

Updates on Reactor Neutrino Flux modeling

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A new generation of experiments have measured the IBD antineutrino spectrum generated by nuclear reactors in the last 12 years with unprecedented accuracy. With respect to the Huber-Mueller model, they have revealed a short-distance deficit, manifesting as an over-prediction at the top of the spectrum, as well as an underprediction at around 6 MeV - which has become colloquially known as 'the bump'. Several possibilities have been put forward to explain these features, including faulty or incomplete modelling, and the possible existence of sterile neutrinos. In this presentation we will review (a) the latest results from nuclear reactor experiments, (b) normalization issues in the electron spectra measured at the Institut Laue Langevin in the 1980s, (c) impact of electron spectra measured to derive decay heat values, (d) recent upgrades to the summation method, on both the fission yields and decay data, and (e) future experiments to resolve outstanding issues.

Poster prize

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