

Abstract Submitted  
for the APR18 Meeting of  
The American Physical Society

**Tau neutrino signals at POEMMA**<sup>1</sup> MARY HALL RENO, University of Iowa, POEMMA COLLABORATION — Satellite- and balloon-based detectors have the potential to discover neutrino signals originating from cosmic ray interactions with background photons as they travel from the highest energy sources. The discovery of these cosmogenic neutrinos will begin a new era of astroparticle physics. The POEMMA (Probe of Extreme Multi-Messenger Astrophysics) mission is being designed with the detection of the flux of cosmogenic tau neutrinos as one goal. With a two-satellite configuration of Cherenkov detectors targeted around the limb of the Earth, POEMMA will use the Earth as a neutrino converter. A comprehensive evaluation of how cosmic ray models and particle physics inputs to the tau neutrino interaction, tau lepton propagation, and tau decay in the atmosphere affect the rate of tau-neutrino induced air showers from Earth-skimming cosmogenic tau neutrinos will be presented. The focus will be on angles and altitudes important for POEMMA. Other detection configurations will also be discussed.

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Date submitted: 25 Jan 2018

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