

General Information

Mission Information

Project name	20230628_F1_IDS_4894
Processing date	2023-06-29 19:03:50
Mission date	2023-06-28 14:03:53
Mission duration	05:49:43.000
Processing mode	IN-Fusion PP-RTX

Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N12299
IMU type	57
Receiver type	BD982
Antenna type	AV39

Project File List

Rover Data Files

File name	File type
VQ1560.833	POS Data
VQ1560.834	POS Data
VQ1560.835	POS Data
VQ1560.836	POS Data
VQ1560.837	POS Data
VQ1560.838	POS Data
VQ1560.839	POS Data
VQ1560.840	POS Data
VQ1560.841	POS Data
VQ1560.842	POS Data
VQ1560.843	POS Data
VQ1560.844	POS Data
VQ1560.845	POS Data
VQ1560.846	POS Data
VQ1560.847	POS Data
VQ1560.848	POS Data
VQ1560.849	POS Data
VQ1560.850	POS Data
VQ1560.851	POS Data
VQ1560.852	POS Data
VQ1560.853	POS Data
VQ1560.854	POS Data
VQ1560.855	POS Data
VQ1560.856	POS Data
VQ1560.857	POS Data
VQ1560.858	POS Data
VQ1560.859	POS Data
VQ1560.860	POS Data
VQ1560.861	POS Data
VQ1560.862	POS Data
VQ1560.863	POS Data
VQ1560.864	POS Data
VQ1560.865	POS Data
VQ1560.866	POS Data
VQ1560.867	POS Data
VQ1560.868	POS Data
VQ1560.869	POS Data
VQ1560.870	POS Data
VQ1560.871	POS Data
VQ1560.872	POS Data
VQ1560.873	POS Data
VQ1560.874	POS Data
VQ1560.875	POS Data
VQ1560.876	POS Data
VQ1560.877	POS Data
VQ1560.878	POS Data
VQ1560.879	POS Data
VQ1560.880	POS Data

Input Files

File Name	File Type
Ephm1790.23g	GLONASS Broadcast Ephemeris
Ephm1790.23n	GPS Broadcast Ephemeris

Output Files

Filename	File type
sbet_20230628_F1_IDS_4894.out	SBET Trajectory File
export_20230628_F1_IDS_4894_NAD832011.out	Custom Smoothed BET Export Output

Rover Data Summary

First raw data file	VQ1560.833		
Last raw data file	VQ1560.880		
Start GPS week	2268		
Start time	13.162 (06/25/2023 00:00:13)		
End time	330798.596 (06/28/2023 19:53:18)		
Start of fine alignment	310510.110 (06/28/2023 14:15:10)		
Available subsystems	Primary GNSS, IMU		
POS Event Input	None		
Correction data	None		
IMU Installation Lever Arms & Mounting Angles			
Reference to IMU lever arm (m)	0.000	0.000	0.000
Reference to IMU mounting angles (deg)	0.000	0.000	0.000
Reference to Primary GNSS lever arm (m)	0.139	0.045	-0.967
Reference to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

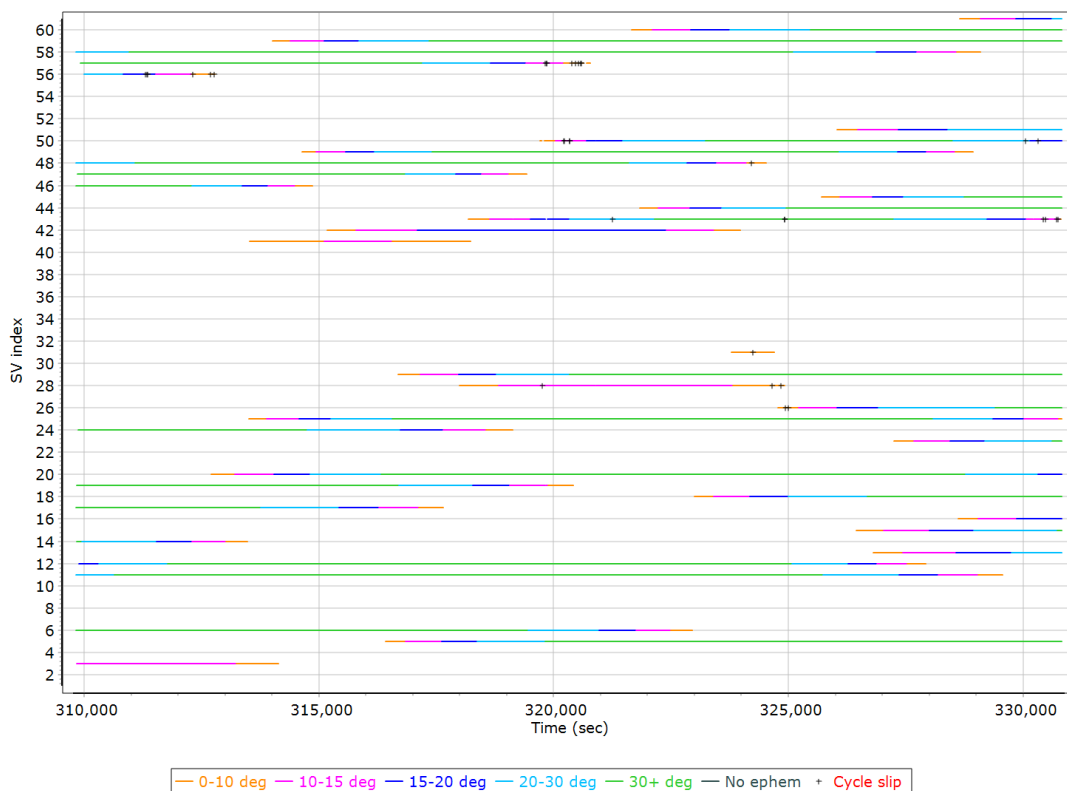
Rover Data QC

Raw IMU Import QC Summary

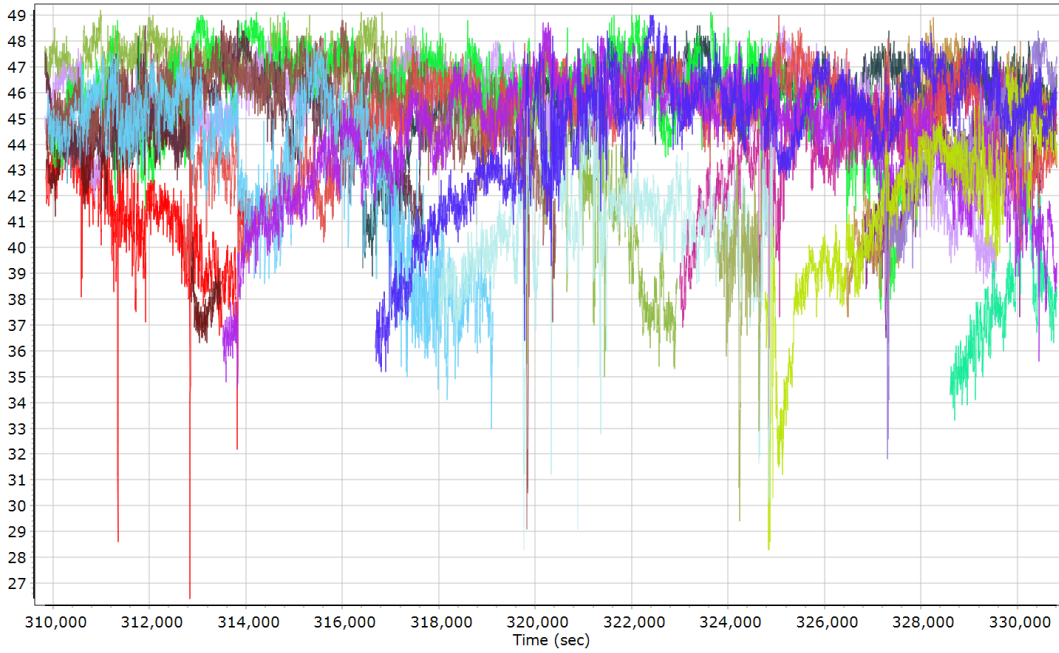
IMU data input file	imu_20230628_F1_IDS_4894.dat
IMU data check log file	imudt_20230628_F1_IDS_4894.log
IMU Records Processed	4195982
Termination Status	Warnings
IMU Anomalies	1
IMU Failure Messages	
309827.905 : WARNING : Gap of 309813.9478 seconds in CHECKDT input data	

Primary Observables & Satellite Data

GPS/GLONASS L1 Satellite Lock/Elevation

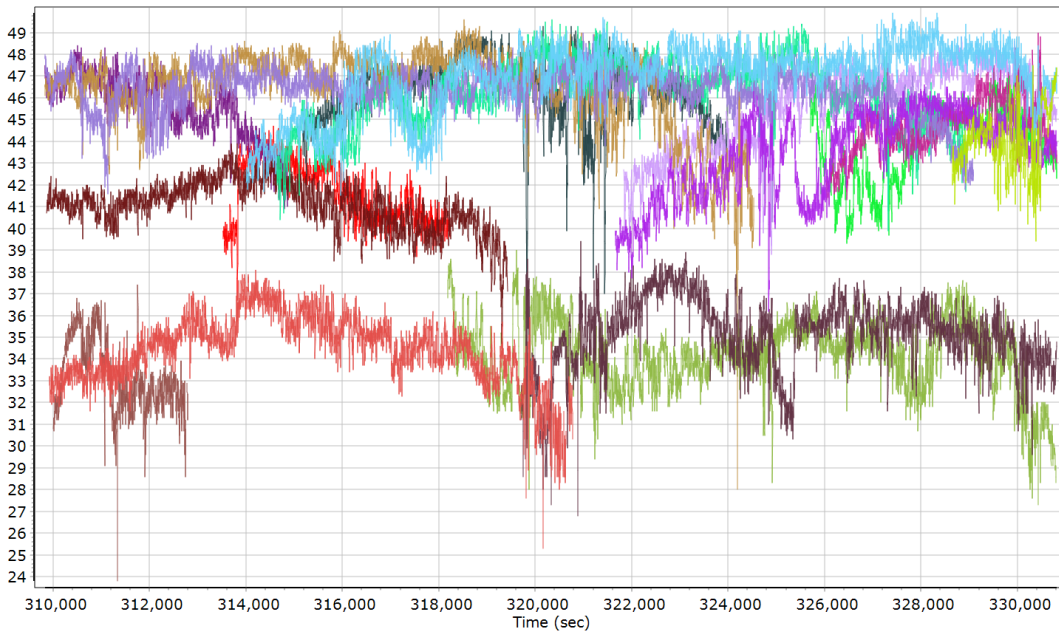


GPS L1 SNR



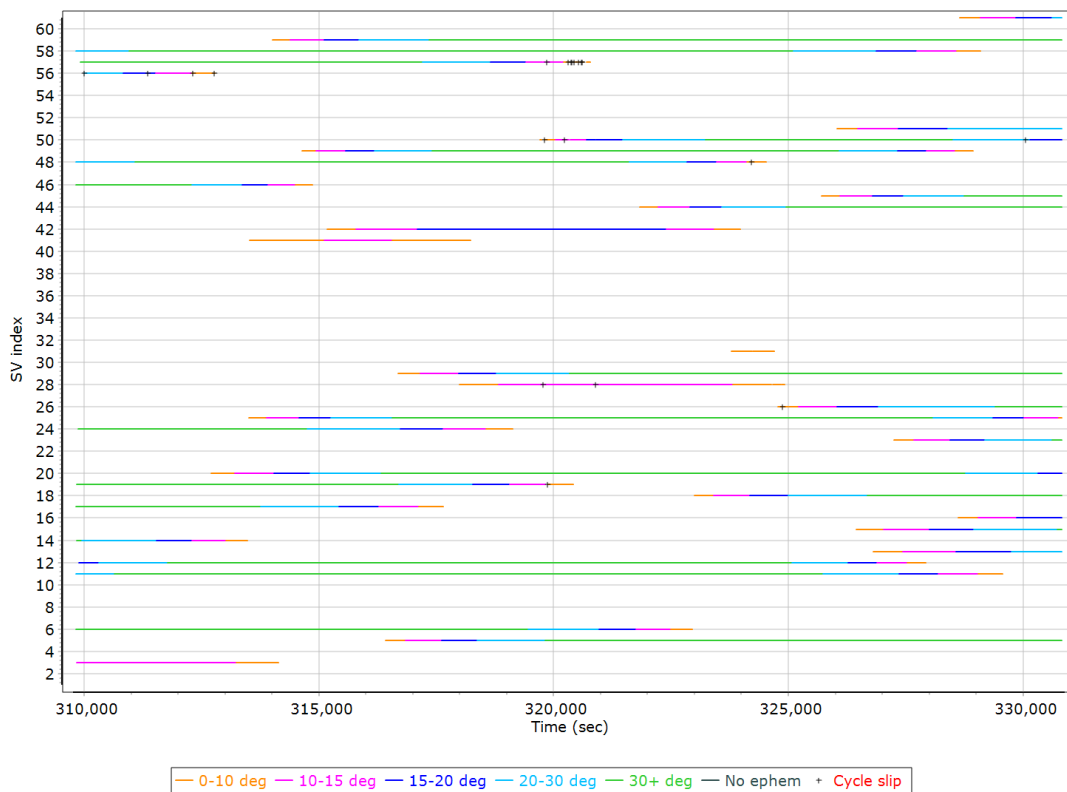
- | | | | |
|---------------------------|---------------------------|---------------------------|---------------------------|
| GPS PRN 03 L1 SNR (dB/Hz) | GPS PRN 05 L1 SNR (dB/Hz) | GPS PRN 06 L1 SNR (dB/Hz) | GPS PRN 11 L1 SNR (dB/Hz) |
| GPS PRN 12 L1 SNR (dB/Hz) | GPS PRN 13 L1 SNR (dB/Hz) | GPS PRN 14 L1 SNR (dB/Hz) | GPS PRN 15 L1 SNR (dB/Hz) |
| GPS PRN 16 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 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) | GPS PRN 31 L1 SNR (dB/Hz) |

GLONASS L1 SNR

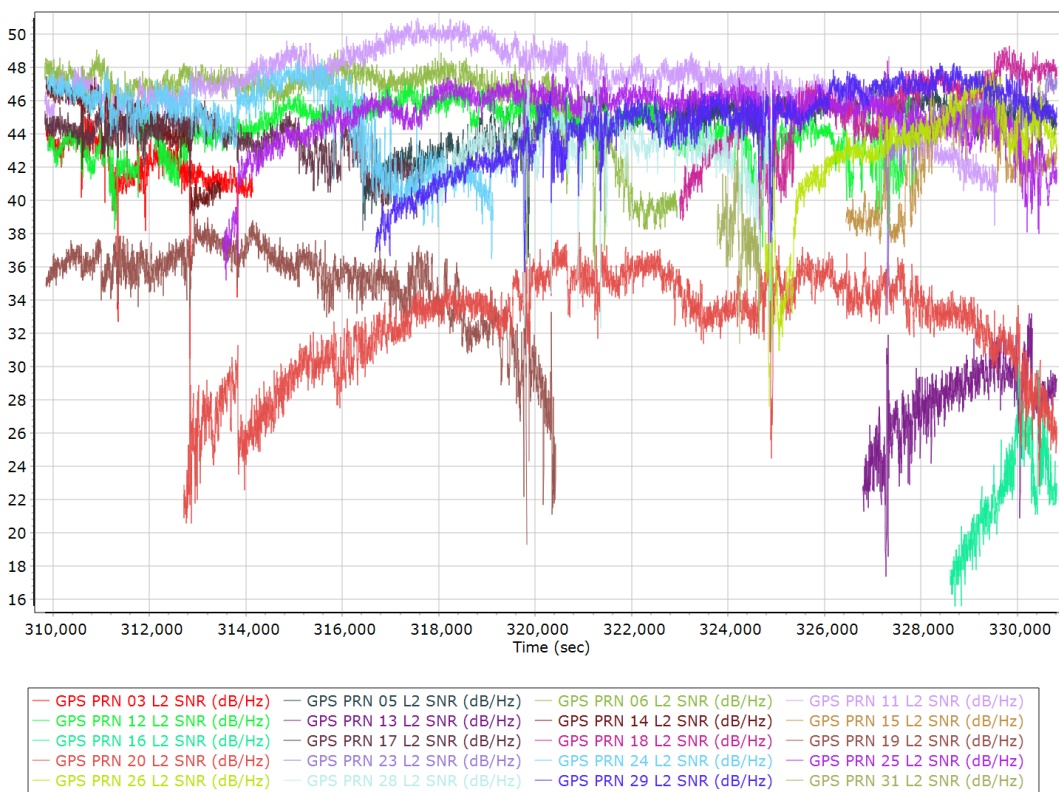


- | | | |
|---------------------------|---------------------------|---------------------------|
| GLONASS 04 L1 SNR (dB/Hz) | GLONASS 05 L1 SNR (dB/Hz) | GLONASS 06 L1 SNR (dB/Hz) |
| GLONASS 07 L1 SNR (dB/Hz) | GLONASS 08 L1 SNR (dB/Hz) | GLONASS 09 L1 SNR (dB/Hz) |
| GLONASS 10 L1 SNR (dB/Hz) | GLONASS 11 L1 SNR (dB/Hz) | GLONASS 12 L1 SNR (dB/Hz) |
| GLONASS 13 L1 SNR (dB/Hz) | GLONASS 14 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) | GLONASS 24 L1 SNR (dB/Hz) | |

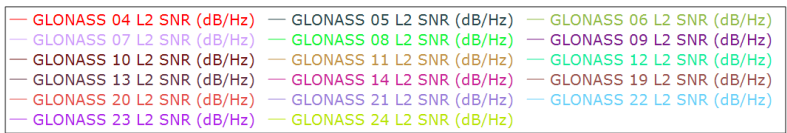
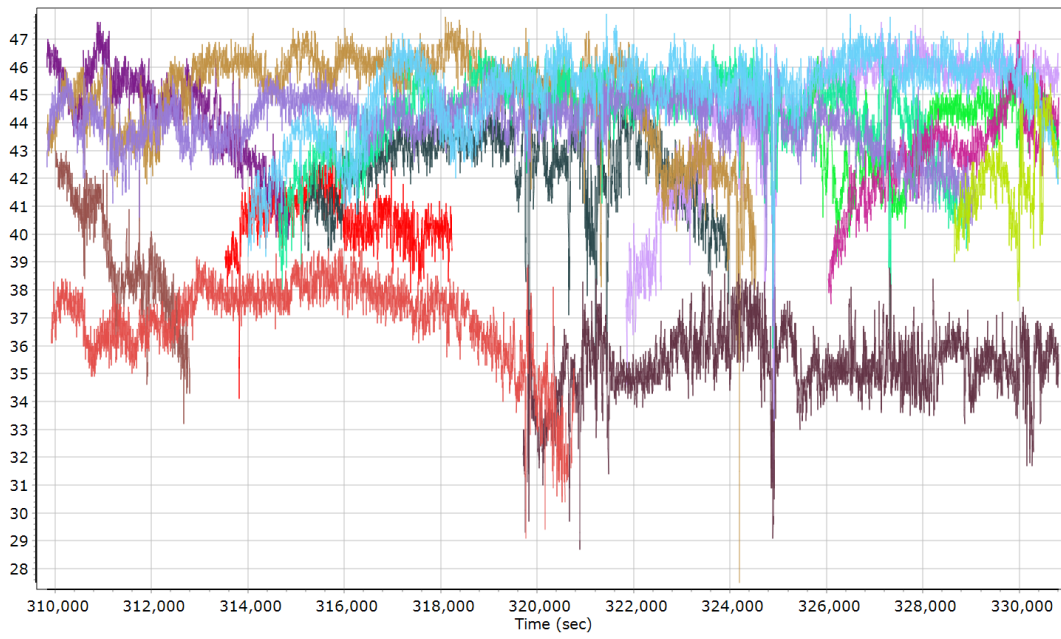
GPS/GLONASS L2 Satellite Lock/Elevation



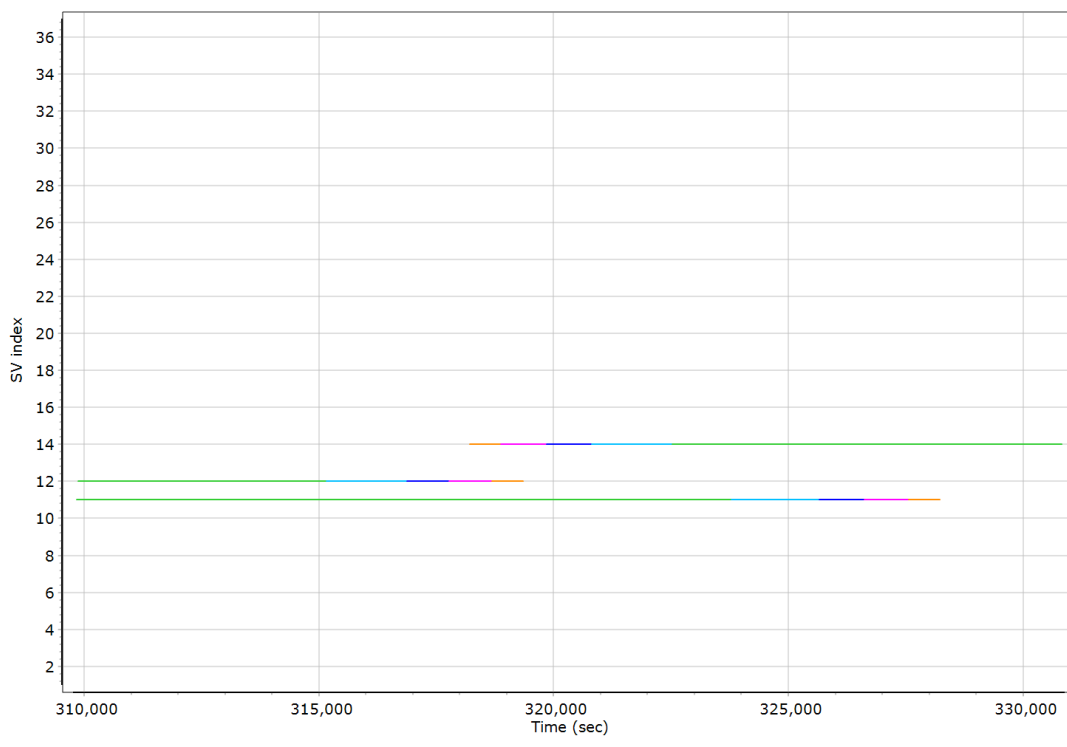
GPS L2 SNR



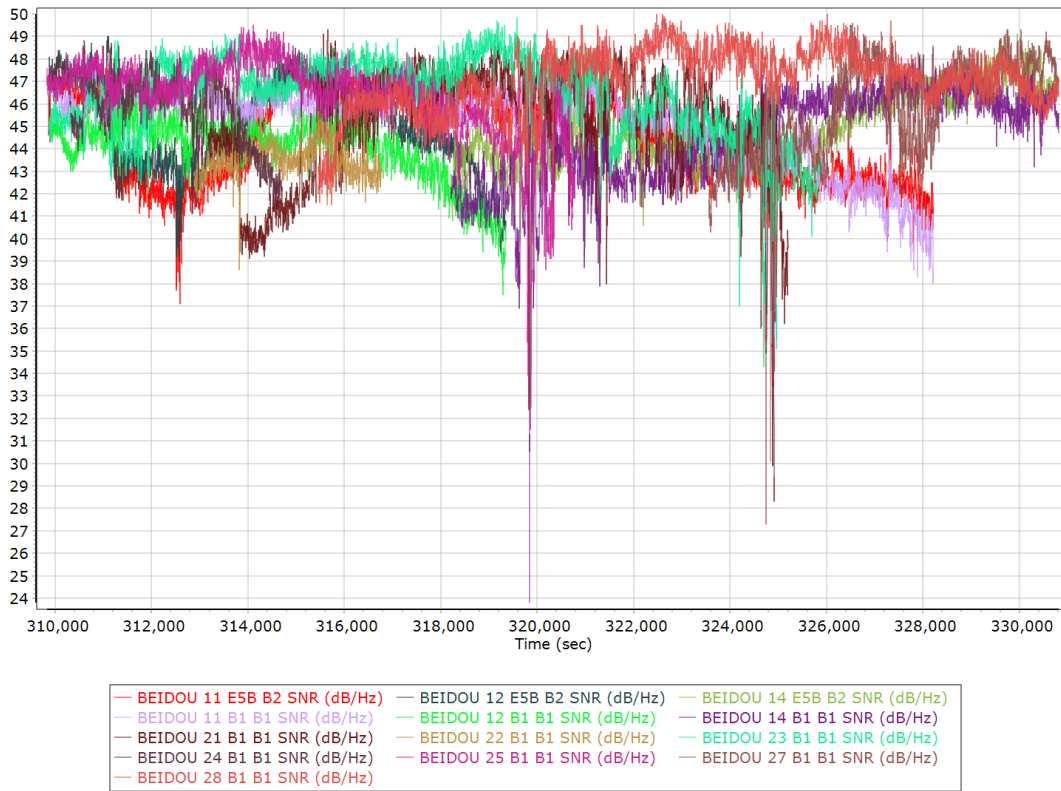
GLONASS L2 SNR



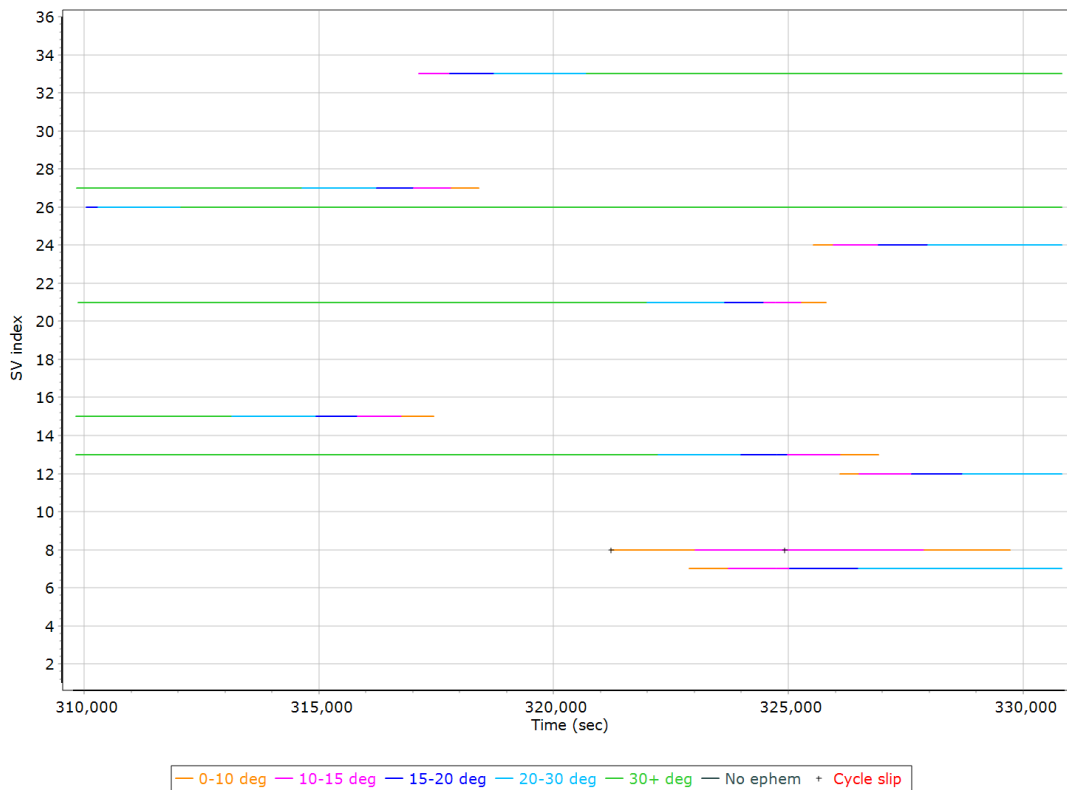
BEIDOU Satellite Lock/Elevation



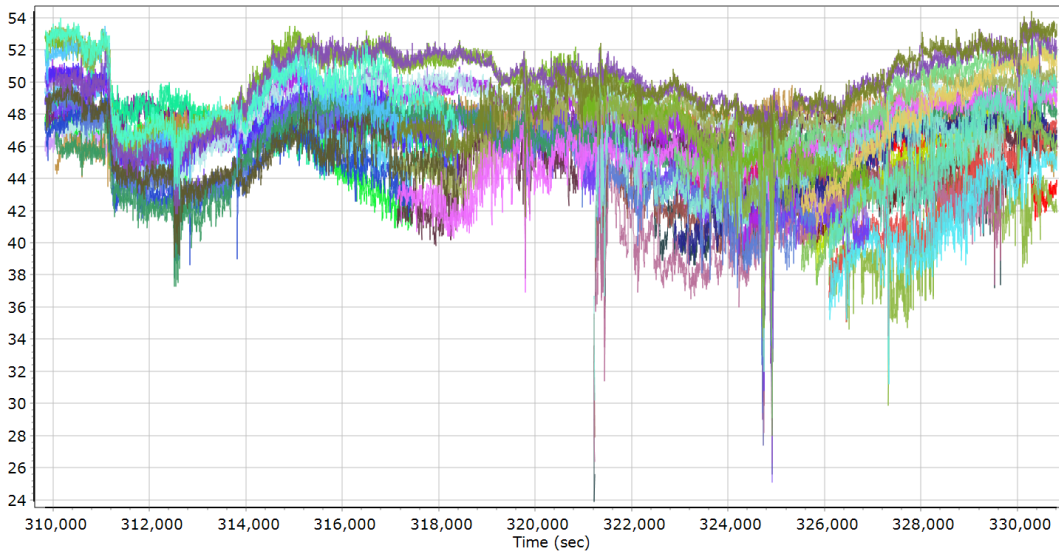
BEIDOU SNR



GALILEO Satellite Lock/Elevation



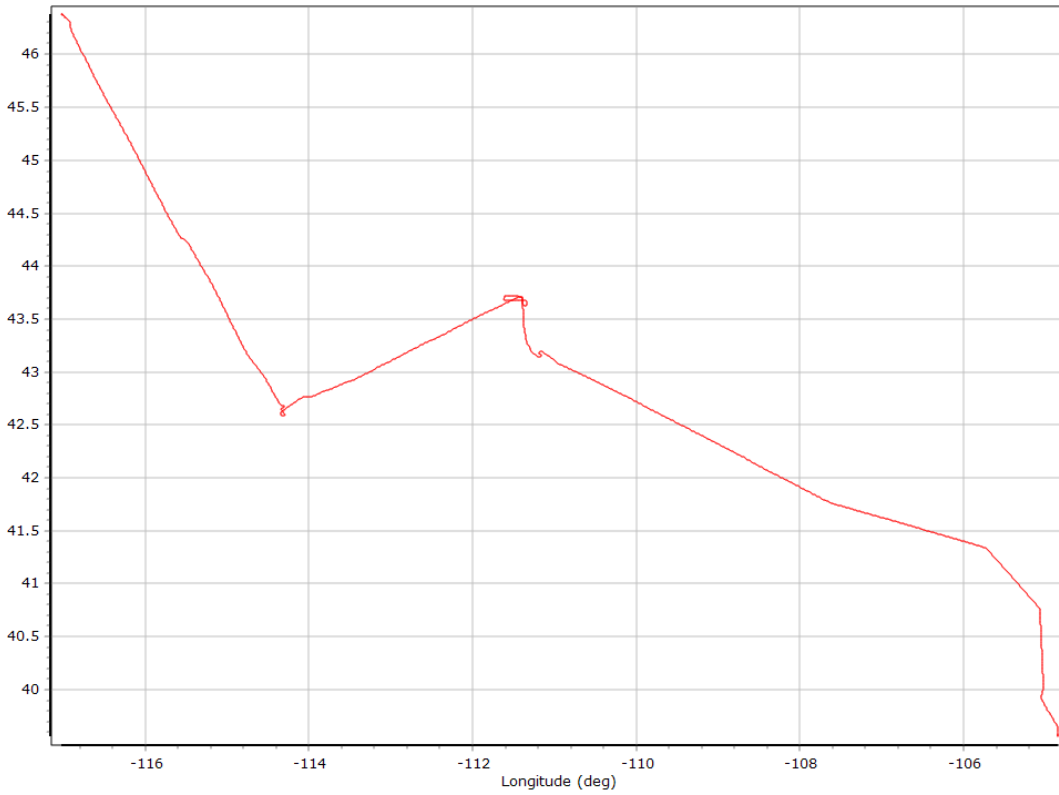
GALILEO SNR



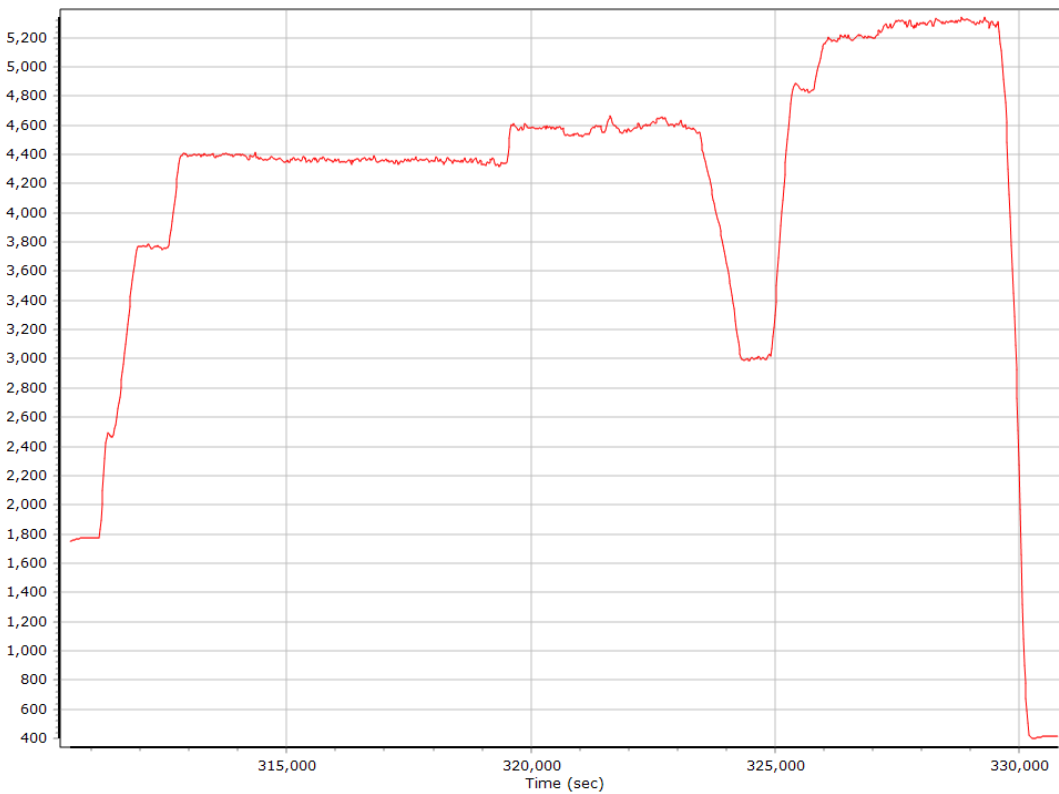
— GALILEO 07 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)	— GALILEO 08 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
— GALILEO 12 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)	— GALILEO 13 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
— GALILEO 15 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)	— GALILEO 21 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
— GALILEO 24 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)	— GALILEO 26 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
— GALILEO 27 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)	— GALILEO 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 12 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 24 L5E5A BPSK10_PD SNR (dB/Hz)	— GALILEO 26 L5E5A BPSK10_PD SNR (dB/Hz)
— GALILEO 27 L5E5A BPSK10_PD SNR (dB/Hz)	— GALILEO 33 L5E5A BPSK10_PD SNR (dB/Hz)

Smoothed Trajectory Information

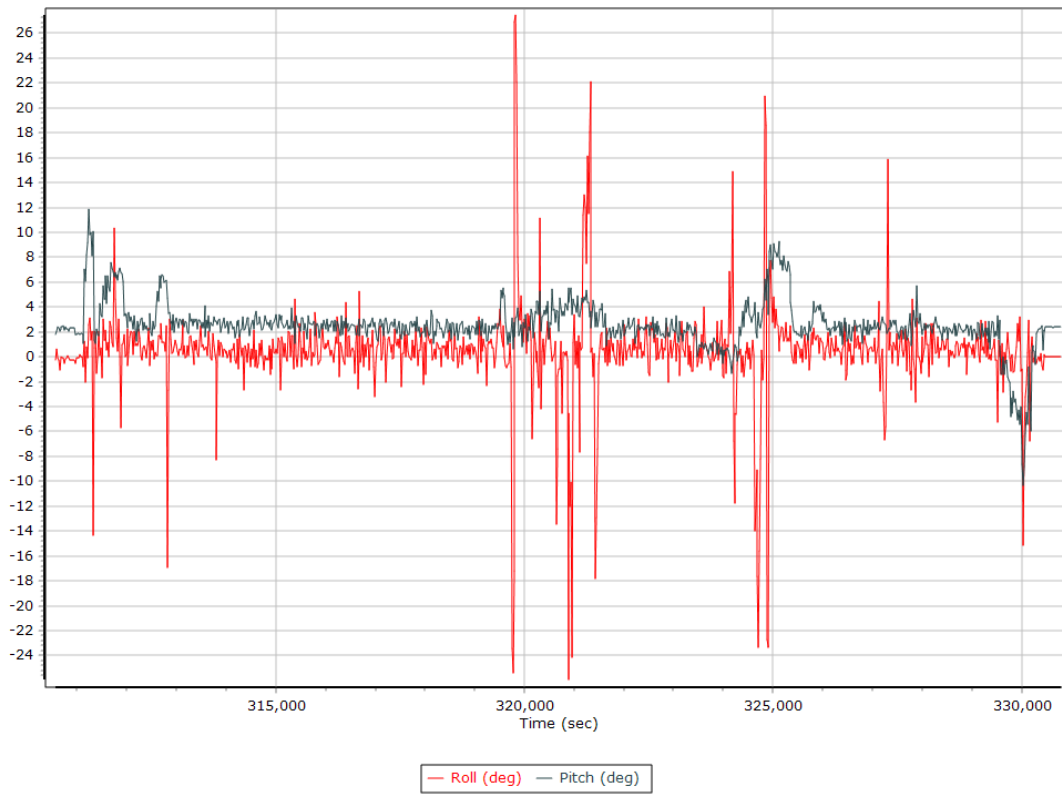
Top View



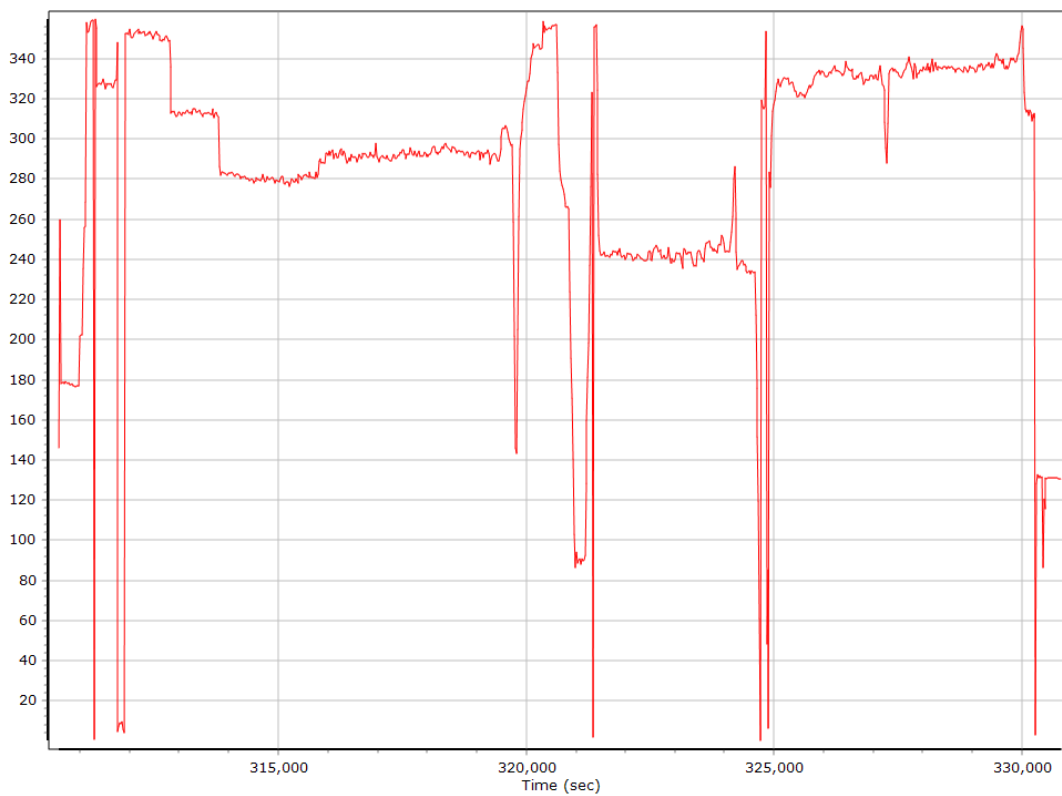
Altitude



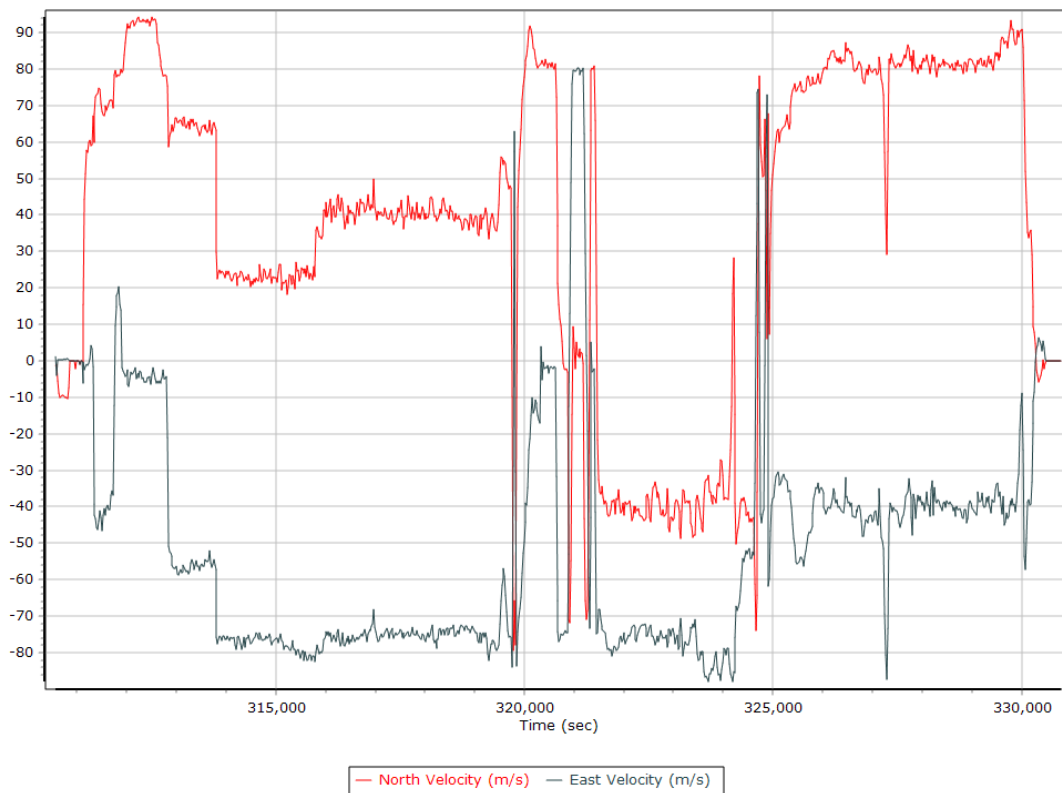
Roll/Pitch



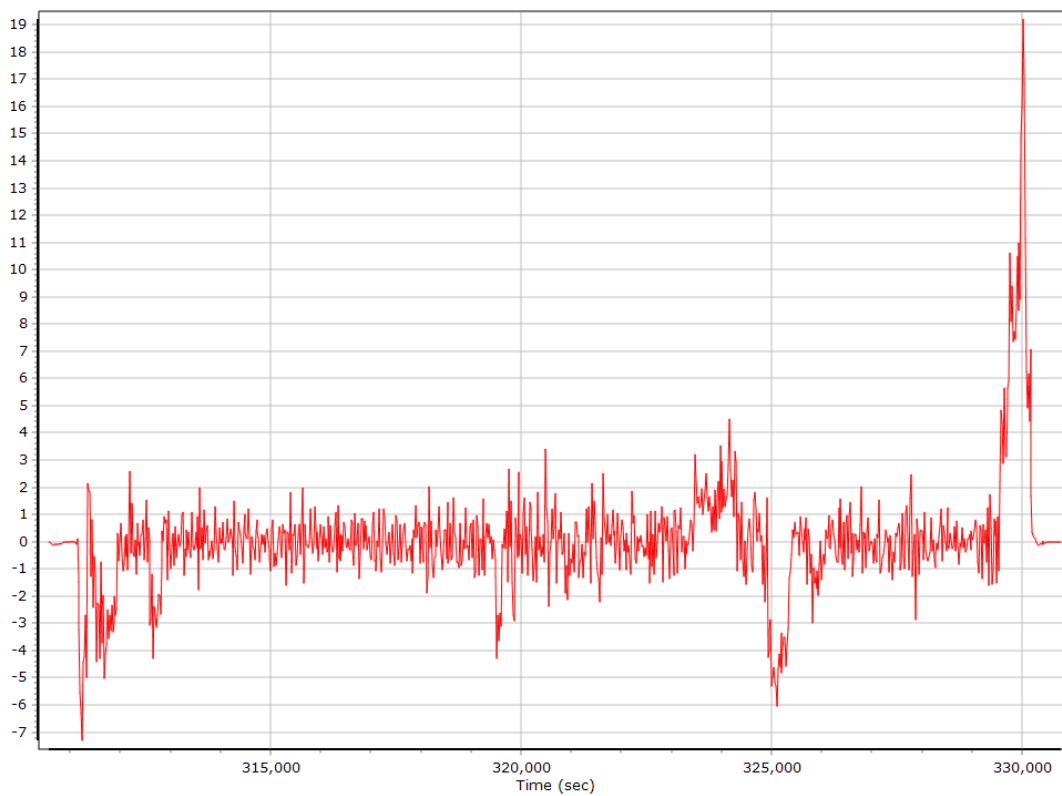
Heading



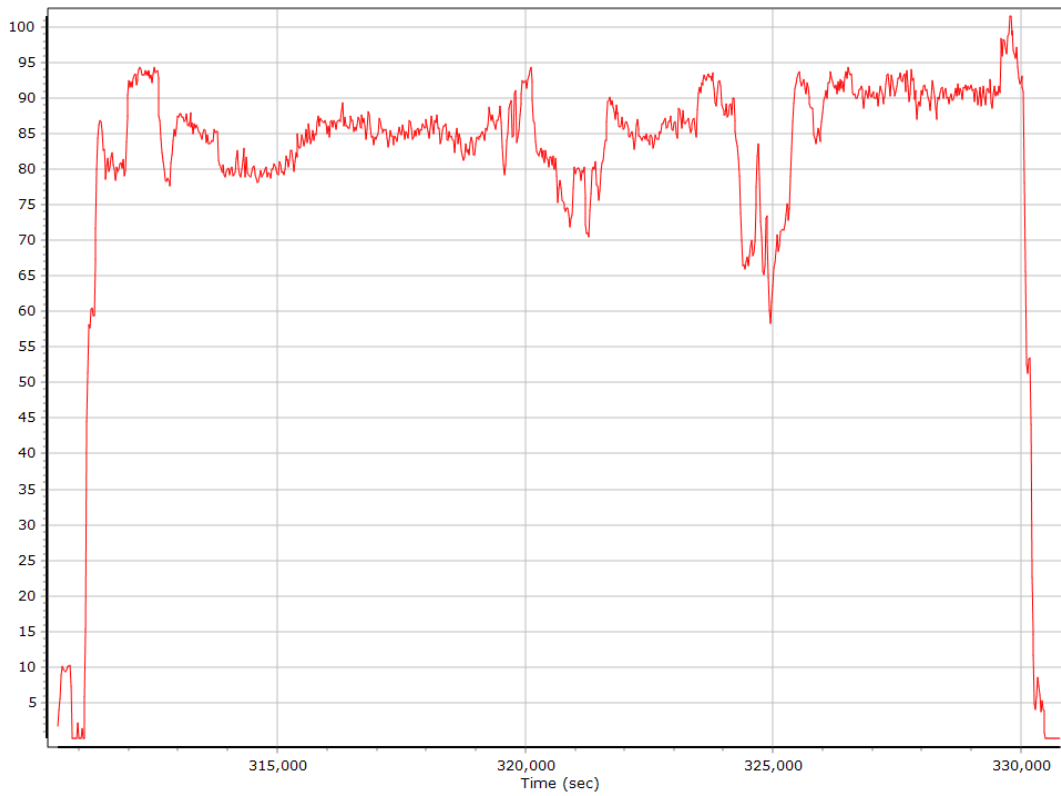
North/East Velocity



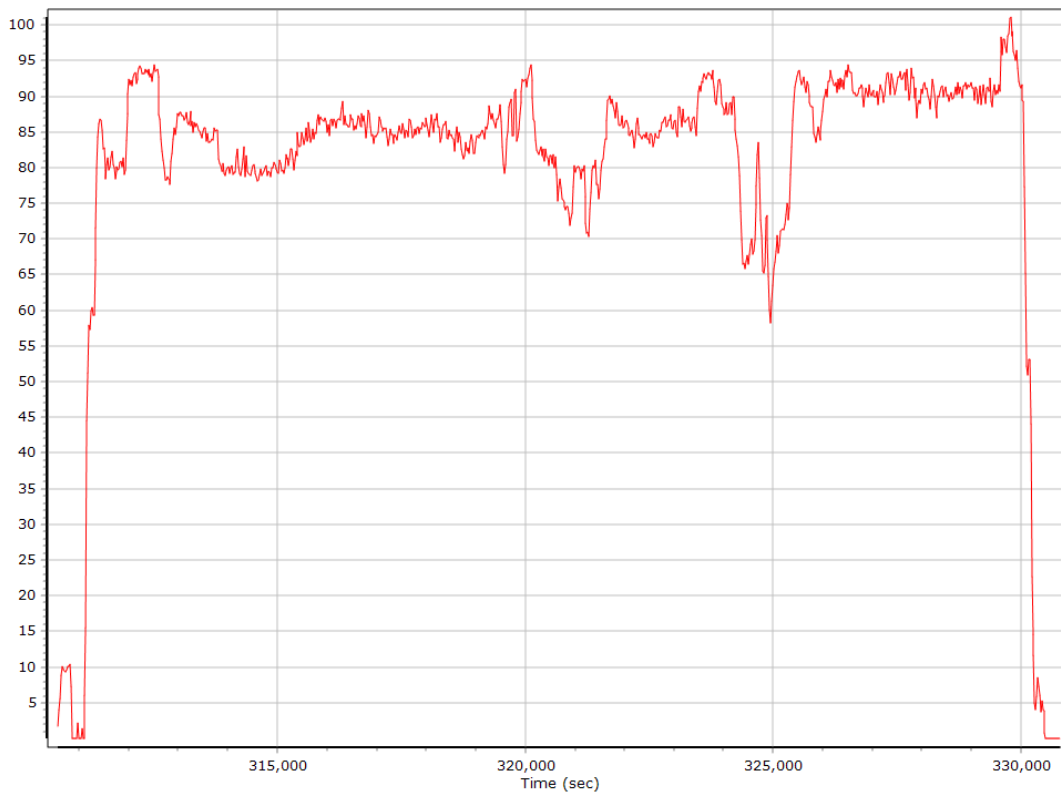
Down Velocity



Total Speed



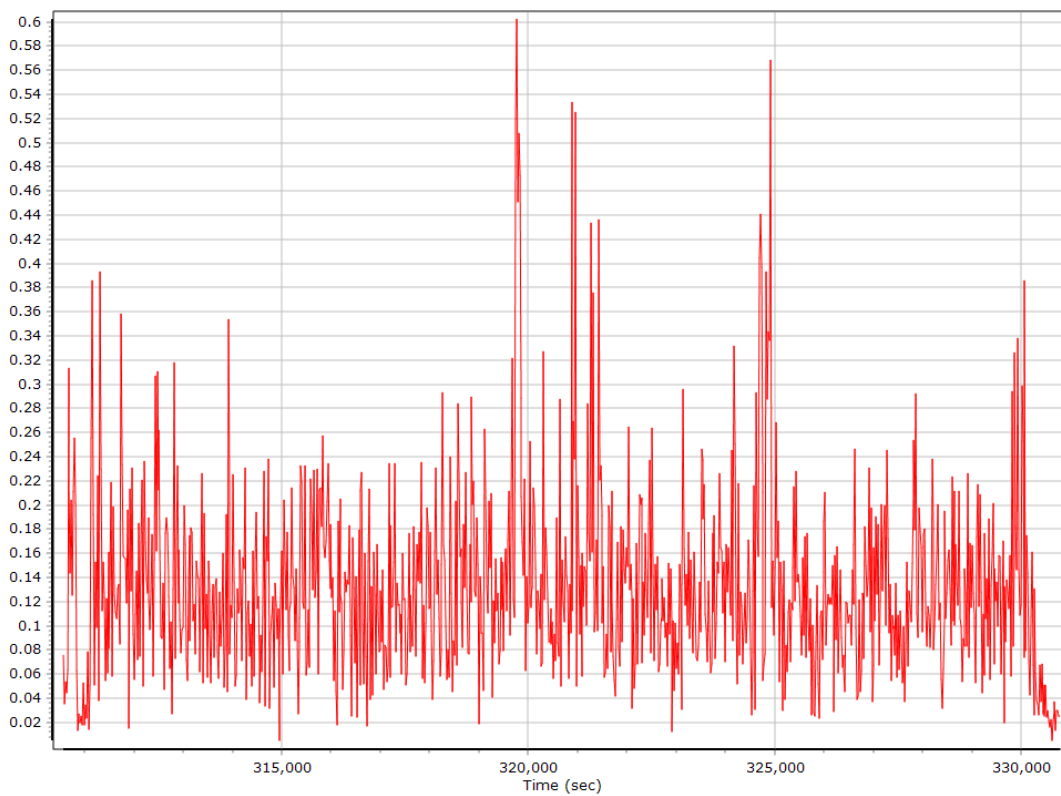
Ground Speed



Body Acceleration



Total Body Acceleration

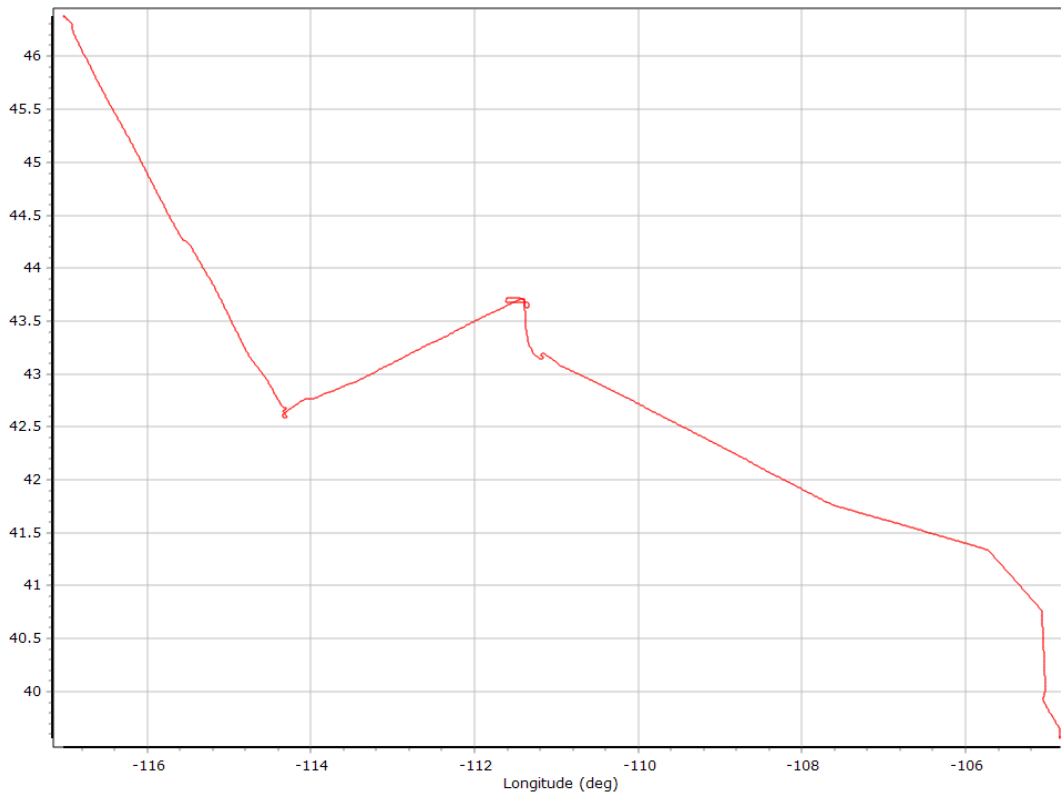


Body Angular Rate

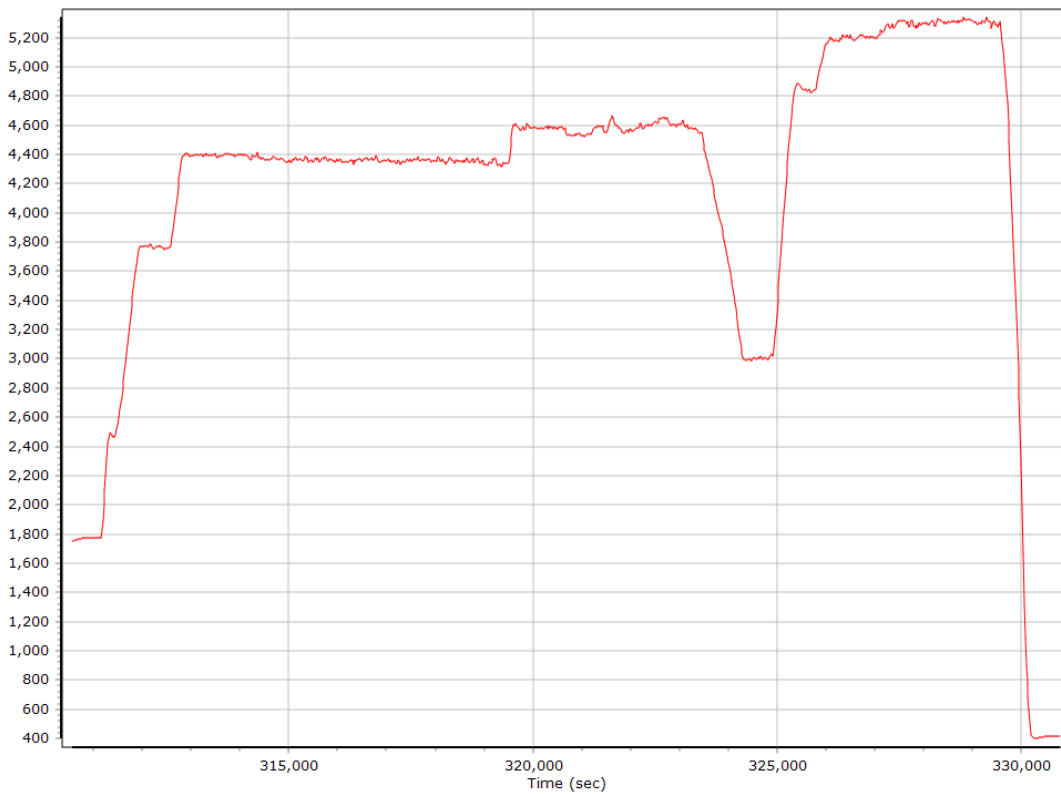


Forward Processed Trajectory Information

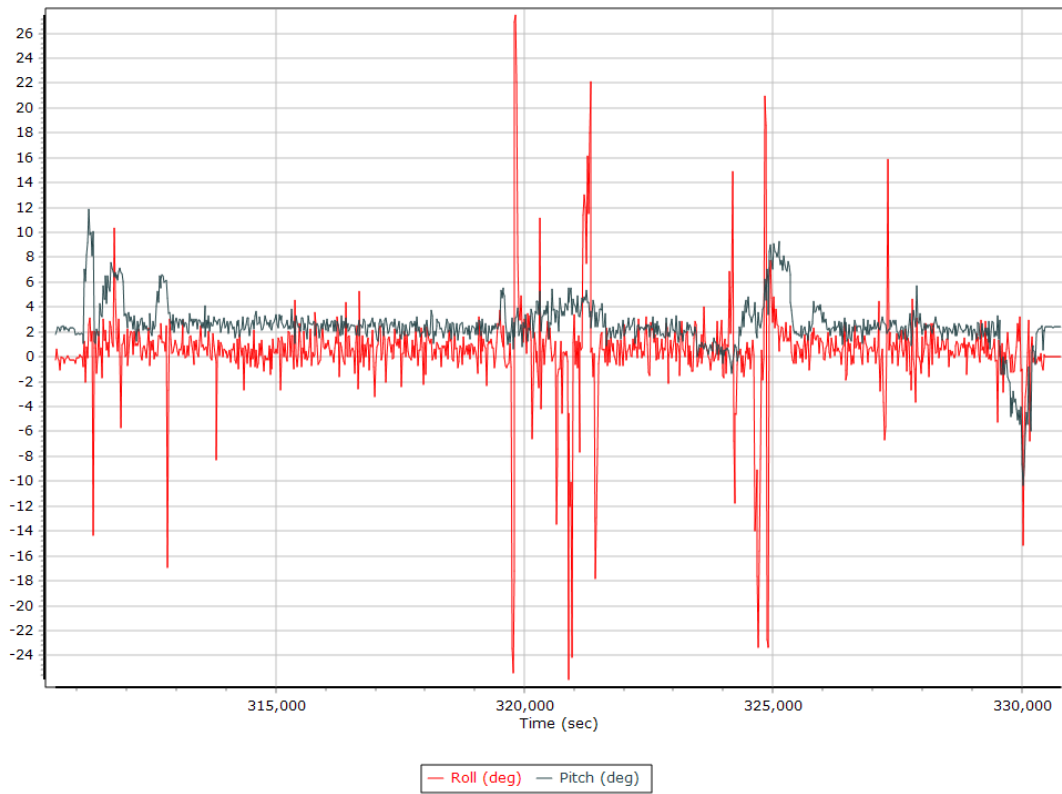
Top View



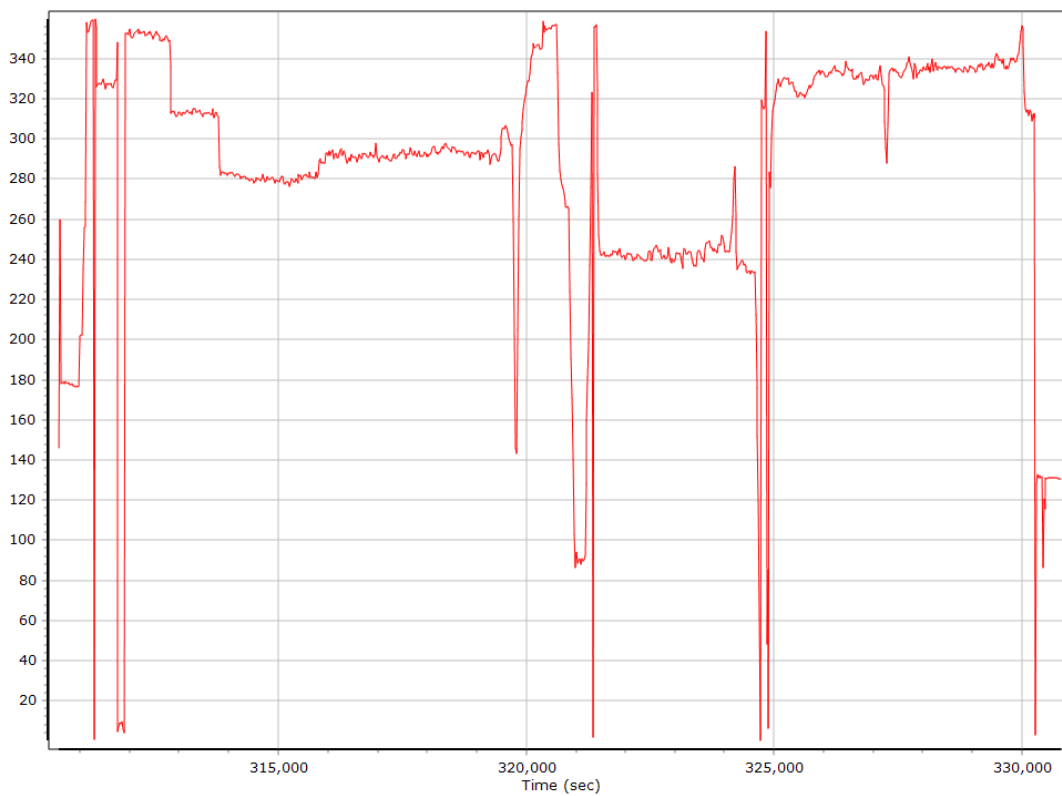
Altitude



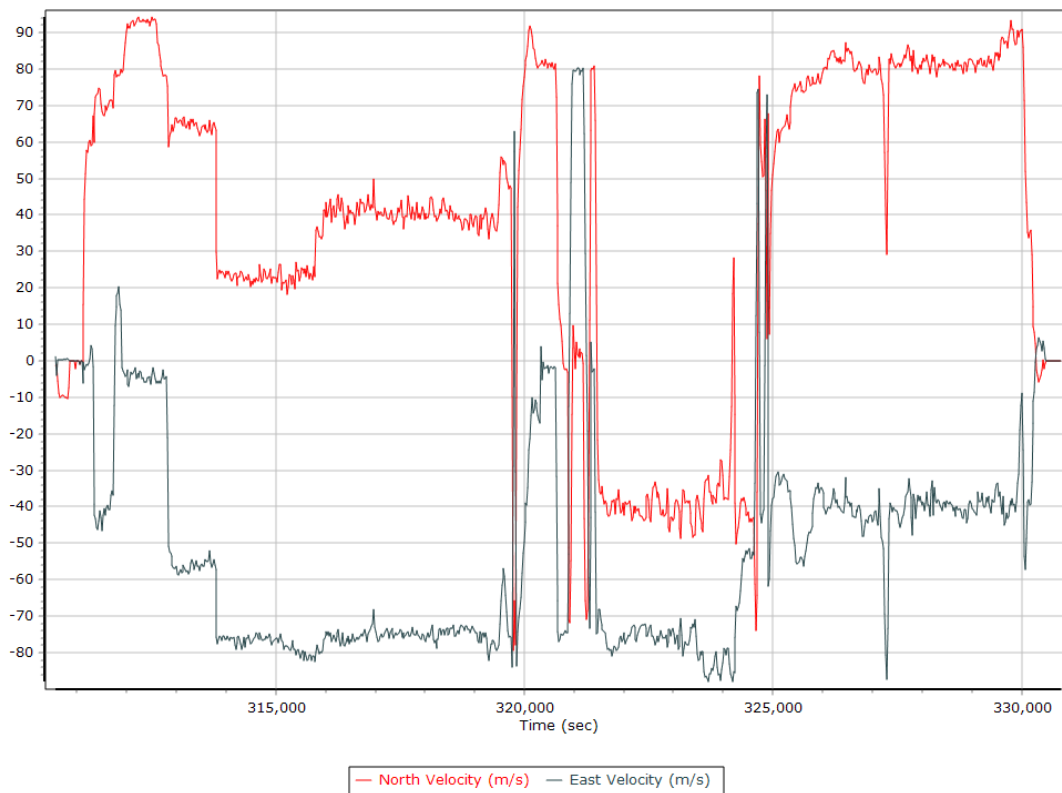
Roll/Pitch



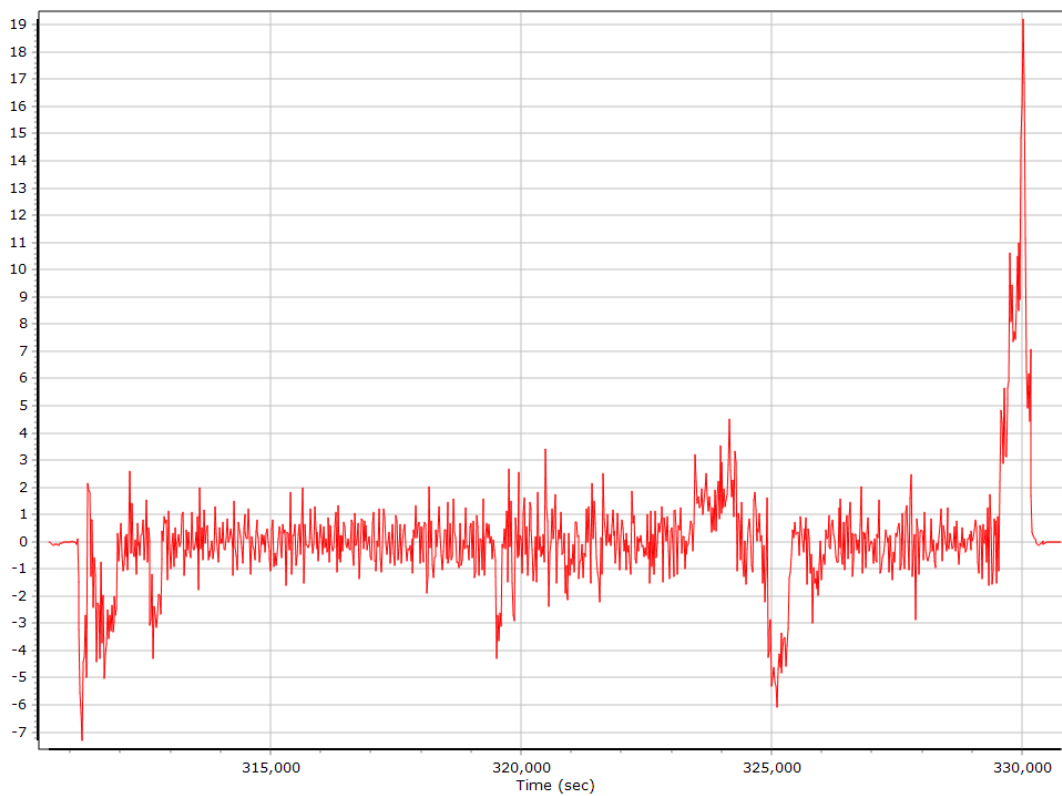
Heading



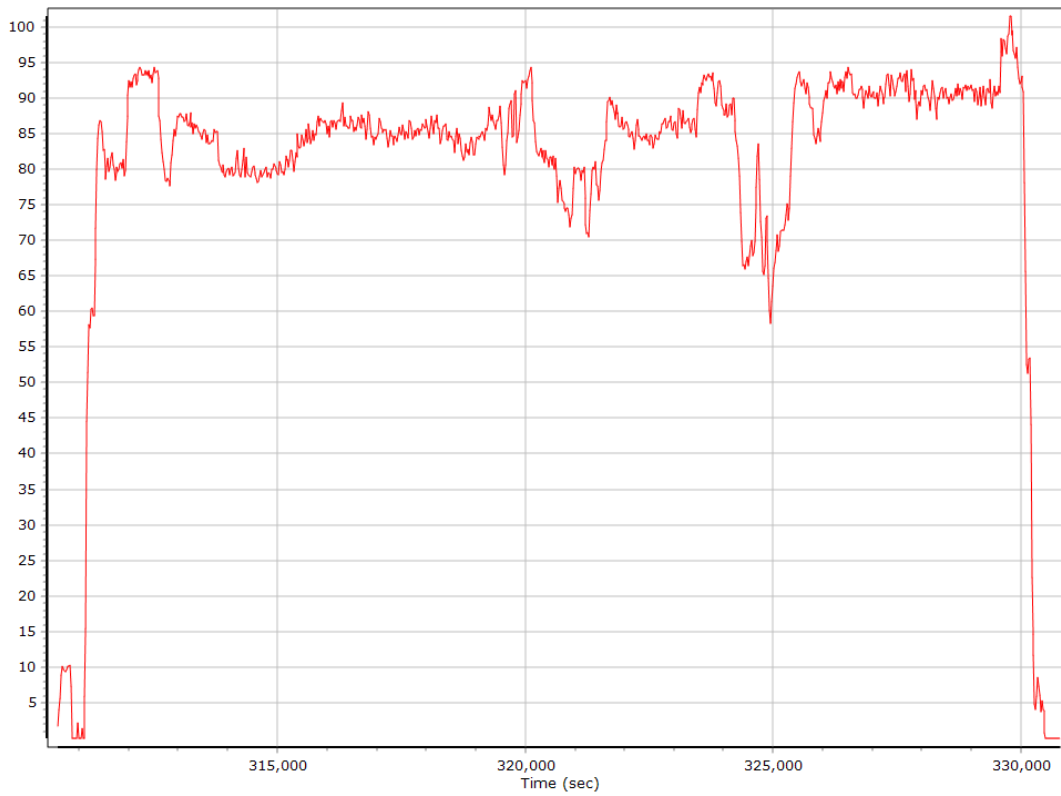
North/East Velocity



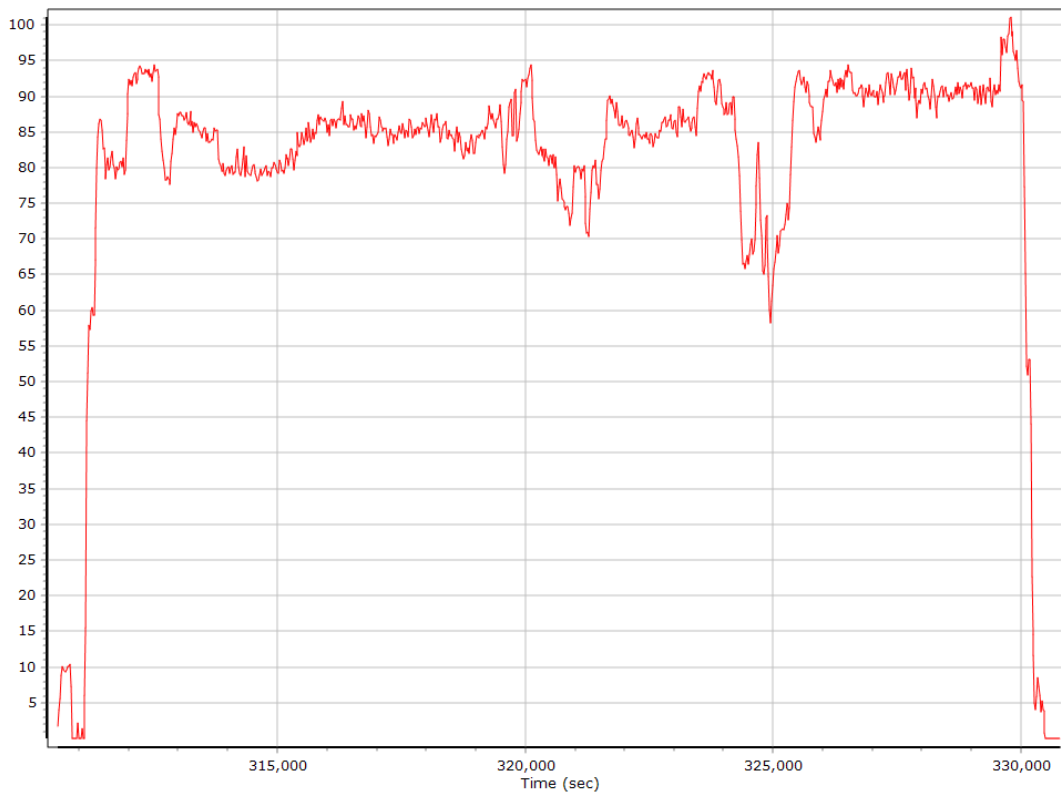
Down Velocity



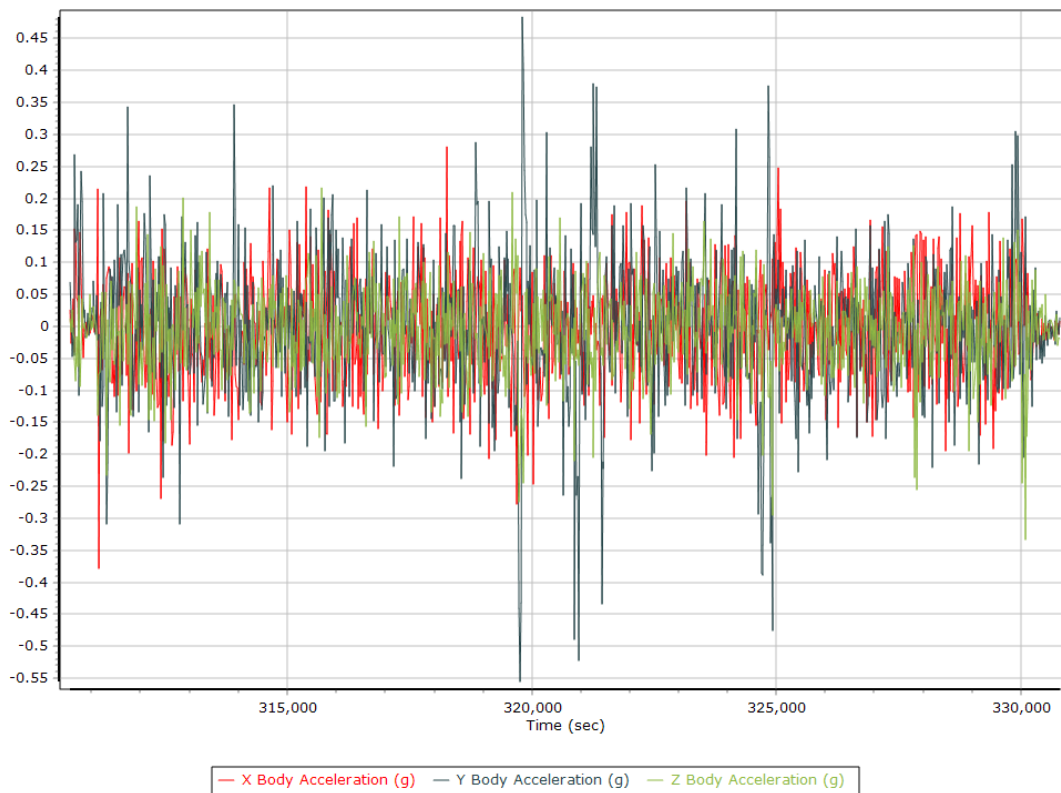
Total Speed



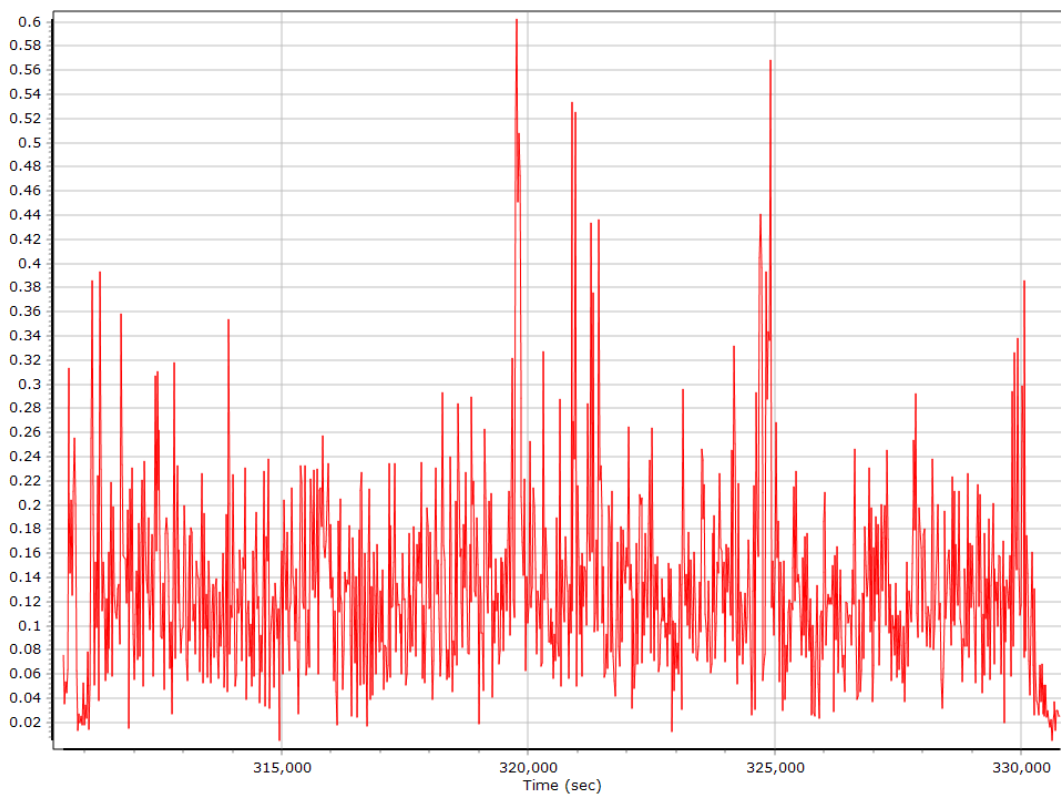
Ground Speed



Body Acceleration



Total Body Acceleration



Body Angular Rate

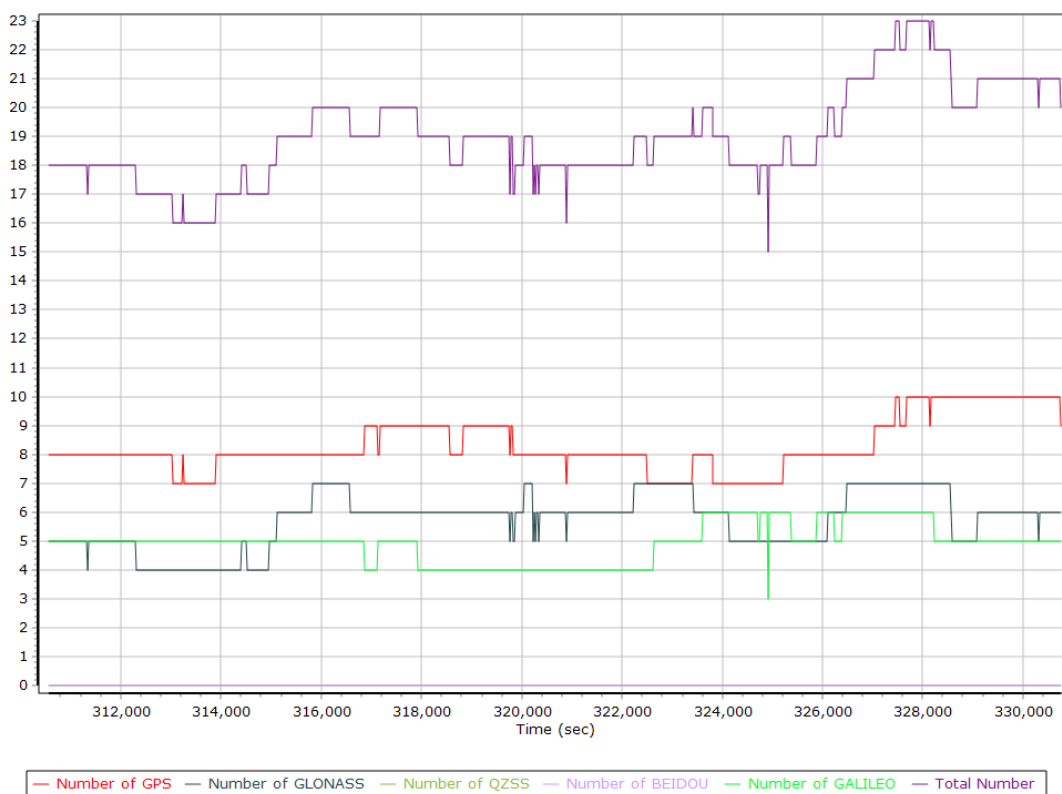


GNSS QC

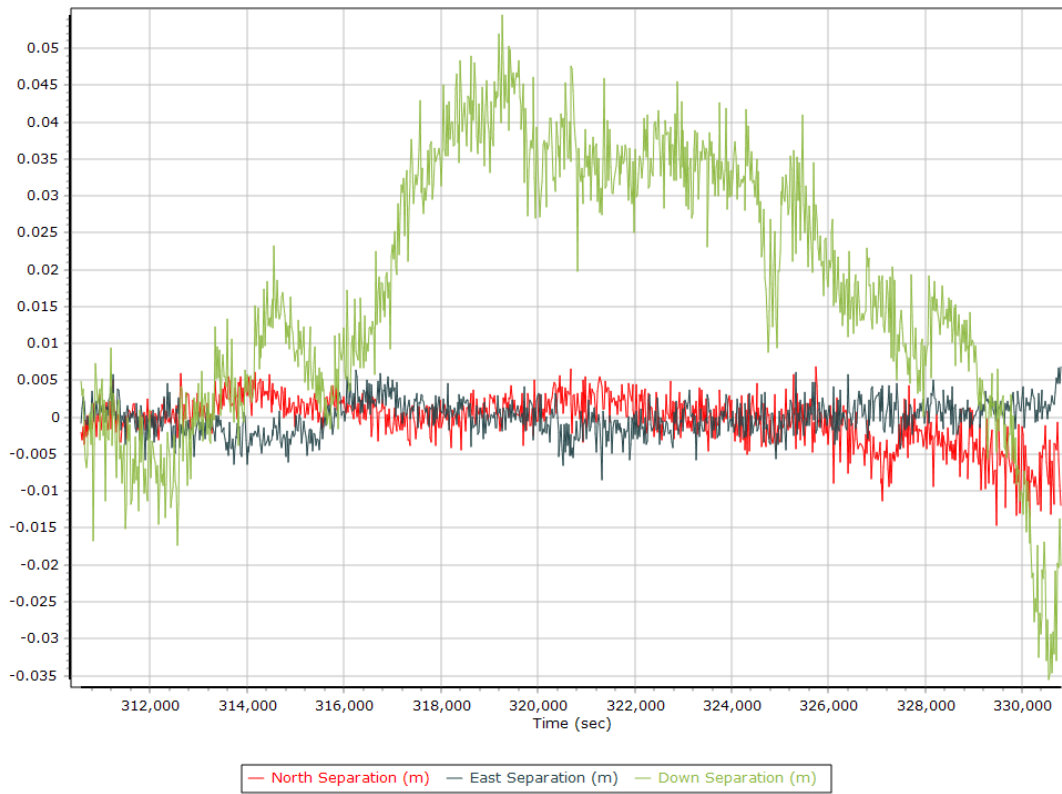
GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	3	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	2	6	5
Total number of SV	8	23	19
PDOP	0.99	3.39	1.22
QC Solution Gaps	0.00	0.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	20930.00	0.00	0.00
Percentage	100.00	0.00	0.00

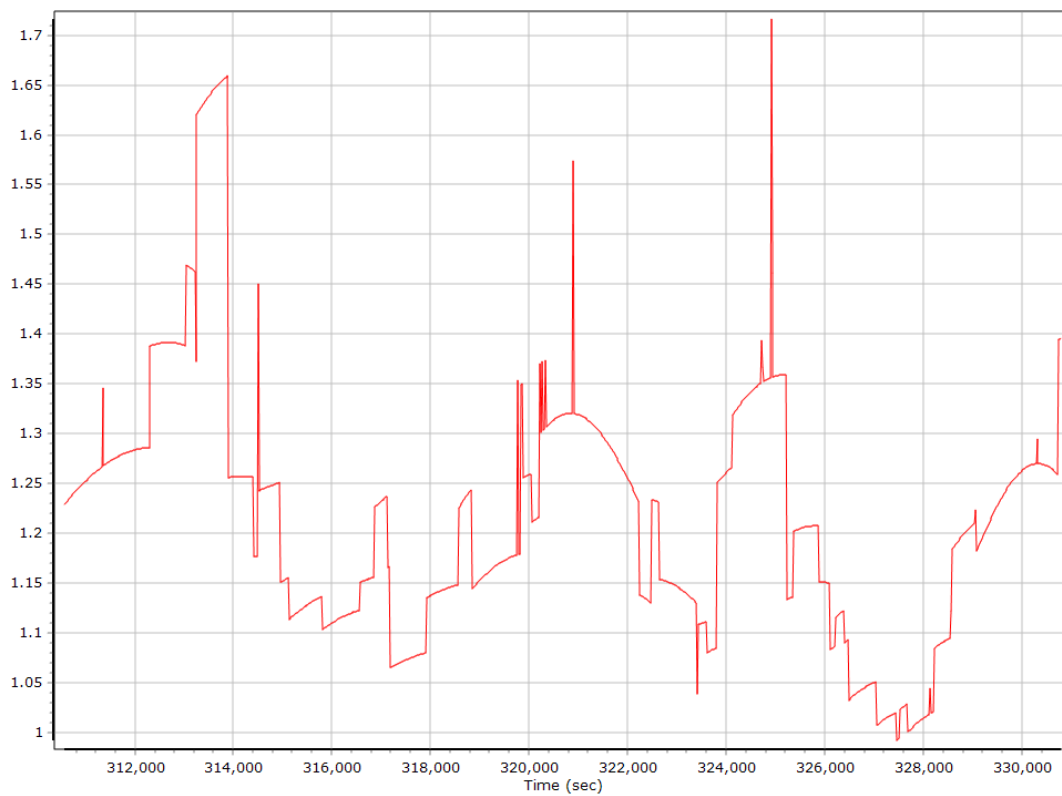
Num SVs in solution



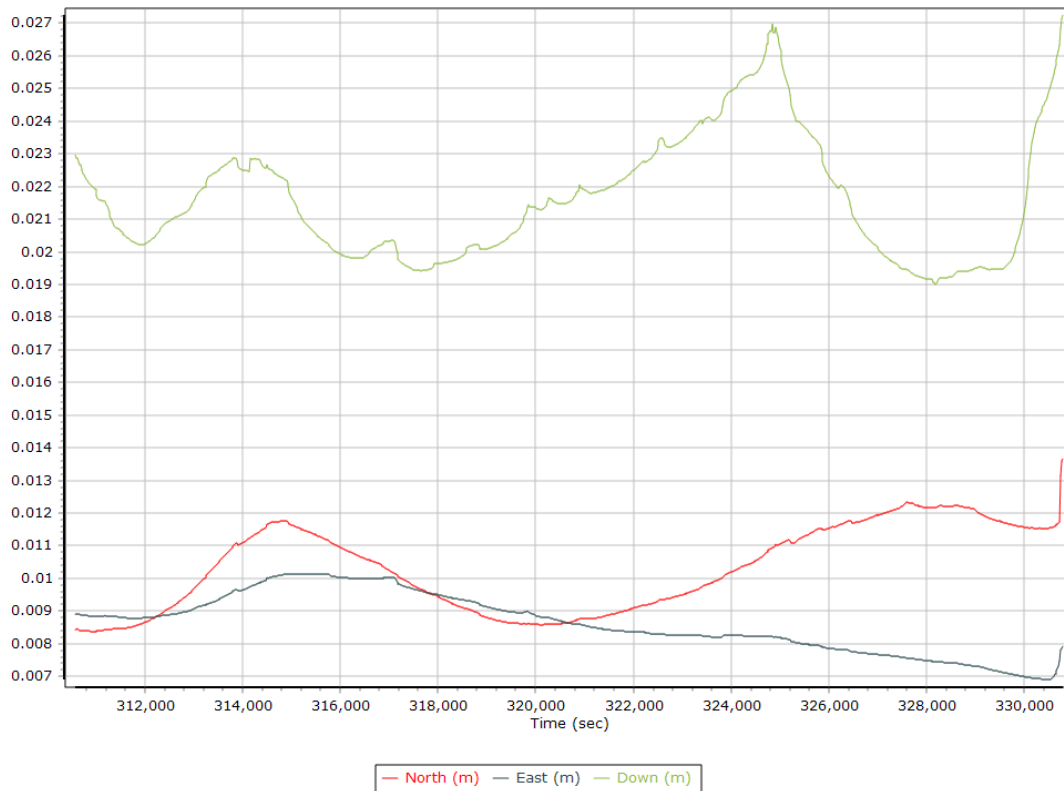
Forward/Reverse Separation



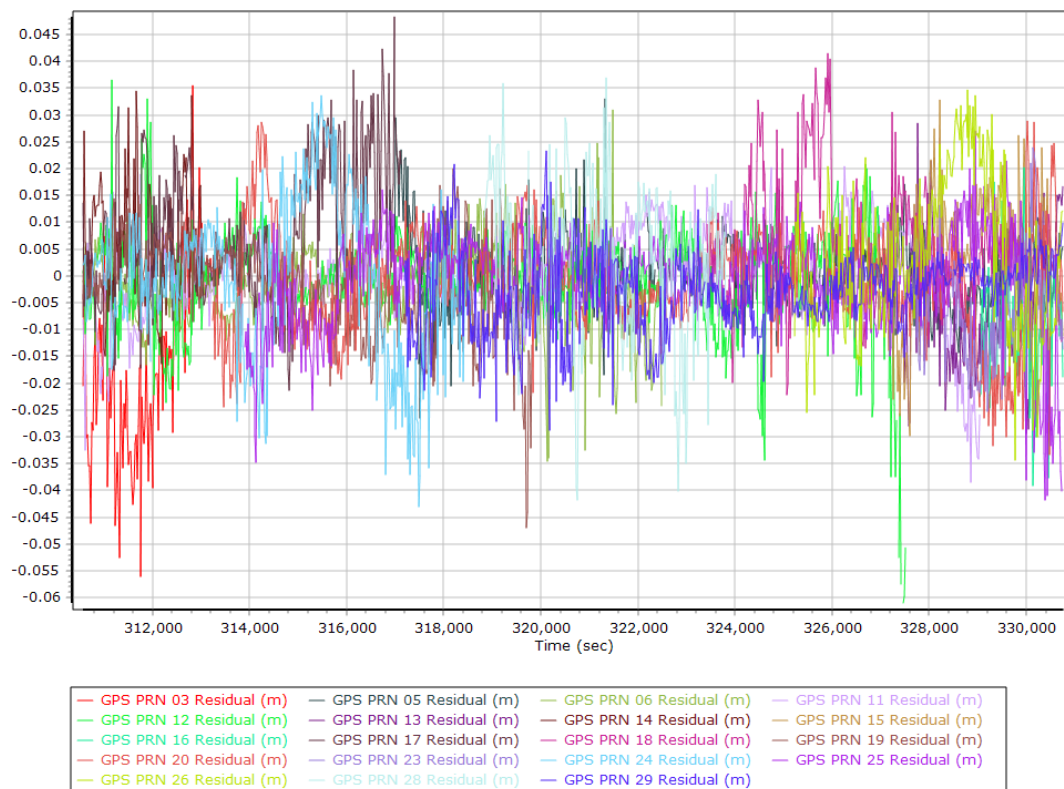
PDOP



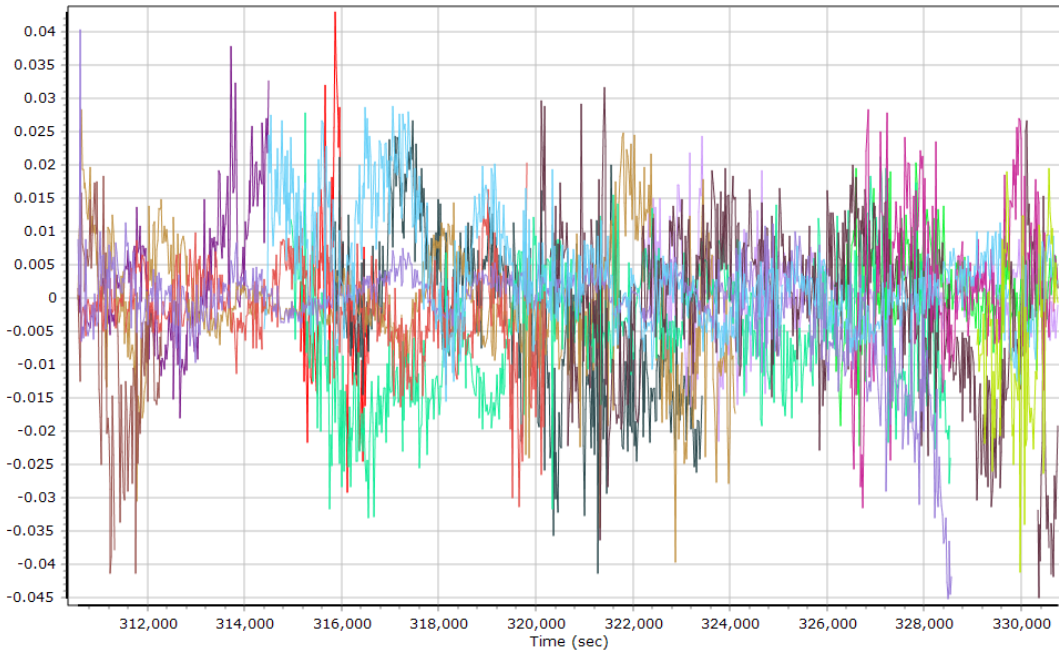
Estimated Position Accuracy



GPS Residuals

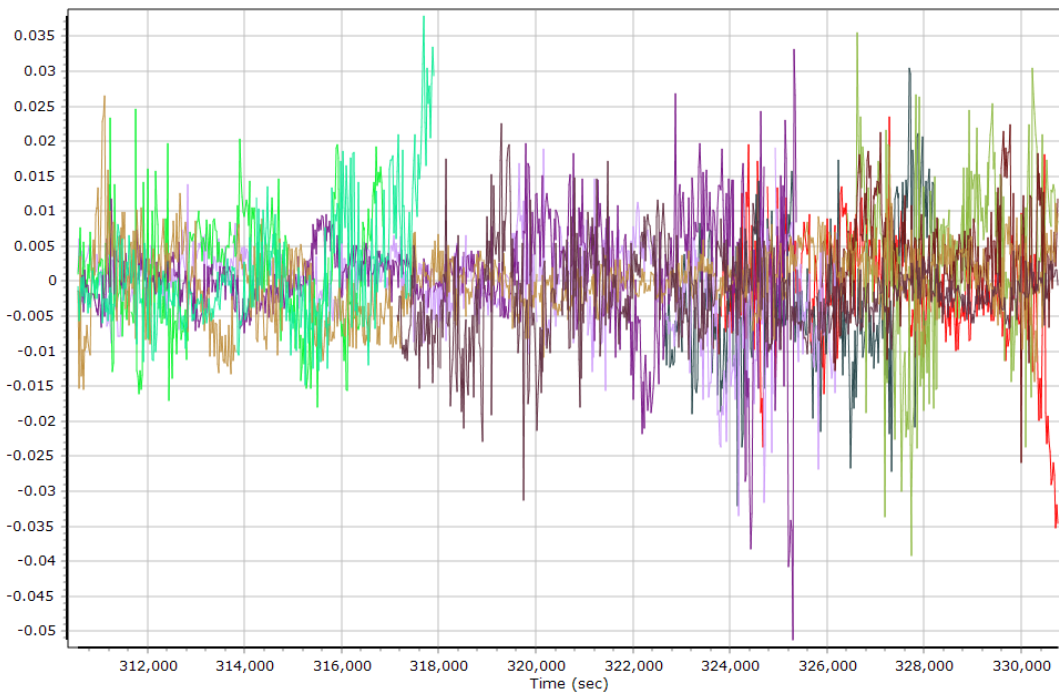


GLONASS Residuals



- | | | | |
|-------------------------|-------------------------|-------------------------|-------------------------|
| GLONASS 04 Residual (m) | GLONASS 05 Residual (m) | GLONASS 06 Residual (m) | GLONASS 07 Residual (m) |
| GLONASS 08 Residual (m) | GLONASS 09 Residual (m) | GLONASS 10 Residual (m) | GLONASS 11 Residual (m) |
| GLONASS 12 Residual (m) | GLONASS 13 Residual (m) | GLONASS 14 Residual (m) | GLONASS 19 Residual (m) |
| GLONASS 20 Residual (m) | GLONASS 21 Residual (m) | GLONASS 22 Residual (m) | GLONASS 23 Residual (m) |
| GLONASS 24 Residual (m) | | | |

GALILEO Residuals



- | | | | |
|-------------------------|-------------------------|-------------------------|-------------------------|
| GALILEO 07 Residual (m) | GALILEO 08 Residual (m) | GALILEO 12 Residual (m) | GALILEO 13 Residual (m) |
| GALILEO 15 Residual (m) | GALILEO 21 Residual (m) | GALILEO 24 Residual (m) | GALILEO 26 Residual (m) |
| GALILEO 27 Residual (m) | GALILEO 33 Residual (m) | | |

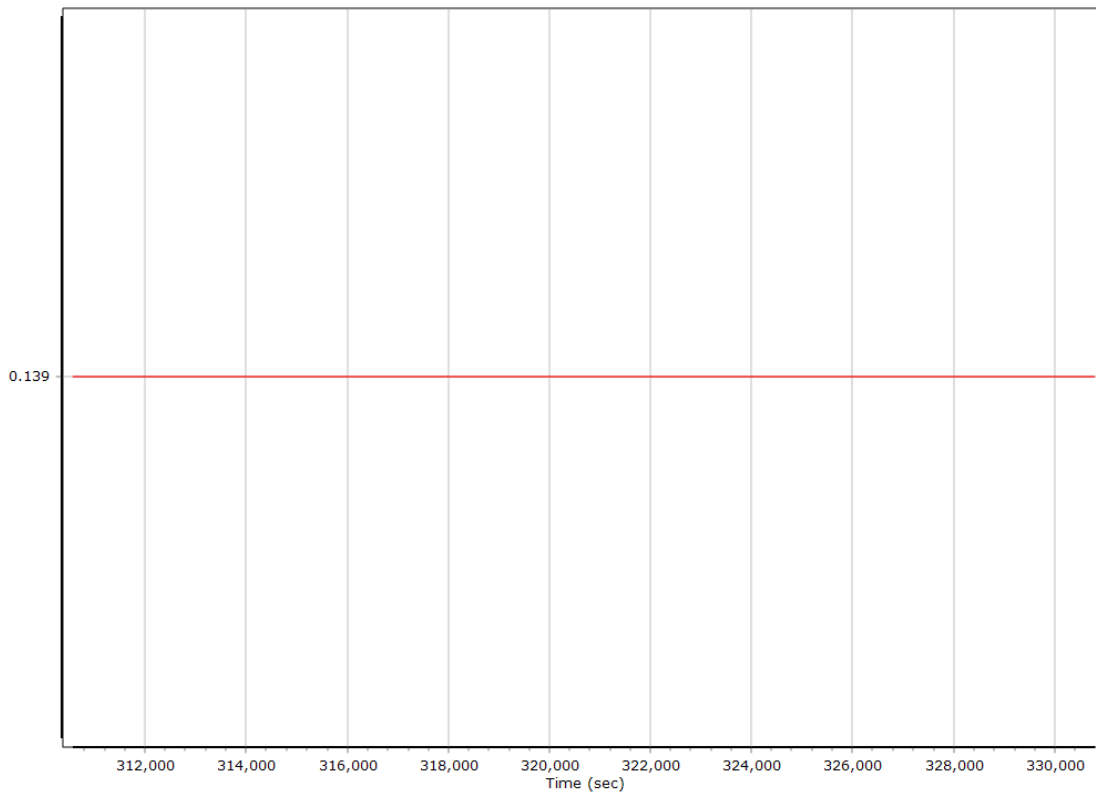
GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	False		
Processing start time	309815.000 (06/28/2023 14:03:35)		
Processing end time	330798.000 (06/28/2023 19:53:18)		
Initial attitude source	Real-Time VNAV/RNAV Attitude		
IMU Sensor Context	Processing with Onboard IMU		
Reference to IMU lever arm (m)	0.000	0.000	0.000
Reference to IMU mounting angles (deg)	0.000	0.000	0.000
Reference to Primary GNSS lever arm (m)	0.139	0.045	-0.967
Reference 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

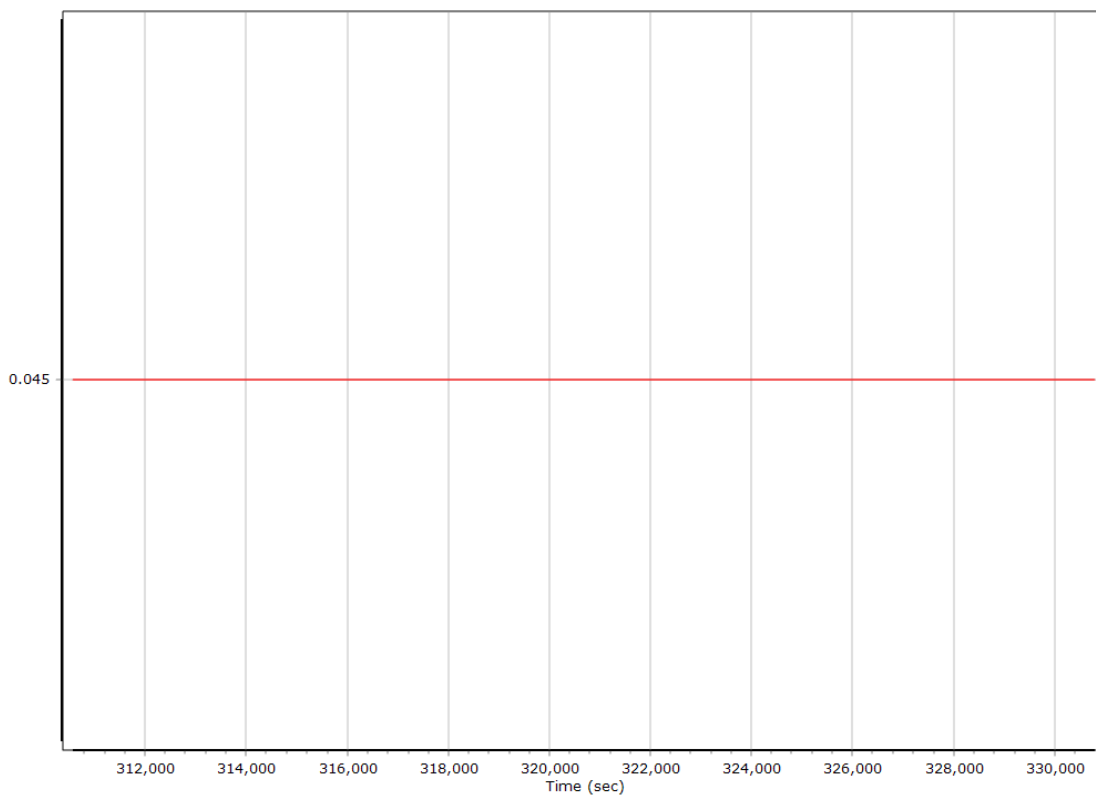
Calibrated Installation Parameters

Reference-Primary GNSS Lever Arm (m)

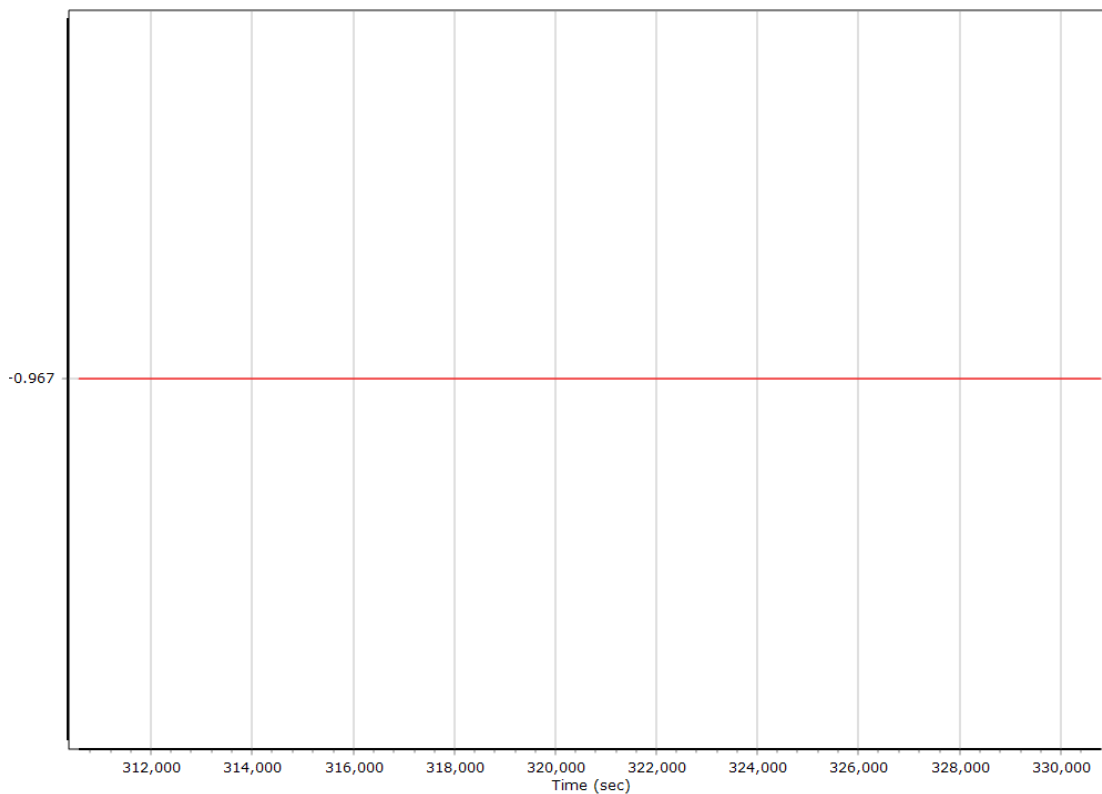
X Reference-Primary GNSS Lever Arm (m)



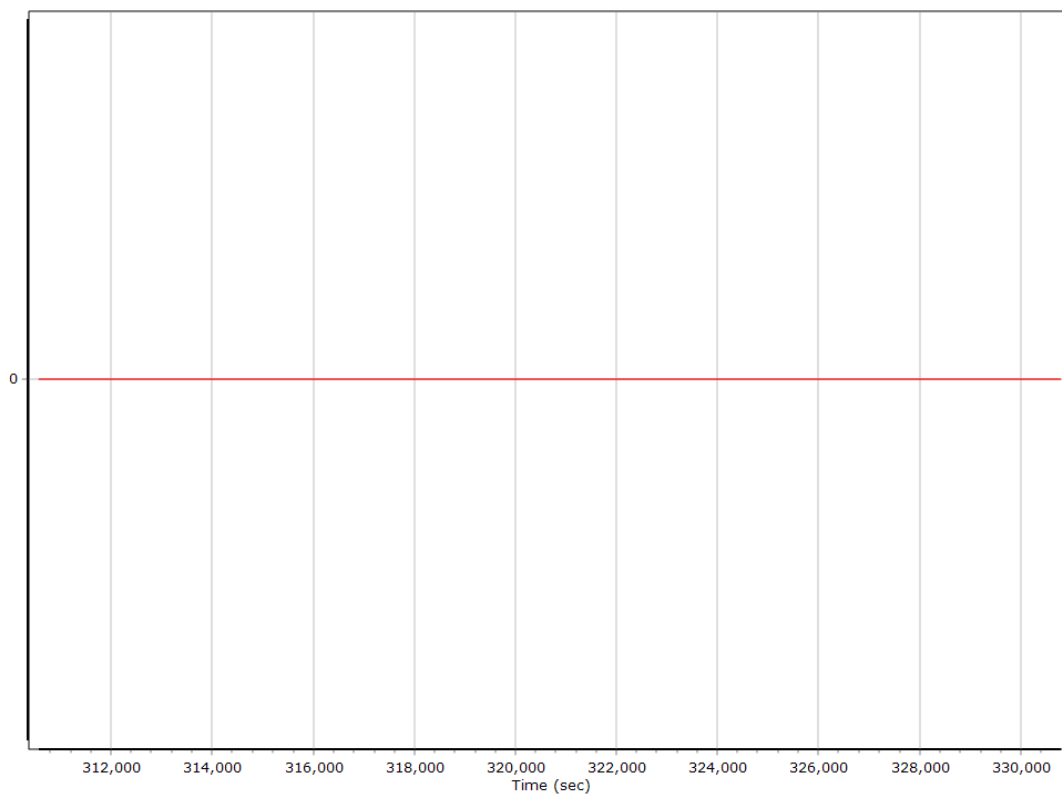
Y Reference-Primary GNSS Lever Arm (m)



Z Reference-Primary GNSS Lever Arm (m)



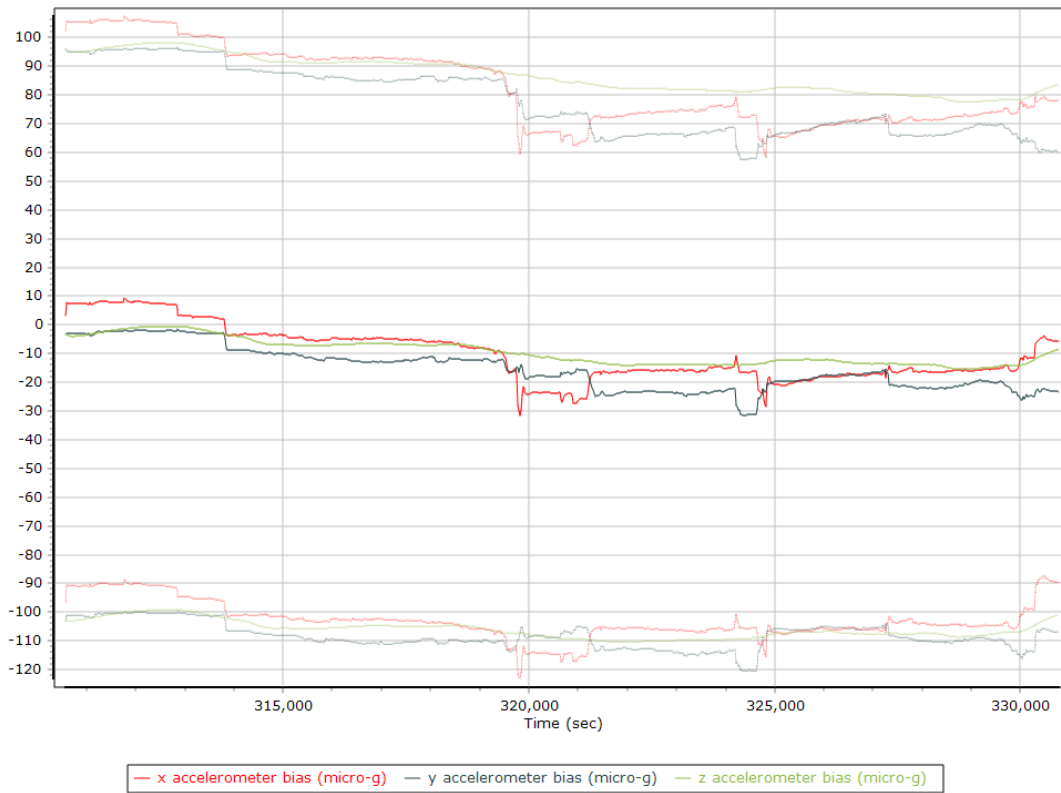
Reference-Primary GNSS Lever Arm Figure of Merit



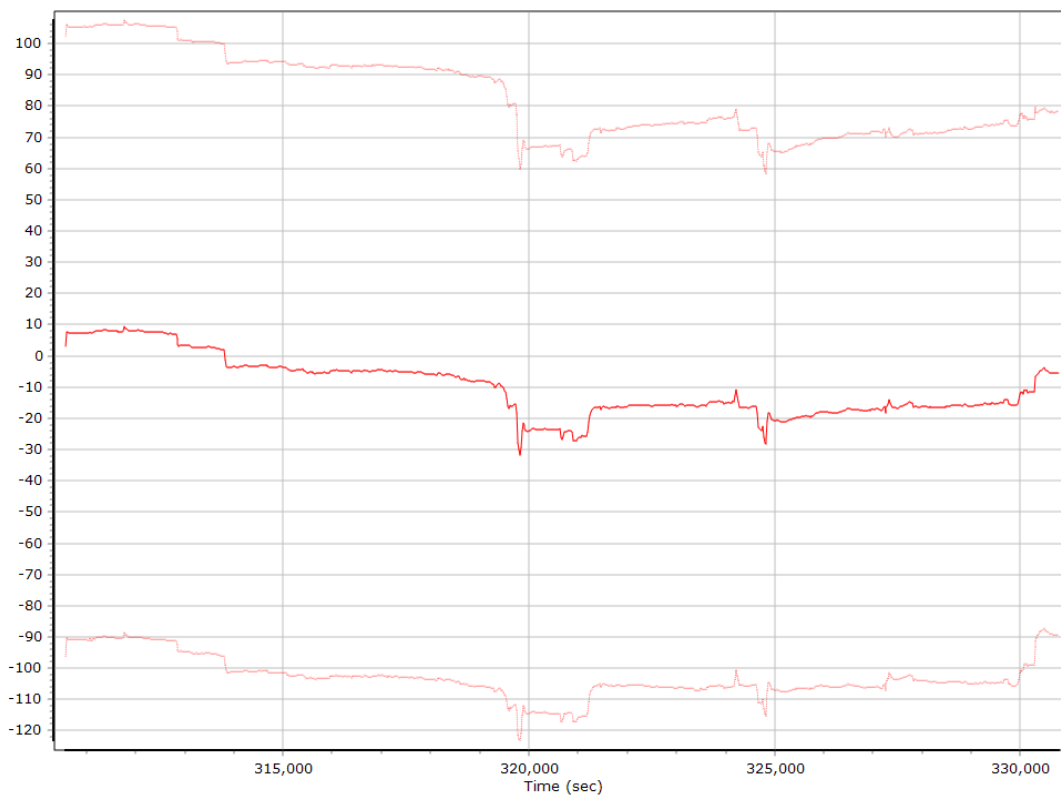
IN-Fusion QC

Forward Processed Estimated Errors, Reference Frame

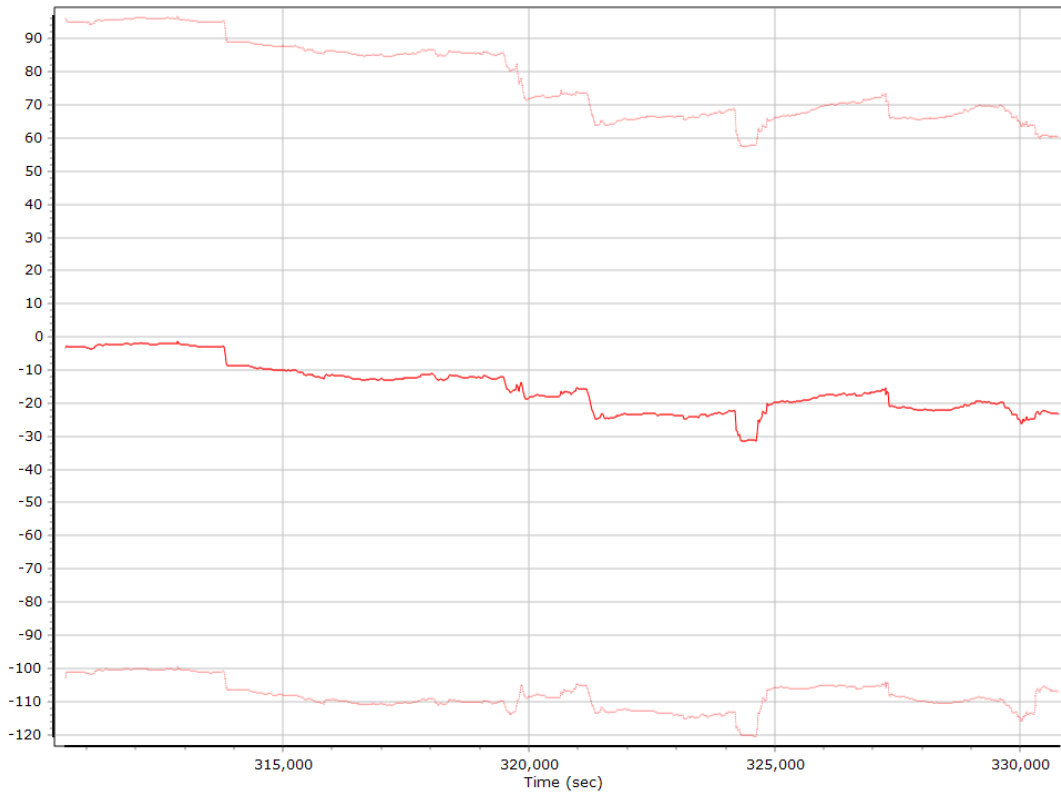
Accelerometer Bias (micro-g)



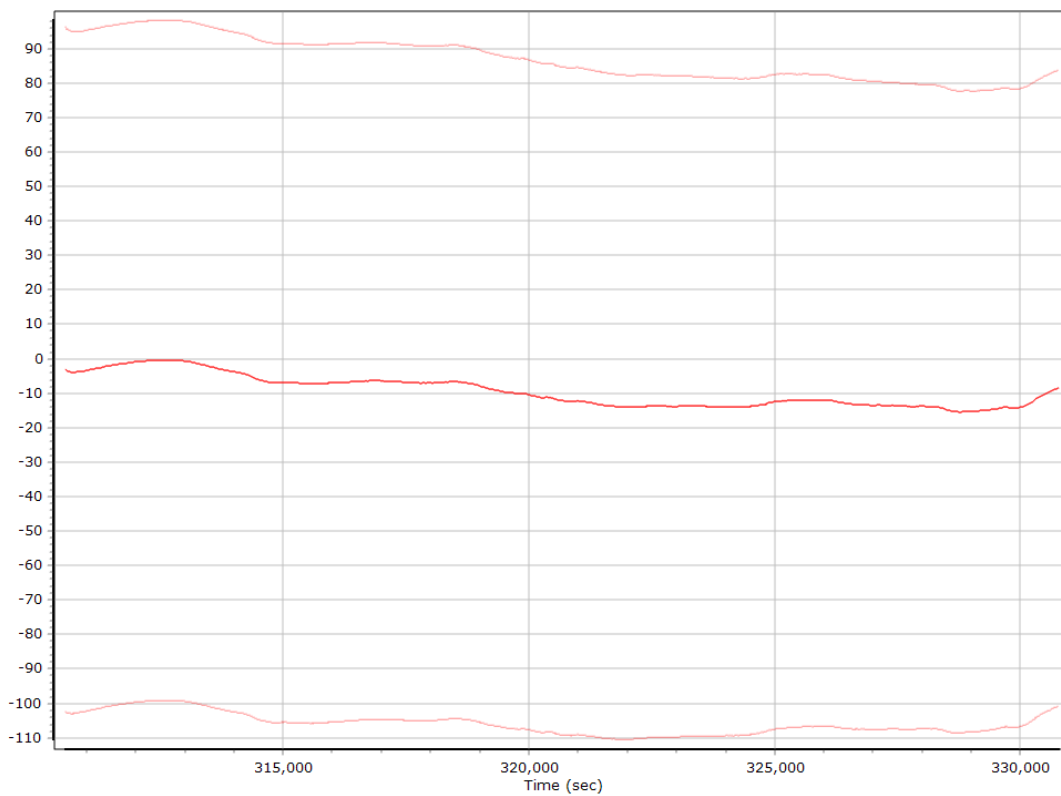
X Accelerometer Bias (micro-g)



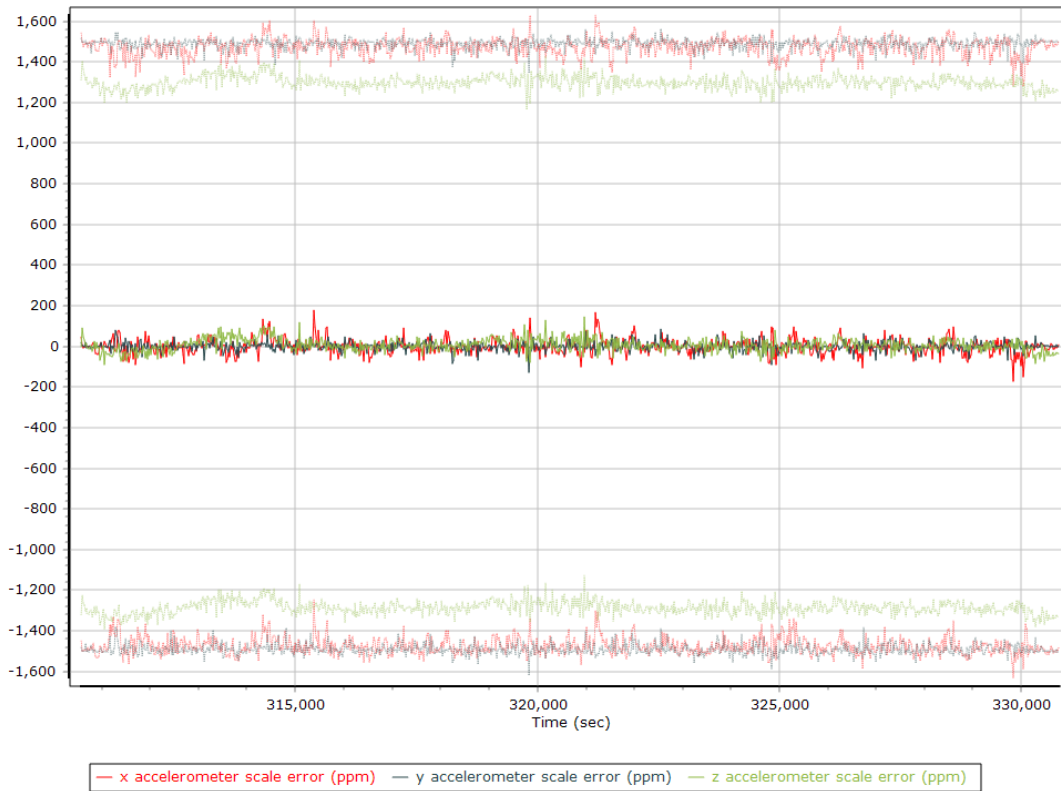
Y Accelerometer Bias (micro-g)



Z Accelerometer Bias (micro-g)



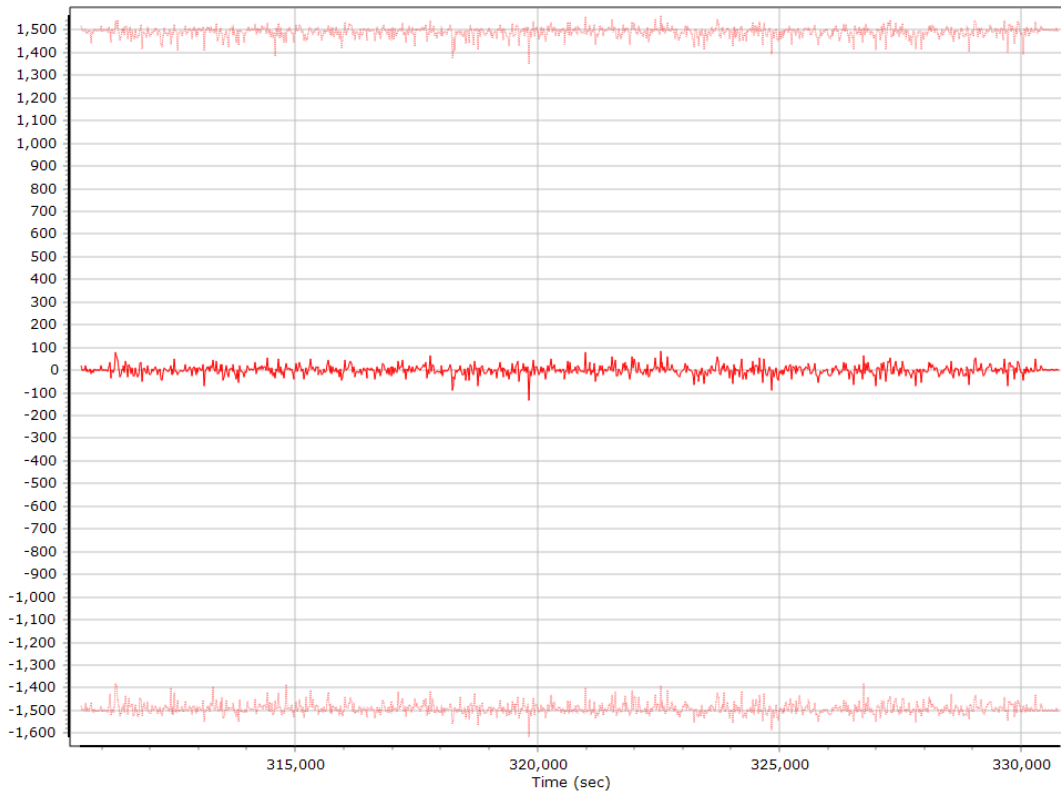
Accelerometer Scale Error (ppm)



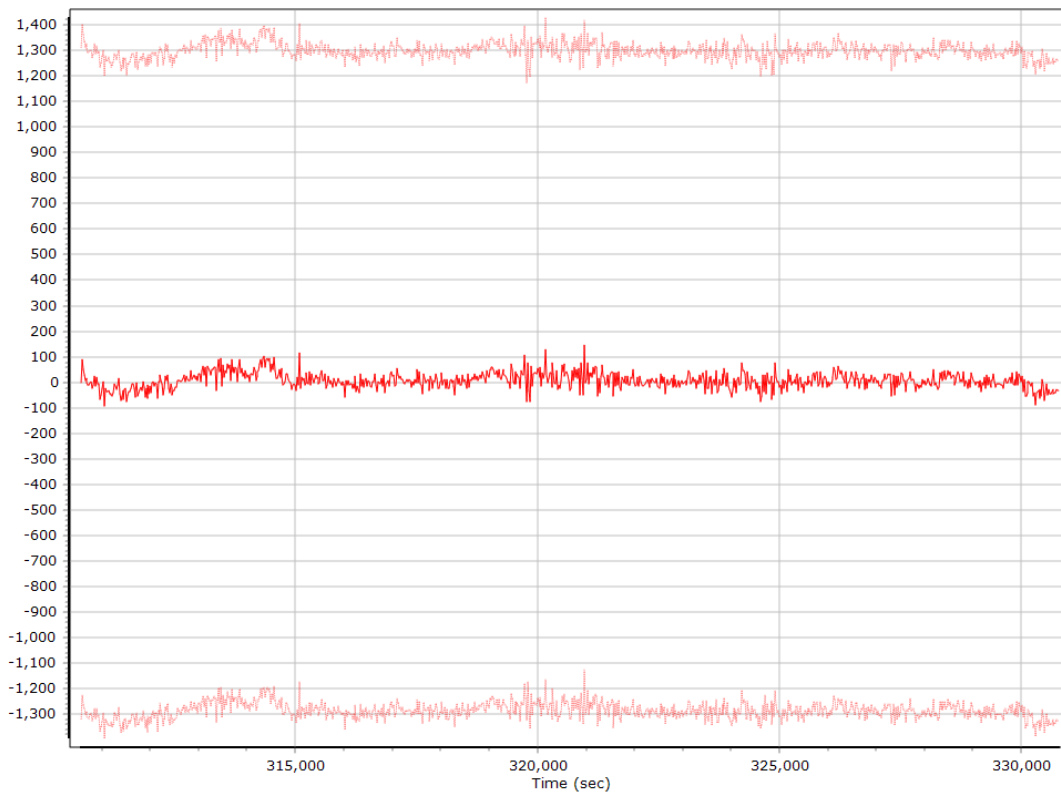
X Accelerometer Scale Error (ppm)



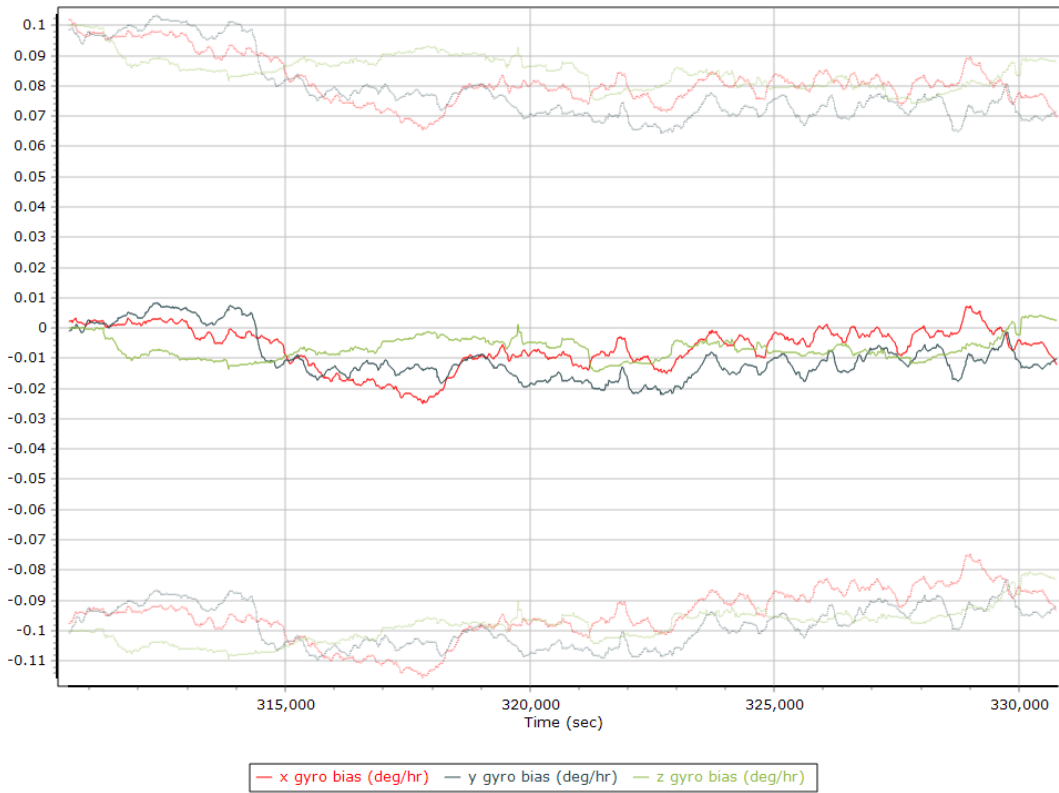
Y Accelerometer Scale Error (ppm)



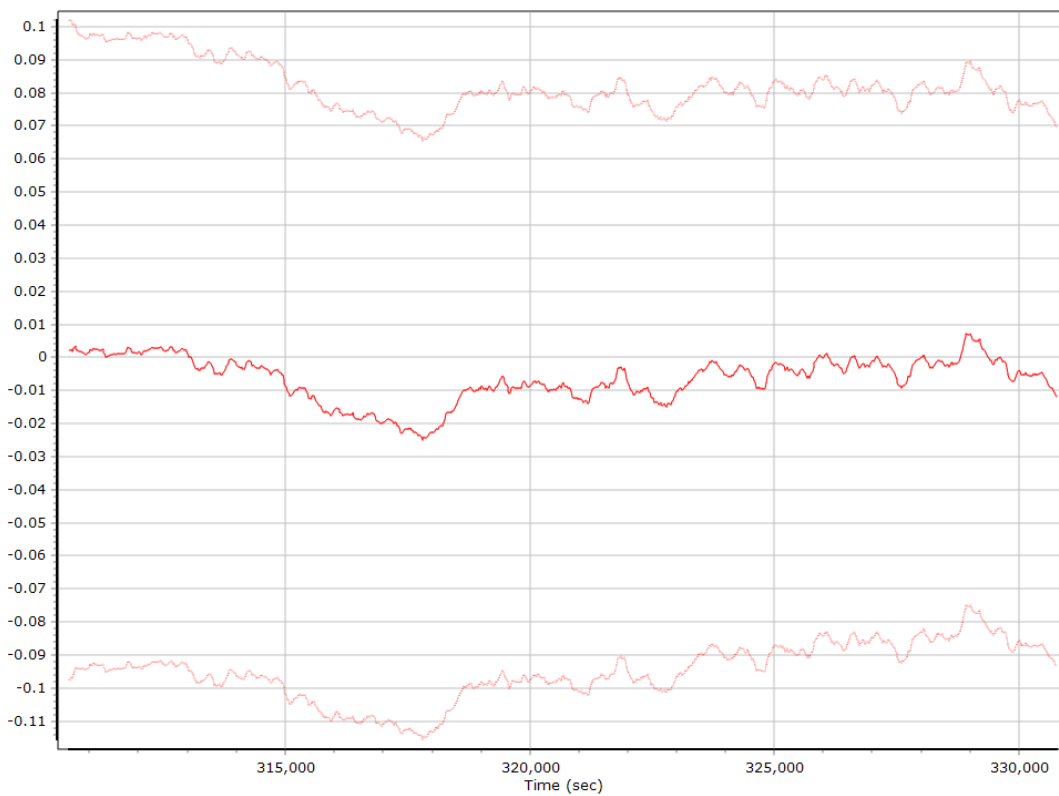
Z Accelerometer Scale Error (ppm)



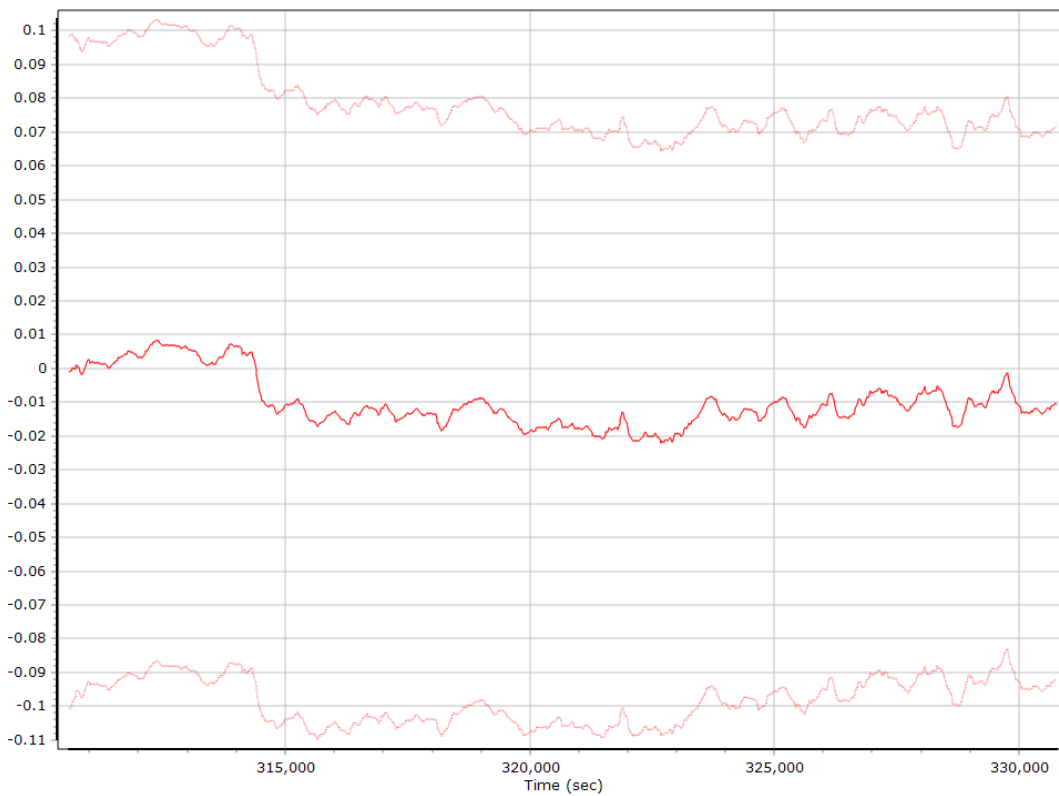
Gyro Bias (deg/h)



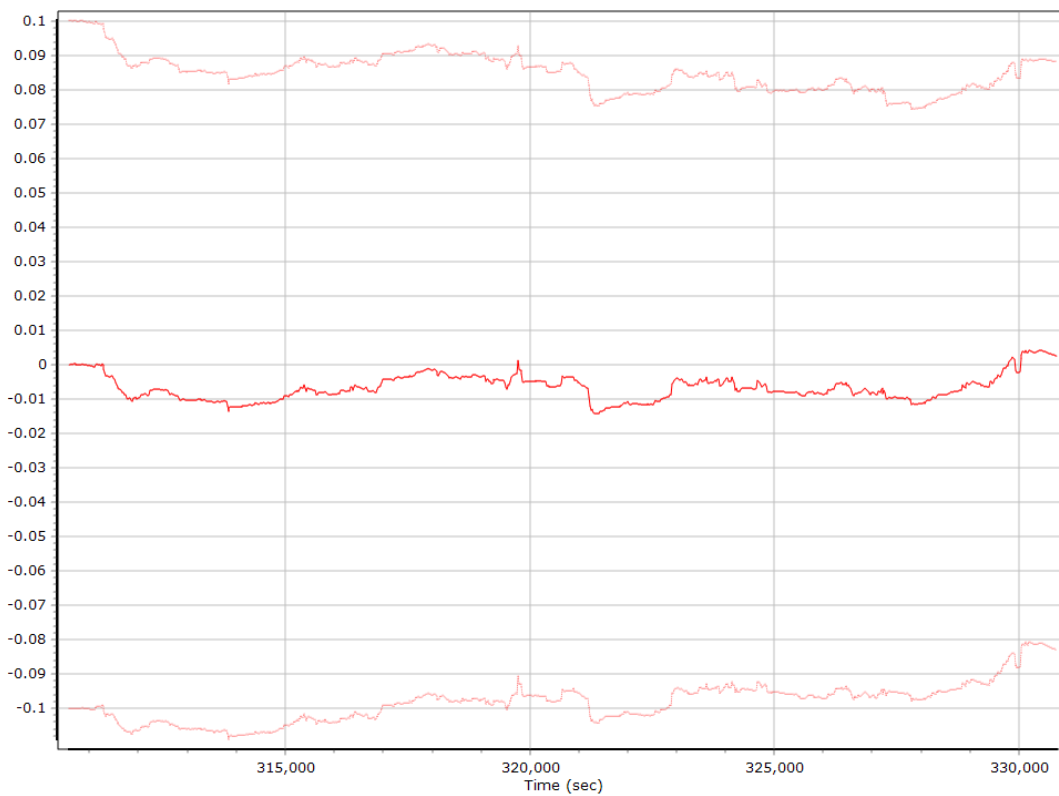
X Gyro Bias (deg/h)



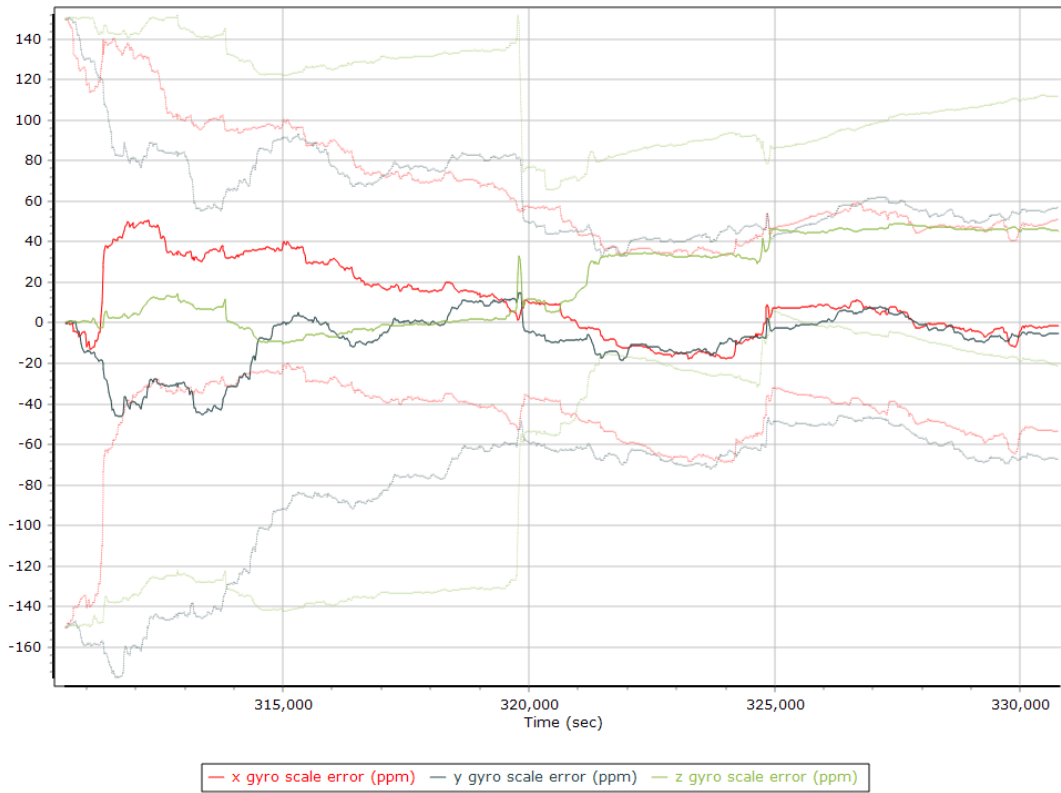
Y Gyro Bias (deg/h)



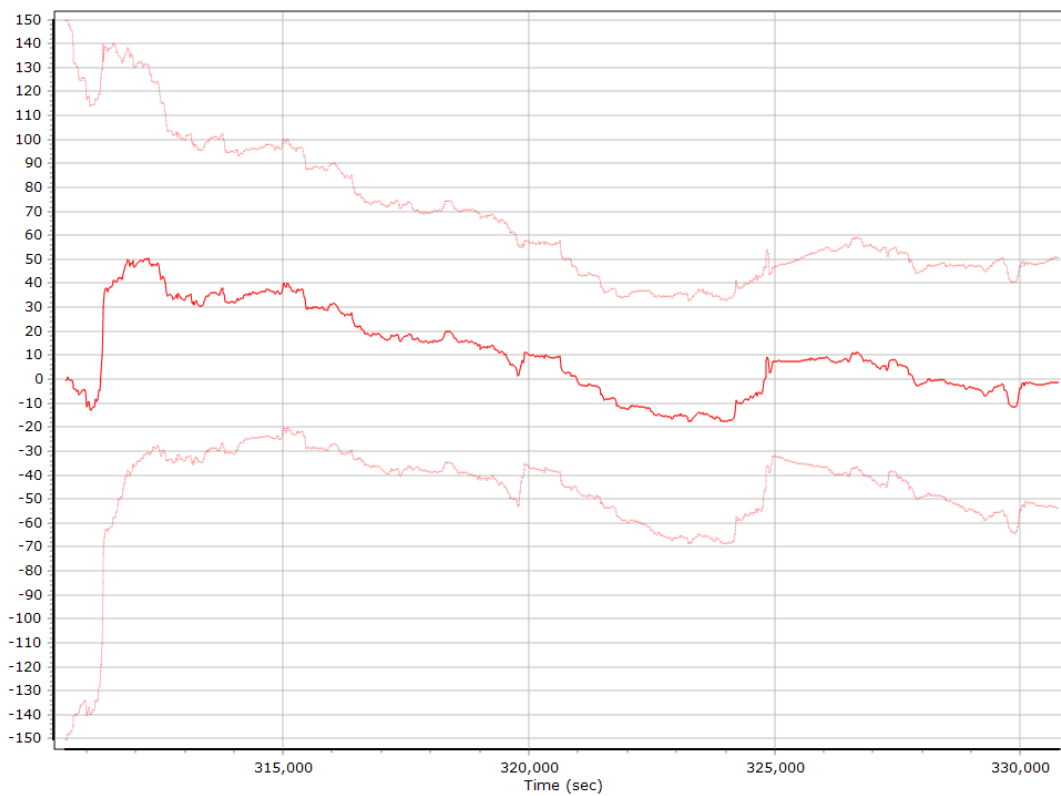
Z Gyro Bias (deg/h)



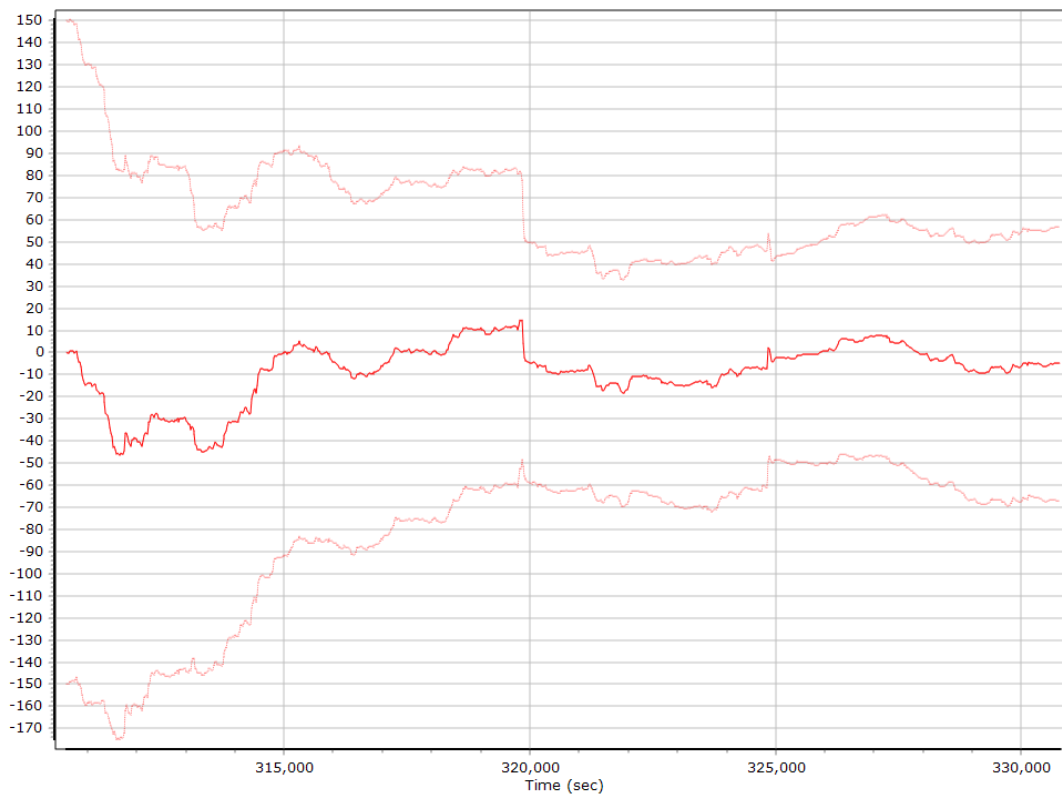
Gyro Scale Error (ppm)



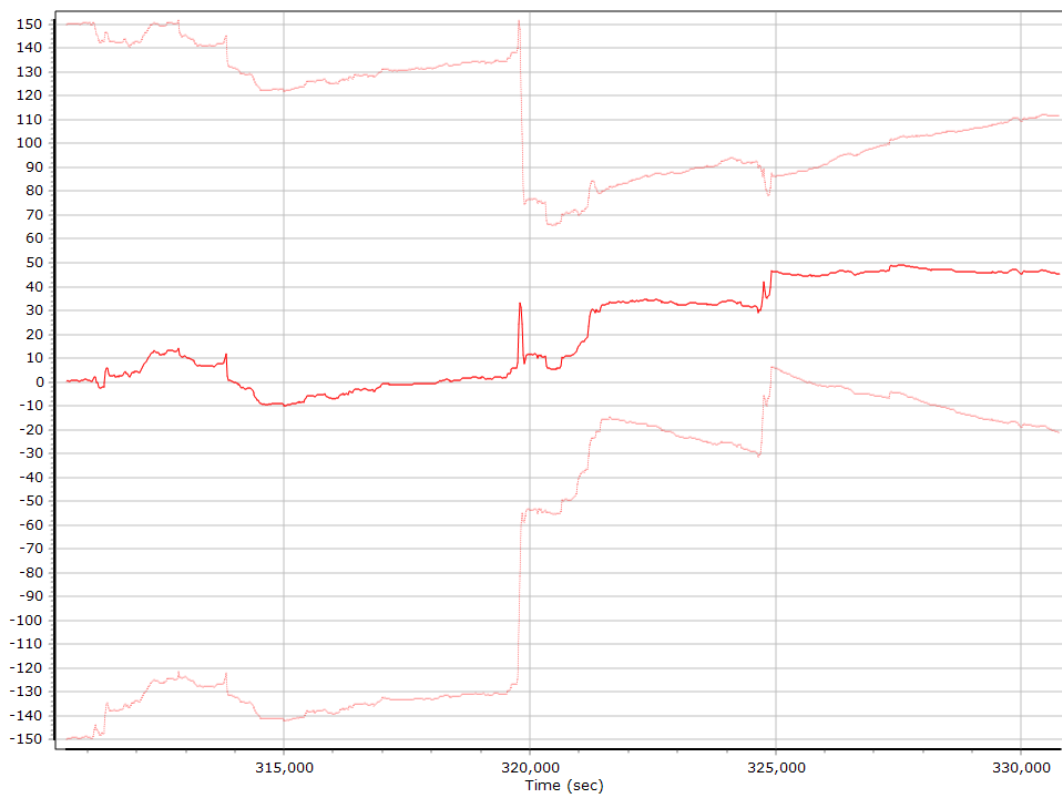
X Gyro Scale Error (ppm)



Y Gyro Scale Error (ppm)

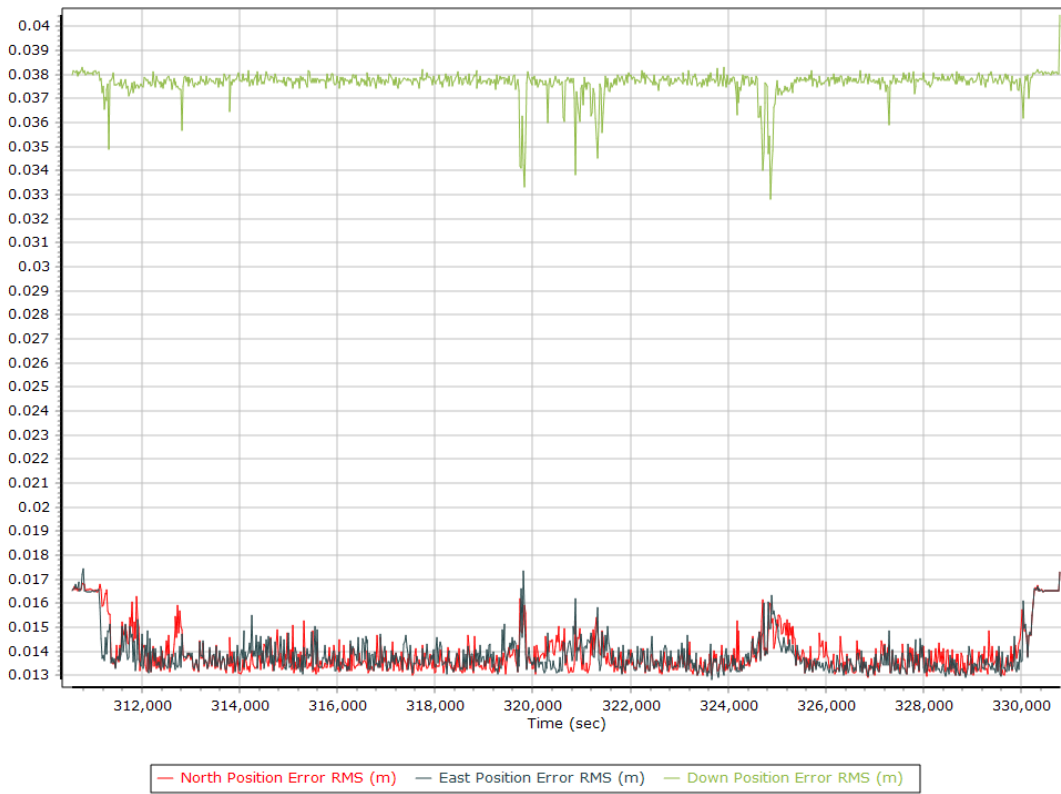


Z Gyro Scale Error (ppm)

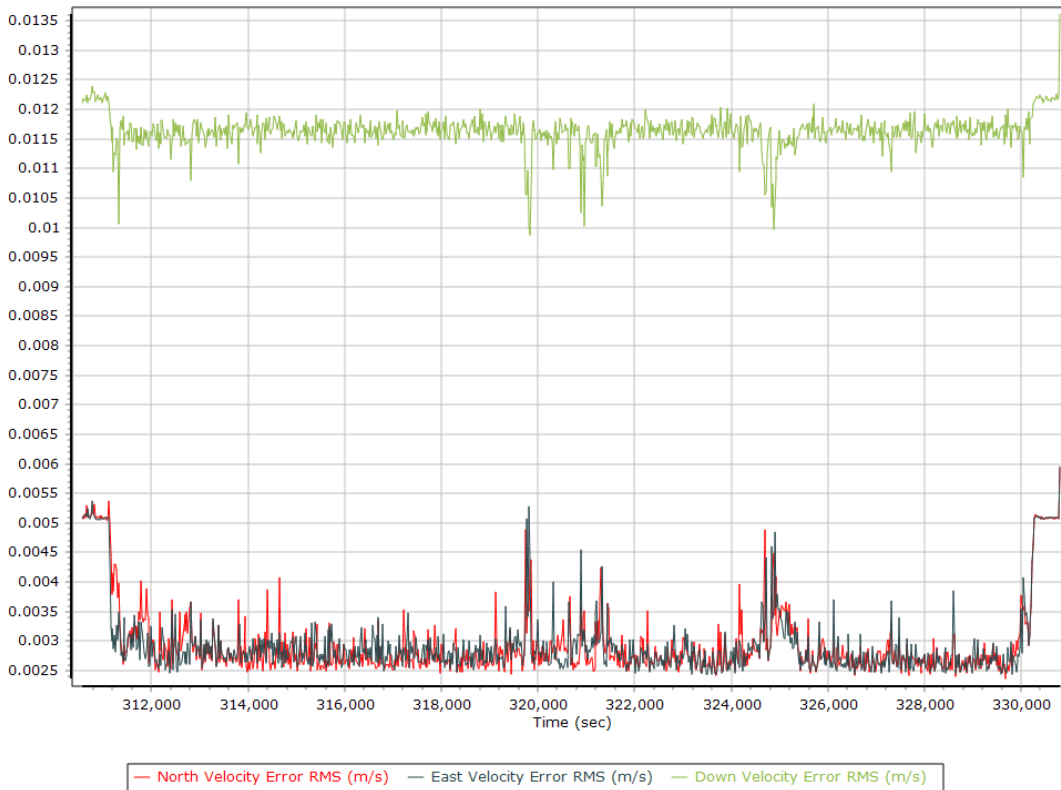


Smoothed Performance Metrics

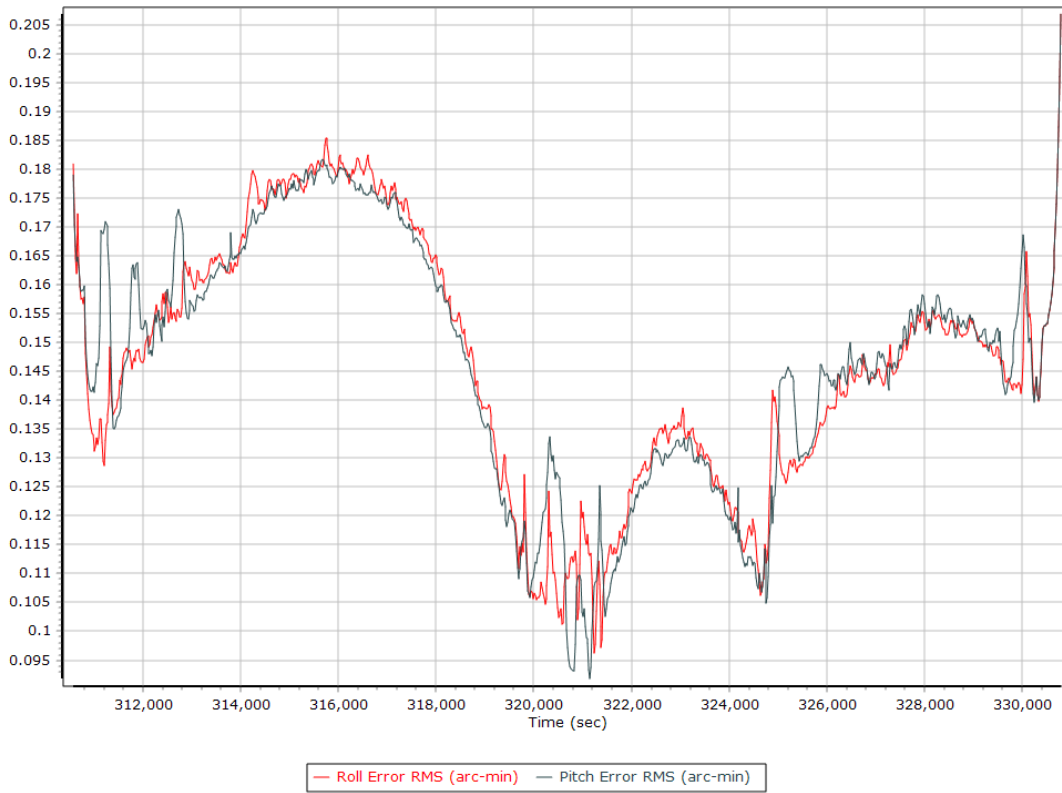
Position Error RMS (m)



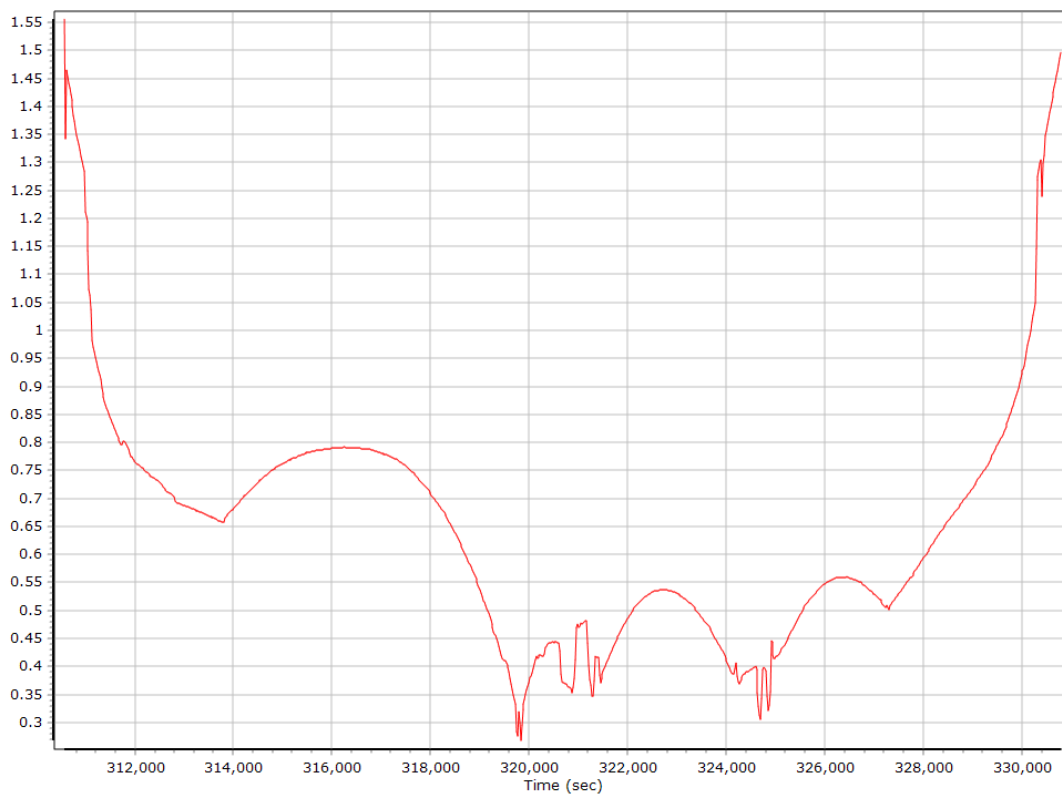
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

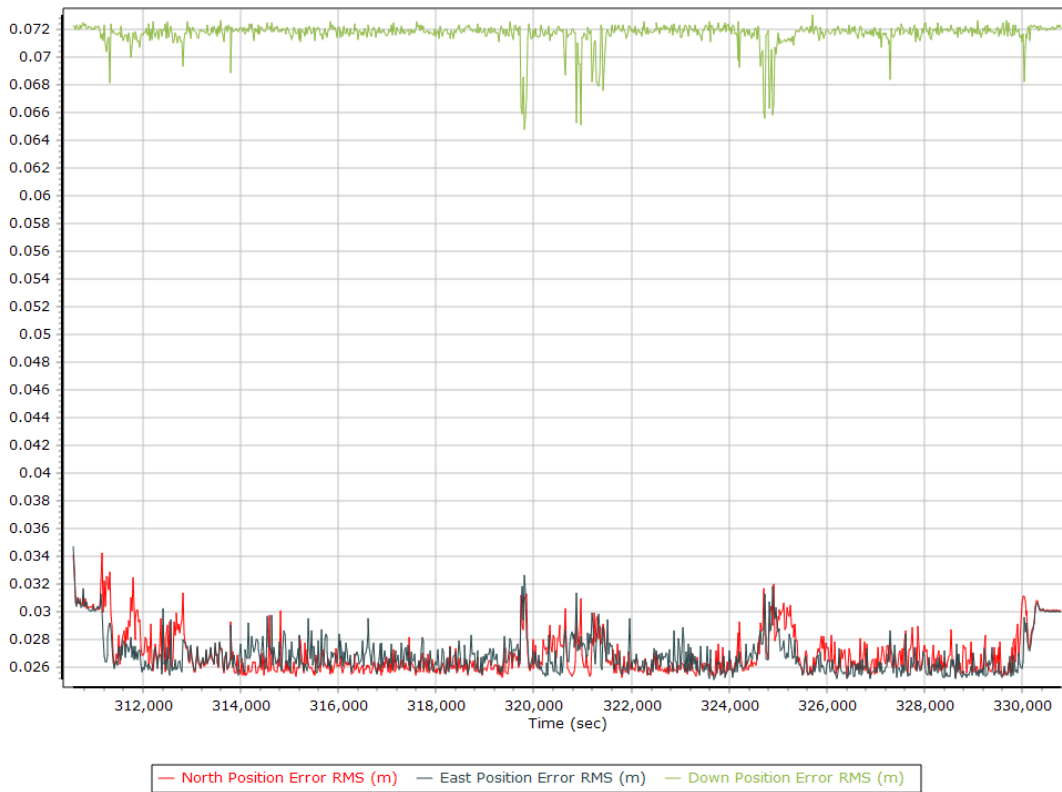


Heading Error RMS (arc-min)

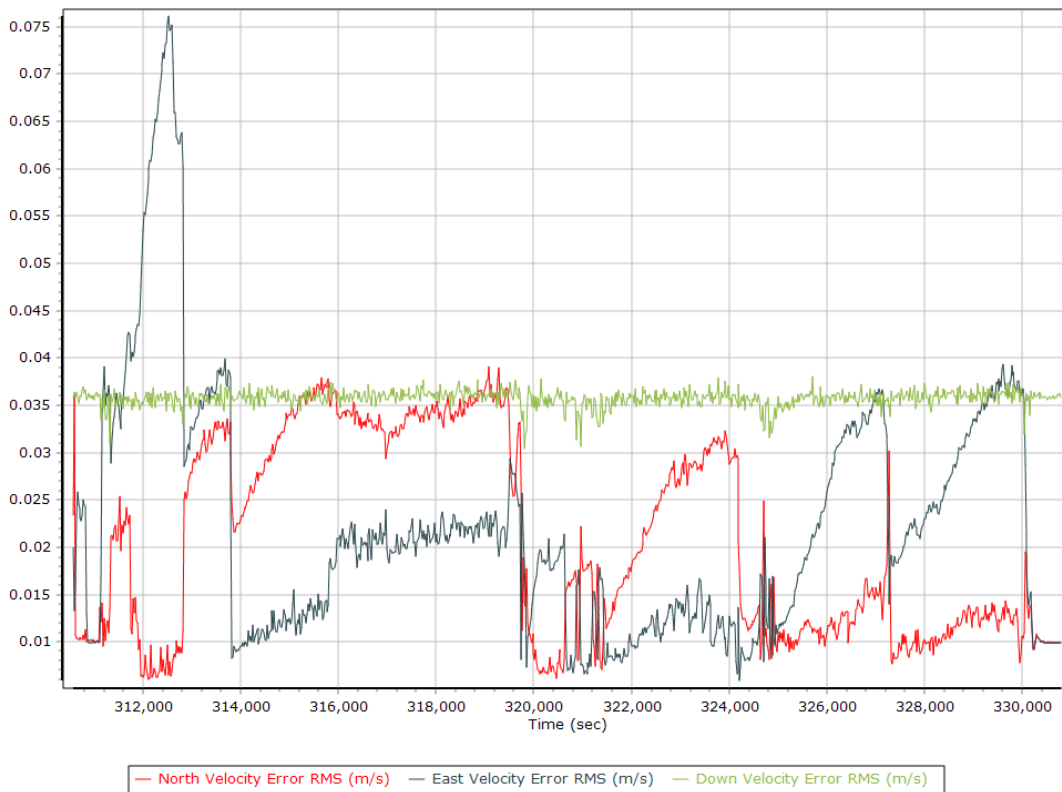


Forward Processed Performance Metrics

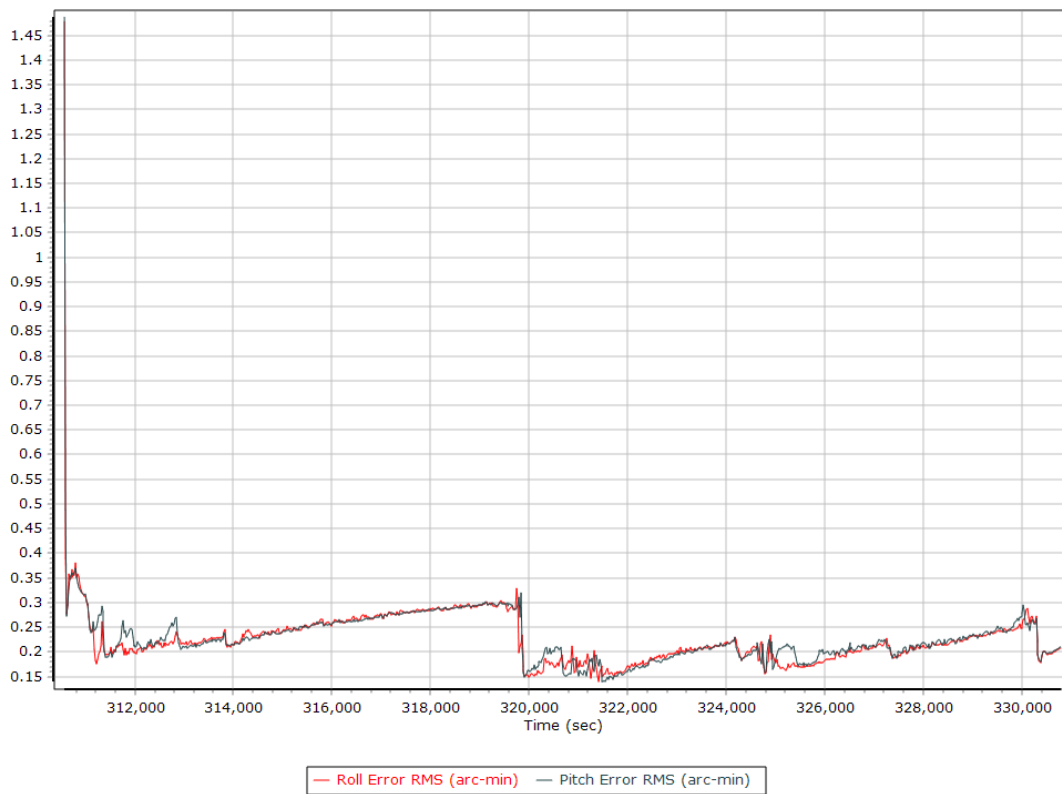
Position Error RMS (m)



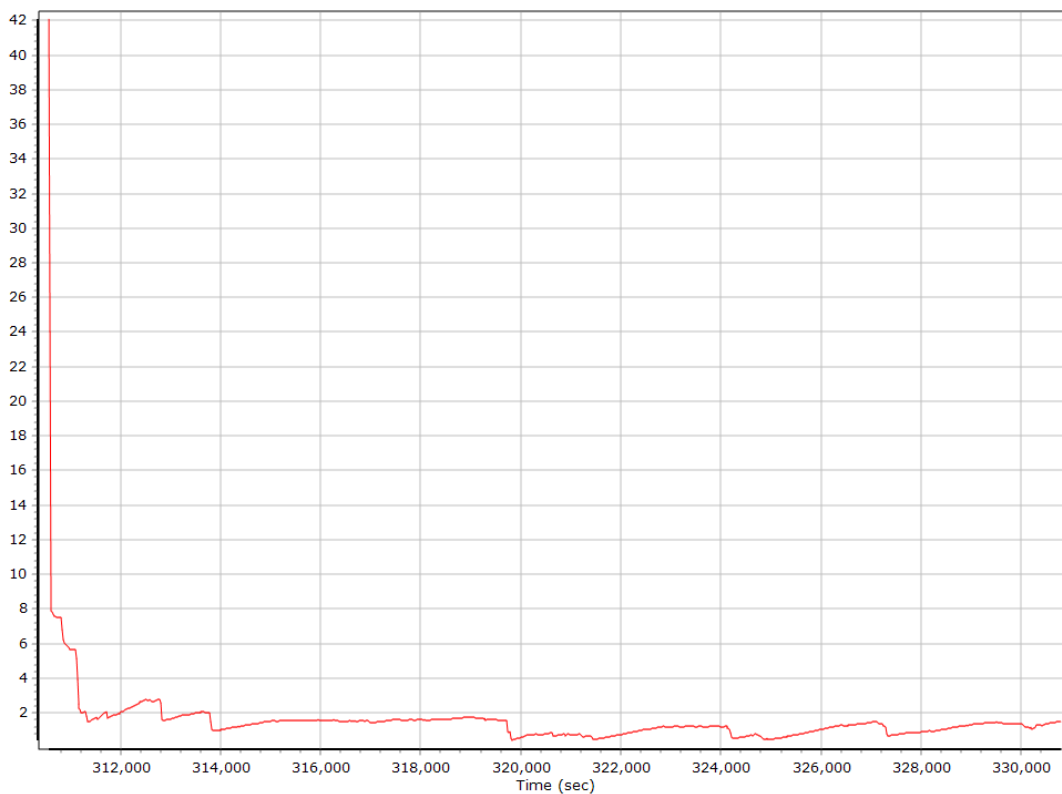
Velocity Error RMS (m/s)



Roll/Pitch Error RMS (arc-min)

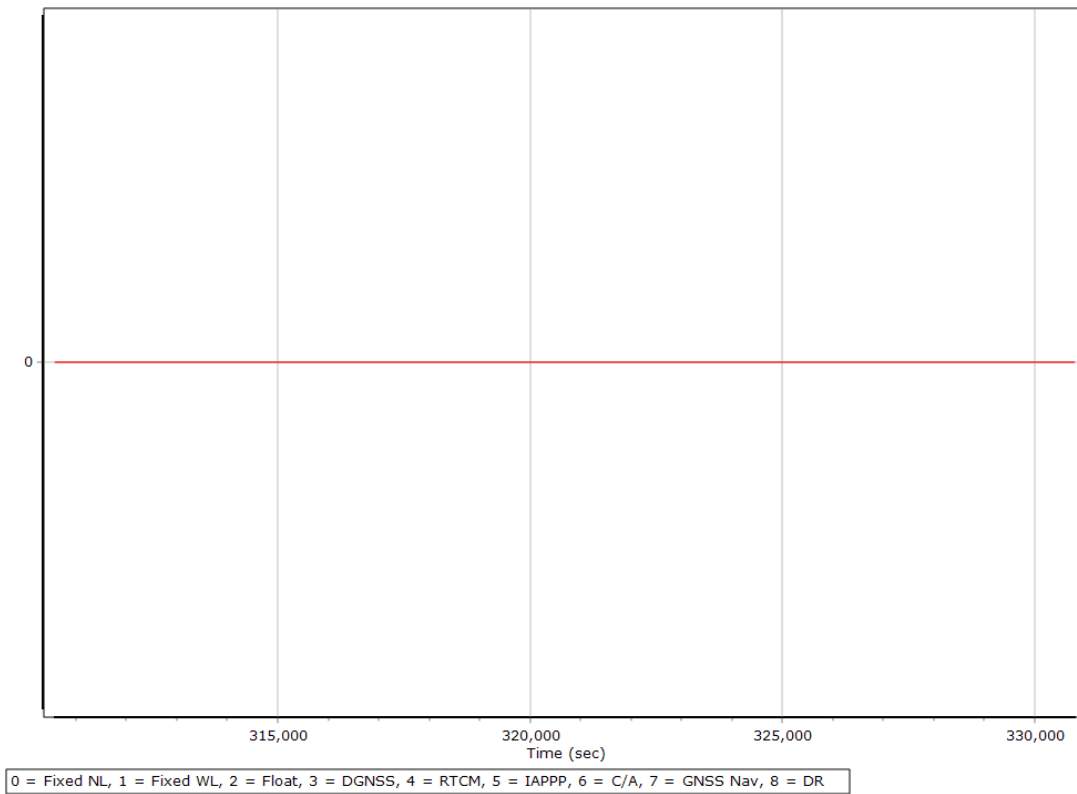


Heading Error RMS (arc-min)

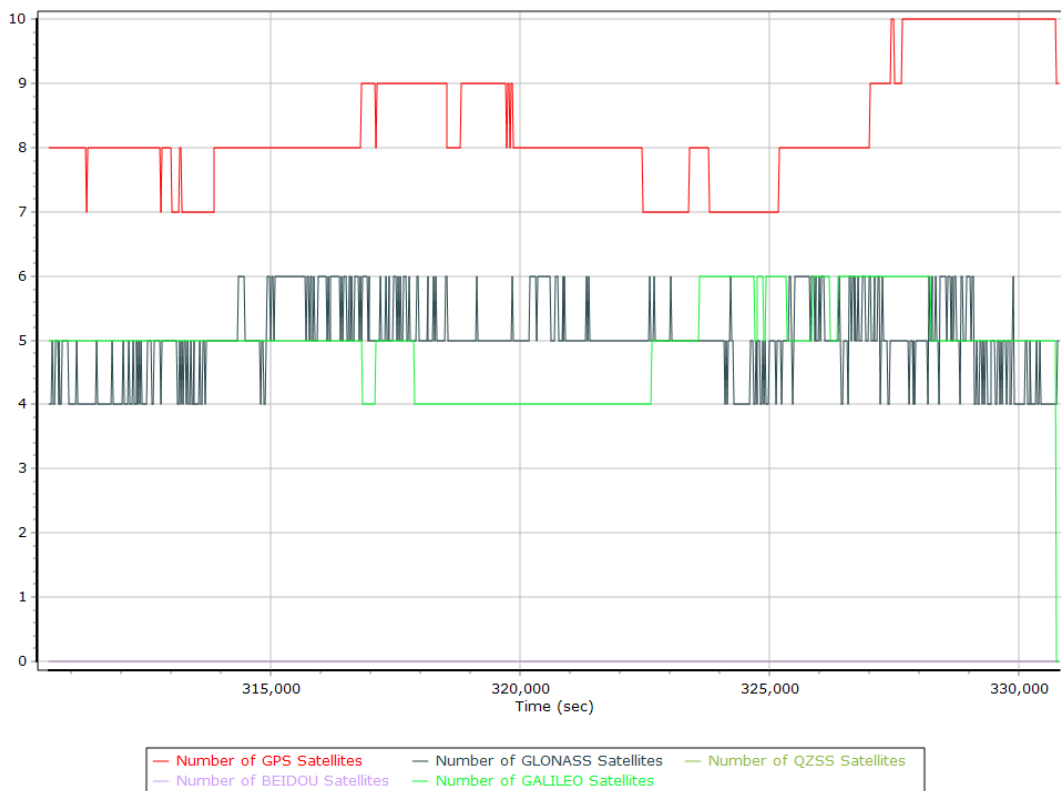


Forward Processed Solution Status

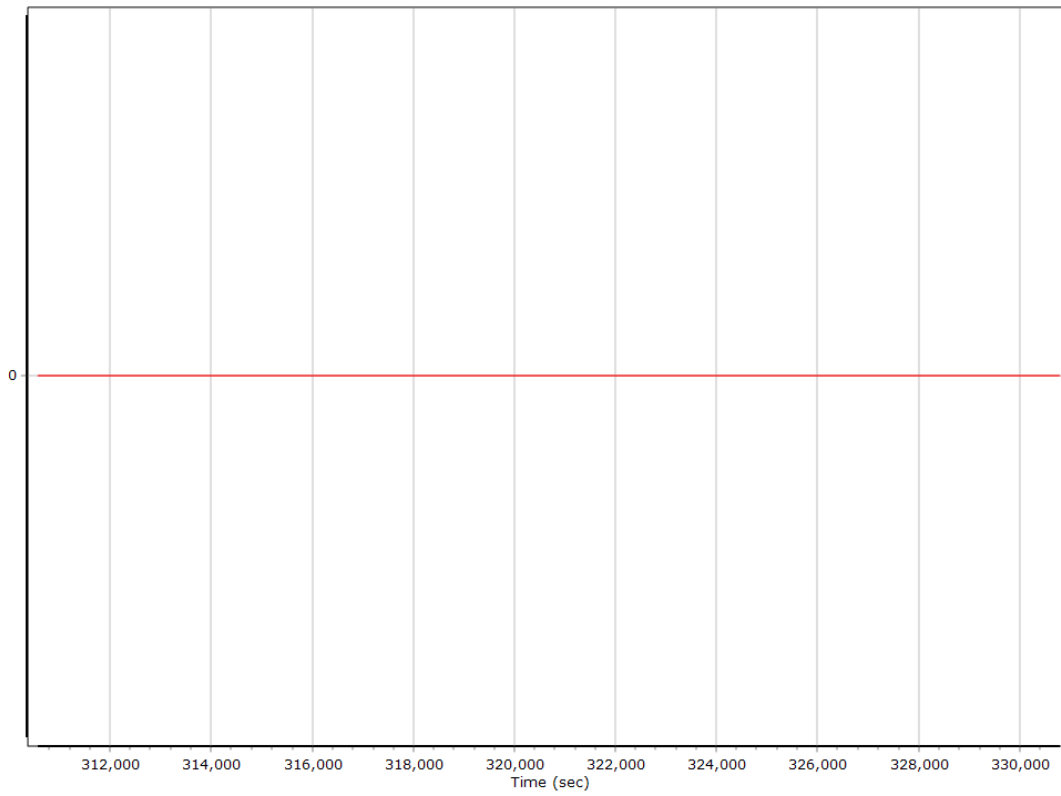
Processing Mode



Number of Satellites



Baseline Length



Export Summary

Export file	export_20230628_F1_IDS_4894_NAD832011.out		
Export format	Custom Smoothed BET		
Solution in use	Post-processed		
Output rate	All Records		
Reference to Output lever arm (m)	0.000	0.000	0.000
Reference mounting angles (deg)	0.000	0.000	0.000
Output units (Coordinate / Lat & Lon)	Meter	Deg Decimal	
Export start time	310512.001 (06/28/2023 14:15:12)		
Export end time	330798.001 (06/28/2023 19:53:18)		
Height option	Ellipsoid Height		
WGS84 height flag	False		
Grid	Universal Transverse Mercator		
Zone	UTM North 12 (114W to 108W)		
Datum	NAD83 (2011)		
Ellipsoid	GRS 1980		
Local Transformation	NONE		
Target Epoch	2023.487671		