

Abstract Submitted
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2D imaging of the edge turbulence in RFX-mod GIANLUIGI SERIANNI, MATTEO AGOSTINI, ROBERTO CAVAZZANA, FABIO SATTIN, PAOLO SCARIN, MONICA SPOLAORE, NICOLA VIANELLO, Consorzio RFX, Associazione EURATOM-ENEA sulla fusione, Padova, Italy — In the reversed Field Pinch Experiment RFX-mod a Gas Puffing Imaging Diagnostic (GPID) is used to investigate the turbulence of the edge plasma. The system consists of a gas puffing nozzle and 32 optical channels to measure the HeI (668 nm) line emission from an area normal to the main magnetic field. A method based on Fourier expansion is developed to obtain a 2D tomographic reconstruction of the light emission pattern from the line integrals. The high time resolution allows to obtain a 2D image every 0.1 μ s; moreover the time evolution of the turbulence can be analysed for the whole discharge duration (350 ms). Emission structures (“blobs”) that move along the $\mathbf{E} \times \mathbf{B}$ flow emerge from the background turbulence and they are characterised by computing energy and phase of the Fourier modes. A comparison is carried out between the structures identified by this 2D reconstruction and the intermittent events detected in the line-of-sight signals with a method based on the continuous wavelet transform. Furthermore, density structures detected with an array of Langmuir probes located in a different toroidal position are comparable with the ones reconstructed by the GPID.

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