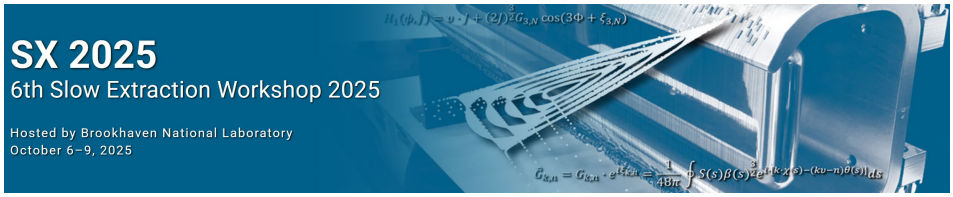

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Simulations of an AC Quadrupole for Power-line Ripple Correction at the AGS Booster

The AGS Booster delivers slow-extracted beam to the NASA Space Radiation
Laboratory by exciting a third integer resonance with. To correct oscillations of the orbit from the power-line ripple, an active filter on the main magnet power supply. This corrects the ripple in the dipoles and four of five windings in the quadrupoles. To correct residual ripple on the quadrupoles, a corrector quadrupole has been installed and connected to an AC circuit to drive the quadrupole at the frequency of the observed ripple. Simulations of the effects of power-line ripple on the quadrupoles are shown, with and without the AC quadrupole corrector, and their effects on the dynamics of slow extracted beam.

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