A Study of the Dynamics of the Exclusive Electro-Disintegration of the Deuteron

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Abstract

This proposal aims at a quantitative study of the dynamics of Final State Interactions, Meson Exchange Currents and Isobaric Currents in the electro-disintegration of the deuteron in order to investigate the short range structure of this few body system. The D(e,e’p)n reaction will be studied by measuring the coincidence cross section for $Q^2$ values of 1.0, 2.5, and 4.0 (GeV/c)$^2$ and recoil momenta values ($p_{\text{miss}}$) between 0.2 and 0.5 GeV/c. A complete angular distribution of the recoiling neutron with respect to the virtual photon will be obtained for each combination of fixed $p_{\text{miss}}$ and $Q^2$. 