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Density fluctuation measurement by FIReTIP for the Enhanced Pedestal H-mode on NSTX[1] K.C. LEE, C.W. DOMIER, N.C. LUHMANN, JR., University of California Davis, R. KAITA, Princeton Plasma Physics Laboratory, R. MAINGI, Oak Ridge National Laboratory, NSTX RESEARCH TEAM — The multi-channel Far Infrared Tangential Interferometry/Polarimetry (FIReTIP) system has been used to measure changes in the electron density fluctuation spectrum for the Enhanced Pedestal H-mode (EPH-mode) on the National Spherical Torus Experiment (NSTX). Data shows dramatic density fluctuation suppression as the EPH-mode is triggered, similar in nature to the turbulence reduction present at the conventional L\H transition. Coherent fluctuations are observed by FIReTIP during the EPH-mode with frequencies greater than 10 kHz. Density fluctuation measurements from FIReTIP edge channels with different tangency radii during the EPH-mode are compared with L-mode and H-mode cases, and are presented together with a discussion of a possible EPH-mode triggering mechanism based on the gyro-center shift (GCS) theory.

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