

Abstract Submitted  
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**Experimental characterization of edge turbulence with GPID in RFX-mod** P. SCARIN, R. CAVAZZANA, G. SERIANNI, M. AGOSTINI, N. VIANELLO, Consorzio RFX, Euratom-ENEA Association, Padova, Italy — The new Gas Puffing Imaging Diagnostic (GPID) system<sup>1</sup> has been installed on RFX-mod to investigate the dynamical structure of plasma edge turbulence in different plasma conditions in the Reversed Field Pinch (RFP) configuration. The system consists of a gas-puffing nozzle and 32 optical channels to measure the local  $H_\alpha$  emission from an area normal to the local magnetic field. The optical lines are 5 mm spaced, cover an area of about 70 mm in the toroidal direction and 40 mm in the radial one. The effective bandwidth of the electronics is 2 MHz and signals are sampled at 10 MSamples/s. Some results obtained during different experiments like externally driven  $m = 0$  mode rotation discharges, OPCD/PPCD and QSH discharges are reported. The comparison of different regimes of discharges is carried out in terms of power spectrum, toroidal propagation of fluctuations and spectral analysis of wave number. Furthermore, the probability distribution functions (pdf) of fluctuations at different time scales have been analysed, revealing deviation from gaussianity and the intermittent character of the fluctuations. Moreover a characterization of the region of the intense plasma-wall interaction, caused by  $m = 1$  localised kink perturbation (wall locking), in terms of turbulence parameters will be shown.

<sup>1</sup>*Cavazzana R. et al.* 2004, Rev. Sci. Instrum. **75** 4152

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