

Spectral measurement of electron antineutrino disappearance via neutron capture on hydrogen at Daya Bay

Authorship annotation

for the Daya Bay collaboration

Session and Location

Monday Session, Poster Wall #164 (Ballroom)

Abstract content

The Daya Bay experiment has measured $\sin^2(2\theta_{13})$ and Δm_{32}^2 with better than 4% precision using an inverse beta decay (IBD) sample tagged via neutron capture on gadolinium (nGd). A precise and independent measurement of the oscillation parameters is performed with IBDs tagged via neutron capture on hydrogen (nH), a statistically distinct sample with largely different systematic uncertainties. Efforts have gone into developing an energy model that improves the characterization of detector response. This enables a spectral measurement of reactor antineutrino disappearance with the nH sample. Data-driven methods have been developed to precisely estimate the backgrounds and to better control the systematic uncertainties. This work will be presented, along with the latest nH oscillation results.

Poster included in proceedings:

yes

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