

Neutrinoless Double Beta Decay: Status and Prospects of CUORE and KamLAND-Zen

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Neutrinoless double beta decay ($0\nu\beta\beta$) is theoretically motivated but has never been observed. Its discovery would demonstrate lepton number violation, establish neutrinos are Majorana fermions and possibly constrain the absolute neutrino-mass scale.

The last decade has seen tremendous experimental progress in the search for this decay but to push the frontier forward improved detectors combining excellent energy resolution, extremely low background, and ton-yr exposures are required.

CUORE and KamLAND-Zen are meeting this challenge in two very different ways; the former with ^{130}Te in TeO_2 bolometers and the latter with ^{136}Xe -loaded liquid scintillator. In this talk I will give a brief overview of both these experiments

and their status. In particular I will present recent results from CUORE-0, a single-tower prototype of the CUORE experiment and describe the ongoing Phase-II of KamLAND-Zen.

Primary author: Dr O'DONNELL, Thomas (UC Berkeley and Lawrence Berkeley National Lab)

Presenter: Dr O'DONNELL, Thomas (UC Berkeley and Lawrence Berkeley National Lab)

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