Abstract Submitted
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Effect of Resonant Magnetic Field Perturbations (RMPs) on Density Profile Evolution in DIII-D[1] L. ZENG, T.L. RHODES, E.J. DOYLE, W.A. PEEBLES, G. WANG, UCLA, T.E. EVANS, GA — The effect of n=3 RMPs on density profile evolution is investigated in low collisionality ITER similar discharges. A significant decrease in plasma density is associated with RMP application and subsequent ELM suppression. Profile reflectometer measurements with high temporal (25 μs) and spatial ($\sim$4 mm) resolution are used to track profile evolution through the ELM suppression. Evidence is presented showing that the enhanced particle transport during RMP operation is not due to more repetitive ELM particle exhaust, but is primarily RMP induced. The magnetic field line loss fraction from the TRIP3D field line tracing code (a proxy for the full plasma response), indicates that the width of the edge stochastic layer exceeds the experimentally observed DIII-D ELM suppression correlation criterion[2] when the rate of pedestal density pump-out reaches a maximum. Detailed profile and n evolution during RMPs and their relation to transport changes are also presented and discussed.

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[2]Fenstermacher, PoP 15, 56122

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