

Astrophysical Implications of Neutrino Target-of-Opportunity Observations with Space-based and Suborbital Optical Cherenkov Detectors

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Cosmic-ray accelerators capable of reaching ultra-high energies are expected to also produce very-high energy neutrinos via hadronic interactions within the source or its surrounding environment. Many of the candidate astrophysical source classes are either transient in nature or exhibit flaring activity. Leveraging the Earth as a neutrino converter, suborbital and space-based optical Cherenkov detectors will be able to detect upward-moving extensive air showers induced by decay tau-leptons generated from cosmic tau neutrinos (with energies ~ 10 PeV and above), reaching sensitivities at the level of modeled neutrino fluences for several classes of astrophysical transients. We discuss the astrophysical implications of neutrino Target-of-Opportunity observations with the super-pressure balloon mission EUSO-SPB2 and the proposed satellite-based mission POEMMA.

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Collaboration

other (fill field below)

other Collaboration

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Subcategory

Future projects

Primary authors: VENTERS, Tonia (NASA Goddard Space Flight Center); RENO, Mary Hall (University of Iowa); KRIZMANIC, John (4NASA/Goddard Space Flight Center); FOR THE EUSO-SPB2 AND POEMMA COLLABORATIONS

Presenter: VENTERS, Tonia (NASA Goddard Space Flight Center)

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