Benchmarking of neutrino energy reconstruction methods using electron-deuterium scattering data

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High-precision measurements of neutrino oscillation parameters require a deep understanding of neutrino interactions with the atomic nuclei of detectors. These nuclear effects are one of the main sources of systematic uncertainty in neutrino experiments. To help resolve this, we take advantage of electron-deuteron scattering data using the large-acceptance CLAS detector at Jefferson Lab. This data could be particularly useful in this process, because such a light and simple nucleus is relatively well-understood. The elimination of tangled nuclear effects is also an attractive reason to consider deuterium-based detectors. I will present our results on the benchmarking of neutrino energy reconstruction methods using 5-GeV electron-deuteron scattering data.