Contribution ID: **71** Type: **Talk**

An analysis of a tau-neutrino origin for the atypical ANITA-IV cosmic-ray-like events

Wednesday, 14 July 2021 19:18 (12 minutes)

The ANITA collaboration has recently reported on four anomalous cosmic-ray-like events observed during ANITA's fourth flight that are observationally consistent with air showers from upgoing particles emerging from the Antarctic ice. One possible interpretation of these events is that they are due to ultrahigh energy tau neutrinos interacting in the Earth, resulting in an extensive air shower initiated by the decay of the tau lepton after it leaves the ice. Unlike previous ANITA anomalous events that were observed from steeply inclined angles, the four events observed by ANITA-IV appear to originate very close to the radio horizon. We present a comprehensive study of a tau-neutrino origin for these events (from both point-source and diffuse neutrino fluxes) and discuss how these events compare against the point source limits set by other neutrino observatories.

Keywords

ANITA; tau neutrino; anomalous events; ultrahigh energy; UHE; PUEO; tau

Collaboration

ANITA

other Collaboration

Subcategory

Experimental Results

Primary author: PRECHELT, Remy (University of Hawai'i)

Co-authors: Dr WISSEL, Stephanie (Pennsylvania State University); Dr ROMERO-WOLF, Andres (Jet Propulsion Laboratory)

Presenter: PRECHELT, Remy (University of Hawai'i)

Session Classification: Discussion

Track Classification: Scientific Field: NU | Neutrinos & Muons