

**Abstract Submitted for the Forty-Ninth Annual Meeting
Division of Plasma Physics
November 12–16, 2007, Orlando, Florida**

Category Number and Subject:

Theory Experiment

H-Mode Pedestal Toroidal Velocity in DIII-D,* J.S. deGrassie, R.J. Groebner, K.H. Burrell, GA, W.M. Solomon, PPPL, and DIII-D Team – Tokamak discharges have nonzero toroidal momentum in the absence of any auxiliary injected torque [1]. It is important to understand this “intrinsic rotation” in order to extrapolate to burning plasmas. The interface between the plasma and the boundary can possibly provide an edge momentum flux, or nonzero velocity boundary condition. In order to see if it is possible to extract any boundary condition we have looked at the DIII-D database of measurements of toroidal and poloidal velocity in the region of the edge density pedestal in H-mode discharges, including Ohmic and ECH H-modes with no auxiliary torque, discharges with rotation driven by uni-directed neutral beam injection (NBI), and discharges with near-balanced NBI, which portend to allow measurements of intrinsic rotation at high auxiliary power levels. The consistency of an NBI momentum flux through the pedestal vs intrinsic rotation will be evaluated. Comparison will be made with applicable neoclassical and turbulence theories of intrinsic rotation.

[1] J.S. deGrassie, *et al.*, Phys. Plasma **14**, 056115-1 (2007).

*Supported by the US DOE under DE-FC02-04ER54698 and DE-AC02-76CH03073.