

Unlocking the Potential of Tau Neutrino Astronomy with TAMBO

Tuesday, 18 June 2024 17:30 (2 hours)

The detection of high-energy astrophysical neutrinos by IceCube has opened a new window on our Universe. While IceCube has measured the flux of these neutrinos at energies up to several PeV, much remains to be discovered regarding their origin and nature. Currently, the discovery of point sources of neutrinos is hindered by atmospheric neutrino backgrounds; likewise, astrophysical neutrino flavor ratio measurements are limited by the difficulty of discriminating between electron and tau neutrinos. TAMBO is a next-generation neutrino telescope specifically designed to detect tau neutrinos in the 1-100 PeV energy range. This tau neutrino specificity enables a nearly background-free identification of astrophysical neutrino sources, as well as tests of the flavor ratio of astrophysical neutrinos. TAMBO will comprise an array of water Cherenkov and plastic scintillator detectors deployed on the face of the Colca Canyon in the Peruvian Andes, with its unique geometry facilitating the high-purity measurement of astrophysical tau neutrinos. In this poster, I will present the prospects of TAMBO in the context of next-generation neutrino observatories and provide an overview of its current status.

Poster prize

Yes

Given name

Will

Surname

Thompson

First affiliation

Harvard University

Second affiliation

Institutional email

will_thompson@g.harvard.edu

Gender

Male

Collaboration (if any)

TAMBO Collaboration

Primary author: THOMPSON, Will (Harvard University)

Presenter: THOMPSON, Will (Harvard University)

Session Classification: Poster session and reception 1

Track Classification: Astrophysical neutrinos