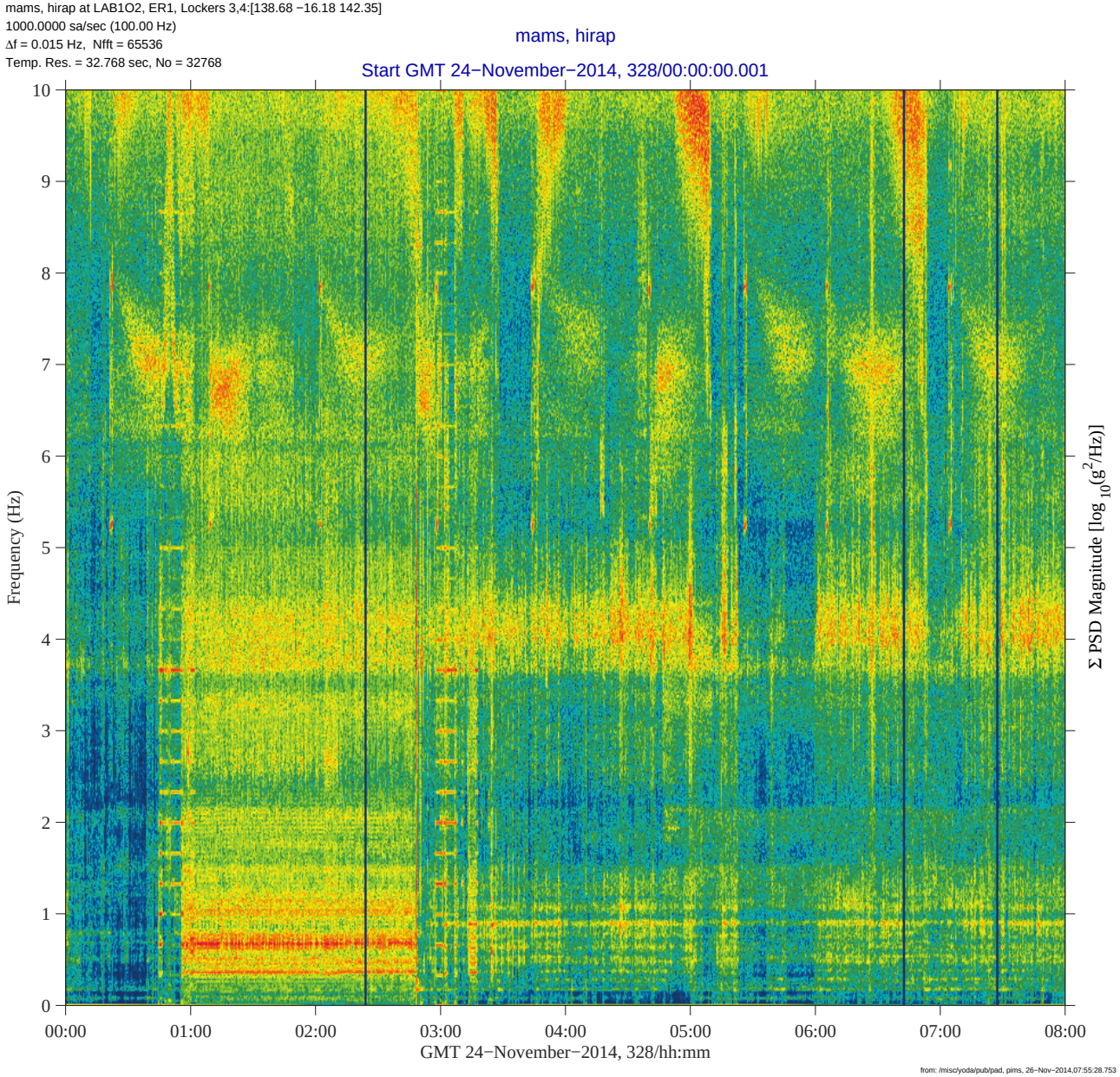
Soyuz 41S Docking Qualify



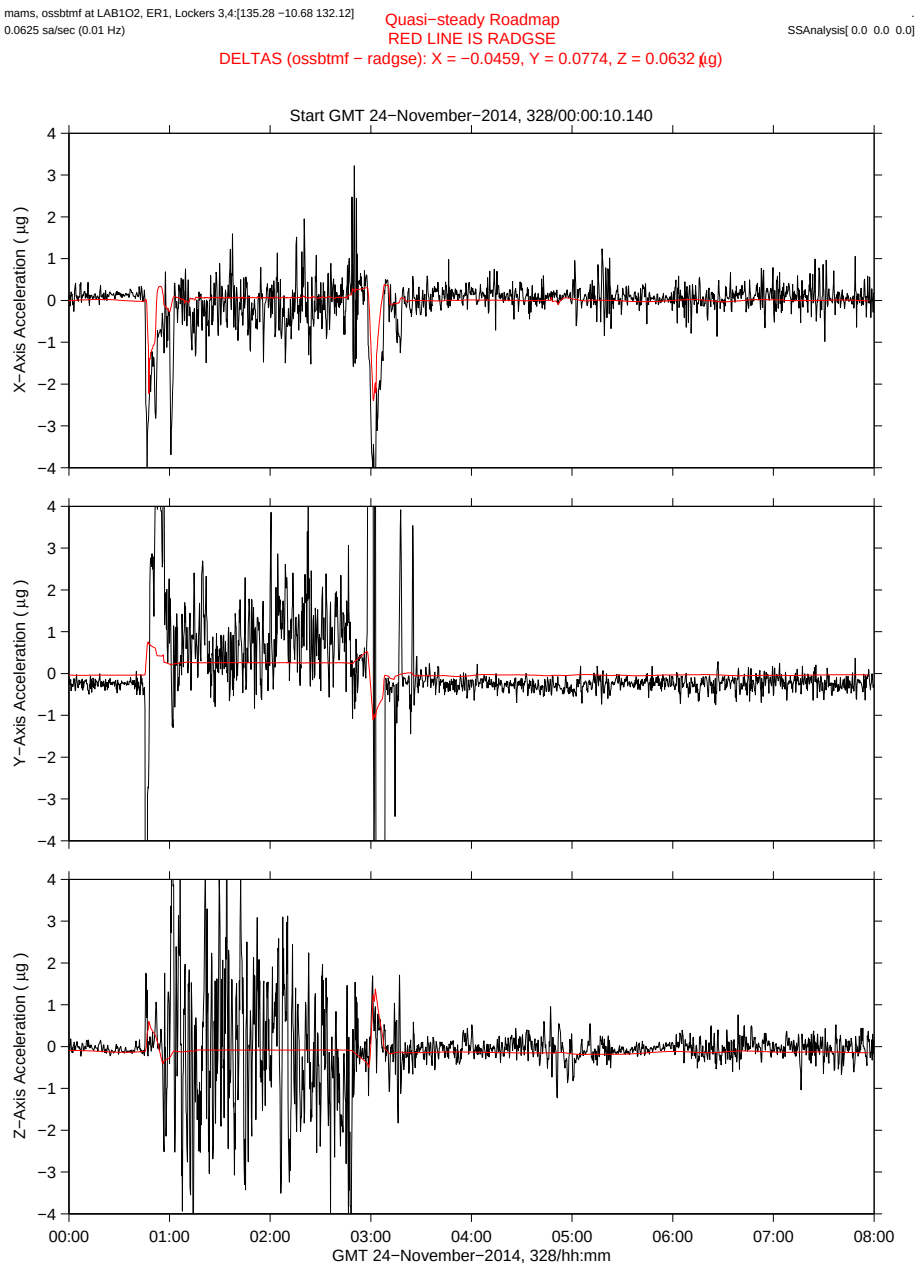
Description	
Sensor	MAMS hirap 1000.0 sa/sec, 100 Hz
Location	LAB1O2, ER1, Lockers 3,4
Plot Type	Spectrogram (< 10 Hz)

Notes:

- This roadmap spectrogram shows an overview of: (1) handover to Russian segment for attitude control at 00:40, (2) maneuver to docking attitude from 00:45 to 01:05, (3) free drift from 02:48 to 02:58 for docking at 02:53, and (4) maneuver to post-docking attitude from 02:58 to 03:21, and (5) handover from Russian segment back to US momentum management at 03:42.
- The most prominent feature seen in the acceleration spectrum is the excitation of structural modes below about 3 Hz during the span when the Russian segment is used for attitude control. This span is seen as the bright red horizontal streaks between about 01:00 and about 03:00 below 3 Hz.

Regime:	Quasi-Steady
Category:	Vehicle
Source:	Soyuz 41S Docking

Soyuz 41S Docking Qualify



Description	
Sensor	MAMS ossbtmf 0.0625 sa/sec, 0.01 Hz
Location	LAB1O2, ER1, Lockers 3,4
Plot Type	Acceleration vs. Time

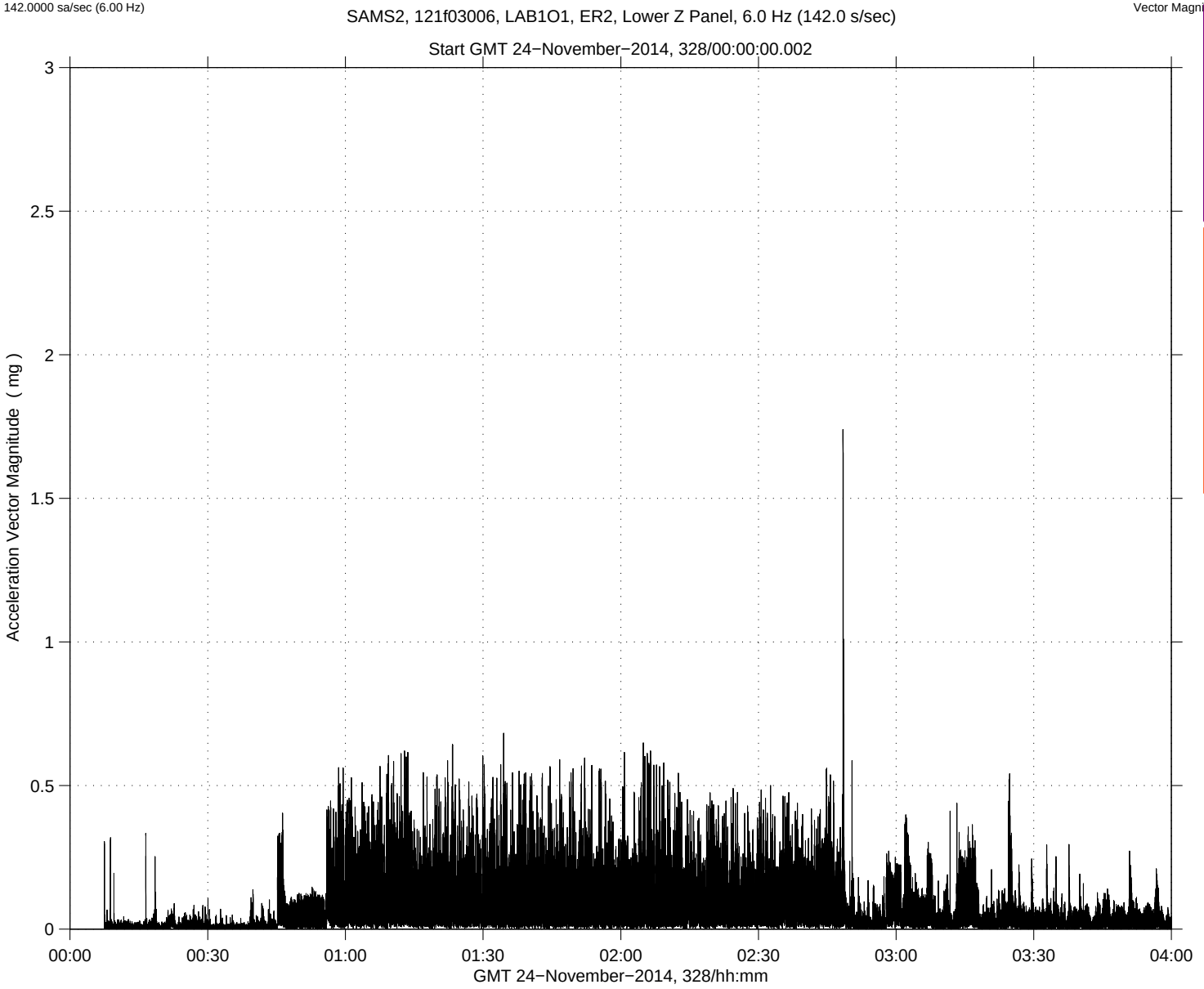
Notes:

- This plot shows the quasi-steady impact of the maneuver to docking attitude between about 00:45 and 01:05 and the maneuver to post-docking LVLH attitude between about 02:58 and 03:21.

Regime:	Quasi-Steady
Category:	Vehicle
Source:	Soyuz 41S Docking

Soyuz 41S Docking Quantify

sams2, 121f03006 at LAB1O1, ER2, Lower Z Panel:[191.54 −40.54 135.25]
142.0000 sa/sec (6.00 Hz)



Description	
Sensor	SAMS 121f03006 142.00 sa/sec, 6.00 Hz
Location	LAB1O1, ER2, Lower Z Panel
Plot Type	Acceleration vs. Time

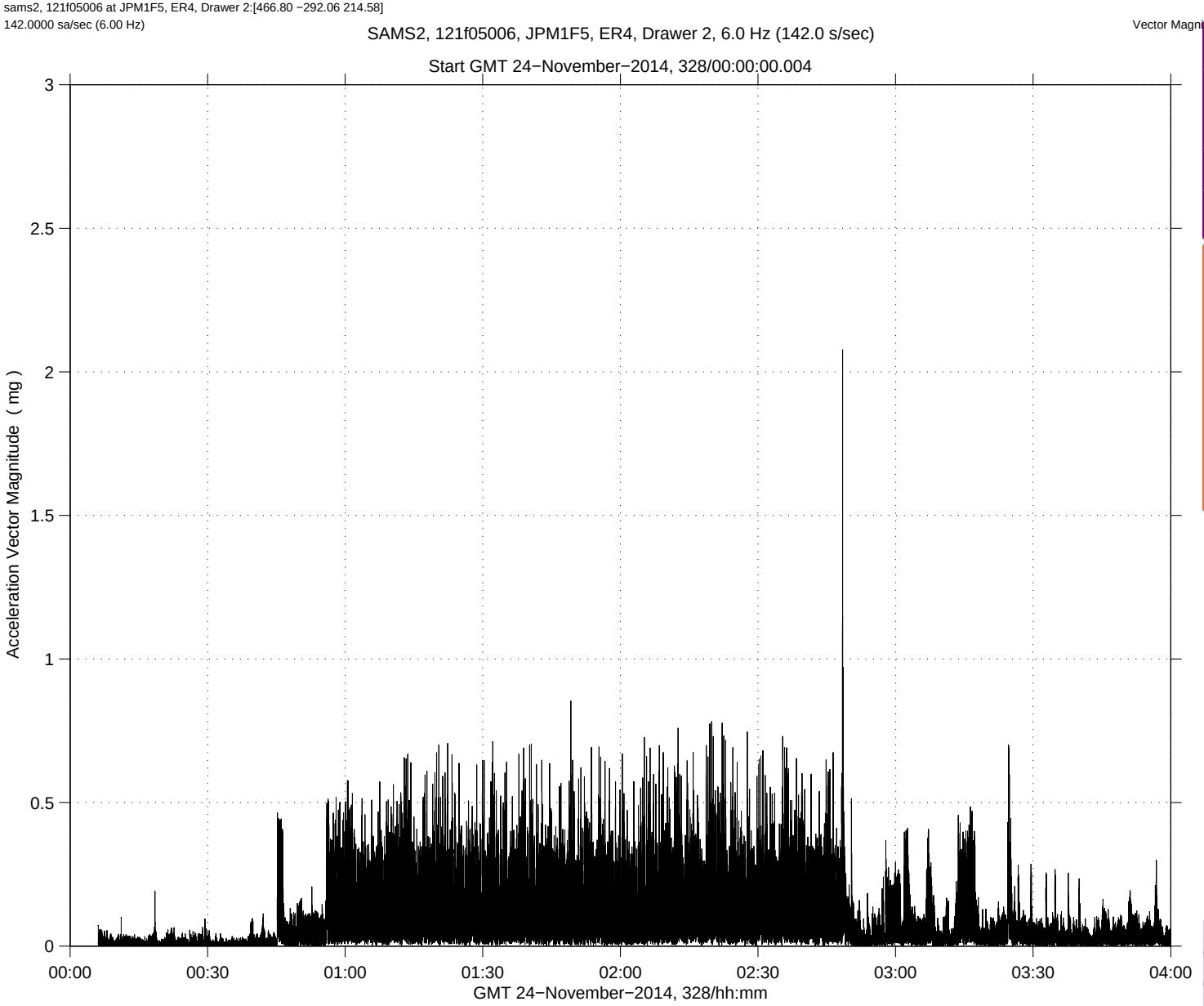
Notes:

- This plot shows the acceleration vector magnitude versus time around the docking of the Soyuz 41S vehicle.
- The measurements shown here came from the SAMS sensor 121f03 in the USL.
- The most prominent feature in these data is the impact of Russian segment attitude control between about 01:00 and 03:00.

Regime:	Quasi-Steady
Category:	Vehicle
Source:	Soyuz 41S Docking

Soyuz 41S Docking Quantify

sams2, 121f05006 at JPM1F5, ER4, Drawer 2:[466.80 −292.06 214.58]
142.0000 sa/sec (6.00 Hz)



Description	
Sensor	SAMS 121f05006 142.00 sa/sec, 6.00 Hz
Location	JPM1F5, ER4, Drawer 2
Plot Type	Acceleration vs. Time

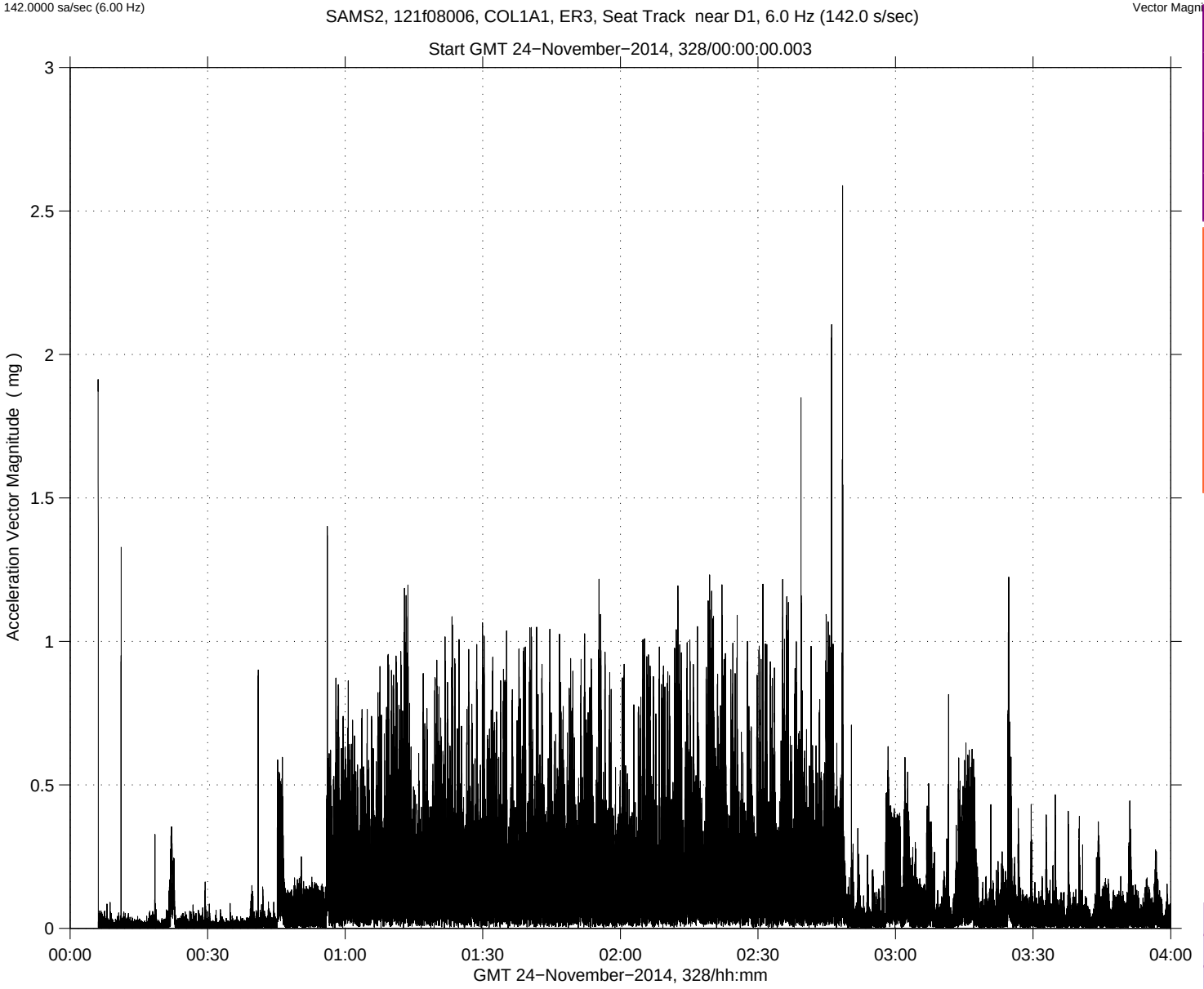
Notes:

- This plot shows the acceleration vector magnitude versus time around the docking of the Soyuz 41S vehicle.
- The measurements shown here came from the SAMS sensor 121f05 in the JEM.
- The most prominent feature in these data is the impact of Russian segment attitude control between about 01:00 and 03:00.

Regime:	Quasi-Steady
Category:	Vehicle
Source:	Soyuz 41S Docking

Soyuz 41S Docking Quantify

sams2, 121f08006 at COL1A1, ER3, Seat Track near D1:[371.17 193.43 165.75]
142.0000 sa/sec (6.00 Hz)



Description	
Sensor	SAMS 121f08006 142.00 sa/sec, 6.00 Hz
Location	COL1A1, ER3, Seat Track near D1
Plot Type	Acceleration vs. Time

Notes:

- This plot shows the acceleration vector magnitude versus time around the docking of the Soyuz 41S vehicle.
- The measurements shown here came from the SAMS sensor 121f08 in the COL.
- The most prominent feature in these data is the impact of Russian segment attitude control between about 01:00 and 03:00.

Regime:	Quasi-Steady
Category:	Vehicle
Source:	Soyuz 41S Docking

The previous 3 pages show a quantitative comparison between SAMS sensor measurements in each of the 3 main laboratories: (121f03) in the USL, (121f05) in the JEM, and (121f08) in the COL. It is important to note that these data have been low-pass filtered to highlight the impact of Soyuz docking. The values shown are median acceleration vector magnitudes (after low-pass filtering below 6 Hz) from the time span between GMT 24-Nov-2014/01:00 and 02:30.

SAMS Sensor & Location	Median Accel. Vector Magnitude (ug)
121f03 in USL	99.8
121f05 in JEM	119.1
121f08 in COL	175.6