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Geoneutrino observation with KamLAND

KamLAND is marked by ability to detect low energy anti-neutrino signals with 1,000 tons of ultra pure liquid scintillator. This feature has the sensitivity to detect geo-neutrinos produced by the decay of ^{238}U and ^{232}Th within the Earth. Owing to the long-term shutdown of Japanese reactors, the flux of reactor anti-neutrinos has been significantly reduced, and the data yield greater sensitivity for geo-neutrinos. Our decade-long measurement, including the reactor-off period, has the level of accuracy possible for adding constraints on composition models of the Earth, and the indicated geo-neutrino measurement provides key information for understanding the Earth. We will present our geoneutrino observation results and future prospects.

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