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Gyrokinetic simulation of the mirror instability and comparison with quasilinear results and hybrid simulations PETER PORAZIK, JAY JOHNSON, Princeton Plasma Physics Laboratory, PETER YOON, University of Maryland, PAVEL TRAVNICEK, UC, Berkeley — Nonlinear evolution of the mirror instability is studied using gyrokinetic particle simulation in three-dimensional uniform slab. Plasma beta and temperature anisotropy are chosen for which the quasilinear numerical solutions show that the mirror instability dominates over the electromagnetic ion cyclotron instability, and the gyrokinetic simulation results for these parameters are compared to quasilinear numerical solutions, and to hybrid simulations. Final structures in planes parallel and perpendicular to the magnetic field are also addressed. The motivation of the present study is to help guide the interpretation of observations and improve efficiency of future simulation models.

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