

Recent Results from the Daya Bay Reactor Neutrino Experiment

The Daya Bay Reactor Neutrino Experiment is designed to precisely measure the mixing parameter $\sin^2 2\theta_{13}$ via relative measurements with eight identically designed antineutrino detectors (ADs).

In 2012, Daya Bay first observed a non-zero $\sin^2 2\theta_{13}$ value with a significance larger than 5σ with the initial six ADs.

With the installation of two new ADs to complete the full configuration, Daya Bay is continuing to increase statistics and lower systematic uncertainties for better precision of $\sin^2 2\theta_{13}$ and for the exploration of other physics topics.

In this talk, I will present the latest analysis results of $\sin^2 2\theta_{13}$ and $|\Delta m_{ee}^2|$, including a measurement made with neutron capture on Gadolinium and an independent measurement made with neutron capture on hydrogen.

The latest results of the search for sterile neutrino in the mass splitting range of $10^{-3} \text{ eV}^2 < |\Delta m_{41}^2| < 0.3 \text{ eV}^2$ and the absolute measurement of the rate and energy spectrum of reactor antineutrinos will also be presented.

Summary

The latest results of Daya Bay on the measurements of oscillation parameters, the search for sterile neutrino, and the measurement of reactor neutrino spectrum will be presented.

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