

PHAROS Conference 2019: the multi-messenger physics and astrophysics of neutron stars



Contribution ID : 111

Type : **not specified**

Transport coefficients in nucleon NS cores for different nucleon potentials

Transport coefficients of nucleon matter in neutron star cores are considered in the Brueckner-Hartree-Fock formalism following our previous work (Shternin et al. 2013, PRC, 88, 065803). In that work, one particular nucleon-nucleon interaction model was employed. In the present study, we extend the consideration by analyzing the dependence of the results on the choice of the nuclear potential. We consider $npe\mu$ composition of the core and employ the same nuclear interaction models as in Baldo et al. (2014, PRC 89, 048801). We show that the nucleon contribution to the transport coefficients varies by an order of magnitude when different nucleon potentials are used. The nucleon contribution is compared to the lepton one in non-superfluid neutron star cores and in the presence of a strong proton superfluidity (Shternin 2018, PRD 98, 063015).

Primary author(s) : Dr SHTERNIN, Peter (Ioffe Institute)

Co-author(s) : Dr SCHULZE, Hans-Josef (INFN Sez. di Catania); Dr BALDO, Marcello (INFN Sez. di Catania)

Presenter(s) : Dr SHTERNIN, Peter (Ioffe Institute)