

Status of the Liquid Scintillator for JUNO

Friday 19 July 2024 20:40 (20 minutes)

The purification of the Juno Liquid Scintillator is a crucial and complex key point for the Jiangmen Underground Neutrino Observatory (JUNO). The huge LS mass (20 kton), the high transparency ($> 20 \text{ m @ } 420 \text{ nm}$), high radio-purity ($< 10^{-15} \text{ g/g}$, even 10^{-17} g/g in U/Th) and extraordinary energy resolution (3% @ 1 MeV) are fundamental to achieve JUNO's goals. Physics purposes include neutrino mass ordering, solar neutrinos, supernova neutrinos and atmosphere neutrinos. In this talk, the construction and commissioning of the five JUNO LS purification systems will be presented: alumina filtration, distillation, LS mixing, water extraction, nitrogen stripping. Moreover, two essential auxiliary systems will be described: ultra-pure water and high pure nitrogen. So far, two rounds of plants commissioning had been done with the production of the first sample of JUNO LS whose radio-purity will be checked and monitored online soon. Detector LS filling is planned to start in Nov. 2024.

Alternate track

I read the instructions above

Yes

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Session Classification: Poster Session 2

Track Classification: 12. Operation, Performance and Upgrade (incl. HL-LHC) of Present Detectors