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Measurement of the Uranium-235 Antineutrino Spectrum by PROSPECT

The Precision Reactor Oscillation and SPECTrum experiment, or PROSPECT, detector is designed to accurately measure the ^{235}U antineutrino energy spectrum. The detector is located at the High Flux Isotope Reactor (HFIR), an 85 MW highly-enriched uranium (HEU) reactor with short reactor-on periods, such that over 99% of the antineutrino flux comes from ^{235}U .

This poster presents the latest spectral results from PROSPECT. We compare the resulting spectrum to model predictions, and test the contribution of ^{235}U towards potential high energy excess as seen in previous spectral measurements performed at nuclear power reactors.

Mini-abstract

The latest results of the PROSPECT ^{235}U antineutrino energy spectrum analysis.

Experiment/Collaboration

PROSPECT Collaboration

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