

Abstract Submitted
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Error field and locked mode threshold studies on Alcator C-Mod¹

S.M. WOLFE, R.S. GRANETZ, I.H. HUTCHINSON, MIT PSFC, T.C. HENDER, D.F. HOWELL, UKAEA — Non-axisymmetric fields of order $\tilde{B}/B \sim 10^{-4}$ are observed to destabilize non-rotating tearing modes (locked modes) in present-day tokamaks. Prediction of the error-field sensitivity and determination of the requirements for corrective measures is an important issue for ITER. At Alcator C-Mod a set of external coils (A-coils), producing predominantly n=1 fields with adjustable toroidal phase and poloidal (m)spectra, is routinely used to compensate the intrinsic error fields, resulting in substantial expansion of the accessible operating space. Recent experiments have investigated the scaling of the locked mode threshold, with particular attention to the dependence on toroidal field and verification of non-dimensional scaling constraints, in order to provide an extrapolation to ITER. Additional experiments were directed to improving characterization of the intrinsic error field on C-Mod.

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