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Electron temperature measurements and heat transport improvement in the RFX-mod experiment. ALBERTO ALFIER, FEDERICA BONOMO, PAOLO FRANZ, LIONELLO MARRELLI, ROBERTO PASQUALOTTO, PAOLO PIOVESAN, GIANLUCA SPIZZO, Consorzio RFX, Euratom-ENEA Association, Corso Stati Uniti 4, 35127 Padova - Italy, SILVIA VALERIA ANNIBALDI, Space and Plasma Physics, Association Euratom-VR, EE, Royal Institute of Technology, SE-10044 Stockholm, Sweden — Electron temperature profiles at about 1keV have been measured in the RFX-mod experiment during the recent high plasma current campaign (I_p >1.2MA, n_e ~$4{\cdot}10^{19}$): peaked Te profiles, obtained through the Thomson scattering diagnostic, are characterized by a steep gradient in the core during the quasi-single helicity (QSH) state. The formation of well defined magnetic flux surfaces during QSH states determines a reduction of thermal heat conductivity, whose estimate is essential to quantify this transport improvement. We apply the M1TeV code [1] to various experimental scenarios in order to estimate heat diffusivity, then also calculating electron confinement time: in this study, we consider the effect of the increase of plasma current and also of eventual external current drive.
[1] F.Porcelli *et al.*, Phys. Rev. Lett. 82, 1458 (1999).

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