

**Abstract Submitted for the Forty-Eighth Annual Meeting
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Research

Theory Experiment

Particle Flux Profiles During ELM Control Experiments,*
A. Nelson, *U. of St. Thomas*, J.G. Watkins, *SNL*, I. Joseph, R.A. Moyer, *UCSD*, T.E. Evans, *GA*, C.J. Lasnier, M.E. Fenstermacher, M. Groth, *LLNL* – Periodic magnetohydrodynamic instabilities known as edge-localized modes (ELMs) present a significant obstacle in plasma fusion operation in magnetic confinement reactors due to impulsive heating of the divertor target plates and inner chamber walls. At DIII-D, resonant magnetic perturbations at the plasma edge have been used to reduce or eliminate ELMs in high-confinement mode (H-mode) plasmas. A new array of high spatial resolution Langmuir probes capable of handling large heat fluxes have been installed along the divertor target plates at DIII-D to investigate the effect of resonant magnetic perturbations on the divertor plasma. Profiles of the target plate particle fluxes at the outer strikepoint will be examined to characterize the edge plasma response under ELM-suppressed conditions. Experimental data can then be used to validate theoretical predictions of the non-axisymmetric particle flux distribution.

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