

# Monitoring Low Energy Astrophysical Neutrinos in JUNO

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With its unprecedented sensitivity to MeV-scale neutrinos, the Jiangmen Underground Neutrino Observatory (JUNO) will play an essential role in the emerging field of multi-messenger astronomy, especially in capturing next galactic core-collapse supernova (CCSN). Two real-time monitoring systems have been designed to detect the forecasted burst of neutrinos from a CCSN in JUNO. Here we present a dedicated CCSN monitoring system and its sensitivity to supernova neutrinos including a variety of supernova models. Assuming a yearly false alert rate, JUNO expects to be sensitive to neutrinos from a  $30 M_{\odot}$  progenitor up to 370 (360) kiloparsecs, with normal (inverted) mass ordering. The possibility to boost the CCSN sensitivity will be presented, including the one to low energy all-flavour neutrino events, made accessible with JUNO's Multi-messenger trigger system, which aims to reduce energy thresholds to approximately 20 keV.

## Poster prize

Yes

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Jiangmen Underground Neutrino Observatory Collaboration

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**Classifica Sessioni:** Poster session and reception 2

**Classificazione della track:** Supernova neutrinos