

Abstract Submitted
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Gyrokinetic simulations of magnetic reconnection PAOLO RICCI, BARRETT ROGERS, Dartmouth College, WILLIAM DORLAND, University of Maryland — We present linear and nonlinear simulations of magnetic reconnection in a simple slab geometry using the GS2 code. The GS2 code treats both the electrons and the ions gyrokinetically, and includes effects such as trapped particles and the out-of-plane magnetic field perturbations due to finite plasma beta. We show numerical convergence studies in both the linear and nonlinear cases, and compare the GS2 results to those obtained using a simple two-fluid model. We address the dependence of the reconnection rate on the ion-to-electron temperature ratio, the plasma beta, the simulation box geometry, and the mass ratio.

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