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Gyrokinetic Simulations of RMP Effects on DIII-D Edge Turbulence SAM TAIMOURZADEH, Univ of California - Irvine, IHOR HOLOD, Lawrence Livermore National Laboratory, ZHIHONG LIN, University of California, Irvine, RAFFI NAZIKIAN, Princeton Plasma Physics Laboratory, ANDREAS WINGEN, Oak Ridge National Laboratory — It has been demonstrated that edge localized modes (ELMs) can be fully suppressed in DIII-D H-mode plasmas with the application of resonant magnetic perturbations (RMPs), and that there is a corresponding reduction of pedestal gradients, changes in rotation, and changes in the radial electric field (E_r) profile [Nucl. Fusion 55, 023002 (2015)]. However, with the application of RMPs there is also an increase in long wavelength, electrostatic turbulence on top of the pedestal, as observed with BES, DBS, and other fluctuation diagnostics. Using the Gyrokinetic Toroidal Code (GTC), DIII-D shots 158103, at times 3750 ms (ELMing w/ RMP) and 3050 ms (ELM suppressed w/ RMP), and shot 158104.1350 (ELMing) are investigated, and a link between increased pedestal top turbulence, during the ELM suppressed phase, and a shift in the E_r profile is demonstrated.

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