

Abstract Submitted for the Forty-Seventh Annual  
Meeting  
Division of Plasma Physics  
October 24–28, 2005, Denver, Colorado

Category Number and Subject: 5.6.2 DIII-D tokamak

Theory     Experiment

**NTM Stabilization With Optimal ECCD Alignment in DIII-D,** \* R.J. La Haye, *GA*, for the DIII-D Team– A key focus of the DIII-D program is establishing the basis for electron cyclotron current drive stabilization of neoclassical tearing modes in ITER. In the recent campaign, important issues evaluated include: (1) the effectiveness of island suppression as a function of the width of the ECCD and alignment of the ECCD with respect to the island location, (2) real-time compensation for the effect of refraction on the ECCD absorption location, and (3) preemptive ECCD for avoiding either the  $m/n=3/2$  or  $m/n=2/1$  mode. With preemptive ECCD, stable operation up to the free boundary beta limit was achieved without the  $m/n=2/1$  NTM becoming unstable. A key element for the success of ECCD in NTM elusion at higher beta is the use of real-time Motional Stark Effect EFIT reconstructions to accurately locate rational surfaces to keep the ECCD aligned without a mode. Plans for the upcoming campaign will also be presented.

\*Work supported by U.S. DOE under DE-FC02-04ER54698.

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