Abstract Submitted
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AMON Archival Searches for Jointly-Emitting Neutrino + Gamma-Ray Transients AZADEH KEIVANI, Penn State, AMON COLLABORATION — The Astrophysical Multimessenger Observatory Network (AMON), currently under development at Penn State, aims to create a single network in search of multimessenger transients. This network will link the world's most sensitive high-energy electromagnetic, neutrino, and cosmic ray observatories, as well as gravitational wave facilities. As a demonstration of the capabilities of an AMON real-time system, and in order to explore potential multimessenger signals, we have carried out archival analyses comparing public neutrino data from the 40-string configuration of IceCube (IC40) with contemporaneous public gamma-ray data from Fermi LAT and Swift. Our analyses have the potential to discover statistically significant coincidences between high energy neutrinos and gamma ray signals, and hence, possible jointly-emitting neutrino/gamma ray transients. In addition, our analyses were used to validate our understanding of the component datasets and to explore different candidate statistical approaches to generating AMON alerts for the network's follow-up partners. During the talk I will present the component high-energy neutrino and gamma-ray datasets, the statistical approaches that we used, and the results of analyses of the IC40+LAT and IC40+Swift datasets.

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