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Séminaire SPP

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CEA-Saclay Bat 141, salle André Berthelot

Status and Perspectives of the KATRIN Experiment

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The Karlsruhe Tritium Neutrino (KATRIN) Experiment is a next generation, large-scale, single beta-decay experiment. It is currently under construction and will prospectively start taking data in 2016. The prime goal of the experiment is to probe the absolute neutrino mass scale with a sensitivity of 200 meV at 90% confidence level by analyzing the shape of the tritium beta-spectrum a few tens of eV below beta-decay endpoint energy, where the impact of the neutrino mass is maximal.

In this talk both the current status and future perspectives of the KATRIN experiment will be presented : The first part will focus on the recent main spectrometer commissioning measurements, with which the spectrometer's transmission and background properties were successfully investigated. The second part of the talk focuses on the possibility of extending the physics reach of KATRIN from its main goal of measuring the neutrino mass in the sub-eV range to look for contributions of possible sterile neutrinos in the multi-keV range constituting a possible candidate for Warm Dark Matter.

Le café sera servi 10 minutes avant.

NB : La présentation d'une pièce d'identité est exigée à l'entrée du centre. Tous les auditeurs extérieurs sont priés de prévenir à l'avance Martine Oger, tél. 01 69 08 23 50, e-mail : `martine.oger@cea.fr`. (U.E. : délai de 24 h, hors U.E. : délai de 4 jours).