



Contribution ID: 1132

Type: **Talk**

Searching for Ultrahigh Energy Neutrinos with PUEO

Wednesday 16 July 2025 17:20 (15 minutes)

PUEO, the Payload for Ultrahigh Energy Observations, is a long duration balloon-borne experiment with the primary science goal of detecting the impulsive Askaryan emission from ultrahigh energy (>1 EeV) neutrinos interacting in the ice sheet of Antarctica. The ultrahigh energy neutrino flux is yet to be detected, and so a successful measurement by PUEO will give us information about the where and how these neutrinos are produced; this may be through a process called the GZK effect when ultrahigh energy cosmic rays interact with the cosmic microwave background, or it may be directly within the environment of cosmic ray accelerators.

In order to detect radio Askaryan emission, PUEO consists of a broadband interferometric radio detector of 96 antennas which point down at the ice. Additionally, it has a drop-down low-frequency subsystem which will deploy after launch. This improves PUEO's ability to detect tau neutrinos and charged cosmic rays, which can both produce geomagnetic air shower emission. This contribution will outline PUEO's science case, present its expected sensitivity, and share status updates from our preparation to launch PUEO from McMurdo Station, Antarctica in December 2025.

Collaboration(s)

PUEO Collaboration

Author: ABARR, Quincy (University of Delaware)

Presenter: ABARR, Quincy (University of Delaware)

Session Classification: NU

Track Classification: Neutrino Astronomy & Physics