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Soft x-ray emissivity characterization in RFX-mod F. BONOMO, P. FRANZ, M. GOBBIN, L. MARRELLI, P. MARTIN, P. PIOVESAN, G. SPIZZO, A. ALFIER, R. PASQUALOTTO, Consorzio RFX - Associazione Euratom-ENEA Padova, Italy — We present a characterization of the soft x-ray (SXR) plasma emissivity in the RFX-mod reversed field pinch (RFP) device. The measurements has been performed with the high spatial resolution SXR tomographic diagnostic installed in RFX-mod, consisting of 4 probes (for a total amount of 78 lines of observation) located in different poloidal portholes at the same toroidal section. The line integrated radial profiles have been analyzed in different scenarios, and operating conditions with and without the Virtual Shell (VS) have been considered. The regimes explored have been those of the Multiple Helicity (MH) and Quasi Single Helicity (QSH) states. In the latter case, asymmetric brightness profiles are indicators of the arising of a localized structure emerging from the plasma core, and corresponding to the presence of a dominant (m=1,n) mode in the magnetic spectra. The profiles measured with the tomography have been also compared with those obtained with the new multifoil diagnostic for the estimation of electron temperature semi-profiles over the low field side of the RFX-mod chamber.

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