

Lundi 28 novembre 11h00

CEA-Saclay Bat 141, salle André Berthelot

---

## The MEG experiment

RYU SAWADA

---

The MEG is an experiment to search for the rare muon decay  $\mu \rightarrow e\gamma$ . The lepton-flavor violating  $\mu \rightarrow e\gamma$  decay is forbidden in the standard model of the particle physics. However various new theories beyond the standard model such as supersymmetric grand unified theories predict branching ratio ( $\mathcal{B}$ ) just below the current experimental limit. The decay would be therefore a signature of new physics. The previous upper limit of  $\mathcal{B}$  is  $1.2 \times 10^{-11}$  given by the MEGA collaboration in 1999. The MEG experiment is aiming to search with a sensitivity down to a few times  $10^{-13}$ . The MEG experiment has been running since 2008 at Paul Scherrer Institut in Switzerland where the most intense DC muon beam up to  $10^8$  Hz is available. A positron spectrometer which allows us to measure high rate muon decays and a world largest liquid xenon gamma ray detector were developed. From 2009 and 2010 dataset, a new limit of  $\mathcal{B}$  of  $2.4 \times 10^{-12}$  was obtained. The experiment takes data in this year and in 2012 to realized the aimed sensitivity.

---

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 Emilie Chancrin, tél. 01 69 08 23 50, e-mail : [emilie.chancrin@cea.fr](mailto:emilie.chancrin@cea.fr). (U.E. : délai de 24 h, hors U.E. : délai de 4 jours).