



Contribution ID: 476

Type: Poster

Constraining astrophysical interpretations of ANITA events with IceCube

The first three flights of the ANITA experiment resulted in two enigmatic detections. These events, if interpreted as upward-going extensive air showers, are compatible with the signature of tau decay from an ultra-high-energy tau neutrino interaction. However, the arrival of these events from well below the horizon is in extreme tension with limits on isotropic cosmogenic neutrino fluxes. Here, we consider that these events might instead be from neutrinos produced in the vicinity of cosmic accelerators, and search for coincident neutrinos with IceCube. In the absence of a significant detection, we set upper limits on neutrino fluxes from potential point sources on various timescales. As any ultra-high-energy tau neutrino flux traversing the Earth should be accompanied by neutrinos in the TeV-PeV range, this non-observation severely constrains any standard model astrophysical interpretation of the ANITA events, regardless of the assumptions on intrinsic spectrum.

Mini-abstract

Results of a search for IceCube events in the direction of ANITA events.

Experiment/Collaboration

IceCube Collaboration

Primary author: PIZZUTO, Alex (University of Wisconsin-Madison)

Co-authors: BARBANO, Anastasia (University of Geneva); SAFA, Ibrahim (University of Wisconsin - Madison); VANDENBROUCKE, Justin (University of Wisconsin-Madison); MONTARULI, Teresa (University of Geneva)

Presenter: PIZZUTO, Alex (University of Wisconsin-Madison)

Session Classification: Poster session 4