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Latest Results of the Antineutrino Flux and Spectrum from Daya Bay

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In this talk, I will present the latest results of the reactor antineutrino flux and spectrum measurements performed by the Daya Bay Reactor Neutrino Experiment. Utilizing six powerful nuclear reactors as antineutrino sources, and eight identically designed detectors deployed in two near and one far underground experimental halls, the Daya Bay experiment has collected the largest reactor antineutrino sample to date. Given the considerable statistics and a comprehensive calibration study, an improved measurement of antineutrino flux with 1.5% relative uncertainty is obtained. The prompt energy spectrum of the inverse beta-decay (IBD) interactions is also found to disagree with the current theoretical models of antineutrino production in nuclear reactors. The individual spectra of the two dominant fissile isotopes, ^{235}U and ^{239}Pu , are extracted from the evolution of the prompt spectrum as a function of isotope fission fractions for the first time using commercial reactors. These results provide important inputs to current and future reactor neutrino experiments and modeling.

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