Status Report

2015. 11. 5

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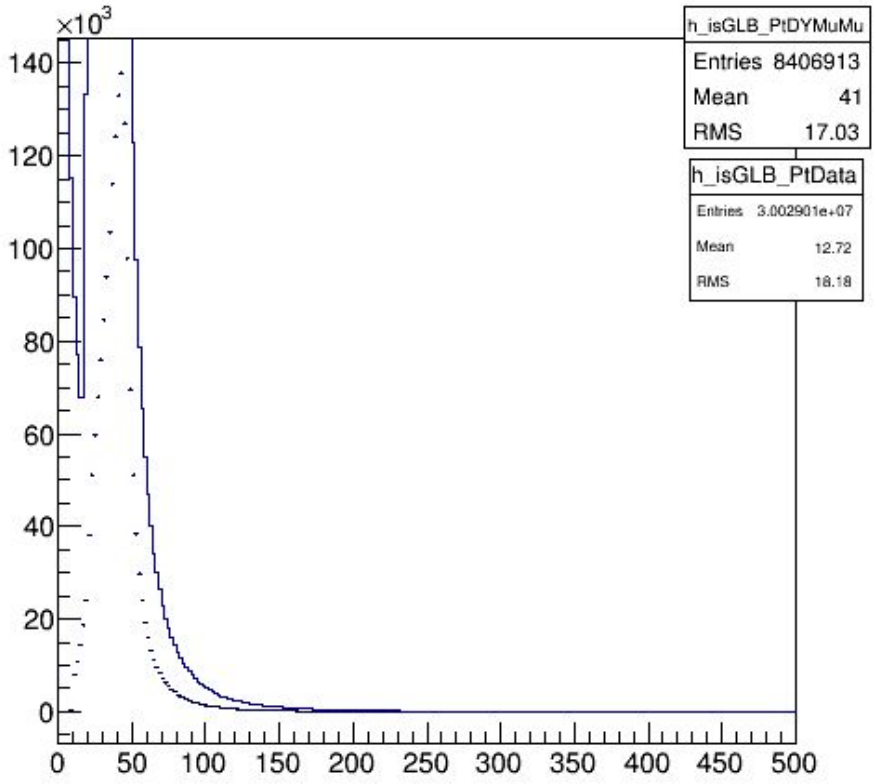
Action Item

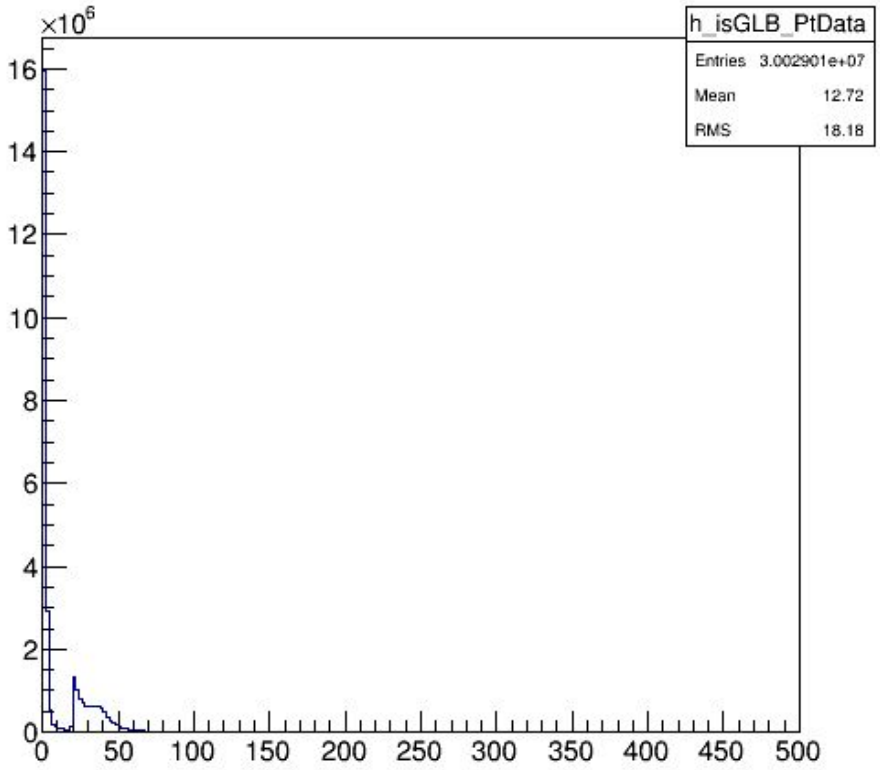
- Why pT have peak?
- Why eta have valleys?
- Why phi is flat?
- How to calculate invariant mass?
- Selection cut
  - Without selection cut
  - Each selection cut
  - (Normalize factor)

Before Selection Cut

pT



pT_Data&DY



pT_Data

Normalization Factor

MC× **(L×σ) / (# MC event)** = (data에서 예측하는 양)

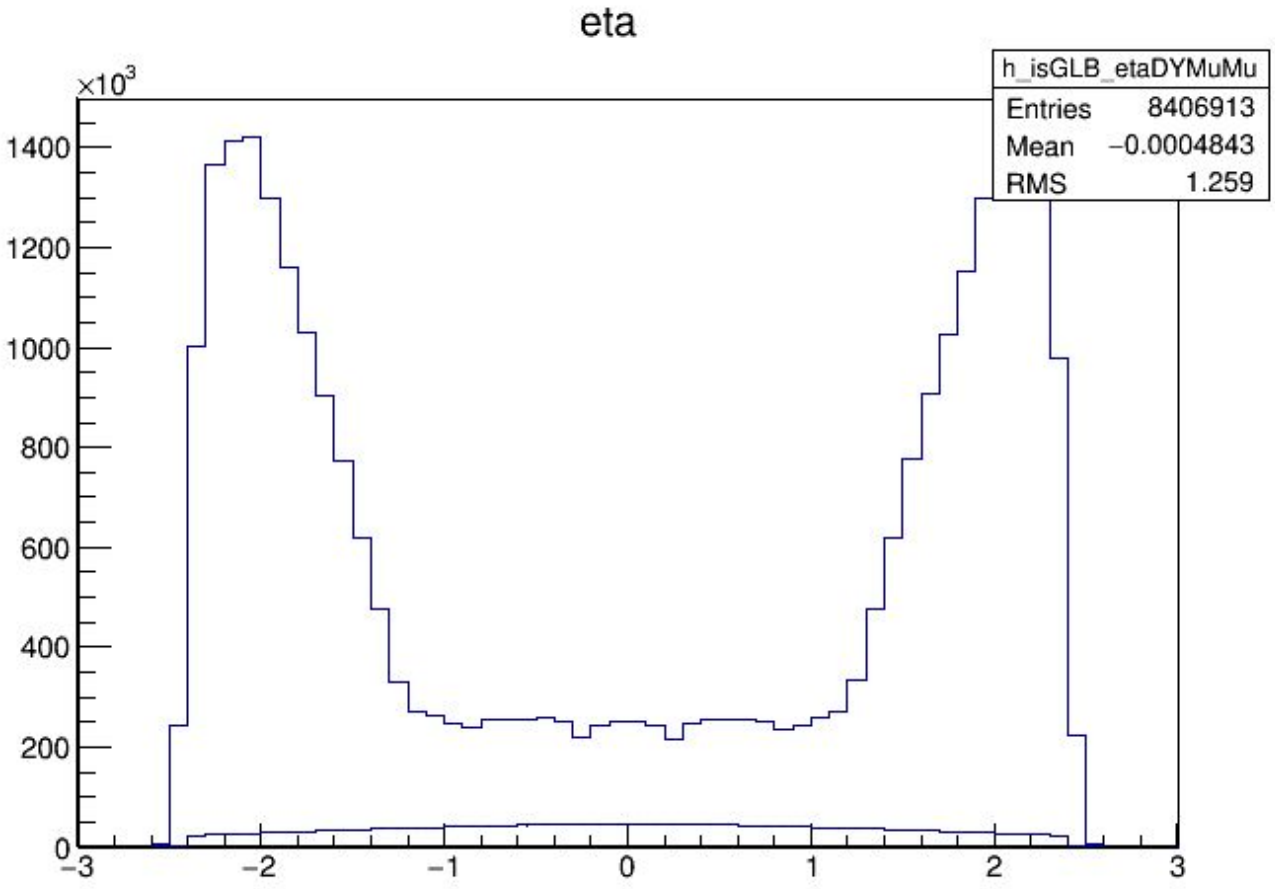
L = 569.0171 pb-1

σ = 2008.4×3

MC event = 4.5275e11

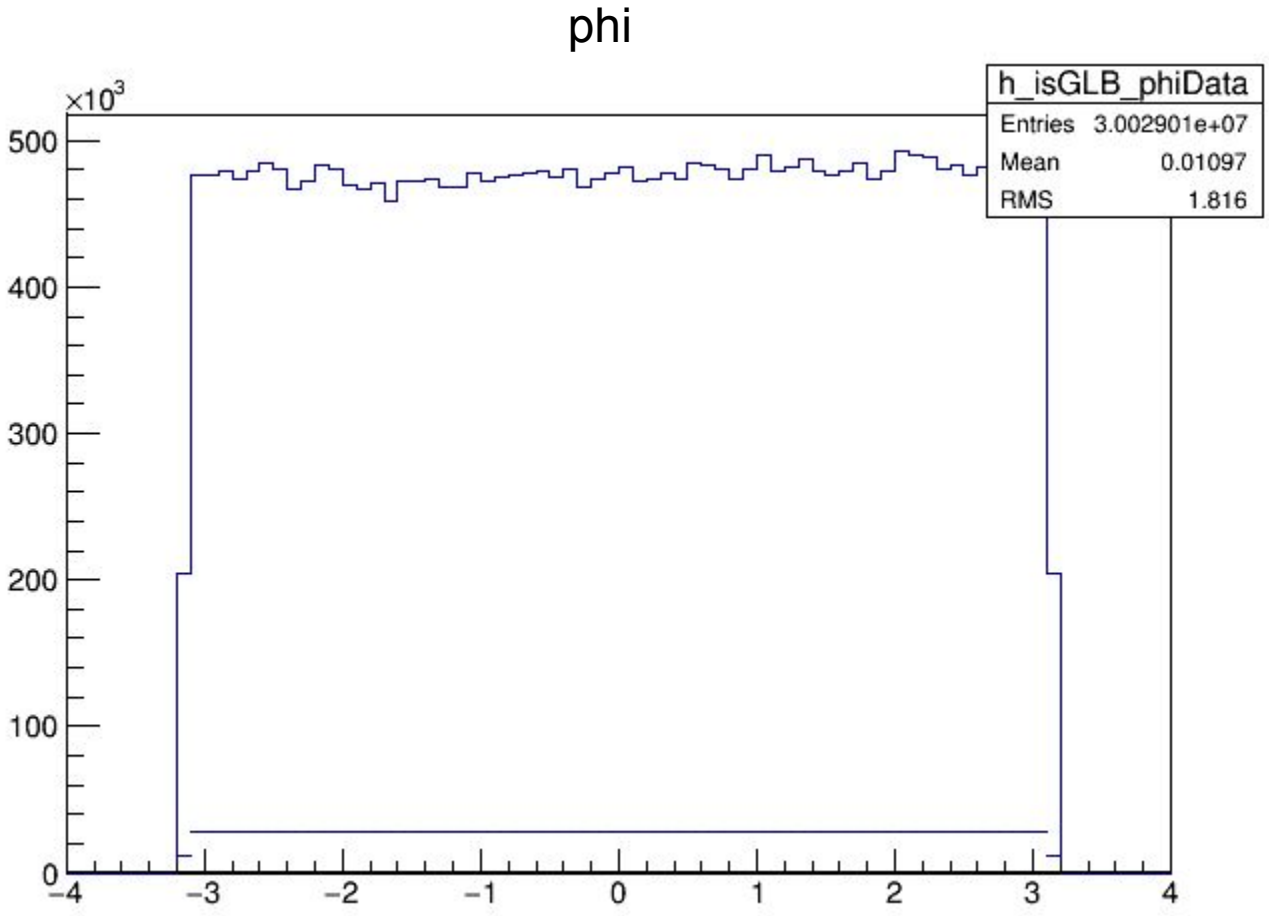
Factor = 7.572483e+04

Before Selection Cut



eta_Data&DY

Before Selection Cut



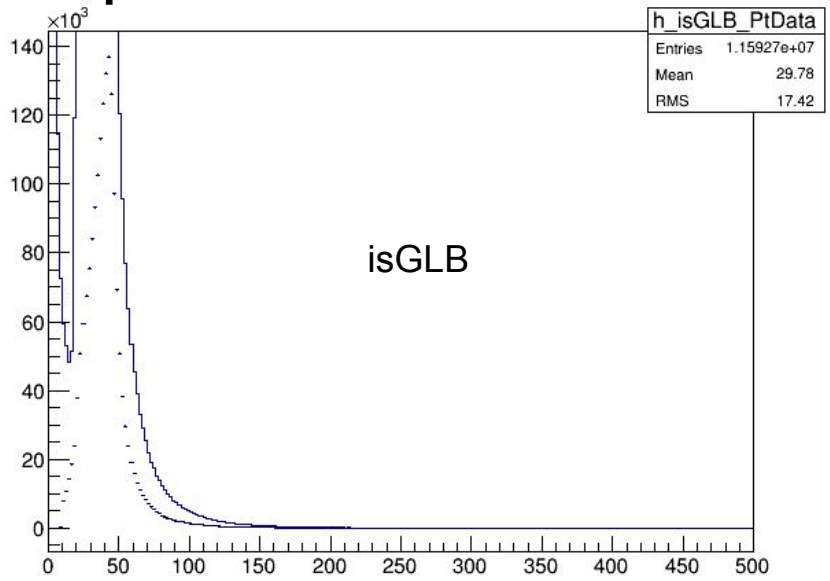
phi_Data&DY

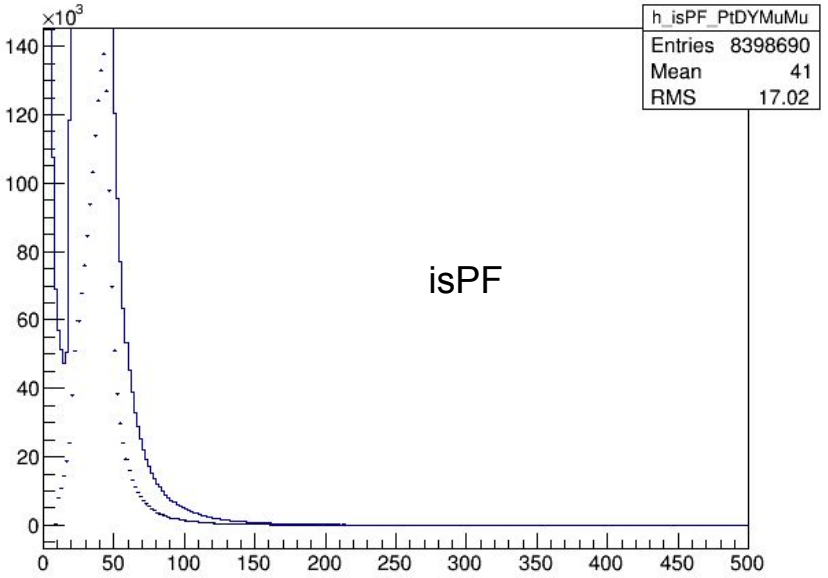
Selection Cut

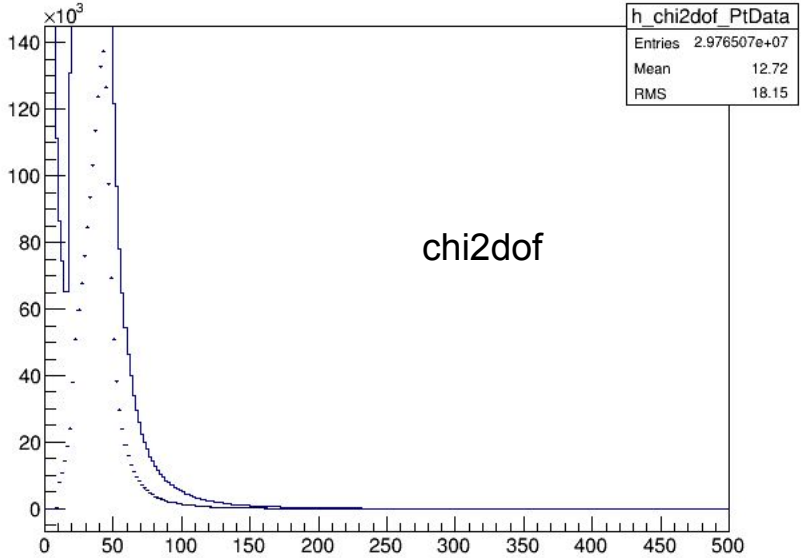
isGLB == 1	Reconstructed as a Global Muon
isPF == 1	Particle Flow Muon the exclusive effect of this requirement is very small
chi2dof < 10	χ^2/ndof of the global-muon track fit < 10
muonHits > 0	At least one muon chamber hit included in the global-muon track fit
nMatches > 1	Muon segments in at least two muon stations This implies that the muon is also an arbitrated tracker muon
abs(dxyVTX) < 0.2	Its tracker track has transverse impact parameter dxy < 2 mm w.r.t. the primary vertex
abs(dzVTX) < 0.5	The longitudinal distance of the tracker track wrt. the primary vertex is dz < 5 mm
pixelHits > 0	Number of pixel hits > 0
trackerLayers > 5	Cut on number of tracker layers with hits >5

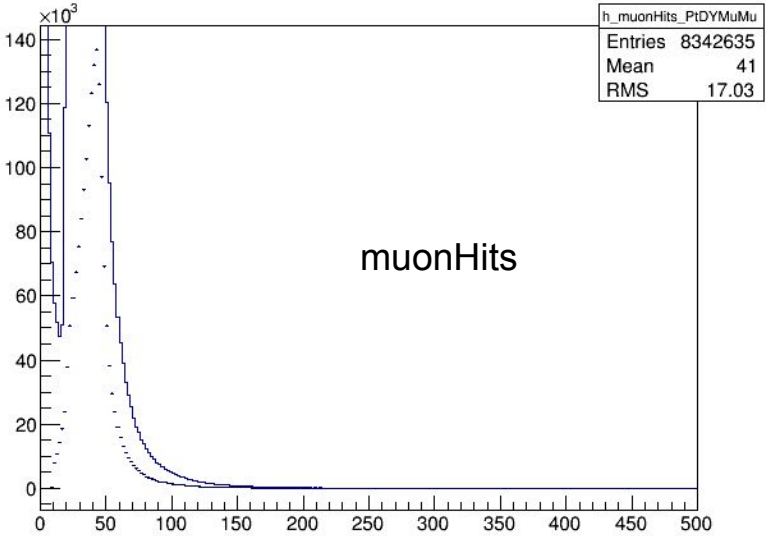
Selection Cut

pT



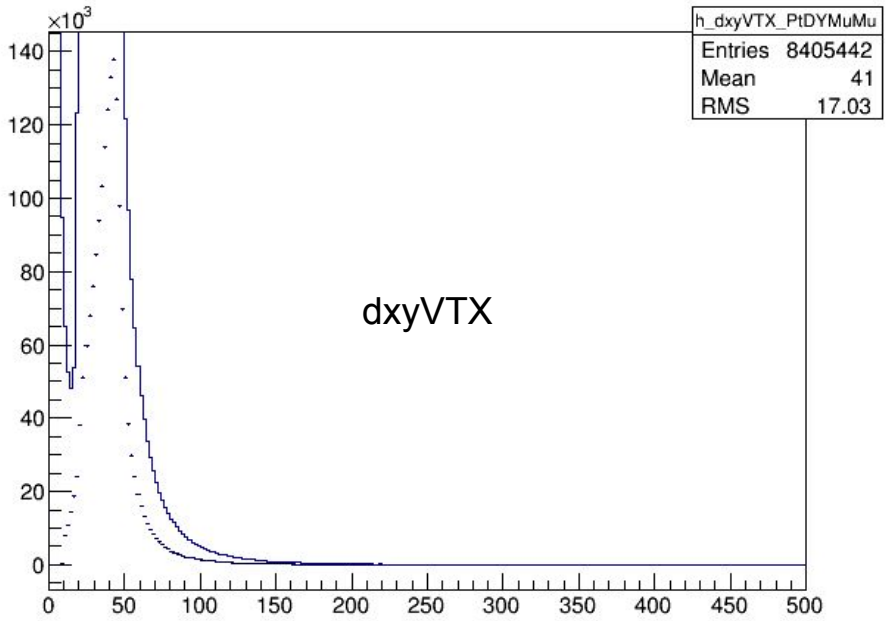


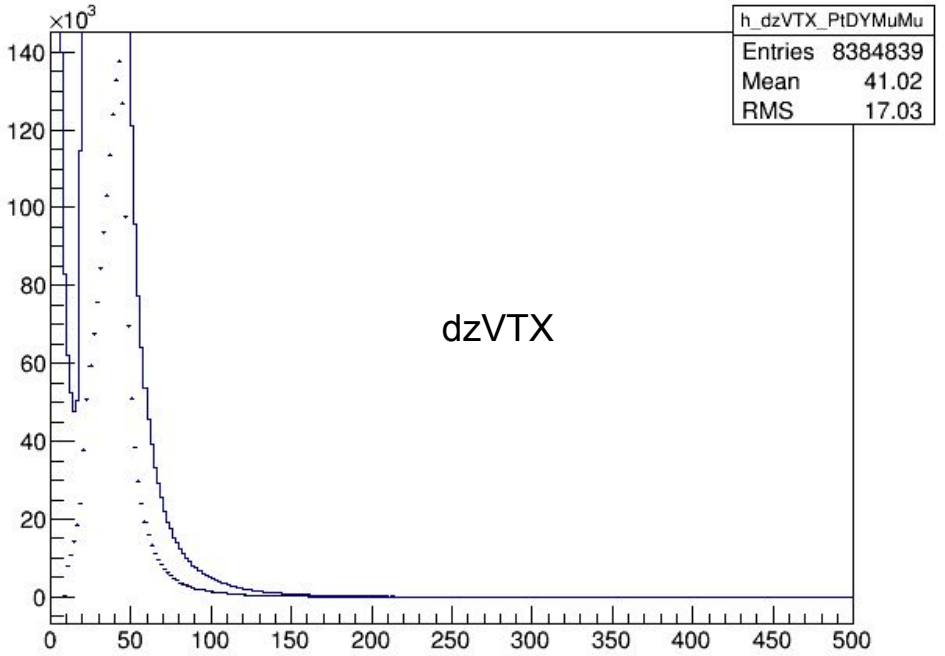




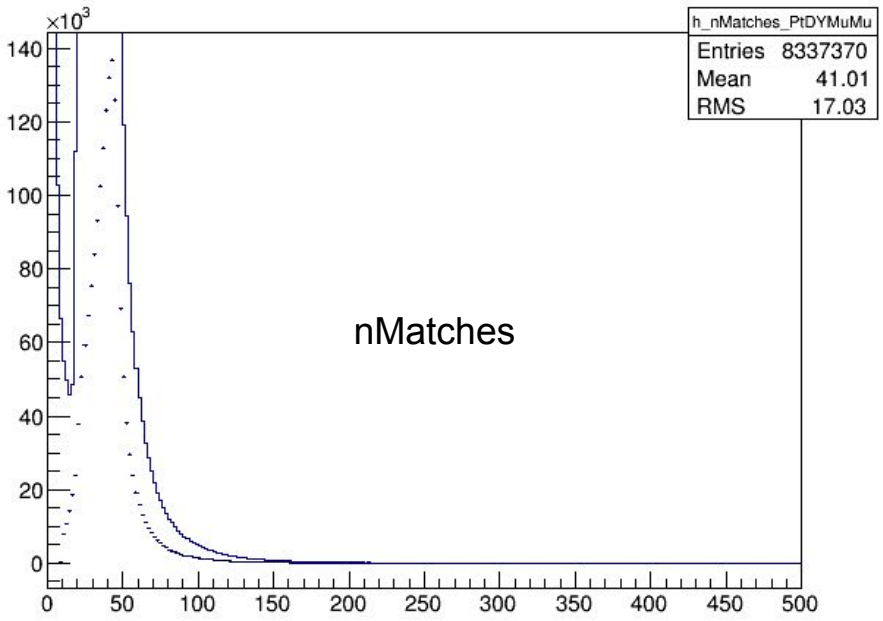
Selection Cut

pT

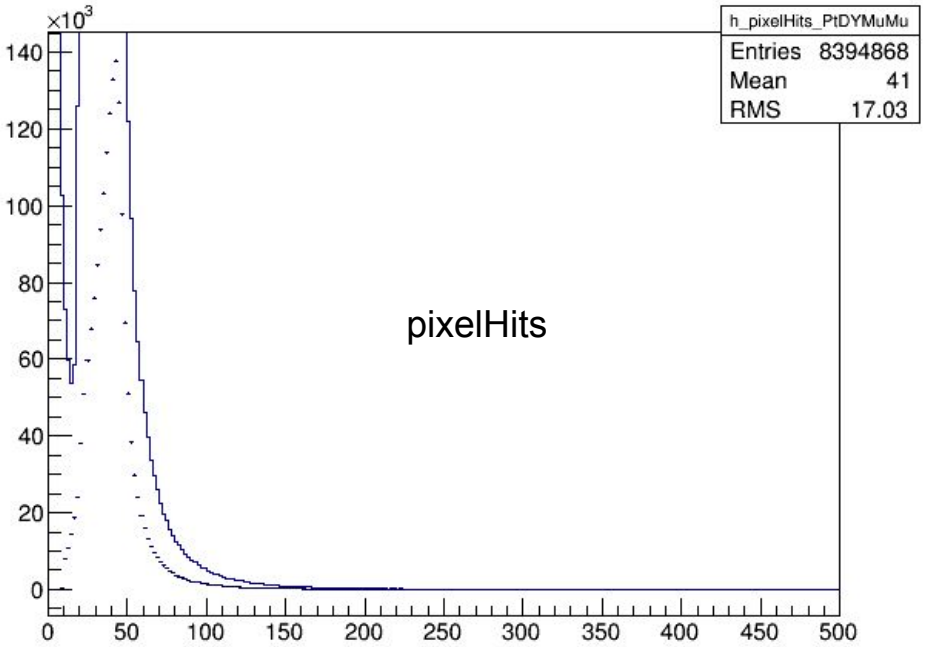




pT

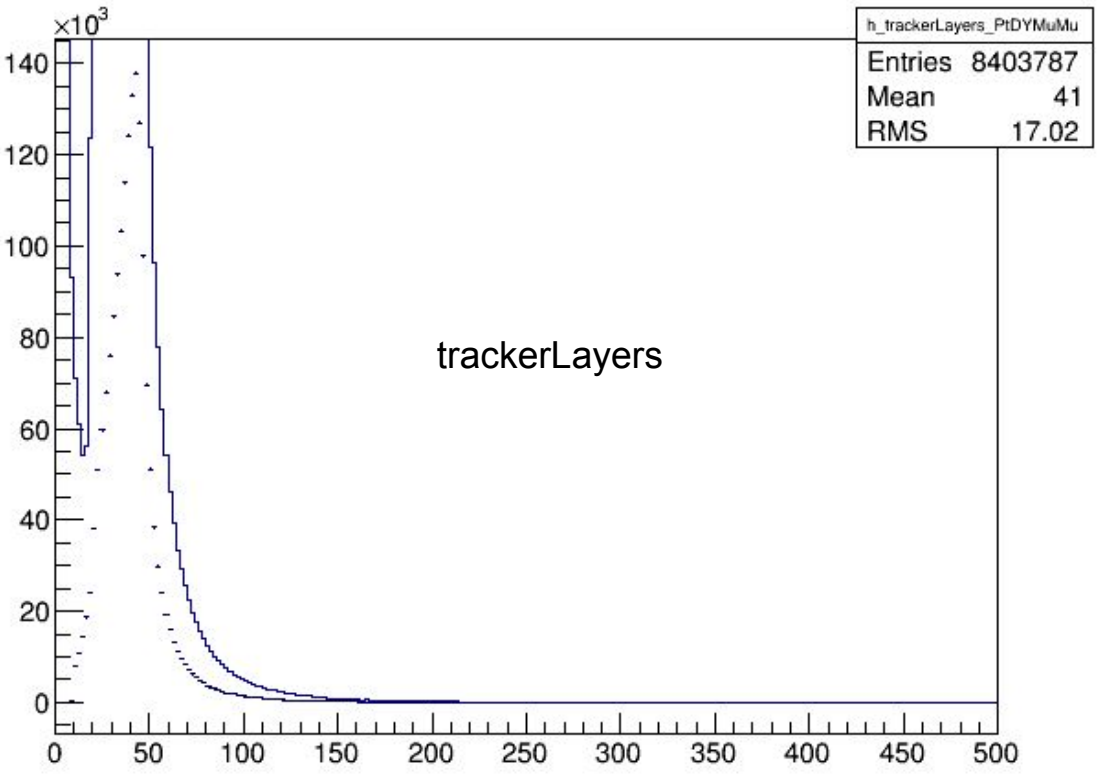


nMatches

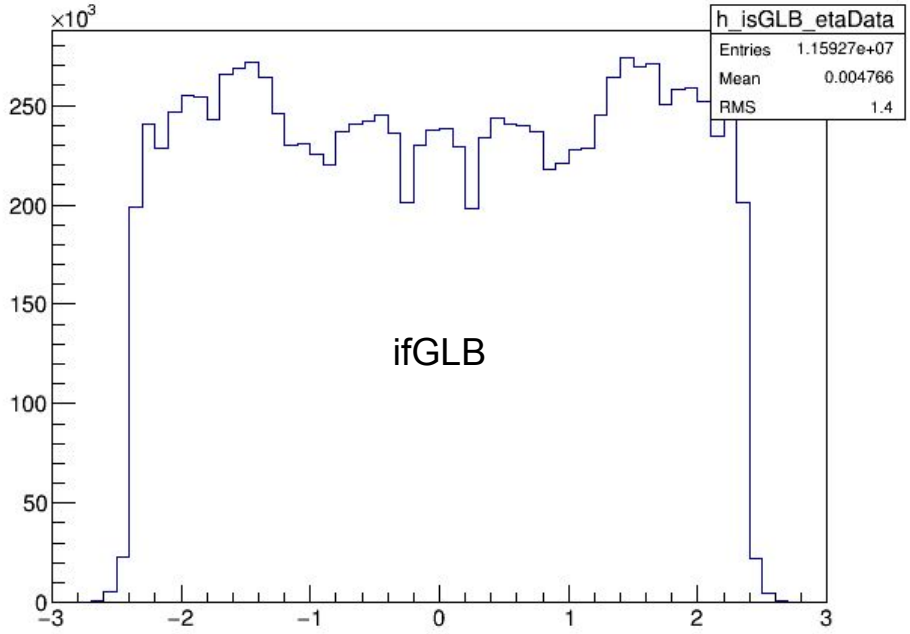


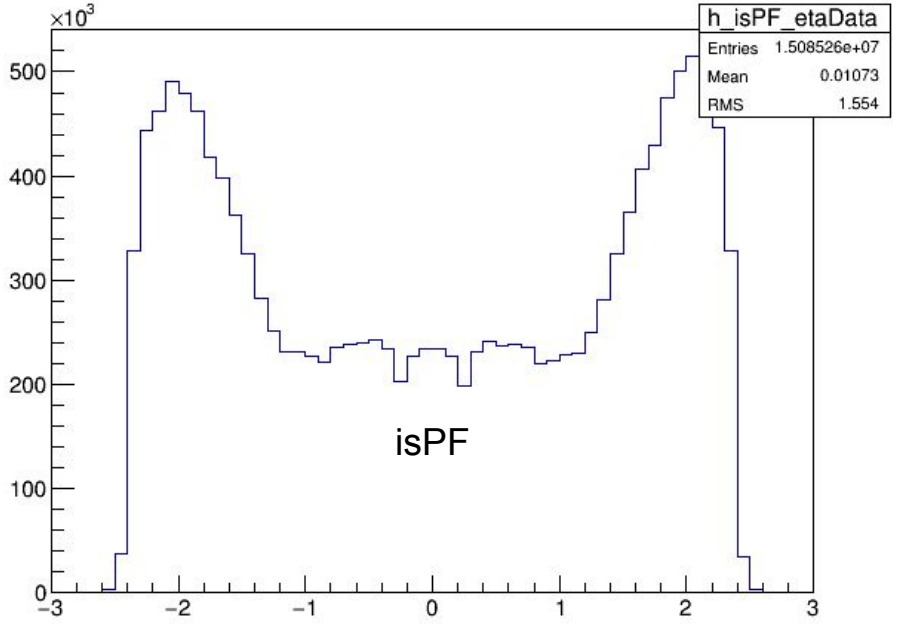
pixelHits

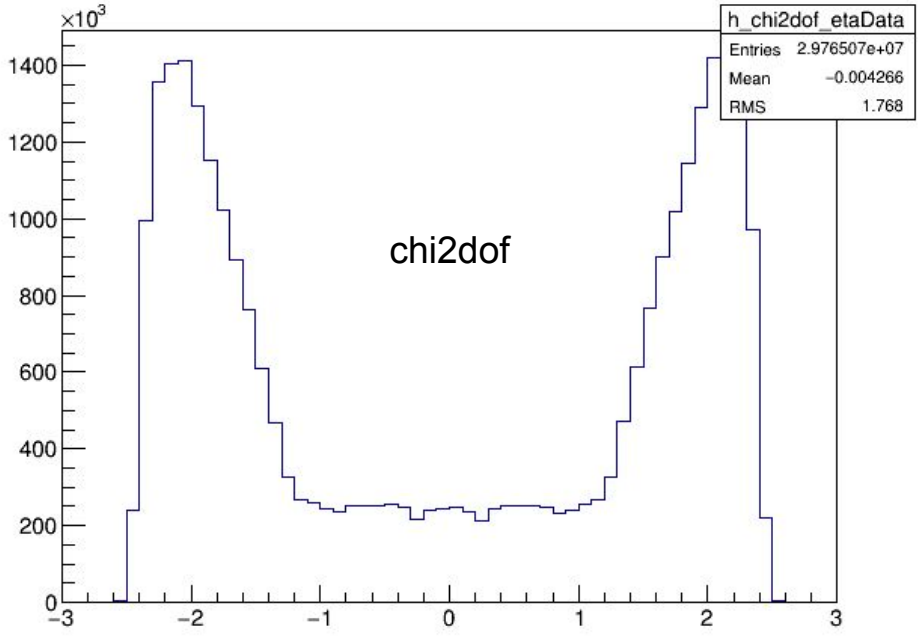
pT

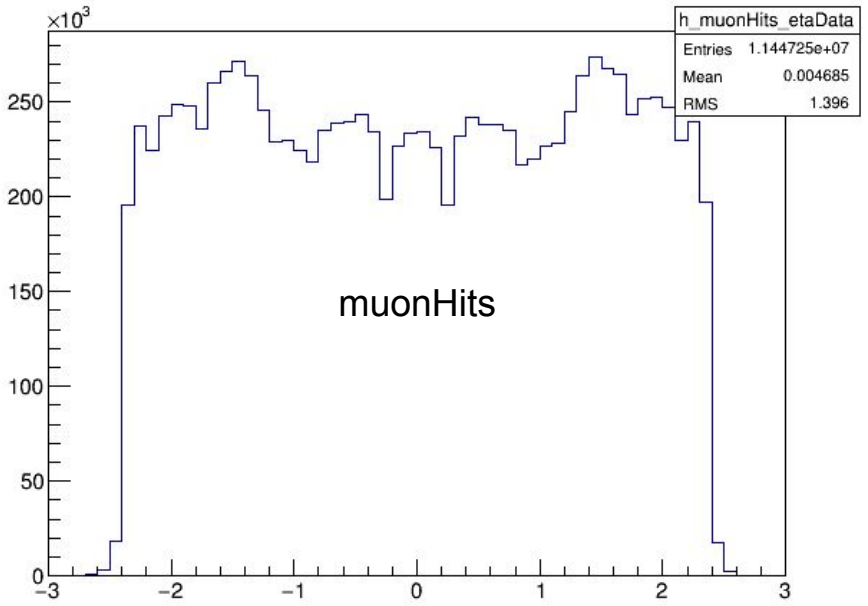

×10^3
140
120
100
80
60
40
20
0
0
50
100
150
200
250
300
350
400
450
500
h_trackerLayers_PtDYMuMu
Entries 8403787
Mean 41
RMS 17.02
trackerLayers

eta

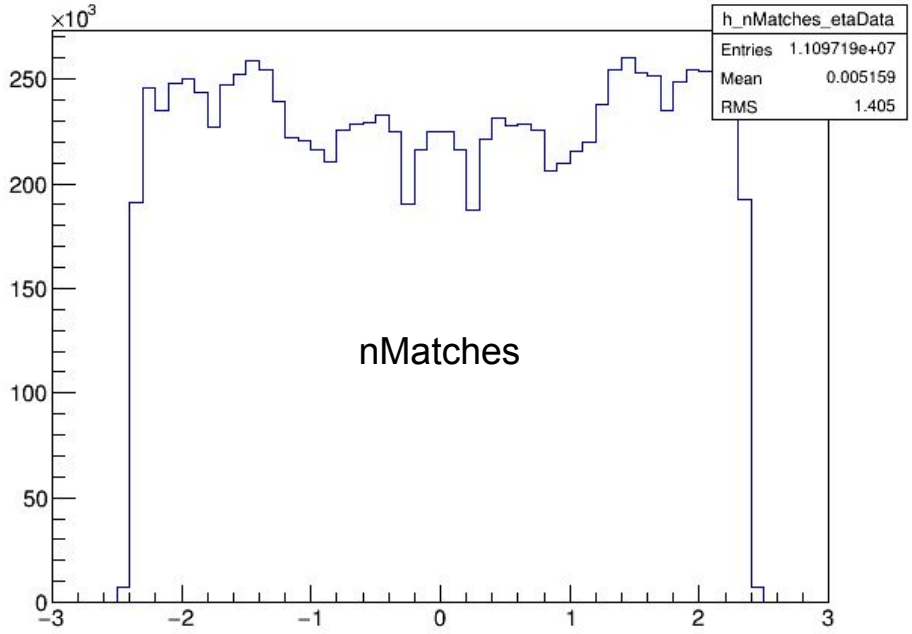

h_isGLB_etaData
Entries 1.15927e+07
Mean 0.004766
RMS 1.4
×10^3
ifGLB

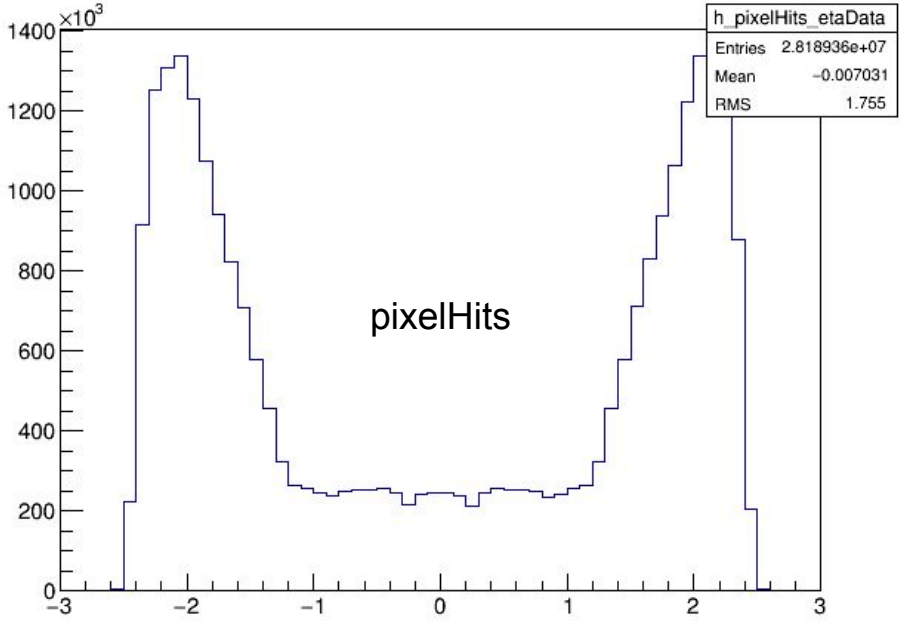

h_isPF_etaData
Entries 1.508526e+07
Mean 0.01073
RMS 1.554
×10^3
isPF

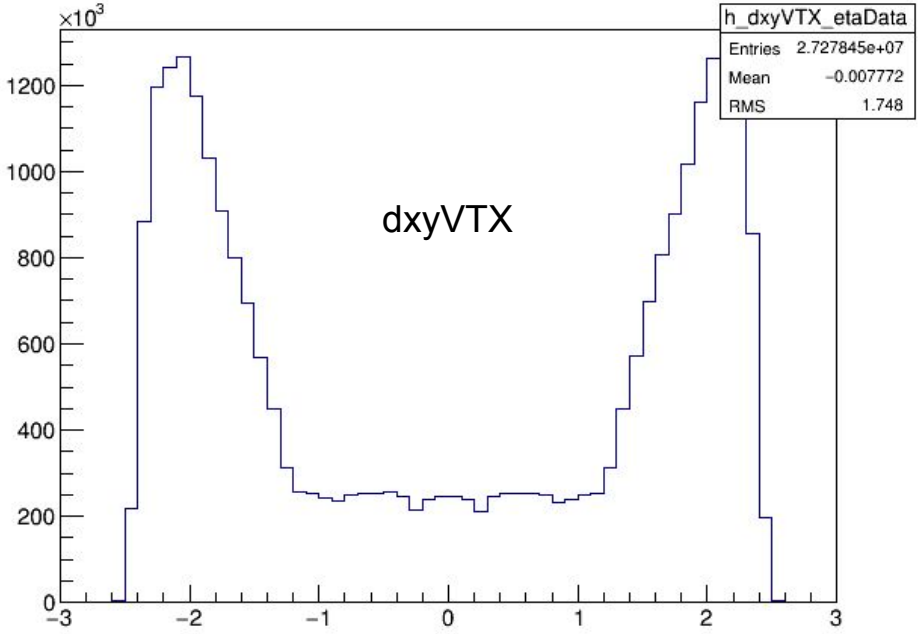

h_chi2dof_etaData
Entries 2.976507e+07
Mean −0.004266
RMS 1.768
×10^3
chi2dof

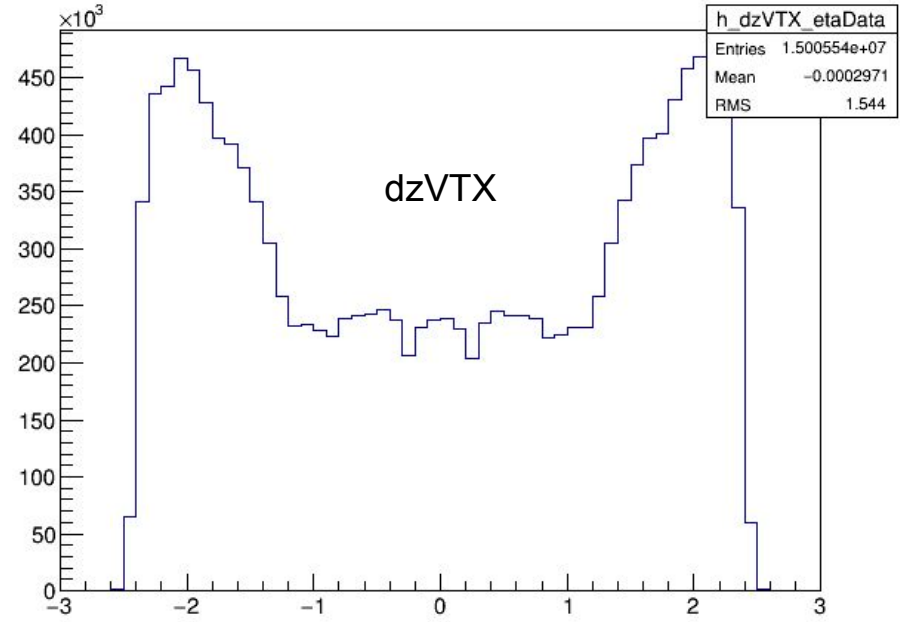

h_muonHits_etaData
Entries 1.144725e+07
Mean 0.004685
RMS 1.396
×10^3
muonHits

eta

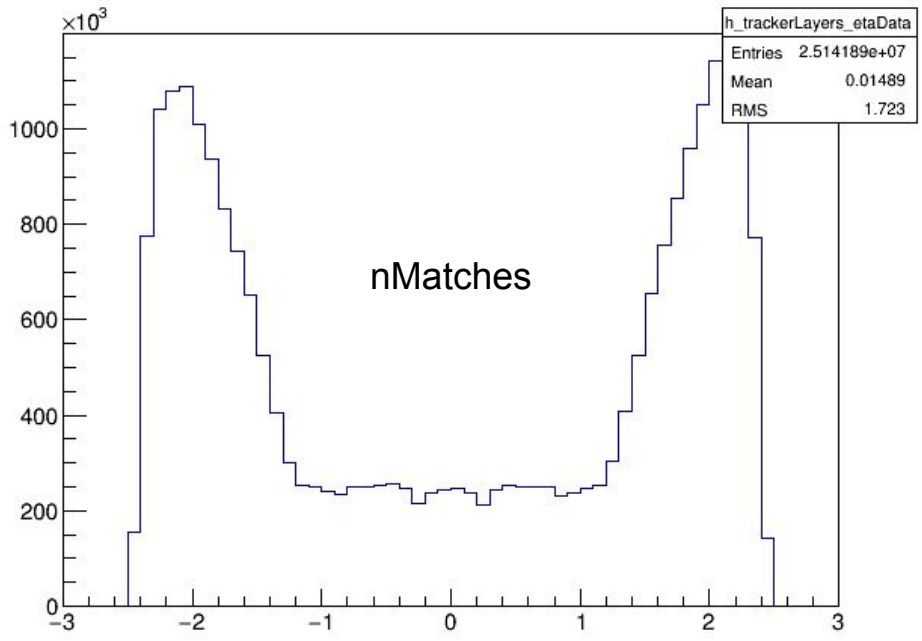

h_nMatches_etaData
Entries 1.109719e+07
Mean 0.005159
RMS 1.405
×10^3
nMatches


h_pixelHits_etaData
Entries 2.818936e+07
Mean −0.007031
RMS 1.755
×10^3
pixelHits


h_dxyVTX_etaData
Entries 2.727845e+07
Mean −0.007772
RMS 1.748
×10^3
dxyVTX


h_dzVTX_etaData
Entries 1.500554e+07
Mean −0.0002971
RMS 1.544
×10^3
dzVTX

eta


×10^3
h_trackerLayers_etaData
Entries 2.514189e+07
Mean 0.01489
RMS 1.723
nMatches
1000
800
600
400
200
0
−3
−2
−1
0
1
2
3