

**Abstract Submitted for the Forty-Eighth Annual Meeting  
Division of Plasma Physics  
October 30<sup>th</sup>-November 3, 2006, Philadelphia, Pennsylvania**

Category Number and Subject: 5.6.2. DIII-D Tokamak

Theory     Experiment

**Measurement of Plasma Displacement Due to Resonant Field Amplification in High Beta DIII-D Plasmas Using CER Spectroscopy,\*** M.J. Lanctot, A.M. Garofalo, H. Reimerdes, G.A. Navratil, *Columbia U.*, M. Okabayashi, W.M. Solomon, *PPPL*, G.L. Jackson, R.J. La Haye, E.J. Strait, *General Atomics*, Y. In, *FAR-TECH, Inc* – In a plasma with beta above the no-wall limit, externally applied magnetic perturbations can couple to the rotationally stabilized RWM via resonant field amplification [1]. This phenomenon is routinely exploited in the technique of active MHD spectroscopy to test the stability of the RWM [2]. We utilize measurements of the ion temperature from charge exchange recombination spectroscopy at two toroidal locations during MHD spectroscopy experiments to obtain a direct measurement of the n=1 plasma fluid displacement due to the RFA. The displacement profiles are compared with those expected for the stabilized RWM.

[1] A.M. Garofalo, et al., *Phys. Plasmas* **10**, 4776 (2003).

[2] H. Reimerdes, et al., *Phys. Rev. Lett.* **93**, 135002 (2004).

\*Supported by the US DOE under DE-FG02-89ER53297, DE-AC02-76CH03072, DE-FC02-04ER54698, and DE-FG02-03ER83657, and the Fusion Energy Science Fellowship.