

Effects of neutrino electromagnetic form factors on neutrino interaction with finite temperature electron matters

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Abstrak

The differential cross-section of neutrino interaction with dense and warm electron gasses has been calculated by taking into account the neutrino electromagnetic form factors. The significant effect of electromagnetic properties of neutrino can be found if the neutrino dipole moment, μ_ν , is $\approx 5.10^{-9}$ eB and neutrino charge radius, R_ν , is $\approx 5.10^{-6}$ MeV $^{-1}$. The importance of the retarded correction, detailed balance and Pauli blocking factors is shown and analyzed. Many-body effects on the target matter which are included via random phase approximation (RPA) correlation as well as photon effective mass are also investigated.