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# JUNO's potential for GeV events

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The Jiangmen Underground Neutrino Observatory (JUNO) is a next-generation 20
kton liquid scintillator detector under construction in southern China. It is designed to determine the neutrino mass ordering via the measurement of reactor neutrino oscillation. In addition, it has the potential for various other topics including atmospheric neutrinos, cosmic muons, etc., in the GeV energy region. Liquid scintillator detectors such as JUNO have good energy resolution and low threshold, but traditionally have relatively limited capabilities in tracking and directionality measurements. In this talk, I present the development of a novel reconstruction method which greatly expands JUNO's capability for GeV events. This method combines PMT waveform analysis and machine learning techniques, and can be used to reconstruct multiple quantities such as directionality, energy, vertex, and track. Preliminary performance results with MC simulation are presented. The method is applicable to other liquid scintillator detectors as well, which makes liquid scintillator detectors good candidates for future physics measurements in the GeV energy region.

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