

Abstract Submitted
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Interaction of NTM and RMP fields in DIII-D¹ R. NAZIKIAN, Princeton Plasma Physics Laboratory, T.E. EVANS, M.J. SCHAFFER, A.D. TURNBULL, General Atomics — Edge Localized Mode (ELM) suppression by external Resonant Magnetic Perturbations (RMPs) is sometimes accompanied by the growth of internal neoclassical tearing modes. Both Neoclassical Tearing Modes (NTMs) and RMP fields induce a density pump out effect in DIII-D. A question is whether there is a possible synergy between the externally applied RMP field and internal NTM field that could lead to enhanced stochasticity and/or ELM suppression in DIII-D plasmas. A large scalar database study did not reveal a significant correlation between the NTM level and the degree of density pump out observed during application of RMP fields, however individual discharges appear to show an effect. We will present vacuum field calculations of the superposition of modeled internal NTM fields and RMP fields for $n = 2$ and $n = 3$ perturbations in DIII-D in order to better understand the possible interaction of these two sources of magnetic perturbations.

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