

Abstract Submitted
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Plasma Response Modeling of Changes due to Coupling of Error Fields¹ D.M. ORLOV, R.A. MOYER, UCSD, T.E. EVANS, N.M. FERRARO, GA, L. ZENG, UCLA — The applied $n=3$ external perturbation in DIII-D couples constructively or destructively to the dominantly $n=1$ and $n=2$ intrinsic error fields. Recent experiments have shown a very strong dependence of the particle and momentum transport on the relative phase of the I-coil perturbation. In this work, we present the results of the linear two-fluid plasma response modeling (M3D-C1) in terms of the magnetic topology changes associated with alternating relative phase of the perturbation and its effect on the transport in the pedestal region. We show that the intrinsic error fields and sideband modeling in the linear MHD codes significantly change the magnetic topology and produce a wide stochastic region. The effect of the changes in the plasma rotation and the plasma equilibrium on the topology and transport are discussed. The results of the plasma response modeling are compared to the vacuum model and to the experimental measurements.

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