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Edge Turbulence Velocity Flow Shear and Decorrelation Time Dynamics at an LH Transition¹ G.R. MCKEE, C. FENZI, R.J. FONCK, M. JAKUBOWSKI, B.P. LESLIE, University of Wisconsin, K.H. BURRELL, T.N. CARLSTROM, General Atomics — Two-dimensional observations of turbulent density fluctuations with the BES diagnostic system at the edge of DIII-D plasmas allow for direct measurement of the velocity flow field and the resulting flow shear of the fluctuations. These measurements also allow for determination of the radially-dependent turbulence decorrelation times as well as radial and poloidal correlation lengths. The dynamics of these quantities just prior to an LH transition are examined. Decorrelation rates ($1/\tau_c$) near 10^5 s^{-1} are typical, while flow shears, $\partial v_\theta / \partial r$, of this order of magnitude are observed in the edge. In addition, nonlinear mode-mode coupling and the evolution of the 2D eddy structure are examined. Application of these techniques to core measurements with a Lyman-alpha based BES diagnostic is considered.

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Prefer Oral Session
 Prefer Poster Session

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Special instructions: 15th poster in Transport Core Session (after Jakubowski)

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