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High frequency MHD activity due to resistive interchange modes in a reversed field pinch plasma MATTEO ZUIN, Consorzio RFX, Associazione EURATOM-ENEA sulla Fusione, Padova, Italy, SILVIA SPAGNOLO, Consorzio RFX, Padova,Italy, ROBERTO PACCAGNELLA, EMILIO MARTINES, ROBERTO CAVAZZANA, GIANLUIGI SERIANNI, MONICA SPOLAORE, NICOLA VIANELLO, Consorzio RFX, Associazione EURATOM-ENEA sulla Fusione, Padova, Italy — The results of an experimental activity aimed at investigating the origin of high frequency, high toroidal mode number (n>20) magnetic fluctuations in the RFX-mod reversed field pinch device are presented. The space-time properties of the fluctuations are characterized by means of 2 arrays of in-vessel toroidal and poloidal pick-up coils covering the whole toroidal torus, and by means of an insertable edge probe, housing two radial arrays of triaxial pick-up coils, closely spaced in the toroidal direction. High levels of magnetic fluctuation at frequencies above 30 kHz are observed when the reversal of the magnetic field at the edge is driven to deep values. These fluctuations are due to rotating coherent modes whose resonant radii are located between the plasma edge and the reversal surface. A comparison of the experimental spectral properties to the theoretical predictions by a linear MHD stability analysis for a RFP plasma allows to interpret the observed instabilities as resistive interchange modes.

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