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**Search for Choked GRBs using Icecube’s DeepCore** JACOB DAUGHHETEE, Georgia Institute of Technology, THE ICECUBE COLLABORATION — High-energy astrophysical phenomena such as supernovae (SNe) and gamma ray bursts (GRBs) are theorized to result in the production of energetic neutrinos. There is a known correlation between long duration GRBs and core-collapse SNe. A proposed scenario connecting the two involves the production of relativistic jets in a larger fraction of core-collapse SNe rather than just those resulting in GRBs. Whereas in the GRB case these jets break out of the stellar envelope, it is hypothesized that the jets produced in core-collapse SNe often fail to break through their progenitor’s envelope and therefore lack a characteristic GRB electromagnetic signature. Such an event is dubbed a “choked” GRB due to the jets having insufficient energy to breach the envelope. These choked GRBs may be detectable, however, through their neutrino emission by IceCube’s sub-detector, DeepCore. The combination of the transient nature of choked GRB events, imposed angular constraints, and current filtering algorithms will grant strong background rejection in a search for these events. We will present the expected number of neutrino events from a sample choked GRB at the initial cut level as well as after a selection of a few data cuts aimed at reducing background to manageable levels.

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