

## Recent Results from the KamLAND-Zen Experiment

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The decade-old KamLAND neutrino detector entered a new phase two years ago, with the goal of studying neutrinoless double beta decay in  $^{136}\text{Xe}$ . To achieve this goal, the detector was augmented with a small balloon at the center of the detector, filled with liquid scintillator loaded with about 400 kg of 91% enriched  $^{136}\text{Xe}$ . The KamLAND-Zen collaboration recently reported on new neutrinoless double beta decay search results with an exposure of 89.5 kg-yr to this  $^{136}\text{Xe}$  target. These findings, together with results reported by EXO-200, allow to perform the most stringent test to date on the claimed observation of  $0\nu 2\beta$  in  $^{76}\text{Ge}$ . An unanticipated background, most likely due to  $^{110m}\text{Ag}$ , limited KamLAND-Zen's ability to further study  $0\nu 2\beta$  and the collaboration embarked on a purification campaign to reduce this background. I will describe our latest  $0\nu 2\beta$  and  $2\nu 2\beta$  results, give a status of the detector and provide an outlook for the future of KamLAND-Zen.

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