

**Abstract Submitted for the Forty-Eighth Annual Meeting
Division of Plasma Physics
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Category Number and Subject: 5.6.2. DIII-D Tokamak

Theory Experiment

**Study of RWM Stability and RWM Feedback Control in
Reactor Relevant Low-Rotation Discharges in DIII-D,***

H. Reimerdes, J. Bialek, A.M. Garafalo, M.J. Lanctot, O. Katsuro-Hopkins, G.A. Navratil, *Columbia U.*, R. Budny, M. Okabayashi, W.M. Solomon, *PPPL*, M.S. Chu, G.L. Jackson, R.J. La Haye, E.J. Strait, *GA*, Y. In, J.S. Kim, *FAR-TECH, Inc.* – Advanced tokamak operation in ITER is expected to require active control of the resistive wall mode (RWM) [1]. After the re-orientation of 1 of 4 neutral beam injectors DIII-D is now ideally suited to address the stability of non-rotating high-beta plasmas. In discharges with balanced NBI heating the RWM becomes unstable at the no-wall stability limit. Only a modest increase of the plasma rotation is sufficient to remain stable beyond this limit suggesting a lower rotation threshold than anticipated from previous experiments, which used non-axisymmetric magnetic fields to lower the plasma rotation. Feedback experiments using an upgraded audio-amplifier system to stabilize the RWM in low-rotation plasmas have begun and comparisons with feedback modeling will be shown.

[1] Y. Liu, et al., *Nucl. Fusion* **45**, 1131 (2005).

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