Contribution ID: **254**   Type: **Poster supernova**

Detection of MeV supernova neutrinos with the KM3NeT neutrino telescope

Core Collapse Supernovae (CCSN) are explosive phenomena that may occur at the end of the life of massive stars, releasing over 99% of the energy through emission of MeV neutrinos. Neutrinos are believed to play an important role in the not yet fully understood explosion mechanism. Only 24 SN neutrinos have been detected from the SN1987A event.

For a galactic CCSN, the KM3NeT ORCA and ARCA detectors in the Mediterranean will observe a significant number of neutrinos via Cherenkov light, mostly from inverse beta decay interactions in a large seawater volume. Selection of coincidences between the 31 photomultipliers of KM3NeT optical modules allows to separate the signal from the optical background sources.

The KM3NeT sensitivity for the detection of a galactic CCSN and the potential for the study of the burst time profile have been estimated from MC simulations. Specific criteria are proposed for the online triggering and the participation in the SNEWS global alert network.

Authorship annotation

on behalf of the KM3NeT collaboration

Session and Location

Wednesday Session, Poster Wall #9 (Robert-Schumann-Room)

Poster included in proceedings:

yes

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