

Abstract Submitted  
for the DPP00 Meeting of  
The American Physical Society

Sorting Category: 6.6.2 (Experimental)

**Active Feedback Control of the Resistive Wall Mode in DIII-D**<sup>1</sup> A.M. GAROFALO, G.A. NAVRATIL, J. BIALEK, Columbia Univ., E.D. FREDRICKSON, L.C. JOHNSON, M. OKABAYASHI, PPPL, T.K. JENSEN, R.J. LA HAYE, E.J. STRAIT, J.T. SCOVILLE, A.D. TURNBULL, GA, M. GRYAZNEVICH, UKAEA, DIII-D TEAM — The resistive wall mode (RWM) limits beta and the duration of the high normalized performance phase in DIII-D advanced tokamak plasmas. We are investigating the feasibility of RWM stabilization through application of external magnetic fields in closed loop feedback, using a target plasma with reproducible RWMs and the DIII-D error field correction coils as actuators. Without feedback, an RWM-induced disruption occurs when the plasma rotation decreases below a threshold value. With feedback, the RWM is held to a very small amplitude, and the plasma duration above the no wall beta limit is prolonged by more than 30 wall times  $\tau_w$ . Control is eventually lost when the RWM growth rate becomes exceedingly large ( $>1/\tau_w$ ), presumably due to plasma evolution towards more unstable equilibria. Results are examined in comparison to predictions of a 1-D analytical feedback model that includes effects of non-ideal circuit components.

<sup>1</sup>Supported by US DOE Grant DE-FG02-89ER53297, and Contracts DE-AC03-99ER54463 and DE-AC02-76CH03073.

- Prefer Oral Session  
 Prefer Poster Session

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Special instructions: 4th Oral presentation in DIII-D Session (to follow Strait)

Date submitted: July 12, 2000

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