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Gamma-ray counterparts of IceCube track-type high-energy neutrino events

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Observations performed by the Large Area Telescope (LAT) on board of the Fermi Gamma-ray Space Telescope around the IC170922A region revealed a flaring gamma-ray blazar, TXS 0506+056, in spatial and temporal coincidence with the neutrino event detected by the IceCube Neutrino Observatory. Archival searches of other historical, well-reconstructed high-energy neutrino events have revealed further potential gamma-ray counterparts less bright than TXS 0506+056 during the 2017 flare. The electromagnetic properties are crucial input to any kind of modeling proving the source as neutrino counterpart candidate. A detailed study will be presented, using 9.6 years of Fermi-LAT data in the 100 MeV - 1 TeV energy range, that focuses on a selection of sky regions of historical neutrino events detected by IceCube.

Primary authors: FRANCKOWIAK, Anna (DESY); BUSON, Sara (NASA); GARRAPPA, Simone (DESY)

Presenter: GARRAPPA, Simone (DESY)

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