

A Multi-Component Model for the Observed Astrophysical Neutrinos

In the last few years, the IceCube experiment has opened a new era in neutrino astronomy, providing the first evidence for high-energy astrophysical neutrinos. The origin of these neutrinos is still unknown and some contradictions in the data are present, such as the different observed spectral indices in the high-energy starting and through-going muon samples, a possible anisotropy due to Galactic events, the non-observation of point sources, and the constraint from the extragalactic diffuse gamma-ray background.

We propose a multi-component model for the observed diffuse neutrino flux, including the residual atmospheric backgrounds, a Galactic contribution, an extragalactic contribution from pp interactions (such as from starburst galaxies) and a hard extragalactic contribution from photo-hadronic interactions at the highest energies (such as from Tidal Disruption Events or Active Galactic Nuclei). This model can successfully address the key problems of astrophysical neutrino data.

Session and Location

Wednesday Session, Poster Wall #170 (Ballroom)

Poster included in proceedings:

yes

Primary author: Dr PALLADINO, Andrea (DESY)

Co-author: Dr WINTER, Walter (DESY)

Presenter: Dr PALLADINO, Andrea (DESY)

Track Classification: Poster (participating in poster prize competition)