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Nuclear Dependence of Quasi-Elastic Scattering at MINERvA

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A precise understanding of quasi-elastic interactions is crucial to measure neutrino oscillations. Current neutrino oscillation experiments use different targets that range from carbon to argon. A sample of neutrino interactions on Fe, Pb, C and CH with one muon and at least one proton candidate is used to study quasielastic-like interactions and the role that the nuclear environment plays in modifying those interactions. Measurements of differential cross sections and ratios of Fe, Pb and C to scintillator are presented as a function of four-momentum transferred to the target nucleus, where the momentum transferred is reconstructed using proton kinematics. Comparisons of these measurements with the predictions from the GENIE and NuWro event generators will be shown.

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