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Effects of kinetic electrons on Alfvenic ITG in global electromagnetic gyrokinetic particle simulations Y. NISHIMURA, Z. LIN, L. CHEN, UC-Irvine — Employing an electromagnetic gyrokinetic simulation model[1] in a global tokamak geometry,[2] trapped electron effects on the finite beta ITG modes are investigated. With the fluid-kinetic hybrid electron model,[1] non-adiabatic kinetic electrons are perturbatively added on top of the adiabatic fluid electrons. Details on the formulation and the implementation of the electron drift kinetic equation is discussed. This work is supported by U.S. Department of Energy, Cooperative Agreement DE-FC02-04ER54796 and 06ER54860, and in part by SciDAC Center for Gyrokinetic Particle Simulation of Turbulent Transport in Burning Plasmas and Center for Plasma Edge Simulation.

[1]Z. Lin and L. Chen, Phys. Plasmas **8**, 1447 (2001).
[2]Y. Nishimura, Z. Lin, and W. X. Wang, Phys. Plasmas **14**, 042503 (2007).

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