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A three-flavor oscillation analysis of a new KamLAND data set
THOMAS O'DONNELL, Physics Department, University of California, Berkeley and Lawrence Berkeley National Laboratory, Berkeley, California 94720, USA, KAMLAND COLLABORATION — KamLAND is a one kilo-ton liquid scintillator anti-neutrino detector which studies reactor-$\bar{\nu}_e s$ with an average baseline of $\sim$ 180 km. The experiment was the first to report reactor-$\bar{\nu}_e$ disappearance and distortion of the $\bar{\nu}_e$ spectrum – the fingerprint of mass-driven flavor oscillation – and is uniquely sensitive to the mixing parameter Δm^2_{21} . I will present the results of a three-flavor oscillation analysis based on the most recent data set which amounts to a total exposure of 3.49×10^{32} proton-years and includes data collected with more favorable background conditions achieved by a detector radio-purity upgrade. Finally the results of a global analysis including reactor, solar, atmospheric and long-baseline accelerator oscillation data and the emerging weak constraints on θ_{13} will be presented.

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