

Abstract Submitted
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Kinetic Effects of a Non-Maxwellian Distribution of Energetic Particles on 2/1 Stability¹ R. TAKAHASHI, D.P. BRENNAN, University of Tulsa, C.C. KIM, University of Washington, A.D. TURNBULL, R.J. LA HAYE, General Atomics — Recent experiments have shown JET discharges to be stable for values of $\beta_N/4\ell_I$ as a function of ρ^* far exceeding where JT-60U, DIII-D, and ASDEX-U are unstable. It is conjectured that kinetic effects of energetic particles can play a crucial role in the stability of the 2/1 mode in JET. Using model equilibria based on experimental reconstructions, the non-ideal MHD stability and nonlinear evolution of the 2/1 mode is investigated including a delta-f PIC model for the energetic particles coupled to the MHD solution. Modifications of the ideal outer region solution of linear resistive MHD codes are discussed, along with preliminary results from initial value computations.

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