

## General Information

### Mission Information

Project name	220623_A_5060448_nad2011_FINAL
Processing date	2023-01-19 02:50:41
Mission date	2022-06-23 11:47:43
Mission duration	05:12:32.000
Processing mode	IN-Fusion PP-RTX

### Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N11194
IMU type	57
Receiver type	BD992
Antenna type	AV39

## Project File List

### Rover Data Files

File name	File type
0623a448.536	POS Data
0623a448.537	POS Data
0623a448.538	POS Data
0623a448.539	POS Data
0623a448.540	POS Data
0623a448.541	POS Data
0623a448.542	POS Data
0623a448.543	POS Data
0623a448.544	POS Data
0623a448.545	POS Data
0623a448.546	POS Data
0623a448.547	POS Data
0623a448.548	POS Data
0623a448.549	POS Data
0623a448.550	POS Data
0623a448.551	POS Data
0623a448.552	POS Data
0623a448.553	POS Data
0623a448.554	POS Data
0623a448.555	POS Data
0623a448.556	POS Data
0623a448.557	POS Data
0623a448.558	POS Data
0623a448.559	POS Data
0623a448.560	POS Data
0623a448.561	POS Data
0623a448.562	POS Data
0623a448.563	POS Data
0623a448.564	POS Data
0623a448.565	POS Data
0623a448.566	POS Data
0623a448.567	POS Data
0623a448.568	POS Data
0623a448.569	POS Data
0623a448.570	POS Data
0623a448.571	POS Data
0623a448.572	POS Data
0623a448.573	POS Data
0623a448.574	POS Data
0623a448.575	POS Data
0623a448.576	POS Data
0623a448.577	POS Data
0623a448.578	POS Data

### Input Files

File Name	File Type
Ephm1740.22g	GLONASS Broadcast Ephemeris
Ephm1740.22n	GPS Broadcast Ephemeris

### Output Files

Filename	File type
sbet_220623_A_5060448_nad2011_FINAL.out	SBET Trajectory File

## Rover Data Summary

First raw data file	0623a448.536		
Last raw data file	0623a448.578		
Start GPS week	2215		
Start time	388062.899 (6/23/2022 11:47:42 AM)		
End time	406807.473 (6/23/2022 5:00:07 PM)		
Start of fine alignment	388711.262 (6/23/2022 11:58:31 AM)		
Available subsystems	Primary GNSS, IMU		
POS Event Input	None		
Correction data	None		
<b>IMU Installation Lever Arms &amp; Mounting Angles</b>			
Reference to IMU lever arm (m)	0.000	0.000	0.000
Reference to IMU mounting angles (deg)	0.000	0.000	180.000
Reference to Primary GNSS lever arm (m)	0.140	-0.150	-1.115
Reference to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

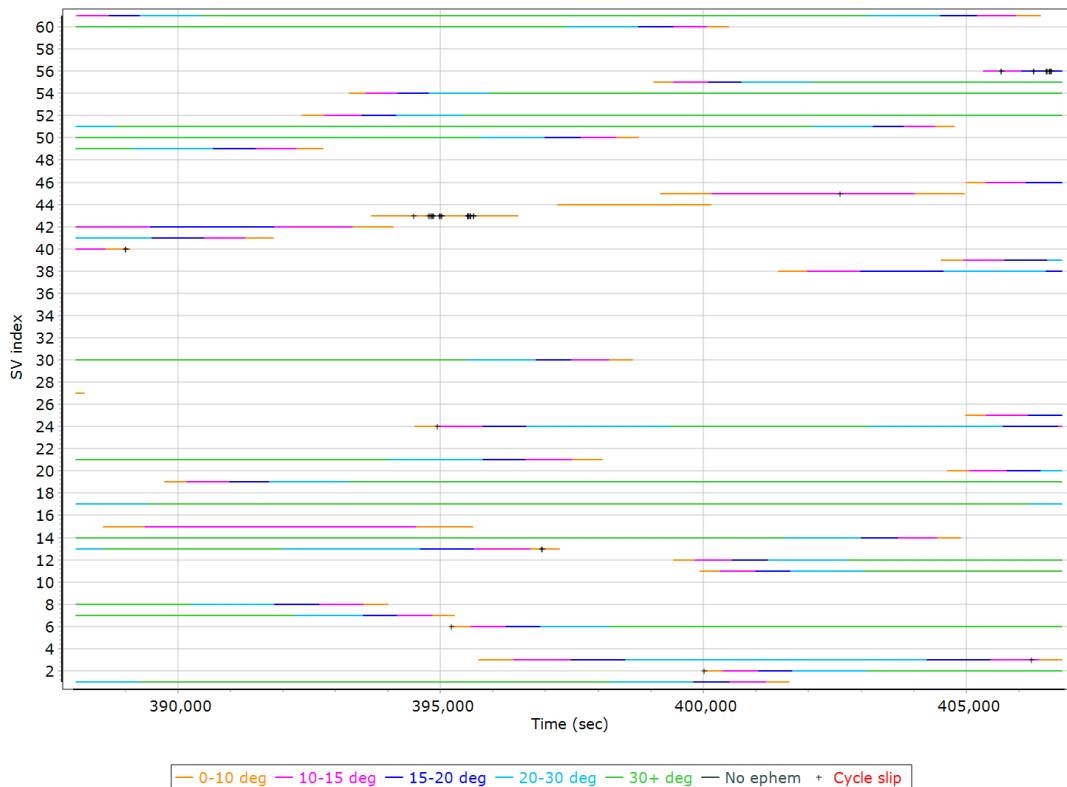
## Rover Data QC

### Raw IMU Import QC Summary

IMU data input file	imu_220623_A_5060448_nad2011_FINAL.dat
IMU data check log file	imudt_220623_A_5060448_nad2011_FINAL.log
IMU Records Processed	3749739
Termination Status	Normal
IMU Anomalies	0

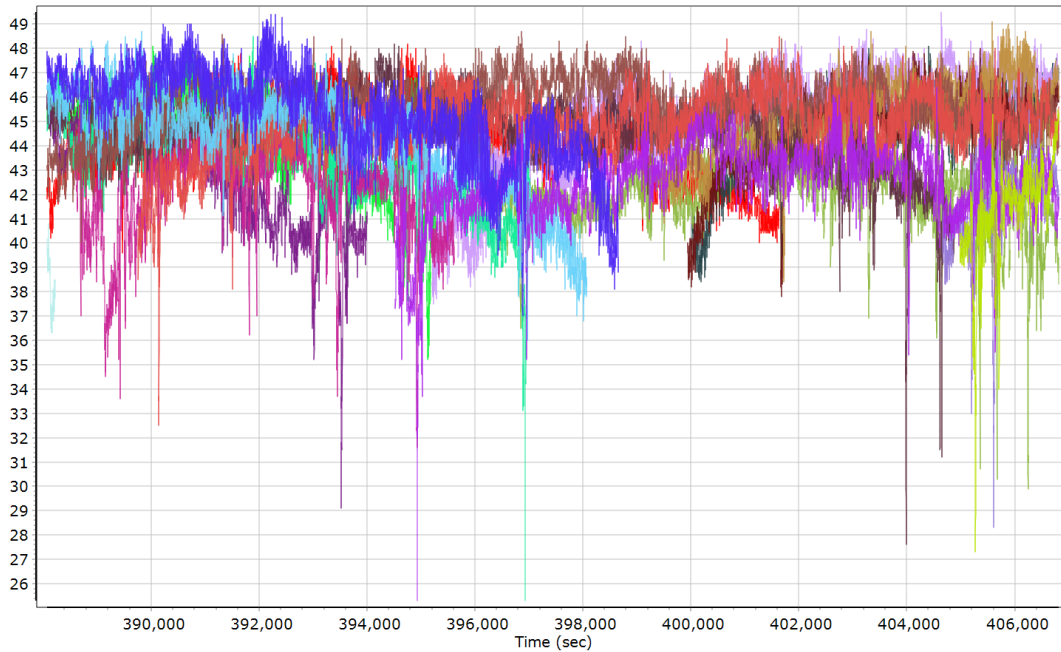
## Primary Observables & Satellite Data

### GPS/GLONASS L1 Satellite Lock/Elevation



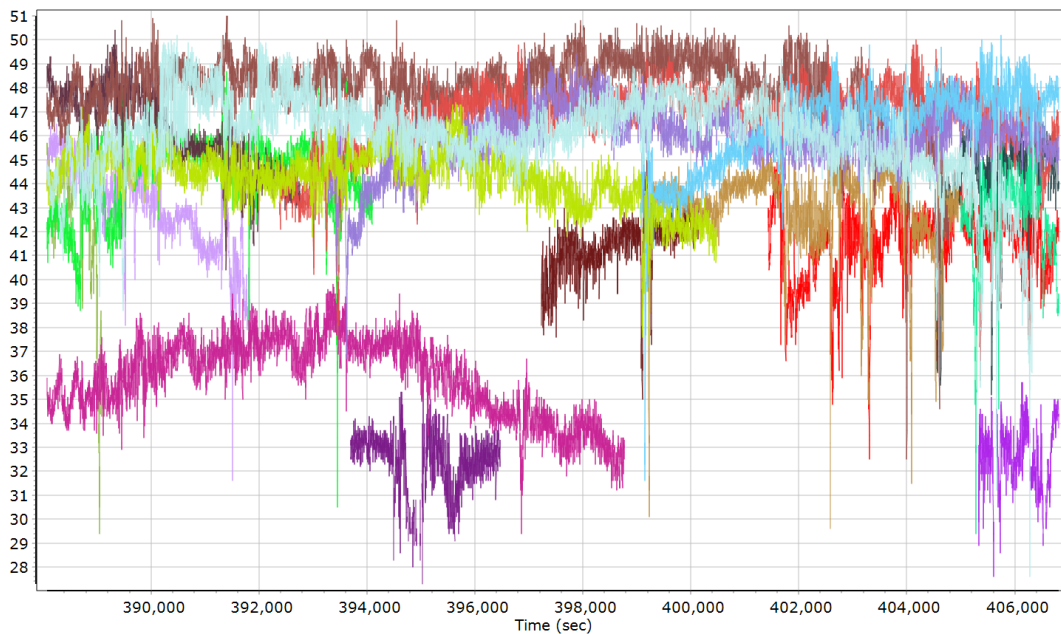


### GPS L1 SNR



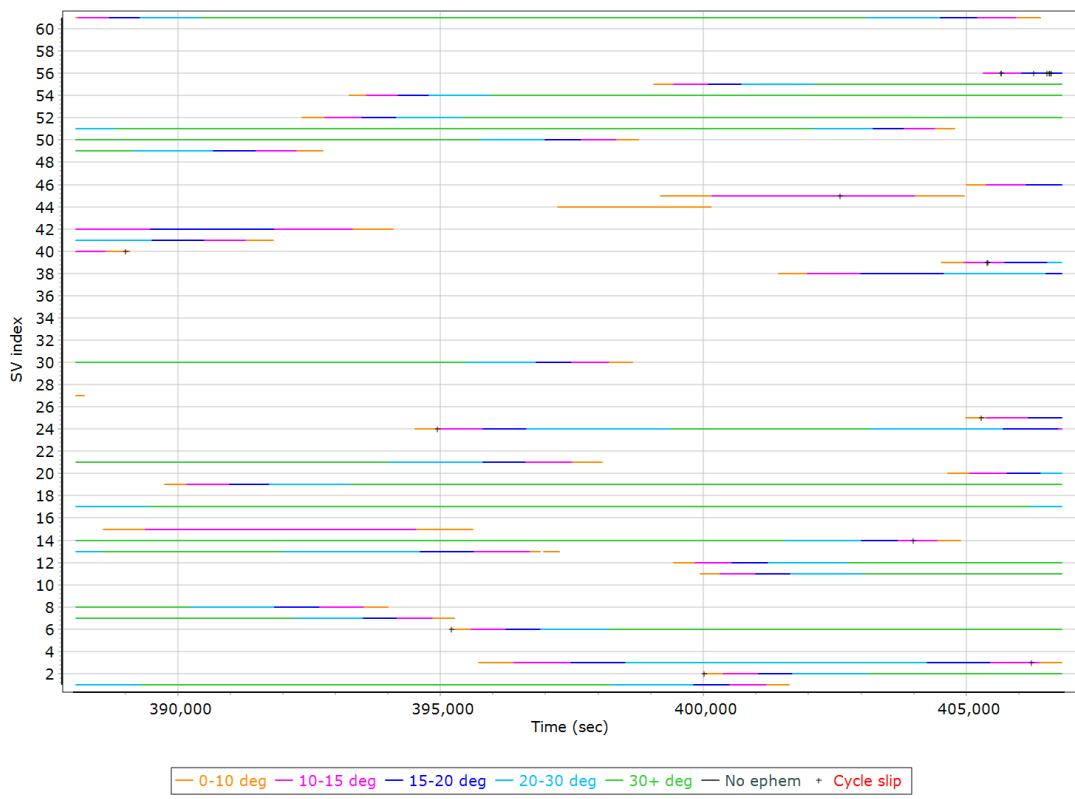
- |                           |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|---------------------------|
| GPS PRN 01 L1 SNR (dB/Hz) | GPS PRN 02 L1 SNR (dB/Hz) | GPS PRN 03 L1 SNR (dB/Hz) | GPS PRN 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 24 L1 SNR (dB/Hz) |
| GPS PRN 25 L1 SNR (dB/Hz) | GPS PRN 27 L1 SNR (dB/Hz) | GPS PRN 30 L1 SNR (dB/Hz) |                           |

### GLONASS L1 SNR

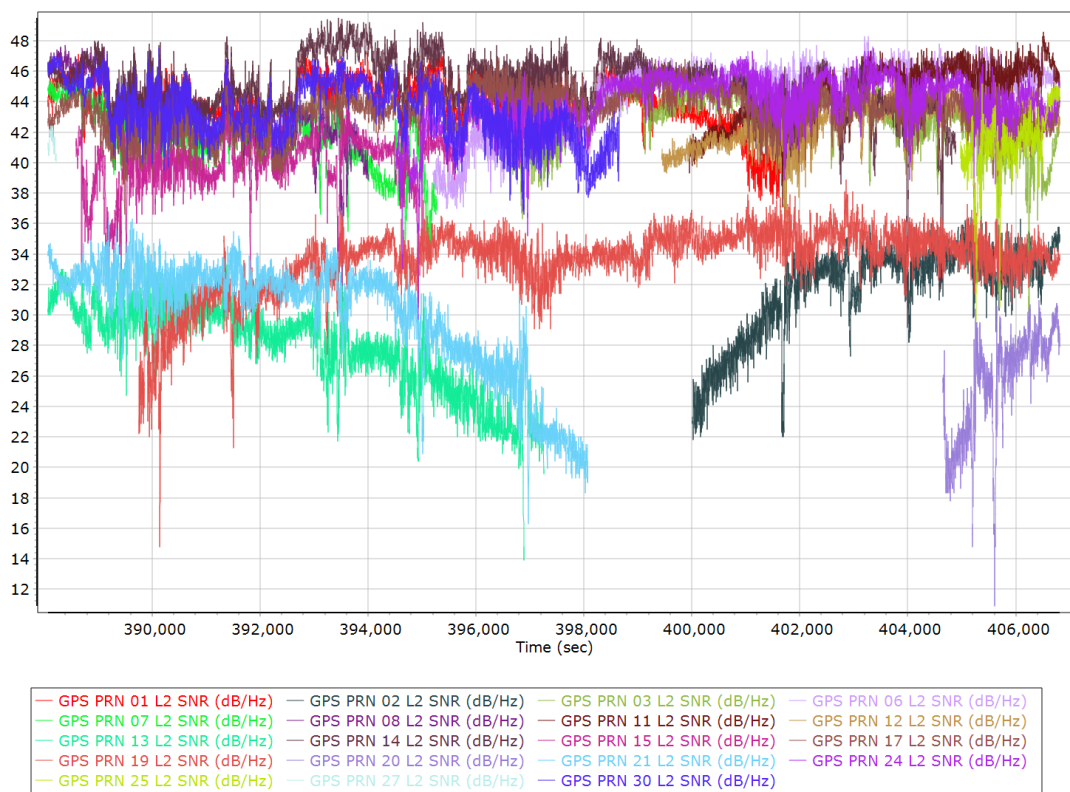


- |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|
| GLONASS 01 L1 SNR (dB/Hz) | GLONASS 02 L1 SNR (dB/Hz) | GLONASS 03 L1 SNR (dB/Hz) |
| GLONASS 04 L1 SNR (dB/Hz) | GLONASS 05 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 12 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 23 L1 SNR (dB/Hz) | GLONASS 24 L1 SNR (dB/Hz) |

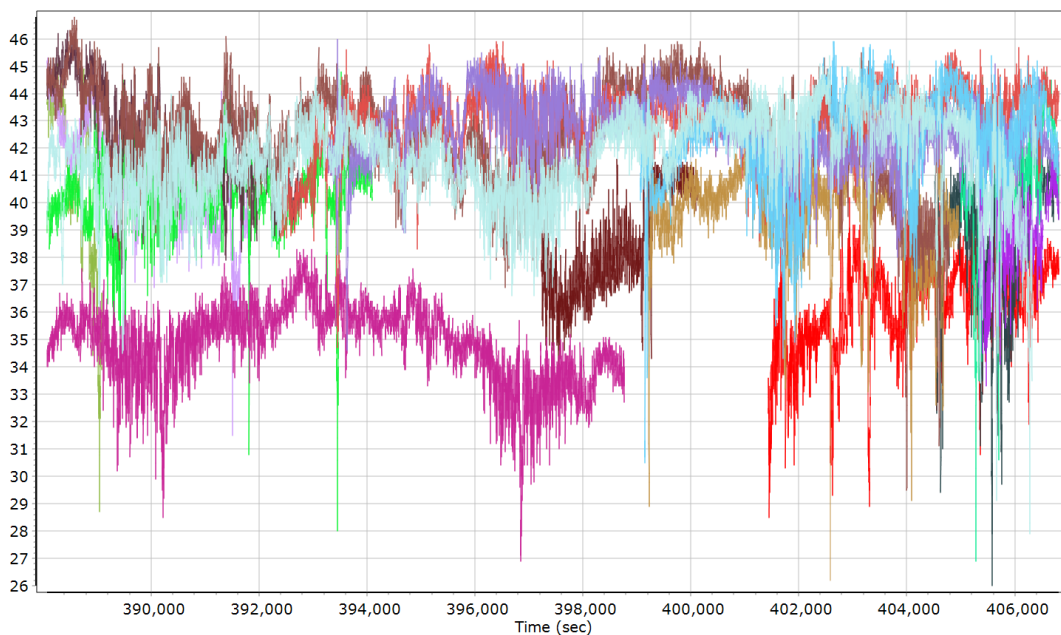
### GPS/GLONASS L2 Satellite Lock/Elevation



### GPS L2 SNR

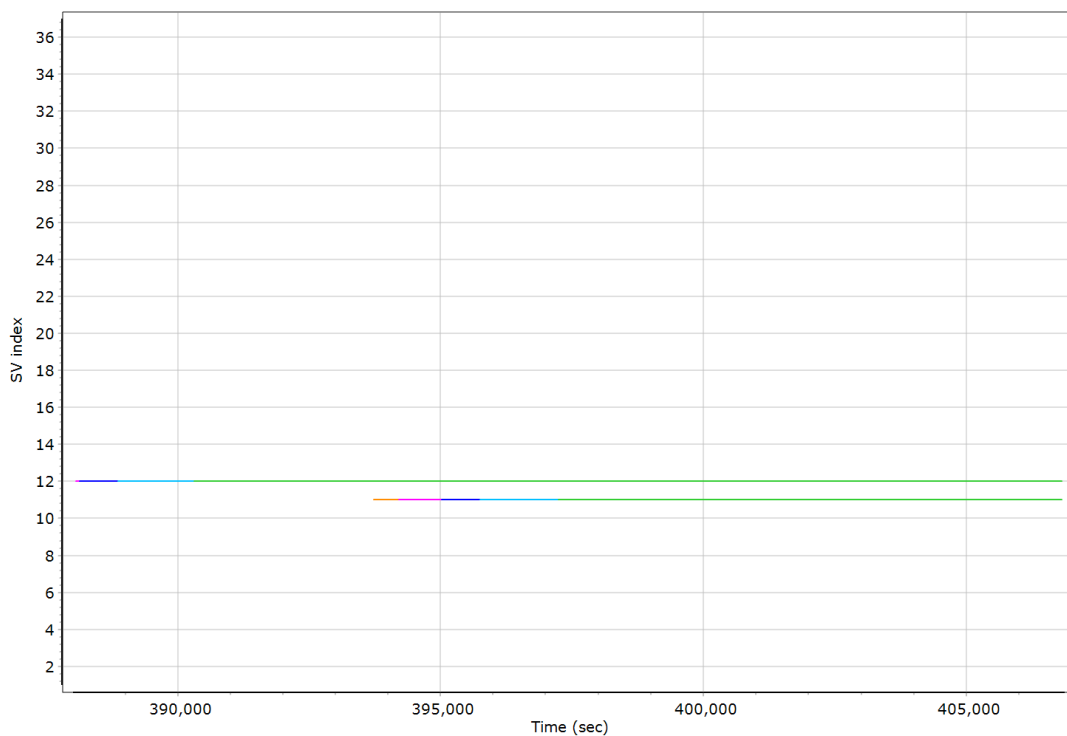


### GLONASS L2 SNR



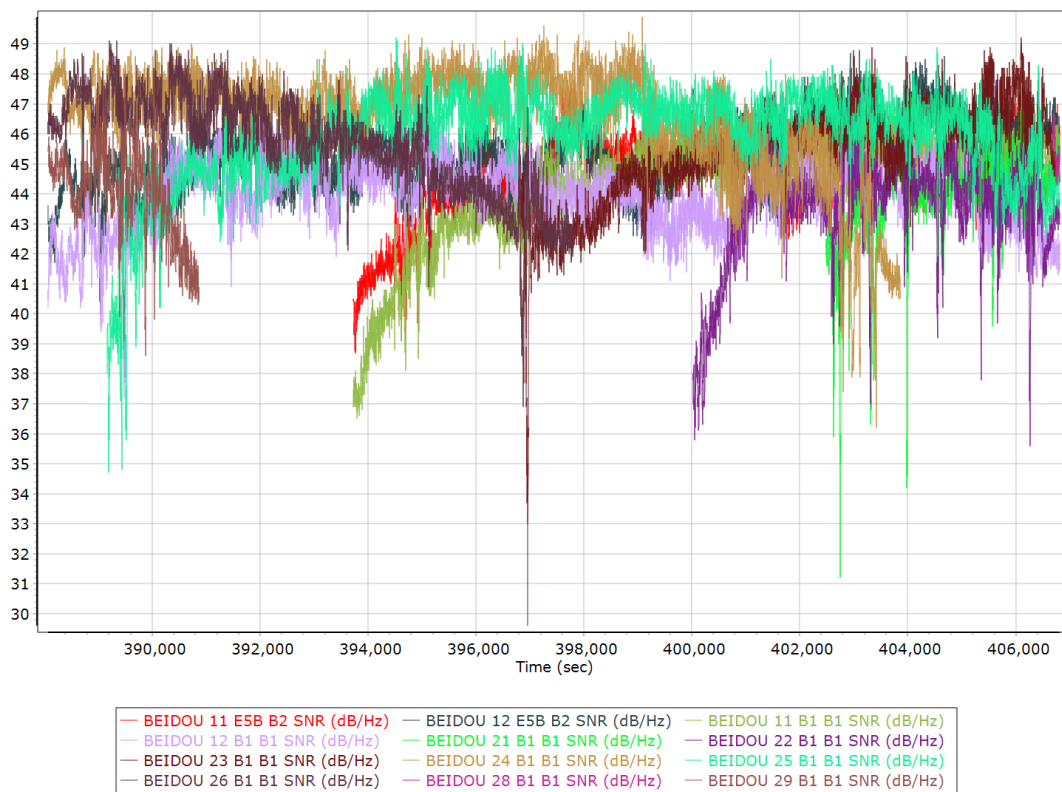
- GLONASS 01 L2 SNR (dB/Hz)
- GLONASS 02 L2 SNR (dB/Hz)
- GLONASS 03 L2 SNR (dB/Hz)
- GLONASS 04 L2 SNR (dB/Hz)
- GLONASS 05 L2 SNR (dB/Hz)
- GLONASS 06 L2 SNR (dB/Hz)
- GLONASS 07 L2 SNR (dB/Hz)
- GLONASS 08 L2 SNR (dB/Hz)
- GLONASS 09 L2 SNR (dB/Hz)
- GLONASS 10 L2 SNR (dB/Hz)
- GLONASS 11 L2 SNR (dB/Hz)
- GLONASS 12 L2 SNR (dB/Hz)
- GLONASS 13 L2 SNR (dB/Hz)
- GLONASS 14 L2 SNR (dB/Hz)
- GLONASS 15 L2 SNR (dB/Hz)
- GLONASS 16 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 22 L2 SNR (dB/Hz)
- GLONASS 23 L2 SNR (dB/Hz)
- GLONASS 24 L2 SNR (dB/Hz)

### BEIDOU Satellite Lock/Elevation

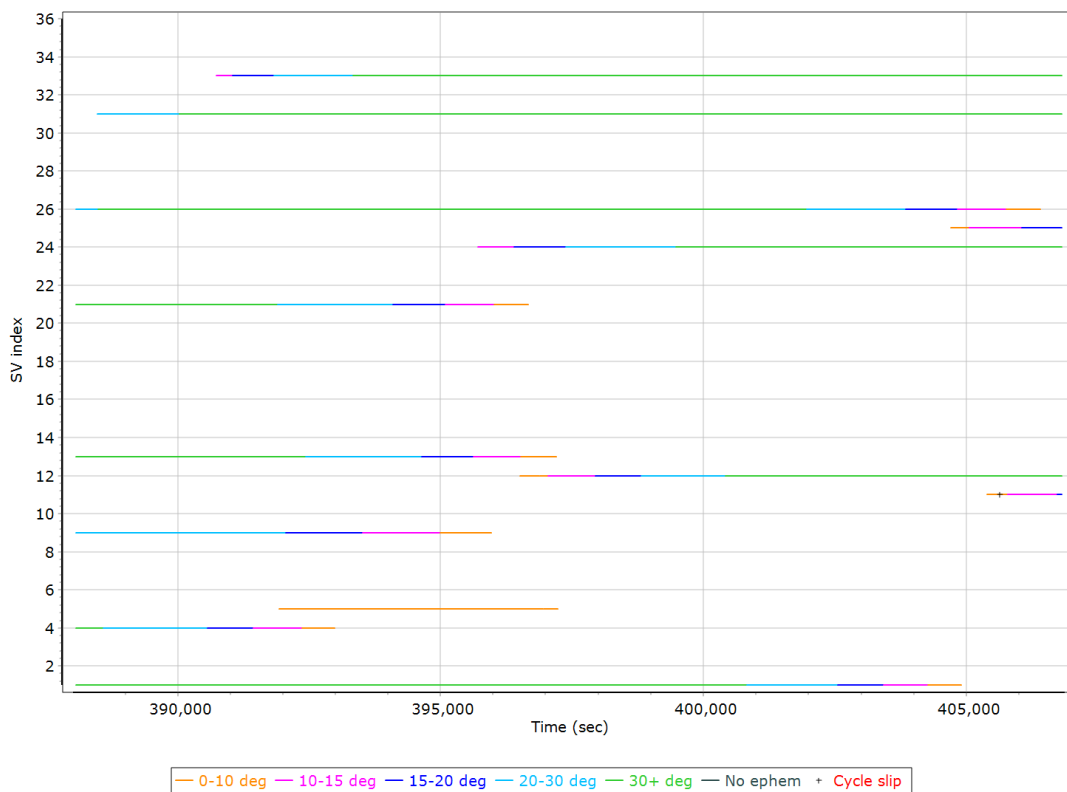


- 0-10 deg
- 10-15 deg
- 15-20 deg
- 20-30 deg
- 30+ deg
- No ephem
- + Cycle slip

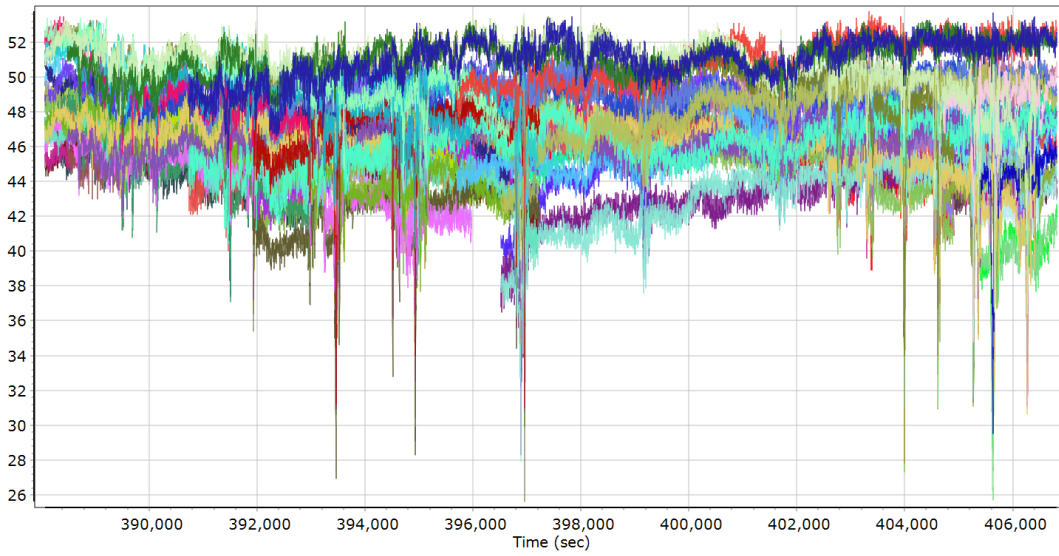
### BEIDOU SNR



### GALILEO Satellite Lock/Elevation



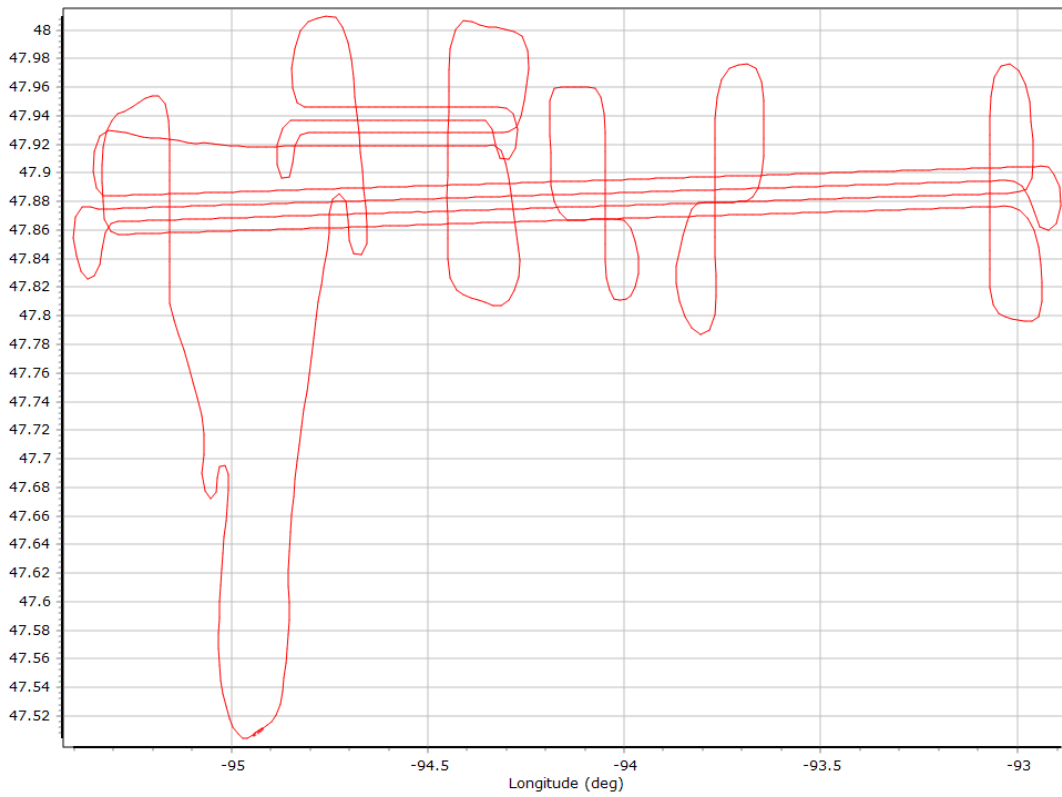
## GALILEO SNR



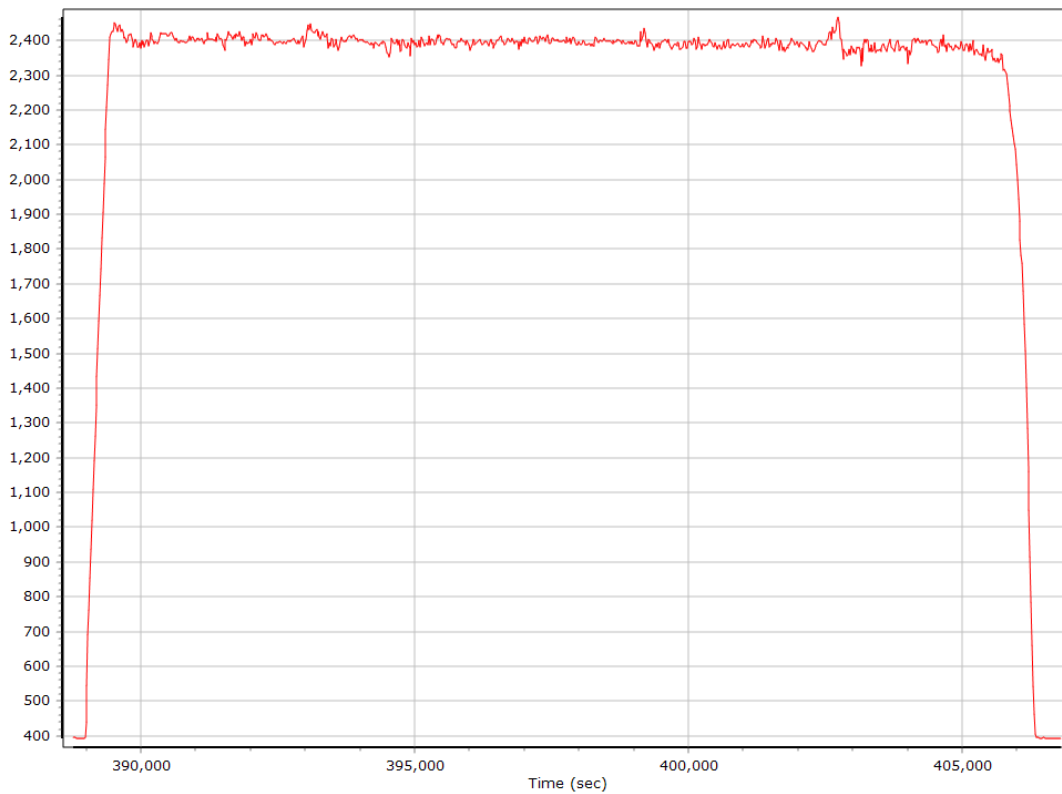
— GALILEO 01 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)	— GALILEO 04 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
— GALILEO 05 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)	— GALILEO 09 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
— GALILEO 11 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)	— GALILEO 12 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
— GALILEO 13 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)	— GALILEO 21 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
— GALILEO 24 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)	— GALILEO 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 01 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 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



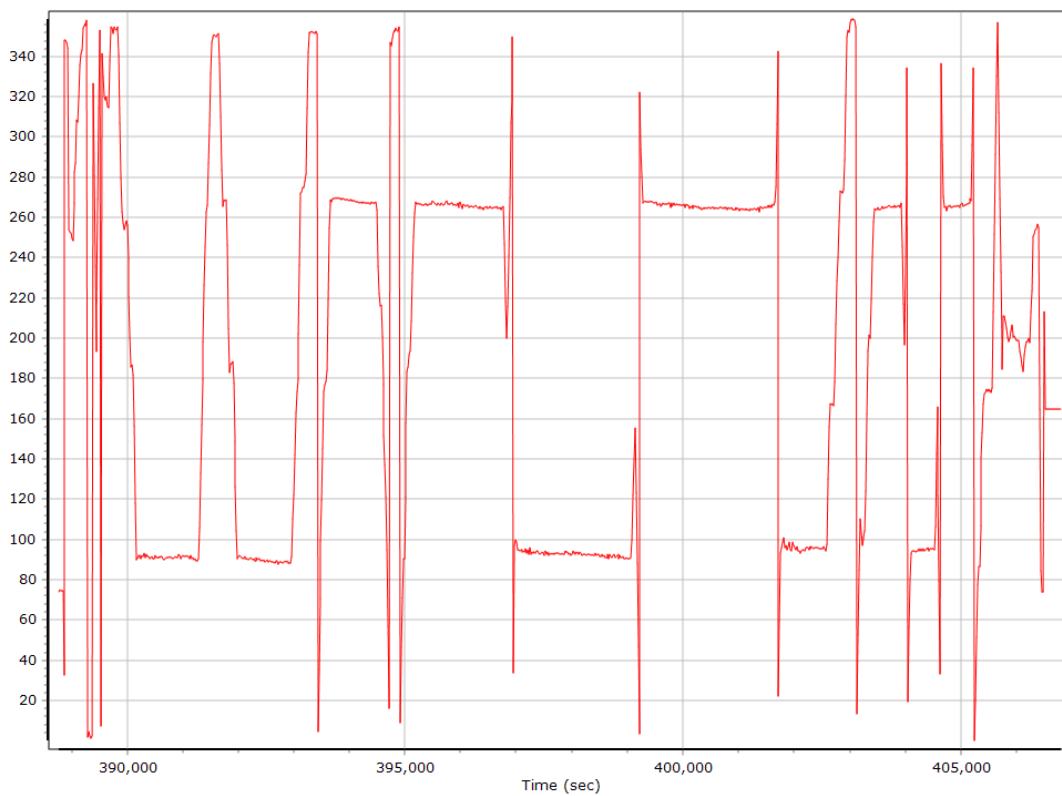
### Altitude



## Roll/Pitch

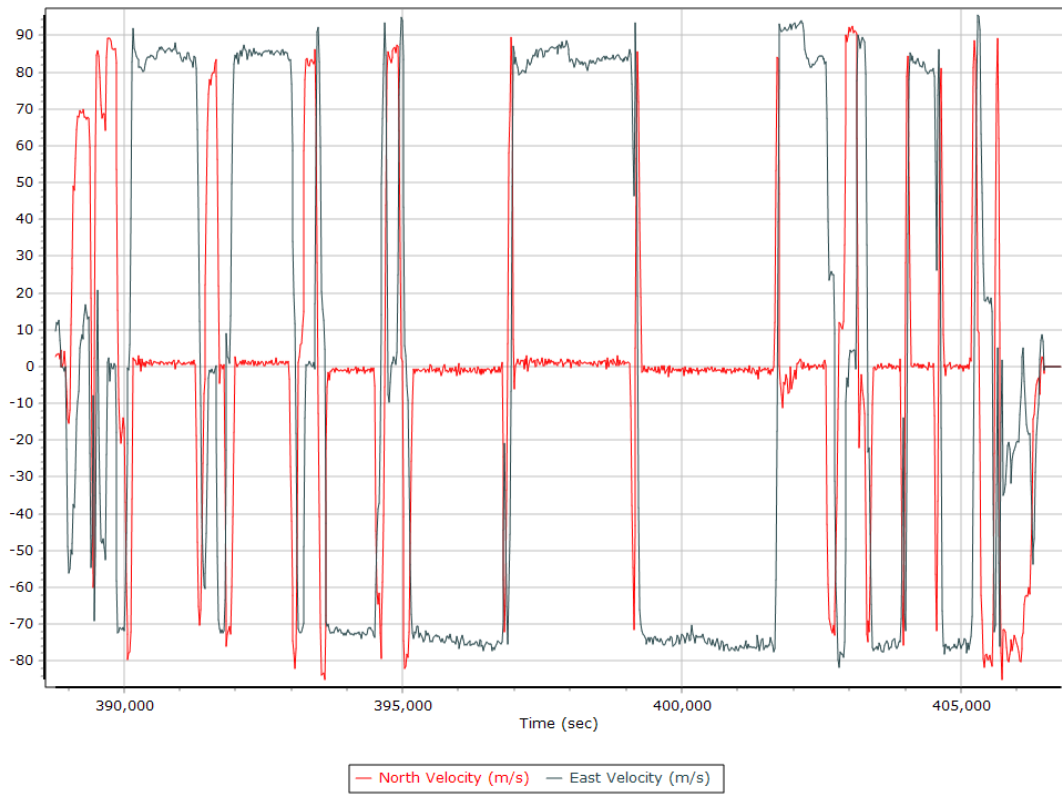


## Heading

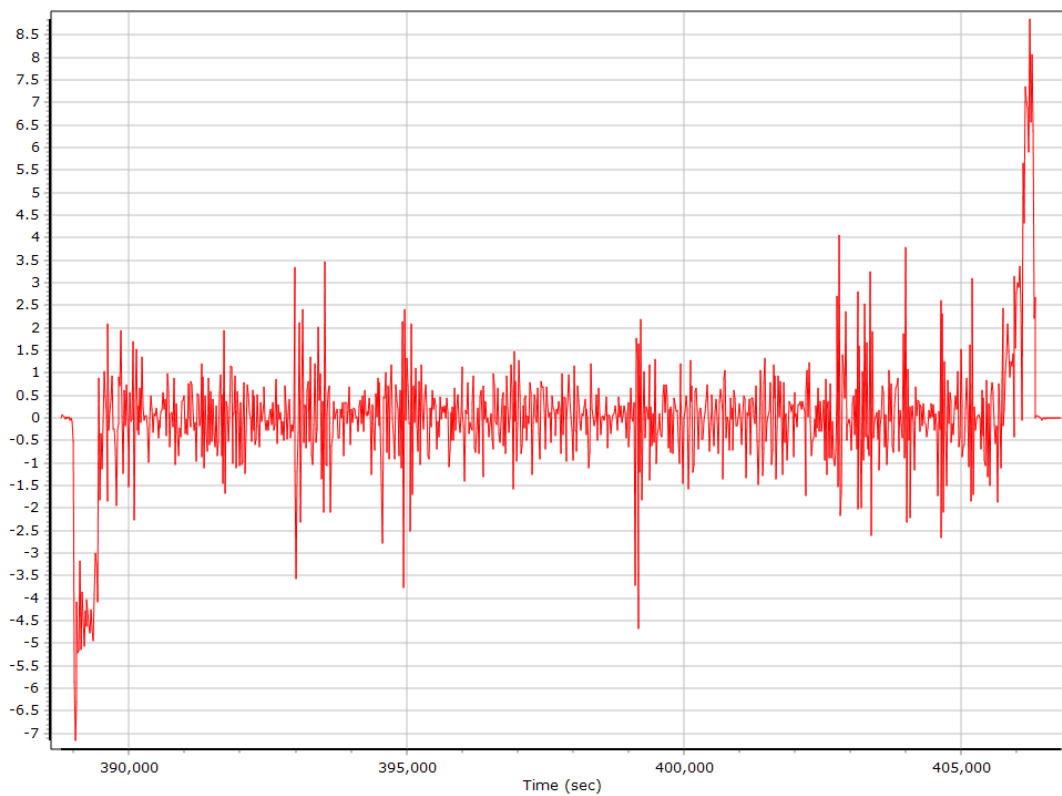




## North/East Velocity

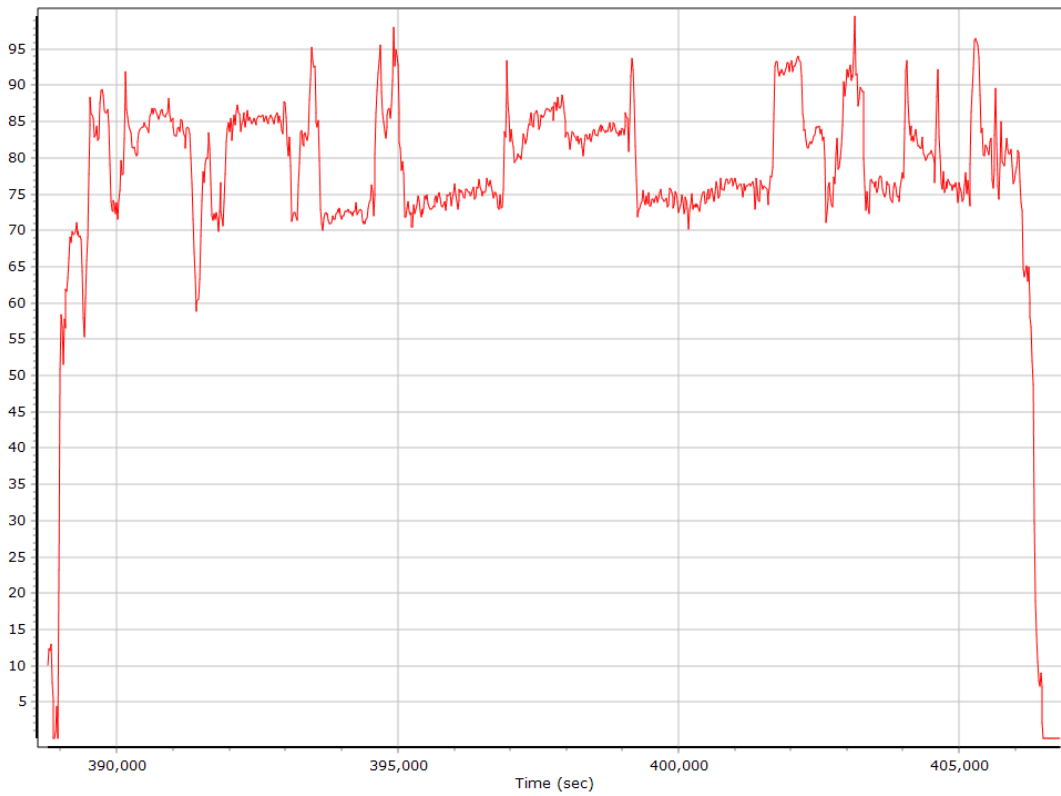


## Down Velocity

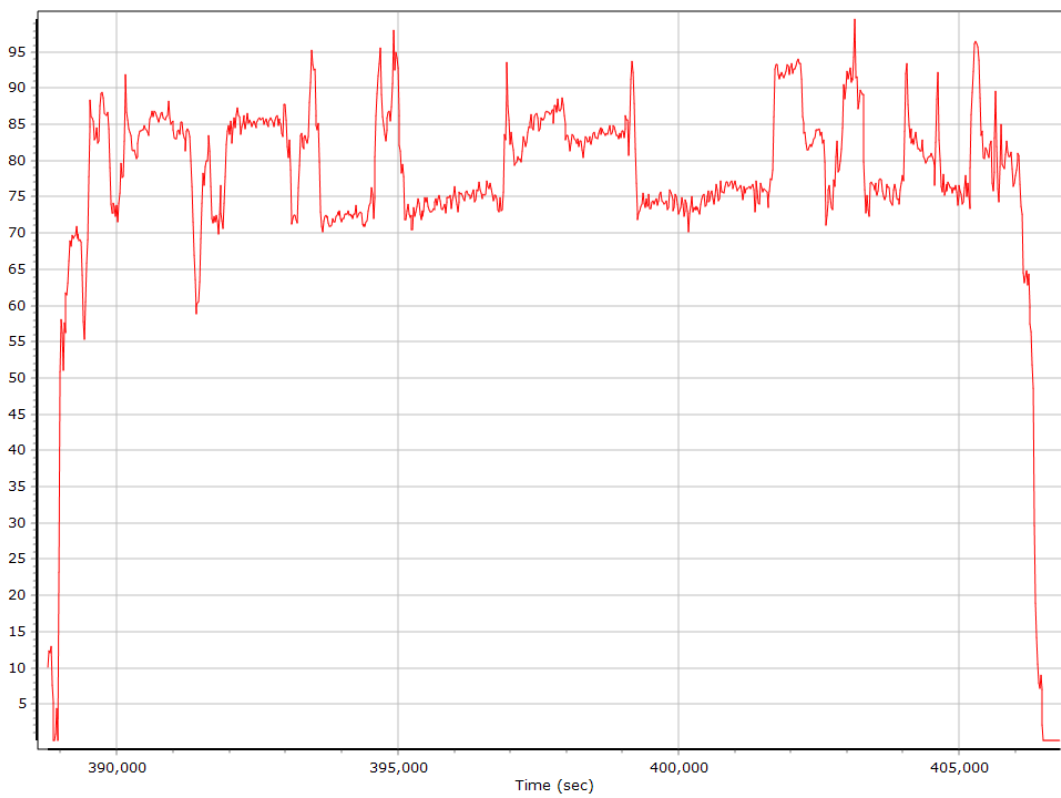




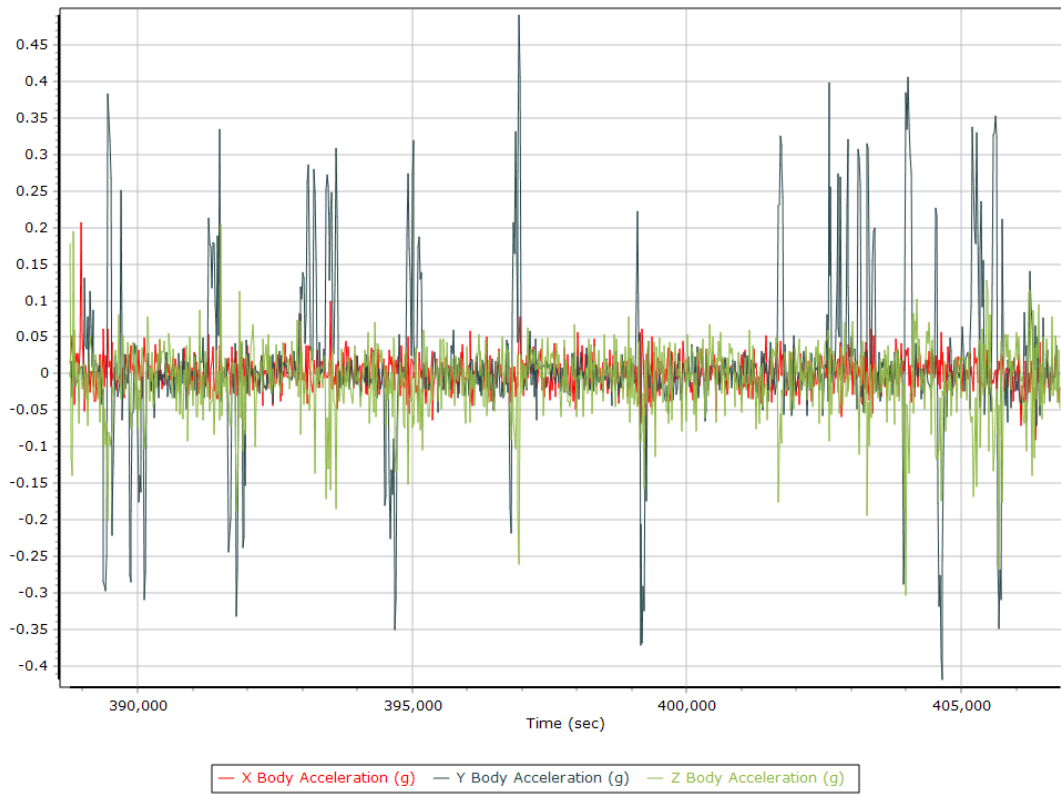
## Total Speed



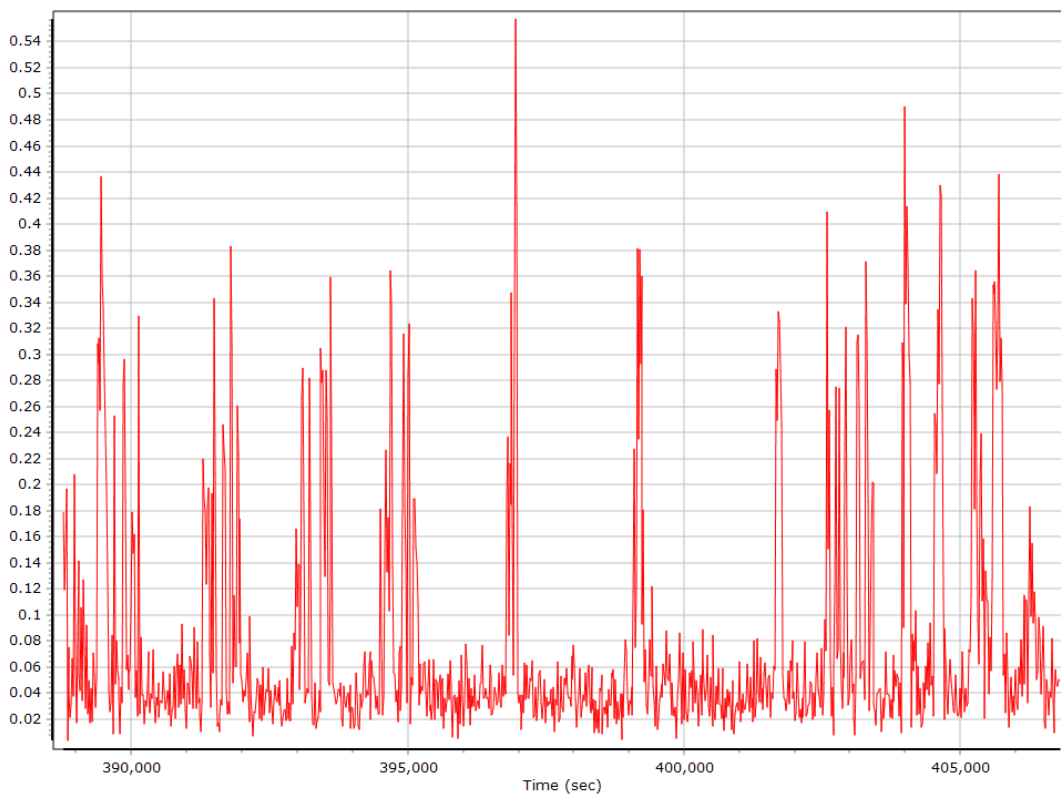
## Ground Speed



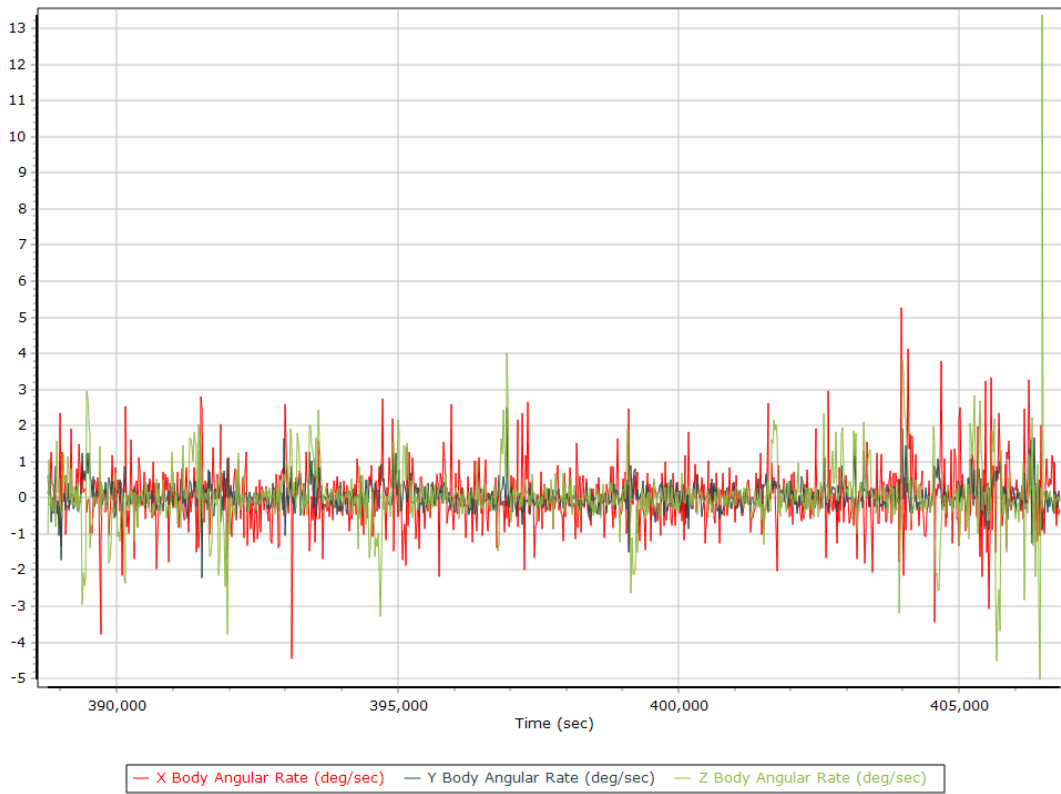
## Body Acceleration



## Total Body Acceleration

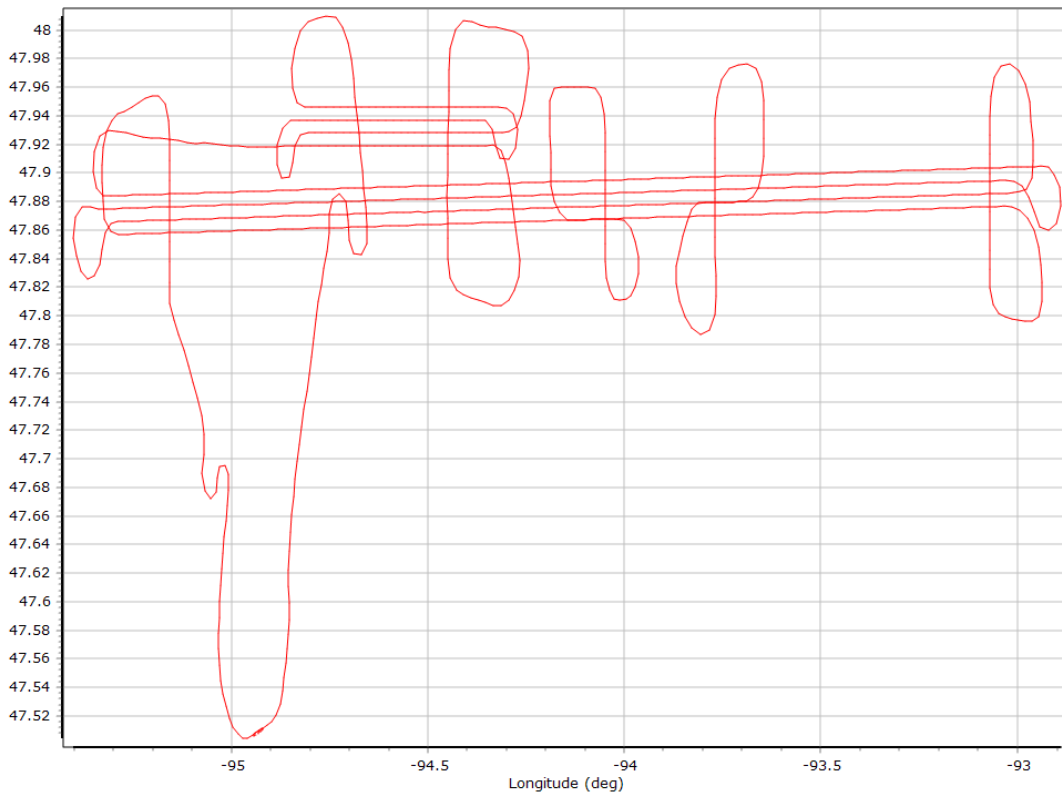


## Body Angular Rate

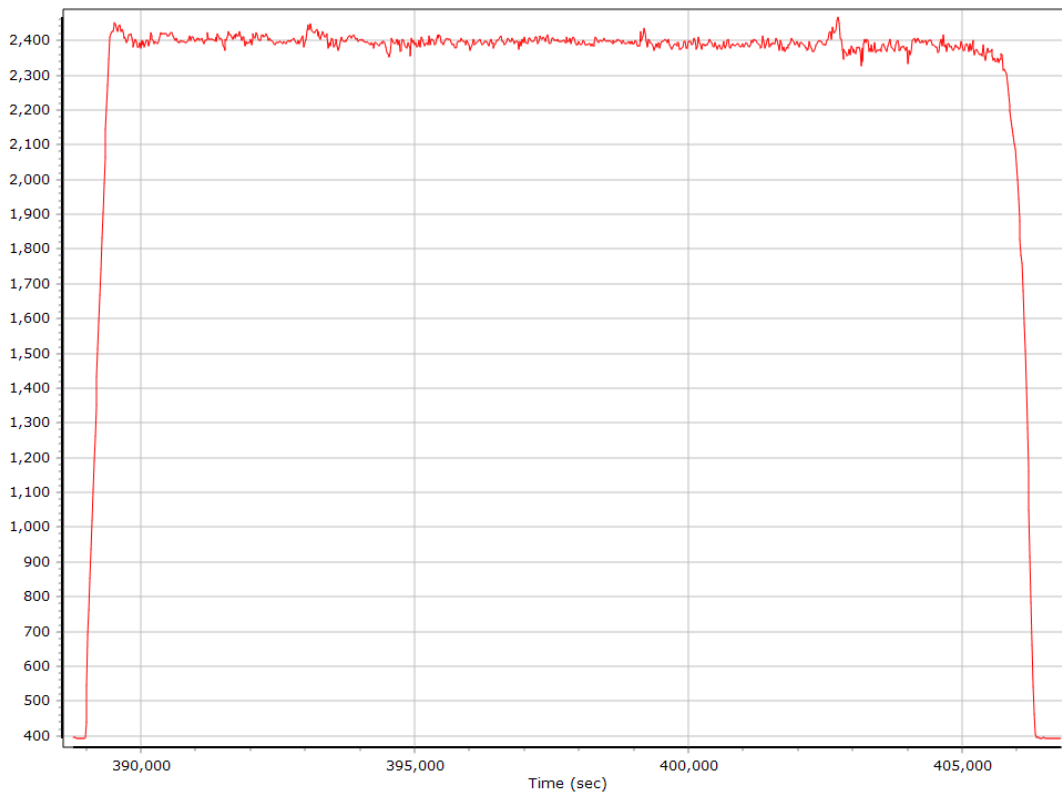


## Forward Processed Trajectory Information

### Top View



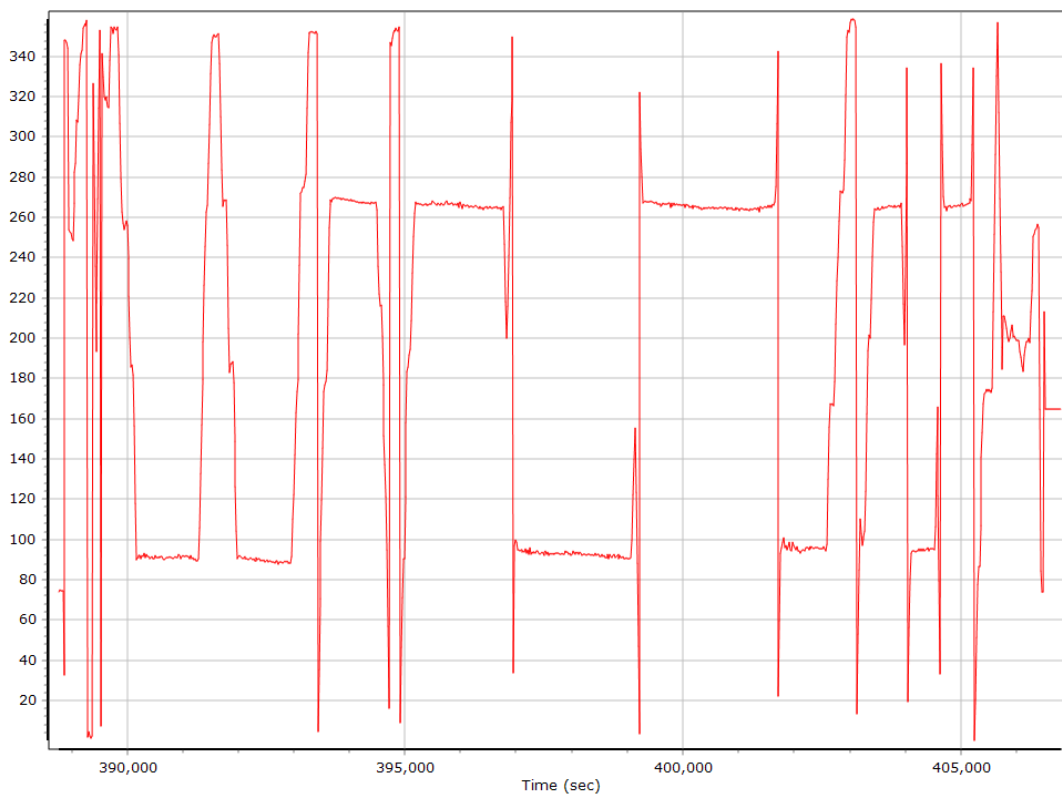
### Altitude



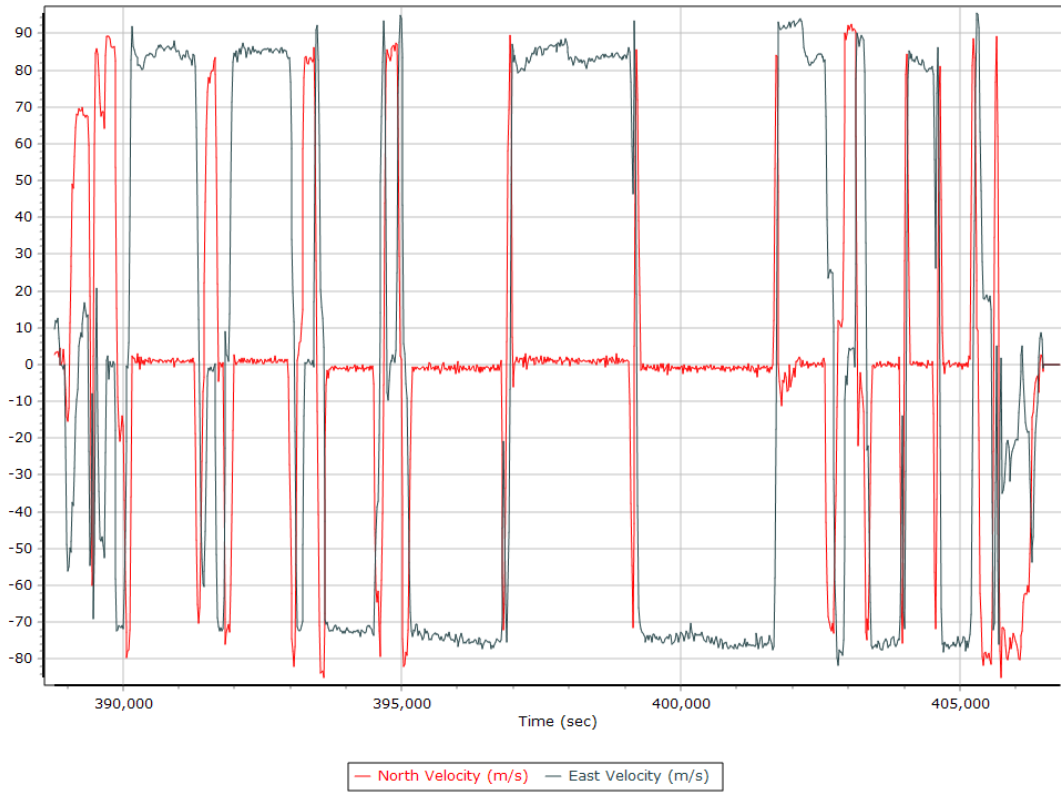
## Roll/Pitch



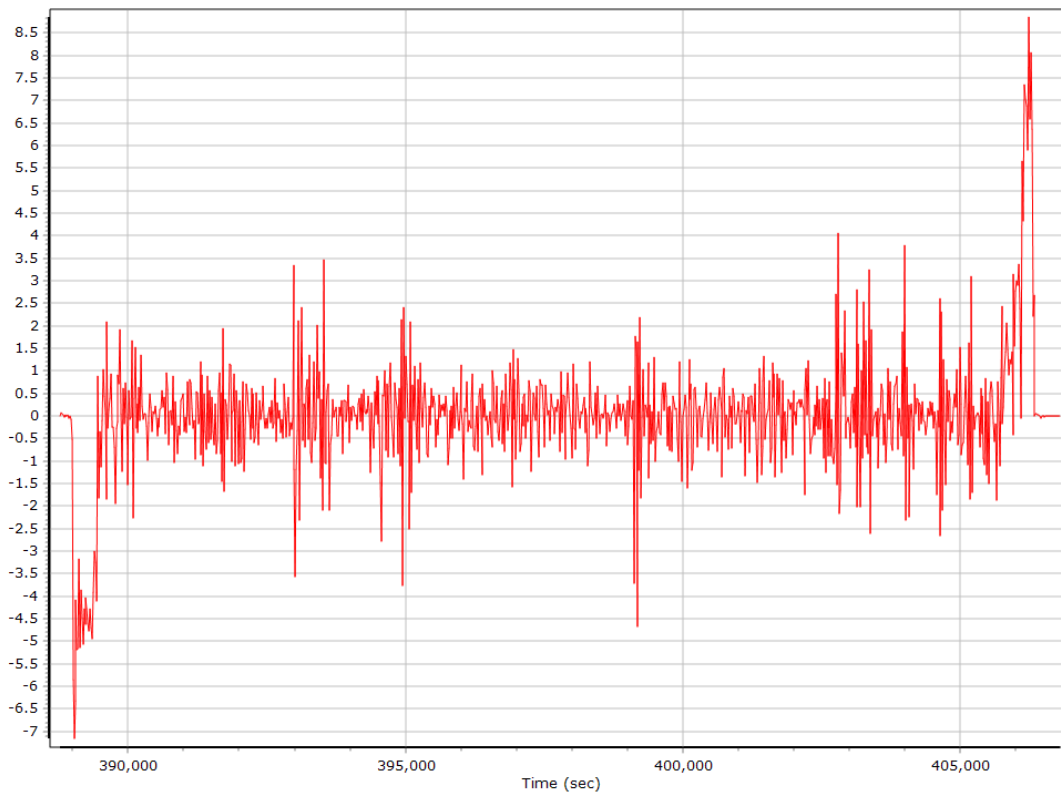
## Heading



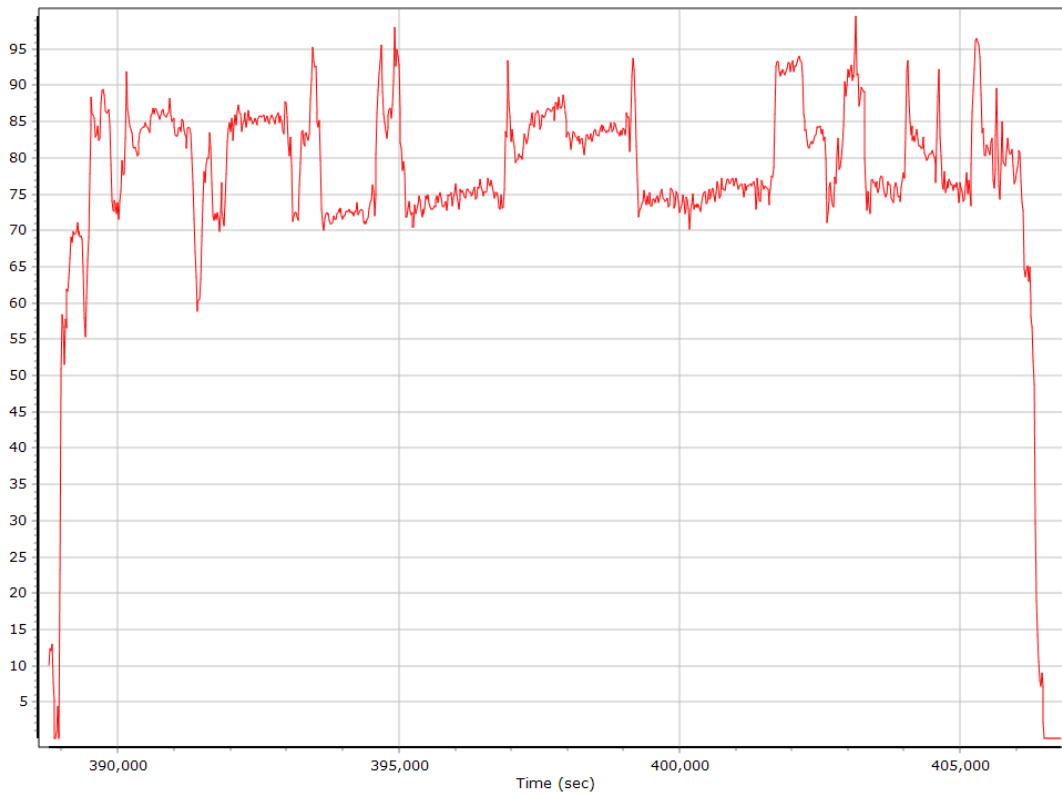
## North/East Velocity



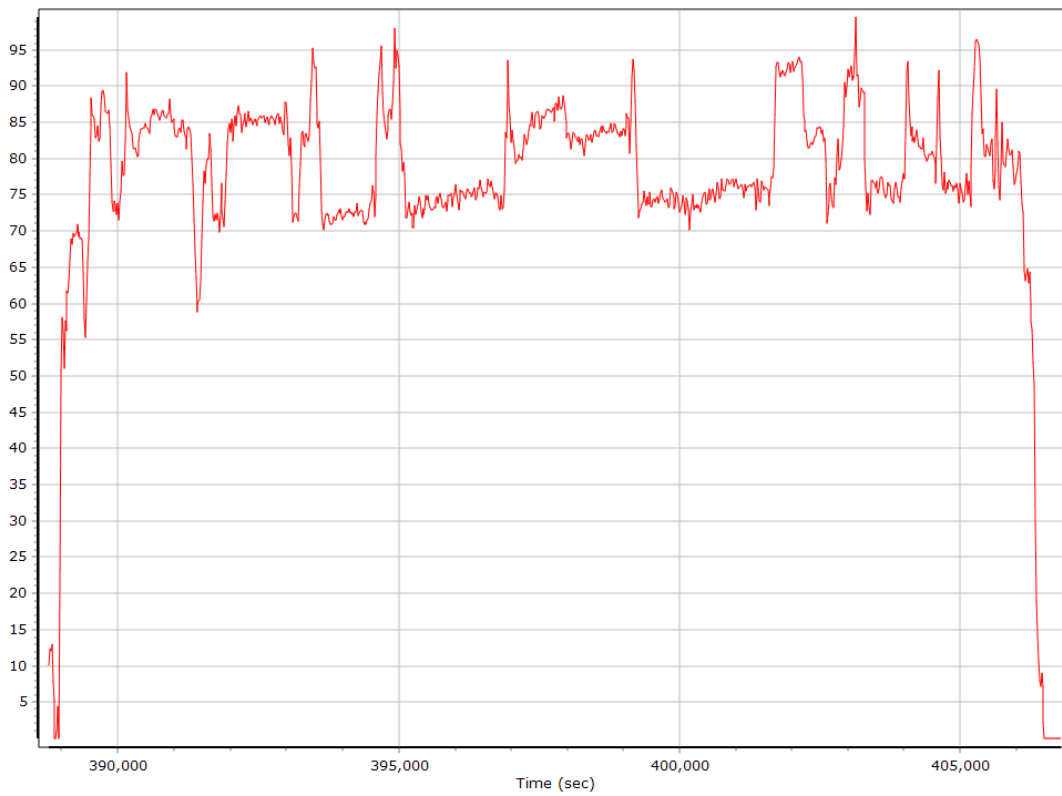
## Down Velocity



## Total Speed



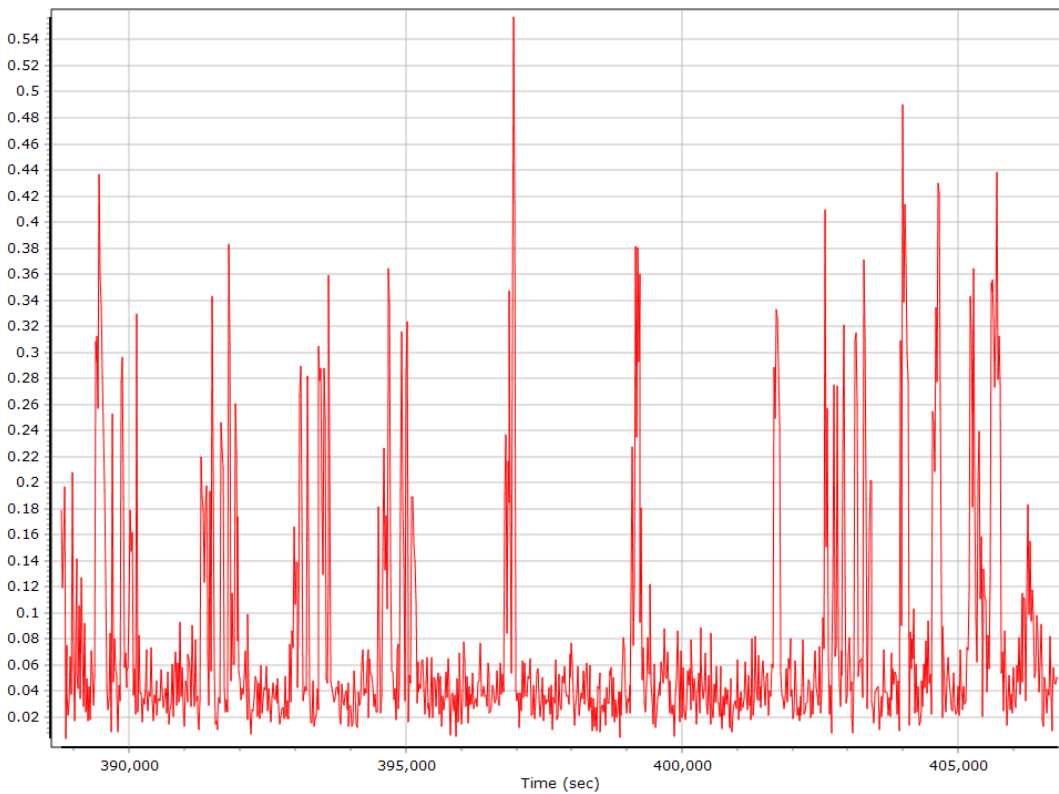
## Ground Speed



## Body Acceleration

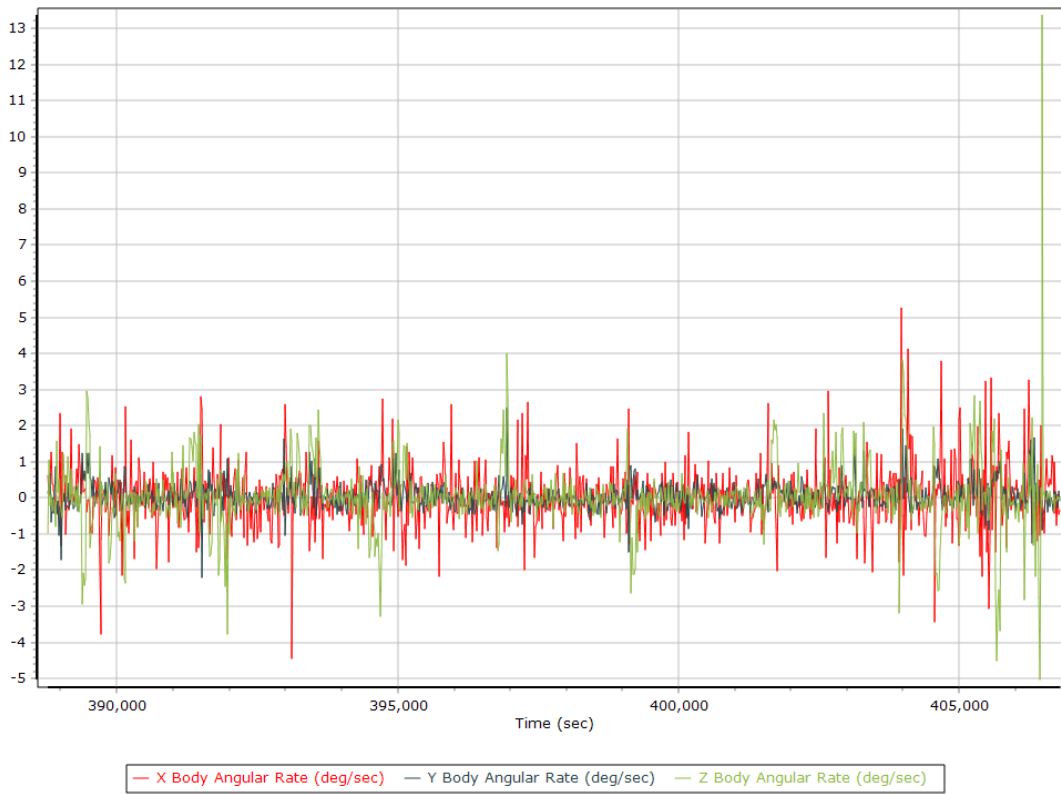


## Total Body Acceleration





## Body Angular Rate

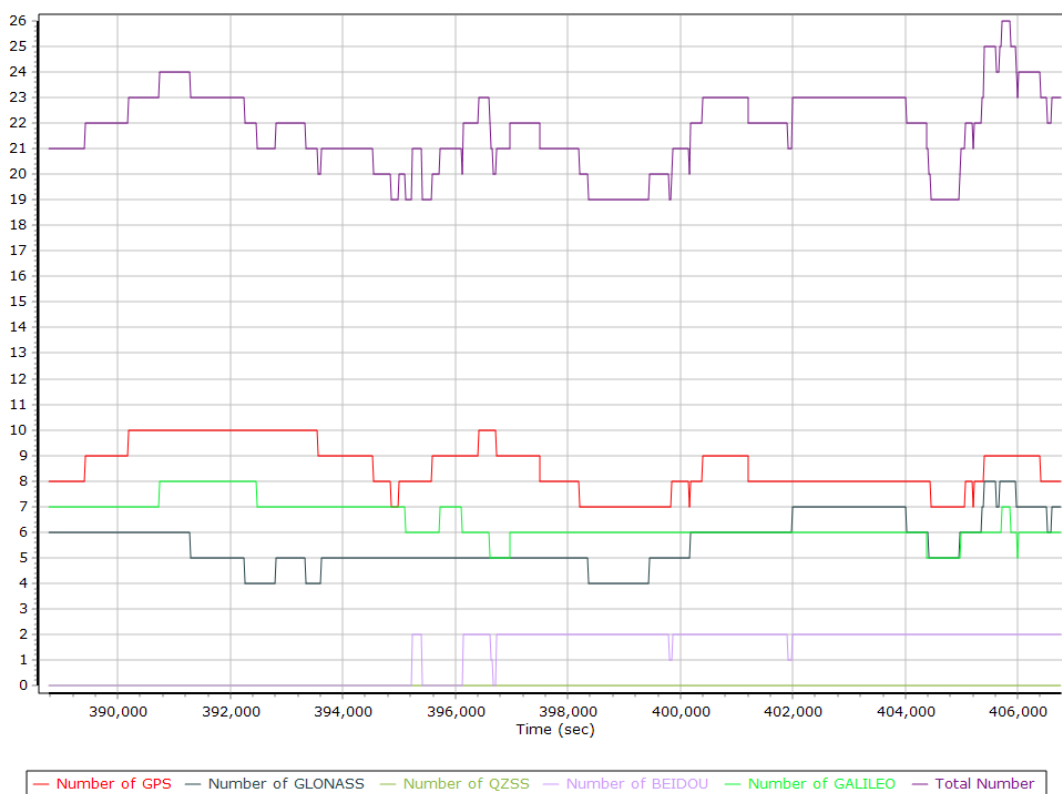


## GNSS QC

### GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	7	10	9
Number of GLONASS SV	4	8	6
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	2	1
Number of GALILEO SV	5	8	6
Total number of SV	19	26	22
PDOP	0.89	1.57	1.13
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

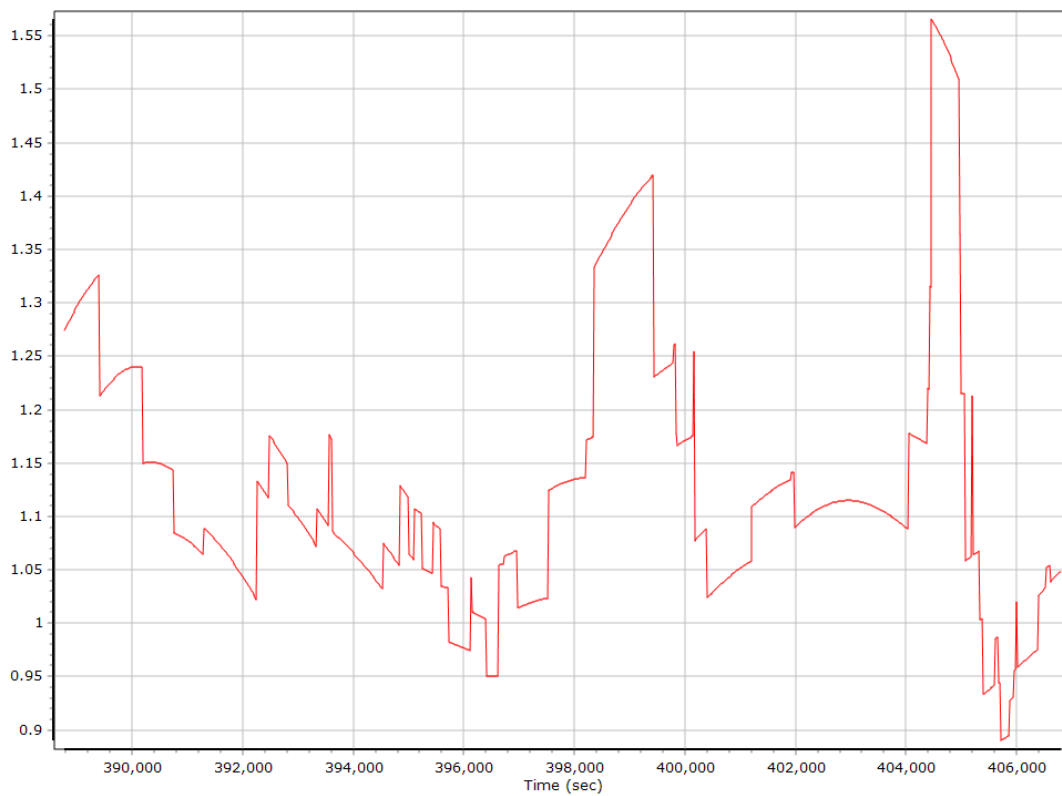
### Num SVs in solution



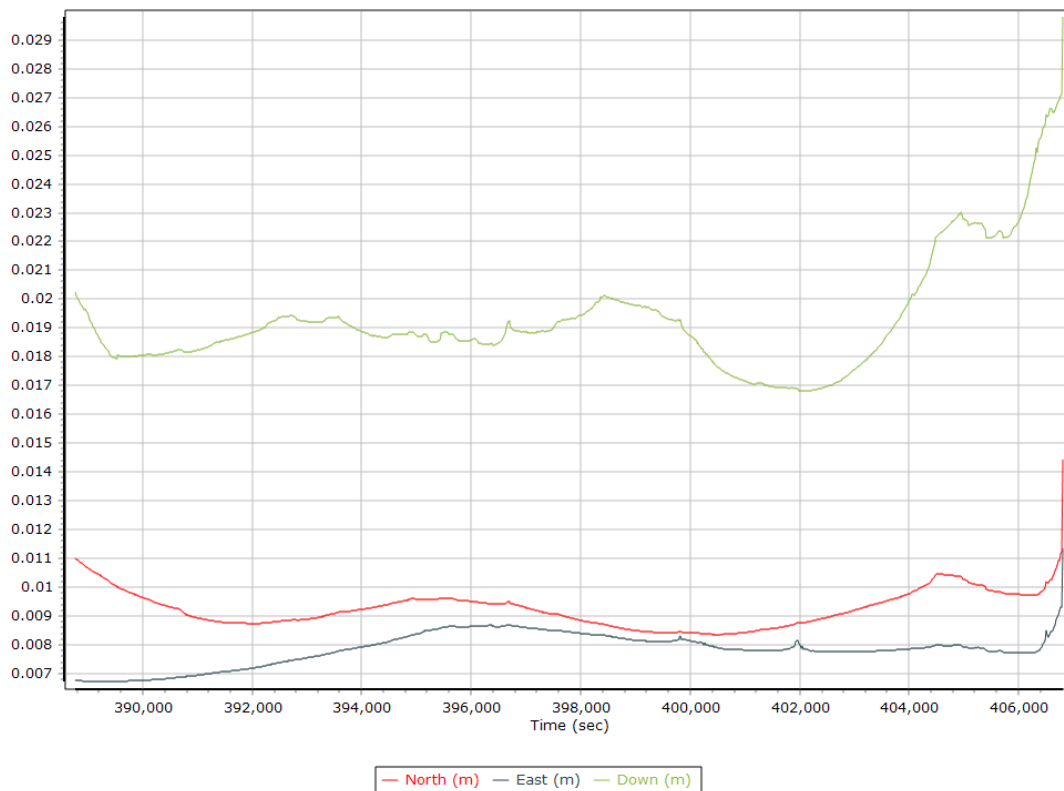
## Forward/Reverse Separation



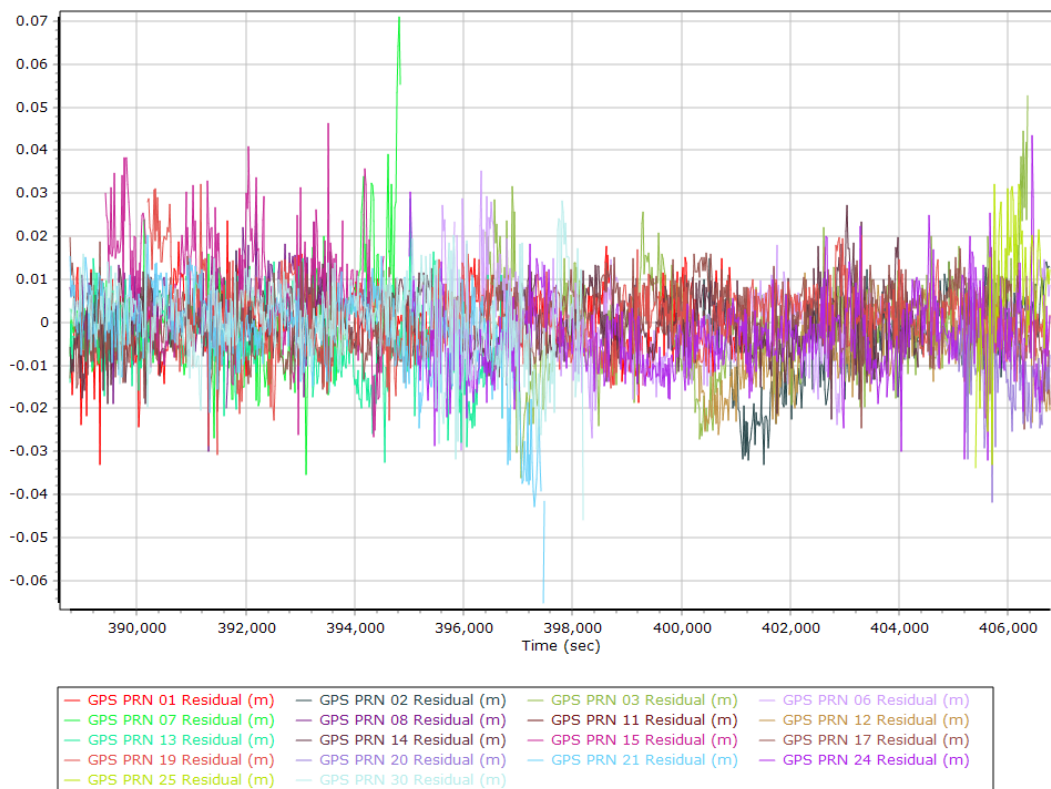
## PDOP



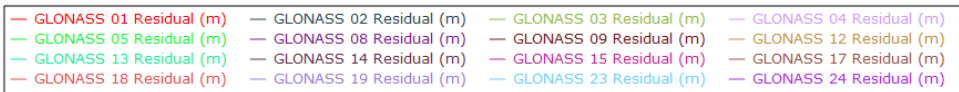
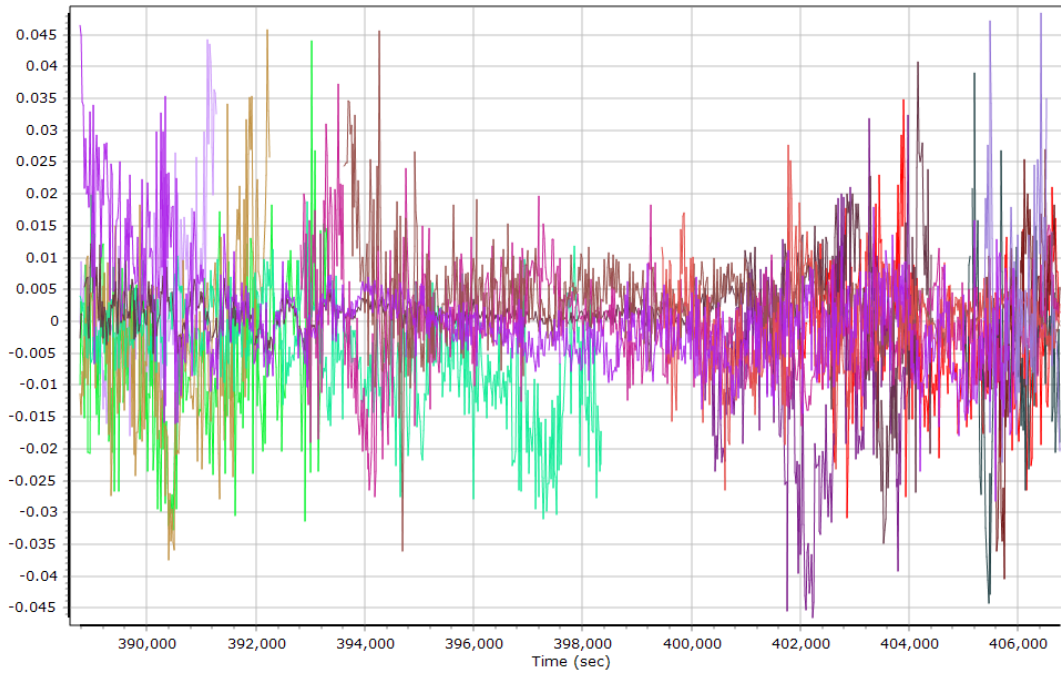
## Estimated Position Accuracy



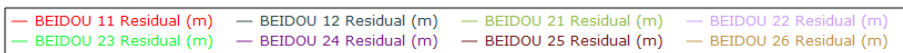
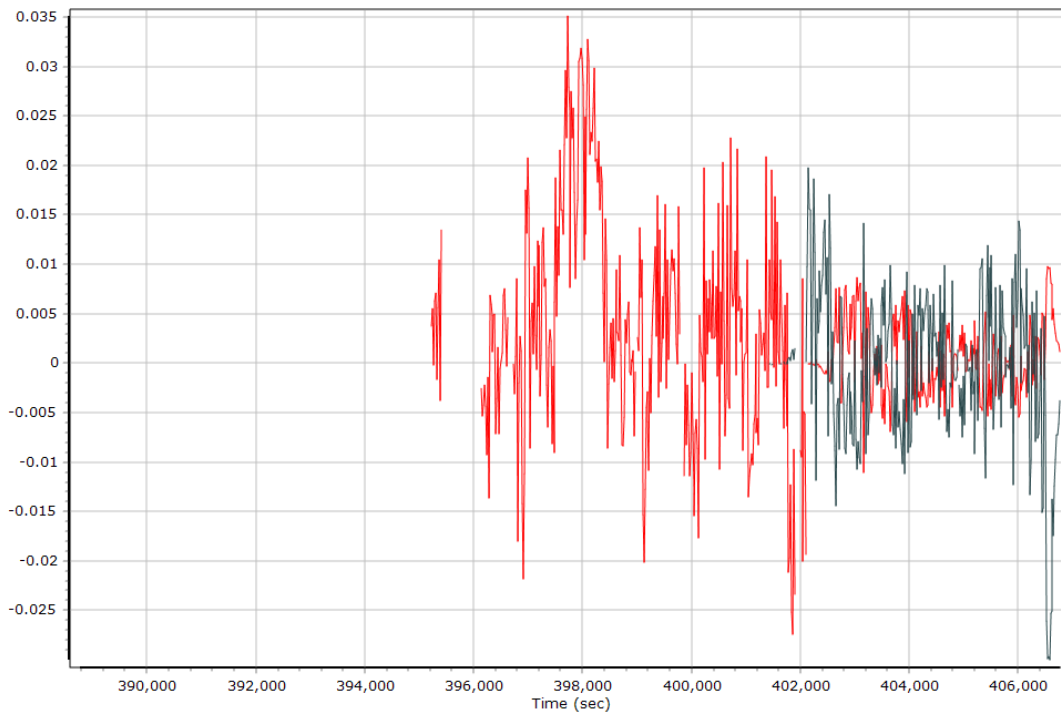
## GPS Residuals



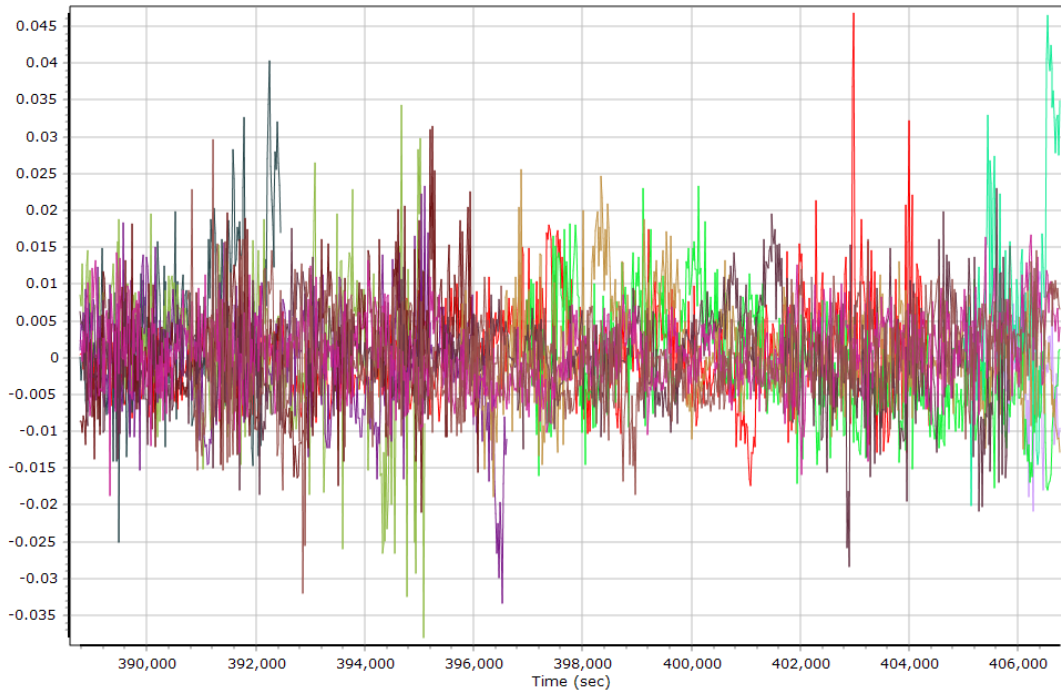
## GLONASS Residuals



## BEIDOU Residuals



## GALILEO Residuals



- |                         |                         |                         |                         |
|-------------------------|-------------------------|-------------------------|-------------------------|
| GALILEO 01 Residual (m) | GALILEO 04 Residual (m) | GALILEO 09 Residual (m) | GALILEO 11 Residual (m) |
| GALILEO 12 Residual (m) | GALILEO 13 Residual (m) | GALILEO 21 Residual (m) | GALILEO 24 Residual (m) |
| GALILEO 25 Residual (m) | GALILEO 26 Residual (m) | GALILEO 31 Residual (m) | GALILEO 33 Residual (m) |

## GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	False		
Processing start time	388063.000 (6/23/2022 11:47:43 AM)		
Processing end time	406815.000 (6/23/2022 5:00:15 PM)		
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	180.000
Reference to Primary GNSS lever arm (m)	0.084	-0.169	-1.105
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

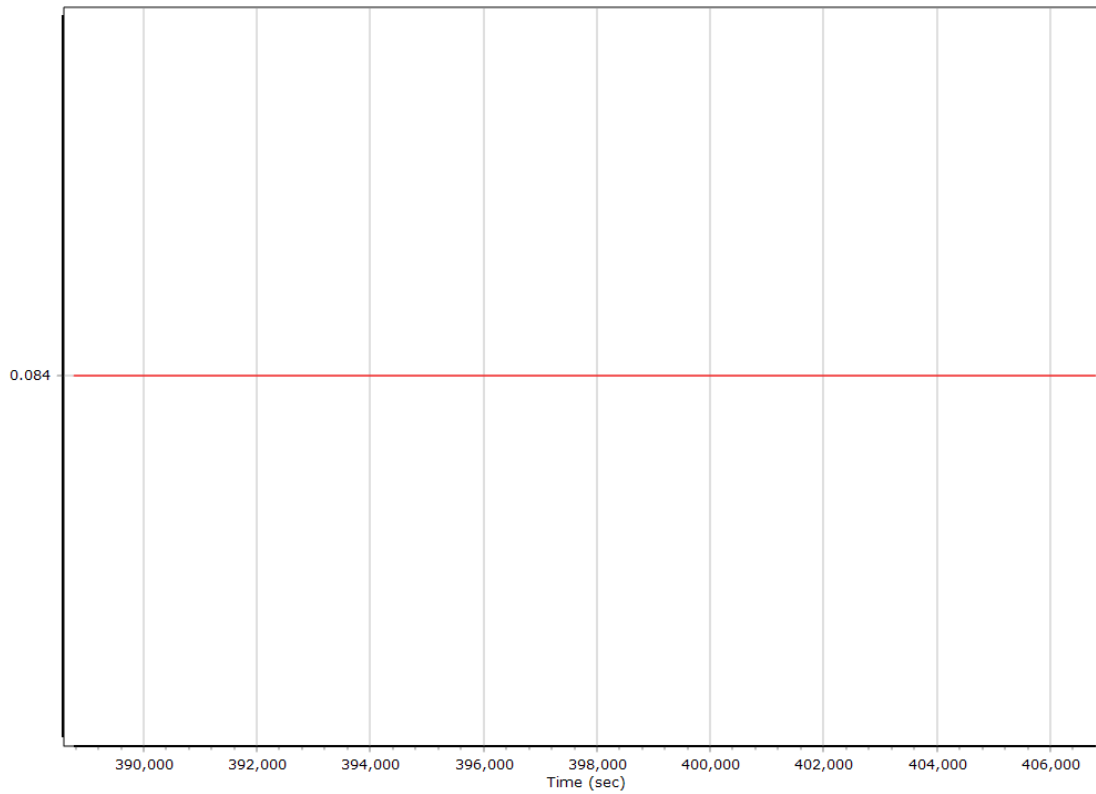
## Calibrated Installation Parameters

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

#### Reference-Primary GNSS Lever Arm Automatic Calibration Results

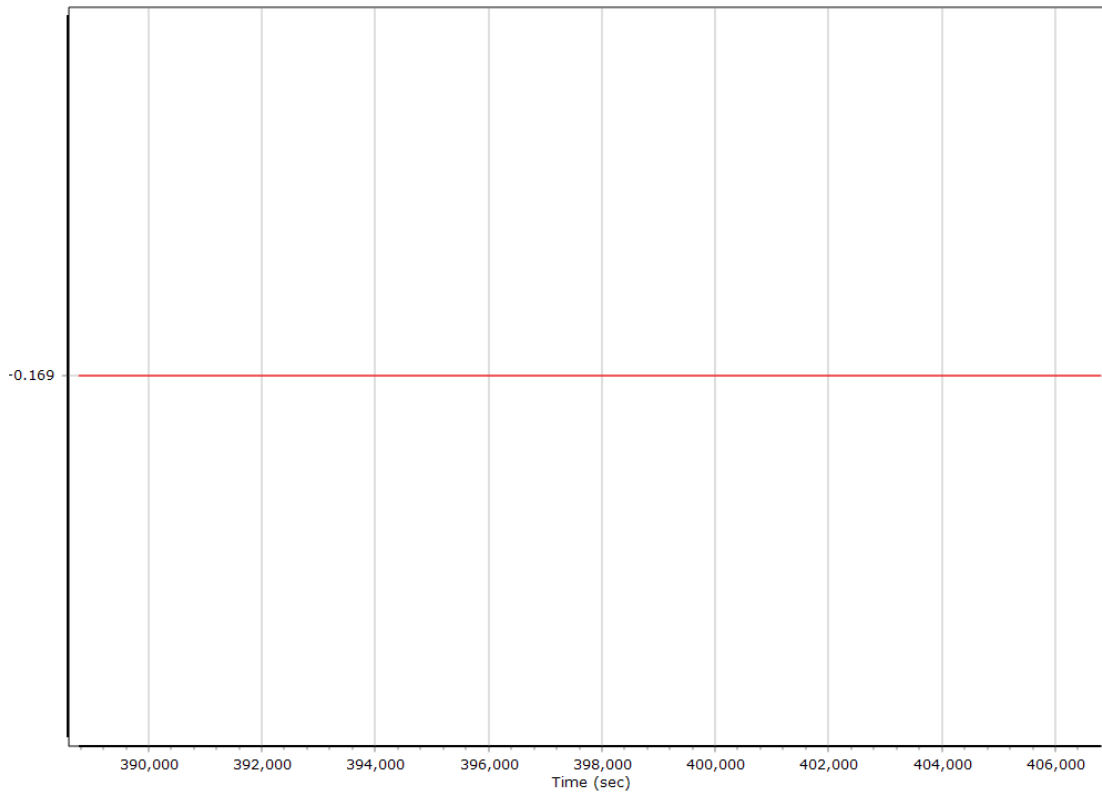
Original Reference to Primary GNSS lever arm (m)	0.140	-0.150	-1.115
Iteration 1 Reference to Primary GNSS lever arm (m)	0.085	-0.169	-1.105
Iteration 2 Reference to Primary GNSS lever arm (m)	0.084	-0.169	-1.105
Primary GNSS Lever Arm In use	Iteration 2		

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

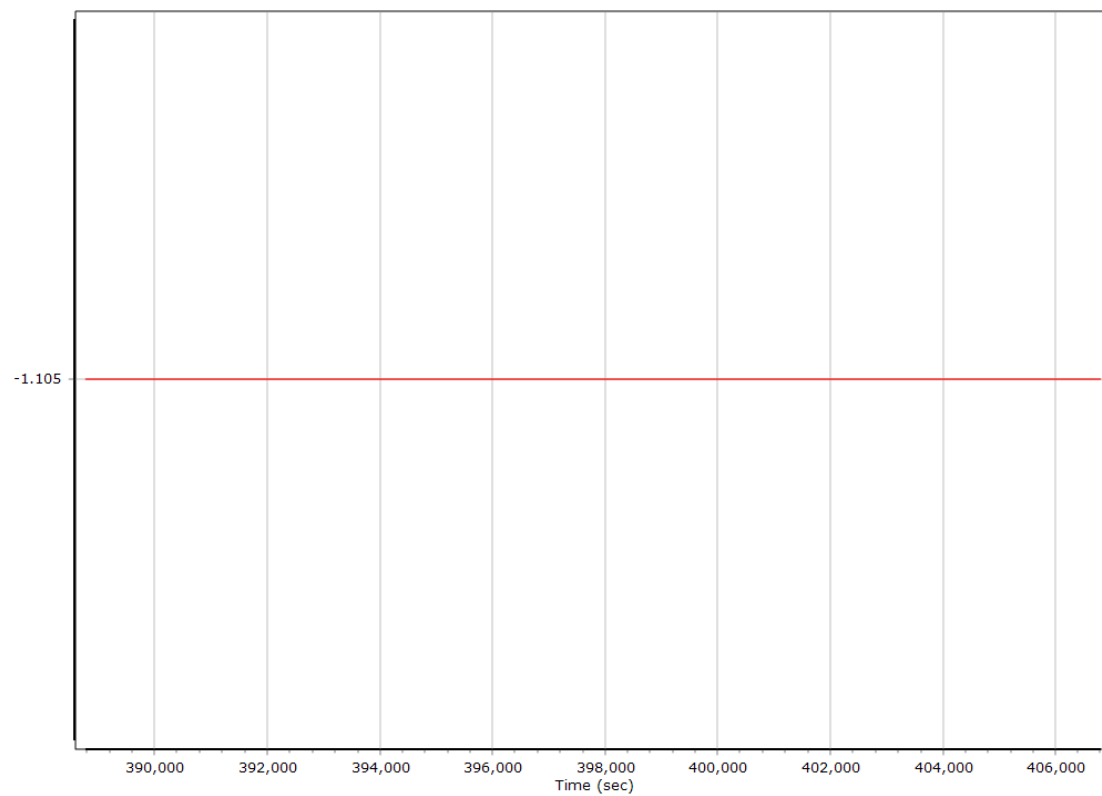




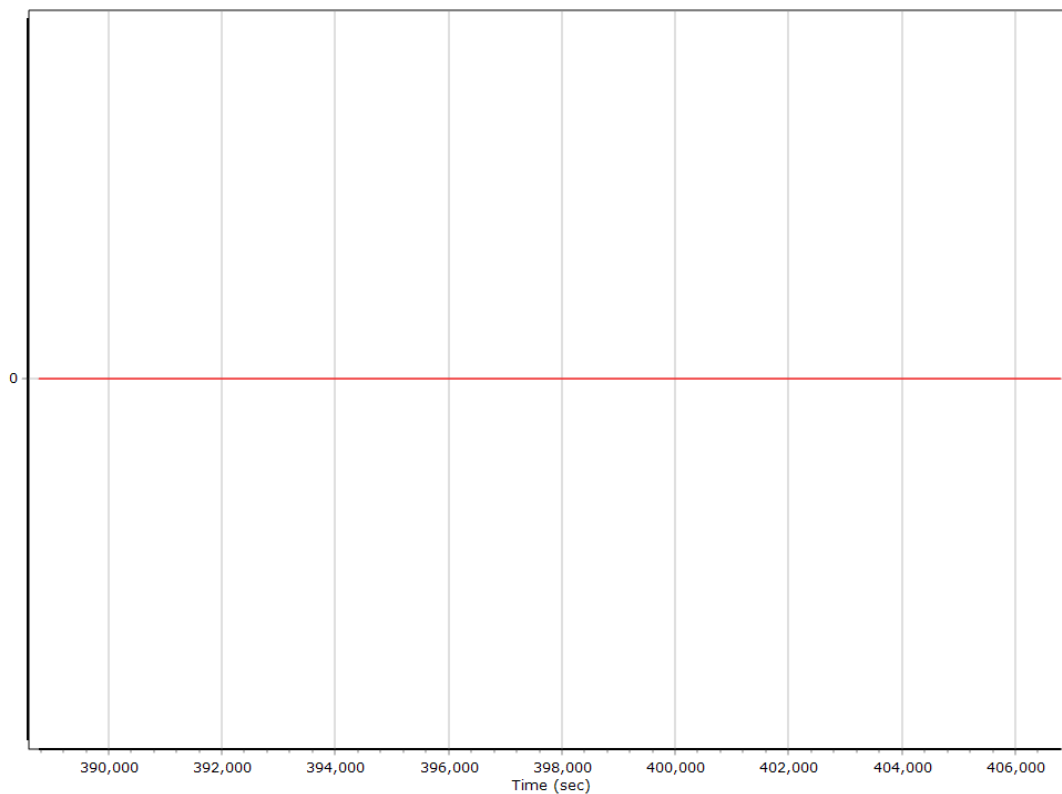
### Y Reference-Primary GNSS Lever Arm (m)



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



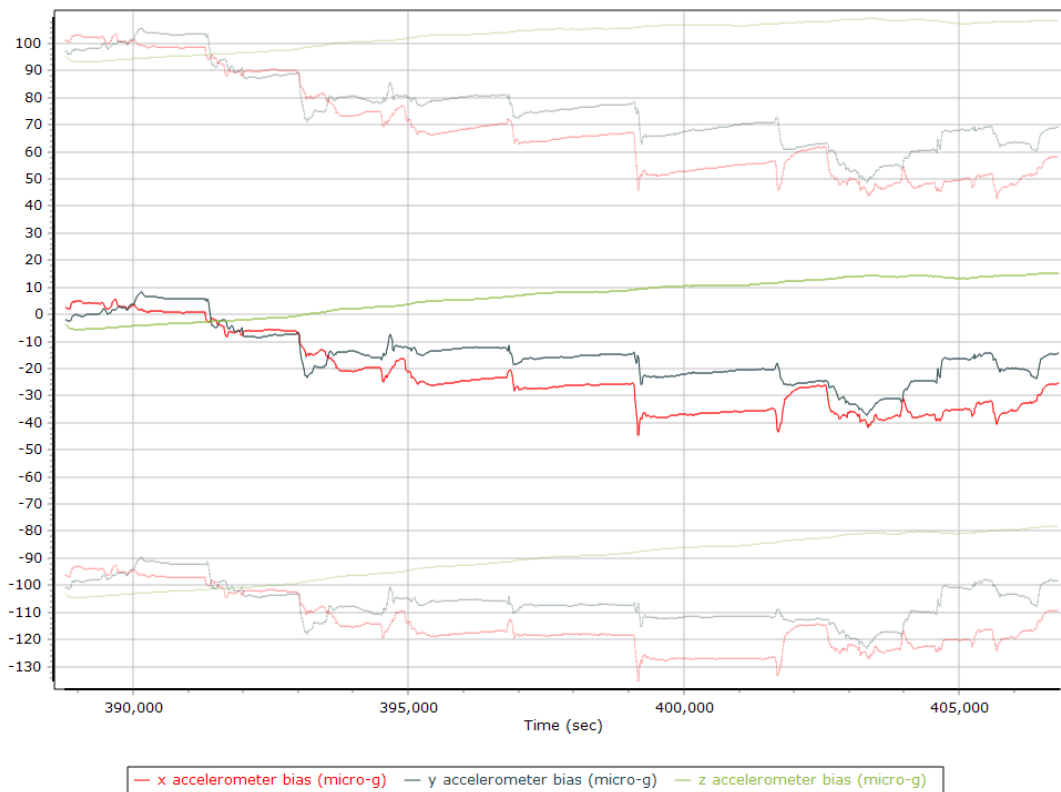
### Reference-Primary GNSS Lever Arm Figure of Merit



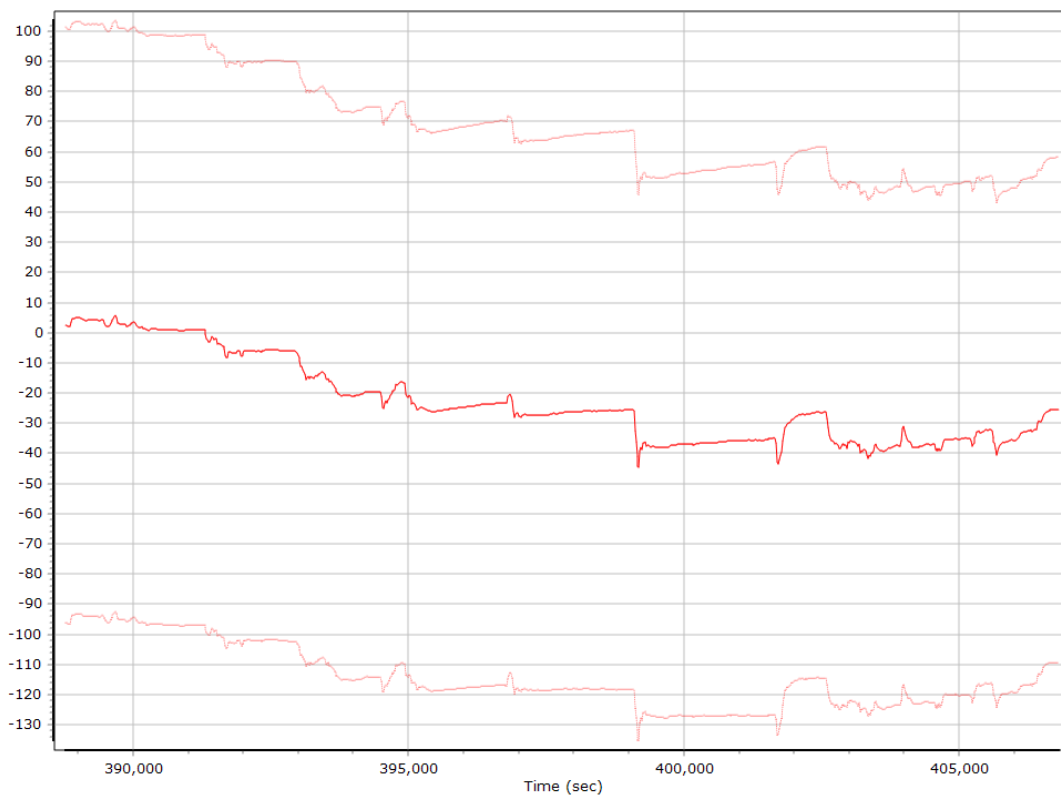
## IN-Fusion QC

### Forward Processed Estimated Errors, Reference Frame

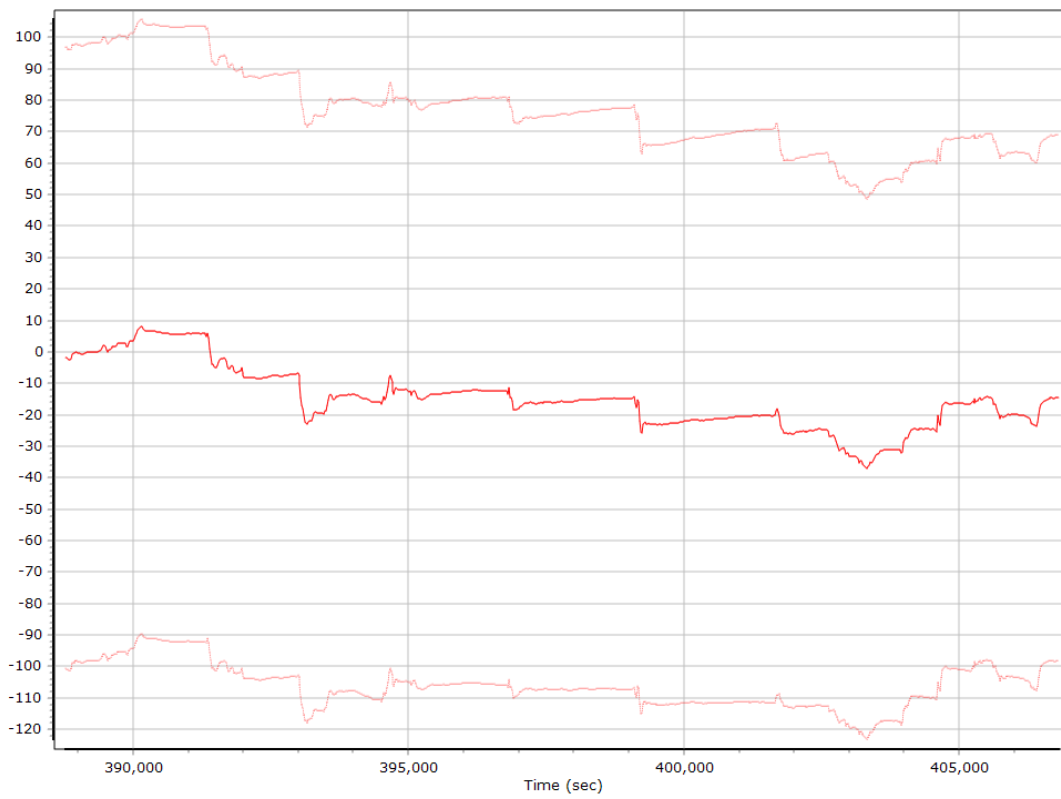
#### Accelerometer Bias (micro-g)



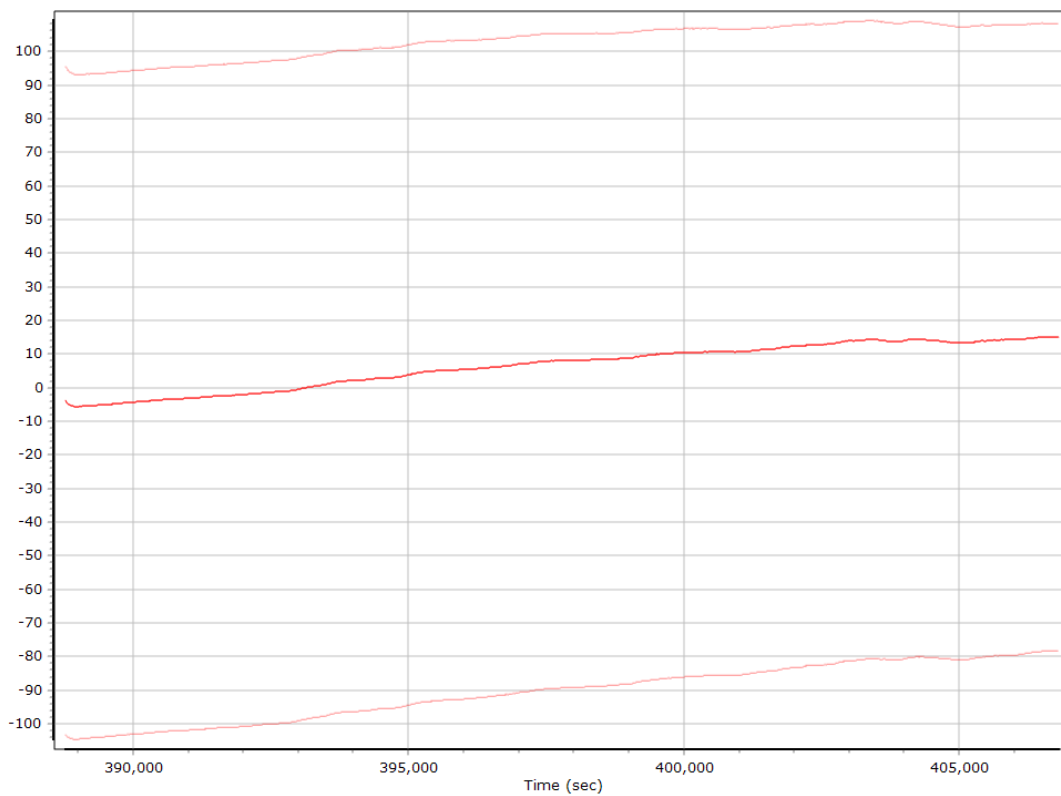
#### X Accelerometer Bias (micro-g)



### Y Accelerometer Bias (micro-g)



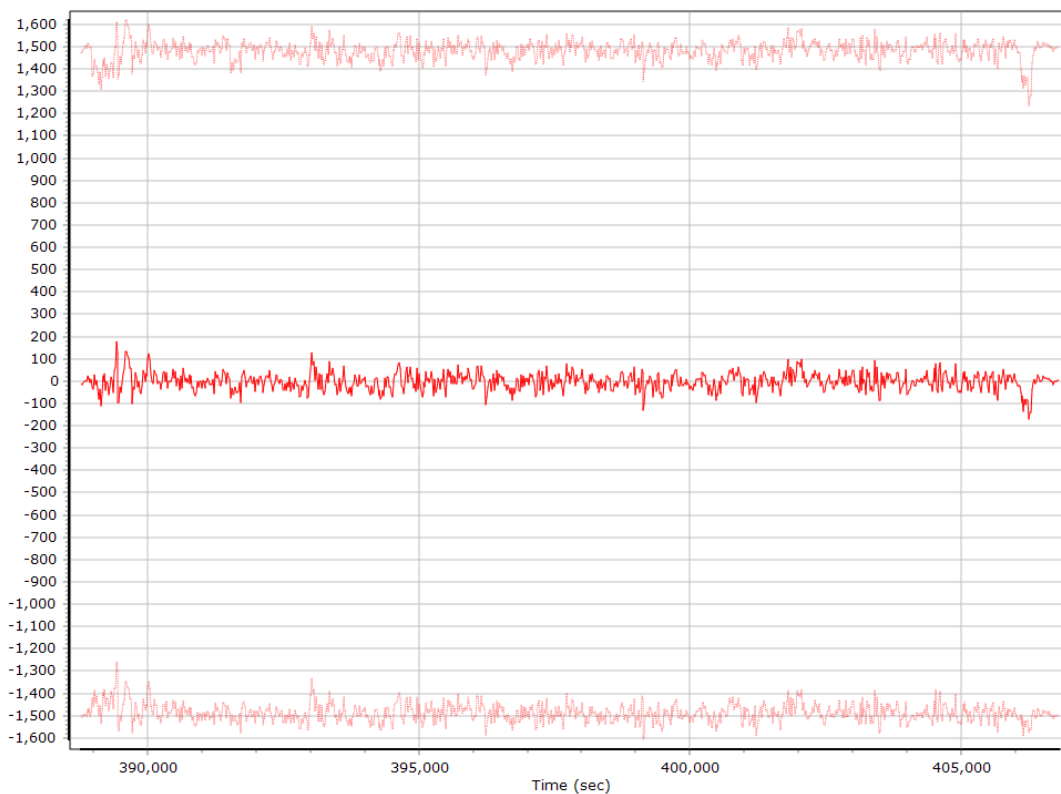
### Z Accelerometer Bias (micro-g)



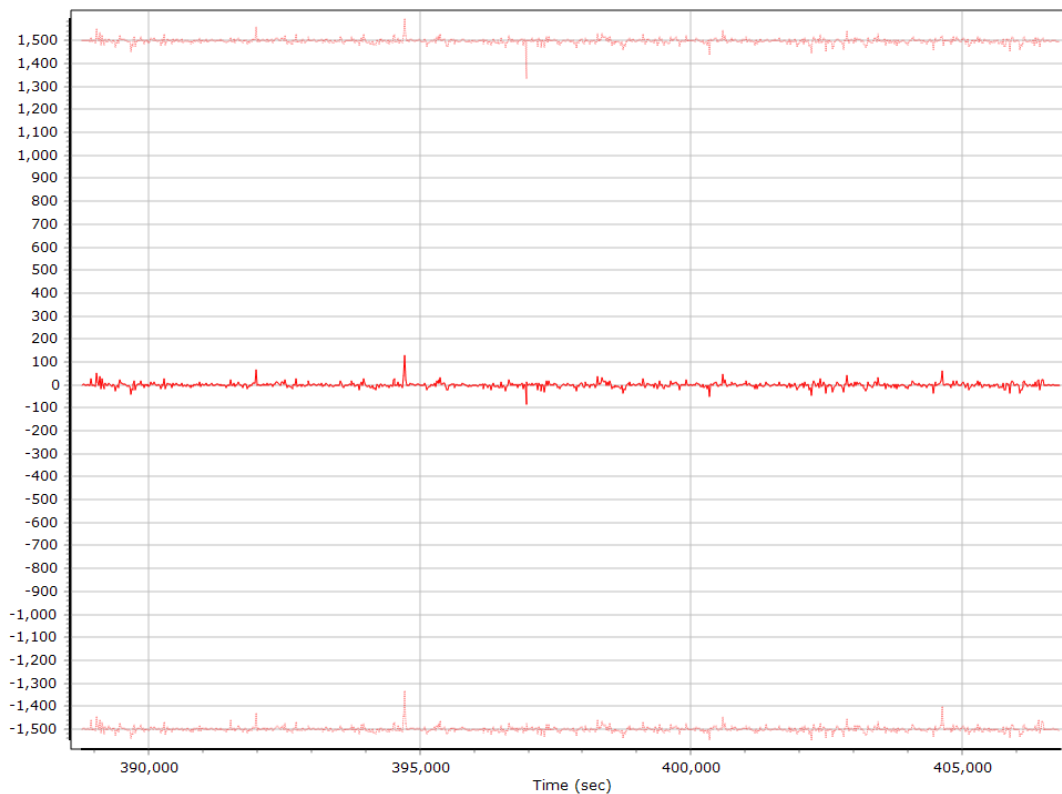
### Accelerometer Scale Error (ppm)



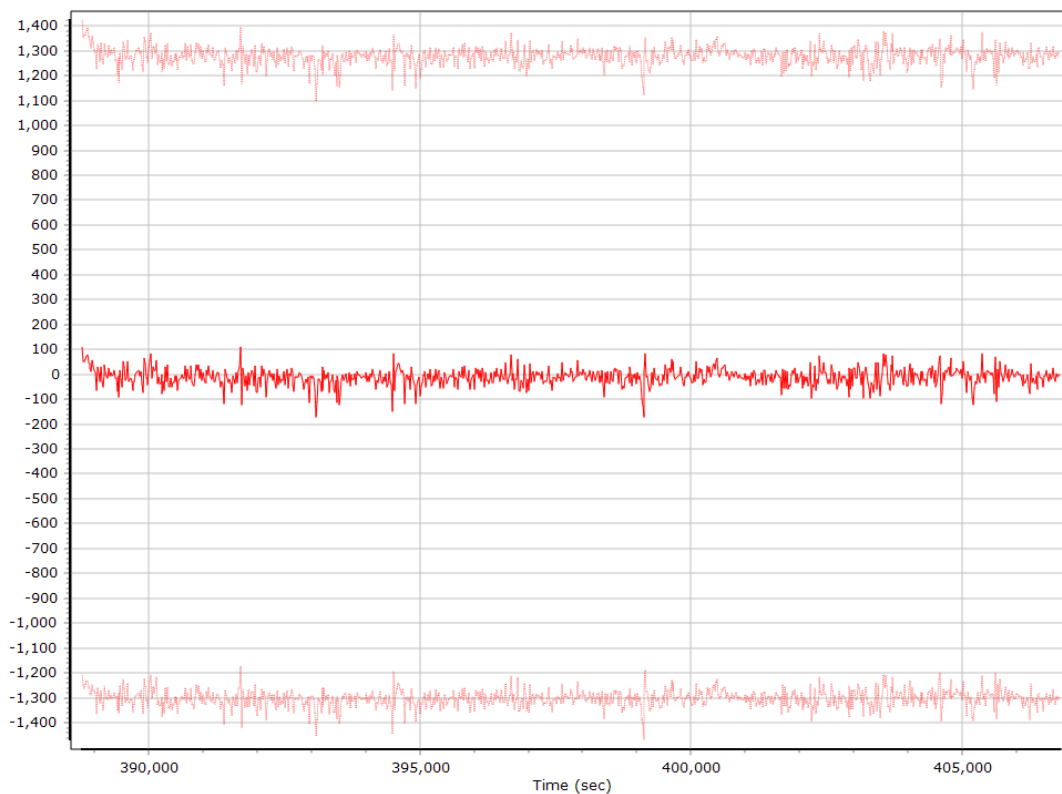
### X Accelerometer Scale Error (ppm)



### Y Accelerometer Scale Error (ppm)



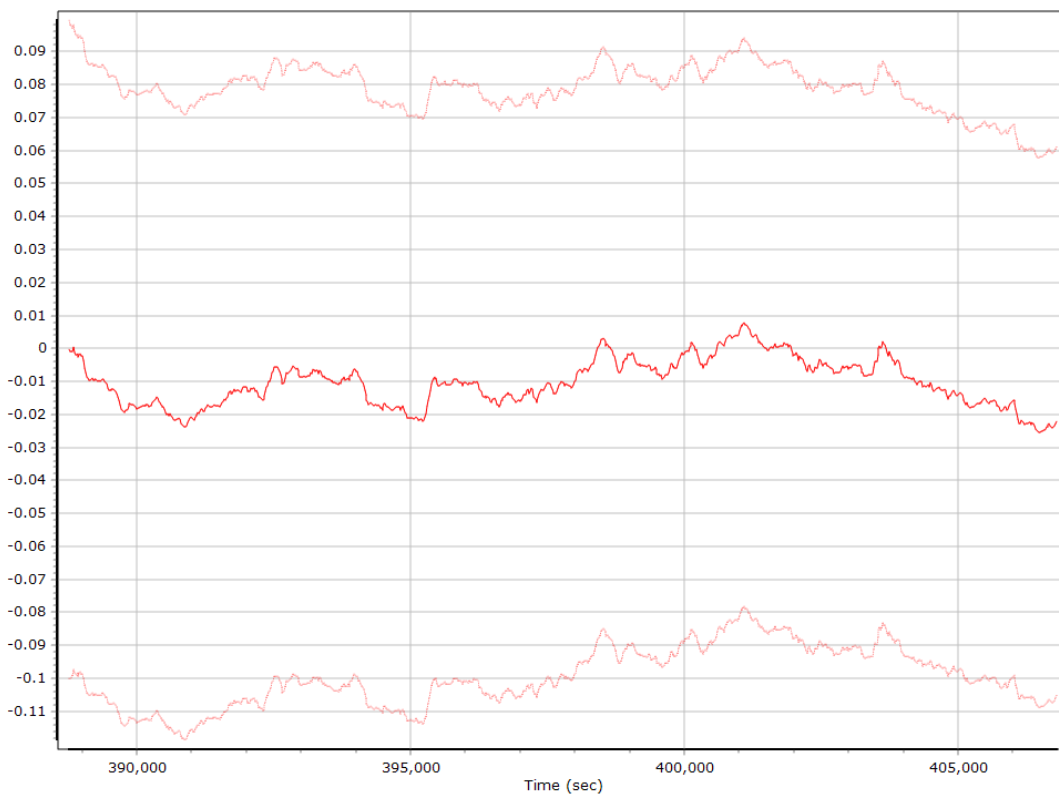
### Z Accelerometer Scale Error (ppm)



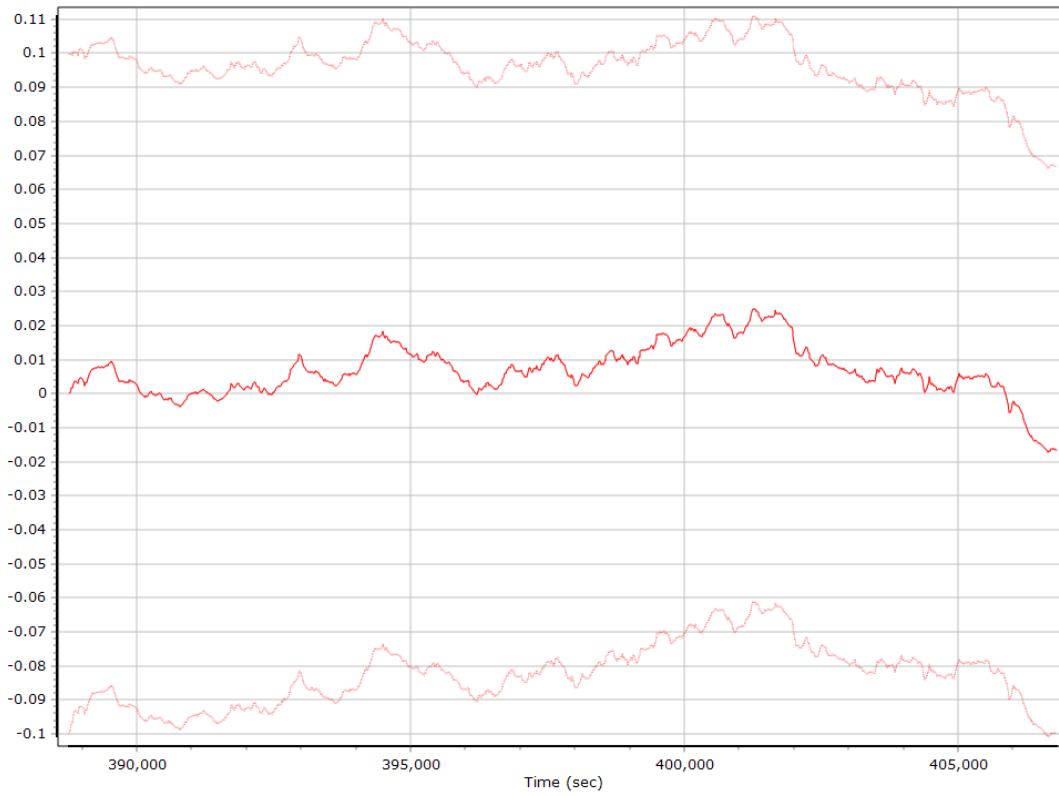
### Gyro Bias (deg/h)



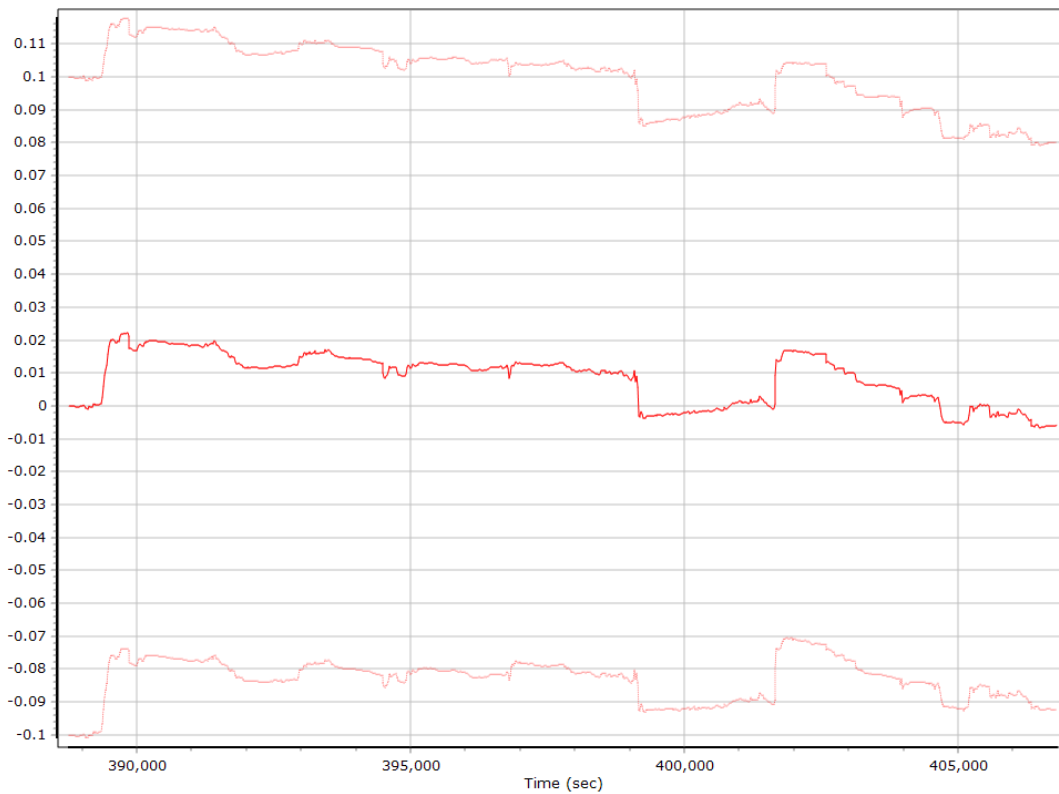
### X Gyro Bias (deg/h)



### Y Gyro Bias (deg/h)

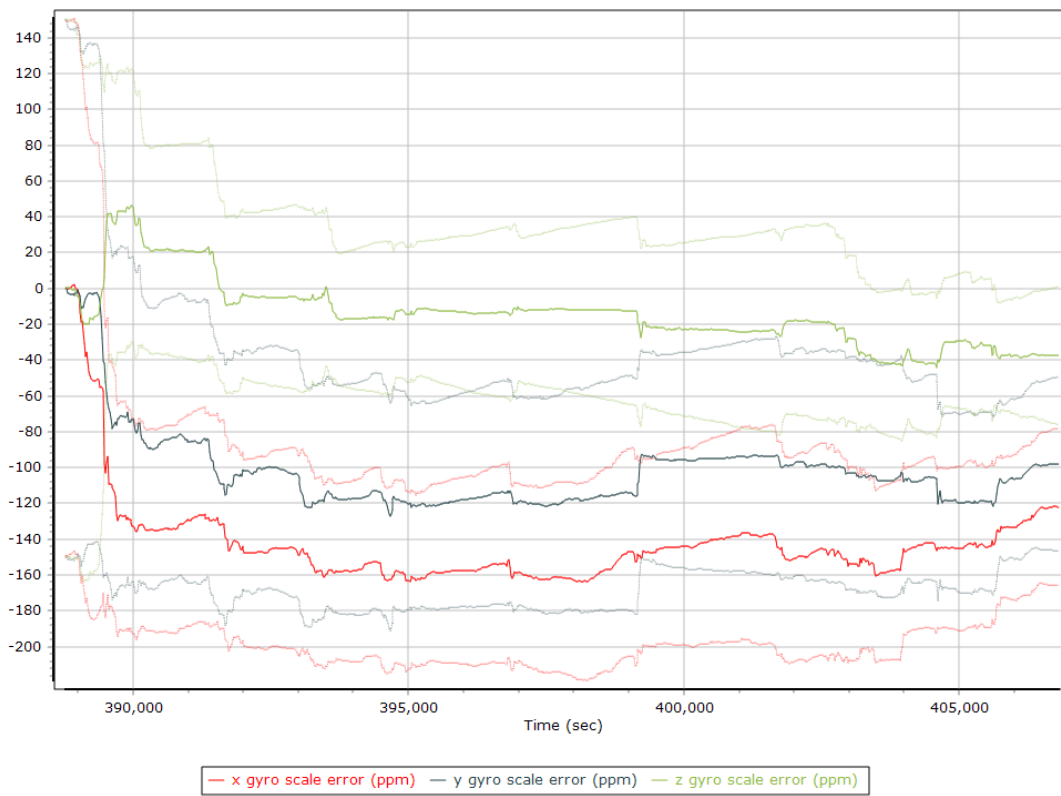


### Z Gyro Bias (deg/h)

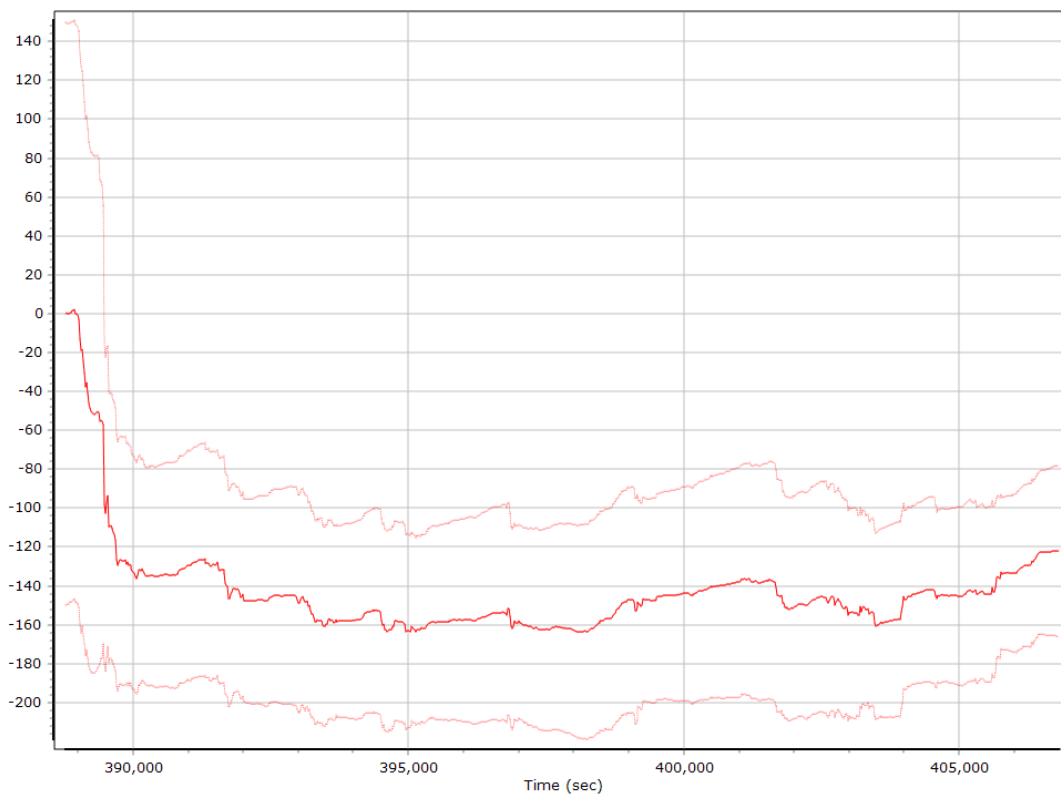




### Gyro Scale Error (ppm)



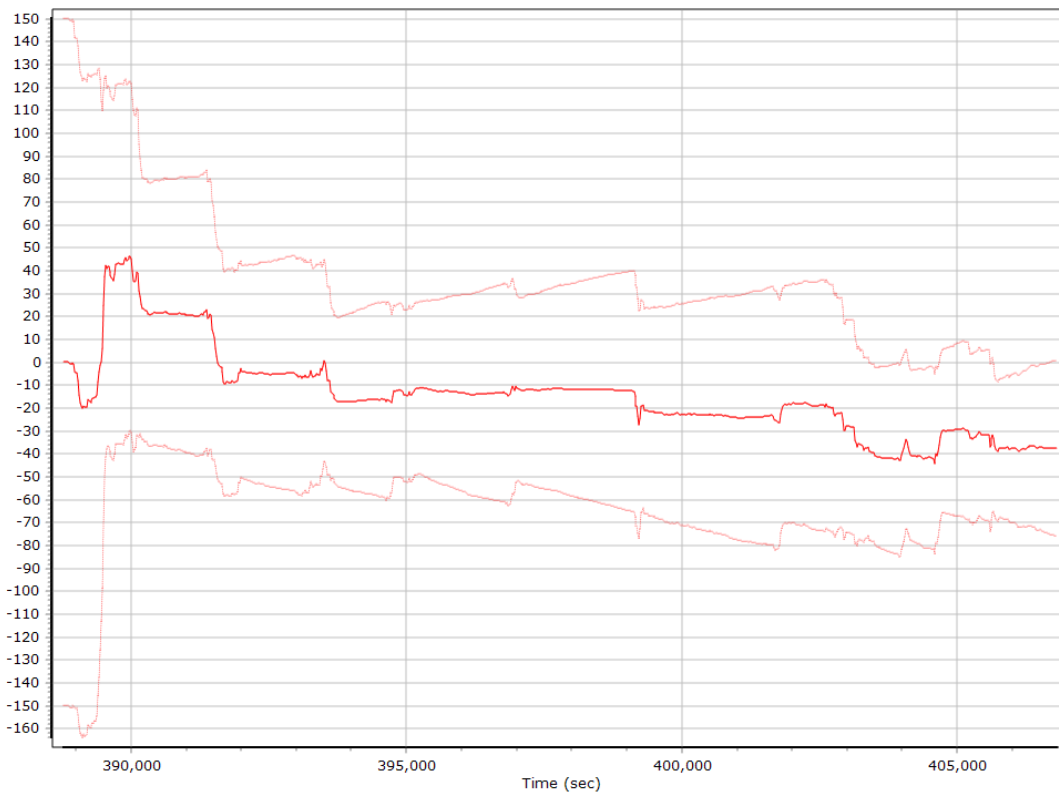
### X Gyro Scale Error (ppm)



### Y Gyro Scale Error (ppm)

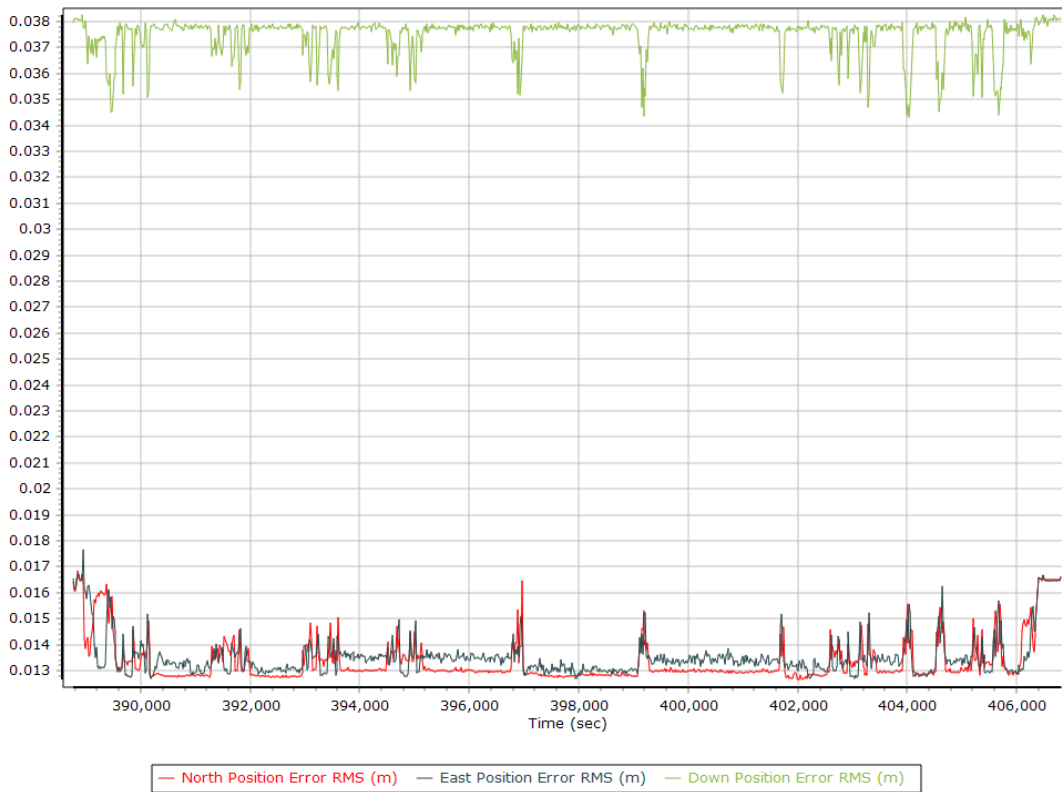


### Z Gyro Scale Error (ppm)

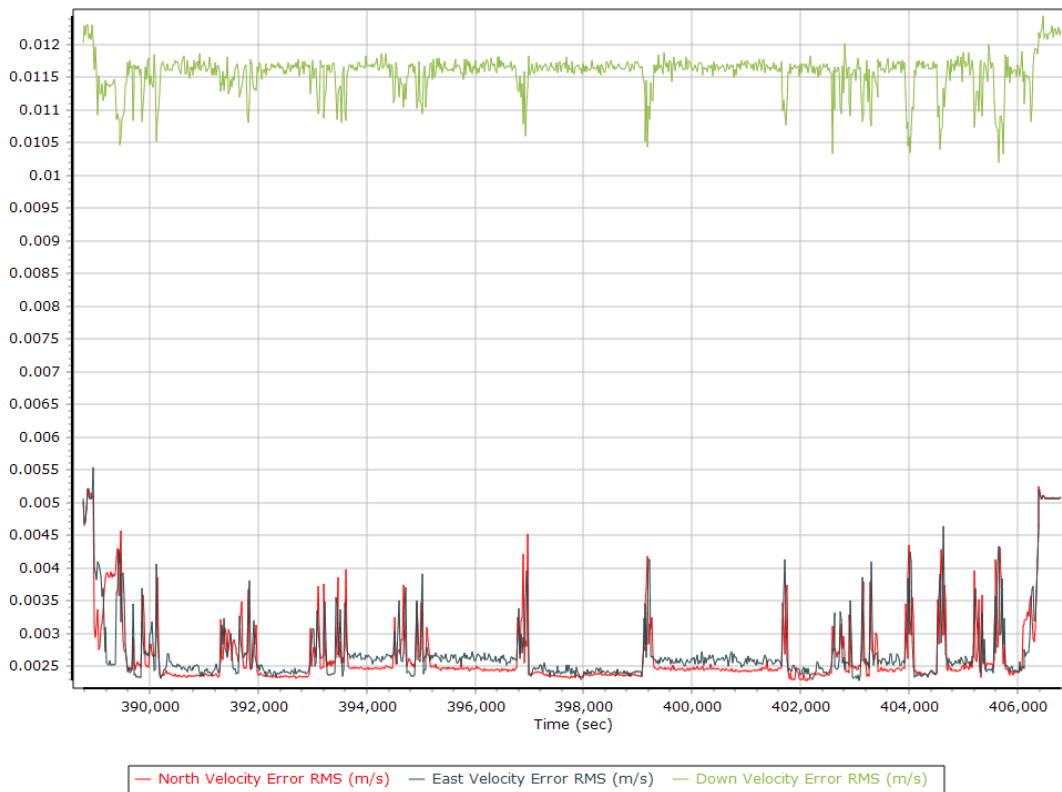


## Smoothed Performance Metrics

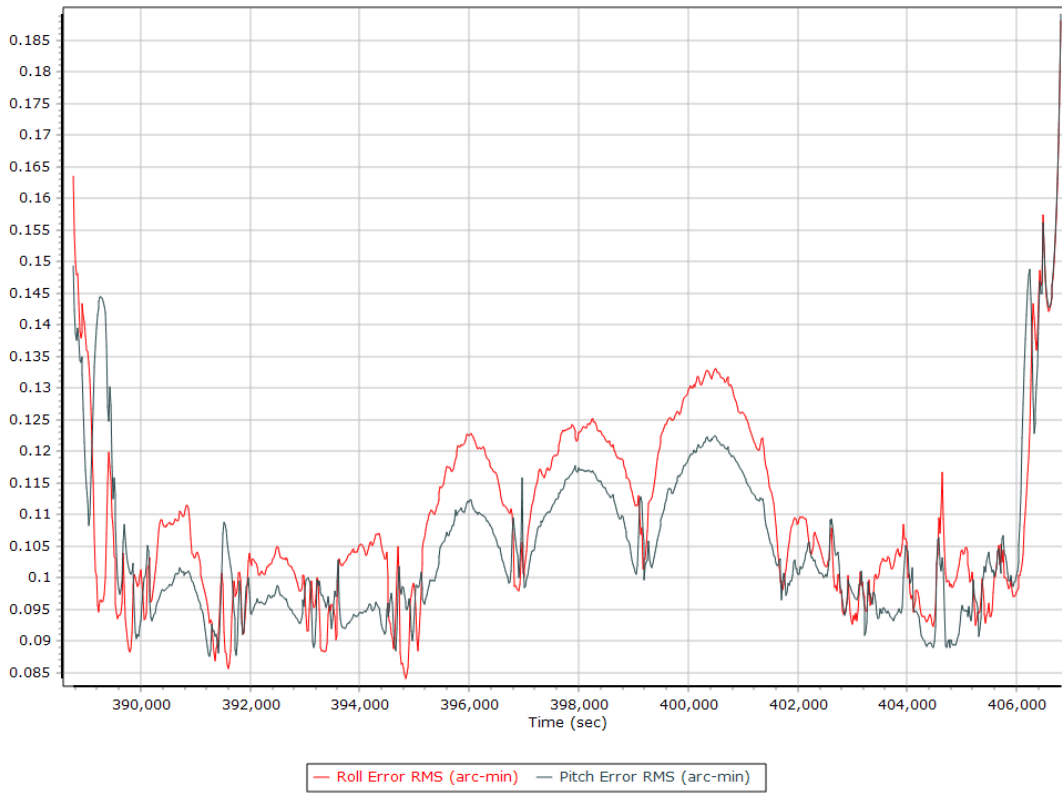
### Position Error RMS (m)



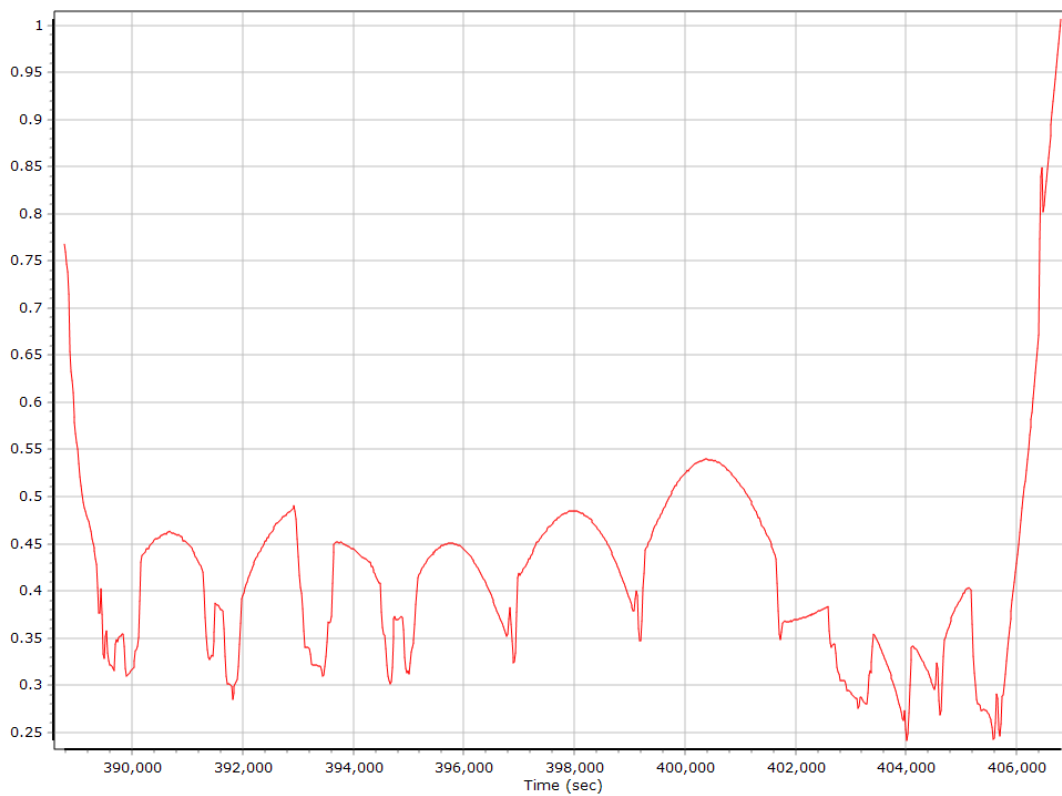
### Velocity Error RMS (m/s)



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

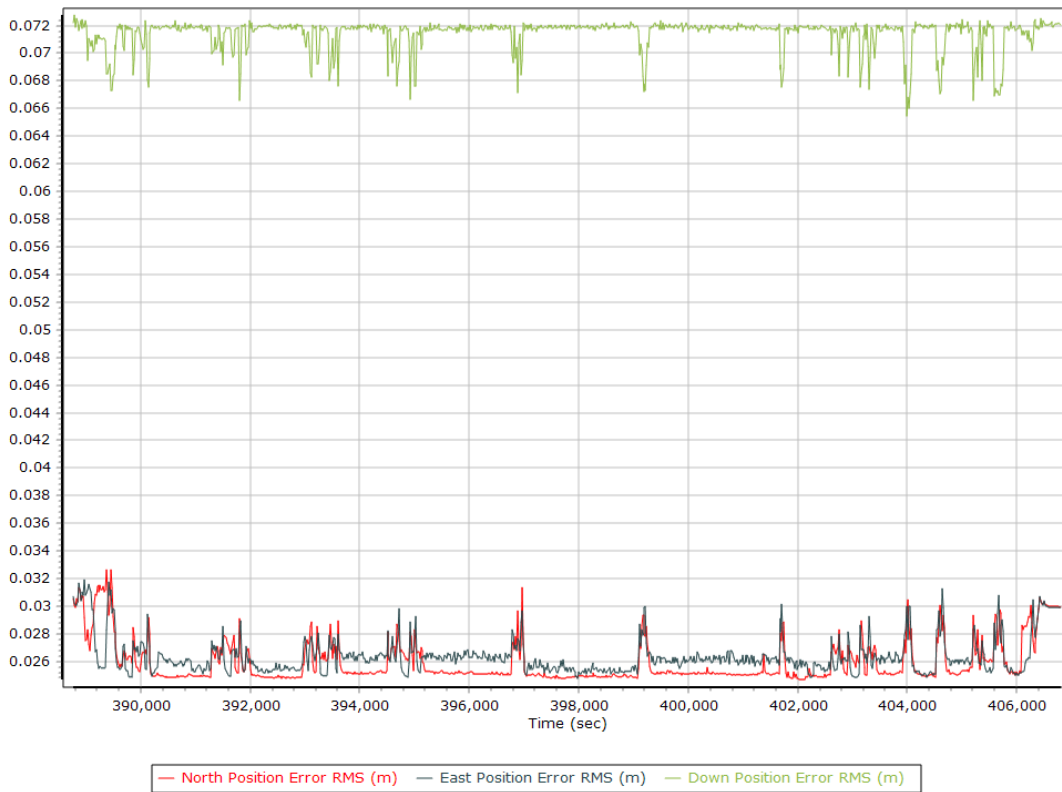


### Heading Error RMS (arc-min)

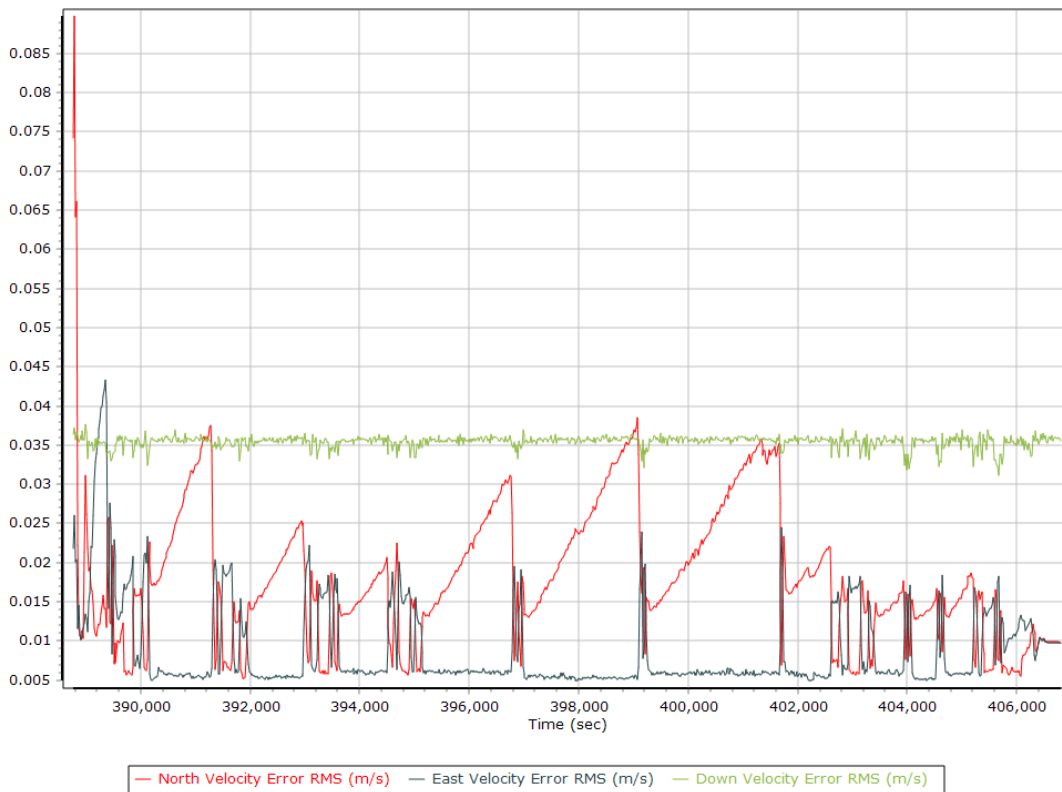


## Forward Processed Performance Metrics

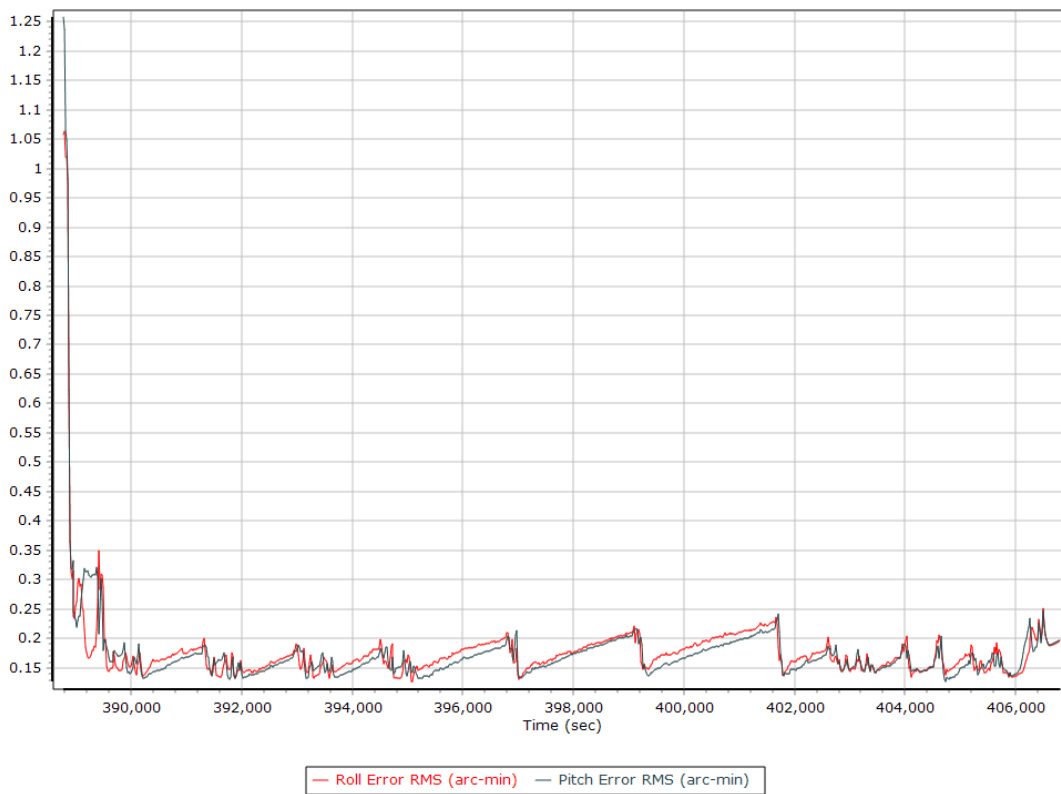
### Position Error RMS (m)



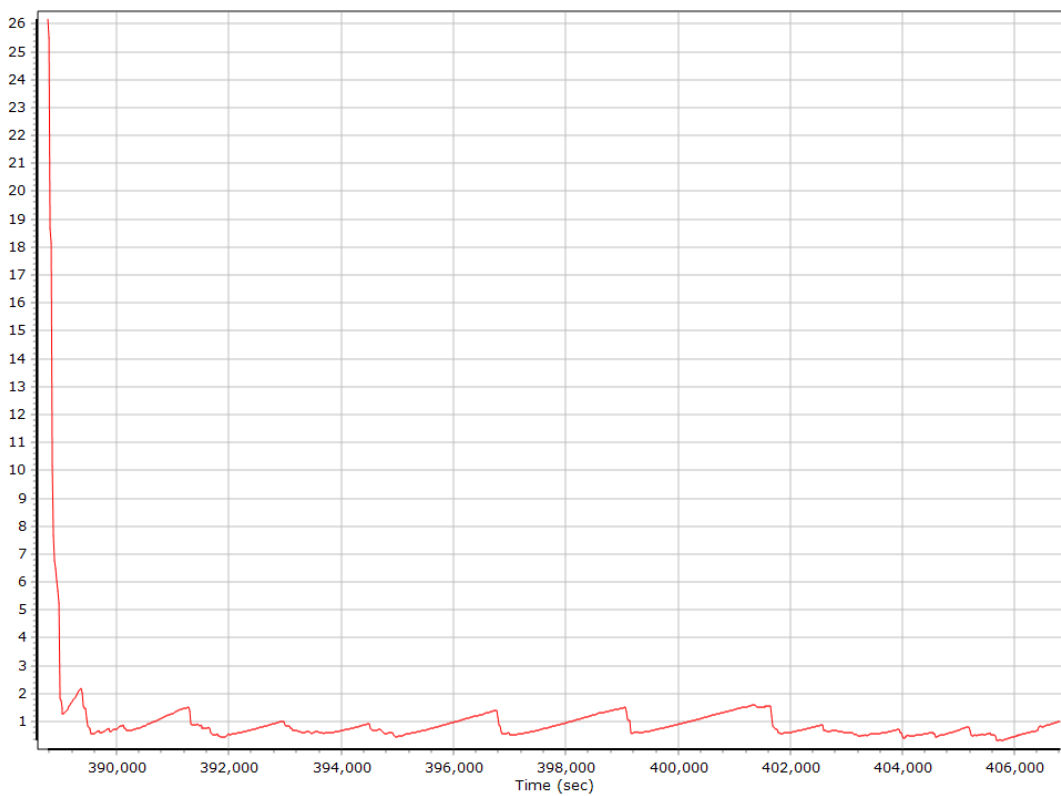
### Velocity Error RMS (m/s)



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

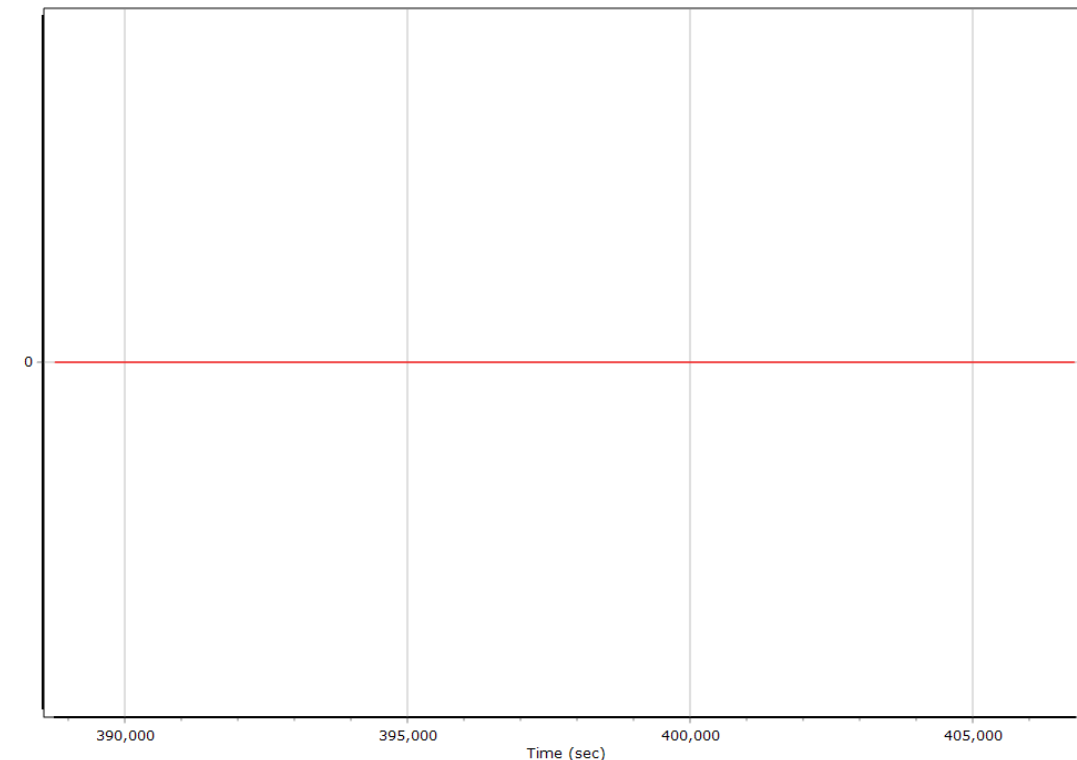


### Heading Error RMS (arc-min)



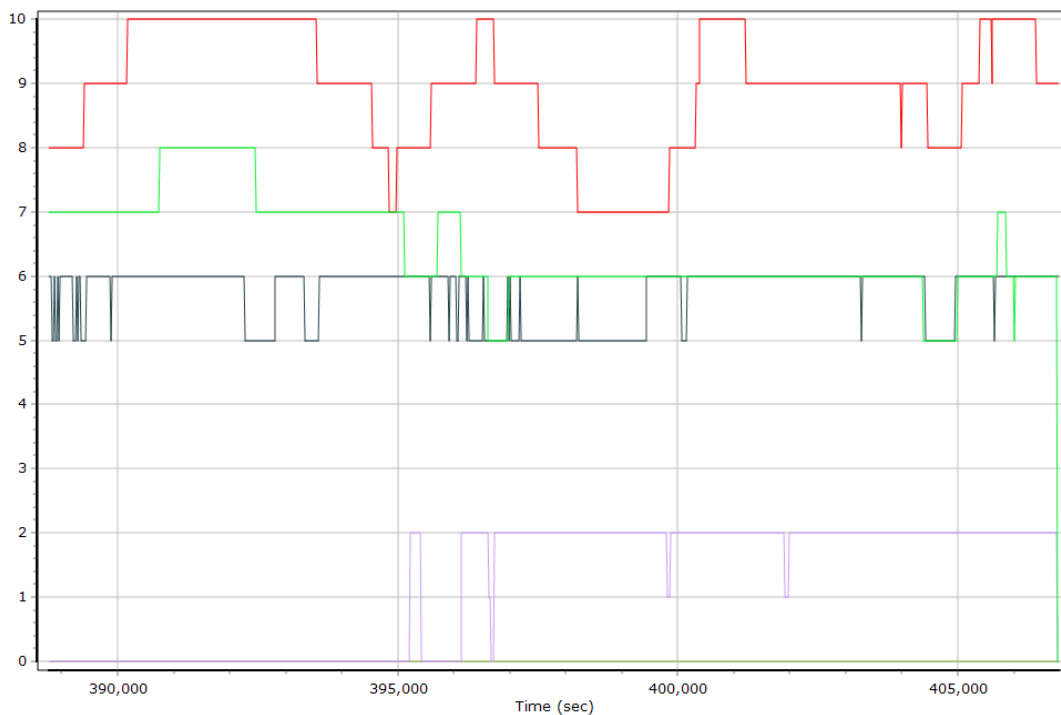
## Forward Processed Solution Status

### 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



— Number of GPS Satellites   
 — Number of GLONASS Satellites   
 — Number of QZSS Satellites  
— Number of BEIDOU Satellites   
 — Number of GALILEO Satellites

## Baseline Length

