

Multimessenger follow-up of high energy neutrino events using Fermi-GBM

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The simultaneous detection of a high energy neutrino event during a gamma-ray flare from TXS 0506+056 played an essential role in its identification as an astrophysical neutrino source in 2017. This highlights the current importance of electromagnetic follow-up by gamma-ray instruments for finding new sources in the field of high-energy neutrino astronomy where many of the sources and source classes have yet to be discovered. The Fermi Gamma-ray Burst Monitor (GBM) is an ideal instrument for searching for new classes of high energy neutrino sources from short timescale transients given its all sky monitoring capabilities and sensitivity to photon energies from 8 keV to 40 MeV. We will present the current methods that Fermi-GBM uses to identify potential seconds-scale counterparts to high energy neutrino events, including subthreshold searches for weak candidates performed in high-time-resolution data that are sensitive to dim, potentially off-axis transients similar to GRB170817A/GW170817.

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