

Abstract Submitted
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Characterisation of intermittent turbulence in the edge of the NSTX experiment with the Gas Puff Imaging MATTEO AGOSTINI, Consorzio RFX, Associazione EURATOM-ENEA sulla fusione, Padova, Italy, STEWART ZWEBEN, Princeton Plasma Physics Laboratory, Princeton, New Jersey, USA, RICARDO MAQUEDA, Nova Photonics Inc., Princeton, New Jersey, USA, DAREN STOTLER, Princeton Plasma Physics Laboratory, Princeton, New Jersey, USA, ROBERTO CAVAZZANA, PAOLO SCARIN, GIANLUIGI SERIANNI, Consorzio RFX, Associazione EURATOM-ENEA sulla fusione, Padova, Italy — The edge turbulence of the National Spherical Torus Experiment (NSTX) fusion device is studied with the Gas Puff Imaging (GPI) diagnostic that measures the visible light emitted from a locally puffed neutral gas. The analysis of the fluctuations is carried out in terms of poloidal and radial propagation velocity, power spectra, frequency-wavenumber spectra and correlation. Moreover the statistical properties of the fluctuations at different time-scales are analysed using the Continuous Wavelet Transform; the probability distribution function is computed for different plasma discharges and for different radial positions. The poloidal and radial characteristic lengths of the intermittent structures at different time scales have been determined by applying the conditional average technique. The dependence of the number of structures on the radial position is studied, and the characterisation of turbulence for ohmic, NBI and RF heated plasma is carried out.

Matteo Agostini
Consorzio RFX, Associazione EURATOM-ENEA sulla fusione, Padova, Italy

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