

Abstract Submitted  
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**Nonlinear electromagnetic gyrokinetic particle simulations with the electron hybrid model** Y. NISHIMURA, Z. LIN, L. CHEN, UC-Irvine, T. HAHM, W. WANG, W. LEE, PPPL — The electromagnetic model with fluid electrons is successfully implemented into the global gyrokinetic code GTC.<sup>1</sup> In the ideal MHD limit, shear Alfvén wave oscillation and continuum damping is demonstrated. Nonlinear electromagnetic simulation is further pursued in the presence of finite  $\eta_i$ .<sup>2</sup> Turbulence transport in the AITG unstable  $\beta$  regime is studied. This work is supported by Department of Energy (DOE) Grant DE-FG02-03ER54724, Cooperative Agreement No. DE-FC02-04ER54796 (UCI), DOE Contract No. DE-AC02-76CH03073 (PPPL), and in part by SciDAC Center for Gyrokinetic Particle Simulation of Turbulent Transport in Burning Plasmas.

<sup>1</sup>Z. Lin, *et al.*, *Science* **281**, 1835 (1998).

<sup>2</sup>F. Zonca and L. Chen, *Plasma Phys. Controlled Fusion* **30**, 2240 (1998); G. Zhao and L. Chen, *Phys. Plasmas* **9**, 861 (2002).

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