
## Poster session 2 – Tuesday 5 July

P2.063 **Oscillation analysis in Daya Bay experiment**

M Gonchar

JINR, Russia

*on behalf of Daya Bay collaboration*

Daya Bay neutrino experiment is the first experiment to observe reactor electron antineutrino disappearance with significance higher than 5 standard deviations and is the first reactor experiment to measure mass splitting $\Delta m^2_{32}$. Daya Bay has measured antineutrino mixing angle $\theta_{13}$ with unprecedented precision.

Antineutrino flux from 6 nuclear reactors with a total nominal thermal power of 17.4 GW is observed by 8 identically designed 20 kt liquid scintillator detectors. Experimental halls located on average distances of 500 m, 600 m and 1500 m from the reactors see slightly different antineutrino flux due to oscillations. The comparison of the observed antineutrino spectrum between far and near detectors gives a flux model independent handle to measure oscillation parameters. The ratio of the total number of events is related mostly to the oscillation amplitude $\sin^2 2\theta_{13}$ while relative spectral distortion is almost exclusively determined by mass splitting.

The target precision of 3 % on both oscillation parameters in 2017 requires a very high level of consistency between several independent analysis groups. The poster covers one of the particular methods used for the oscillation analysis of Daya Bay data including experimental model implementation, free reactor antineutrino spectrum model, uncertainties propagation, $X^2$ implementation. The latest oscillation analysis results are presented.