

Abstract Submitted
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Simulating MHD/Fluid type electromagnetic modes in the total-f gyrokinetic code XGC1 J. LANG, S.-H. KU, C.-S. CHANG, PPPL, Y. CHEN, S.E. PARKER, U. of Colorado at Boulder — For a more complete description of the MHD/fluid type mode activities including ELMs and neoclassical tearing modes, their interaction with the kinetic neoclassical and microturbulence dynamics needs to be simulated together. Evolution of the background profile should also be captured self-consistently. We report recent development activity of the MHD/fluid modes capability in the total-f gyrokinetic codes in the limit of small delta-B. Verification of the Alfvén wave modes, low-n tearing modes, and transition from ITG to KBM modes will be presented. Plan for further development will be discussed. Important implication of the new development to the XGC1 program and fusion physics will also be discussed.

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