

Clone of XIX International Workshop on Neutrino Telescopes



Contribution ID: 160

Type: **Parallel Contributed Talk**

Probing Dark Matter with IceCube

Thursday, 25 February 2021 10:40 (20 minutes)

In view of the IceCube's 6-year high-energy starting events (HESE) sample, we revisit the possibility that the updated data may be better explained by a combination of neutrino fluxes from dark matter decay and an isotropic astrophysical power-law than purely by the latter. We find that the combined two-component flux qualitatively improves the fit to the observed data over a purely astrophysical one, and discuss how these updated fits compare against a similar analysis done with the 4-year HESE data. We also update fits involving dark matter decay via multiple channels, without any contribution from the astrophysical flux. We find that a DM-only explanation is not excluded by neutrino data alone. Finally, we also consider the possibility of a signal from dark matter annihilations and perform analogous analyses to the case of decays, commenting on its implications.

Collaboration name

Co-author: SARCEVIC, INA (UNIVERSITY OF ARIZONA)

Presenter: BHATTACHARYA, Atri

Session Classification: Multimessenger Investigations