DVCS ep – Early Science Update

OLIVER JEVONS

UNIVERSITY OF GLASGOW

DVCS early science sample

- EpIC generator, v1.1.6
  - 1M events; 10x130 ep; DVCS+BH+Int
  - $1 < Q^2 < 100$ GeV^2
  - $0 < -t < 1.6$ GeV^2
  - $0.01 < y < 0.9$
  - $10^{-5} < x_B < 0.7$

- Phase space matches that used for initial ePIC DVCS paper (using parameterized version of detector)
  - https://arxiv.org/pdf/2503.05908

DVCS ep early science status

- Previously showed significant issue with 10x130 sample (seen in campaign 25.05.0; presented on 02-Jun-25).
  - Turns out, this is due to the compiler used for EpIC on RACF.
  - This issue has now been fixed, and new events have been generated for simulation campaign tag 25.06.1.
  - Many thanks to Alex and Pawel for sorting this!

- Plots now look good!
  - NOTE: differences to any previously shown DVCS plots will likely be due to the inclusion of the BH process and interference terms.
  - Very coarse cuts are currently applied; these will be improved in the future to reduce Bethe-Heitler contamination to the DVCS signal.