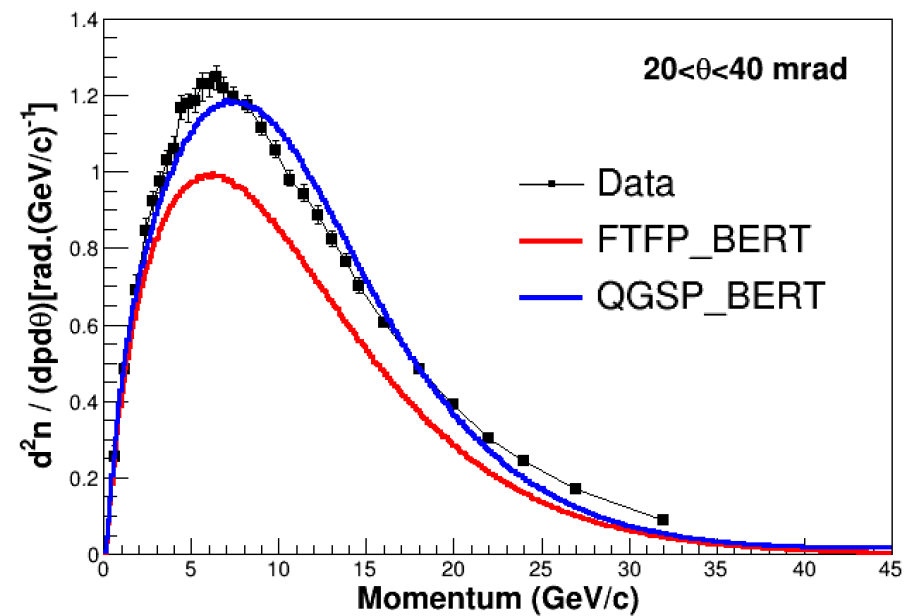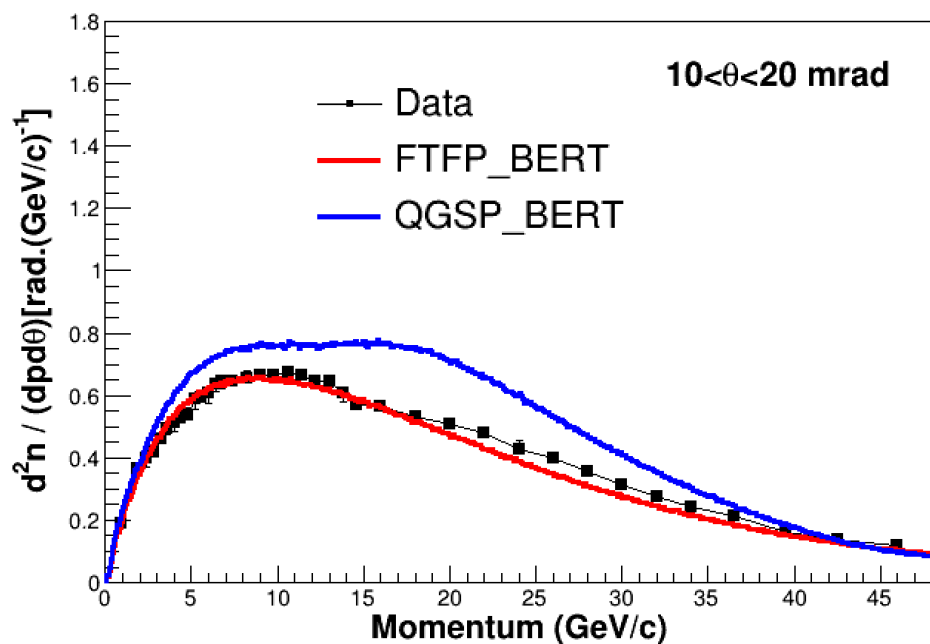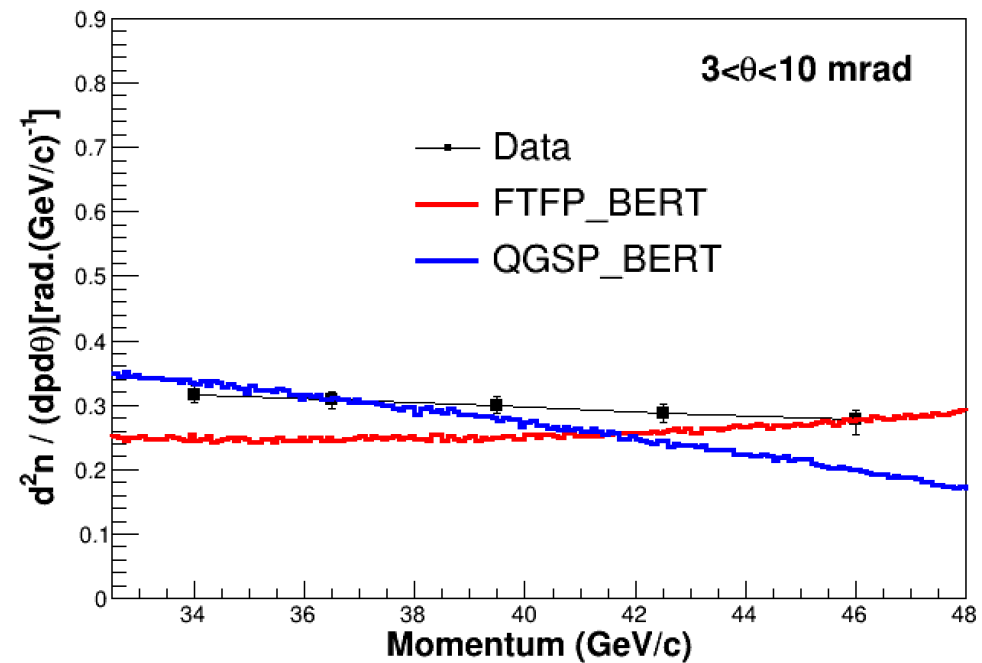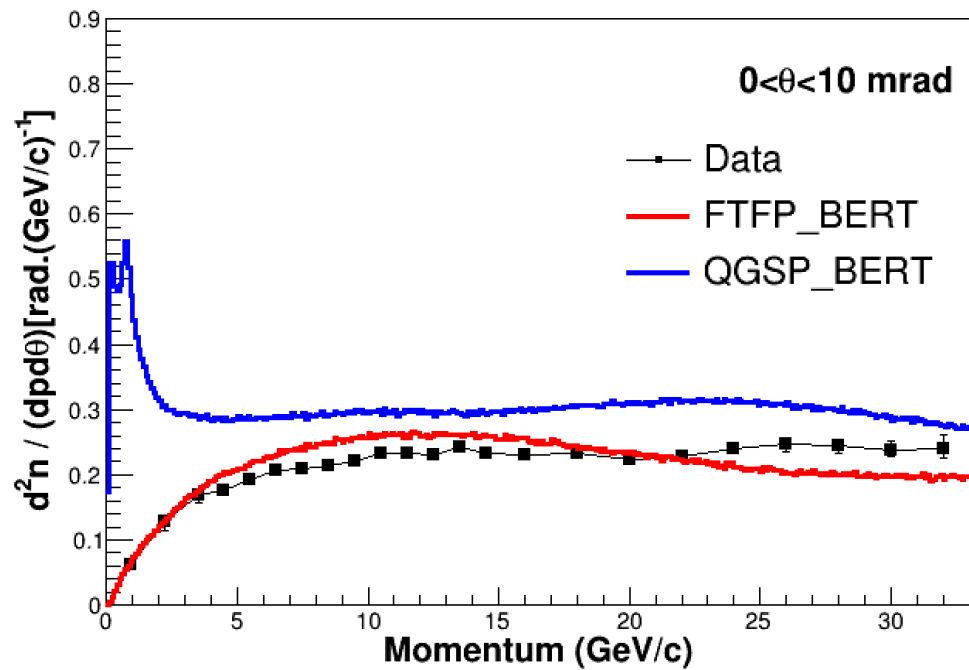# (Update)

Comparison between the NA61 π^{+}+ C @ 60 GeV data and MC

Nilay Bostan (UIowa)
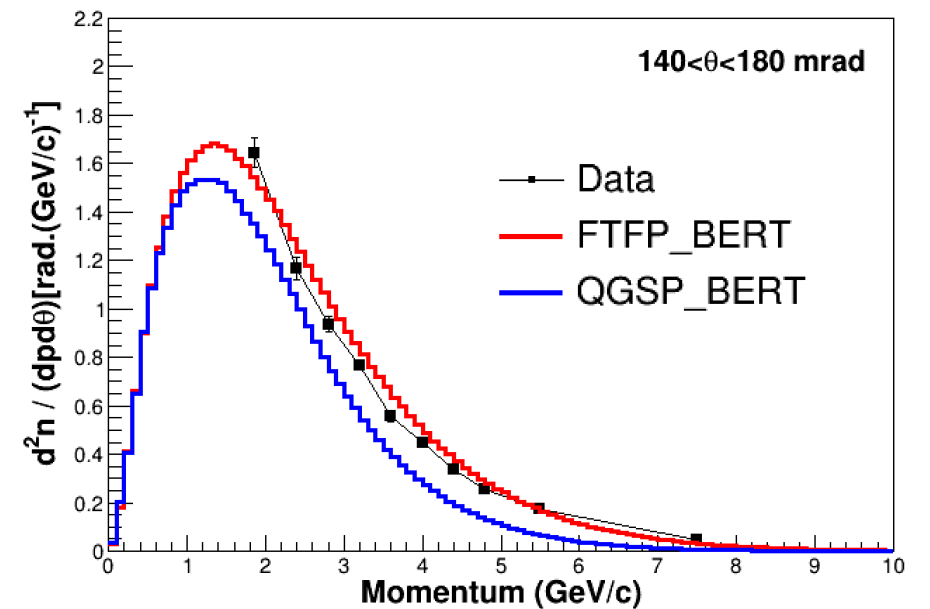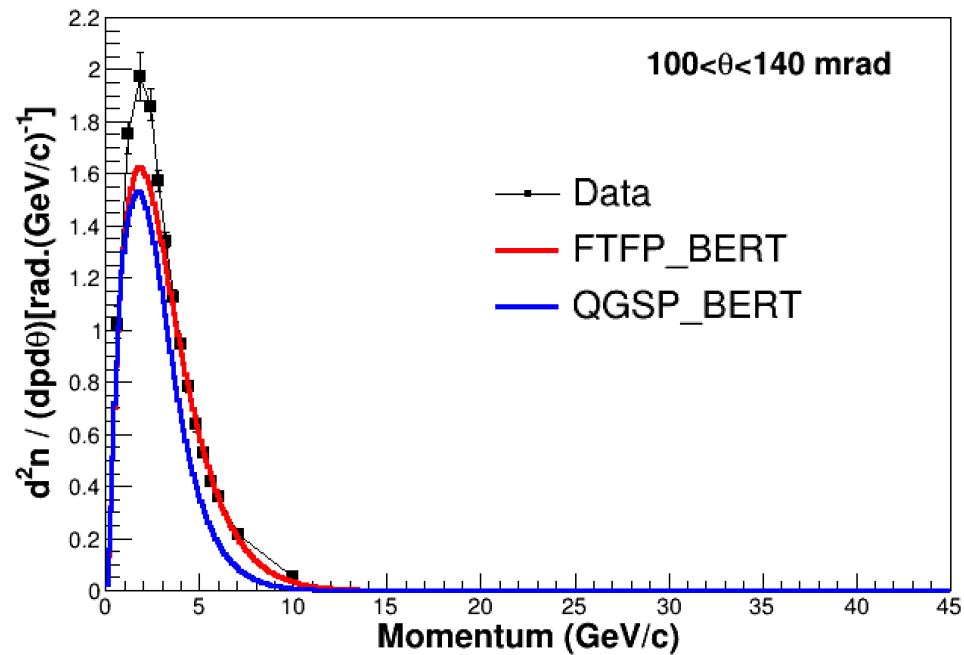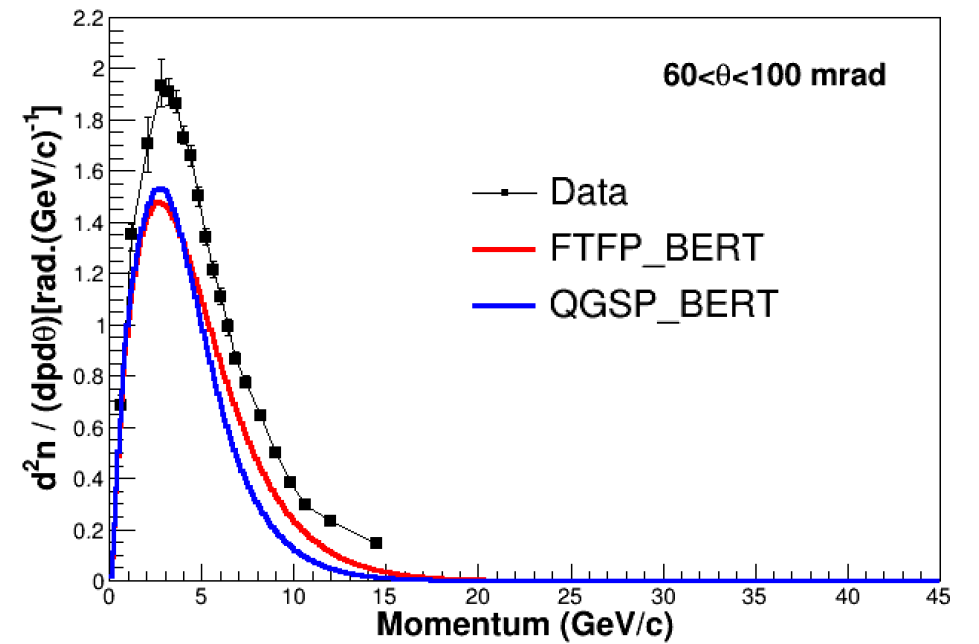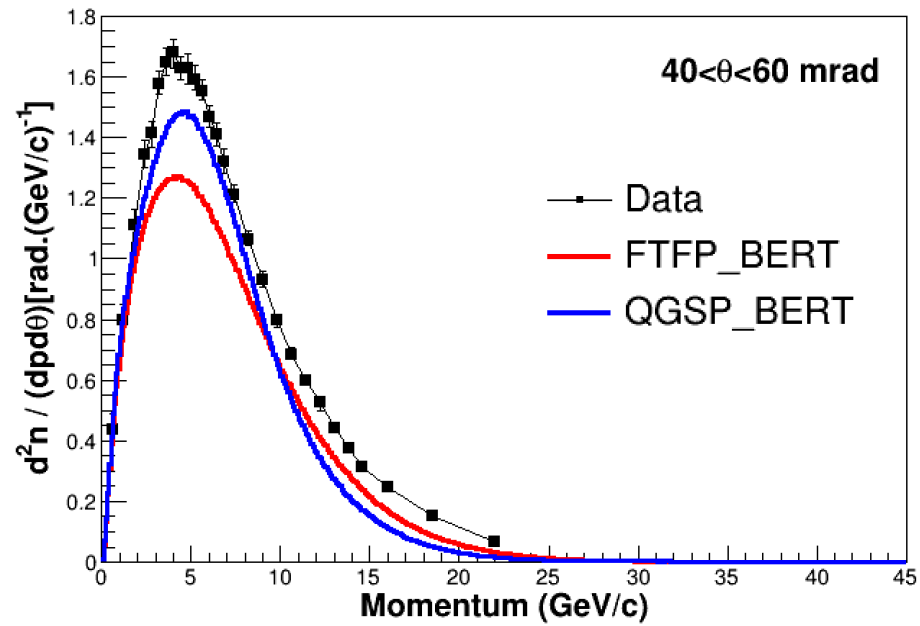
For PPFX group meeting

Nov 6/20

Introduction

- In this talk, I will show the comparison of NA61 data with QGSP_BERT and FTFP_BERT with all angle ranges and produced particle multiplicities for GEANT4 (v4_10_3_p03b, LBNF current version) by using G4HP.
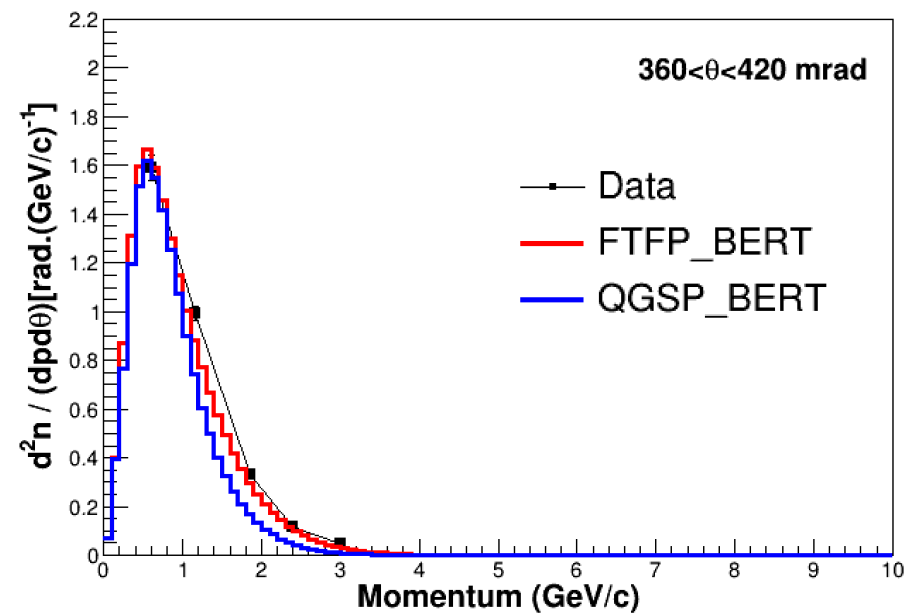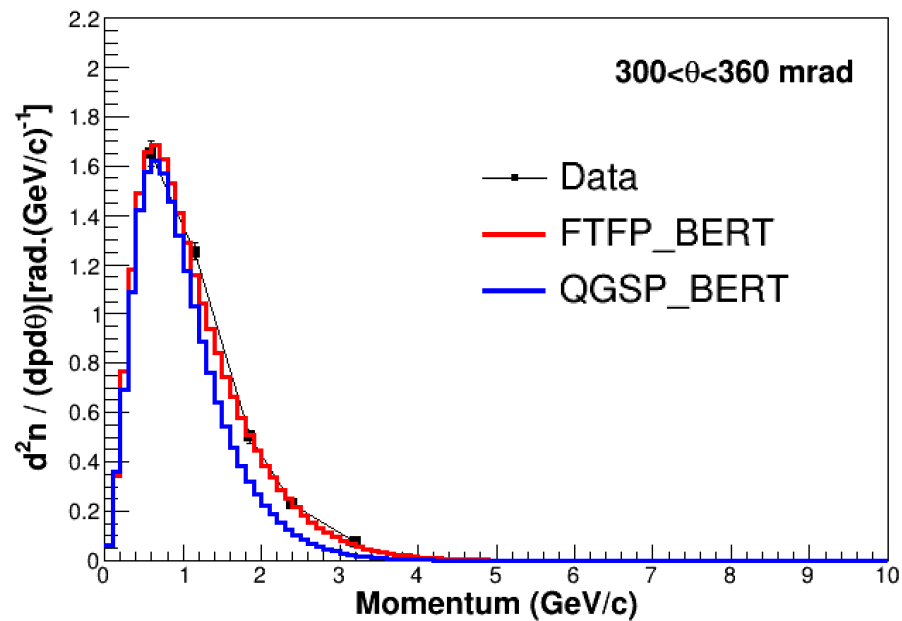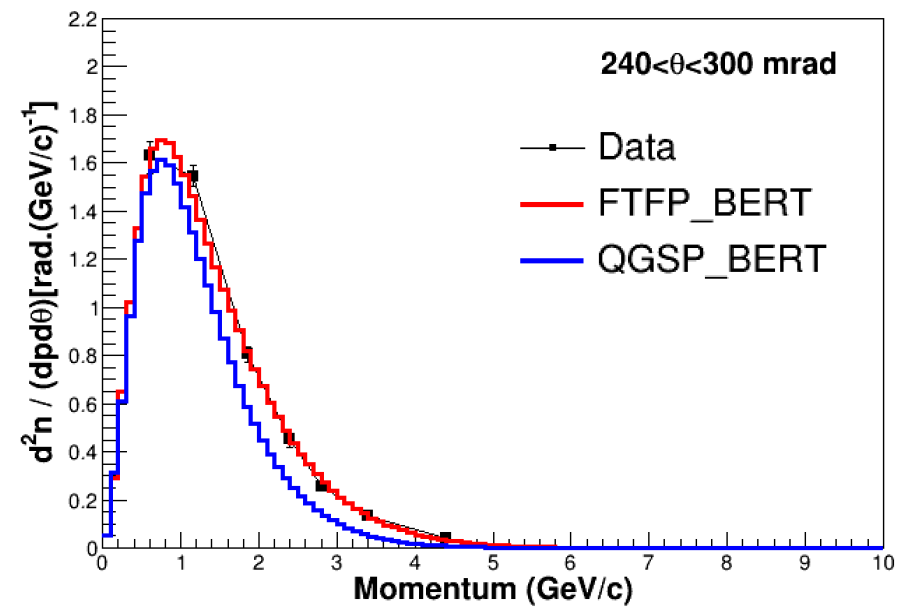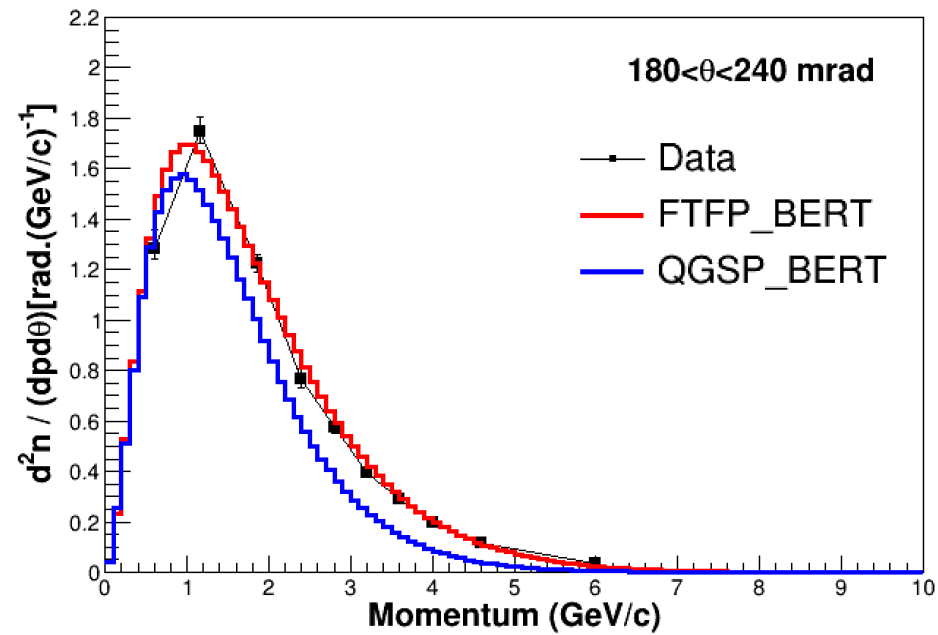
For $\pi^+ + C \to \pi^+ + X$ @ 60 GeV

For $\pi^+ + C \rightarrow \pi^+ + X$ @ 60 GeV

For $\pi^+ + C \to \pi^+ + X$ @ 60 GeV

For $\pi^+ + C \to \pi^- + X$ @ 60 GeV

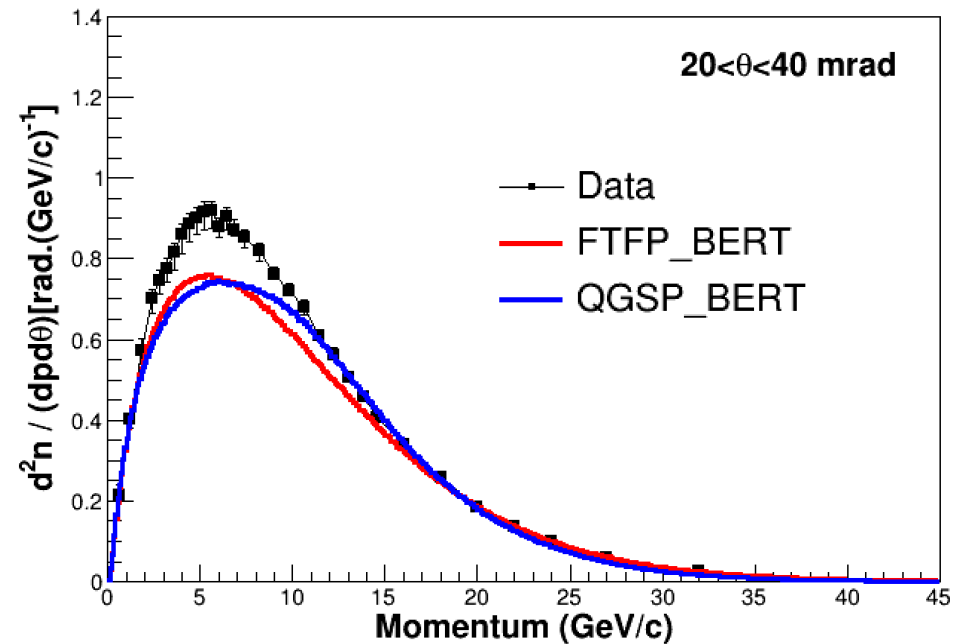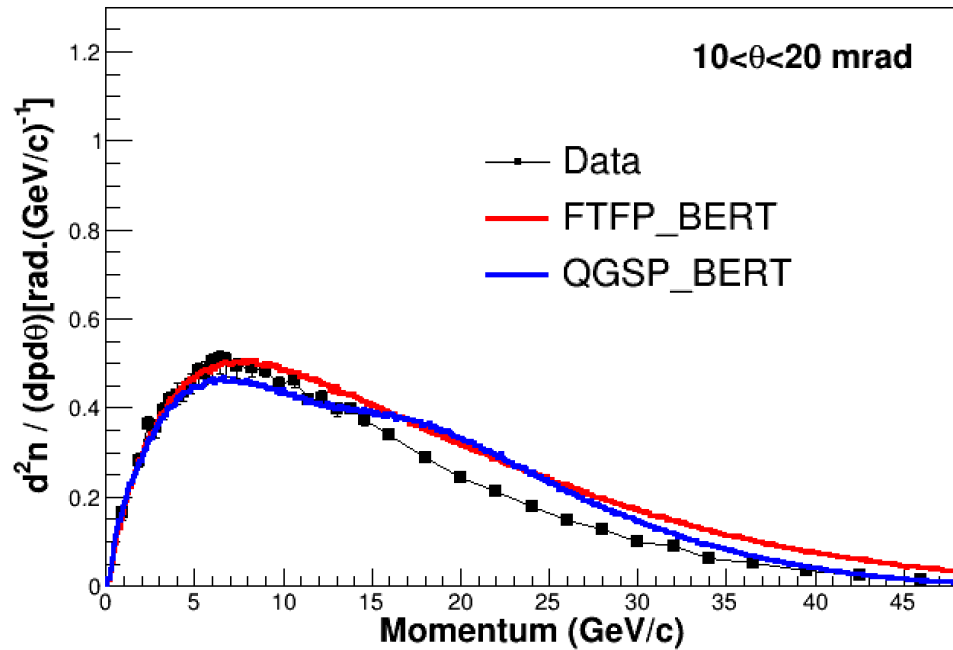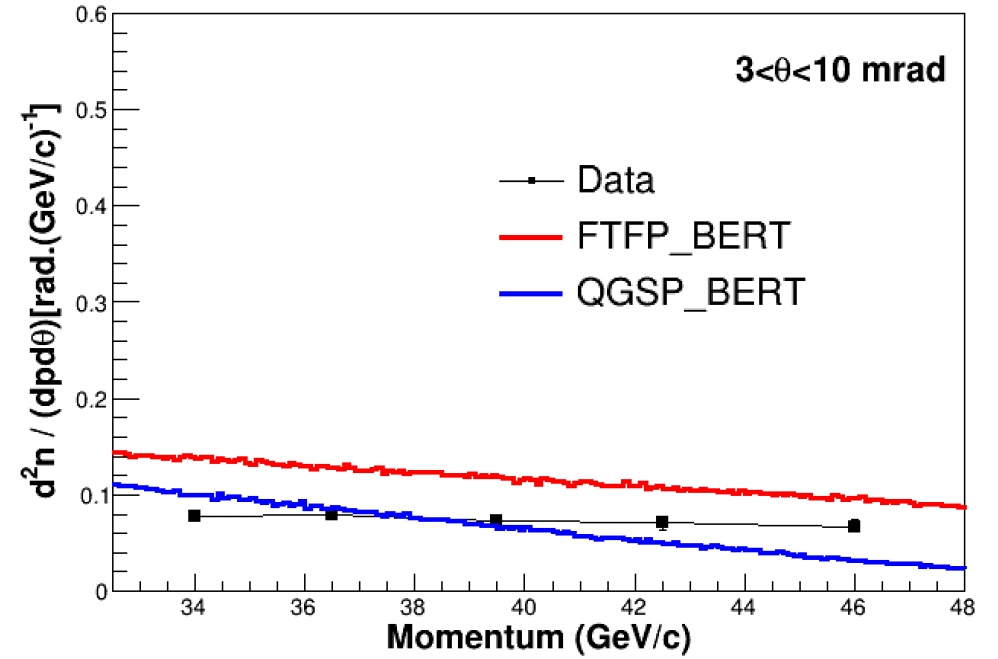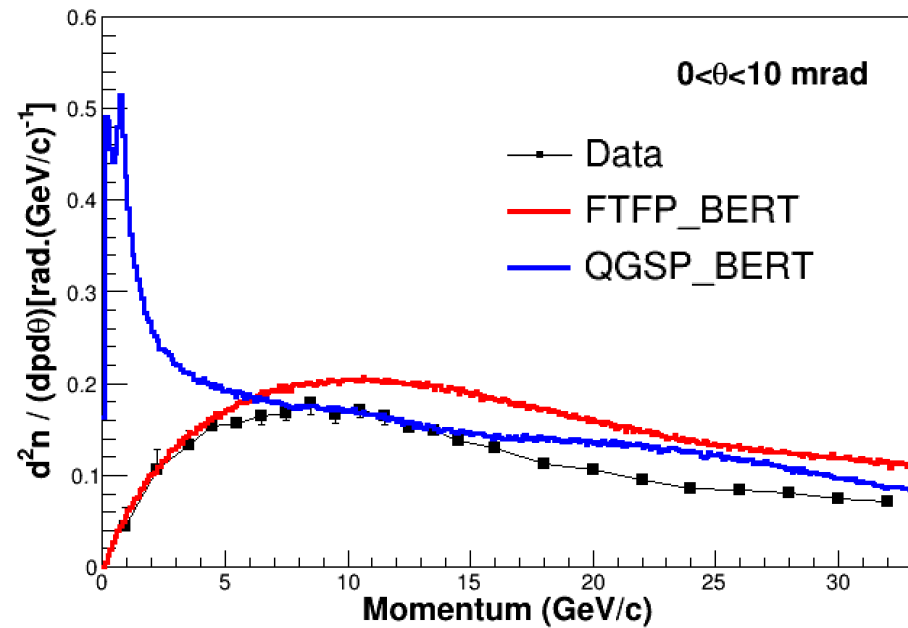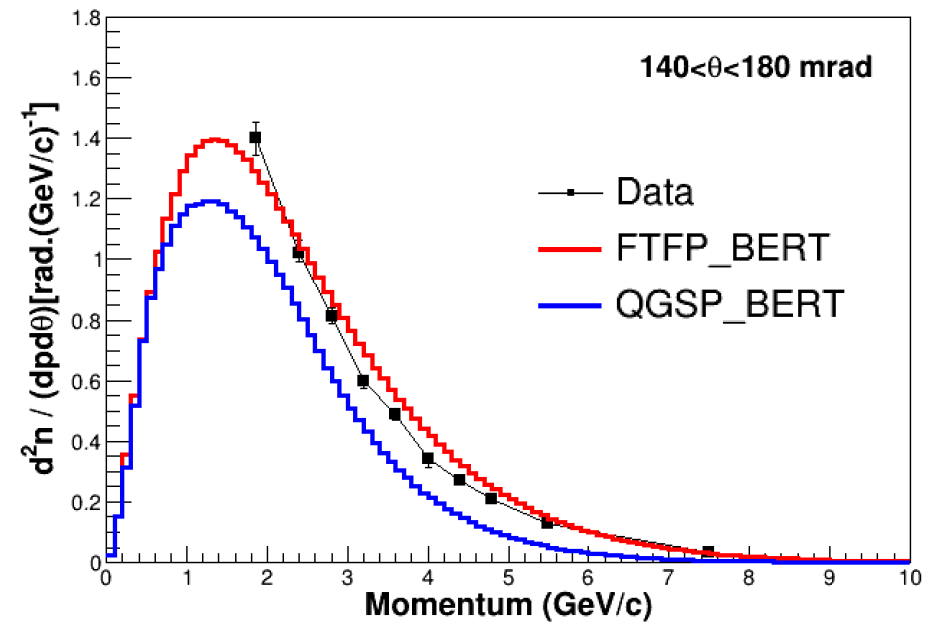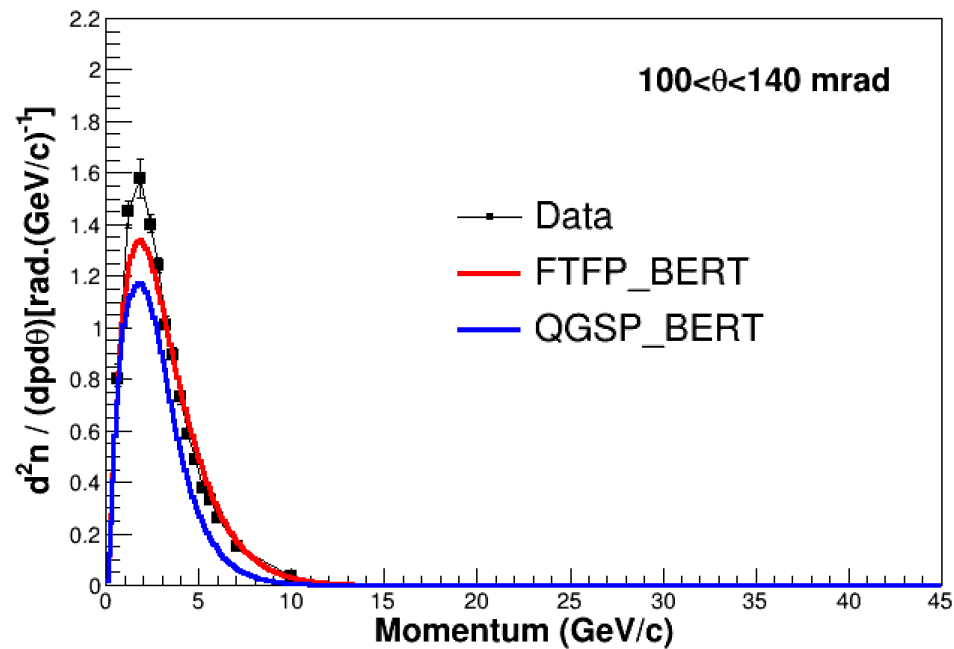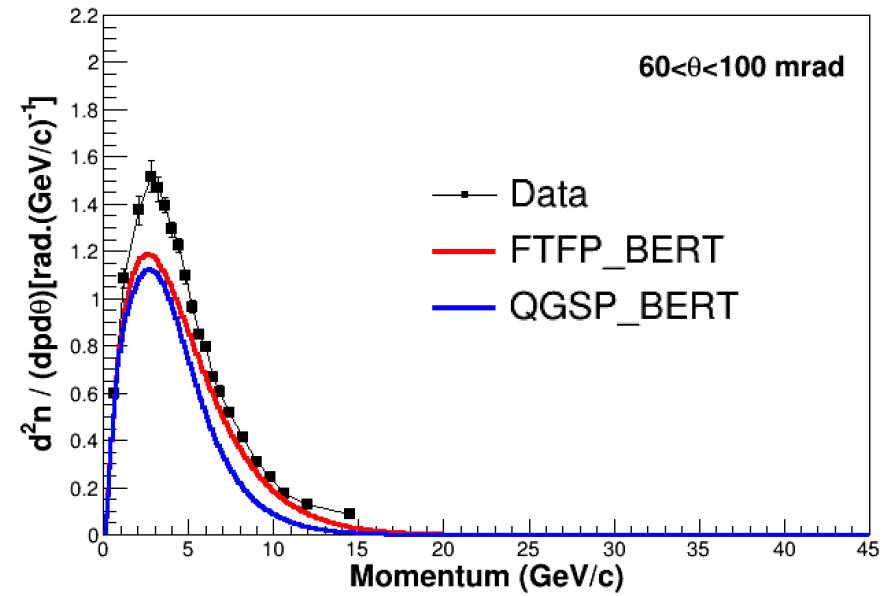For $\pi^+ + C \to \pi^- + X$ @ 60 GeV
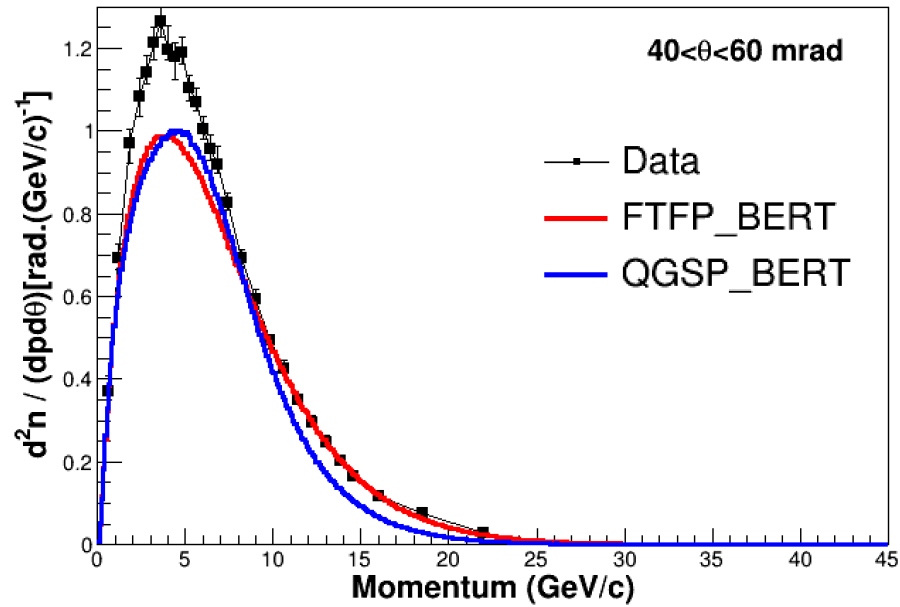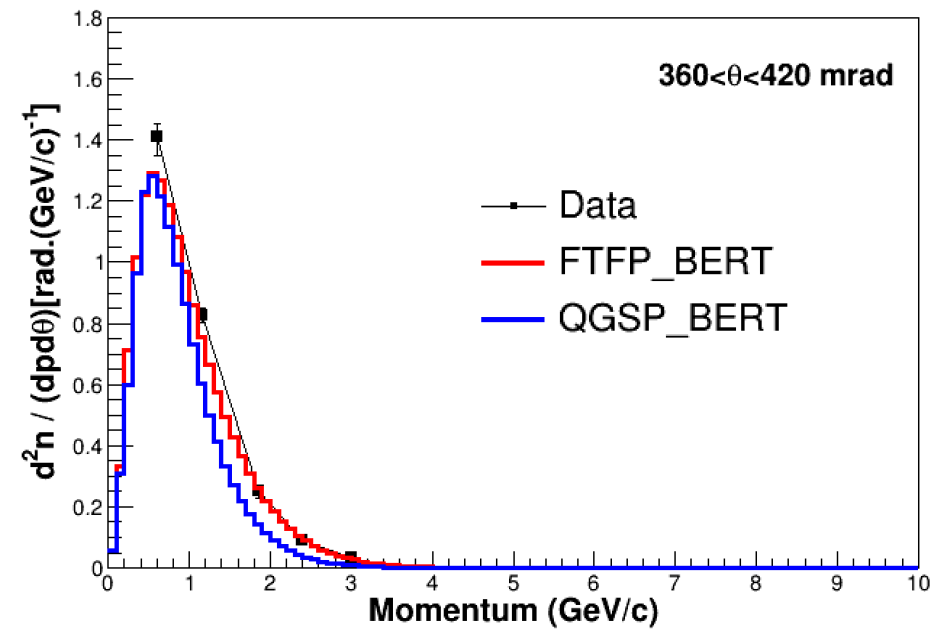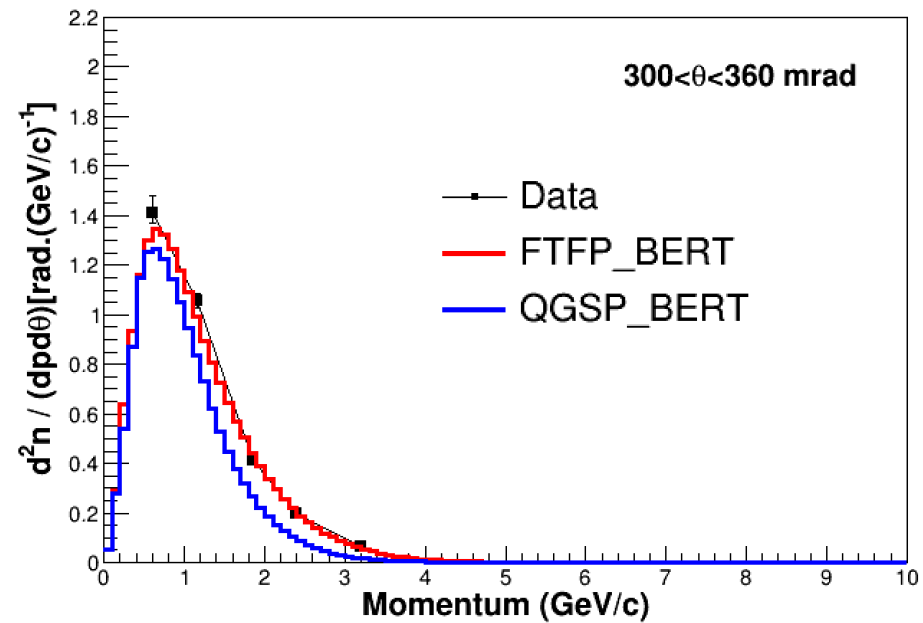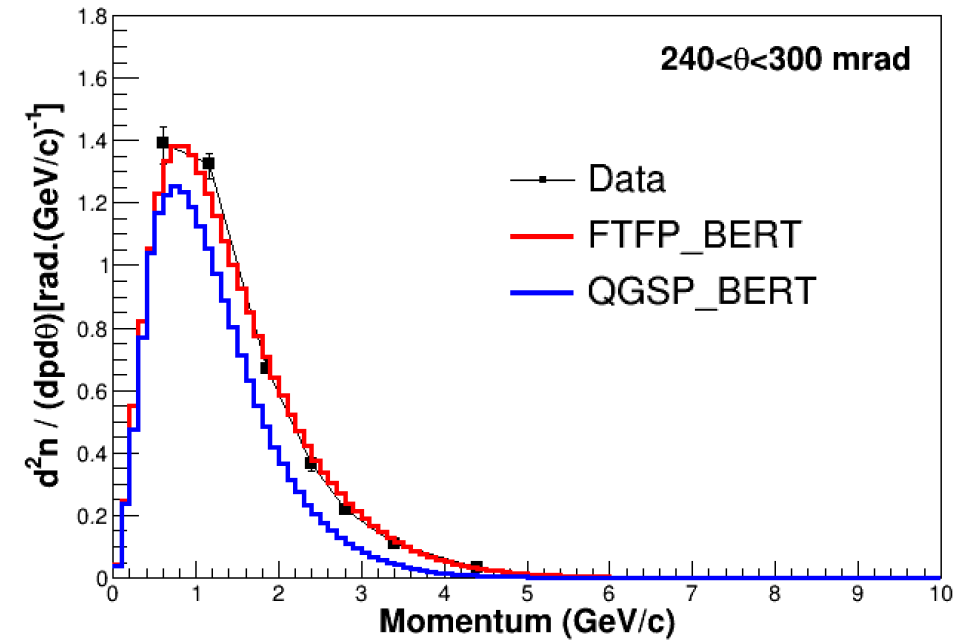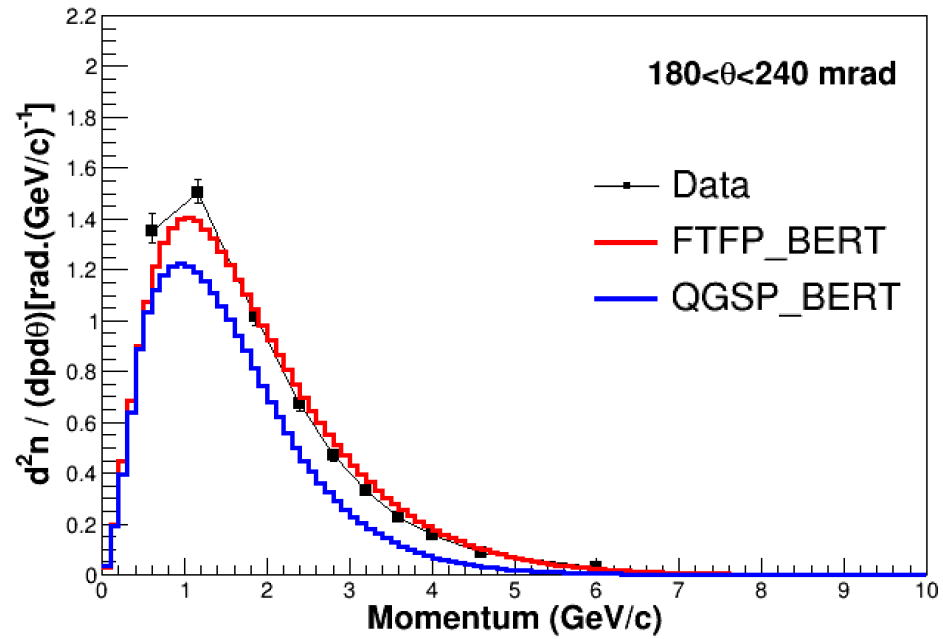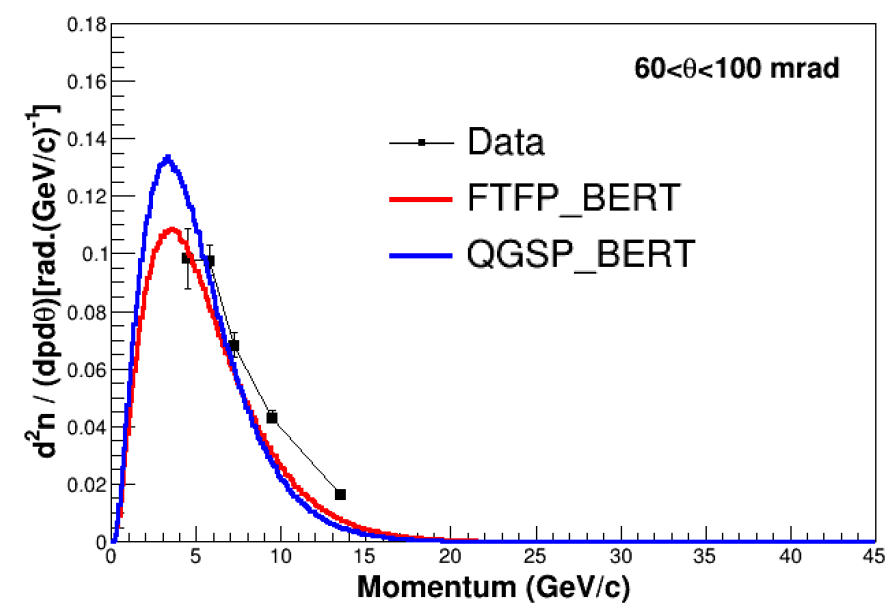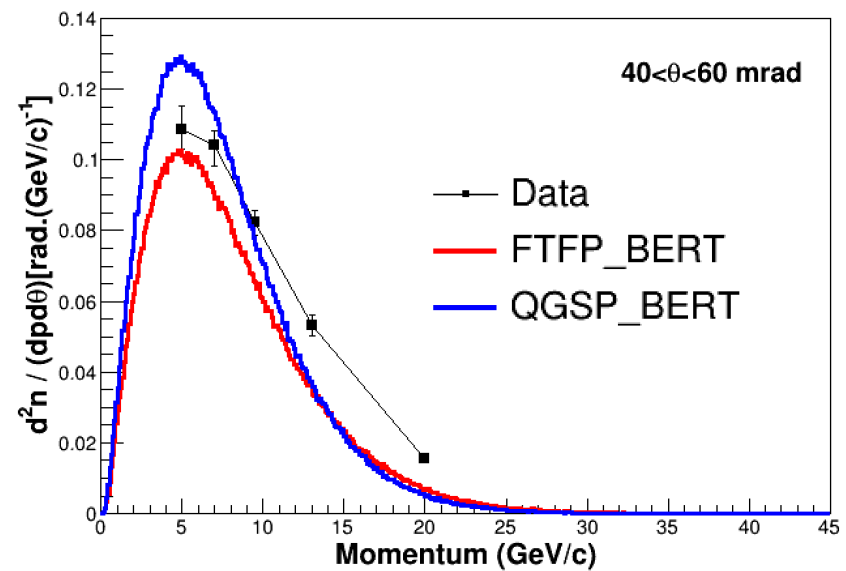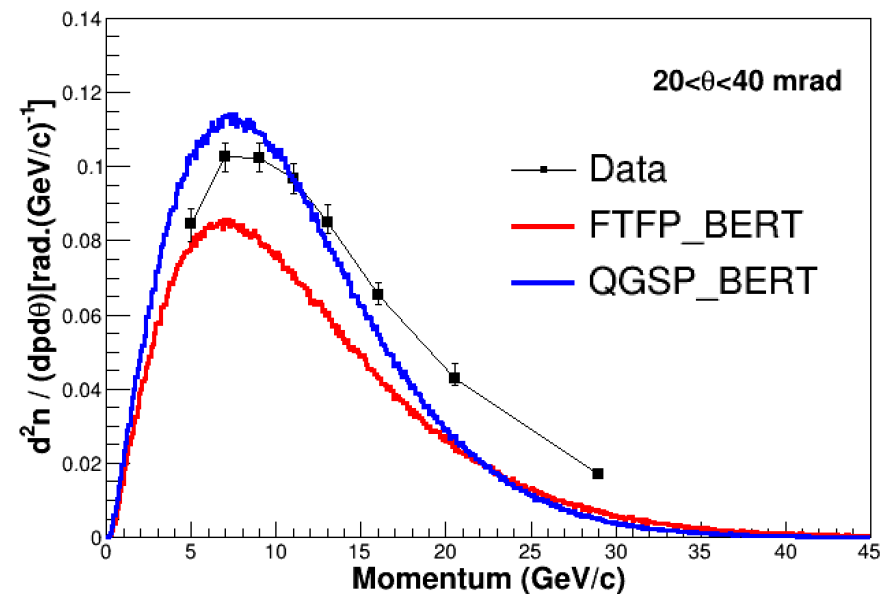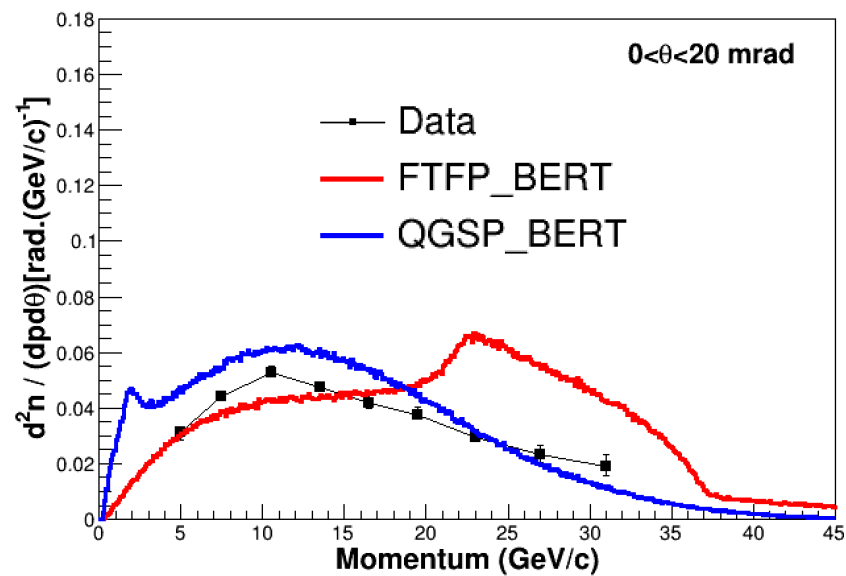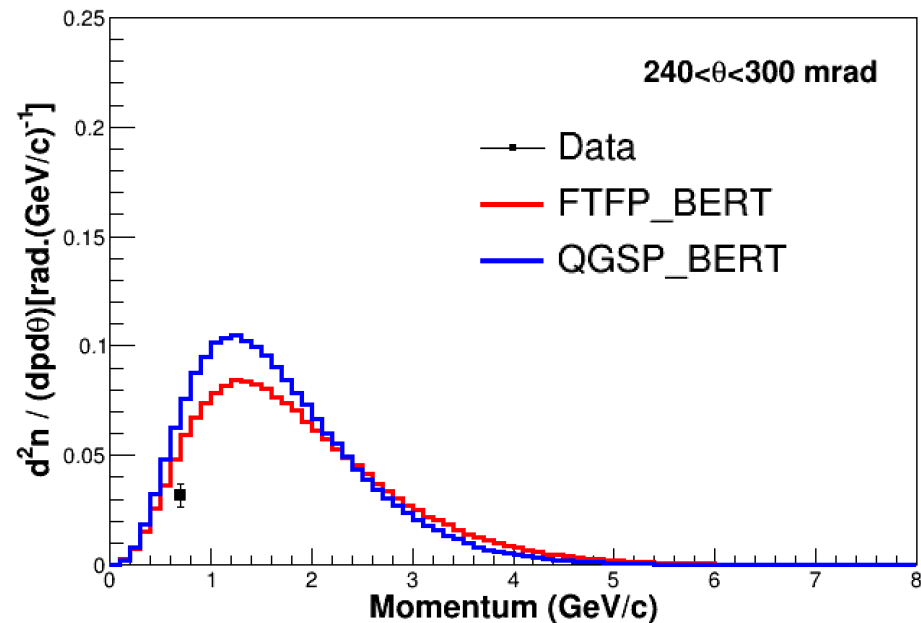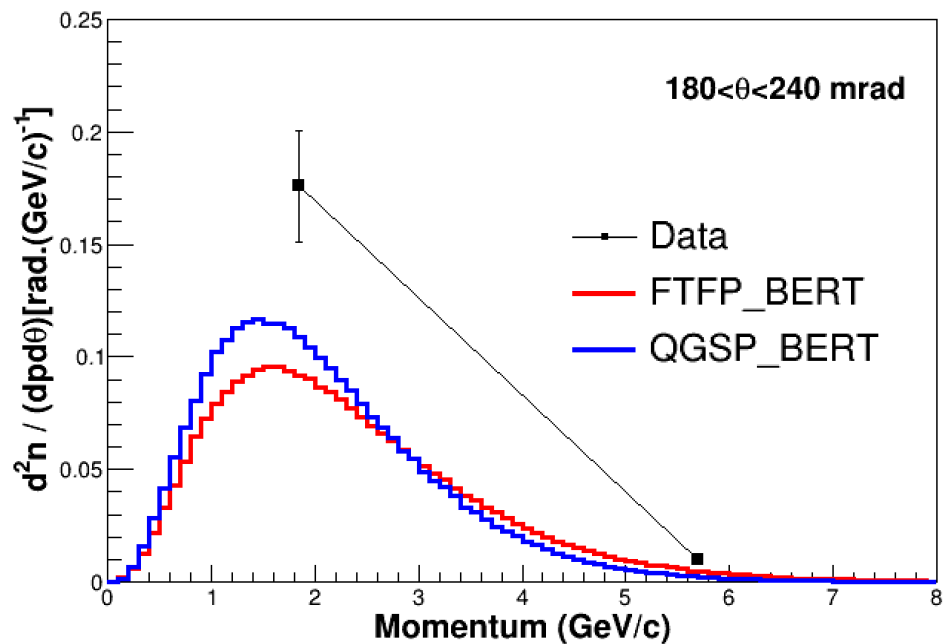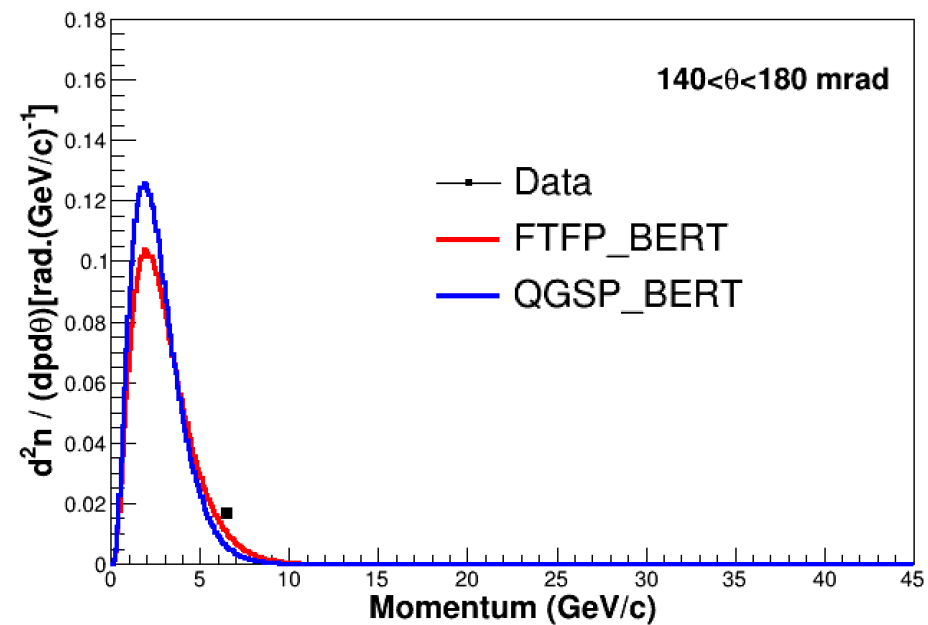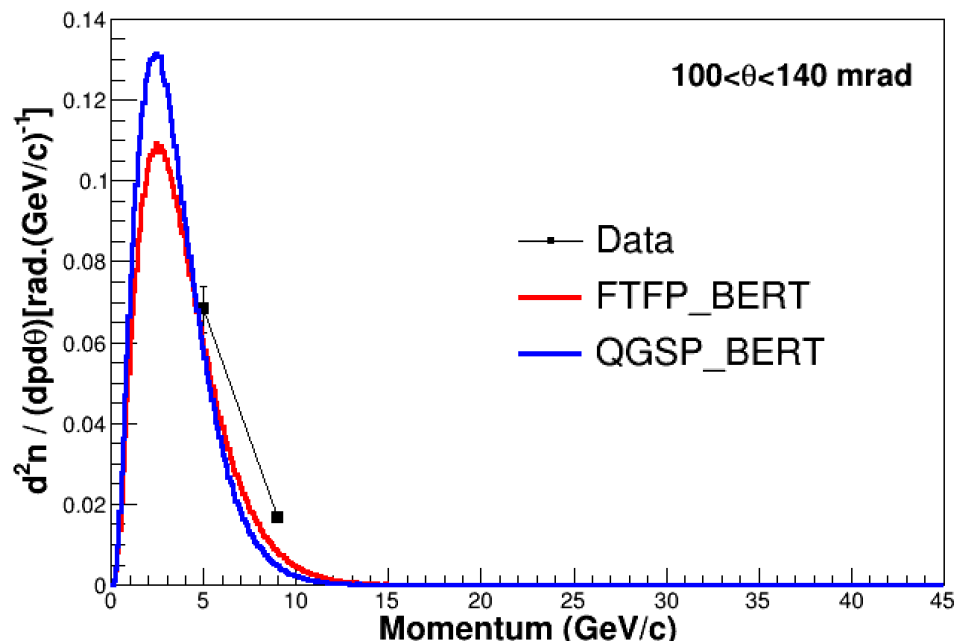
For $\pi^+ + C \rightarrow \pi^- + X$ @ 60 GeV

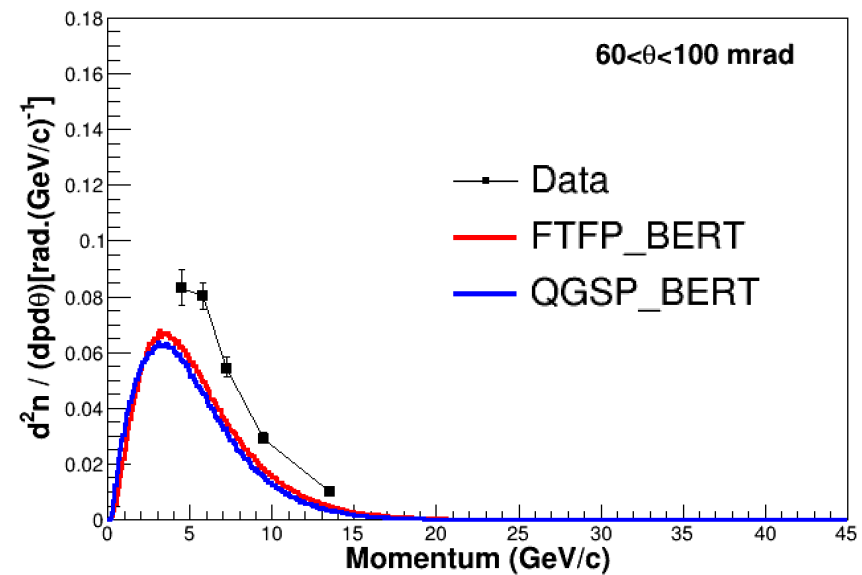For $\pi^+ + C \to K^+ + X$ @ 60 GeV

For π^+ + C -> K^+ + X @ 60 GeV

For $\pi^+ + C \rightarrow K^- + X$ @ 60 GeV

For $\pi^+ + C \to K^- + X$ @ 60 GeV

For π^+ + C -> K^- + X @ 60 GeV

For π^+ + C -> p + X @ 60 GeV
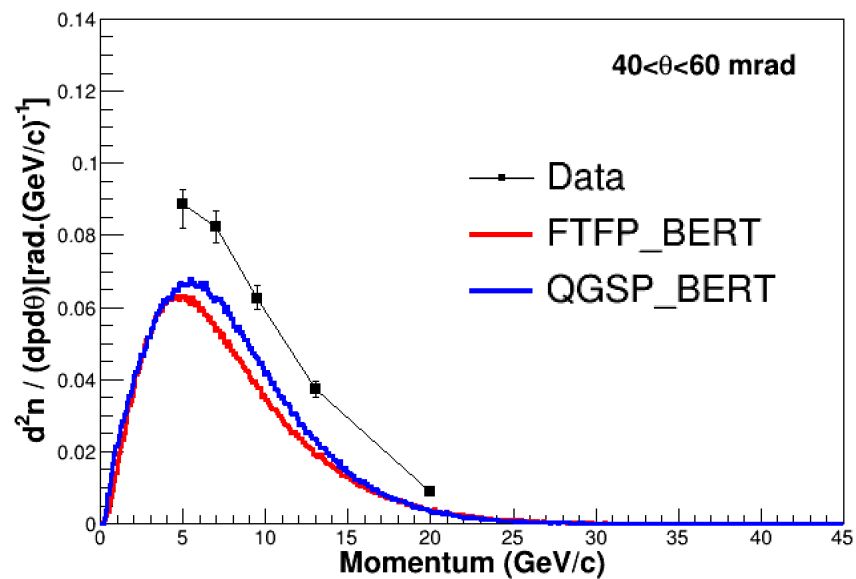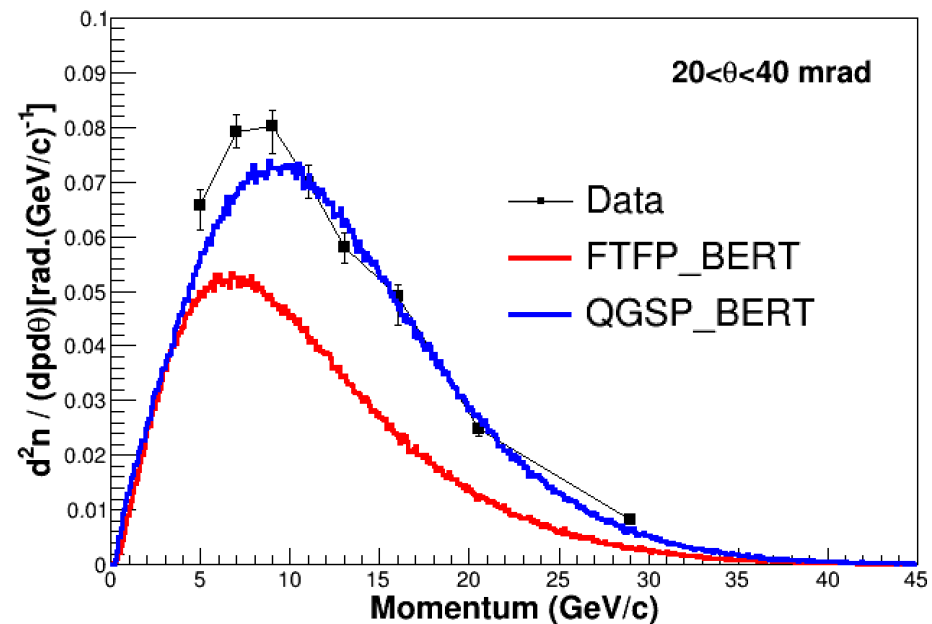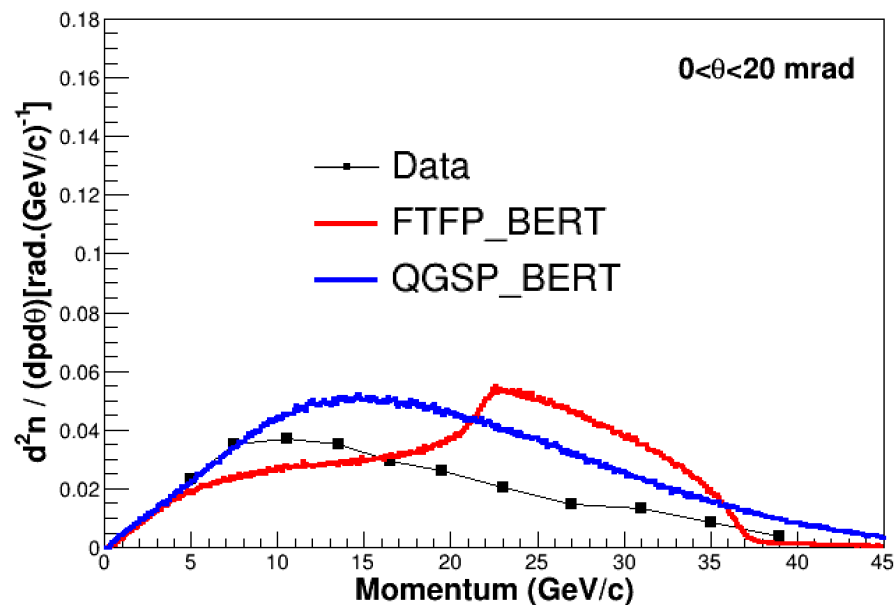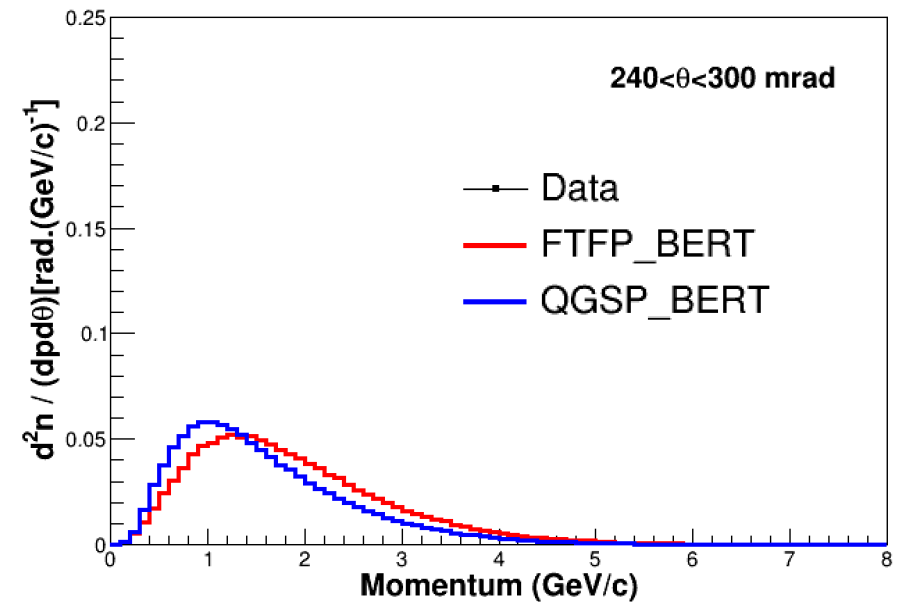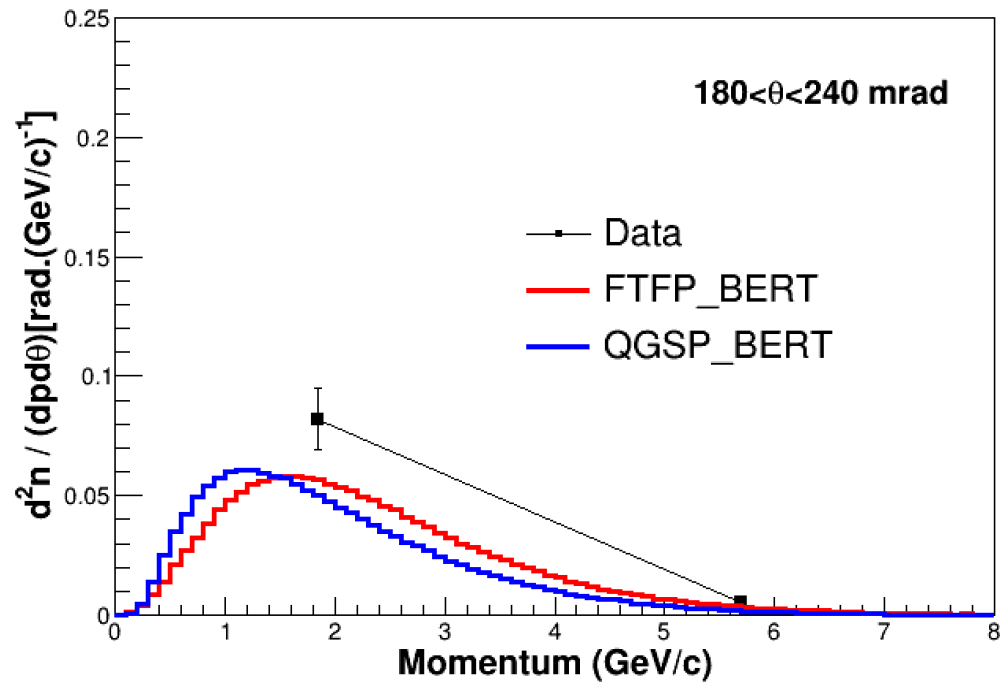
For $\pi^+ + C \rightarrow p + X$ @ 60 GeV

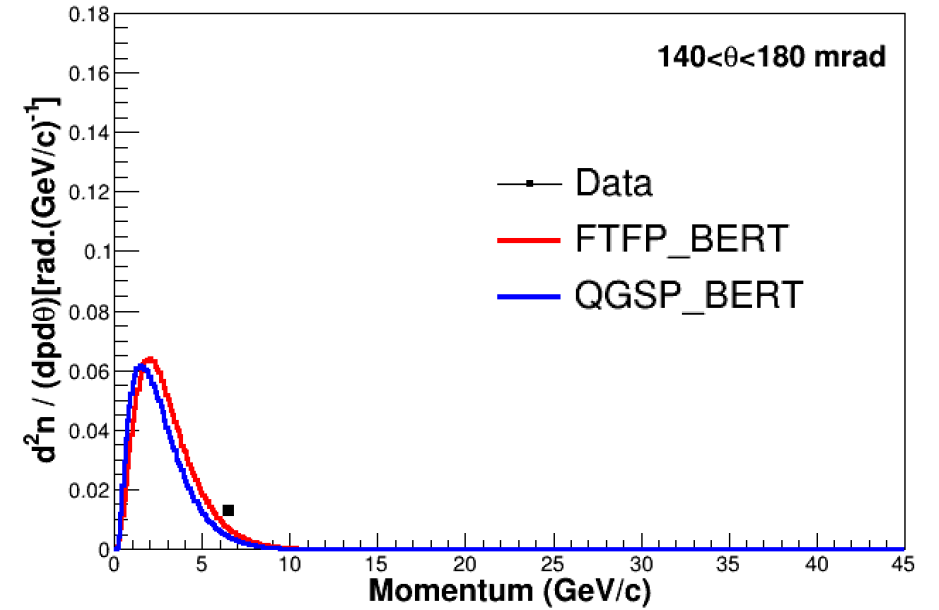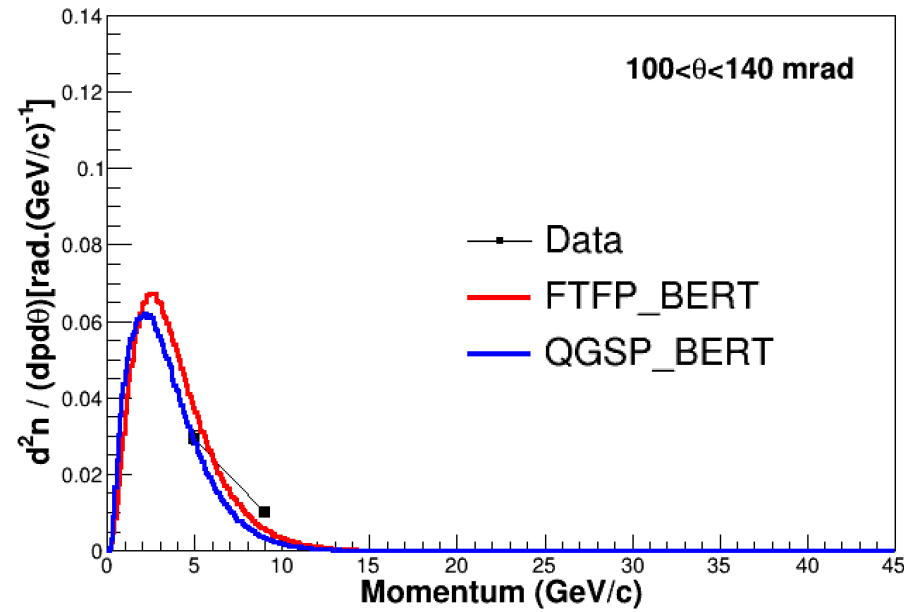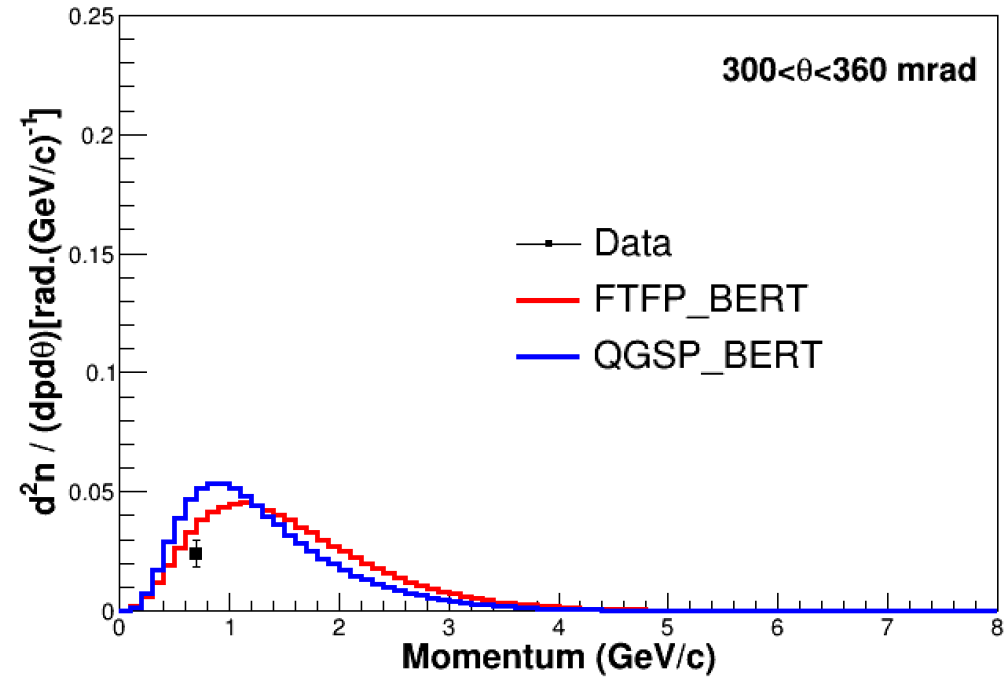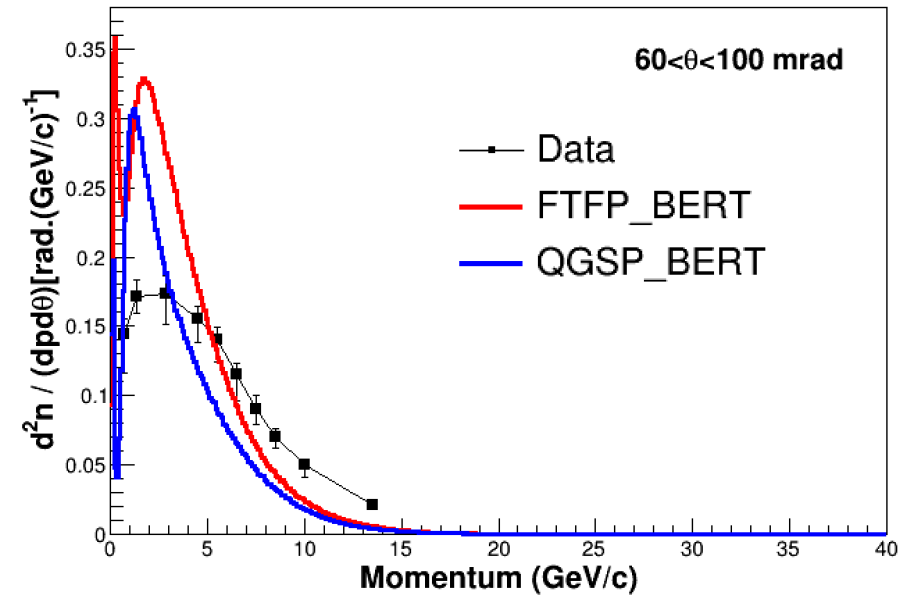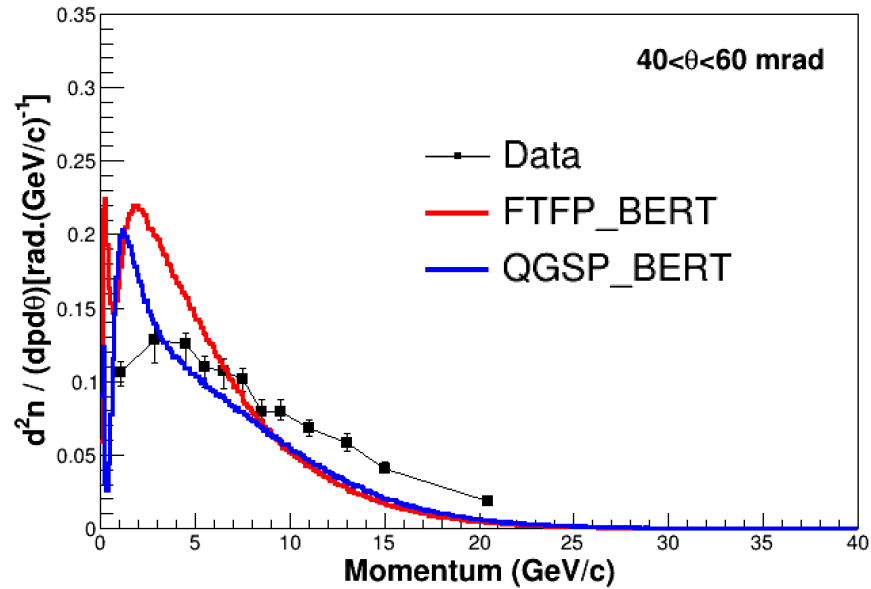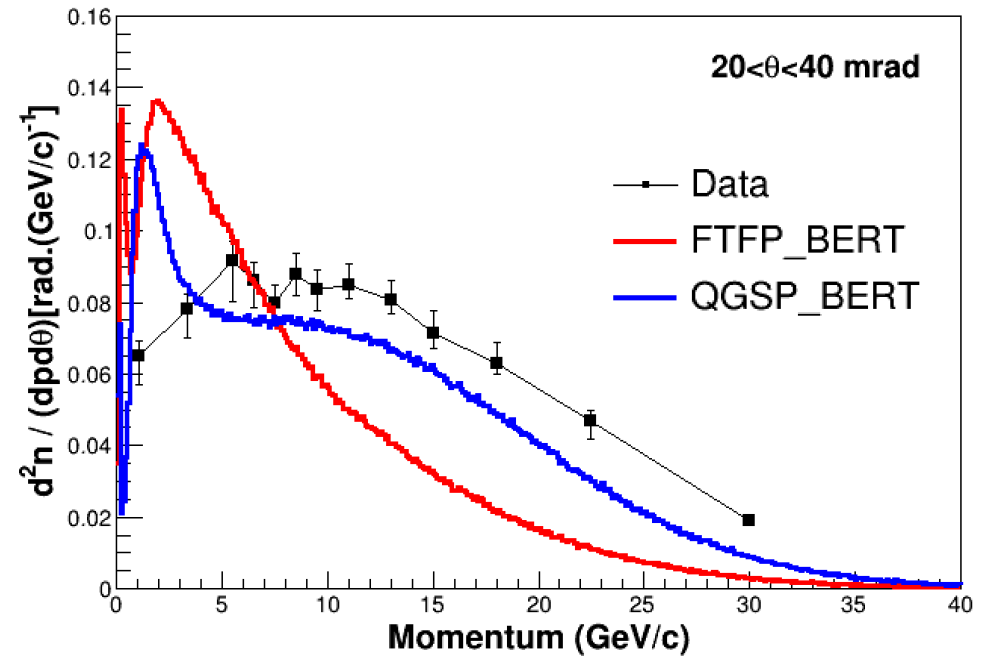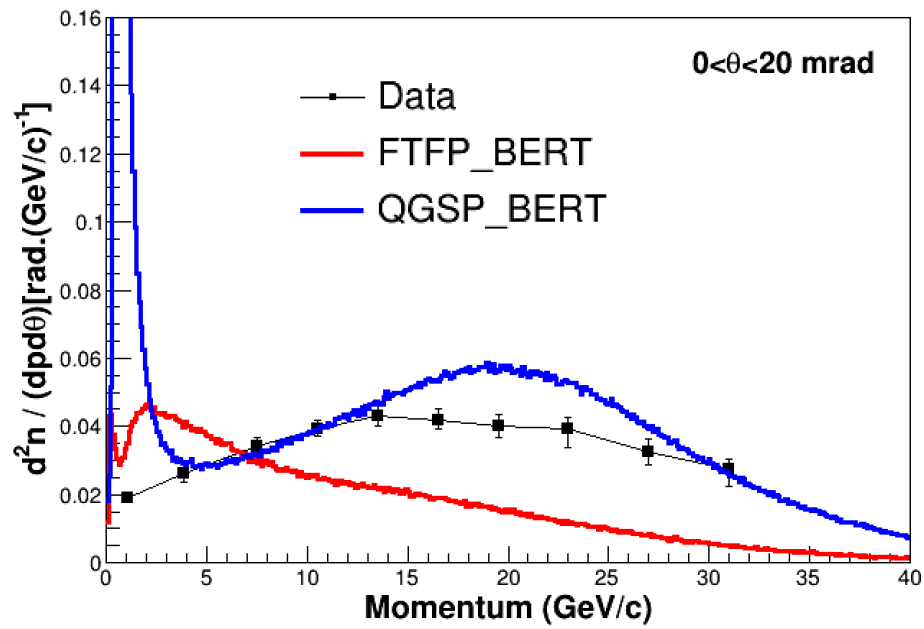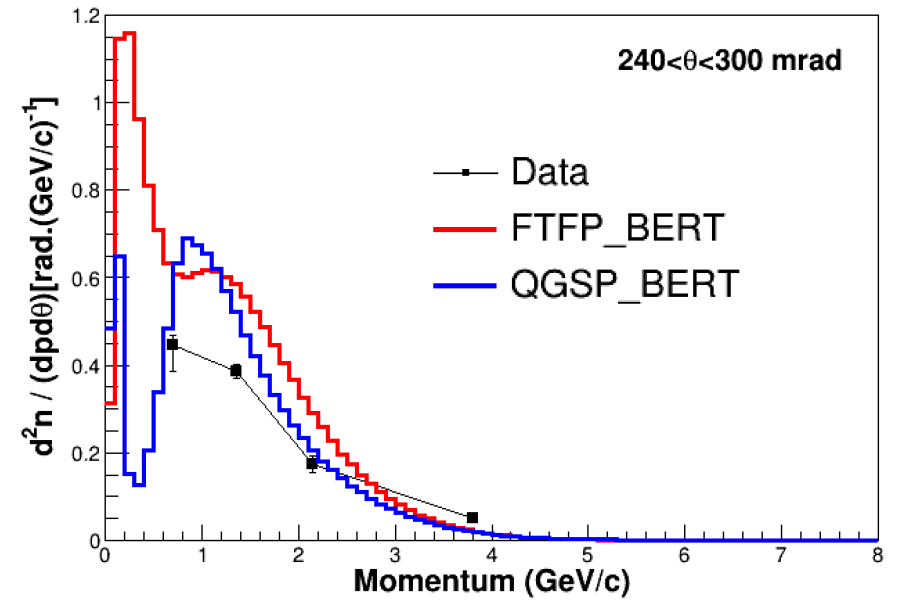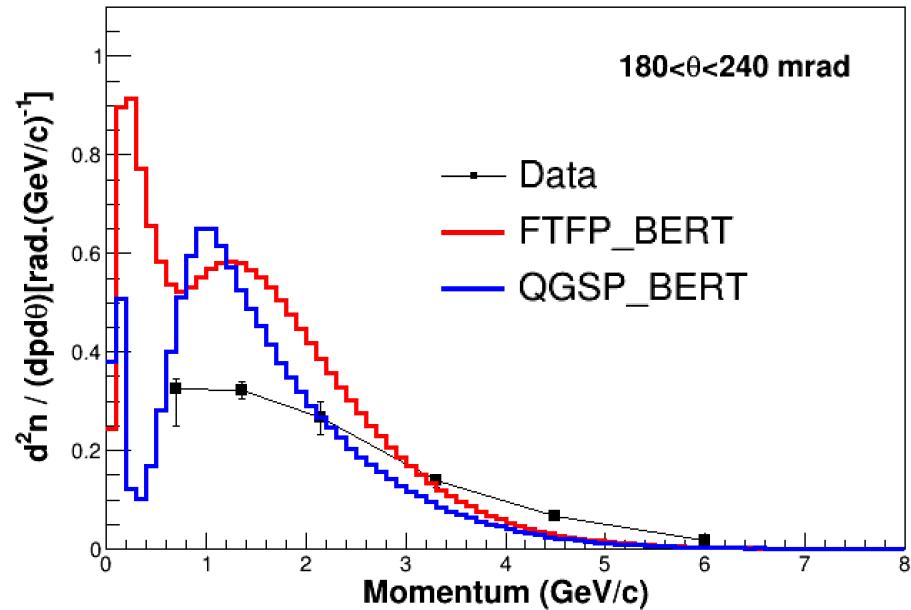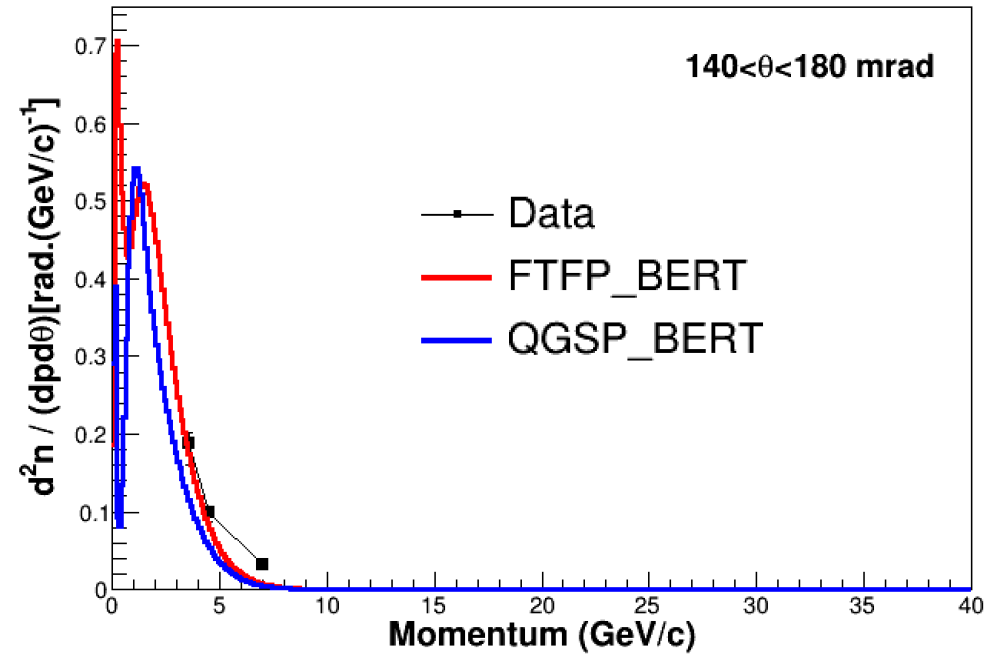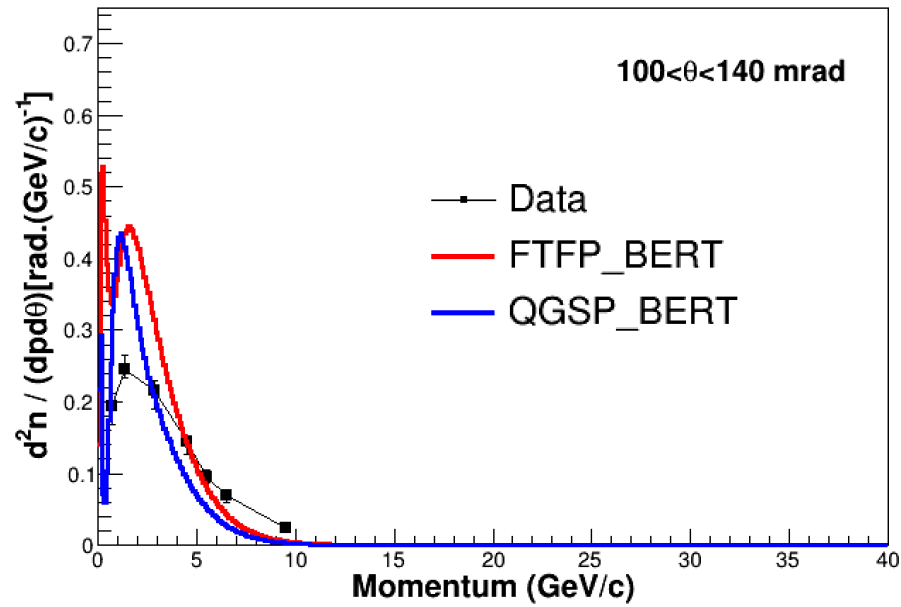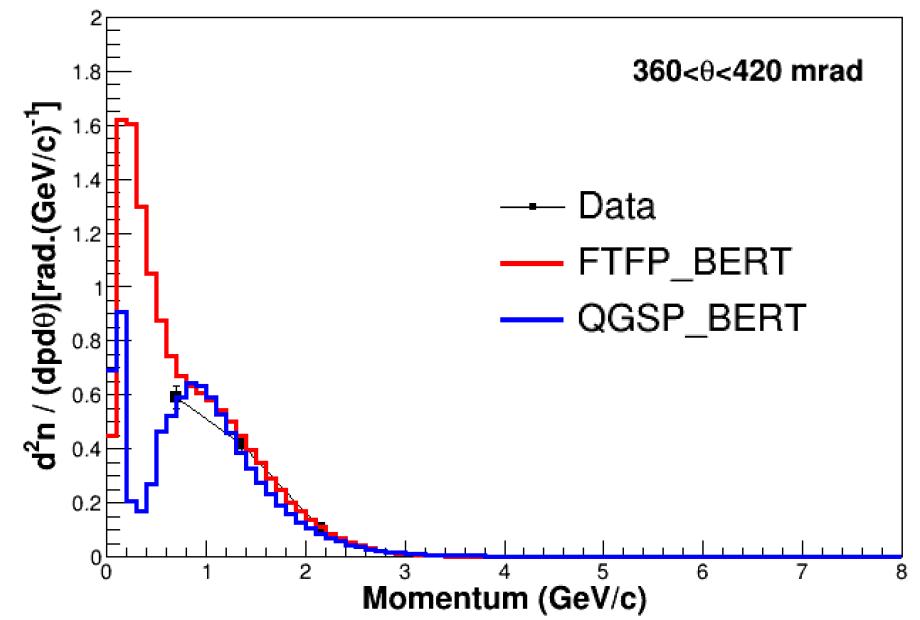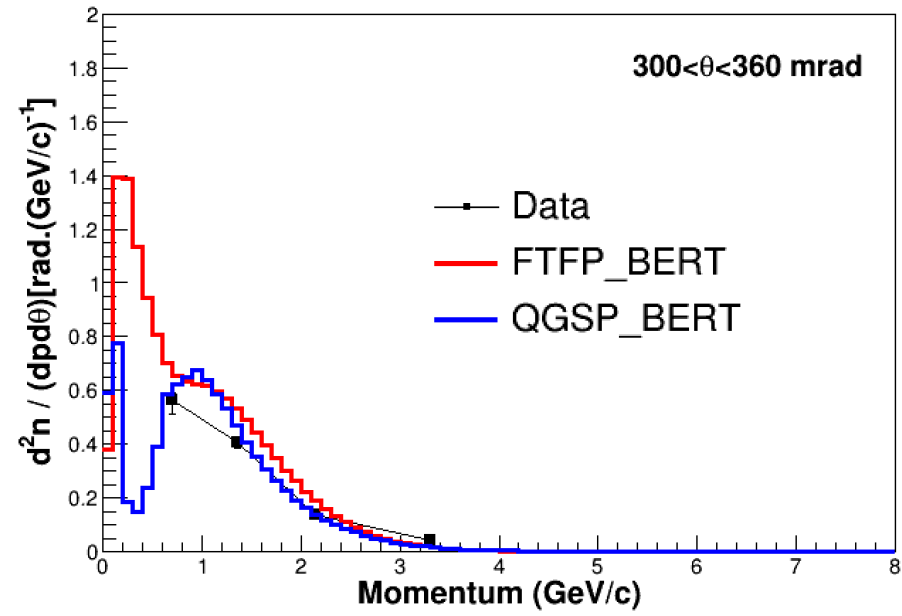For π^+ + C -> p + X @ 60 GeV

Conclusion

- In the previous talk, I made a first comparison of the NA61 data to QGSP_BERT and FTFP_BERT models for GEANT4 for [0, 10] mrad and [40, 60] mrad.

- In this talk, I showed NA61 data with QGSP_BERT and FTFP_BERT comparisons with all angle ranges and produced particle multiplicities.

Grid statistics

Cluster	37701781@jobsub01.fnal.gov
Number of Jobs	500
Submitted	2020-10-21 04:32:33 +0000 UTC
Owner/Group	nbostan / dune (nbostan@FNAL.GOV)
Command	g4hp_job.sh
Requested Memory	1200 MiB
Requested Disk	35.0 GiB
Expected Wall Time	23h40m0s

View this cluster on Fifemon

Average time waiting in queue: 4m8s

Success rate (% jobs with exit code 0): 100.0%

Used	Min	Max	Avg
Memory	395.5 MiB	480.3 MiB	460.0 MiB
Disk	0.0 GiB	0.0 GiB	0.0 GiB
Wall Time	3m35s	31m13s	6m17s
CPU Time	2m45s	12m38s	4m52s

Efficiency	Min	Max	Avg
Memory	33.8%	41.0%	39.3%
Disk	0.0%	0.0%	0.0%
CPU	14.0%	97.3%	77.4%
Time	0.3%	2.2%	0.4%

Exit Code	# Jobs
0	500

✓ Each job has 10M incident particles