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Daya Bay and Other New “Low-Energy” Neutrino Projects at Brookhaven National Laboratory

I will discuss the physics motivation and current status of two major new efforts in neutrino physics: (1) Our current main emphasis is on the Daya Bay experiment, which has the goal of detecting oscillations of antineutrinos emitted by the Daya Bay nuclear reactors in China, in order to make a high-precision measurement of the unknown mixing angle, θ_{13} . (2) We are also participating in SNO+, which plans to use the existing SNO experimental setup, including the 12-meter acrylic vessel, the ~ 104 PMT's, and the DAQ, to search for neutrinoless double beta-decay in ^{150}Nd . A common link between these two experiments is our development of new metal-loaded liquid scintillators (M-LS) as the neutrino detectors, Gd-LS for Daya Bay and Nd-LS for SNO+. We are also working on the detection and removal of low-levels of radioactive contaminants, such as U, Th, Ra, in the M-LS and other components of the detector.

Lundi 7 avril 2008 à 15 heures

Salle André Berthelot, bât. 141
Le café sera servi 15 minutes avant

NB : *La présentation d'une carte d'identité ou d'un passeport est exigée à l'entrée du centre. Tous les auditeurs extérieurs sont priés de prévenir à l'avance de leur visite Emilie Chancrin, tél. 01 69 08 23 50 (U.E. : délai de 24 h, hors U.E. : délai de 4 jours).*