

Cored Dark Matter halos in the Cosmic Neutrino Background

We study the impact of the interaction between DM and the cosmic neutrino background on the evolution of galactic dark matter halos. The energy transfer from the neutrinos to the dark matter can heat the center of the galaxy and make it cored. This effect is efficient for the small galaxies such as the satellite galaxies of the Milky Way and we can put conservative constraint on the non-relativistic elastic scattering cross section as $\lesssim 10^{-31}$ cm² for 0.1 keV dark matter and 0.1 eV neutrino.

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