

Abstract Submitted
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Global gyrokinetic simulations of MHD-modes in tokamak plasmas IGOR HOLOD, ZHIHONG LIN, YASUTARO NISHIMURA, LIU CHEN, UC-Irvine — Linear stability properties of global MHD modes, e.g., TAE and EPM, are determined by competition of dissipative kinetic effects and drive mechanisms, with energetic particles playing a significant role. The simulations of global MHD modes are performed using gyrokinetic toroidal particle-in-cell code (GTC) where ions and energetic particles are treated kinetically while hybrid scheme is implemented for electrons [Z. Lin, L. Chen, Phys. Plasmas 8, 1447 (2001)]. Linear dispersion from global kinetic simulations will be compared to theory and MHD simulations. The work was supported by DOE grants DE-FC02-04ER54796 and DE-FG02-03ER54724.

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