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Fission Product Yields and their Impact on the Reactor Antineutrino Anomaly and CEvNS

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The reactor antineutrino anomaly features a spectral bump in the 5-7 MeV range. Previous analyses have suggested that current models can be improved upon through use of the summation method for spectral calculation. However, this method suffers from compounding uncertainties from fission product yield data in nuclear databases. Moreover, nineteen and twenty fission products have been identified as the primary contributors to the spectral bump in the U^{235} and Pu^{239} spectra, respectively. New measurements of these yields in particular are underway to reduce uncertainties in the summation method. Potential effects of this anomaly on CEνNS spectra from reactor antineutrinos are being investigated.

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