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Gyrokinetic particle simulation of edge turbulence in HL-2A tokamak FENG LIU, Southwestern Institute of Physics, YONG XIAO, WENLU ZHANG, University of California, Irvine, JIAQI DONG, Southwestern Institute of Physics, IHOR HOLOD, University of California, Irvine, KAIJUN ZHAO, Southwestern Institute of Physics, ZHIHONG LIN, University of California, Irvine — Strong correlation between high frequency microturbulence and low frequency geodesic acoustic mode (GAM) has been observed in the edge plasmas of the HL-2A tokamak[1], suggesting possibility of turbulence generation of GAM and GAM modulation of turbulence. In this work, we use the gyrokinetic toroidal code (GTC)[2] to study the nonlinear interaction between turbulence and GAM (and zonal flows) in realistic parameters of HL-2A edge plasmas with collisions and steep pressure gradients. Initial GTC linear simulation finds strongly unstable trapped electron mode (TEM). Effects of collisions will be studied and nonlinear simulation results will be reported. Work supported by SciDAC GPS Center.

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