Abstract Submitted
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Measurement of Neutrino Induced Quasi-Elastic Cross Section
JAE KIM, The University of South Carolina — The measurement of the weak mixing angle is the goal, using the data collected in the NOMAD experiment at CERN. Studying the neutrino induced Quasi-Elastic (QE) scattering, in which neutrino hits neutron and results in a muon and a proton, would enhance our understanding of the 'higher-twist effect' – an effect that parameterizes the weak mixing angle. Toward this, I developed a likelihood probability density function that enabled me to eliminate a significant portion of the background, resonance and deep inelastic scattering events. As the Monte Carlo (MC) is only reliable to a precision not better than 15 – 20 percent, I developed several techniques to make sure that MC and DATA agreed around 5 percent. The axial mass and QE cross section can then be calculated. Techniques and the preliminary results relevant to the calculation will be presented.

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