Séminaire P2IO

Masato Shiozawa (University of Tokyo)

Mardi 12 avril 2016 à 10h30

The future of neutrino physics in Japan

In 1998, the Super-K detector in Japan revealed that ubiquitous, almost massless particles called neutrinos have the ability to morph from one type to another. That landmark finding has become one of the most heavily cited scientific results in particle physics (2015 Nobel Prize). The “K” in Super-K and Hyper-K stands for a play on the word Kamioka, the name of a mountainous area about 200 miles west of Tokyo that houses multiple particle physics experiments.
Nowadays, scientists have proposed to build a successor to the still-operating Super-K: Hyper-K, a detector consisting of a megaton scale water tank and ultra-high sensitivity photosensors.
Part microscope and part telescope, the proposed Hyper-K experiment could fill in some of the blanks in our understanding of our universe. It could help explain why the universe favors matter over antimatter. It could provide new details about the fluctuating “flavors” or types of neutrinos. It could help elucidate whether there is any difference between neutrinos and their anti-particles.
It could also provide a better understanding of dark matter and exploding stars and could reveal whether protons—a main ingredient in all atoms—have an expiration date.
The proposed experiment would be complementary to DUNE a planned long-baseline neutrino experiment in the United States that will use different technology.

Auditorium Pierre Lehmann (LAL) -Bât.200

Thé et café seront servis à 10h00 dans la cafeteria du LAL.

Le LABoratoire d’EXcellence Physique des 2 Infinis et des Origines (P2IO) organise conjointement avec les départements Physique des 2 Infinis (P2I) et Sciences de la planète et de l’Univers (SPU) de l’Université Paris-Saclay une série de “Séminaires Communs des Origines et de la Physique des 2 Infinis” (SCOPI). Pour 2016, il est prévu d’avoir quatre séminaires en mars, juin, septembre et décembre.
Ces séminaires s’adressent à un large public.