

Comparison of GK and KM20 in MILOU 3D

- We compare the generation of purely DVCS events in MILOU with GK (by PARTONS) and KM20 @ EIC beam energies
- Generation parameters as follows:

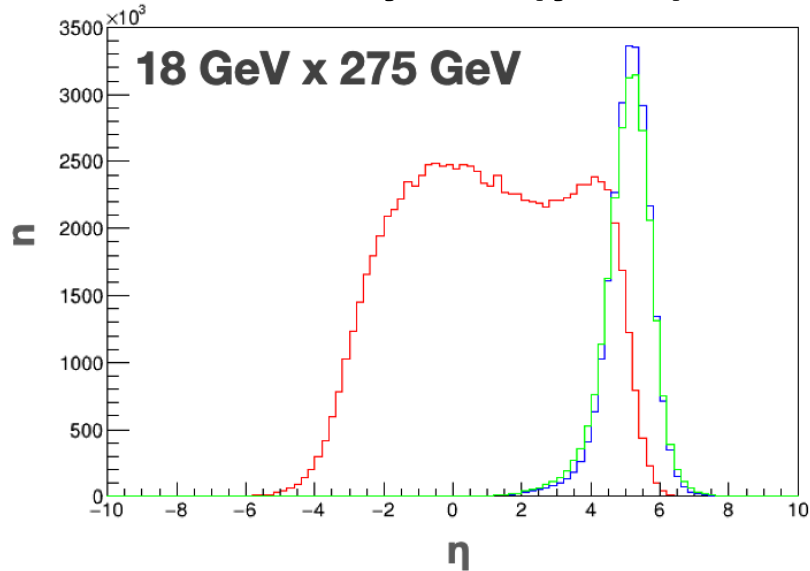
of Generated Events: 500k /configuration

Kinematical cuts at generation level

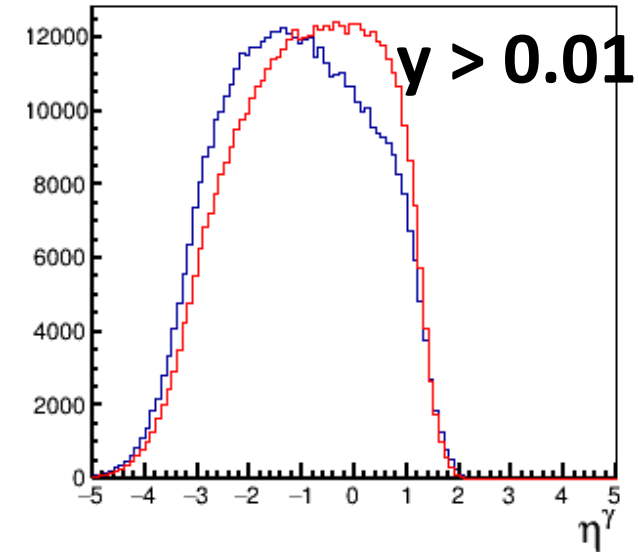
- $10^{-4} < x < 0.9$
- $1.0 < Q^2 < 100 \text{ GeV}^2$
- $0.01 < |t| < 1.6 \text{ GeV}^2$
- **$0.01 < y < 0.95$ [inelasticity]**
- $E_{\text{min}}^{\text{el}} = 0.5 \text{ GeV}$

Photons at forward rapidity

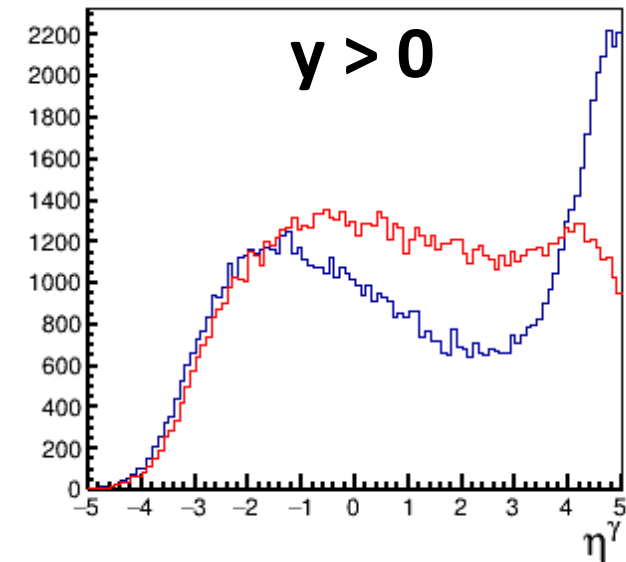
Pawel's toy MC ($y > 0$)



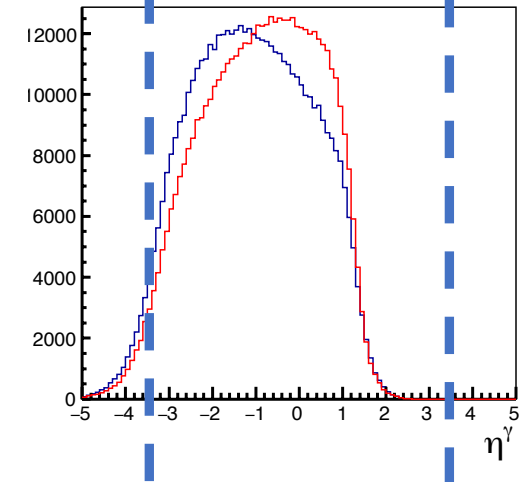
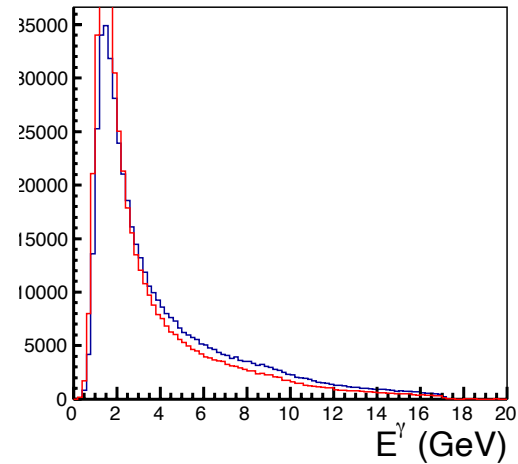
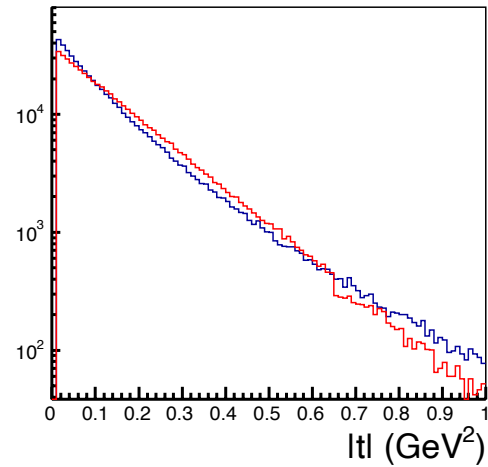
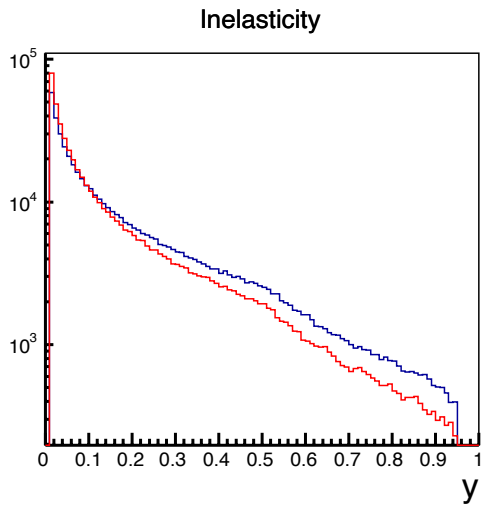
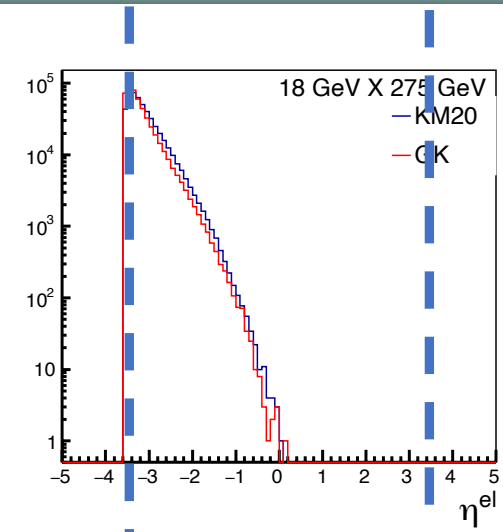
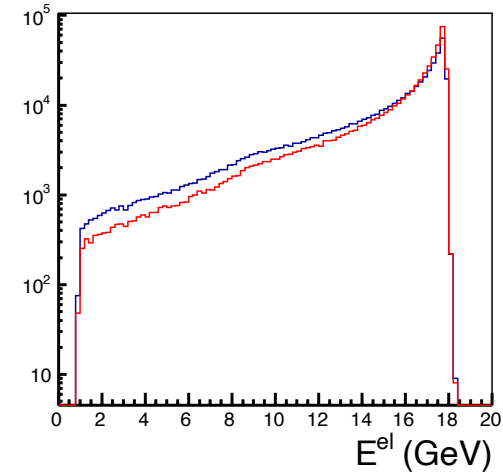
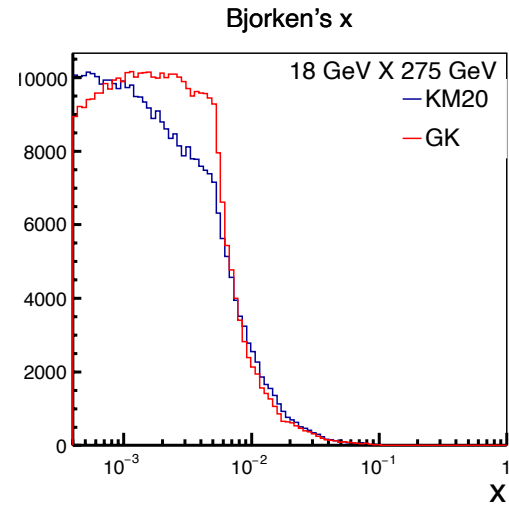
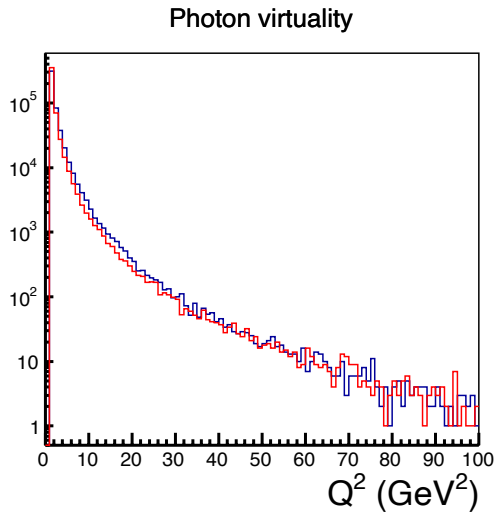
MILOU (GK, KM20)



- In Pawel's plot DVCS photons extended to forward rapidity
- There was some discussion on this within the Y.R., as it seemed to contrast with expectations from W.P. and plots with MILOU
- After investigation we found that this is driven by the lower inelasticity cuts (commonly assumed to be $y > 0.01$)
- **Optimizing the cut? See Pawel's update**



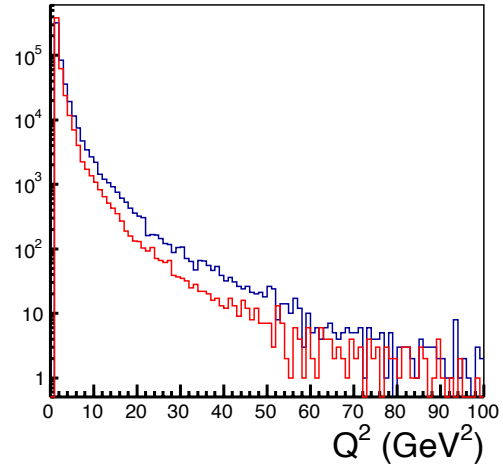
Comparison: (18 x 275) GeV



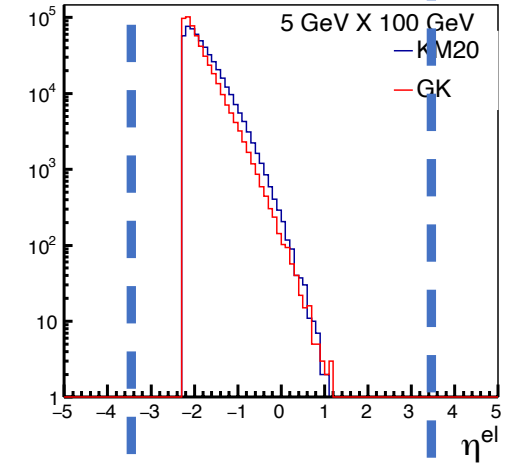
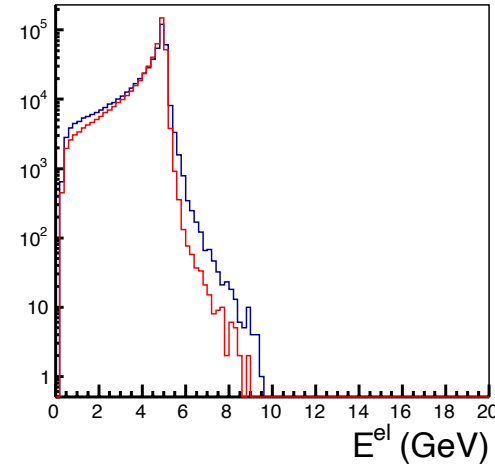
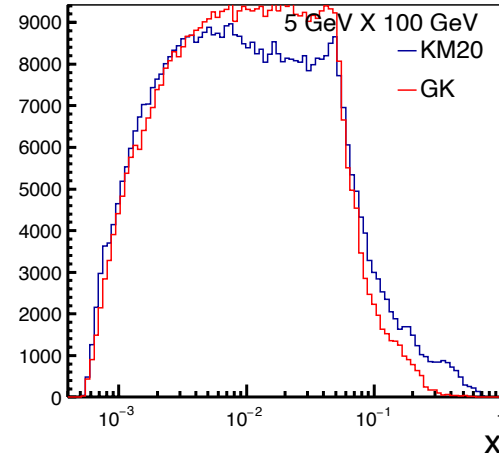
- Different behavior vs Bjorken's x of GK and KM20

Comparison: (5 x 100) GeV

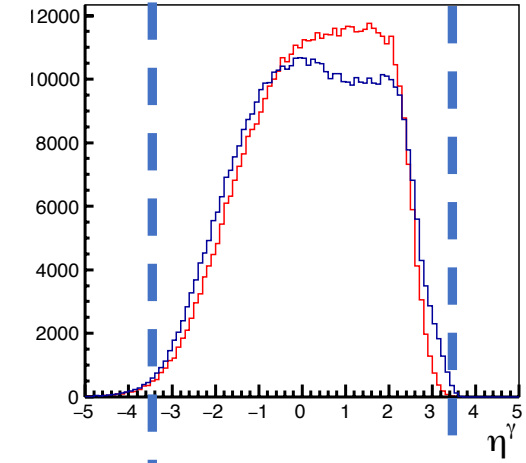
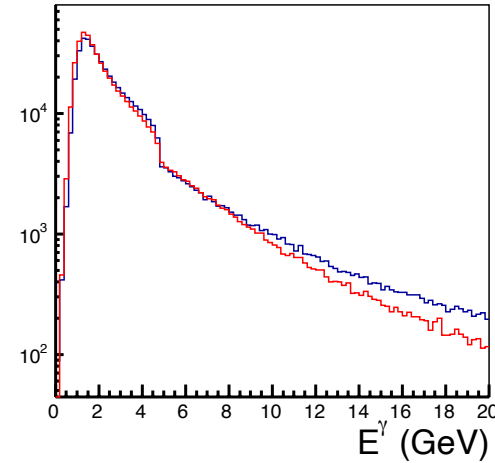
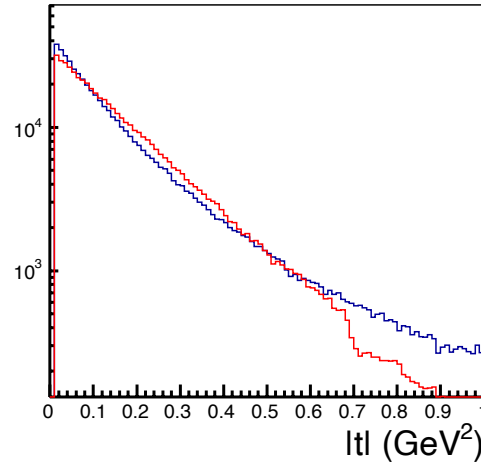
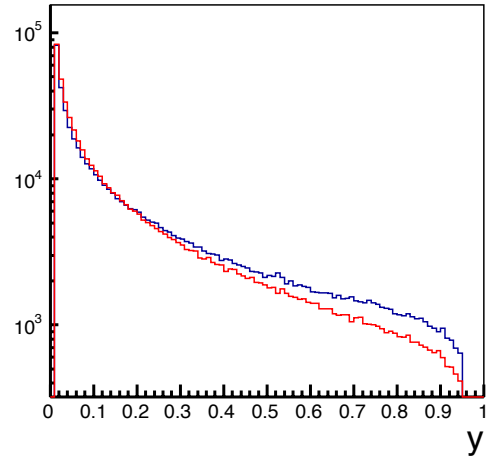
Photon virtuality



Bjorken's x



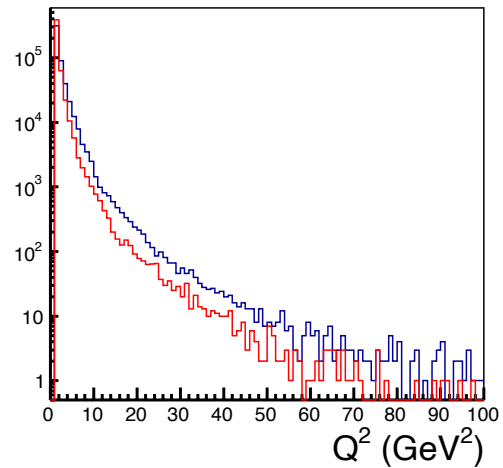
Inelasticity



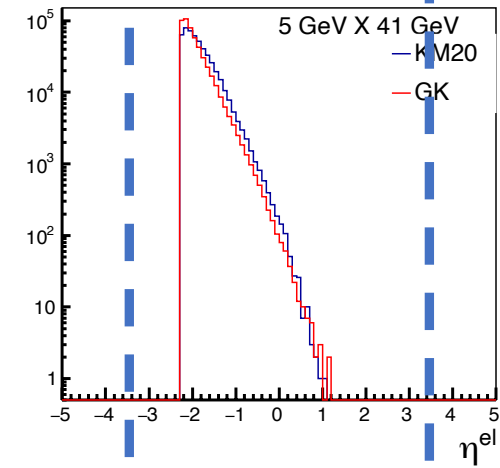
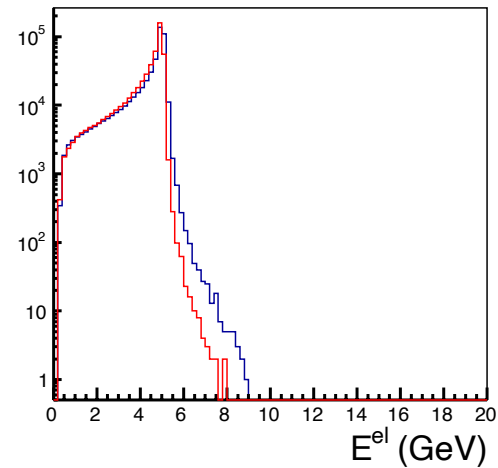
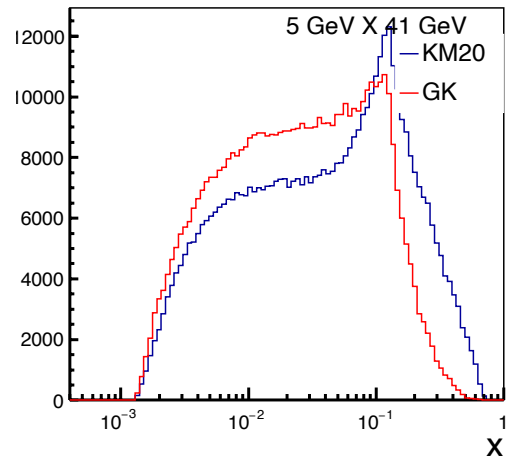
- **Deep in Q^2 distribution disappears.**
- Very different t -dependences at large $|t| > 0.65 \text{ GeV}^2$ for GK (exponential) and KM20 (dipole-like)
- **Behavior vs Bjorken's x of GK and KM20 becomes more similar in the tails**

Comparison: (5 x 41) GeV

Photon virtuality



Bjorken's x



Inelasticity

