

CENTRE D'ETUDES NUCLÉAIRES DE  
BORDEAUX-GRADIGNAN

**Vendredi 3 Juin 2016**

à

**11H**

*Un café sera servi à partir de 10h45*

**Yoann KERMAÏDIC**

*LPSC Grenoble*

**The neutron electric dipole moment search  
at the Paul Scherrer Institute**

The quest for a non-zero electric dipole moment (EDM) in a non-degenerate system such as the electron, the neutron or the Hg atom is a powerful way to search for physics beyond the standard model in the CP violation framework, complementary to the LHCb experiment. So far, no evidence for such an intrinsic property was observed and the upper limit on the neutron EDM (nEDM), established in 2006 by the RAL/Sussex/ILL collaboration, is  $|d_n| < 3 \times 10^{-26}$  e.cm (90% C.L.) [C.Baker et al. PRL 97, 131801 (2006)].

In 2015, we operated the world's most sensitive nEDM experiment for 5 months and cumulated a statistical sensitivity of  $\sigma_d = 2 \times 10^{-26}$  e.cm. I will present the current status of the experiment and the prospects for 2016.

In parallel, our collaboration conducts an active R&D program to build a next generation nEDM experiment called n2EDM to improve by an order of magnitude the current best sensitivity on the neutron electric dipole moment within the next decade. The main features of this new phase will be introduced.

**Salle des Séminaires du CENBG**

*Le Haut Vigneau - BP 120 - F-33175 Gradignan Cedex*