

Search for a sub-eV sterile neutrino using Daya Bay's full dataset

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The Daya Bay experiment has studied antineutrino emission at low-enriched uranium reactors, with detectors spanning a large baseline from the reactor cores ($\sim 2\text{km}$). This poster presents results of a search for the mixing of a sub-eV sterile neutrino based on Daya Bay's full data sample. The result is obtained in the minimally extended 3+1 neutrino mixing model. The analysis benefits from a doubling of the statistics (5.55×10^6 candidates) of our previous result and from improvements of several important systematic uncertainties. With these updates, the sensitivity to $\sin^2 2\theta_{14}$ achieves 5×10^{-3} with 95% confidence level, which represents the world leading constraints in the region of $2 \times 10^{-4} \text{ eV}^2$

$\lesssim \Delta m_{41}^2$

$\lesssim 2 \times 10^{-1} \text{ eV}^2$.

Alternate track

1. Beyond the Standard Model

I read the instructions above

Yes

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