

Detection of Core-Collapse Supernova Neutrino at JUNO

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JUNO is an underground neutrino observatory under construction in Jiangmen, China. It uses 20kton liquid scintillator as a target, which enables it to detect supernova burst neutrinos of large statistics for the next galactic core-collapse supernova (CCSN) and also pre-supernova neutrinos from the nearby CCSN progenitors. All flavors of supernova burst neutrinos can be detected by JUNO via several interaction channels, including inverse beta decay (IBD), elastic scattering on electron and proton, etc. Among them, IBD events makes it possible to get the directional information of CCSN even in a liquid scintillator detector. The real-time monitoring systems for the next CCSN based on FPGA and DAQ are under development in JUNO, which allows prompt alert and trigger-less data acquisition of CCSN events

Reference to paper (DOI or arXiv)

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