

Searching for GRB Counterparts to Gravitational-wave Events from the Third Gravitational Wave Observing Run with Fermi-GBM and Swift-BAT

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We present Fermi Gamma-ray Burst Monitor (Fermi-GBM) and Swift Burst Alert Telescope (Swift-BAT) observations of gravitational-wave (GW) events detected during the third LIGO/Virgo/KAGRA Collaboration observing run (O3). Using Fermi-GBM on-board triggers as well as sub-threshold searches in both Fermi-GBM and Swift-BAT ground data, we search for coincident gamma-ray transients associated with the GW events. No new joint events beyond GRB 170817A and GW170817 were found. We therefore calculate flux upper limits for the associated gamma-ray luminosity of each GW event. Using the lack of electromagnetic (EM) emission from binary black hole (BBH) mergers, we begin to constrain theoretical models of any such emission.

Track

GRBs

Author: WOOD, Joshua (NASA/MSFC)

Co-authors: FLETCHER, Cori; CRNOGORCEVIC, Milena

Presenter: WOOD, Joshua (NASA/MSFC)

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