PR12-17-012B: *Tagged Deeply Virtual Compton Scattering Off Light Nuclei*

I. Balitsky

The GPD program is one of the main goals of scientific program of the 12 GeV upgrade of JLab. The deeply virtual Compton scattering (DVCS) is the most straightforward channel for this program. The main goal of this experiment is to study incoherent DVCS on a nucleon contained inside a nucleus and determine the size of "off-forward EMC effect" - the ratio of bound nucleon's GPD in ^{2}H and ^{4}He to a free nucleon's GPD. The tagging of the recoil spectator particles gives us a handle on experimental study of final state interactions and a possibility to (dis)prove various models of these interactions. The experiment is proposed in a run group with two other measurements aimed at understanding of the structure of ^{4}He.

My comment to the previous version of this proposal was that the unchanged momenta of final nucleons were interpreted as an absence of final-state interactions (FSI). However, I noted that the nucleon scattering amplitude (he elliptic black blob in the right Fig. 1.4 diagram) may have sizable zero momentum transfer limit which may be interpreted as final-state interaction that does not change the momenta of the tagged nucleons but can change the amplitudes and cross sections. Judging from a new Appendix A, the authors of new proposal are aware of the problem and suggest to solve it using model calculations. Based on these model calculations, the authors claim that the *significant* FSI can be identified in the experiment. At this point I do not have further questions and I think the experiment should be pursued.