Abstract Submitted
for the DPP10 Meeting of
The American Physical Society

Measurements of Line-tied Kink Eigenfunction in the Rotating Wall Machine and Comparison to Simulation[1] M.I. BROOKHART, C. PAZ-SOLDAN, D.A. HANNUM, University of Wisconsin-Madison, A. CLINCH, University of Montana, R. KENDRICH, C.R. SOVINEC, C.B. FOREST, University of Wisconsin-Madison — The internal kink instability in the Rotating Wall Machine has an ideal character, but also exhibits reconnection events that periodically flatten the current profile and change the magnetic topology. A scanning, 3-axis magnetic probe has been used to measure the internal equlibrium and fluctuating magnetic fields. Using shot-to-shot averaging, 2D profiles (R,Z) of the plasma can be measured via an an axially scanning traverse. Internal mode structure has been determined through multiple-shot correlation analysis. The line-tying conditions in the machine are examined through the structure of the magnetic field. Finally, using equilibrium measurments of n_e, T_e, and J as inputs, the line-tied kink mode has been studied numericaly using the NIMROD code. Linear and nonlinear simulation results are presented and compared to experiment.

[1]Supported by NSF.

Matthew Brookhart
University of Wisconsin-Madison

Date submitted: 14 Jul 2010 Electronic form version 1.4