



LNGS SEMINARS

Kengo Nakamura

Tohoku University

KamLAND Project

Japan

Neutrino-less double beta decay search at KamLAND

Abstract

After neutrino oscillations have been confirmed by several experiments, neutrino mass hierarchy is the key issue to understand neutrino nature. Search for neutrino-less double beta decay is one of the way to investigate the neutrino mass hierarchy.

KamLAND-Zen400 is an experiment to search for neutrino-less Double beta decay with 400 kg of e-136 and the mission has been completed after 4 years of data taking.

The final result does not see the signal of neutrino-less double beta decay, but constrains on mass hierarchy was improved and getting to "Inverted" hierarchy region. We are upgrading KamLAND-Zen400 to KamLAND-Zen800 to reach to the Inverted hierarchy region.

The main focus of this talk is the KamLAND-Zen experiment: final result and upgrade status. Since KamLAND-Zen is a part of KamLAND experiment that has several on-going physics programs, such as Neutrino Oscillation from Nuclear Reactors and Geo-Neutrinos, the KamLAND experiment is briefly introduced prior to KamLAND-Zen.

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