

Abstract Submitted  
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**Hybrid Simulations of Alpha Particle Effects on MHD Modes in ITER** GUOYONG FU, Princeton Plasma Physics Laboratory — Global hybrid simulations of alpha particle effects on MHD modes have been carried out using the M3D code in burning plasmas. In the hybrid model of M3D, the bulk plasma is described by full MHD while energetic ions are described by drift-kinetic equations. The code uses linear finite elements on unstructured mesh in poloidal planes and finite difference in toroidal direction. For ITER parameters and profiles, It is shown that the elongation of ITER cross-section significantly reduces the alpha particle stabilization of the internal kink mode. The fishbone mode is found to be stable at the nominal alpha beta value. Results will be presented on linear and nonlinear evolutions of alpha particle-driven Alfvén eigenmodes.

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