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

Thursday 18 July 2024 20:40 (20 minutes)

The Daya Bay experiment has studied antineutrino emission at low-enriched uranium reactors, with detectors spanning a large baseline from the reactor cores (~2km). 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 ( $5.55 \times 10^6$  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  $5 \times 10^{-3}$  with 95% confidence level, which represents the world leading constraints in the region of  $2 \times 10^{-4}$  eV<sup>2</sup> lessim $\Delta m_{41}^2$ 

 $less sim 2 \times 10^{-1} \ {\rm eV}^2.$ 

## Alternate track

1. Beyond the Standard Model

## I read the instructions above

Yes

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