

## General Information

### Mission Information

Project name	11893
Processing date	2020-12-08 19:56:02
Mission date	2020-12-06 22:28:54
Mission duration	03:50:26.237
Processing mode	IN-Fusion PP-RTX

### Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N10633
IMU type	57
Receiver type	BD982
Antenna type	AV39

## Project File List

### Rover Data Files

File name	File type
12062020F1Nights.442	POS Data
12062020F1Nights.443	POS Data
12062020F1Nights.444	POS Data
12062020F1Nights.445	POS Data
12062020F1Nights.446	POS Data
12062020F1Nights.447	POS Data
12062020F1Nights.448	POS Data
12062020F1Nights.449	POS Data
12062020F1Nights.450	POS Data
12062020F1Nights.451	POS Data
12062020F1Nights.452	POS Data
12062020F1Nights.453	POS Data
12062020F1Nights.454	POS Data
12062020F1Nights.455	POS Data
12062020F1Nights.456	POS Data
12062020F1Nights.457	POS Data
12062020F1Nights.458	POS Data
12062020F1Nights.459	POS Data
12062020F1Nights.460	POS Data
12062020F1Nights.461	POS Data
12062020F1Nights.462	POS Data
12062020F1Nights.463	POS Data
12062020F1Nights.464	POS Data
12062020F1Nights.465	POS Data
12062020F1Nights.466	POS Data
12062020F1Nights.467	POS Data
12062020F1Nights.468	POS Data
12062020F1Nights.469	POS Data
12062020F1Nights.470	POS Data
12062020F1Nights.471	POS Data
12062020F1Nights.472	POS Data

### Input Files

File Name	File Type
Ephm3410.20g	GLONASS Broadcast Ephemeris
Ephm3410.20n	GPS Broadcast Ephemeris
Ephm3420.20g	GLONASS Broadcast Ephemeris
Ephm3420.20n	GPS Broadcast Ephemeris

### Output Files

Filename	File type
sbet_11893.out	SBET Trajectory File
eo_11893.txt	ZI Imaging POSEO Output
sbet_11893_NAD83(2011).out	Custom Smoothed BET Export Output
lever_arm_values.txt	ReferenceToPrimaryLeverArms Export Output

## Rover Data Summary

First raw data file	12062020F1Nights.442		
Last raw data file	12062020F1Nights.472		
Start GPS week	2135		
Start time	80933.972 (12/06/2020 22:28:53)		
End time	94760.209 (12/07/2020 02:19:20)		
Start of fine alignment	81273.652 (12/06/2020 22:34:33)		
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)	-0.485	-0.379	-1.087
Reference to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

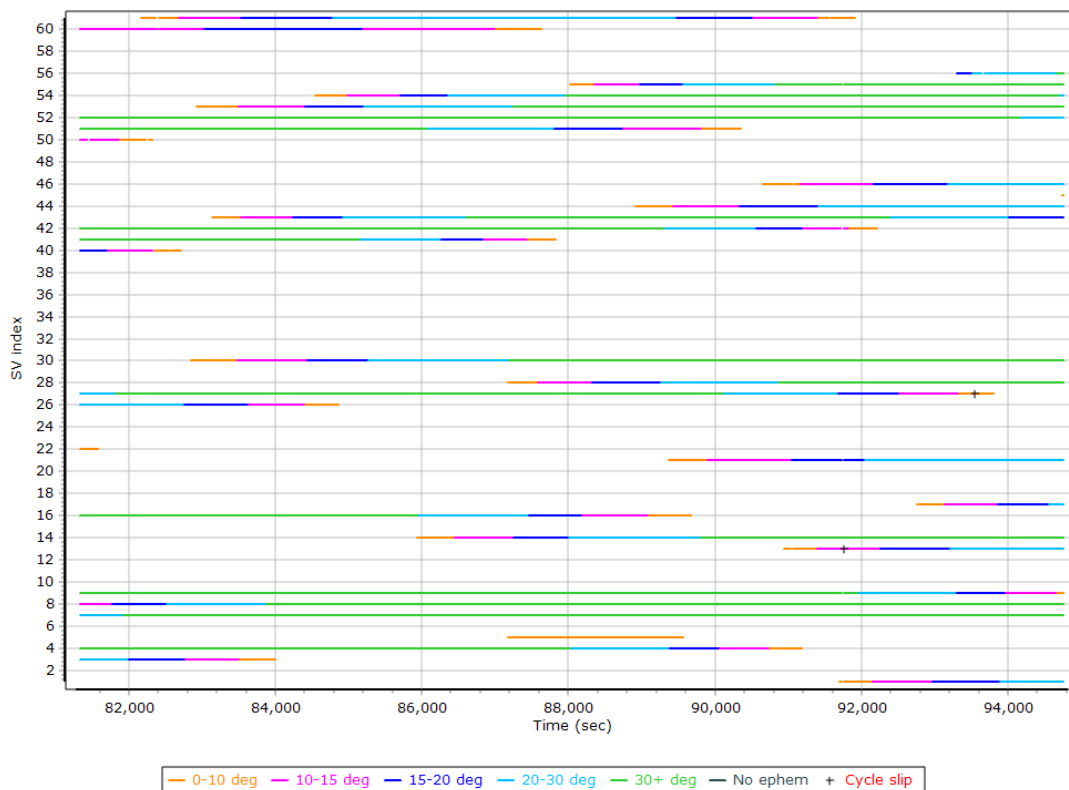
## Rover Data QC

### Raw IMU Import QC Summary

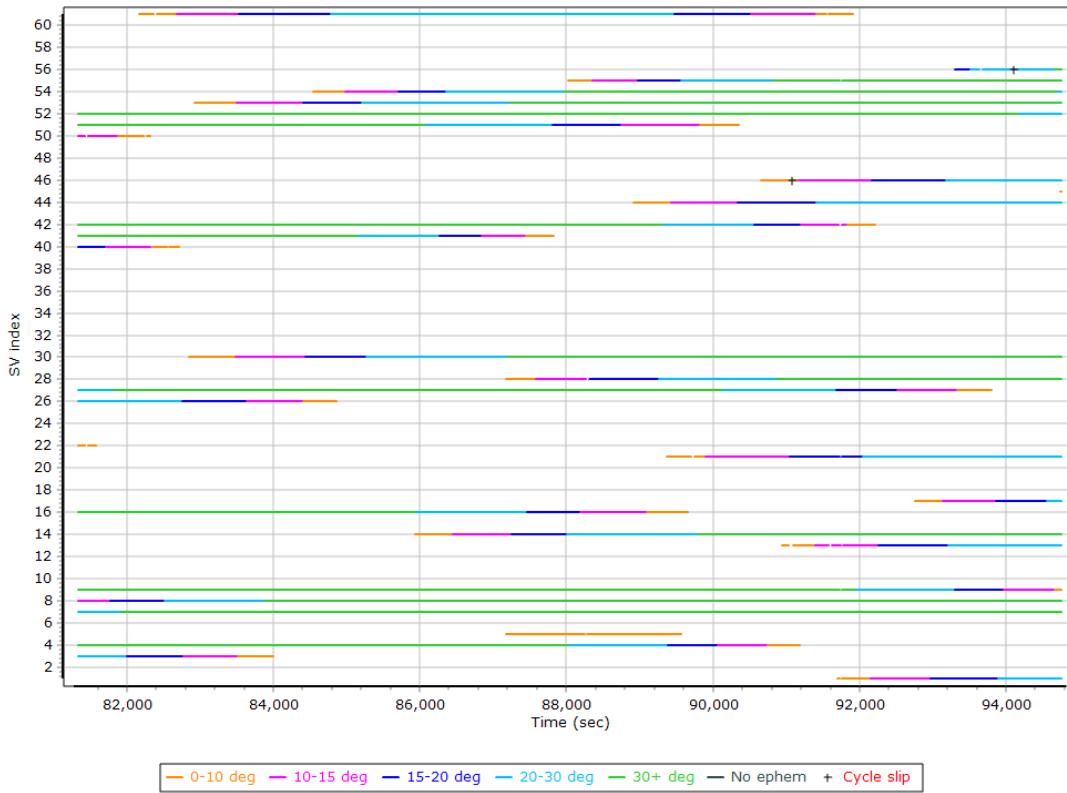
IMU data input file	imu_11893.dat
IMU data check log file	imudt_11893.log
IMU Records Processed	2764724
Termination Status	Normal
IMU Anomalies	0

## Primary Observables & Satellite Data

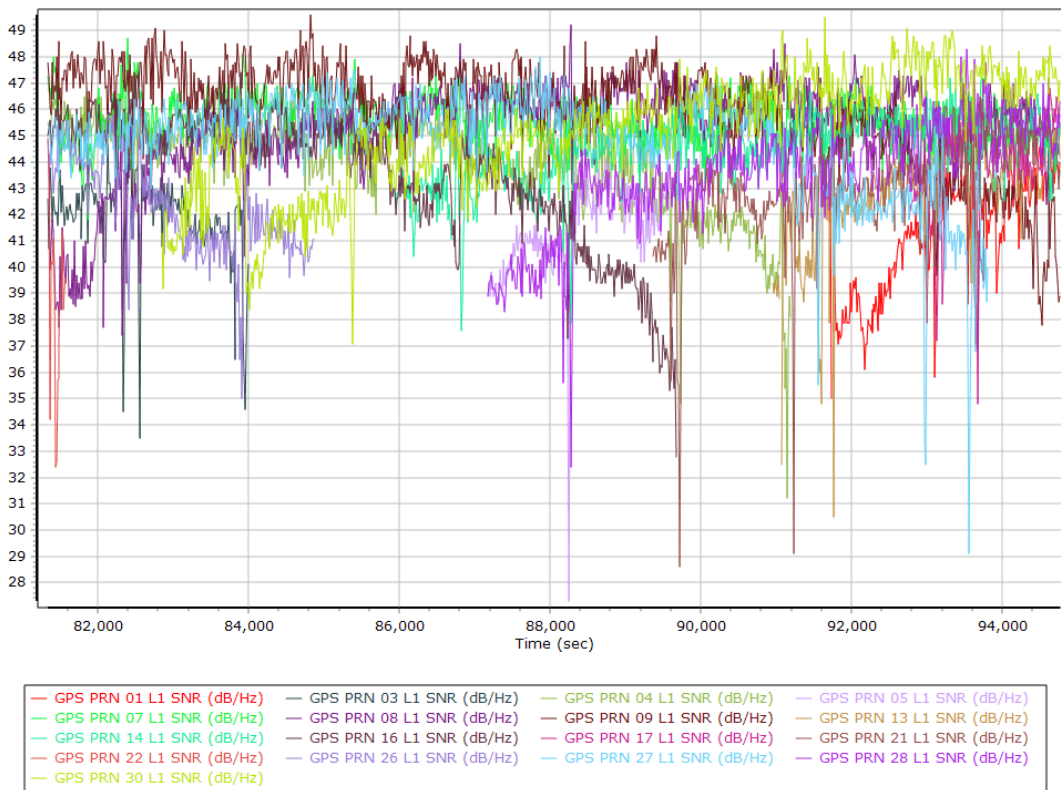
### L1 Satellite Lock/Elevation



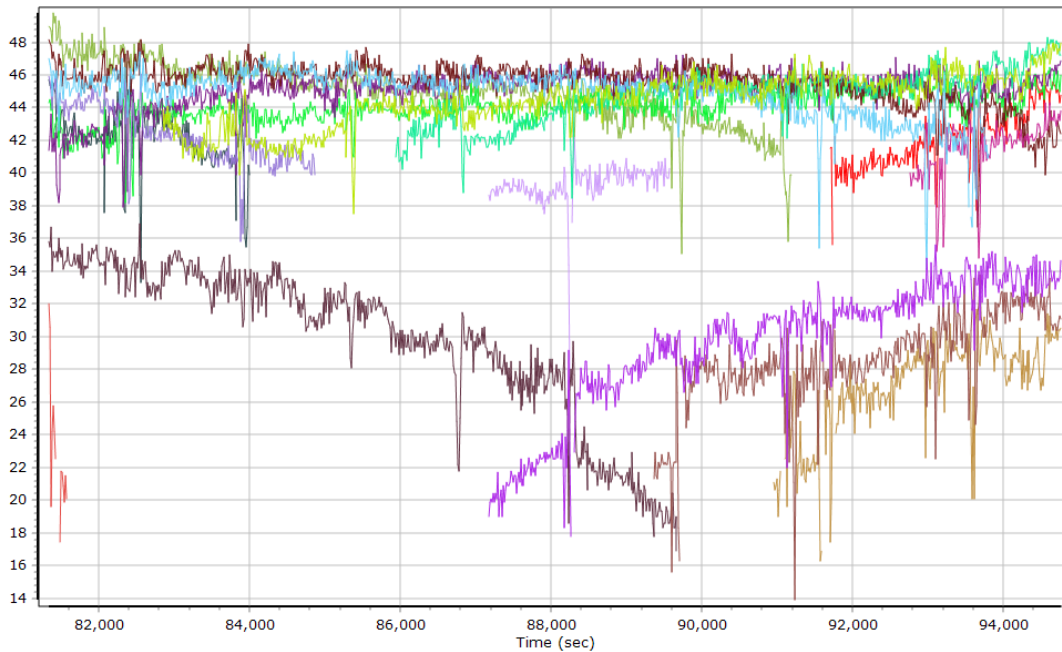
## L2 Satellite Lock/Elevation



## GPS L1 SNR

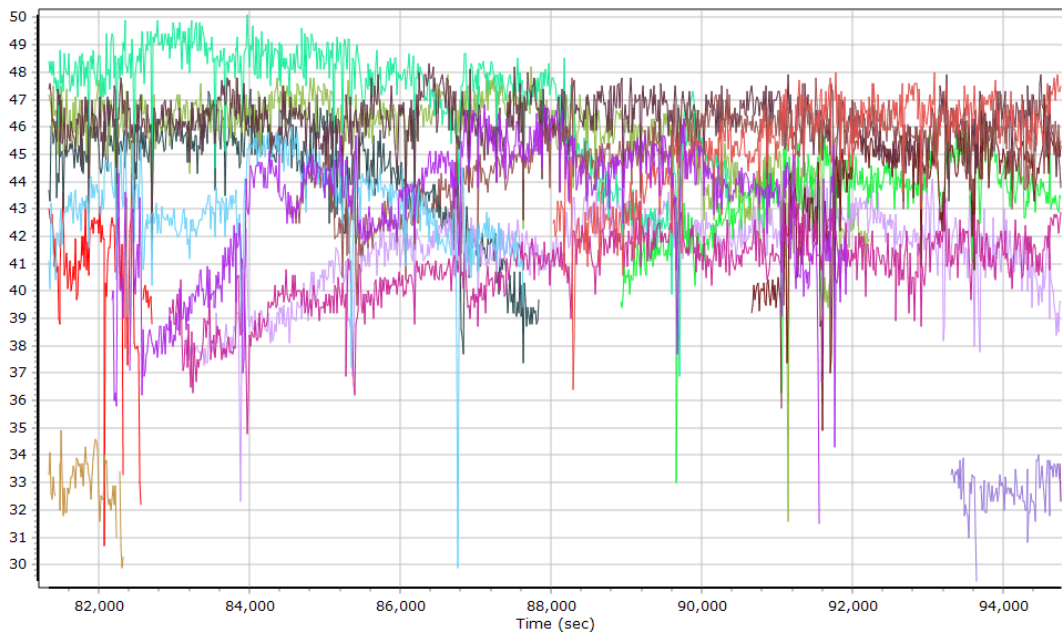


### GPS L2 SNR



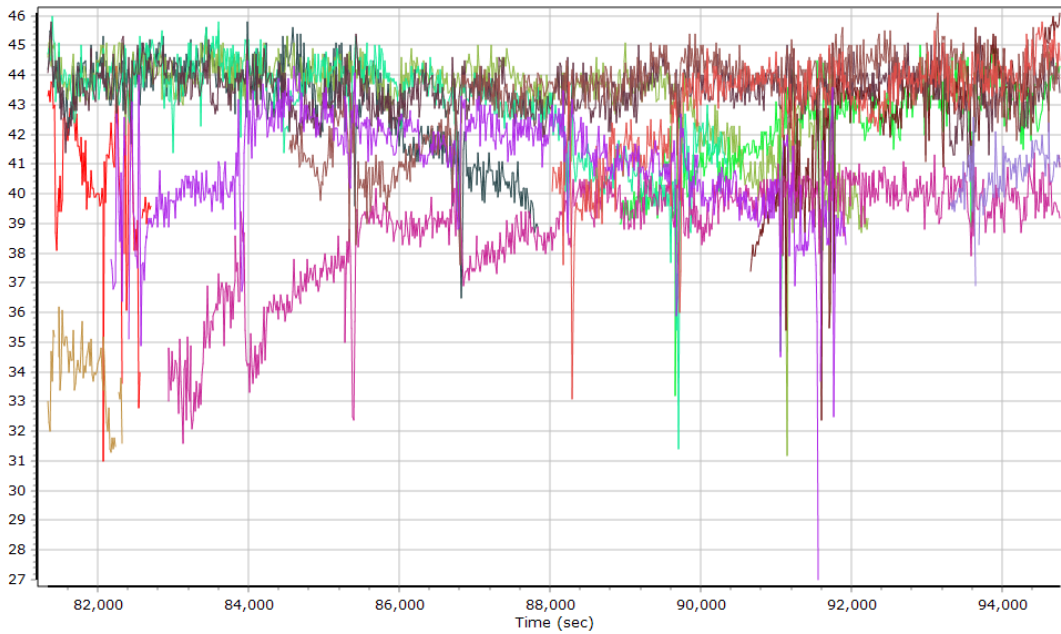
- |                           |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|---------------------------|
| GPS PRN 01 L2 SNR (dB/Hz) | GPS PRN 03 L2 SNR (dB/Hz) | GPS PRN 04 L2 SNR (dB/Hz) | GPS PRN 05 L2 SNR (dB/Hz) |
| GPS PRN 07 L2 SNR (dB/Hz) | GPS PRN 08 L2 SNR (dB/Hz) | GPS PRN 09 L2 SNR (dB/Hz) | GPS PRN 13 L2 SNR (dB/Hz) |
| GPS PRN 14 L2 SNR (dB/Hz) | GPS PRN 16 L2 SNR (dB/Hz) | GPS PRN 17 L2 SNR (dB/Hz) | GPS PRN 21 L2 SNR (dB/Hz) |
| GPS PRN 22 L2 SNR (dB/Hz) | GPS PRN 26 L2 SNR (dB/Hz) | GPS PRN 27 L2 SNR (dB/Hz) | GPS PRN 28 L2 SNR (dB/Hz) |
| GPS PRN 30 L2 SNR (dB/Hz) |                           |                           |                           |

### GLONASS L1 SNR



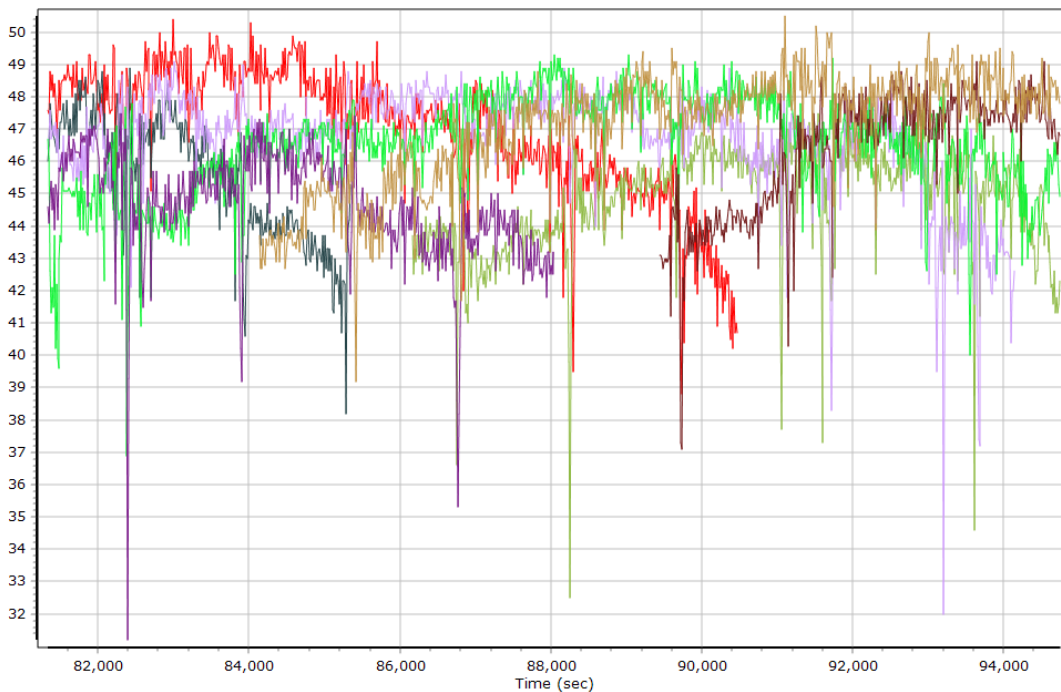
- |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|
| GLONASS 03 L1 SNR (dB/Hz) | GLONASS 04 L1 SNR (dB/Hz) | GLONASS 05 L1 SNR (dB/Hz) |
| GLONASS 06 L1 SNR (dB/Hz) | GLONASS 07 L1 SNR (dB/Hz) | GLONASS 08 L1 SNR (dB/Hz) |
| GLONASS 09 L1 SNR (dB/Hz) | GLONASS 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 23 L1 SNR (dB/Hz) |
| GLONASS 24 L1 SNR (dB/Hz) |                           |                           |

### GLONASS L2 SNR



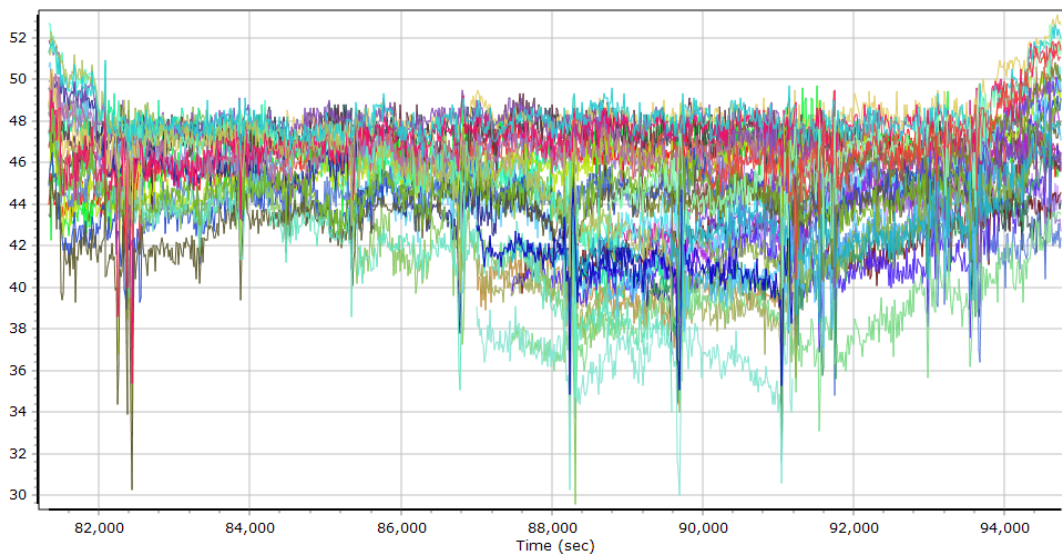
- |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|
| GLONASS 03 L2 SNR (dB/Hz) | GLONASS 04 L2 SNR (dB/Hz) | GLONASS 05 L2 SNR (dB/Hz) |
| GLONASS 06 L2 SNR (dB/Hz) | GLONASS 07 L2 SNR (dB/Hz) | GLONASS 08 L2 SNR (dB/Hz) |
| GLONASS 09 L2 SNR (dB/Hz) | GLONASS 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 23 L2 SNR (dB/Hz) |
| GLONASS 24 L2 SNR (dB/Hz) |                           |                           |

### BEIDOU SNR



- |                             |                             |                             |
|-----------------------------|-----------------------------|-----------------------------|
| BEIDOU 19 B1 B1 SNR (dB/Hz) | BEIDOU 20 B1 B1 SNR (dB/Hz) | BEIDOU 21 B1 B1 SNR (dB/Hz) |
| BEIDOU 22 B1 B1 SNR (dB/Hz) | BEIDOU 27 B1 B1 SNR (dB/Hz) | BEIDOU 28 B1 B1 SNR (dB/Hz) |
| BEIDOU 29 B1 B1 SNR (dB/Hz) | BEIDOU 30 B1 B1 SNR (dB/Hz) |                             |

### GALILEO SNR

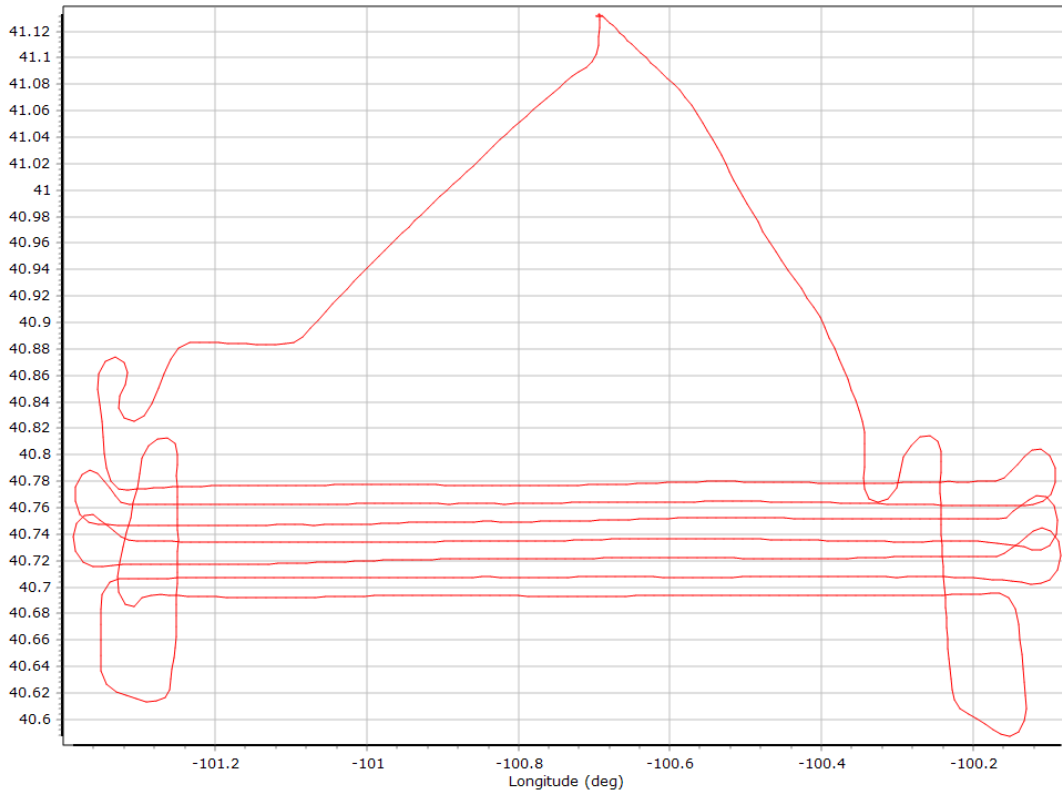


- |  |  |
|--|--|
| — GALILEO 02 L1 BOC_1_1_D_MBOC SNR (dB/Hz) | — GALILEO 03 L1 BOC_1_1_D_MBOC SNR (dB/Hz) |
| — GALILEO 05 L1 BOC_1_1_D_MBOC SNR (dB/Hz) | — GALILEO 07 L1 BOC_1_1_D_MBOC SNR (dB/Hz) |
| — GALILEO 08 L1 BOC_1_1_D_MBOC SNR (dB/Hz) | — GALILEO 09 L1 BOC_1_1_D_MBOC SNR (dB/Hz) |
| — GALILEO 11 L1 BOC_1_1_D_MBOC SNR (dB/Hz) | — GALILEO 12 L1 BOC_1_1_D_MBOC SNR (dB/Hz) |
| — GALILEO 24 L1 BOC_1_1_D_MBOC SNR (dB/Hz) | — GALILEO 25 L1 BOC_1_1_D_MBOC SNR (dB/Hz) |
| — GALILEO 30 L1 BOC_1_1_D_MBOC SNR (dB/Hz) | — GALILEO 36 L1 BOC_1_1_D_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)   |
| — GALILEO 11 L5E5A BPSK10_PD SNR (dB/Hz)   | — GALILEO 12 L5E5A BPSK10_PD SNR (dB/Hz)   |

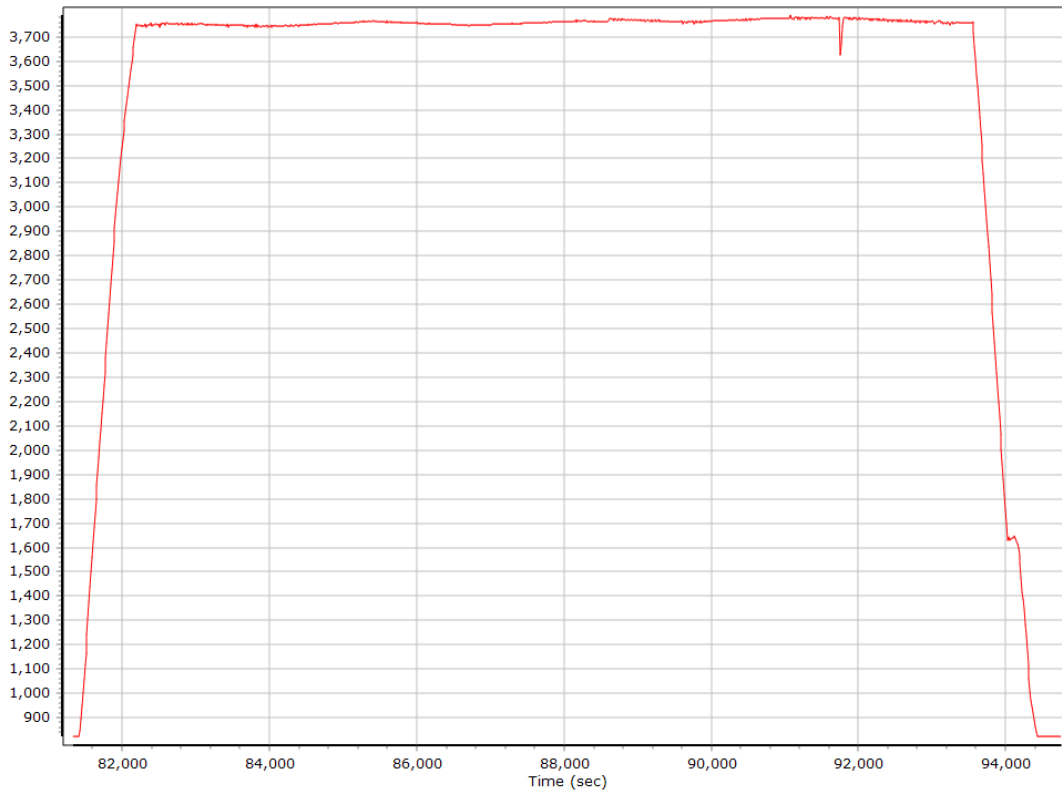


## Smoothed Trajectory Information

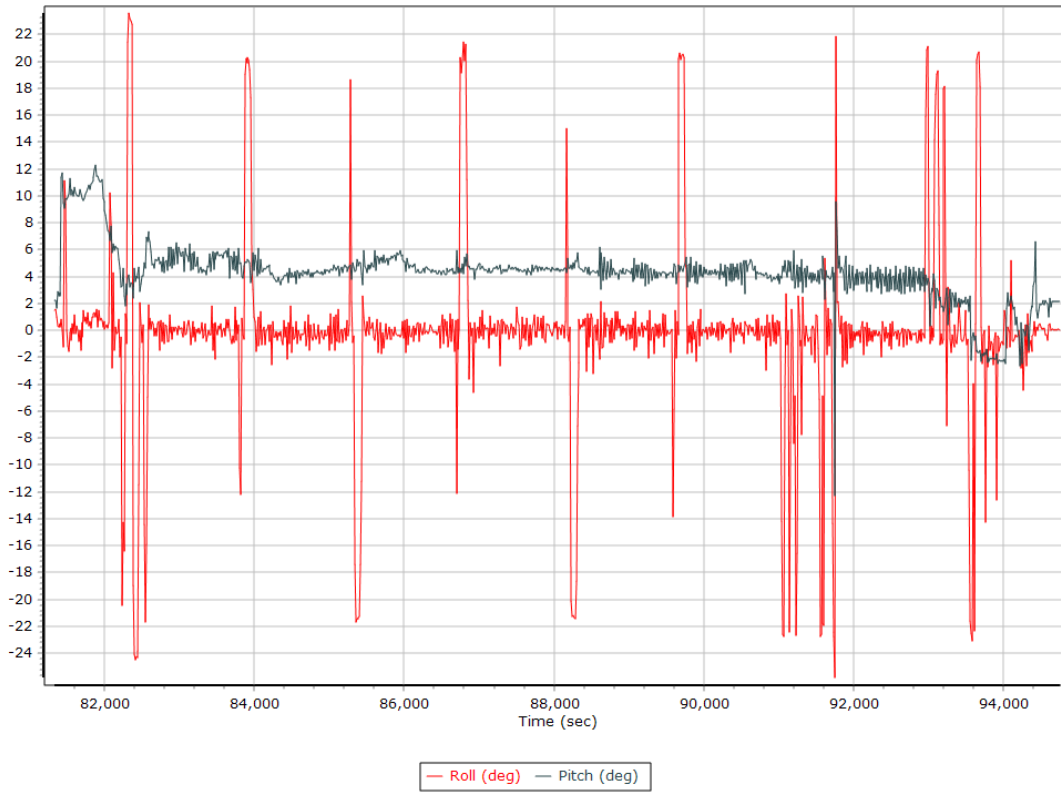
### Top View



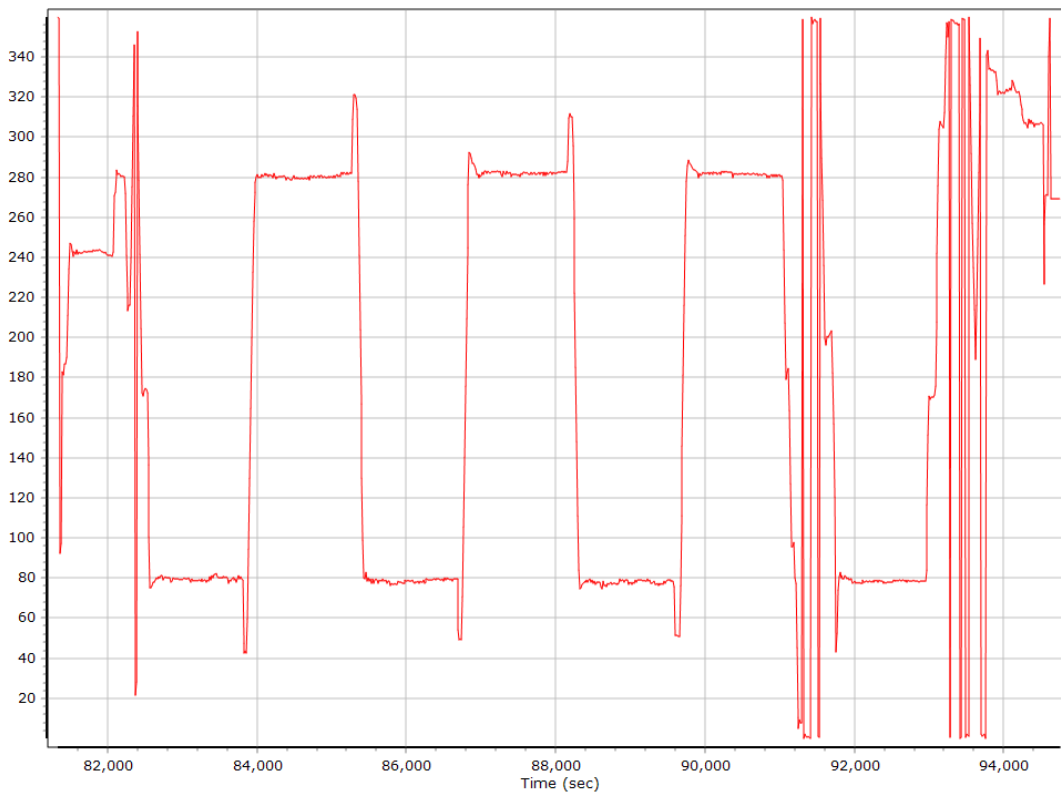
### Altitude



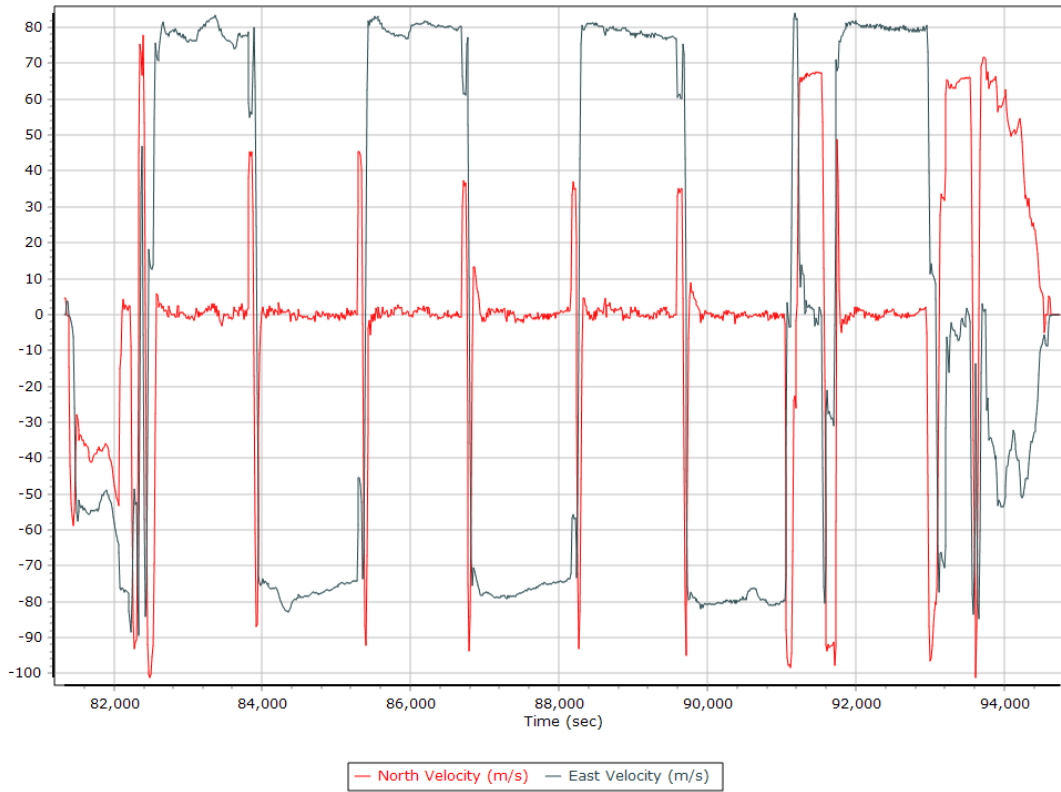
## Roll/Pitch



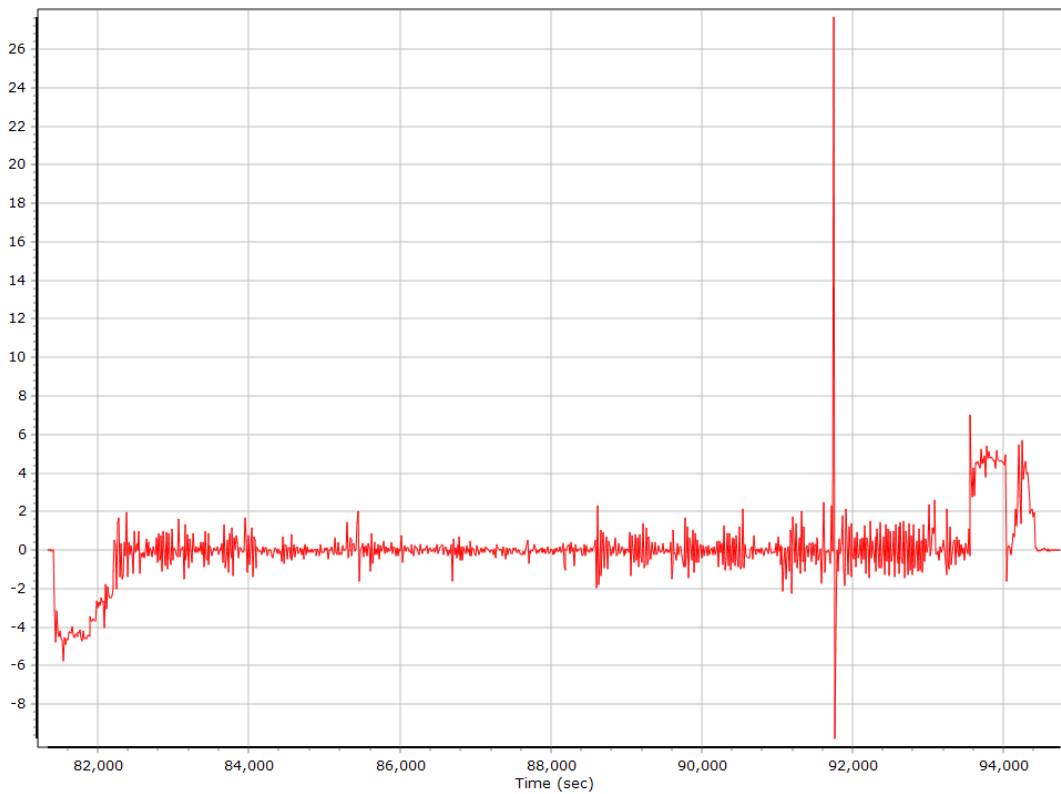
## Heading



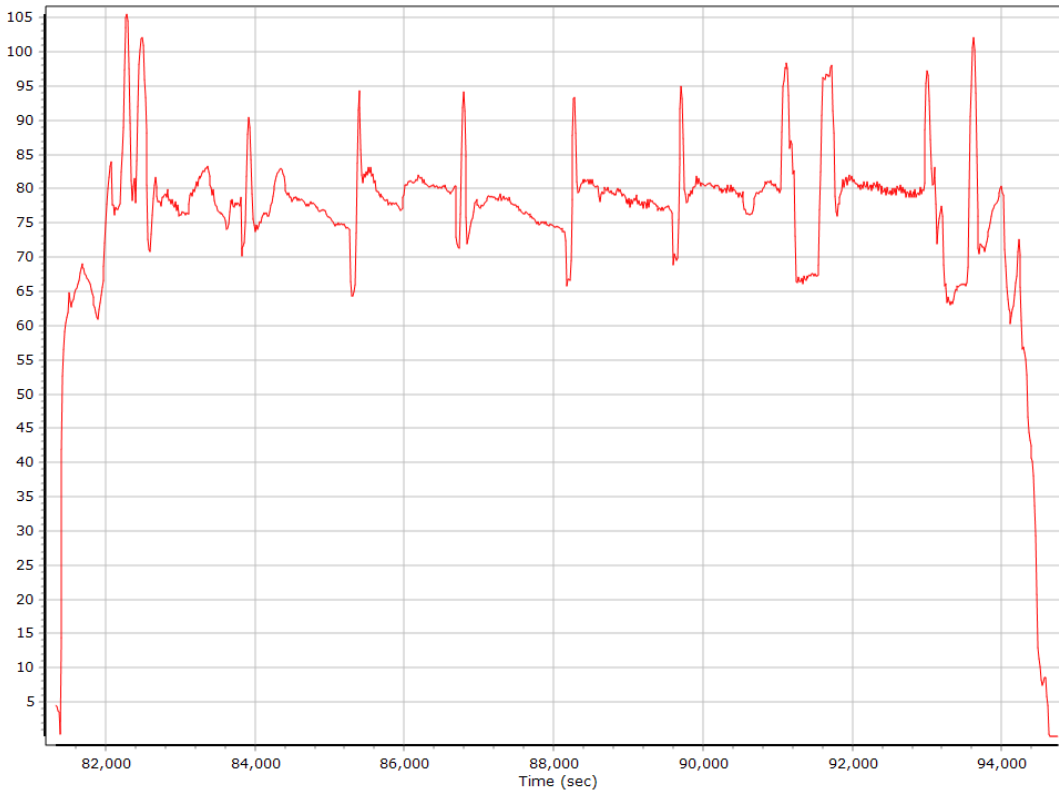
## North/East Velocity



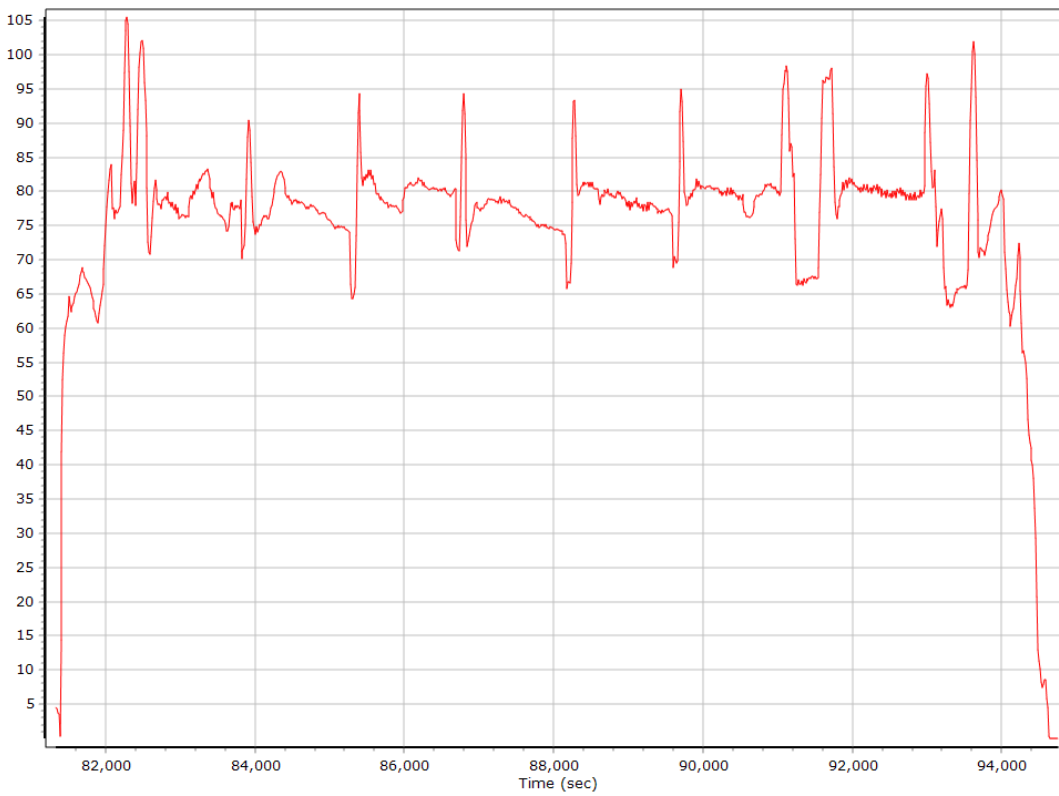
## Down Velocity



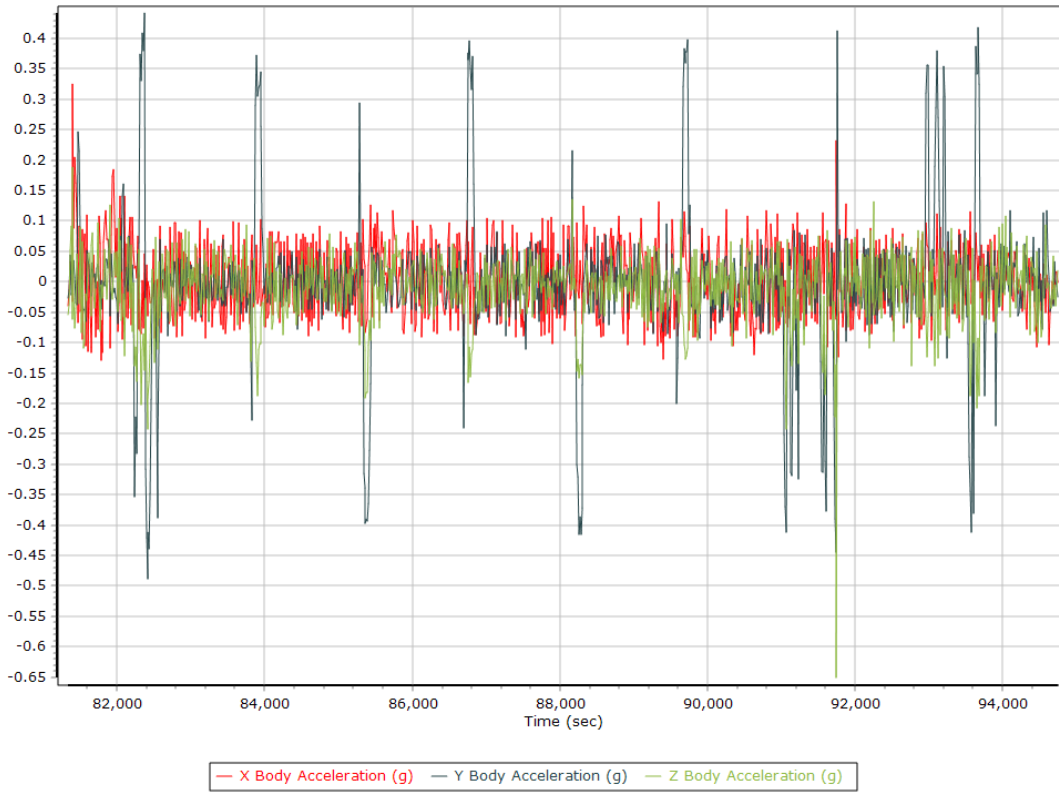
## Total Speed



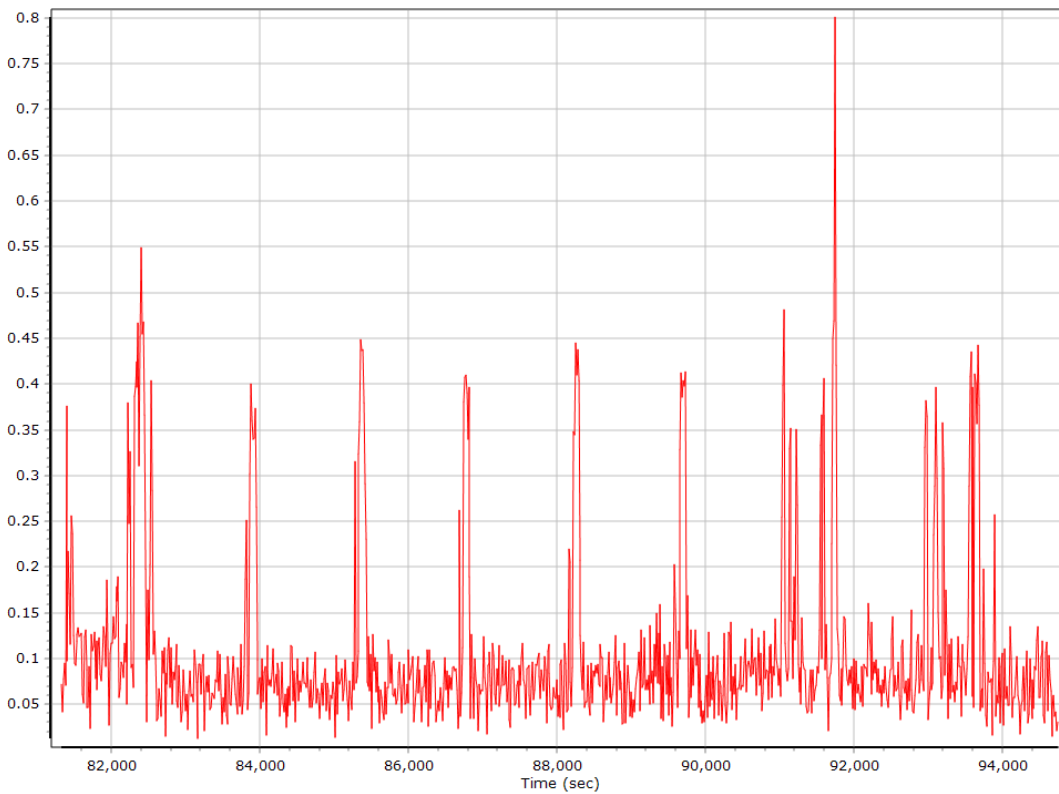
## Ground Speed



## Body Acceleration



## Total Body Acceleration

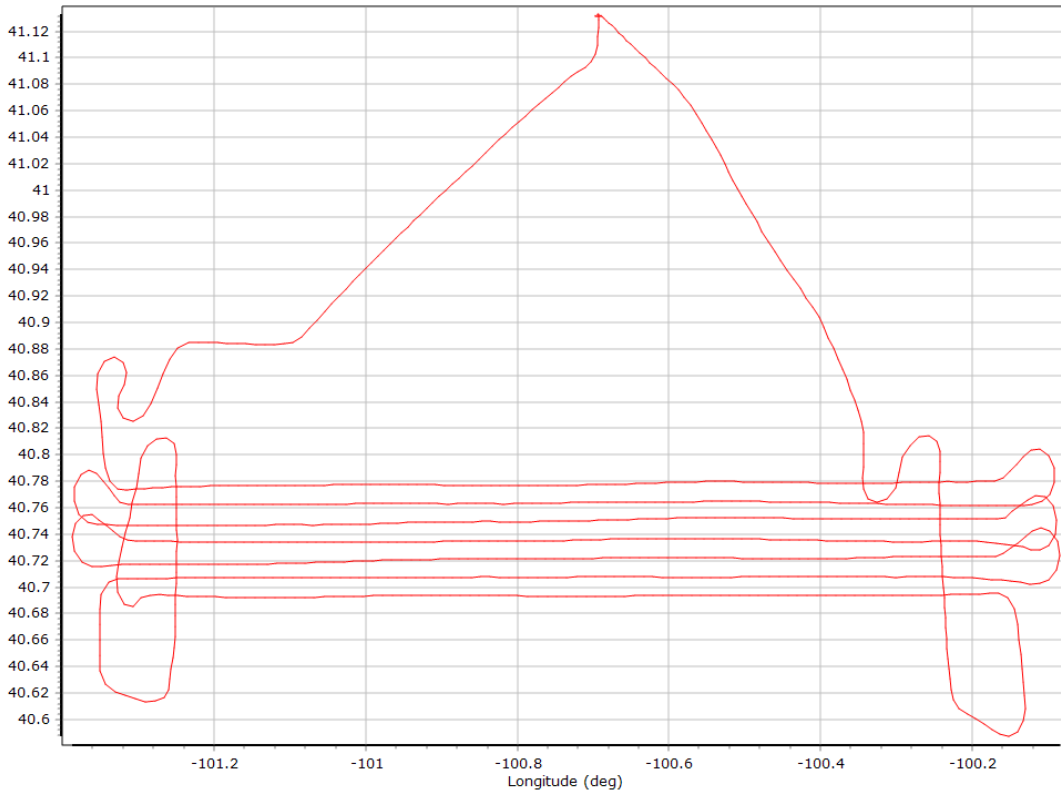


## Body Angular Rate

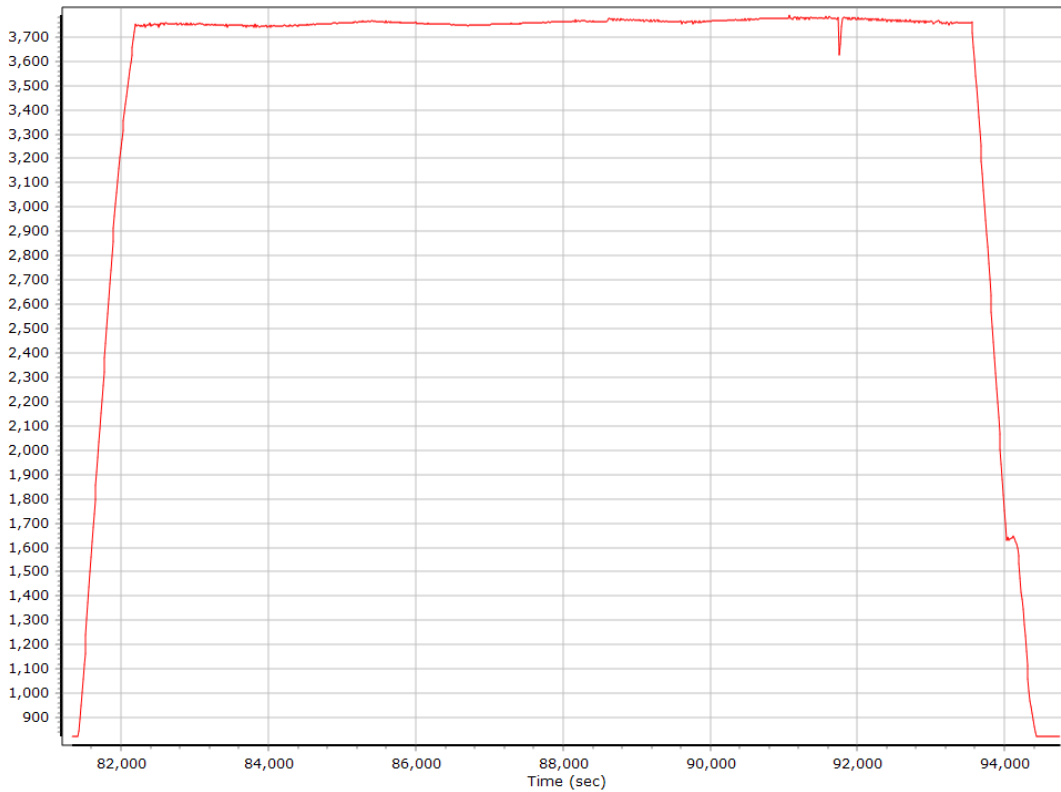


## Forward Processed Trajectory Information

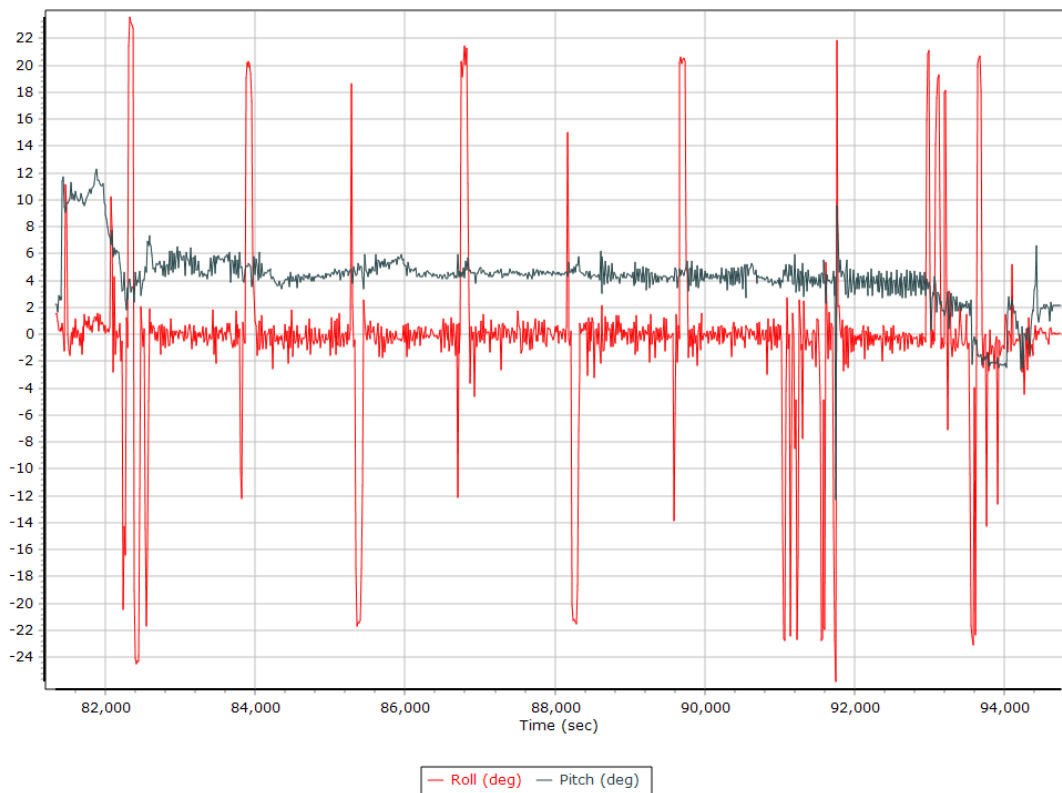
### Top View



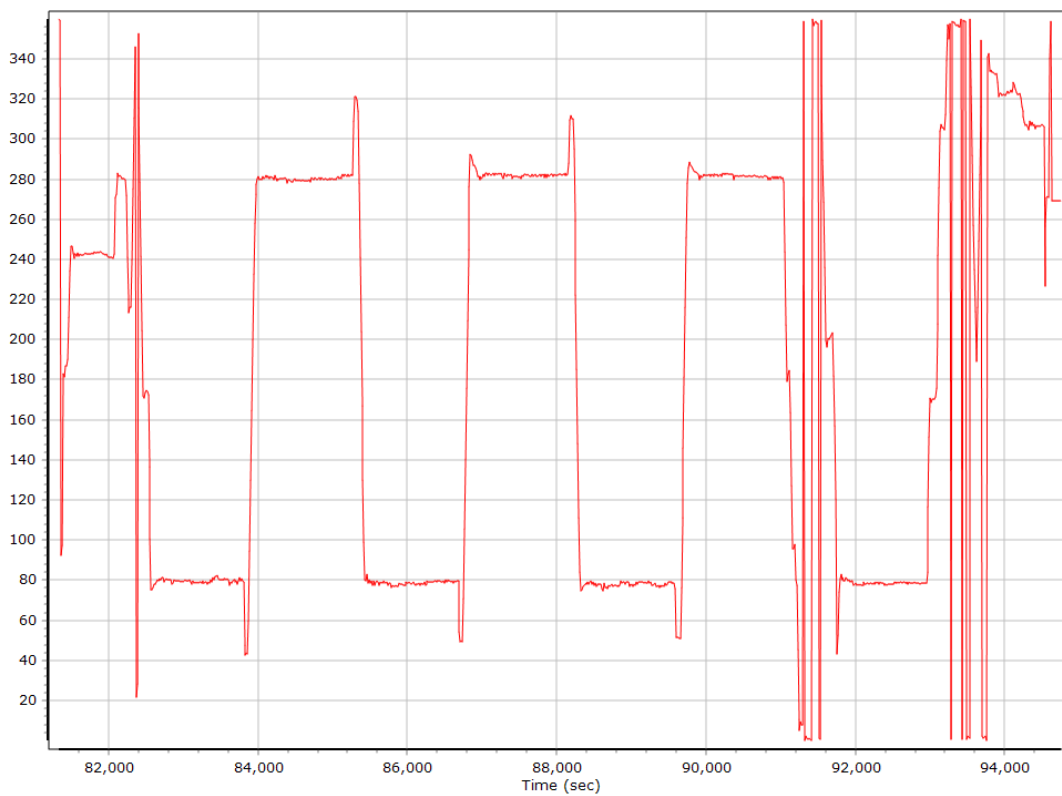
### Altitude



## Roll/Pitch

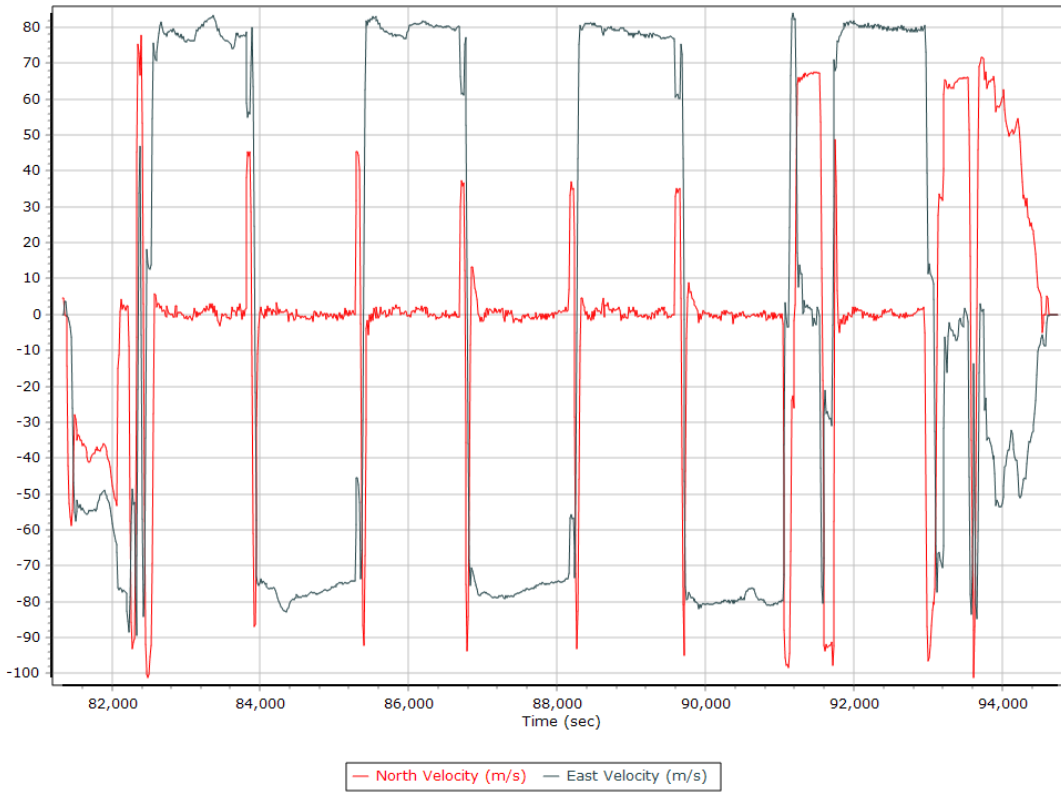


## Heading

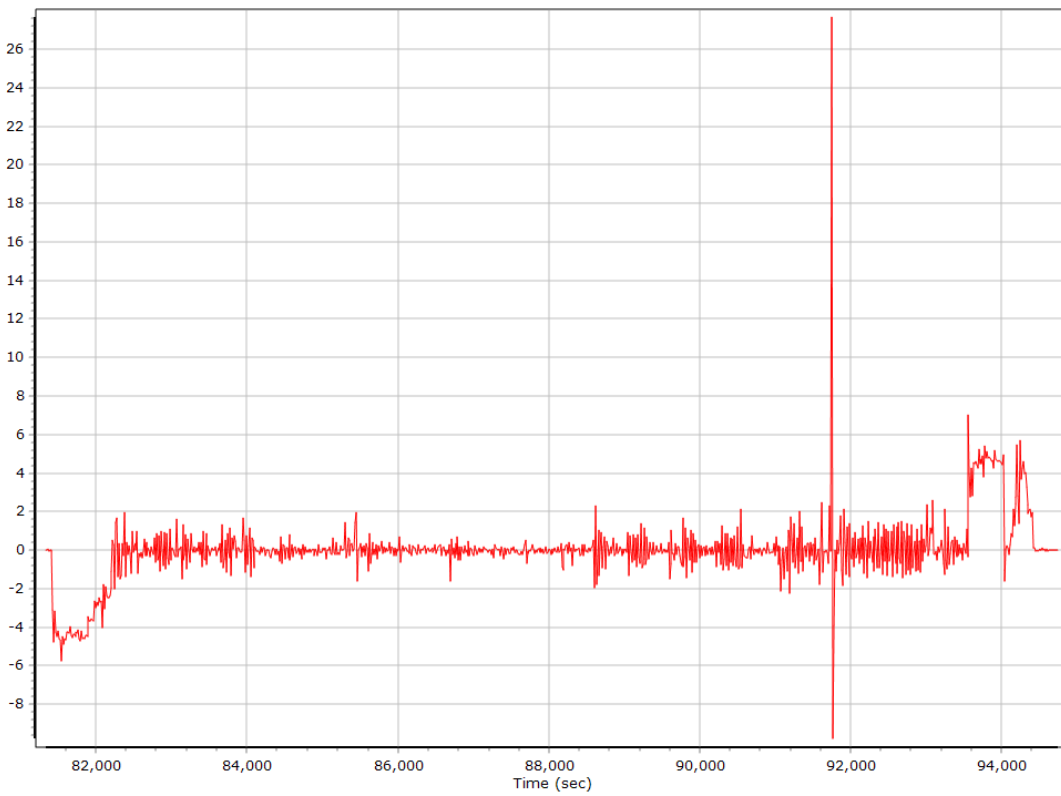




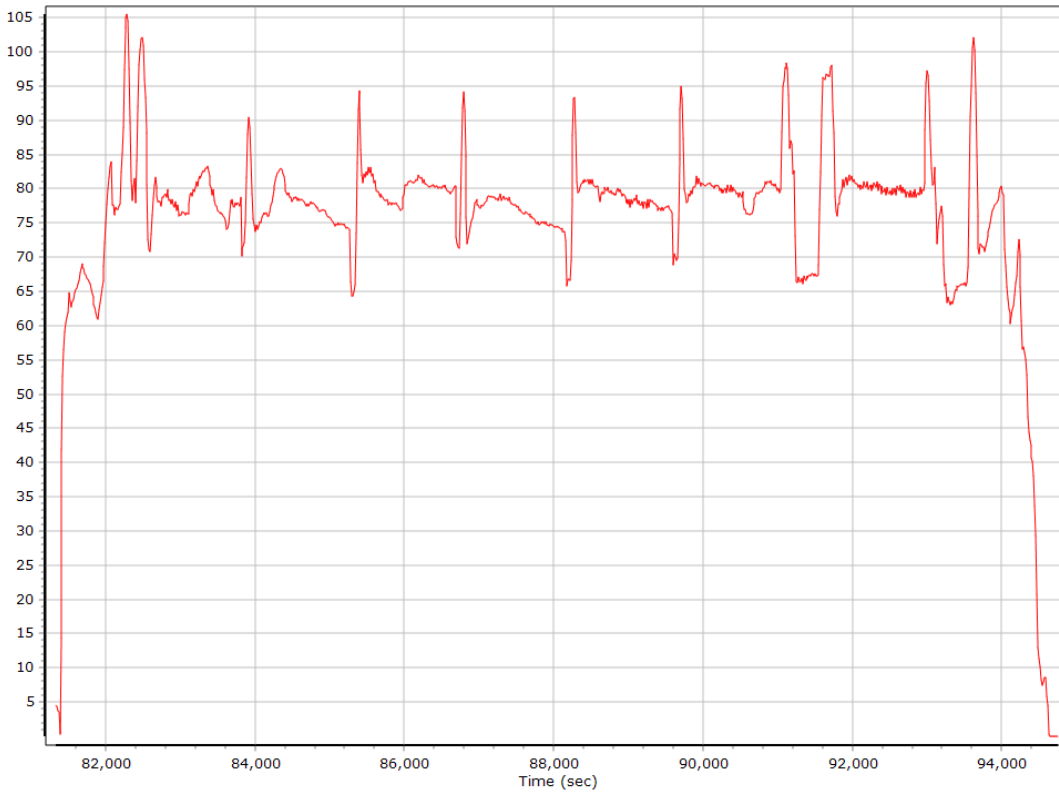
### North/East Velocity



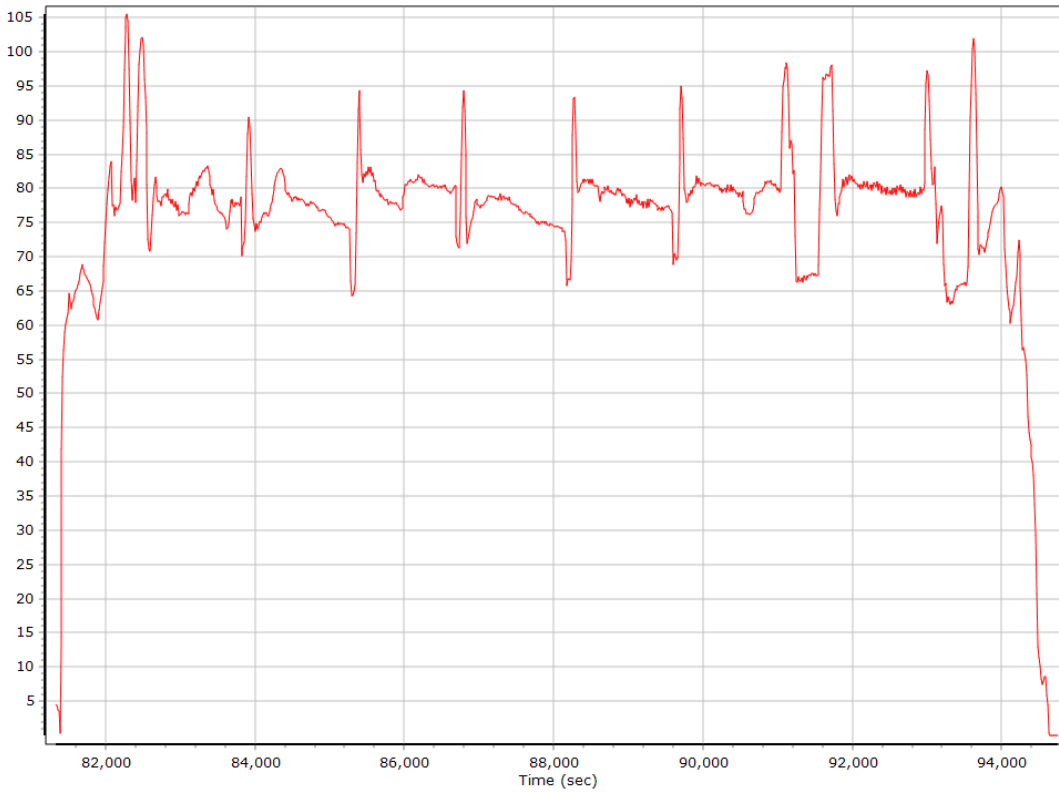
### Down Velocity



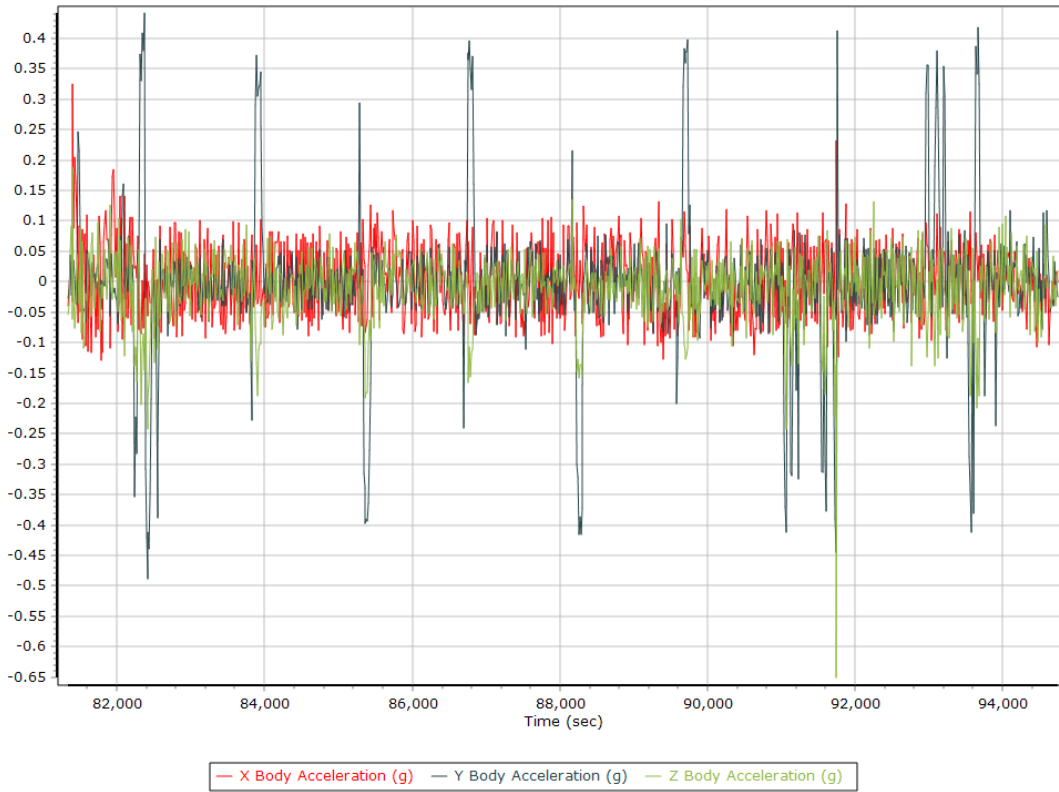
## Total Speed



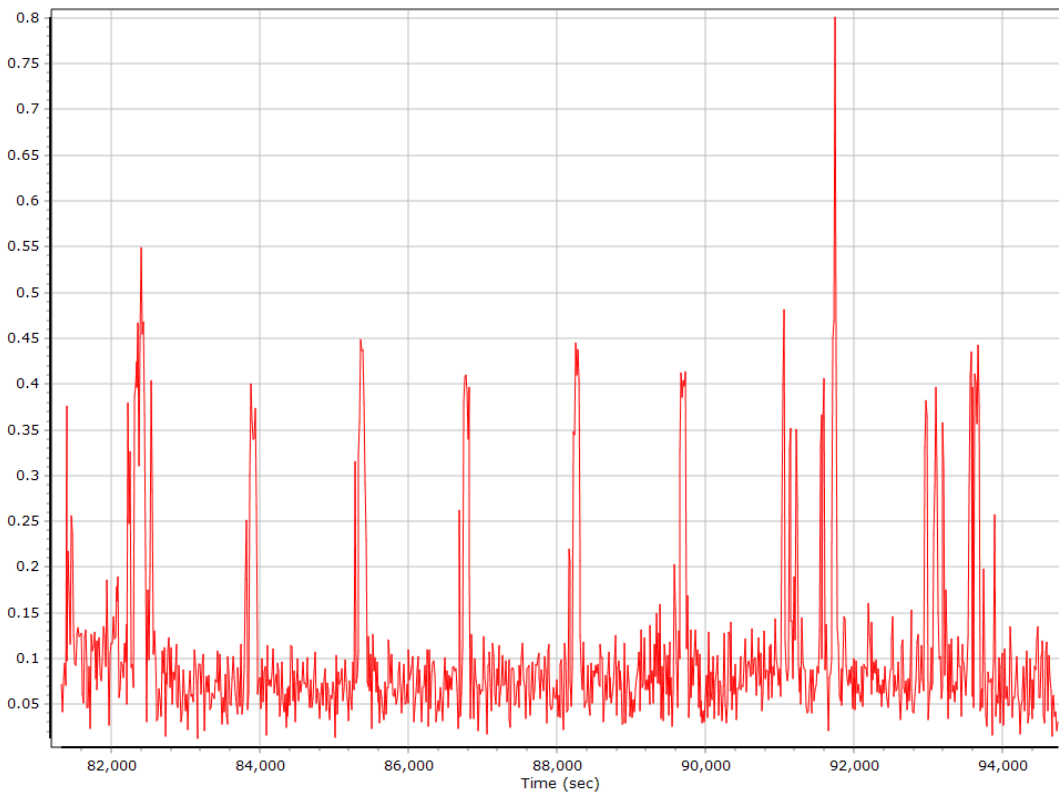
## Ground Speed



## Body Acceleration



## Total Body Acceleration



## Body Angular Rate

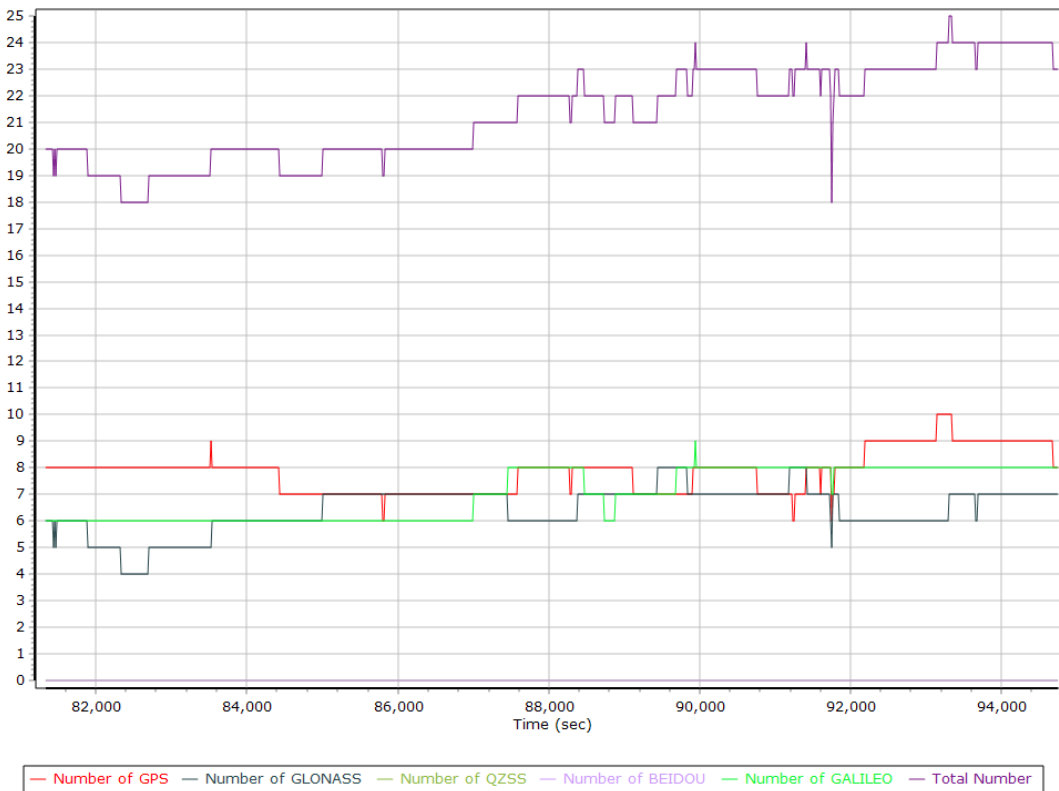


## GNSS QC

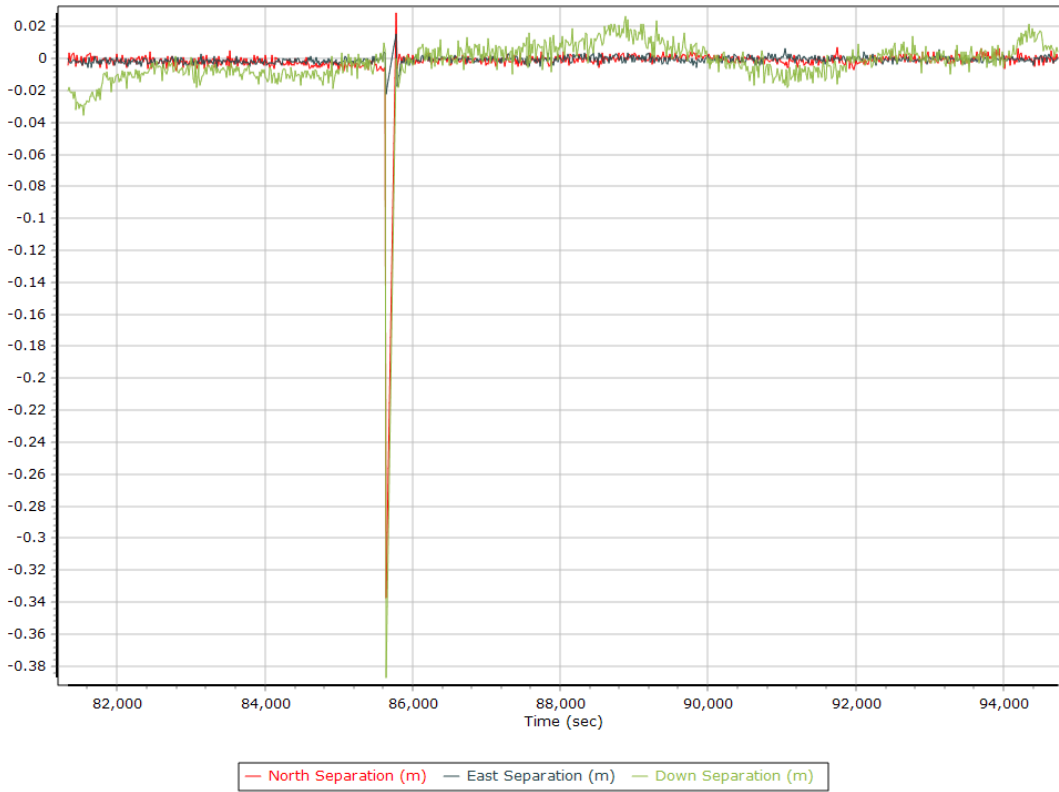
### GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	6	10	8
Number of GLONASS SV	4	8	6
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	18	25	21
PDOP	0.98	1.39	1.17
QC Solution Gaps	1.00	5.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	13814.00	0.00	7.00
Percentage	99.95	0.00	0.05

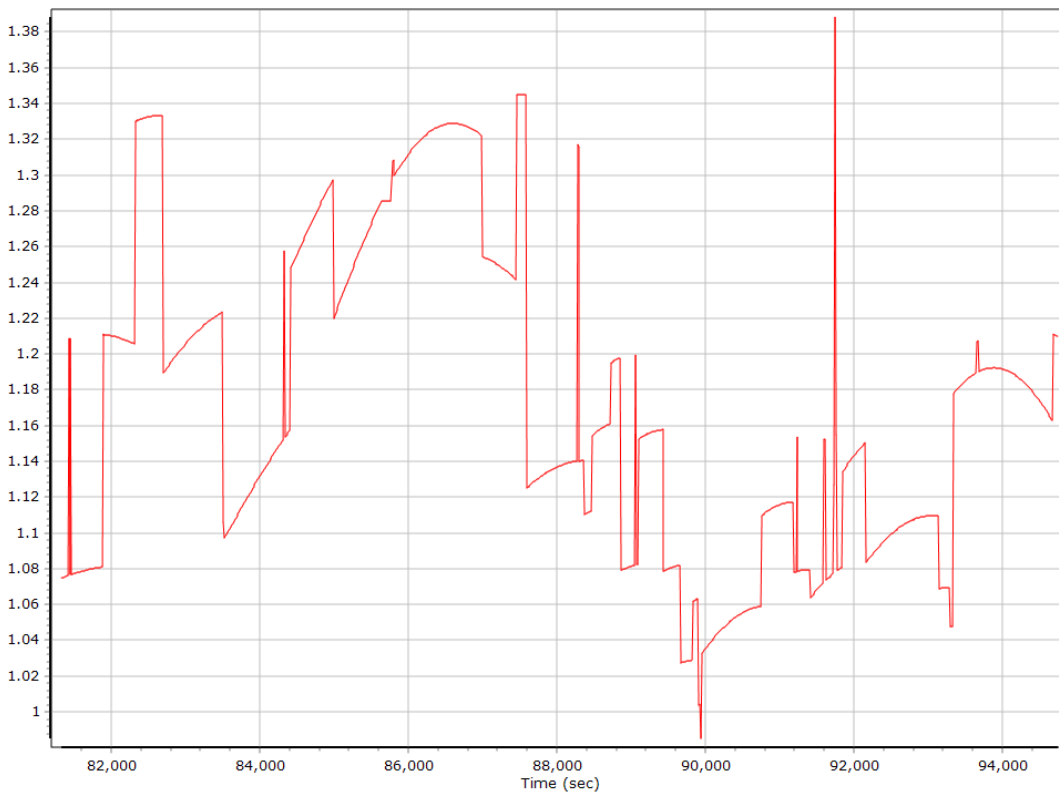
### Num SVs in solution



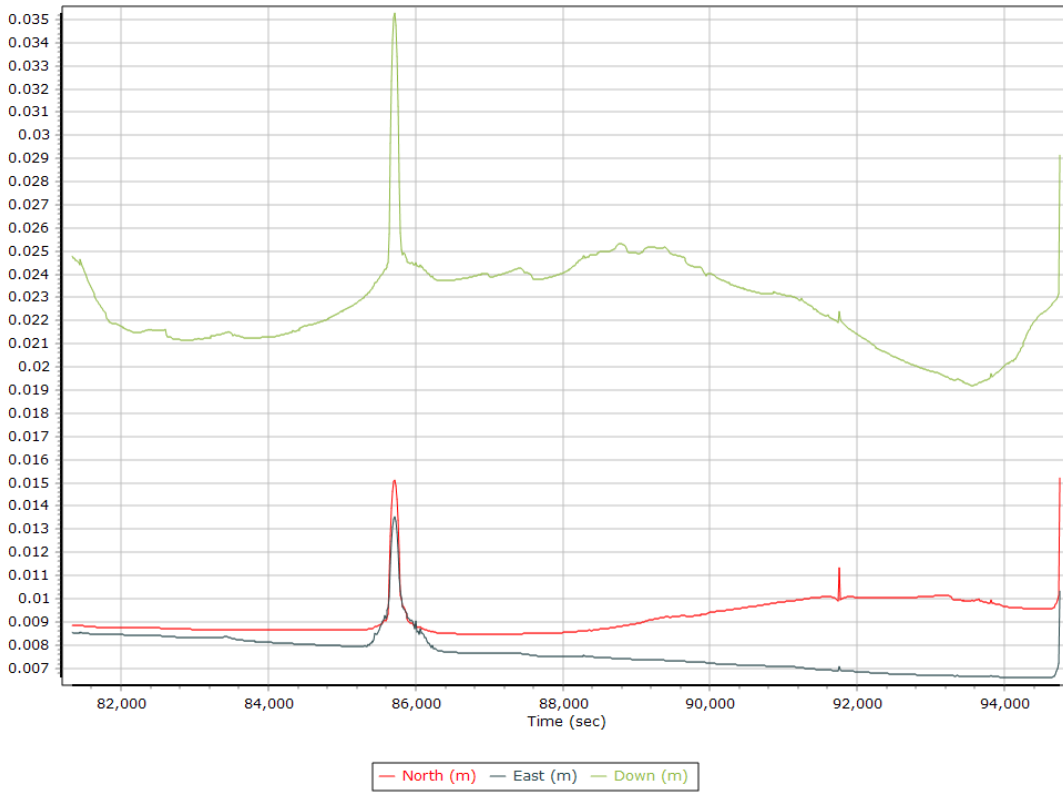
### Forward/Reverse Separation



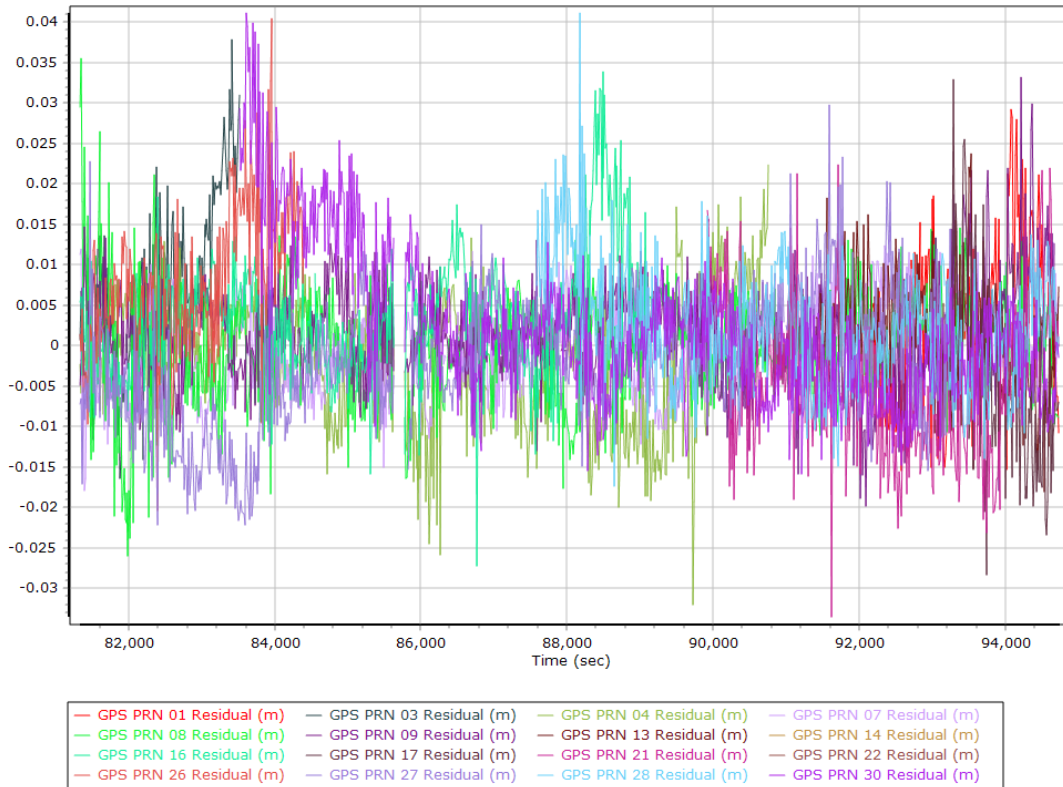
### PDOP



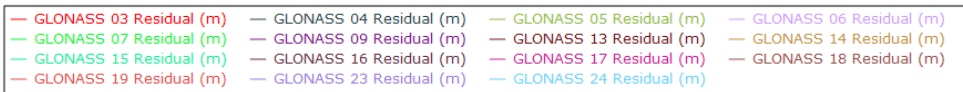
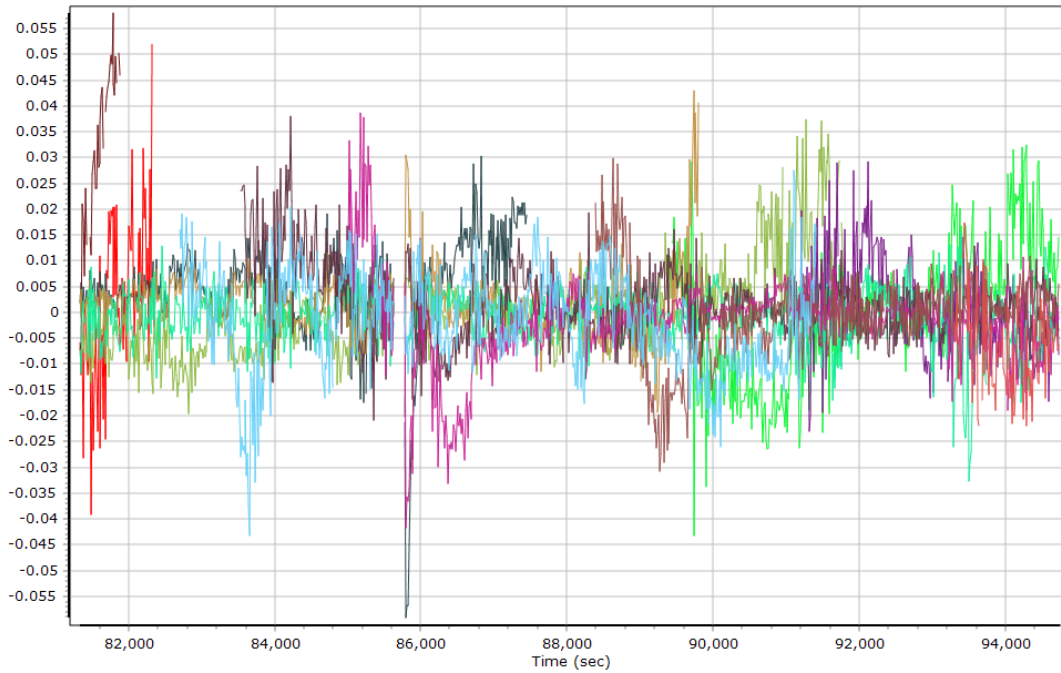
### Estimated Position Accuracy



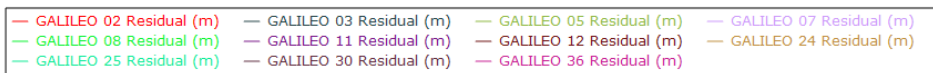
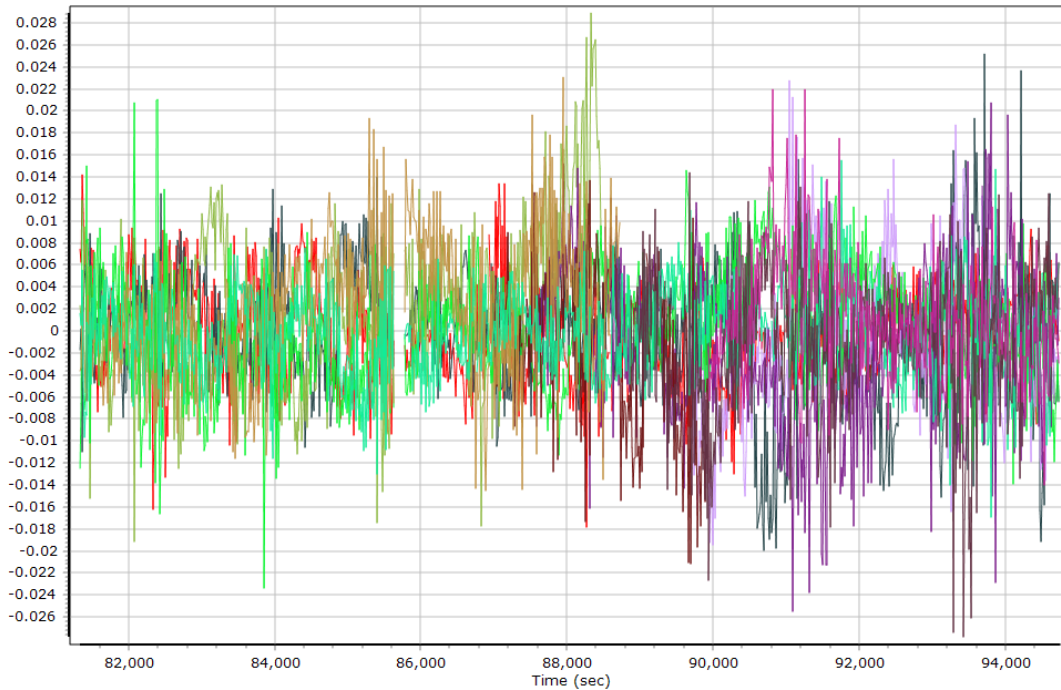
### GPS Residuals



## GLONASS Residuals



## GALILEO Residuals





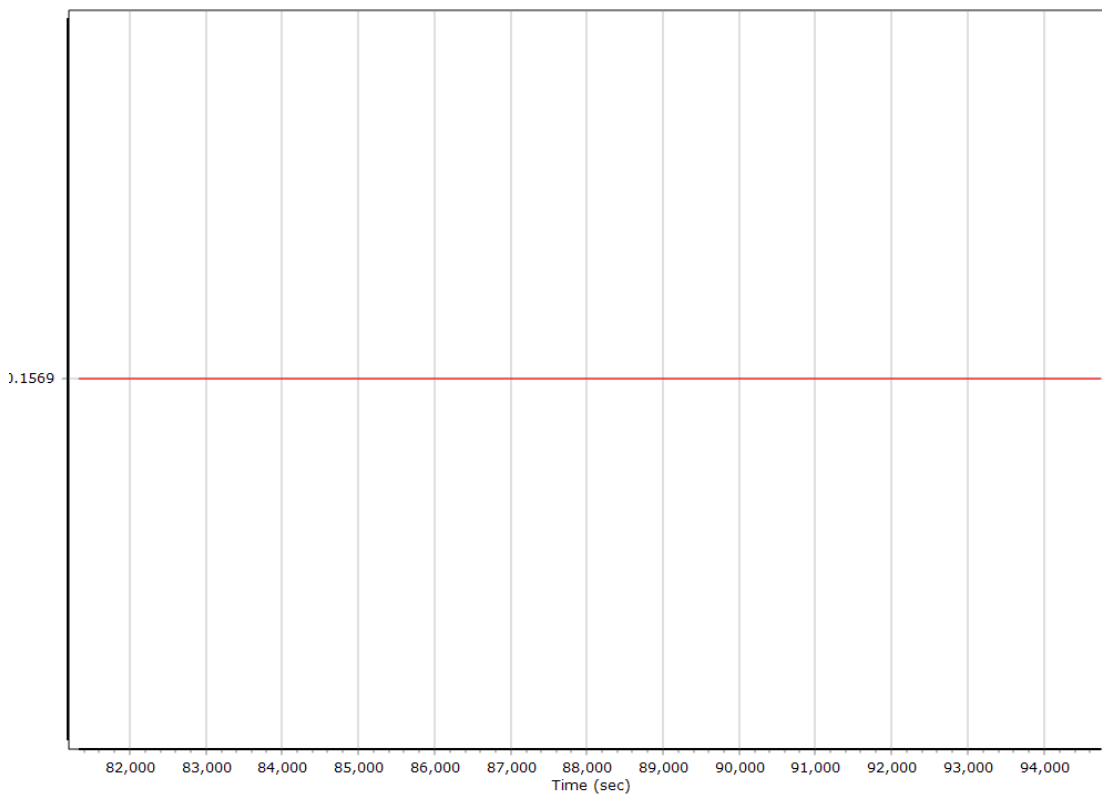
## GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	False		
Processing start time	80934.000 (12/06/2020 22:28:54)		
Processing end time	94760.000 (12/07/2020 02:19:20)		
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)	0.157	-0.150	-1.090
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

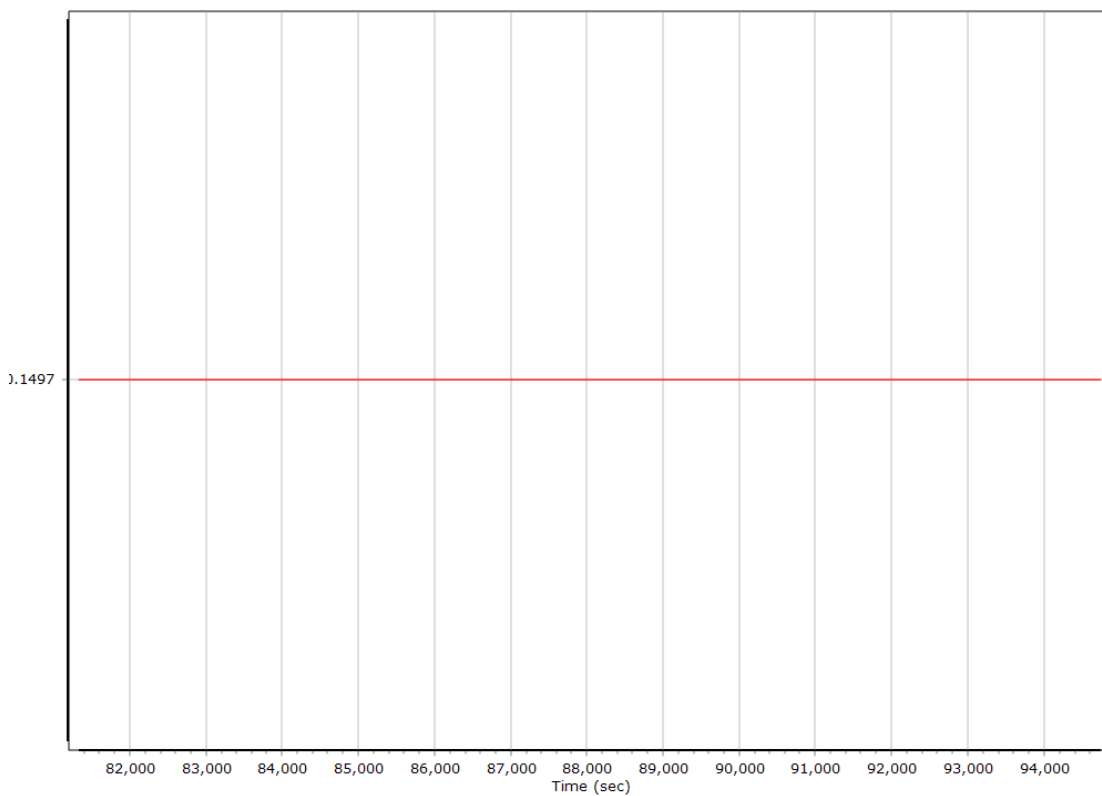
## Calibrated Installation Parameters

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

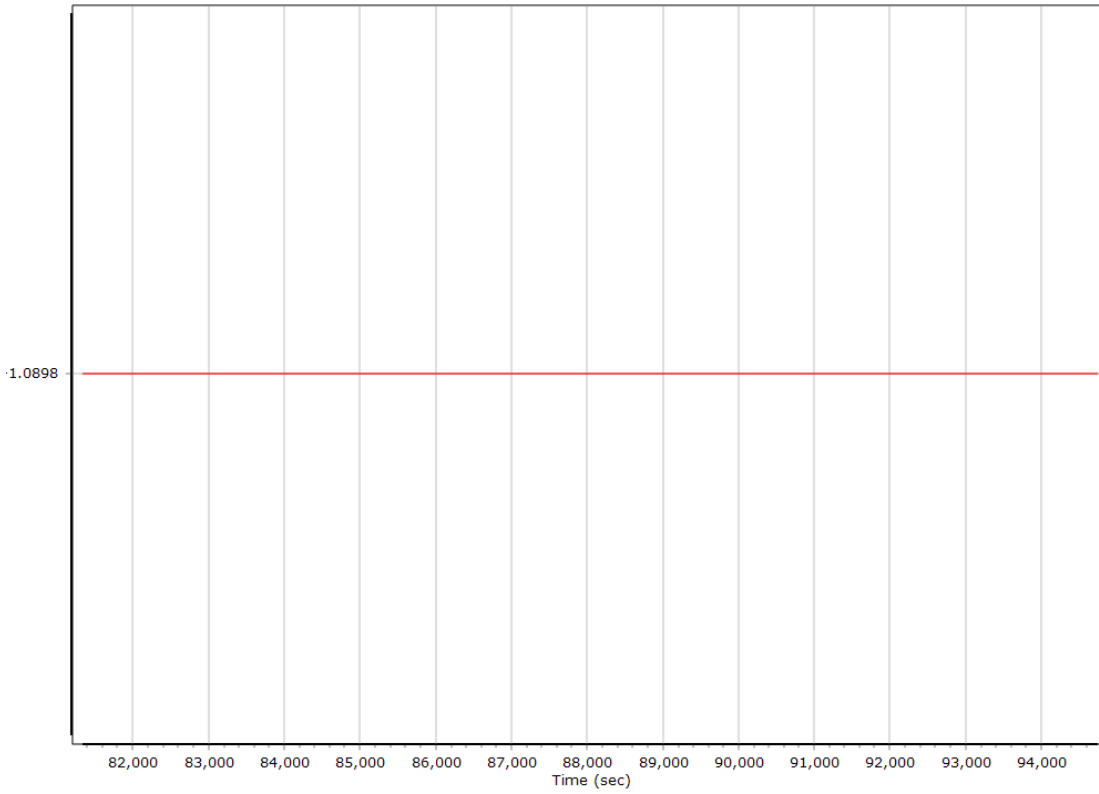
#### X Reference-Primary GNSS Lever Arm (m)



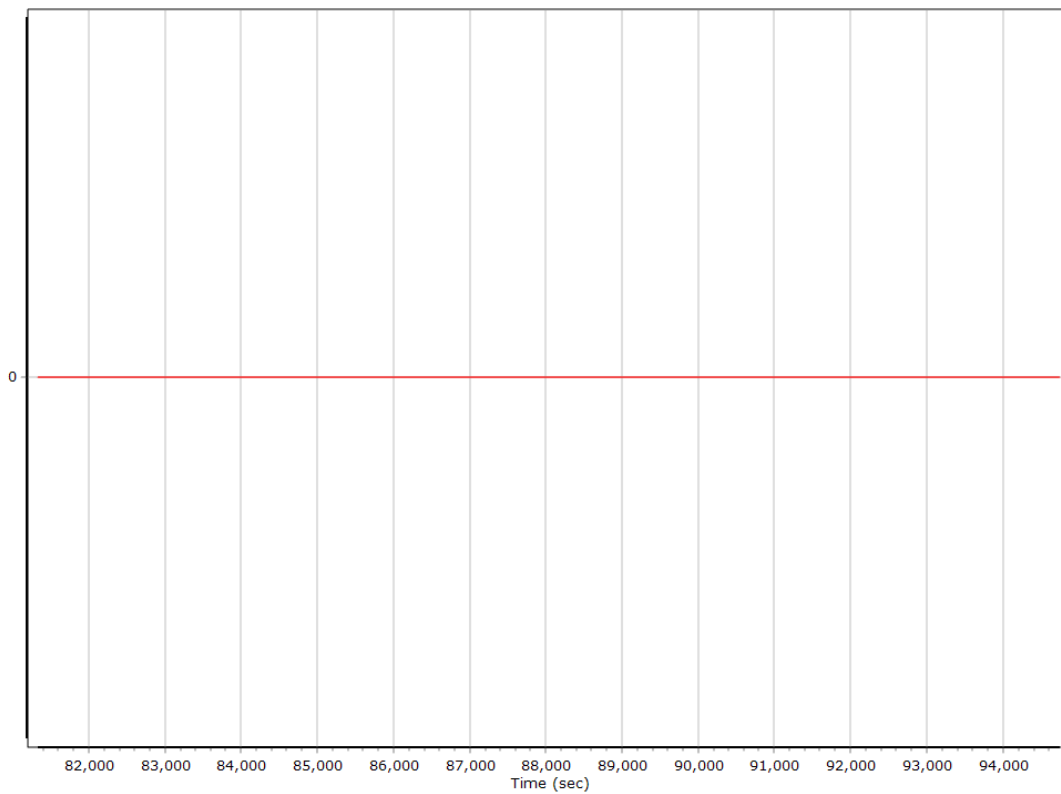
#### Y Reference-Primary GNSS Lever Arm (m)



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



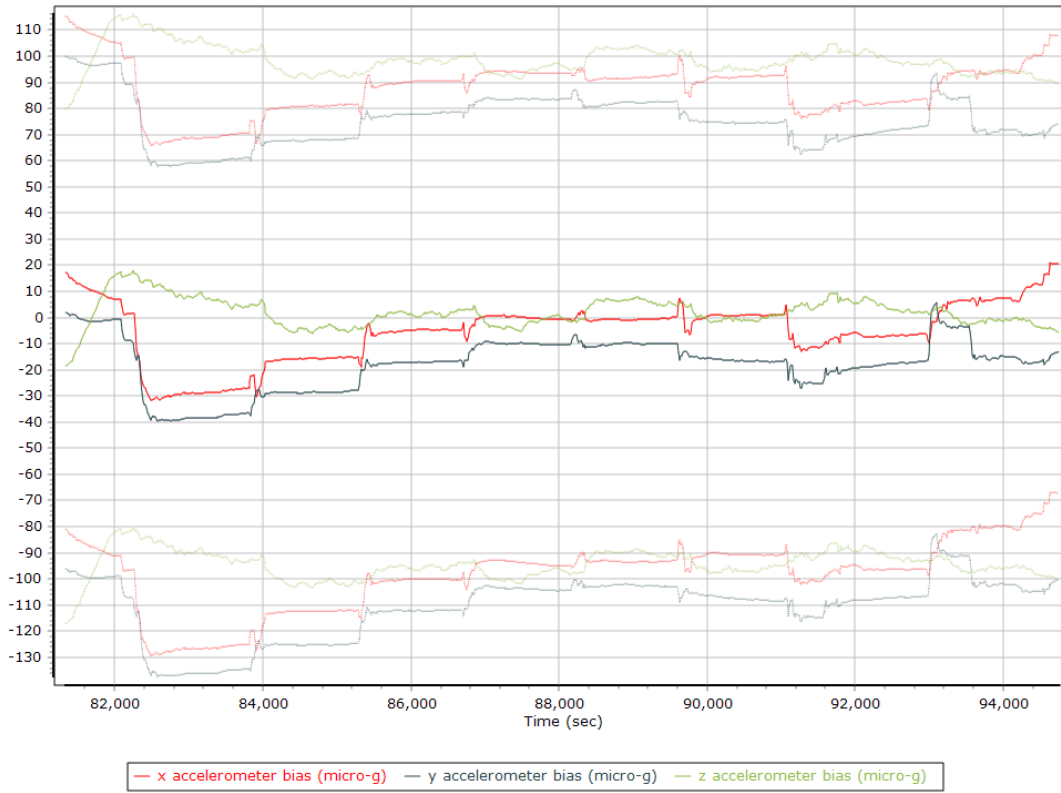
### Reference-Primary GNSS Lever Arm Figure of Merit



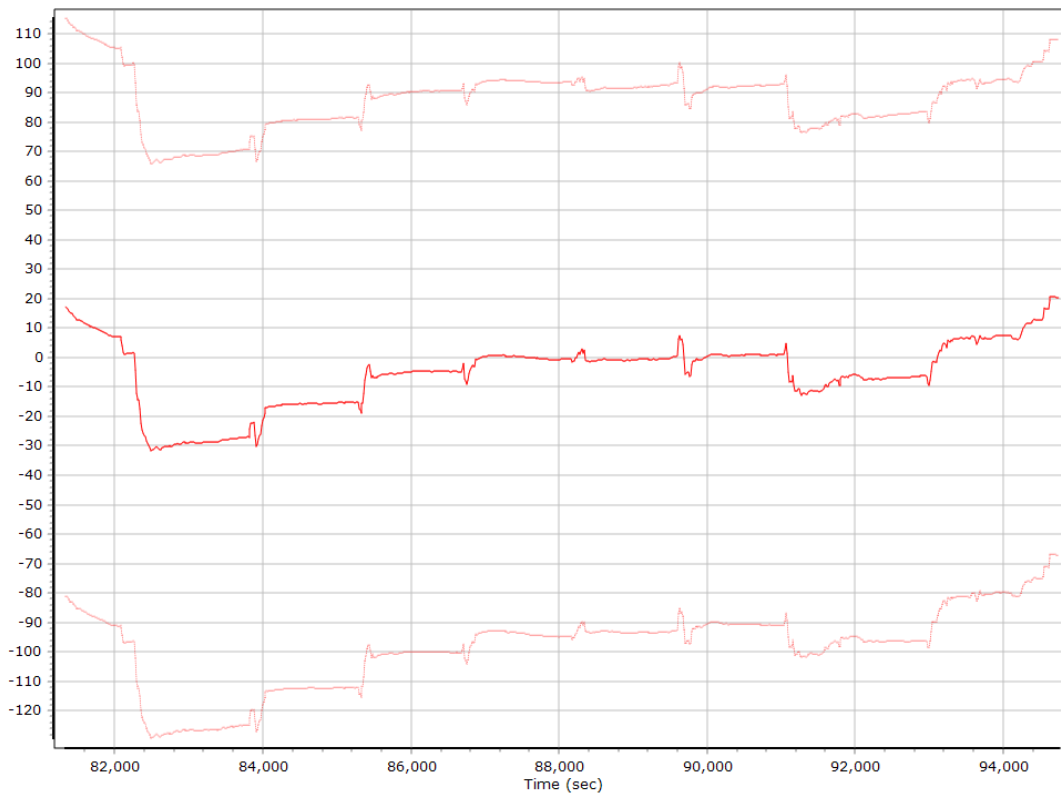
## IN-Fusion QC

### Forward Processed Estimated Errors, Reference Frame

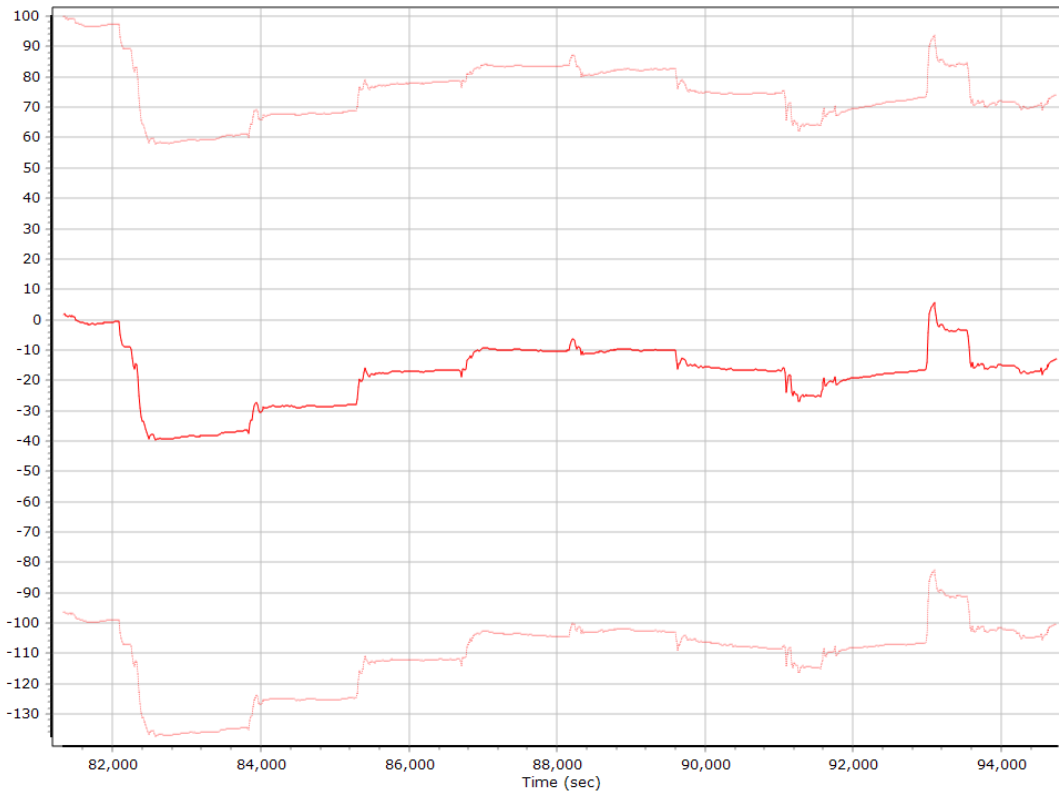
#### Accelerometer Bias (micro-g)



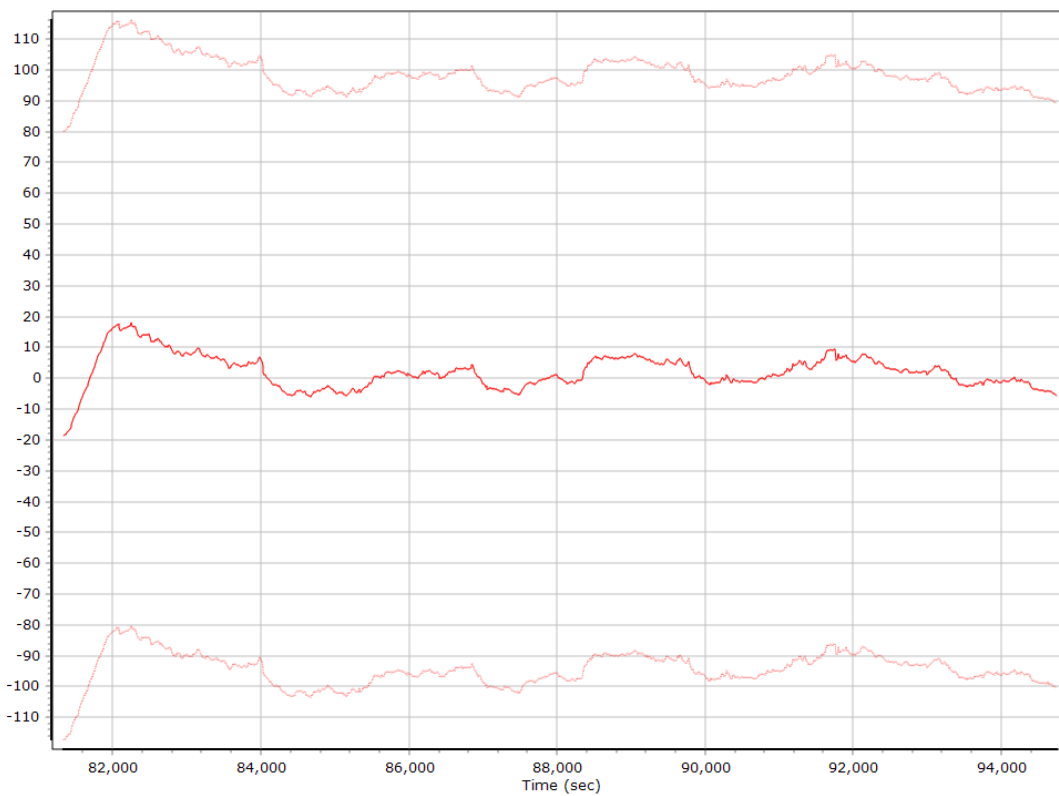
#### X Accelerometer Bias (micro-g)



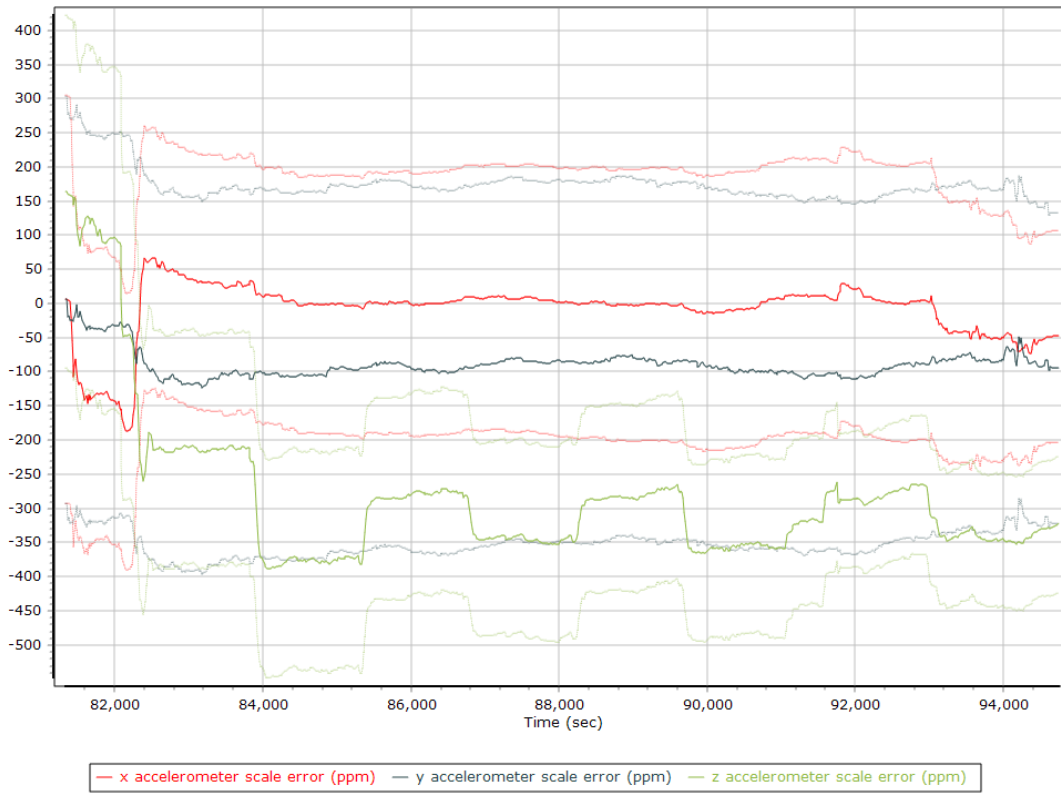
### Y Accelerometer Bias (micro-g)



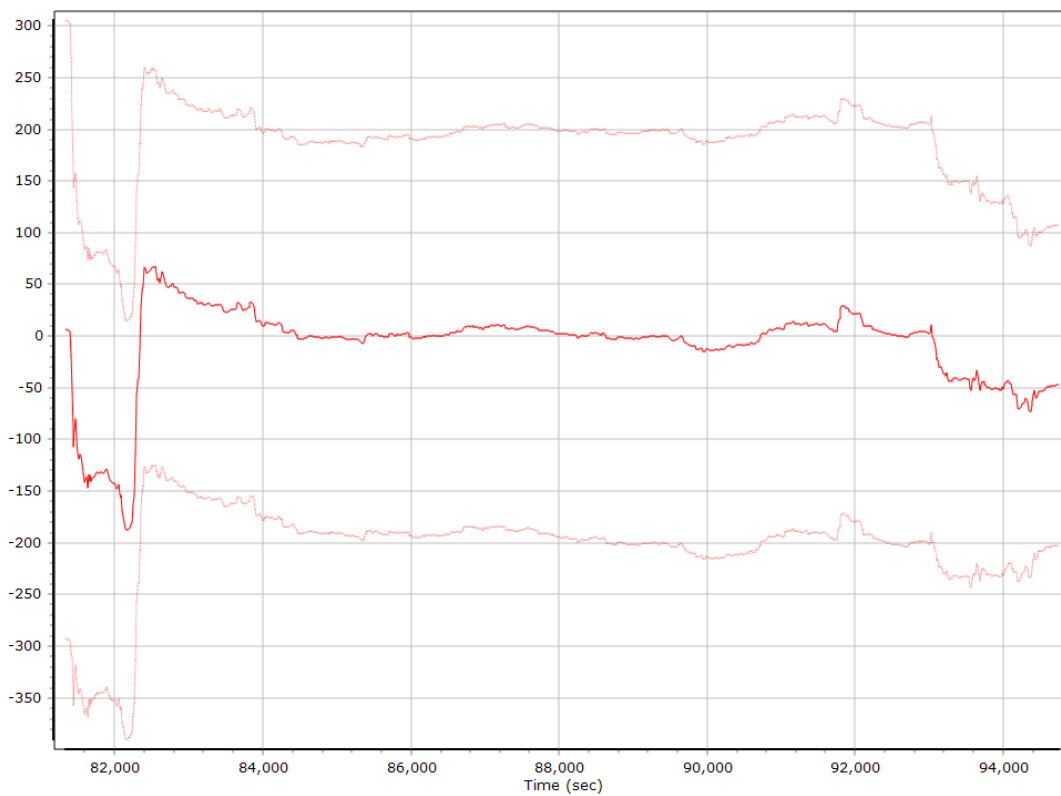
### Z Accelerometer Bias (micro-g)



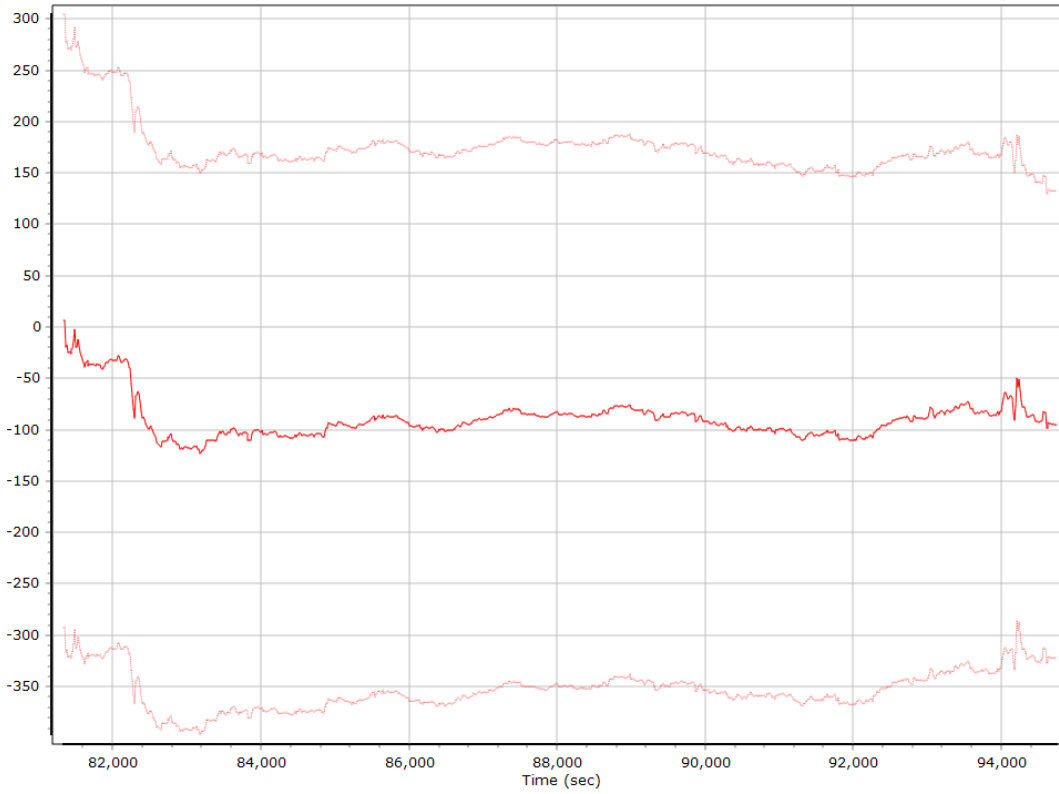
### Accelerometer Scale Error (ppm)



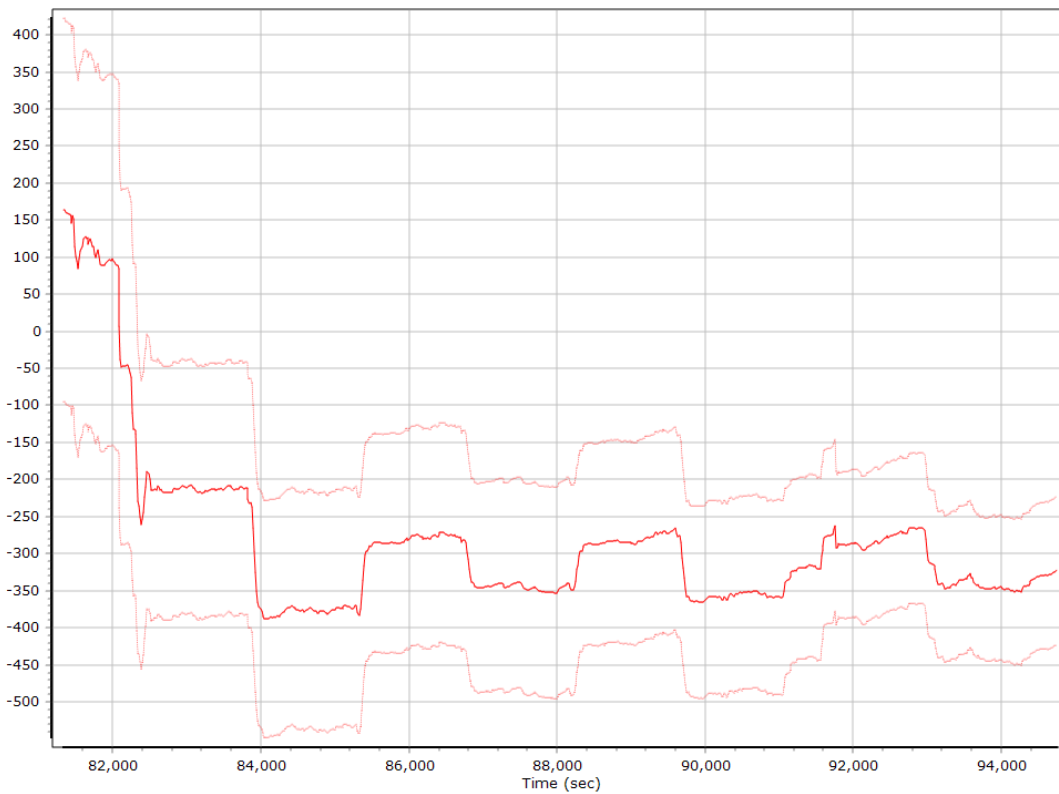
### X Accelerometer Scale Error (ppm)



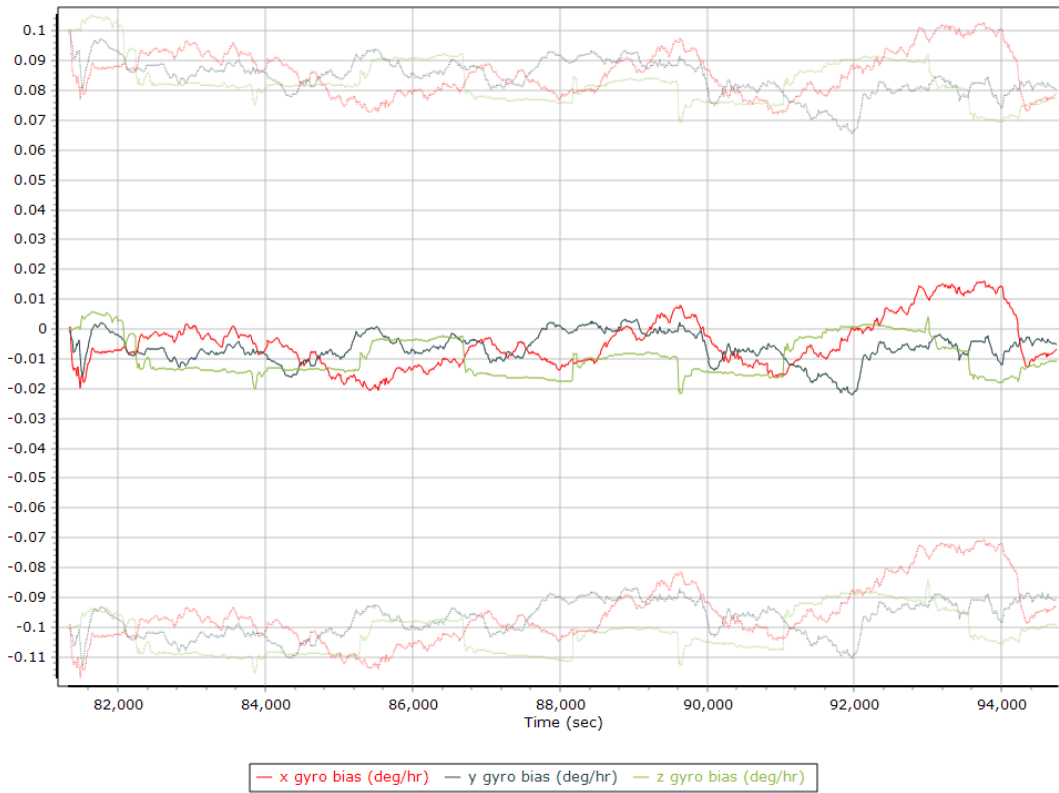
### Y Accelerometer Scale Error (ppm)



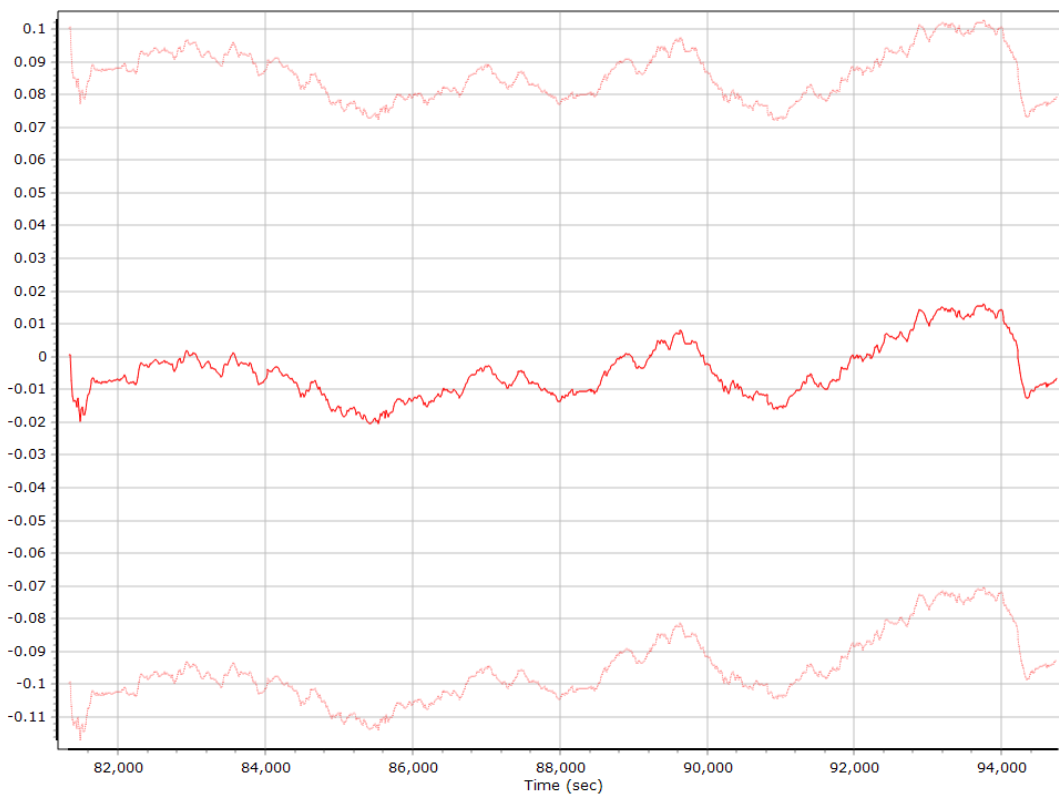
### Z Accelerometer Scale Error (ppm)



### Gyro Bias (deg/h)

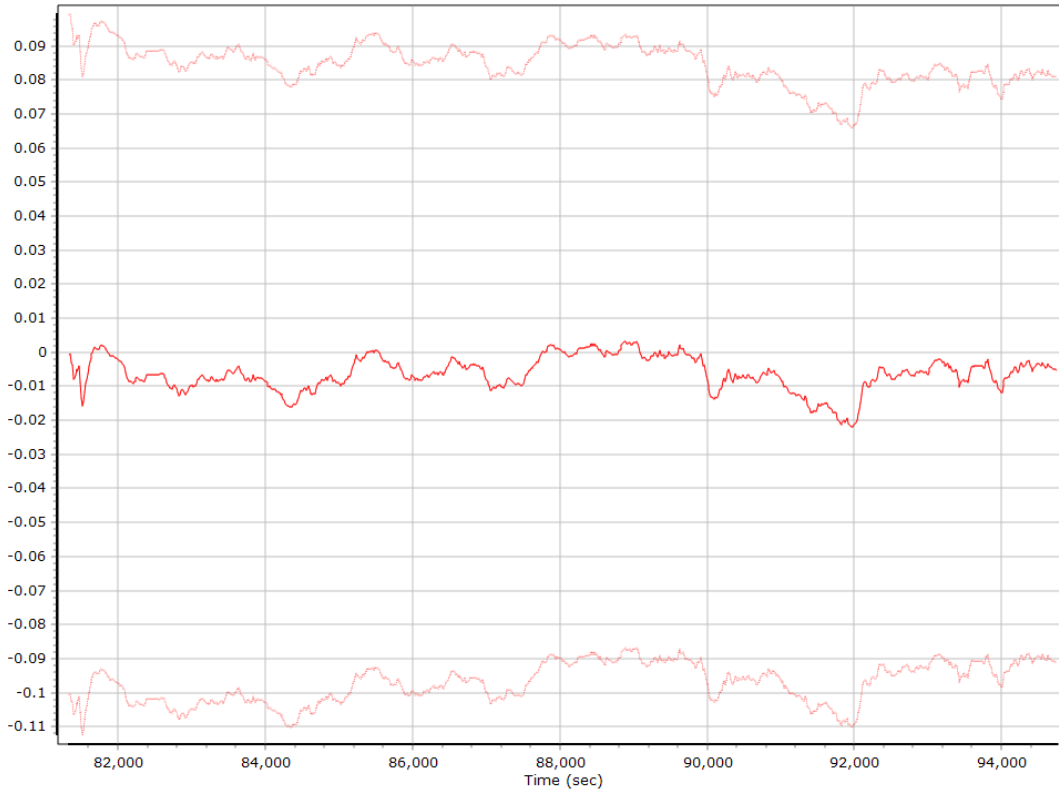


### X Gyro Bias (deg/h)

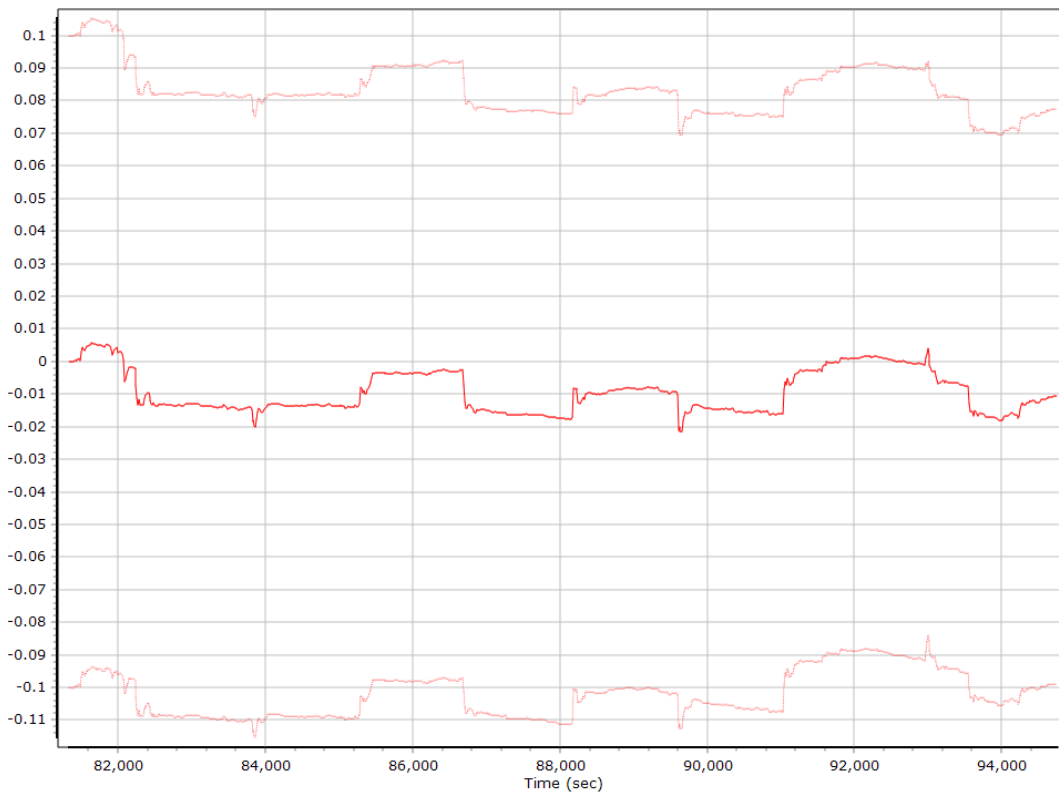




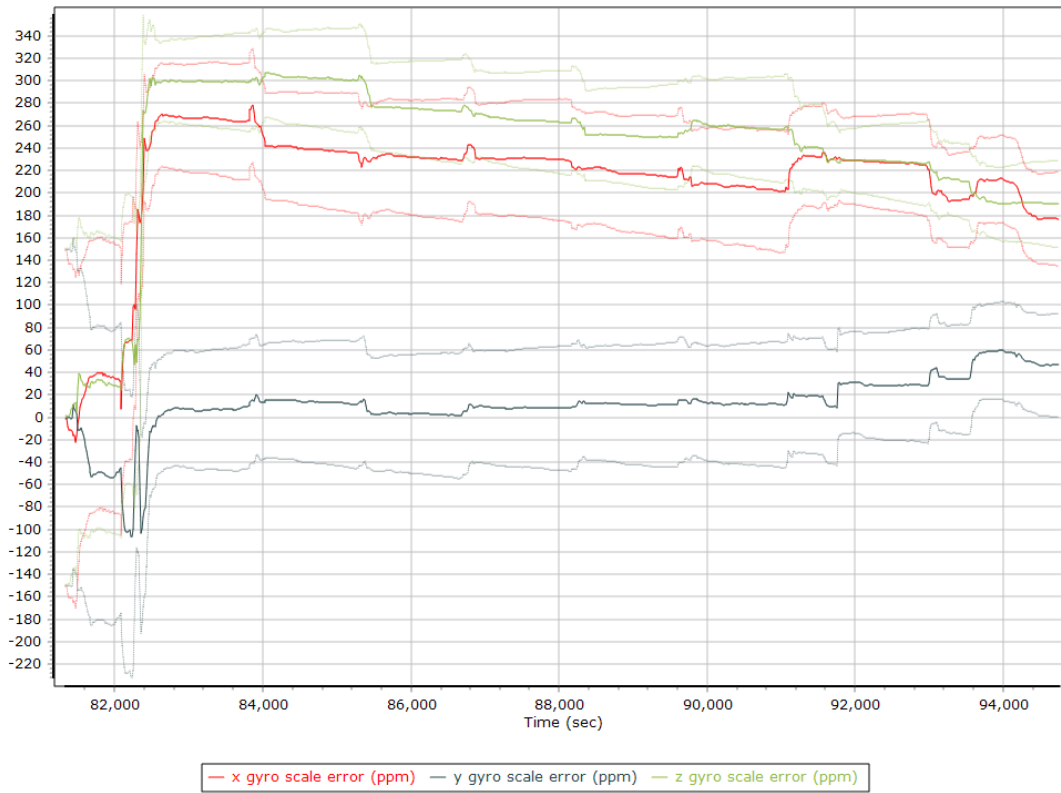
### Y Gyro Bias (deg/h)



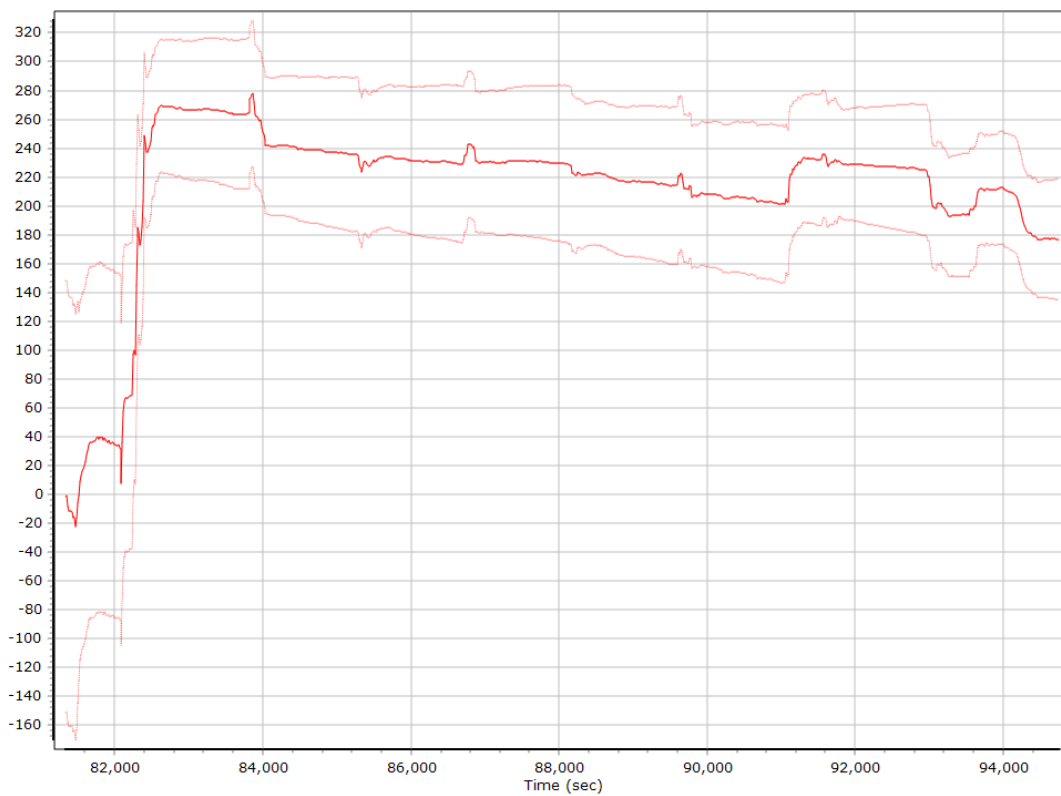
### Z Gyro Bias (deg/h)



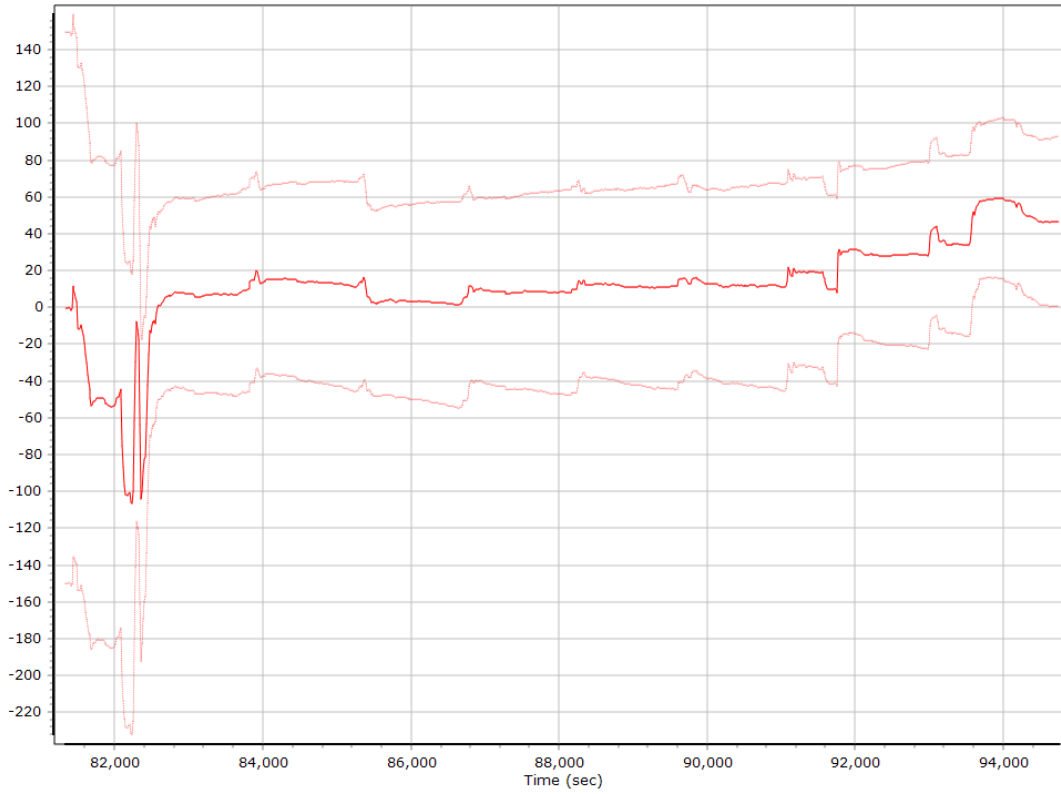
### Gyro Scale Error (ppm)



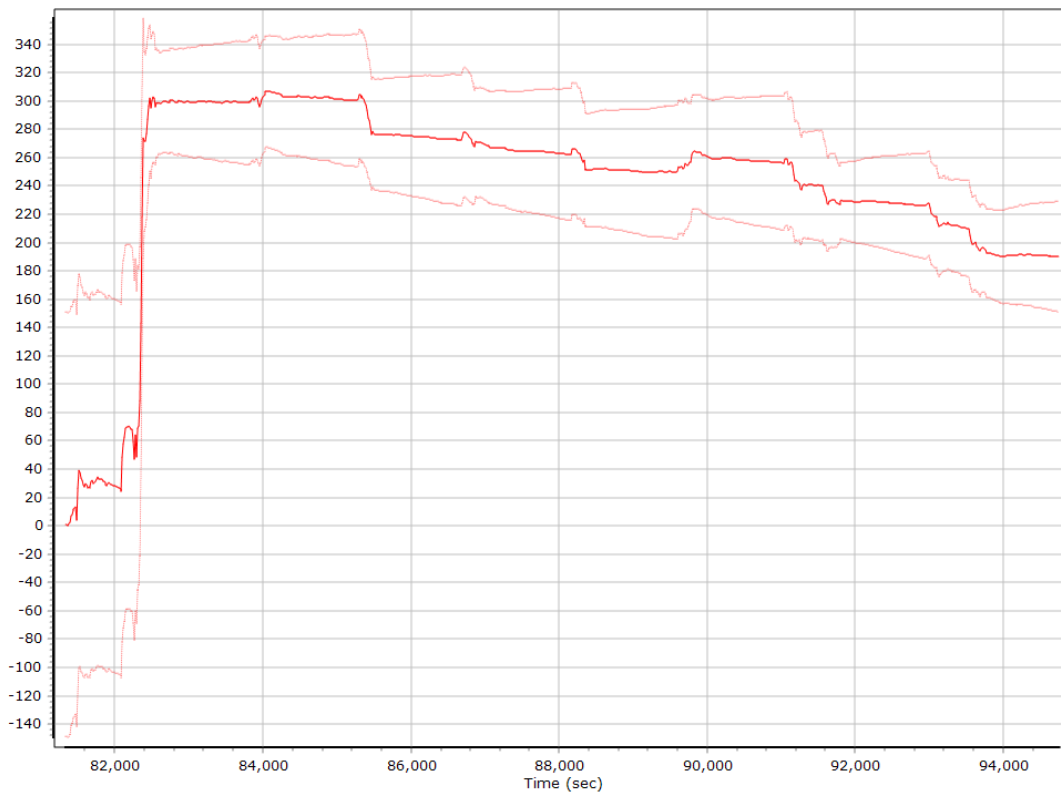
### X Gyro Scale Error (ppm)



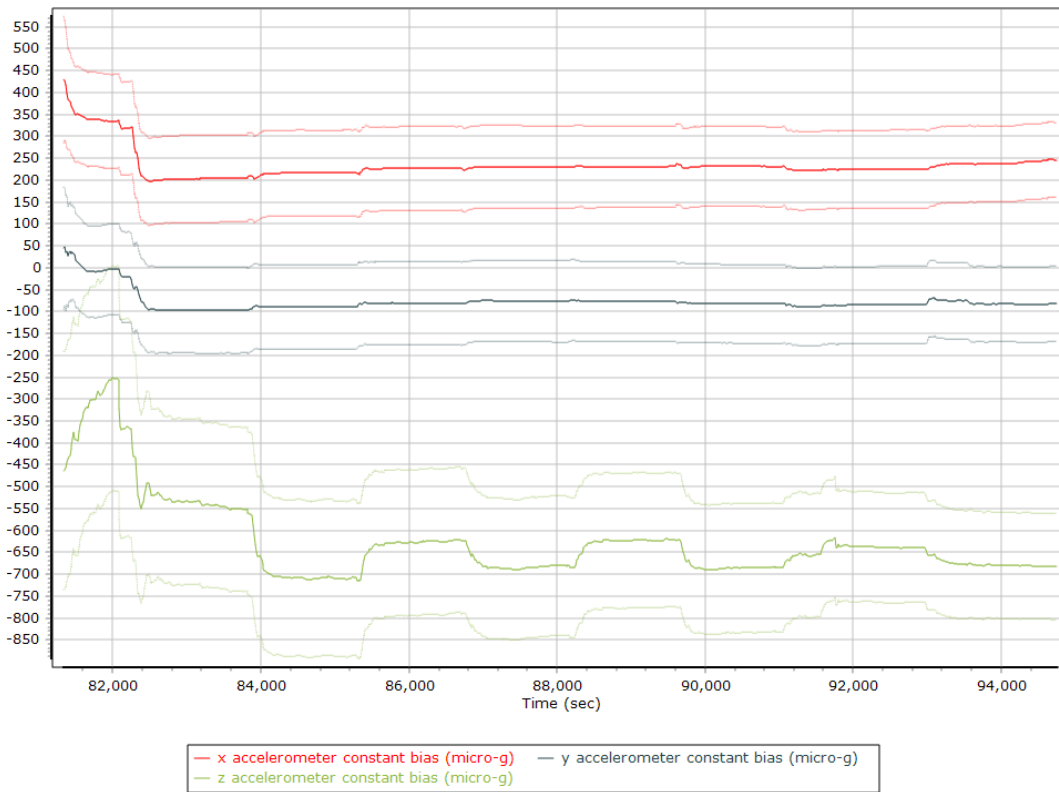
### Y Gyro Scale Error (ppm)



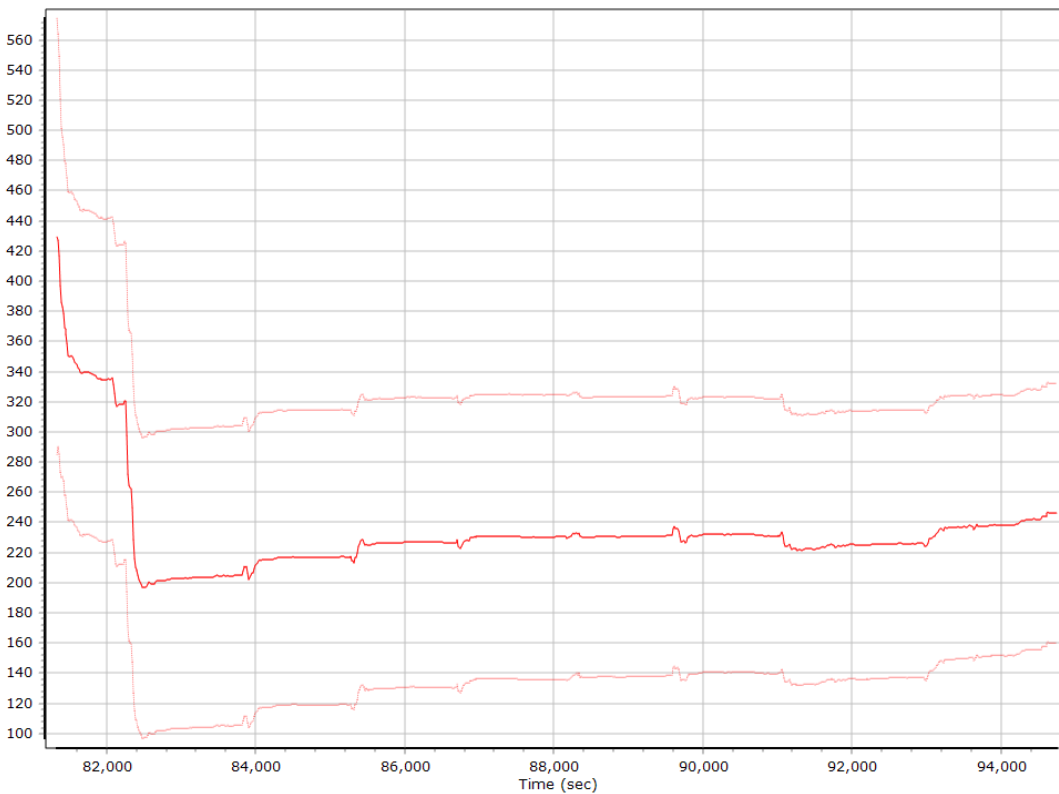
### Z Gyro Scale Error (ppm)



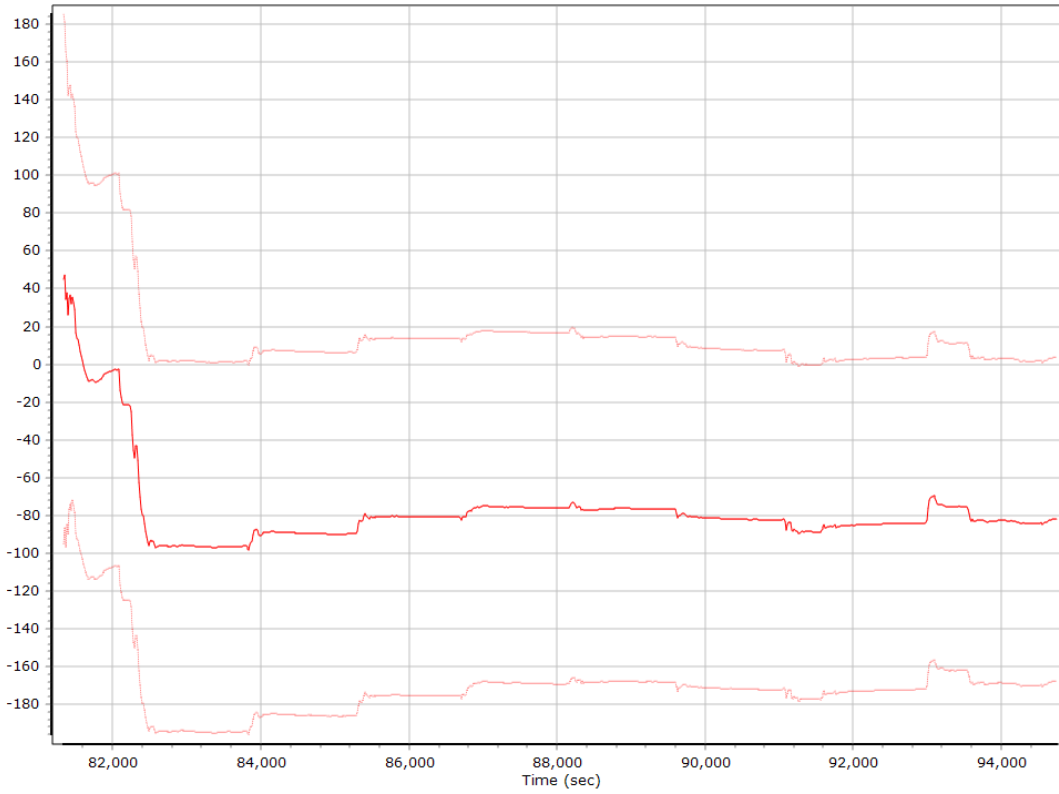
### Forward Processed Estimated Constant Errors, Reference Frame Accelerometer Bias (micro-g)



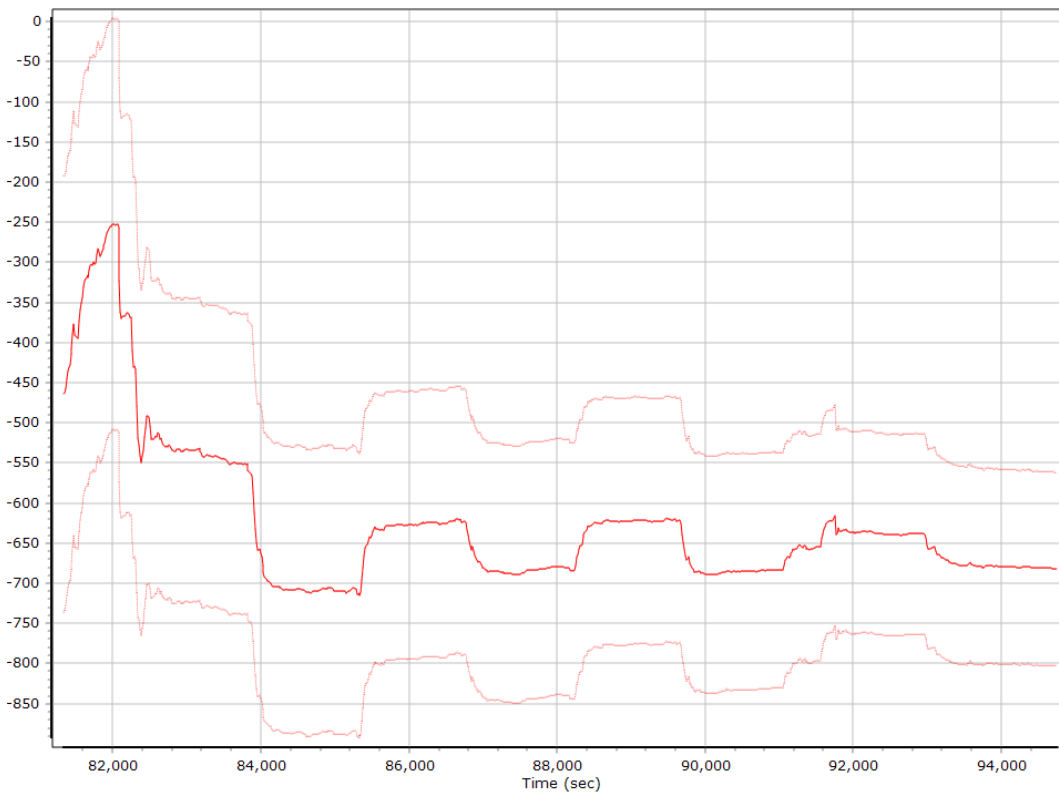
### X Accelerometer Bias (micro-g)



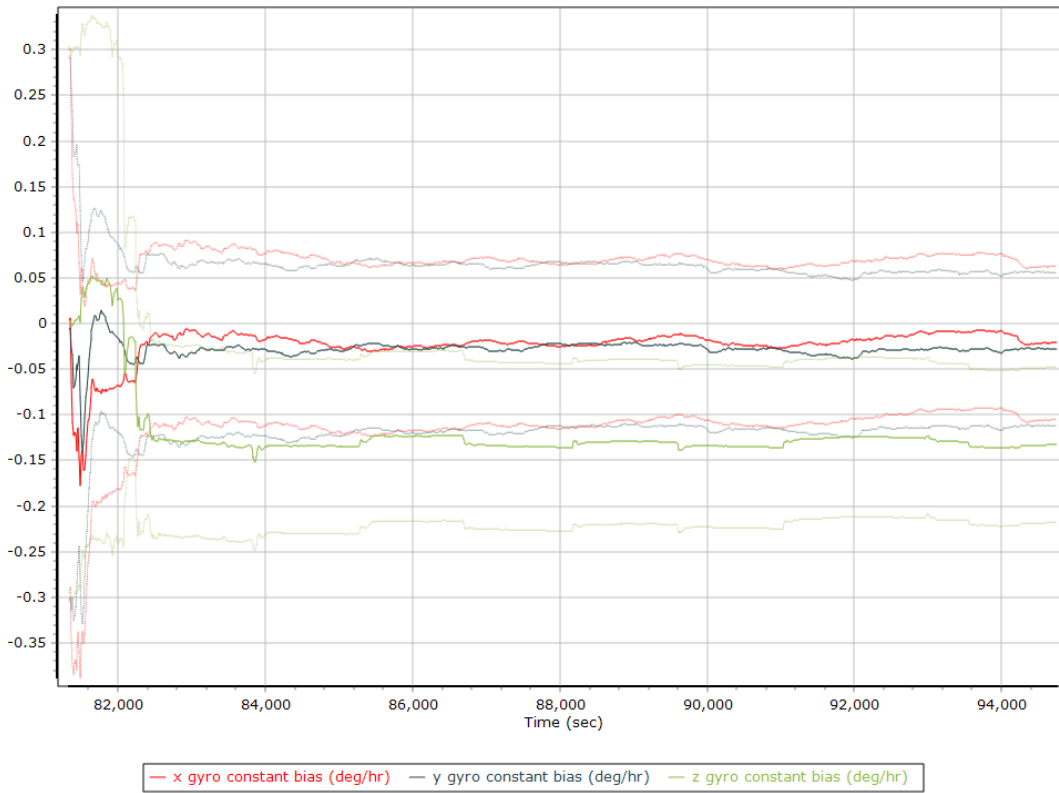
### Y Accelerometer Bias (micro-g)



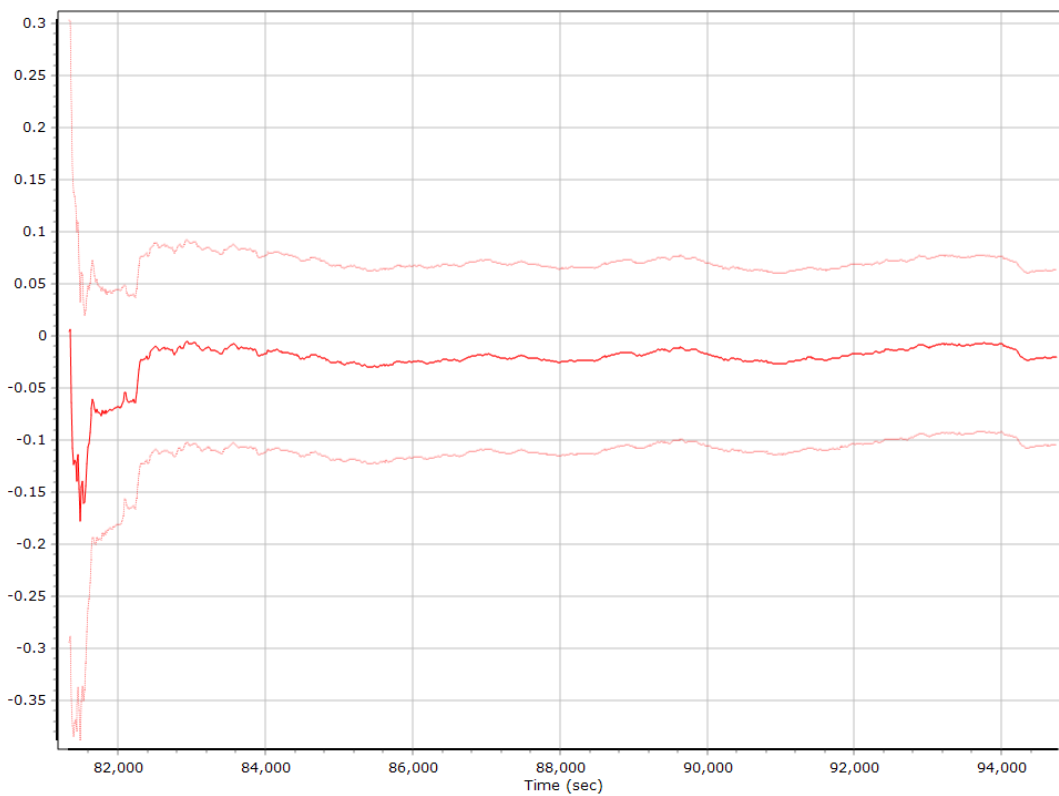
### Z Accelerometer Bias (micro-g)



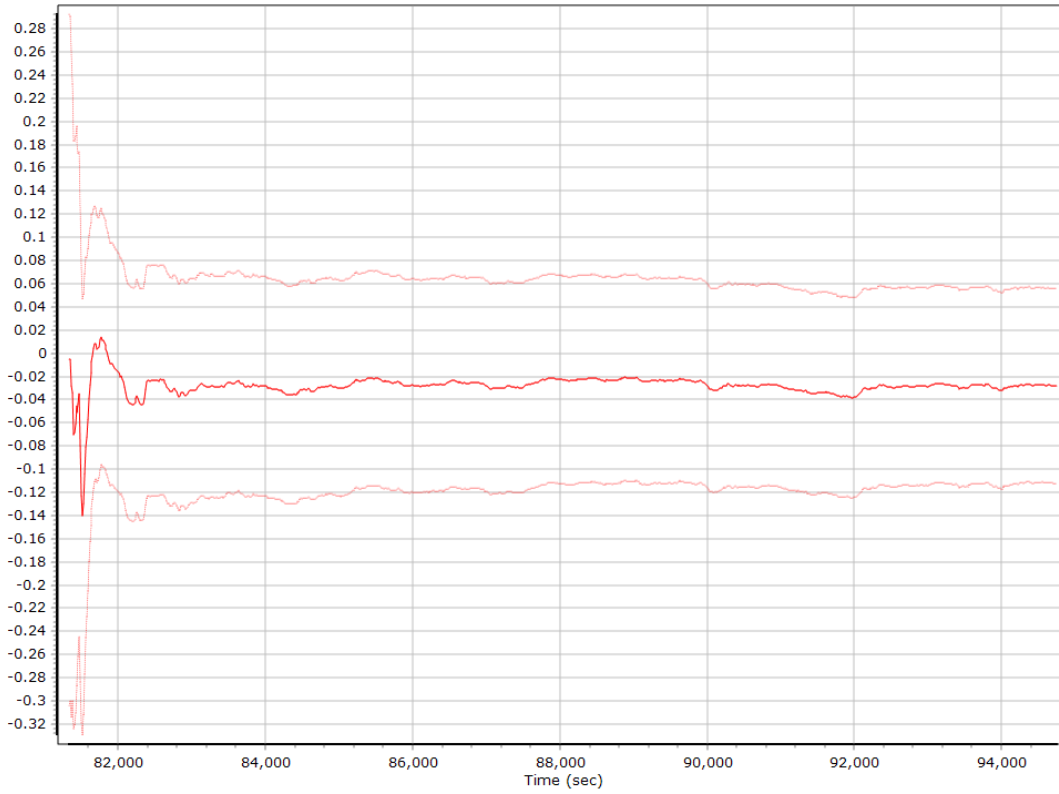
### Gyro Bias (deg/h)



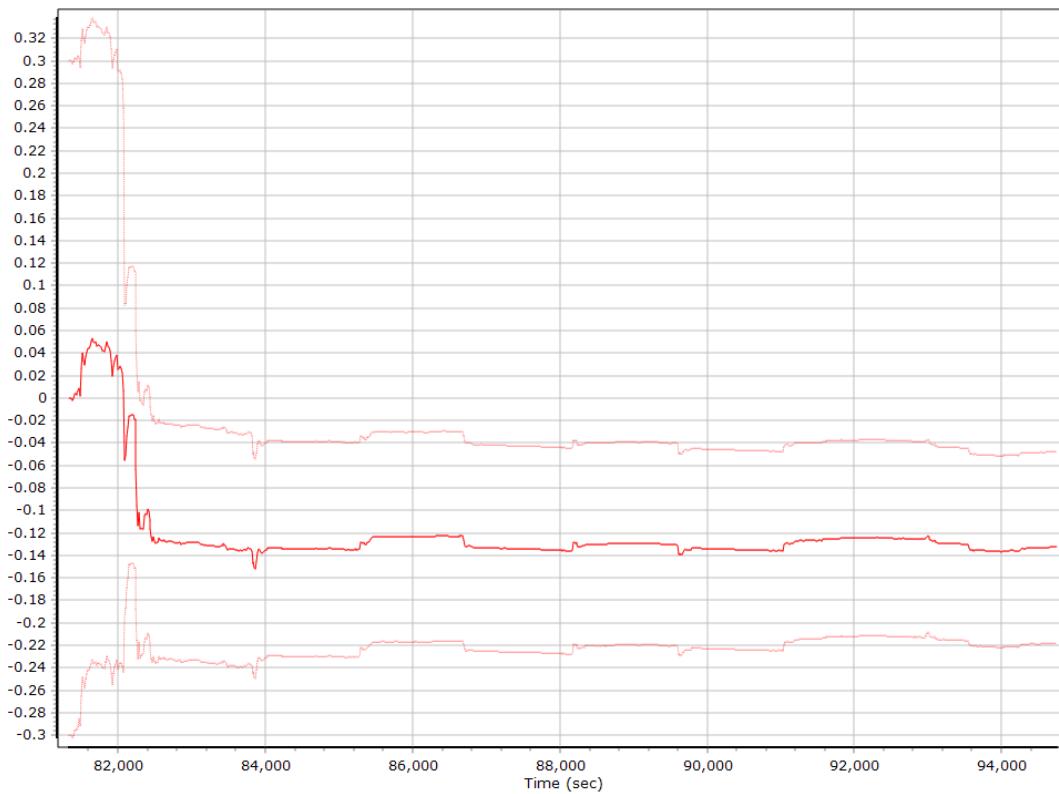
### X Gyro Bias (deg/h)



### Y Gyro Bias (deg/h)

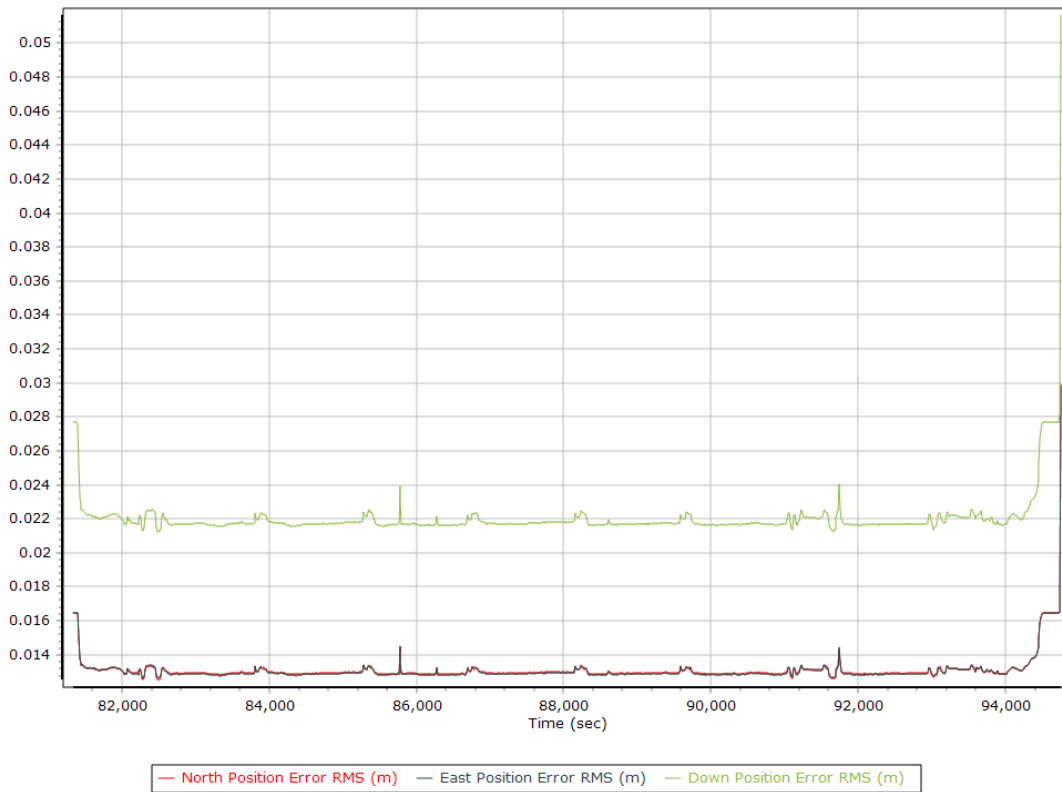


### Z Gyro Bias (deg/h)

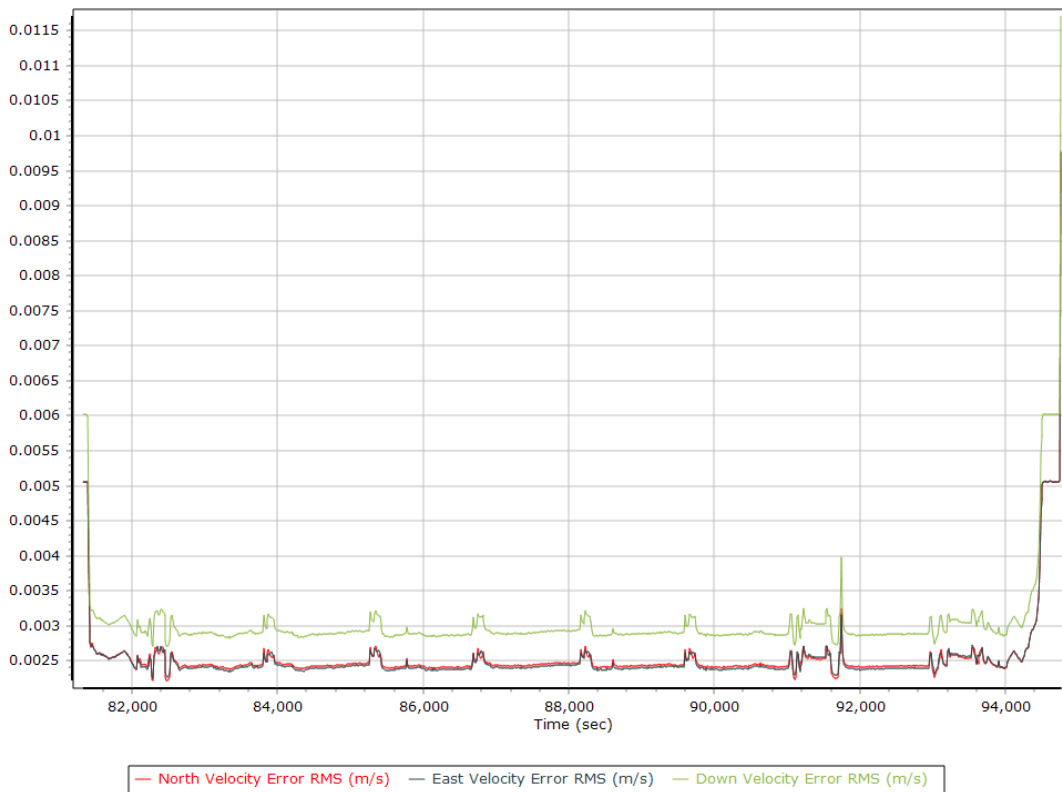


## Smoothed Performance Metrics

### Position Error RMS (m)

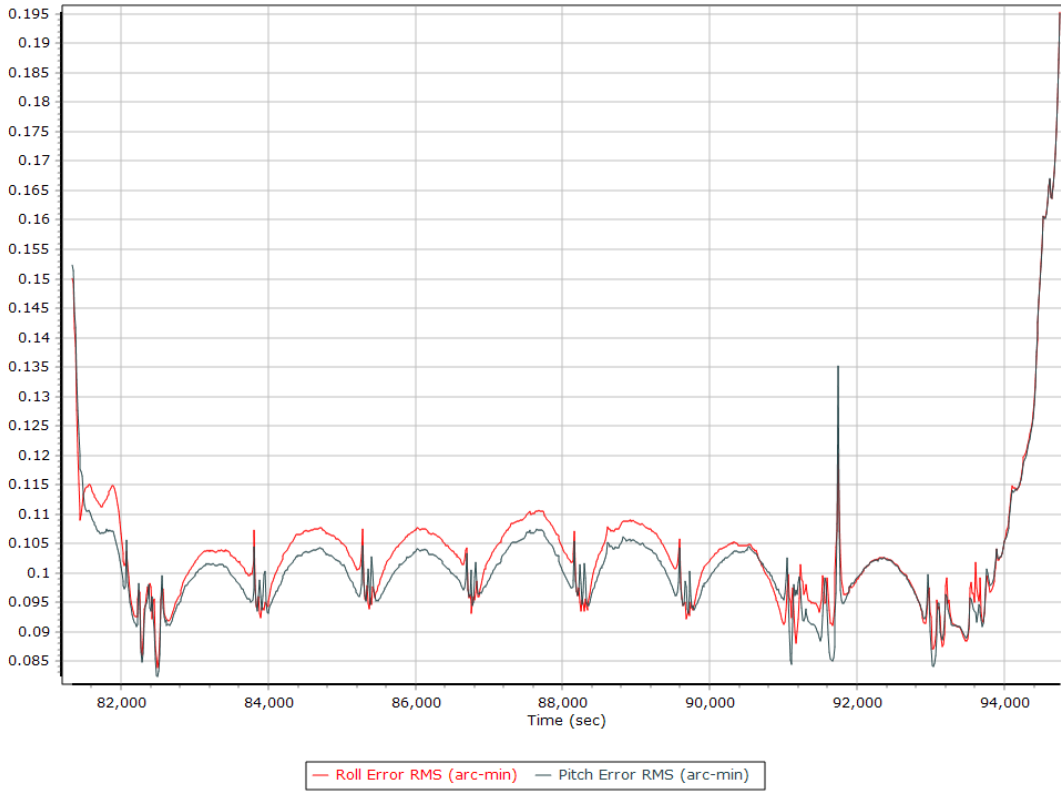


### Velocity Error RMS (m/s)

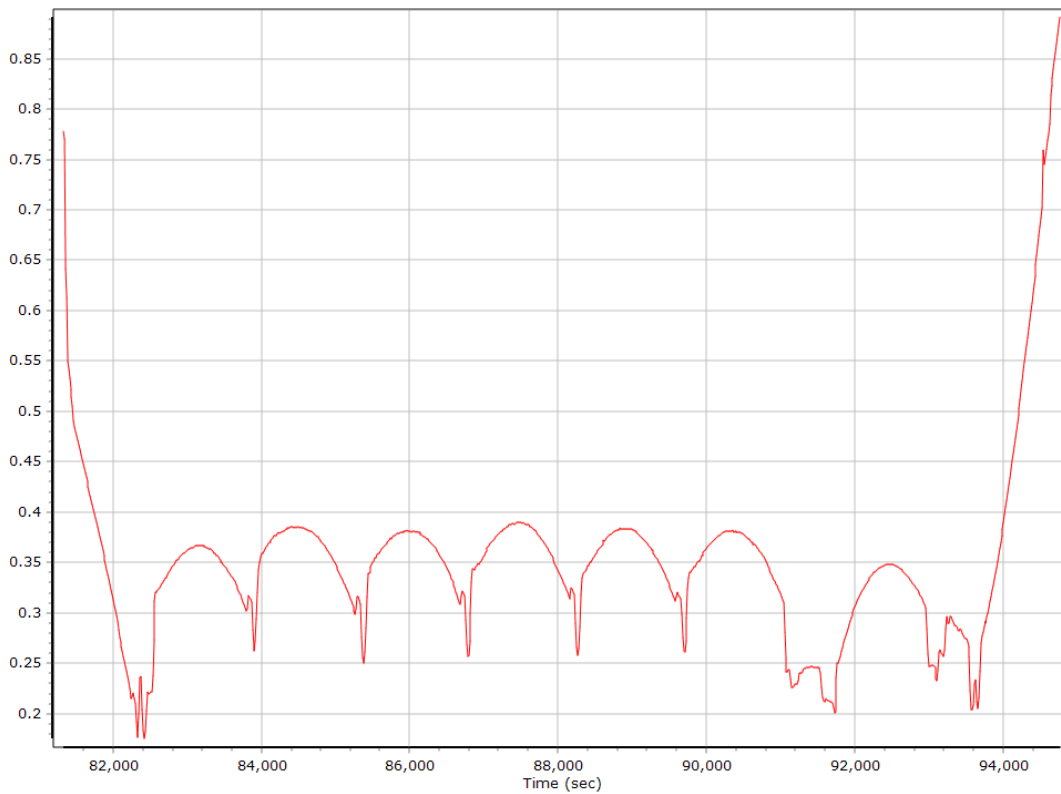




### Roll/Pitch Error RMS (arc-min)

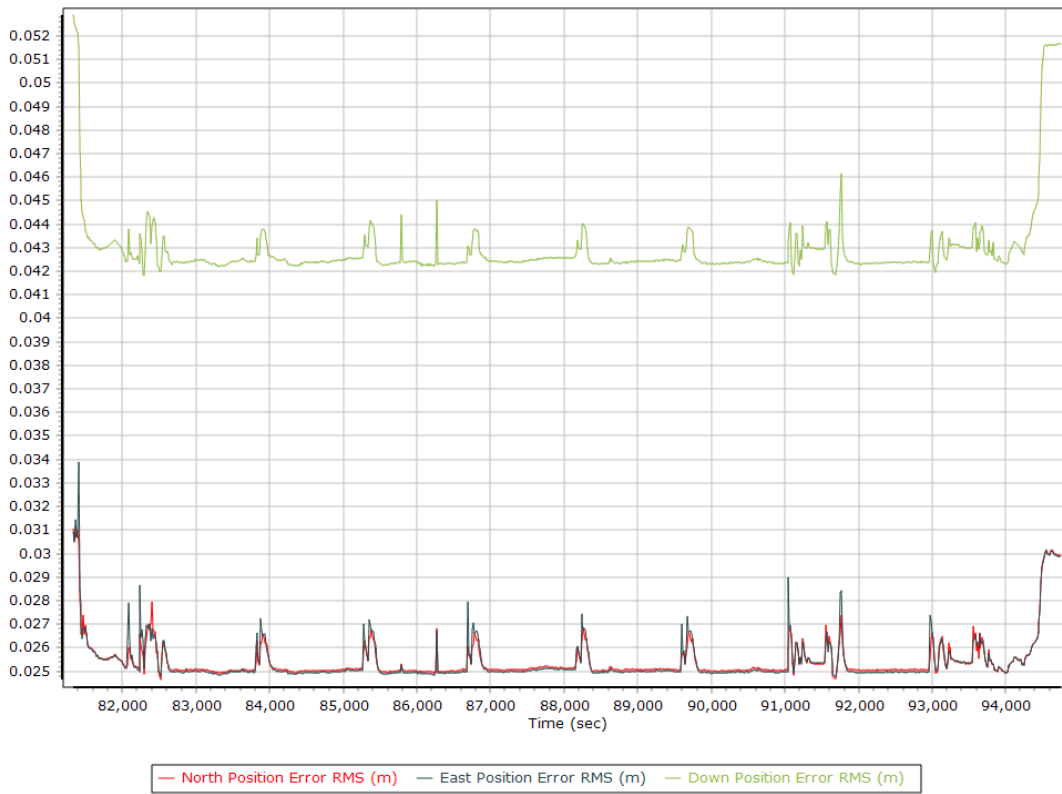


### Heading Error RMS (arc-min)

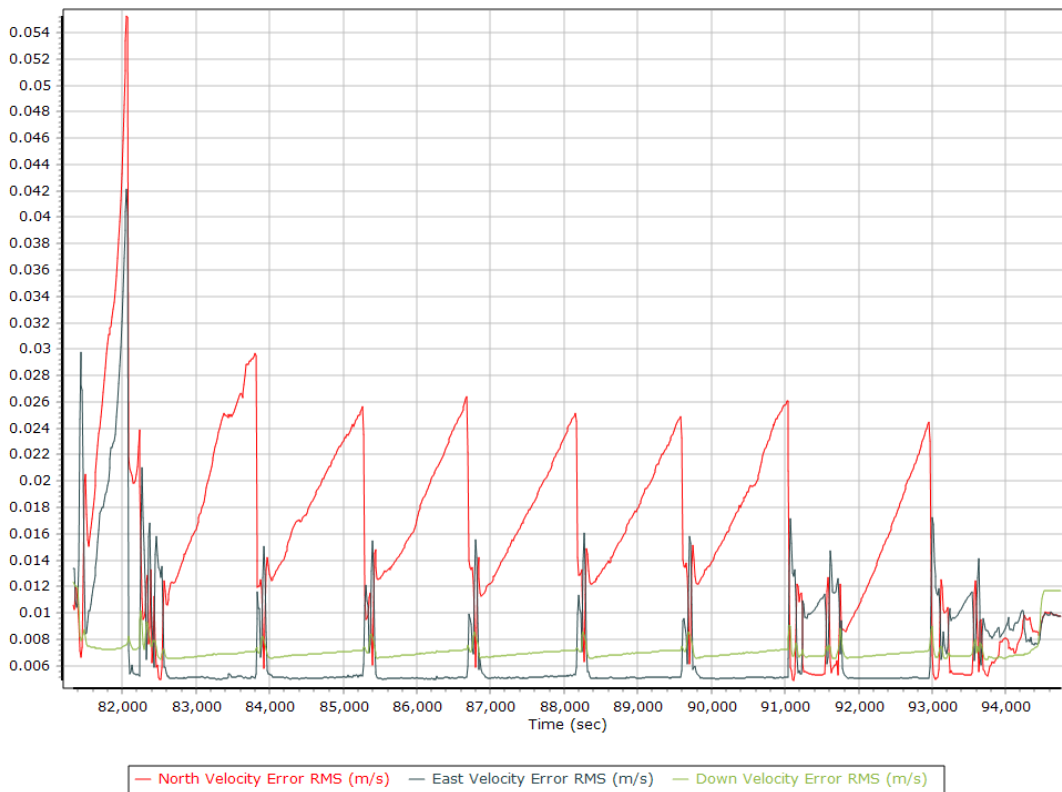


## Forward Processed Performance Metrics

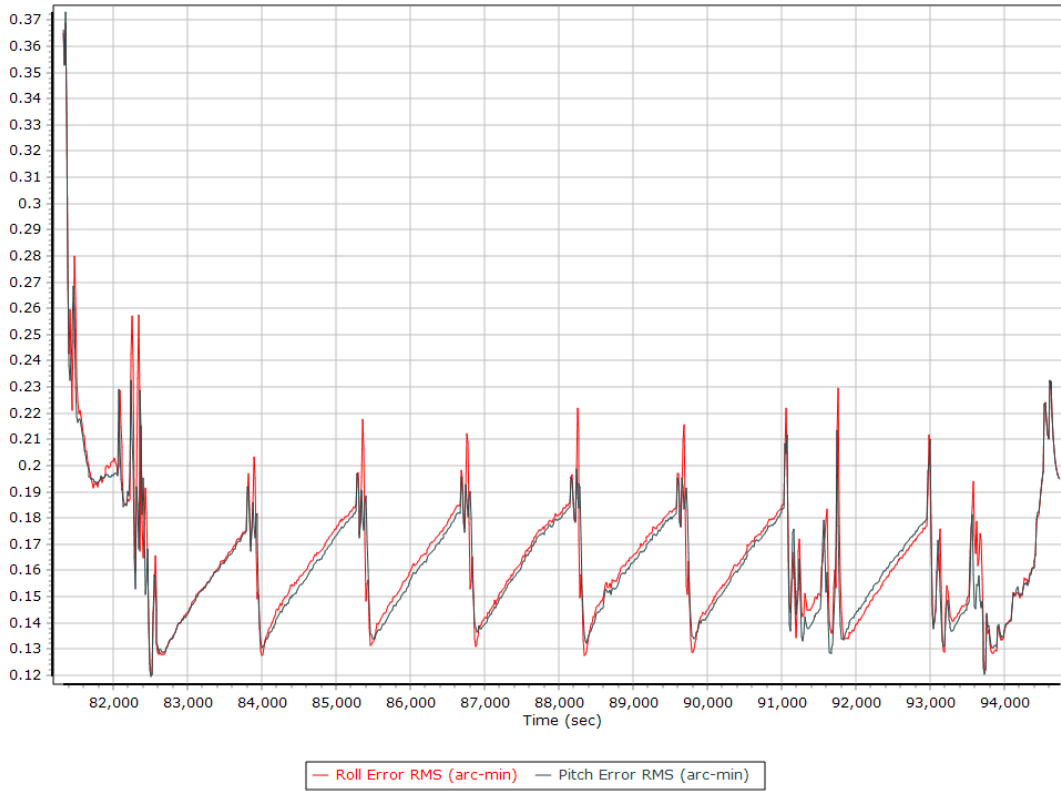
### Position Error RMS (m)



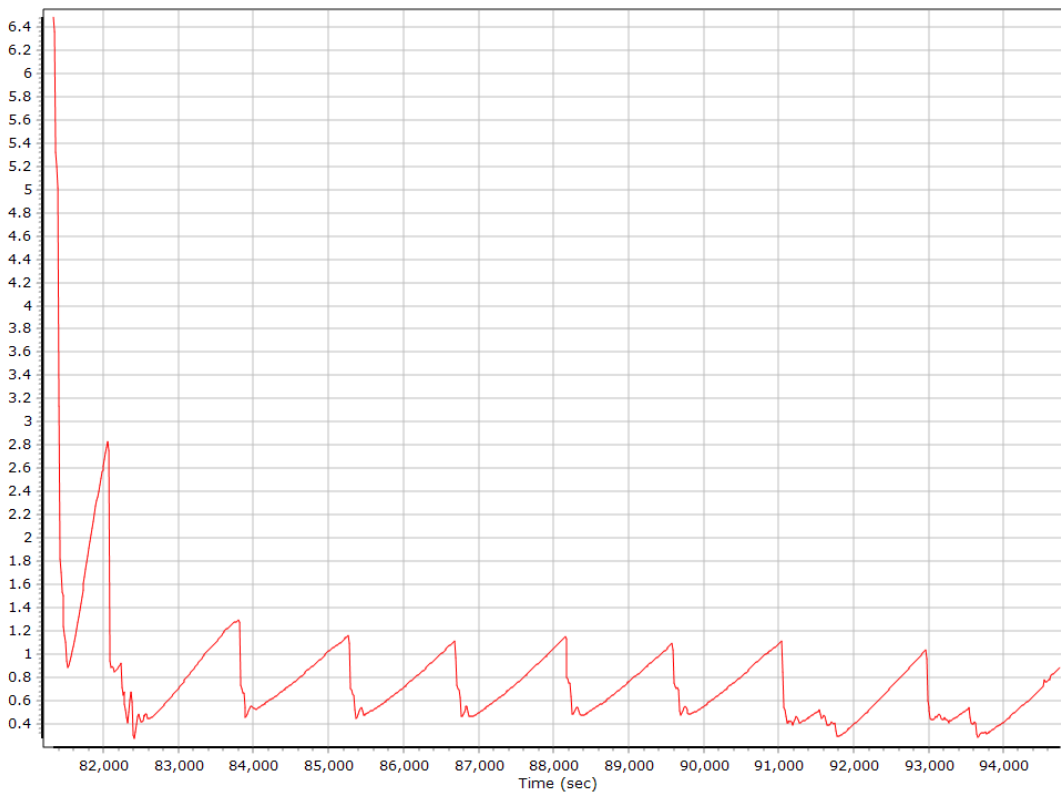
### Velocity Error RMS (m/s)



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

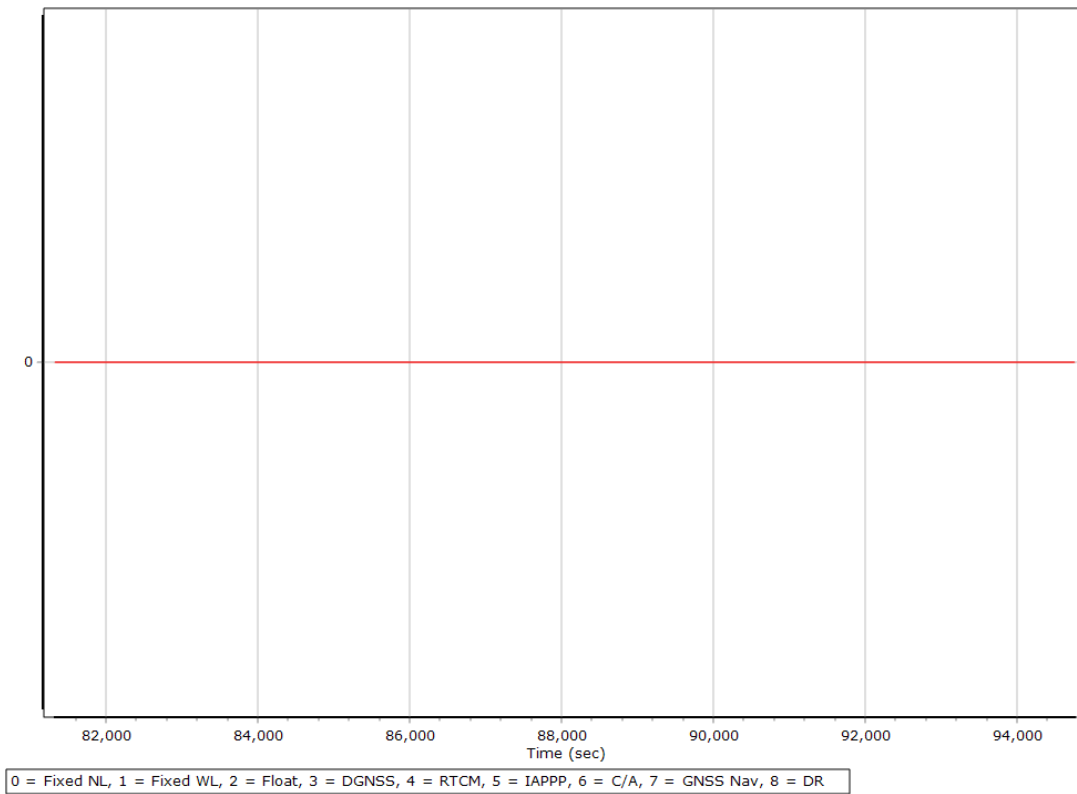


### Heading Error RMS (arc-min)

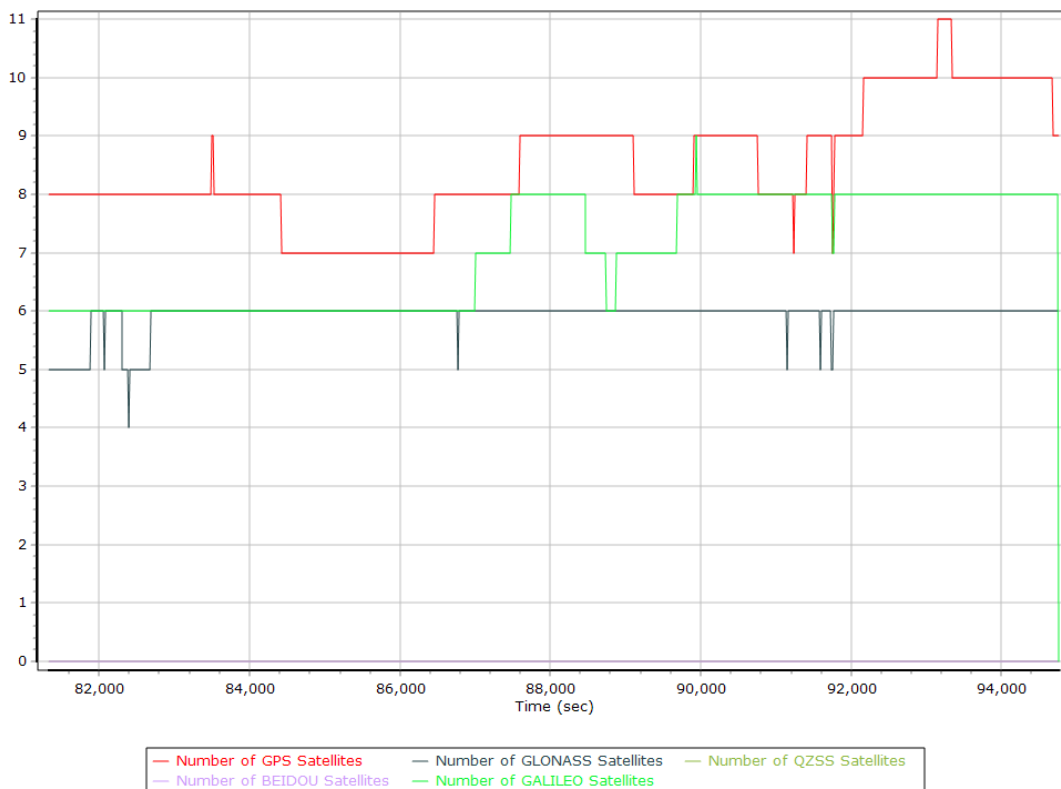


## Forward Processed Solution Status

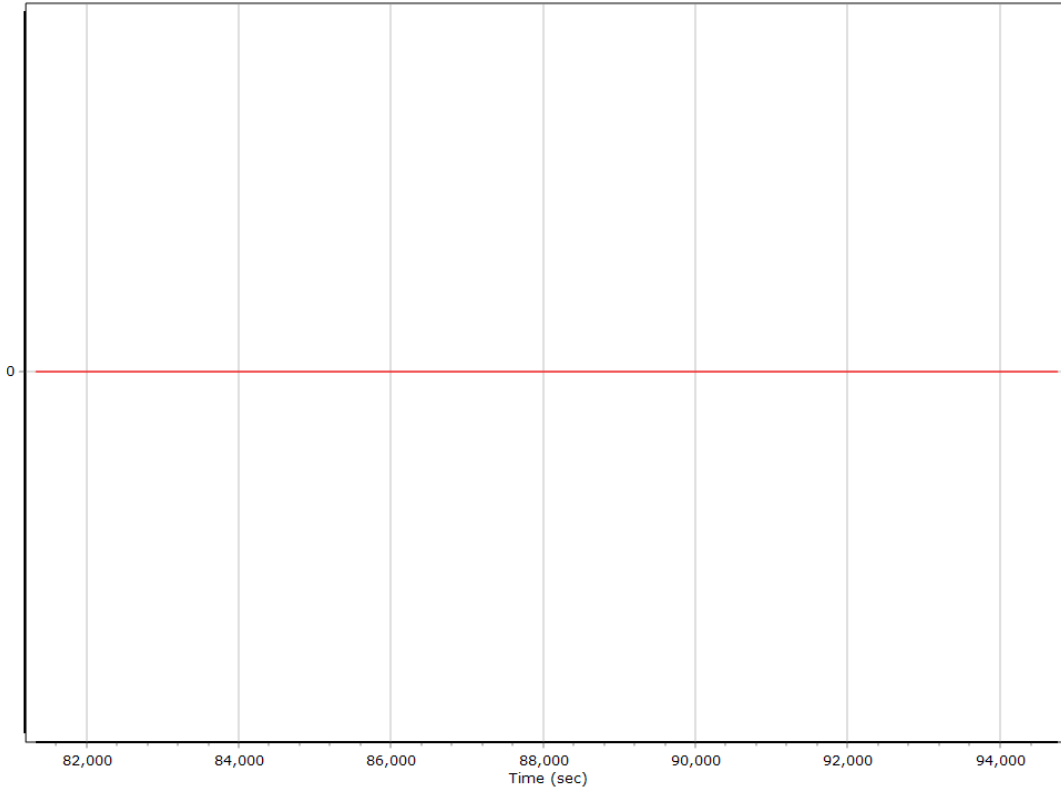
### Processing Mode



### Number of Satellites



### Baseline Length



## Export Summary Section 1

Export file	sbet_11893_NAD83(2011).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	Meter	
Export start time	81275.003 (12/06/2020 22:34:35)		
Export end time	94760.004 (12/07/2020 02:19:20)		
Height option	Ellipsoid Height		
WGS84 height flag	False		
Grid			
Zone			
Datum	NAD83 (2011)		
Ellipsoid	GRS 1980		
Local Transformation			
Target Epoch	2010		

## Export Summary Section 2

Export file	lever_arm_values.txt		
Export format	ReferenceToPrimaryLeverArms		
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	Meter	
Export start time	81275.003 (12/06/2020 22:34:35)		
Export end time	94760.004 (12/07/2020 02:19:20)		
Height option	Ellipsoid Height		
WGS84 height flag	False		
Grid	Universal Transverse Mercator		
Zone	UTM North 14 (102W to 96W)		
Datum	WGS84		
Ellipsoid	WGS84		
Local Transformation	NONE		
Target Epoch	2010		

## EO Summary Section 1

EO file			
EO format	ZI Imaging		
Lever arm (m)	0.000	0.000	0.000
Boresight angles (arcmin)	0.0000	0.0000	0.0000
Output rate	All Records		
Rotation sequence	x omega	y phi	z kappa
Local shift (m)	0.000	0.000	0.000
Output units (coordinate / angle / lat & lon)	Meter	Degree	Deg Decimal
Height option	Ellipsoid Height		
WGS84 height flag	False		
Scale height option	False		
Kappa cardinal rotation (deg)	0		
Solution in use	Post-processed		
EO start time	81275.003 (12/06/2020 22:34:35)		
EO end time	94760.004 (12/07/2020 02:19:20)		
Grid	Universal Transverse Mercator		
Zone	UTM North 14 (102W to 96W)		
Datum	NAD83 (2011)		
Ellipsoid	GRS 1980		
Local Transformation	NONE		
Target Epoch	2010		