

Commissioning of the JUNO detector

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The Jiangmen Underground Neutrino Observatory (JUNO) is a multi-purpose 20-kiloton liquid scintillator detector set to begin data-taking this year. The experiment aims to have world-leading sensitivity to the neutrino mass ordering and make sub-percent precision measurements of oscillation parameters Δm_{31}^2 , Δm_{21}^2 , $\sin^2(\theta_{12})$. These goals hinge on precisely resolving the fine oscillation structure in the antineutrino energy spectrum of nuclear reactors ~52.5km away. For this, a world-leading energy resolution is required, alongside low background rates. To prepare for operation, following the completion of detector construction, JUNO underwent its commissioning phase. This is a two-stage process, beginning with a full fill of the detector's central cavity with pure water, followed by the gradual replacement of the water in the inner vessel with the final liquid scintillator mixture. This talk will present an overview of the detector's commissioning, highlighting key procedures and preliminary performance evaluations carried out during both the pure water and liquid scintillator phases, essential for the experiment's future smooth running.

Collaboration you are representing

JUNO

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