

Contribution ID: 1442

Type: Talk

Heavy Dark Matter Annihilation search with IceCube tracks

Tuesday 22 July 2025 17:05 (15 minutes)

Dwarf Spheroidal galaxies (dSphs) are suspected dark matter (DM) dense astrophysical objects within our galactic neighborhood. DSphs are otherwise faint high-energy neutrino sources which makes them ideal dark matter targets. An early IceCube dark matter search toward dSphs was performed with an incomplete detector with 59 strings and 339.8 days of livetime. This updated analysis is performed on IceCube's full 86 strings with 10.4 years of data from the Northern Hemisphere. We study a dark matter mass range not well explored ranging from hundreds of GeV to 100 PeV in dark matter mass. We present the current IceCube sensitivity and preliminary limits on the velocity-weighted cross section of annihilating dark matter. We report that our data is consistent with the neutrino background.

Collaboration(s)

IceCube Neutrino Observatory

Author: SALAZAR-GALLEGOS, Dan

Co-authors: TOLLEFSON, Kirsten Anne (Michigan State University (US)); NISA, Mehr Un (Michigan State University)

Presenter: SALAZAR-GALLEGOS, Dan

Session Classification: DM

Track Classification: Dark-Matter Physics