

Abstract Submitted  
for the DPP07 Meeting of  
The American Physical Society

**Effects of Resonant Magnetic Perturbations on Edge Turbulence and Profiles in DIII-D**<sup>1</sup> J.A. BOEDO, D.L. RUDAKOV, I. JOSEPH, R.A. MOYER, UCSD, G.R. MCKEE, U. Wisc-Madison, D. REISER, Juelich, T.E. EVANS, W.P. WEST, GA, J.G. WATKINS, SNL — Resonant magnetic perturbations (RMPs) applied to the plasma edge can cause changes in average density and in the turbulence measured by various diagnostics at the edge and scrape-off layer (SOL). The change in turbulence can modify the edge profiles, which can affect the RMP ELM suppression, which is important for ITER. Two main regimes have been explored: 1) low power and collisionality discharges, where it is seen that the RMPs affect the edge profiles across the SOL and into the core; and 2) high power, varying (low, medium and high) collisionality discharges where the average density can increase or decrease but the turbulence in the SOL always increases. In these discharges, the pedestal fluctuations can increase or decrease in narrowly localized radial regions near the pedestal top. When the RMP are rotated toroidally, the fluctuations change amplitude and/or location, indicating that the RMP-induced changes are toroidally localized.

<sup>1</sup>Supported by US DOE under DE-FG02-04ER54698, DE-FG02-89ER53296, DE-FC02-04ER54758, and DE-AC04-94AL85000.

J.A. Boedo  
University of California-San Diego

Date submitted: 21 Jul 2007

Electronic form version 1.4