

## General Information

### Mission Information

Project name	20220924_F1
Processing date	2022-09-28 02:22:41
Mission date	2022-09-24 15:40:49
Mission duration	05:12:36.000
Processing mode	IN-Fusion PP-RTX

### Rover Hardware Information

Product	POS AV 510 VER6 HW2.4-11
Serial number	S/N6463
IMU type	46
Receiver type	BD982
Antenna type	AV39

## Project File List

### Rover Data Files

File name	File type
ALS.036	POS Data
ALS.037	POS Data
ALS.038	POS Data
ALS.039	POS Data
ALS.040	POS Data
ALS.041	POS Data
ALS.042	POS Data
ALS.043	POS Data
ALS.044	POS Data
ALS.045	POS Data
ALS.046	POS Data
ALS.047	POS Data
ALS.048	POS Data
ALS.049	POS Data
ALS.050	POS Data
ALS.051	POS Data
ALS.052	POS Data
ALS.053	POS Data
ALS.054	POS Data
ALS.055	POS Data
ALS.056	POS Data
ALS.057	POS Data
ALS.058	POS Data
ALS.059	POS Data
ALS.060	POS Data
ALS.061	POS Data
ALS.062	POS Data
ALS.063	POS Data
ALS.064	POS Data

### Input Files

File Name	File Type
Ephm2670.22g	GLONASS Broadcast Ephemeris
Ephm2670.22n	GPS Broadcast Ephemeris

### Output Files

Filename	File type
sbet_20220924_F1.out	SBET Trajectory File
export_20220924_F1_NAD832011.out	Custom Smoothed BET Export Output

## Rover Data Summary

First raw data file	ALS.036		
Last raw data file	ALS.064		
Start GPS week	2228		
Start time	574842.674 (09/24/2022 15:40:42)		
End time	593583.114 (09/24/2022 20:53:03)		
Start of fine alignment	575814.466 (09/24/2022 15:56:54)		
Available subsystems	Primary GNSS, IMU		
POS Event Input	Event 2 Input		
Correction data	None		
<b>IMU Installation Lever Arms &amp; Mounting Angles</b>			
Reference to IMU lever arm (m)	-0.267	0.040	-0.890
Reference to IMU mounting angles (deg)	90.000	0.000	180.000
Reference to Primary GNSS lever arm (m)	0.000	0.000	0.000
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_20220924_F1.dat
IMU data check log file	imudt_20220924_F1.log
IMU Records Processed	3753426
Termination Status	Warnings
IMU Anomalies	2
<b>IMU Failure Messages</b>	
574842.509 : WARNING : Gap of 0.0100 seconds in CHECKDT input data	
574842.429 : WARNING : Gap of 574820.4443 seconds in CHECKDT input data	

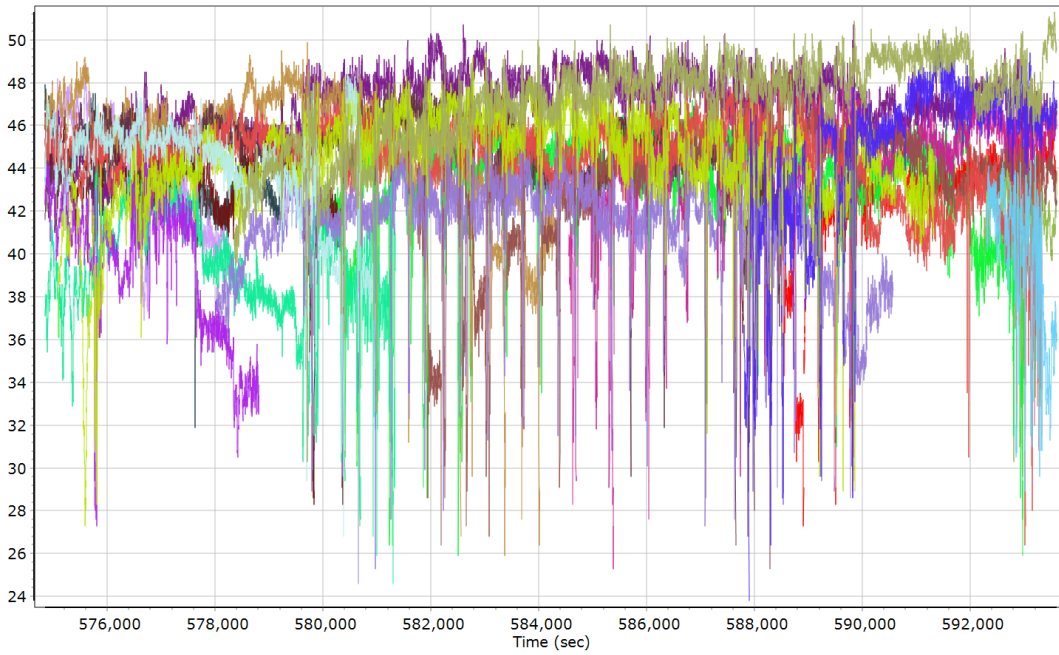
## Primary Observables & Satellite Data

### GPS/GLONASS L1 Satellite Lock/Elevation



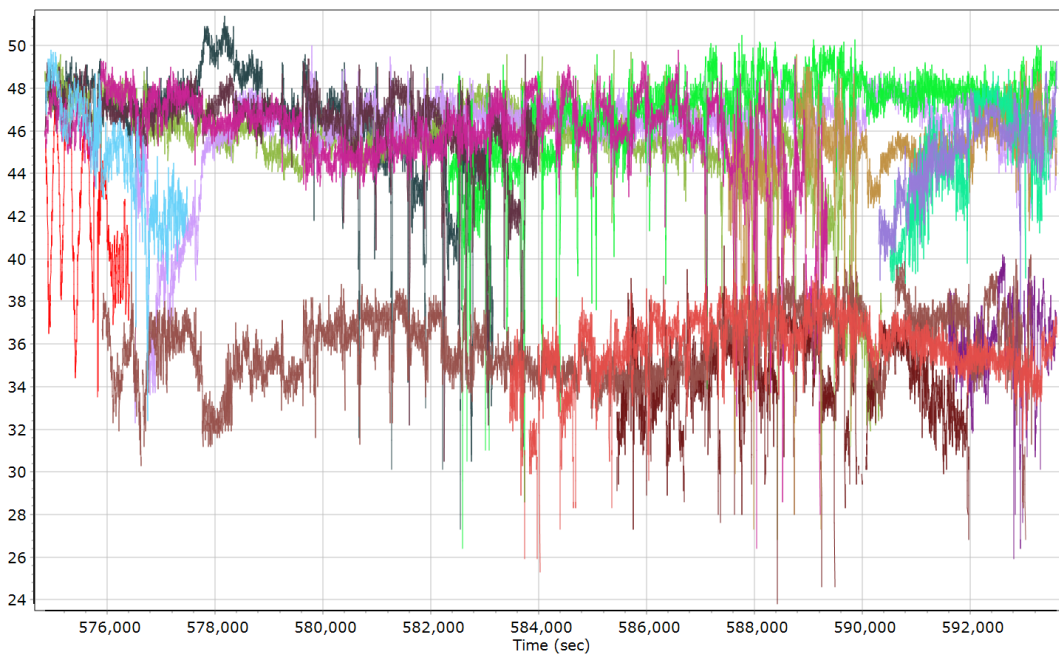


### GPS L1 SNR



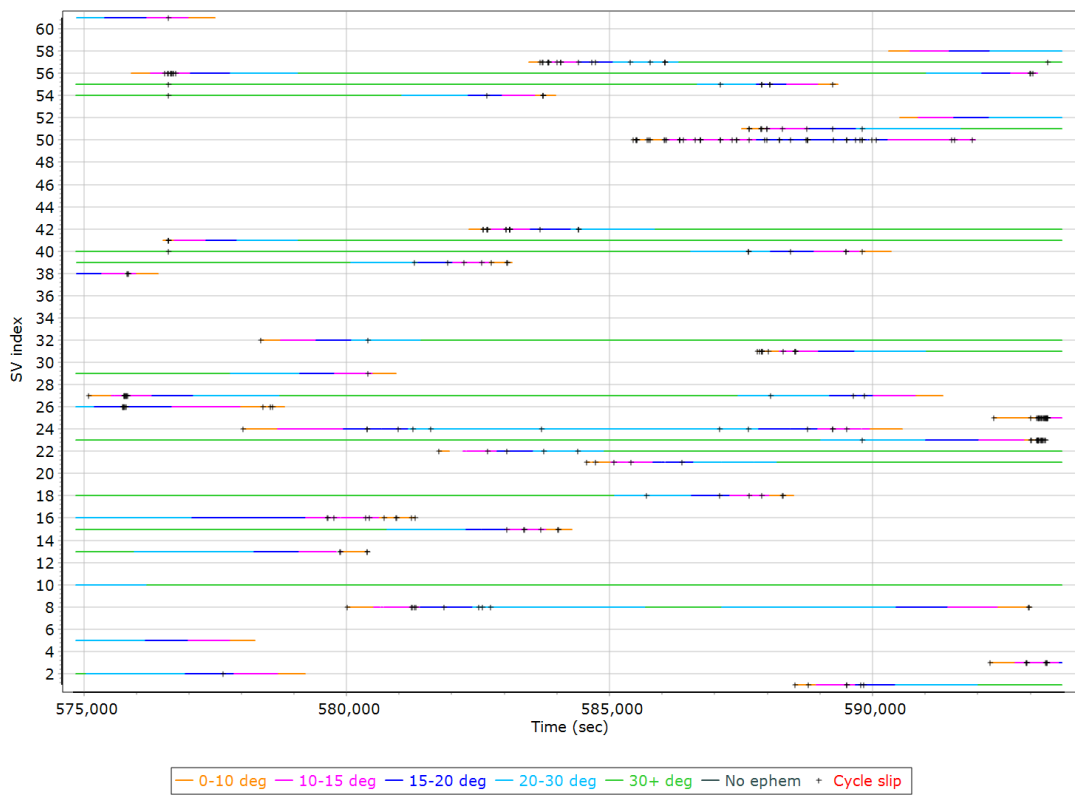
- |                           |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|---------------------------|
| GPS PRN 01 L1 SNR (dB/Hz) | GPS PRN 02 L1 SNR (dB/Hz) | GPS PRN 03 L1 SNR (dB/Hz) | GPS PRN 05 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 22 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 29 L1 SNR (dB/Hz) | GPS PRN 31 L1 SNR (dB/Hz) | GPS PRN 32 L1 SNR (dB/Hz) |

### GLONASS L1 SNR

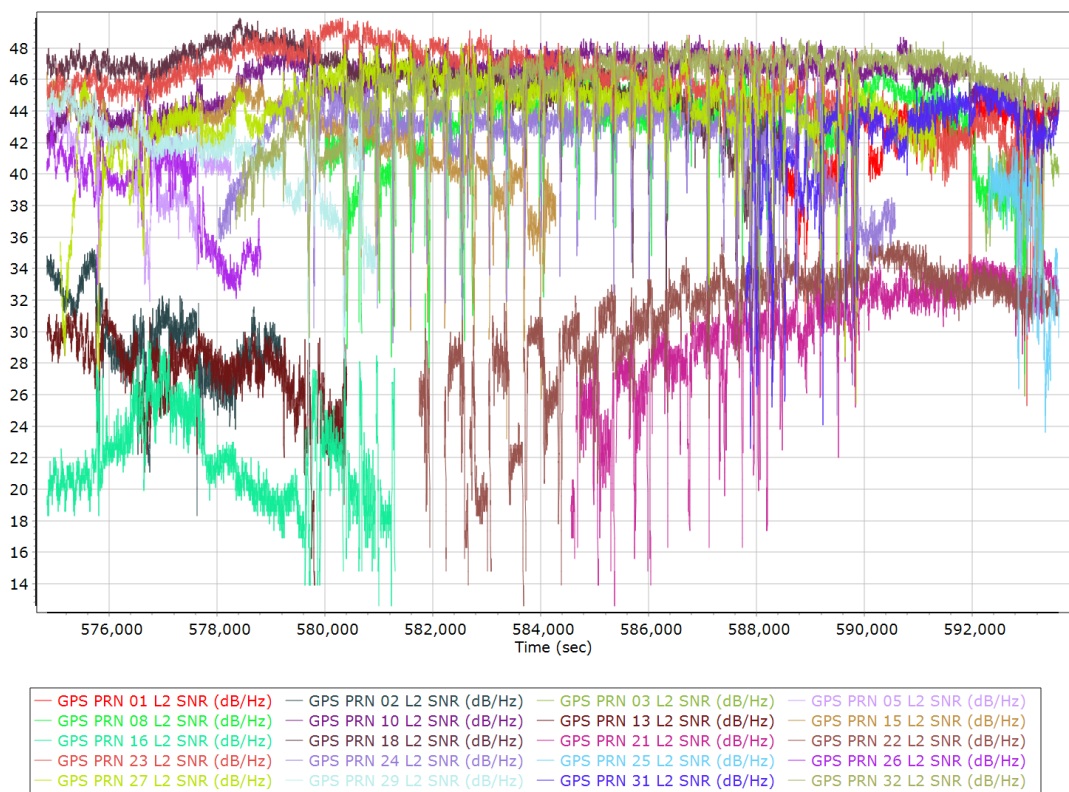


- |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|
| GLONASS 01 L1 SNR (dB/Hz) | GLONASS 02 L1 SNR (dB/Hz) | GLONASS 03 L1 SNR (dB/Hz) |
| GLONASS 04 L1 SNR (dB/Hz) | GLONASS 05 L1 SNR (dB/Hz) | GLONASS 06 L1 SNR (dB/Hz) |
| GLONASS 13 L1 SNR (dB/Hz) | GLONASS 14 L1 SNR (dB/Hz) | GLONASS 15 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 24 L1 SNR (dB/Hz) |

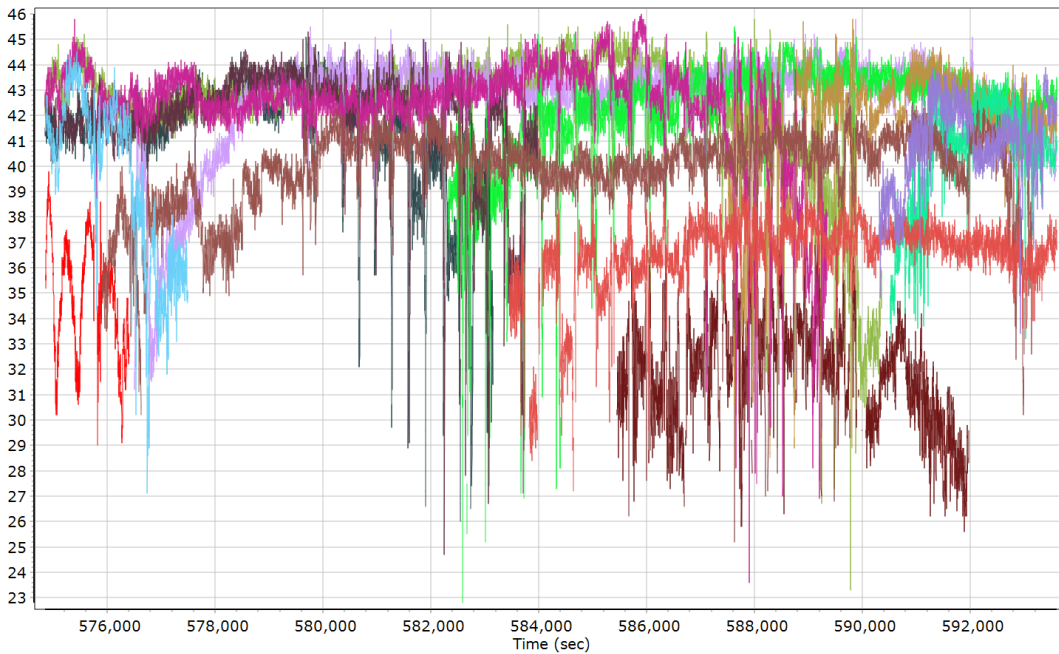
### GPS/GLONASS L2 Satellite Lock/Elevation



### GPS L2 SNR

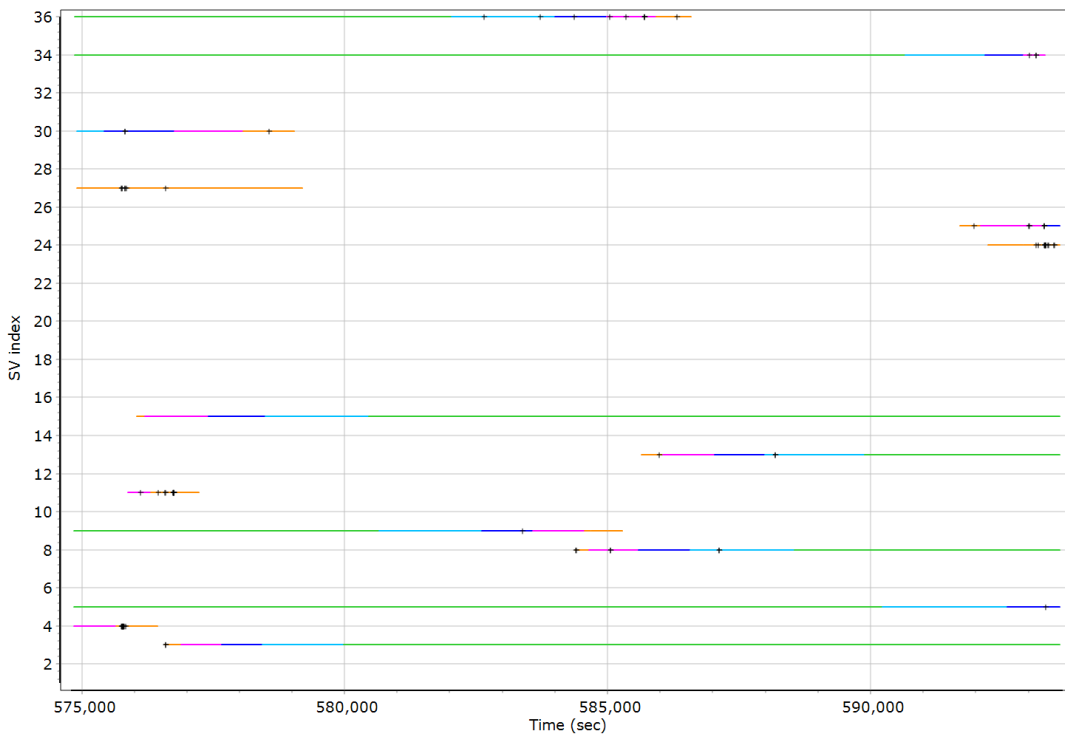


### GLONASS L2 SNR



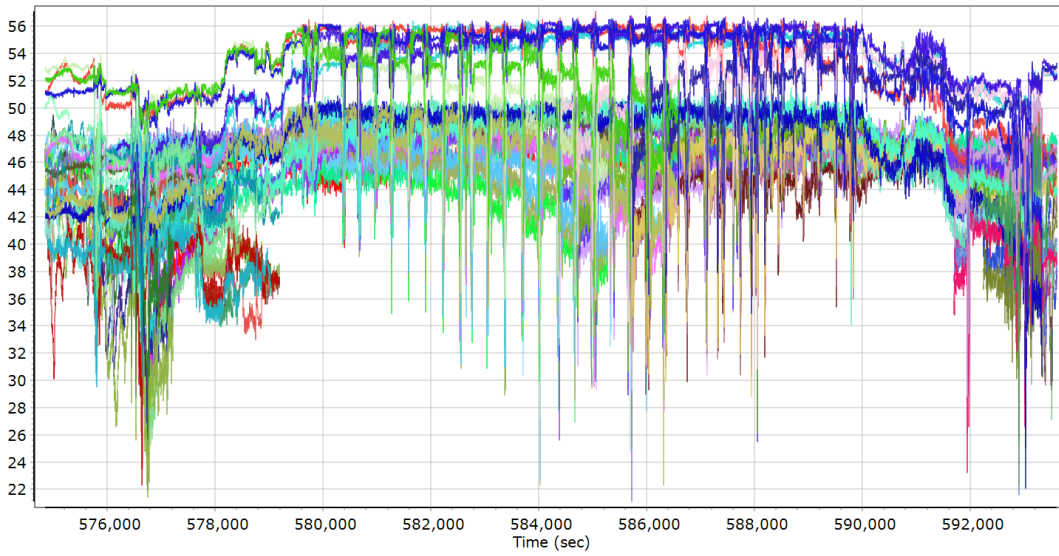
- GLONASS 01 L2 SNR (dB/Hz)
- GLONASS 02 L2 SNR (dB/Hz)
- GLONASS 03 L2 SNR (dB/Hz)
- GLONASS 04 L2 SNR (dB/Hz)
- GLONASS 05 L2 SNR (dB/Hz)
- GLONASS 06 L2 SNR (dB/Hz)
- GLONASS 13 L2 SNR (dB/Hz)
- GLONASS 14 L2 SNR (dB/Hz)
- GLONASS 15 L2 SNR (dB/Hz)
- GLONASS 17 L2 SNR (dB/Hz)
- GLONASS 18 L2 SNR (dB/Hz)
- GLONASS 19 L2 SNR (dB/Hz)
- GLONASS 20 L2 SNR (dB/Hz)
- GLONASS 21 L2 SNR (dB/Hz)
- GLONASS 24 L2 SNR (dB/Hz)

### GALILEO Satellite Lock/Elevation



- 0-10 deg
- 10-15 deg
- 15-20 deg
- 20-30 deg
- 30+ deg
- No ephem
- + Cycle slip

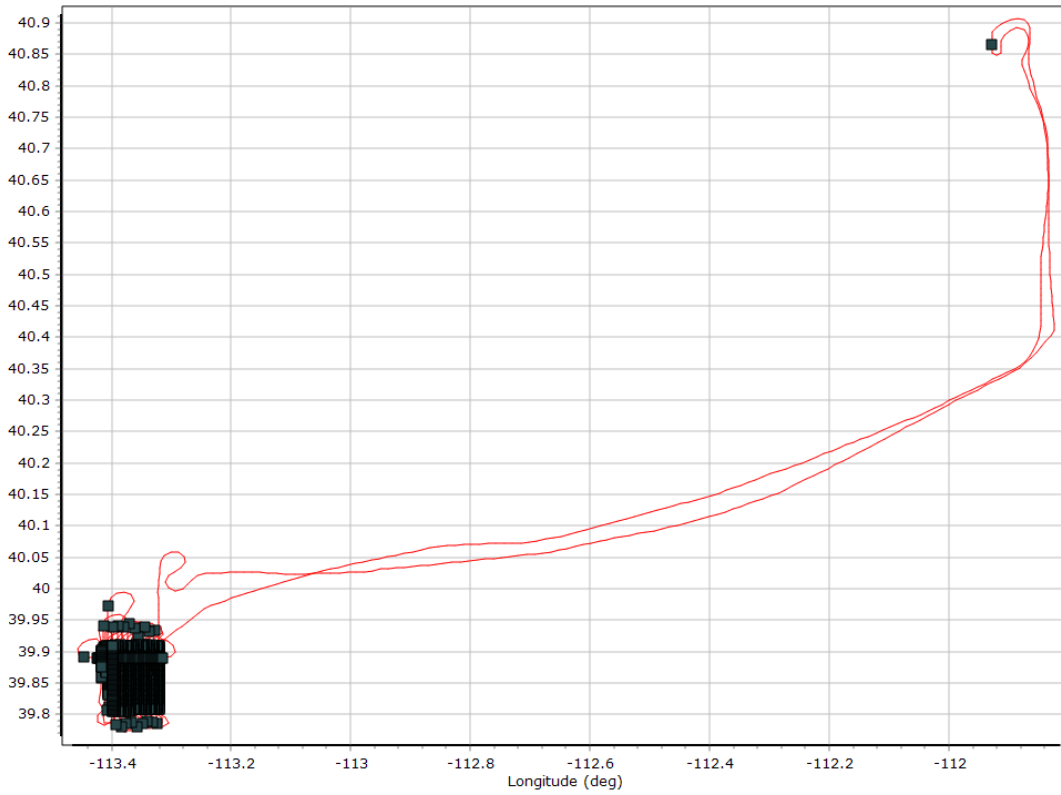
## GALILEO SNR



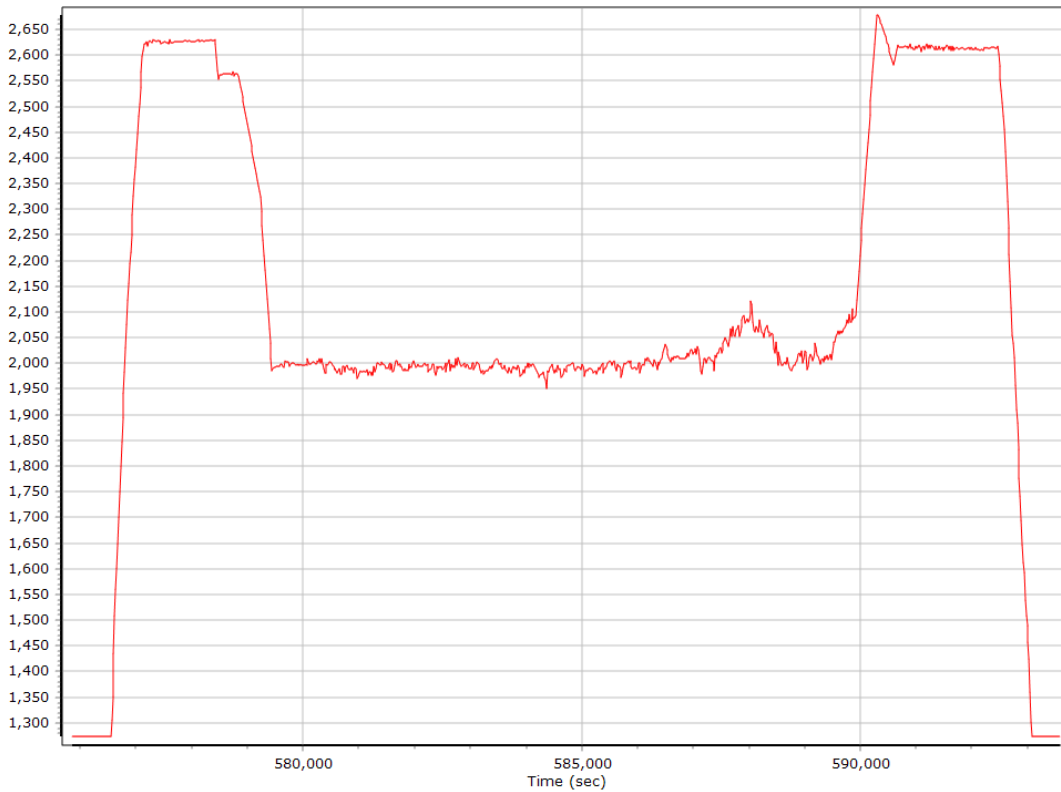
— GALILEO 03 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)	— GALILEO 04 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
— GALILEO 05 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)	— GALILEO 08 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
— GALILEO 09 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)	— GALILEO 11 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
— GALILEO 13 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)	— GALILEO 14 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 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 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)

## Smoothed Trajectory Information

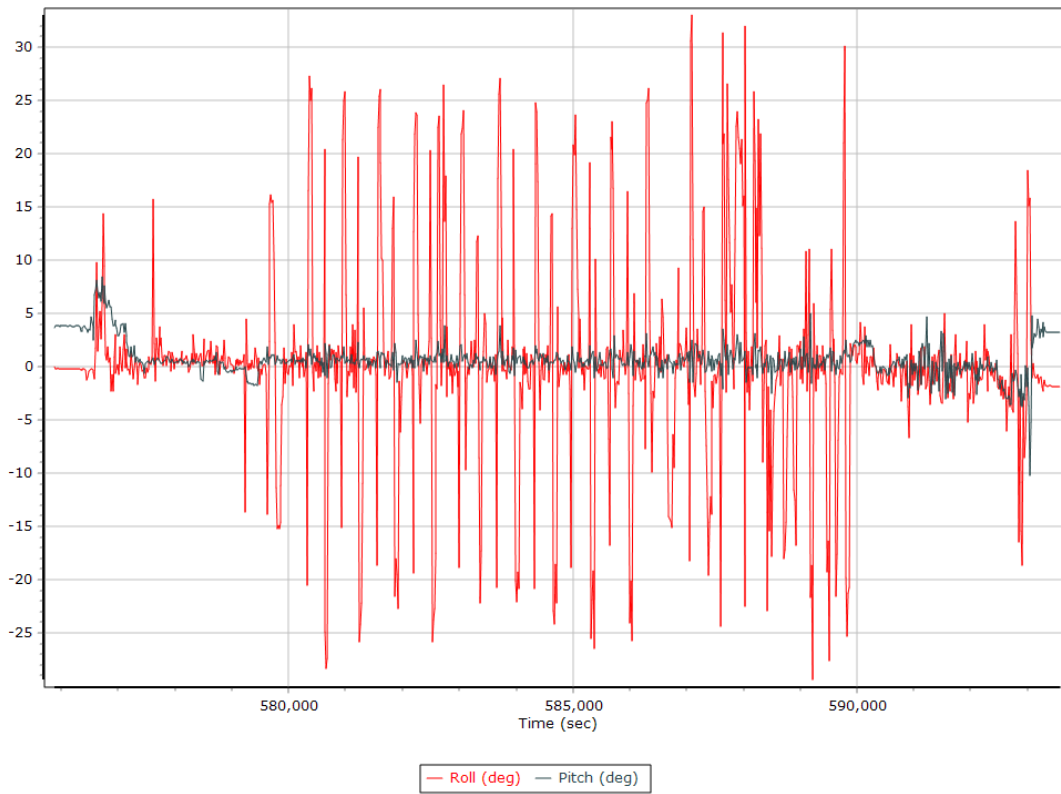
### Top View



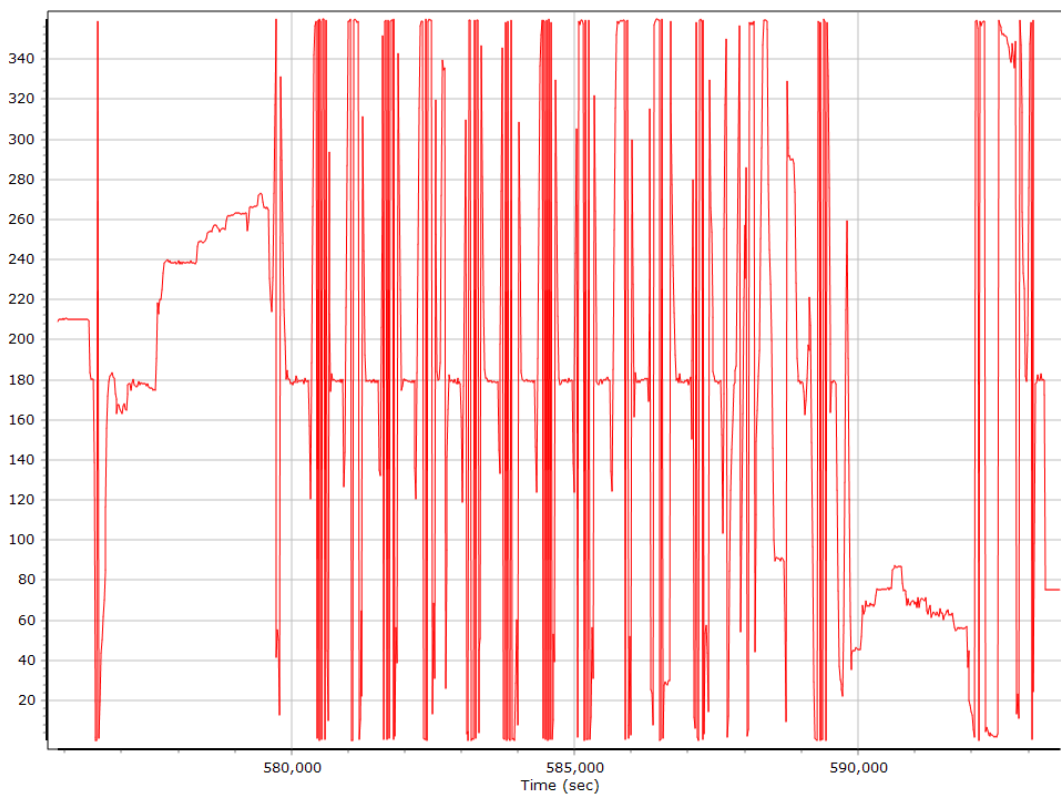
### Altitude



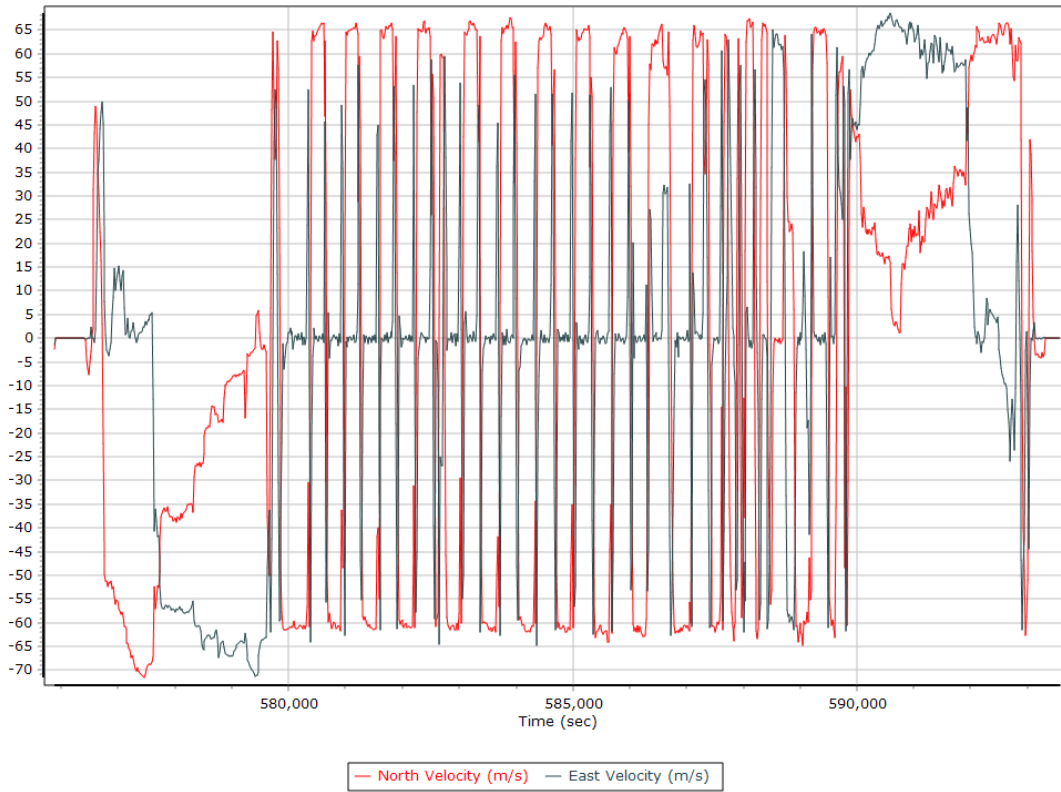
## Roll/Pitch



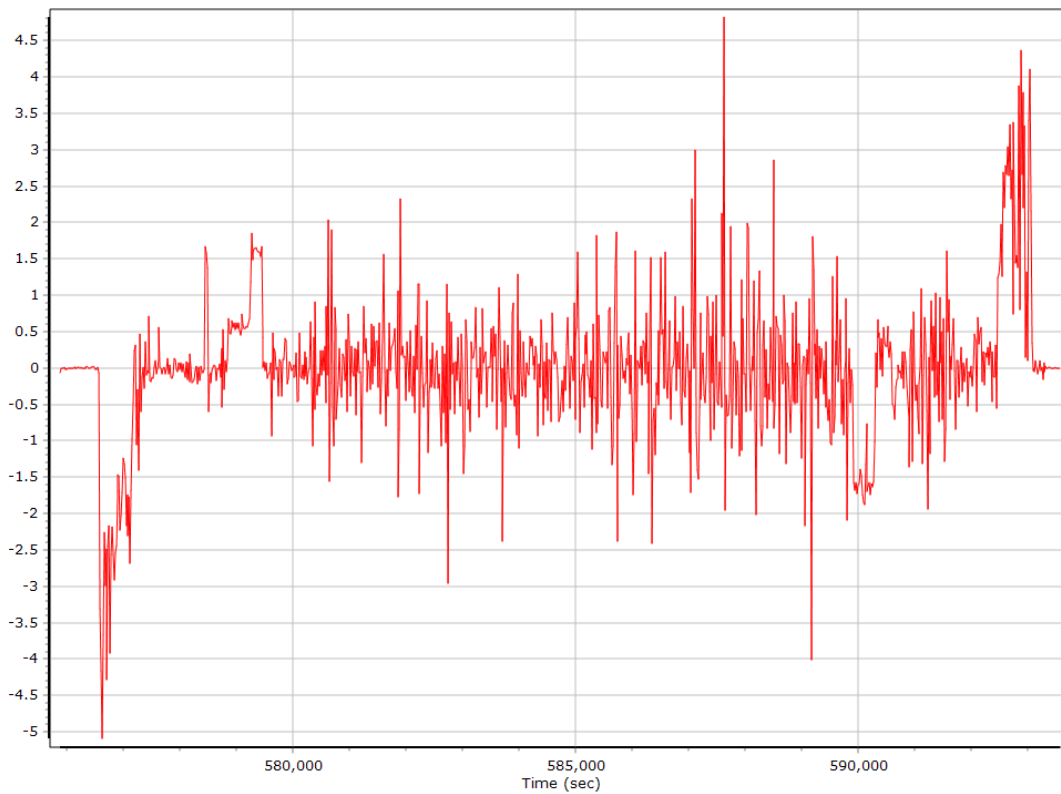
## Heading



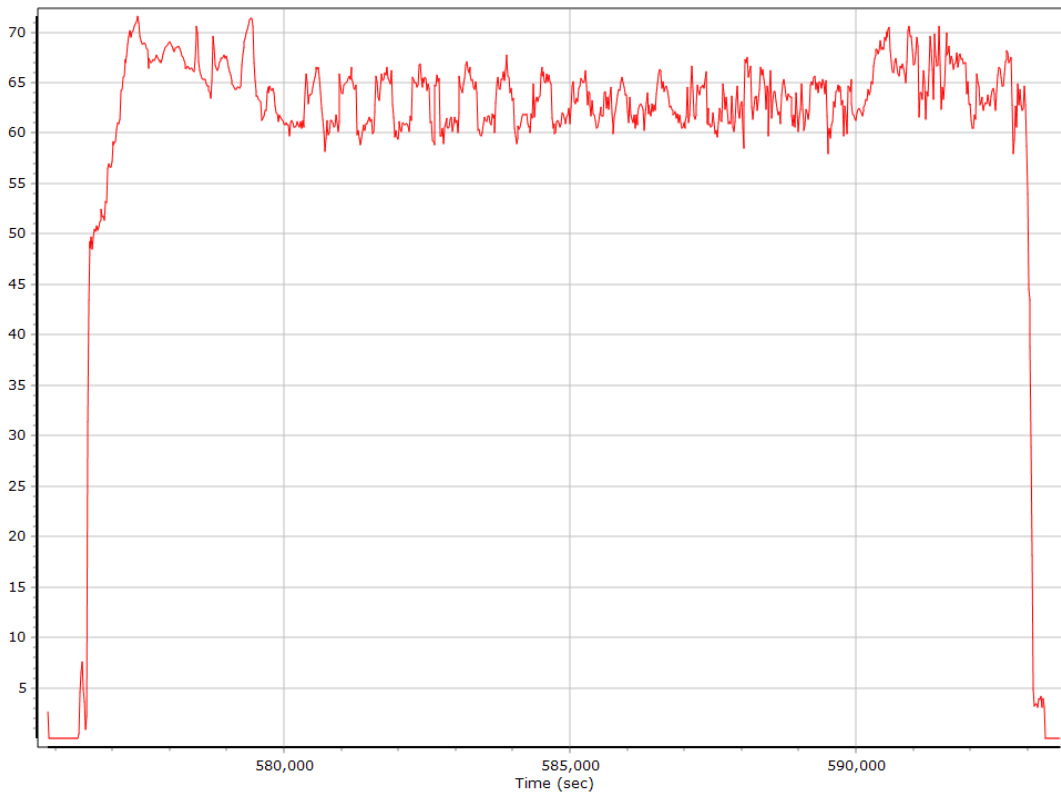
## North/East Velocity



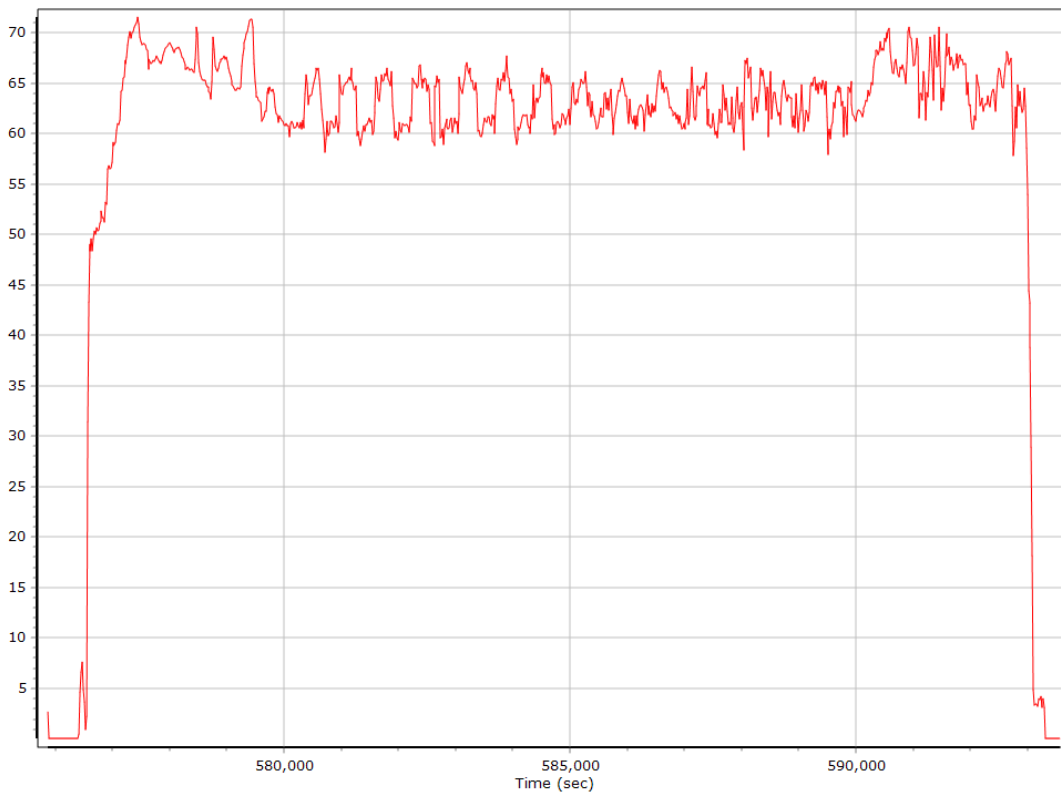
## Down Velocity



## Total Speed

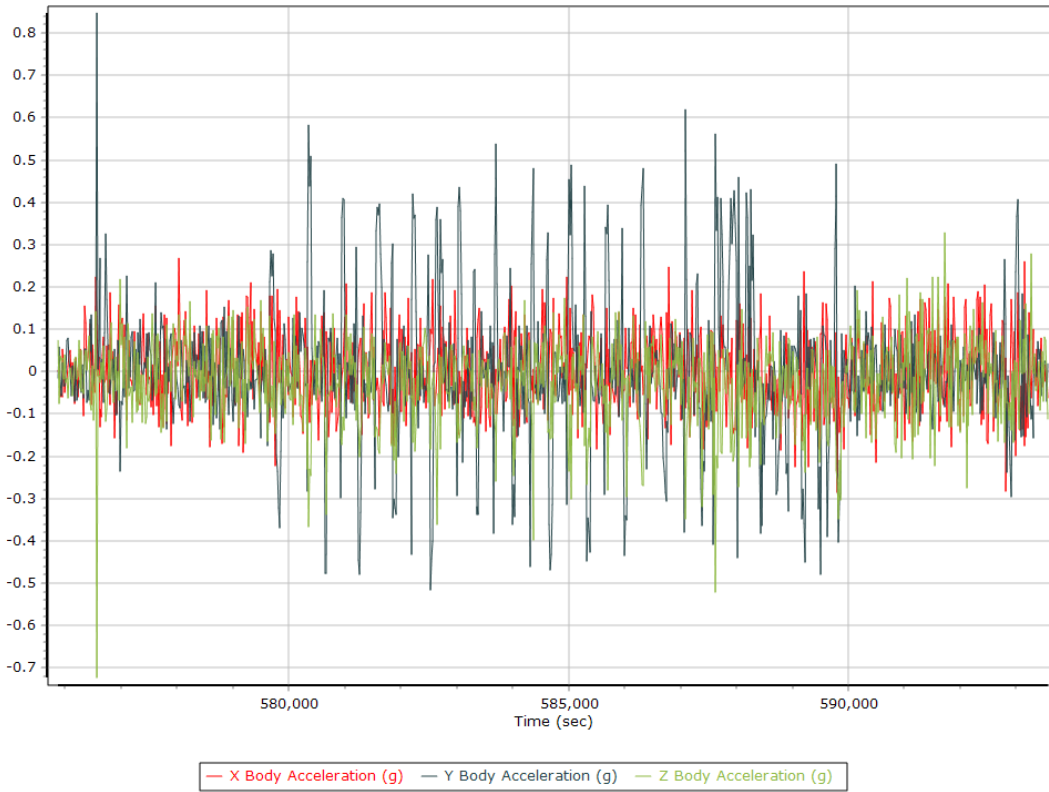


## Ground Speed

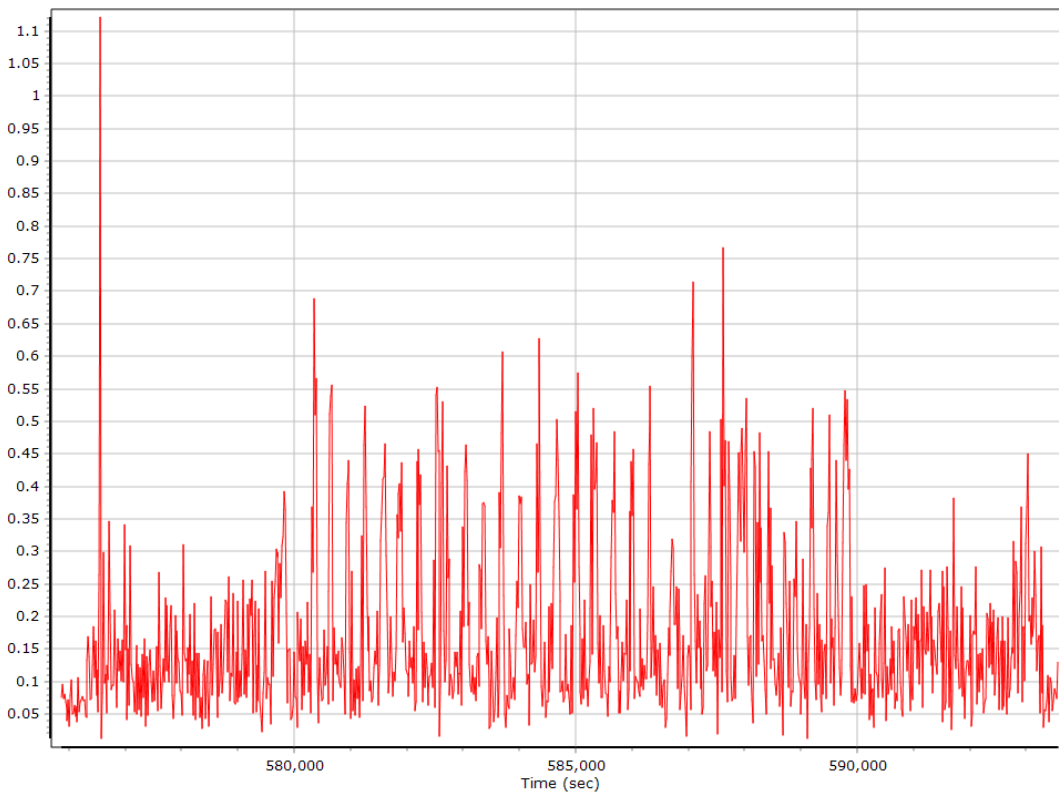




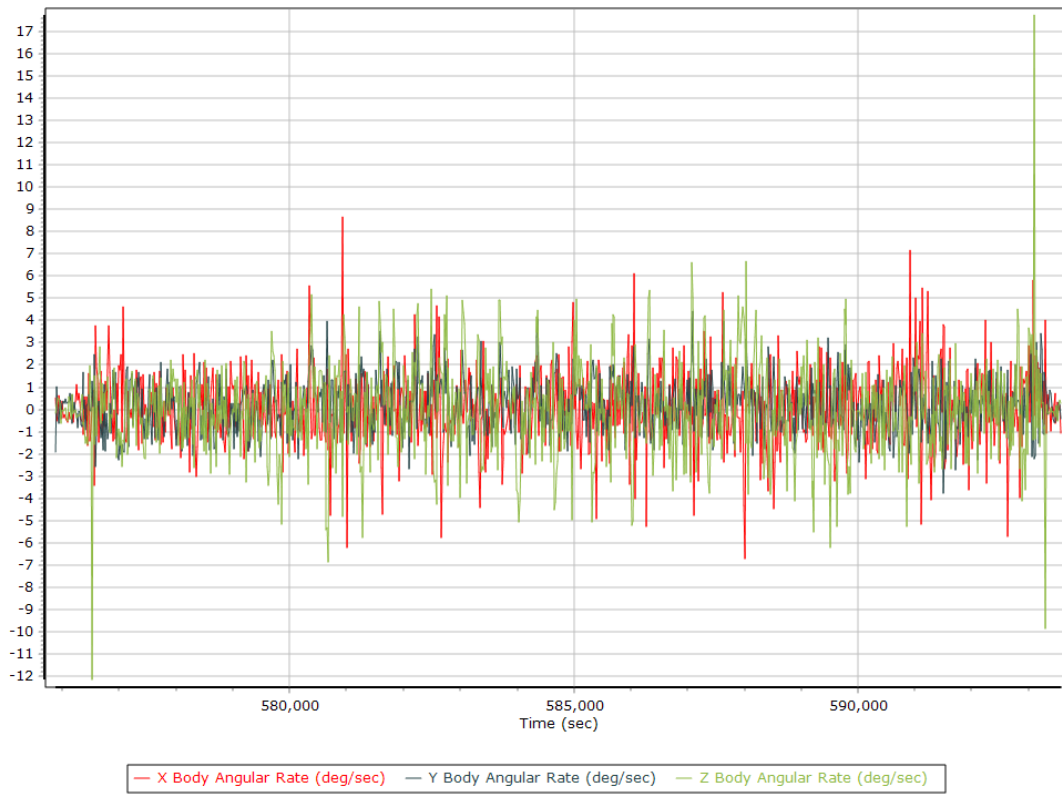
## Body Acceleration



## Total Body Acceleration

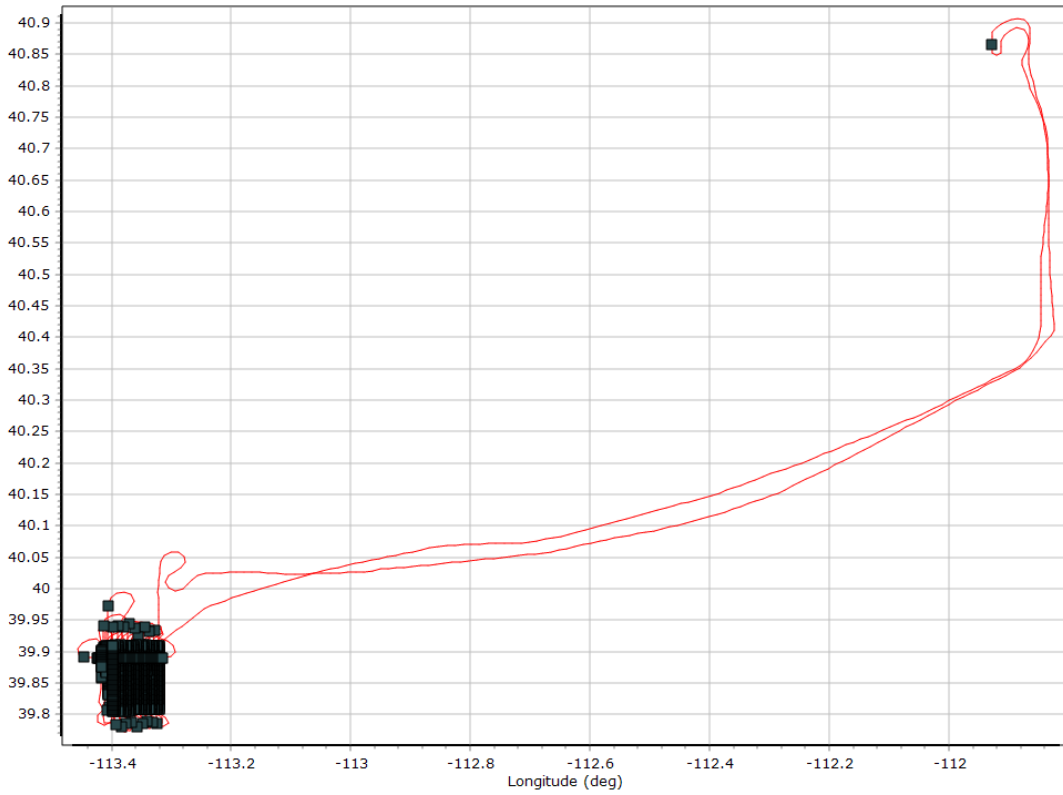


## Body Angular Rate

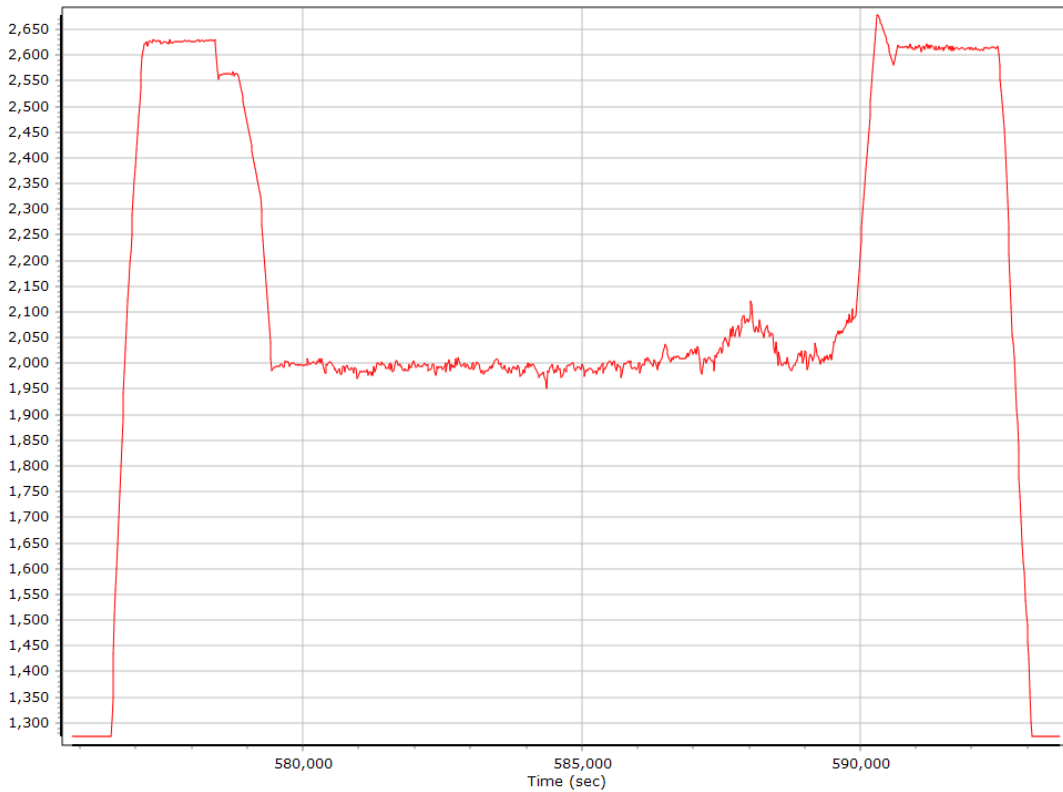


## Forward Processed Trajectory Information

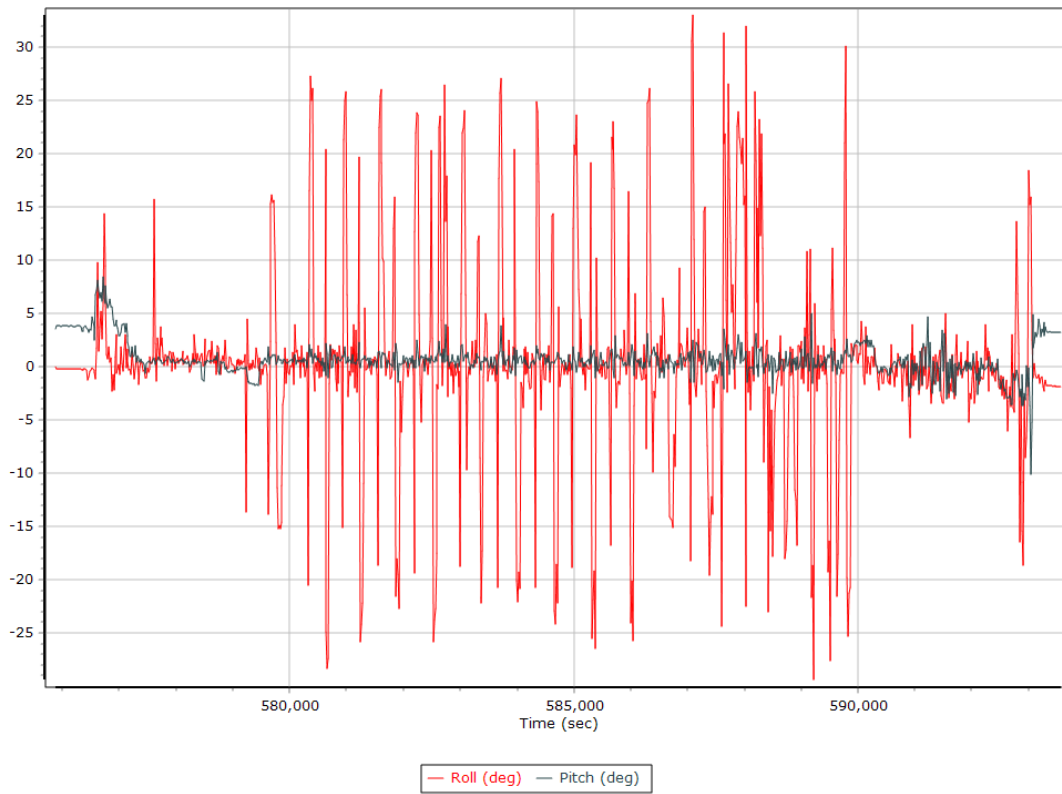
### Top View



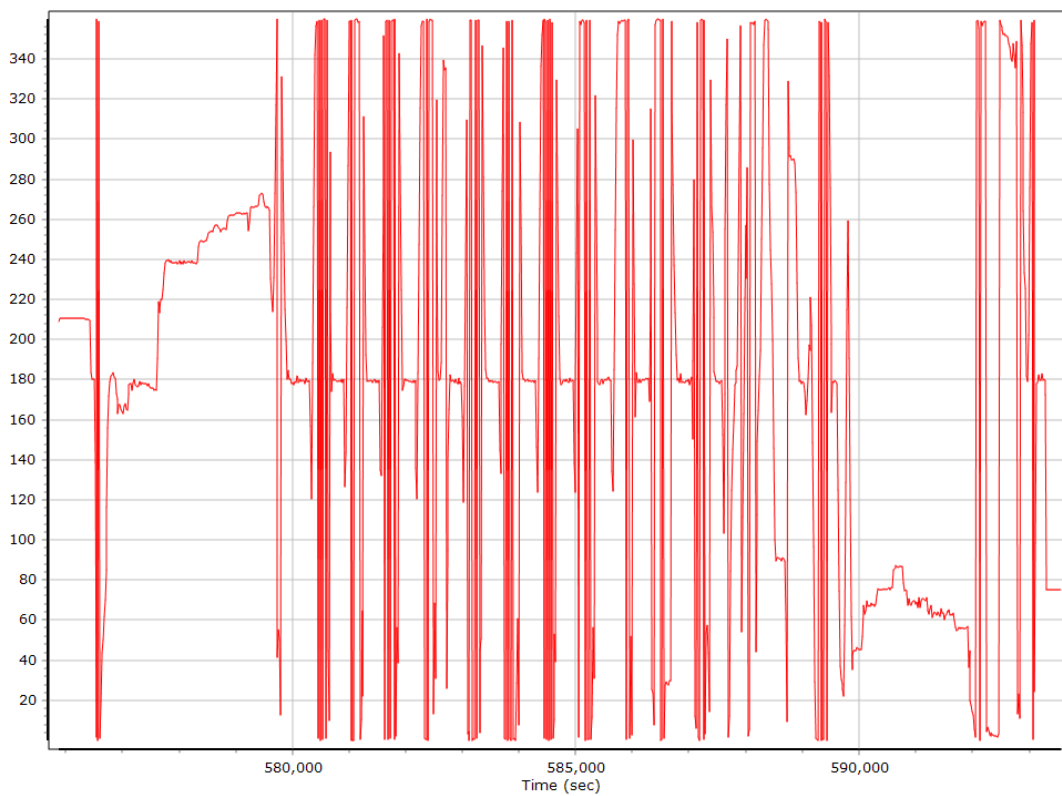
### Altitude



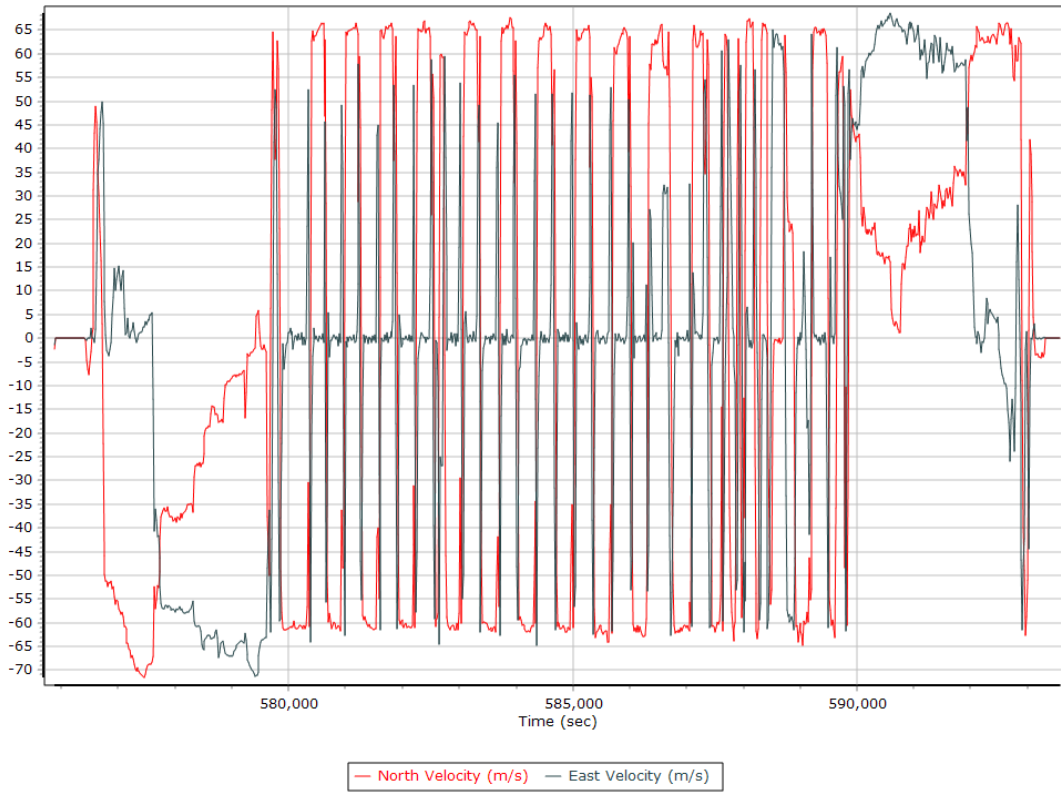
## Roll/Pitch



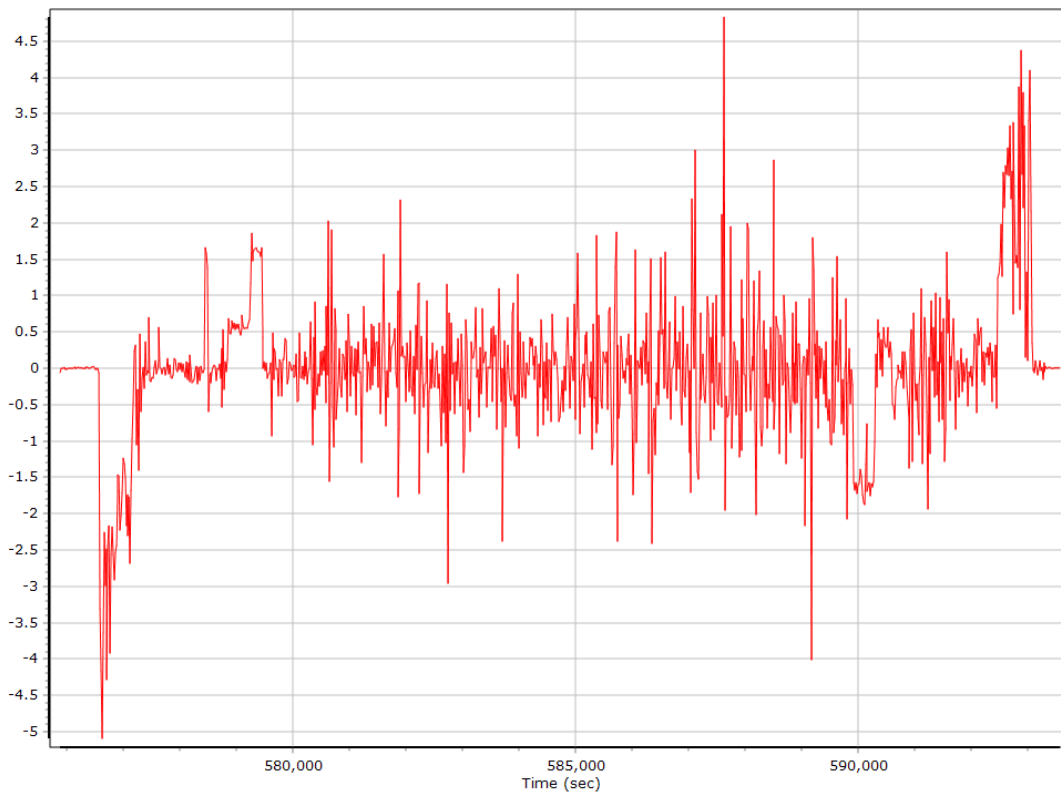
## Heading



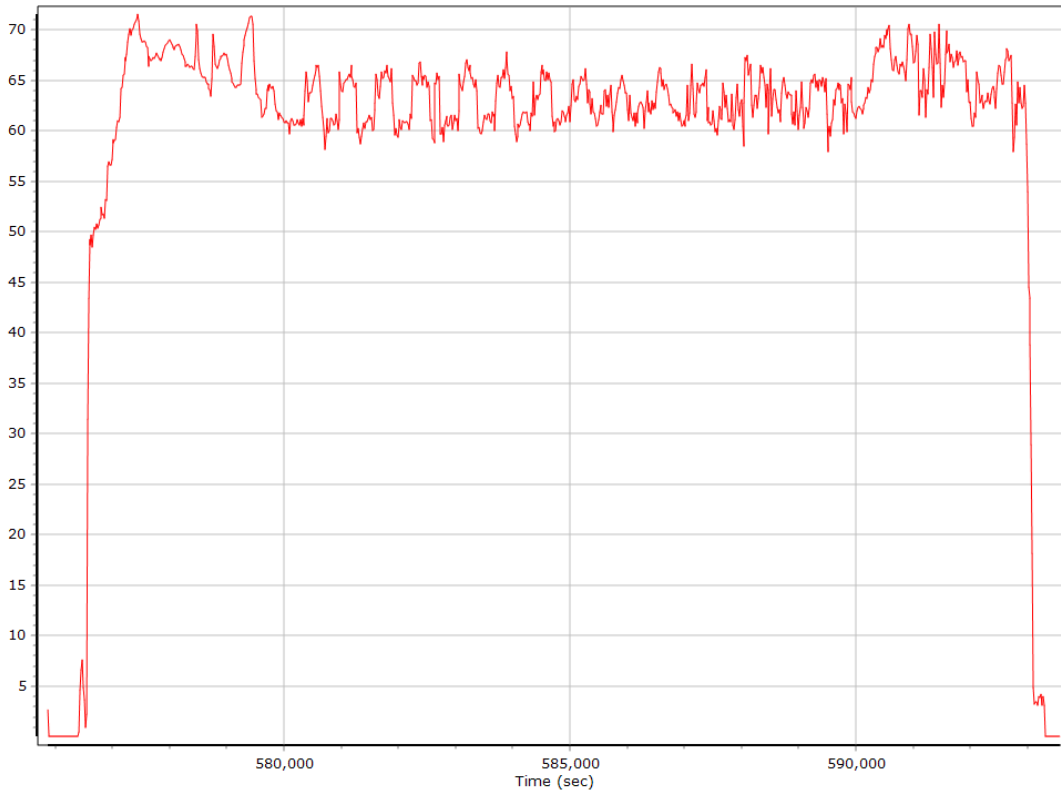
## North/East Velocity



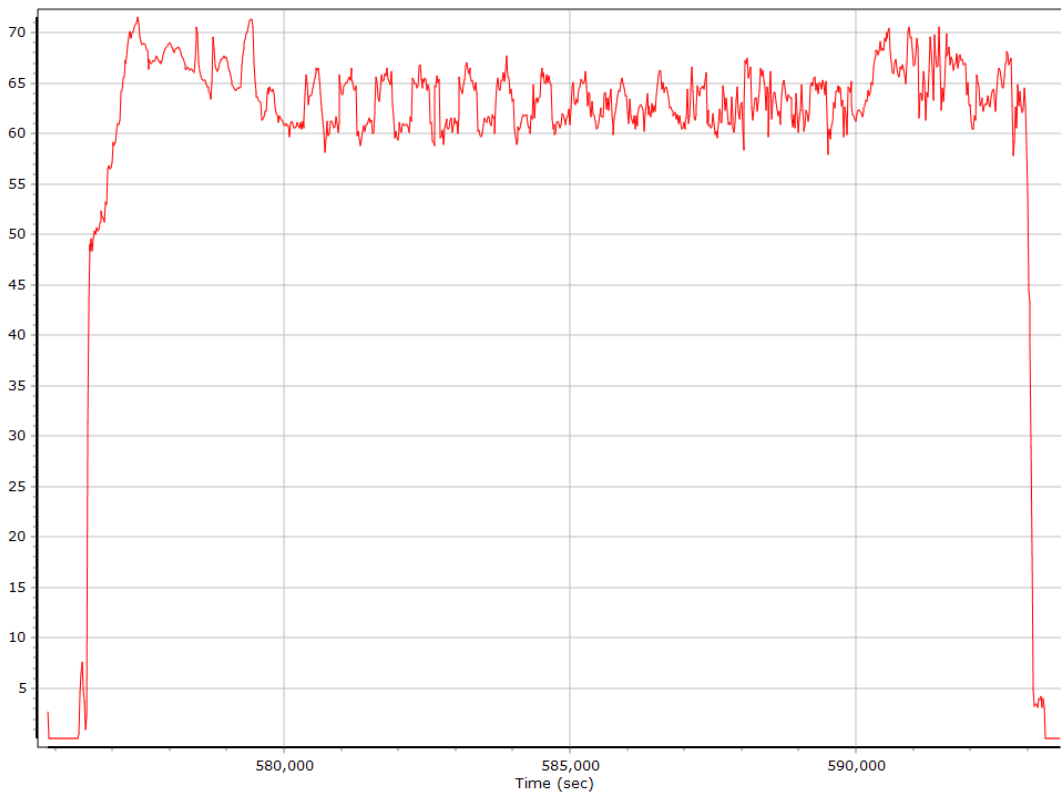
## Down Velocity



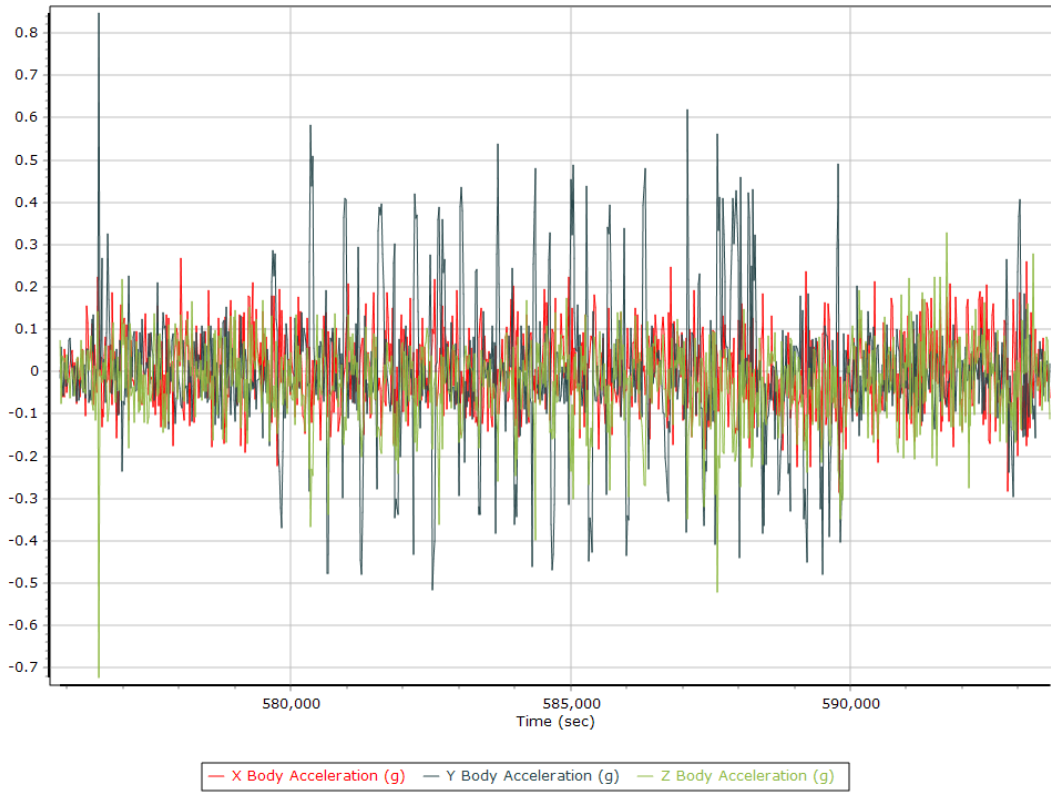
## Total Speed



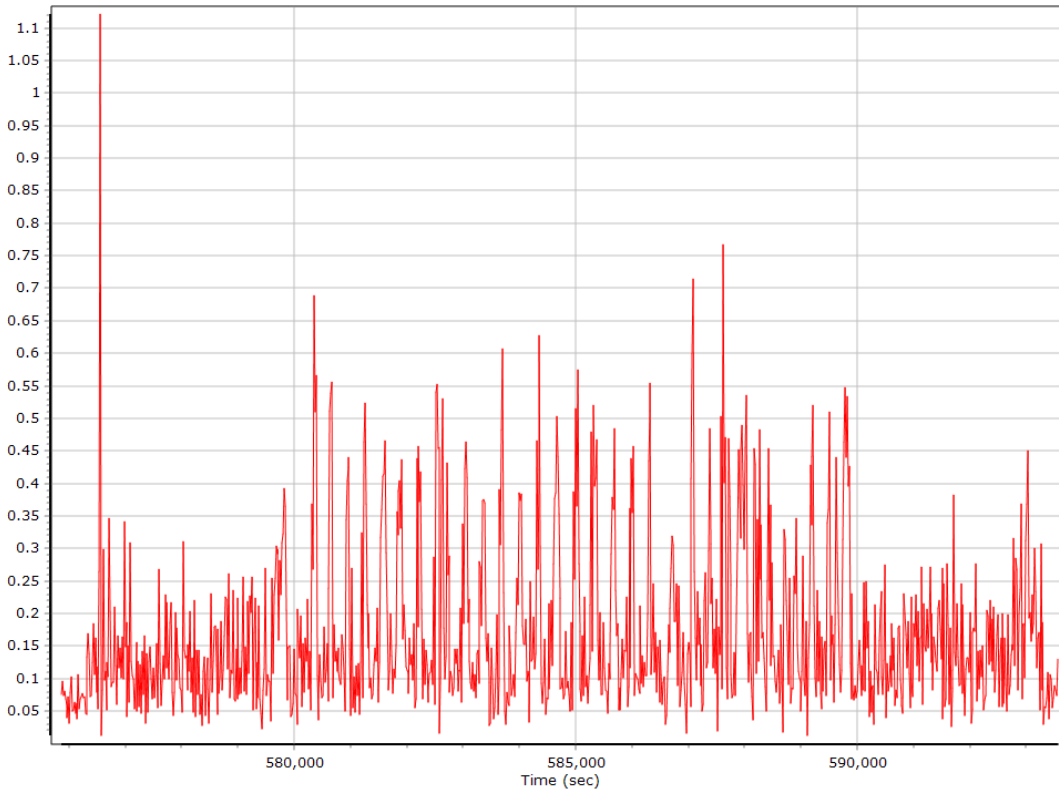
## Ground Speed



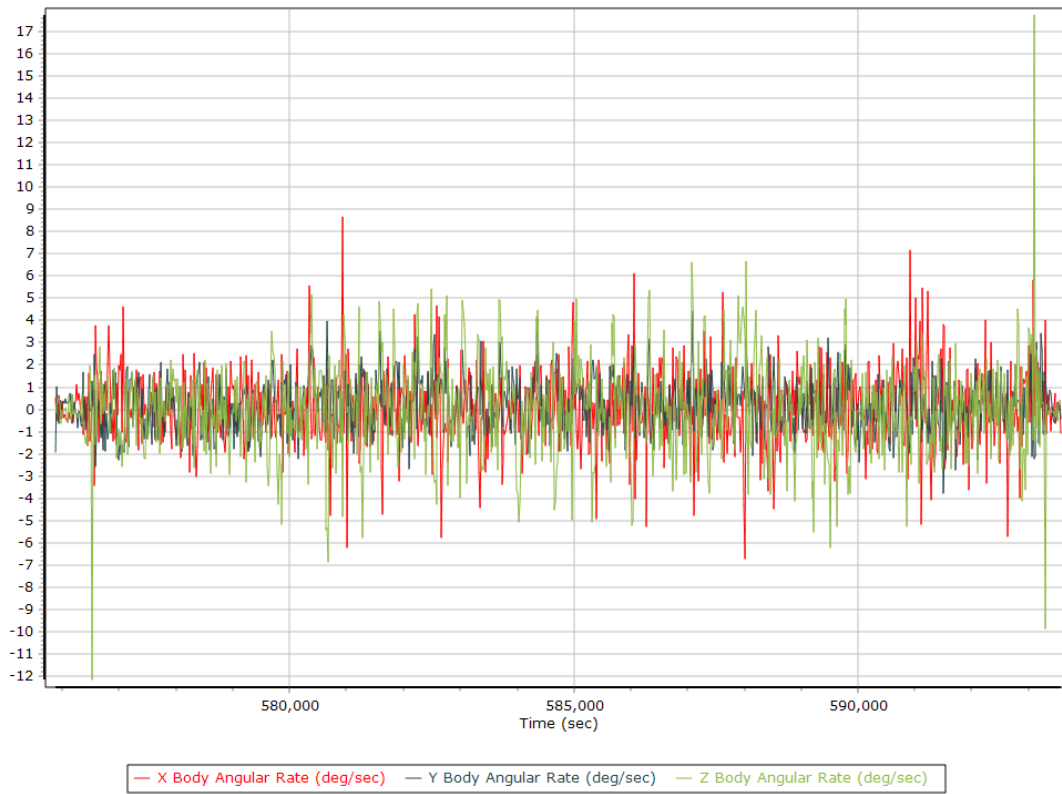
## Body Acceleration



## Total Body Acceleration



## Body Angular Rate



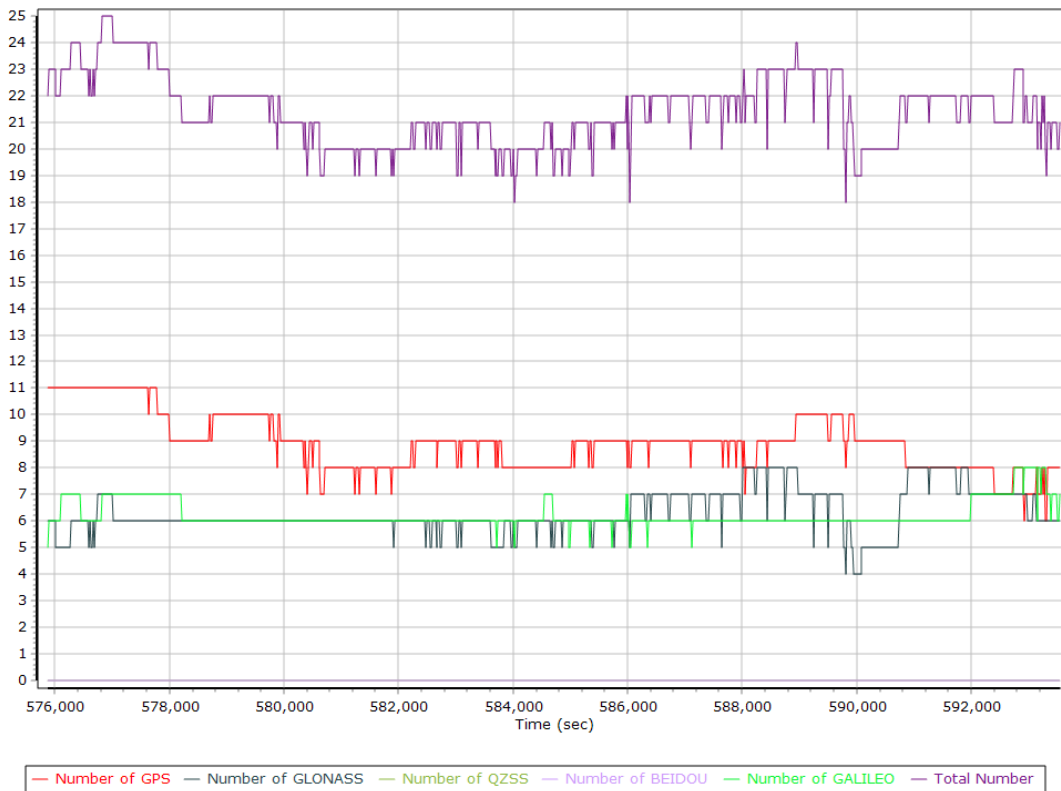


## GNSS QC

### 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	1	8	6
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	0	0
Number of GALILEO SV	2	8	6
Total number of SV	15	25	21
PDOP	0.93	1.64	1.11
QC Solution Gaps	0.00	0.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	18711.00	0.00	0.00
Percentage	100.00	0.00	0.00

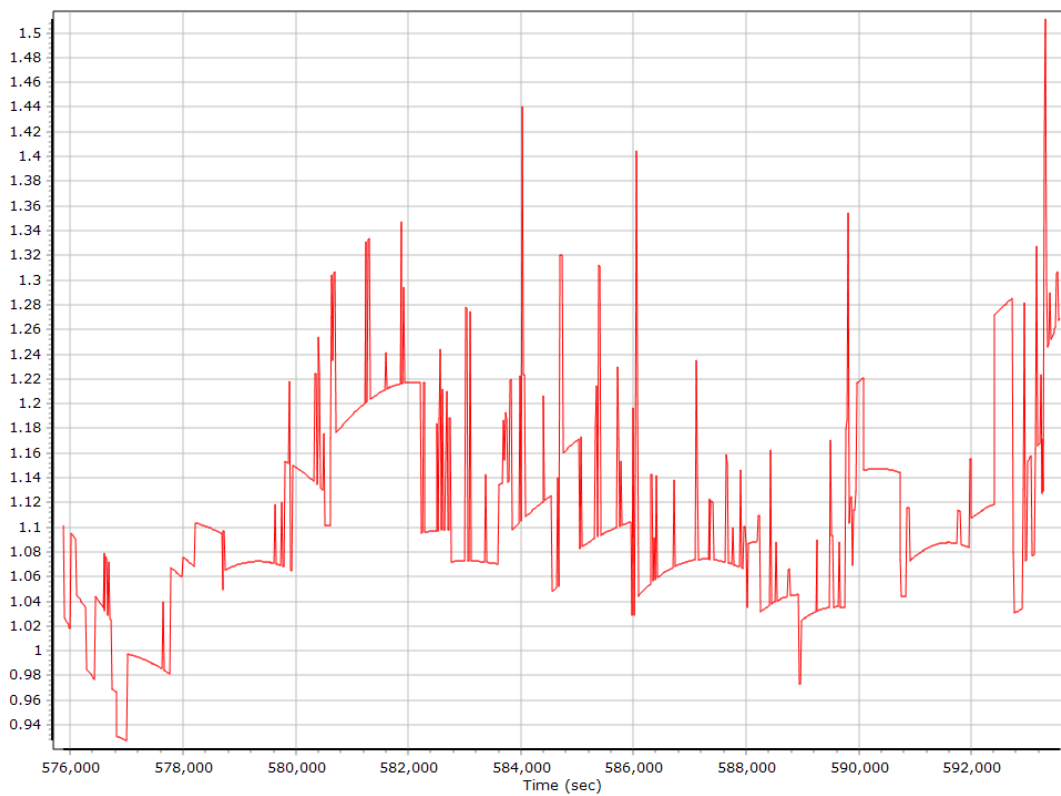
### Num SVs in solution



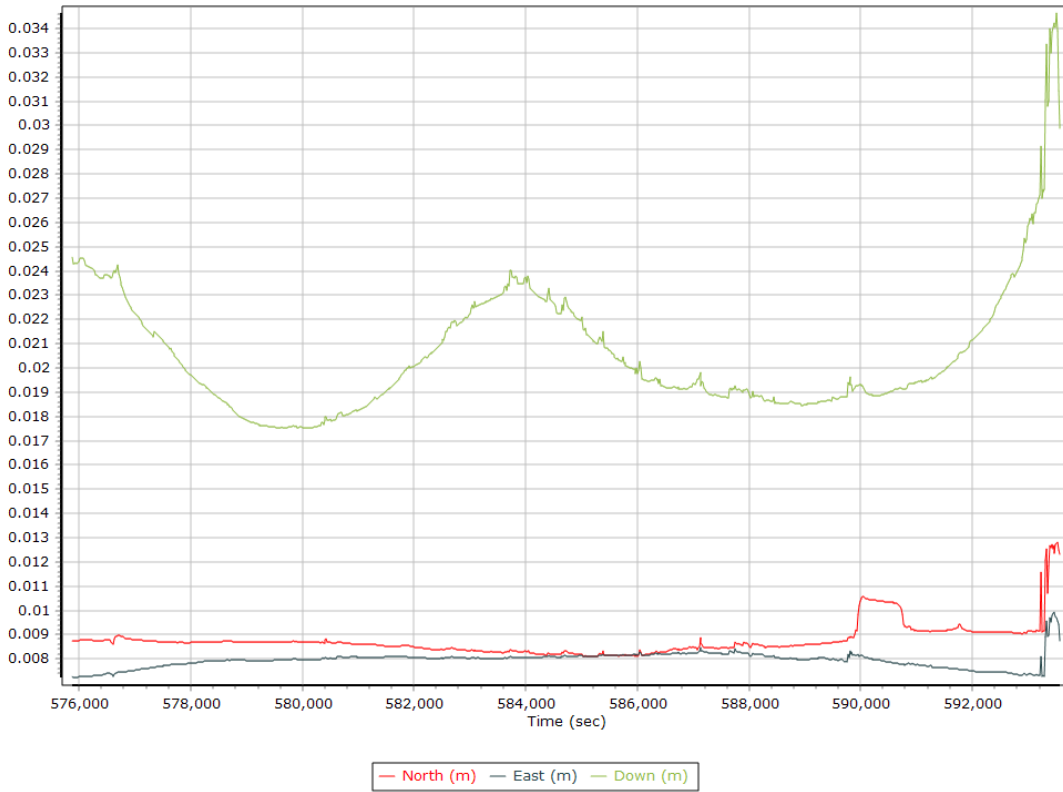
## Forward/Reverse Separation



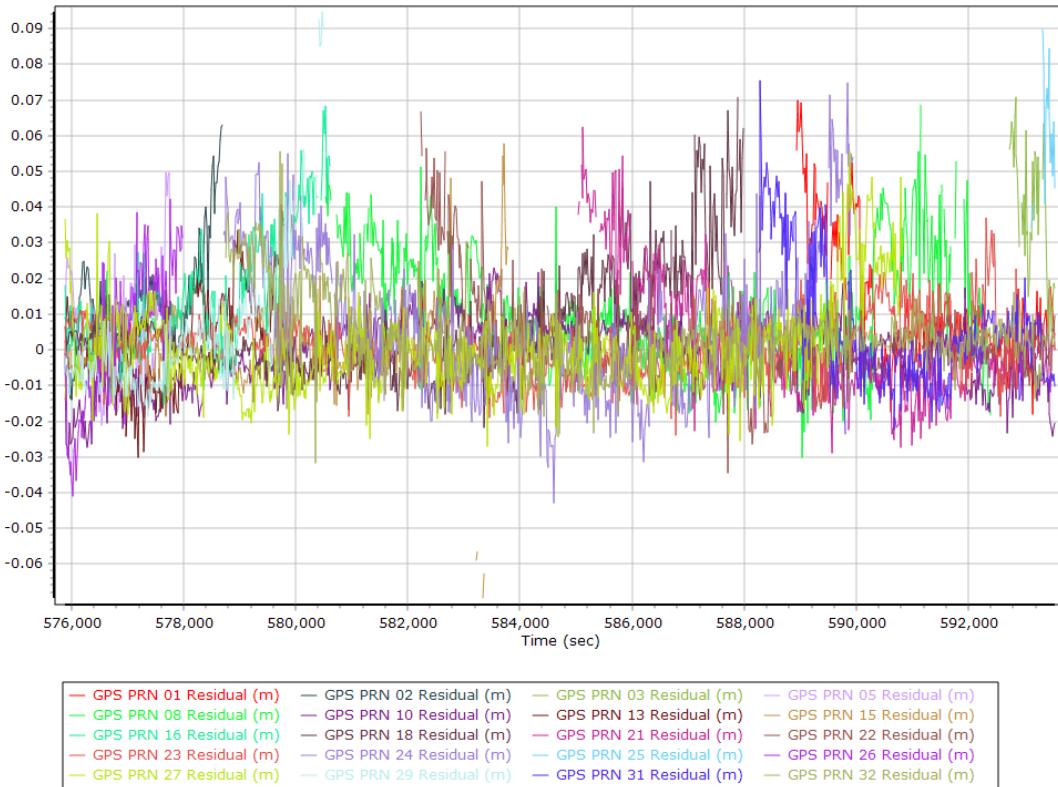
## PDOP



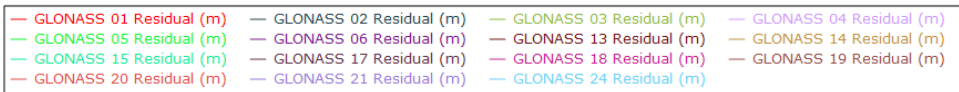
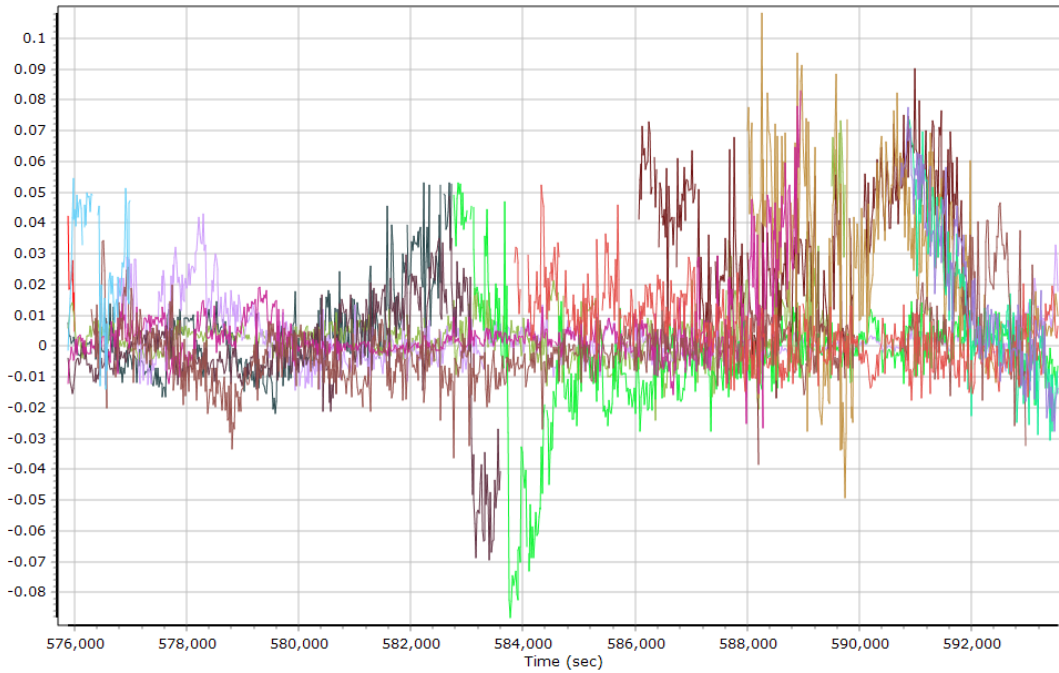
## Estimated Position Accuracy



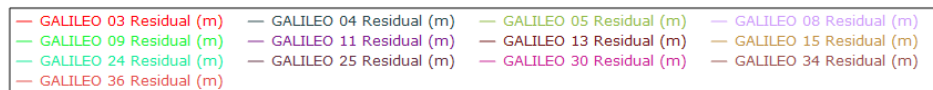
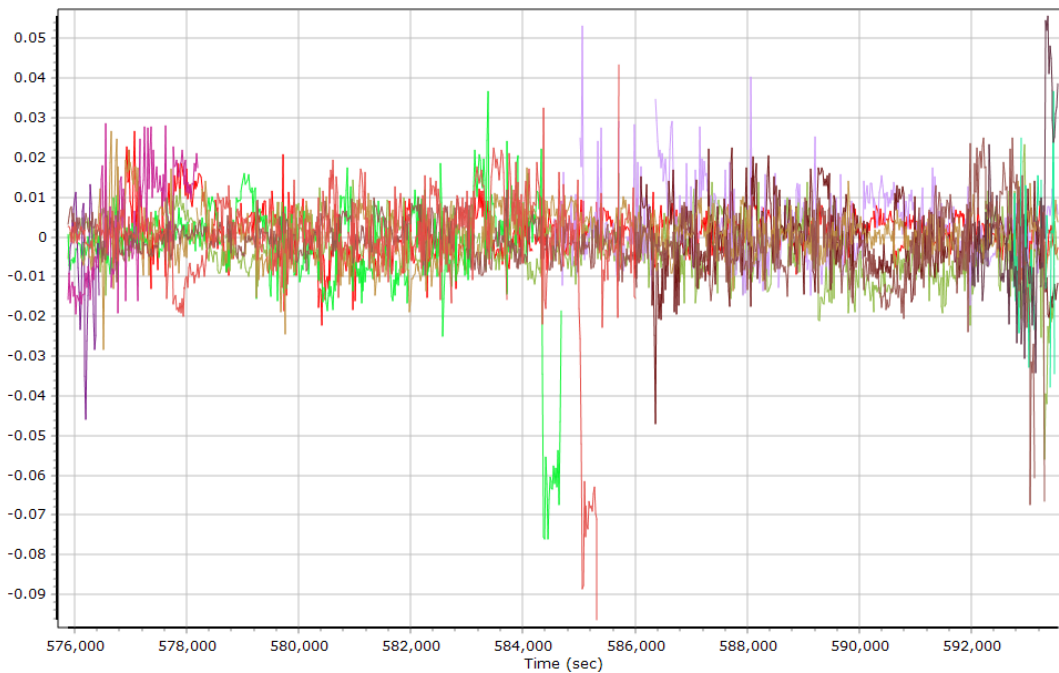
## GPS Residuals



## GLONASS Residuals



## GALILEO Residuals



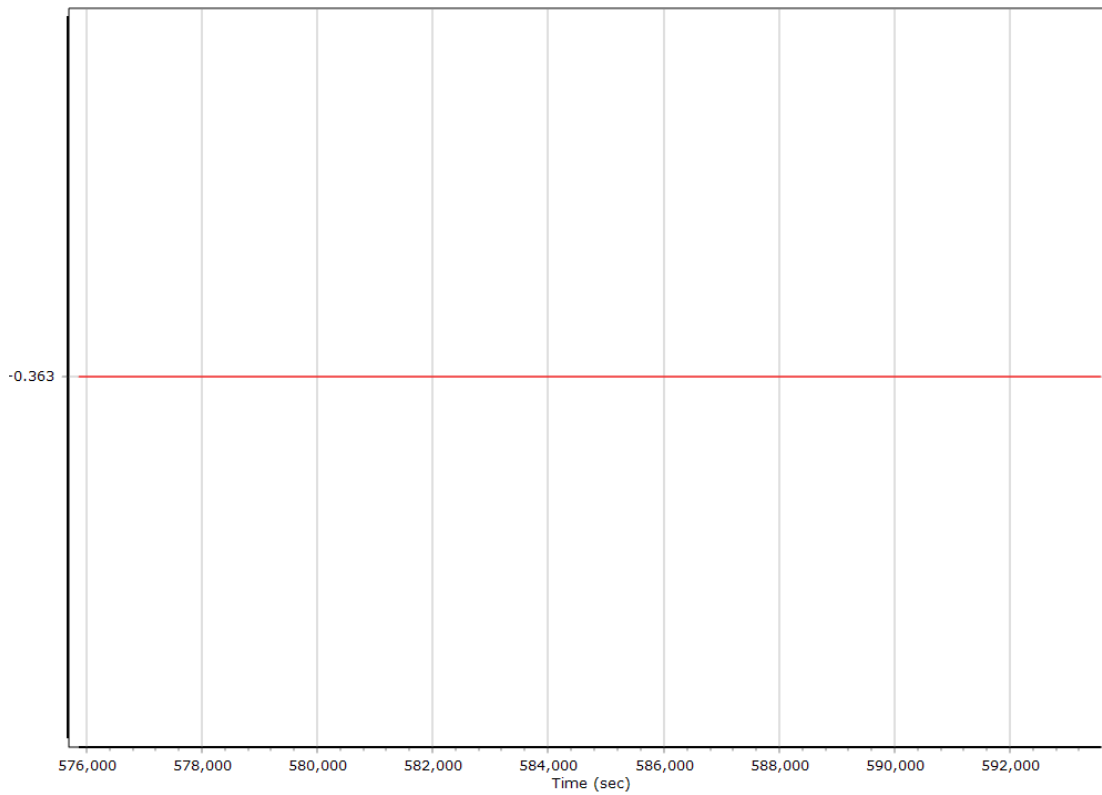
## GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	False		
Processing start time	574831.000 (09/24/2022 15:40:31)		
Processing end time	593587.000 (09/24/2022 20:53:07)		
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)	90.000	0.000	180.000
Reference to Primary GNSS lever arm (m)	-0.363	0.052	-1.691
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

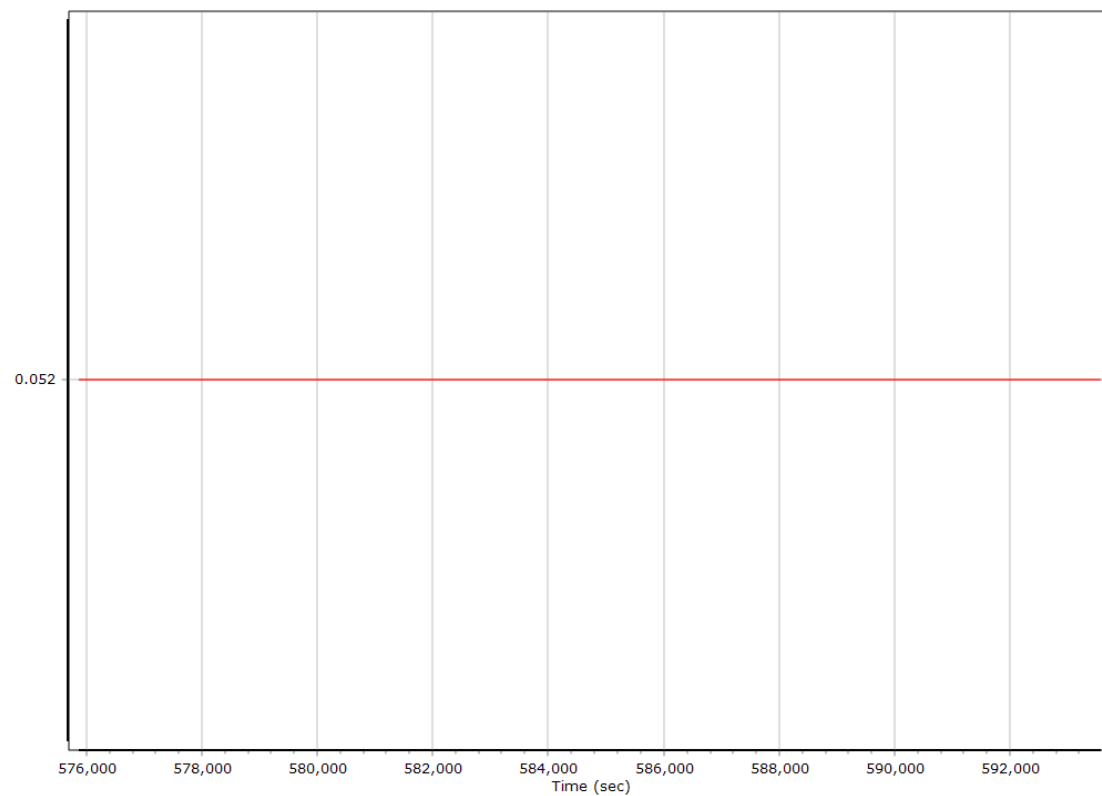
## Calibrated Installation Parameters

### Reference-Primary GNSS Lever Arm (m)

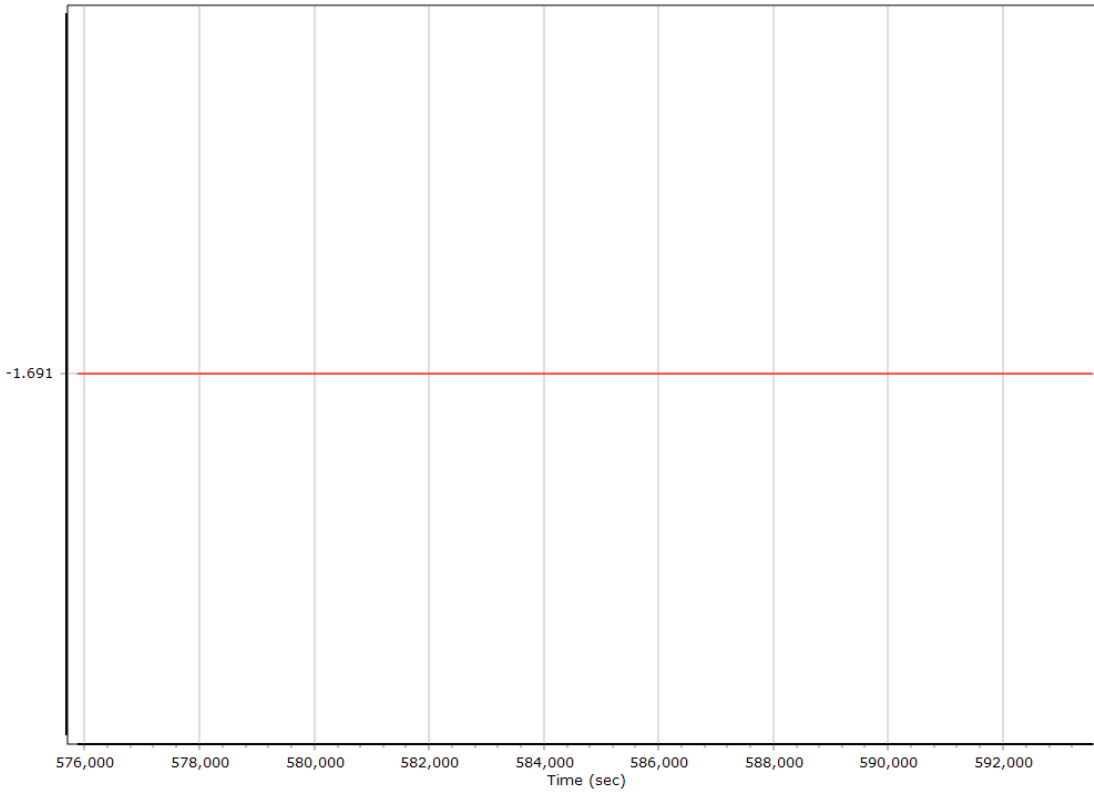
#### X Reference-Primary GNSS Lever Arm (m)



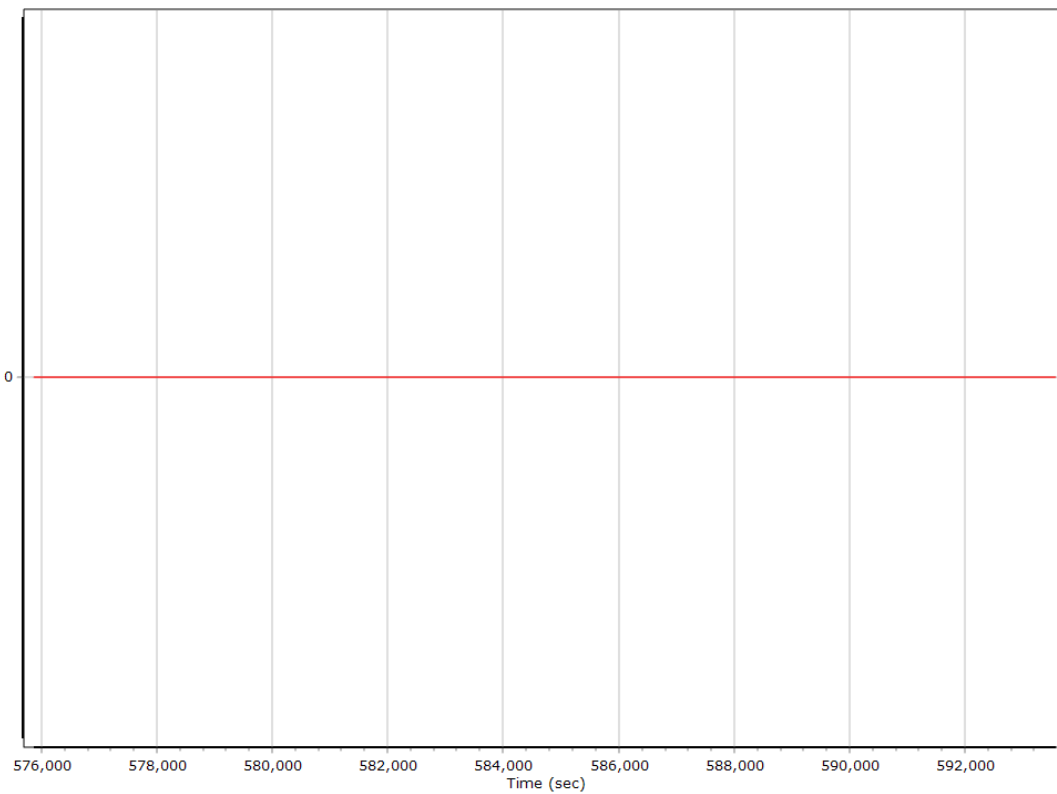
#### Y Reference-Primary GNSS Lever Arm (m)



### Z Reference-Primary GNSS Lever Arm (m)



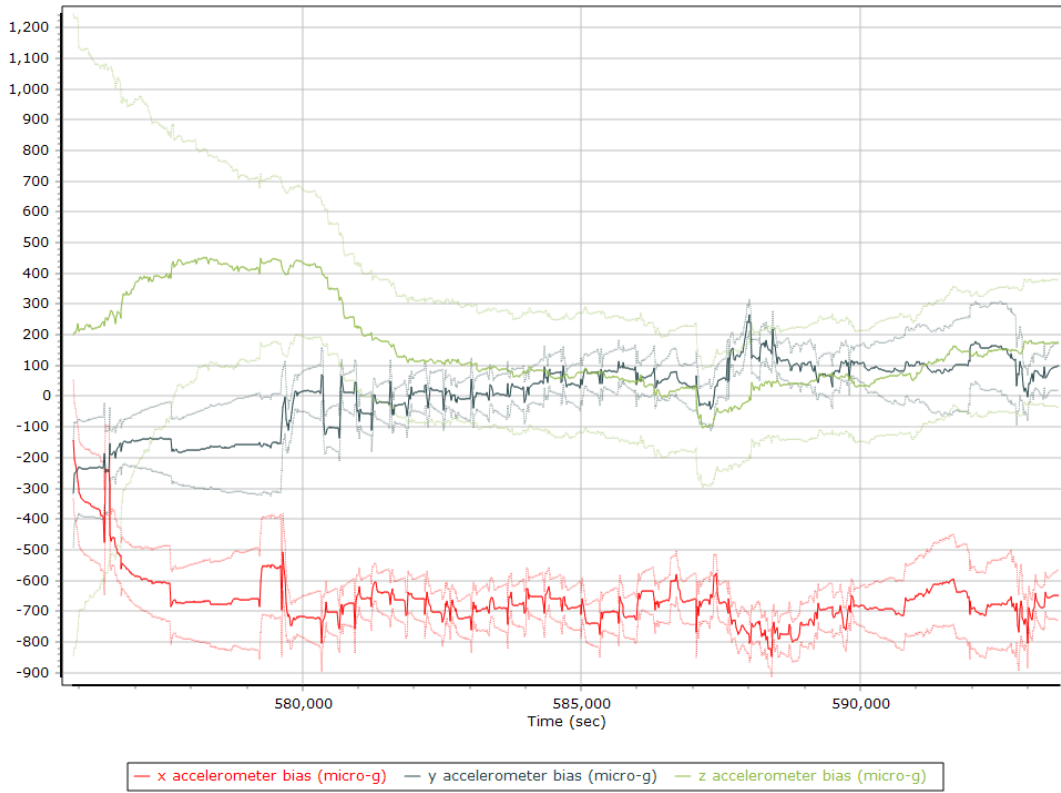
### Reference-Primary GNSS Lever Arm Figure of Merit



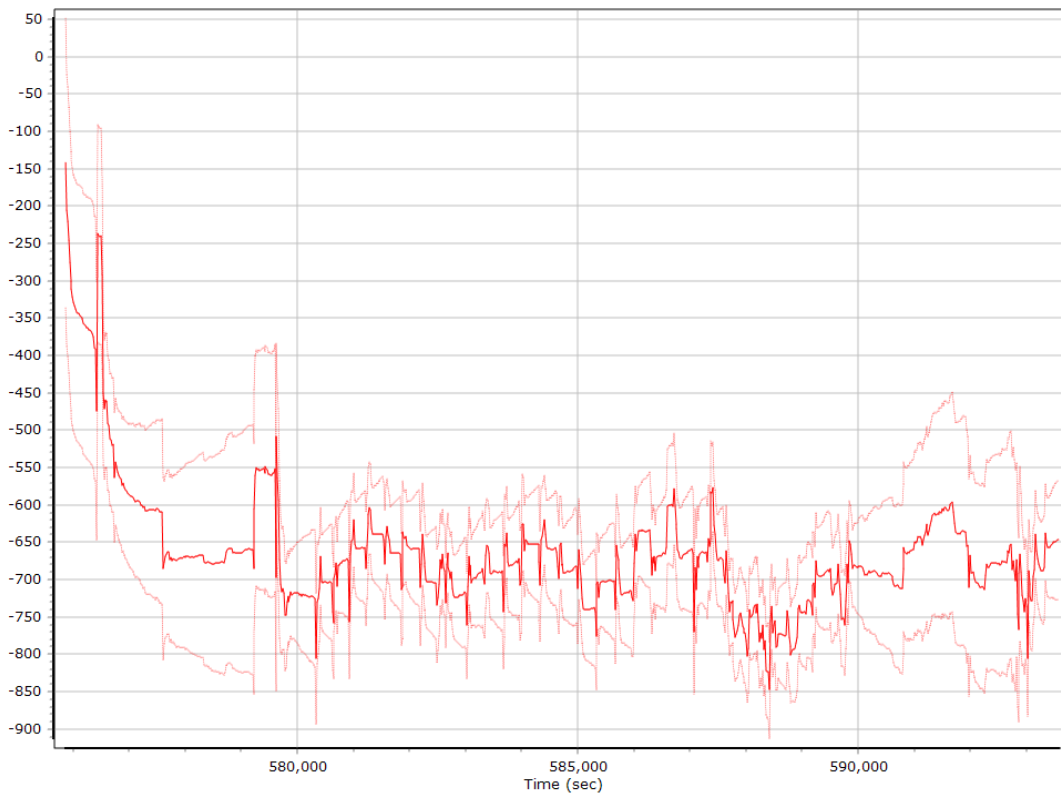
## IN-Fusion QC

### Forward Processed Estimated Errors, Reference Frame

#### Accelerometer Bias (micro-g)

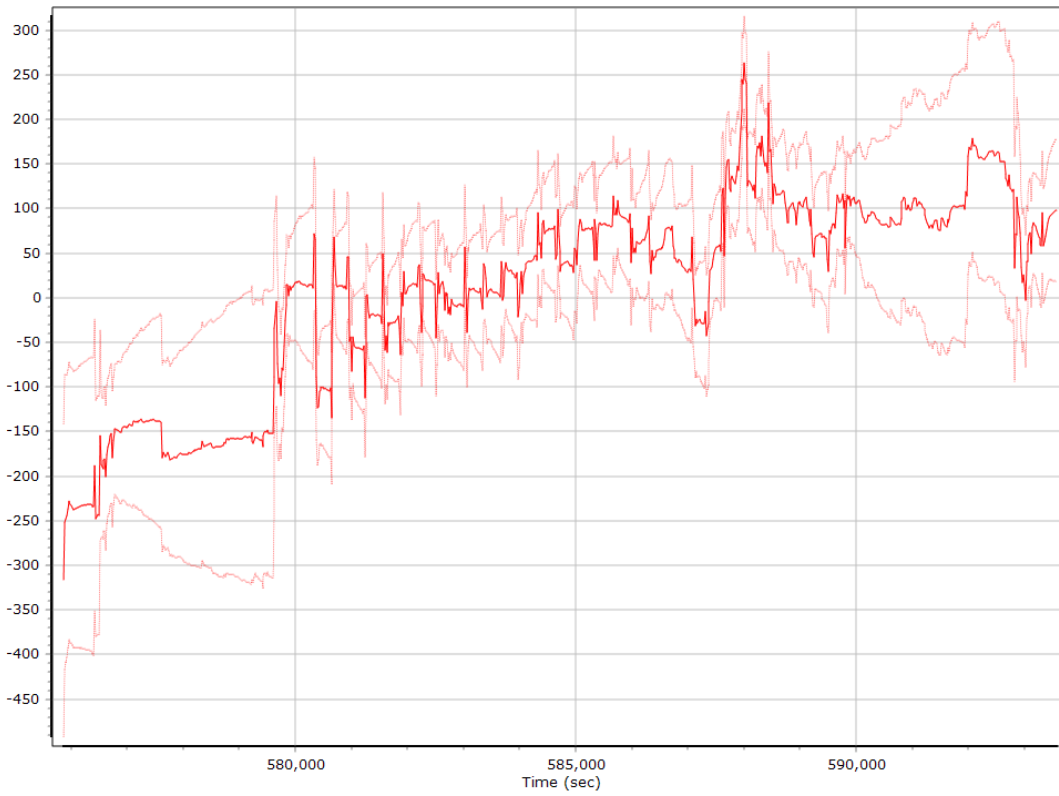


#### X Accelerometer Bias (micro-g)

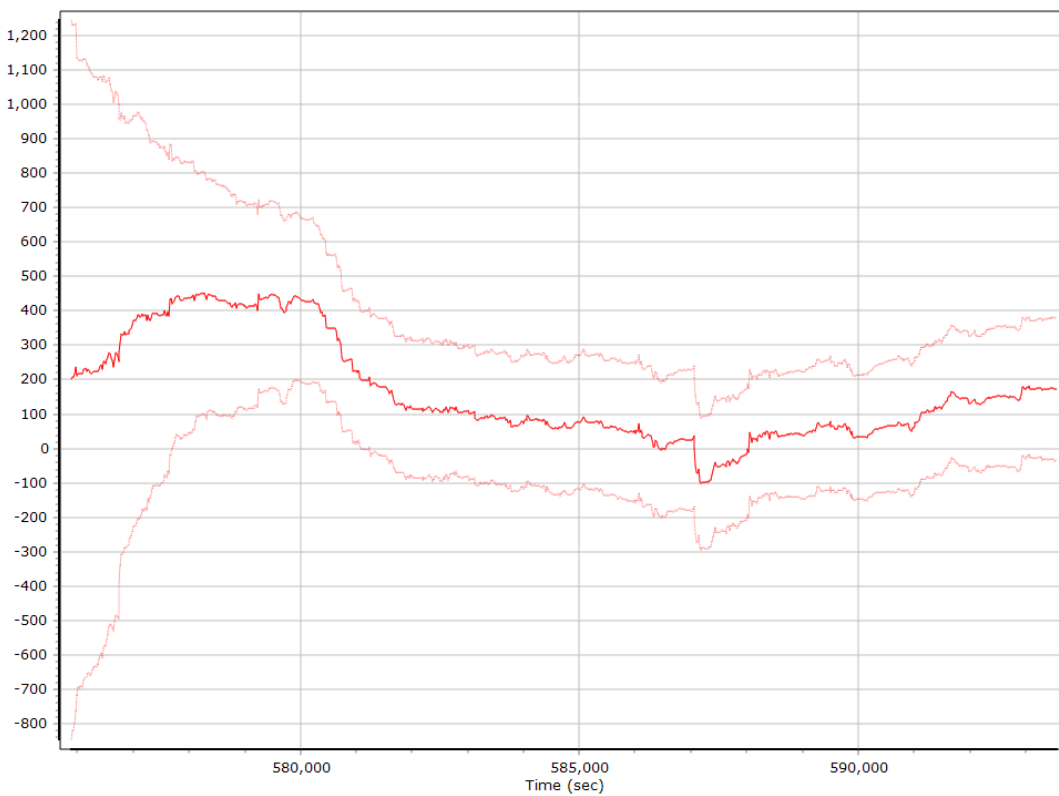




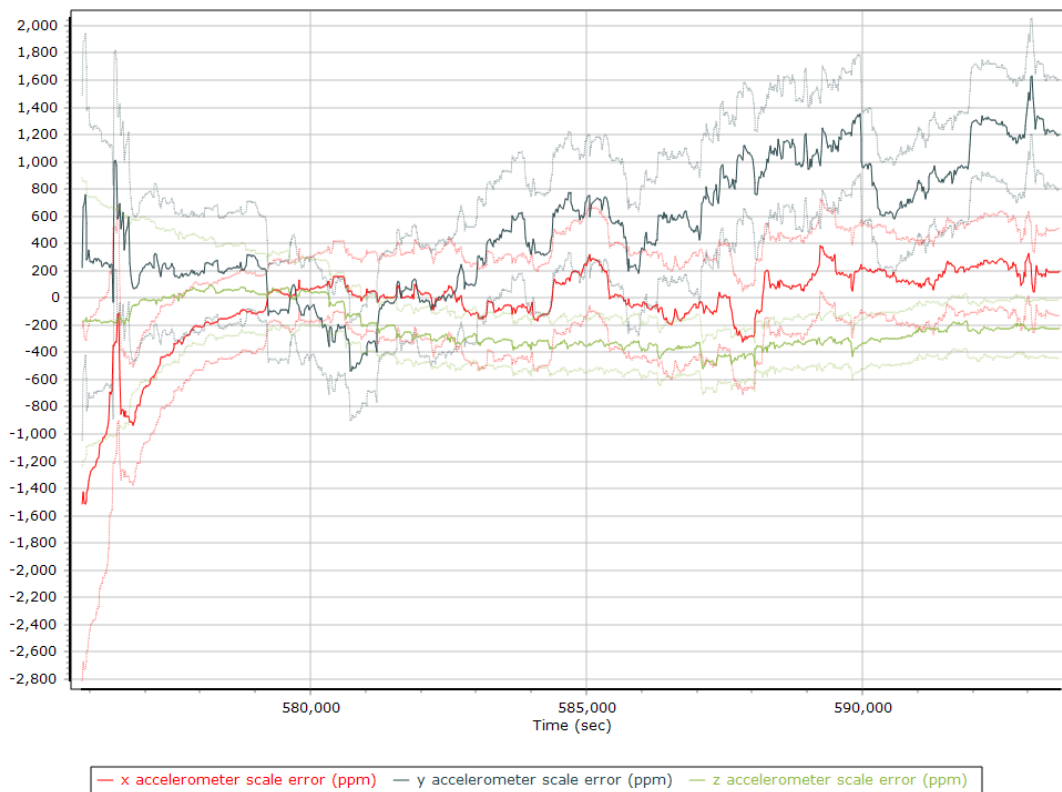
### Y Accelerometer Bias (micro-g)



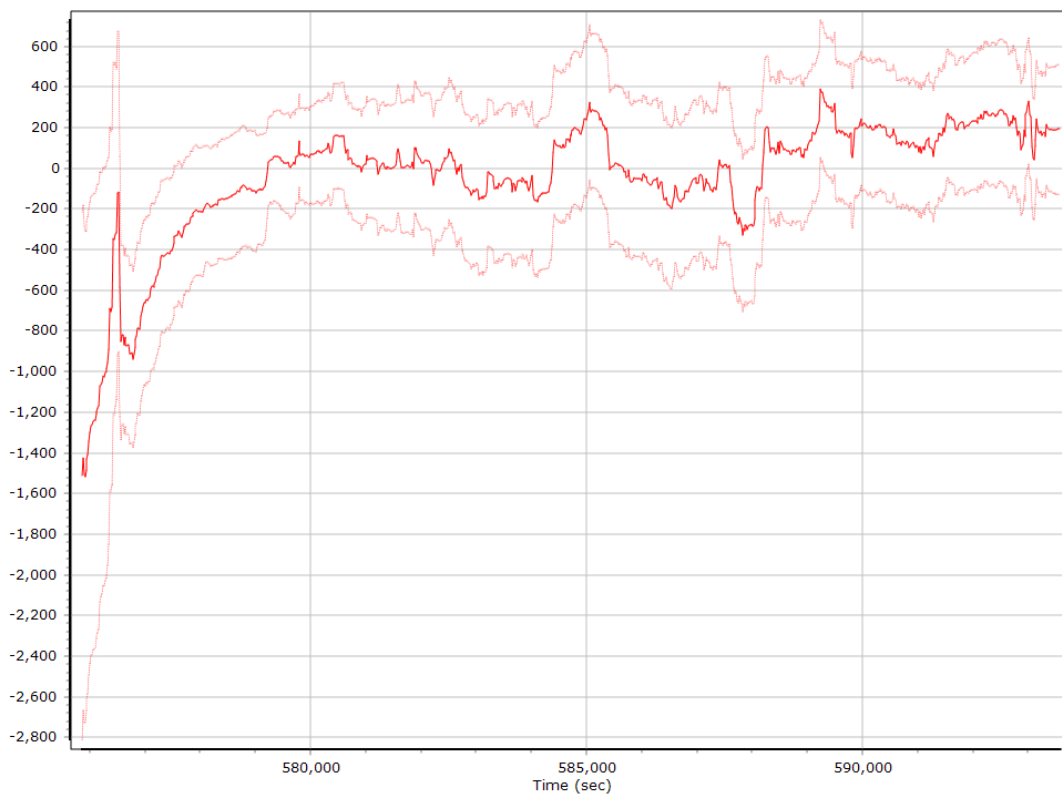
### Z Accelerometer Bias (micro-g)



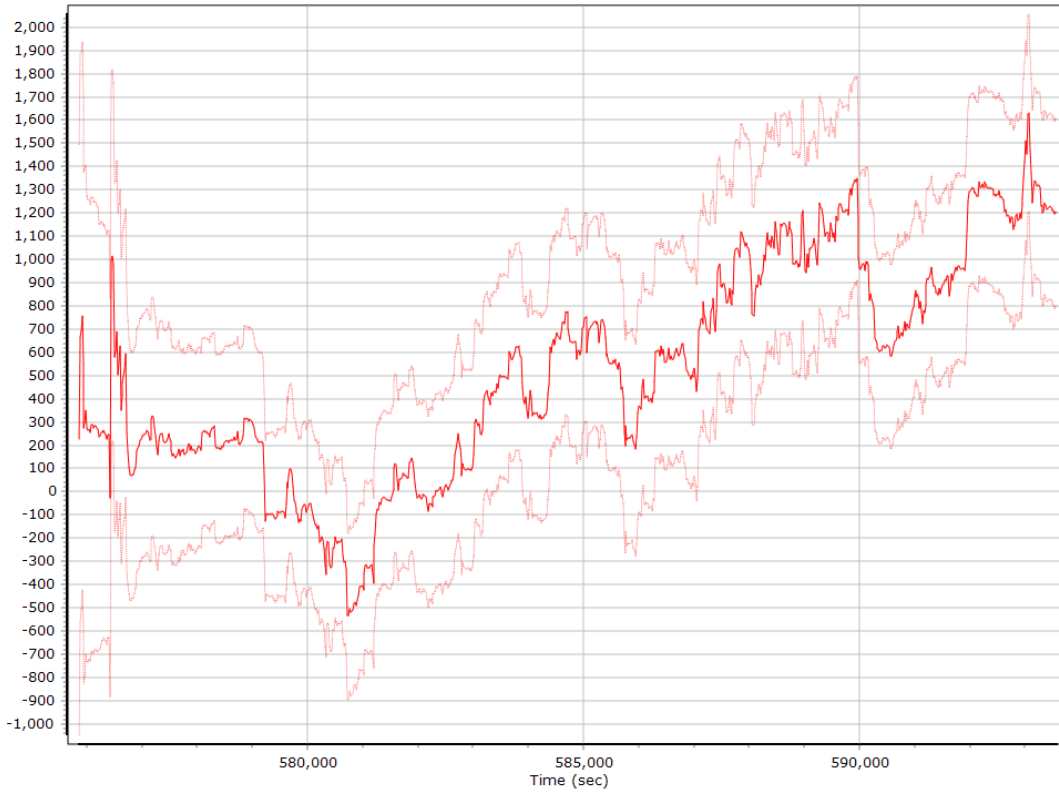
### Accelerometer Scale Error (ppm)



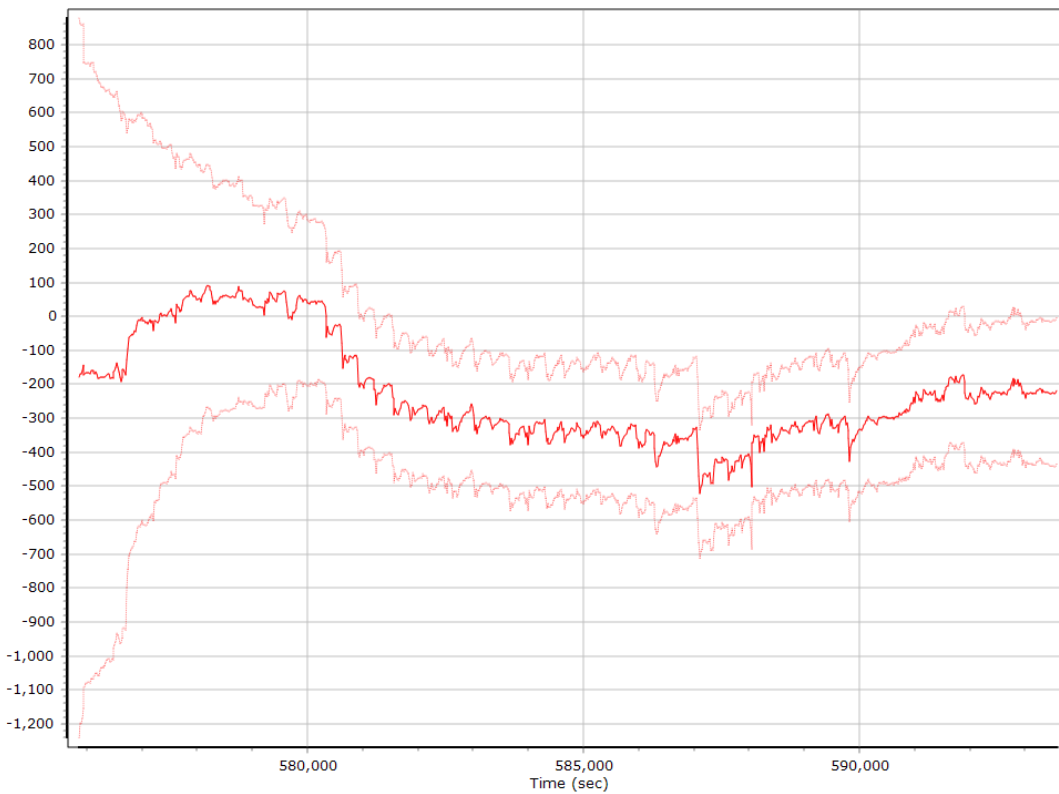
### X Accelerometer Scale Error (ppm)



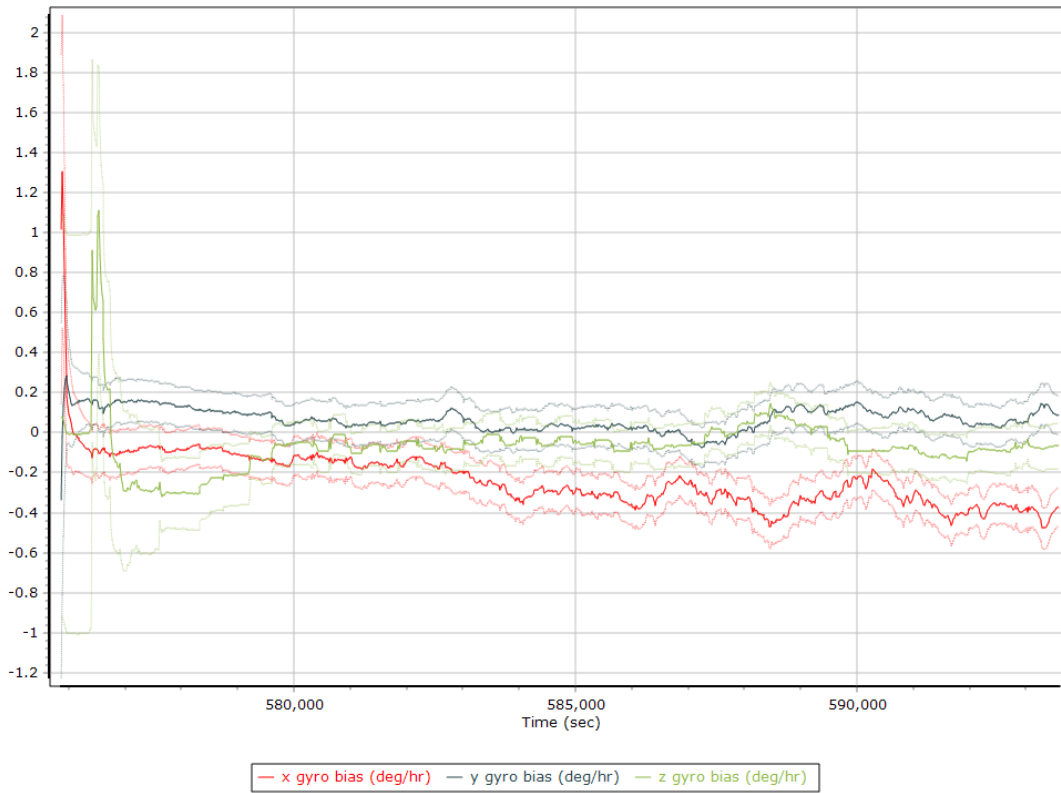
### Y Accelerometer Scale Error (ppm)



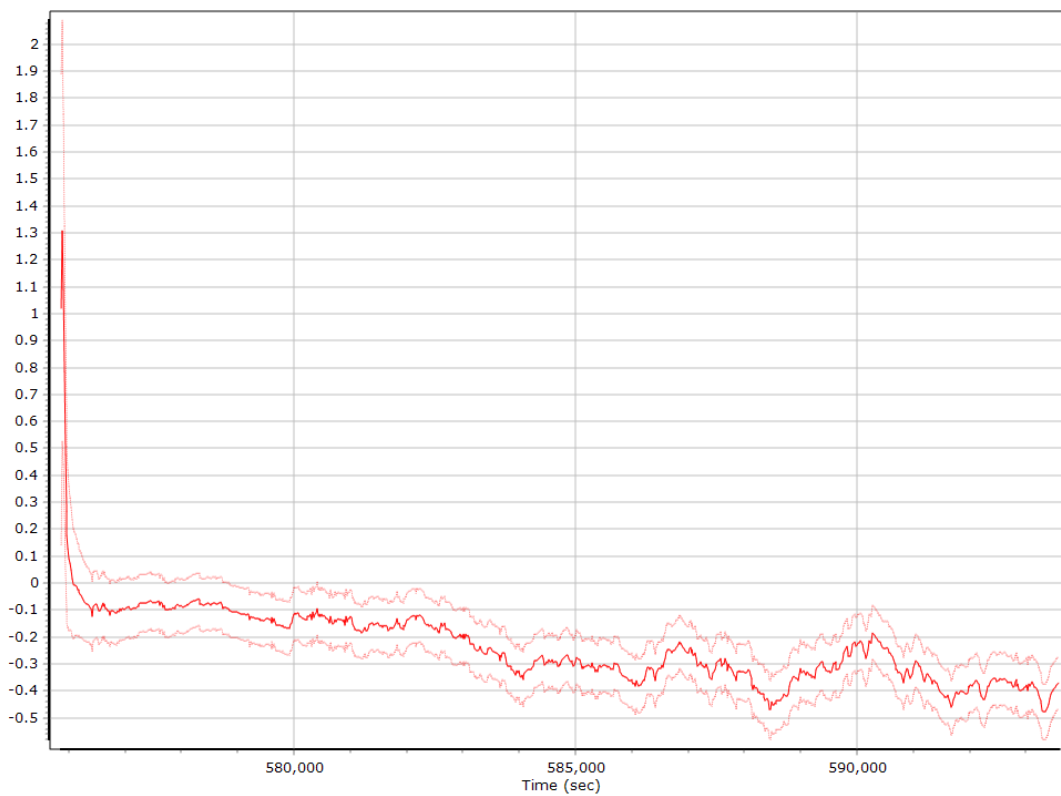
### Z Accelerometer Scale Error (ppm)



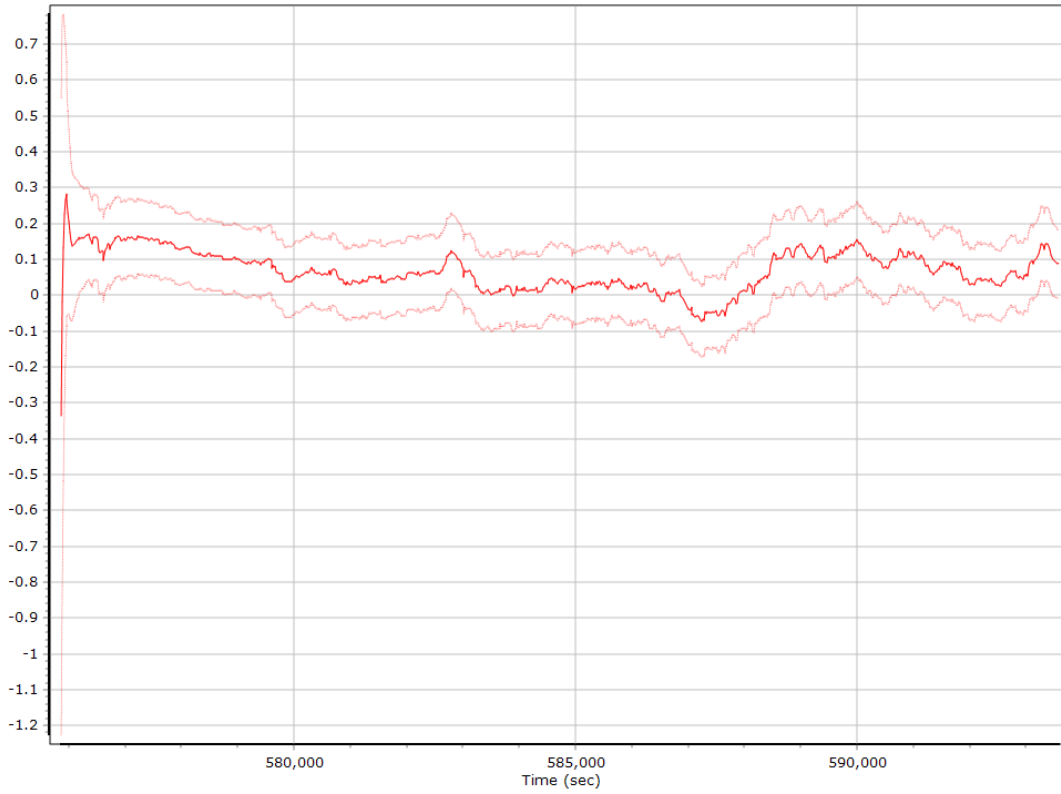
### Gyro Bias (deg/h)



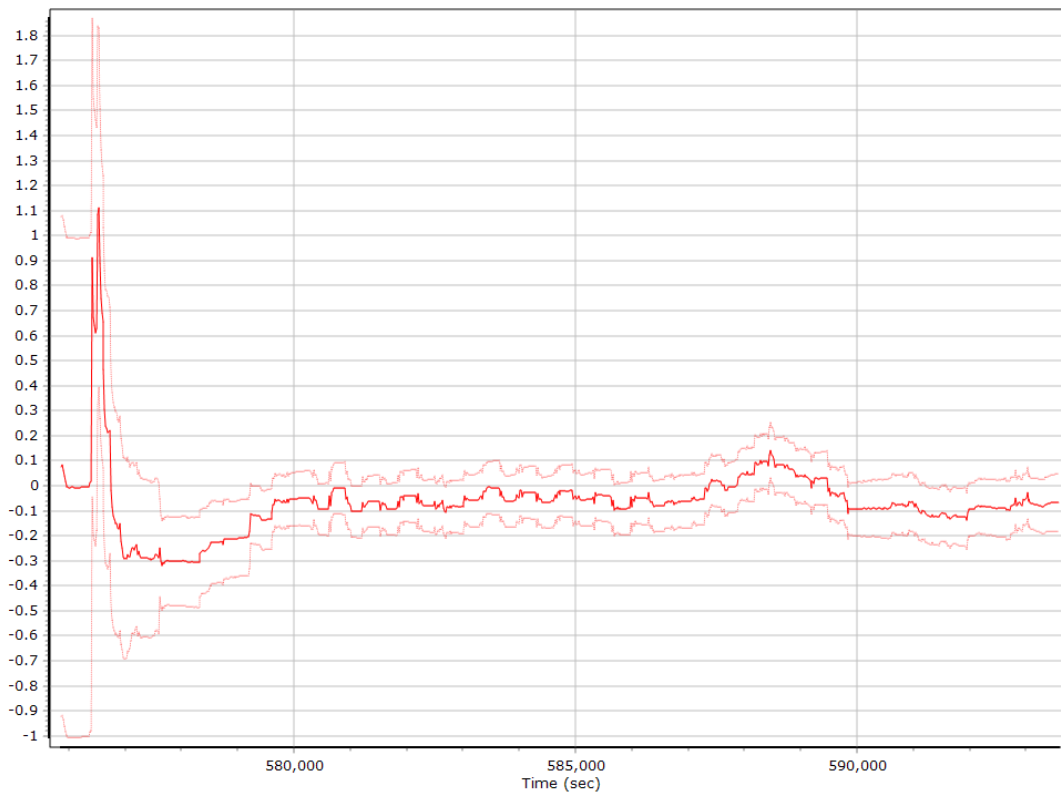
### X Gyro Bias (deg/h)



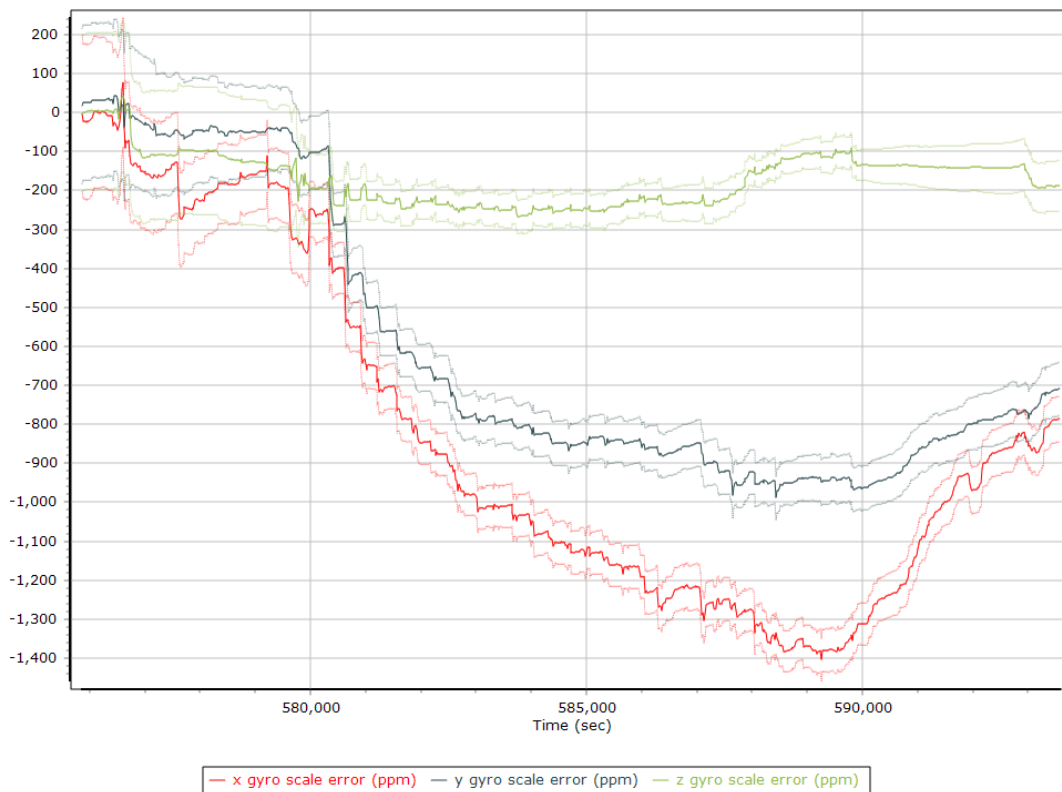
### Y Gyro Bias (deg/h)



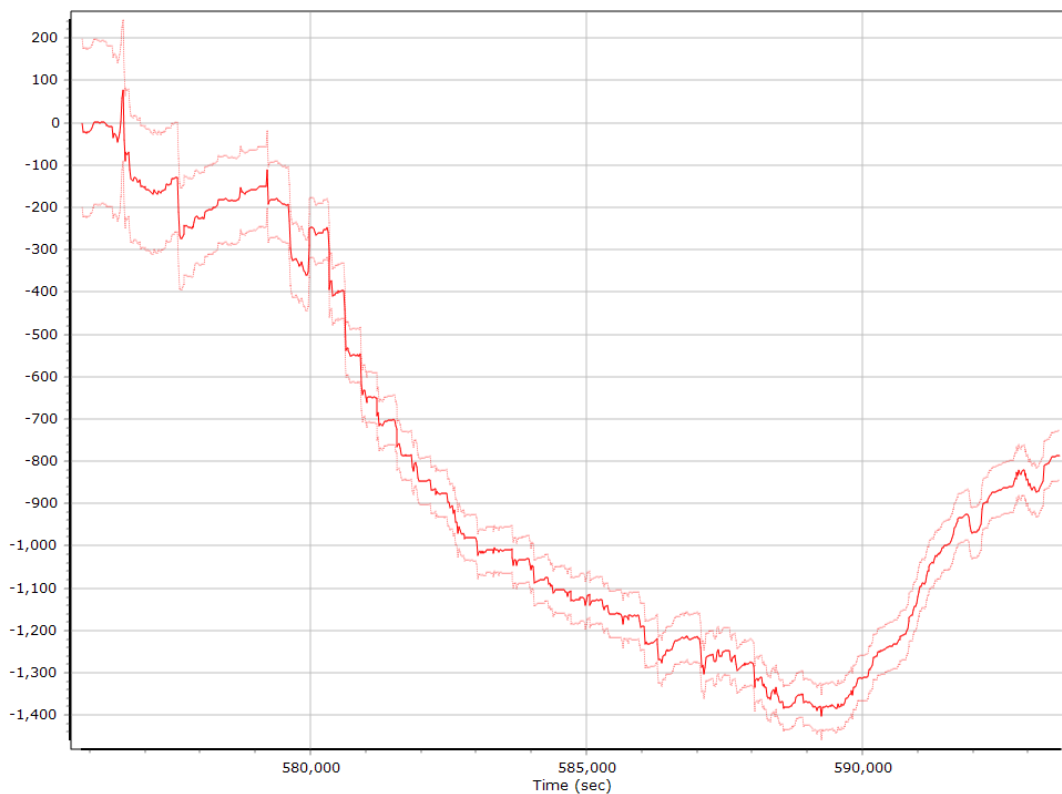
### Z Gyro Bias (deg/h)



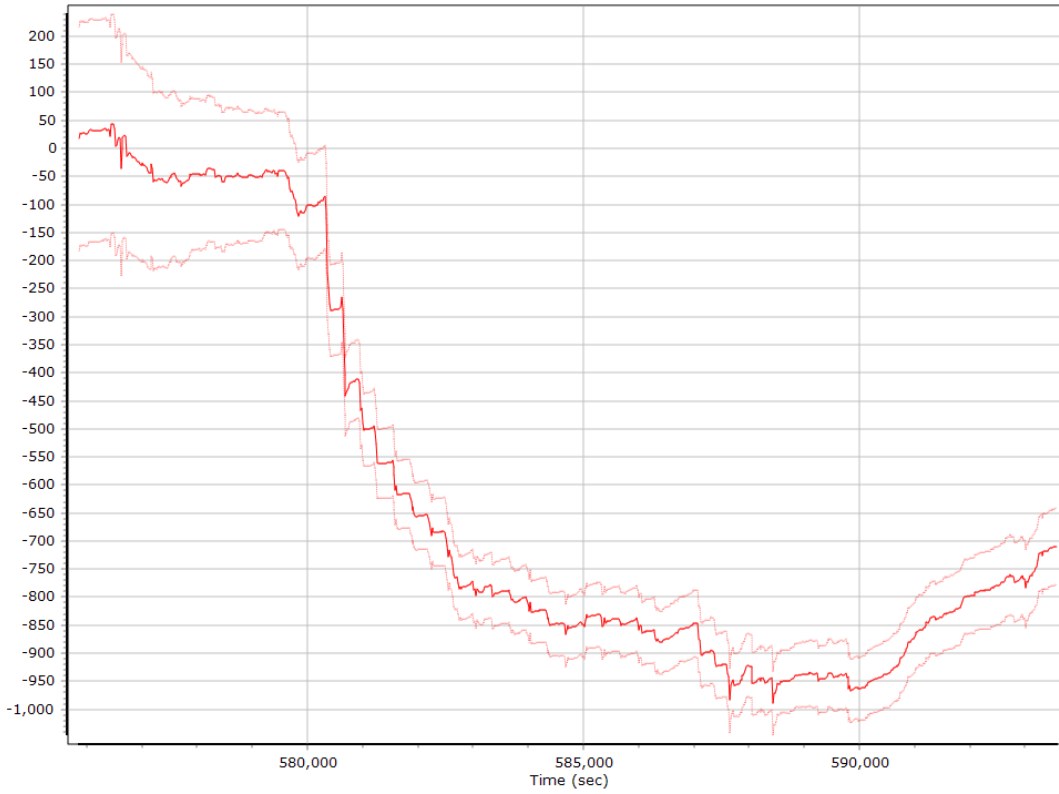
### Gyro Scale Error (ppm)



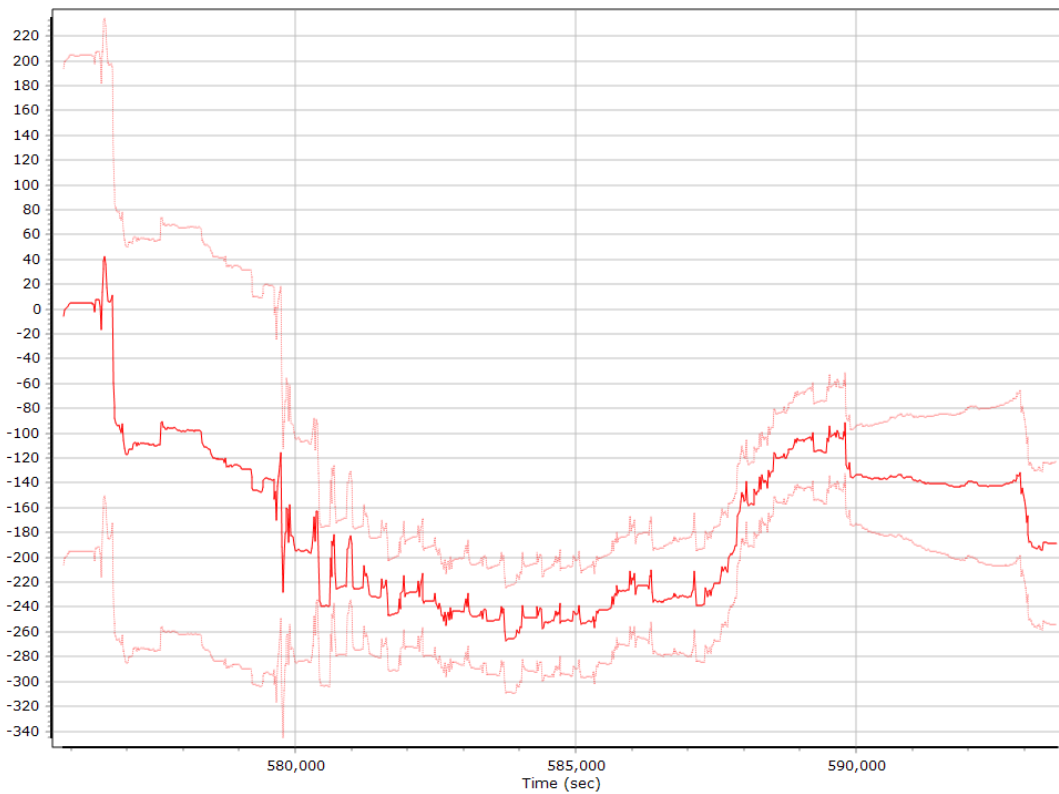
### X Gyro Scale Error (ppm)



### Y Gyro Scale Error (ppm)

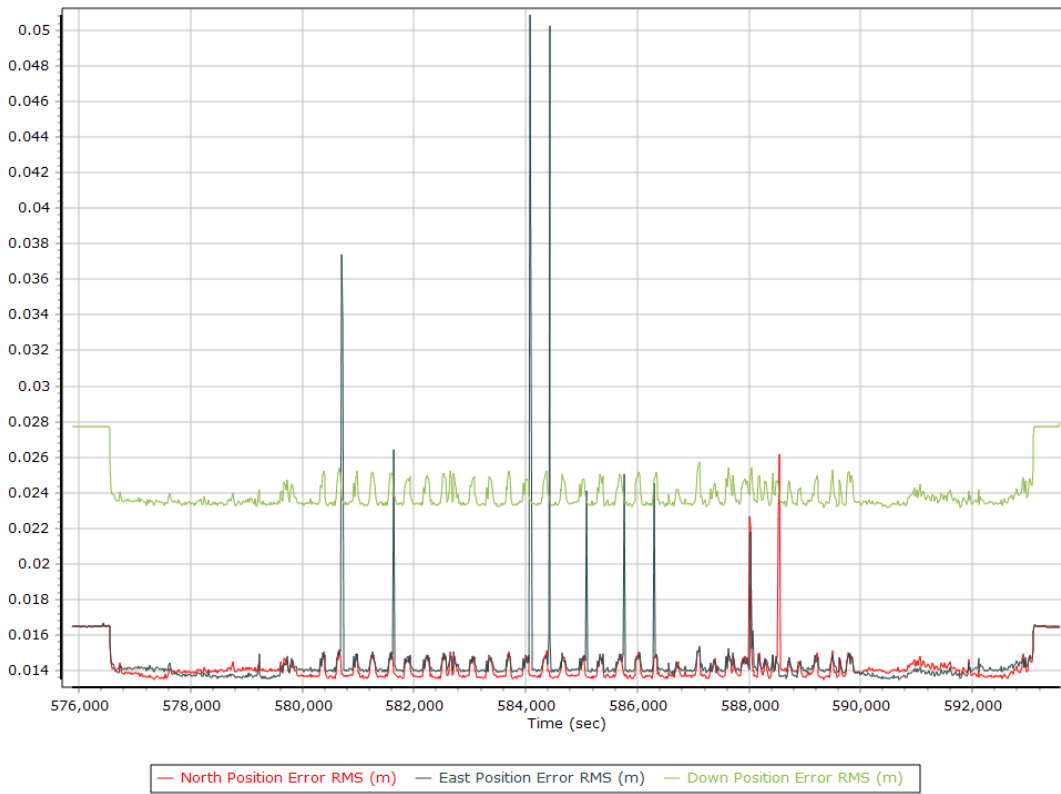


### Z Gyro Scale Error (ppm)

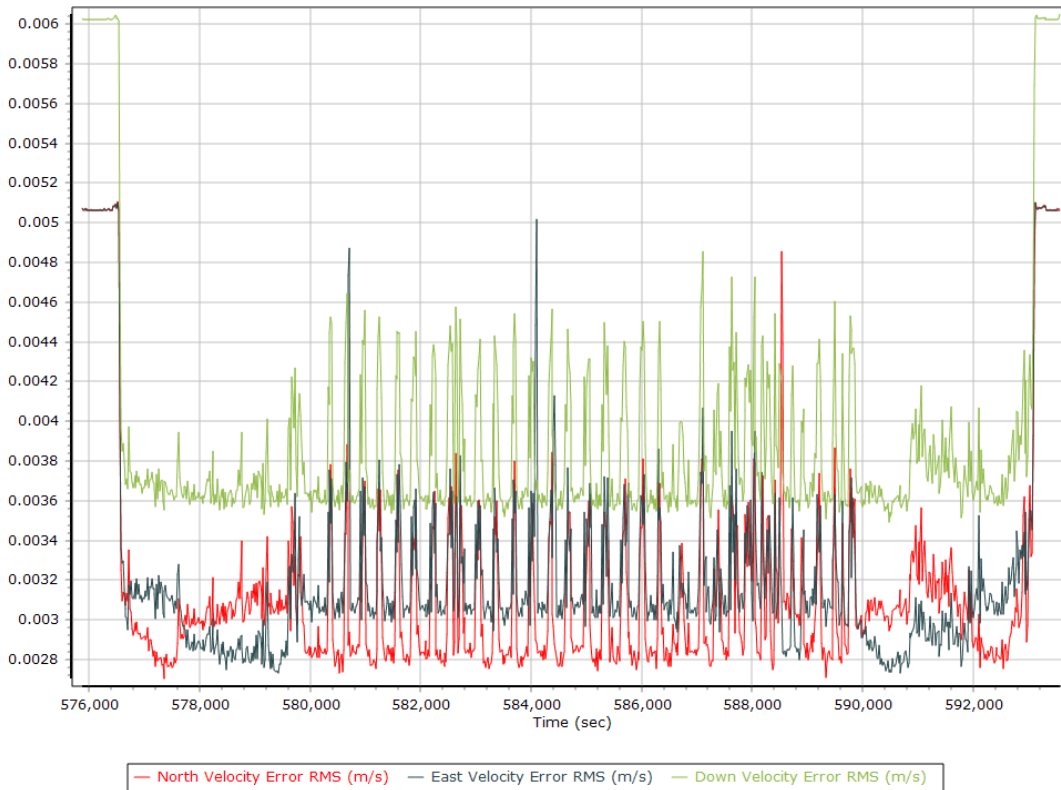


## Smoothed Performance Metrics

### Position Error RMS (m)

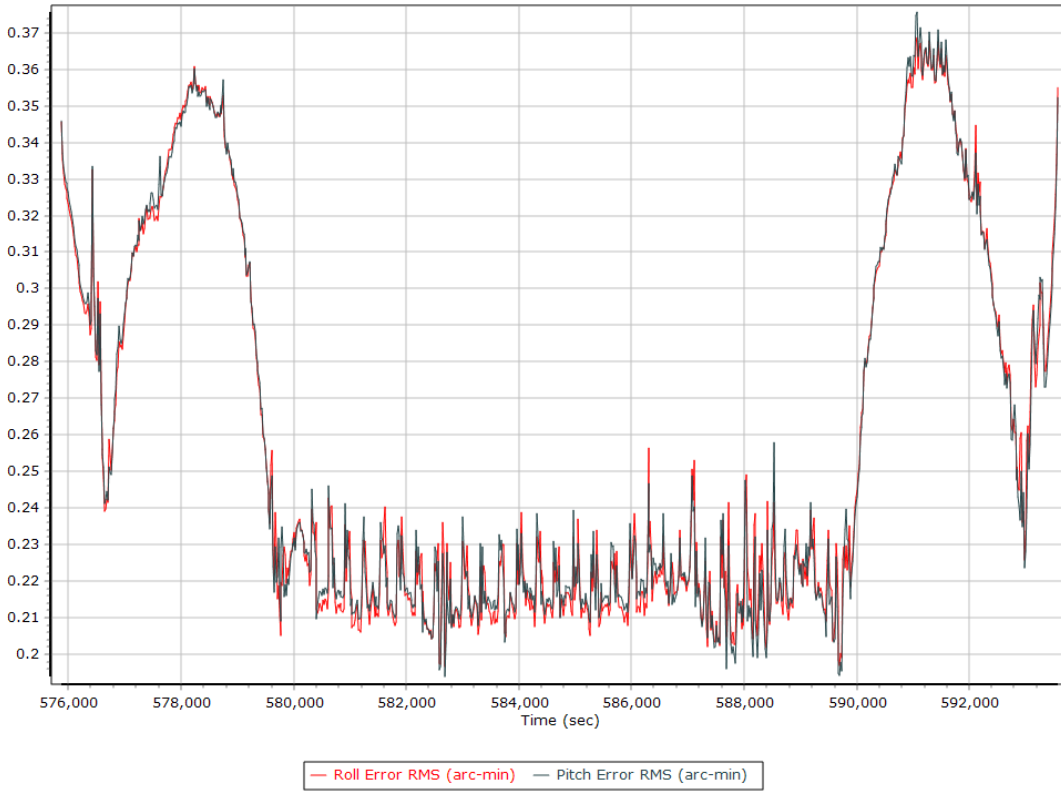


### Velocity Error RMS (m/s)

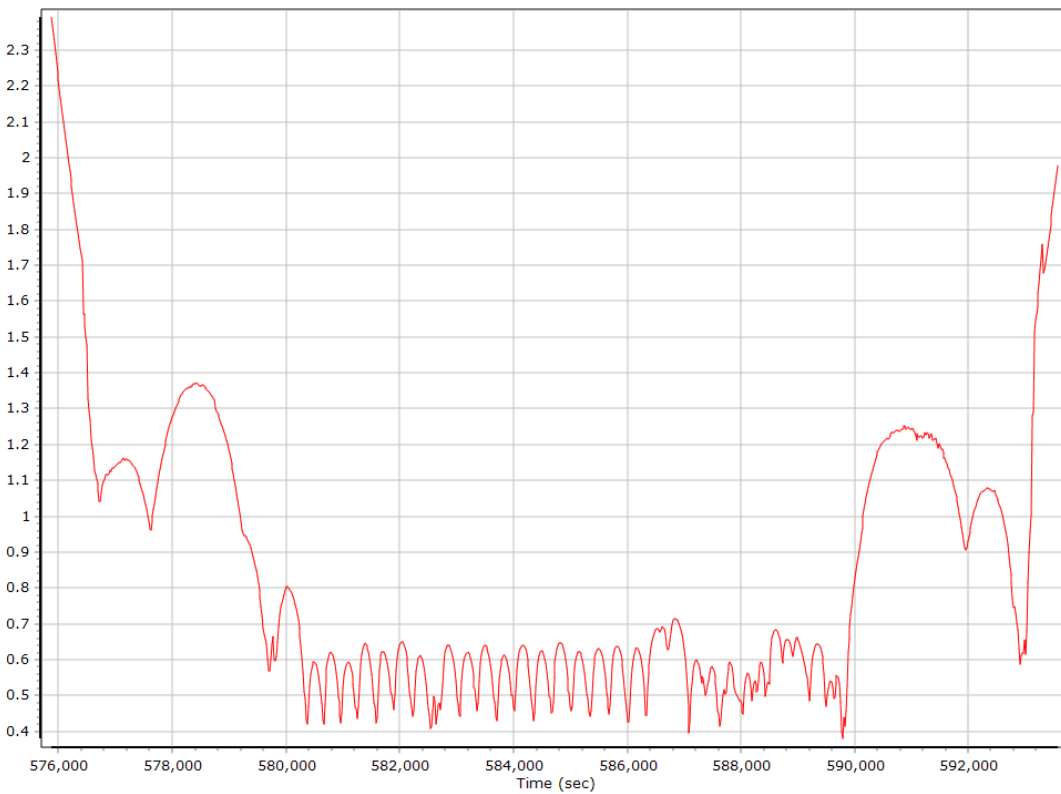




### Roll/Pitch Error RMS (arc-min)

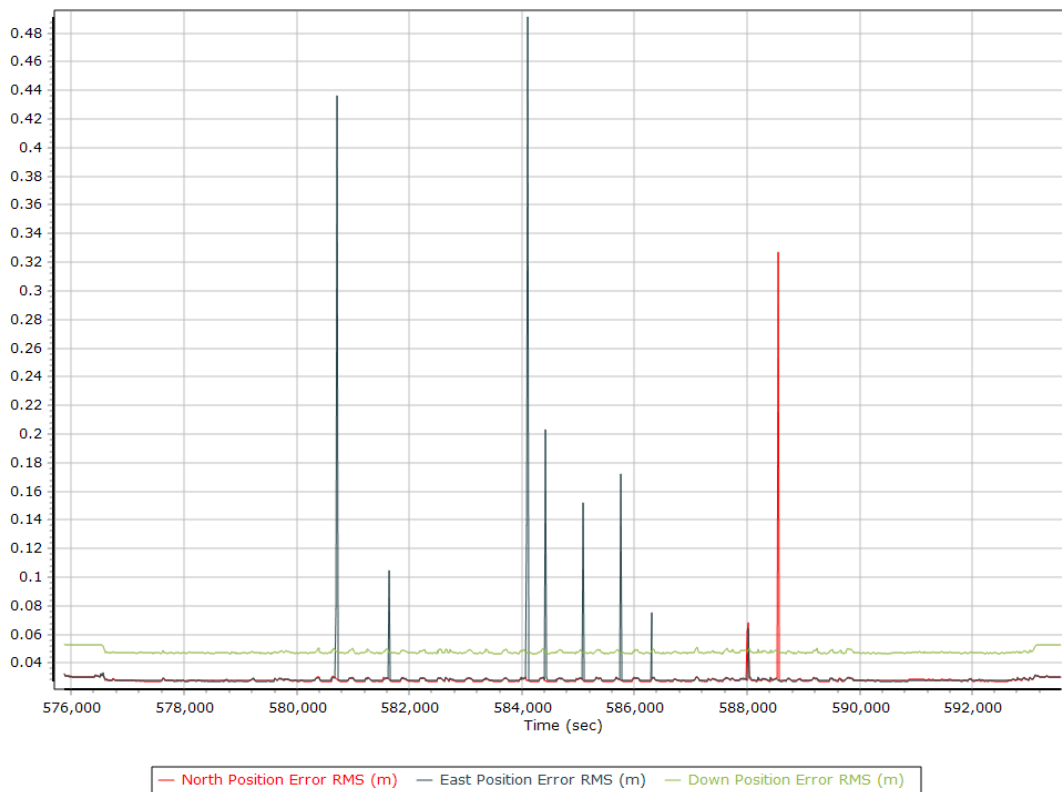


### Heading Error RMS (arc-min)

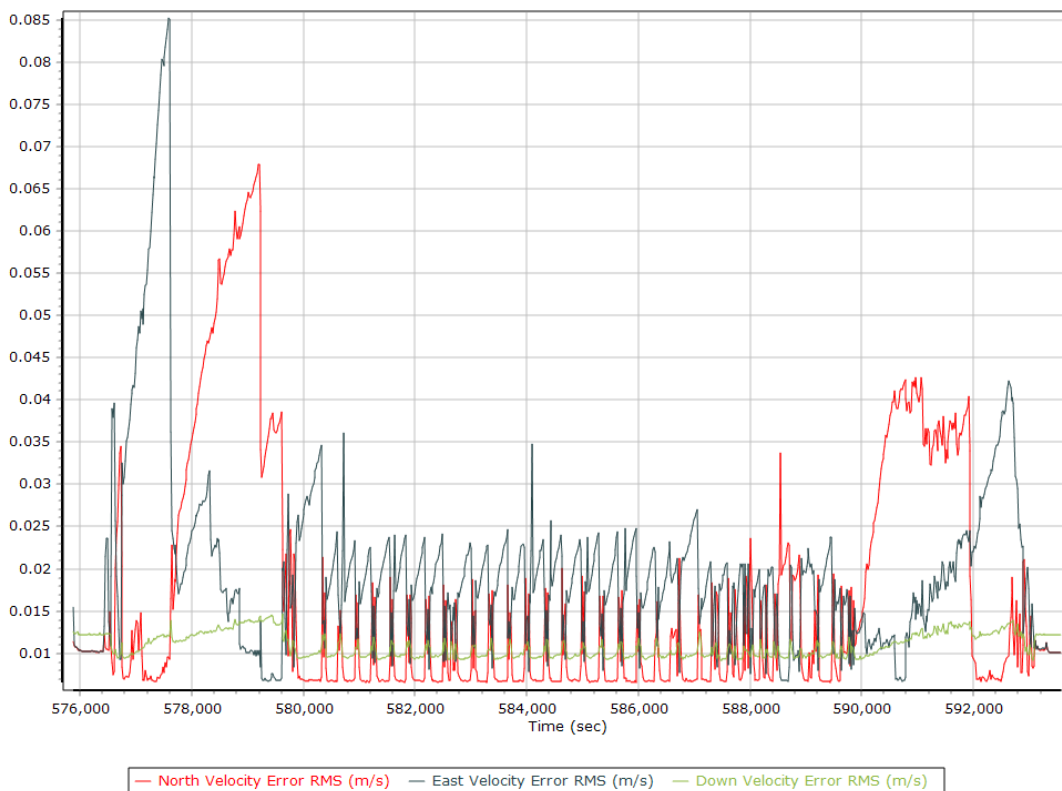


## Forward Processed Performance Metrics

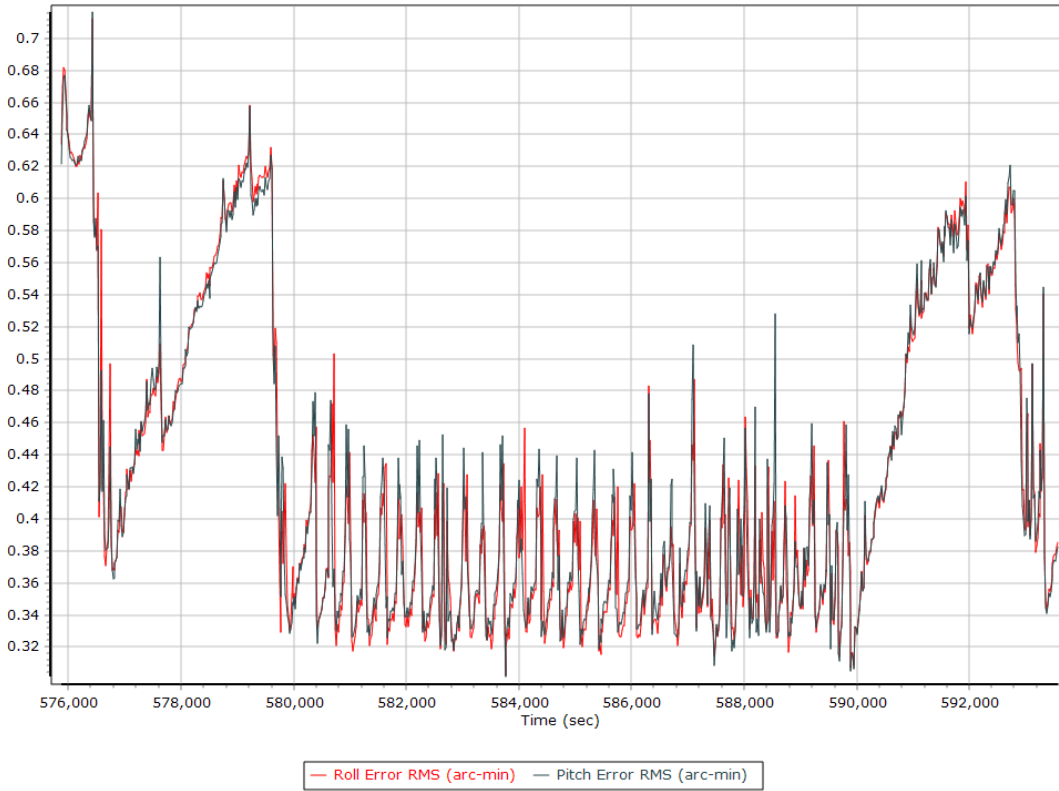
### Position Error RMS (m)



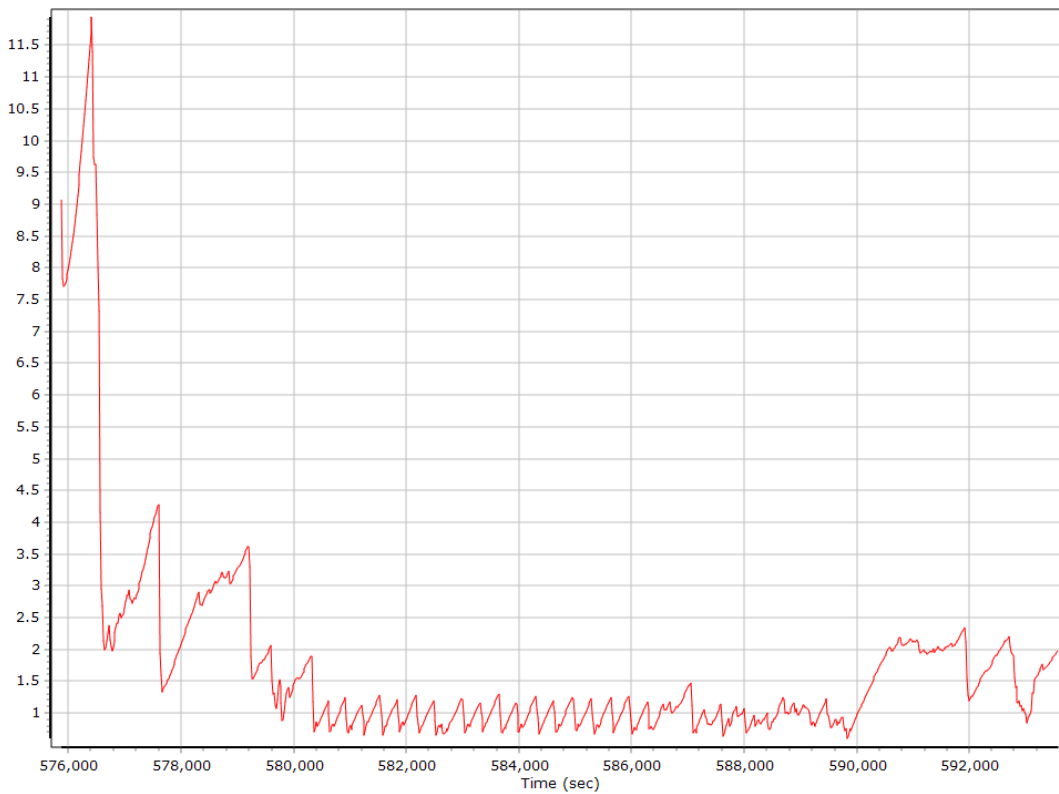
### Velocity Error RMS (m/s)



### Roll/Pitch Error RMS (arc-min)

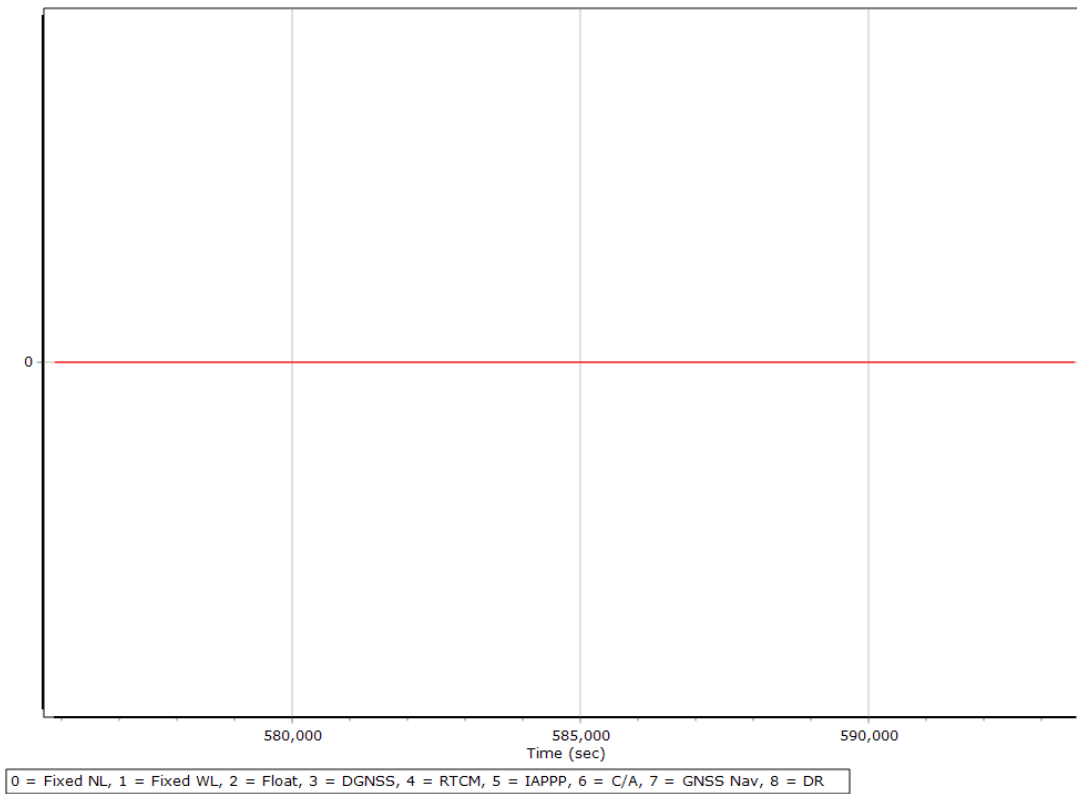


### Heading Error RMS (arc-min)

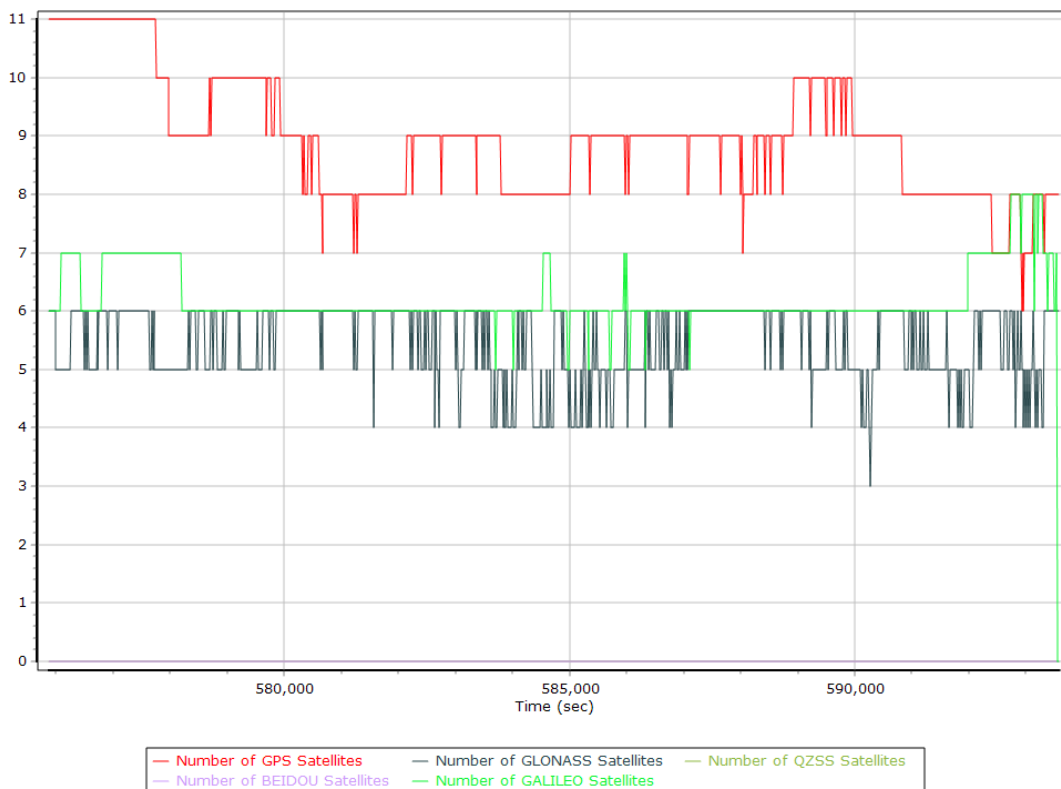


## Forward Processed Solution Status

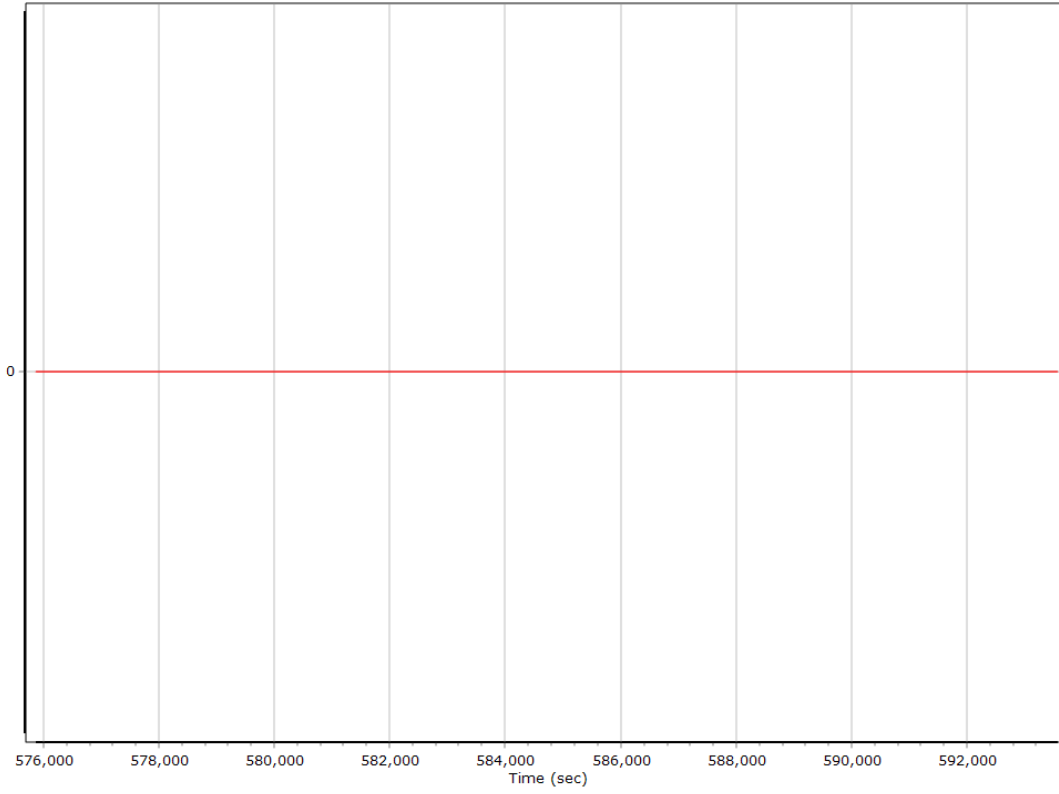
### Processing Mode



### Number of Satellites



### Baseline Length



## Export Summary

Export file	export_20220924_F1_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	575816.001 (09/24/2022 15:56:56)		
Export end time	593587.004 (09/24/2022 20:53:07)		
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	2022.728767		