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Category Number and Subject:

Theory      Experiment

**Turbulence Dynamics During RMP-ELM Suppressed Discharges,\*** G.R. McKee, Z. Yan, *U. Wisc.*; O. Schmitz, *IPP Juelich*; R.J. Buttery, T.E. Evans, M.R. Wade, *General Atomics*; L. Schmitz, *UCLA*; R.A. Moyer, *UCSD* — Long-wavelength density fluctuations in the plasma edge region ( $0.75 < r/a < 1.0$ ) change markedly in response to applied resonant magnetic field perturbations, used to suppress ELMs. The RMP-enhanced fluctuations, measured with a 2D array of BES channels, have a radial correlation length of a few cm and span 50-400 kHz in frequency. Modulated RMPs are used to examine the fast temporal dynamics of the turbulence and related parameters. Inside of the pedestal ( $0.8 < r/a < 0.9$ ), turbulence is found to change rapidly with the applied RMP, with a few ms response time, suggesting that enhanced turbulence may play a causative role in the observed increased particle and momentum transport. Fluctuations in the pedestal region exhibit a more complex response, initially decreasing with reduced RMP, but subsequently increasing as the pedestal pressure gradient increases. New measurements from upcoming experiments on the  $q_{95}$  dependence of the turbulence and flow response to RMPs will also be presented.

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