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[ ] Theory [ X ] Experiment

**Measurements of Islands and Screening with Resonant Magnetic Perturbations on DIII-D,\*** M.W. Shafer, E.A. Unterberg, A. Wingen, J.M. Canik, J.D. Lore, J.H. Harris, D.L. Hillis, S.P. Hirshman, *ORNL*; T.E. Evans, N.M Ferraro, *GA*, M.E. Austin, *UT-Austin* — Recent experiments on DIII-D have advanced the understanding of plasma response to resonant magnetic perturbations (RMPs) in low magnetic shear, inner wall limited, L-mode plasmas. Fine torque scans using mixtures of co- and counter-current neutral beam injection reveal that large RMP-induced  $n=1$  islands are present at multiple mode-rational surfaces ( $m=2,3,4$ ) at low rotation, but are completely screened at higher rotation. There is an observed nonlinear threshold for this torque, where small torque increments lead to a completely screened plasma response. Initial analysis indicates that near-zero  $\omega_{e,\perp}$  is found not to be a sufficient condition for island formation, as it is observed to be approximately zero in cases where islands are completely screened. Comparisons are underway with two-fluid MHD modeling via the M3D-C1 code, 3D fluid transport with the EMC3-EIRENE code and nonlinear resistive MHD with the SIESTA code.

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