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Calibration Strategy of the JUNO Experiment

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The Jiangmen Underground Neutrino Observatory (JUNO) central detector (CD) would be the world's largest liquid scintillator (LS) detector to probe multiple physics goals, including determining neutrino mass ordering, measuring solar neutrino, detecting supernova neutrino, etc. With an unprecedented 3% effective energy resolution and an energy nonlinearity better than 1% requirement to determine neutrino mass ordering, the calibration system, including Auto Calibration Unit (ACU), Cable Loop System (CLS), Guide Tube Calibration System (GTCS), and Remotely Operated Vehicle (ROV), is designed with deploying multiple radioactive sources in various locations inside/outside of the CD. The strategy of the JUNO calibration system has been optimized based on Monte Carlo simulation results from calibration sub-systems data. This talk will present details of calibration strategy, including the JUNO calibration system design and simulation results, which help achieve an excellent energy resolution better than 3% between 1 MeV and 8 MeV.

Working group

WG1

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