

Abstract Submitted
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A new ^{238}U fission yields evaluation for calculations of reactor antineutrino spectra¹ ANDREA MATTERA, ALEJANDRO A. SONZOGNI, ELIZABETH A. MCCUTCHAN, SHAOFEI ZHU, RYAN LOREK, MATTEO VORABBI, GINO FABRICANTE, TUNISIA SOLOMON, Brookhaven National Laboratory — Independent fission yields (IFYs), *i.e.*, the probability of a nuclide to be produced in a fission event represent, along with decay data, the key quantity needed to predict reactor antineutrino spectra. It has been recently speculated by A.C. Hayes and collaborators that the excess of antineutrinos at 5 MeV - colloquially known as 'the bump' - could be due to deficient knowledge of the ^{238}U antineutrino spectrum. The last evaluation of ^{238}U dates back to the 1990's, thus revisiting it is timely.

We present an effort to produce new FY recommended experimental values for fast fission of ^{238}U . We explored different methods to evaluate IFYs, from simply adopting the new experimental data published since the last evaluation, to employing fission models to correct and use results from innovative experimental techniques (such as inverse kinematics) that are not traditionally included in FY evaluations. The various sets of ^{238}U recommended values, and their effects in reactor antineutrino calculations will be discussed and compared.

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