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sterile neutrino analysis of reactor-neutrino oscillation

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Sterile neutrinos are one candidate to explain anomalies in neutrino oscillations. The mass-difference-driving oscillation between flavors can be probed only within specific combinations of baseline and flight energy. For a neutrino whose mass is completely unknown, it is necessary to scan all available ranges in spectrum and all accessible baselines. Here, we present four-neutrino analysis of the results announced by RENO and Daya Bay, which performed the definitive measurements of θ 13 based on the disappearance of the inverse-beta-decay antineutrino at km-order baselines. Our results within 3+1 scheme include the exclusion curve of Δm 41 vs. θ 14 , and the adjustment of θ 13 due to the contribution of θ 14 to the disappearance of electron antineutrinos.

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