

Detection of Galactic Supernova Neutrinos at the NOvA Experiment

Core-collapse supernovae emit about 99% of their gravitational energy in a burst of neutrinos. Detecting such a neutrino signal would provide a valuable information both on the neutrino properties and on the stellar collapse physics. The large liquid scintillator detectors used in the NOvA experiment provide a possibility to detect such a signal. A dedicated trigger system was developed for NOvA to perform the search of inverse beta decay neutrino interaction candidates in real time and is able to detect the supernova burst within ~seconds latency and save the data from detectors for further study. This system has been running in stable mode since November 2017. A parallel effort is on-going to develop background rejection and event selection techniques for an offline analysis of these neutrinos.

Authorship annotation

on behalf of the NOvA collaboration

Session and Location

Wednesday Session, Poster Wall #13 (Robert-Schumann-Room)

Poster included in proceedings:

yes

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Track Classification: Poster (participating in poster prize competition)