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Latest Reactor Neutrino Flux and Spectrum Measurements from the Daya Bay Experiment SAMUEL KOHN, UC Berkeley / Lawrence Berkeley National Laboratory, THE DAYA BAY COLLABORATION COLLABORATION — The Daya Bay Reactor Antineutrino Experiment consists of eight identically-designed antineutrino detectors used for measuring the θ_{13} neutrino mixing angle. With a data set of millions of inverse beta decay reactor antineutrino events, Daya Bay is able to probe the mechanisms of antineutrino production in nuclear reactors. The absolute reactor antineutrino flux is updated following improved precision of the neutron detection efficiency. Two new studies, of individual ^{235}U and ^{239}Pu antineutrino spectra, and of flux and spectral evolution, have also been reported. The latest flux measurement continues to confirm the discrepancy with the Huber-Mueller model prediction (known as the reactor antineutrino anomaly) resulting in a ratio of measured to predicted yield of $0.952 \pm 0.014(exp.) \pm 0.023(model)$). The individual ^{235}U and ^{239}Pu spectral measurements, extracted from a reactor antineutrino spectrum for the first time, show spectral shape disagreements with the Huber-Mueller prediction in both isotopes. The flux and spectral evolution (due to changing reactor fuel composition) suggest that ^{235}U modeling may be the primary contributor to the reactor antineutrino anomaly.

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