

Abstract Submitted
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Study of statistical properties of edge turbulence in NSTX with the GPI diagnostic MATTEO AGOSTINI, Consorzio RFX, STEWART ZWEBEN, PPPL, ROBERTO CAVAZZANA, PAOLO SCARIN, GIANLUIGI SERIANNI, Consorzio RFX, RICARDO MAQUEDA, Nova Photonics, DAREN STOTLER, PPPL — The Gas Puff Imaging (GPI) diagnostic is used to study the edge turbulence of the NSTX spherical tokamak. The statistical properties of the edge fluctuations are characterized as a function of the radial position, using the Continuous Wavelet Transform, showing their lack of self-similarity. Bursts are identified in the signals; the correlation between the electron pressure radial profile and the percentage of bursts is shown. The difference between L and H mode is studied, correlating it with the amount of coherent structures in the edge plasma. In the H-mode discharges the linear density of structures decreases drastically compared to the L-mode case; it is also shown that such observation cannot be accounted for by the difference in the poloidal propagation velocity measured near the separatrix. The spectral properties are studied by measuring the power spectrum as a function of the poloidal wavenumber k : a difference between the two confinement regimes is found.

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