

Abstract Submitted
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Modeling of Plasma Pressure Effects on ELM Suppression With RMP in DIII-D¹ D.M. ORLOV, R.A. MOYER, S. MORDIJCK, UCSD, T.E. EVANS, T.H. OSBORNE, P.B. SNYDER, General Atomics, E.A. UNTERBERG, ORISE, M.E. FENSTERMACHER, LLNL — Resonant magnetic perturbations (RMPs) are used to control the pedestal pressure gradient in both low and high (ν_3^*) DIII-D plasmas. In this work we have analyzed several discharges with different levels of triangularity, different neutral beam injection power levels, and with, β_N ranging from 1.5 to 2.3. The field line integration code TRIP3D was used to model the magnetic perturbation in ELMing and ELM suppressed phases during the RMP pulse. The results of this modeling showed very little effect of β_N on the structure of the vacuum magnetic field during ELM suppression using $n = 3$ RMPs. Kinetic equilibrium reconstructions showed a decrease in bootstrap current during RMP. Linear peeling-ballooning stability analysis performed with the ELITE code suggested that the ELMs, which persist during RMP, i.e. ELMing still is observed, are not Type I ELMs. Identification of these D_α spikes is an ongoing work.

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