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Gyrokinetic Simulations of Electrostatic Turbulence Reduction due to Radial Electric Field Shear in DIII-D SAM TAIMOURZADEH, IHOR HOLOD, ZHIHONG LIN, University of California, Irvine, RAFFI NAZIKIAN, General Atomics — 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 short wavelength, electrostatic turbulence on top of the pedestal, as observed with BES, DBS, and other fluctuation diagnostics. The effects of E_r shear on this turbulence, is investigated using gyrokinetic simulations via the gyrokinetic toroidal code (GTC) for in DIII-D shot 158103, at times 3750 ms (RMP on, ELM active) and 3050 ms (RMP on, ELM suppressed).

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