Abstract Submitted
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Effect of RMP on Edge Density Profiles and Fluctuations in DIII-D[1] 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 (Δt=25 μs, Δr $\geq$ 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.

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