Abstract Submitted
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Internal Mode Structure of Resonant Field Amplification in DIII-D[1] M.J. LANCTOT, G. NAVRATIL, H. REIMERDES, Columbia U., I.N. BOGATU, Y. IN, FAR-TECH, Inc., M.S. CHU, A.M. GAROFALO, G.L. JACKSON, R.J. LA HAYE, E.J. STRAIT, A.D. TURNBULL, General Atomics, Y.Q. LIU, EURATOM/UKAEA, M. OKABAYASHI, W.M. SOLOMON, PPPL — The sensitivity of high-β plasmas to error fields is caused by a paramagnetic plasma response to error fields with a topology that is resonant with the structure of weakly-damped resistive wall modes (RWM), a phenomenon referred to as resonant field amplification (RFA) [1]. The RFA has been driven in DIII-D H-mode plasmas by applying slowly-rotating, low-n magnetic fields with a set of 12 coils located inside the vacuum vessel. Measurements of the RFA mode structure have been obtained using a pair of soft x-ray photodiode cameras. A virtual diagnostic has been developed to compare the measurements to the eigenfunctions for the free boundary external kink and the RWM, which were calculated using the stability codes GATO and MARS-F. Details of the analysis will be presented.

[1] A.H. Boozer, Phys. Rev. Lett. **86**, 5059 (2001).

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