

Abstract Submitted
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Transport with Reversed E_r in Gamma -10, LAPD and the Sao Paulo Tokamak SEAN FU, P.J. MORRISON, W. HORTON, Institute for Fusion Studies, IBERE CALDAS, USP/Sao Paulo/ Brazil, INSTITUTE FOR FUSION STUDIES TEAM, UNIVERSITY OF SAO PAULO TEAM — The understanding of how and when the reversed radial electric field produces an internal transport barrier is still poorly understood. There are two linked aspects to the problem: (i) the change in the plasma instabilities and thus the fluctuation spectrum from changes away from or towards the generalized Rayleigh condition for destabilizing the drift wave/ Rossby wave instabilities and (2) for a fixed fluctuation spectrum the role of the E_r reversal in creating a layer where the resonant surfaces do not overlap so the condition for the onset of diffusion from overlapping resonances in phase space is not satisfied. We look at a model that is representative of the externally controlled E_r shear in the G-10 Tsukuba tandem mirror and in the wall biasing experiments in the LAPD and the Sao Paulo Tokamak to ask when the effects are dominant and how they may compete with each other to determine the conditions for the transport suppression that is reported in numerous plasma experiments.

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