



Contribution ID: 659

Type: Poster

Current status of JUNO Top Tracker

Monday, 15 July 2019 18:30 (1h 30m)

The JUNO experiment is a multi-purpose anti-neutrino oscillation experiment with the main objective of determining the neutrino mass ordering (ν MO). The baselines to its two major reactors are both 53 km. JUNO's goal is to achieve 3σ sensitivity of ν MO with 6-year of data taking, so it is critical to obtain an unprecedented energy resolution, better than 3% at 1 MeV. The JUNO Central Detector (CD), a 20 kton liquid scintillator detector, will be built with high PMT photocathode coverage and good transparency for this purpose.

Despite the 700m overburden, the atmospheric muon-induced background is still estimated to be non negligible compared to the expected signal for the ν MO determination. A veto system was designed for muon detection to further suppress muon-induced background. Two subsystems are used for the muon veto strategy: the Top Tracker (TT) and the Water Cherenkov Detector (WCD). The TT is a 3-layer muon tracker covering about 60% of the surface above the WCD and will provide precise atmospheric muon tracking. These well reconstructed muons are essential in the JUNO veto strategy for rejecting cosmogenic isotopes (^9Li and ^8He). Combining the muon information from the TT and the WCD, our veto strategy will remove most of the atmospheric muon-induced background.

This poster will discuss the current status and the expected performance of the JUNO Top Tracker.

Primary authors: Mr HUANG, Qinhua (IPHC/LLR IN2P3); Dr ATHAYDE MARCONDES DE ANDRE, Joao Pedro (IPHC)

Presenter: Mr HUANG, Qinhua (IPHC/LLR IN2P3)

Session Classification: Wine & Cheese Poster Session

Track Classification: Neutrino Physics