

The Energy Dependence of Nucleon Propagation in Nuclei
as Measured in the (e,e'p) Reaction

A Proposal for CEBAF

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Abstract

The energy dependence of proton propagation through nuclei will be examined in measurements of the A dependence of the quasifree (e,e'p) reaction on four targets, ^{12}C , ^{28}Si , ^{58}Ni and ^{208}Pb for average emergent proton energies of 400, 700, 1000, and 2000 MeV. At $T_p=400$ MeV, $Q^2=.76$ (GeV/c) 2 , a Rosenbluth separation will be performed to study the reaction mechanism. A consistent data set covering this large range of proton energy would be unique and provide an important survey of the reaction mechanism in the quasifree region. The experiment would be performed using the coincidence spectrometer pair in Hall C to detect the electron and proton. The A dependence of the integrated coincidence yield provides a direct measure of the proton attenuation.