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Progress in kinetic MHD simulation of magnetic reconnection in Harris sheet equilibrium JIANHUA CHENG, YANG CHEN, SCOTT E. PARKER — We have previously developed a Lorentz force ion, fluid electron kinetic MHD hybrid model [D. Barnes, *et al*, Phys. Plasmas **15**, 055702 (2008)]. This model has been extended to gyrokinetic electrons. Here we focus on the implementation of an isothermal fluid electron model in the GEM turbulence code. A second-order accurate implicit scheme that generalizes the previous implicit scheme for Vlasov ions and drift kinetic electrons [Chen and Parker, submitted] has been implemented. The generalized Ohm's law is solved for the Harris sheet equilibrium configuration by Fourier decomposing the electric field along the equilibrium field and solving for each Fourier component in the direction perpendicular to the current sheet using direct matrix inversion. This presentation focuses on the simulation of Alfvén waves, ion sound waves and the Whistler waves in a slab. Preliminary results for the 1-D Harris sheet equilibrium with a guide field will be reported.

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