ID de Contribution: **14** Type: **Non spécifié**

Neutrinoless double beta decay within the Interacting Shell Model

mercredi 10 octobre 2012 15:05 (40 minutes)

Neutrinoless double beta (0nbb) decay is a unique process because, if detected, it will imply the Majorana nature of neutrinos. Moreover, once an experimental lifetime will be measured, with the nuclear matrix elements (NMEs) very important information about the hierarchy an absolute masses of the neutrinos will be known.

Therefore, a reliable calculation of the NMEs is crucial. Those can be obtained with the Shell Model (SM) for most 0nbb decay candidates, which lie in nuclear mass regions where the SM is able to give a very good spectroscopic description.
I will present some details of these calculations, including the pairing and deformation effects on the NMEs.

I will then explore the problem of the value of the axial-vector coupling g_A, which needs to be quenched in Gamow-Teller and two-neutrino double beta decay calculations, using weak currents based on chiral effective field theory (chiral EFT).

This theory also gives nuclear forces that can be used in nuclear structure calculations.

Auteur principal: Dr MENÉNDEZ, Javier (Technical University Darmstadt)

Orateur: Dr MENÉNDEZ, Javier (Technical University Darmstadt)

Classification de Session: Double-beta decay and other rare processes

Classification de thématique: Beta-beta decays and other rare processes