

Trinity: Probing Very High-Energy Cosmic Neutrinos with Imaging Atmospheric Cherenkov Technique

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Trinity, an imaging atmospheric Cherenkov telescope (IACT) observatory, is proposed for detecting very high energy (VHE) and ultra-high energy (UHE) cosmic neutrinos.

It is designed to detect Earth-skimming tau-neutrinos, transforming into tauons which emerge in the atmosphere and decay producing air showers. Currently, Trinity is in its Demonstrator phase featuring a 0.75 m² mirror area telescope with a 5° x 5° FoV, deployed at Frisco Peak, Utah, and it promises to be the most sensitive VHE-neutrino detector for sources, pointed at NGC 1068 and TXS 0506+56. The Demonstrator became operational and started data-taking since October 3rd, 2023. This presentation highlights the Trinity Demonstrator's status, showcasing initial data acquisition results, stability, remote operation, background assessment, atmospheric monitoring, and data analysis development.

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Collaboration (if any)

Trinity

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