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Category Number and Subject: 5.6.3. DIII-D Tokamak

Theory Experiment

Strike Point Splitting in RMP-ELM-free H-mode,* I. Joseph, R.A. Moyer, *UCSD*, T.E. Evans, M.J. Schaffer, W.P. West, *GA*, M. Jakubowski, A.M. Runov, R. Schneider *MPI*, S.V. Kasilov, *Kharkov-IPT*, O. Schmitz, *FZ-Jülich*, M.E. Fenstermacher, M. Groth, C.J. Lasnier, *LLNL*, J.G. Watkins, *SNL* – The E3D two-fluid code is used to model the effect of resonant magnetic perturbations on DIII-D thermal transport. The strike points are predicted to develop multiple striations determined by the invariant manifolds of the perturbed field, and the heat flux distribution is predicted to be well-correlated with the local connection length. Although filtered optical cameras observe striations in particle flux, the energy fluxes measured by infrared cameras and Langmuir probes do not appear to display significant splitting. This indicates that the perturbed field lines do not penetrate far inside the unperturbed separatrix. This is consistent with the fact that the predicted thermal transport is too large to match measured pedestal profiles. Both results may indicate that the rotational plasma response limits the stochastic field to a thin layer near the separatrix.

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