Exclusive Compton Scattering on The Proton

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Abstract

We propose measurements at 3 – 6 GeV of Compton scattering $\gamma + p \rightarrow \gamma + p$ at large perpendicular momentum transfer to the proton. Recent theoretical developments offer the possibility of a unified treatment of high energy Compton scattering, elastic form factors, and deep inelastic scattering. We will use an untagged bremsstrahlung beam in Hall A with coincidence detection of the recoil proton and scattered photon. The proton will be detected in one of the HRS spectrometers, and the photon will be detected in a large-area, multi-segment Pb-Glass calorimeter.