heading Error RMS (arc-min)



Forward Processed Solution Status

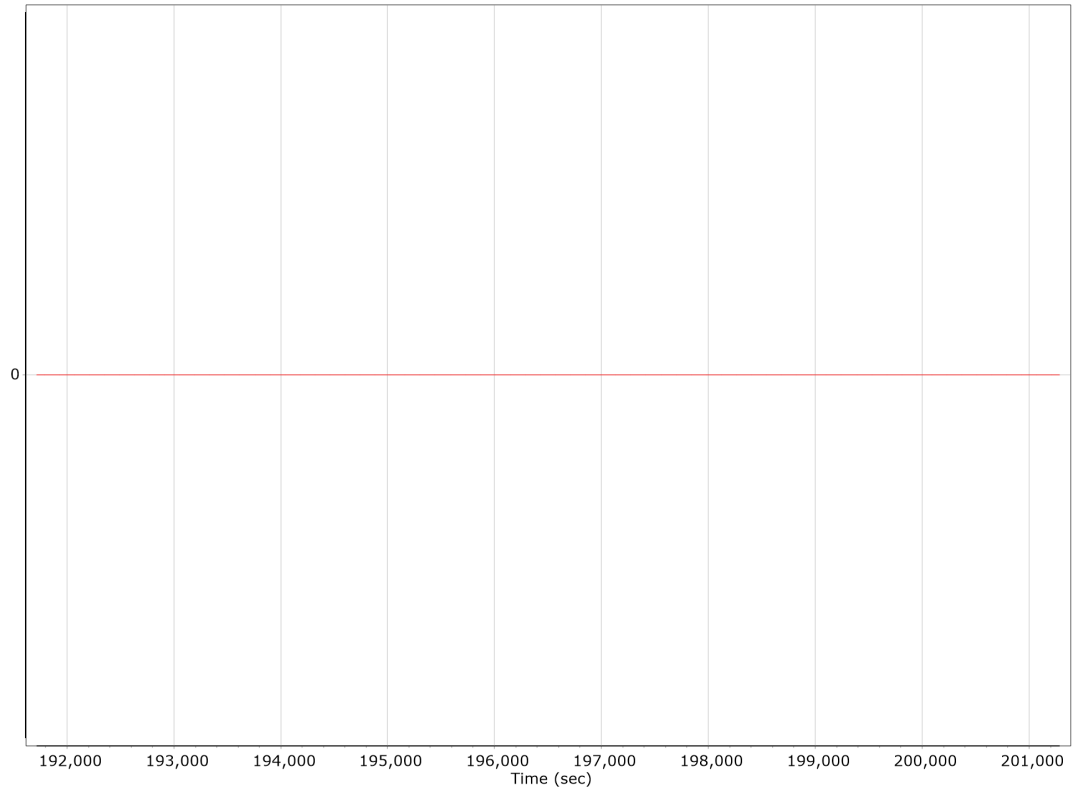
Processing Mode



Number of Satellites



Baseline Length



General Information

Mission Information

Project name	12072023A_3061
Processing date	2023-12-12 18:42:09
Mission date	2023-12-07 20:47:52
Mission duration	02:44:09.309
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N8902
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
231207_204734_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm3410.23g	GLONASS Broadcast Ephemeris
Ephm3410.23n	GPS Broadcast Ephemeris

Output Files

Filename	File type
sbet_12072023A_3061.out	SBET Trajectory File

Rover Data Summary

First raw data file	231207_204734_INS-GPS_1.raw		
Last raw data file	231207_204734_INS-GPS_1.raw		
Start GPS week	2291		
Start time	420454.080 (12/7/2023 8:47:34 PM)		
End time	430303.389 (12/7/2023 11:31:43 PM)		
Start of fine alignment	420746.051 (12/7/2023 8:52:26 PM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	0.000	0.000	0.000
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

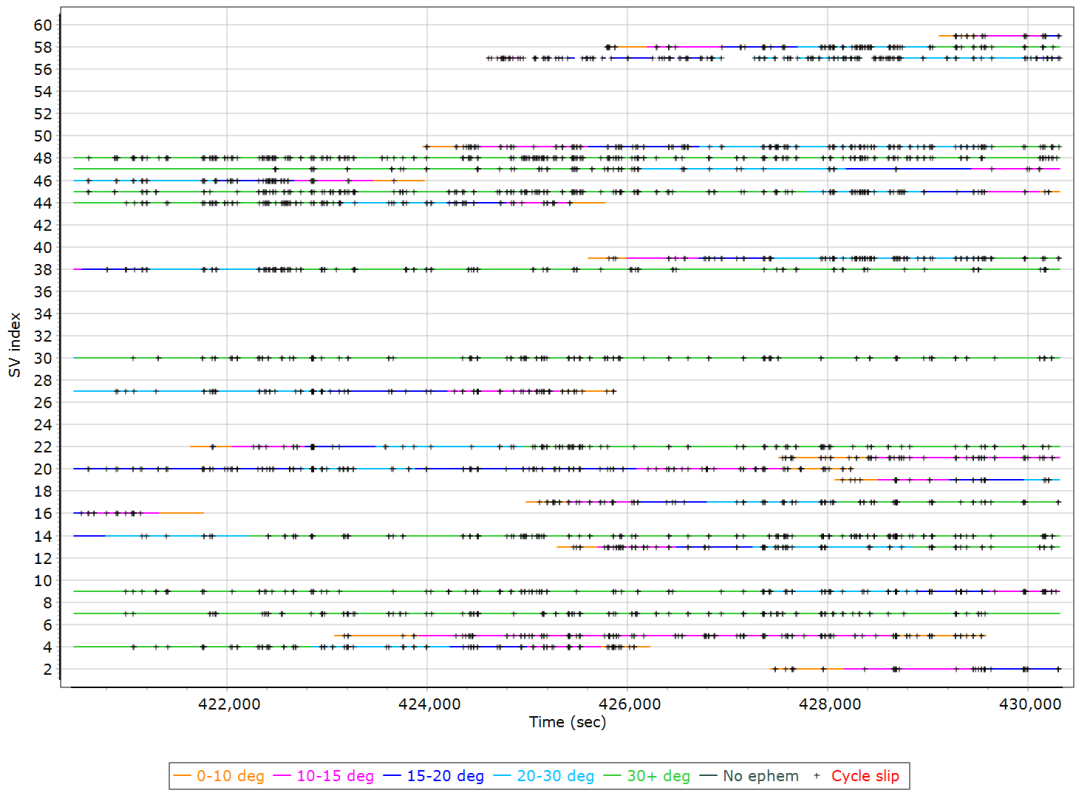
Rover Data QC

Raw IMU Import QC Summary

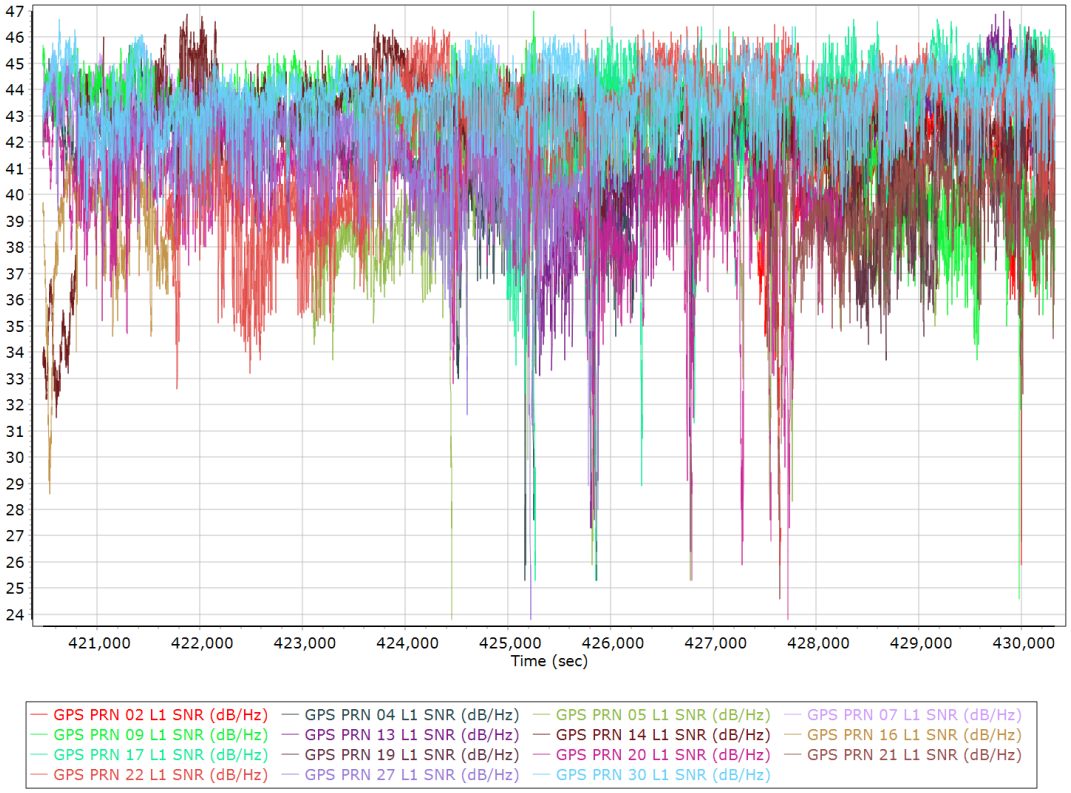
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_12072023A_3061.log
IMU Records Processed	1969506
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

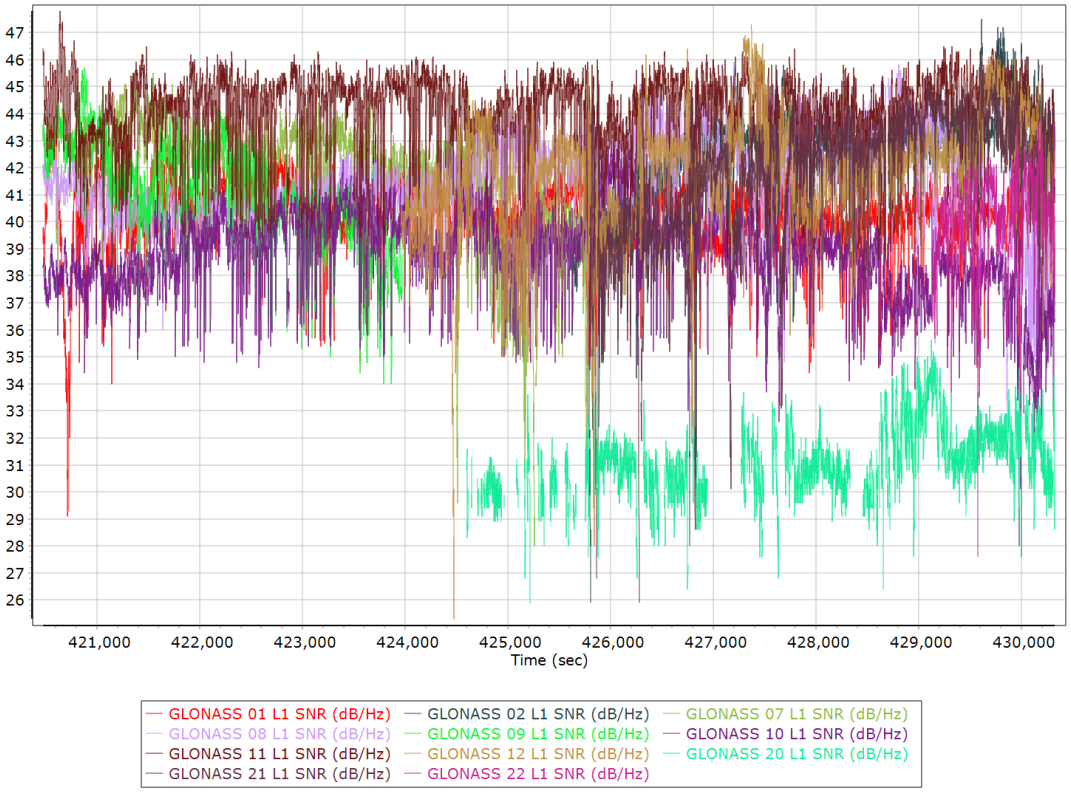
GPS/GLONASS L1 Satellite Lock/Elevation



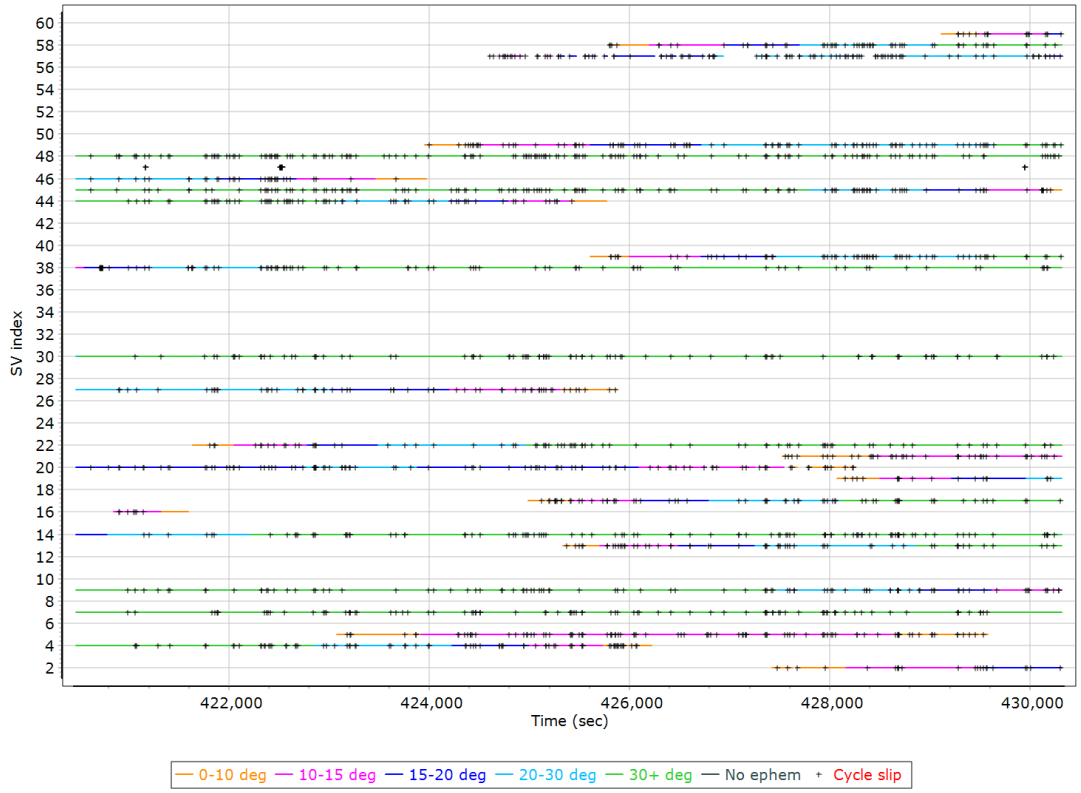
GPS L1 SNR



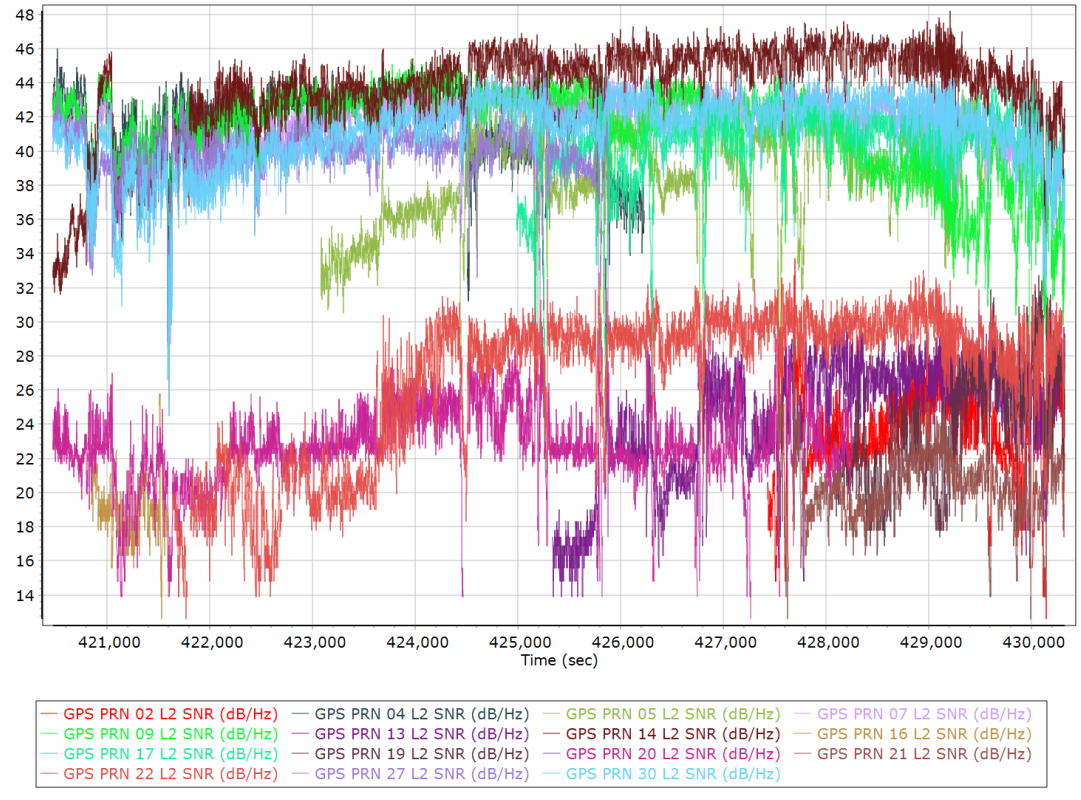
GLONASS L1 SNR



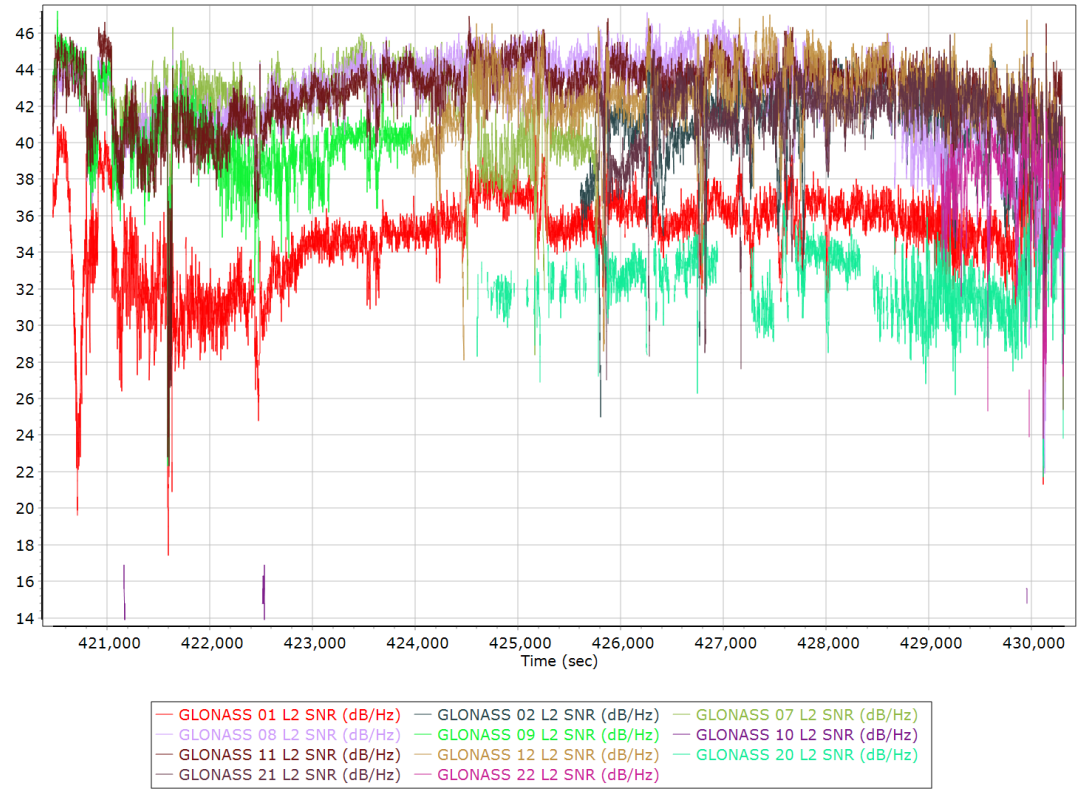
GPS/GLONASS L2 Satellite Lock/Elevation



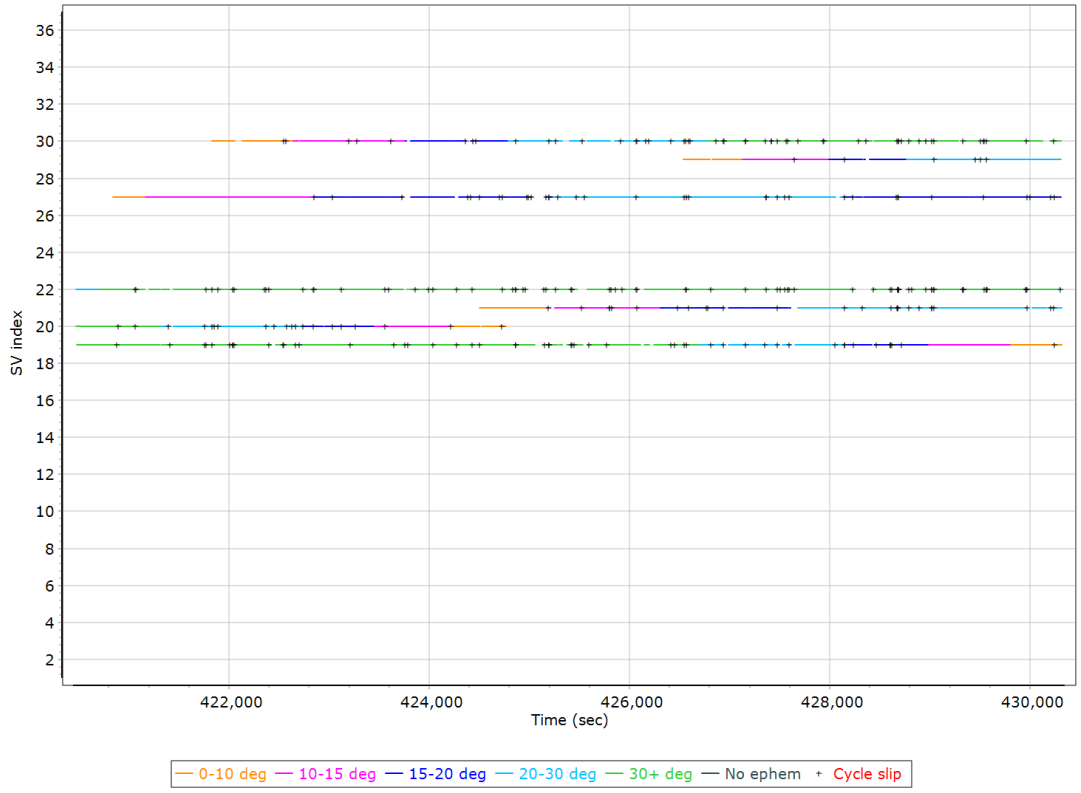
GPS L2 SNR



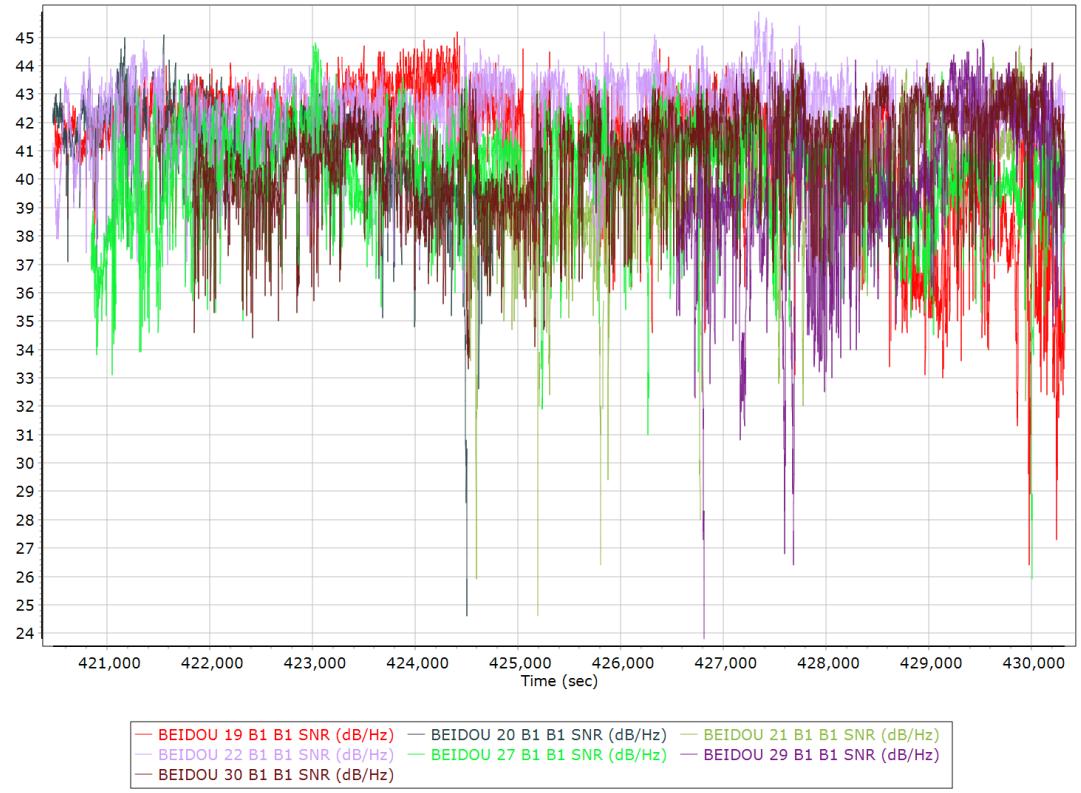
GLONASS L2 SNR



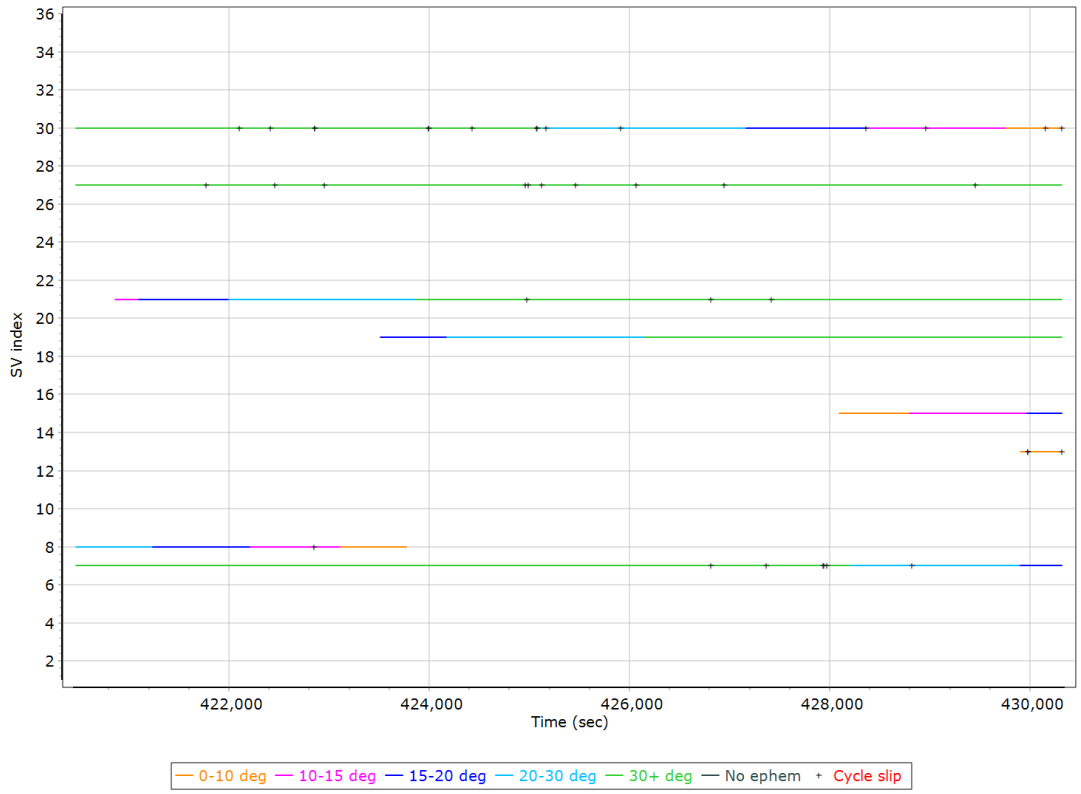
BEIDOU Satellite Lock/Elevation



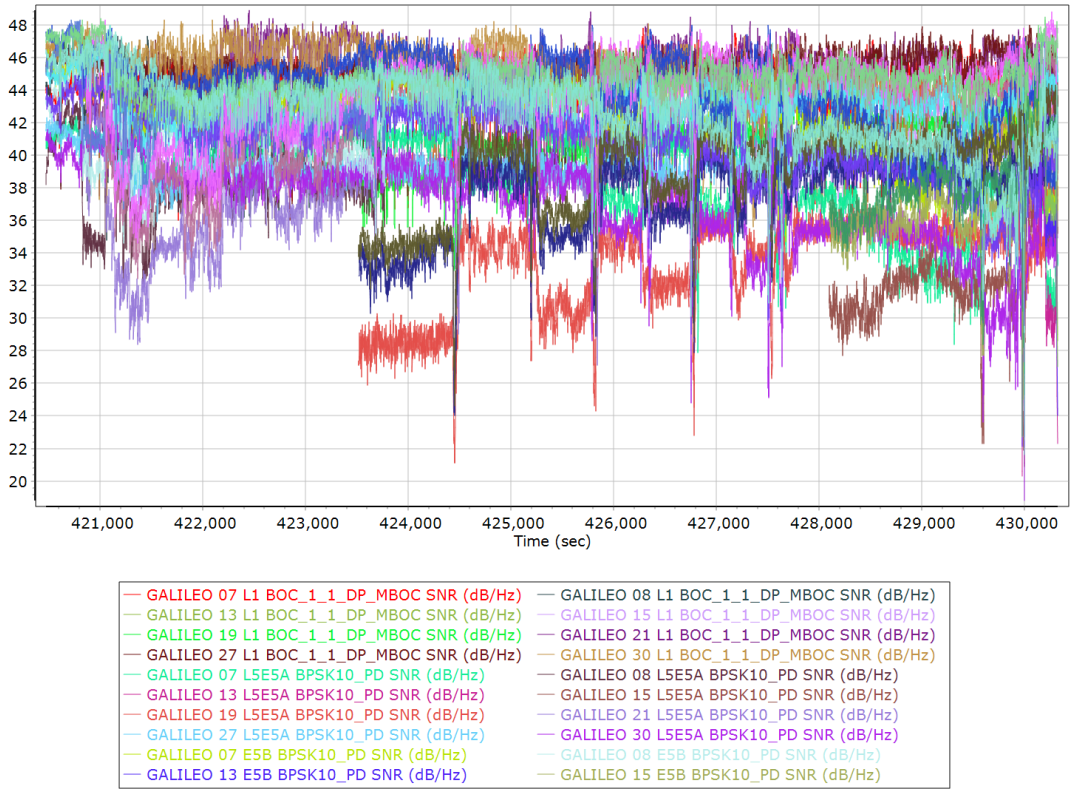
BEIDOU SNR



GALILEO Satellite Lock/Elevation

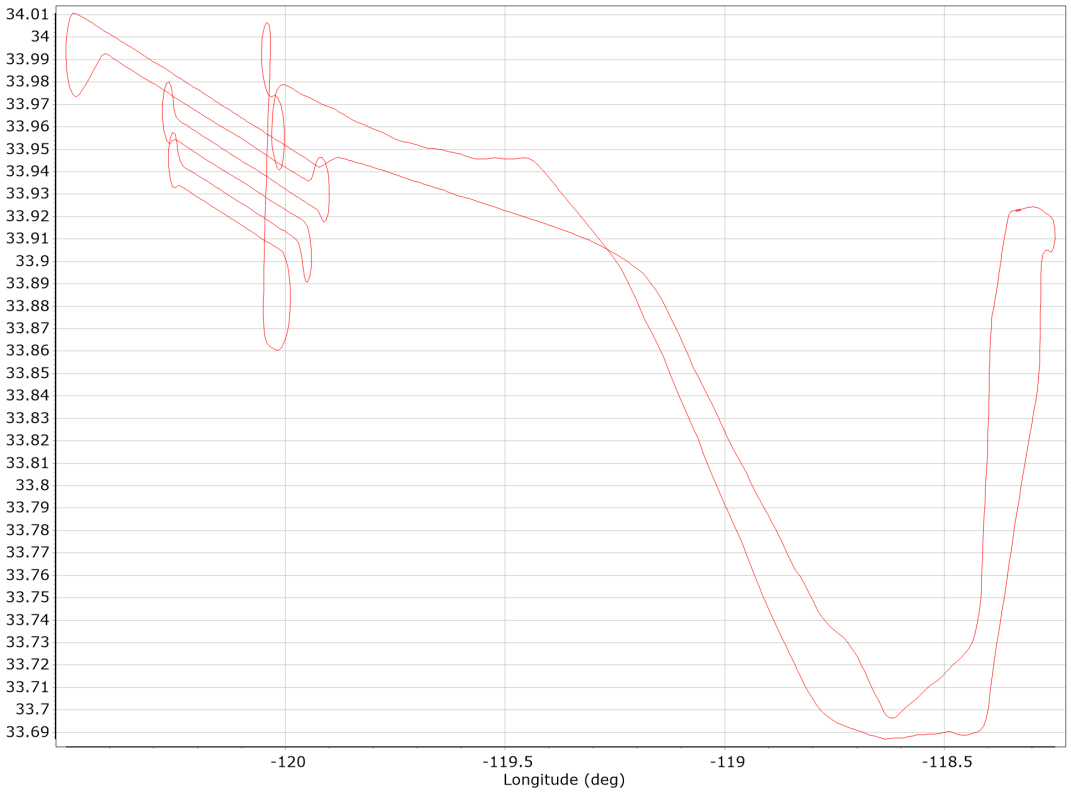


GALILEO SNR


48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
421,000
422,000
423,000
424,000
425,000
426,000
427,000
428,000
429,000
430,000
Time (sec)
GALILEO 07 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 08 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 13 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 15 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 19 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 21 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 27 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 30 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 07 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 08 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 13 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 15 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 19 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 21 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 27 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 30 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 07 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 08 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 13 E5B BPSK10_PD SNR (dB/Hz)
GALILEO 15 E5B BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

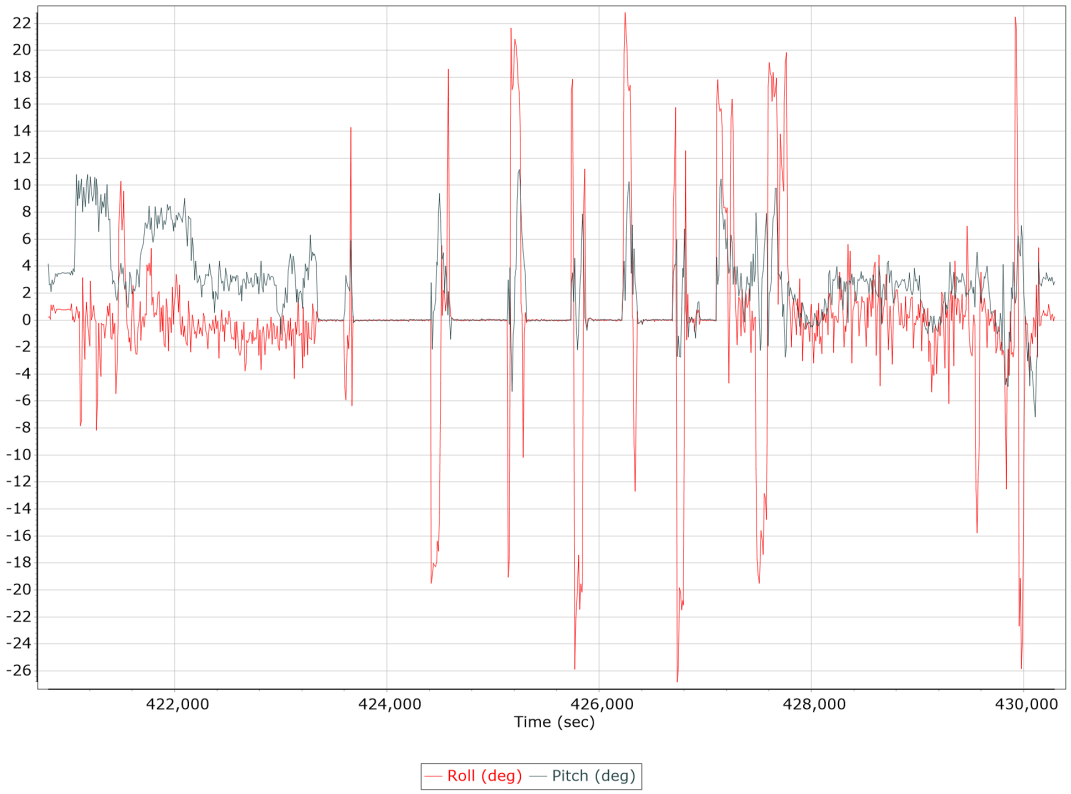
Top View



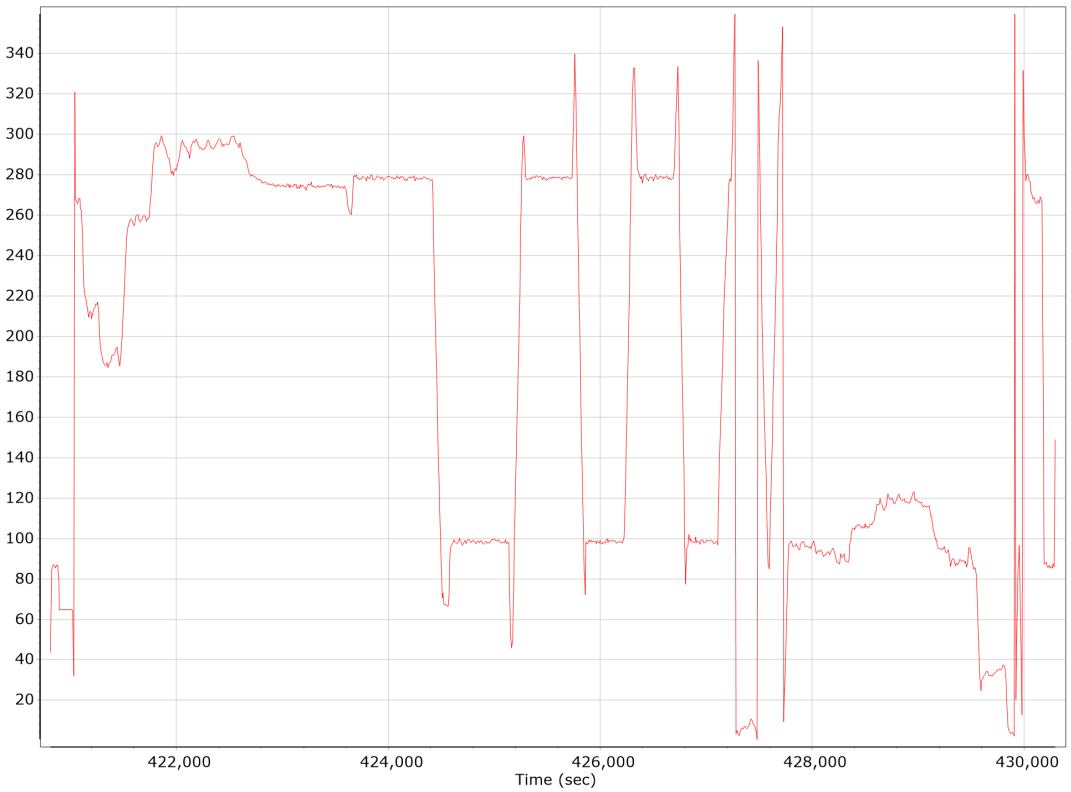
Altitude



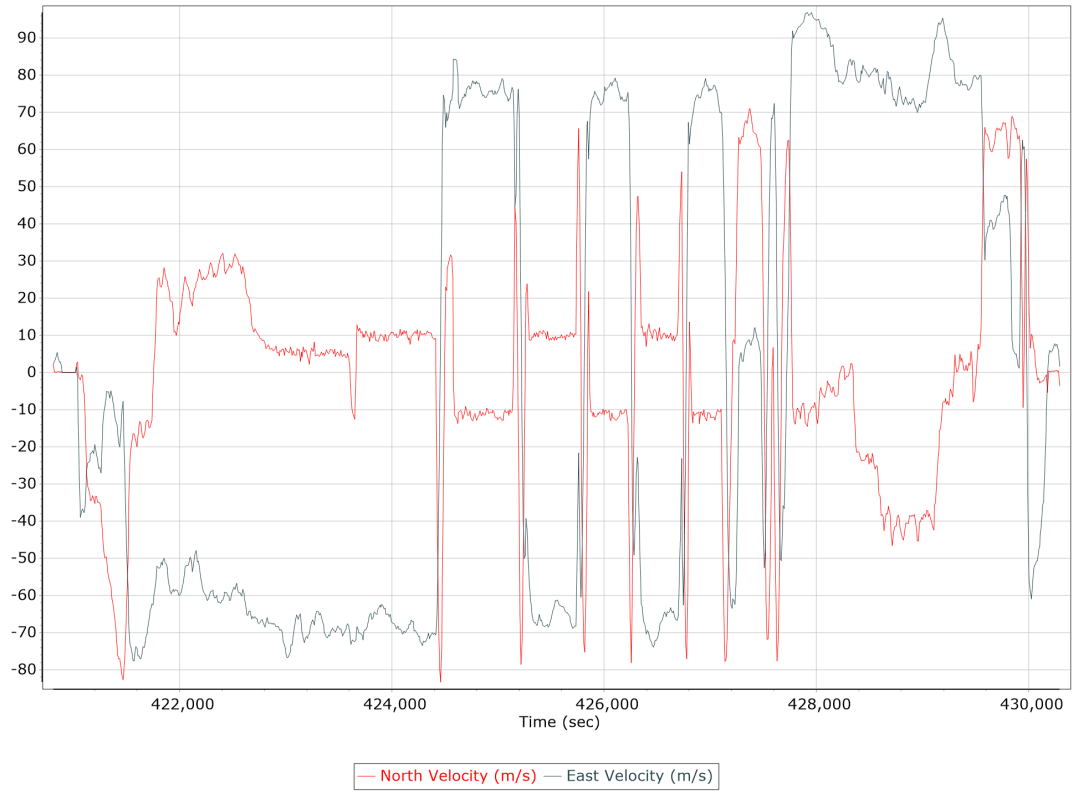
Roll/Pitch



Heading



North/East Velocity



Down Velocity



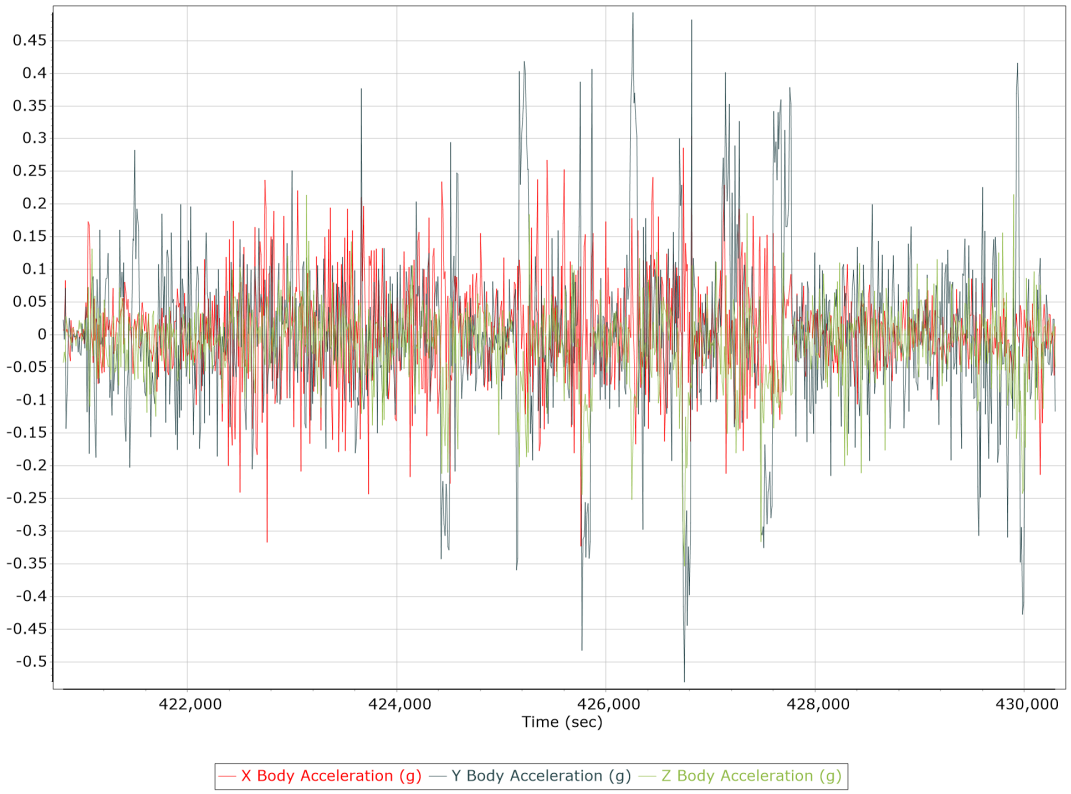
Total Speed



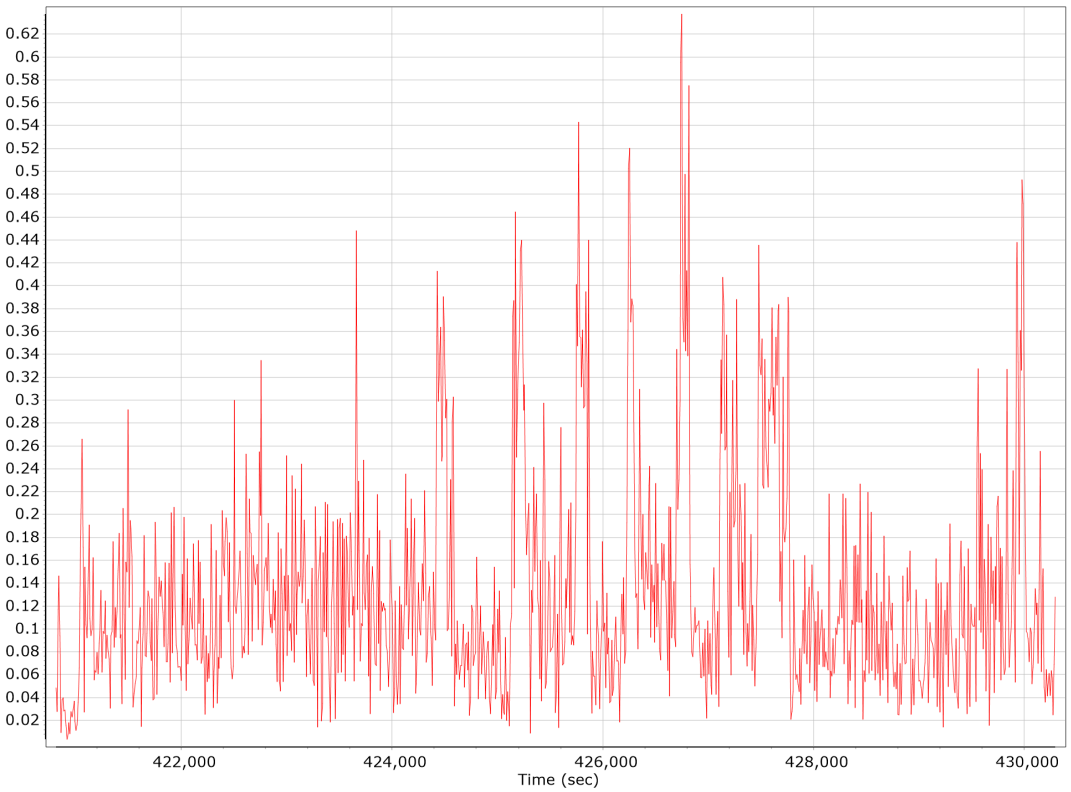
Ground Speed



Body Acceleration



Total Body Acceleration

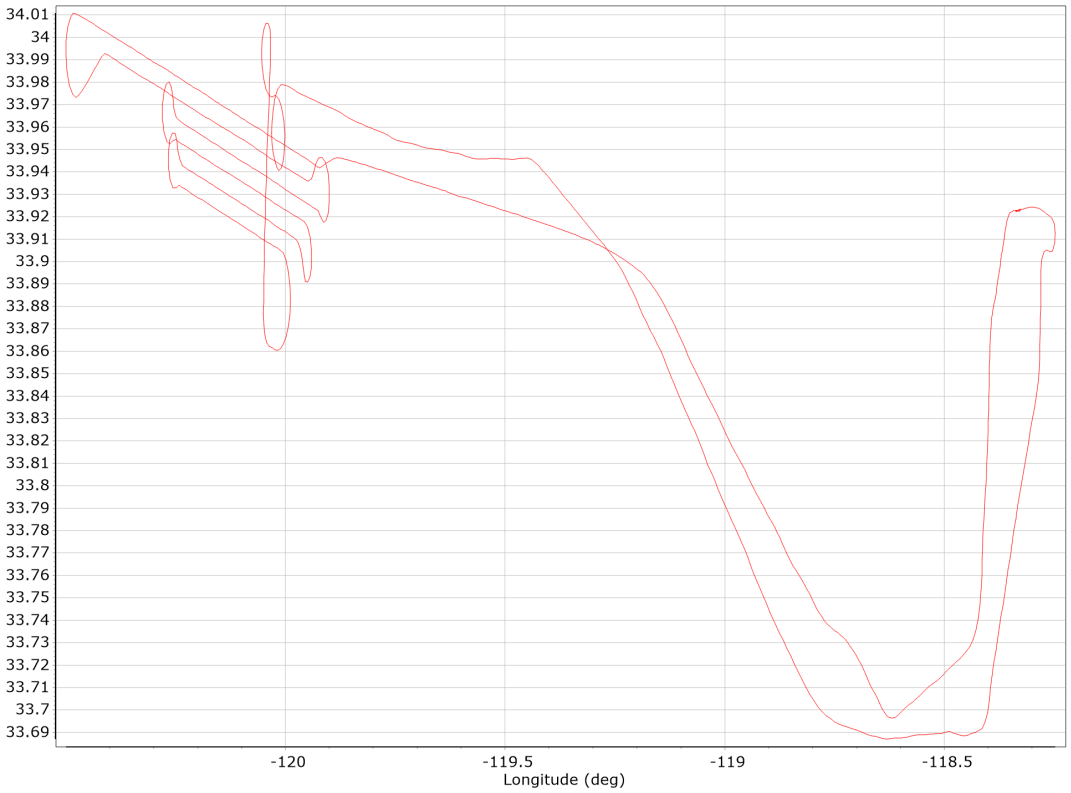


Body Angular Rate



Forward Processed Trajectory Information

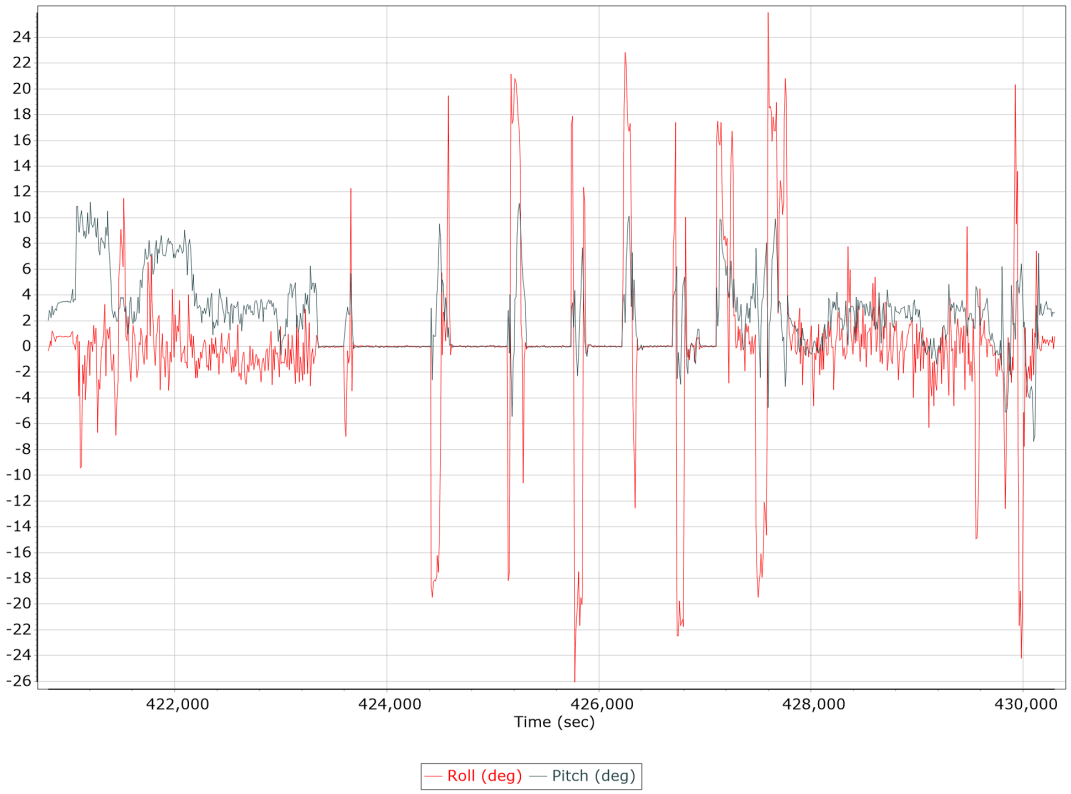
Top View



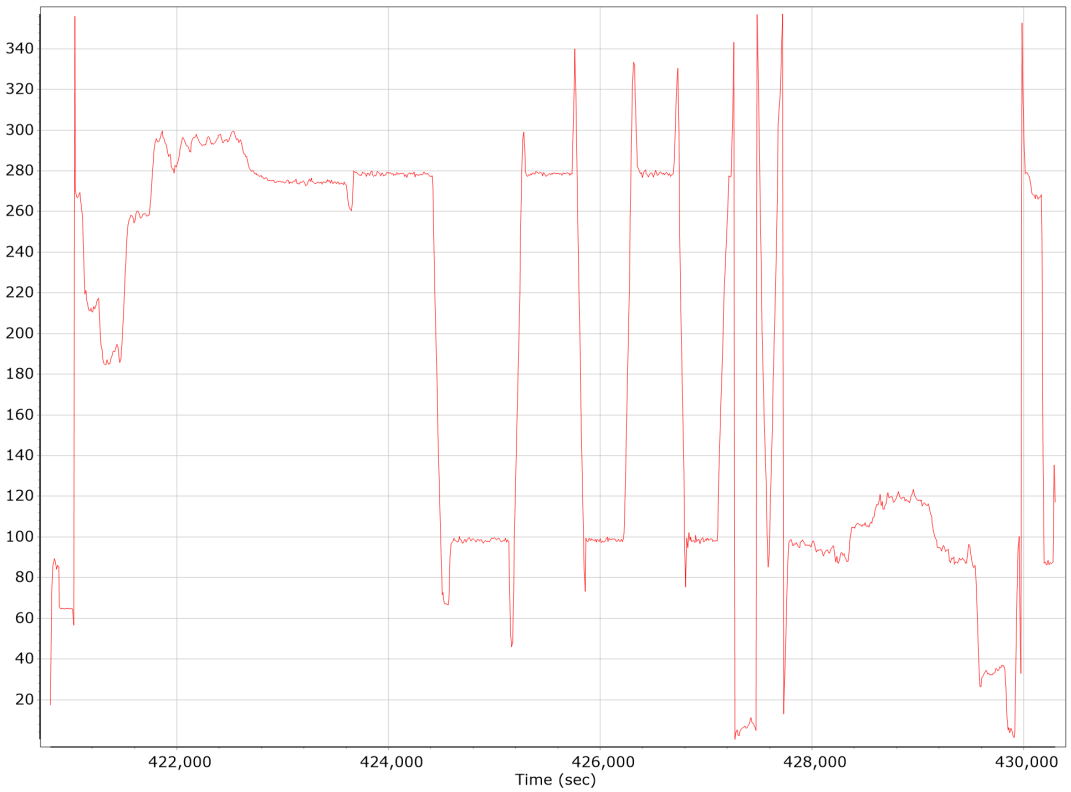
Altitude



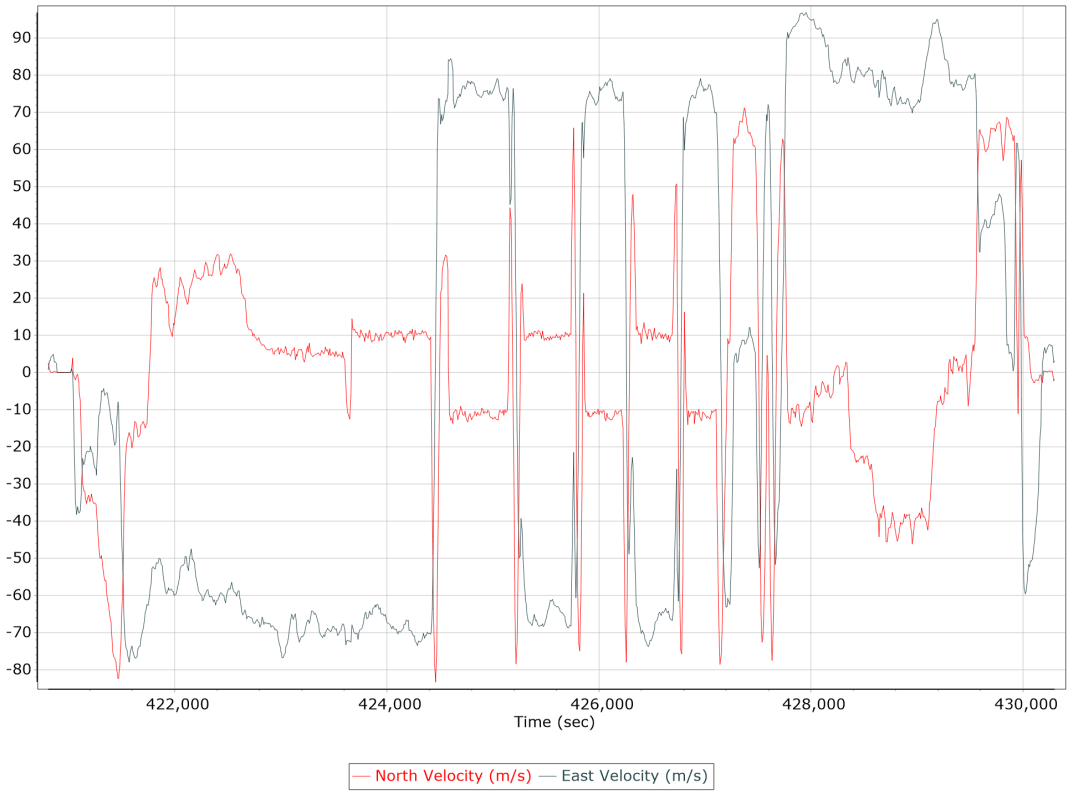
Roll/Pitch



Heading



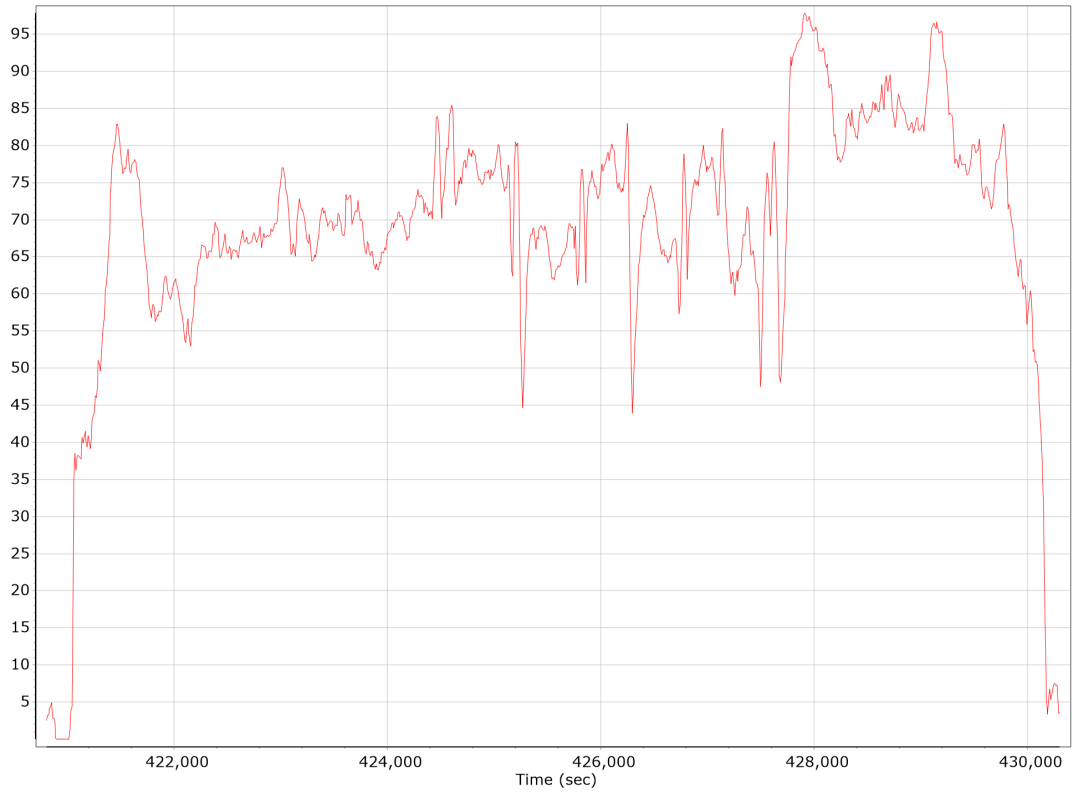
North/East Velocity



Down Velocity



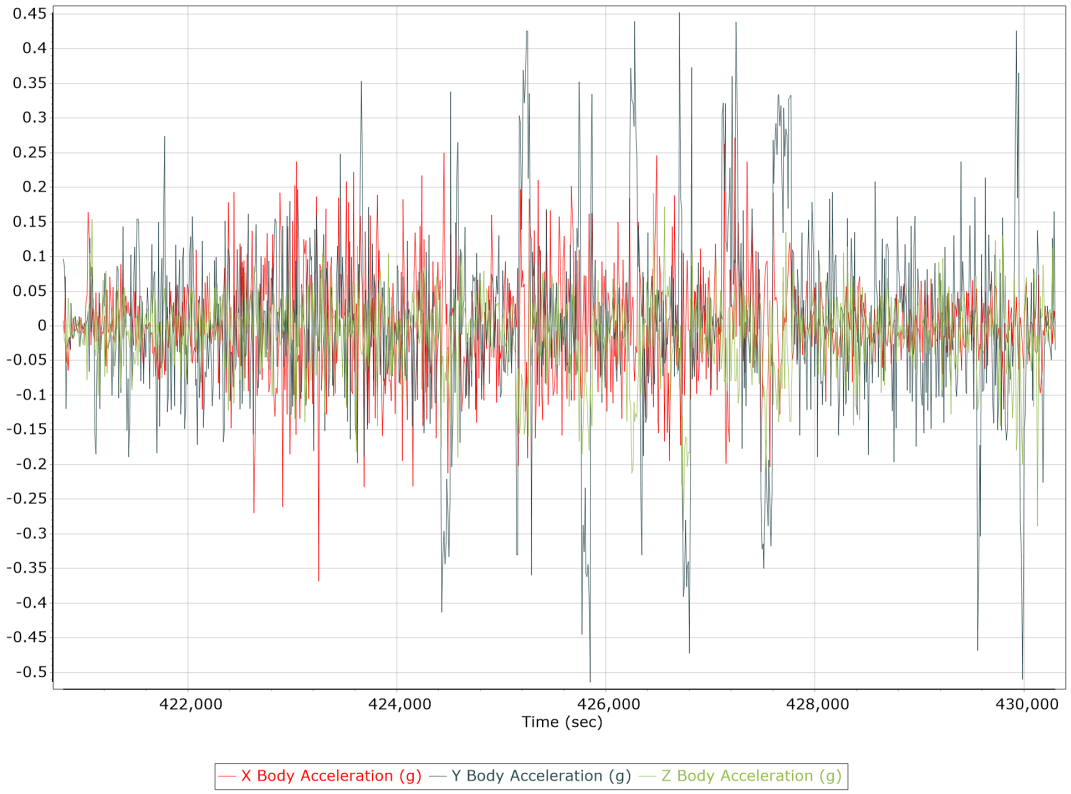
Total Speed



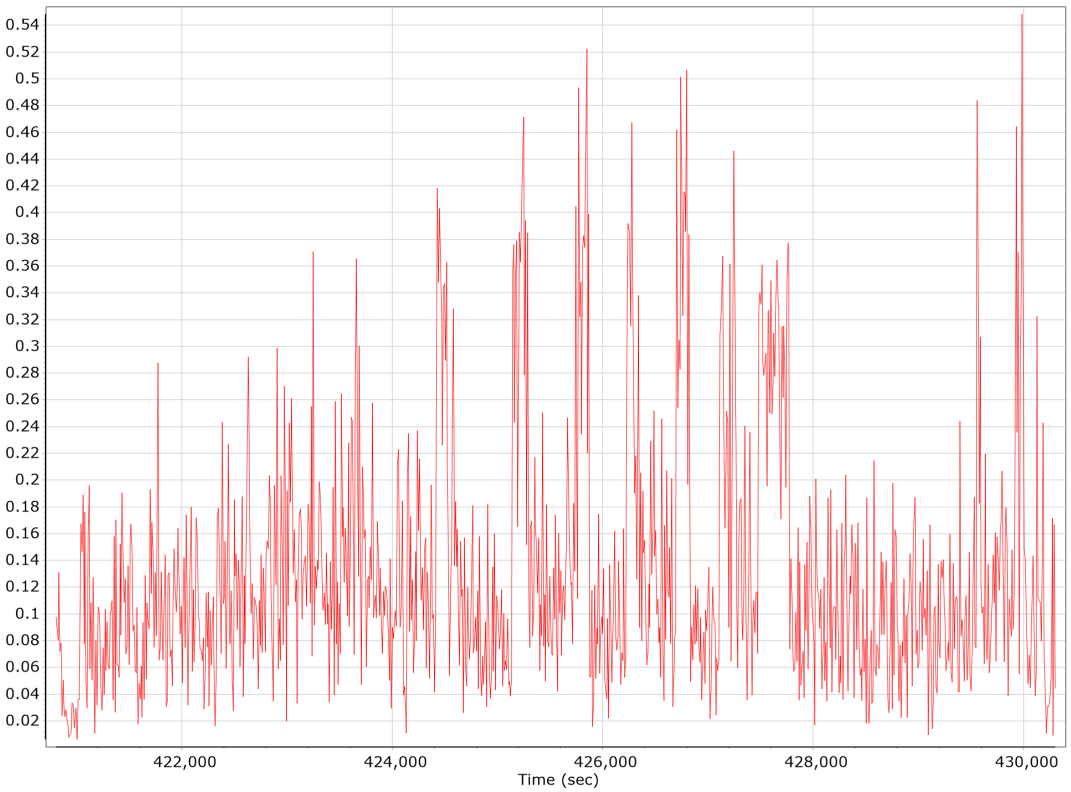
Ground Speed



Body Acceleration



Total Body Acceleration



Body Angular Rate

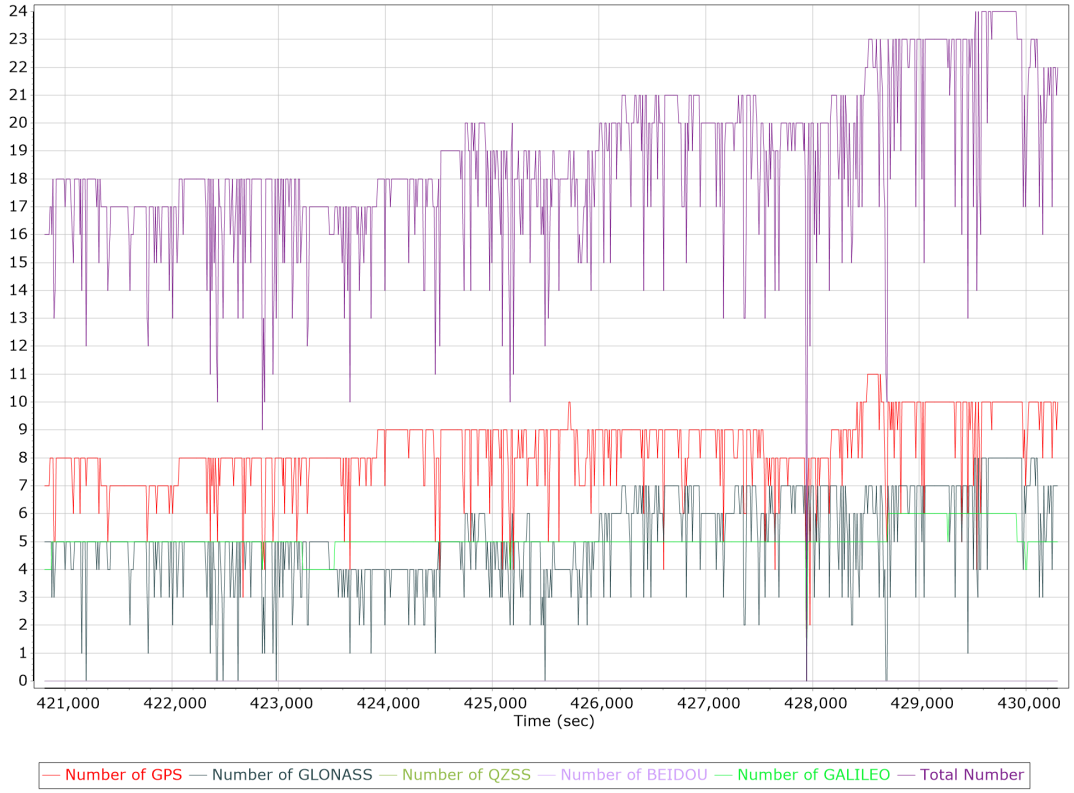


GNSS QC

GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	2	11	8
Number of GLONASS SV	0	8	5
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	4	6	5
Total number of SV	7	24	18
PDOP	1.04	2.99	1.24
QC Solution Gaps	2.00	4.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	9826.00	0.00	10.00
Percentage	99.90	0.00	0.10

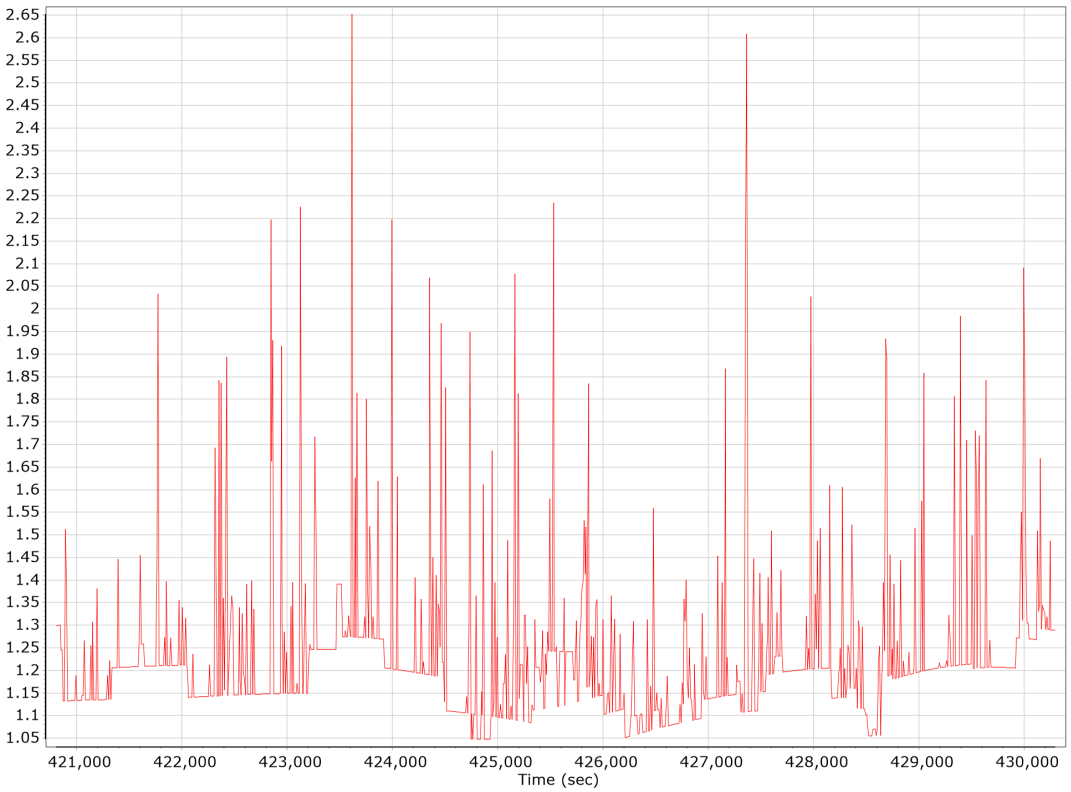
Num SVs in solution



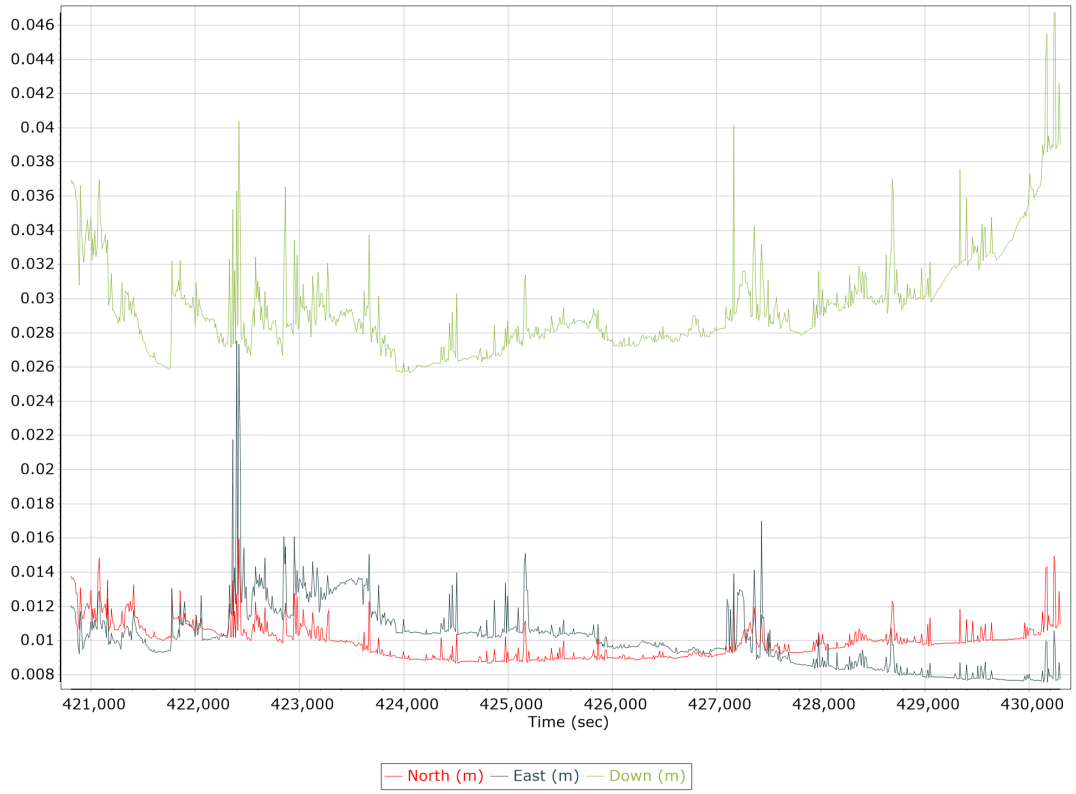
Forward/Reverse Separation



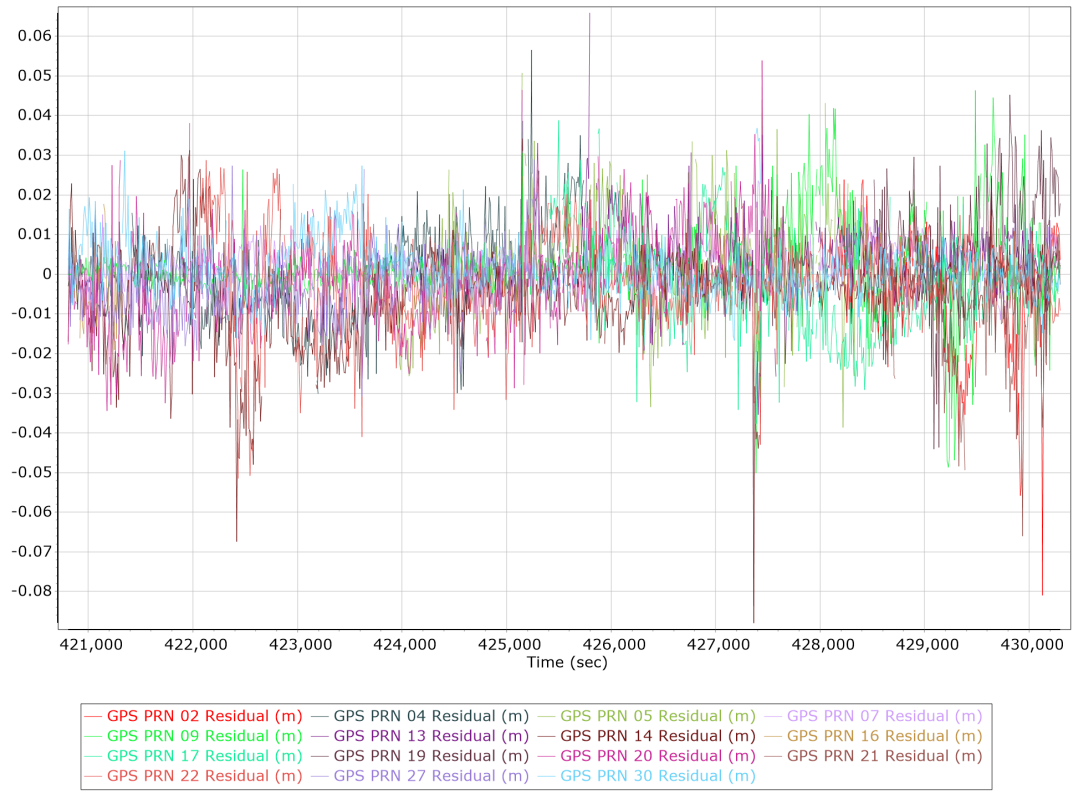
PDOP



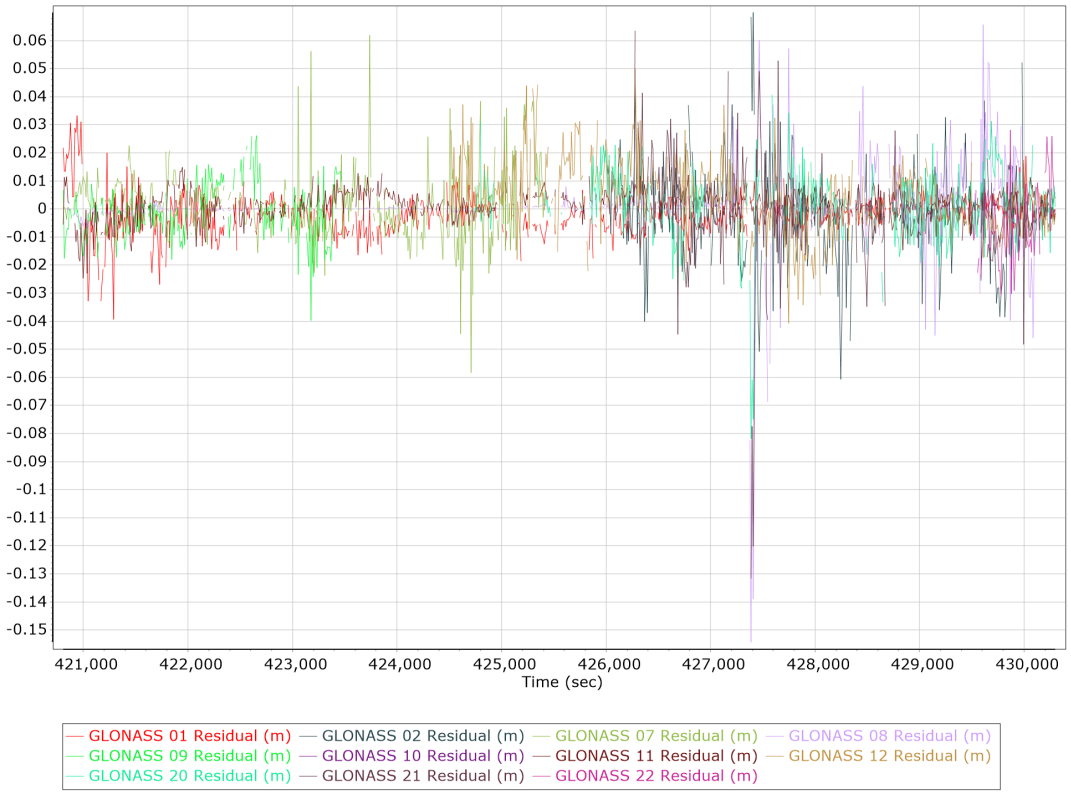
Estimated Position Accuracy



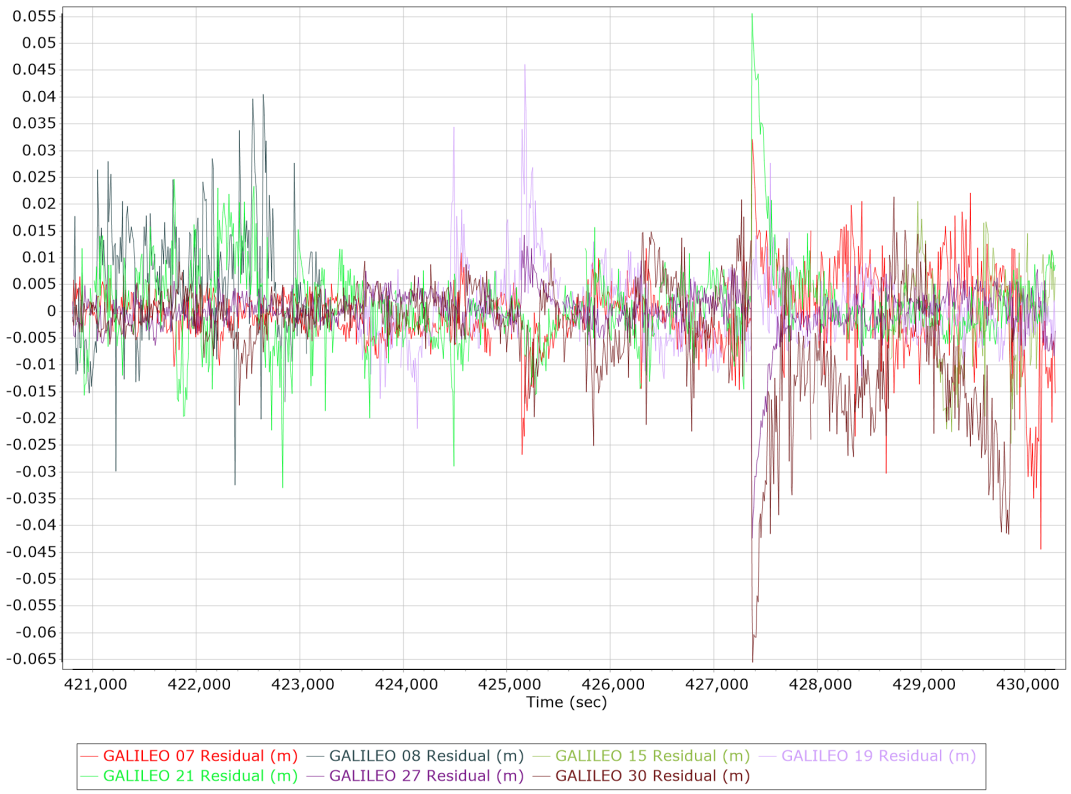
GPS Residuals



GLONASS Residuals



GALILEO Residuals



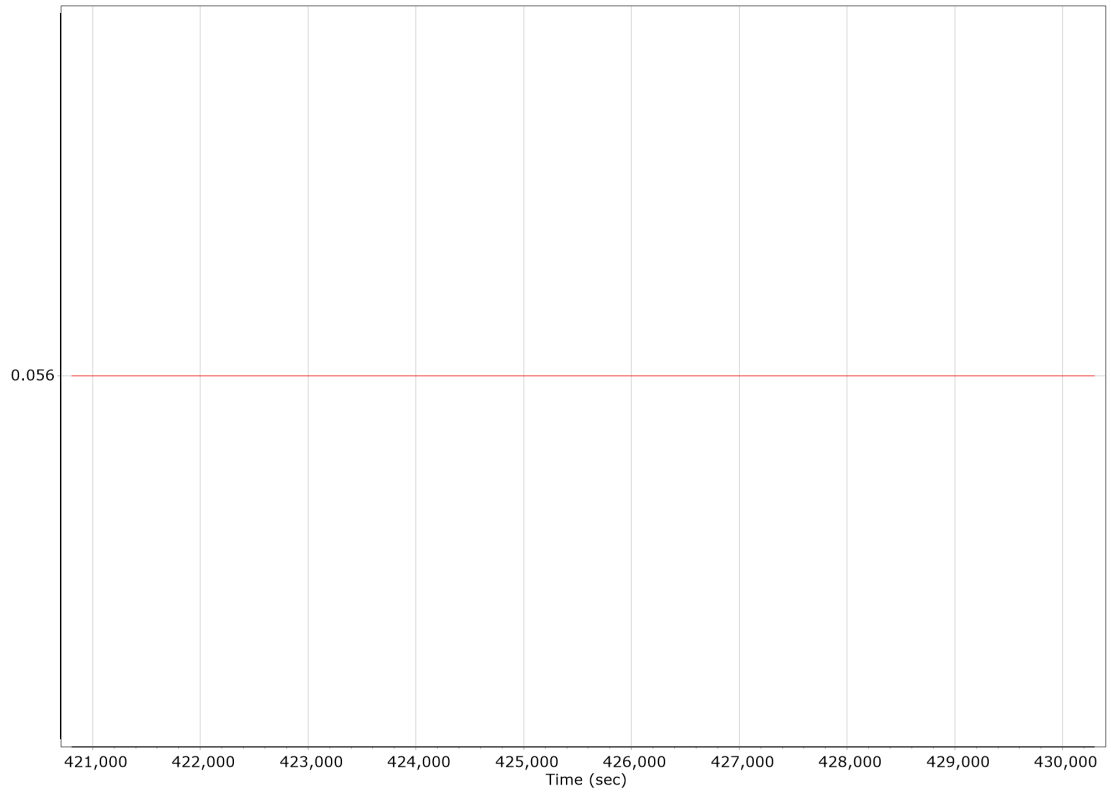
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	420454.025 (12/7/2023 8:47:34 PM)		
Processing end time	430303.000 (12/7/2023 11:31:43 PM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.056	0.055	-1.294
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

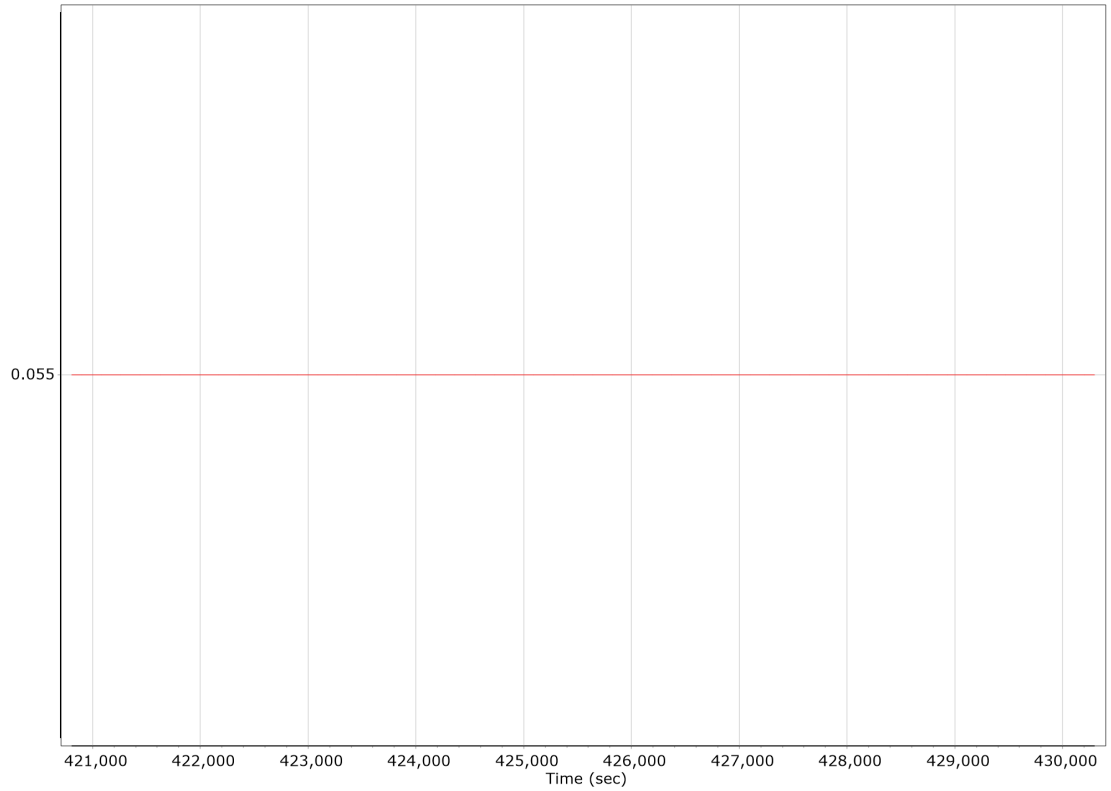
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

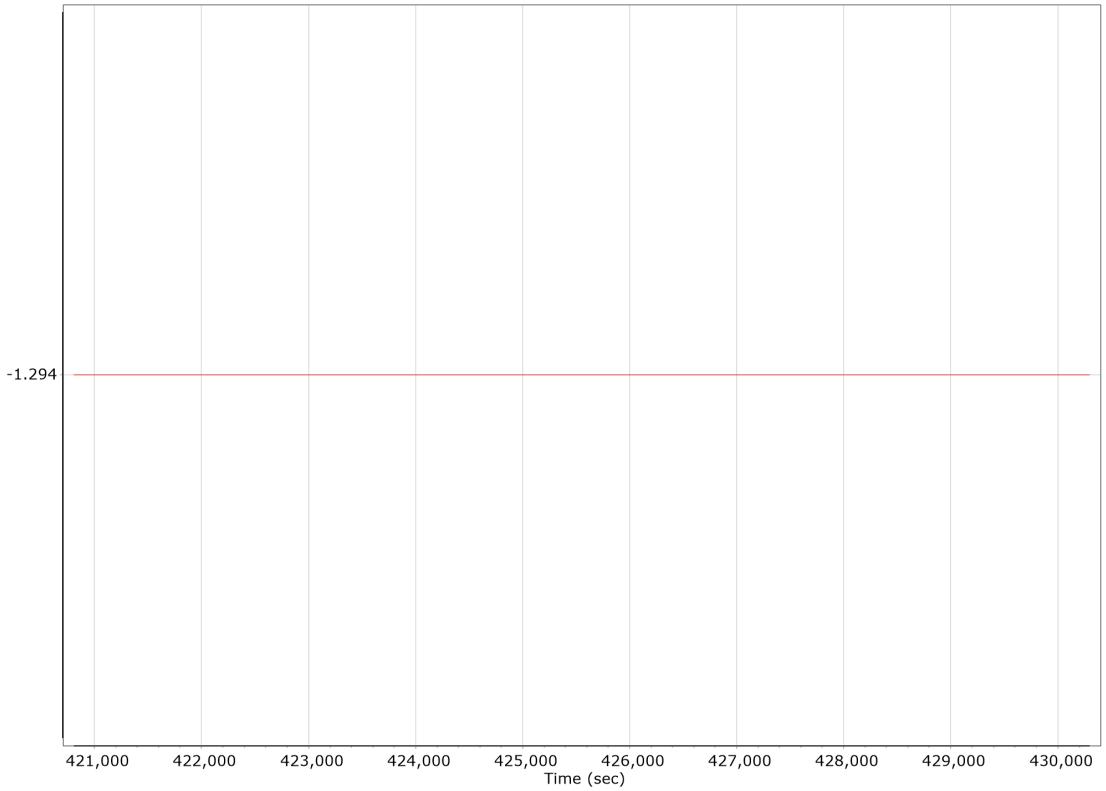
X Reference-Primary GNSS Lever Arm (m)



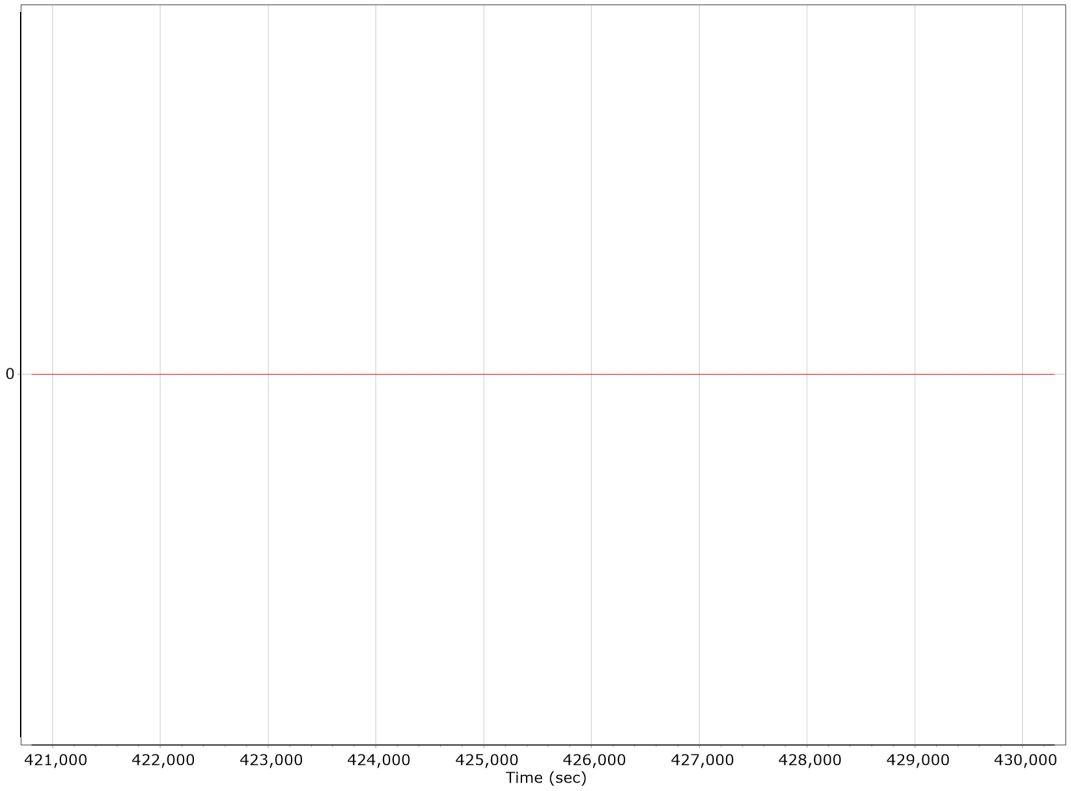
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



Reference-Primary GNSS Lever Arm Figure of Merit



IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

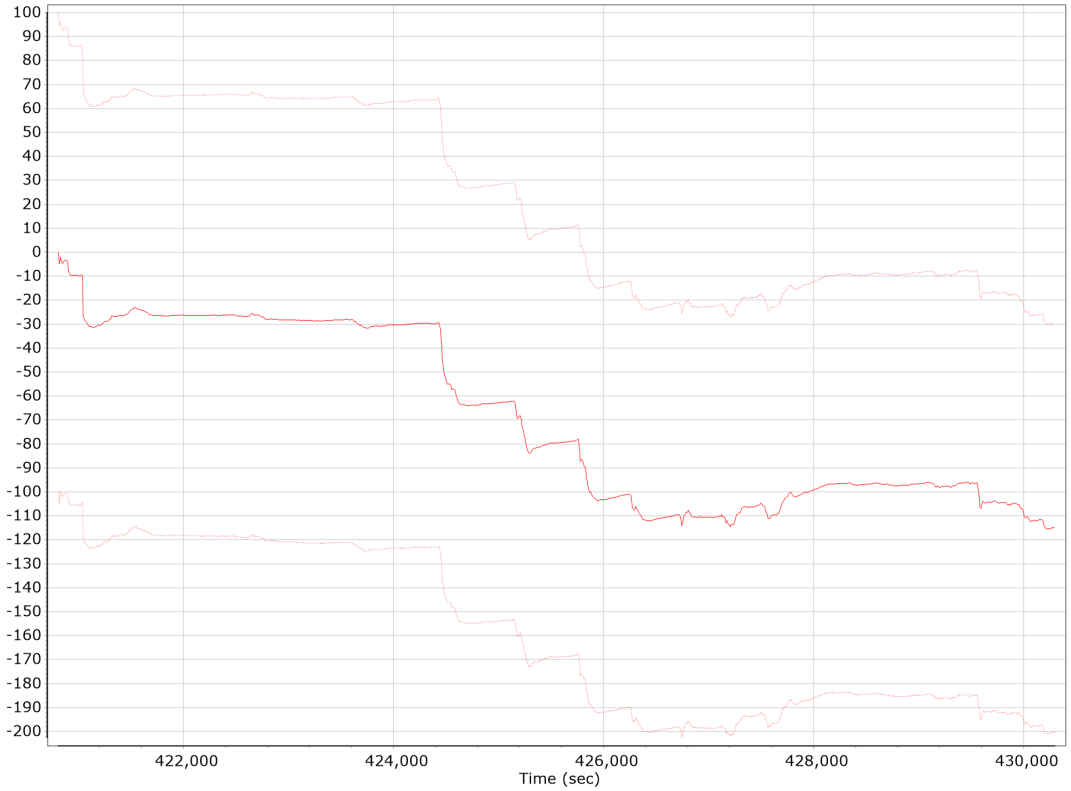
Accelerometer Bias (micro-g)



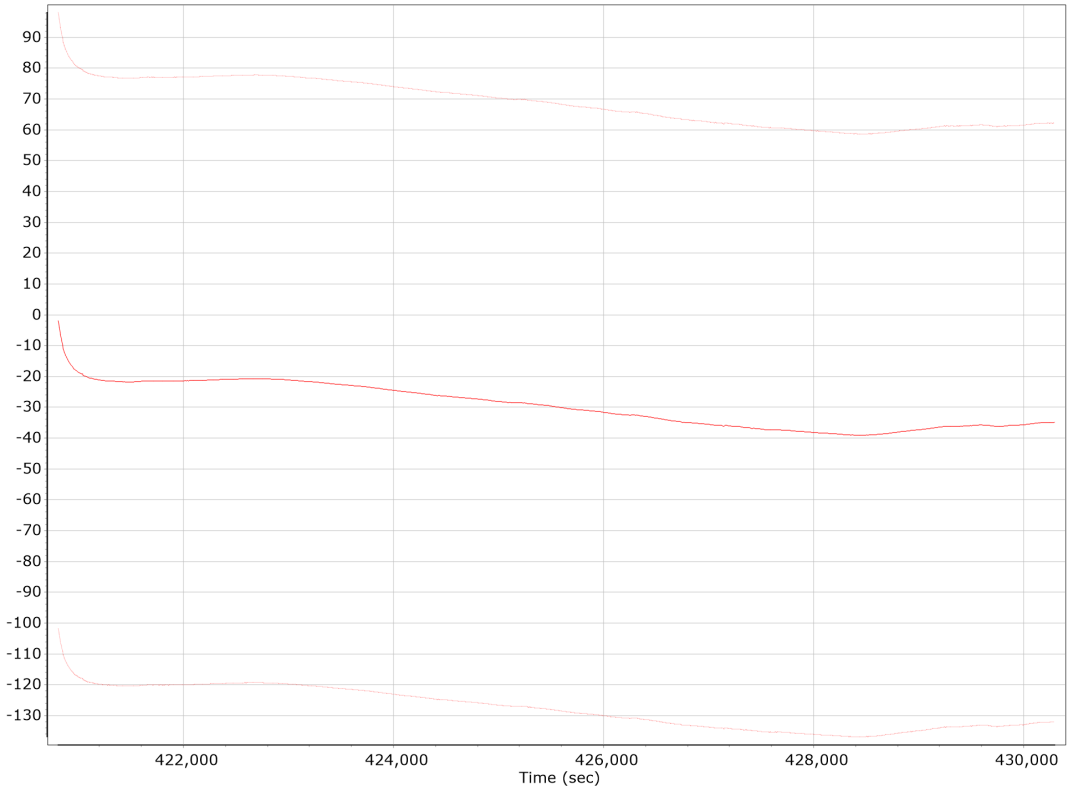
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



X Accelerometer Scale Error (ppm)



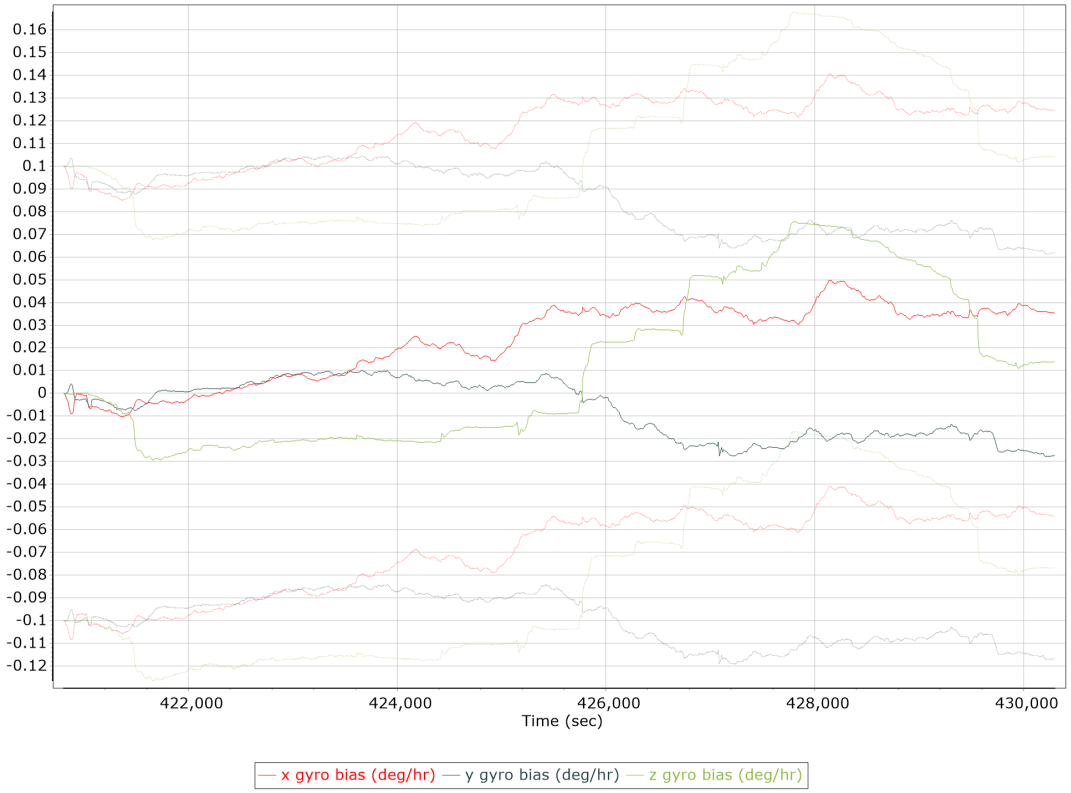
Y Accelerometer Scale Error (ppm)



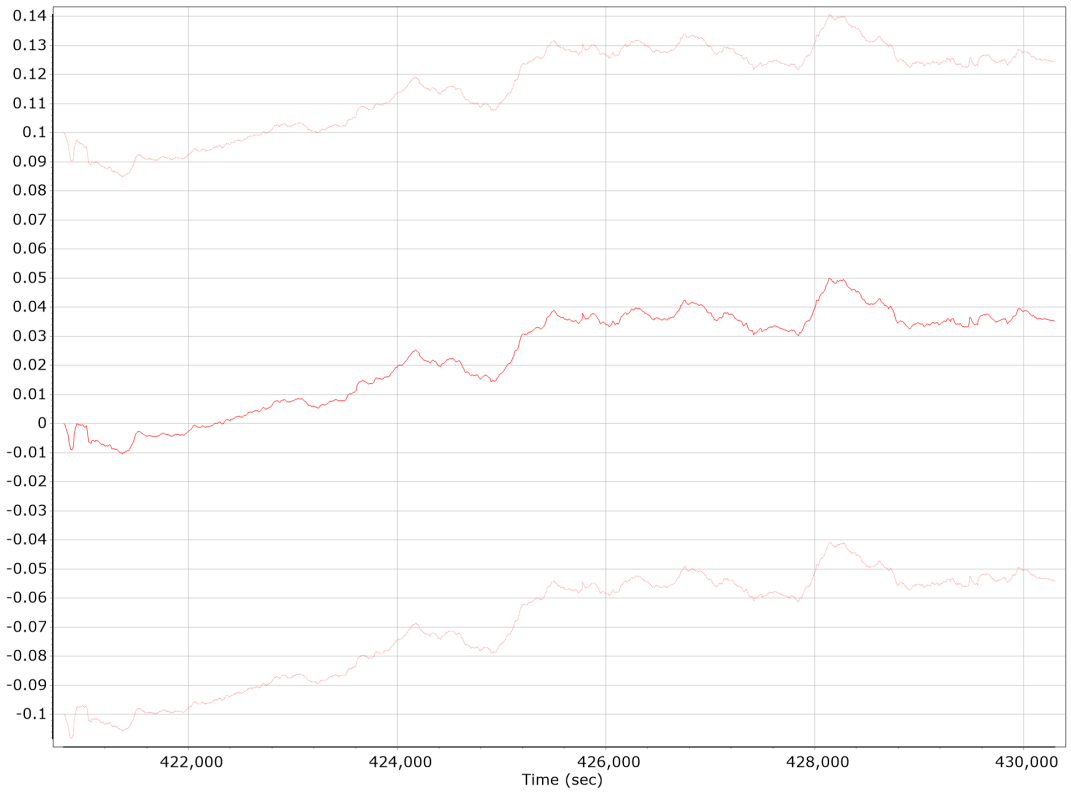
Z Accelerometer Scale Error (ppm)



Gyro Bias (deg/h)



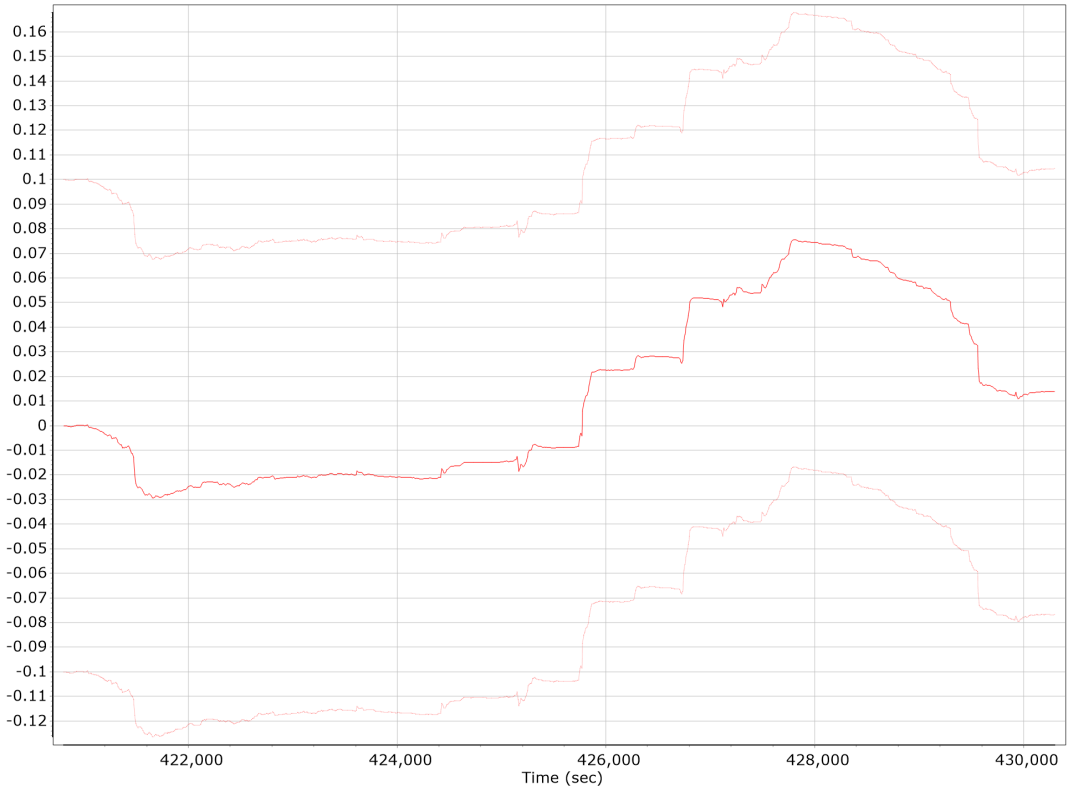
X Gyro Bias (deg/h)



Y Gyro Bias (deg/h)



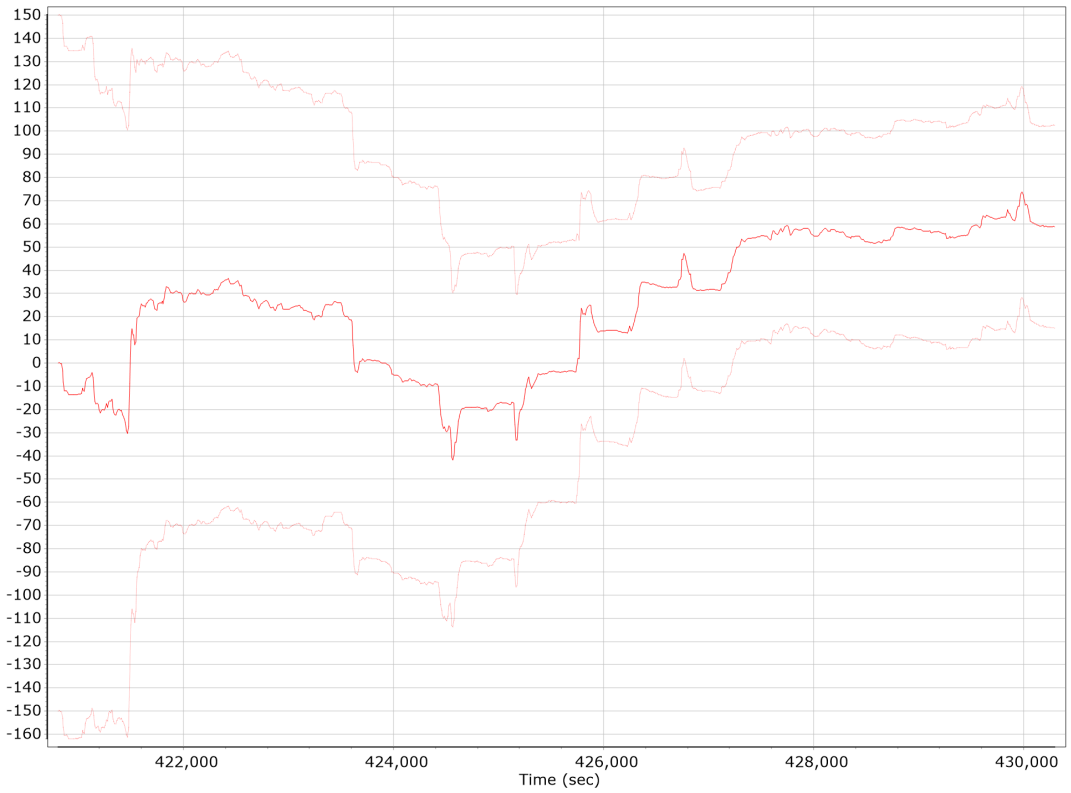
Z Gyro Bias (deg/h)



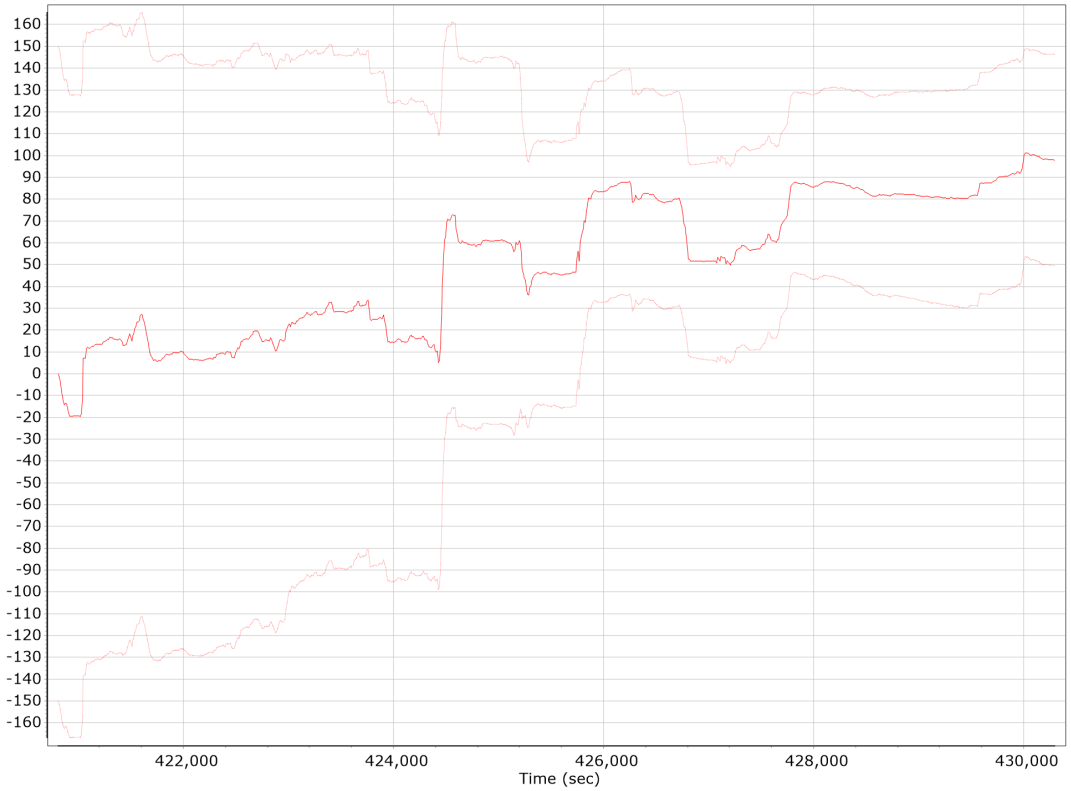
Gyro Scale Error (ppm)



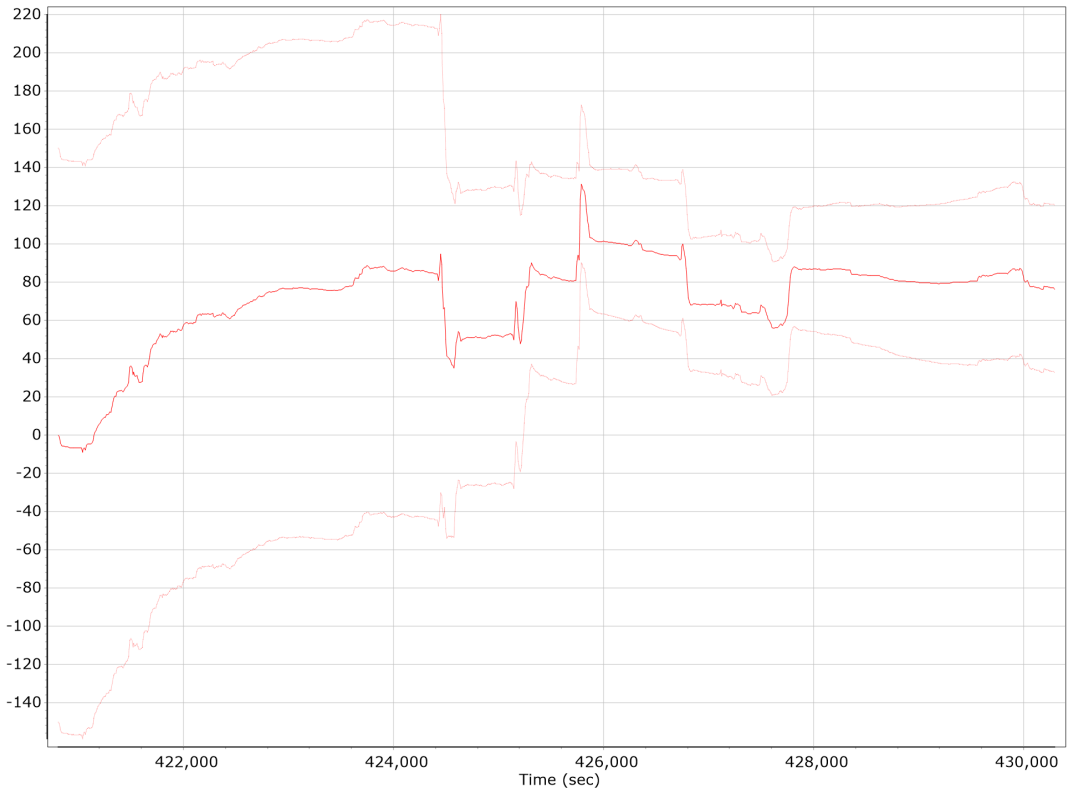
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)



Z Gyro Scale Error (ppm)

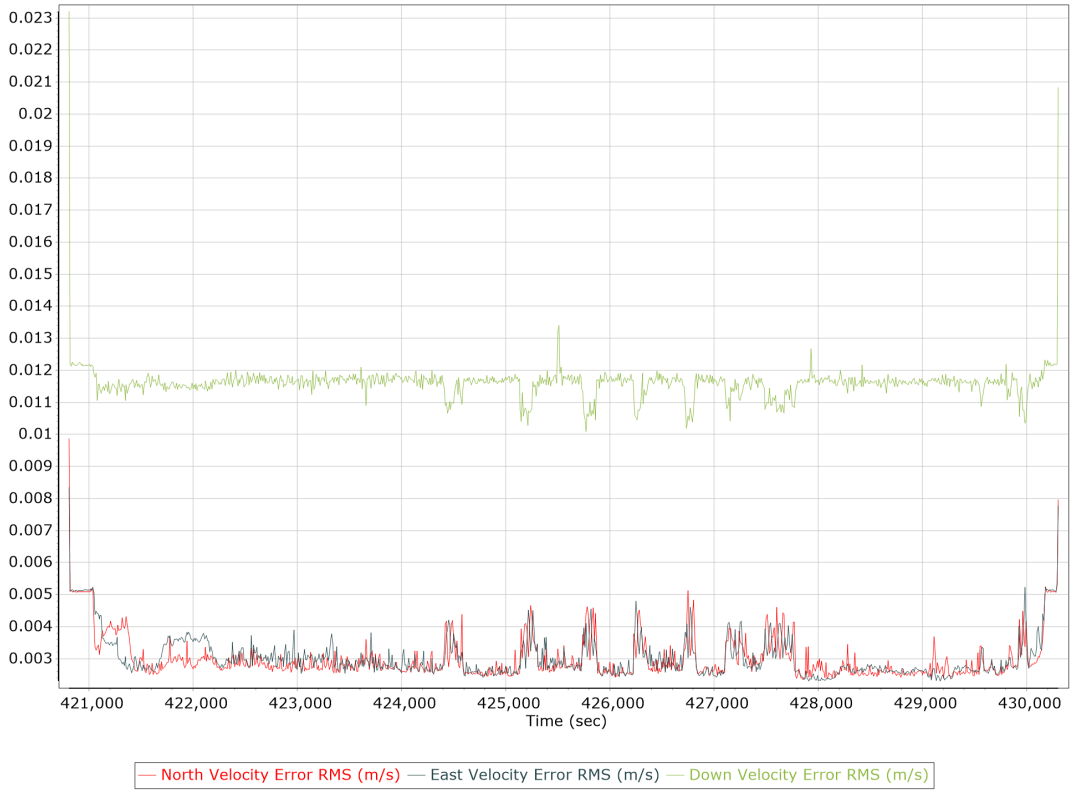


Smoothed Performance Metrics

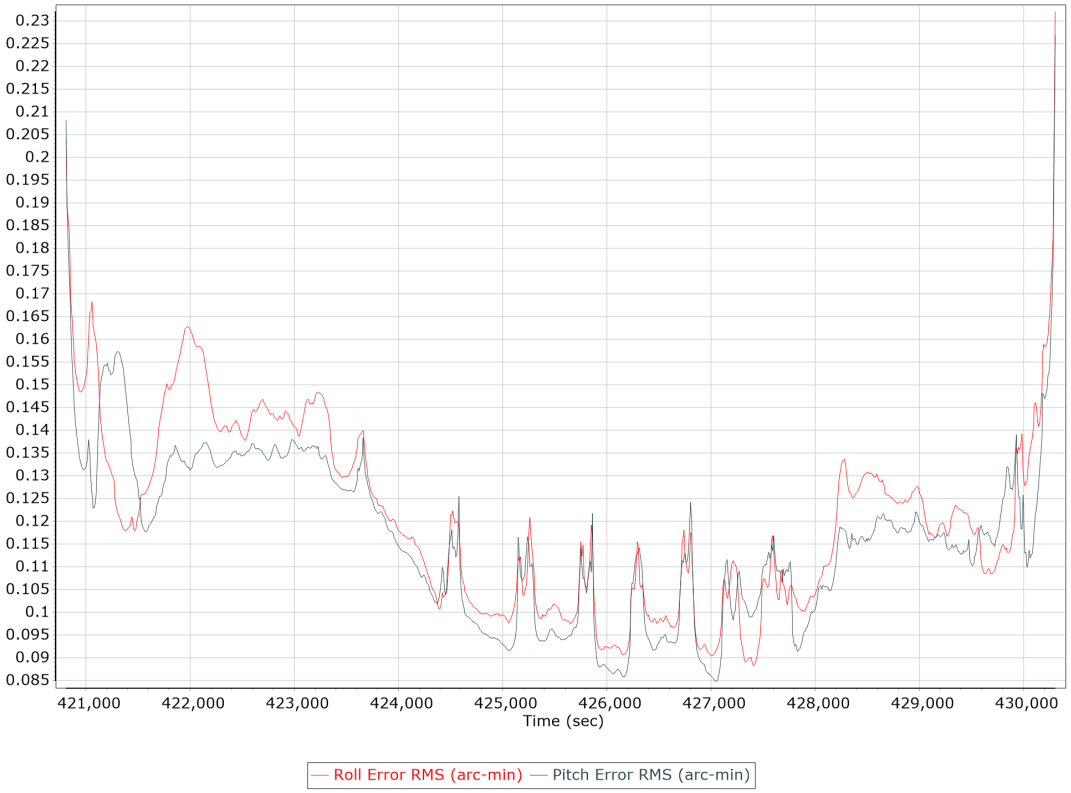
Position Error RMS (m)



Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

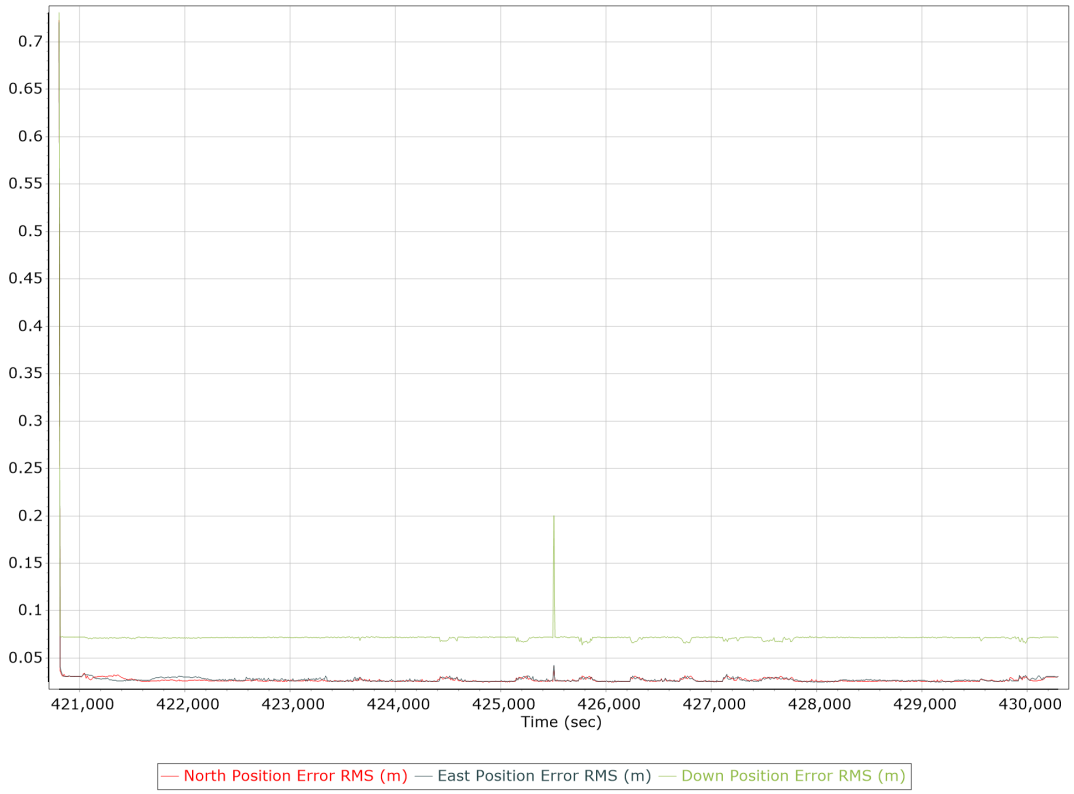


Heading Error RMS (arc-min)

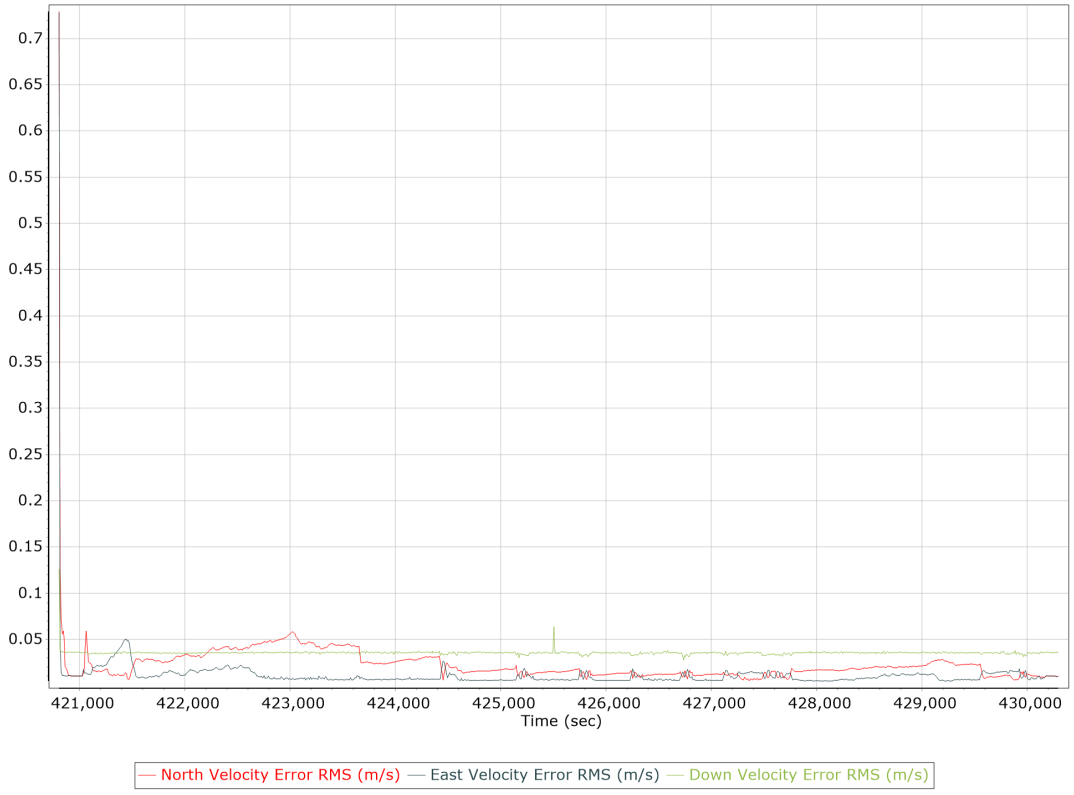


Forward Processed Performance Metrics

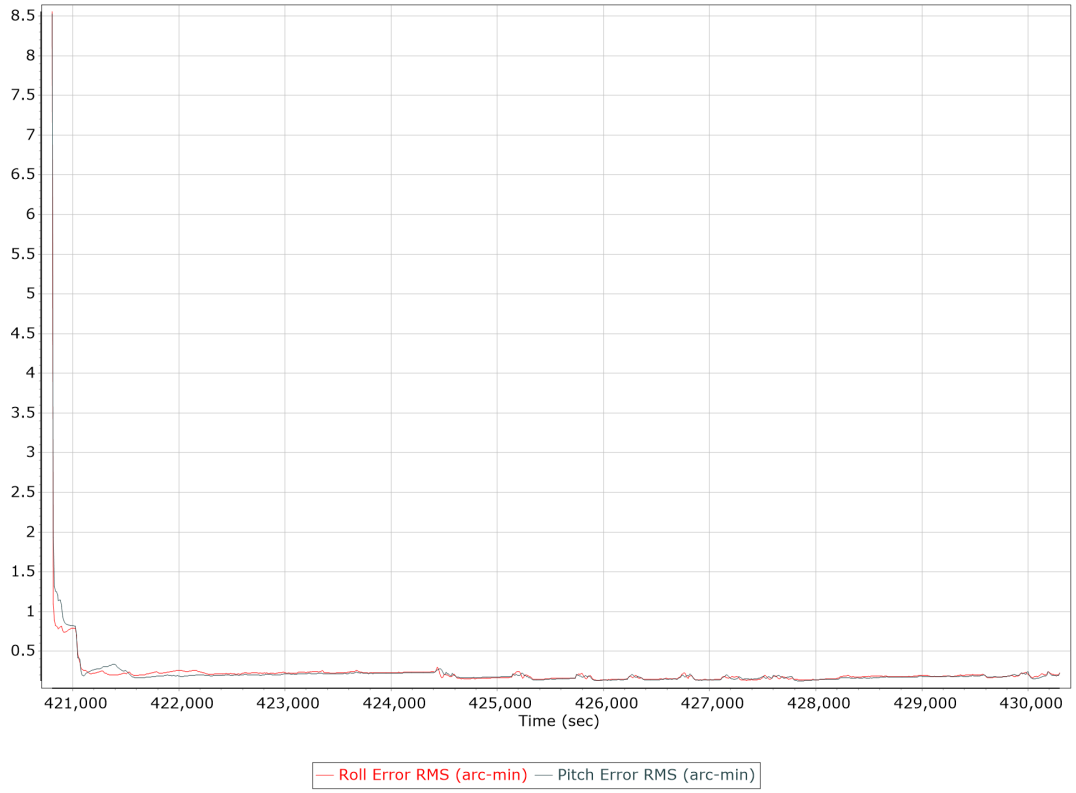
Position Error RMS (m)



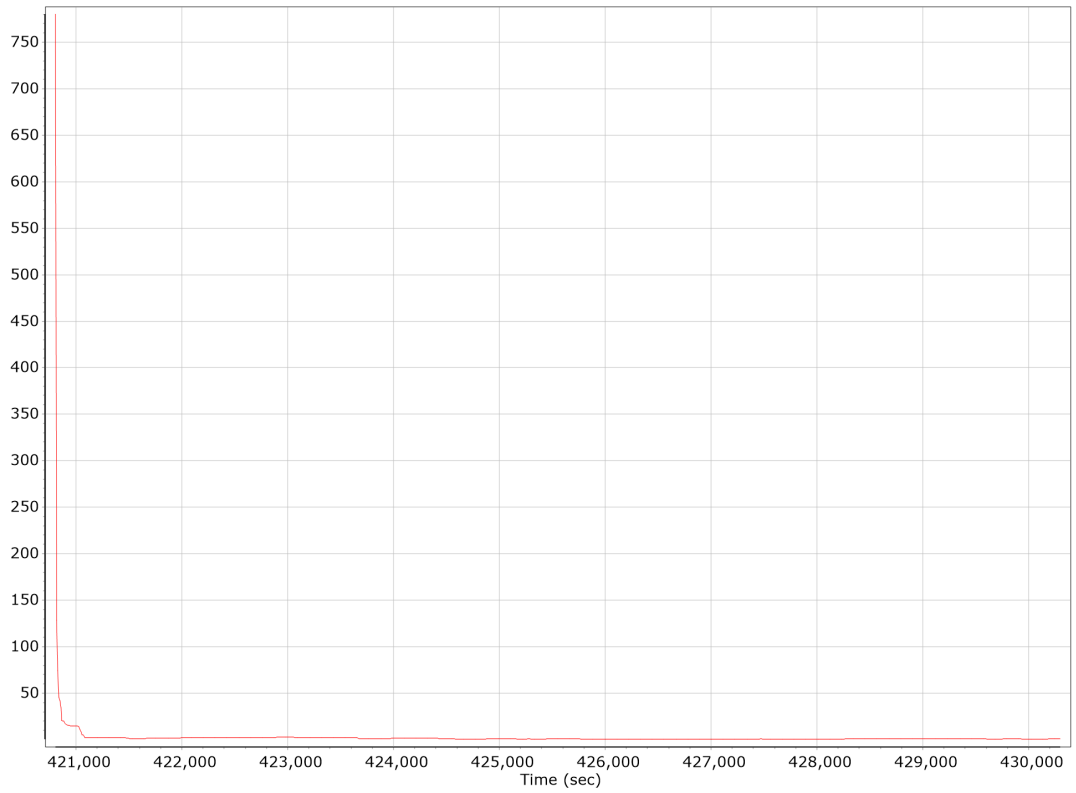
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

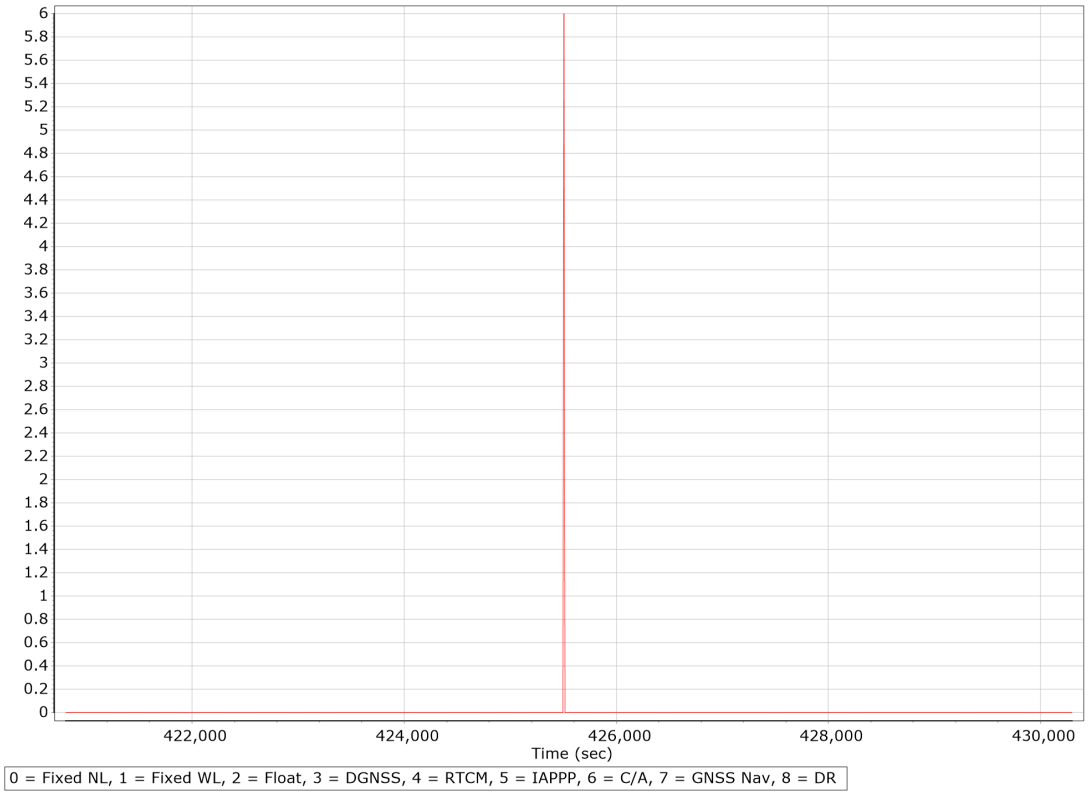


Heading Error RMS (arc-min)



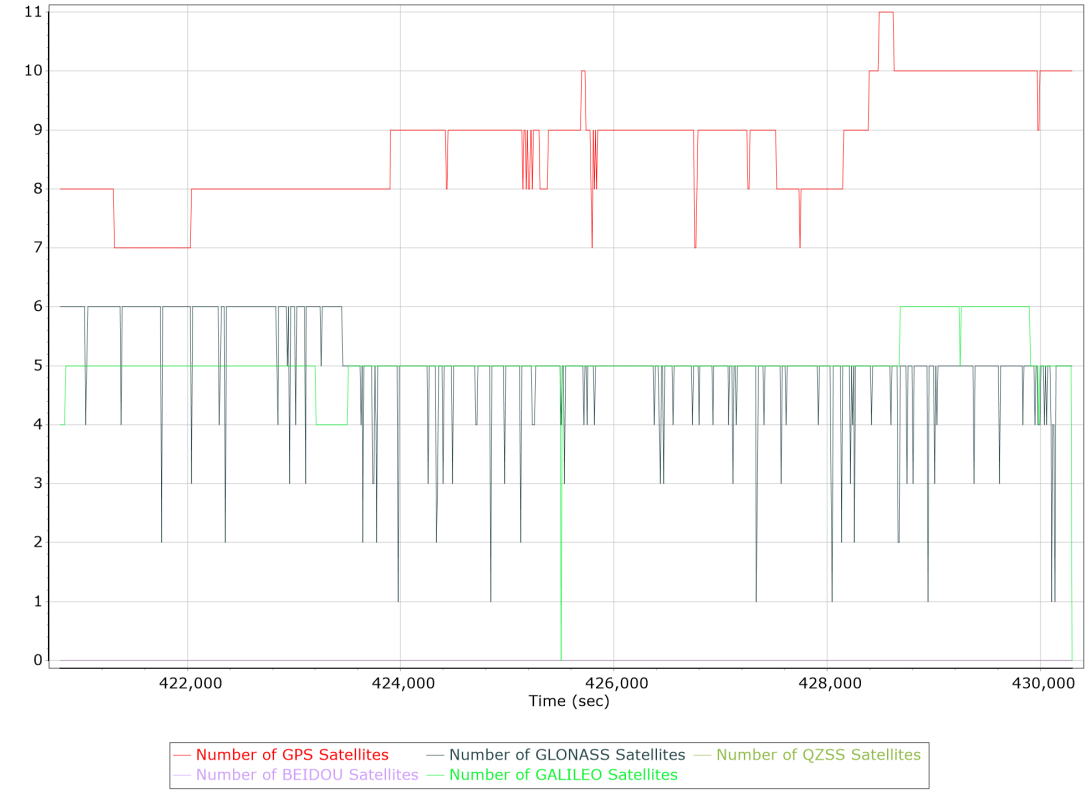
Forward Processed Solution Status

Processing Mode

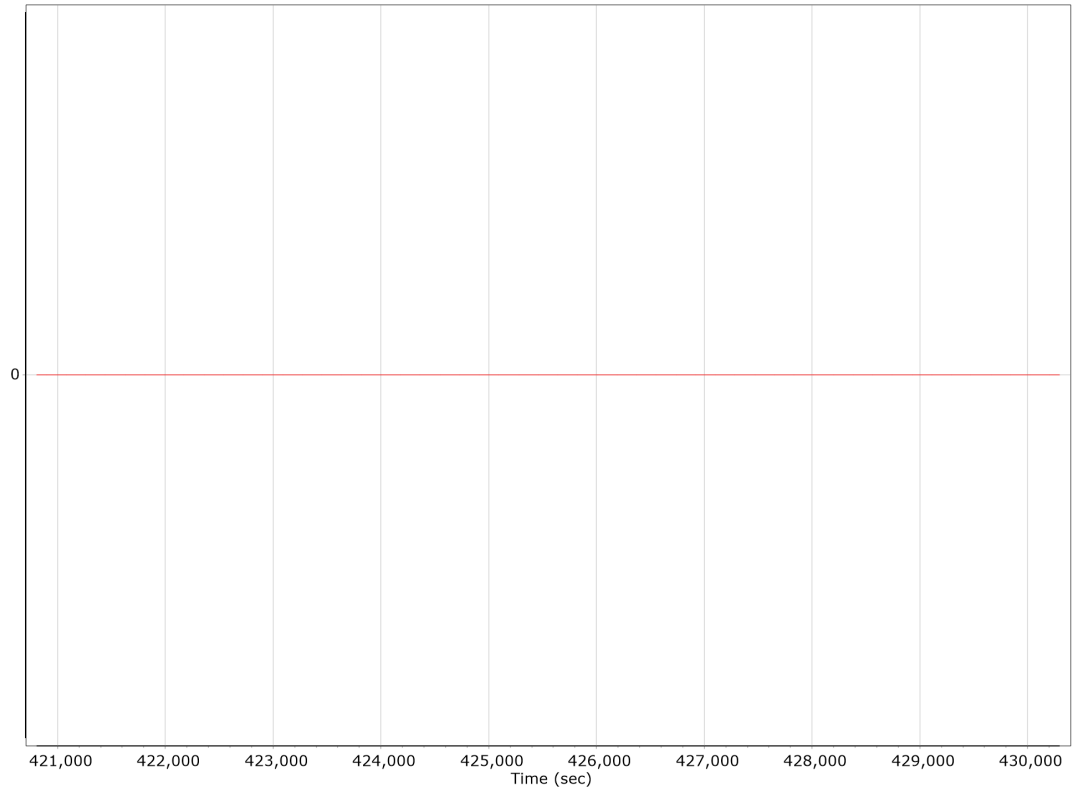


0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGNSS, 4 = RTCM, 5 = IAPPP, 6 = C/A, 7 = GNSS Nav, 8 = DR

Number of Satellites



Baseline Length



General Information

Mission Information

Project name	12072023B_3061
Processing date	2023-12-12 19:36:18
Mission date	2023-12-08 07:36:00
Mission duration	01:47:08.476
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N8902
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
231208_073541_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm3420.23g	GLONASS Broadcast Ephemeris
Ephm3420.23n	GPS Broadcast Ephemeris

Output Files

Filename	File type
sbet_12072023B_3061.out	SBET Trajectory File

Rover Data Summary

First raw data file	231208_073541_INS-GPS_1.raw		
Last raw data file	231208_073541_INS-GPS_1.raw		
Start GPS week	2291		
Start time	459341.056 (12/8/2023 7:35:41 AM)		
End time	465769.532 (12/8/2023 9:22:49 AM)		
Start of fine alignment	459605.420 (12/8/2023 7:40:05 AM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	0.000	0.000	0.000
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

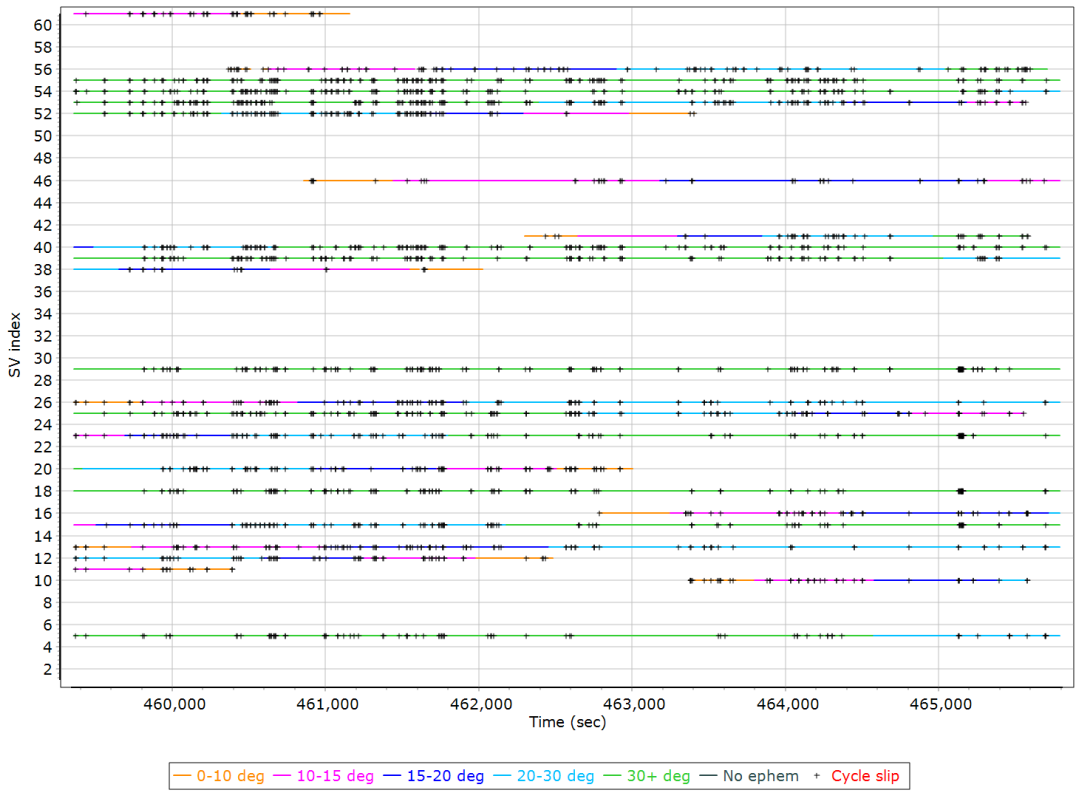
Rover Data QC

Raw IMU Import QC Summary

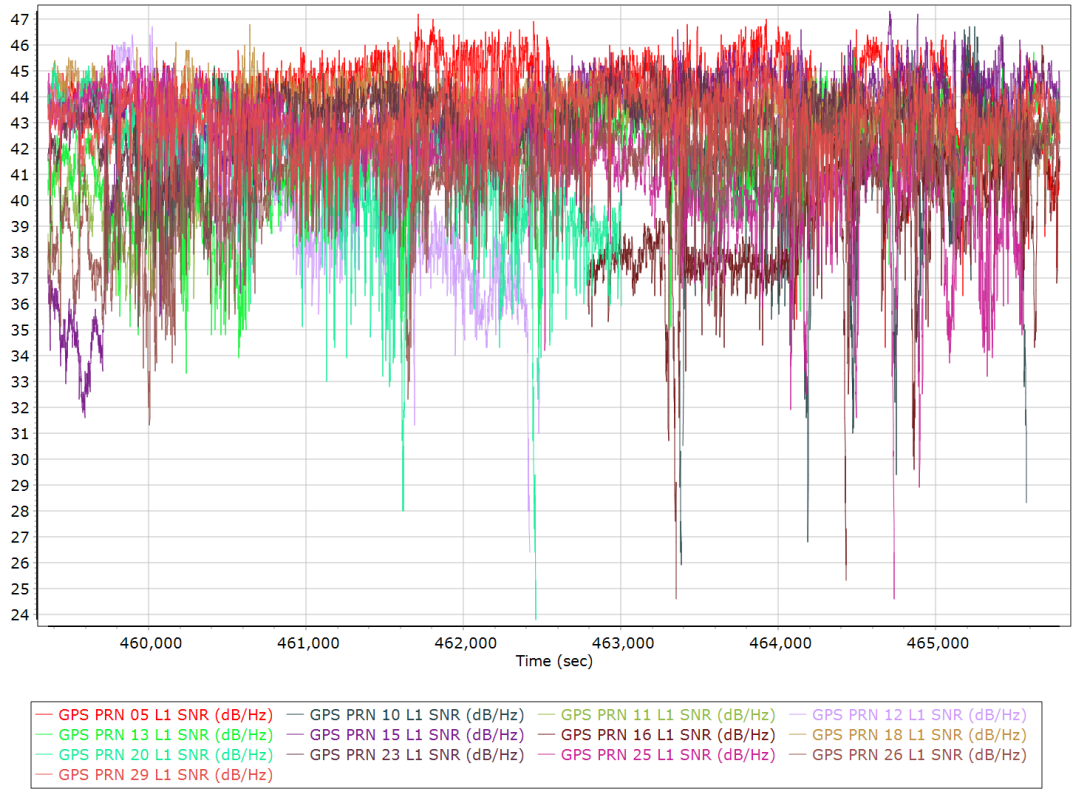
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_12072023B_3061.log
IMU Records Processed	1285561
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

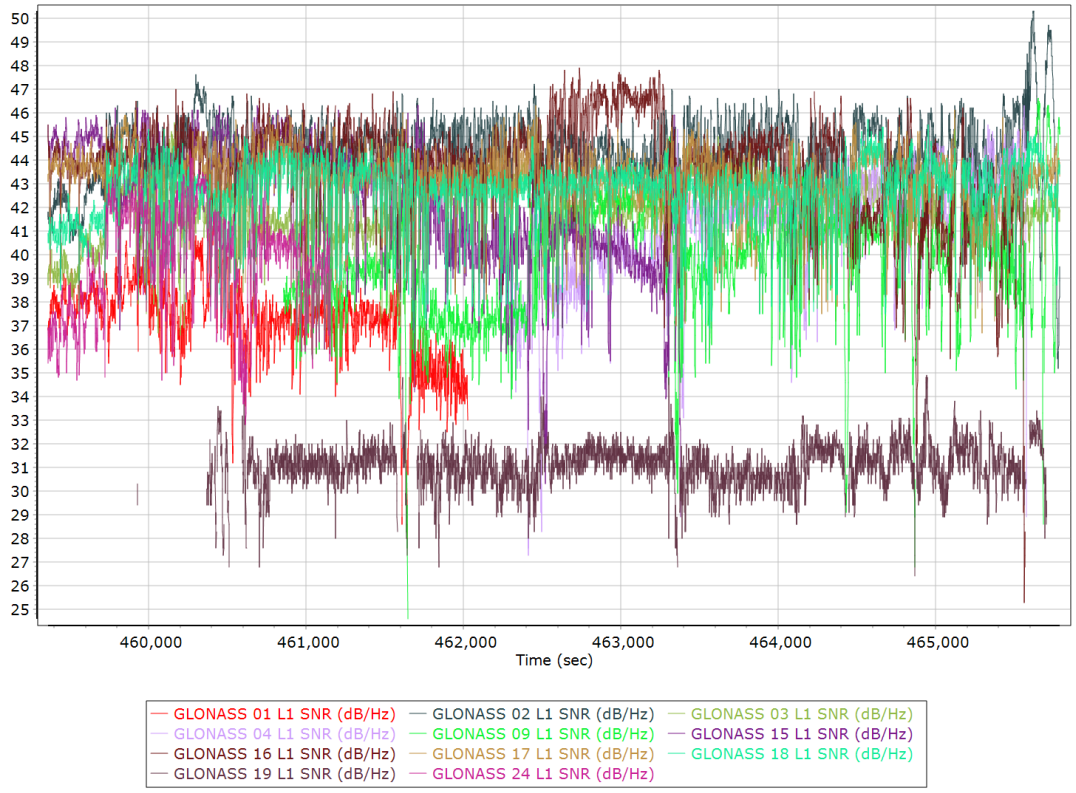
GPS/GLONASS L1 Satellite Lock/Elevation



GPS L1 SNR



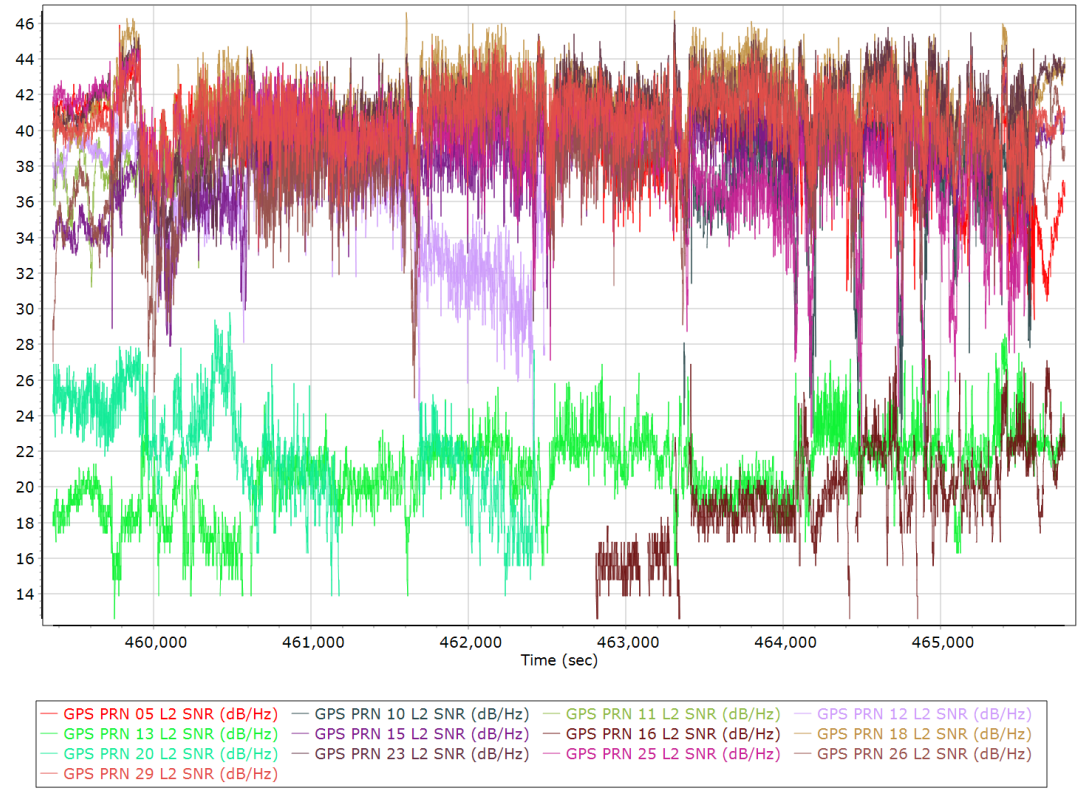
GLONASS L1 SNR



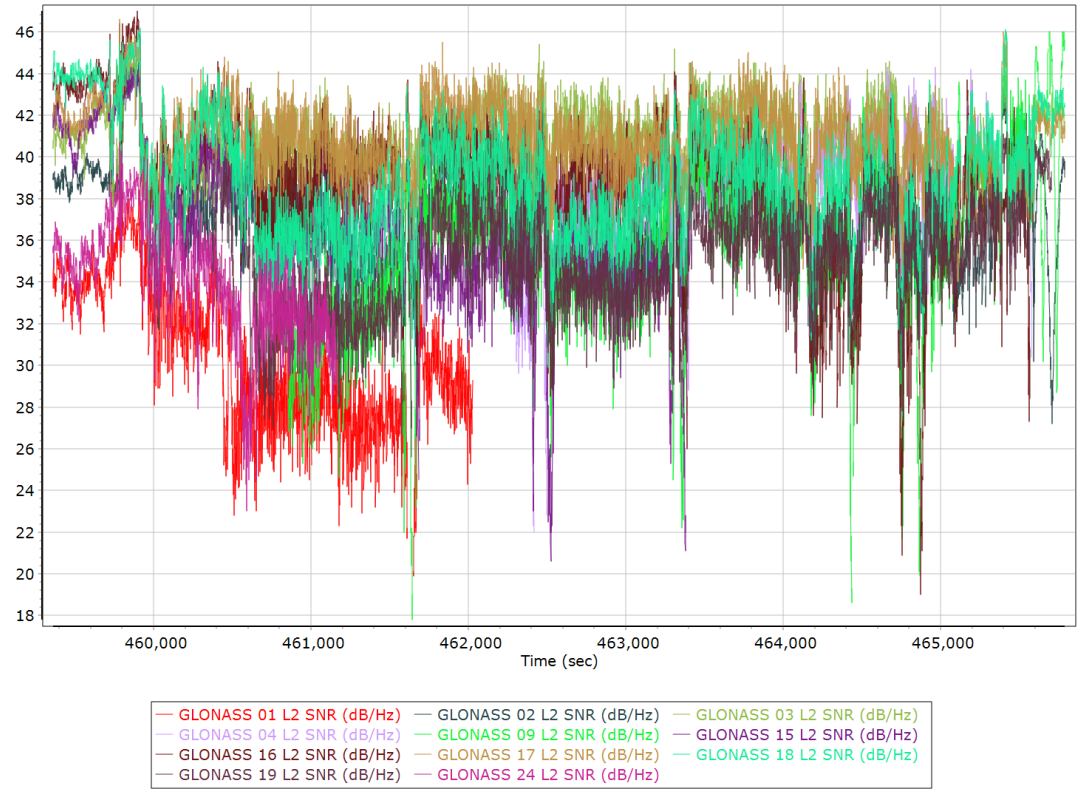
GPS/GLONASS L2 Satellite Lock/Elevation



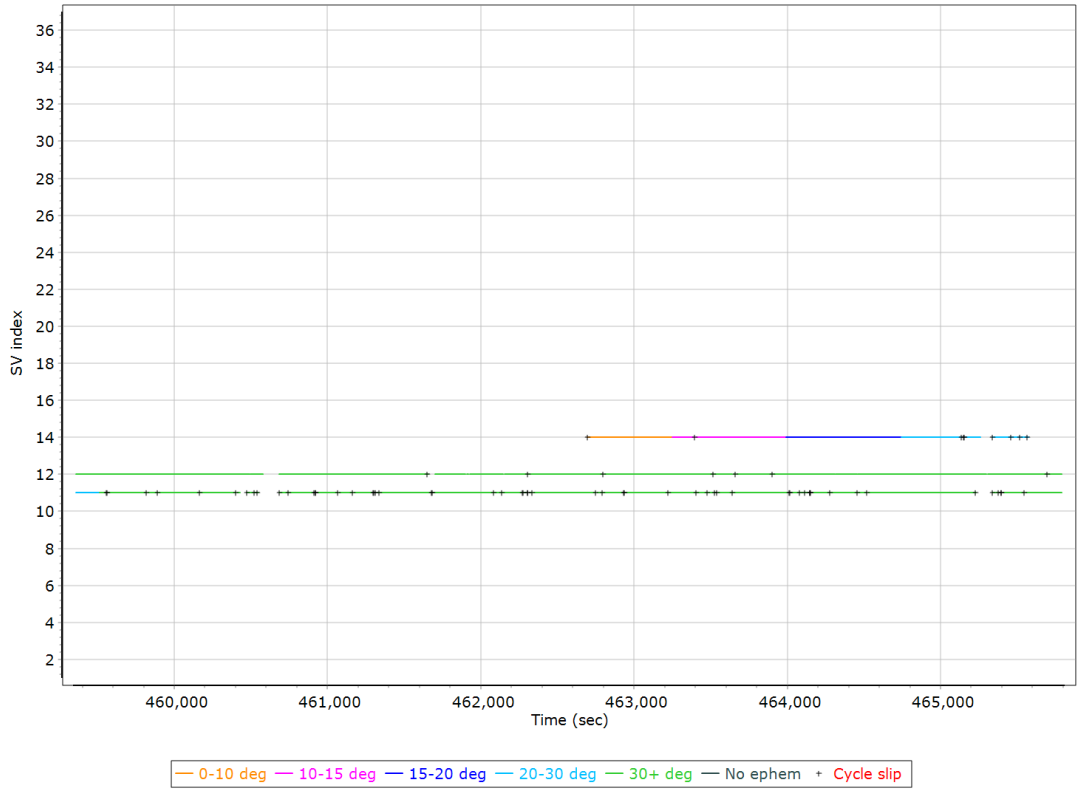
GPS L2 SNR



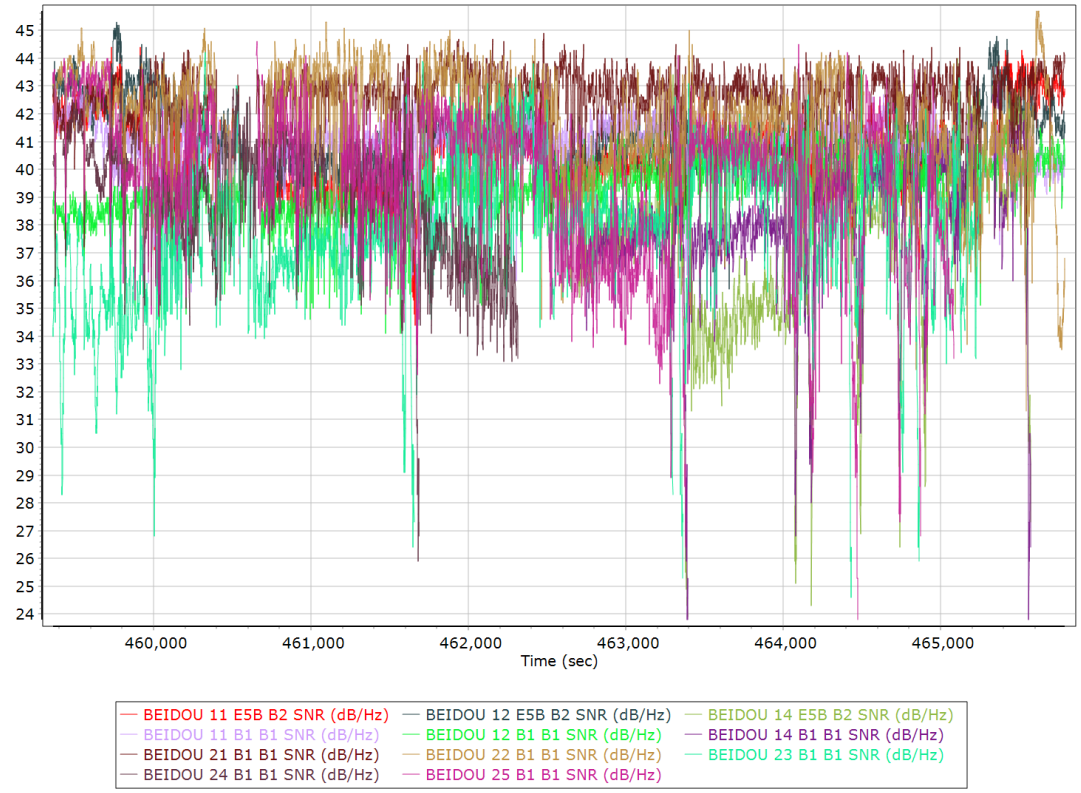
GLONASS L2 SNR



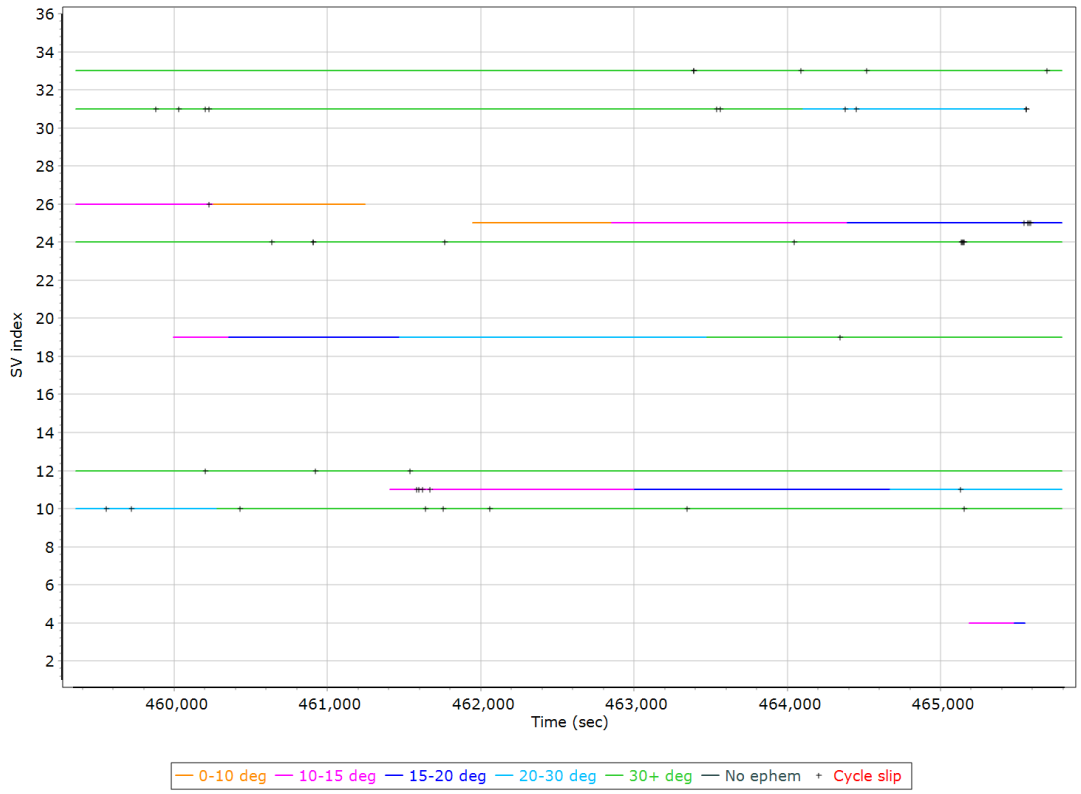
BEIDOU Satellite Lock/Elevation



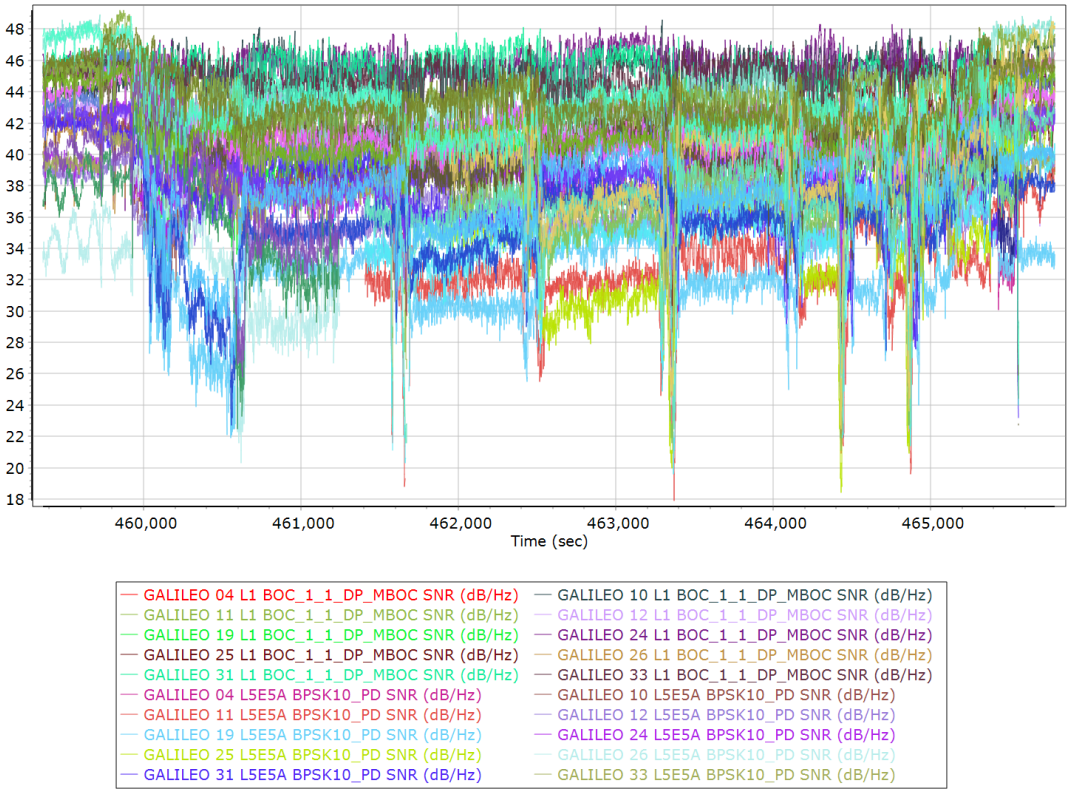
BEIDOU SNR



GALILEO Satellite Lock/Elevation

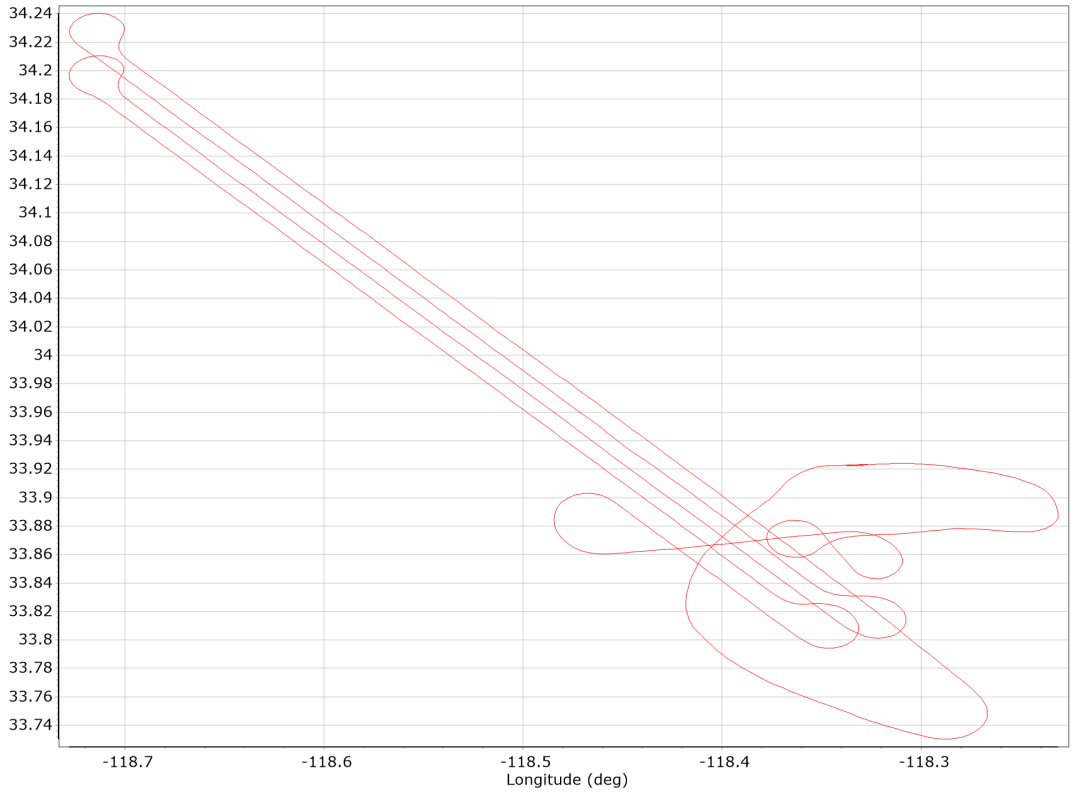


GALILEO SNR

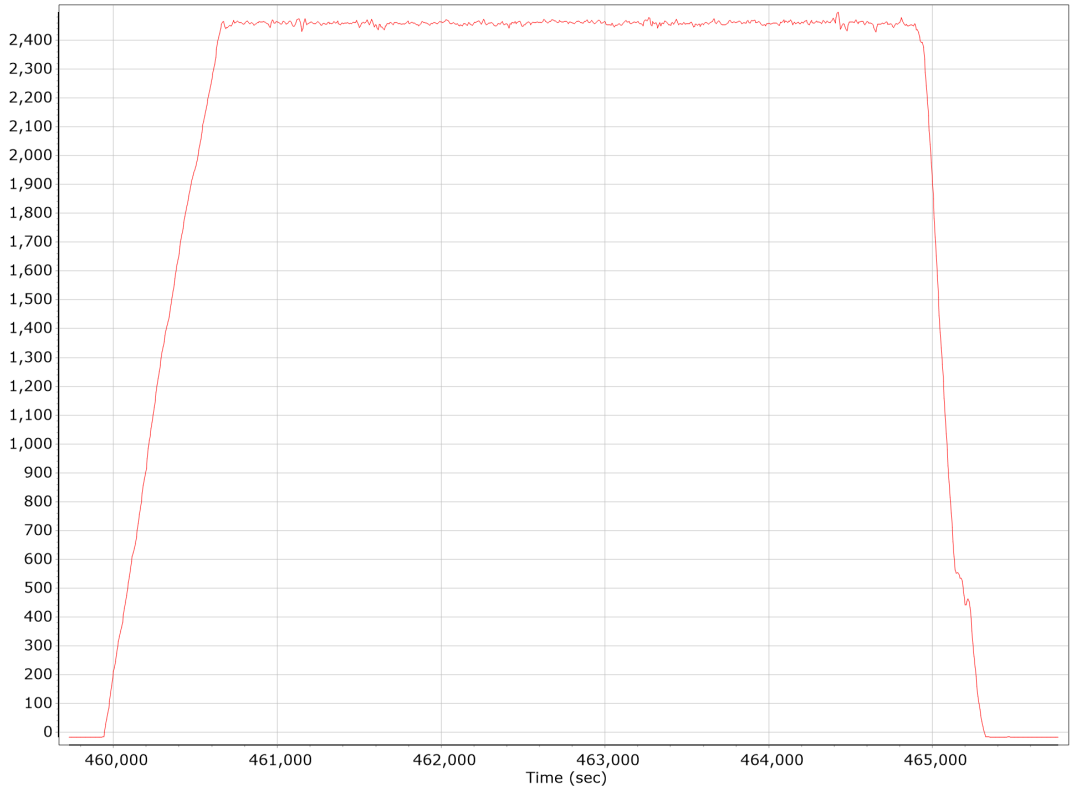

48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
18
460,000
461,000
462,000
463,000
464,000
465,000
Time (sec)
GALILEO 04 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 10 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 11 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 12 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 19 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 24 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 25 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 26 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 31 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 33 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 04 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 10 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 11 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 12 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 19 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 24 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 25 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 26 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 31 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 33 L5E5A BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

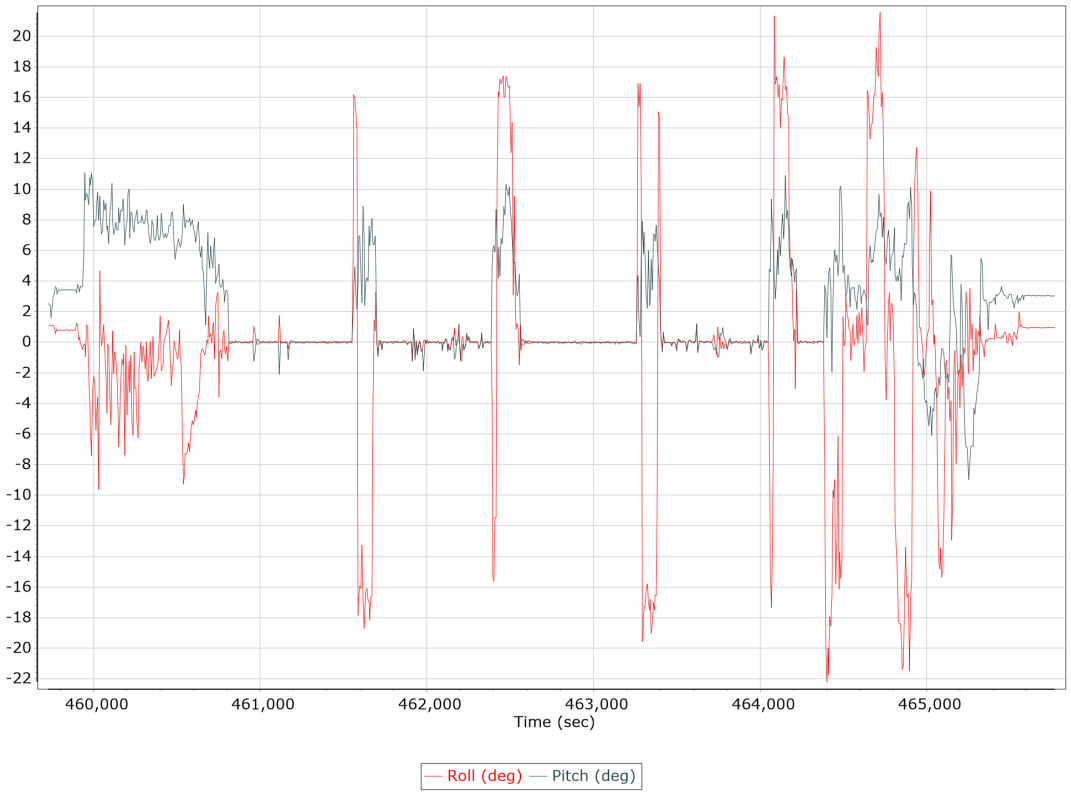
Top View



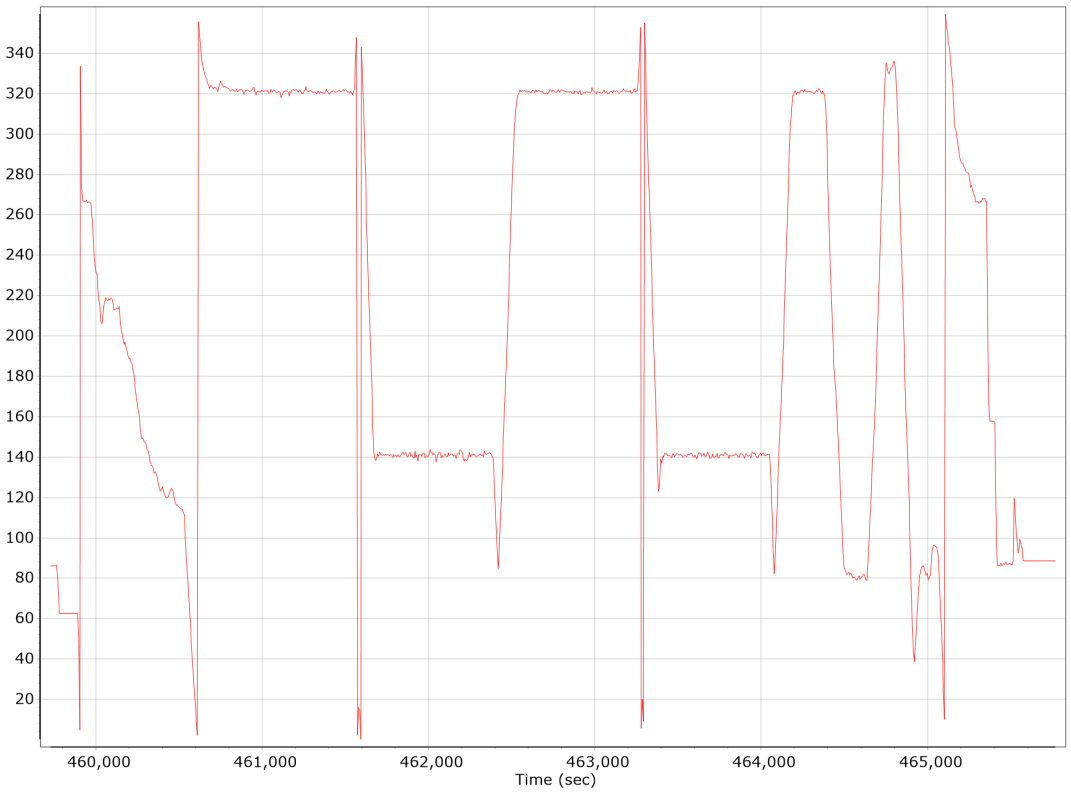
Altitude



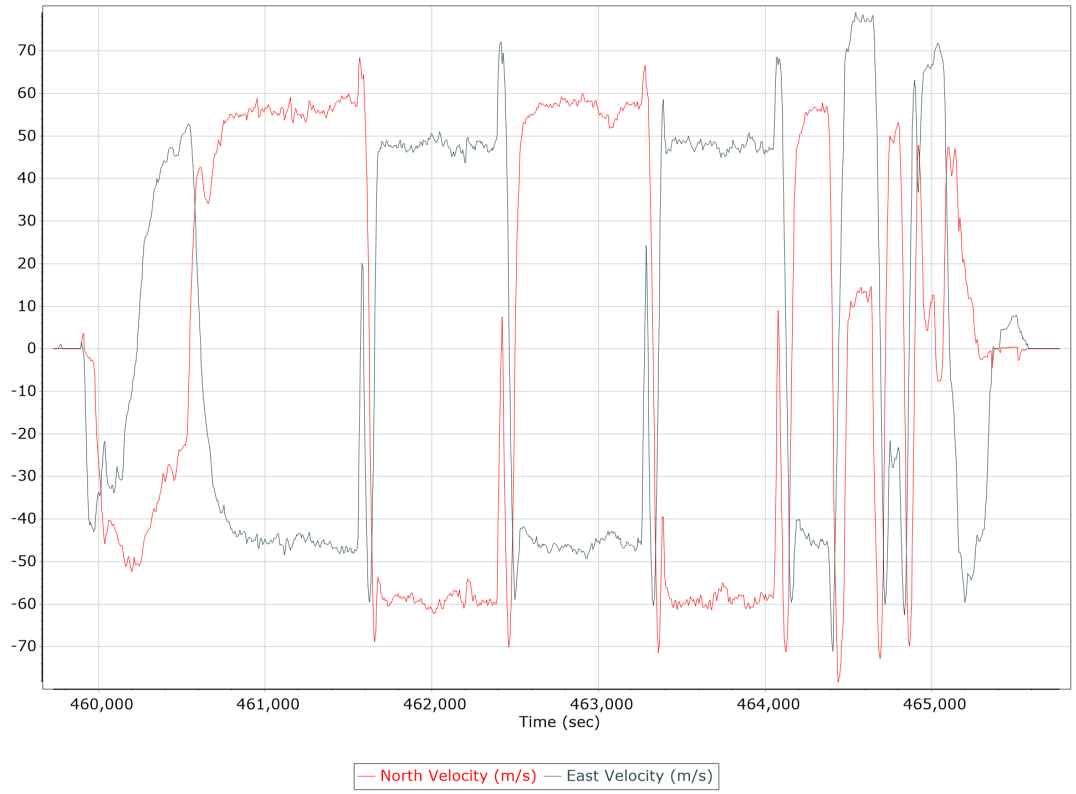
Roll/Pitch



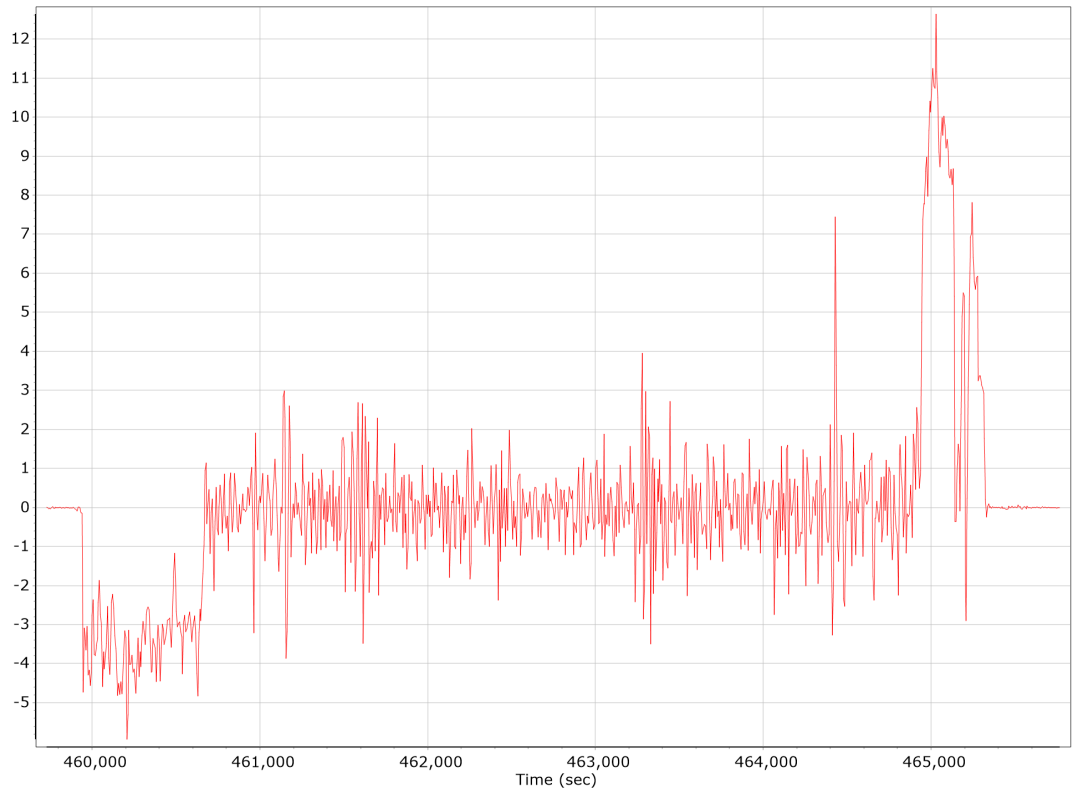
Heading



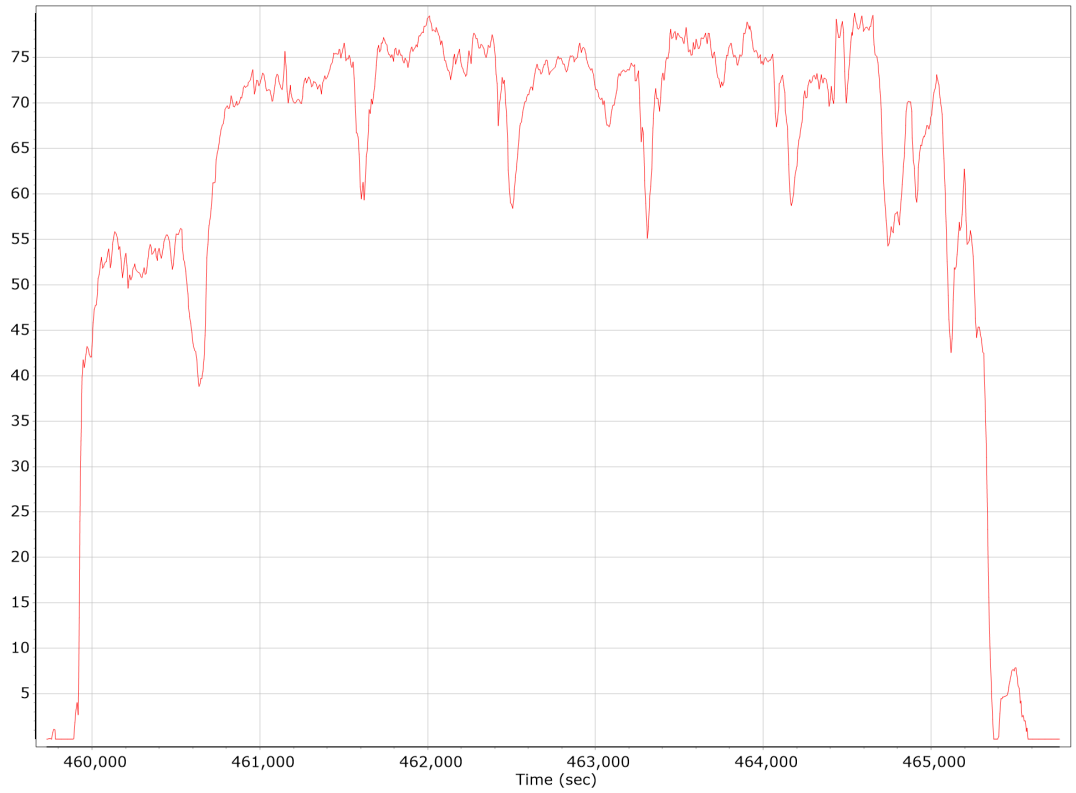
North/East Velocity



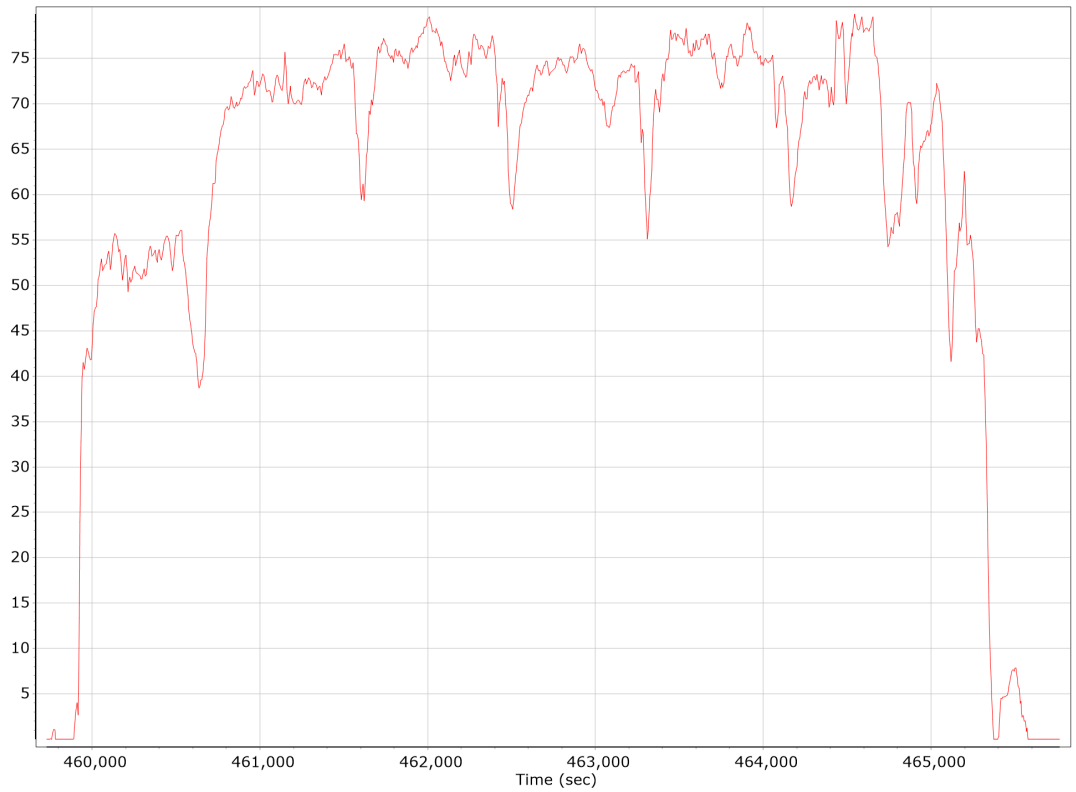
Down Velocity



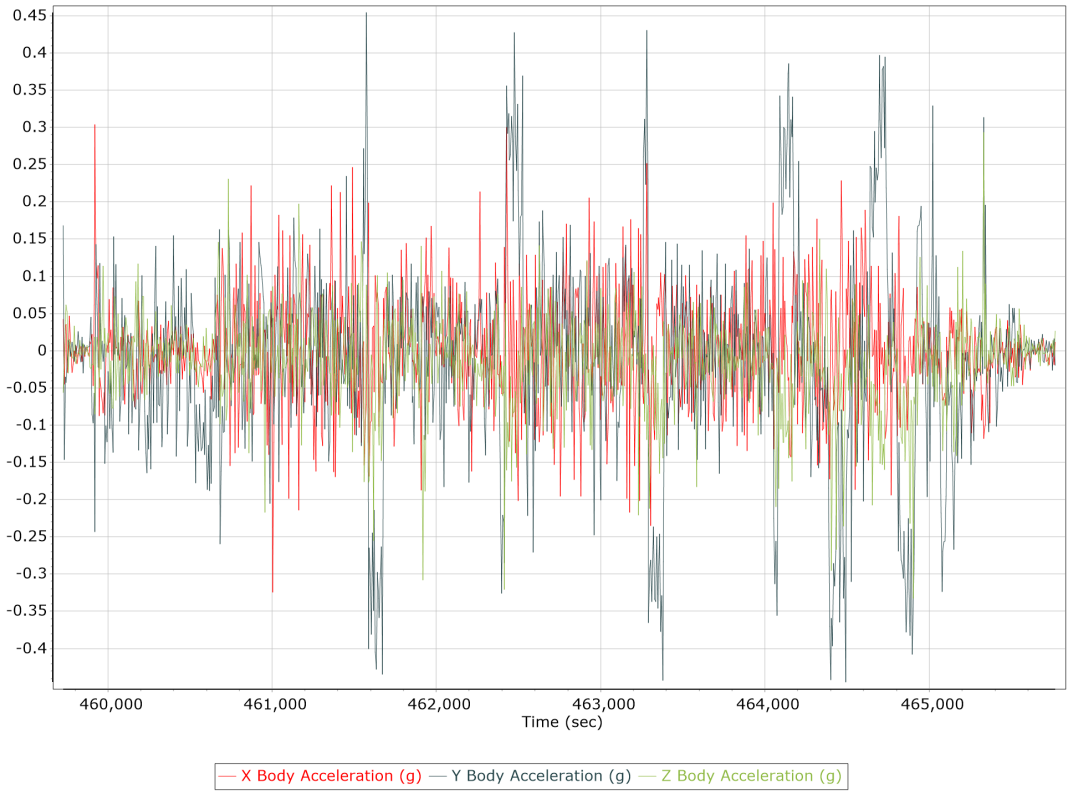
Total Speed



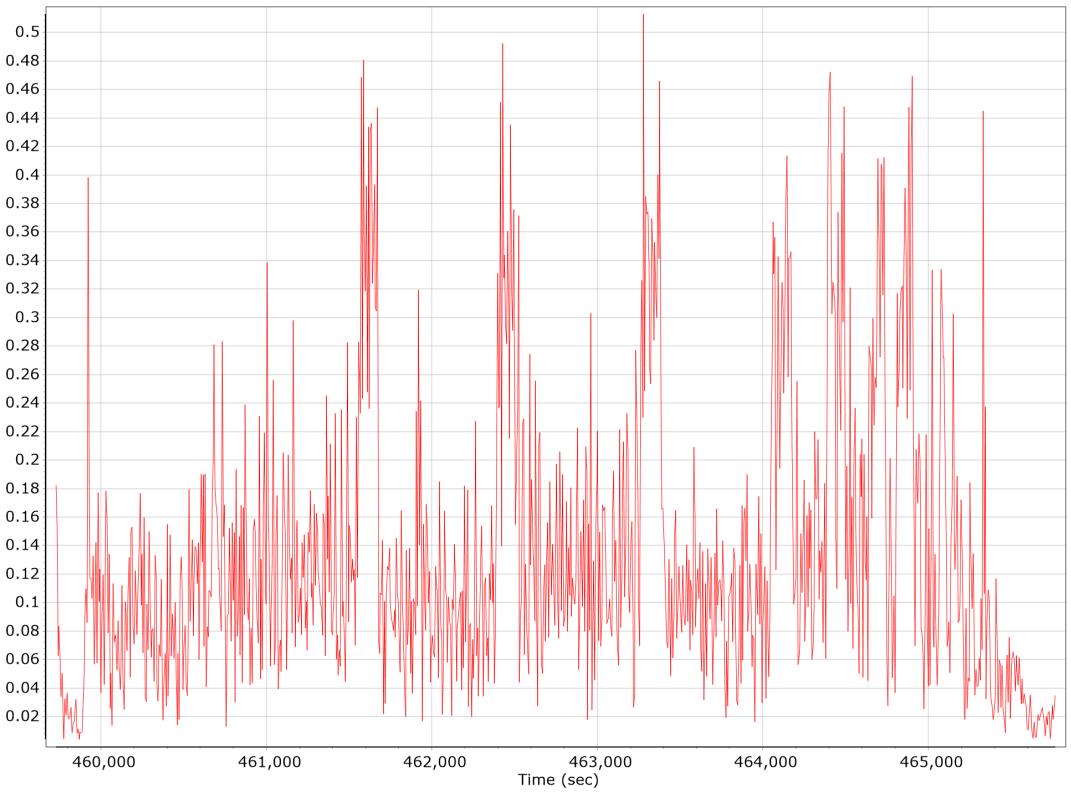
Ground Speed



Body Acceleration



Total Body Acceleration

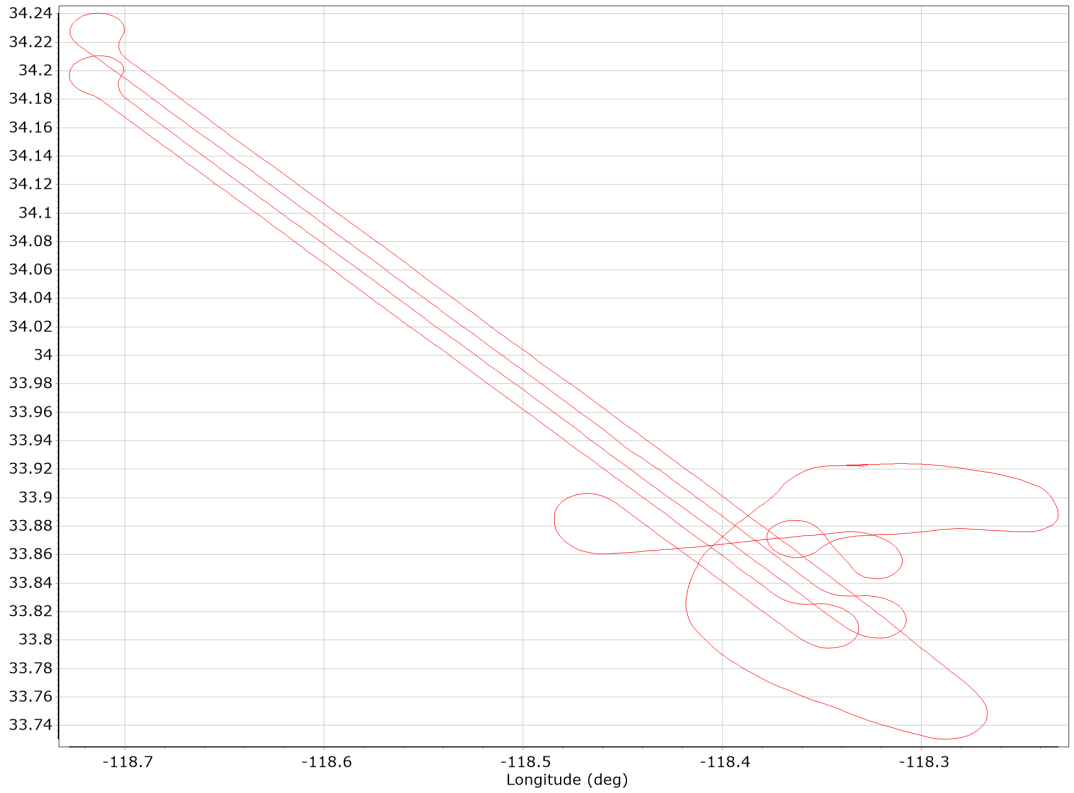


Body Angular Rate

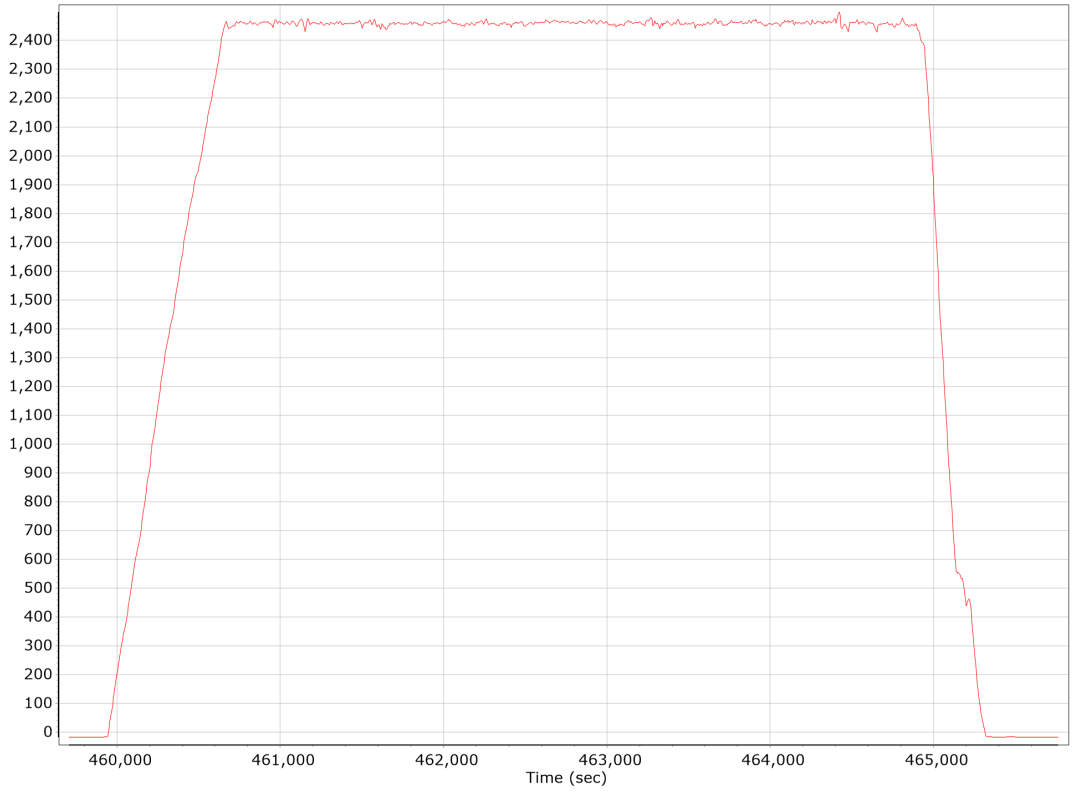


Forward Processed Trajectory Information

Top View



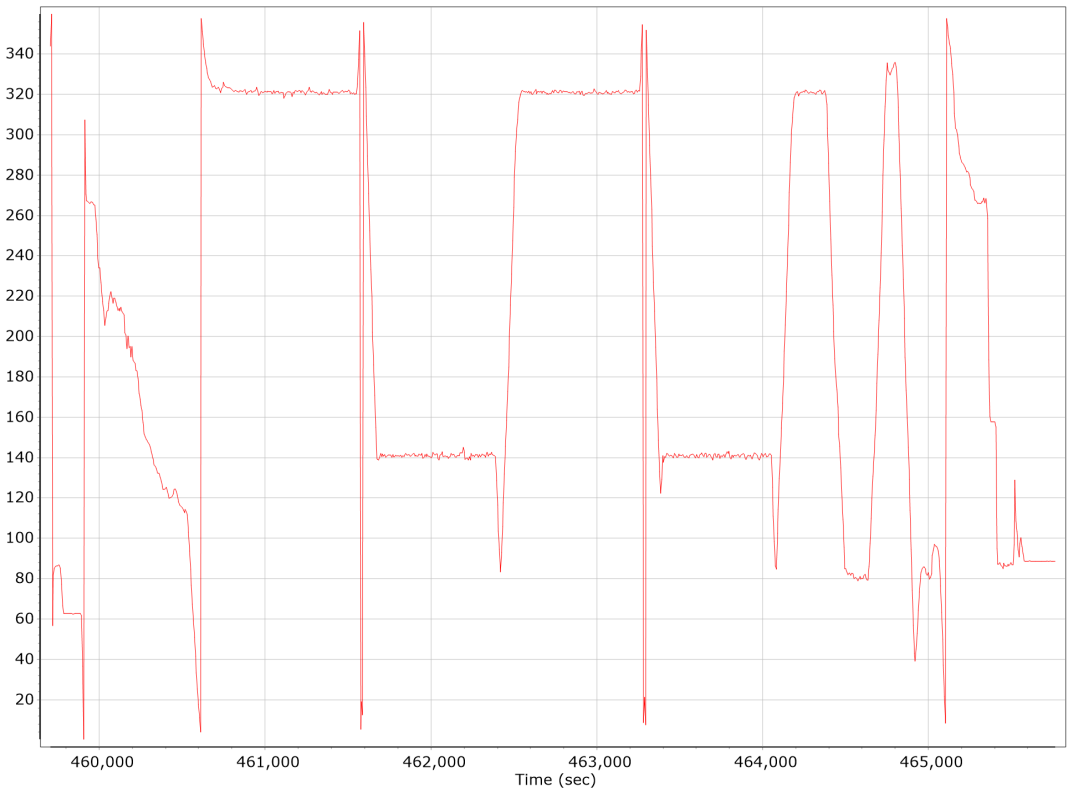
Altitude



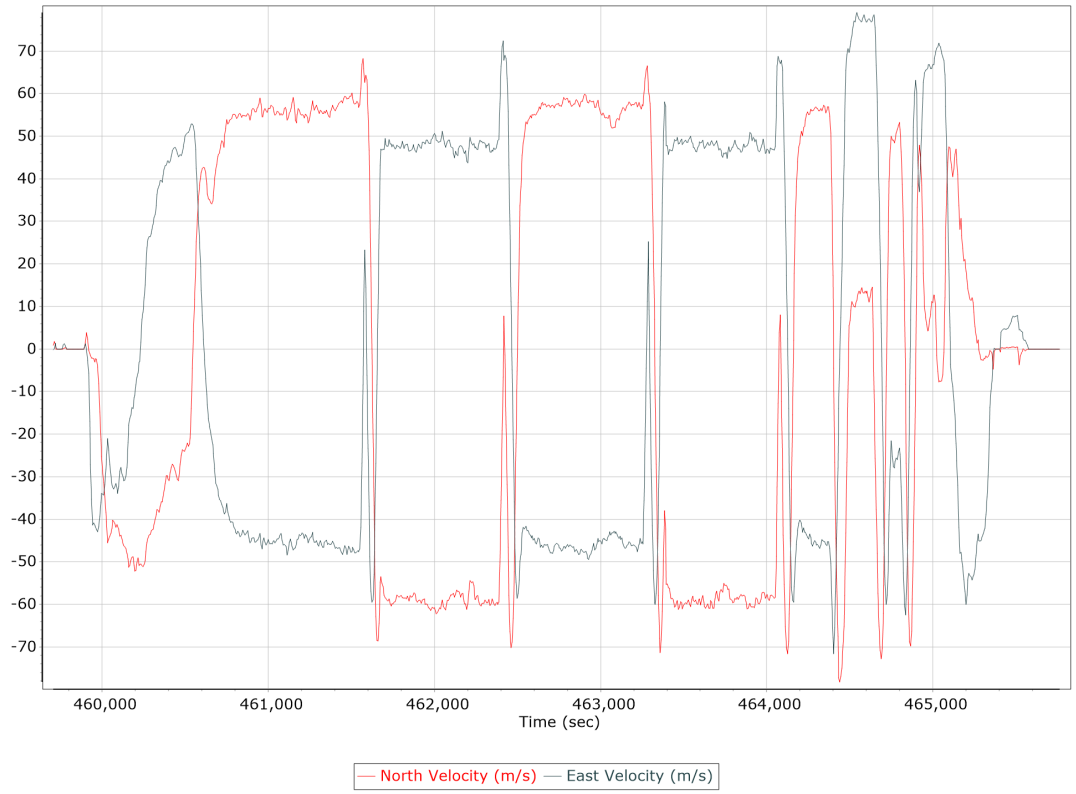
Roll/Pitch



Heading



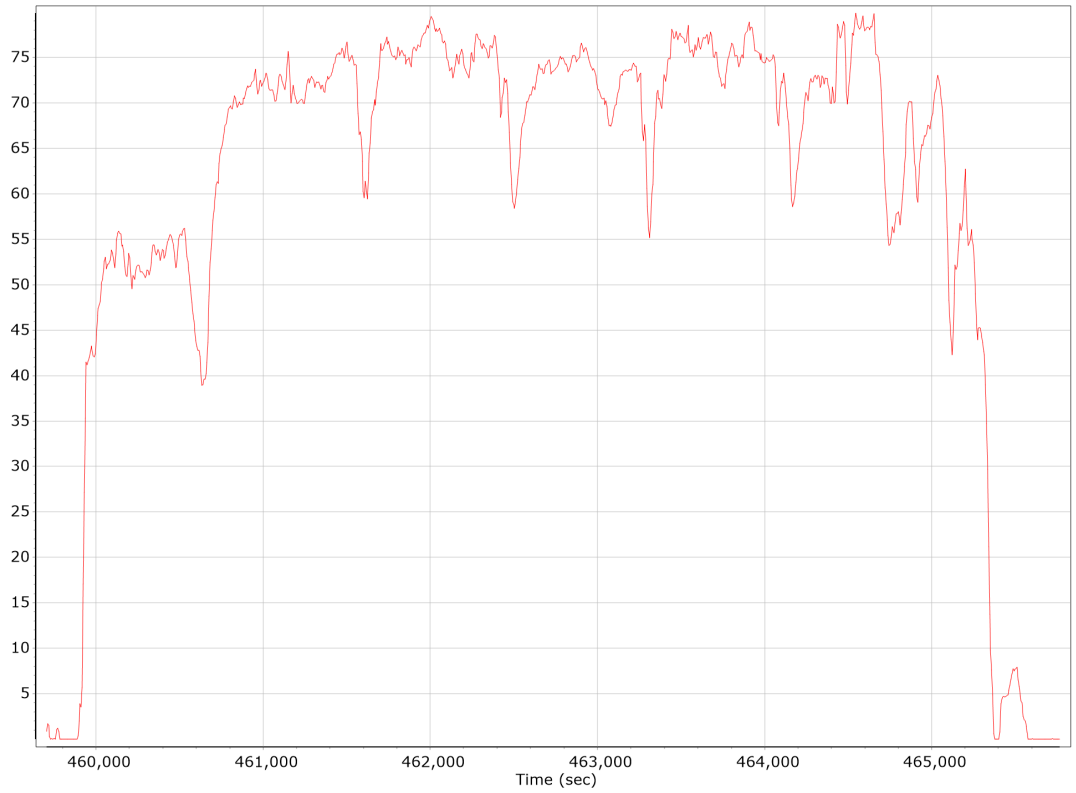
North/East Velocity



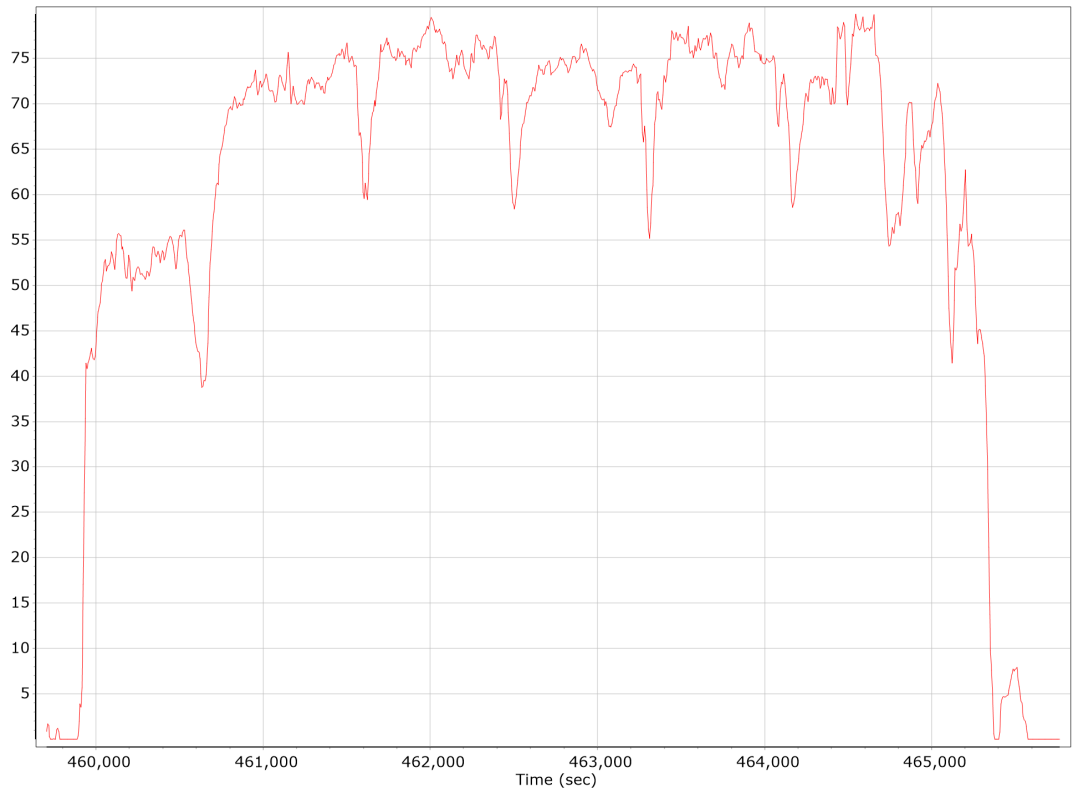
Down Velocity



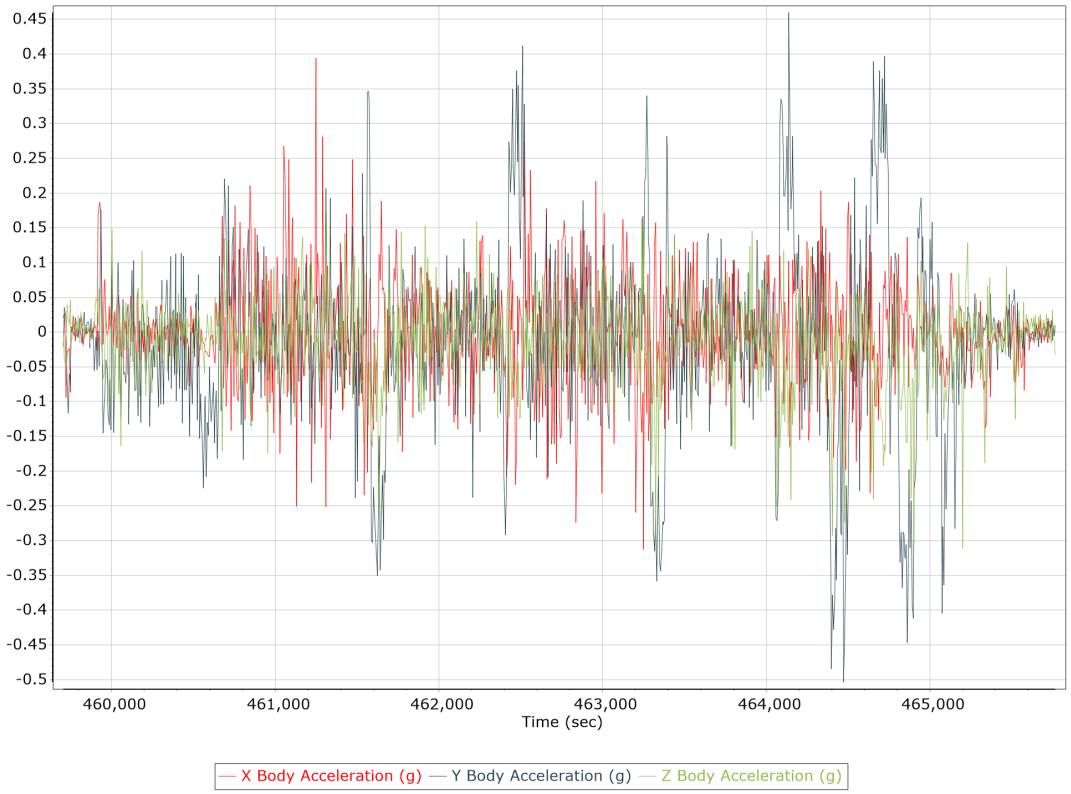
Total Speed



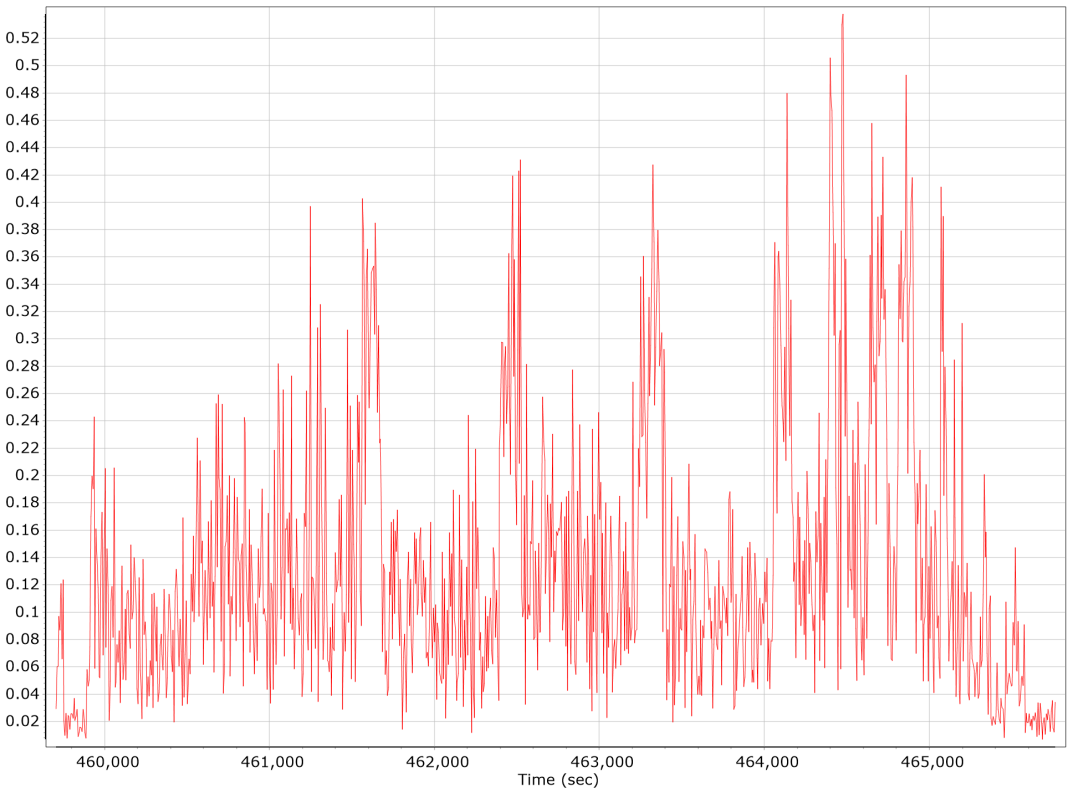
Ground Speed



Body Acceleration



Total Body Acceleration



Body Angular Rate



GNSS QC

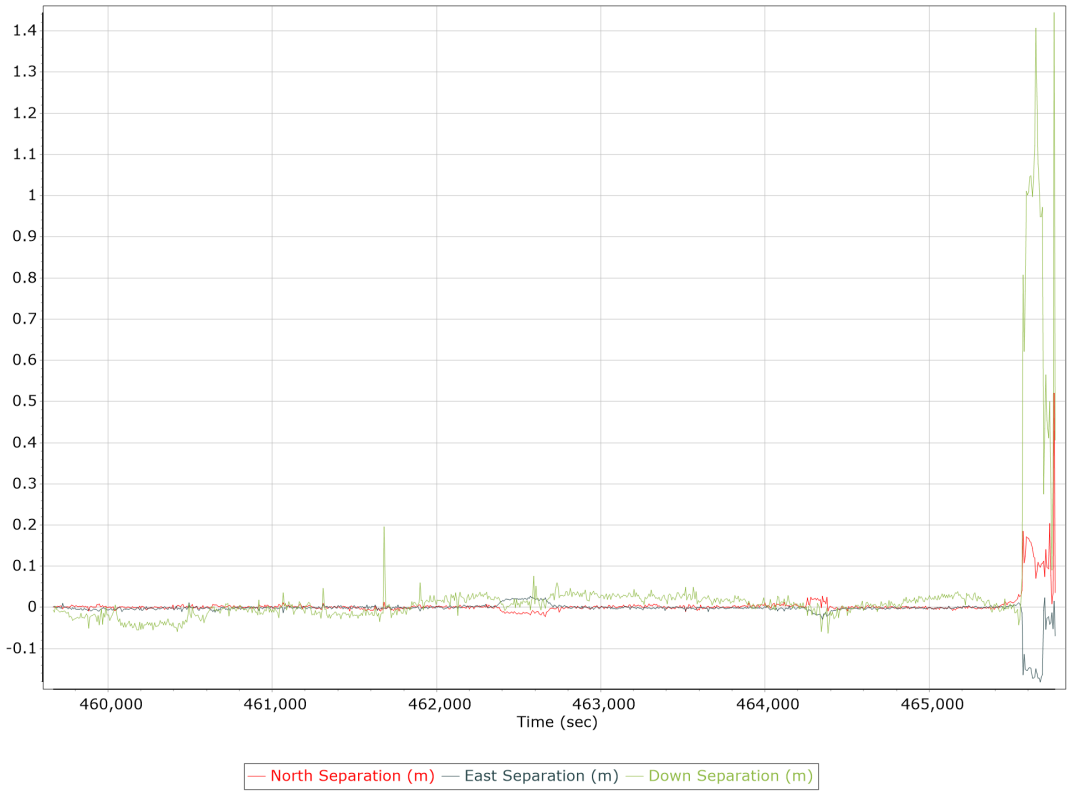
GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	2	11	9
Number of GLONASS SV	0	9	7
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	5	8	7
Total number of SV	10	26	23
PDOP	1.07	3.41	1.23
QC Solution Gaps	2.00	2.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	6421.00	0.00	2.00
Percentage	99.97	0.00	0.03

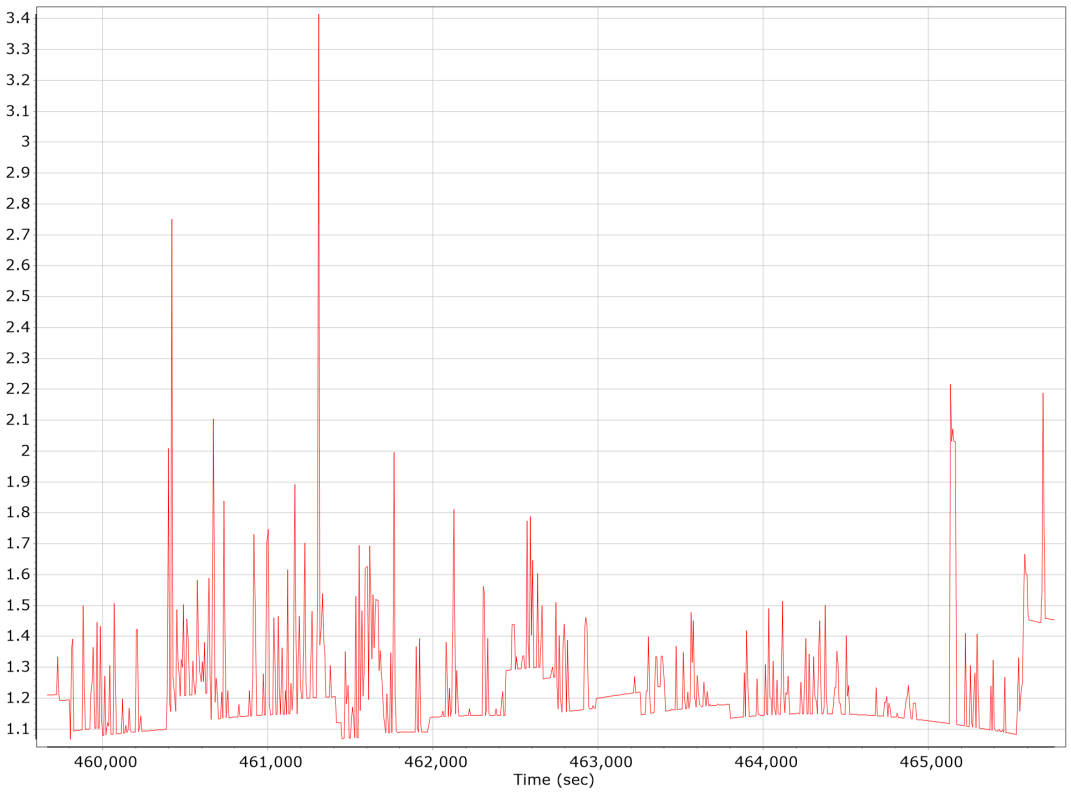
Num SVs in solution



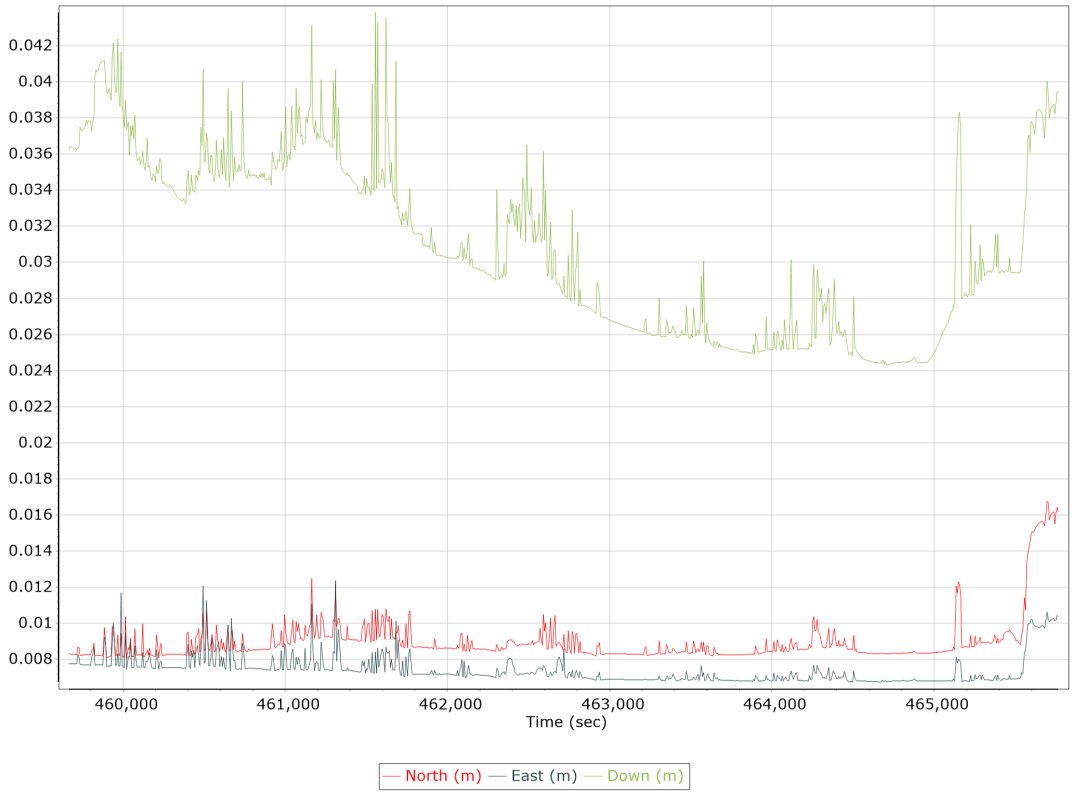
Forward/Reverse Separation



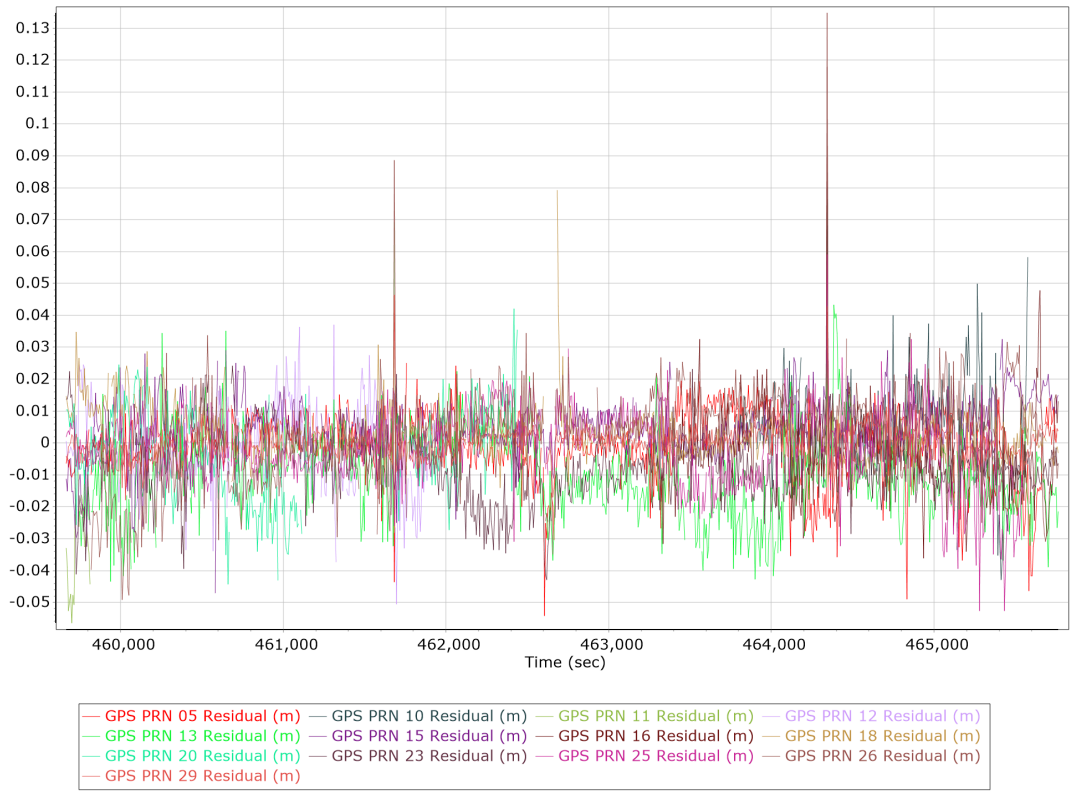
PDOP



Estimated Position Accuracy



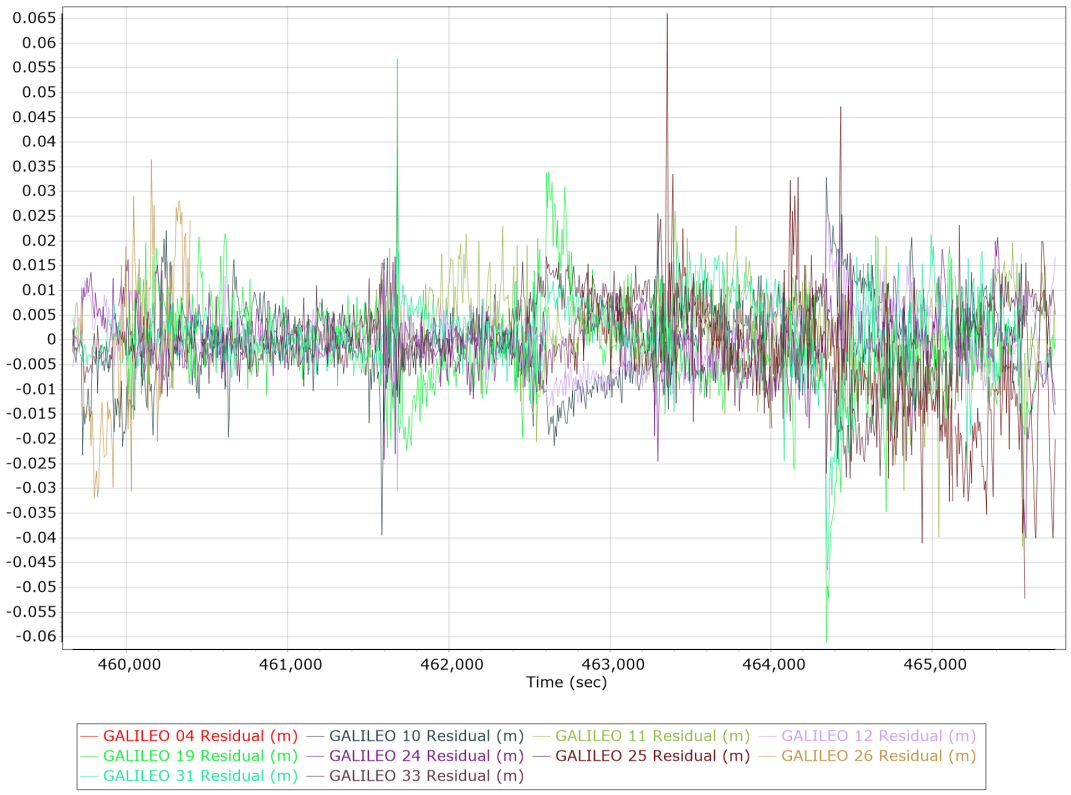
GPS Residuals



GLONASS Residuals



GALILEO Residuals



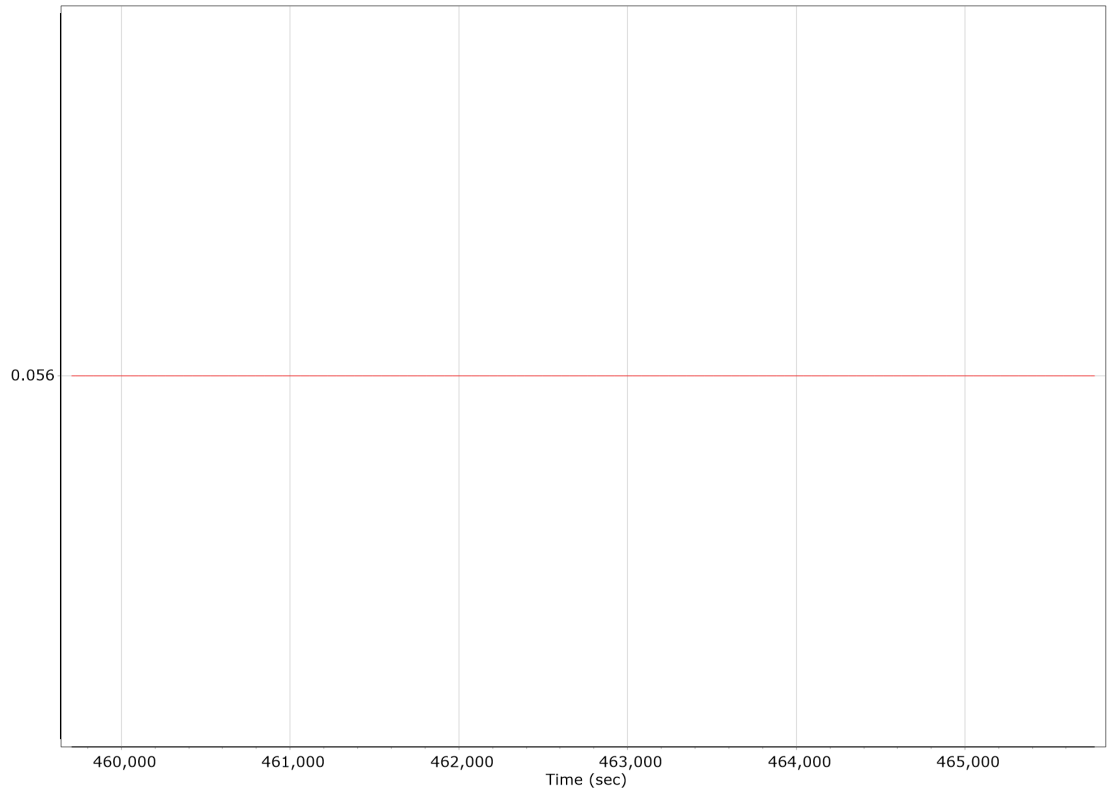
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	459342.000 (12/8/2023 7:35:42 AM)		
Processing end time	465770.000 (12/8/2023 9:22:50 AM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.056	0.055	-1.294
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

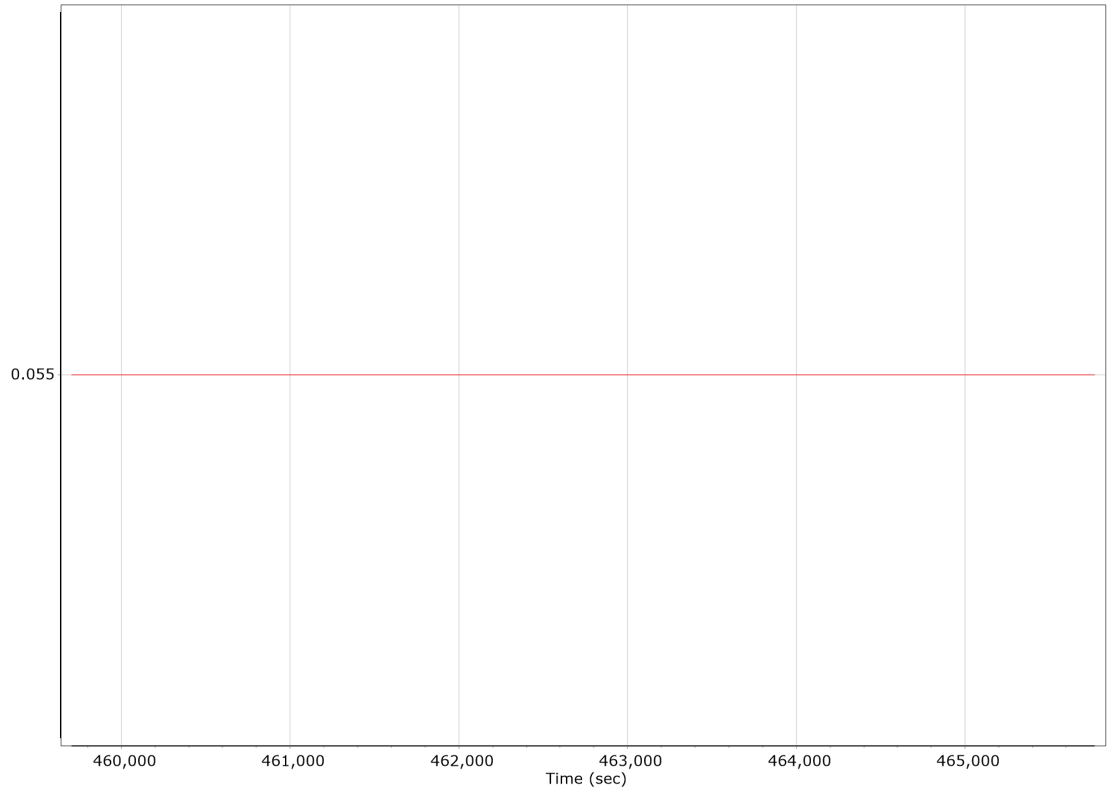
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

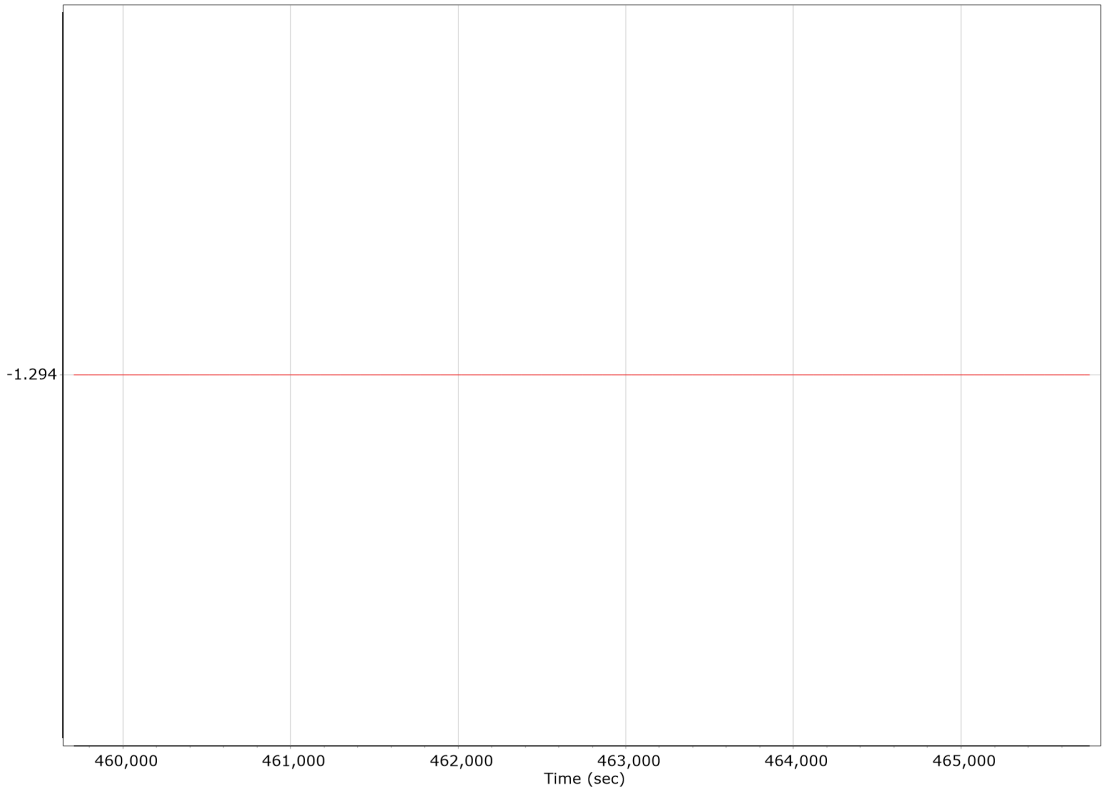
X Reference-Primary GNSS Lever Arm (m)



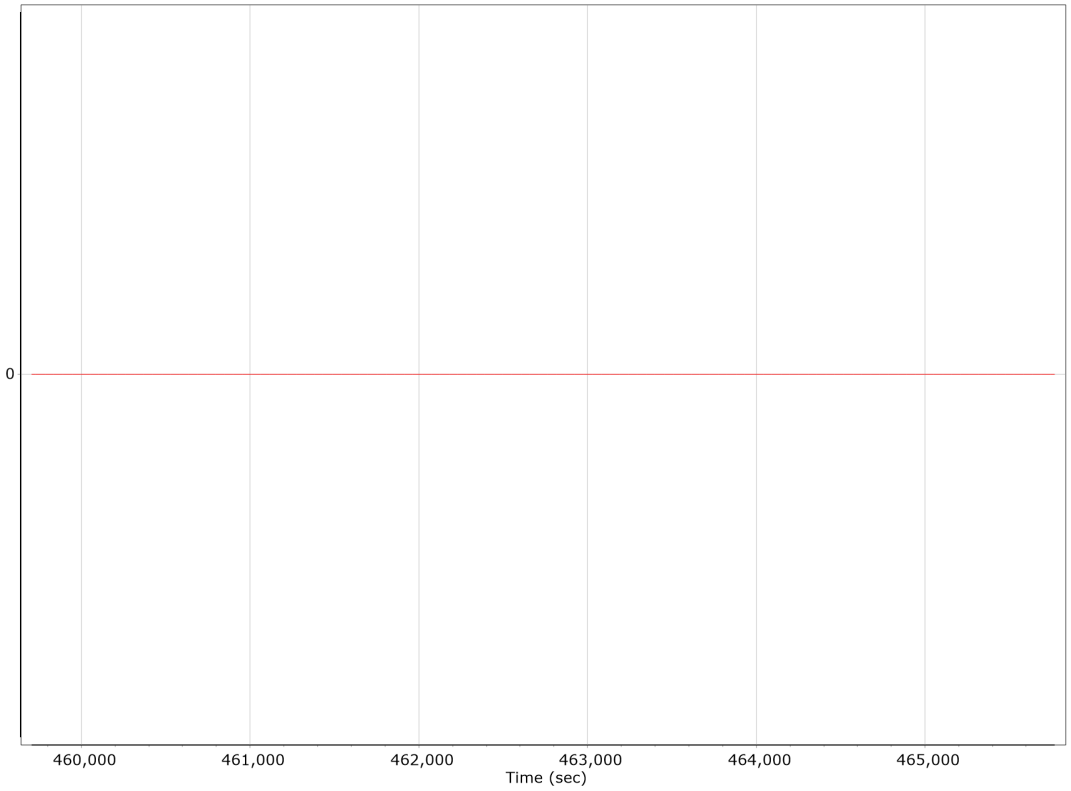
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



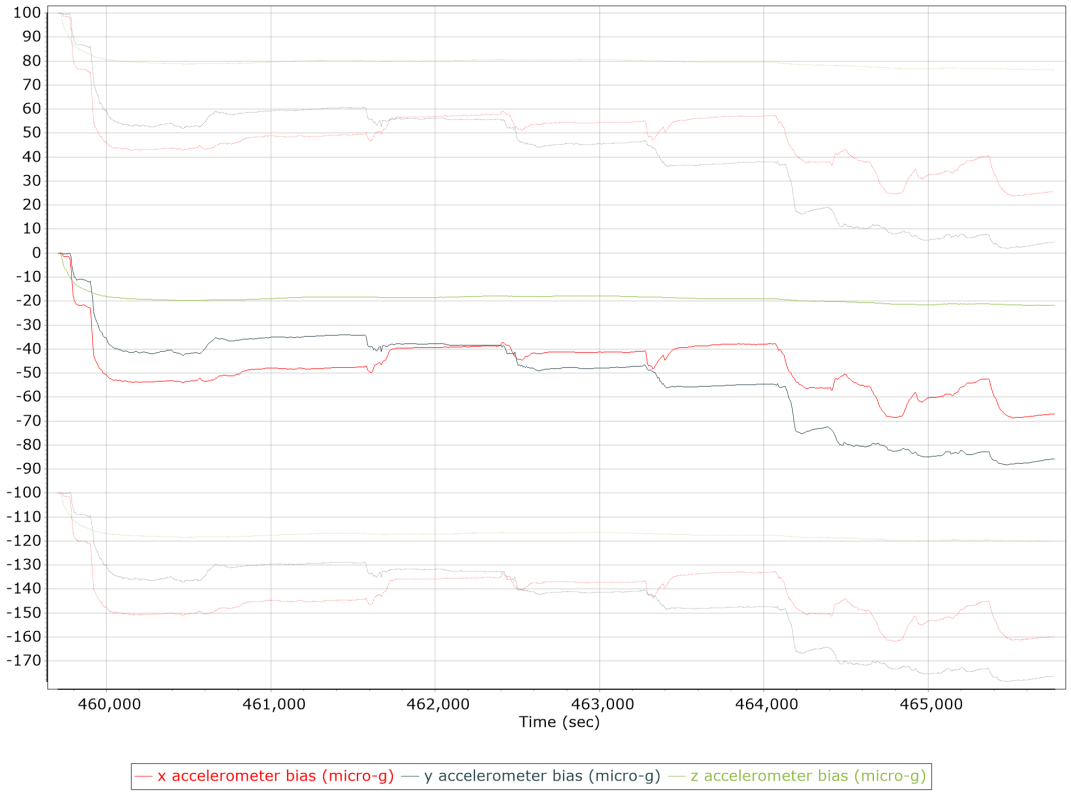
Reference-Primary GNSS Lever Arm Figure of Merit



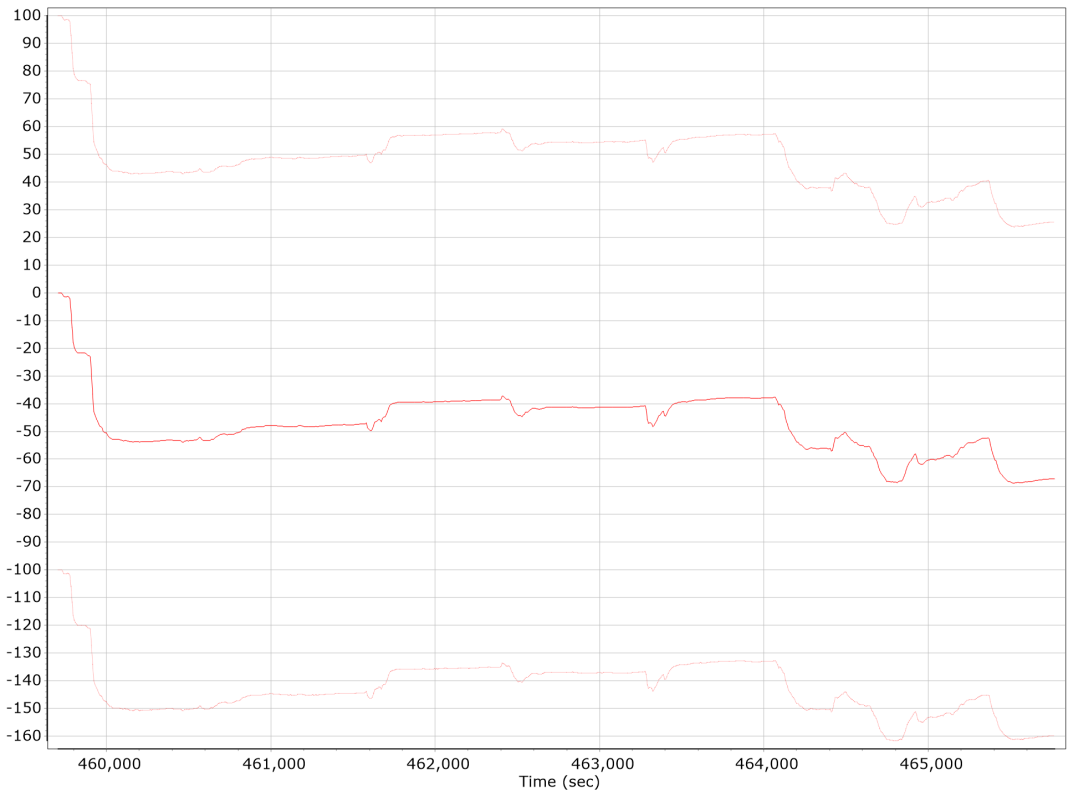
IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

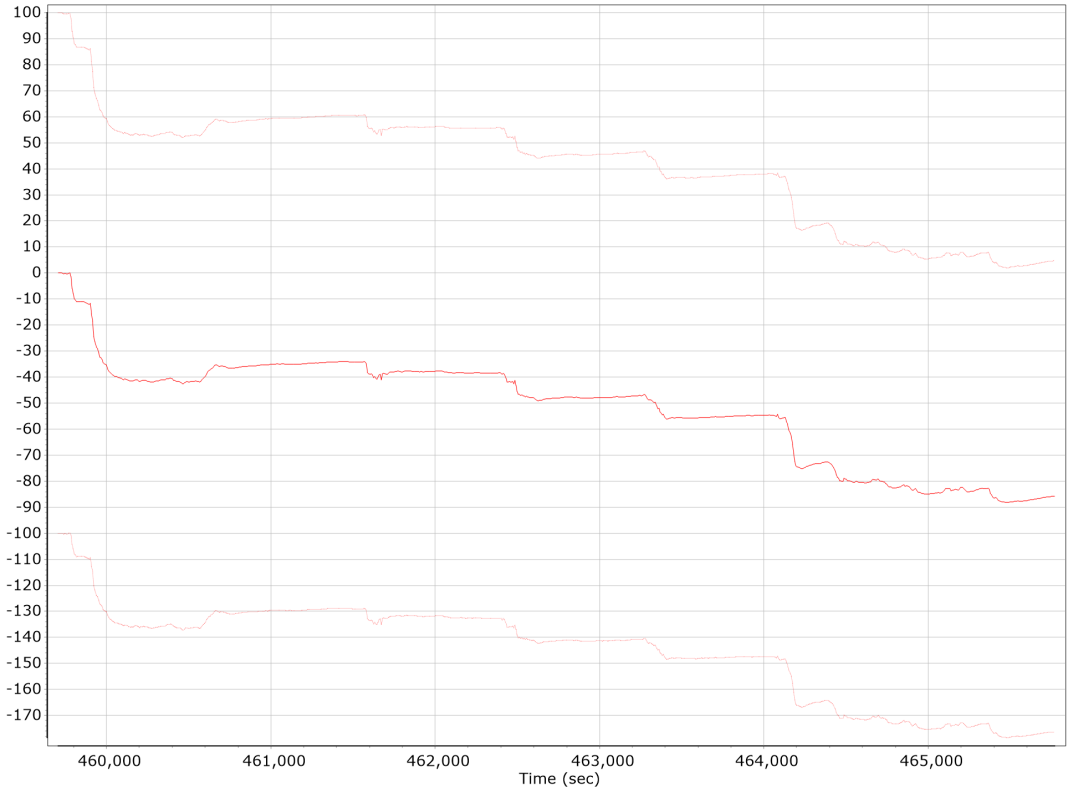
Accelerometer Bias (micro-g)



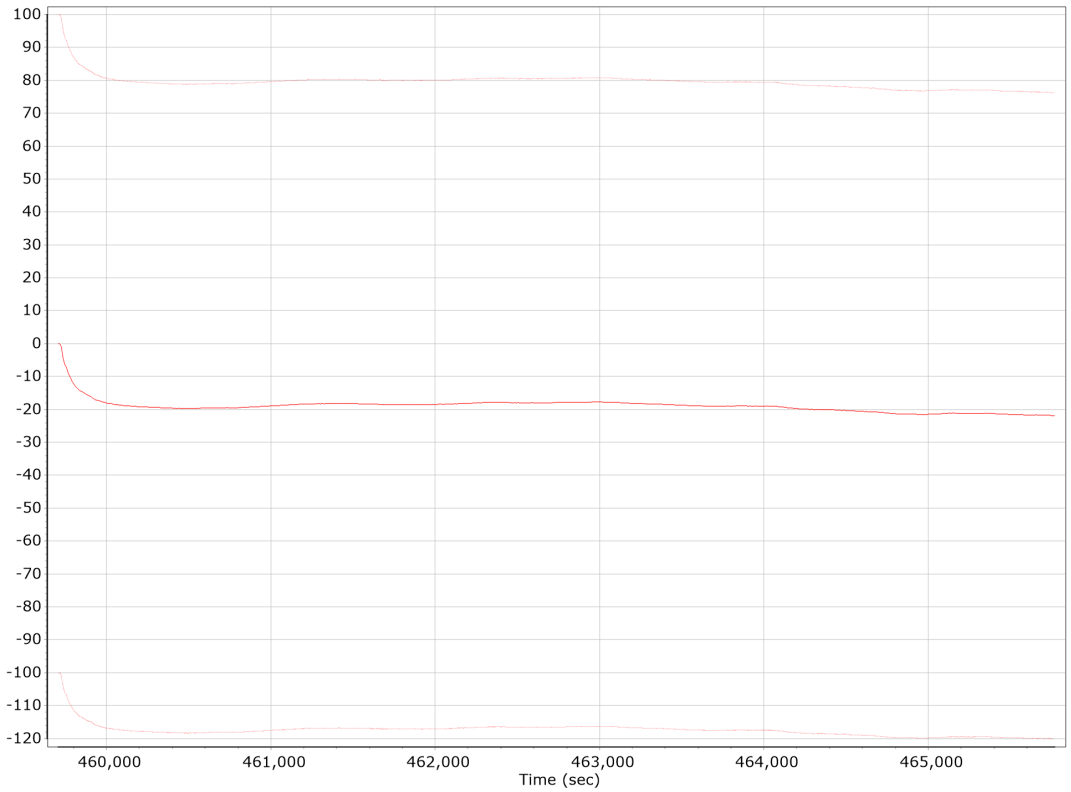
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



X Accelerometer Scale Error (ppm)



Y Accelerometer Scale Error (ppm)



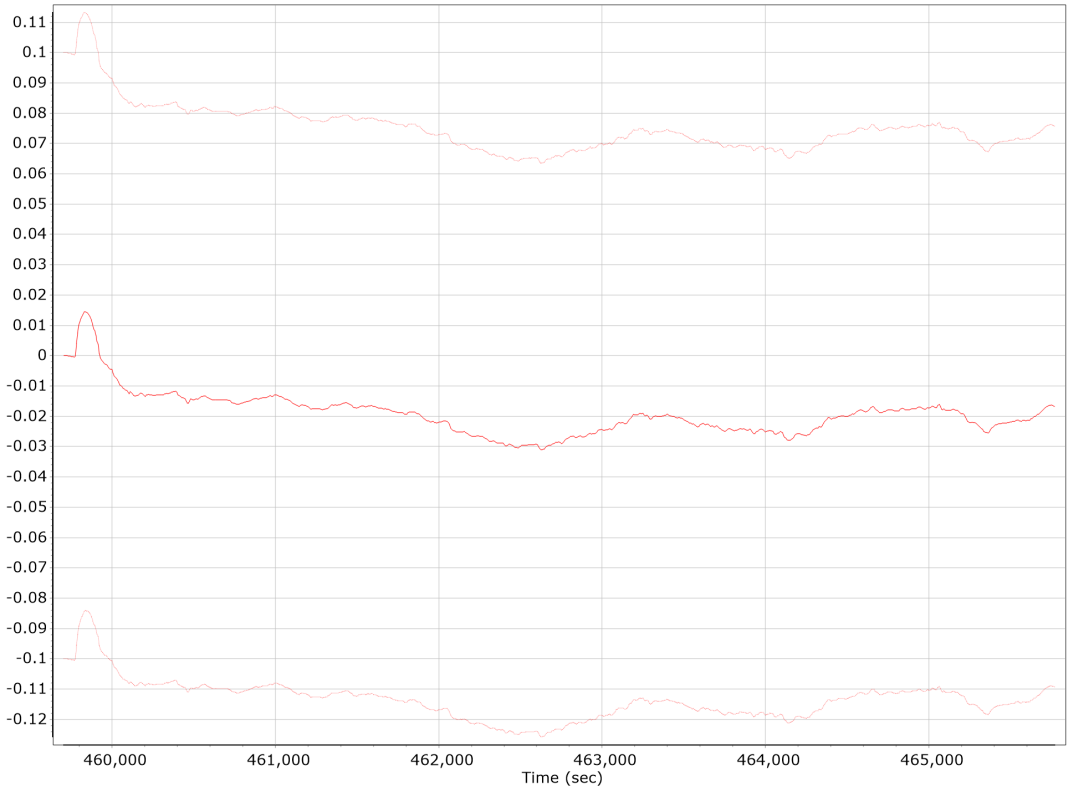
Z Accelerometer Scale Error (ppm)



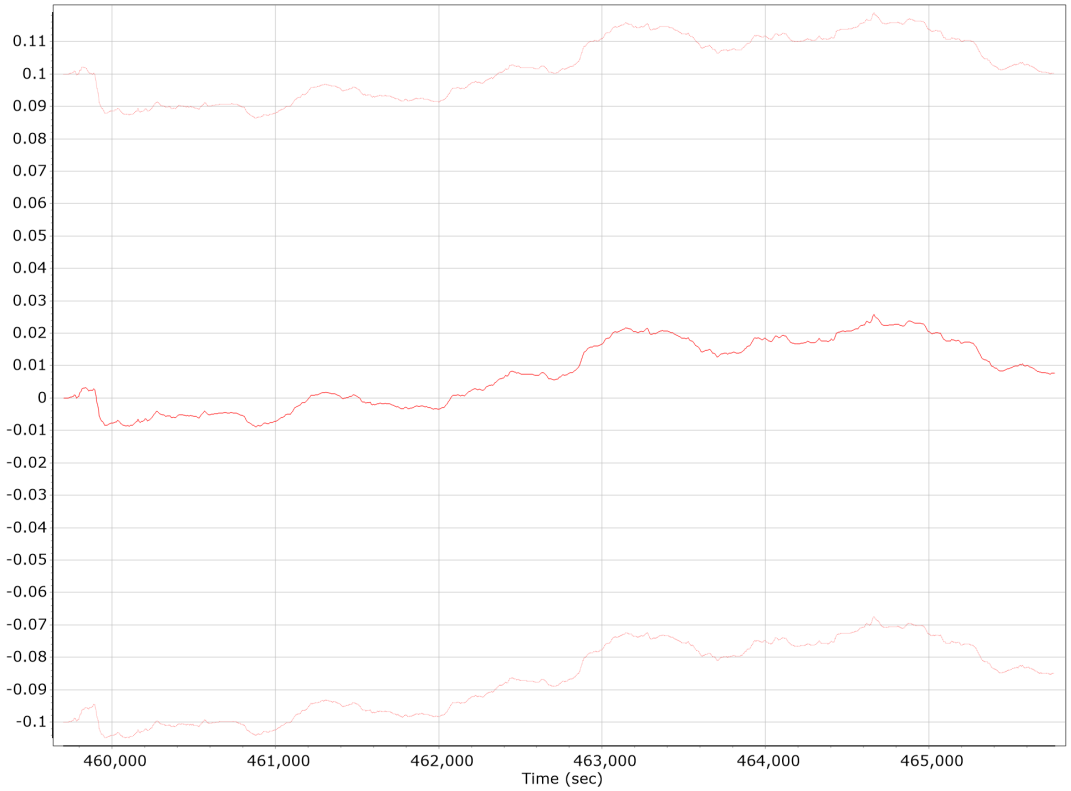
Gyro Bias (deg/h)



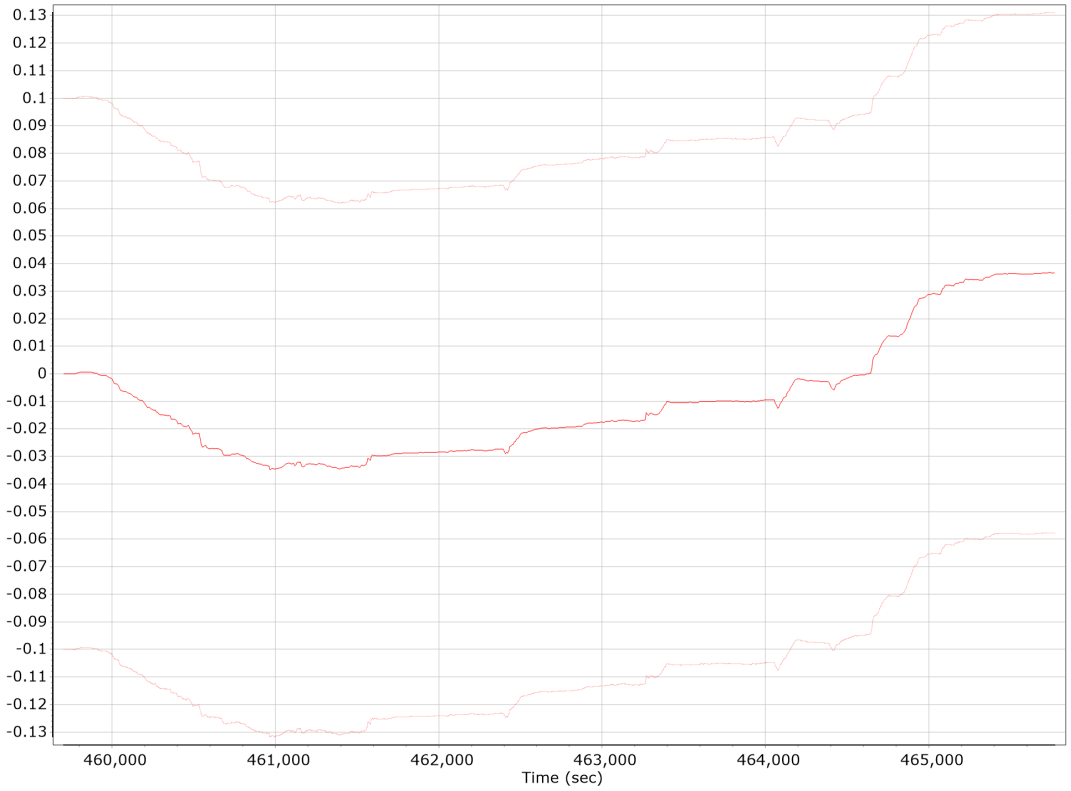
X Gyro Bias (deg/h)



Y Gyro Bias (deg/h)



Z Gyro Bias (deg/h)



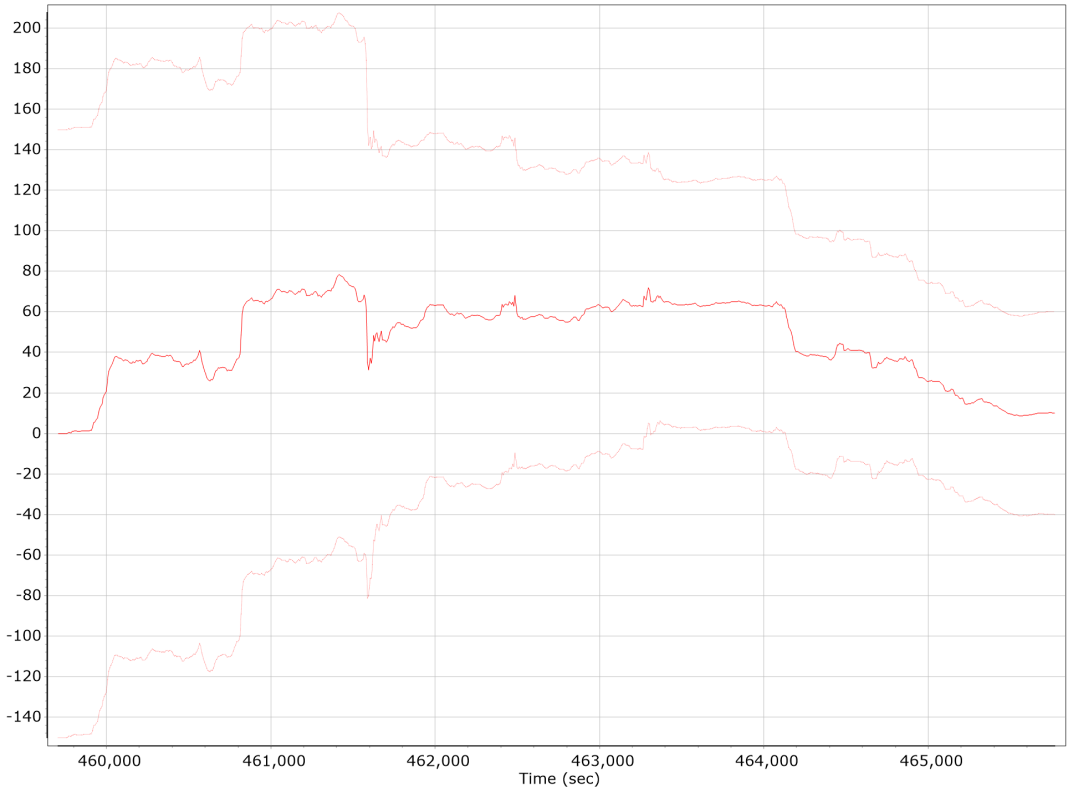
Gyro Scale Error (ppm)



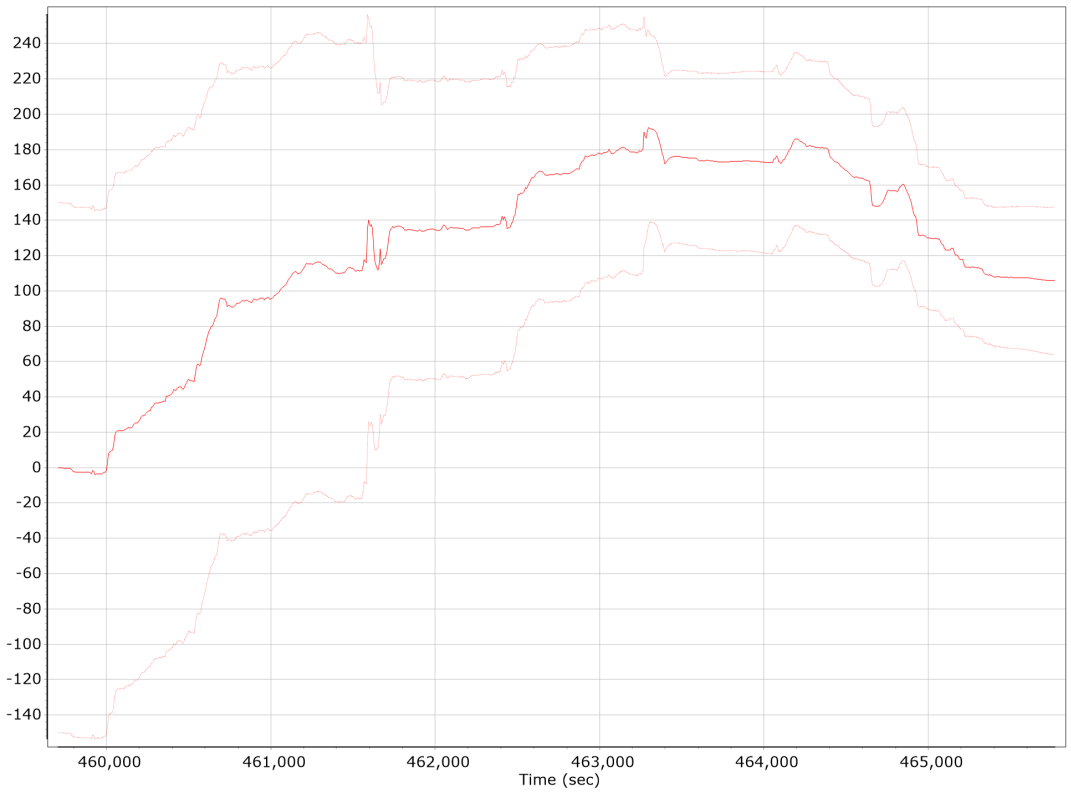
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)

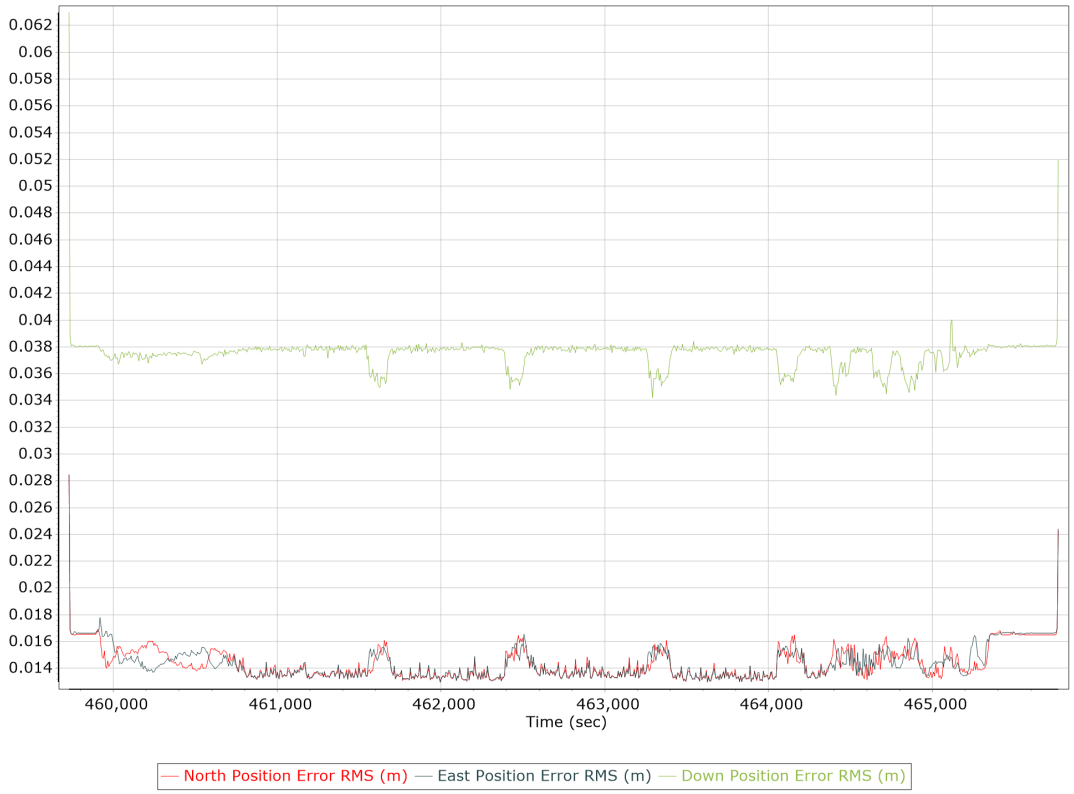


Z Gyro Scale Error (ppm)

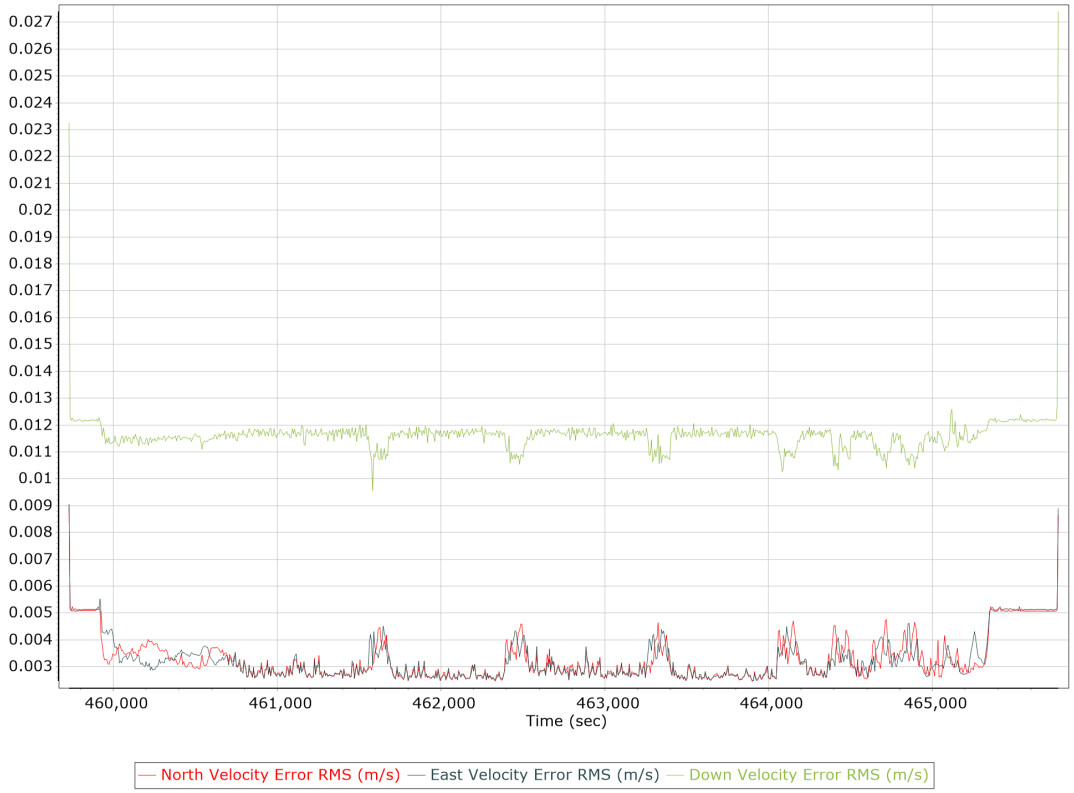


Smoothed Performance Metrics

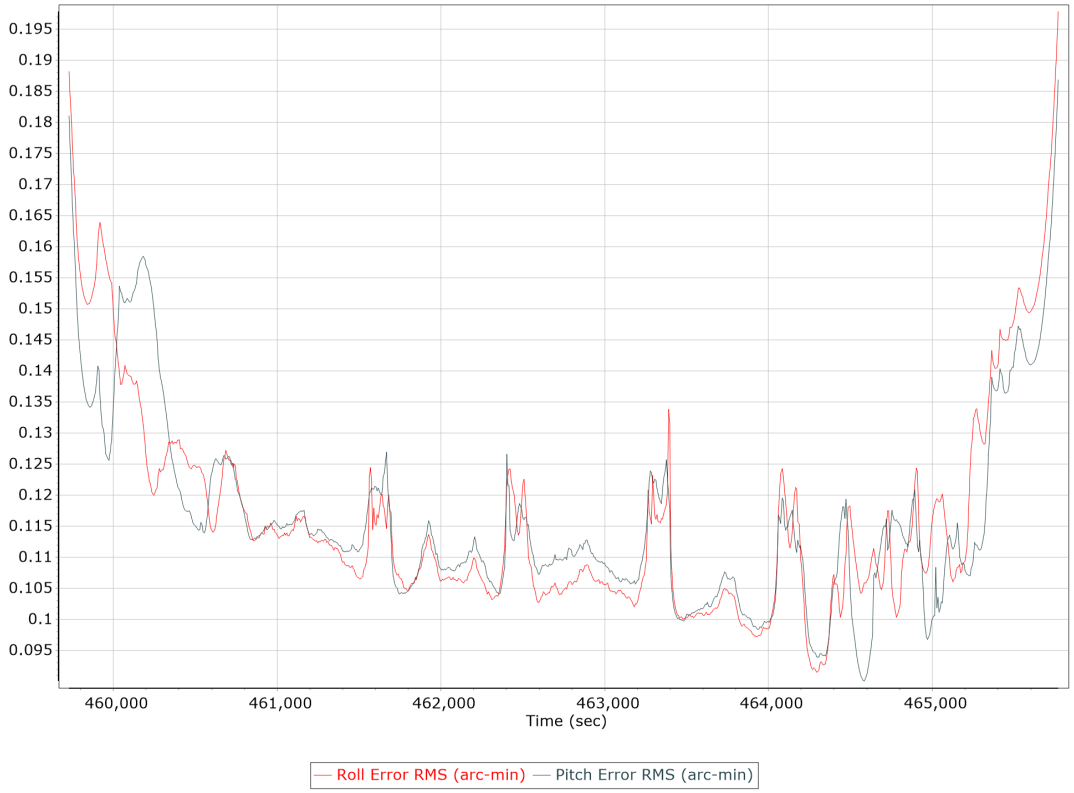
Position Error RMS (m)



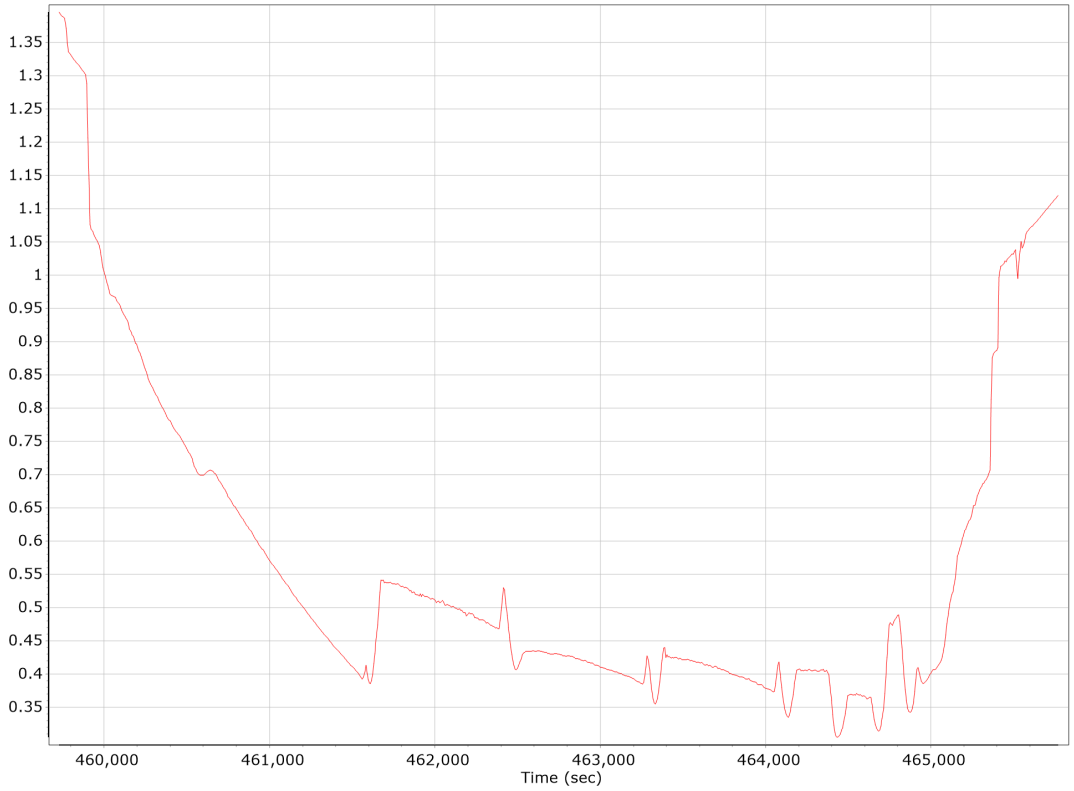
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

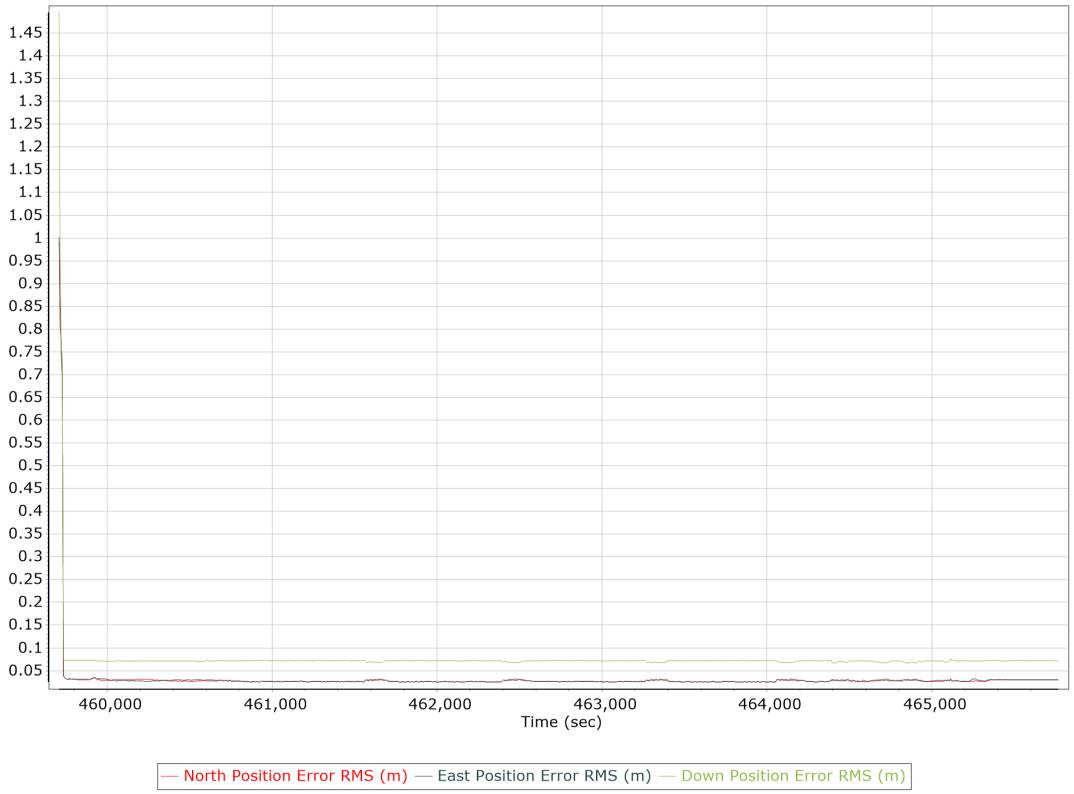


Heading Error RMS (arc-min)

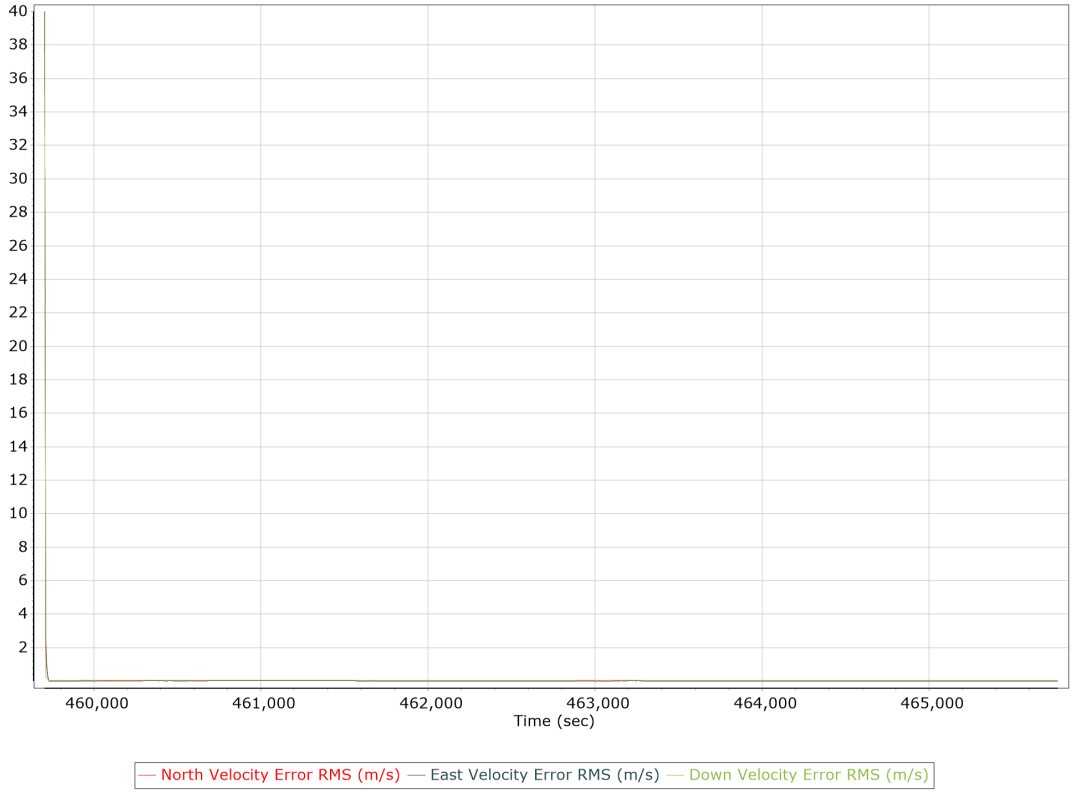


Forward Processed Performance Metrics

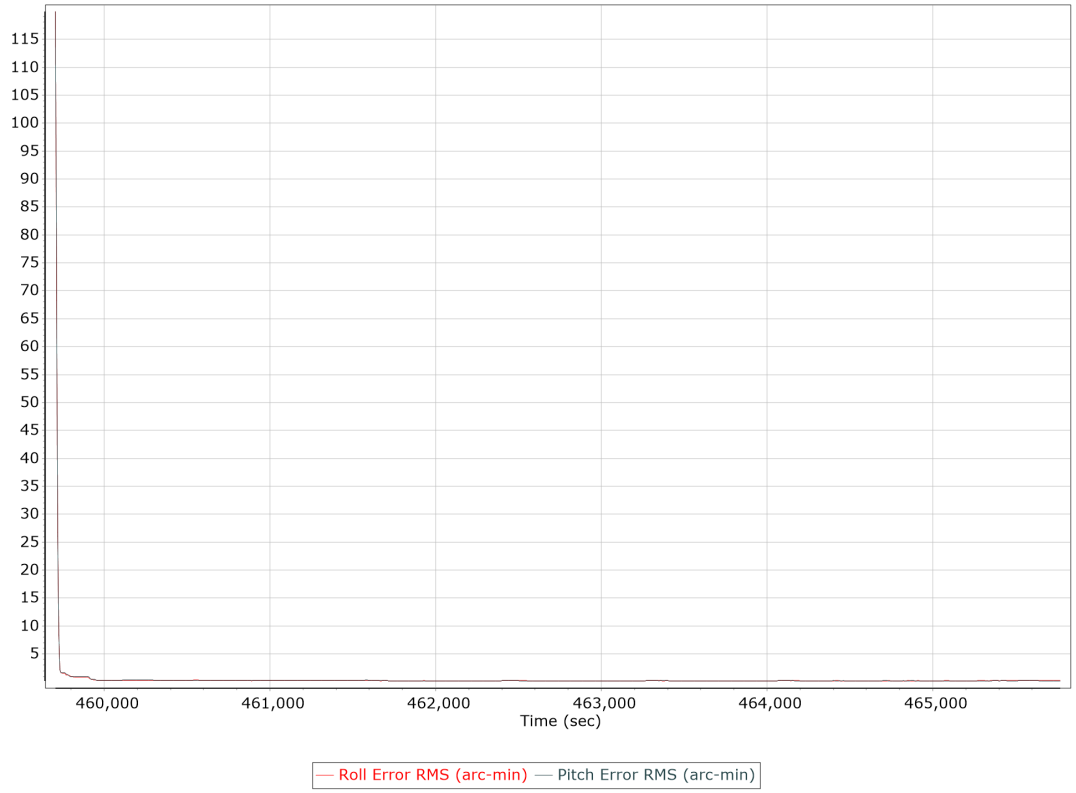
Position Error RMS (m)



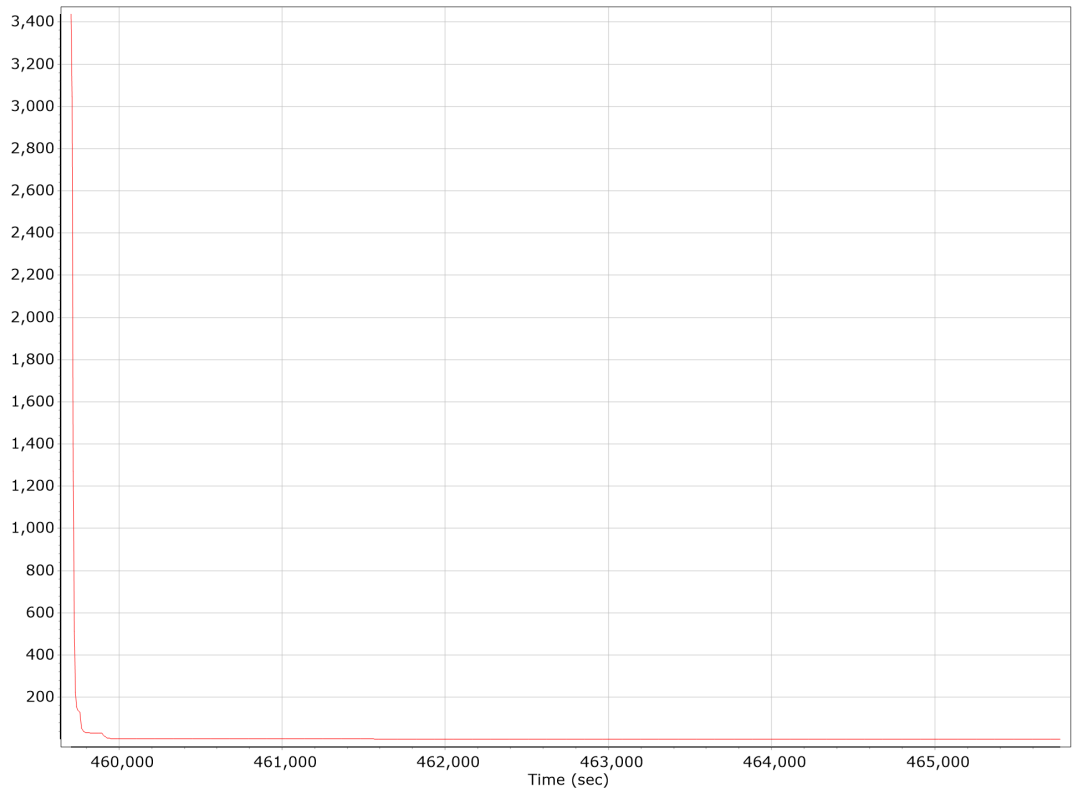
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

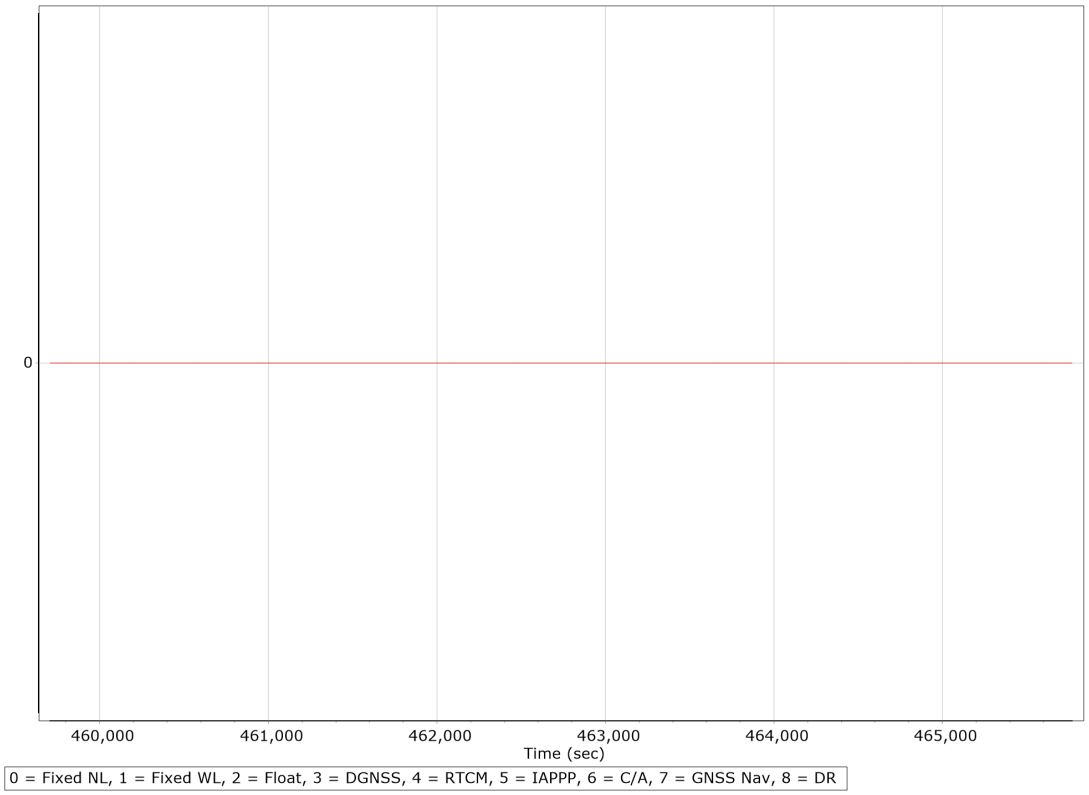


Heading Error RMS (arc-min)

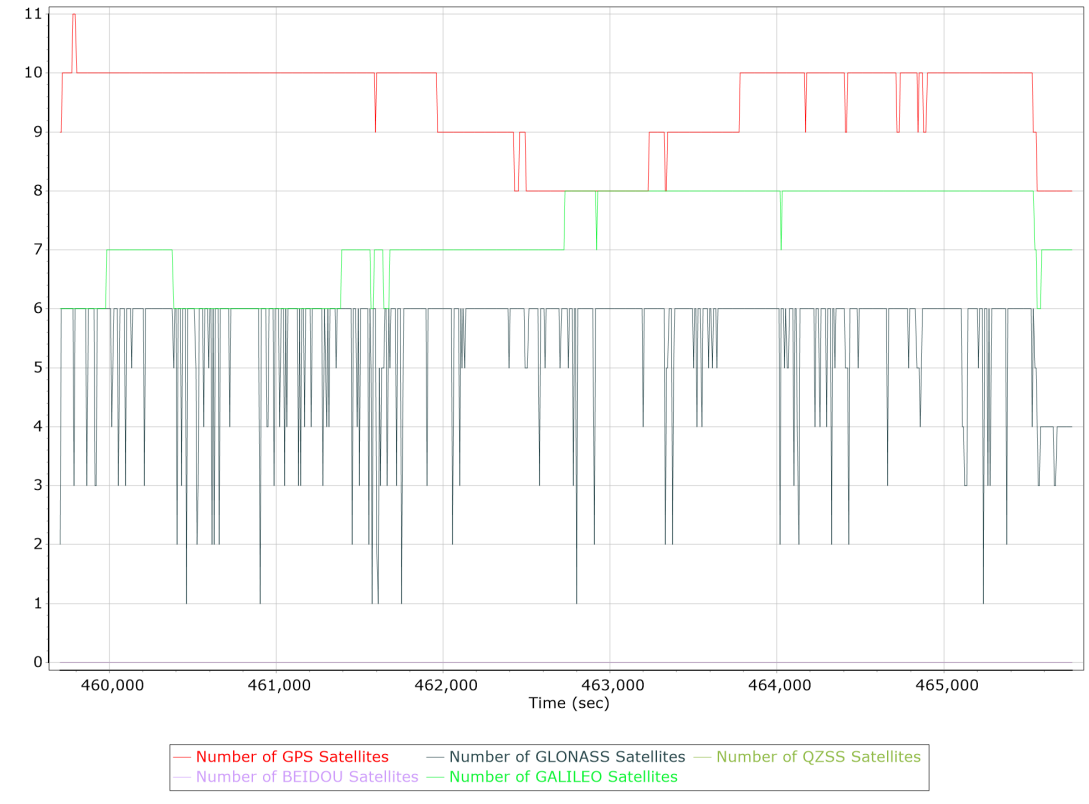


Forward Processed Solution Status

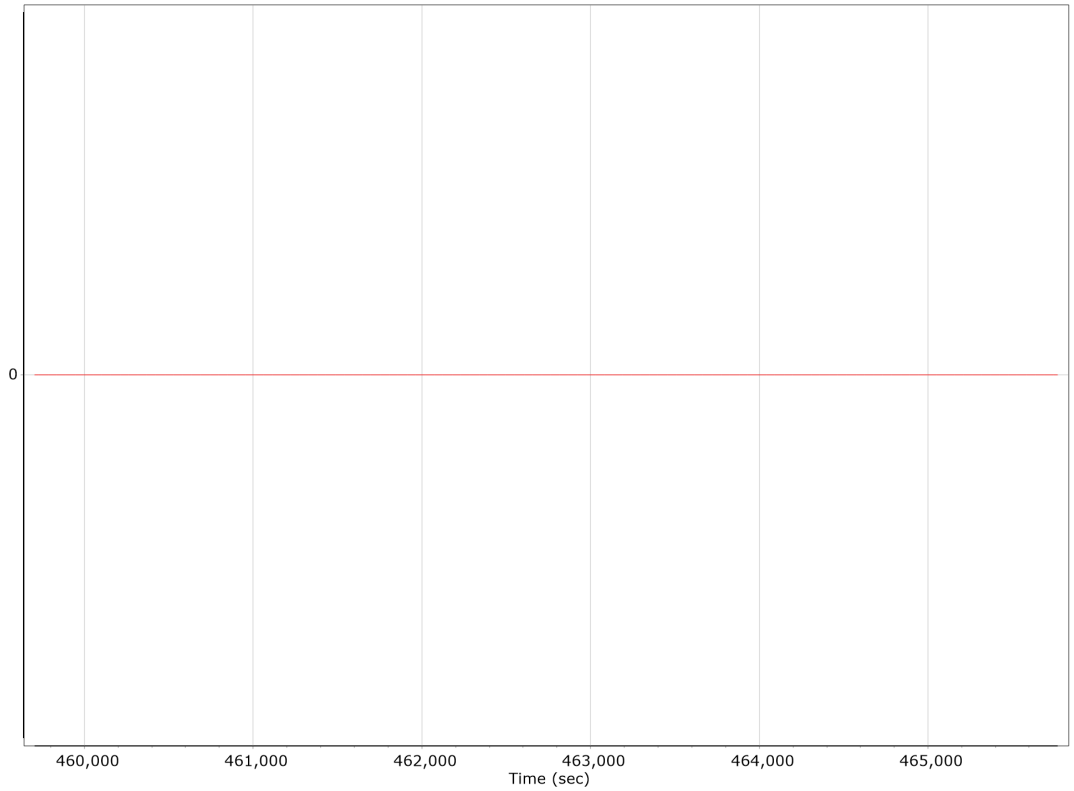
Processing Mode



Number of Satellites



Baseline Length



General Information

Mission Information

Project name	12092023A_3061
Processing date	2023-12-12 19:57:43
Mission date	2023-12-09 16:35:25
Mission duration	02:55:23.422
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N8902
IMU type	57
Receiver type	BD982
Antenna type	AV59

Project File List

Rover Data Files

File name	File type
231209_163506_INS-GPS_1.raw	POS Data

Input Files

File Name	File Type
Ephm3430.23g	GLONASS Broadcast Ephemeris
Ephm3430.23n	GPS Broadcast Ephemeris

Output Files

Filename	File type
sbet_12092023A_3061.out	SBET Trajectory File

Rover Data Summary

First raw data file	231209_163506_INS-GPS_1.raw		
Last raw data file	231209_163506_INS-GPS_1.raw		
Start GPS week	2291		
Start time	578106.322 (12/9/2023 4:35:06 PM)		
End time	588629.744 (12/9/2023 7:30:29 PM)		
Start of fine alignment	578435.098 (12/9/2023 4:40:35 PM)		
Available subsystems	Primary GNSS, Gimbal, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Gimbal to IMU lever arm (m)	0.000	0.000	0.000
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

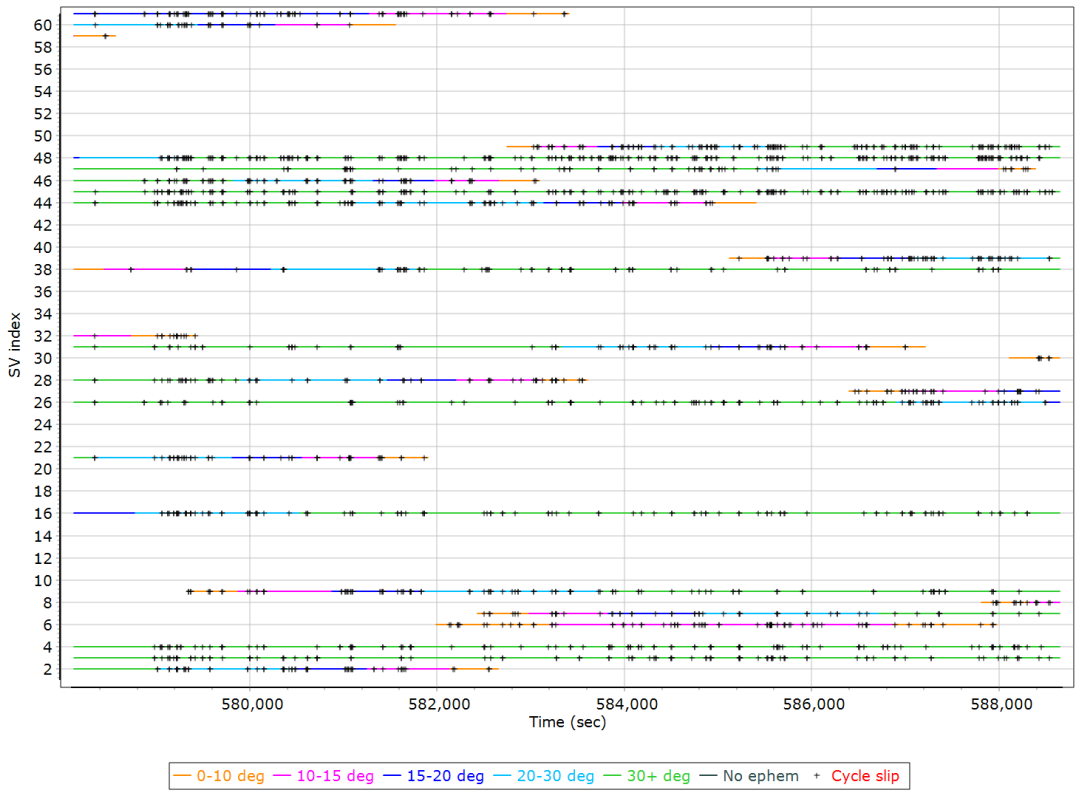
Rover Data QC

Raw IMU Import QC Summary

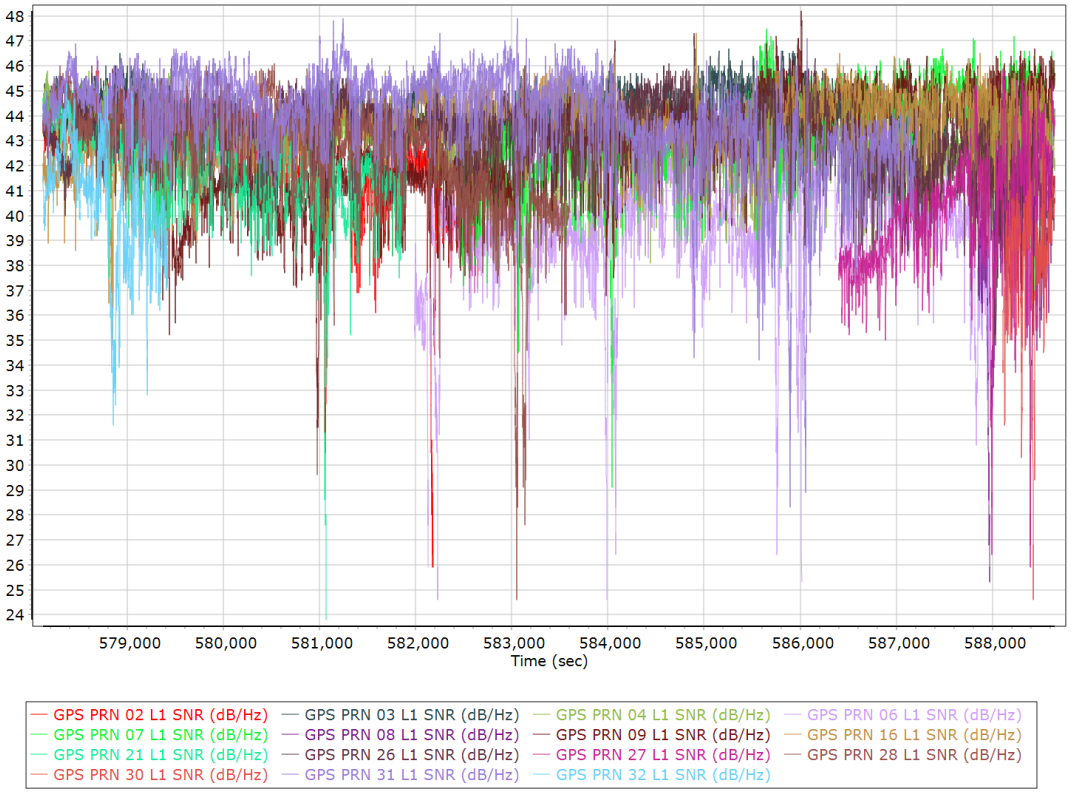
IMU data input file	imu_Mission 1.dat
IMU data check log file	imudt_12092023A_3061.log
IMU Records Processed	2104232
Termination Status	Normal
IMU Anomalies	0

Primary Observables & Satellite Data

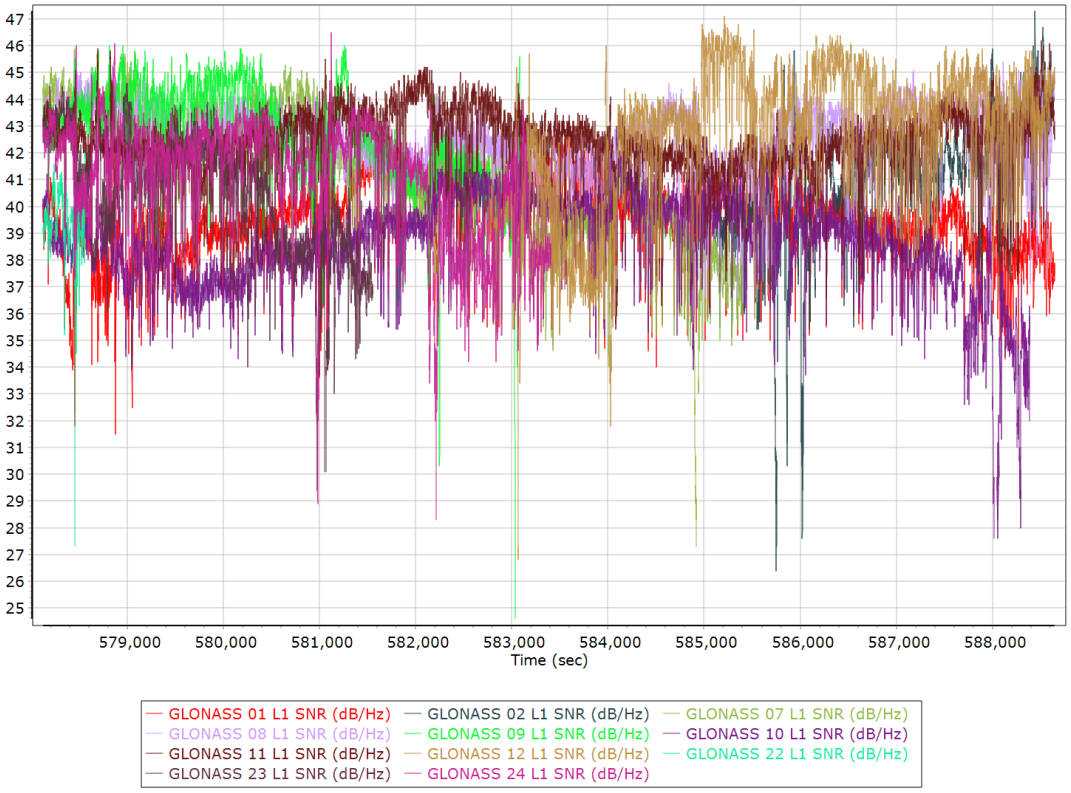
GPS/GLONASS L1 Satellite Lock/Elevation



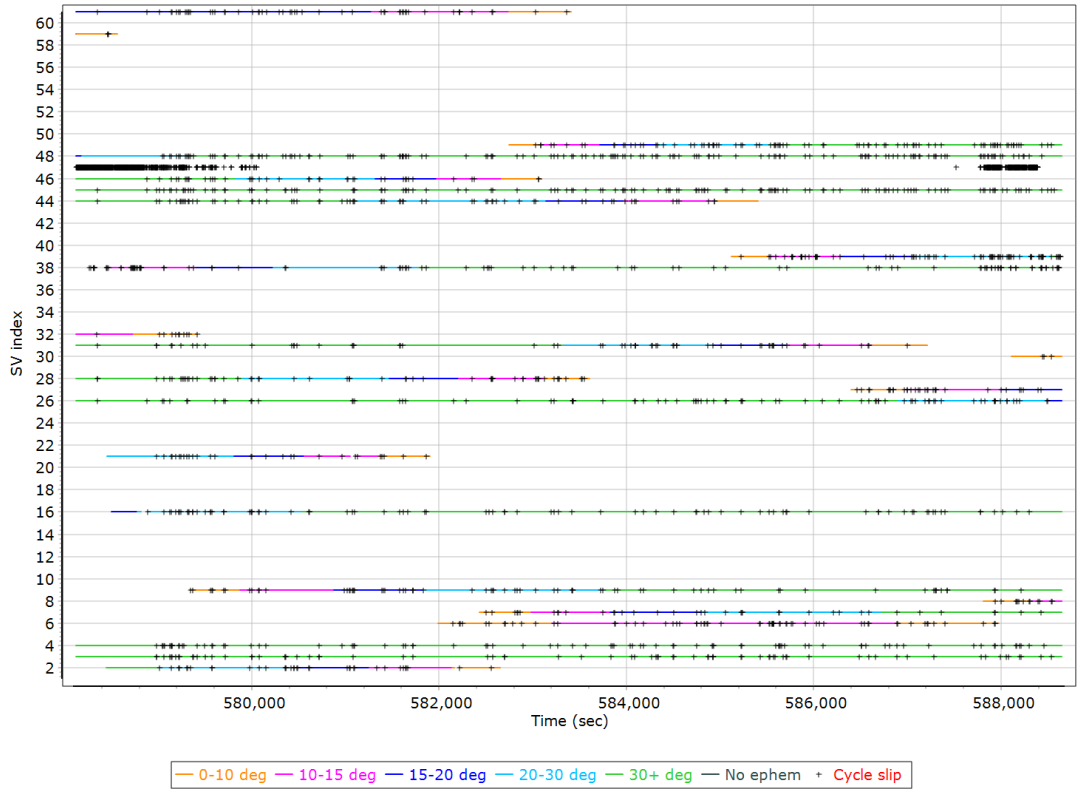
GPS L1 SNR



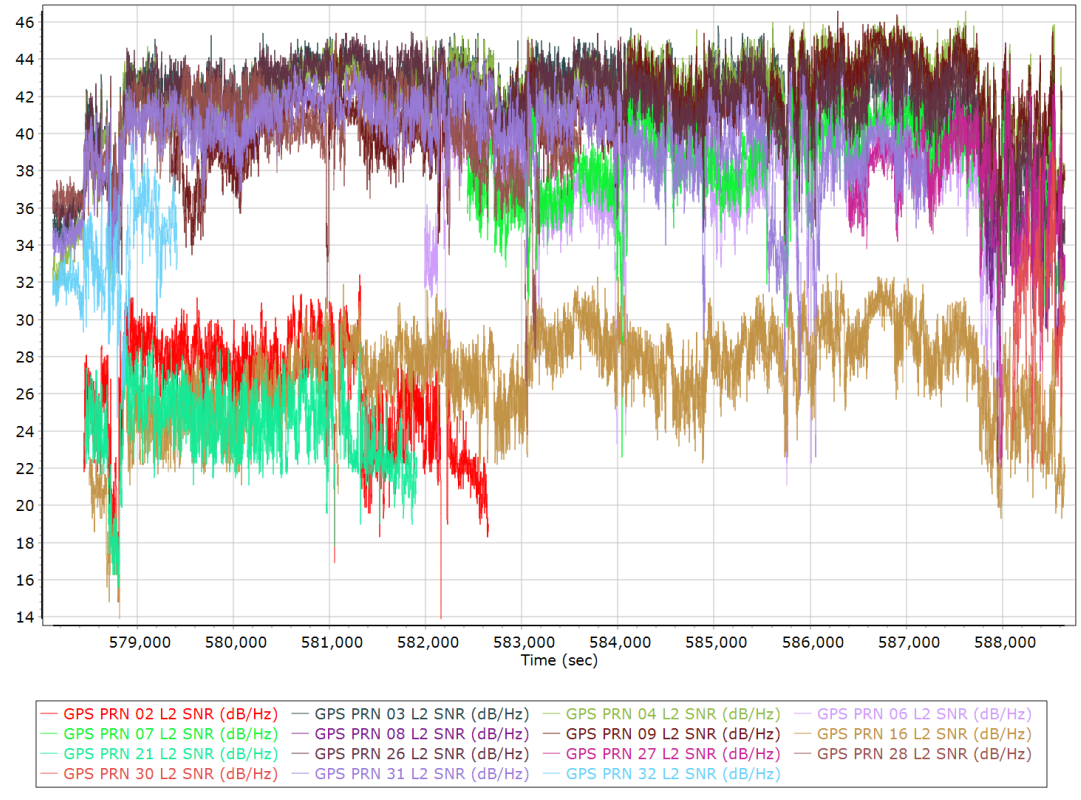
GLONASS L1 SNR



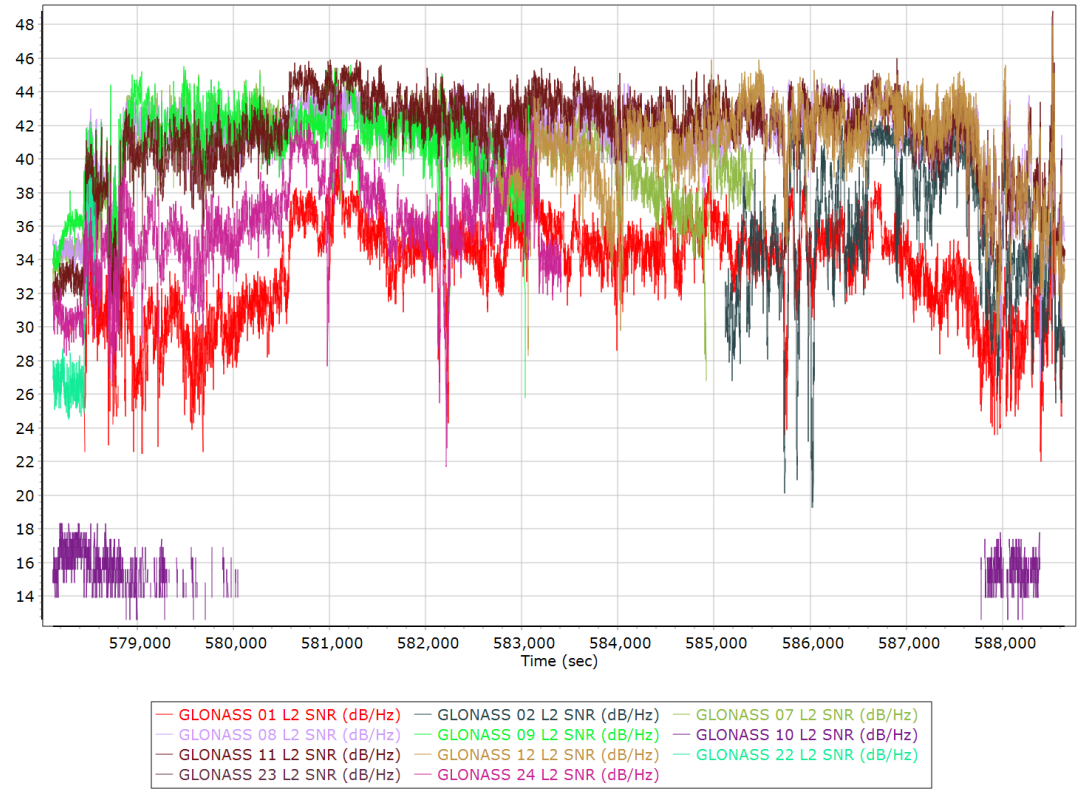
GPS/GLONASS L2 Satellite Lock/Elevation



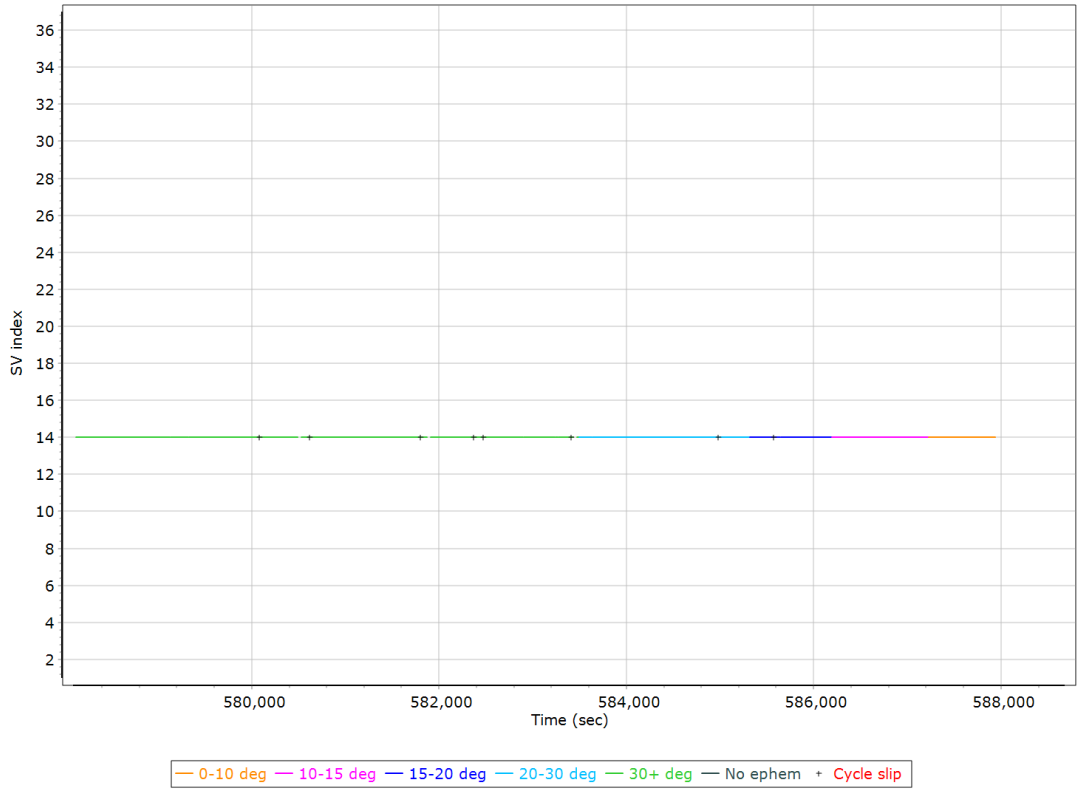
GPS L2 SNR



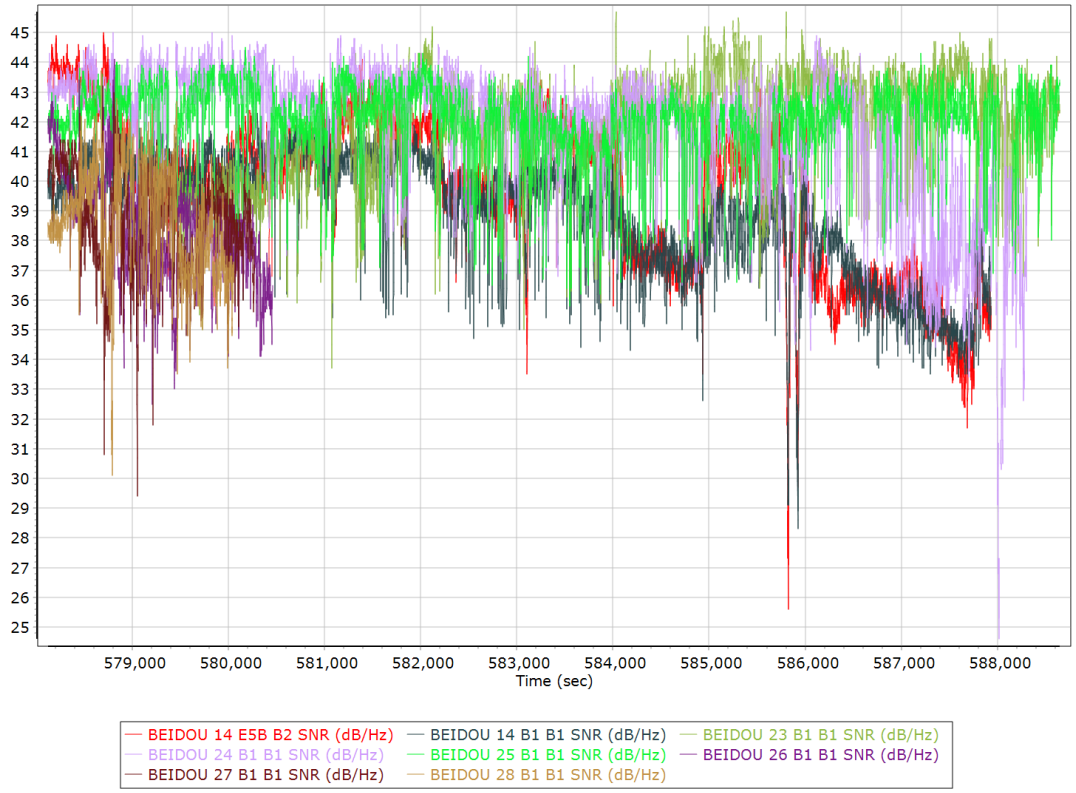
GLONASS L2 SNR



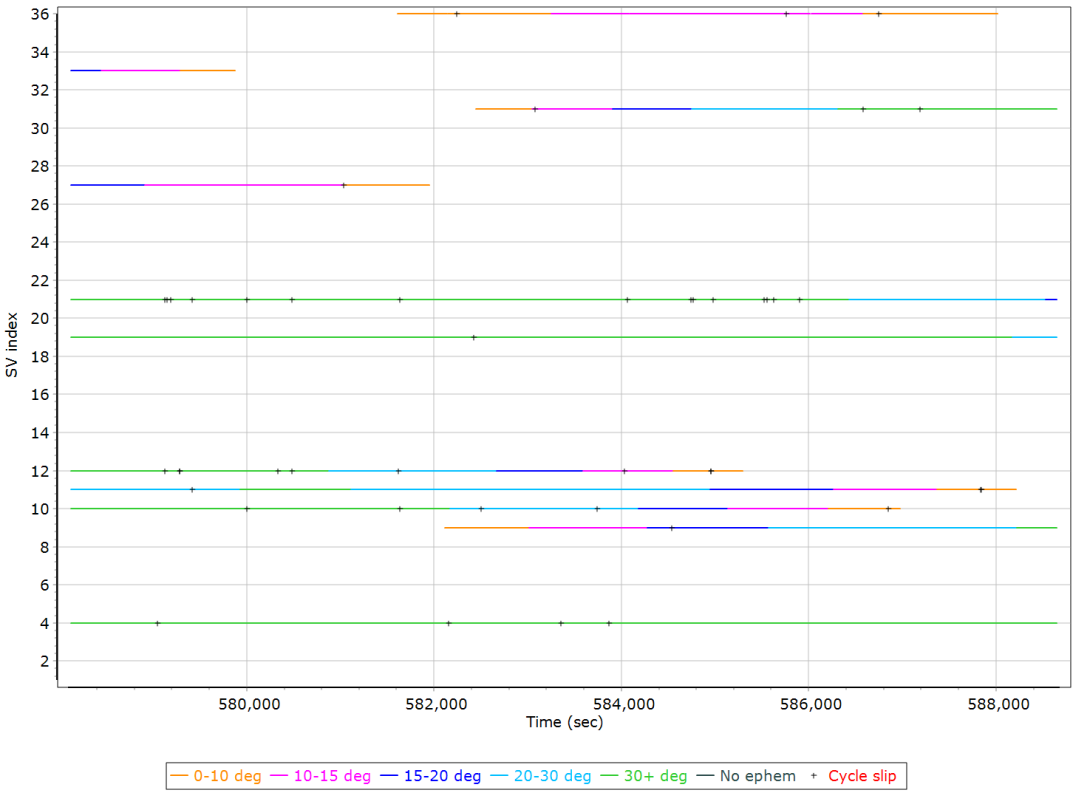
BEIDOU Satellite Lock/Elevation



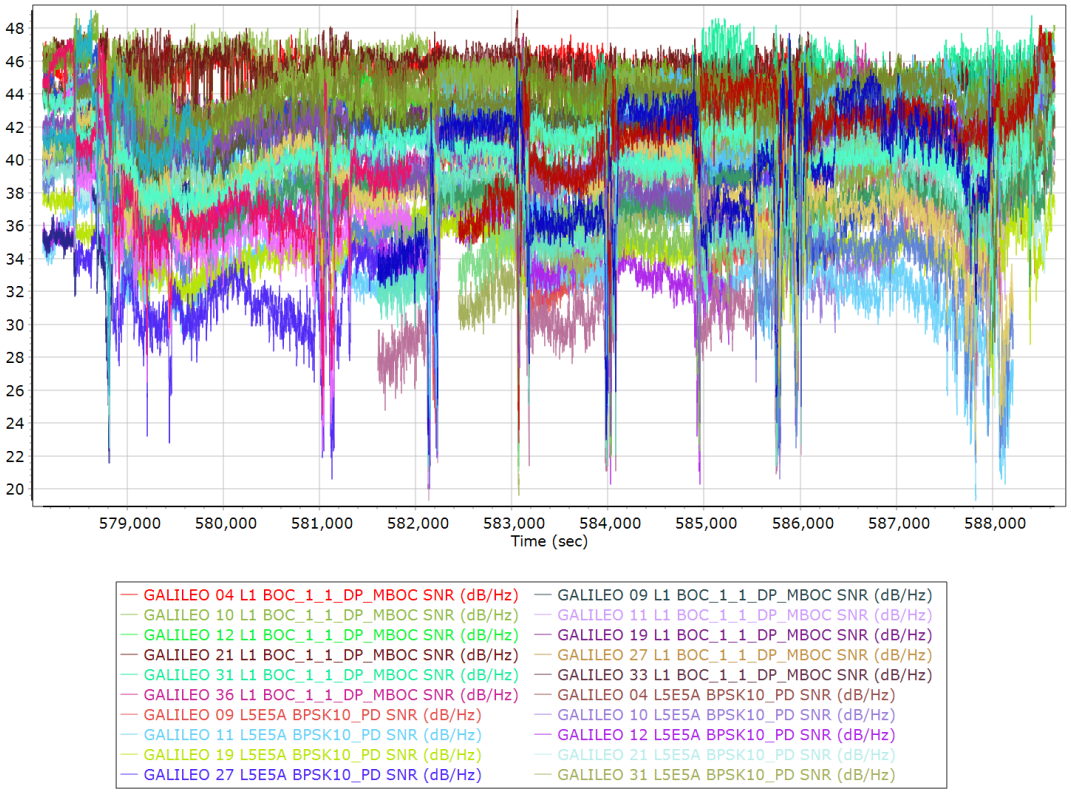
BEIDOU SNR



GALILEO Satellite Lock/Elevation

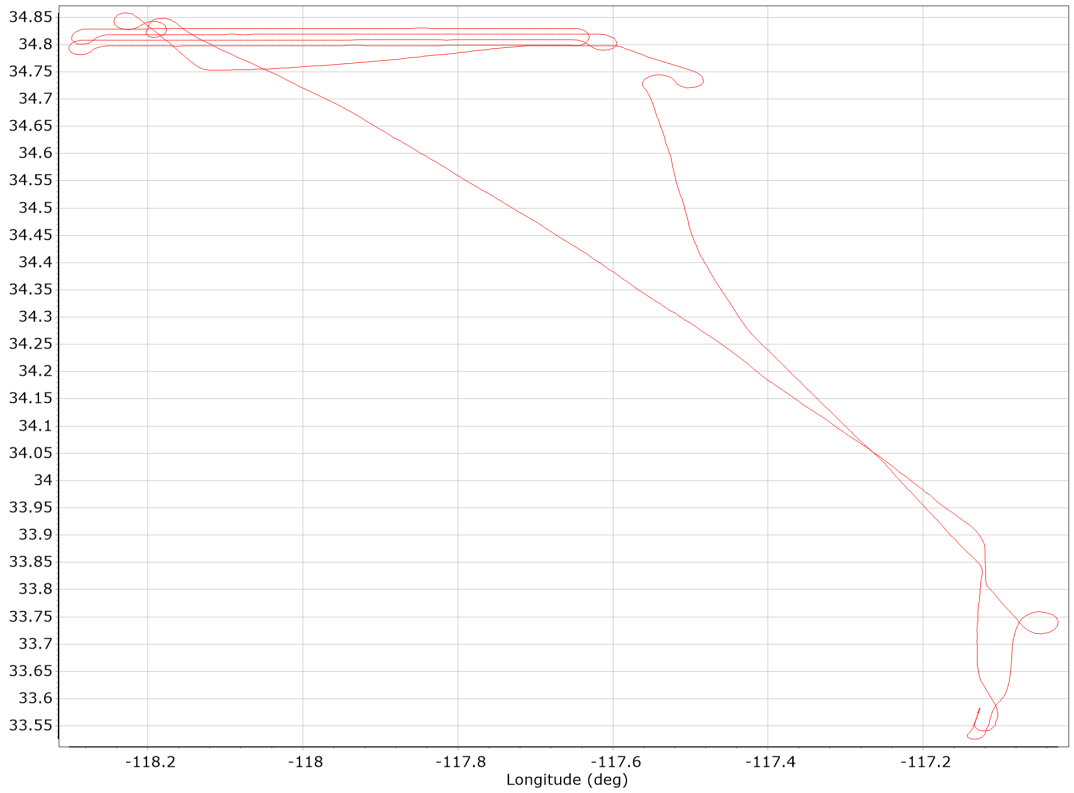


GALILEO SNR

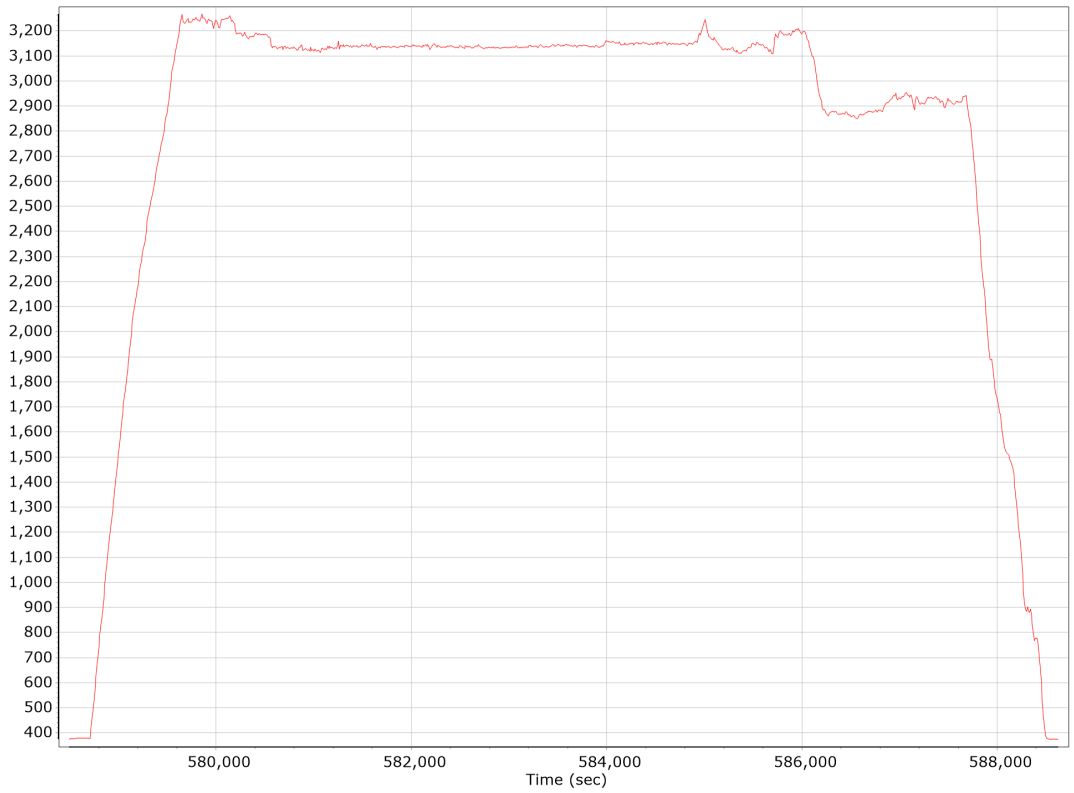

48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
579,000
580,000
581,000
582,000
583,000
584,000
585,000
586,000
587,000
588,000
Time (sec)
GALILEO 04 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 09 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 10 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 11 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 12 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 19 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 21 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 27 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 31 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 33 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 36 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
GALILEO 04 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 09 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 10 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 11 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 12 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 19 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 21 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 27 L5E5A BPSK10_PD SNR (dB/Hz)
GALILEO 31 L5E5A BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

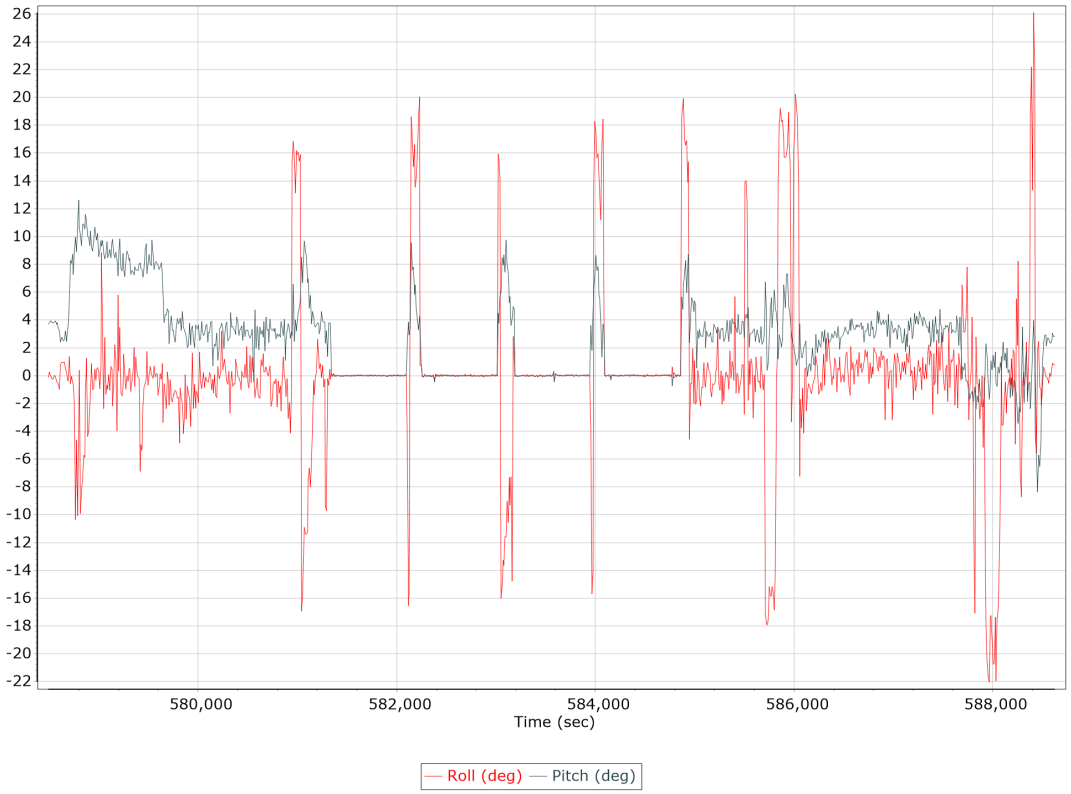
Top View



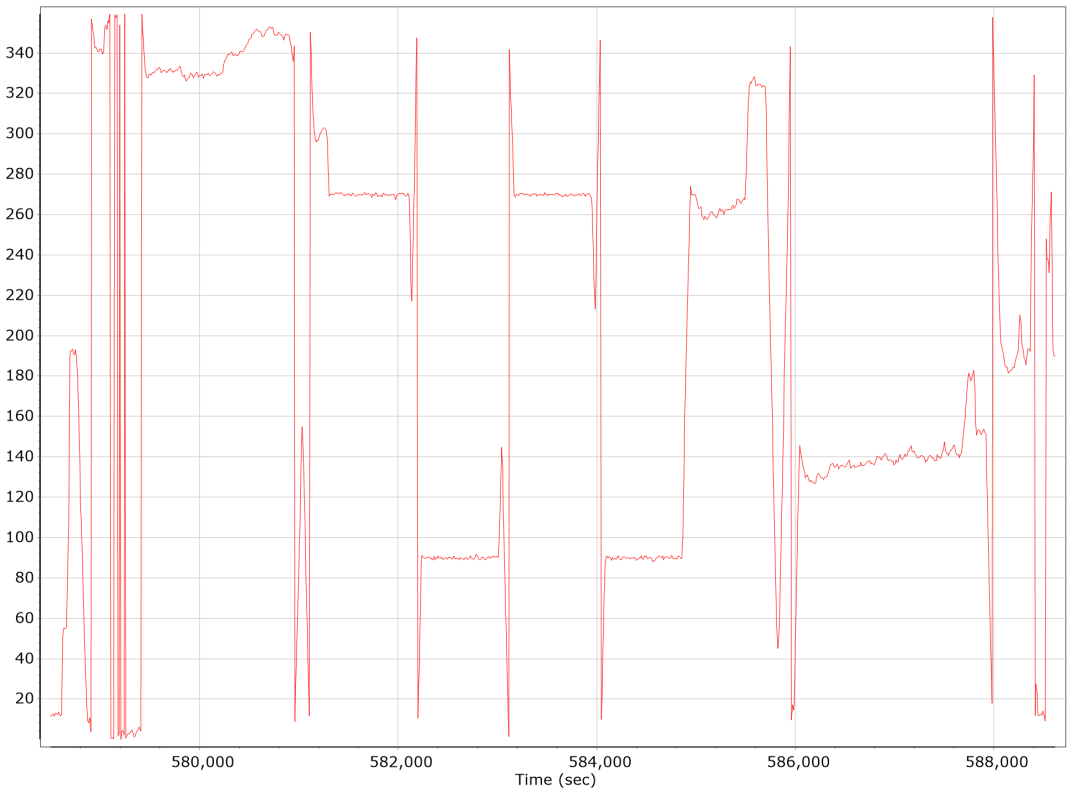
Altitude



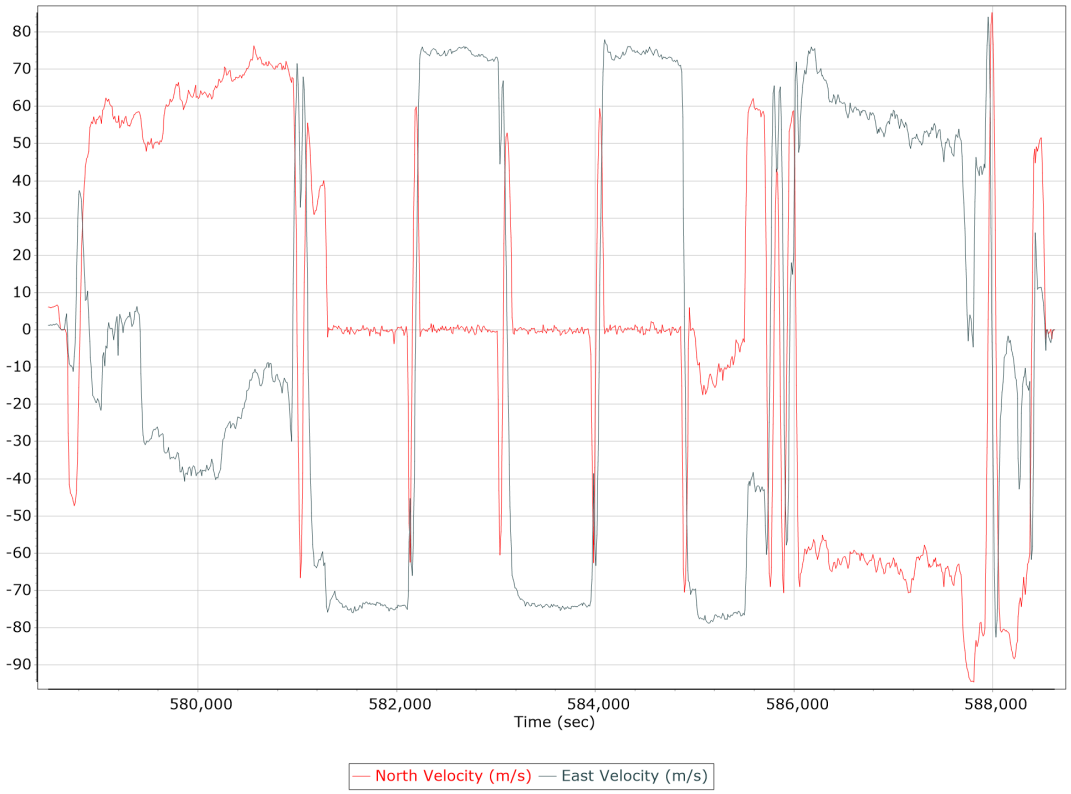
Roll/Pitch



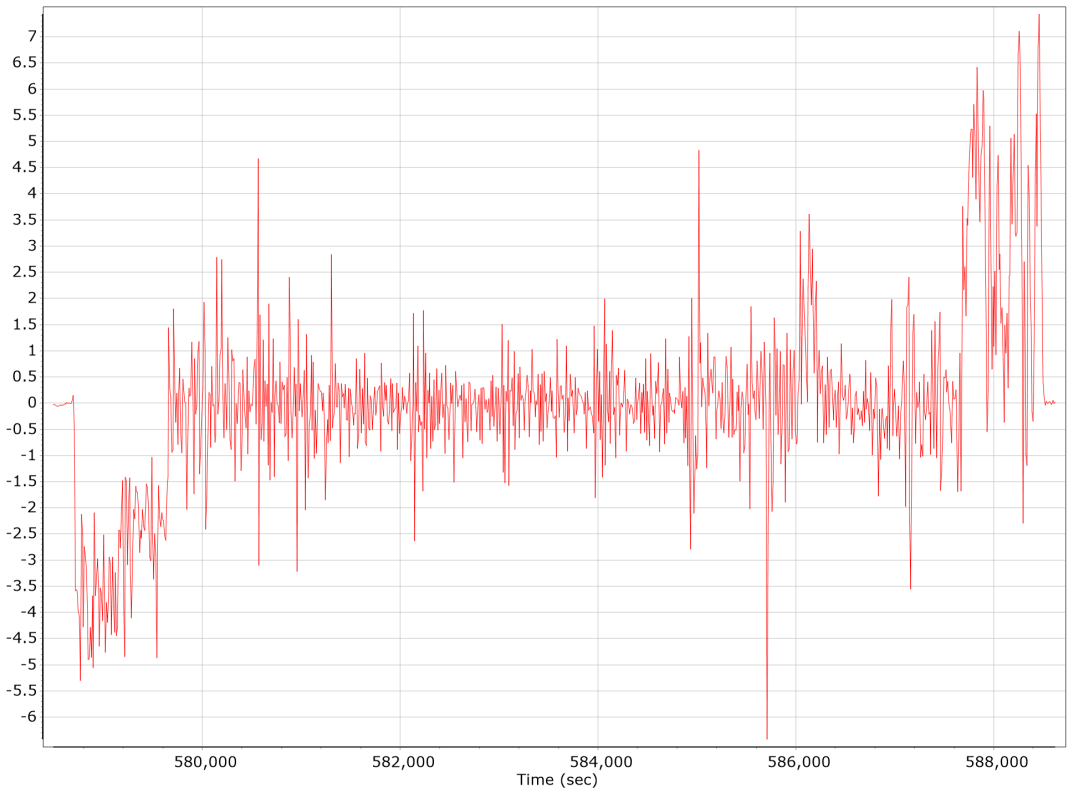
Heading



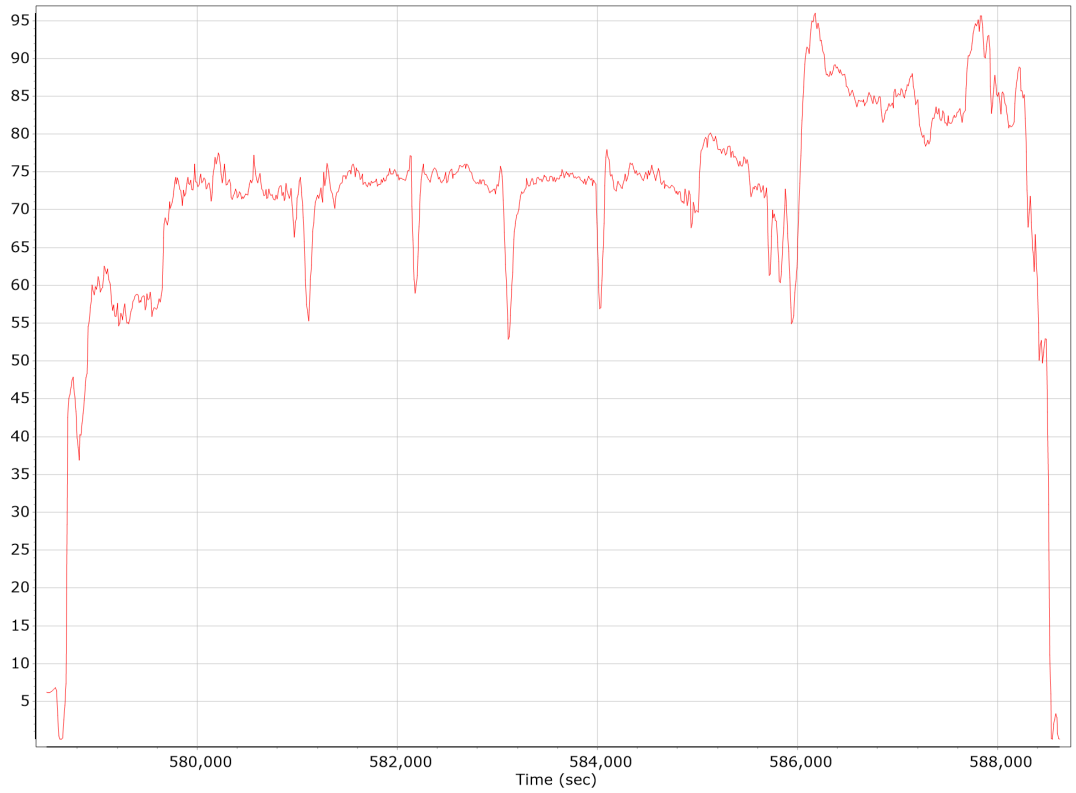
North/East Velocity



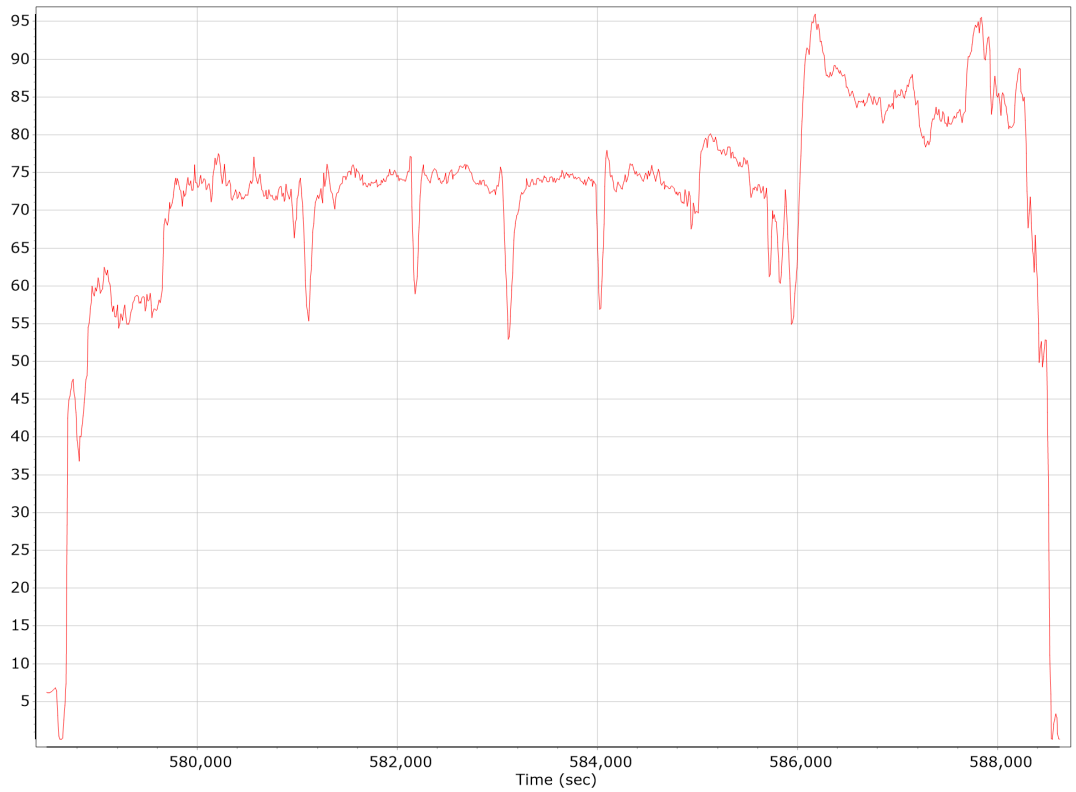
Down Velocity



Total Speed



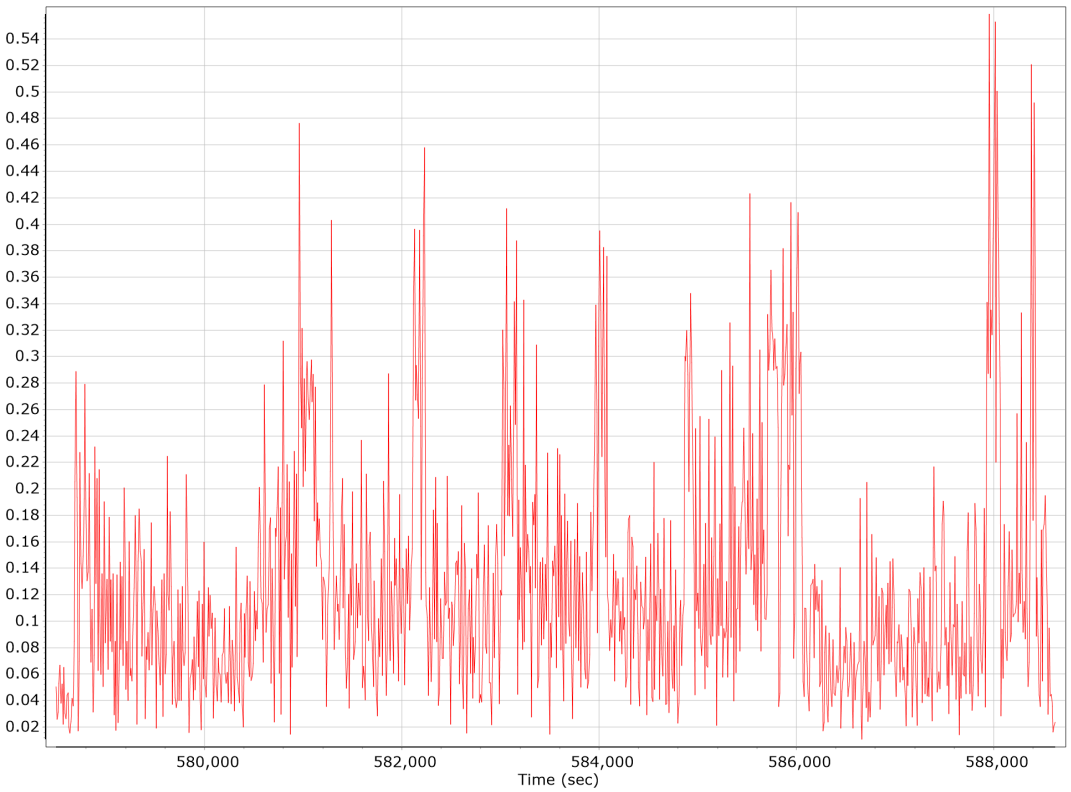
Ground Speed



Body Acceleration



Total Body Acceleration

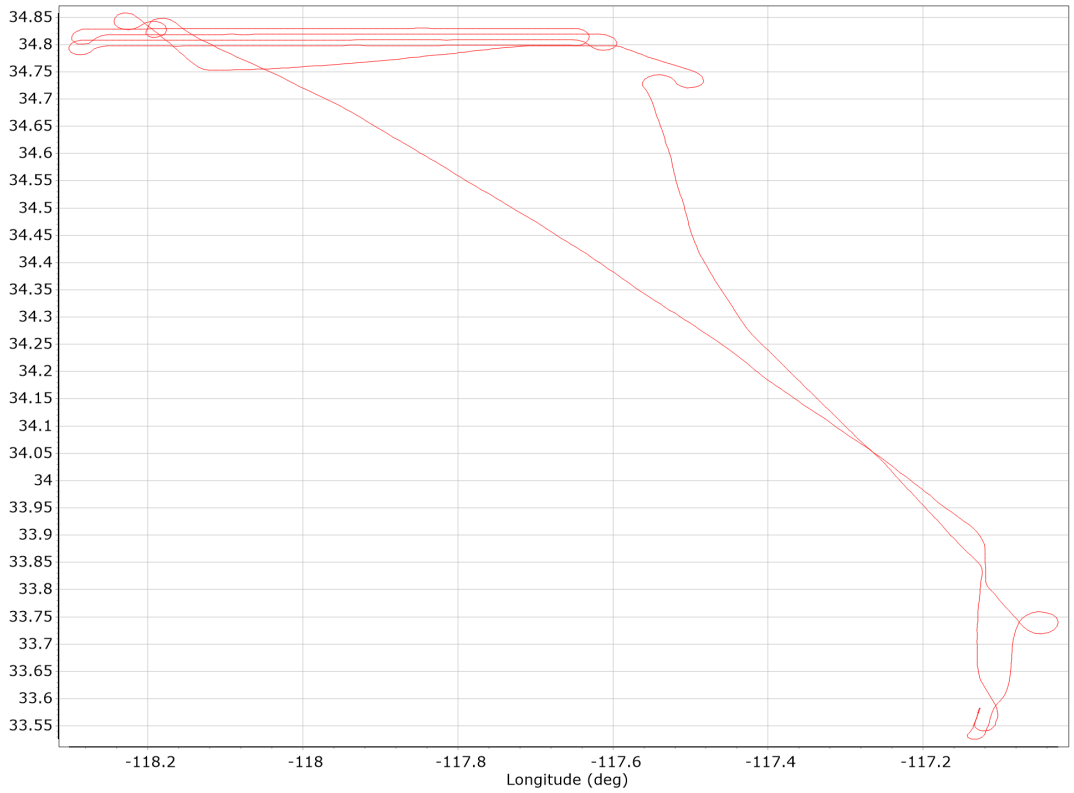


Body Angular Rate

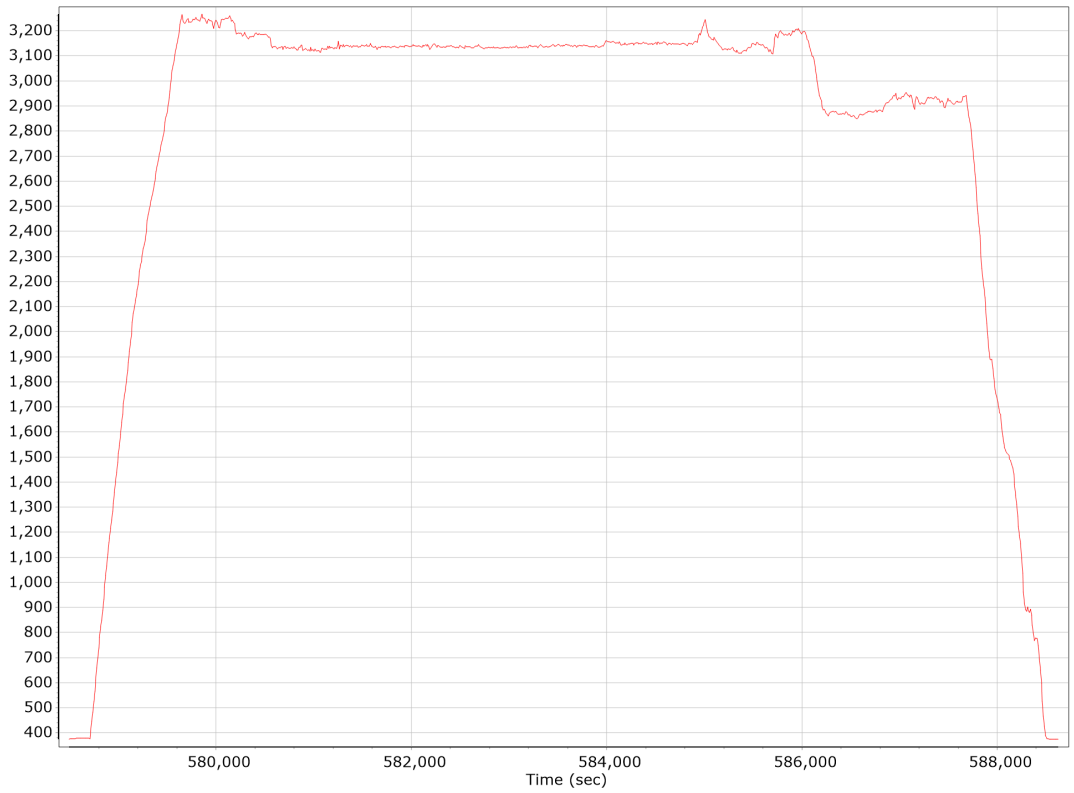


Forward Processed Trajectory Information

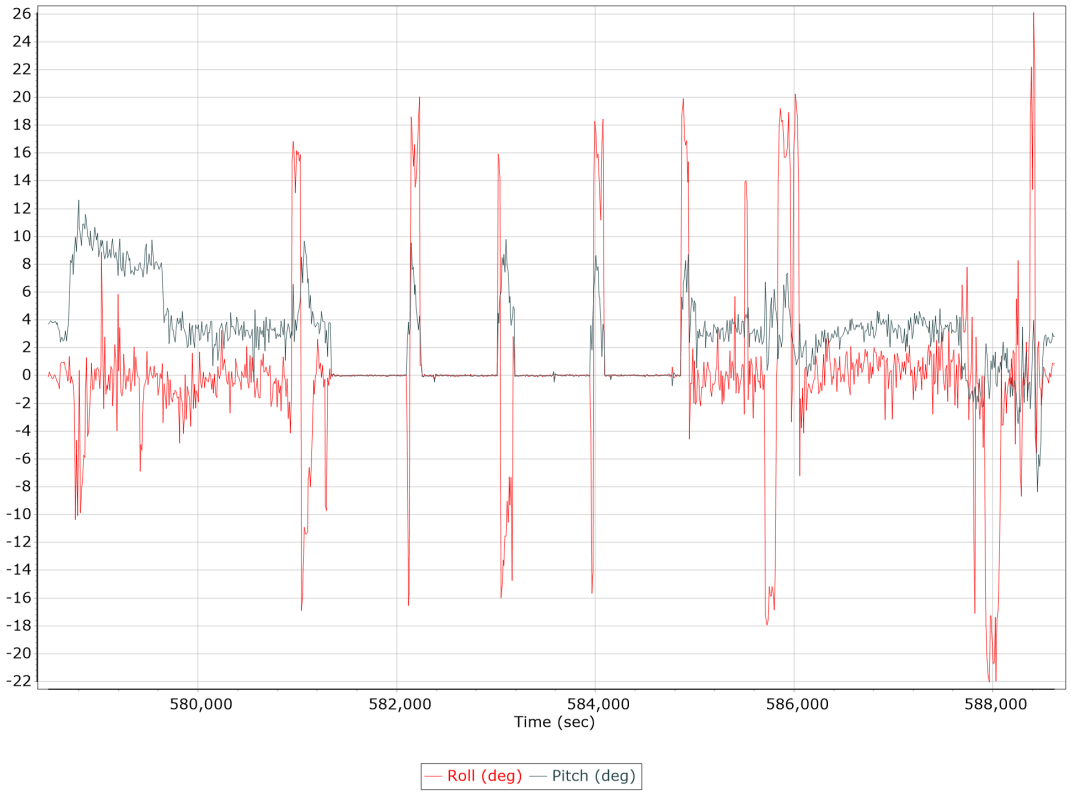
Top View



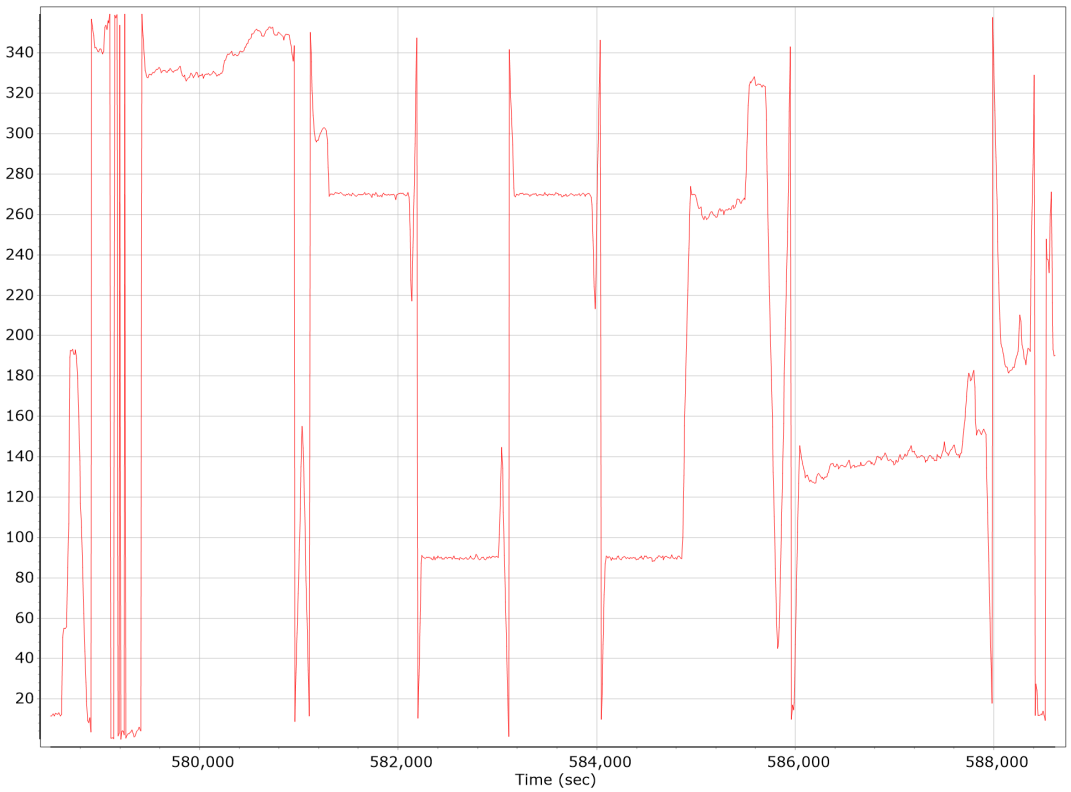
Altitude



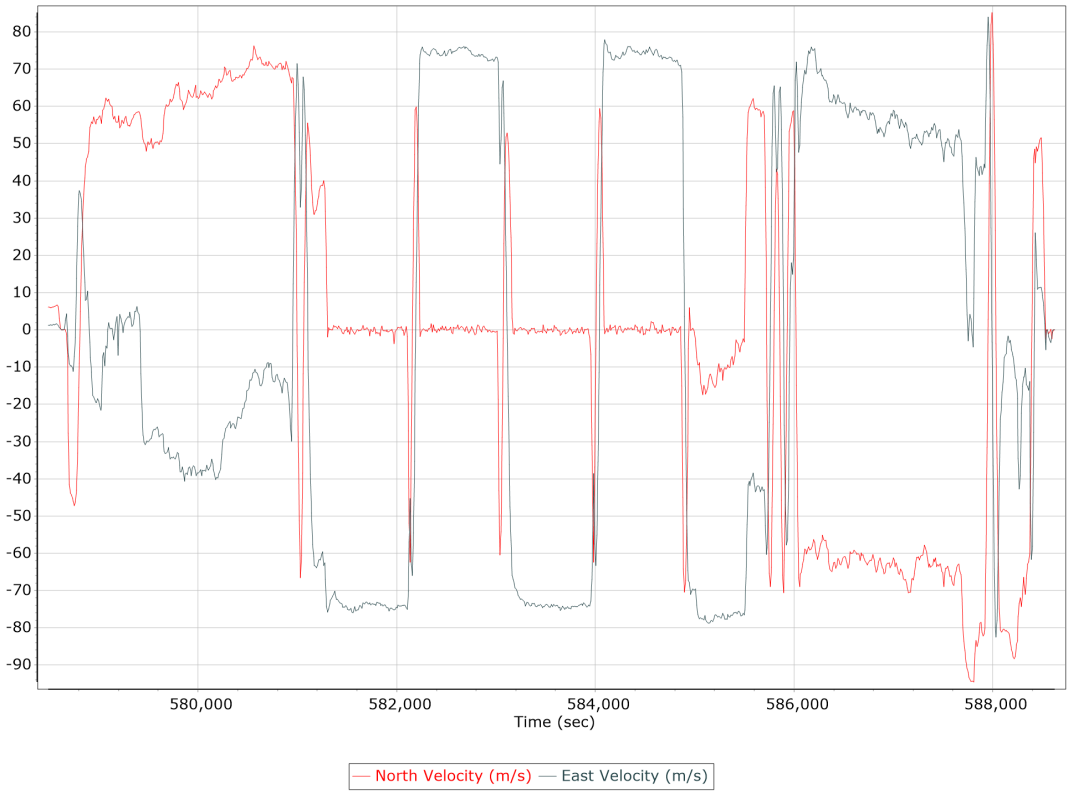
Roll/Pitch



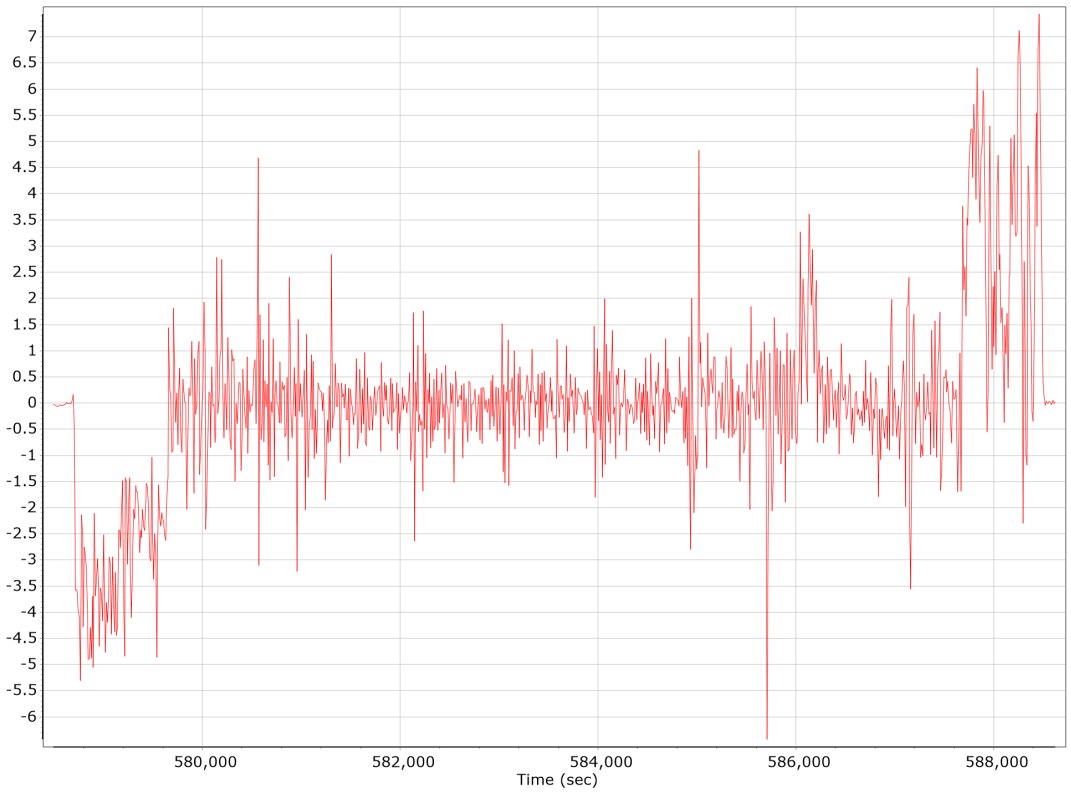
Heading



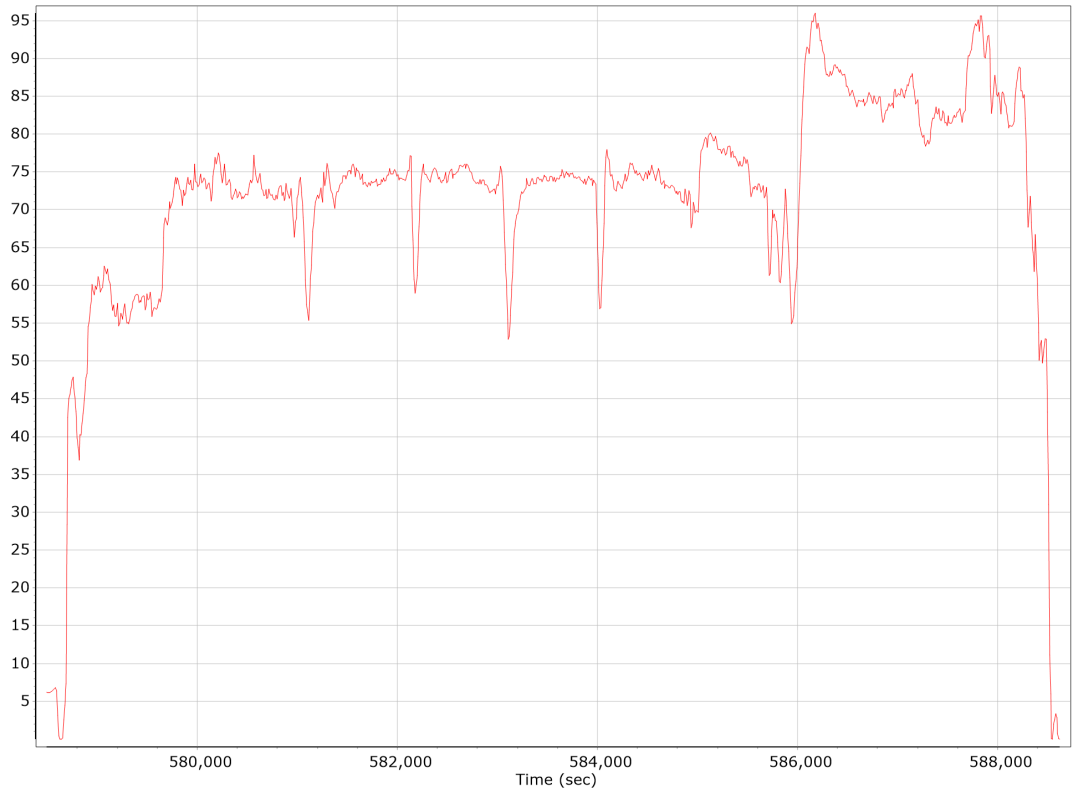
North/East Velocity



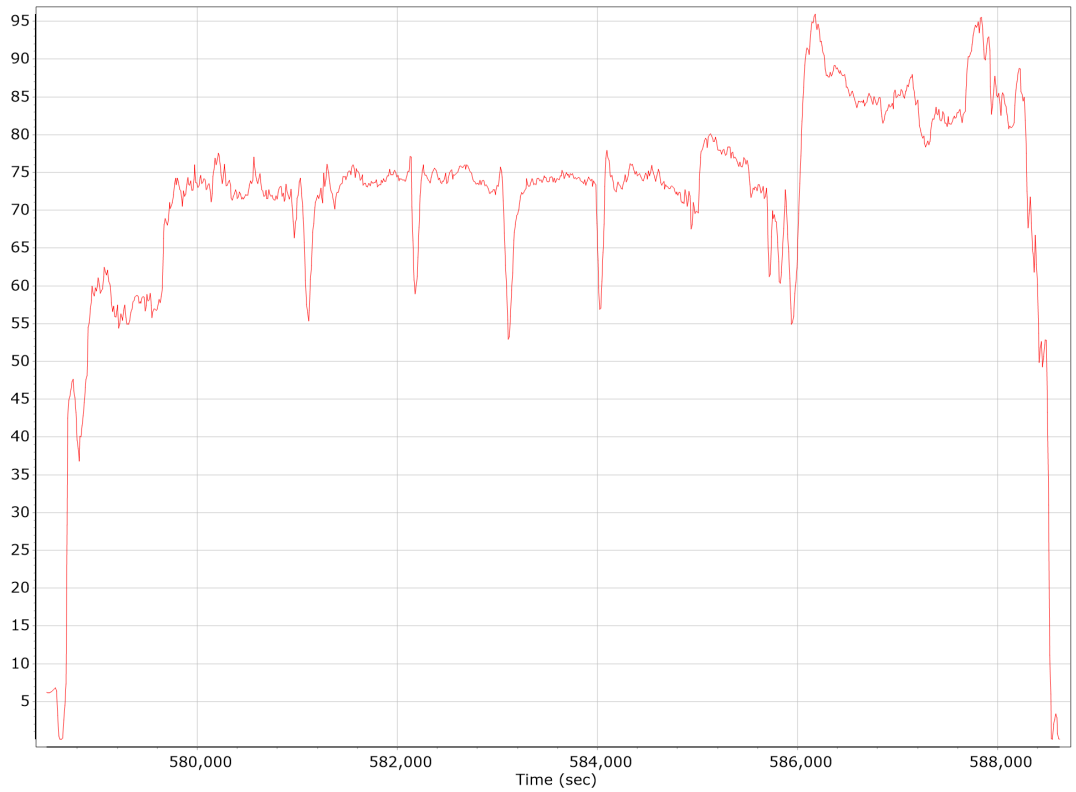
Down Velocity



Total Speed



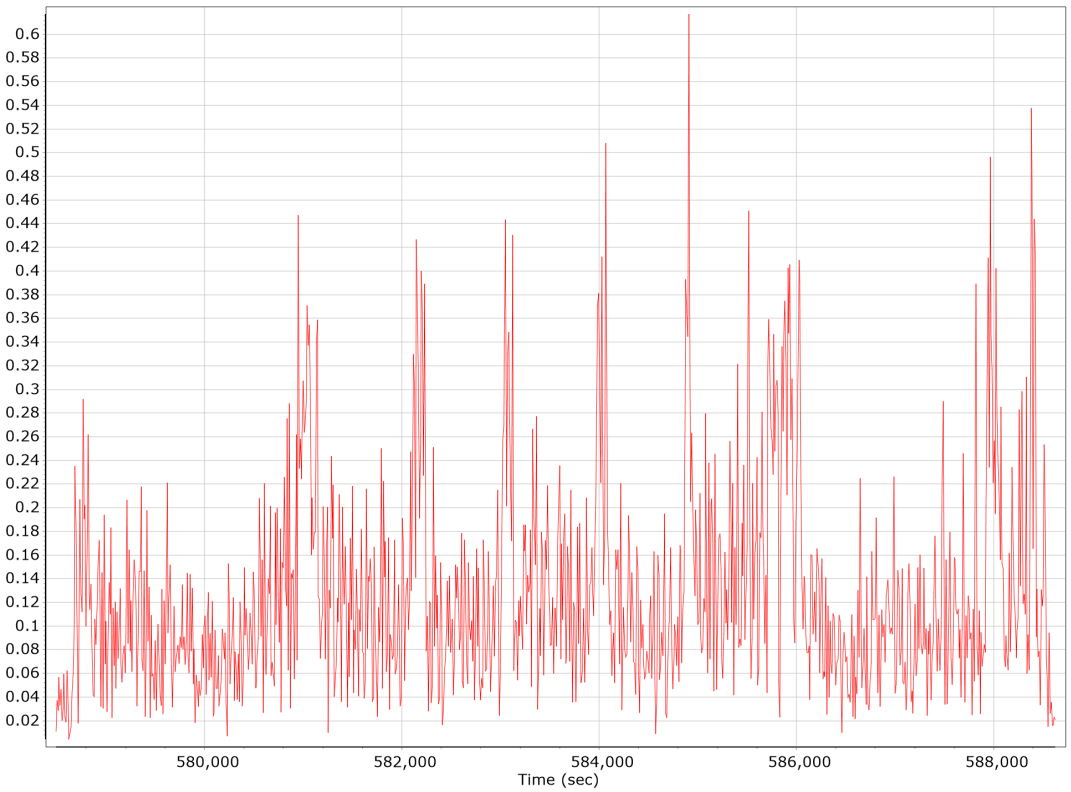
Ground Speed



Body Acceleration



Total Body Acceleration



Body Angular Rate

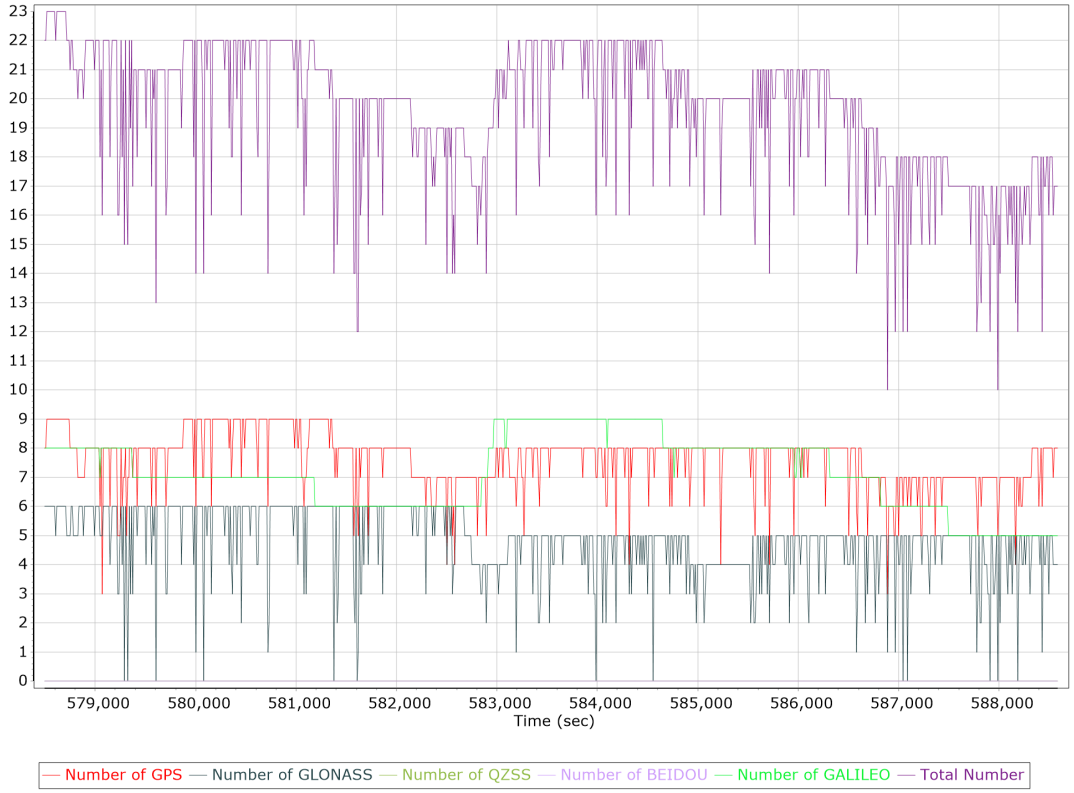


GNSS QC

GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	2	9	8
Number of GLONASS SV	0	6	5
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	5	9	7
Total number of SV	8	23	20
PDOP	1.05	3.15	1.31
QC Solution Gaps	1.00	1.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	10461.00	0.00	1.00
Percentage	99.99	0.00	0.01

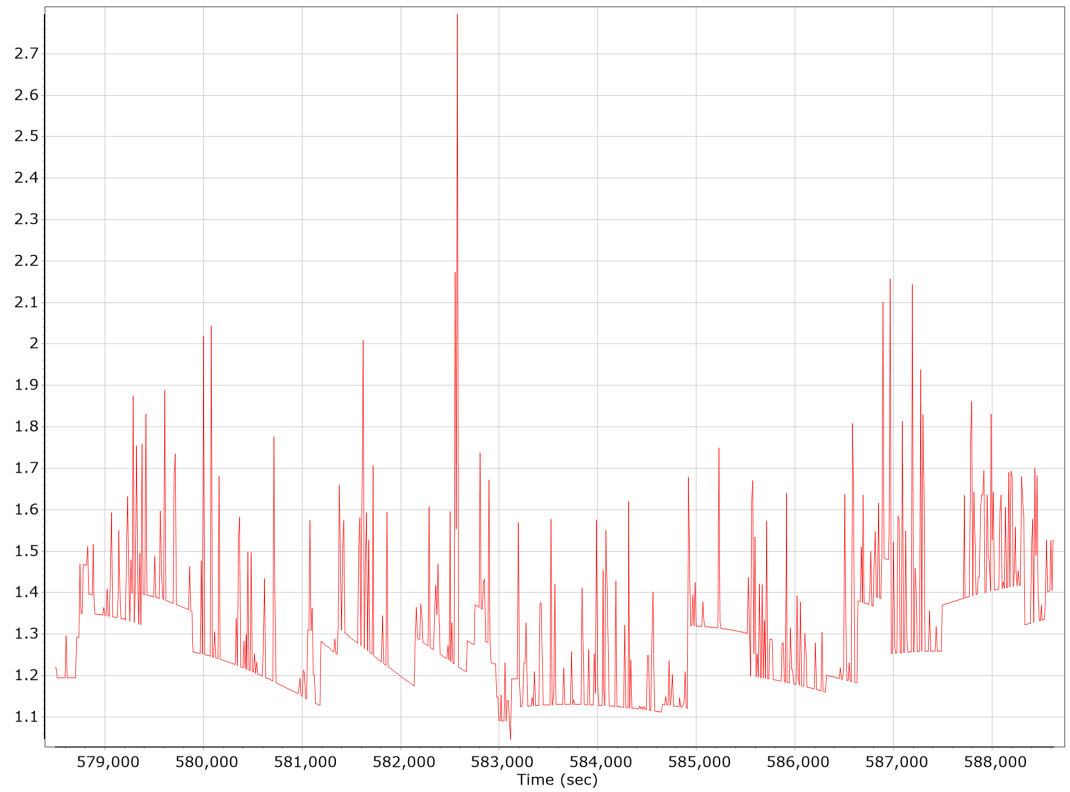
Num SVs in solution



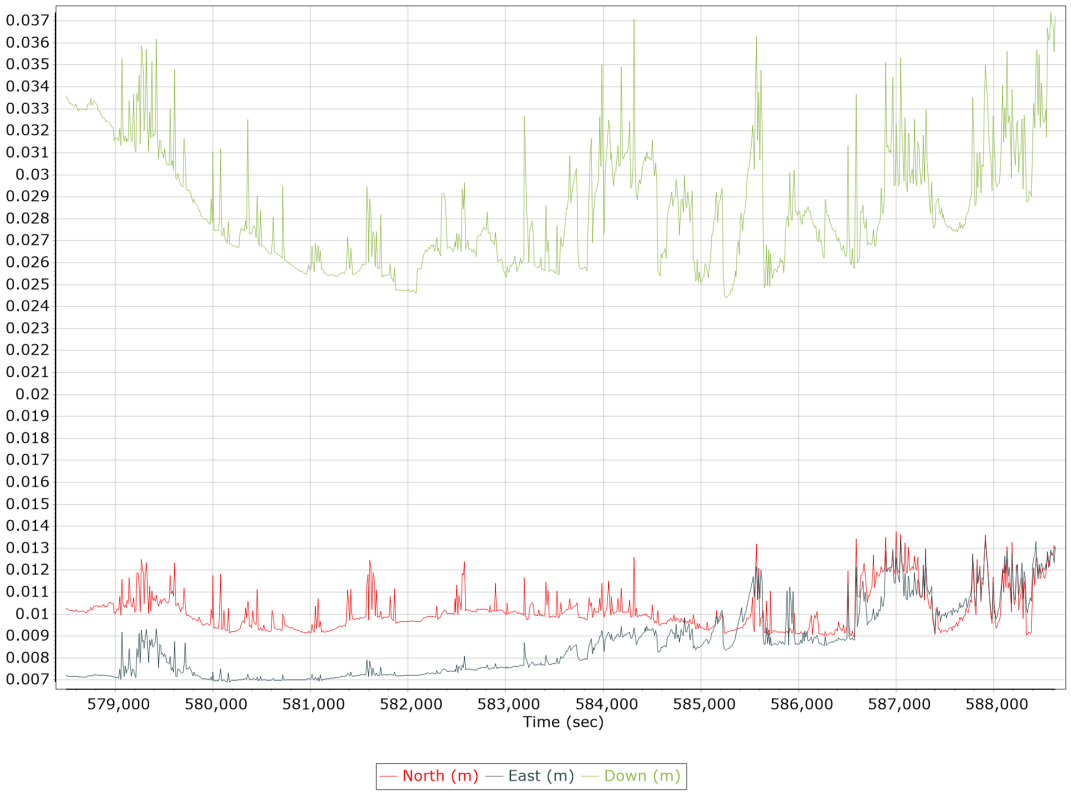
Forward/Reverse Separation



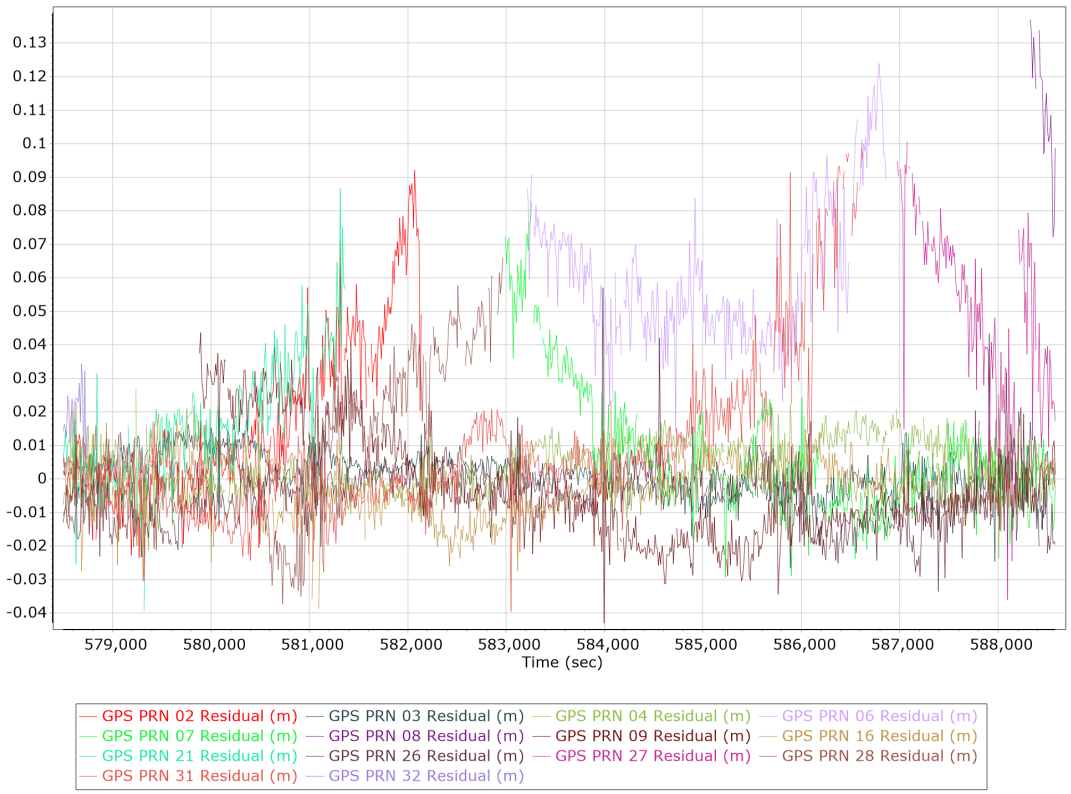
PDOP



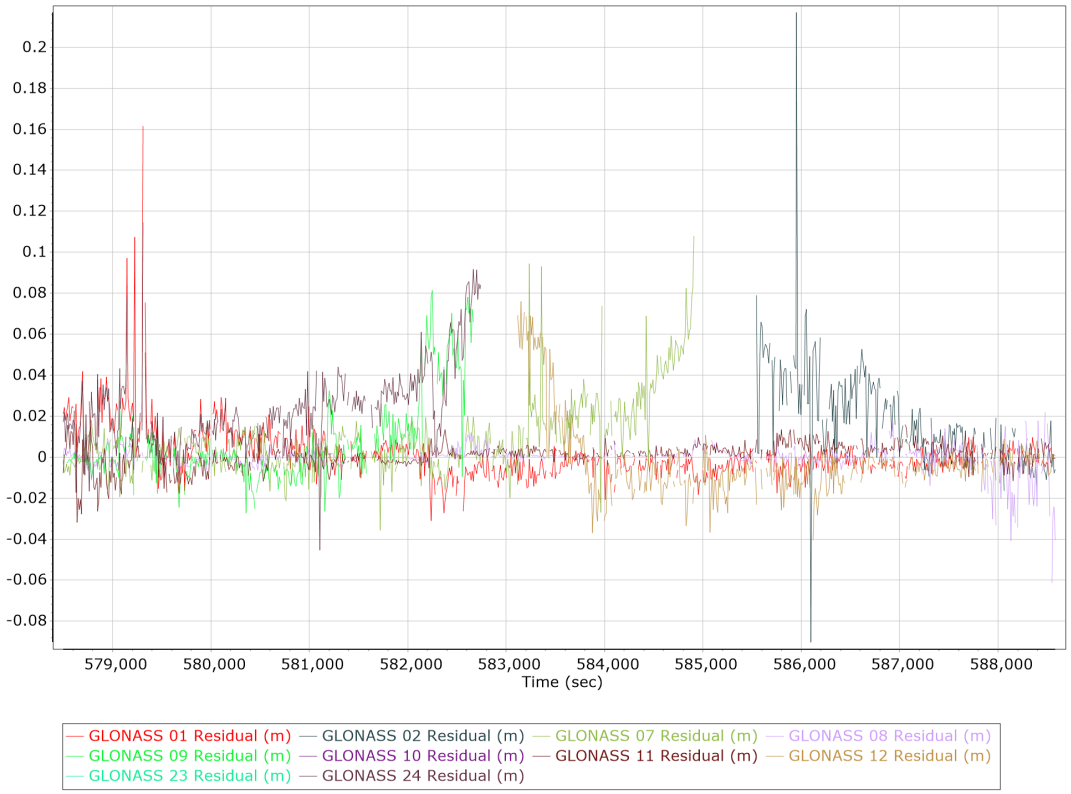
Estimated Position Accuracy



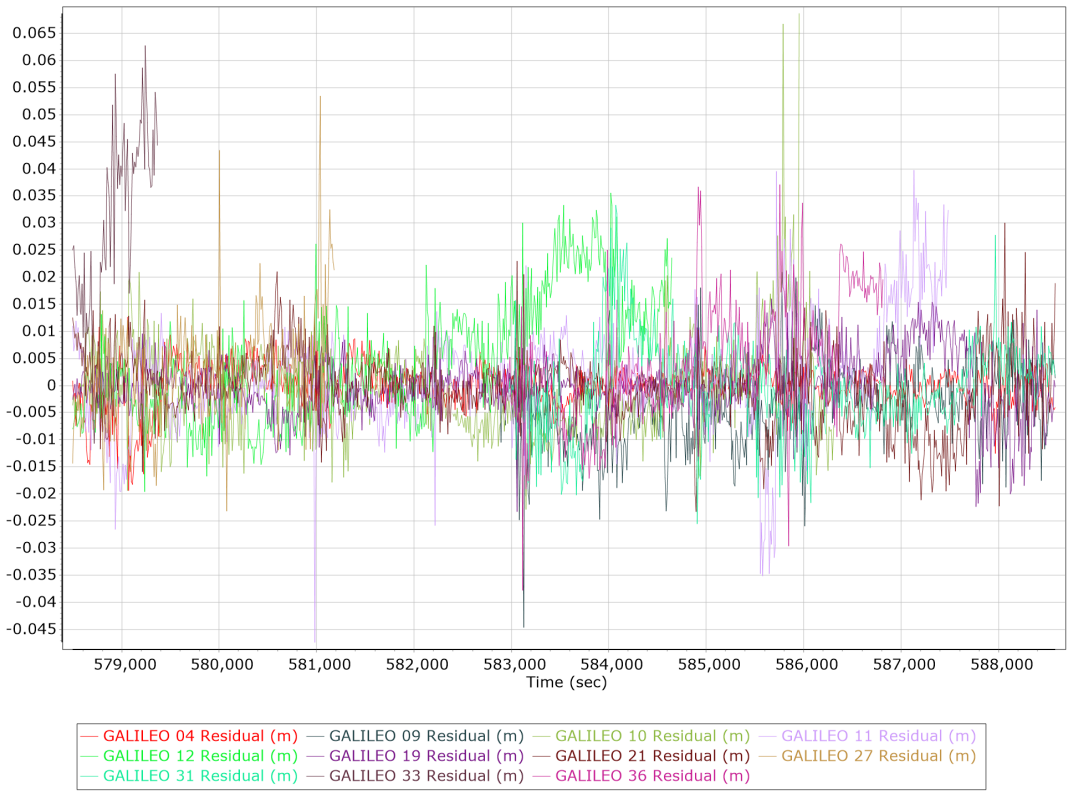
GPS Residuals



GLONASS Residuals



GALILEO Residuals



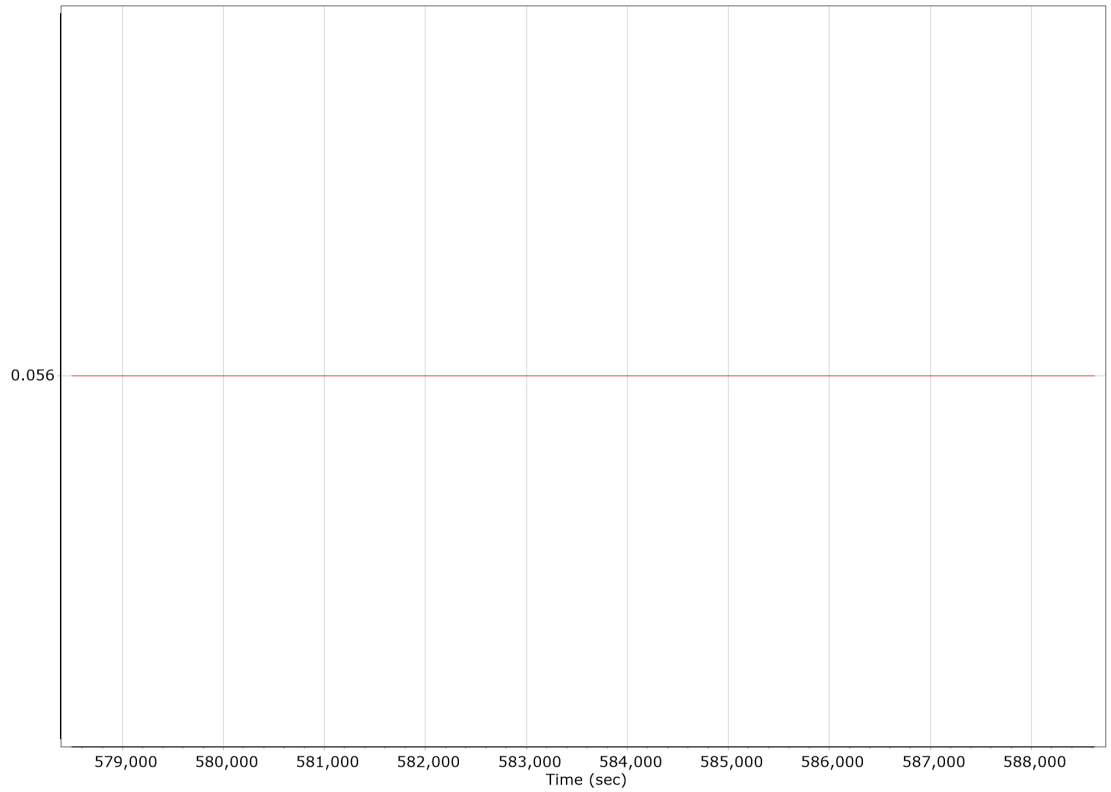
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	True		
Processing start time	578107.000 (12/9/2023 4:35:07 PM)		
Processing end time	588629.000 (12/9/2023 7:30:29 PM)		
Initial attitude source	Primary GNSS Track		
IMU Sensor Context	Processing with Onboard IMU		
Gimbal to IMU lever arm (m)	-0.034	-0.010	-0.374
Gimbal to IMU mounting angles (deg)	0.000	0.000	0.000
Gimbal to Primary GNSS lever arm (m)	0.056	0.055	-1.294
Gimbal to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

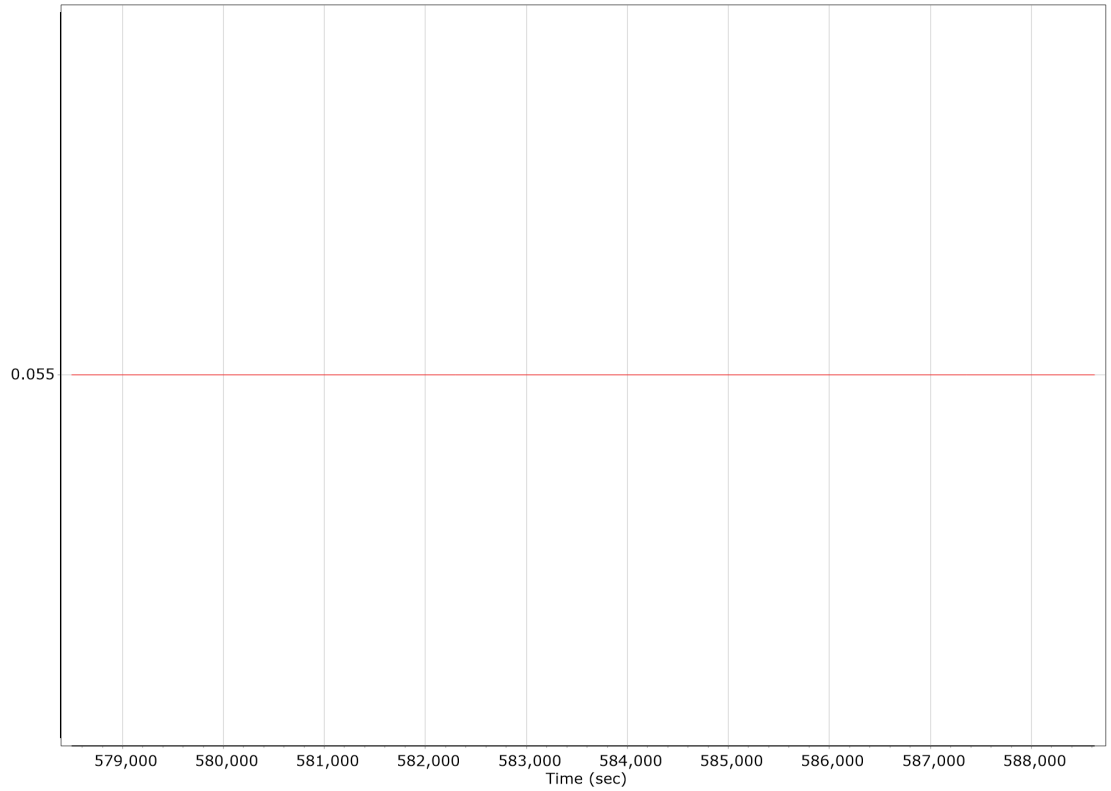
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

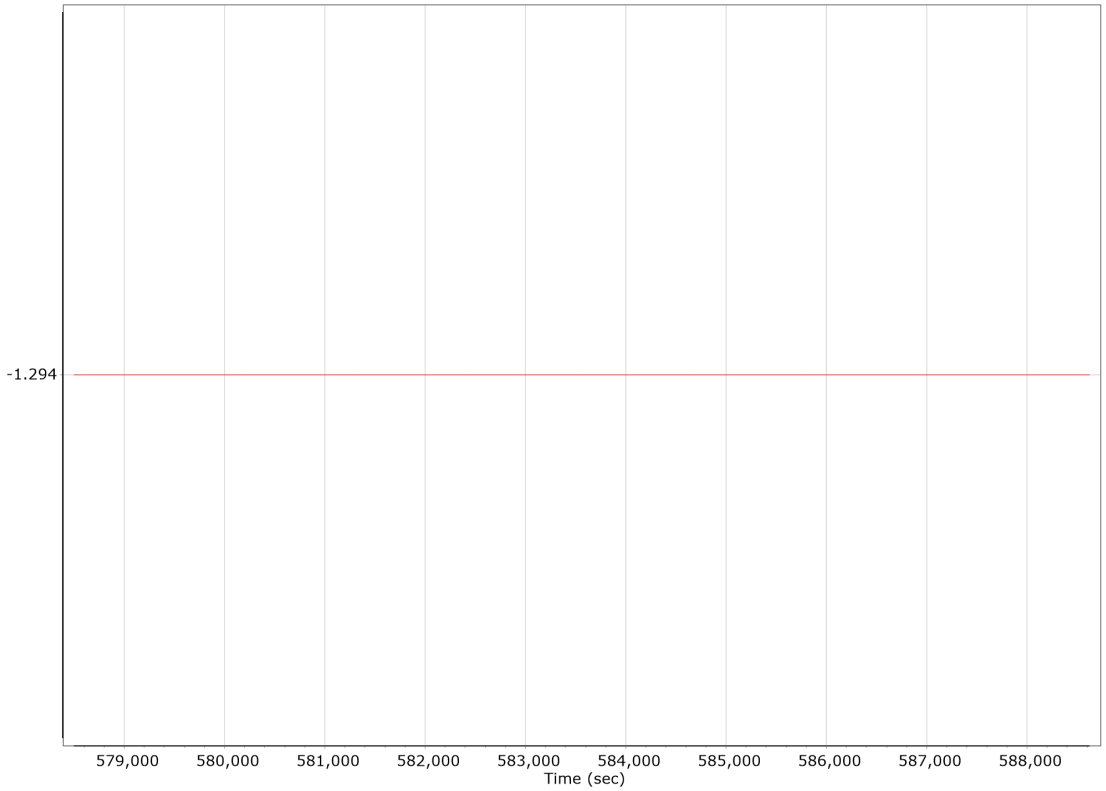
X Reference-Primary GNSS Lever Arm (m)



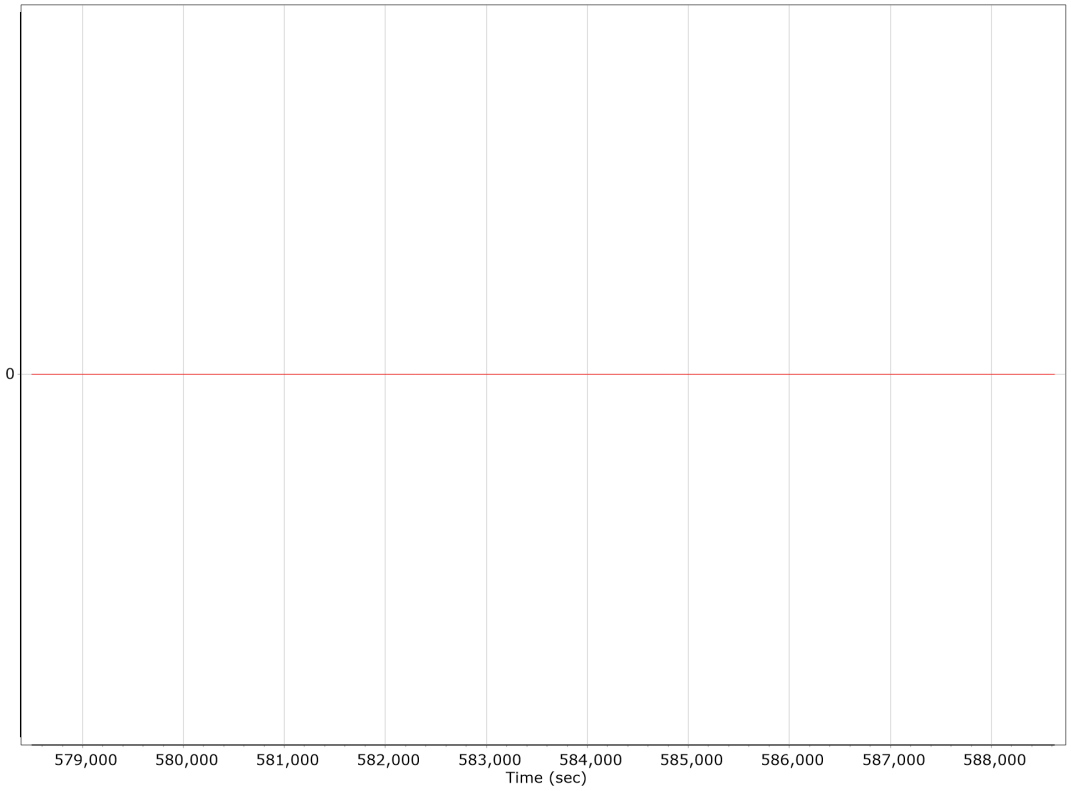
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



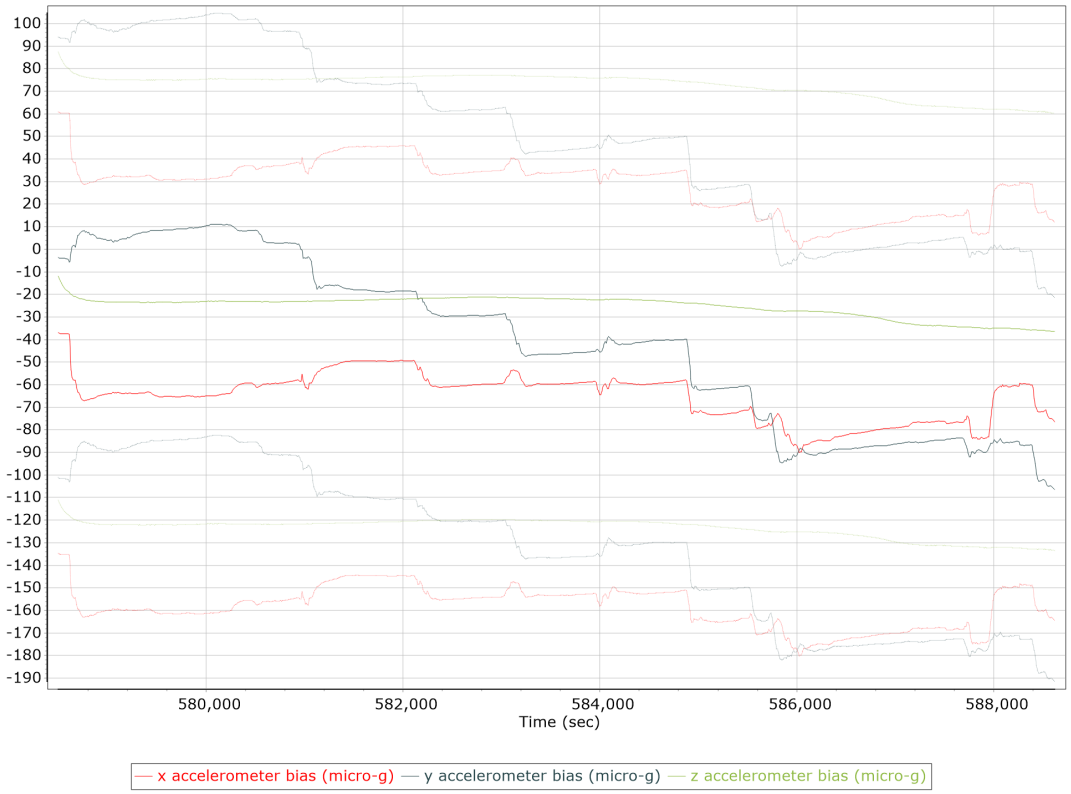
Reference-Primary GNSS Lever Arm Figure of Merit



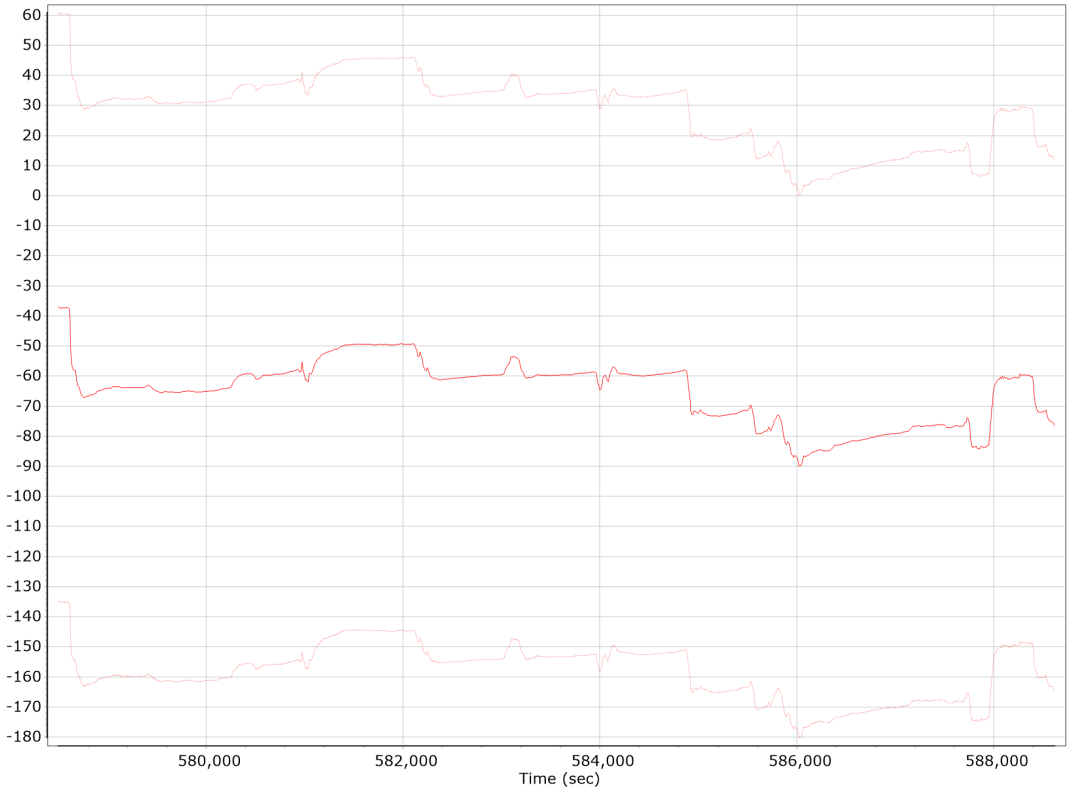
IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

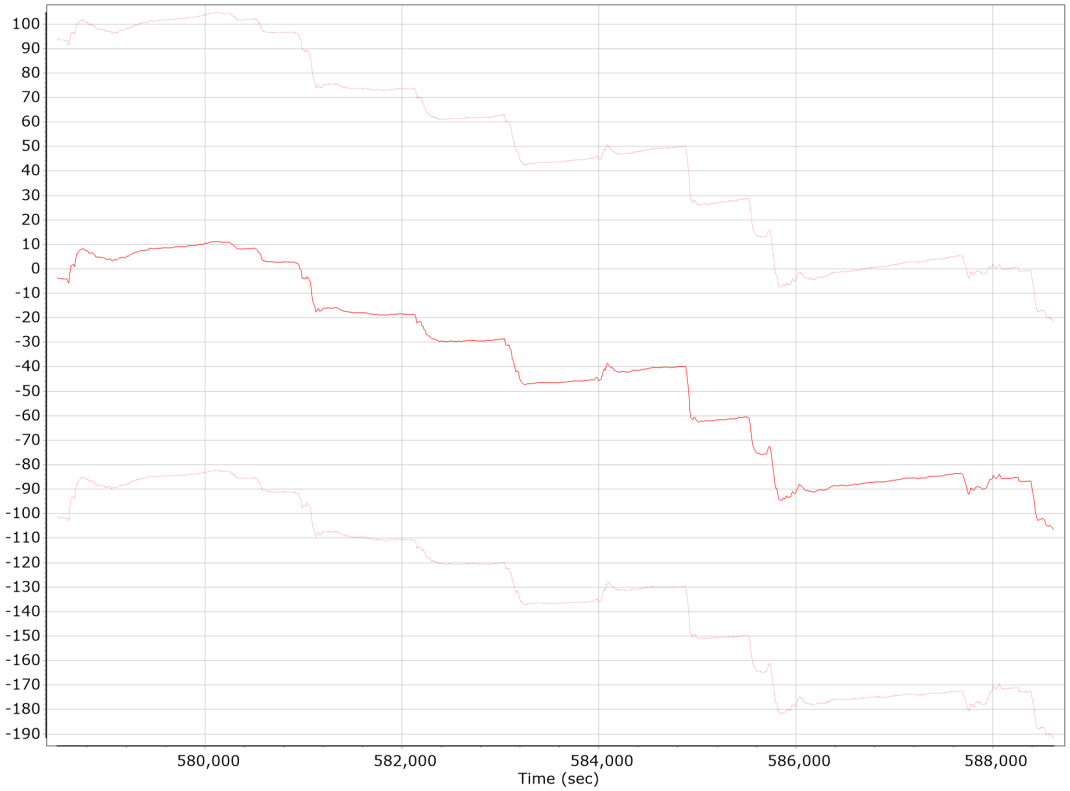
Accelerometer Bias (micro-g)



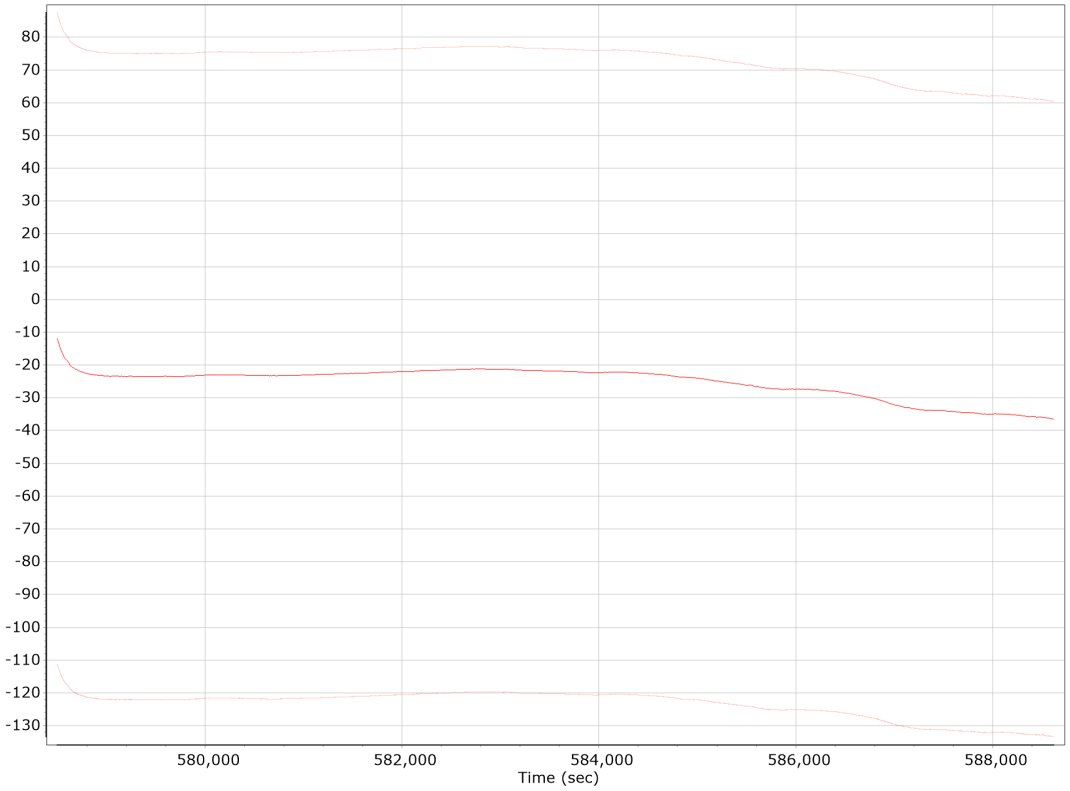
X Accelerometer Bias (micro-g)



Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



Accelerometer Scale Error (ppm)



X Accelerometer Scale Error (ppm)



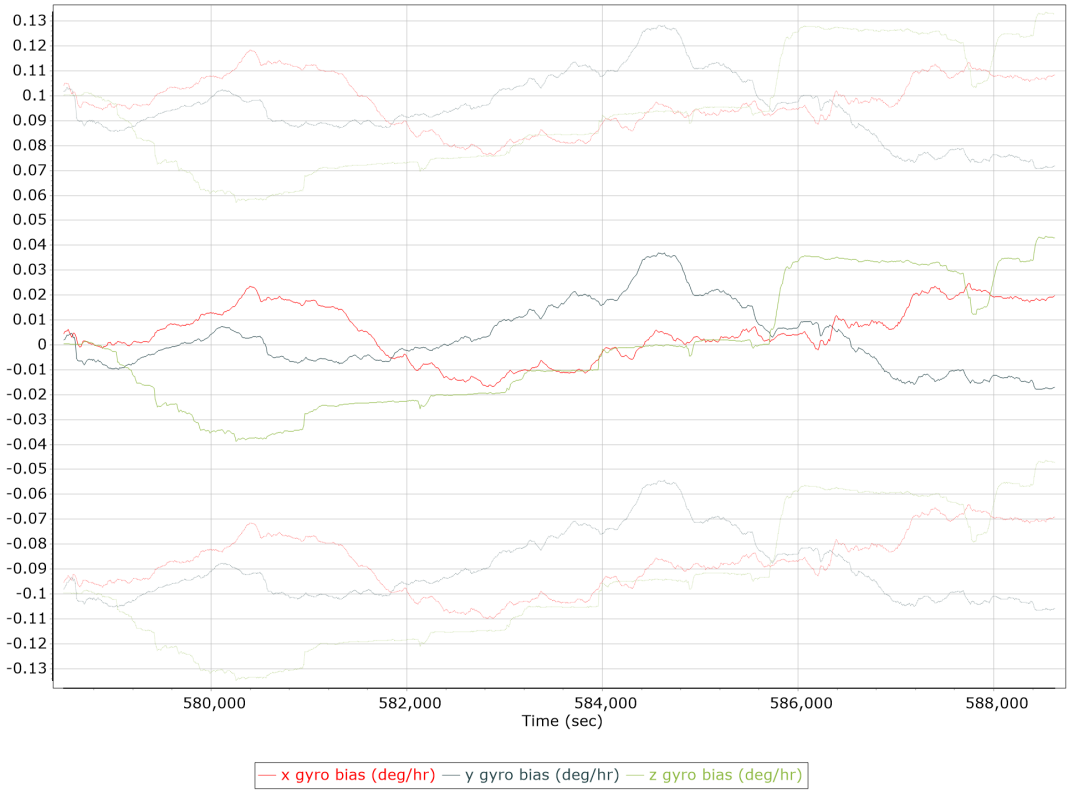
Y Accelerometer Scale Error (ppm)



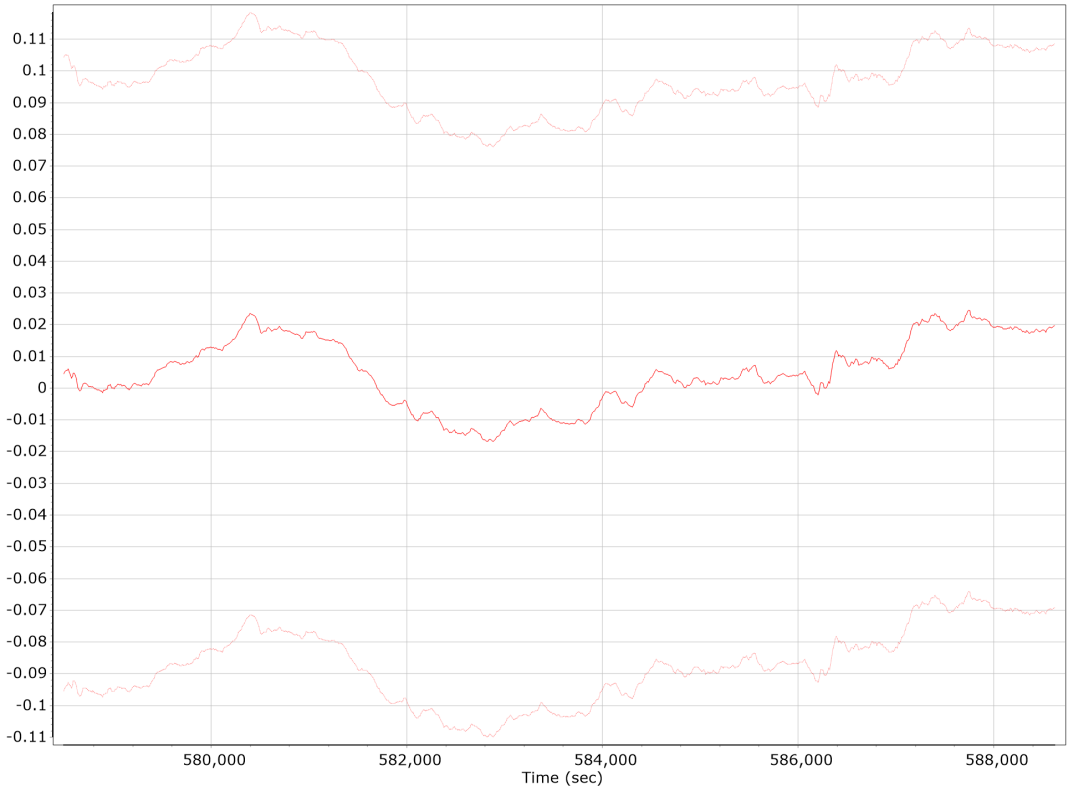
Z Accelerometer Scale Error (ppm)



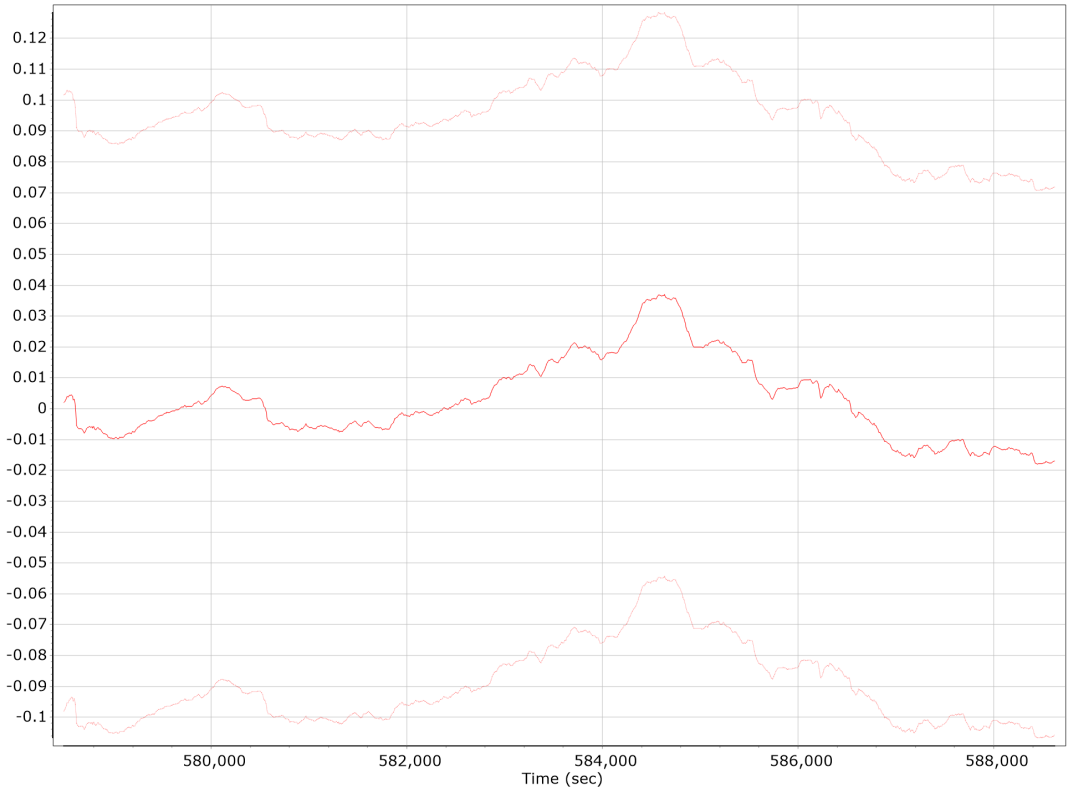
Gyro Bias (deg/h)



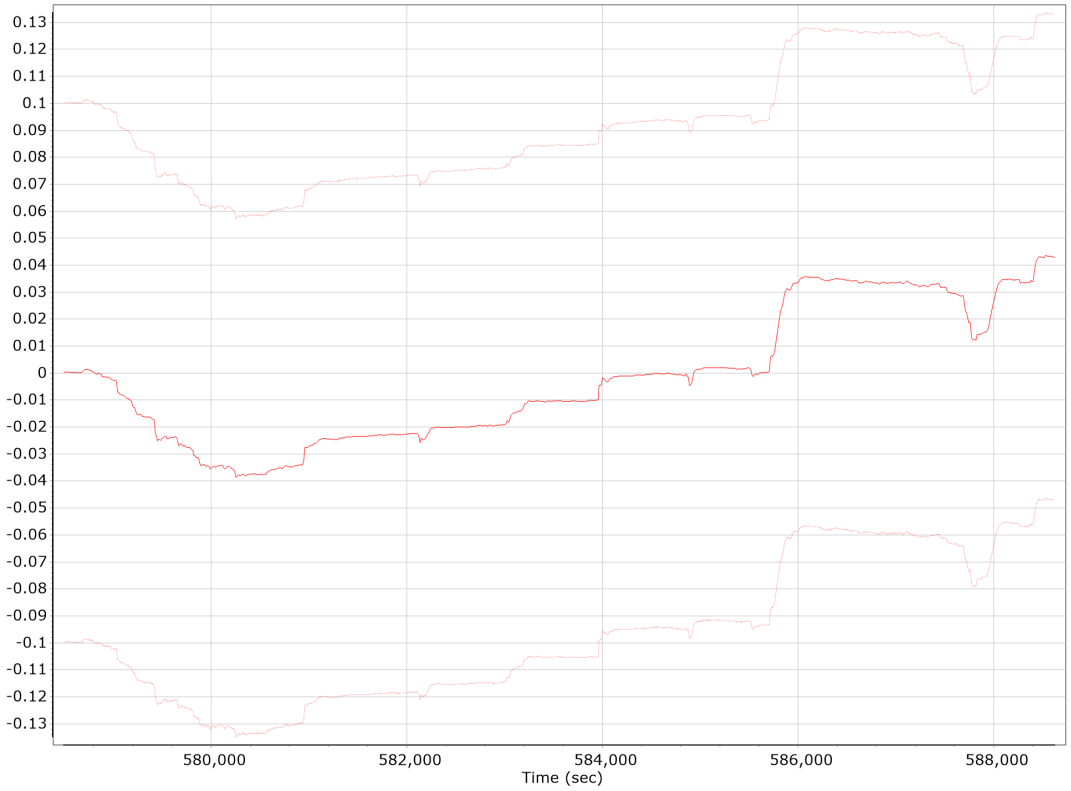
X Gyro Bias (deg/h)



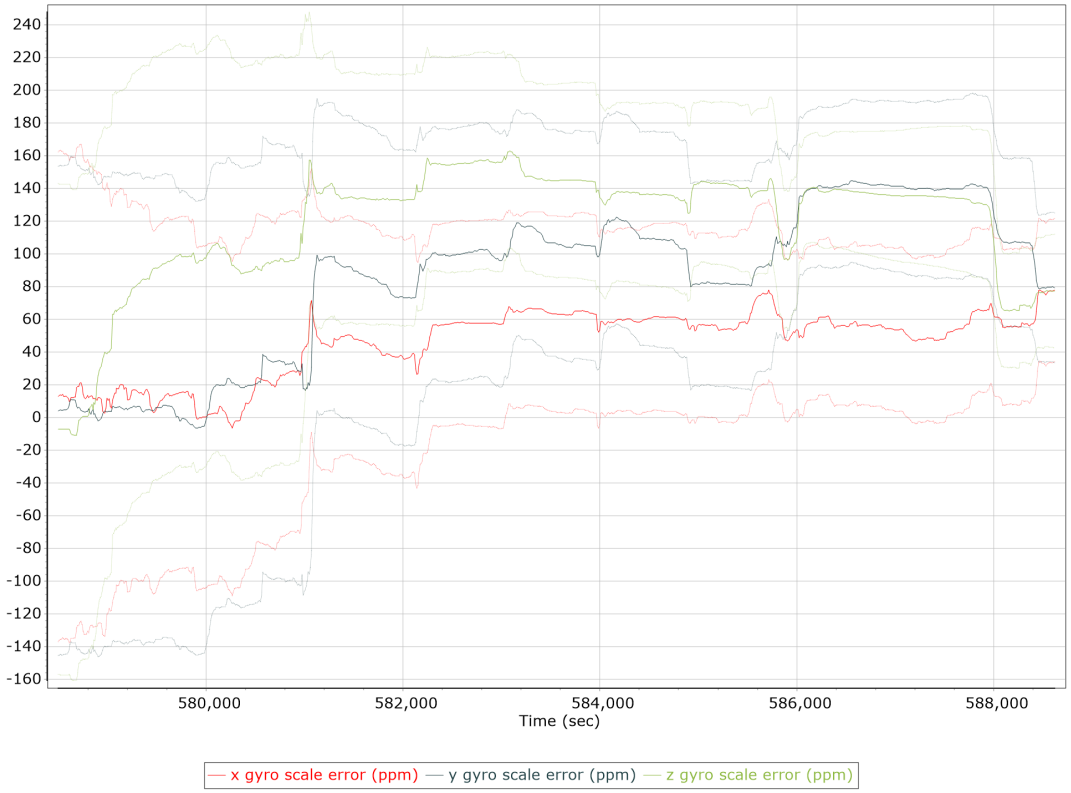
Y Gyro Bias (deg/h)



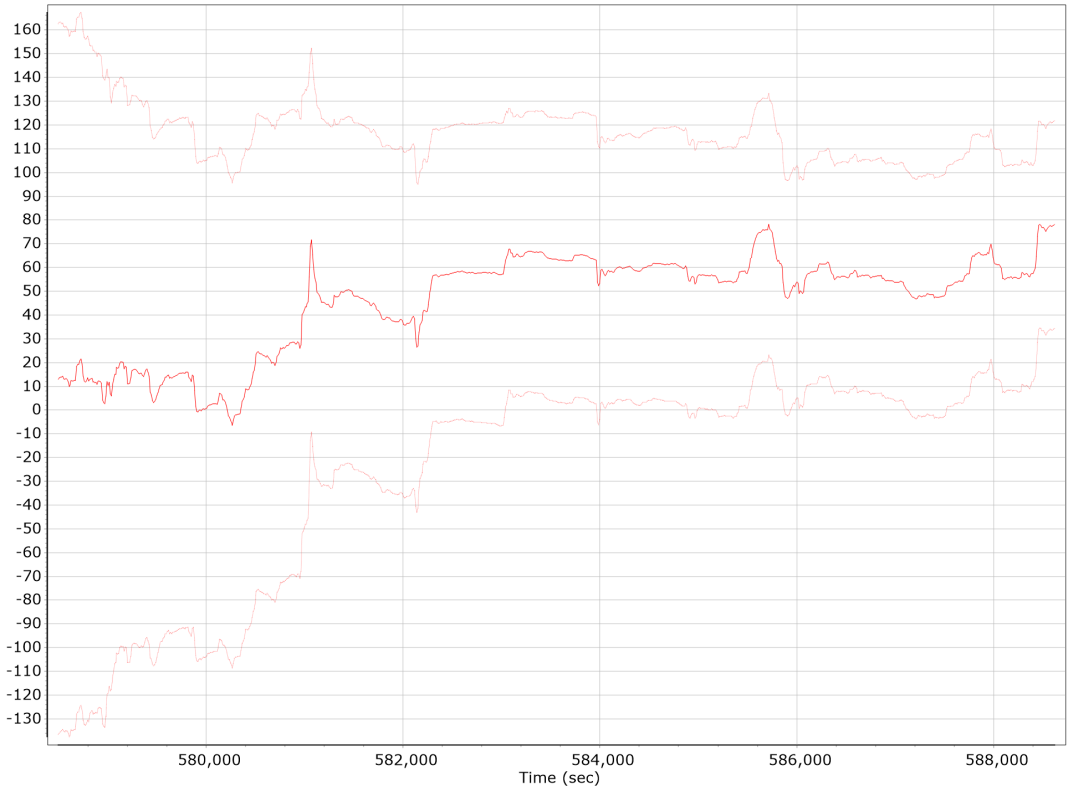
Z Gyro Bias (deg/h)



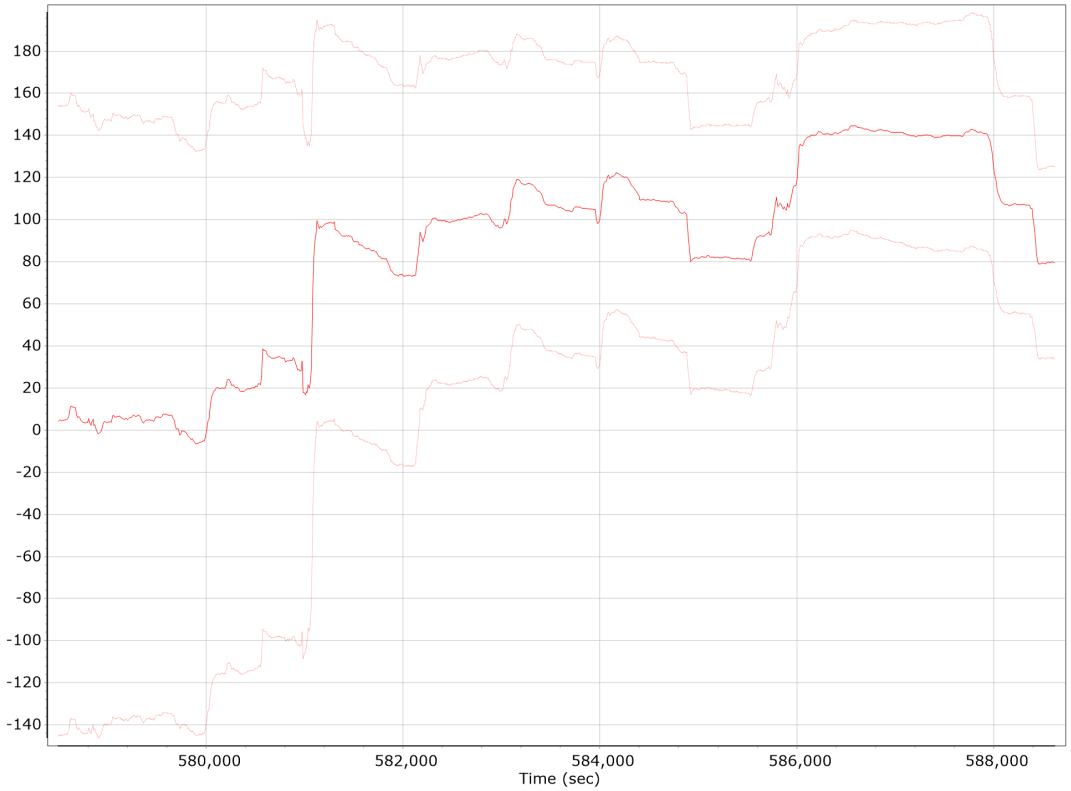
Gyro Scale Error (ppm)



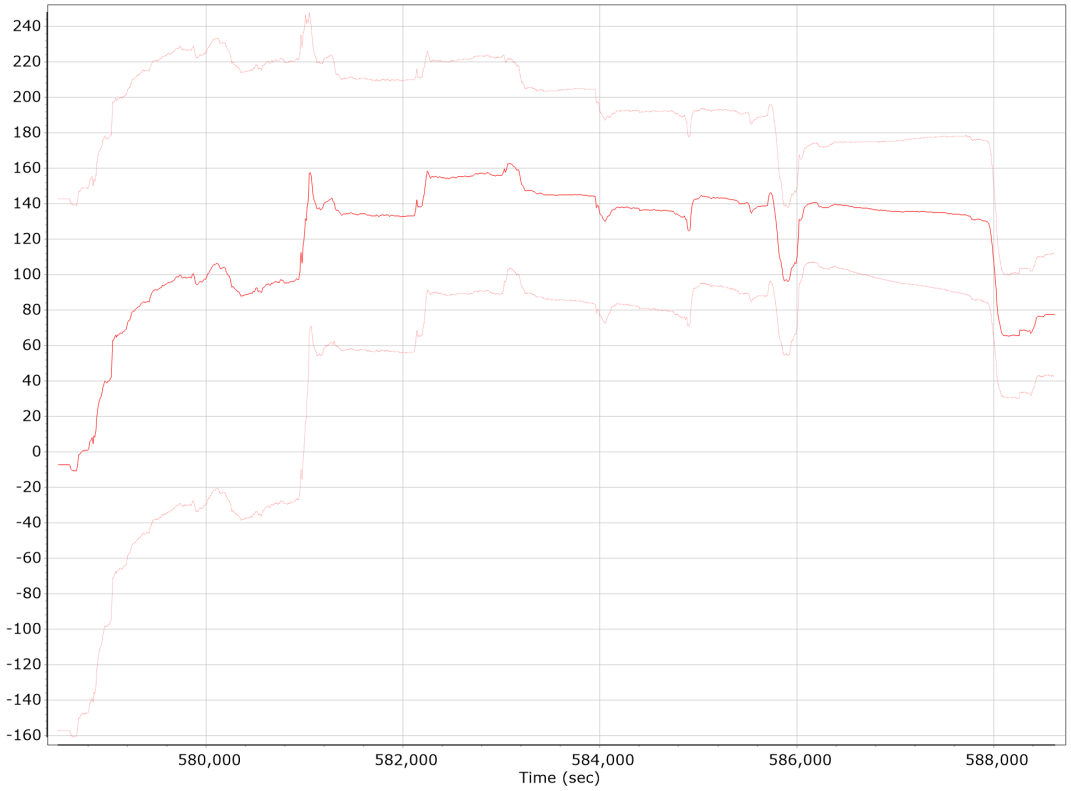
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)

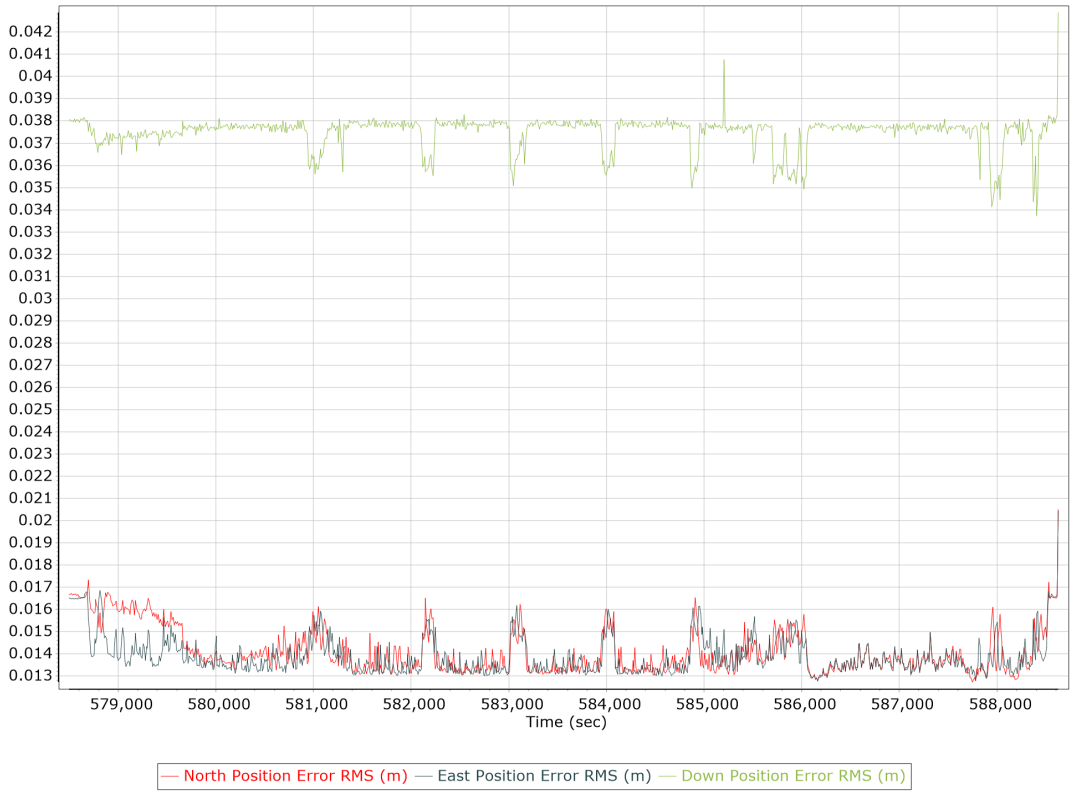


Z Gyro Scale Error (ppm)

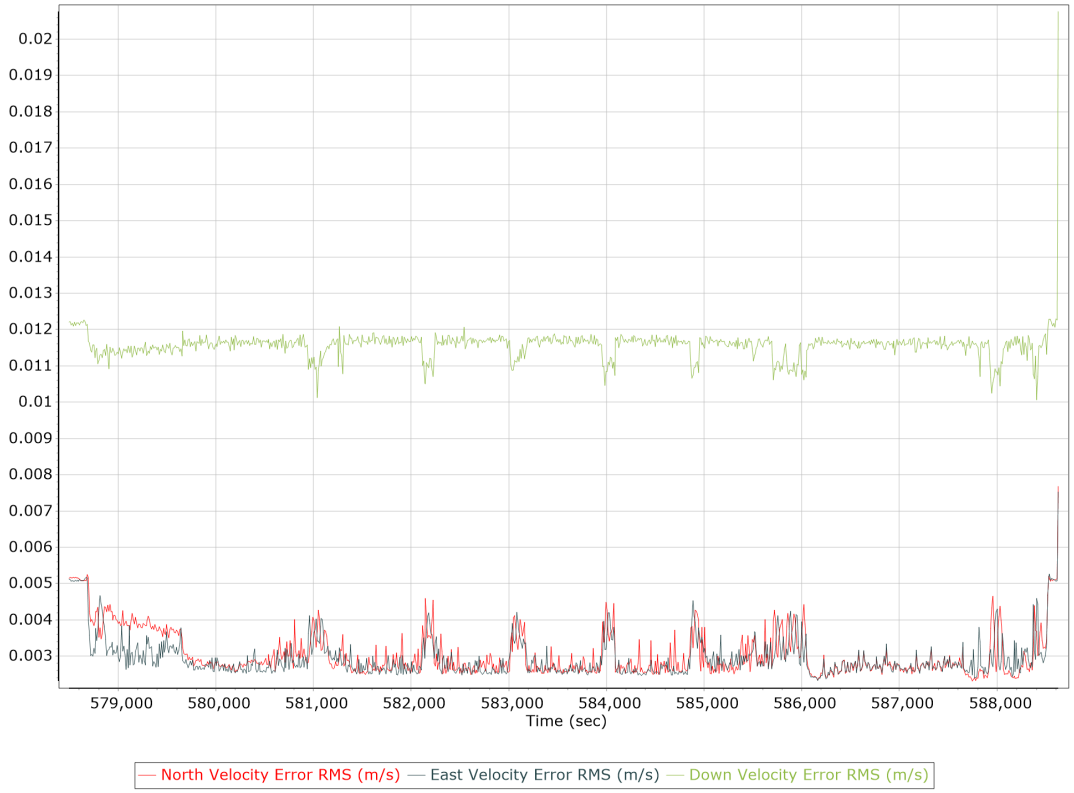


Smoothed Performance Metrics

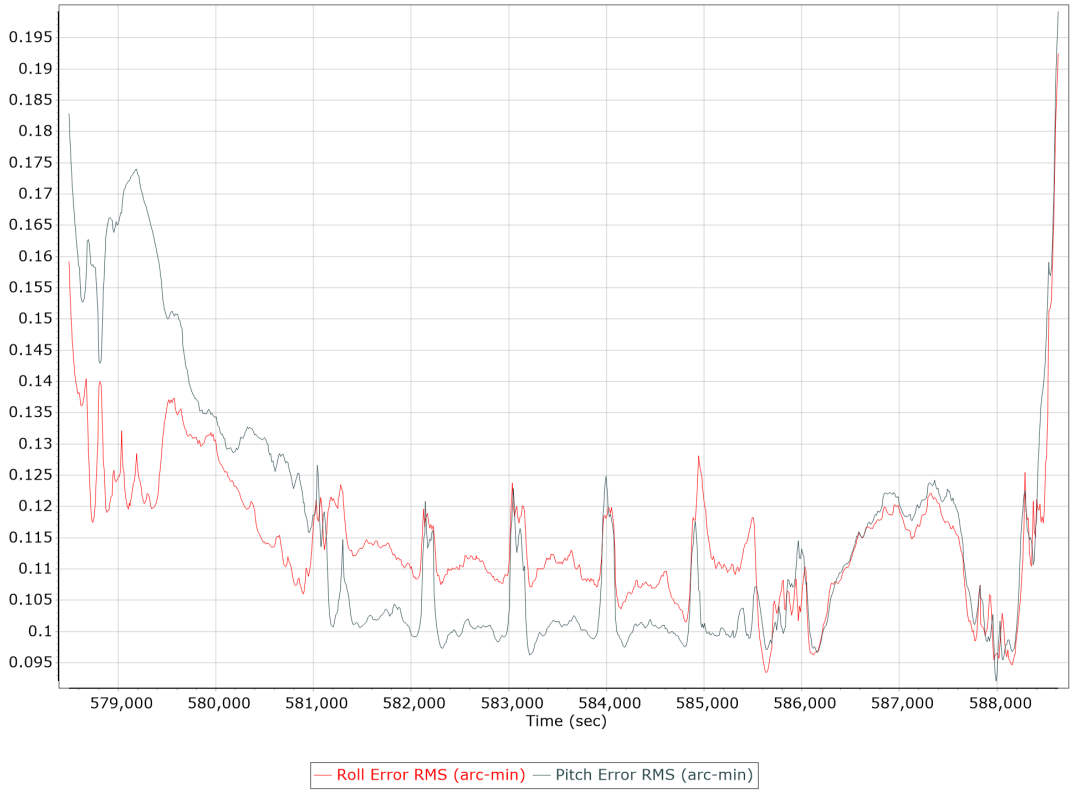
Position Error RMS (m)



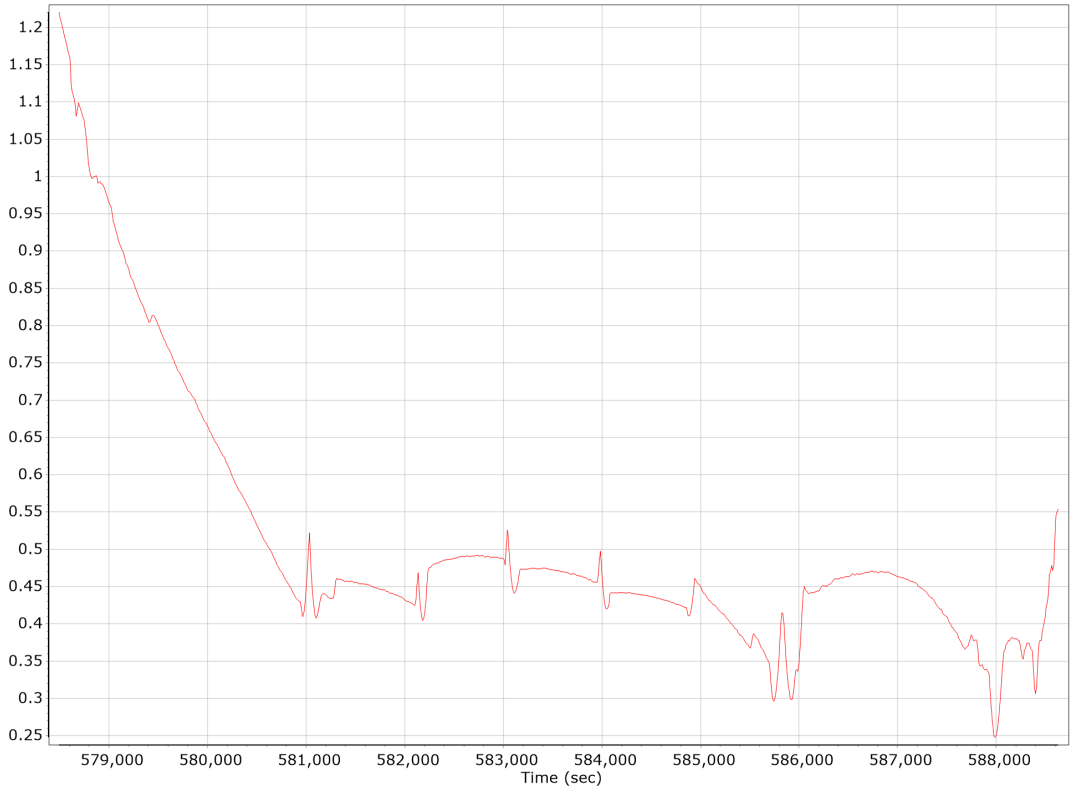
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)



Heading Error RMS (arc-min)

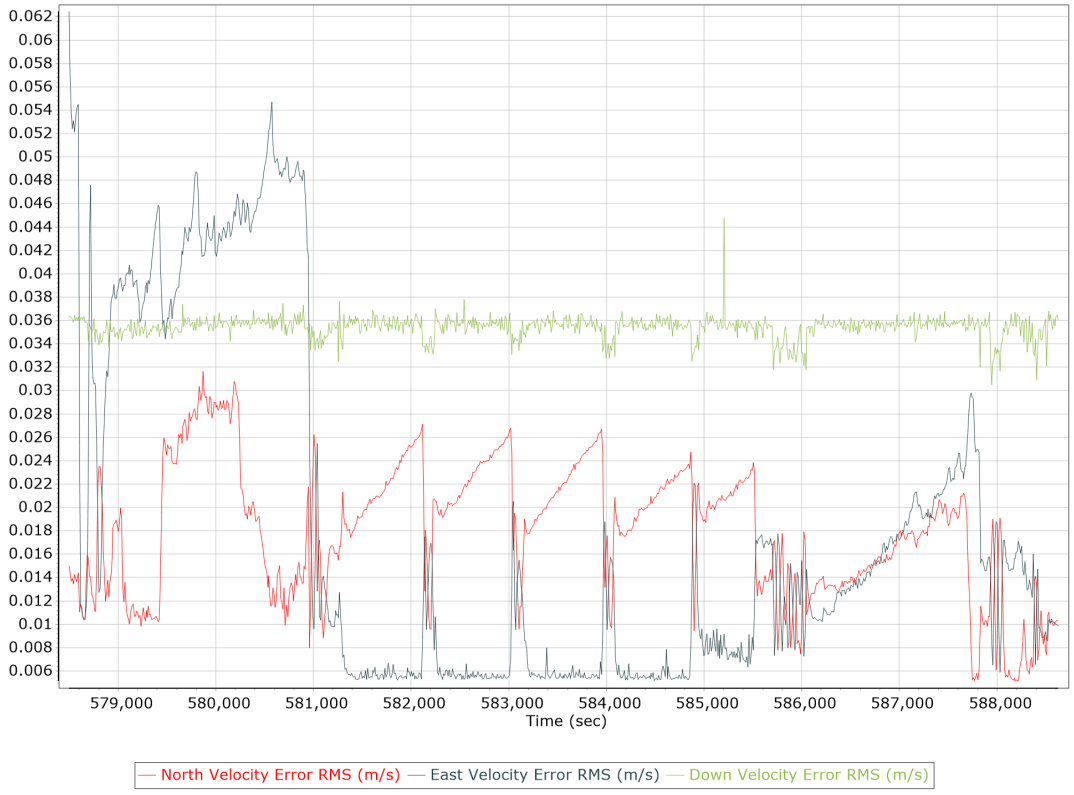


Forward Processed Performance Metrics

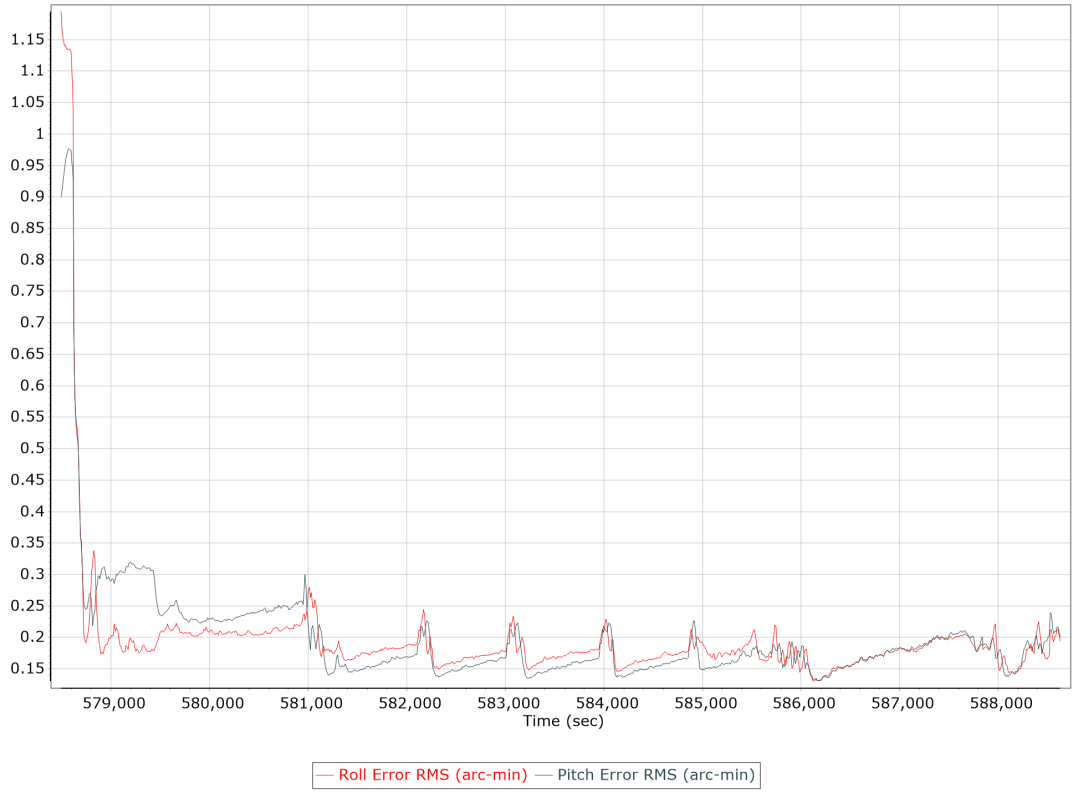
Position Error RMS (m)



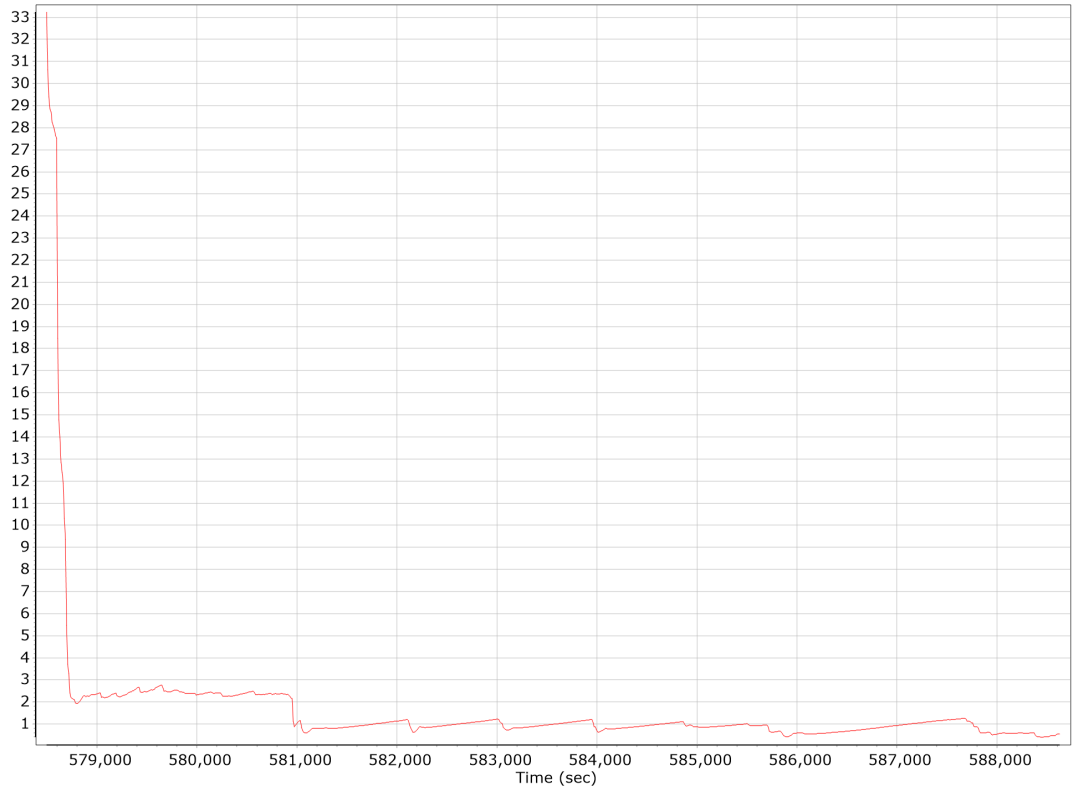
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

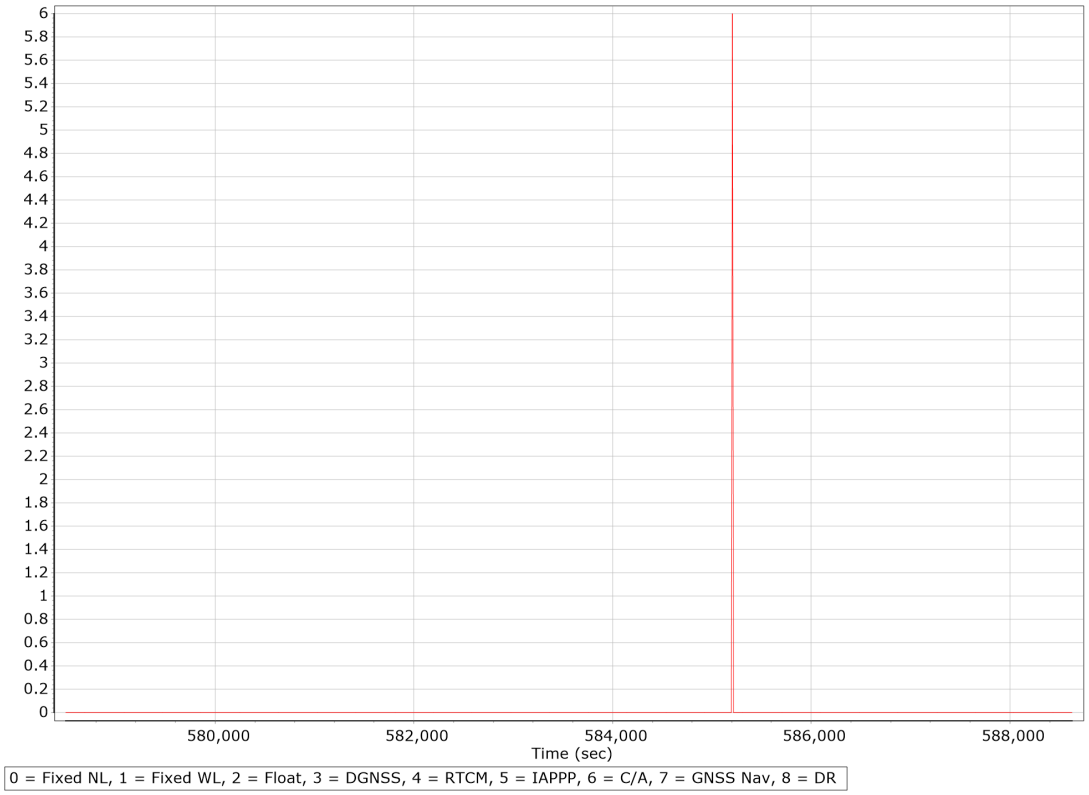


Heading Error RMS (arc-min)



Forward Processed Solution Status

Processing Mode



Number of Satellites



Baseline Length

