ID de Contribution: **41** Type: **Ordinary**

Reactor Anti-Neutrino Anomaly

mercredi 16 mars 2011 19:30 (15 minutes)

Recently new reactor antineutrino spectra have been provided for 235U, 239Pu, 241Pu and 238U, increasing the mean flux by about 3 percent. To good approximation, this reevaluation applies to all reactor neutrino experiments. The synthesis of published experiments at reactor-detector distances ≤ 100 m leads to a ratio of observed event rate to predicted rate of 0.979(0.029). With our new flux evaluation, this ratio shifts to 0.937(0.027), leading to a deviation from unity at 98.4% C.L. which we call the reactor antineutrino anomaly. The compatibility of our results with the existence of a fourth non-standard neutrino state driving neutrino oscillations at short distances is discussed. The combined analysis of reactor data, gallium solar neutrino calibration experiments, and MiniBooNE-neutrino data disfavors the no-oscillation hypothesis at 99.93% C.L. The oscillation parameters are such that |Δm^2| ≥ 1.5eV^2 (99% C.L.) and sin^2(2θ) = 0.17(0.1) (95% C.L.). Constraints on the theta13 neutrino mixing angle are revised.

Auteur principal: Dr MENTION, Guillaume (CEA Saclay)

Orateur: Dr MENTION, Guillaume (CEA Saclay)

Classification de Session: Flavour Physics - Lepton Flavour - Neutrinos

Classification de thématique: Experiment