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Absolute $\overline{\nu}_e$ Detection Efficiency of the Daya Bay Experiment BRYCE LITTLEJOHN, University of Cincinnati, DAYA BAY COLLABORATION — The Daya Bay reactor $\overline{\nu}_e$ experiment has provided the most sensitive measurement of the neutrino mixing parameter θ_{13} ever recorded, $\sin^2 2\theta_{13} = 0.090 \pm 0.009$, by measuring relative differences in neutrino interaction rates between near and far detectors. In addition to measuring relative differences between detectors, the Daya Bay experiment can also make high-statistics measurements of the absolute reactor $\overline{\nu}_e$ flux and spectrum with its near site detectors. An essential input to any absolute measurement of the reactor flux normalization is the absolute efficiency in detecting $\overline{\nu}_e$ inverse beta decay interactions in the detector targets. The absolute efficiency of the Daya Bay inverse beta decay analysis utilizing neutron capture on Gadolinium has been precisely re-calculated using tuned Monte Carlo simulations of the Daya Bay detectors, with cross-checks and systematic uncertainties provided by data-Monte Carlo comparisons of various relevant calibration and inverse beta decay datasets.

Bryce Littlejohn
University of Cincinnati

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