



東工大 物理学2専攻 「物理学リーダーシップ」

FGIP : Foreign Graduate Student Invitation Program

外国人博士課程大学院生の短期招待・共同研究

FGIP - Student Forum セミナー

Valérian Sibille (CEA Saclay, France)

日時：2015年12月11日(金) 13:00 - 14:00, 場所：本館H156

Cosmogenic Decays in Double Chooz

Abstract:

The Double Chooz experiment aims at measuring accurately the value of the neutrino mixing angle θ_{13} . To do so, the experiment makes the most of two identical detectors — filled with gadolinium-loaded liquid scintillator — observing electron antineutrinos released by the two nuclear reactors of the French Chooz power plant. The mixing parameter θ_{13} leads to an energy dependent disappearance of the antineutrinos as they propagate from the nuclear cores to the detection sites, which allows for a fit of the $\sin^2 2\theta_{13}$ value. The 467.90 live days of data taking with the far detector and a good understanding of the various backgrounds has allowed the Double Chooz Collaboration to publish a recent and robust assessment of the mixing parameter: $\sin^2 2\theta_{13} = 0.090^{+0.032}_{-0.029}$.

The preliminary part of the talk will get you acquainted with the speaker. The rest of the seminar will be dedicated to Physics and introduce the neutrino oscillation phenomenon, present the experimental site and the detection principle, before focusing on the main background of the experiment: the decay of cosmogenic isotopes, which are produced in the detector by muon-induced spallation reactions. The discussion will open with an outlook on the speaker's main other contributions.



問い合わせ：久世研究室・シャランコヴァ（内線2722）

FGIP - Guest student の滞在スケジュール

名前	大学・研究機関	滞在期間	受入担当
Valérian Sibille	CEA Saclay, France	12/4 - 12/28	Ralitsa Sharankova