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Filamented current density structures measured in the edge region of the RFX-mod experiment M. SPOLAORE, N. VIANELLO, R. CAVAZZANA, E. MARTINES, G. SERIANNI, E. SPADA, M. ZUIN, V. ANTONI, M. AGOSTINI, P. SCARIN, Consorzio RFX, Associazione Euratom-ENEA sulla Fusione, Corso Stati Uniti 4,35127 Padova, Italy — Coherent structures emerging from turbulence background have been detected in the edge region of the RFX-mod Reversed Field Pinch fusion device and are believed to significantly contribute to the particle transport. In order to gain insight into their presence and features a new and original probe system has been used: the system consists of two sets of electric and magnetic probes toroidally spaced by 88 mm. Each set is equipped with a 2-D array of Langmuir probes and a radial array of 3-axial magnetic coils. Magnetic and electrostatic fluctuations can then be measured simultaneously and on the same location with a high time resolution; statistical methods have been applied in order to detect structure-related bursts in the turbulence. It has been found that in the cross-field plane the bursts in density fluctuations correspond to structures, often referred in literature as 'blobs', and are associated to current density filaments, which are mainly oriented along the magnetic field. Work is in progress to compare the current density bursts, as deduced by the magnetic field circulation, with those due to the diamagnetic current density, related to pressure gradient fluctuations.

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