

Spatiotemporal correlation between gamma-ray bursts and ultra-high energy neutrinos

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We searched for coincident arrivals of photons from gamma-ray bursts (GRBs) and ultra-high energy neutrinos (UHENs) from the IceCube Observatory. A spatiotemporal cross-match of the compiled datasets that contained 164 UHENs and 3221 GRBs was conducted. As a result, 20 GRB-UHEN matches were obtained within a time window of 4 days after the GRBs. Statistical analysis of the results was conducted using mock data, and imply that the resulting number of matches is in perfect agreement with random associations.

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