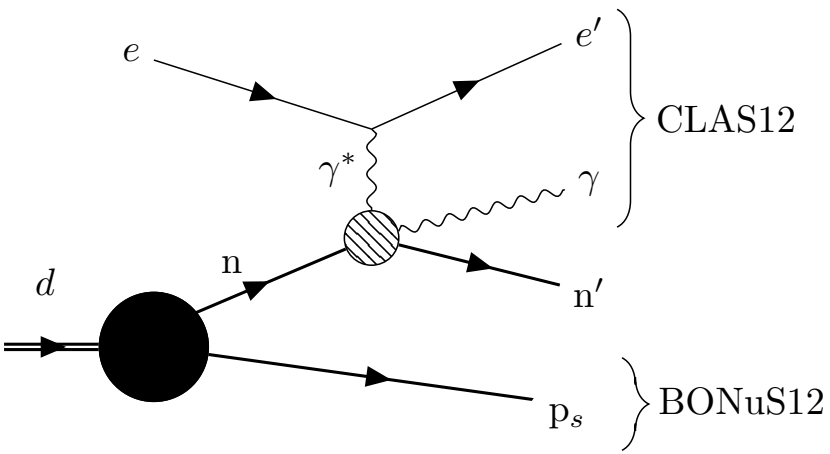
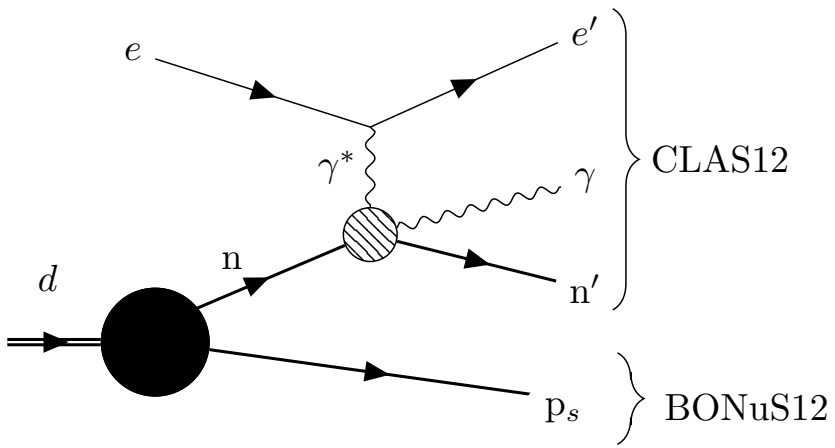
Neutron DVCS off D_2

M. Hattawy

Pass-1 Readiness Review for RG-F Summer 2020 Data

nDVCS off D_2





Semi-Exclusive nDVCS

$e^- + D \rightarrow e^- + \gamma + p_s + (n)$.

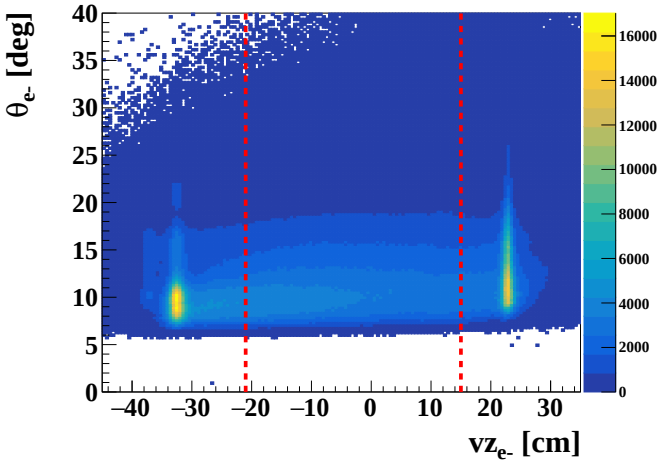
- Exploring the neutron's CFF via the BSA.
- Compare the nDVCS to Free proton DVCS.

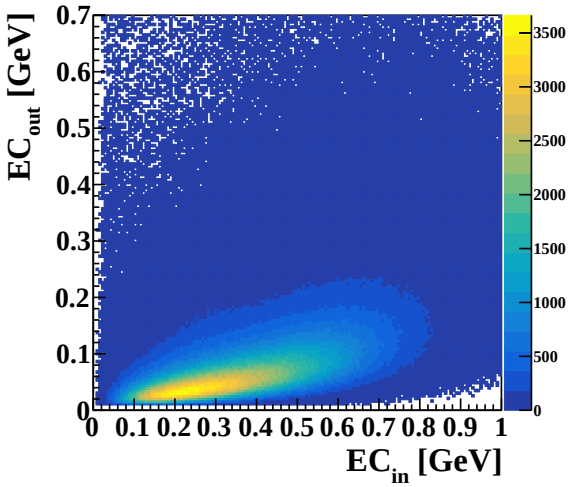
Exclusive nDVCS

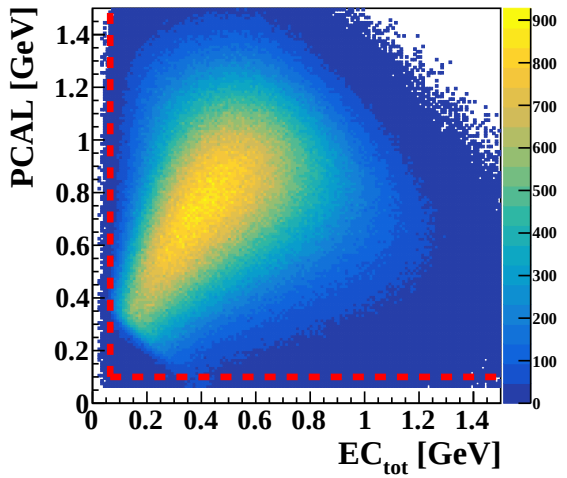
$e^- + D \rightarrow e^- + \gamma + p_s + n$.

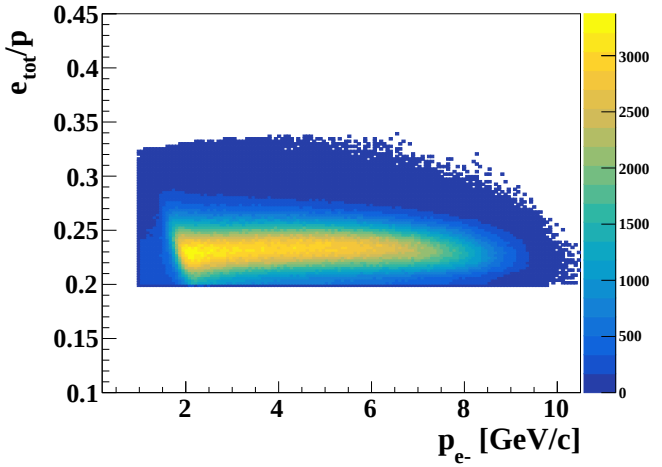
- Exploring the Fermi motion FSI effects on the neutron BSA.

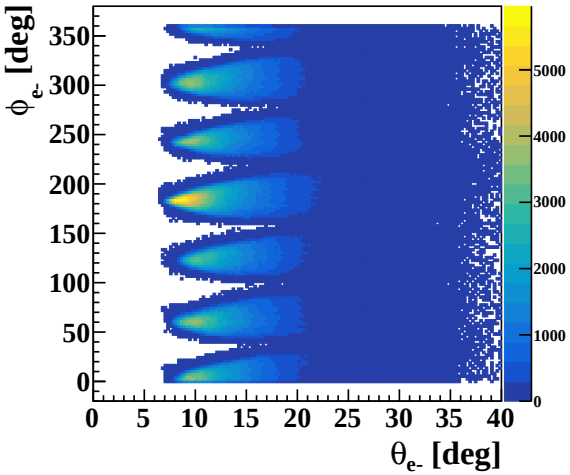
Electron Selection

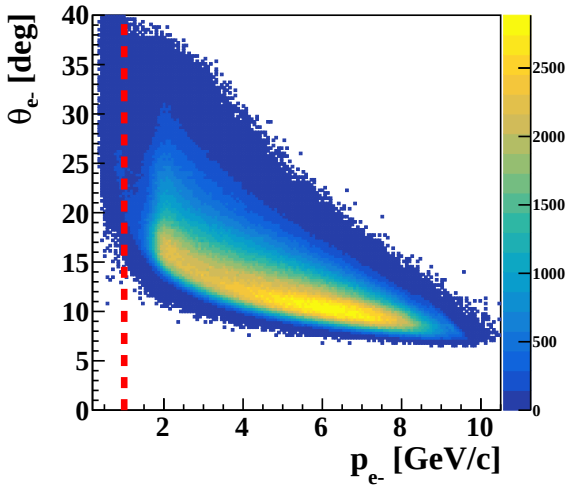




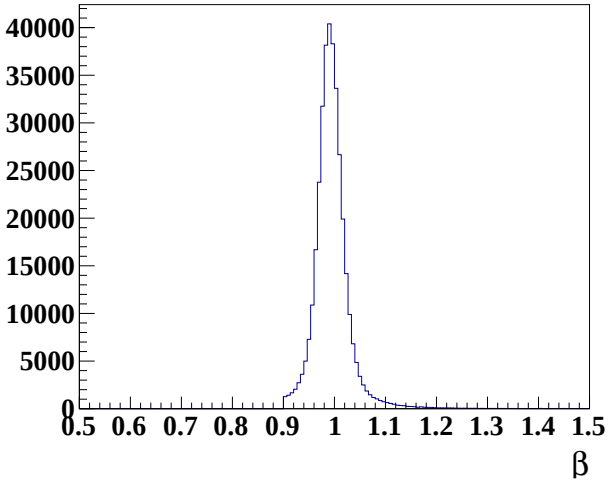


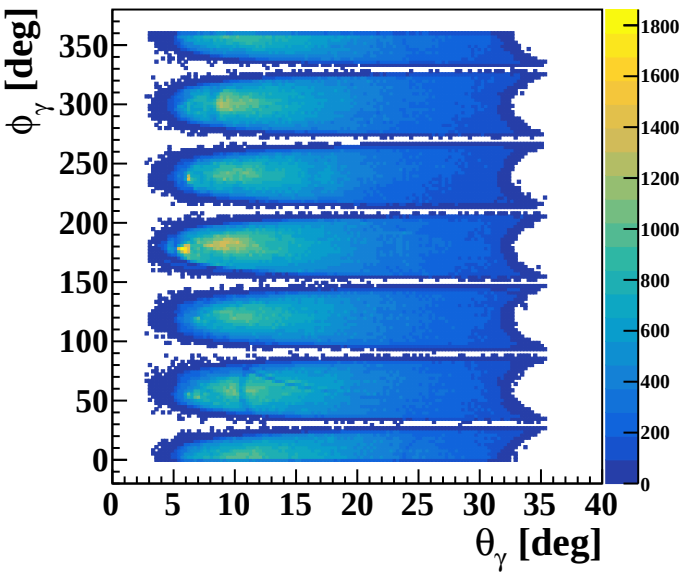


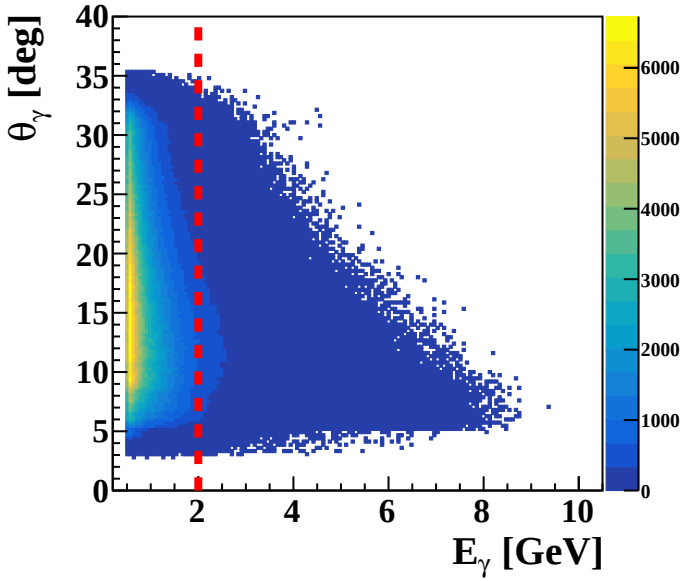




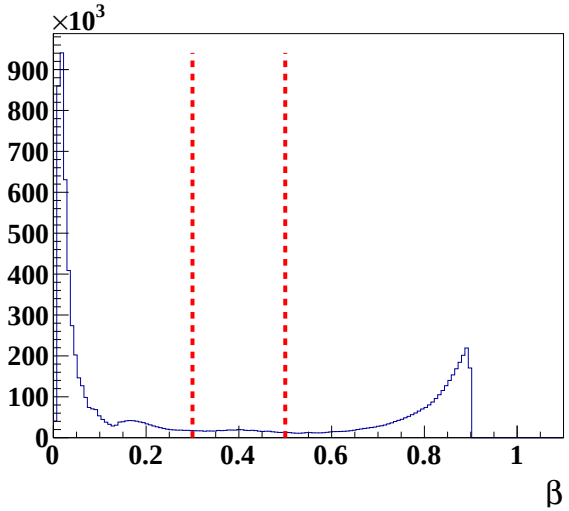
Photons Selection

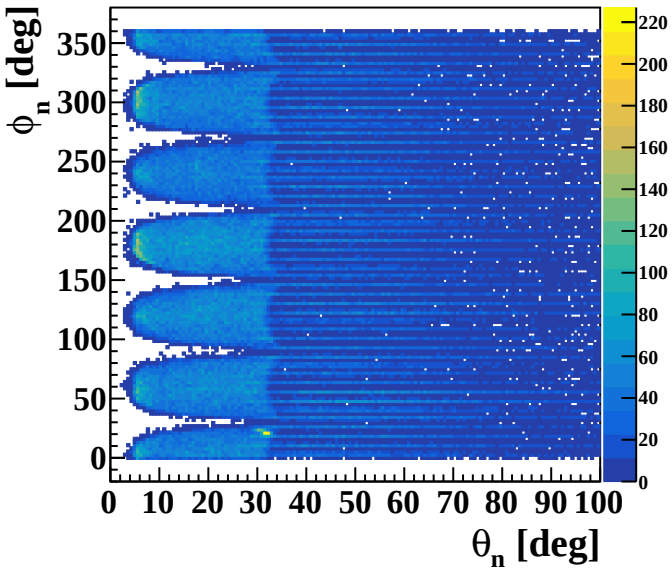


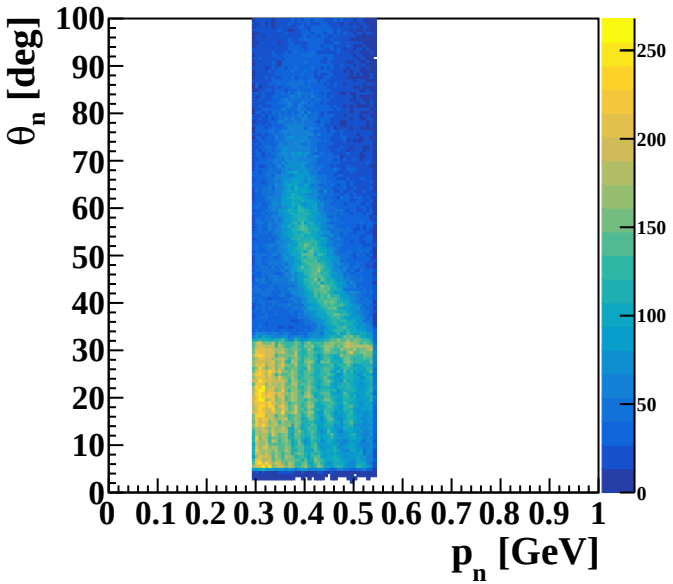




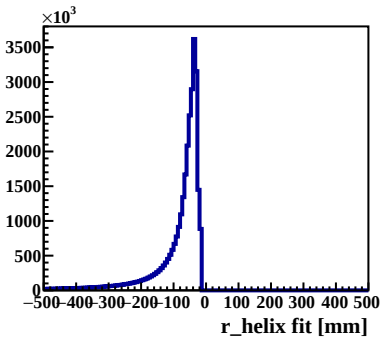
Neutron Selection

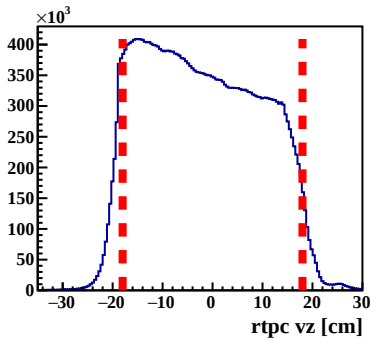


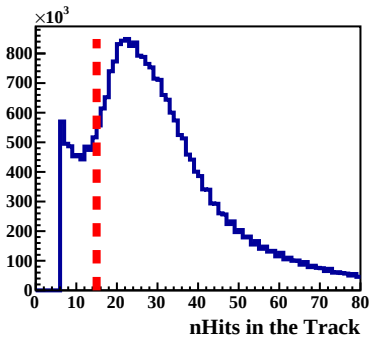


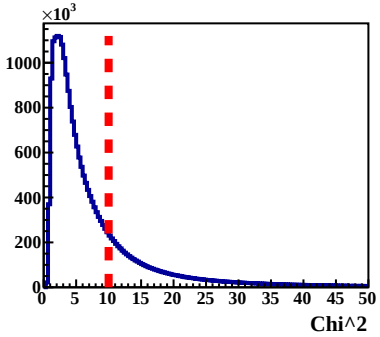


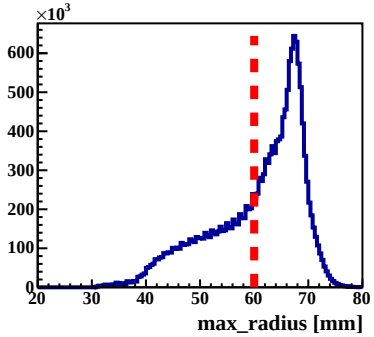
RTPC Proton Selection

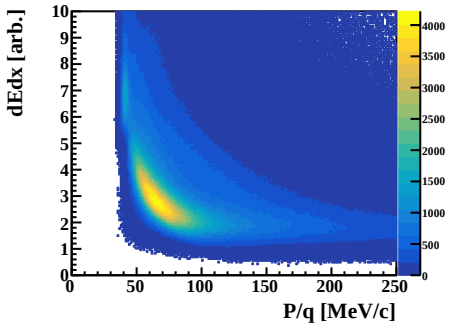


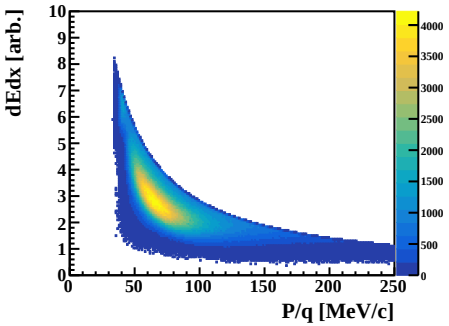


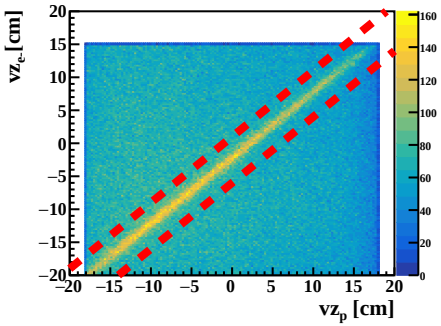






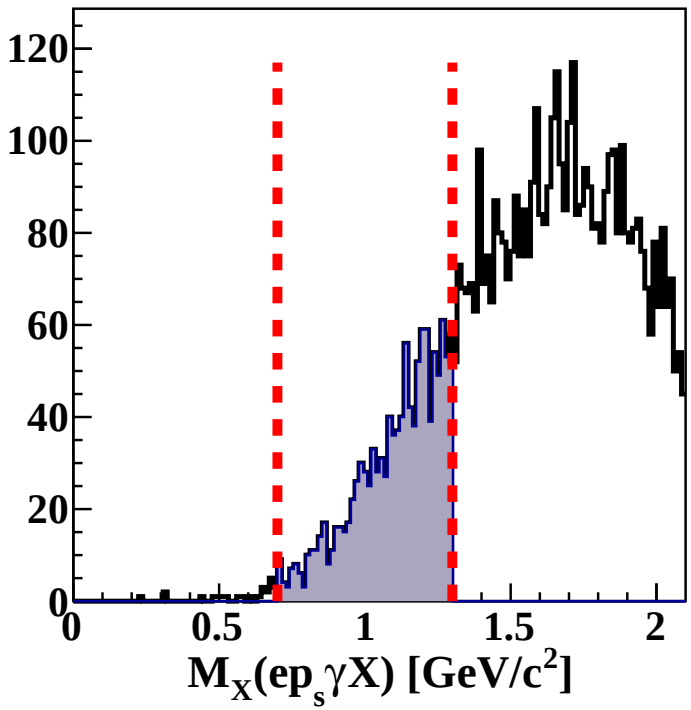


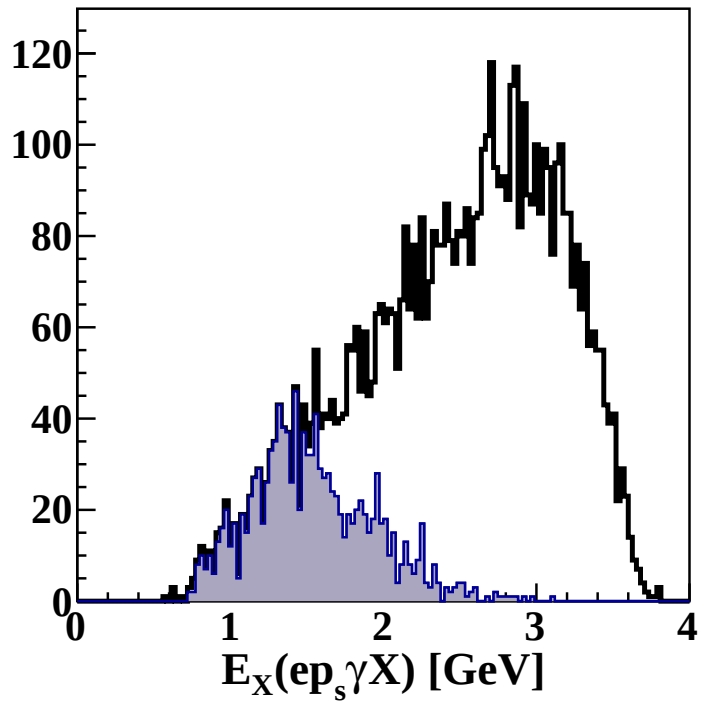




Exclusive Cuts

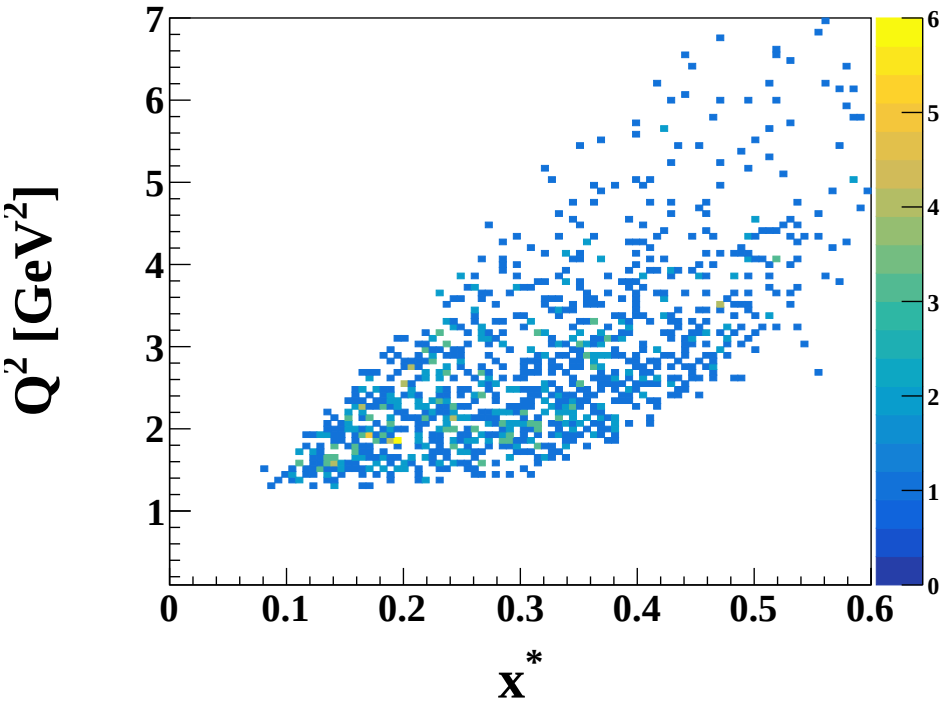
$$e^- + D \rightarrow e^- + \gamma + p_s + (n)$$

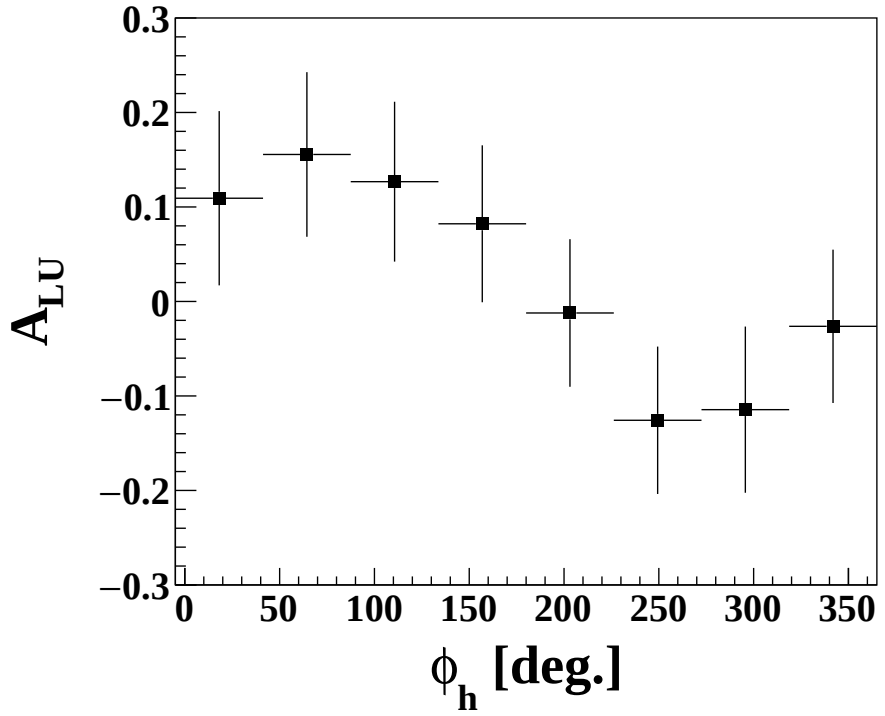




Phase-Space and BSA

$$e^- + D \rightarrow e^- + \gamma + p_s + (n)$$





Summary

Conclusion

- A promising physics outcome from measuring the tagged nDVCS channels.
- Preliminary analysis on 1% of RG-F Summer2020 run has shown first insights to the accessible phase-space.

Perspectives From Pass1 Full Data

- Multi-dimensional binning for the measured BSA from the semi-exclusive nDVCS channel.
- The fully exclusive nDVCS channel will be used to evaluate CTOF and CND calibration quality (We are using the calib. constants from RG-B (Jan 28th, 2020)).