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**Anisotropic heat transport in reversed shear configurations: shearless Cantori barriers and nonlocal transport** D. BLASEVSKI, University of Texas, Austin, D. DEL-CASTILLO-NEGRETE, Oak Ridge National Laboratory — Heat transport in magnetized plasmas is a problem of fundamental interest in controlled fusion. In Ref.[1] we proposed a Lagrangian-Green's function (LG) method to study this problem in the strongly anisotropic ($\chi_\perp = 0$) regime. The LG method bypasses the need to discretize the transport operators on a grid and it is applicable to general parallel flux closures and 3-D magnetic fields. Here we apply the LG method to parallel transport (with local and nonlocal parallel flux closures) in reversed shear magnetic field configurations known to exhibit robust transport barriers in the vicinity of the extrema of the $q$-profile. By shearless Cantori (SC) we mean the invariant Cantor sets remaining after the destruction of toroidal flux surfaces with zero magnetic shear, $q' = 0$. We provide numerical evidence of the role of SC in the anomalously slow relaxation of radial temperature gradients in chaotic magnetic fields with no transport barriers. The spatio-temporal evolution of temperature pulses localized in the reversed shear region exhibits non-diffusive self-similar evolution and nonlocal effective radial transport.

[1]D. del-Castillo-Negrete, and L. Chacón, Phys. Rev. Lett., **106**, 195004 (2011); Phys. Plasmas **19**, 056112 (2012).

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