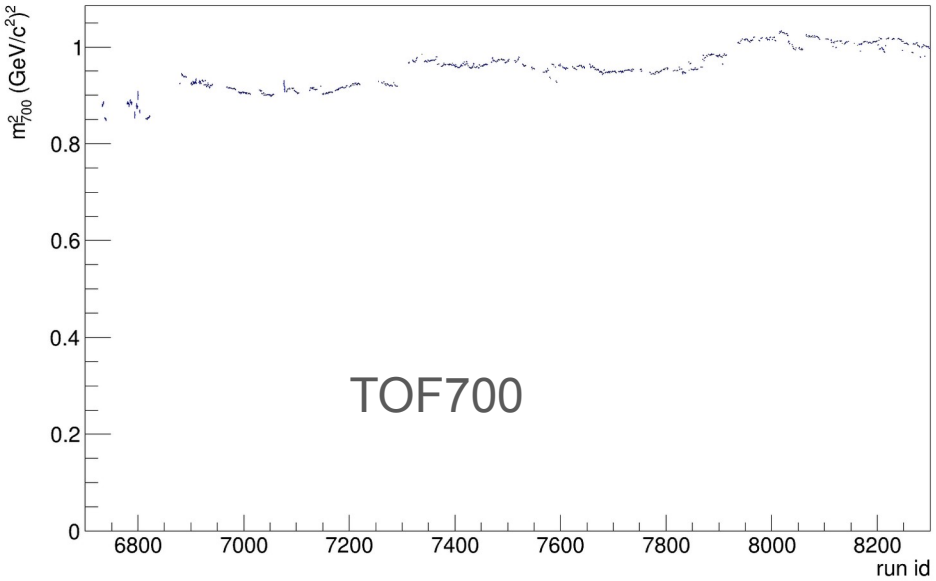
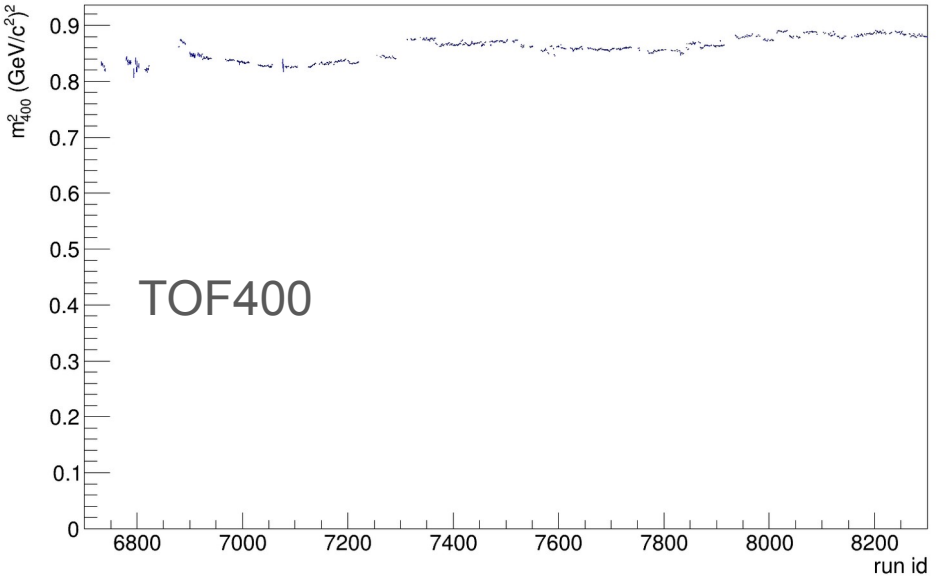
# BM@N :Towards the final results

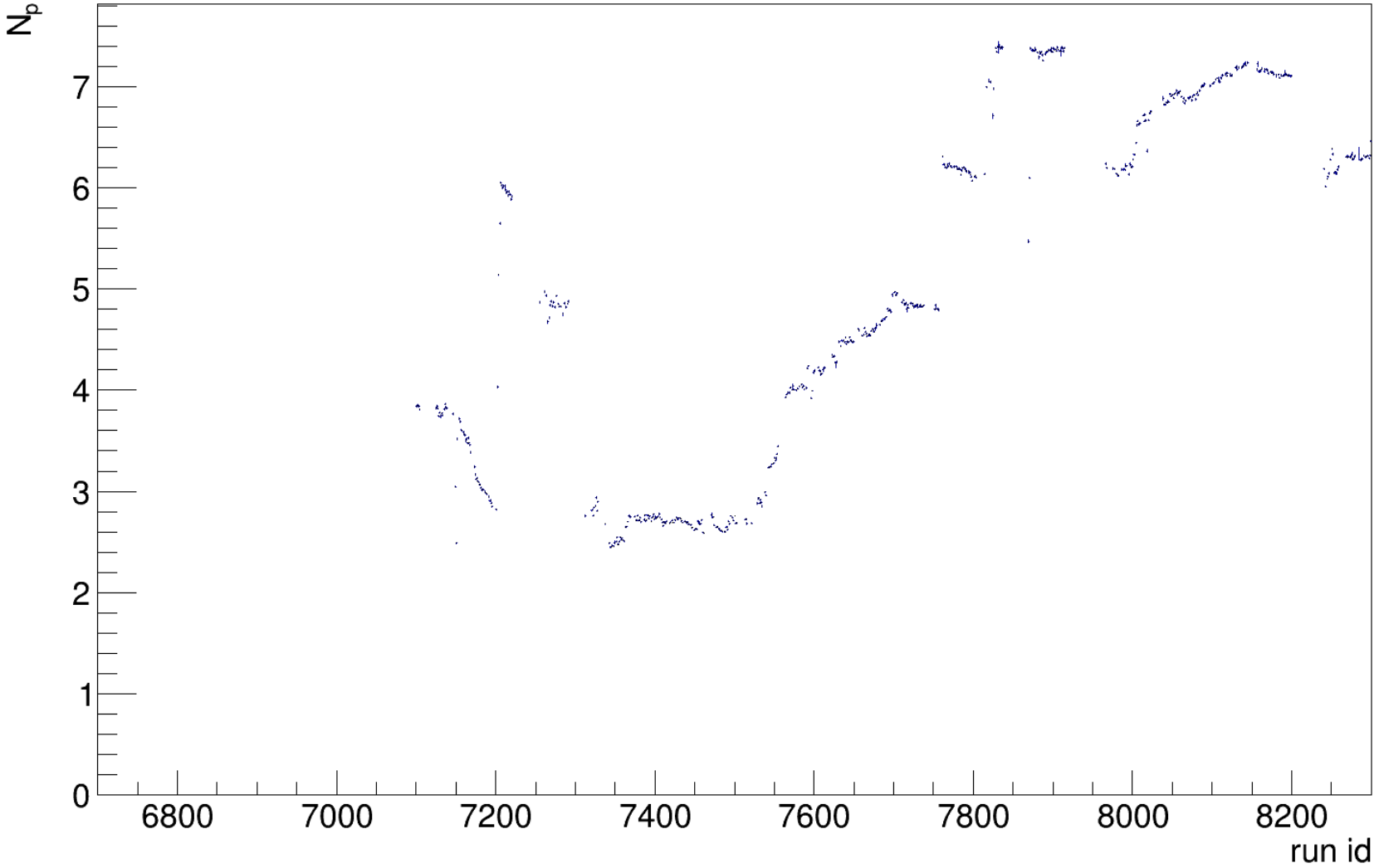
A. Taranenko

# Squared mass of protons with TOF400 and TOF700

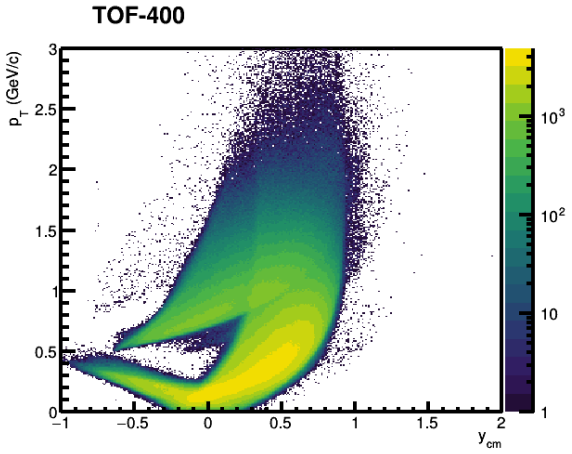


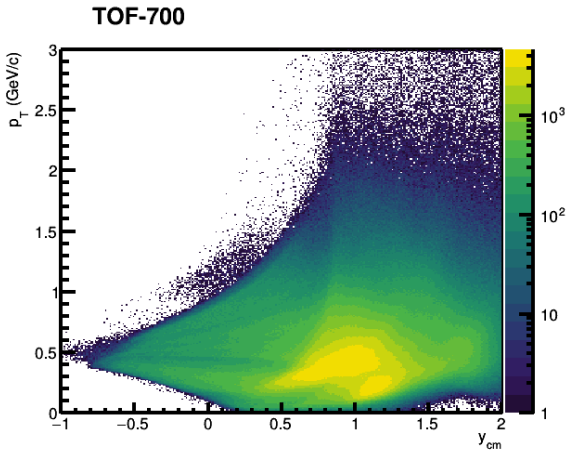



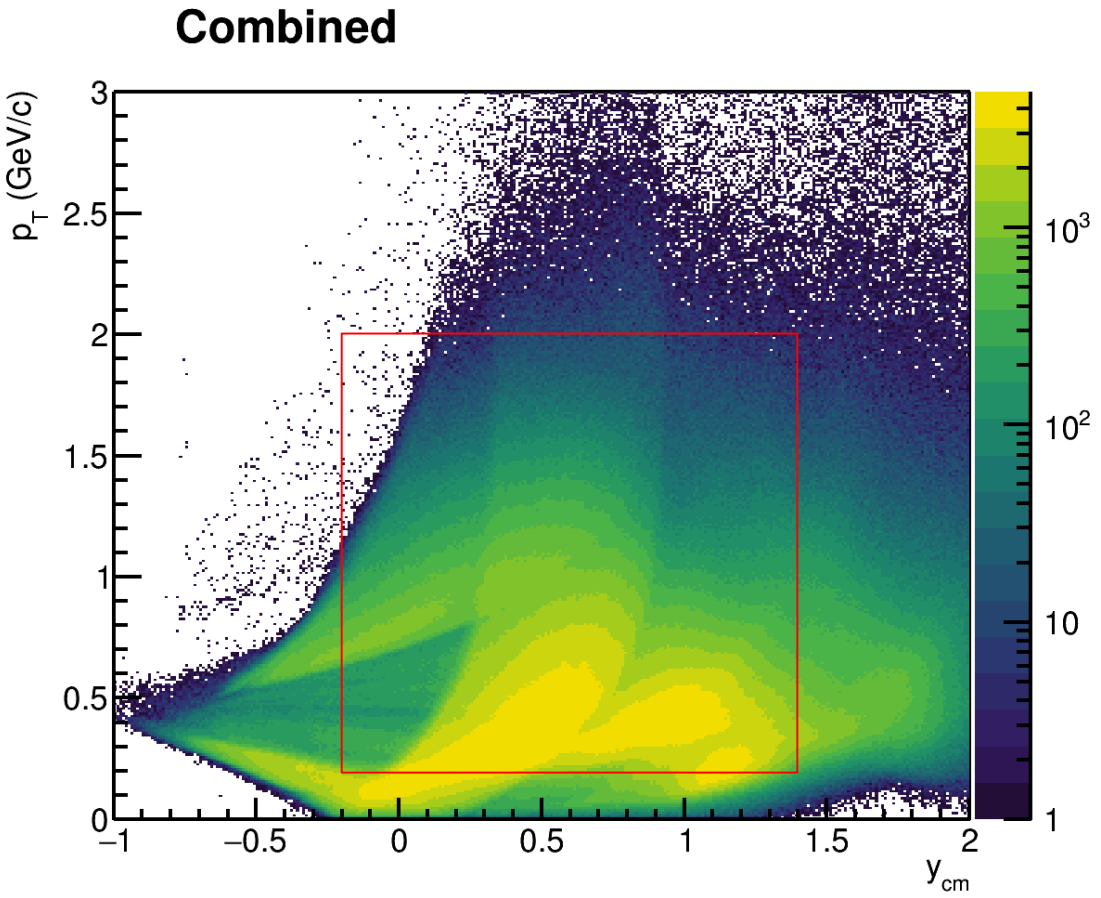

From M. Mamaev presentation – final calibration of Tof detectors

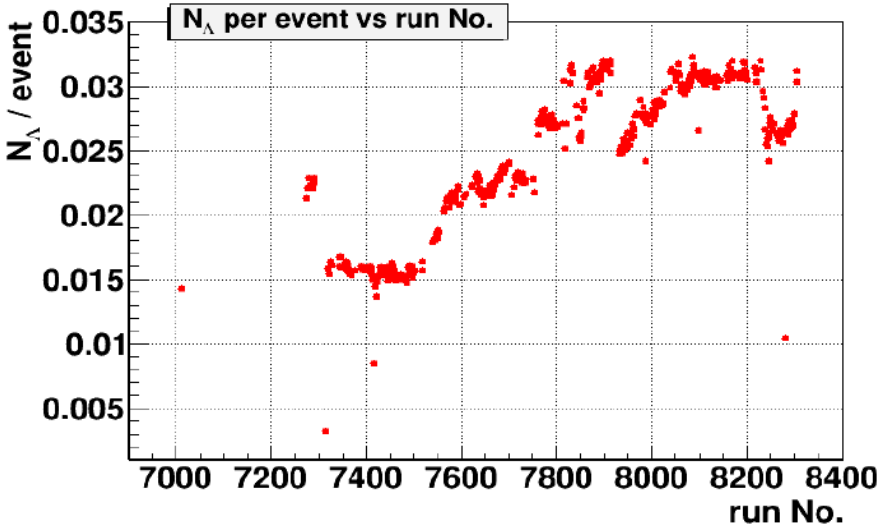

$N_p$
0
1
2
3
4
5
6
7
6800
7000
7200
7400
7600
7800
8000
8200
run id

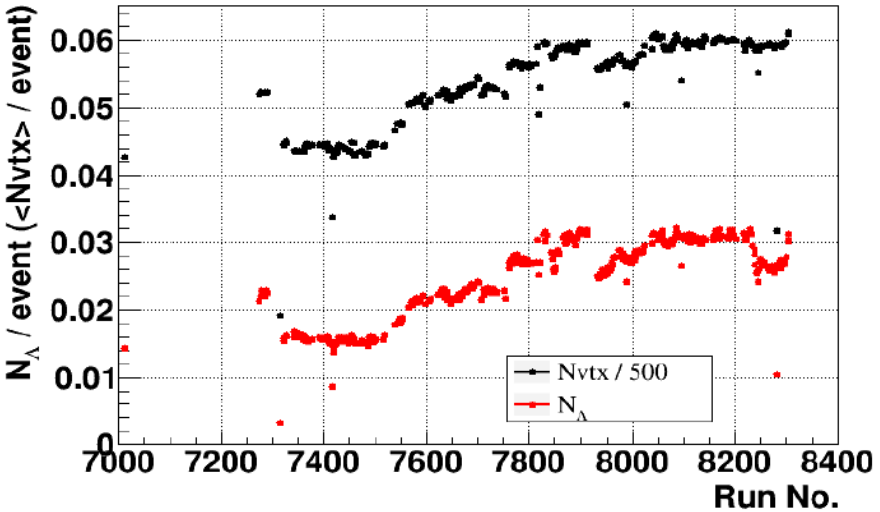
# Proton $p_T$-y acceptance

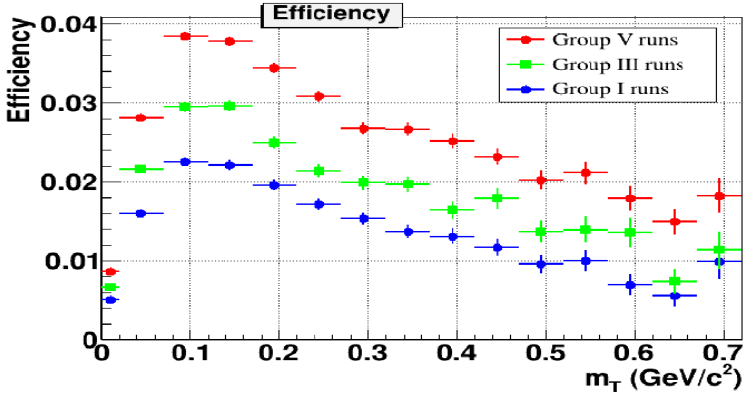


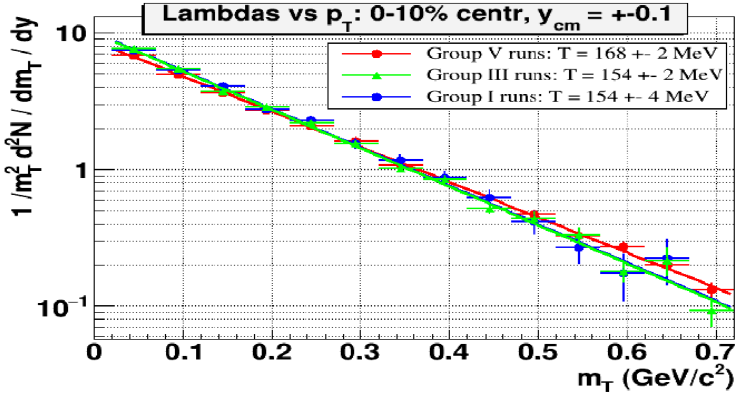



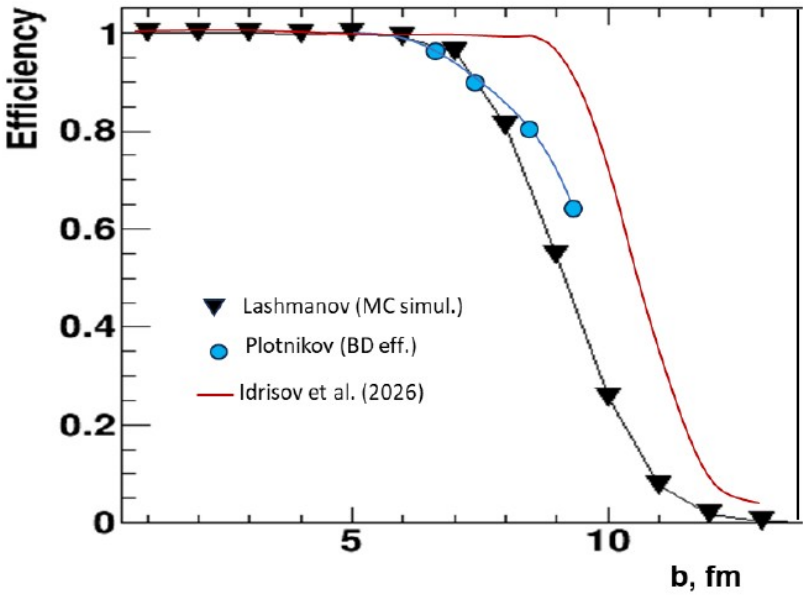




$N_\Lambda$ per event vs run No.
$N_\Lambda$ / event
0.035
0.03
0.025
0.02
0.015
0.01
0.005
7000 7200 7400 7600 7800 8000 8200 8400
run No.

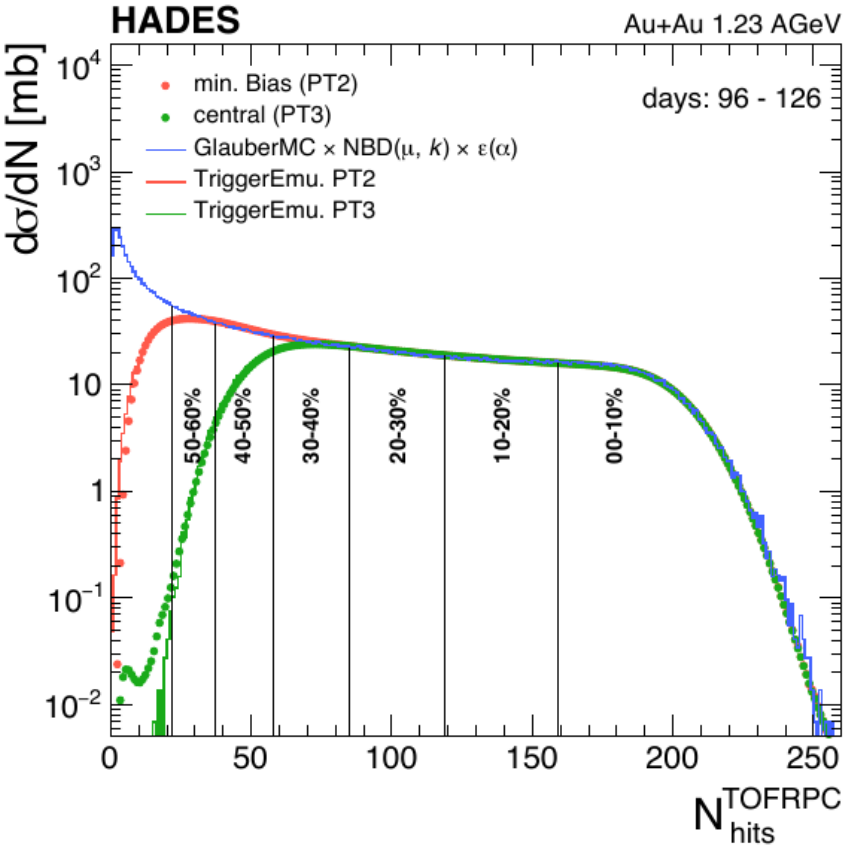

$N_\Lambda$ / event (<Nvtx> / event)
0.06
0.05
0.04
0.03
0.02
0.01
0
7000 7200 7400 7600 7800 8000 8200 8400
Run No.
Nvtx / 500
$N_\Lambda$

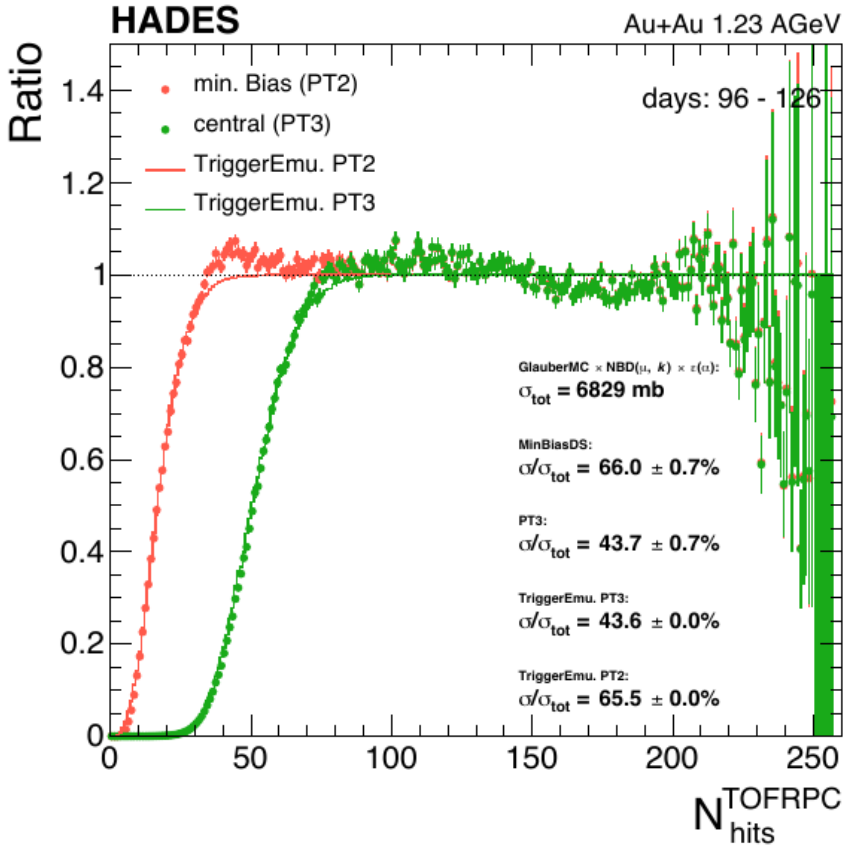

Efficiency
Efficiency
0.04
0.03
0.02
0.01
0
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7
$m_T$ (GeV/$c^2$)
Group V runs
Group III runs
Group I runs


Lambdas vs $p_T$: 0-10% centr, $y_{cm}$ = +-0.1
$1/m_T^2\, d^2N/dm_T/dy$
10
1
$10^{-1}$
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7
$m_T$ (GeV/$c^2$)
Group V runs: T = 168 +- 2 MeV
Group III runs: T = 154 +- 2 MeV
Group I runs: T = 154 +- 4 MeV




Efficiency of interaction trigger CCT2 for Xe + CsI collisions in BM@N run


HADES
Au+Au 1.23 AGeV
dσ/dN [mb]
min. Bias (PT2)
central (PT3)
GlauberMC × NBD(μ, k) × ε(α)
TriggerEmu. PT2
TriggerEmu. PT3
days: 96 - 126
50-60%
40-50%
30-40%
20-30%
10-20%
00-10%
N TOFRPC hits


HADES
Au+Au 1.23 AGeV
Ratio
min. Bias (PT2)
central (PT3)
TriggerEmu. PT2
TriggerEmu. PT3
days: 96 - 126
GlauberMC × NBD(μ, k) × ε(α):
σtot = 6829 mb
MinBiasDS:
σ/σtot = 66.0 ± 0.7%
PT3:
σ/σtot = 43.7 ± 0.7%
TriggerEmu. PT3:
σ/σtot = 43.6 ± 0.0%
TriggerEmu. PT2:
σ/σtot = 65.5 ± 0.0%
N TOFRPC hits

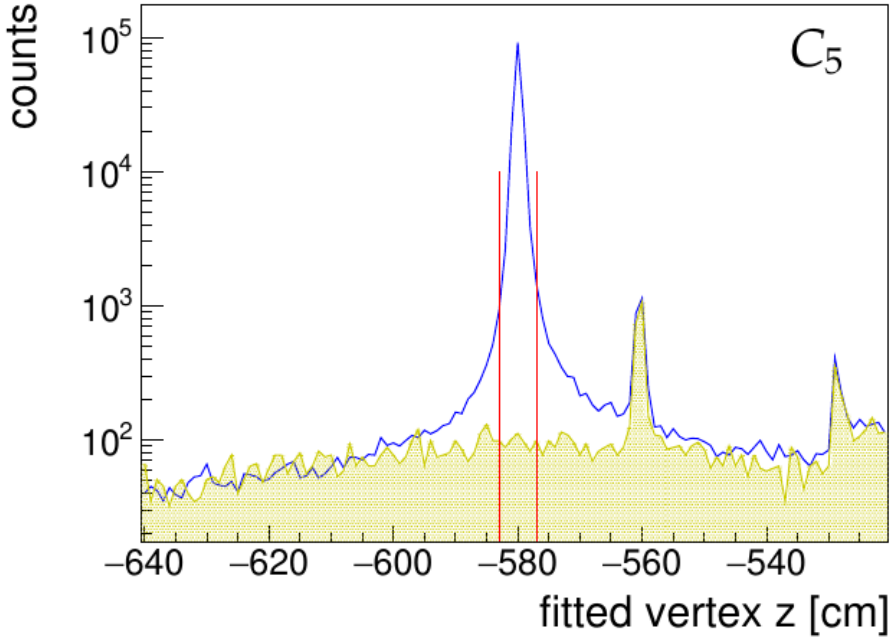
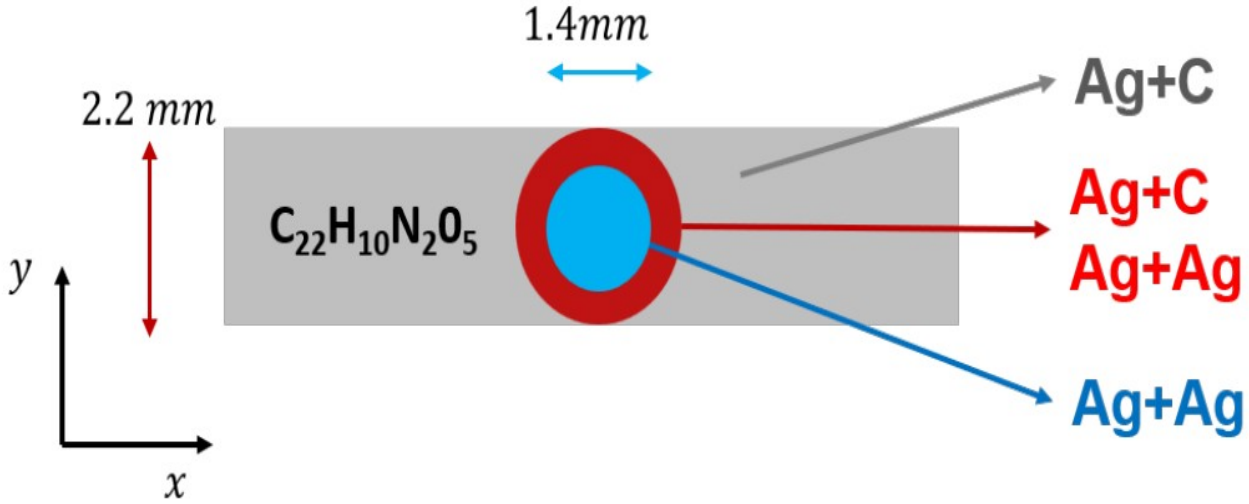
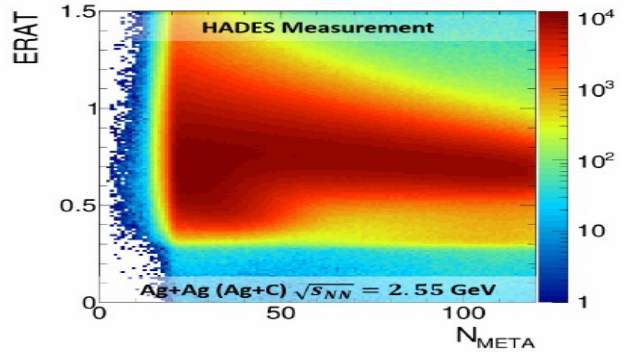
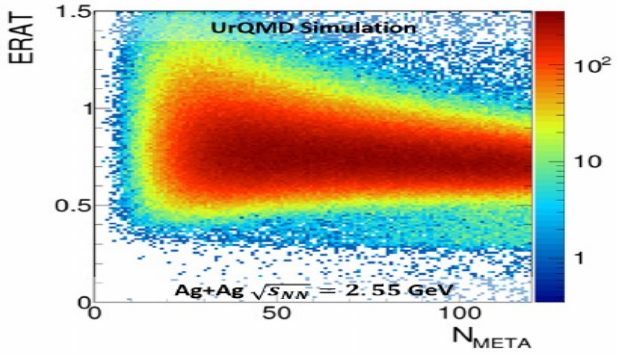
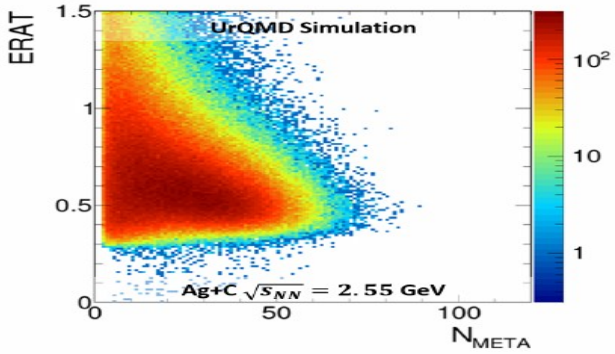



FIGURE 3.1: Primary vertex position distribution along the beam axis for peripheral Ar+Sc collisions at 40$A$ GeV/$c$. The solid blue line represents the target IN data. The shaded area represents scaled target OUT data. The vertical red lines correspond to the cut $\pm$ 3 cm used in this analysis.


1.4mm
2.2 mm
$C_{22}H_{10}N_2O_5$
y
x
Ag+C
Ag+C
Ag+Ag
Ag+Ag


HADES Measurement
ERAT
$N_{META}$
Ag+Ag (Ag+C) $\sqrt{s_{NN}}$ = 2.55 GeV


UrQMD Simulation
ERAT
$N_{META}$
Ag+Ag $\sqrt{s_{NN}}$ = 2.55 GeV


UrQMD Simulation
ERAT
$N_{META}$
Ag+C $\sqrt{s_{NN}}$ = 2.55 GeV