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Investigation of low-frequency beam motion at the APS

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The storage ring of the APS has relatively tight tolerance requirements for beam stability. The tolerances of the rms beam motion in the ID straight sections are set to be less than 4.4 microns and 17 microns in the vertical and horizontal planes, respectively, in a bandwidth of 4-50 Hz. Currently, considerable efforts are being made to identify the sources of the observed beam motion at particular frequencies. Potential sources under investigation include induced mechanical vibrations of the magnets, rf cavities and vacuum chambers by ground motion and water system, power supply ripple, and other electrical sources. The status of the investigation will be discussed.

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