

Abstract Submitted
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Electrons for Neutrinos: Lepton Energy Reconstruction in the Resonance Excitation Region LUCAS TRACY, Univ of Virginia, ELECTRONS FOR NEUTRINOS COLLABORATION, CLAS COLLABORATION COLLABORATION — Extracting neutrino oscillation parameters from experiments such as DUNE relies on determining the incident neutrino energy for each event individually. We exploited the similarities between electron- and neutrino-nucleus scattering to test energy reconstruction techniques using electron data with a known beam energy from the CLAS detector at the Thomas Jefferson National Accelerator Facility. Previous work done for the CLAS Collaboration by the Electrons for Neutrinos ($e4\nu$) Collaboration focused on the more easily understood quasielastic events with one proton and zero pions. We extended this analysis to $1p1\pi$ events, which are dominated by resonance production. Only a fraction of the $p\pi^-$ events reconstructed to the correct beam energy and none of the $p\pi^+$ events did. We will present data on the incident energy and target mass dependence of the energy reconstruction, as well as comparisons to simulations using the GENIE neutrino event generator.

Lucas Tracy
Univ of Virginia

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