Abstract Submitted
for the DPP05 Meeting of
The American Physical Society

**Turbulence Dynamics Across the L-H Transition in DIII-D**[1] D.J. SCHLOSSBERG, R.J. FONCK, G.R. MCKEE, D.K. GUPTA, M.W. SHAFER, U. Wisconsin-Madison, G.R. TYNAN, C. HOLLAND, UCSD — Turbulence characteristics and the effects of sheared poloidal flows on turbulence in the pedestal region of DIII-D plasmas preceding and across the L-H transition are examined using high time resolution time delay estimation (TDE) as well as nonlinear analysis techniques. Density fluctuation measurements are obtained with the recently upgraded, high-sensitivity beam emission spectroscopy system (BES). Poloidal flow shear rates in L-mode, measured with BES and CER, are found to be roughly one quarter the measured decorrelation rates, while in H-mode, they are roughly four times the decorrelation rate in the pedestal region, consistent with the E×B shear suppression of turbulence model for the LH transition. Furthermore, H-mode eddy structures have nearly double the poloidal elongation as L-mode turbulence structures. The evolution of this structure asymmetry as well as counter-propagating modes prior to and during the L-H transition will be investigated using biorthogonal decomposition methods.

[1]Work supported by US DOE under DE-FG03-96ER54373 and DE-FG02-04ER54758.

T.S. Taylor
General Atomics

Date submitted: 21 Jul 2005 Electronic form version 1.4