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Testing a Neutrino Event Generator against Electron Scattering Data AFRODITI PAPADOPOULOU, Massachusetts Inst of Tech-MIT — Neutrino physics is entering an age of precision measurements. A number of experiments have firmly established the existence of neutrino oscillations and determined the corresponding squared mass differences and mixing angles. These measurements have provided unambiguous evidence that neutrinos have non-vanishing masses. The large θ_{13} mixing angle will enable future experiments to search for leptonic CP violation in appearance mode, thus addressing one of the outstanding fundamental problems of particle physics. These searches will involve high precision determinations of the oscillation parameters, which in turn require a deep understanding of neutrino interactions with the atomic nuclei comprising the detectors. In view of the achieved and planned experimental accuracies, the treatment of nuclear effects is indeed regarded as one of the main sources of systematic uncertainty. In this context, a key role is played by the availability of a wealth of electron scattering data. In this analysis, data from the CLAS detector at Jefferson Lab have been used to test the accuracy of the neutrino energy reconstruction methods against the predictions of the commonly used GENIE neutrino event generator.

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