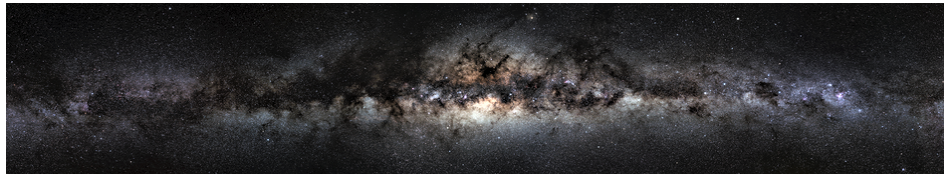


Dark Sectors of Astroparticle Physics (AstroDark-2021): Axions, Neutrinos, Black Holes and Gravitational Waves



Contribution ID: 46

Type: Oral

Intrinsic Background for Astrophysical Tau-neutrino Searches

Tuesday, 7 December 2021 11:38 (18 minutes)

A precise characterization of the astrophysical neutrino flux is feasible as neutrino telescopes collect data. IceCube has already measured the spectral shape and flavor composition of this flux. Several projected experiments will be able to further constrain the nature of cosmic neutrinos. Most of these experiments look for neutrinos that cross the Earth, so it is fundamental to understand the propagation of high-energy neutrinos through dense mediums. In this work, we present neutrino flux predictions accounting for new Earth propagation effects that were not included before. In particular, we calculate the flux of secondary leptons produced as neutrinos travel through, which can not be ignore by new generation of experiments. Finally, we will study the effect of this flux on the latest IceCube's HESE analysis.

Primary authors: GARCIA SOTO, Alfonso Andres (Harvard University); ARGÜELLES, Carlos; SAFA, Ibrahim; ZHELNIN, Pavel

Presenter: GARCIA SOTO, Alfonso Andres (Harvard University)

Session Classification: Parallel 2: Neutrinos