Irfu
Institut de recherche
sur les lois fondamentales
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Séminaire SPP

Lundi 16/12/2013, 11h00-12h00

CEA-Saclay Bat 141, salle André Berthelot

Results on Neutrinoless Double-Beta Decay of Ge-76 from GERDA Phase I

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Neutrinoless double beta decay is a process that violates lepton number conservation. It is predicted to occur in extensions of the standard model of particle physics. This talk reports the results from Phase I of the Germanium Detector Array (GERDA) experiment at the Gran Sasso Laboratory (Italy) searching for neutrinoless double beta decay of the isotope Ge-76. Data considered in the present analysis have been collected between November 2011 and May 2013 with a total exposure of 21.6 kg yr. The background index is about 1×10^{-2} counts/(keV kg yr) after pulse shape discrimination. Altogether, the achieved sensitivity is increased compared to pre-runner experiments Heidelberg-Moscow (HdM) and IGEX. No signal is observed and a lower limit is derived for the half life of neutrinoless double beta decay of Ge-76 T1/20nu $> 2.1 \times 10^{25}$ yr (90% C.L.). Eventually, this talk gives an outlook on Phase II of the experiment commencing early 2014.

Le café sera servi 10 minutes avant.

NB : La présentation d'une pièce d'identité est exigée à l'entrée du centre. Tous les auditeurs extérieurs sont priés de prévenir à l'avance Martine Oger, tél. 01 69 08 23 50, e-mail : `martine.oger@cea.fr`. (U.E. : délai de 24 h, hors U.E. : délai de 4 jours).