

Possibility of ELM control by resonant magnetic perturbation.

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The effect of resonant magnetic perturbation (RMP) on the plasma edge transport is analyzed numerically for JET and DIII-D H-modes using transport code TELM. In the presence of the RMP created by external coils the radial transport is increased in the pedestal region due to the stochastic behaviour of the magnetic field lines. This effect can be used for edge transport control and in particular total ELM suppression is expected as demonstrated experimentally in DIII-D. Possible coils design and equilibrium configurations for main JET scenarios (standard H-mode, Reversed Shear (RS) and Hybrid scenario) are considered in order to optimize the RMP spectrum to create ergodic layer mainly in the pedestal region minimizing error fields in the plasma center.