

## Modification of Edge Plasma Turbulence by External Magnetic Perturbations\*

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We present results from a study on effects of resonant magnetic perturbations (RMP) in the DIII-D tokamak on radial turbulent transport in the scrape-off layer (SOL), both broadband and intermittent. The non-axisymmetric perturbations have been applied in DIII-D via an internal coil set.<sup>1</sup> Under conditions where the applied perturbation is resonant with a  $q=3$  surface just inside the separatrix, intermittent “blobby” transport in the region of the separatrix and SOL is seen to increase. Broadening of the SOL  $T_e$  and  $n_e$  profiles is concomitant with changes in the intermittent transport. The intermittent objects become hotter, denser and more frequent at a given radius when the RMP fields are applied. Measured SOL turbulent radial particle and heat fluxes increase and are consistent with the broadening of the profiles. Hypotheses regarding mechanisms leading to the increased intermittency will be compared to the fast stroke probe data. Methods that allow a degree of control of the intermittent transport may be useful in the control of divertor and particle fluxes. The ability to control the extreme heat and particle fluxes expected in ITER could be very advantageous. For example, the increased transport may be related to the suppression of ELMs previously reported in these discharges.<sup>1</sup>

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