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Future precision studies of the DVCS process at JLab

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Generalized Parton Distribution (GPDs) functions describe the correlation between the spatial distribution of the quarks and its longitudinal momentum fraction. Their definition in the mid 1990's has revolutionized our approach to the description of the internal structure of the nucleon. Deeply Virtual Compton Scattering (DVCS) off the nucleon ($\gamma * N \rightarrow \gamma N$) is the simplest process which is sensitive to the GPDs. A suite of approved DVCS experiments is currently in preparation in Hall A and Hall C at Jefferson Lab. These experiments are the third phase of a successful approach to precise (~5%) measurement of absolute cross-section. The first generation of experiments [1, 2] showed the importance of precise measurement of absolute cross-section. The second generation of experiments (data under analysis) will provide a complete separation of all terms making up the total cross-section. And the third generation of experiments (data to be taken with the 12 GeV beam at JLab) will provide measurements over an extended kinematic range. In this talk, I will review the upcoming DVCS precision measurement program.

References
[1] C. M. Camacho et al. [Jefferson Lab Hall A and Hall A DVCS Collaborations], Phys. Rev. Lett. 97, 262002 (2006) [nucl-ex/0607029].
[2] M. Mazouz et al. [Jefferson Lab Hall A Collaboration], Phys. Rev. Lett. 99, 242501 (2007) [arXiv:0709.0450 [nucl-ex]].

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