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The Dynamics of Turbulence and Shear Flow Approaching the L-H transition,* Z. Yan, G.R. McKee, *U. Wisc.*; J.A. Boedo, D.L. Rudakov, G.R. Tynan, P.H. Diamond, *UCSD*; R.J. Groebner, T.H. Osborne, *General Atomics*; G. Wang, L. Schmitz, *UCLA* — Comprehensive 2D turbulence and turbulent flow measurements have been obtained before, during, and after the L-H transition during an ion gyro-radius scan in DIII-D to understand if the strong threshold dependence on B_T is connected to turbulence behavior. Other non-dimensional parameters (ν^*, q_{95}, β) were kept nearly constant at the pedestal top. The amplitude of long wavelength density fluctuations, measured with the 2D BES array, is found to scale approximately with ρ^*. A mean shear flow layer is observed near r/a~0.92 with a shearing rate exceeding the local turbulence decorrelation rate. Velocimetry shows that the GAM, which peaks near r/a~0.9, appears a few hundred ms before the L-H transition, and decays in amplitude approaching the transition, while a lower-frequency flow structure increases in amplitude during this period. New measurements of the density dependence of the turbulence-zonal flow system will also be presented.

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