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Recent Results From The Daya Bay Reactor Antineutrino Experiment

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The Daya Bay experiment is designed to provide a precise measurement of the smallest neutrino-mixing angle, θ13. It is located at the Daya Bay Nuclear Power Complex in southern China. Eight antineutrino detectors with identical design, each with a 20-t target, are deployed in three underground experimental halls at different distances from three clusters of nuclear reactors for detecting the low-energy electron antineutrinos emitted from the cores. A value of sin22θ13 is determined by comparing the observed rate of antineutrinos in the far detectors with the predicted one based on the measured rates obtained from the near detectors. This kind of relative measurement can reduce the systematic uncertainties significantly. Using this approach, Daya Bay reported the discovery of a non-zero value for sin2θ13 with a statistical significance of more than five standard deviations in March 2012. The recent results and prospects of Daya Bay will be presented in this talk.

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