## 53rd Rencontres de Moriond - EW 2018



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## Results of Daya Bay on the reactor antineutrino fluxes and theta13 measurement

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Daya Bay reactor neutrino experiment has been taking data since the year of 2012 with eight antineutrino detectors deployed at three underground experimental halls at distances of  $\sim$ 400 m - 2000 m away from the six 2.9 GWth nuclear reactors. With millions of inverse beta decay candidate events and well controlled systematics, Daya Bay has measured the neutrino mixing angle theta13 at 4% precision level. The measured reactor antineutrino flux is consistent with the previous experimental results,  $\sim$ 6% lower than the Huber-Mueller model prediction. Meanwhile, the measured spectrum also deviates from the model prediction at  $\sim$ 3 $\sigma$  confidence level. The isotope U235, with unequal deficit compared with isotope Pu239, is likely to be the primary cause of the so-called "reactor antineutrino anomaly" based on the reactor fuel evolution data.

## **Summary**

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