

Neutrino astrophysics and IceCube

Cosmic rays and neutrinos are intimately related. And though TeV-PeV astrophysical neutrinos have been observed, their sources and their relation to potential sources of cosmic rays remain largely unknown. IceCube has conducted numerous searches for potential neutrino sources. This talk is an overview that complements other presentations at this conference.

I will describe the characteristics of the observed diffuse neutrino spectrum. I will showcase specific studies of potential neutrino sources of both galactic and extragalactic nature. I will review the multi-messenger aspect of the field, especially in relation to the search for electromagnetic counterparts to neutrino sources. Finally, I will describe real-time activities that enable the multi-messenger studies including a brief discussion of TXS 0506+056.

Primary author: TABOADA, Ignacio (Georgia Institute of Technology)

Presenter: TABOADA, Ignacio (Georgia Institute of Technology)