

Séminaire LAL

Anatael Cabrena (LAL)

Mardi 11 décembre 2018 à 11h00

Neutrino Multi-Oscillations with JUNO

The JUNO experiment is one of the most ambitious neutrino experiment to be ever built so far. Its liquid scintillator based neutrino detectors design aims to yield high precision calorimetry with the largest detector (20 kton) of its kind. The high precision calorimetry constraint is critical to disentangle both the so-called "solar" and the so-called "atmospheric" oscillations seen for the first time in the same detector. If the energy resolution was controlled well enough, the unique vacuum signature of Mass Ordering (or Hierarchy) could also be observed using reactor neutrinos over a baseline of ~50 km. This measurement should agreed — to be demonstrated — with the very different measurement obtained by all other experiments relying on matter-enhanced effects.

In this seminar, I shall review the novel concept of Stereo Calorimetry detector design, proposed by CNRS/IN2P3 scientists, where JUNO employs two types of photo-detectors readout: 18,000x 20" and 25,000x 3" PMTs. This enables JUNO to have two simultaneous energy scales per event for maximal control of systematics. JUNO can do physics beyond high precision calorimetry of reactor neutrino. This shall be highlighted in the seminar too.

Salle 101 - Bât. 200, Orsay

Organisation : Reisaburo Tanaka (LAL) - seminaires@lal.in2p3.fr

LAL web : <http://www.lal.in2p3.fr>

Indico: <https://indico.lal.in2p3.fr/category/31/>