

Electrons For Neutrinos: The Next Generation

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The ability of current and next generation accelerator based neutrino oscillation measurements to reach their desired sensitivity and provide new insight into the nature of our Universe, requires a high-level of understanding of the neutrino-nucleus interactions. These include precise estimation of the relevant cross sections and the reconstruction of the incident neutrino energy from the measured final state particles.

The electron for neutrinos collaboration leverages wide phase-space exclusive electron scattering data with known beam energies to test energy reconstruction methods and interaction models. In this talk we will summarize new results and analyses underway measuring proton transparency, a crucial diagnostic observable for event generators' intranuclear cascade models, as well as a new exclusive $1p1\pi$ analysis. We will also discuss new data taken in 2022 with beams at the same energy region and similar nuclear targets as expected in the next generation of accelerator based neutrino oscillation experiments.

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