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Recent Results from Daya Bay Reactor Neutrino Experiment

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A new spectral measurement of electron antineutrino disappearance using the fully constructed Daya Bay Reactor Neutrino Experiment was reported in 2015. The final two of eight antineutrino detectors were installed in the summer of 2012. Including the 404 days of data collected from October 2012 to November 2013 resulted in a total exposure of $6.9 \times 10^5 GW_{th}$ ton days, a 3.6 times increase over our previous results. Direct prediction of the antineutrino signal in the far detectors based on the measurements in the near detectors explicitly minimized the dependence of the measurement on models of reactor antineutrino emission. We gave a measurement of the neutrino oscillation parameters of θ_{13} and $|\Delta m_{ee}^2|$ in the three-neutrino framework.

We also reported a measurement of the flux and energy spectrum of electron antineutrinos from the reactors. It was consistent with previous short-baseline reactor antineutrino experiments, and compared to the flux predicted with the Huber+Mueller (ILL+Vogel) fissile antineutrino model.

An improved independent measurement of neutrino mixing angle θ_{13} with signals from the neutron captured by hydrogen is going to be published.

Auteur principal: M. ZHANG, Yiming (Tsinghua University)

Orateur: M. ZHANG, Yiming (Tsinghua University)

Classification de Session: Neutrinos

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