

Abstract Submitted
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Tearing-Mode Excitation by Counter ECCD for Validation of Resistive MHD Models in DIII-D¹ L.L. LAO, R. PRATER, R.J. LA HAYE, M.S. CHU, A.W. HYATT, T.C. LUCE, T.H. OSBORNE, E.J. STRAIT, G. ABLA, V.S. CHAN, A. COLLIER, A.D. TURNBULL, GA, V.A. IZZO, UCSD, W. GUY, G. LI, C. PAN, Q. REN, ASIPP, R. SRINIVASAN, IPR, J.M. PARK, ORNL — Resistive MHD modes play an important role in tokamak plasma confinement and stability. Although ideal MHD is well established as a reliable predictive tool for tokamak stability limit, resistive MHD is less understood. In this DIII-D experiment, $3/2$ tearing modes of varying amplitudes are systematically excited and their characteristics documented for validation of their linear stability threshold and saturated island structure against PEST3 and NIMROD predictions. Up to 3 MW of counter ECCD power is injected into H-mode plasmas. $3/2$ tearing modes with increasing amplitudes are driven as the amount of injected counter ECCD power is stepped up. Detailed stability analyses using PEST3 and NIMROD are being performed for comparison against experimental observations with accurately reconstructed equilibria that allow for the counter ECCD effects. Results will be presented.

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