

Séminaire LAL

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Physics, Design and Status of JUNO Experiment

The Jiangmen Underground Neutrino Observatory (JUNO), a 20 kton multi-purpose underground liquid scintillator (LS) detector, is under construction in China to mainly determine the neutrino mass hierarchy (MH) by detecting reactor anti-neutrinos at a baseline of 53km. JUNO physics potential also includes precision measurements of the neutrino mixing parameters, the detection of supernova neutrinos, geo-neutrinos and solar neutrinos.

Its central detector is an acrylic sphere with a diameter of 35.4 m containing about 20,000 ton of liquid scintillator as the target and equipped with ~17000 20'' PMTs + ~34000 3'' PMTs, which is the key of the whole facility and tailored to reach an extremely high light yield (1200 PE/MeV) to achieve the unprecedented energy resolution of 3% at 1 MeV and an energy nonlinearity much better than 1%. The central detector is surrounded by veto detector, which consists of Water Cherenkov Detector and Top Tracker. Water Cherenkov Detector tracks muons and shields ambient radioactivity, while top tracker provides independent muon information to help muon tagging and track reconstruction. A thorough calibration system complex is also designed to deploy multiple sources, to cover the entire energy range of reactor neutrinos, and to achieve a full-volume position coverage inside the detector.

In this talk, we will update the recent progress in JUNO.

Salle 101 - Bât. 200, Orsay

Thé et café seront servis 15 mn avant le séminaire

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