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The population of neutrino blazar candidates from real-time high-energy neutrino alerts

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Observations from the Large Area Telescope (LAT) on board the Fermi Gamma-ray Space Telescope enabled the identification of the flaring gamma-ray blazar TXS 0506+056 as a likely counterpart to the neutrino event IC-170922A. By continuously monitoring the gamma-ray sky, Fermi-LAT plays a key role in the identification of candidate counterparts to realtime high-energy neutrino alerts released by IceCube.
In this contribution, I will present our recent studies of real time follow-up of high-energy neutrino alerts with Fermi-LAT focusing on the most compelling neutrino candidates observed in more than 8 years (since April 2016) in the gamma-ray sky. In particular, our investigation is focused on the population of blazars coincident with single high-energy neutrinos, and we evaluate the relationship between their neutrino and gamma-ray luminosities. I will also present the current Fermi-LAT strategy for following up high-energy neutrino alerts and the future prospects on these searches.

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