

STEP Accelerometer Sensitivity Validation and Calibration

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The STEP (Satellite Test of the Equivalence Principle) accelerometer sensitivity is achieved using a SQUID-based superconducting circuit with features that enhance sensitivity to differential motion of two test masses. The recent success of SQUID measurement systems on GPB demonstrates that SQUID noise performance on the ground can be used during integrated testing to validate on-orbit performance. We will present the first measurements of SQUID noise and displacement sensitivity for a “brass-board” accelerometer with the fidelity to validate the STEP baseline design. We will also discuss our expectations for the performance of an engineering model accelerometer that is currently under manufacture.