

Measurement of the evolution of the reactor antineutrino flux and spectrum at Daya Bay

Authorship annotation

for the Daya Bay collaboration

Session and Location

Monday Session, Poster Wall #198 (Ballroom)

Abstract content

The Daya Bay experiment has utilized eight functionally identical underground detectors to sample reactor antineutrino fluxes from three pairs of nuclear reactors in South China, accruing the largest reactor antineutrino sample to date. Four antineutrino detectors in two experimental halls were used to identify 2.2 million inverse beta decays (IBDs) over 1230 days spanning multiple fuel cycles for each of Daya Bay's six 2.9 GW reactor cores. A variation in IBD yield was found to be energy-dependent, rejecting the hypothesis of a constant antineutrino energy spectrum. While measurements of the linear variation with respect to the fuel content in the IBD spectrum show general agreement with predictions from recent reactor models, the measured linear variation with respect to the fuel content in the total IBD yield disagrees with recent predictions. This poster will explain these results, while providing an update on the present status of analysis improvements

Poster included in proceedings:

yes

Primary author(s) : Dr. MARTINEZ CAICEDO, David (Illinois Institute of Technology)

Presenter(s) : Dr. MARTINEZ CAICEDO, David (Illinois Institute of Technology)

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