

Reactor Neutrino Experiments in the light of the Reactor Antineutrino Anomaly

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Recently new reactor antineutrino spectra have been provided for ^{235}U , ^{239}Pu , ^{241}Pu and ^{238}U , increasing the mean flux by about 3 percent. We will review the synthesis of published experiments at reactor-detector distances <100 m leading to a ratio of observed event rate to predicted rate of $0.943(0.023)$, deviating from unity at the 98.6% C.L.. The compatibility of this new result with the existence of a fourth non-standard neutrino state driving new neutrino oscillations will be discussed. Test of the anomaly with short baseline reactor experiments will be presented. We will then review the forthcoming reactor neutrino program towards the determination of the θ_{13} mixing angle at Daya Bay, Double Chooz, and Reno. We will finally discuss the implication of the reactor antineutrino anomaly on the sensitivity of the neutrino oscillation searches at reactors in both solar and atmospheric sectors.

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