How Small are FSI Corrections at High Q^2?

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Abstract

For analysis of precision experiments recently performed at Jefferson Lab, as well as experiments proposed for the 12 GeV upgraded facility, it is important to accurately relate the processes measured using light nuclei to equivalent free nucleons. It is widely accepted that Final State Interactions (FSI) and Meson Exchange Currents (MEC) diminish for quasi-elastic kinematics at high Q^2; the subject of this study is the exact value due to FSI and MEC for quasi-elastic measurements at high Q^2. The Generalized Eikonal Approximation allows a potentially infinite number of re-scattering diagrams to be summed into the final set of Feynman diagrams.[1]

In this talk, I will discuss results of calculations made in the framework of recent theoretical models for FSI relevant to data taken for Jefferson Lab E02-013, a high precision measurement of the Sach's form factor G_E^n at Q^2 up to 3.5 GeV^2 *via* quasi-elastic scattering from a polarized ^{3}He target.

[1]Sargsian, M M, arXiv: nucl-th/0110053