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Turbulence Dynamics During RMP-ELM Suppressed Discharges[1] G.R. MCKEE, Z. YAN, U. Wisc-Madison, 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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