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First Results of the Daya Bay Reactor Neutrino Experiment

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The neutrino mixing angle θ 13 is the gateway of studying CP violation in lepton sectors and determines the trend of future neutrino experiments. The Daya Bay Reactor Neutrino Experiment aims to precisely determine θ 13, with the design sensitivity better than 0.01 in sin^22 θ 13 at the 90% C.L. The experiment takes a near-far relative measurement by comparing the observed electron-antineutrino rates and spectra at various baselines from the reactors. Functionally identical antineutrino detectors are deployed in water pools underground, in order to minimize the systematic errors and to suppress the cosmogenic backgrounds. The experiment started physics data taking on Dec.24, 2011. An overview of the experiment and the results using data up to May.15, 2012 will be presented.

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