

## Towards "Neutrino Geoscience" with Geo-neutrino Measurement

\*Hiroko Watanabe<sup>1</sup>

1. Research Center for Neutrino Science, Tohoku University

Neutrino is an elusive particle and it can penetrate even astronomical objects. While neutrino experiments continue to explore the neutrino properties, such as the oscillation nature of neutrino flavor transformation, the mass-square differences and the mixing angles and so on, we have begun to utilize neutrinos as a tool to look into the Earth. Anti-neutrinos emitted from radioactive isotopes, geo-neutrinos, bring unique and direct information about the Earth's interior and thermal dynamics.

KamLAND, Kamioka Liquid-scintillator Anti-neutrino Detector, utilizes 1 kton liquid scintillator and reported the first experimental study of geo-neutrino in 2005. Later the geo-neutrino signals were used to estimate the Earth's radiogenic heat production and constrain the composition models of the bulk silicate Earth. We have begun to use neutrinos as "probe" to observe the Earth's interior.

In this talk, we will present status and future prospects of geo-neutrino measurement and possible application to geoscience.

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