

The water system and radon measurement system of JUNO veto detector

The Jiangmen Underground Neutrino Observatory (JUNO), a 20 kton multi-purpose underground liquid scintillator detector, is under construction with the determination of the neutrino mass hierarchy as a primary physics goal. To suppress natural radioactivity and neutrons from rock, the central detector is surrounded with at least 2.5 meters ultra-pure water. About 2000 MCP-PMTs are equipped to form a water Cherenkov detector to tag muons. In order to keep the good water quality, especially the attenuation length, and stable temperature, a reliable ultrapure water production, purification and circulation system is required. Besides, the radon concentration in water should be less than 0.2 Bq/m³ to reduce the trigger rate in the central detector, thus a Rn removal and measurement system is also required. In this poster, the conceptual design of the water system, the calculation result of the water circulation as well as the status of Rn removal and measurement system will be presented.

Authorship annotation

On behalf of the JUNO collaboration

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