Contribution ID: **94** Type: **Oral contribution**

JUNO Detector

Wednesday, September 2, 2026 11:00 AM (30 minutes)

Jiangmen Underground Neutrino Observatory (JUNO), the largest liquid scintillator detector ever built, started its physics data-taking in Aug. 2025, aiming to address key questions in neutrino physics such as neutrino mass ordering and precision measurement of neutrino oscillation parameters. JUNO consists of a liquid scintillator central detector, an outer water Cherenkov detector, and an external plastic scintillator top tracker. The central detector is filled with 20 kton high-purity, high-transparency liquid scintillator and is instrumented with 17,596 high-quantum-efficiency 20-inch photomultiplier tubes (PMTs) and 25,587 3-inch PMTs, exhibiting excellent detector performance that meets or surpasses the design objectives. This talk reviews the milestones of JUNO’s construction, and highlights its performance and physics results achieved so far.

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Session Classification: Plenary

Track Classification: Plenary Session