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Turbulence Characteristics Near the L-H Transition in NSTX Ohmic Discharges[1] S. KUBOTA, W.A. PEEBLES, UCLA, S.J. ZWEBEN, R.E. BELL, S.M. KAYE, B.P. LEBLANC, PPPL, R. MAQUEDA, Nova Photonics, R. MAINGI, C.E. BUSH, ORNL, R. RAMAN, U. Washington — Ohmic discharges offer a good template for studying the L-H transition in NSTX. Peaked density profiles provide good accessibility for the reflectometers, there are no fast-ion driven fluctuations to complicate the turbulence measurements, and issues due to external momentum input and hot fueling from neutral beams is avoided. Details of NSTX Ohmic H-modes have been reported previously [C.E. Bush et al., APS-DPP08, NP6.00091]. Here we present additional turbulence measurements near the L-H transition using FM-CW reflectometry (profile, correlation and backscattering) and high-speed gas puff imaging (GPI). Reflectometry shows changes in the turbulence localized to the ETB radius: 1) $\tilde{n}/n$ decreases across a broad spectral range (k_r=0−20 cm^{-1}), and 2) the radial correlation length drops from ∼1−2 cm to less than 0.5 cm. GPI sees coherent zonal flows at ∼3−4 kHz prior to the L-H transition. The relationship between these observations and quantities such as the mean flow shear and edge gradients, as well as their connection to the ETB formation, will be investigated.

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