Abstract Submitted for the 49th Annual Meeting
Division of Plasma Physics
November 12-16, 2007, Orlando, Florida

Category Number and Subject: 5.6.2. DIII-D Tokamak

[ ] Theory [x] Experiment

Particle Transport in RMP ELM Suppressed H-modes* R.A. Moyer, J.A. Boedo, V.A. Izzo, I. Joseph, S. Mordijck, D.L. Rudakov, J.H. Yu, *UCSD*, T.E. Evans, N.H. Brooks, T.H. Osborne, P. Gohil, J.S. deGrassie, A.W. Leonard, *GA,* M.E. Fenstermacher, C.J. Lasnier, *LLNL*, J.G. Watkins, *SNL,* T.C. Jernigan, *ORNL*, M. Jakubowski, *MPI-Griefswald*, O. Schmitz, *FZJ,* G. Wang, A.E. White, L. Zeng, *UCLA*, G.R. McKee *U. Wisc.*, C. Rost, J.R. Dorris, *MIT* – Suppression of Type I ELMS with n=3 edge resonant magnetic perturbations (RMP) depends on reducing the pedestal pressure gradient below the peeling-ballooning mode stability limit. This pressure gradient reduction results from a reduction in pedestal particle density and effective particle confinement time τ_p^*. Recent experimental results suggest that this τ_p^* reduction arises from at least two mechanisms: increased ion-scale turbulence in the region 1>r/a>0.75, and improved coupling of the plasma to the pump due to strike point splitting. These mechanisms are observed to increase the density at the pump entrance, leading to improved pumping efficiency and lower τ_p^*.

*Work supported by US DOE under DE-FG02-04ER54758, DE-FC02-04ER54698, W-7405-ENG-48, DE-AC04-94AL85000, DE-AC05-00OR22725, DE-FG03-01ER54615, DE-FG02-89ER53296, and DE-FG02-04ER54235.