

Results from KamLAND-Zen

martedì 18 giugno 2024 14:50 (20 minuti)

KamLAND-Zen is a double beta decay experiment that exploits the existing KamLAND neutrino detector which realizes an ultra-low background environment. The xenon-loaded liquid scintillator in a spherical nylon balloon was deployed at the center of the KamLAND detector. The first search for neutrinoless double-beta decay of ^{136}Xe with 381 kg of xenon (KamLAND-Zen 400) demonstrated excellent sensitivity. To enhance the sensitivity, the KamLAND-Zen detector was upgraded to larger volume containing 745 kg xenon (KamLAND-Zen 800), corresponding to a twofold increase. In this talk, we will present the result of the improved search using complete KamLAND-Zen dataset, corresponding to an exposure of about 2 ton-yr of ^{136}Xe . In the future, the KamLAND detector is planned to be upgraded to improve the search sensitivity (KamLAND2-Zen), and final optimizations of design are ongoing.

Poster prize

Given name

Surname

First affiliation

Second affiliation

Institutional email

Gender

Collaboration (if any)

Autore principale: SHIMIZU, Itaru (Tohoku University)

Relatore: SHIMIZU, Itaru (Tohoku University)

Classifica Sessioni: S6: Neutrino properties 1