

Abstract Submitted
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Study of RWM Stability and RWM Feedback Control in Reactor Relevant Low-Rotation Discharges in DIII-D¹ H. REIMERDES, J. BIALEK, A.M. GAROFALO, 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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