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Search for Neutrinos from GRBs with IceCube

This poster presents the results of a search for neutrinos of all flavors associated with gamma-ray bursts (GRBs) using the IceCube Neutrino Observatory. Charged-current interactions of electron and tau neutrinos along with neutral current interactions of all neutrino flavors result in a spherical hit pattern of Cherenkov light called a “cascade.” The search looks for cascade events time-correlated with gamma-ray emission observed in satellite detectors, and is the first IceCube GRB-neutrino coincidence search not optimized for charged-current muon neutrino interactions which produce extended hit patterns called “tracks.” We expect comparable sensitivity in the all-sky cascade search to that of the northern hemisphere track search. Results from the cascade only search, as well as preliminary combined cascade and track search limits on GRBs as high-energy neutrino sources, are discussed.

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Track Classification: Cosmic Neutrinos