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Transport reduction and heating in the helical core of the reversed-field pinch F. BONOMO, A. ALFIER, Consorzio RFX, Padova - Italy, S.V. ANNIBALDI, Space and Plasma Physics, Association Euratom-VR, EE, Royal Institute of Technology, SE-10044 Stockholm, Sweden, P. BURATTI, Associazione Euratom-ENEA, CR ENEA Frascati - Italy, R. PASQUALOTTO, P. PIOVESAN, G. SPIZZO, D. TERRANOVA, Consorzio RFX, Padova - Italy — We describe the use of the M1TeV transport code to interpret the strong heating which is observed inside magnetic islands in the core of a reversed-field pinch during the quasi-single helicity (QSH) state. M1TeV describes the evolution of an internal kink mode in a Tokamak, using helical flux coordinates[1]. We adapted the code to the q profile typical of the reversed-field pinch, and we stopped the reconnection process at an intermediate stage to study 2D electron heat diffusion. Results show that inside the magnetic island the heat transport coefficient is two orders of magnitude lower than in the chaotic background, and its values fall in the Tokamak range. The M1TeV code is also capable of reproducing quite well the observed temperature profiles measured by the Thomson Scattering diagnostic at the RFX-mod experiment in Padova, Italy.

[1]F.Porcelli *et al.*, Phys. Rev. Lett. **82**, 1458 (1999).

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