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GPD Factorization in Pion Electroproduction: PionLT Luminosity Studies

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Generalized Parton Distributions (GPDs) are a huge advancement in our understanding of hadronic structure and non-perturbative QCD. To study GPDs, one may use the Deep Exclusive Meson Production (DEMP) reaction. The PionLT experiment in Jefferson Lab Hall C measures the DEMP reaction, but to access GPD information we must perform a LT separation on the data. An LT separation divides the cross-section into components based on the virtual-photon polarization. But to do this, first one must understand the rate dependence of the data. This is because to do a single LT separation requires high precision knowledge of the cross-sections at atleast two values of photon virtuality, epsilon, for fixed Q^2 and W, which means directly comparing settings at different beam energies with different rates. In addition, to obtain full azimuthal coverage in Hall C one must take data at three angles in the SHMS spectrometer, meaning a total of 6 settings that must be directly compared. This talk reports finalized luminosity studies for the PionLT experiment which determines the rate dependence precisely.

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