

**Abstract Submitted for the 50th Annual Meeting  
Division of Plasma Physics  
November 17–21, 2008, Dallas, Texas**

Category Number and Subject:

Theory       Experiment

**Feedback stabilization of current-driven resistive-wall-modes (RWMs) near  $q_{95} \sim 4$  in DIII-D,\*** Y. In, J.S. Kim, I.N. Bogatu. FAR-TECH, Inc., G.L. Jackson, R.J. La Haye, M.J. Schaffer, E.J. Strait, GA, A.M. Garofalo, 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.

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