



Séminaire du Laboratoire de l'Accélérateur Linéaire

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Jour et heure inhabituels

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The bolometric way to Double Beta Decay

Neutrinoless double beta decay is a rare nuclear transition which could shed light on fundamental aspects of neutrino physics, with strong impact on debated topics in cosmology and elementary particle physics. After a short review on this fascinating and elusive process, a discussion is given on the possible experimental approaches. Particular emphasis is placed on the bolometric technique, which makes use of crystals cooled at very low temperatures to detect the nuclear energy released by the decay through a tiny temperature change. The bolometric experiments on Double Beta Decay are at the forefront in the international arena : Cuoricino (now closed) and CUORE (in preparation) are presented and described. The prospects of this technology, which looks able to cover fully the inverted hierarchy region of the neutrino mass pattern, are discussed in detail, providing a description of important detector developments able to reduce drastically the background, such as the scintillating bolometers studied in the new project LUCIFER.

Salle 101 du LAL - Bât. 200, Orsay

Thé et café seront servis 1/4 h avant le séminaire

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