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Electrons for Neutrinos: Lepton Energy reconstruction in the Resonance Excitation Region ALICIA MAND, MARIANA KHACHATRYAN, Old Dominion University, AFRODITI PAPADOPOULOU, ADI ASHKENAZI, Massachusetts Institute of Technology, FLORIAN HAUENSTEIN, Old Dominion University, Massachusetts Institute of Technology, ANJALI NAMBRATH, Massachusetts Institute of Technology, LAWRENCE B. WEINSTEIN, Old Dominion University, OR HEN, Massachusetts Institute of Technology, LUCAS TRACY, Old Dominion University, STUART FEGAN, University of York, CLAS COLLABORATION — An area of particular interest in particle physics is neutrino oscillation. The nature of these oscillations remains unexplained by the standard model of particle physics. Neutrino oscillations are defined as the oscillating probability of a neutrino to be in a particular state as it travels through space. This is represented as a function of their propagation distance over their energy (L/E). However, the energy (E) is not directly measurable. Because of this, experiments rely on phenomenological models such as GENIE to reconstruct E. Through the use of electron data with known beam energies from the CLAS detector at the Thomas Jefferson National Accelerator Facility, the similarities between electron-nucleus and neutrino-nucleus interactions can be exploited. Using data from a variety of targets and known beam energies, we are able to test the GENIE interaction model. We found that the discrepancy between the data and the GENIE model were significant enough to show that GENIE can bias the energy reconstruction of neutrino-nucleus interactions. This presentation will be taking a look at the results generated from the analysis of the 1p1pi channel using the aforementioned data and the GENIE model.

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