
HEPGEN AND CLAS12

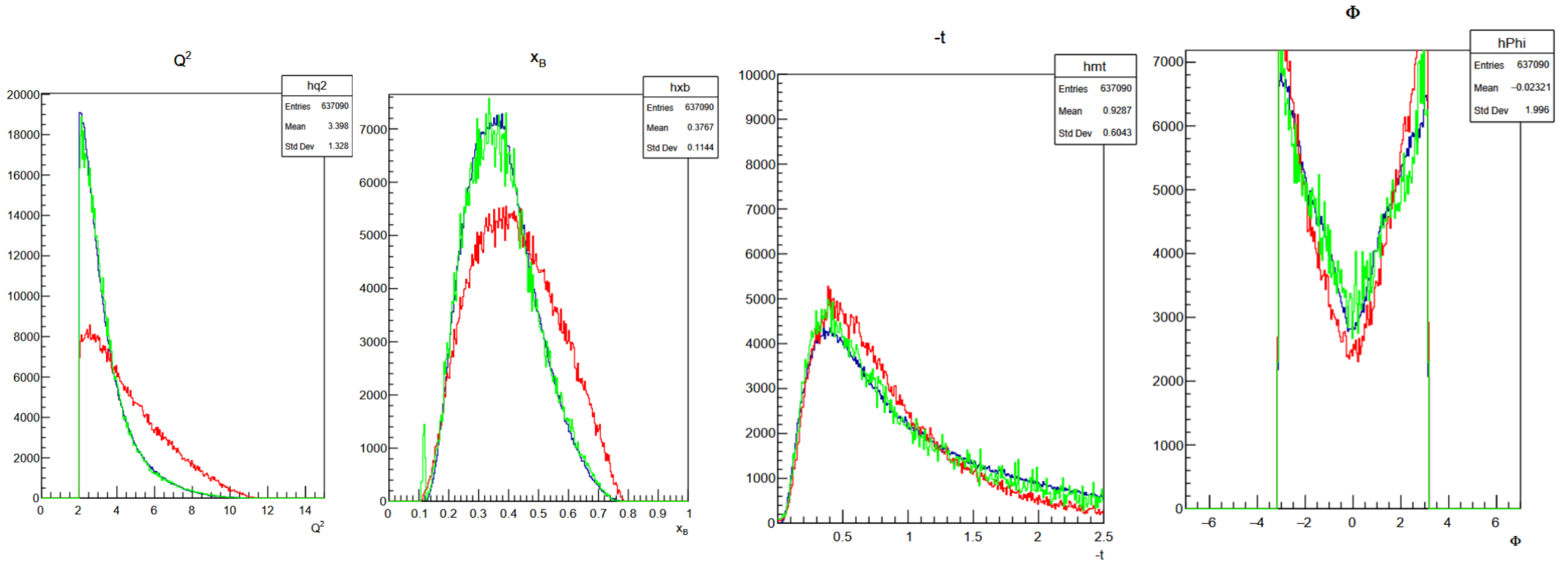
Nicholaus Trotta

HEPGEN WAS MADE FOR COMPASS

- While an option existed for electrons, many things were hard coded to be muons.
- Events were reweighted using kinematics: Q^2 , x_b , $-t$ and ϕ
- Events were then processed through GEMC

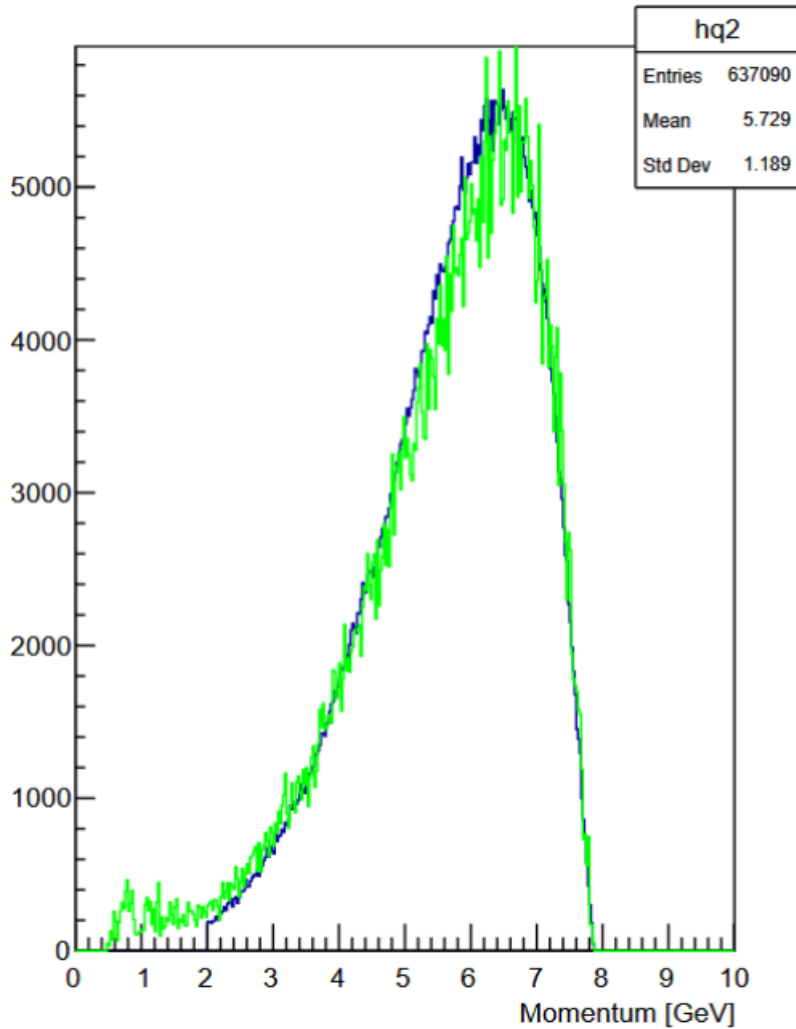
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* number of events
NGEV 10000
* Colliding particles: ELEPT, EHADR, ILEPT, AHADR, ZHADR - PARL(1), PARL(2)
BEAM 10.6 0.9382723 11 1 1
* Read beam external file: 0-nothing, 1-beam only, 2-halo only, 3-beam+halo
BMRD 0
* Physics process: 1 gamma, 2 W ex., 3 Z, 4 full NC - LSTHFL(4), 5 HiExcProd
PROC 5
* LEPTO 'soft' cuts: x, y, Q2, W2, nu, E', phi (min/max) - CUT(1-14)
CUTL 0 0.7 0.0 1 1 14.0 0.0 4.0 1 10.6 1 10.6 0.0 6.28
* limits for tprim generation
TLIM 0.0001 5
* Select produced particle and its decay mode (DVCS: ivecm=0)
VMES 2 211
* Switch to turn diffractive dissociation ON (1) or OFF (0)
DIFF 0
* Target parameters (A, probc, bcoh, bin)
TPAR 1.0 -0.1 52.2 5.0
* A dependence of cross sections
ALFA 1
* lepton beam charge and polarisation
BPAR -1.0 1
* parameterisation of  $x_B$ ,  $t$  correlation
REGG 4.94116 0.042 1
```

EXCLUSIVE KINEMATIC DISTRIBUTIONS

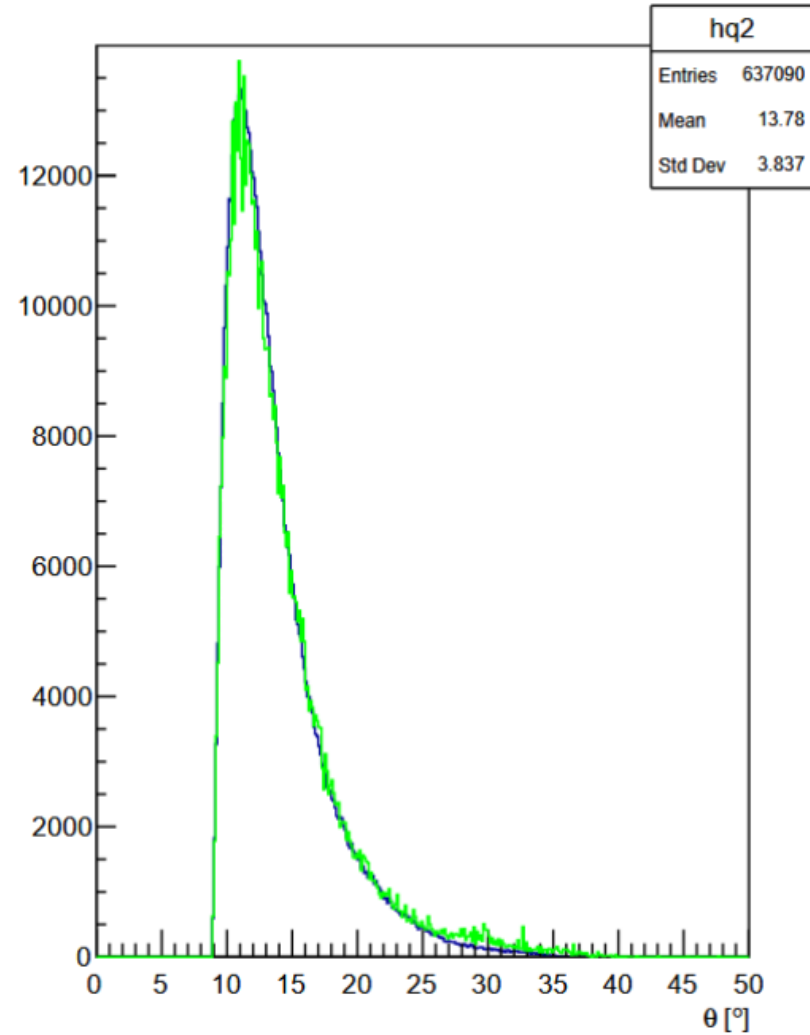


ELECTRON DISTRIBUTIONS

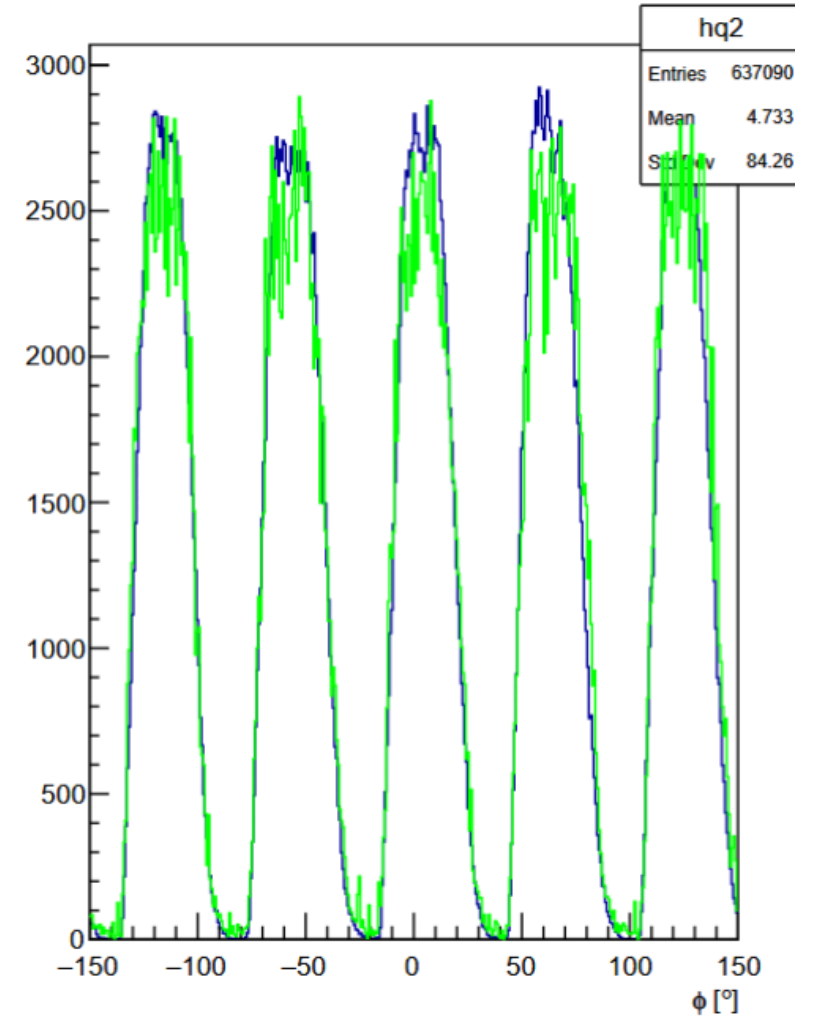
e- #momentum (Q^2 Bin 1)



e- θ (Q^2 Bin 1)

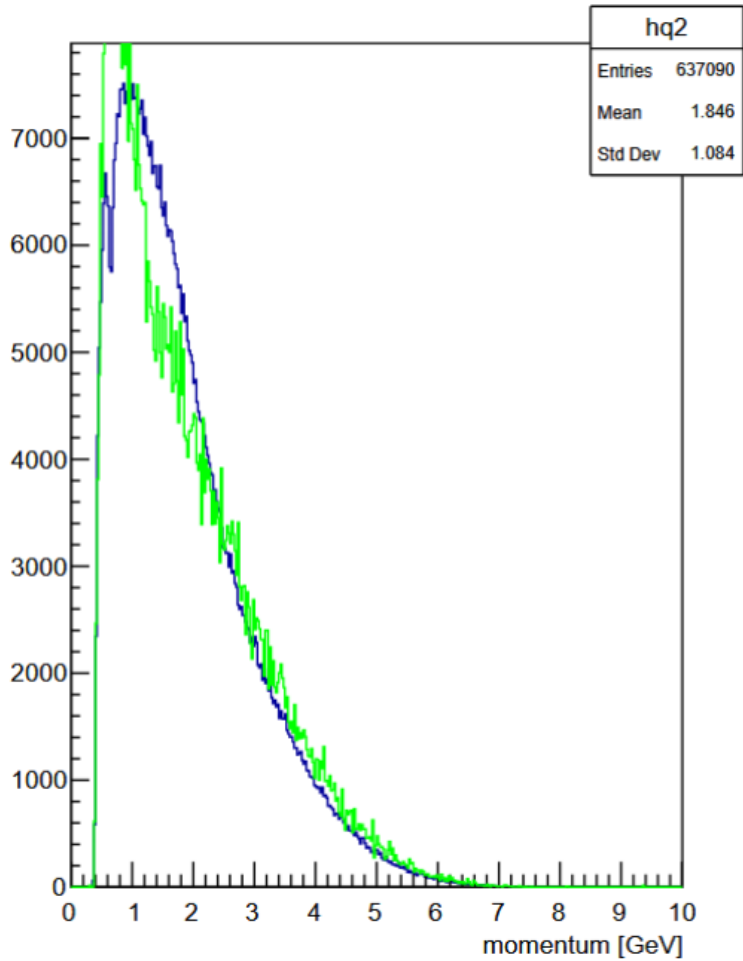


e- ϕ (Q^2 Bin 1)

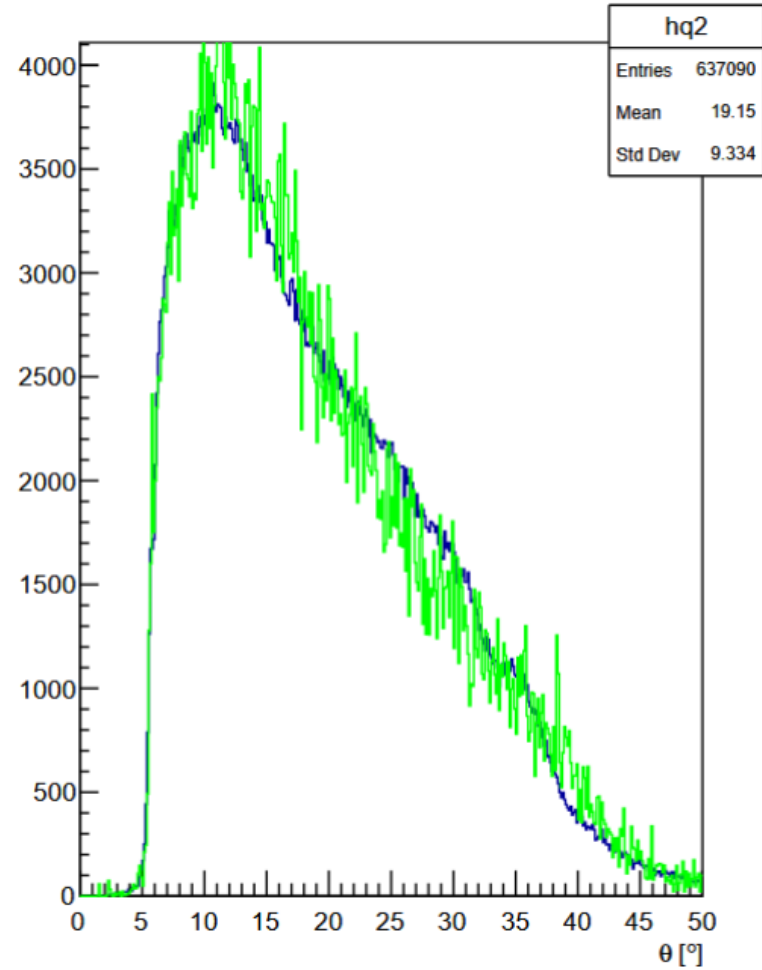


PI+ DISTRIBUTIONS

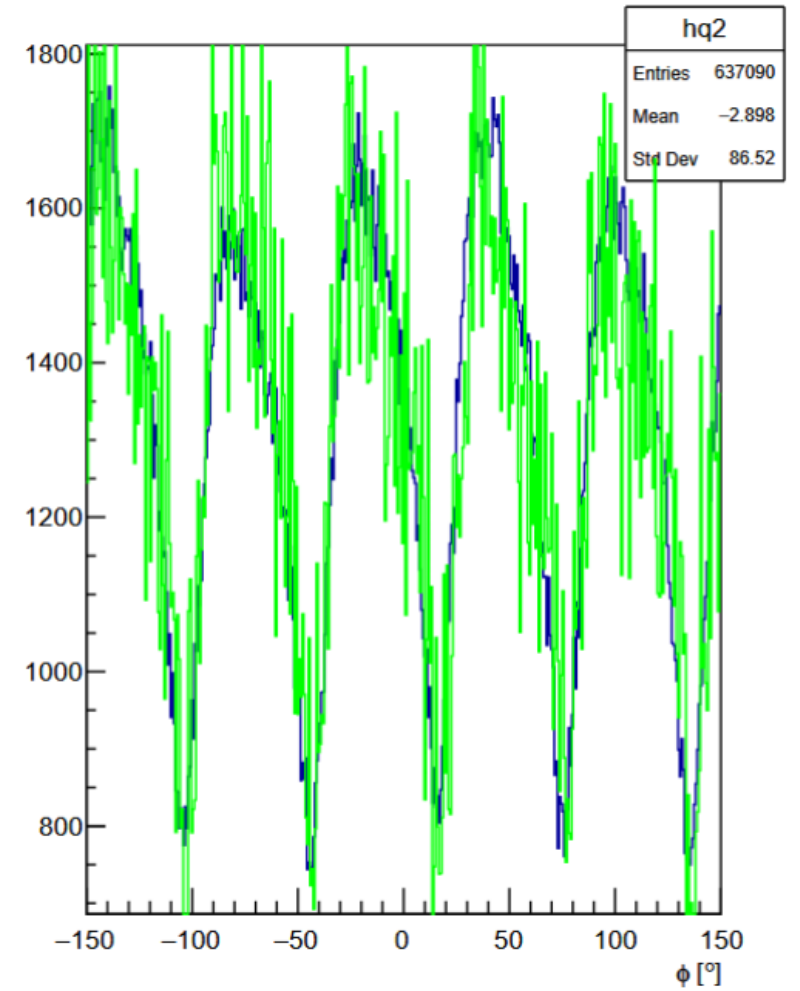
π^+ momentum (Q^2 Bin 1)



π^+ θ (Q^2 Bin 1)

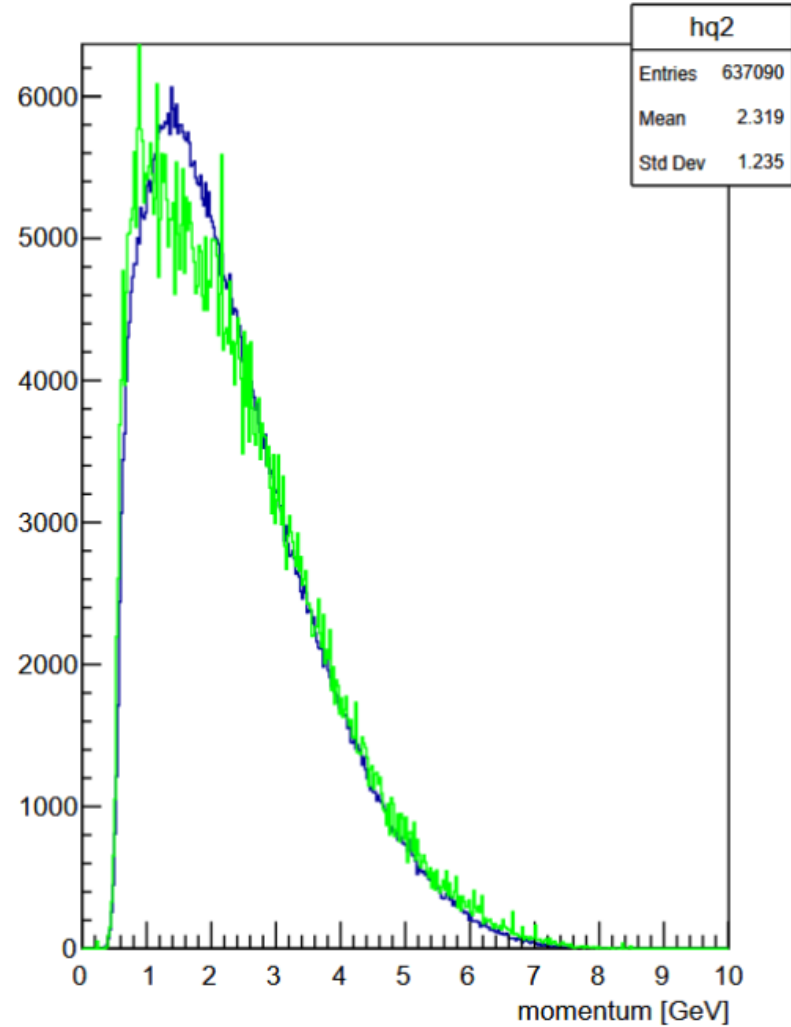


π^+ ϕ (Q^2 Bin 1)

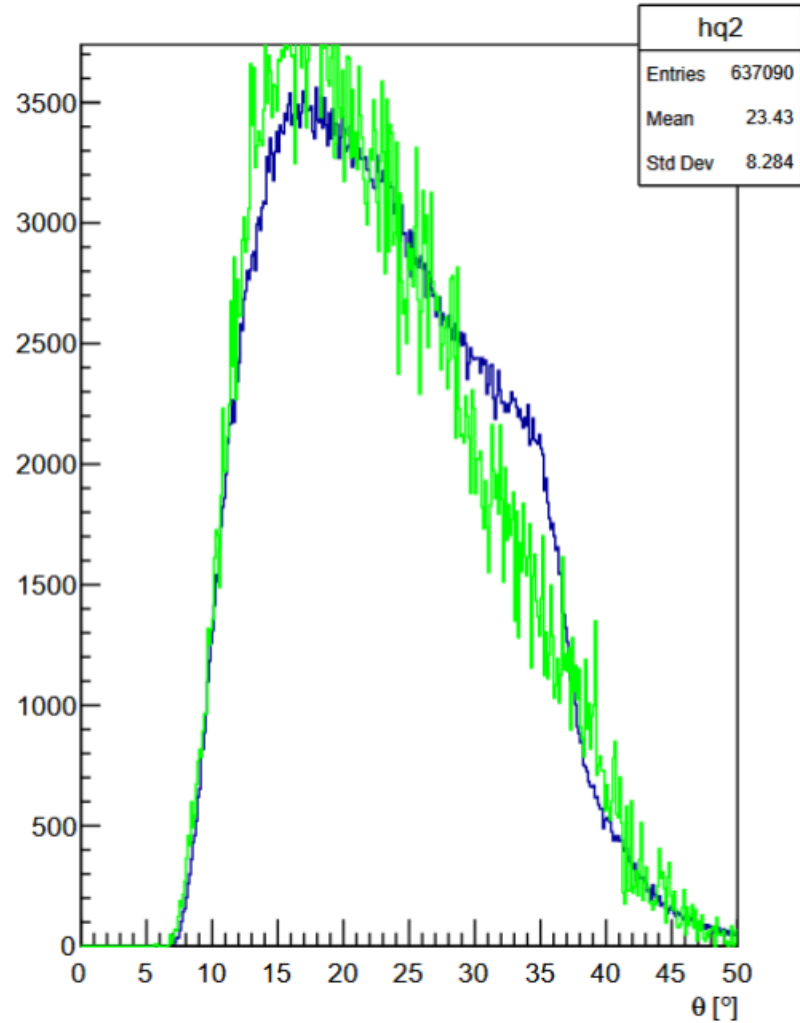


PI- DISTRIBUTIONS

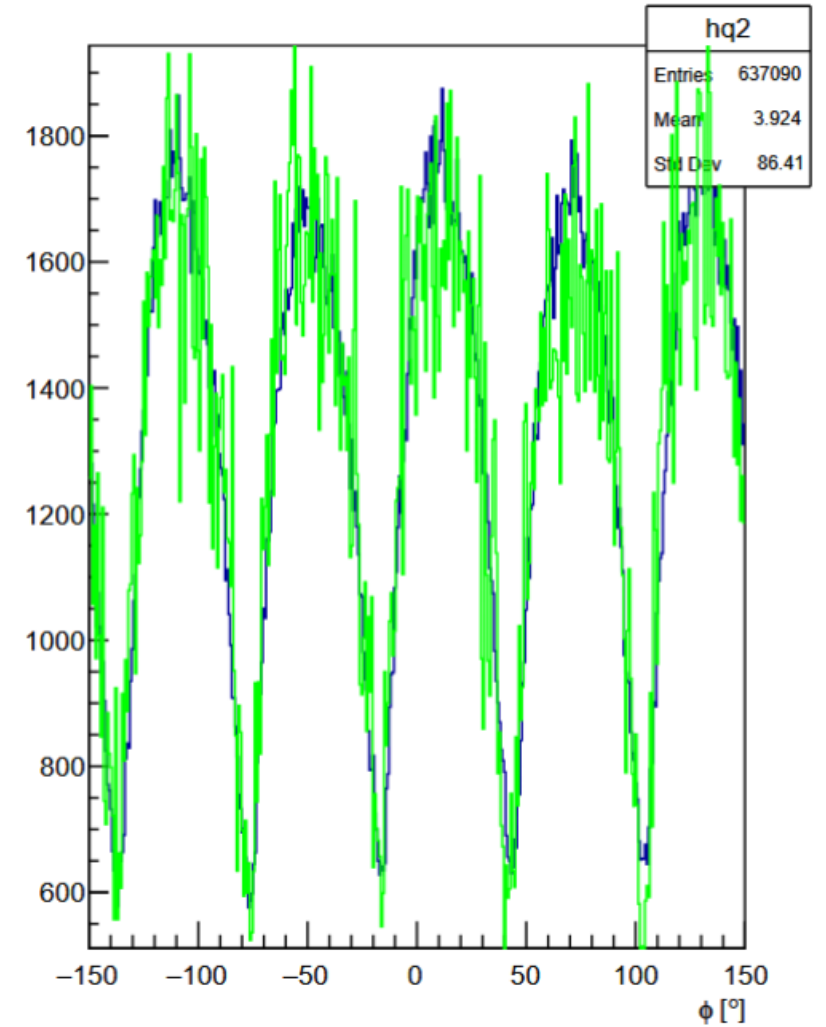
π^- momentum (Q^2 Bin 1)



π^- θ (Q^2 Bin 1)

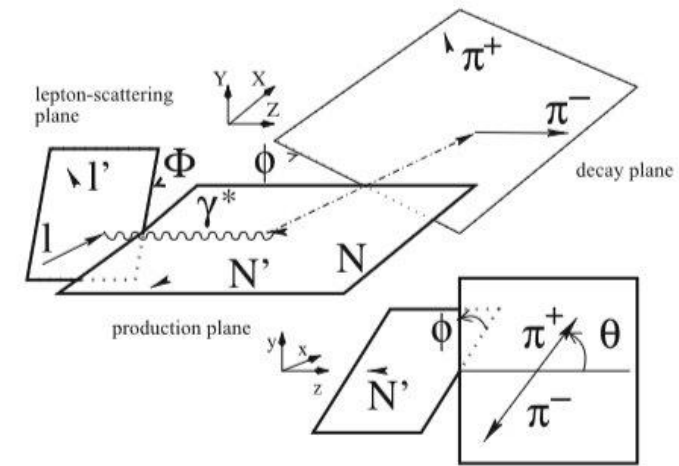
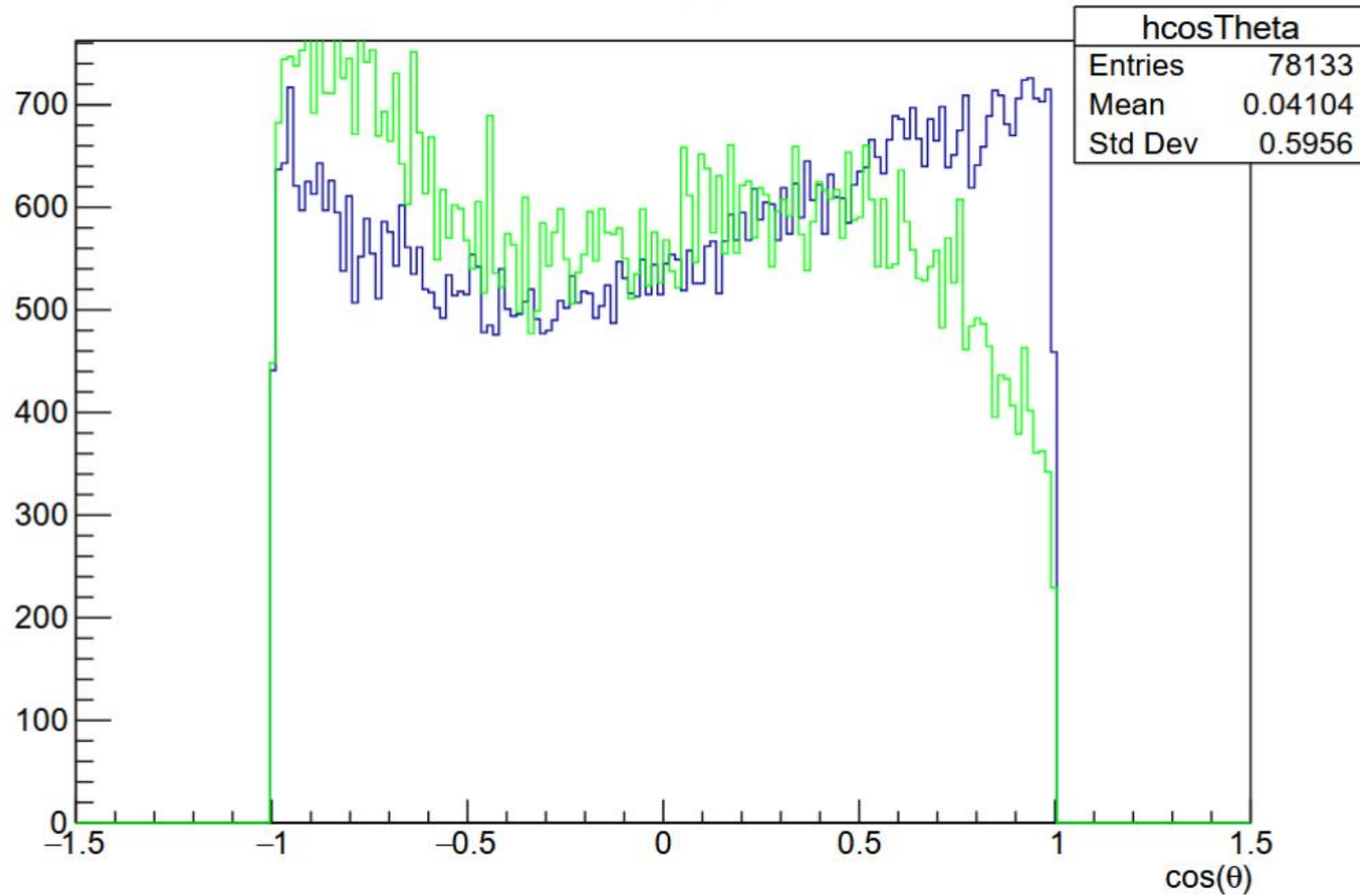


π^- ϕ (Q^2 Bin 1)

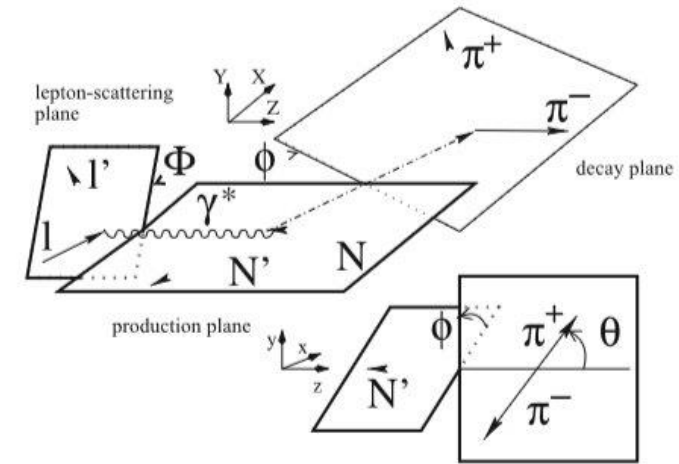
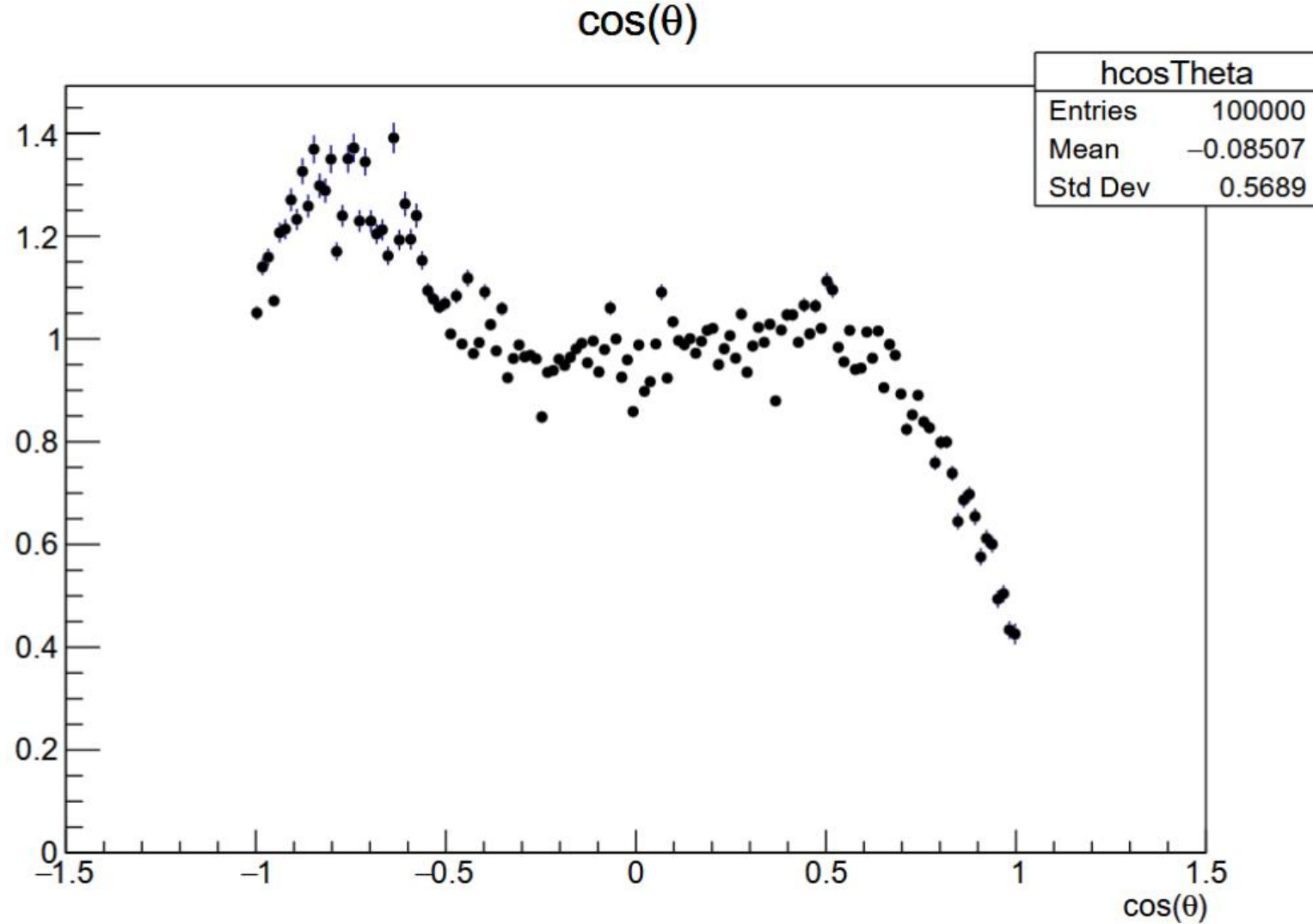


COS(THETA)

$\cos(\theta)$

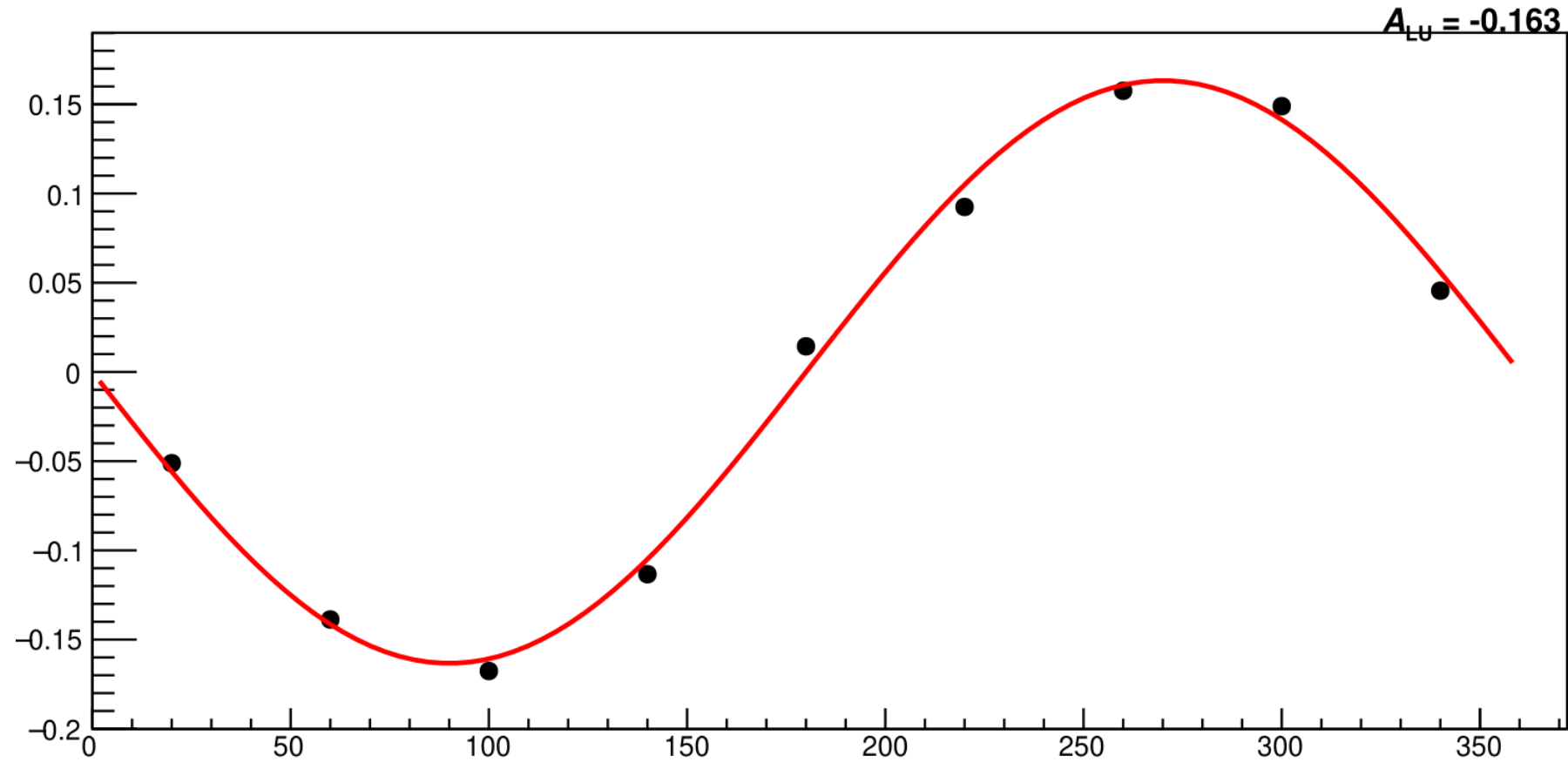


COS(THETA) ACCEPTANCE



BSA INJECTION

BSA INJECTED INTO THE EVENT GENERATED



BSA AFTER GEMC

