

**Abstract Submitted for the Forty-Eighth Annual Meeting
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Category Number and Subject: 5.6.2. DIII-D Tokamak

Theory Experiment

Improved Stochastic Transport Modeling for DIII-D,*

I. Joseph, R.A. Moyer, *UCSD*, T.E. Evans, T.H. Osborne, M.J. Schaffer *GA*, A. Runov, R. Schneider *MPIG*, S.V. Kasilov, *Kharkov IPT*, M.E. Fenstermacher, M. Groth, C.J. Lasnier, G.D. Porter *LLNL* – The E3D two-fluid code is used to model the effect of resonant magnetic perturbations (RMPs) on DIII-D pedestal and SOL particle and thermal transport. E3D uses Monte Carlo integration to accurately compute the stochastically enhanced perpendicular transport caused by the 3D magnetic geometry. Progress has been made in adding parallel momentum balance and in efforts to use anomalous particle and thermal diffusivities inferred from 1D and 2D transport models. Qualitative agreement with observations of the RMP-induced magnetic footprint structures observed by IR-TV and Xpt-TV have been verified and may lead to direct probes of field penetration. Future improvements require self-consistent modeling of the induced non-axisymmetric currents, electric potential, and neutral transport.

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