

High-energy neutrino sources and their electromagnetic counterparts in the Fermi-LAT era

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A new era for multi-messenger astronomy has begun with the detection of the flaring gamma-ray blazar TXS 0506+056 in spatial and temporal coincidence with the high-energy neutrino IC-170922A. Since this outstanding result, several associations have been proposed between high-energy neutrinos and cosmic accelerators observed at different wavelengths. The *Fermi*-Large Area Telescope (LAT), which has continuously monitored the gamma-ray sky for more than 14 years, plays a key role in the identification of candidate neutrino sources. It provides crucial input to population studies, as well as realtime observations of exceptional transient events coincident with single high-energy neutrinos.

In this contribution, I will present an overview of the main results obtained in the identification of candidate counterparts to high-energy neutrinos, focusing on the crucial contributions of *Fermi*-LAT observations to the multi-wavelength synergies in the astronomical community. I will also discuss future prospects and strategies in the multi-wavelength searches for counterparts to astrophysical neutrinos.

Track

Neutrinos

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