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Interpretative Modeling of RMP Effect on Edge Pedestal Transport[1] T. WILKS, W.M. STACEY, J.P. FLOYD, Georgia Institute of Technology, T.E. EVANS, General Atomics — Resonant magnetic perturbation (RMP) fields produced by 3D control coils are considered a viable option for the suppression of edge localized modes in future tokamaks, so an analysis of the diffusive and non-diffusive transport effects of these perturbations in the plasma edge has been performed. Repeated reversals of the toroidal phase of the I-coil magnetic field in RMP shot 147170 on DIII-D has generated uniquely different edge profiles, implying different transport phenomena. The causes, trends, and implications of RMP toroidal phase change on transport are analyzed by comparing various parameters at $\phi = 0$ and 60 degrees with an I-coil toroidal mode number of $n = 3$. The change in the diffusive and non-diffusive transport in the edge pedestal for this RMP shot is characterized by interpreting the ion and electron heat diffusivities and the ion diffusion coefficient and pinch velocity in the edge pedestal region for both phases.

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