Abstract Submitted
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Effects of Plasma Shaping on Intrinsic Rotation in DIII-D[1] J.S. DEGRASSIE, T.H. OSBORNE, General Atomics, B.A. GRIERSON, PPPL, G.R. MCKEE, U. Wisc-Madison, T.L. RHODES, UCLA — Intrinsic rotation in an axisymmetric tokamak must have its source in a momentum flux that passes through the boundary of the plasma. Since it is well-known that shaping in diverted discharges modifies the pedestal in H-mode discharges [1], we have performed experiments on DIII-D in which the shaping is changed during a discharge and the accompanying change in the intrinsic rotation profile is measured. We see that the change in intrinsic rotation magnitude in the outer plasma region, rho = 0.7, is correlated with the plasma stored energy to a large extent. At the next level of response, there are changes in the rotation profiles related to the pedestal pressure, and in the interior possibly to the q profile. An additional focus of these experiments was to make measurements of the shape-induced changes in turbulence strength and spectra with Beam Emission Spectroscopy and Doppler Back Scattering. Both show clear changes in frequency with, for example, a change in the major radius of the X-point in a single null diverted plasma. [1] R.J. Groebner et al, Nucl. Fusion **49**, 085037 (2009).

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