

**CENTRE D'ÉTUDES NUCLÉAIRES DE
BORDEAUX-GRADIGNAN**

Vendredi 7 Avril 2017

à 11H

Un café sera servi à partir de 10h45

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**Chasing the light sterile neutrino:
status of the STEREO experiment**

The standard three-family neutrino oscillation model is challenged by a number of observations, such as the reactor antineutrino anomaly (RAA), that can be explained by the existence of sterile neutrinos at the eV mass scale. The RAA can be tested by comparing antineutrino energy spectra at different distances from a reactor core, in order to observe possible distortions due to short baseline oscillations toward sterile neutrinos. After a review of the upcoming experiments and techniques that are being developed, I will focus on the STEREO experiment. STEREO detects antineutrinos produced in the ILL research reactor via their inverse beta decay interactions in the liquid scintillator of its 6 identical target cells. Since the start of its activity in November 2016, STEREO has collected data from a full reactor cycle. If no evidence of sterile neutrinos after the full statistics of 6 cycles is gathered, STEREO expect to fully exclude the RAA allowed region.

Salle des Séminaires du CENBG

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