

Abstract Submitted
for the DPP08 Meeting of
The American Physical Society

Feedback stabilization of current-driven resistive-wall-modes (RWMs) near $q_{95} \sim 4$ in DIII-D¹ Y. IN, J.S. KIM, I.N. BOGATU, FAR-TECH, Inc., G.L. JACKSON, R.J. LA HAYE, M.J. SCHAFFER, E.J. STRAIT, A.M. GAROFALO, General Atomics, M.J. LANCTOT, H. REIMERDES, Columbia U., M. OKABAYASHI, PPPL, L. MARRELLI, P. MARTIN, Consorzio RFX — Complete feedback stabilization of current-driven RWM at $q_{95} \sim 4$ has been demonstrated in DIII-D. Taking advantage of the reproducible RWMs in ohmic plasmas with fast current ramps, we assessed the RWM feedback algorithm that had not been fully evaluated with pressure-driven RWMs. Using the internal control coils powered with a broadband supply, we suppressed the current-driven RWM at $q_{95} \sim 4$; successful feedback is attributable to both error field correction and direct mode feedback. The use of derivative gains expanded the stable range of proportional gains. The current-driven RWMs are frequently accompanied by magnetic island-like structures near $q = 2$ surface: the evolution of such internal structures is also used to assess the efficacy of feedback stabilization. The experimental results will be used for a benchmark of RWM feedback models.

¹Supported by the US DOE DE-FG02-06ER84442, DE-FC02-04ER54698, DE-FG02-89ER53297, and DE-AC02-76CH03073.

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Date submitted: 19 Jul 2008

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