

Sensitivities to electroweak mixing angle and neutrino charge radius at reactor neutrino experiments involving CE ν NS (poster)

Content

Standard Model electroweak theory and radiative corrections to the Weinberg angle ($\sin^2 \theta_W$) predict that neutrinos, while electrically neutral, possess quantifiable electromagnetic properties. Specifically, one such property is the neutrino charge radius (NCR). This poster presents how different experimental configurations involving reactor antineutrinos interacting via Coherent Elastic Neutrino-Nucleus Scattering (CE ν NS) in liquid argon can yield differing results depending on the values of $\sin^2 \theta_W$ and the NCR, thus quantifying the sensitivity of such experiments to these Standard Model parameters. The results show the projected sensitivity of reactor-based experiments near Mexico City to determining the Weinberg angle and the electron-neutrino NCR.

Summary

Primary author(s) : Mr. GUERRA, Mario (Cinvestav)

Presenter(s) : Mr. GUERRA, Mario (Cinvestav)