

Abstract Submitted
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Low Frequency Response of Plasma to MHD Perturbations¹ M.S. CHU, General Atomics, Y.Q. LIU, Chalmers University — MHD stability of the plasma depends critically on the frequency and wave length of the perturbation. Future tokamaks are expected to operate in regimes where the external macro-scale perturbations have much lower frequencies than the intrinsic dynamical time scales of the particles [1]. This situation calls for a detailed re-examination of the assumptions on previous models of the response of the plasma to MHD perturbations [2]. The kinetic formulation of MHD response [3] is examined numerically in this work. The energy and momentum flux across the plasma surface is expressed in terms of the MHD perturbations. Implication on the stability and plasma response [4] relevant for the resistive wall mode, with its time scale dramatically reduced by the external resistive wall, is discussed.

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M.S. Chu
General Atomics

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