

Abstract Submitted
for the DPP07 Meeting of
The American Physical Society

Sorting Category: 5.6.2 (E)

Effect of RMP on Edge Density Profiles and Fluctuations in DIII-D¹ L. ZENG, T.L. RHODES, E.J. DOYLE, G. WANG, W.A. PEEBLES, A.E. WHITE, UCLA, T.E. EVANS, General Atomics, R.A. MOYER, UCSD, M.E. FENSTERMACHER, LLNL — Resonant magnetic perturbation (RMP) has been used successfully to suppress Type-I edge localized modes (ELM) in DIII-D. In these ELM-suppressed operations, the detailed edge density profile and evolution of the fluctuations have been investigated in order to study the effect of RMP on edge transport. Utilizing a high-resolution profile reflectometer ($\Delta t = 25 \mu s$, $\Delta r \geq 2$ mm), it is observed that with even parity $n=3$ RMP, pellet injection results in a larger increase in the scrape-off layer density and a smaller increase in the pedestal density gradient, as compared with no RMP. This result is consistent with the decay time of pellet-induced core density perturbation with RMP being shorter than without RMP, indicating an enhanced particle transport during the ELM-suppressed phase. The detailed density profile and fluctuation evolution will be presented for various RMP configurations, e.g. $n=1$, $n=3$, in both low and high collisionalities.

¹Supported by the US DOE under DE-FG03-01ER54615, DE-FC02-04ER54698, DE-FG02-04ER54758, and W-7405-ENG-48.

Prefer Oral Session
 Prefer Poster Session

L. Zeng
zeng@fusion.gat.com
University of California-Los Angeles

Date submitted: 22 Jul 2007

Electronic form version 1.4