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The effect of updated ^{238}U Fission Yields on reactor antineutrino spectra

It has been speculated by A.C. Hayes and collaborators that the excess of antineutrinos at 5 MeV (known as "the bump") could be due to deficient knowledge of the antineutrino spectrum. Cumulative fission product yields play a major role in this calculation and Hayes suggested, in particular, that ^{238}U could be an important contributor to the bump.

Nonetheless, yields from ^{238}U were often neglected in experimental campaigns, and the evaluated values in ENDF-B/VIII.0 date back to the 1990s. In this work we introduce a new effort undertaken at the NNDC to produce updated FY recommended experimental values for fast fission of ^{238}U . This is based on a reevaluation of results from older experiments, and the inclusion of new important datasets produced in the past 30 years. We will show the updated ^{238}U (nfast,f) FY recommended values, and their effects on reactor antineutrino calculations.

Mini-abstract

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Experiment/Collaboration

Primary author: MATTERA, Andrea (Brookhaven National Laboratory - NNDC)

Presenter: MATTERA, Andrea (Brookhaven National Laboratory - NNDC)

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