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Edge Turbulence in High Density Ohmic Plasmas on NSTX K.M. WILLIAMS, S.J. ZWEBEN, PPPL, R. MAINGI, C.E. BUSH, ORNL, R.J. MAQUEDA, Nova Photonics, V. SOUKHANOVSKII, LLNL, J. BOEDO, General Atomics, NSTX TEAM — The Gas Puff Imaging Diagnostic (GPI) consists of a controlled neutral gas puff of deuterium, which increases the brightness of the turbulent emission fluctuations at the plasma edge. A 2-D measurement of the edge turbulence from D_{α} light emission is obtained using a high-speed camera sharing the same viewing area with 13 discrete chords, arranged in a radial-poloidal cross pattern. Light collected from the viewing area 20cm above the outer mid-plane is gathered by an array of 13 discrete optical fibers, each connected to a photomultiplier tube/preamplifier providing time series data at a rate of 500kHz over 120ms. Using the GPI, edge turbulence is studied in high-density, Ohmic, lower single null deuterium plasmas near the Greenwald density. Densities up to 0.8 times the Greenwald density were achieved using a combination of low and high field side gas injection as well as super sonic gas injection for fueling. The data analysis as well as the characteristic features of the turbulence in both high-density and low-density regimes will also be discussed in this poster.

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