

Abstract Submitted
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Poloidal Gap Field Error Control and its Effects on the MST plasma¹ T.D. THARP, A.F. ALMAGRI, B.E. CHAPMAN, D.J. HOLLY, K.J. MCCOLLAM, J.S. SARFF, University of Wisconsin - Madison — An active feedback control system has been installed to correct radial magnetic field errors at the poloidal gap of the Madison Symmetric Torus (MST). The field errors result from the axial asymmetry presented by the gap in MST's aluminum shell. The error causes increased plasma-wall interactions with adverse effects on several MST performance characteristics. Correcting the error increases the pulse duration and helps preserve plasma rotation. Previously the error correction was passive and incomplete; the new active system results in smaller errors for the entire discharge duration. Tests are planned to study the effects of active control on the duration of improved confinement, pulse-to-pulse reproducibility, fast particle confinement, and quasi-single helicity (QSH) mode rotation.

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