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(APC)

The Theta13 Panorama within the next 5 years

CP violation within the leptonic sector could provide the path for understanding the observed matter/antimatter asymmetry in the Universe. It has been realised that a non-zero θ_{13} (mixing angle of the leptonic mixing matrix: PMNS) is necessary to measure the Dirac leptonic CP violation through neutrino oscillations. This realisation is embodied by a series of experiments designed to measure θ_{13} within the next 5 years. There are two types of experiments endeavored on this challenge: reactor neutrinos and conventional beam neutrinos. Reactor neutrinos are sensitive to θ_{13} only, while beam neutrinos are additionally sensitive to the Dirac CP violation complex phase inbuilt in the PMNS matrix. Both types of experiments yield, today, comparable sensitivities on θ_{13} . This is not a redundancy but, in fact, an advantage since their results are complementary enhancing the effective sensitivity on CP violation (and other neutrino oscillations observables) through combined analyses.

During my seminar, I plan to cover the different experiments having any impact to the hunt for θ_{13} within the short time scale. This can be through the measurement of $\Delta m^2_{\text{atmospheric}}$ or the θ_{13} itself. Within this category, I will cover the impact of the following experiments: MINOS (in detail), OPERA, Double Chooz, Daya Bay, RENO, T2K and NOvA.

NOTE: I will exclude of my discussion other very interesting experimental approaches such as NuFact, Beta-beams, etc., whose time scale is longer.

Lundi 5 février 2007 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).