CENBG

SÉMINAIRE

A new leading contribution to neutrinoless double beta decay

Ubirajara van Kolck

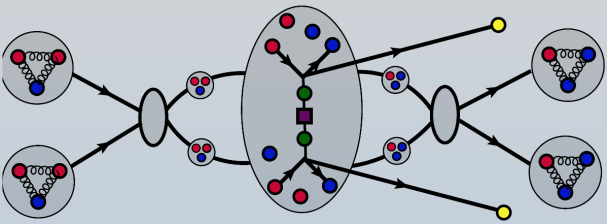
IPN Orsay

salle des séminaires du CENBG

Vendredi 1 Mars 2019 à 11h15

café servi à partir de 11h

The Standard Model (SM) of particle physics accidentally conserves lepton number (L) at the classical level. In the absence of unobserved light particles, the simplest deviation from the SM is expected to come from the only dimension-five operator that can be constructed from SM fields. This operator provides a natural explanation for the small values of neutrino masses, which give rise to neutrino flavor oscillations. Essentially the only practical way to test the concomitant L violation is the neutrinoless double-beta (0n2b) decay of heavy nuclei, for which extensive experimental efforts exist world-wide. The level at which this process occurs for given neutrino masses and mixings depends on the strong interactions that govern nuclear physics. I will show that in addition to the well-known uncertainty stemming from the many-body problem, there is a leading-order contribution from the QCD scale that has not been included in most calculations of the 0n2b amplitude.



CNRS IN2P3 Institut national de physique nucléaire et de physique des particules

Centre d'Études Nucléaires de Bordeaux-Gradignan

19 chemin du Solarium, CS 10120, 33175 Gradignan Cedex

université de BORDEAUX