

Cored Dark Matter halos in the Cosmic Neutrino Background

Tuesday, 13 June 2023 17:30 (20 minutes)

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 $\sigma_{\chi\nu} 10^{-31} \text{ cm}^2$ for 0.1 keV dark matter and 0.1 eV neutrino.

Secondary category for the parallel session (optional)

Astroparticle Physics

Primary authors: Dr KIM, Hee Jung (Center of Theoretical Physics of the Universe, IBS); Dr CHOI, Ki-Young (Sungkyunkwan University); CHO, Wonsub (Sungkyunkwan University)

Presenter: CHO, Wonsub (Sungkyunkwan University)

Session Classification: Parallel: Dark Matter 4

Track Classification: Parallel Sessions: Dark Matter Physics