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Field Line modeling of divertor footprints due to RMPs[1] BENJAMIN P. RIVIERE, D.M. ORLOV, R.A. MOYER, UCSD, S.P. DUTTA, IPR, T.E. EVANS, GA — In ITER H-mode plasmas, high pedestal pressures form edge-localized modes (ELMs) which must be controlled. Resonant Magnetic Perturbations (RMPs) produce magnetic fields that have proven to be effective for ELM suppression in several existing tokamaks, but the effects of RMPs on divertor conditions are not yet well understood. Plasma response modeling has shown that RMPs can cause pedestal field lines to strike the divertor targets, potentially resulting in high heat fluxes due to the large parallel heat transport along these open field lines. Here, we use the TRIP3D code to study the properties of field lines connecting the inner and outer divertor plates through the pedestal plasma. TRIP3D results are compared to M3D-C1 simulation showing differences in the density of field lines hitting the divertor targets. These studies are needed to develop tools for quantifying the target heat flux from plasma response codes such as M3D-C1. These results will also serve as standard test cases for verifying future model iterations being implemented in both the vacuum field and plasma response codes.

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