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Effects of Recent Reactor Anti-neutrino Spectra on Neutrino Oscillations CIARA STERBENZ, Los Alamos National Lab and Columbia University — The β-decay of nuclear fission fragments produces a very large $\overline{\nu}_e$ flux from nuclear reactions. The shape of the expected flux has previously been predicted by converting the measured β-electron spectrum to an $\overline{\nu}_e$ spectrum. Recent reactor neutrino experiments, however, find a large shoulder in the observed $\overline{\nu}_e$ spectrum relative to this prediction in the energy region 5 - 7 MeV. Accurate knowledge of the expected $\overline{\nu}_e$ flux from reactors is important for oscillation experiments that only involve one neutrino detector. In this project, I examine the implications of these spectral changes on the ν oscillation result found by the KamLAND experiment. At the time of their finding, the spectral anomaly from 5 - 7 MeV had not be observed. I have re-derived the oscillation parameters Δm^2 and $sin^2(2\theta)$ using the anti-neutrino flux from Daya Bay and from nuclear database predictions. With these new expected fluxes, these oscillation parameters shifted and their uncertainties increased. I compare the new oscillation parameters with those derived from solar neutrino oscillation data.

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