

Indirect search for sub-GeV dark matter with neutrino telescopes

Thursday 30 June 2022 17:45 (15 minutes)

We discuss indirect searches for sub-GeV dark matter (DM) that annihilates directly to a neutrino pair or a pair of new bosons subsequently decaying to neutrinos. The neutrino spectrum from the DM annihilation is monochromatic in the former process and a polynomial shape in the latter case. As a benchmark scenario, we consider a gauged $U(1)_{L_\mu - L_\tau}$ model under which a DM field is charged, and evaluate the sensitivity at Super-Kamiokande and future Hyper-Kamiokande experiments. We also discuss the interplay between the muon $g-2$ anomaly and DM physics.

Authors: ASAI, Kento (Saitama University); TSUMURA, Koji (Kyushu University); OKAWA, Shohei (ICCUB)

Presenter: OKAWA, Shohei (ICCUB)

Session Classification: Parallel Session III.2