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High-energy reactor neutrino flux measurement at Daya Bay

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This poster will present the first measurement of high-energy reactor antineutrinos at the Daya Bay experiment. Based on the data collected over 1958 days, the Daya Bay experiment has observed about 9000 inverse beta decay candidates in the prompt energy region of 8-12 MeV from six commercial reactors. A multivariate analysis is applied to separate ~2500 signal events from backgrounds statistically. As a result, the hypothesis of no reactor antineutrinos with energy above 10 MeV is rejected with a significance of 6.2 standard deviations. This first direct measurement of high-energy reactor antineutrinos provides a unique data-based reference for other experiments and theoretical calculations.

In-person participation

No

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