The SoLid experiment

The recent observation of the Reactor Antineutrino Anomaly has revived the interest in short baseline experiments probing the disappearance of electron neutrinos and antineutrinos. The SoLid experiment is a reactor project that aims to resolve the anomaly using a novel detector design. Installed at a very short distance of $\sim 5-10$ m from the BR2 research reactor at SCK·CEN in Belgium, it will be able to scan the allowed parameter region within a year of data taking through the detection of low energy $\bar{\nu}_e$. The detector cube segmentation and robust neutron identification capabilities offer an unprecedented background rejection necessary for experiments on surface. The first phase of the experiment is expected to start in 2016.

In this seminar I will review the experimental layout and the current status of SoLid. Recent results from the SM1 detector prototype will also be presented. I shall conclude this talk, with an overview of the timeline envisaged for SoLid, highlight its physics potential, and give a brief description of other competitive efforts.

Seminar by Leonidas N. Kalousis