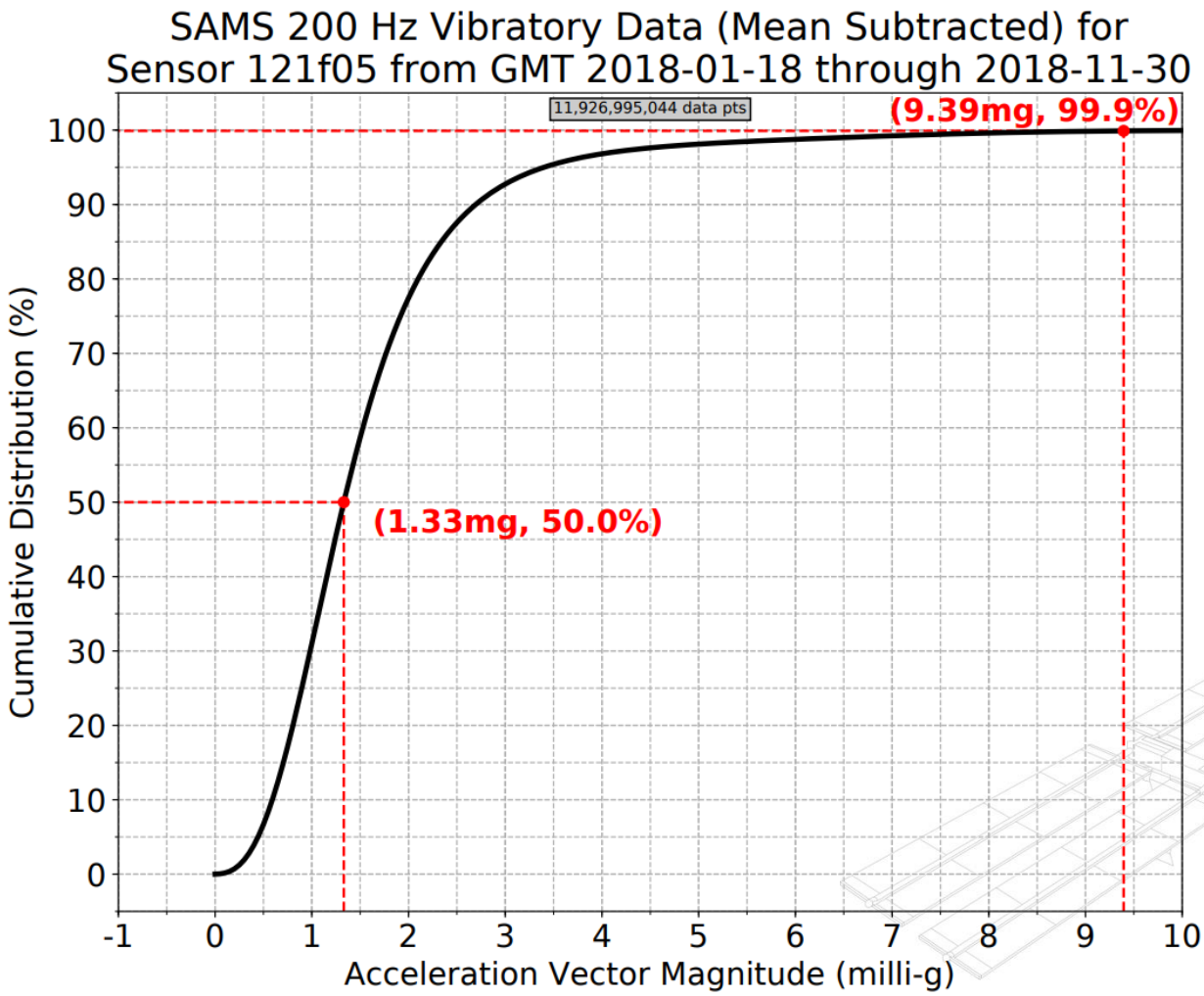
Space Communications and Navigation (SCaN) Testbed Quantify



Description	
Sensor	121f05 500 sa/sec (200 Hz)
Location	JPM1F1, ER5, Drawer 2
Orientation	Space Station Analysis (SSA)
Plot Type	Acceleration Magnitude Cumulative Distribution

Notes:

- The decommissioning of the SCaN Testbed equipment will require robotic capture and positioning, which comes with concern about accelerating the equipment during transport and thereby inadvertently driving gimbal motion during this activity.
- SAMS measurements inside of the pressurized modules of the ISS were examined to give planners a fairly comprehensive body of statistical background to use in their decisions and in the planning process.
- The cumulative distribution shown on the left gives the statistical summary for a SAMS sensor located in the JEM for measurements below 200 Hz from GMT 2018-01-18 through 2018-11-30.
- We see here that the median acceleration vector magnitude measured by SAMS in the JEM was about 1.3 milli-g and the 99.9th percentile was about 9.4 milli-g.

Regime:	Vibratory
Category:	Experiment Equipment
Source:	Aggregate

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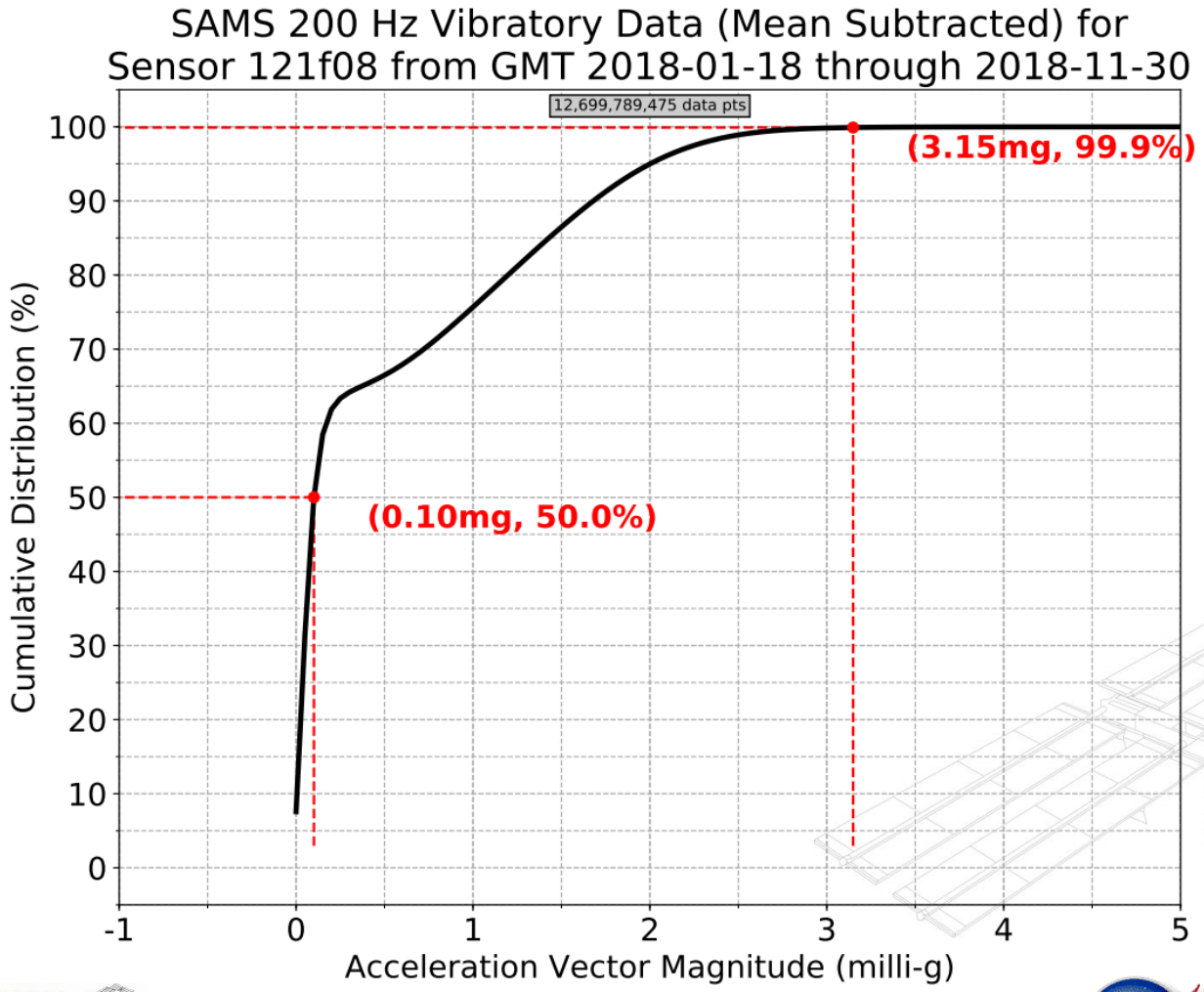

Description	
Sensor	121f08 500 sa/sec (200 Hz)
Location	COL1A3, EPM
Orientation	Space Station Analysis (SSA)
Plot Type	Acceleration Magnitude Cumulative Distribution

Notes:

- Similar to the plot on the previous page, the cumulative distribution shown on the left gives the statistical summary for a SAMS sensor located in the Columbus module for measurements below 200 Hz from GMT 2018-01-18 through 2018-11-30.
- We see here that the median acceleration vector magnitude measured by SAMS in the Columbus module was about 0.1 milli-g and the 99.9th percentile was about 3.2 milli-g.
- A very quiet rack location (EPM) for this sensor head over long periods of time give rise to the skewed nature in the low magnitude regime of this plot.

Regime:	Vibratory
Category:	Experiment Equipment
Source:	Aggregate

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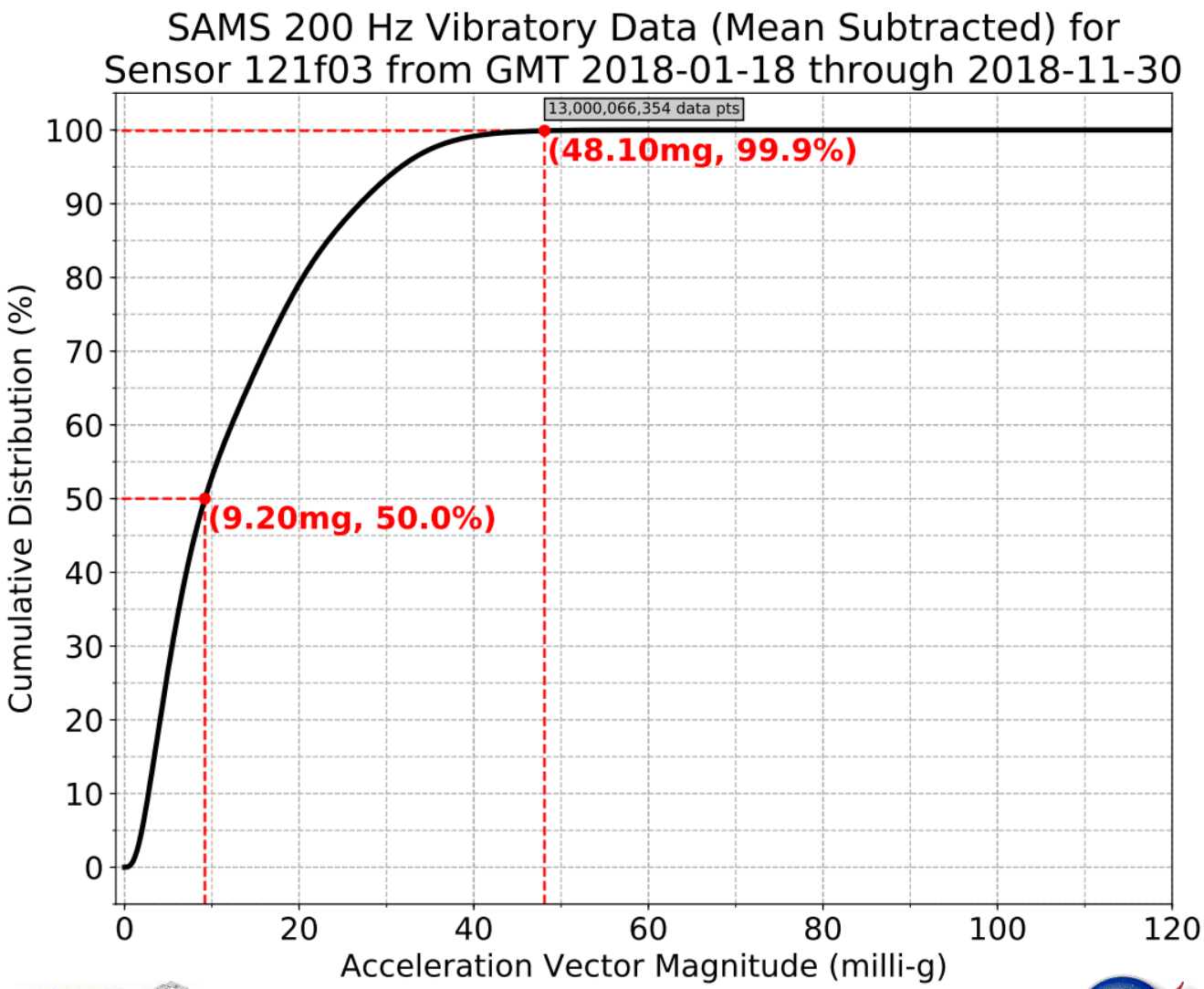
Quantify



Description	
Sensor	121f03 500 sa/sec (200 Hz)
Location	LAB1O1, ER2
Orientation	Space Station Analysis (SSA)
Plot Type	Acceleration Magnitude Cumulative Distribution

Notes:

- Similar to the plot on the previous 2 pages, the cumulative distribution shown on the left gives the statistical summary for a SAMS sensor located in the US LAB module for measurements below 200 Hz from GMT 2018-01-18 through 2018-11-30.
- We see here that the median acceleration vector magnitude measured by SAMS in the US LAB module was about 9 milli-g and the 99.9th percentile was about 48 milli-g.

Regime:	Vibratory
Category:	Experiment Equipment
Source:	Aggregate

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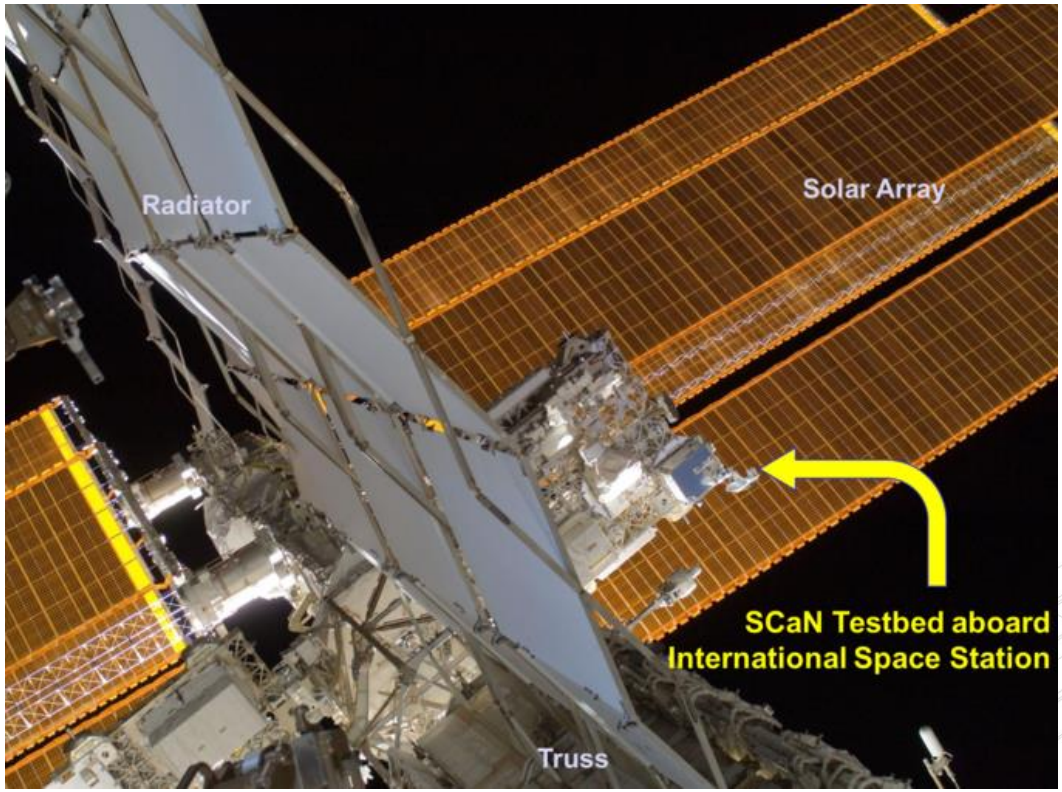
Space Communications and Navigation (SCaN) Testbed
Quantify

Notes:

- The table below serves to summarize the results from the previous 3 pages.
- These values suggest that, in the US LAB, over 99.9% of the measured acceleration magnitudes (below 200 Hz) were below 50 milli-g. The 99.9th percentile in the JEM was less than 10 milli-g and the EPM rack in Columbus faired best (quietest) with a 99.9th percentile acceleration magnitude of just above 3 milli-g.

SAMS Location	99.9th Percentile (mg)
JPM1F1 (ER5)	9.39
COL1A3 (EPM)	3.15
LAB1O1 (ER2)	48.10



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Regime:	Vibratory
Category:	Experiment Equipment
Source:	Aggregate