

## GeV neutrino interaction study

The Jiangmen Underground Neutrino Observatory (JUNO) is a 20 kton liquid scintillator detector currently under construction in an underground laboratory in Southern China. JUNO is designed to achieve a remarkable energy resolution of 3% at 1 MeV, a large detector volume, and exceptional background control. With these capabilities, JUNO will become a flagship experiment in the forthcoming decades, primarily focusing on determining the neutrino mass ordering, and precise measurements of the neutrino oscillation parameters using reactor antineutrinos. Furthermore, it will study interesting phenomena involving neutrinos from various sources. The understanding of GeV-neutrino interactions inside the JUNO detector relies on the modeling of nuclear medium effects. These effects are crucial ingredients for the neutrino mass ordering measurement using atmospheric neutrinos and the searches for rare phenomena like diffuse supernova neutrino background and nucleon decay. This talk will delve into the study of neutrino interactions in the few-GeV regime at JUNO, with an active pursuit of a better understanding of the relevant systematic effects.

**Primary author:** 程, 捷 (North China Electric Power University)

**Presenter:** 程, 捷 (North China Electric Power University)

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