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Gyrokinetic Simulation of Reverse Shear Alfven Eigenmodes in DIII-D Plasmas[1] YANG CHEN, University of Colorado at Boulder, SCOTT PARKER, JIANYING LANG, GUO-YONG FU — We present simulation results of the beam driven Reverse Shear Alfven Eigenmodes (RSAE) observed in DIII-D discharge 142111 using the GEM code. Bulk ions and energetic particles are gyrokinetic, but electrons are described by a mass-less fluid model. We observed modes with frequencies sensitive to qmin, and the mode structure dominated by a single poloidal harmonics, suggesting RSAE. The frequency chirping range in the simulation is in agreement with experimental observations. The mode is sensitive to the beam distribution, and for some beam distribution, as qmin is decreased a transition in the most unstable mode is seen. The new mode has a higher frequency that continues to chirp up in time. The beam particles distribution is currently assumed to be slowing-down and isotropic in pitch-angle, but more realistic distributions will be used. Nonlinear simulations will be carried out to determine the saturation amplitude of RSAE with the beam particle collisional effects. We also report code verification results between GEM and M3D-K.

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