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Experimental study of terrestrial antineutrinos with KamLAND
MIKHAIL BATYGOV, KamLAND Collaboration, KAMLAND COLLABORATION — The Kamioka Liquid scintillator AntiNeutrino Detector (KamLAND) is a low-energy, low-background neutrino detector built with the primary goal of detecting reactor anineutrino oscillations. Additionally, it has proven to be a useful tool for observation antineutrinos from terrestrial ^{238}U and ^{232}Th decays. The first experimental study of terrestrial antineutrinos was performed using KamLAND. The present measurement of the antineutrino fluxes and spectra is consistent with current geophysical models and constrains the antineutrino emission from U and Th in the planet to less than 1.45x10^{-30} per target per proton per year at 99% CL.

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