Abstract Submitted
for the DPP13 Meeting of
The American Physical Society

Electron temperature profiles characterization and eITBs dynamics in the helical states of RFX-mod MARCO GOBBIN, ALESSANDRO FASSINA, PAOLO FRANZ, LIONELLO MARRELLI, BARBARA MOMO, ITALO PREDEBON, ALBERTO RUZZON, Consorzio RFX, Padova (Italy), RAUL SANCHEZ, Universidad Carlos III de Madrid, Madrid (Spain), DAVID TERRANOVA, MATTEO ZUIN, Consorzio RFX, Padova (Italy) — Electron temperature profiles in RFX-mod 3D helical plasmas are characterized by a complex dynamics recently investigated thanks to the high time resolution *Te* measurements obtained by double filter technique with a multichord soft-x-ray diagnostic.[1] This study is focused in particular on the characterization of the intermittent behaviour of thermal structures developing in helical states and on the loss of helical topology. A statistical approach reveals that the increase of the magnetic chaos and the partial break of the 3D magnetic configuration usually occur in a phase where the electron temperature gradient is already decreasing. For a deeper understanding of this phenomenology the microtearing perturbations and the pressure driven instabilities, the latter investigated by using the stability COBRA code,[2] are considered in the analysis.

[1]P.Franz et al., Nucl. Fusion 53 (2013) 053011
[2]R. Sanchez et al., Computer Physics Communications 141 (2001) 55–65

Marco Gobbin
Consorzio RFX, Padova (Italy)

Date submitted: 12 Jul 2013 Electronic form version 1.4