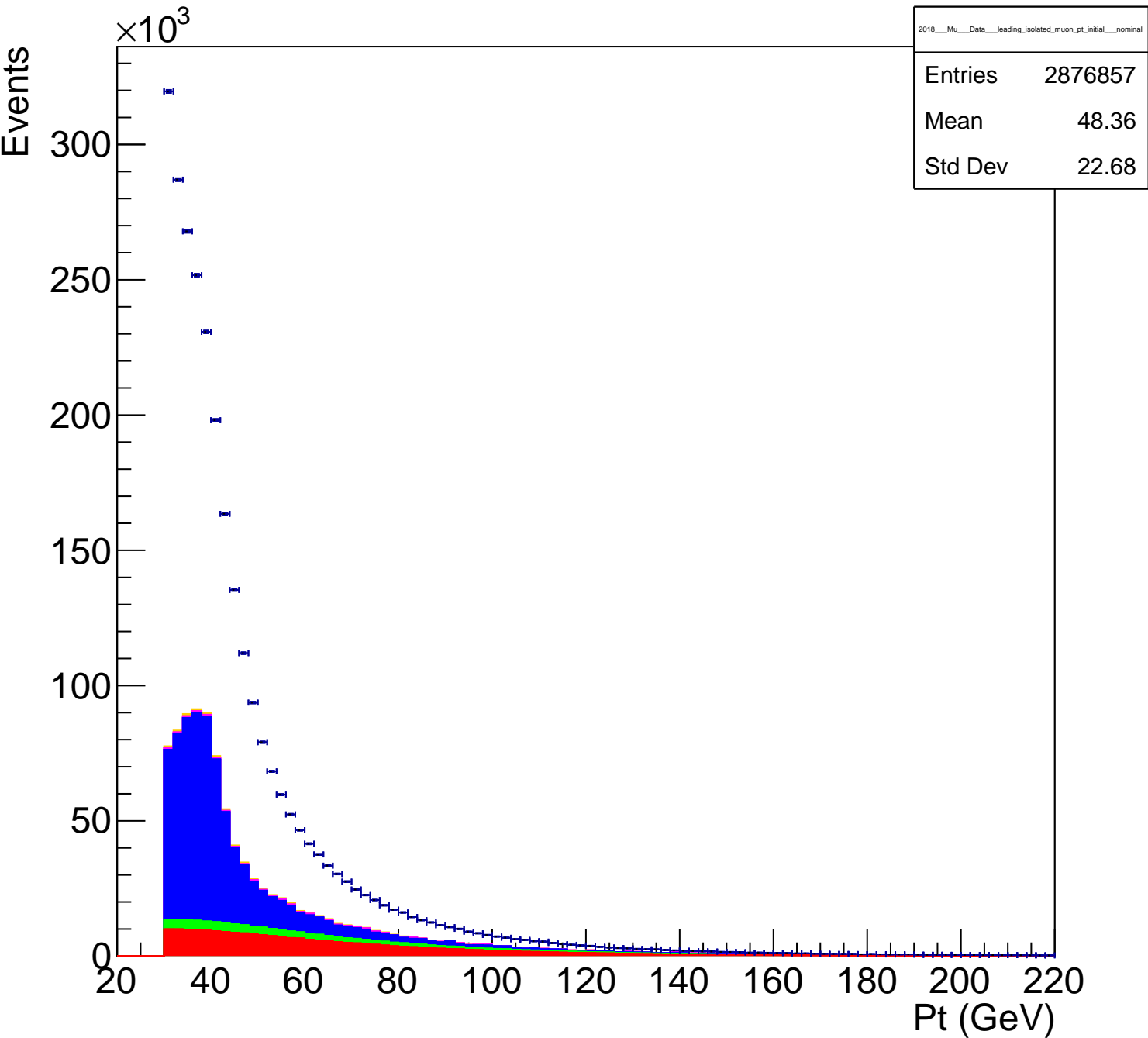
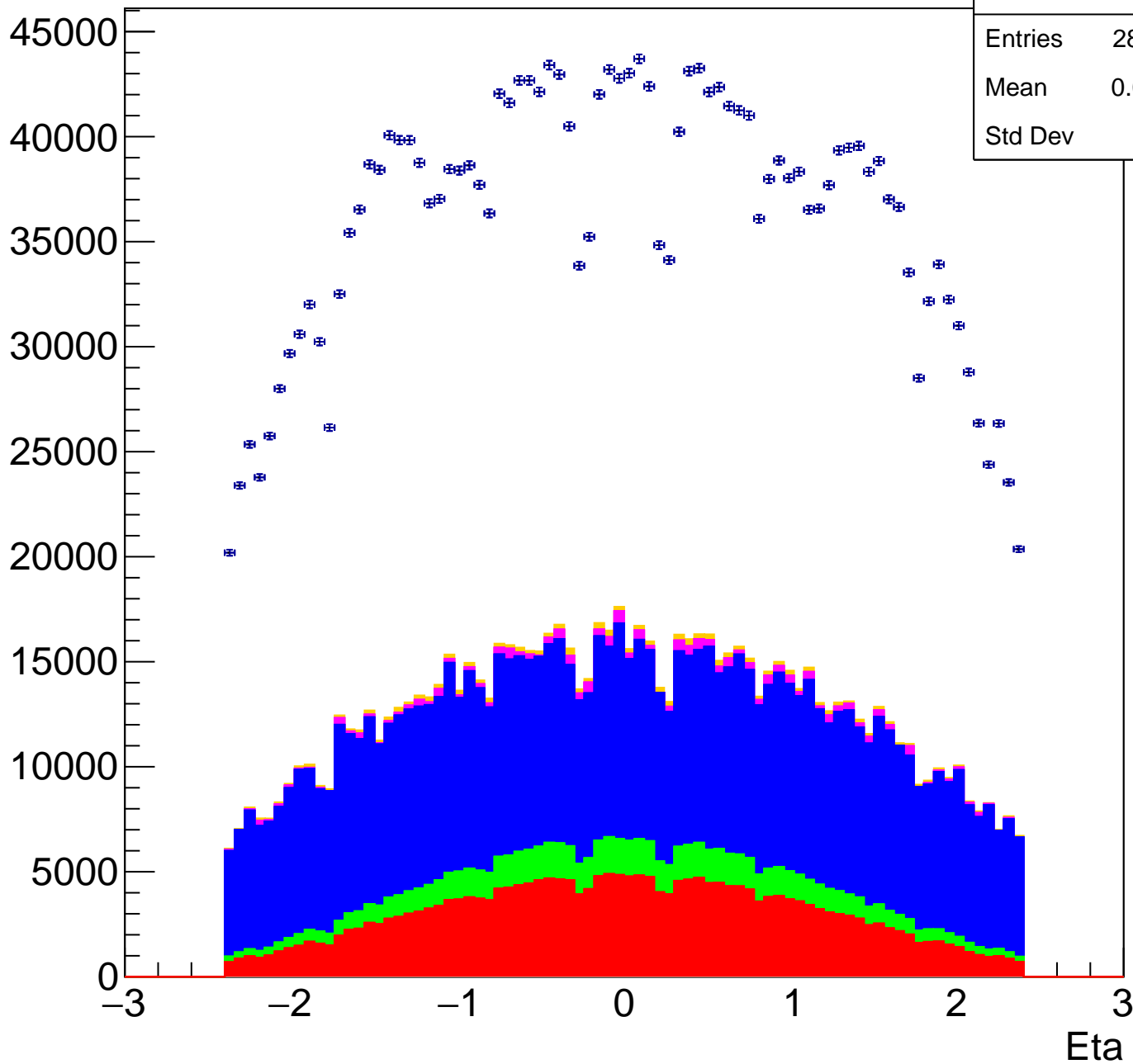


Leading Isolated Muon Transverse Momentum (One Muon, No Electrons)

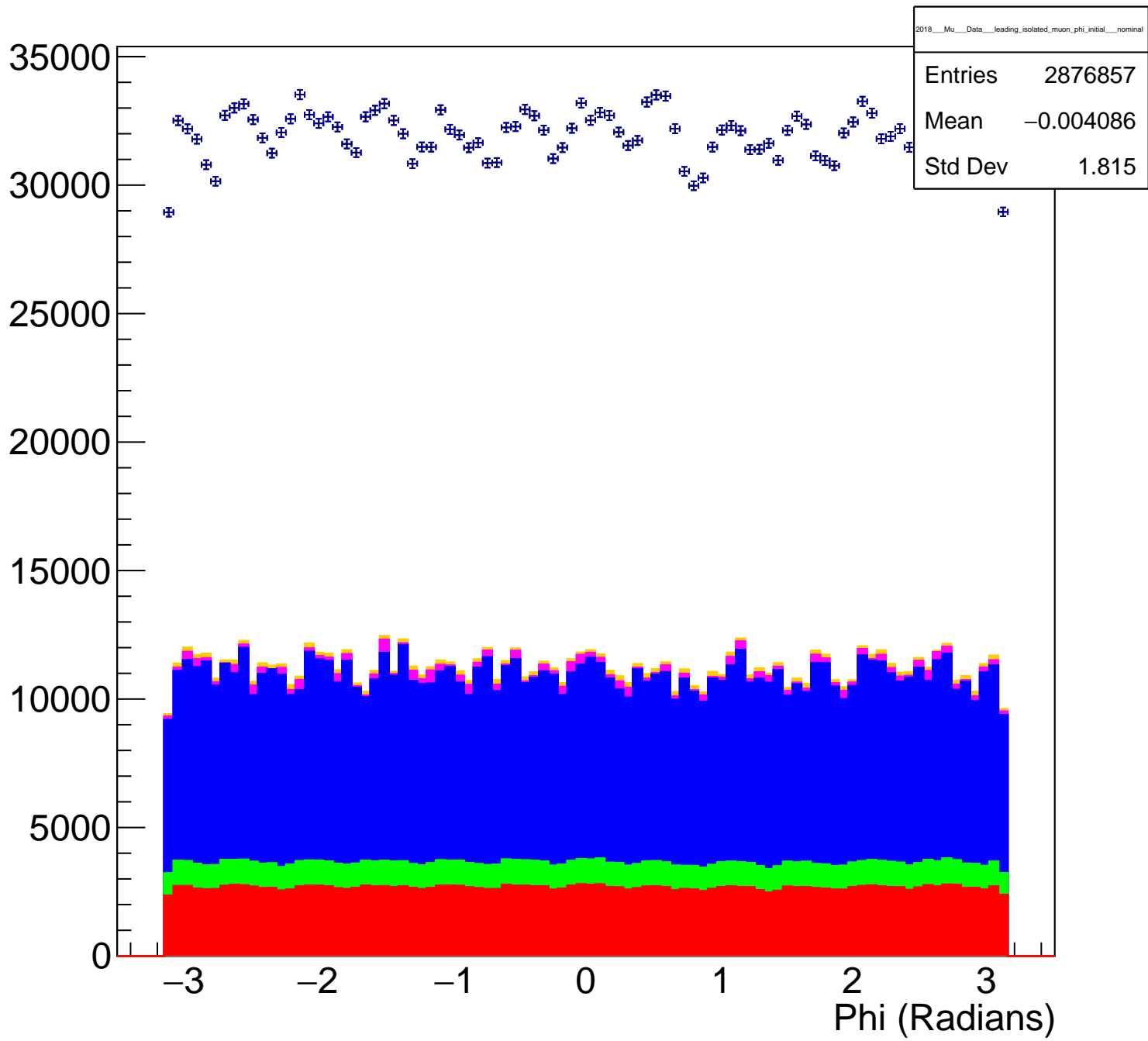


Leading Isolated Muon Pseudorapidity (One Muon, No Electrons)

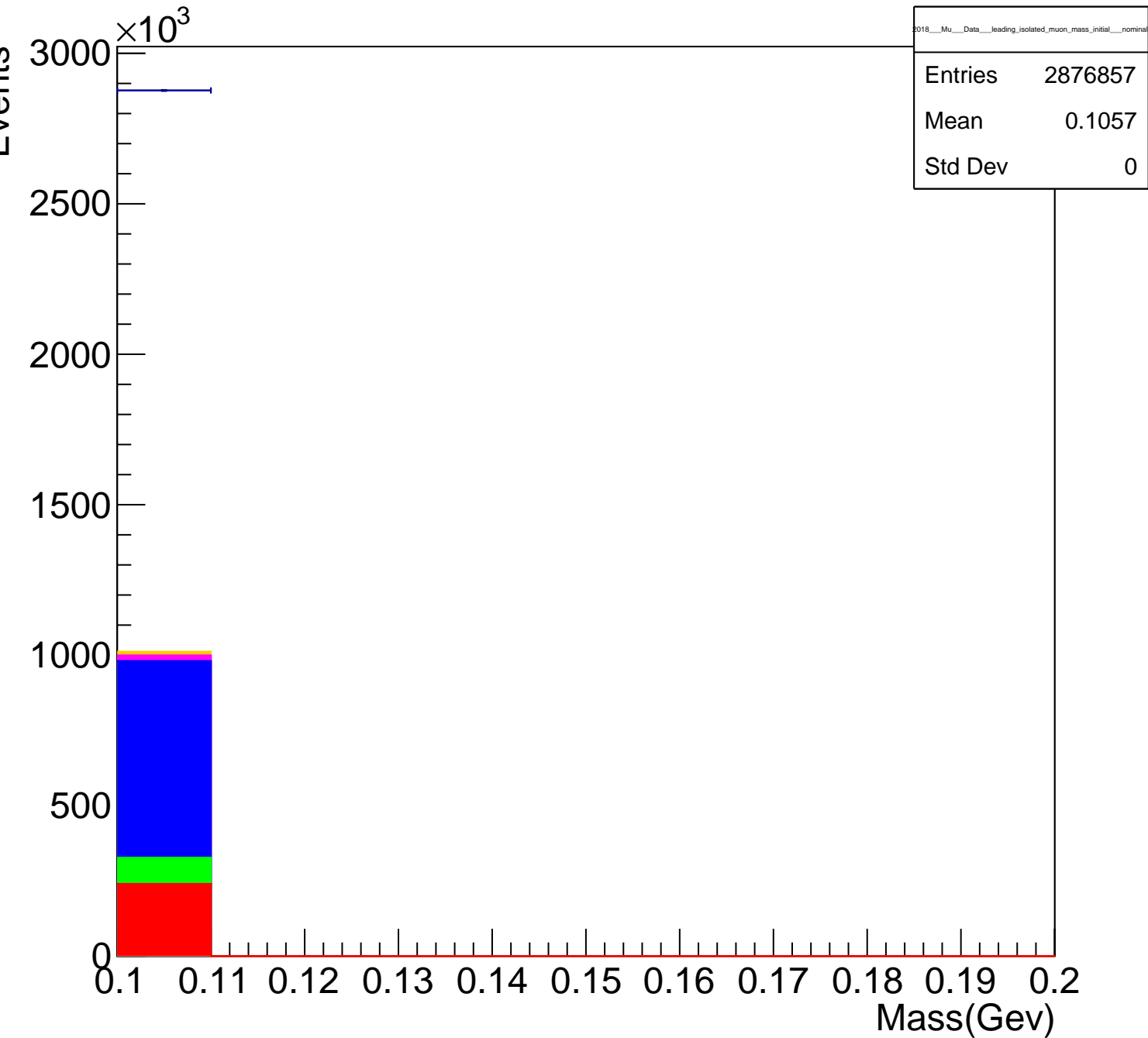
| | |
|--|----------|
| 2018_Mu_Data_leading_isolated_muon_eta_initial_nominal | |
| Entries | 2876857 |
| Mean | 0.007951 |
| Std Dev | 1.287 |



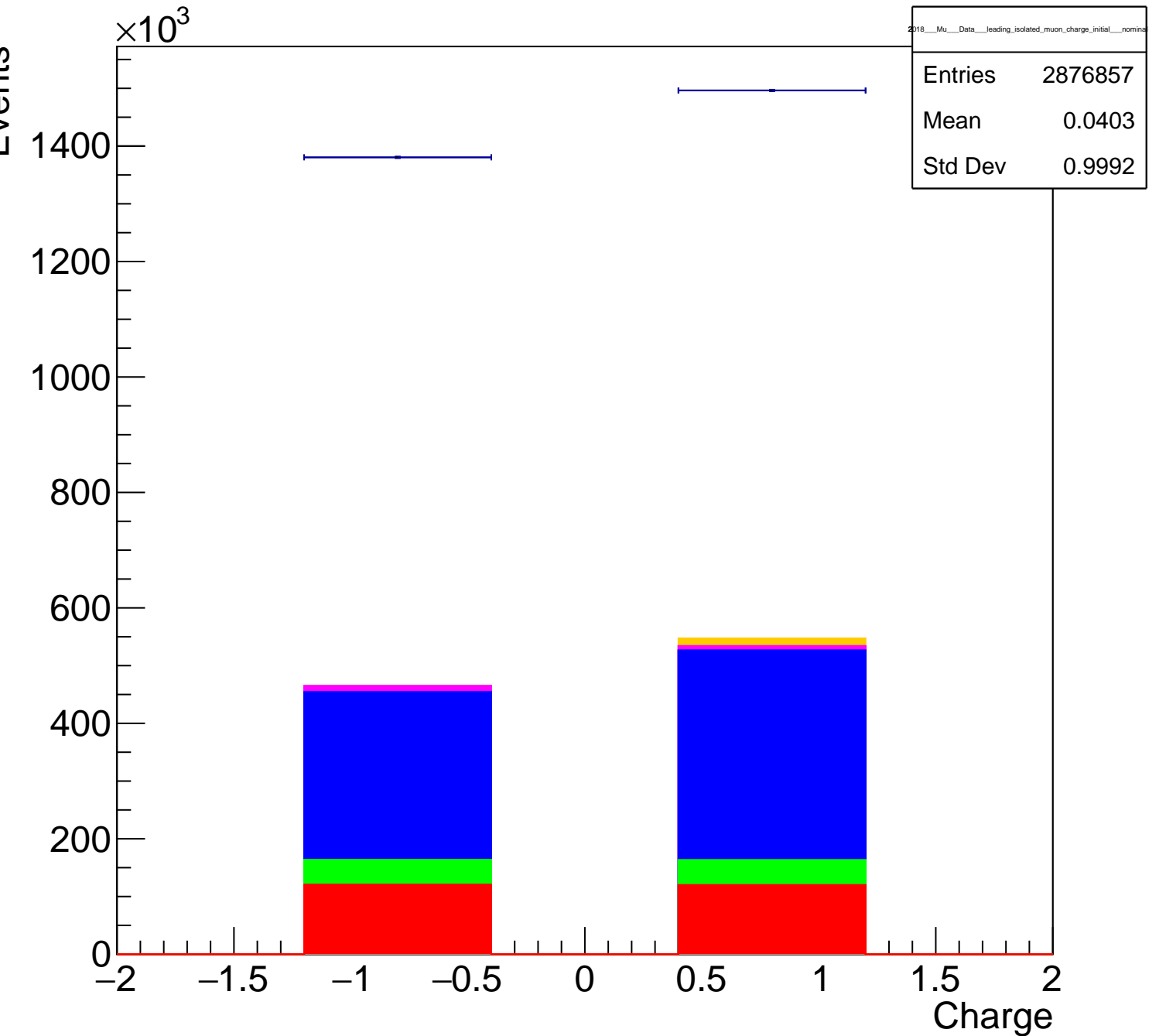
Leading Isolated Muon Angle (One Muon, No Electrons)



Leading Isolated Muon Mass (One Muon, No Electrons)

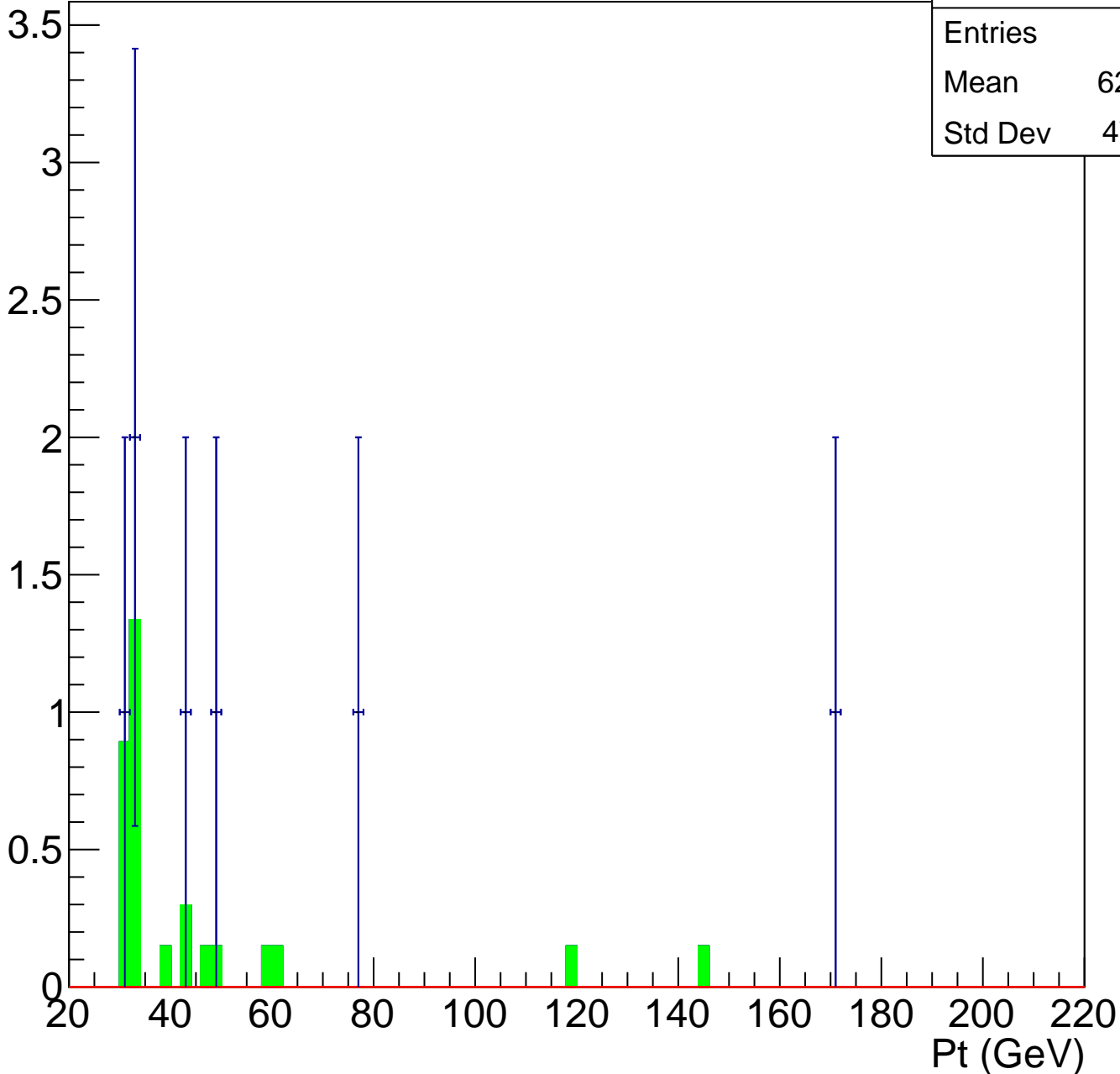


Leading Isolated Muon Charge (One Muon, No Electrons)

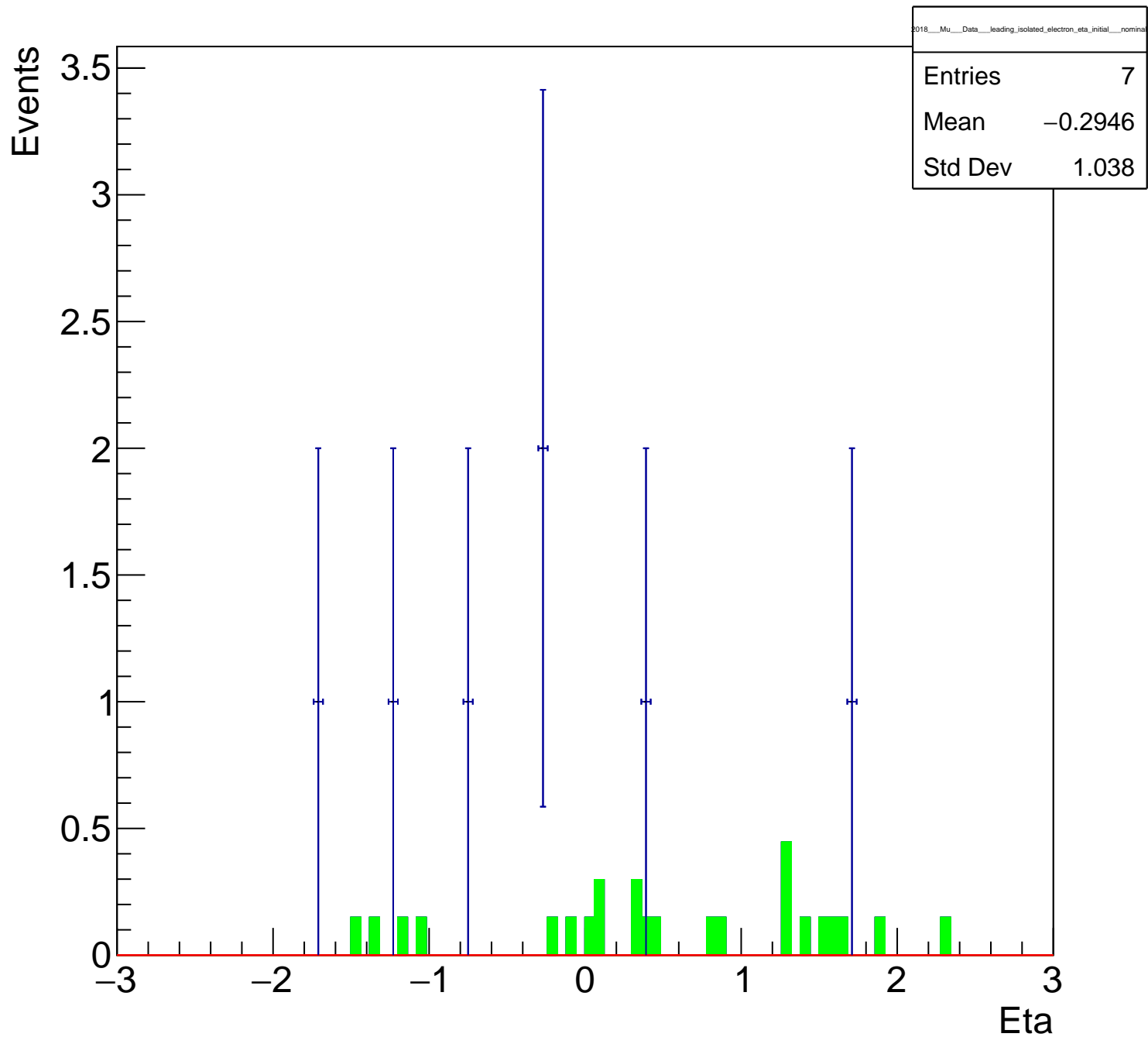


Leading Isolated Electron Transverse Momentum (One Electron, No Muons)

Events



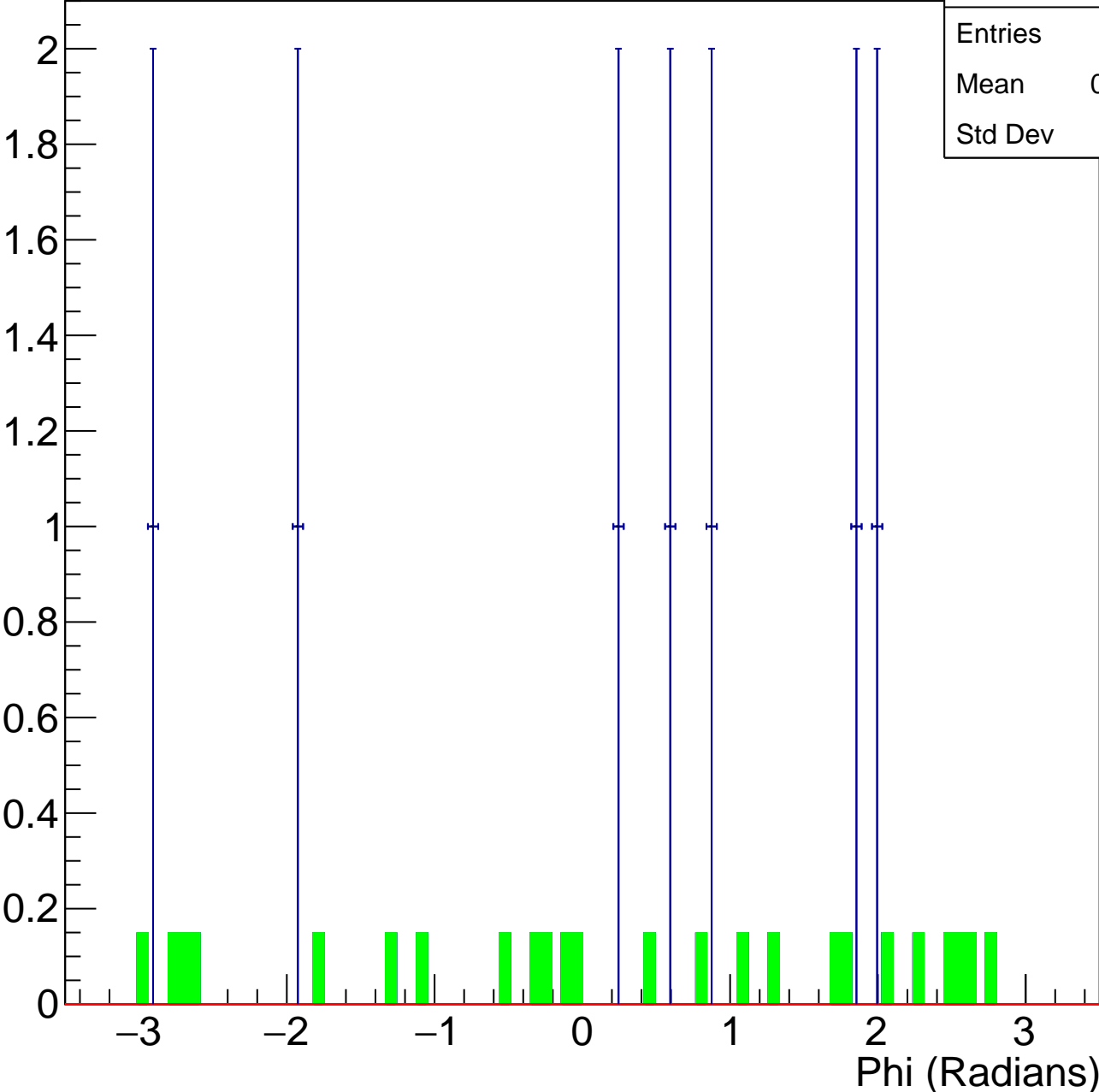
Leading Isolated Electron Pseudorapidity (One Electron, No Muons)



Leading Isolated Electron Angle (One Electron, No Muons)

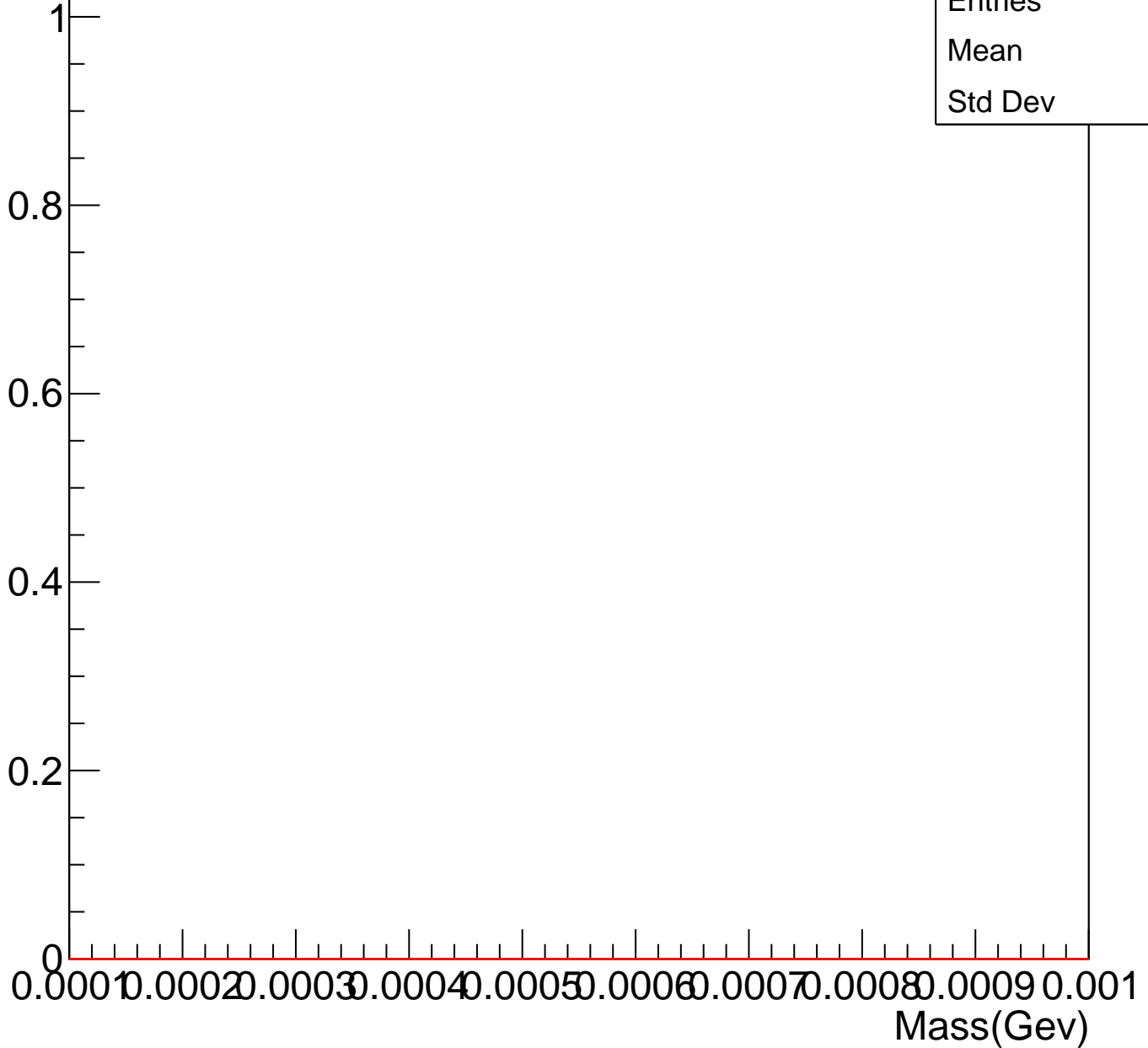
Events

| | |
|--|---------|
| 2018__Mu__Data__leading_isolated_electron_phi_initial__nominal | |
| Entries | 7 |
| Mean | 0.08943 |
| Std Dev | 1.724 |

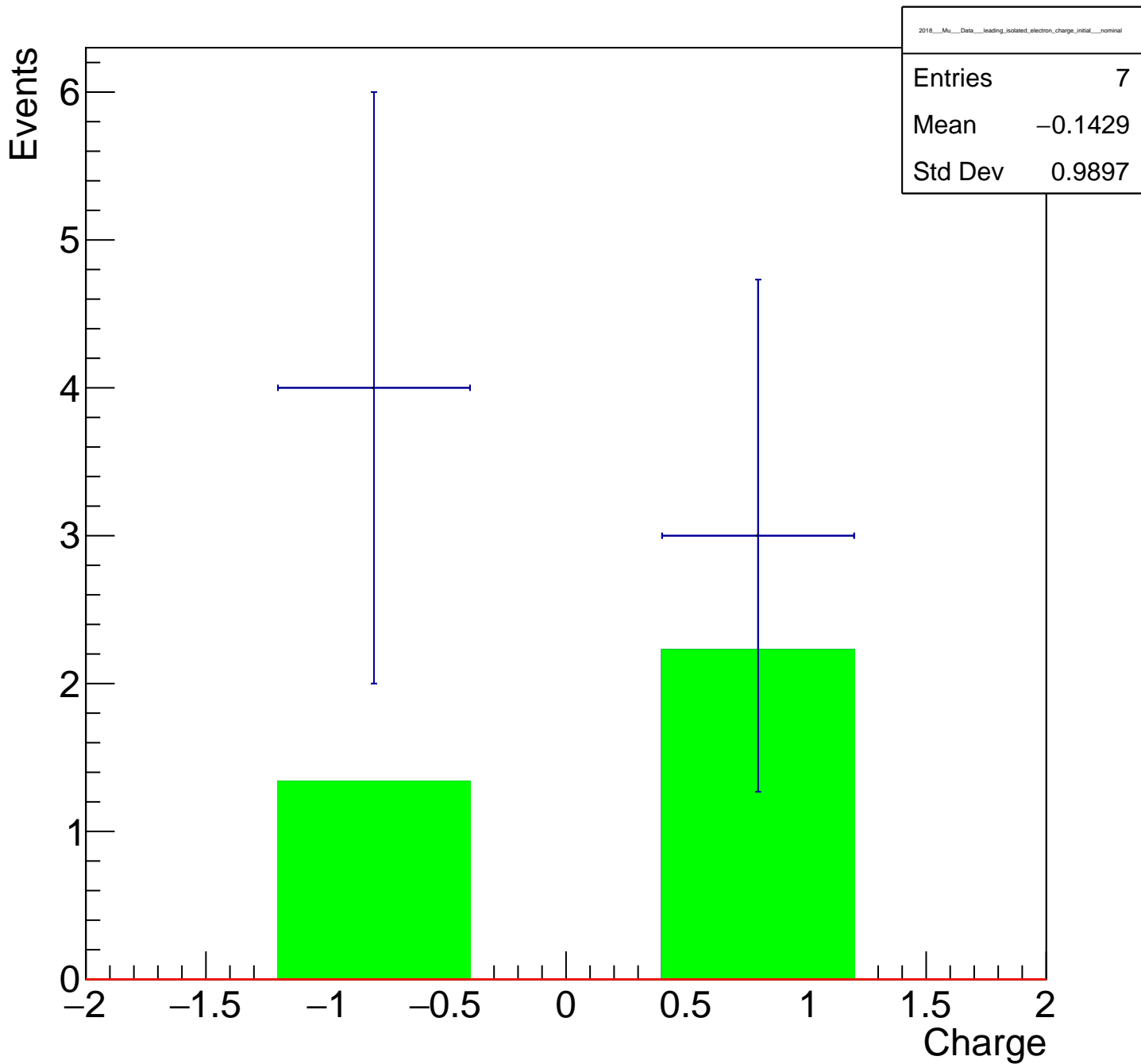


Leading Isolated Electron Mass (One Electron, No Muons)

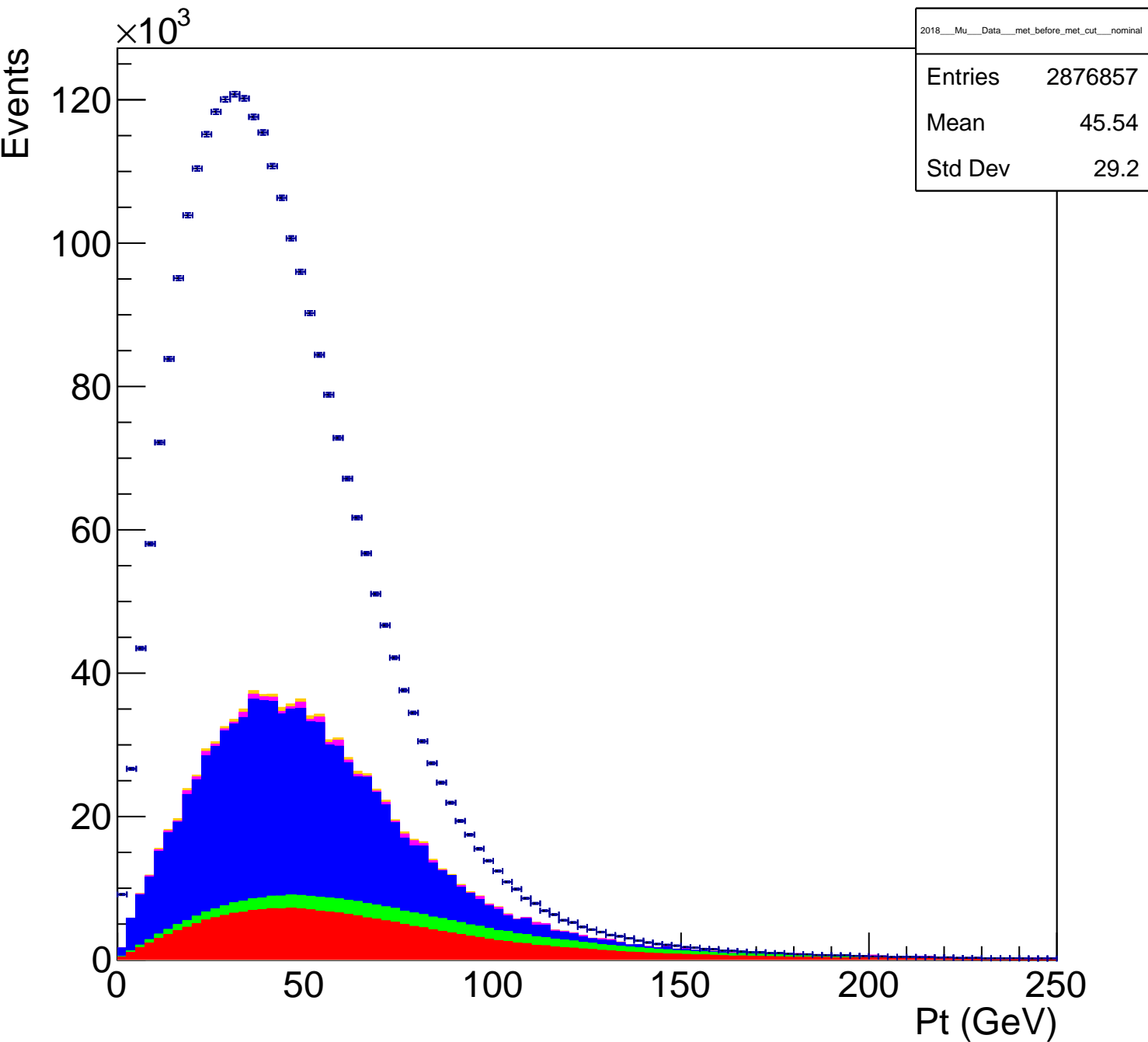
Events



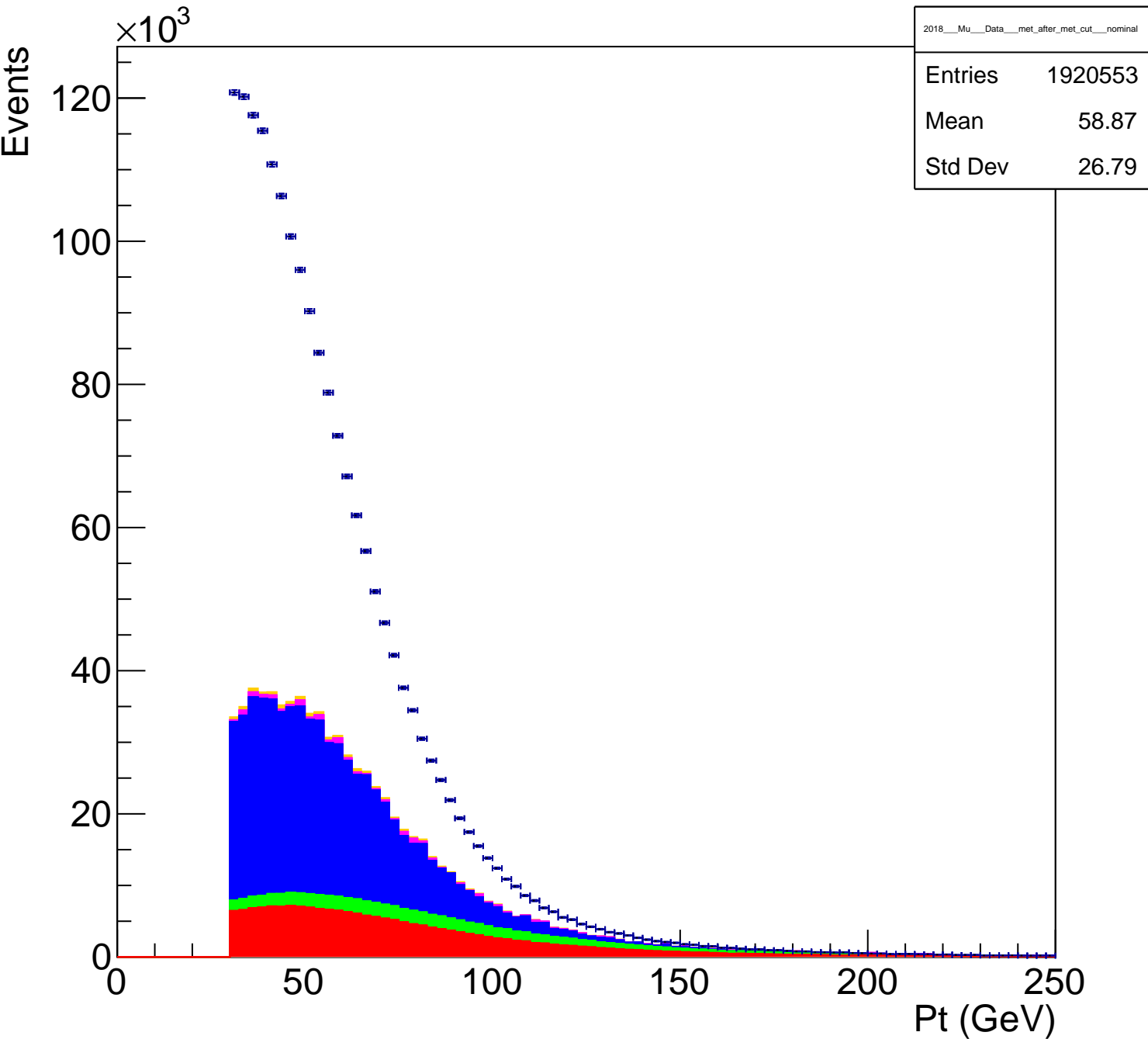
Leading Isolated Electron Charge (One Electron, No Muons)



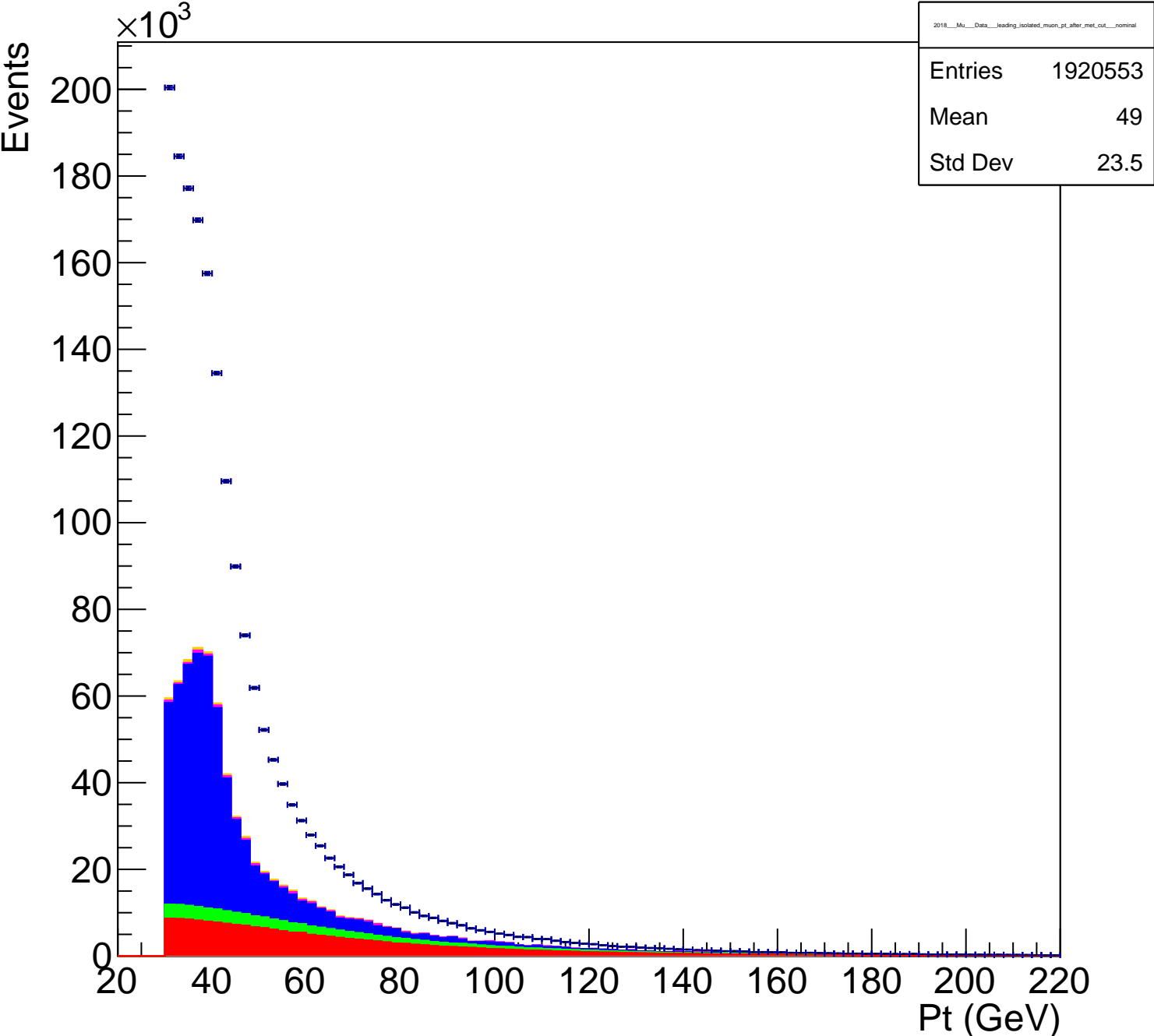
MET Before MET Cut



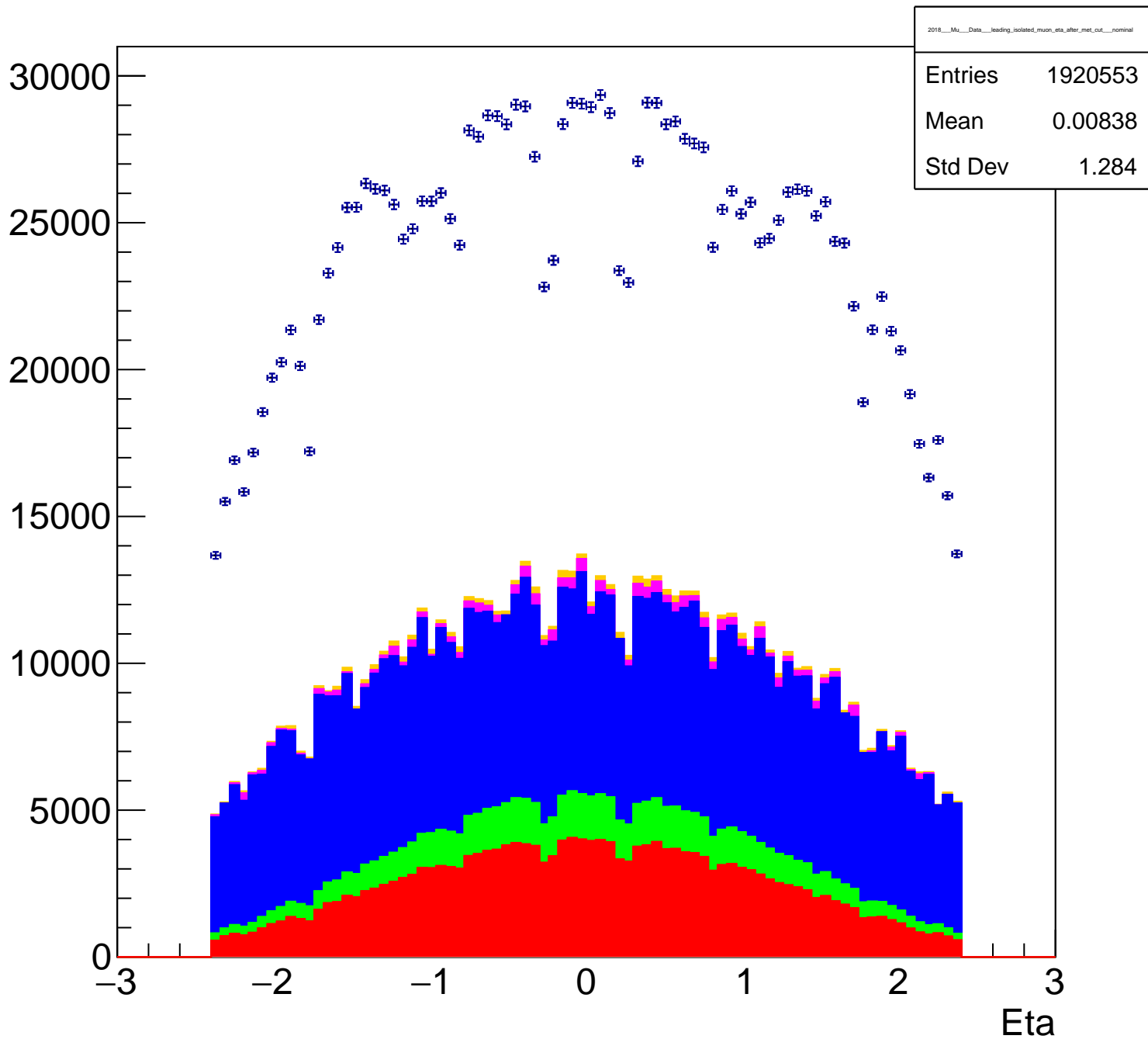
MET After MET Cut



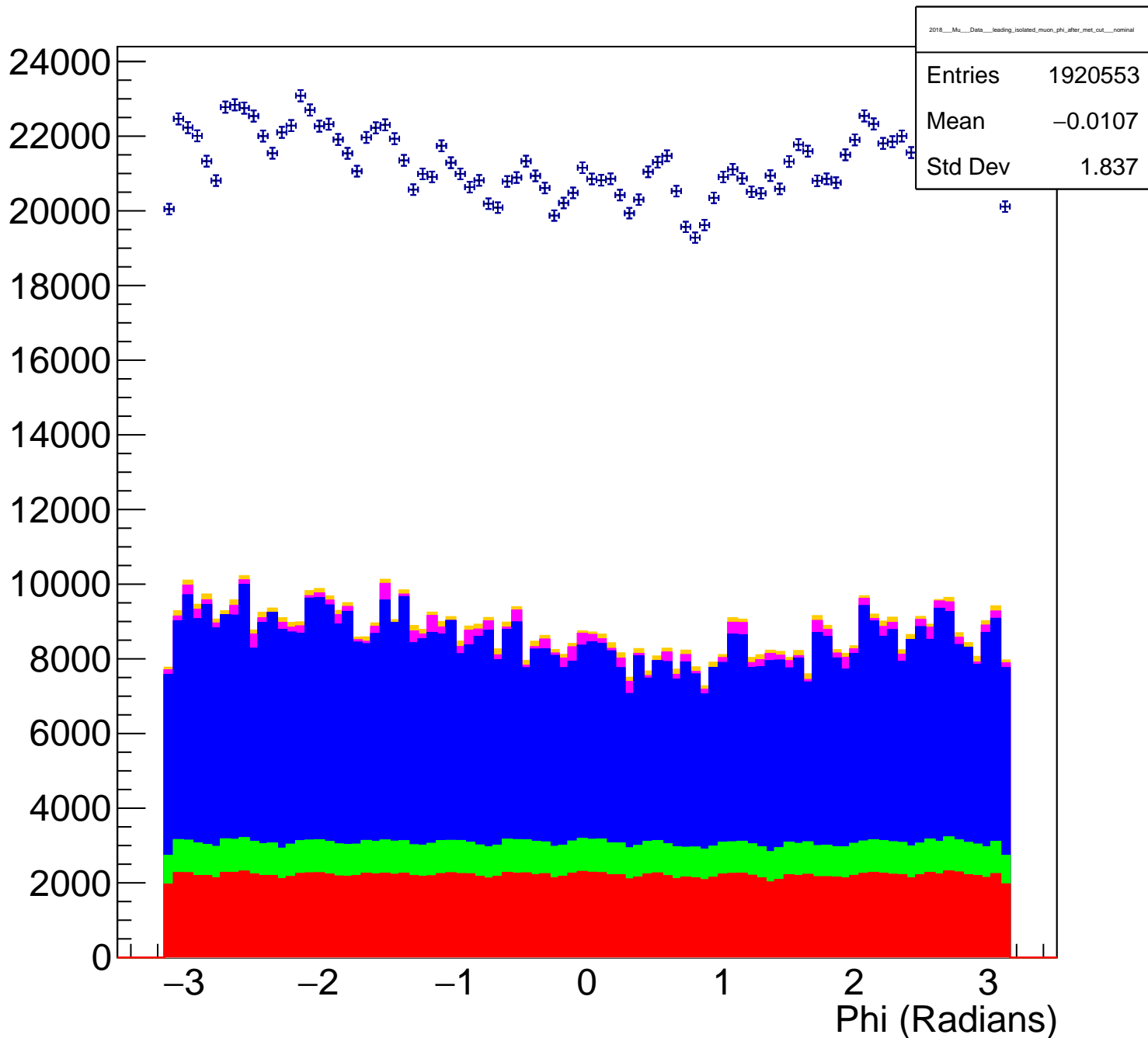
Leading Isolated Muon Transverse Momentum After MET Cut



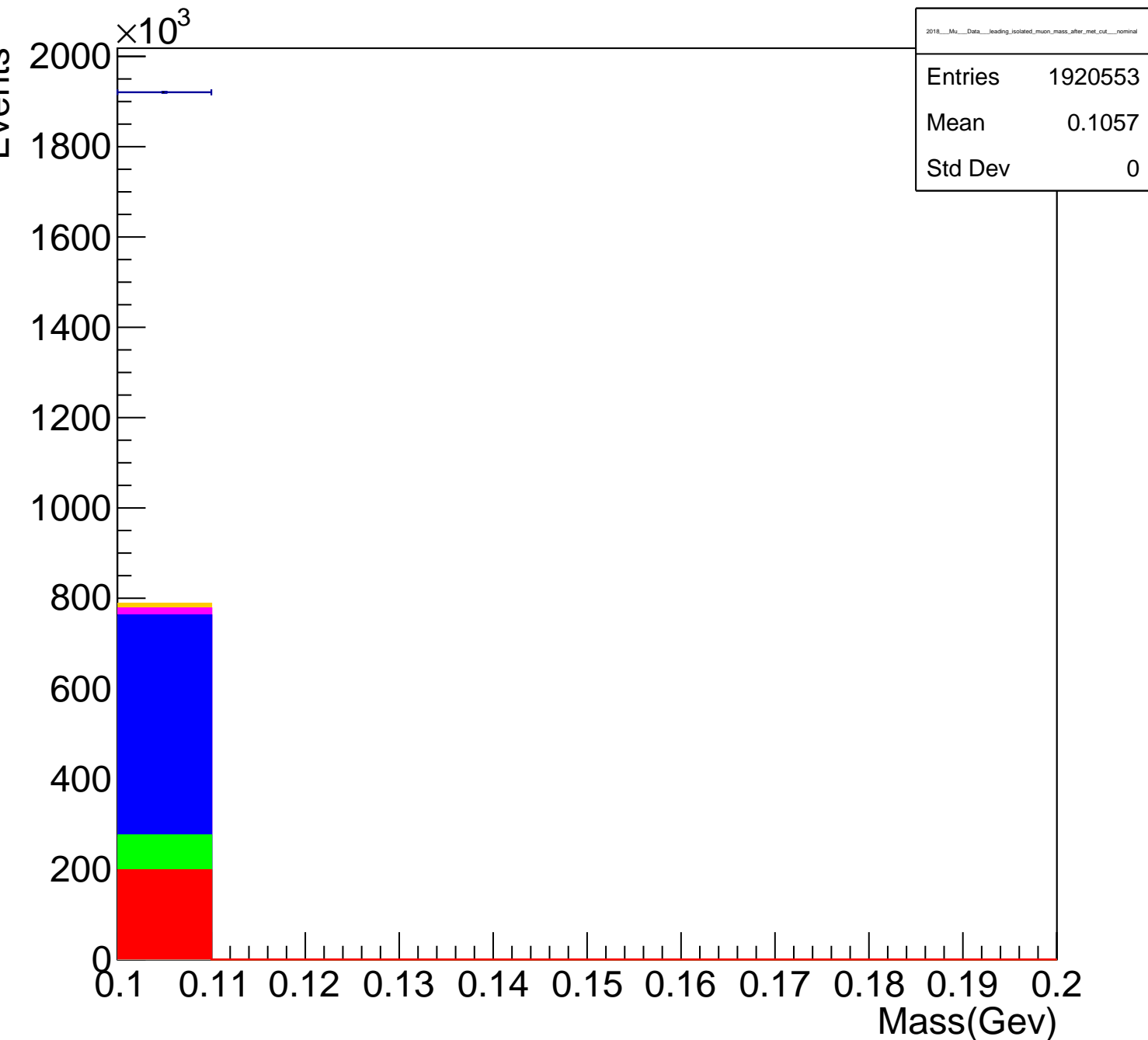
Leading Isolated Muon Pseudorapidity After MET Cut



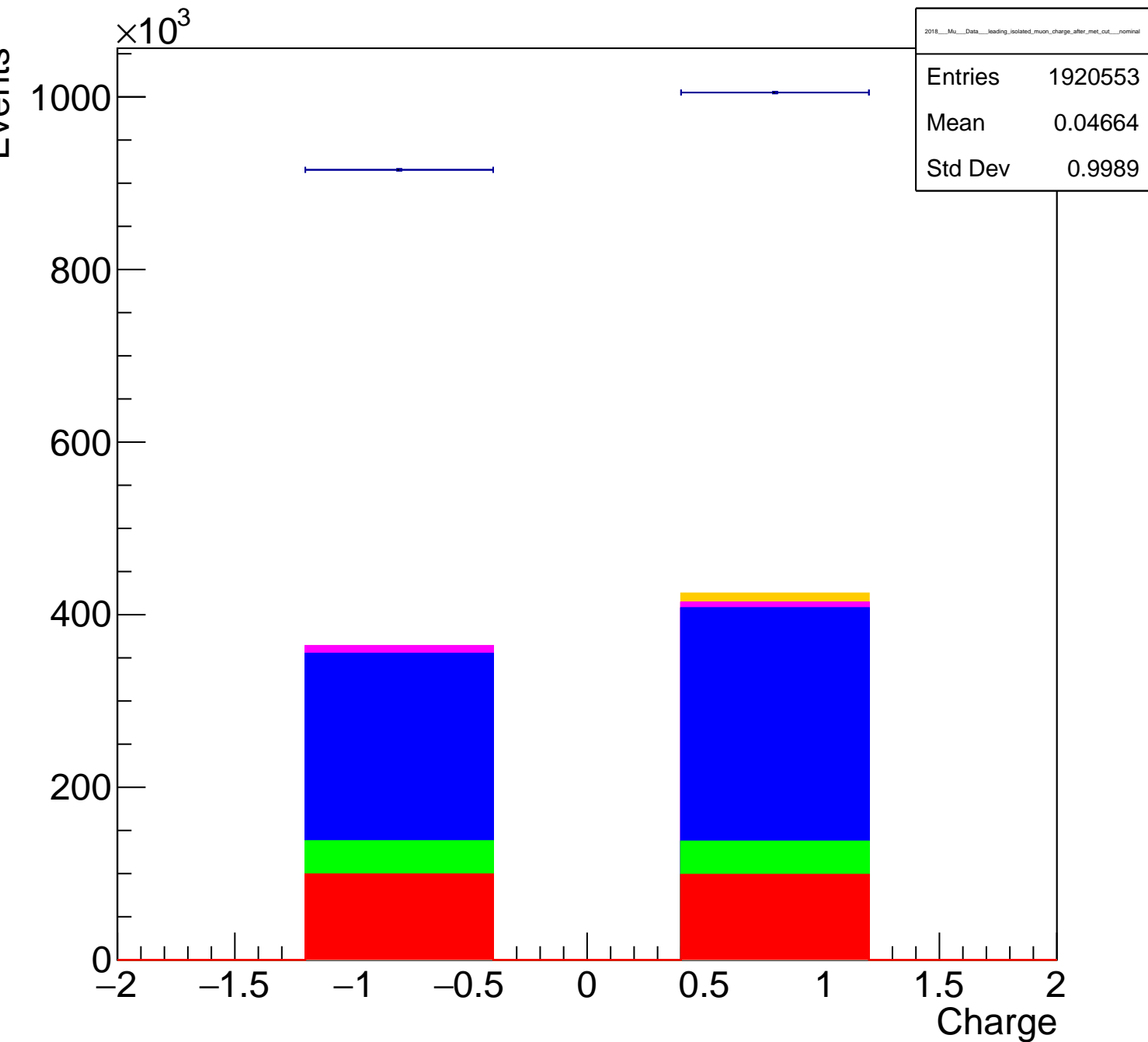
Leading Isolated Muon Angle After MET Cut



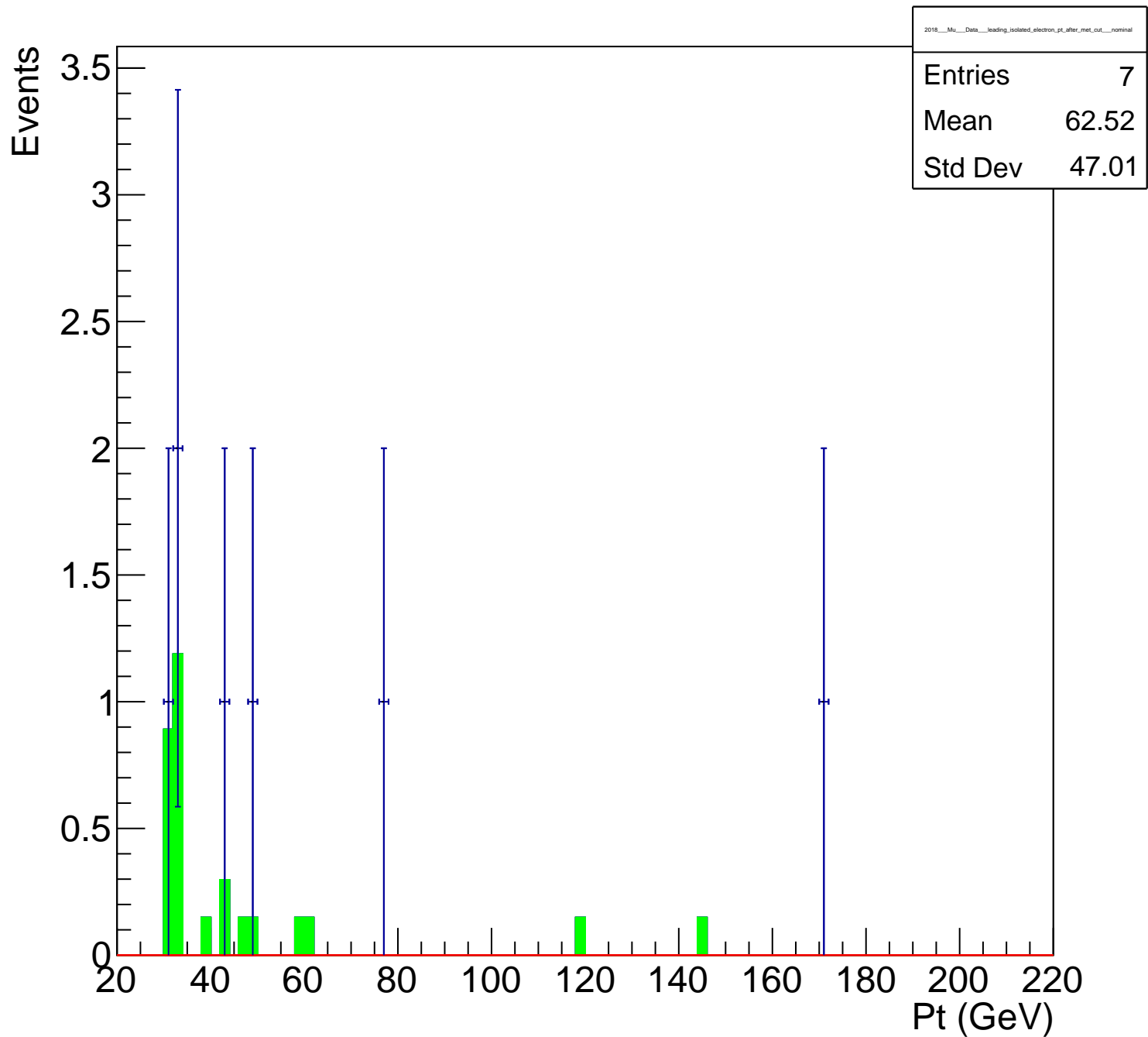
Leading Isolated Muon Mass After MET Cut



Leading Isolated Muon Charge After MET Cut

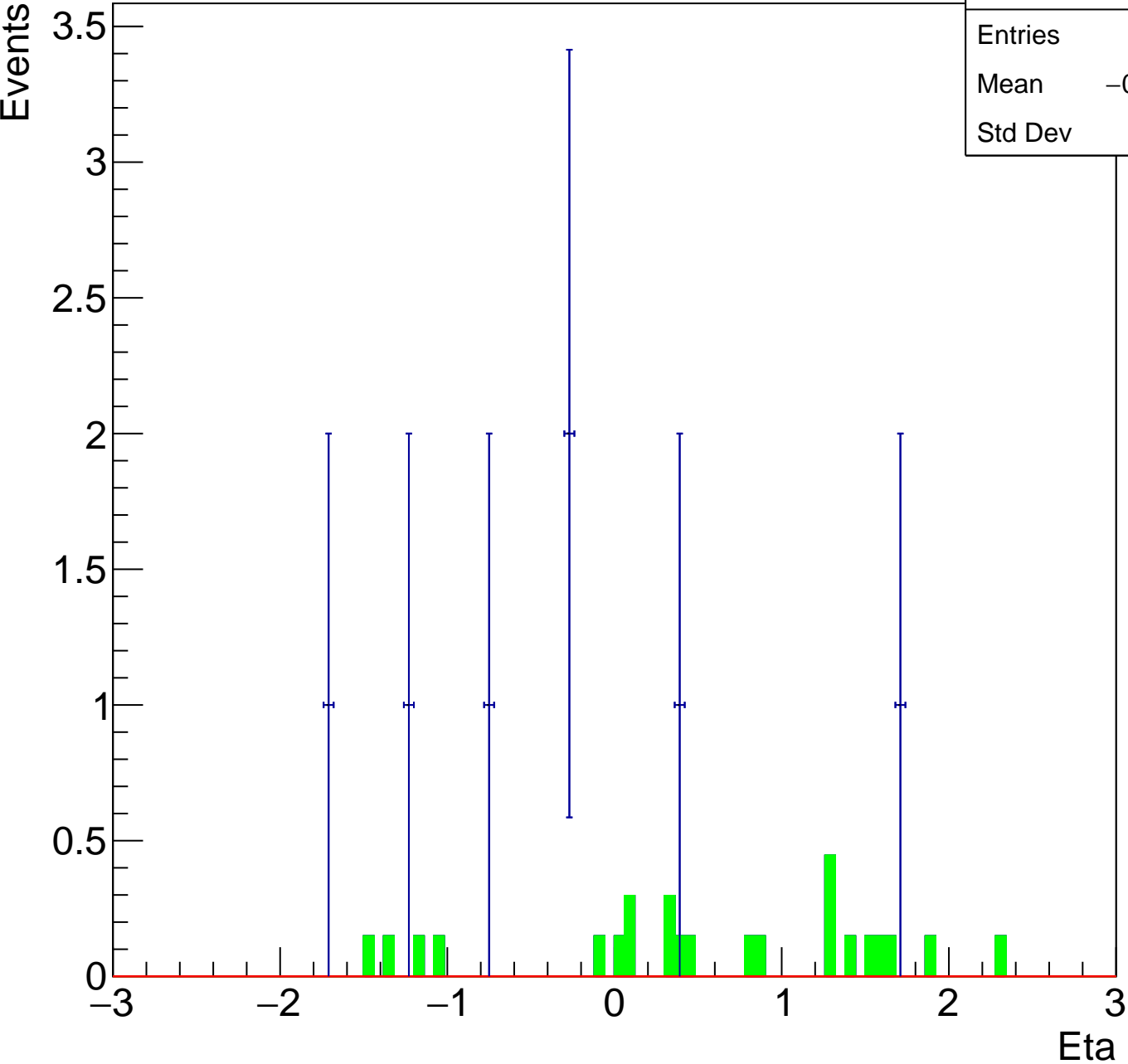


Leading Isolated Electron Transverse Momentum After MET Cut



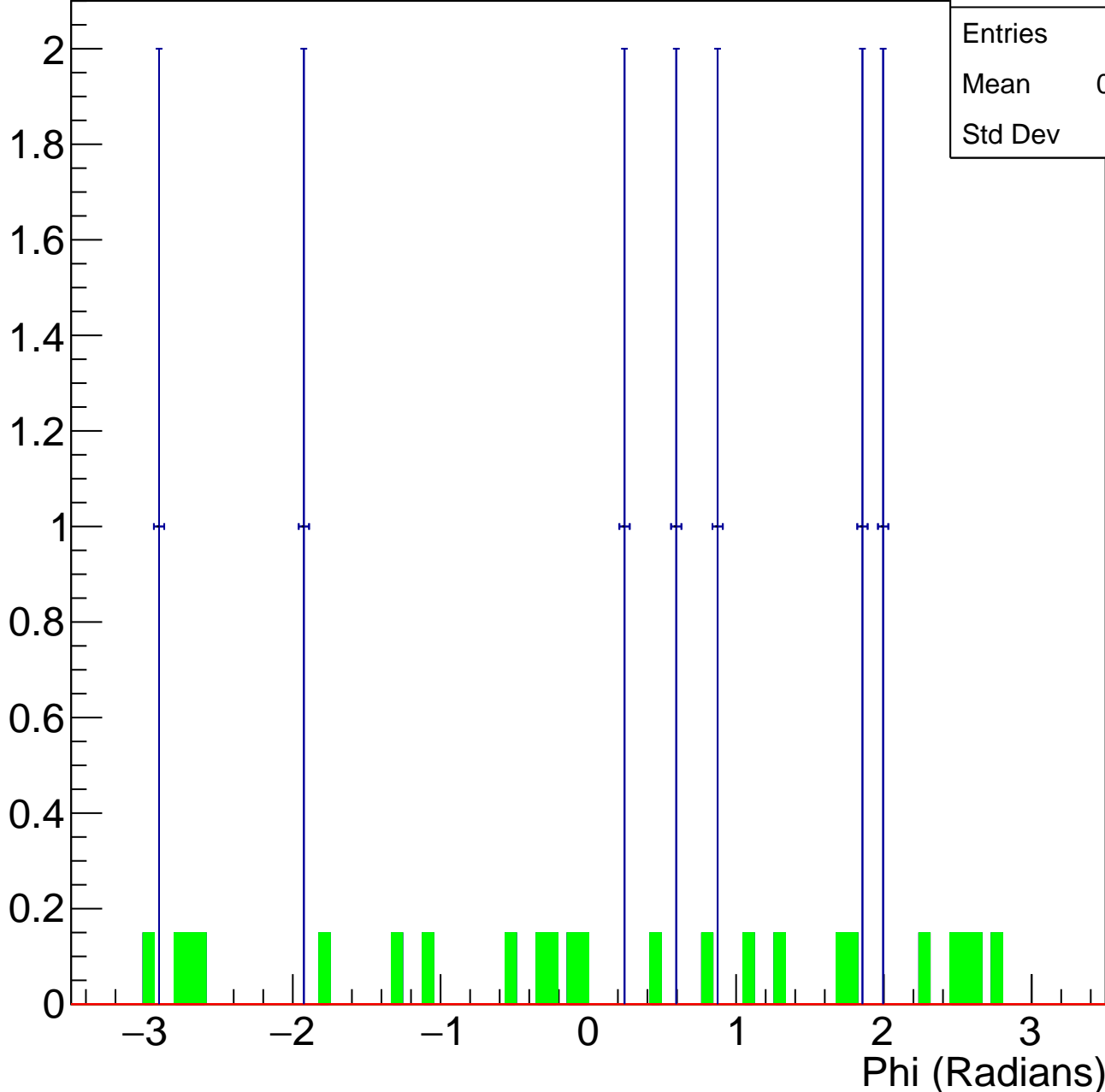
Leading Isolated Electron Pseudorapidity After MET Cut

| | |
|--|---------|
| 2018_Mu_Data_leading_isolated_electron_eta_after_met_cut_nominal | |
| Entries | 7 |
| Mean | -0.2946 |
| Std Dev | 1.038 |



Leading Isolated Electron Angle After MET Cut

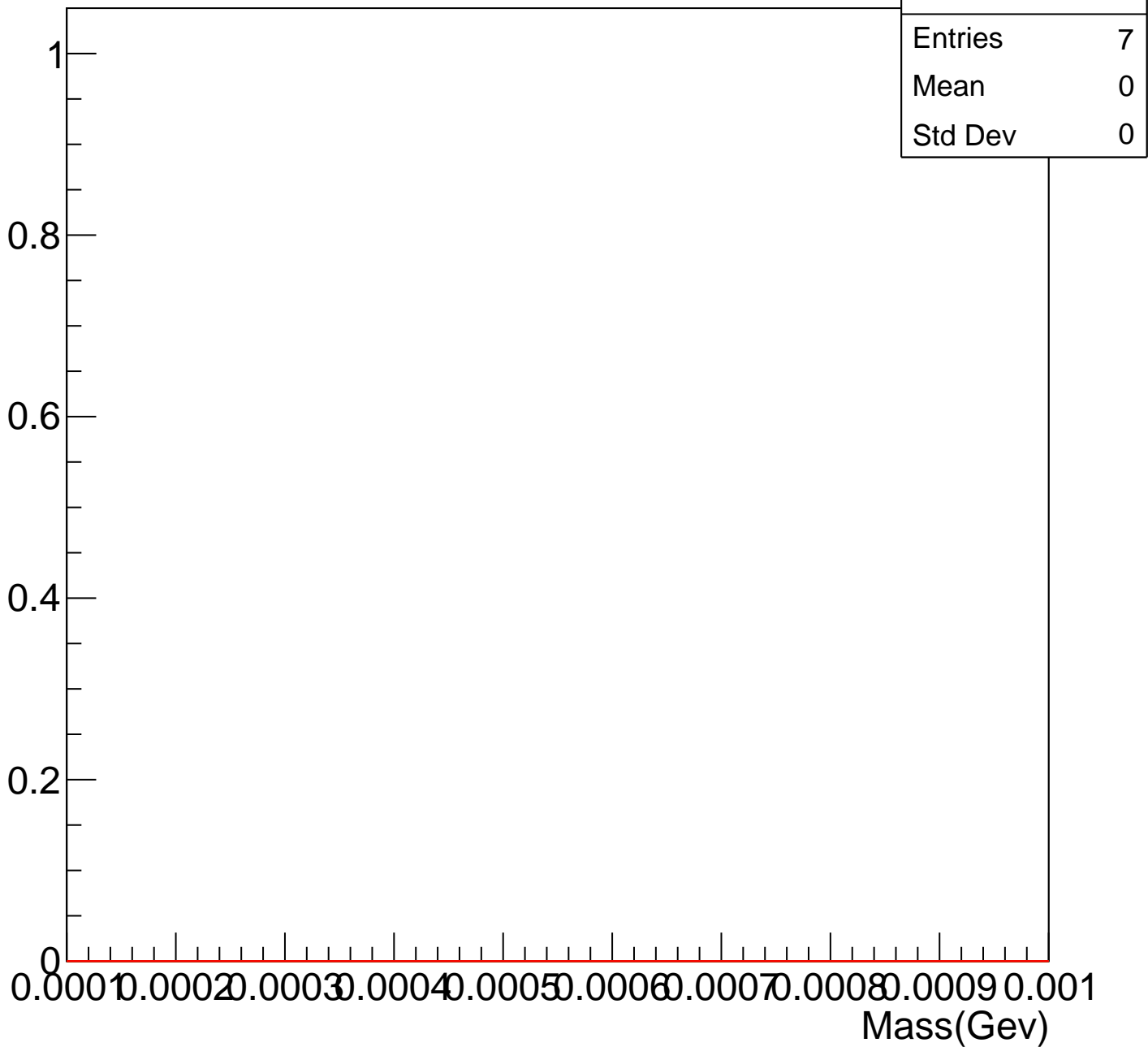
Events



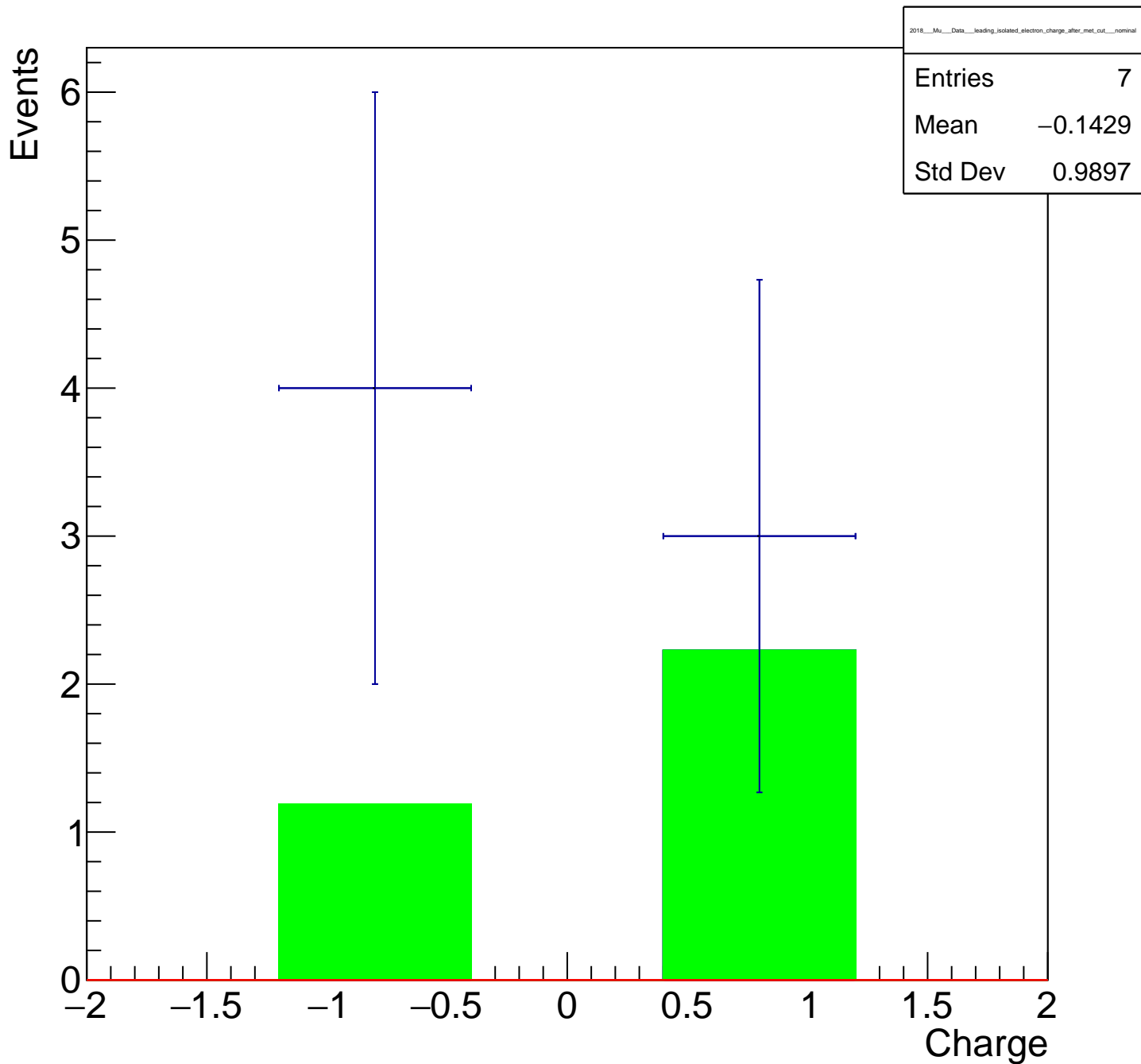
| | |
|--|---------|
| 2018_Mu_Data_leading_isolated_electron_phi_after_met_cut_nominal | |
| Entries | 7 |
| Mean | 0.08943 |
| Std Dev | 1.724 |

Leading Isolated Electron Mass After MET Cut

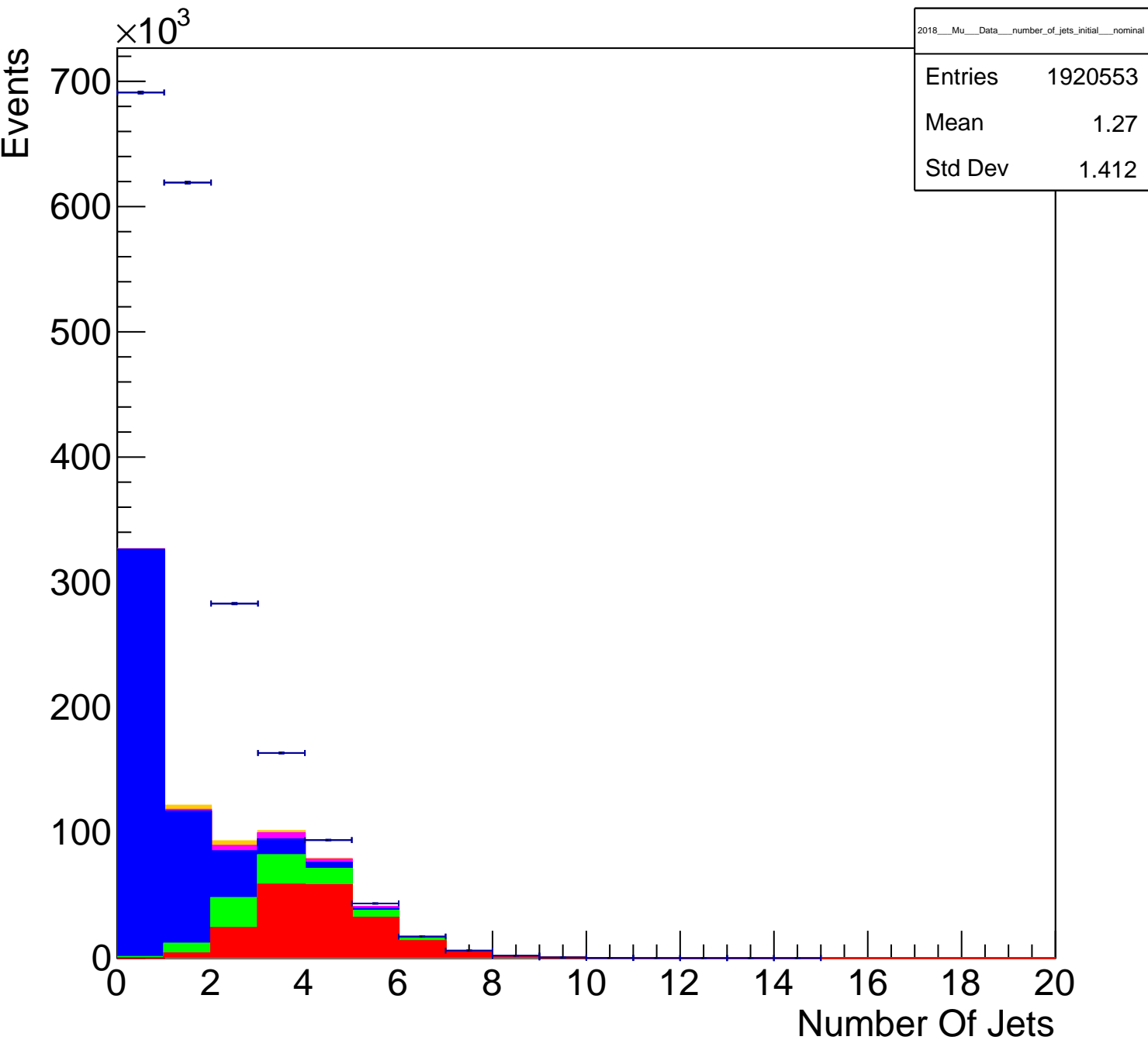
Events



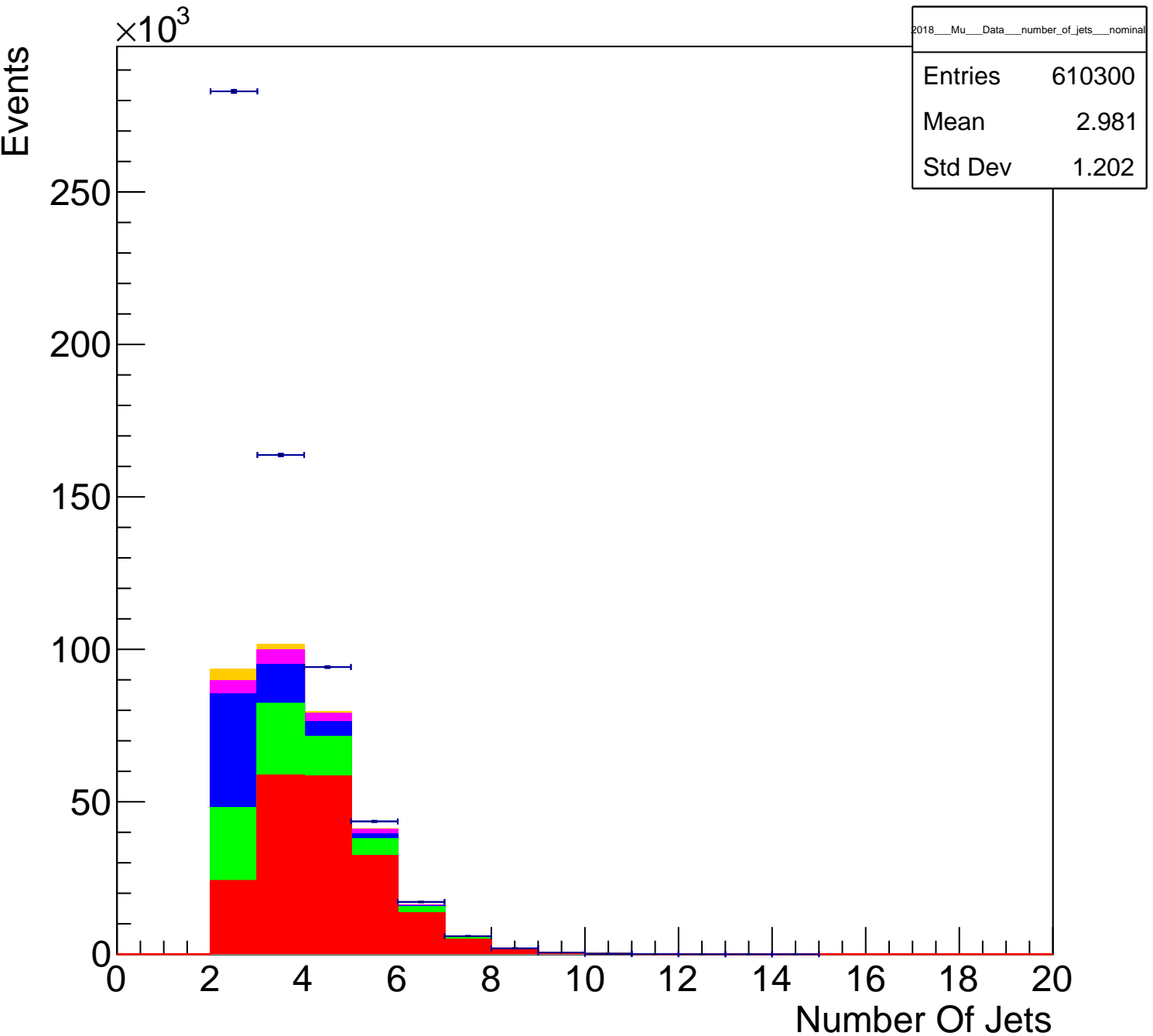
Leading Isolated Electron Charge After MET Cut



Number of Jets Before Jet Cut



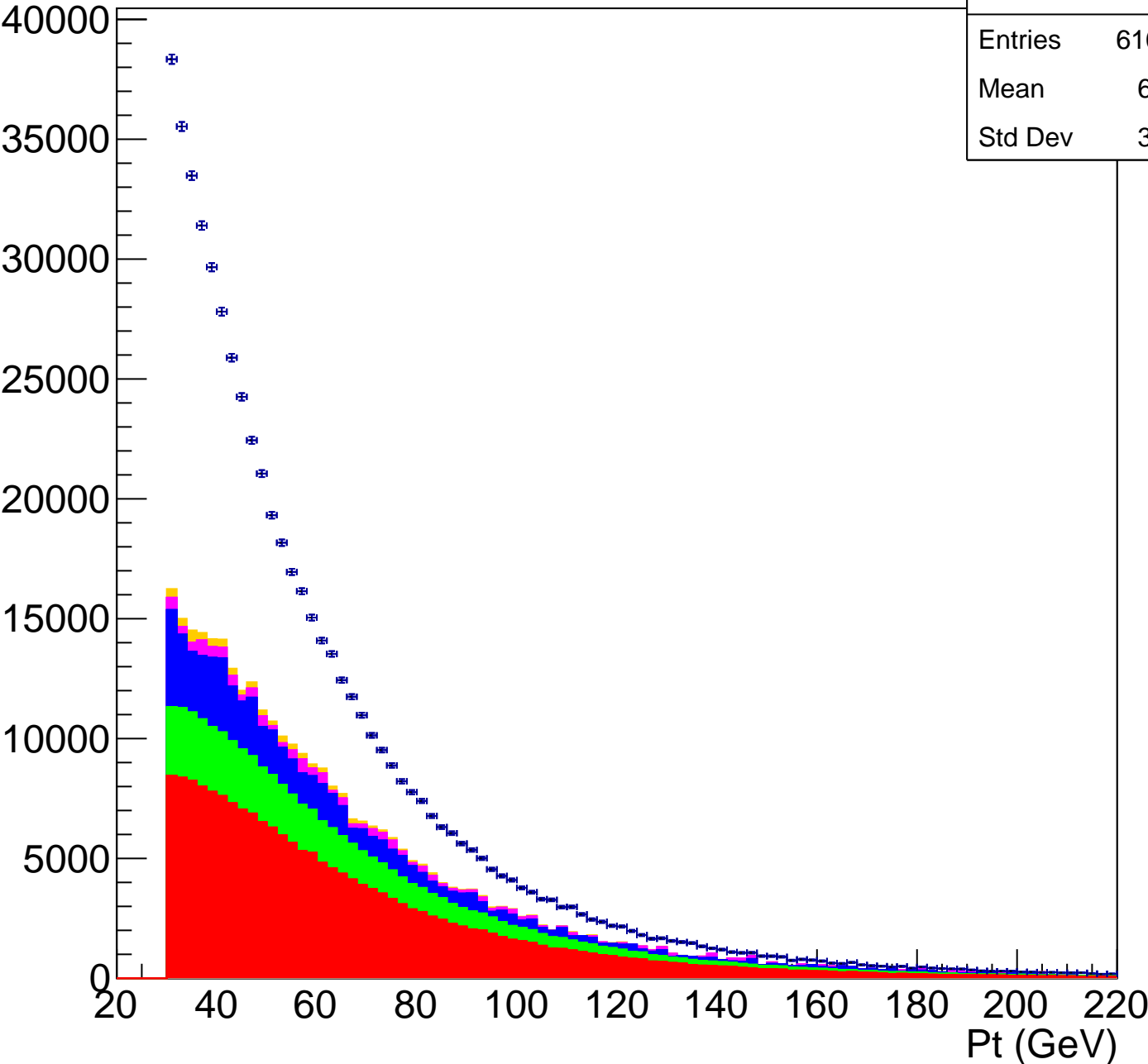
Number Of Jets



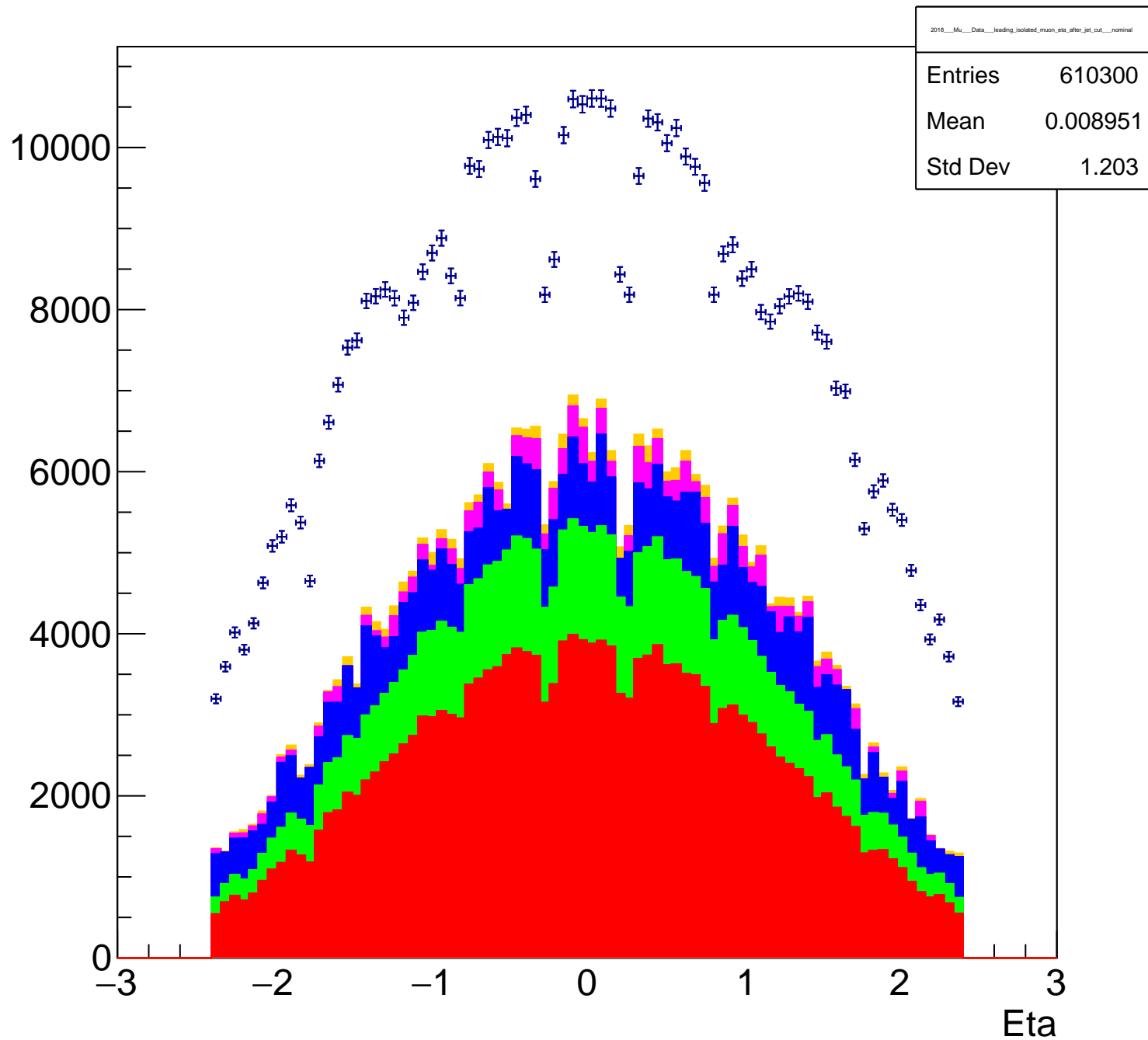
Leading Isolated Muon Transverse Momentum After Jet Cut

2018_Mu_Data_leading_isolated_muon_pt_after_jet_cut_nominal

| | |
|---------|--------|
| Entries | 610300 |
| Mean | 61.39 |
| Std Dev | 31.62 |

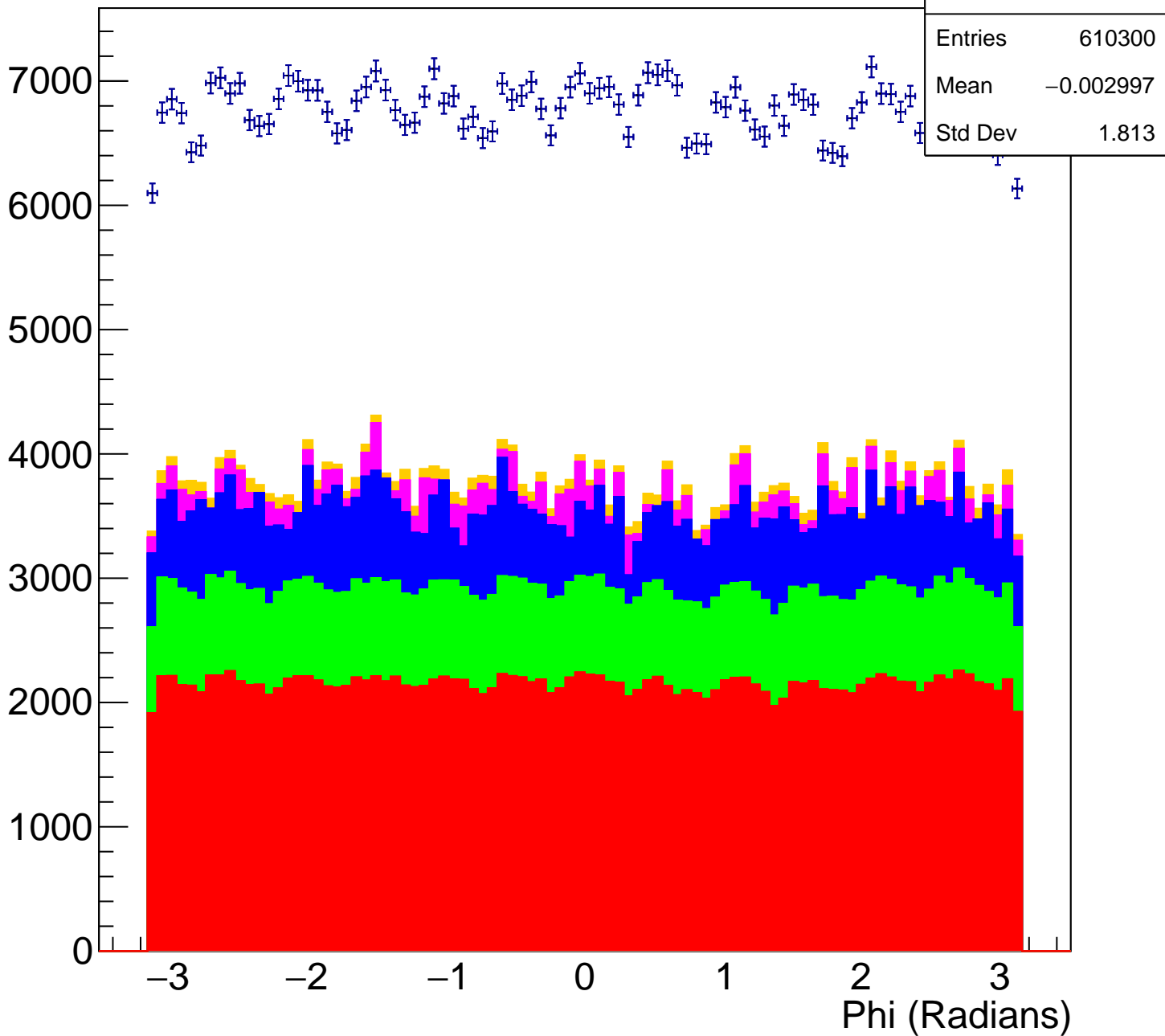


Leading Isolated Muon Pseudorapidity After Jet Cut

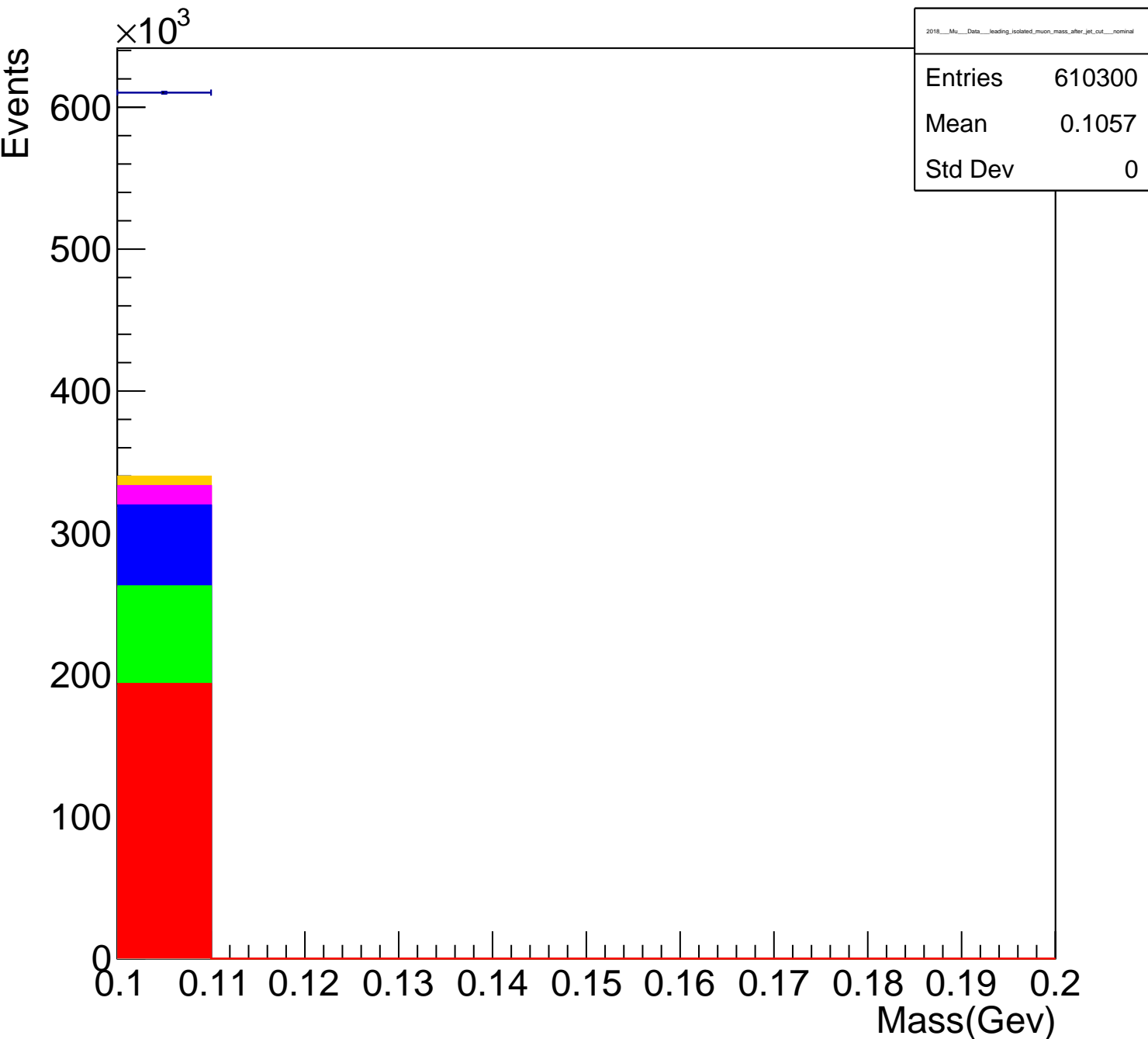


Leading Isolated Muon Angle After Jet Cut

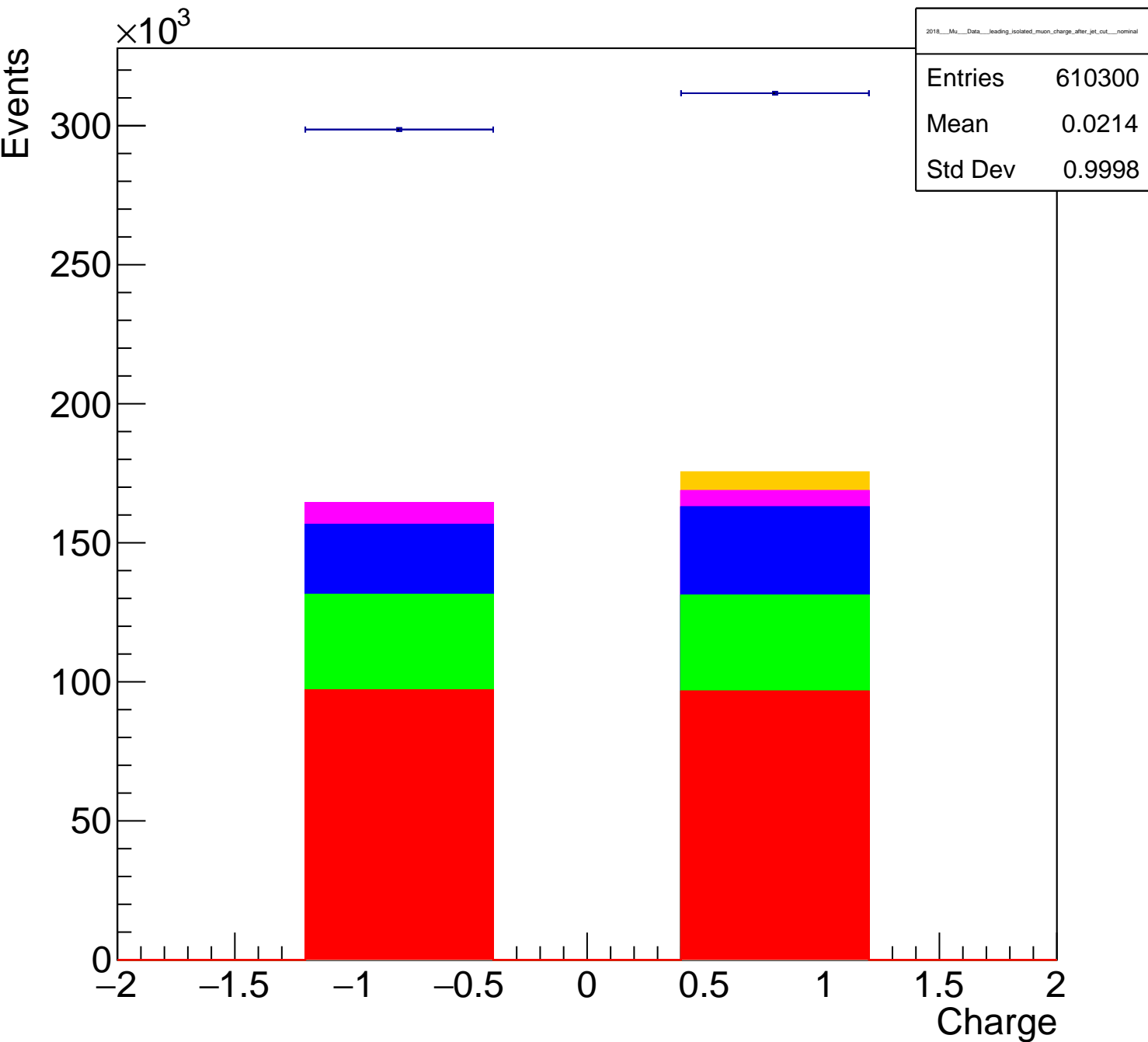
Events



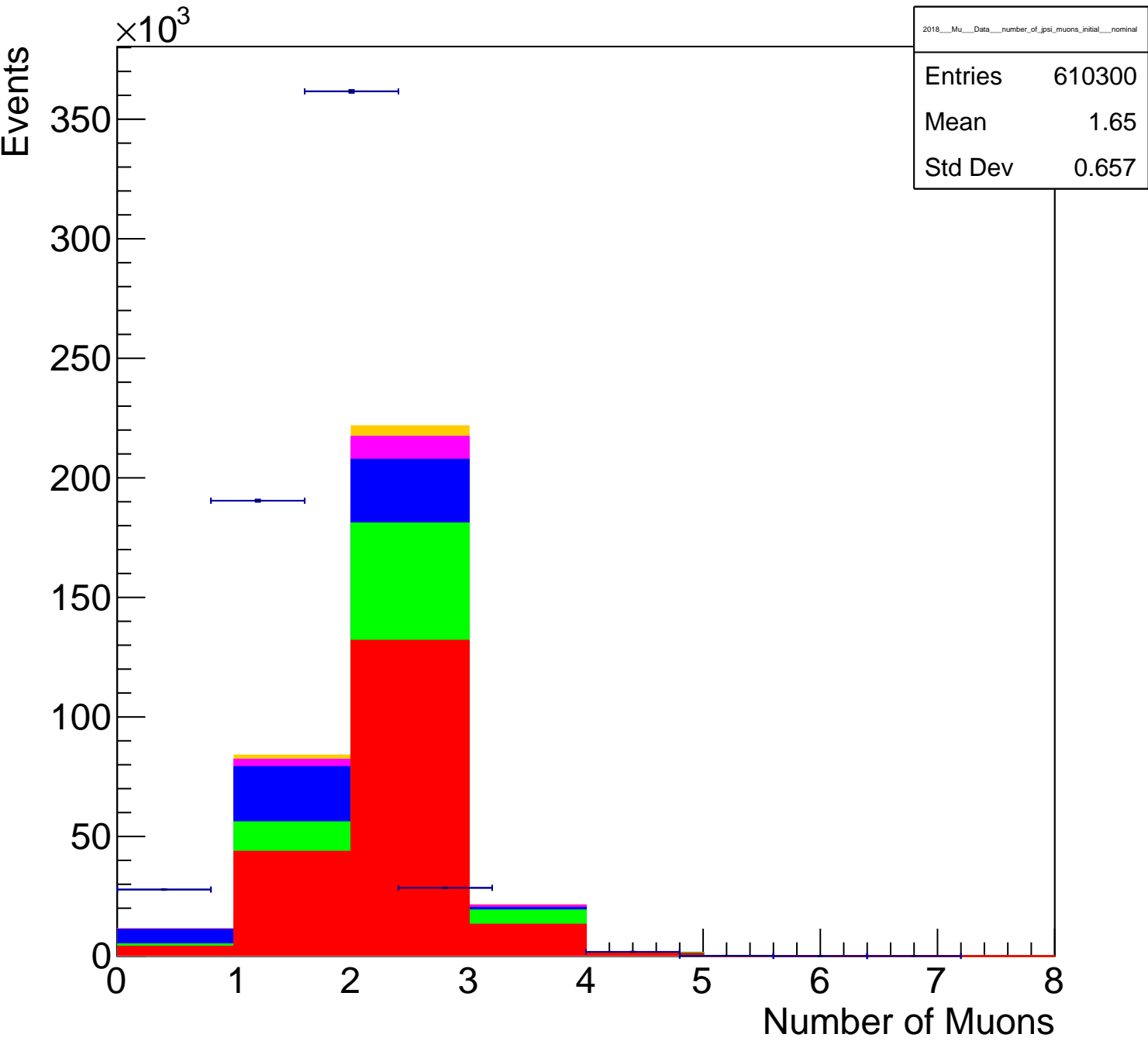
Leading Isolated Muon Mass After Jet Cut



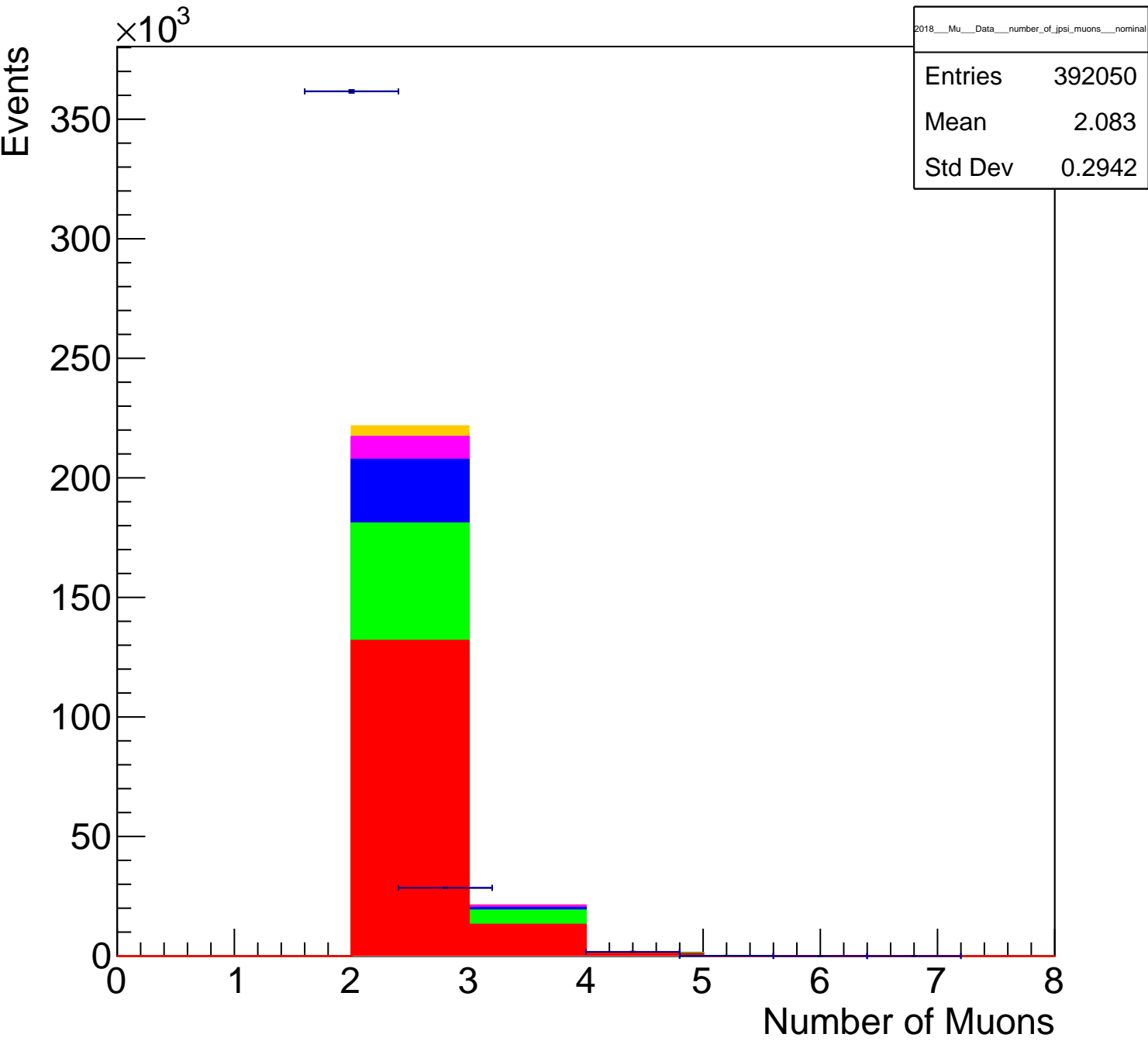
Leading Isolated Muon Charge After Jet Cut



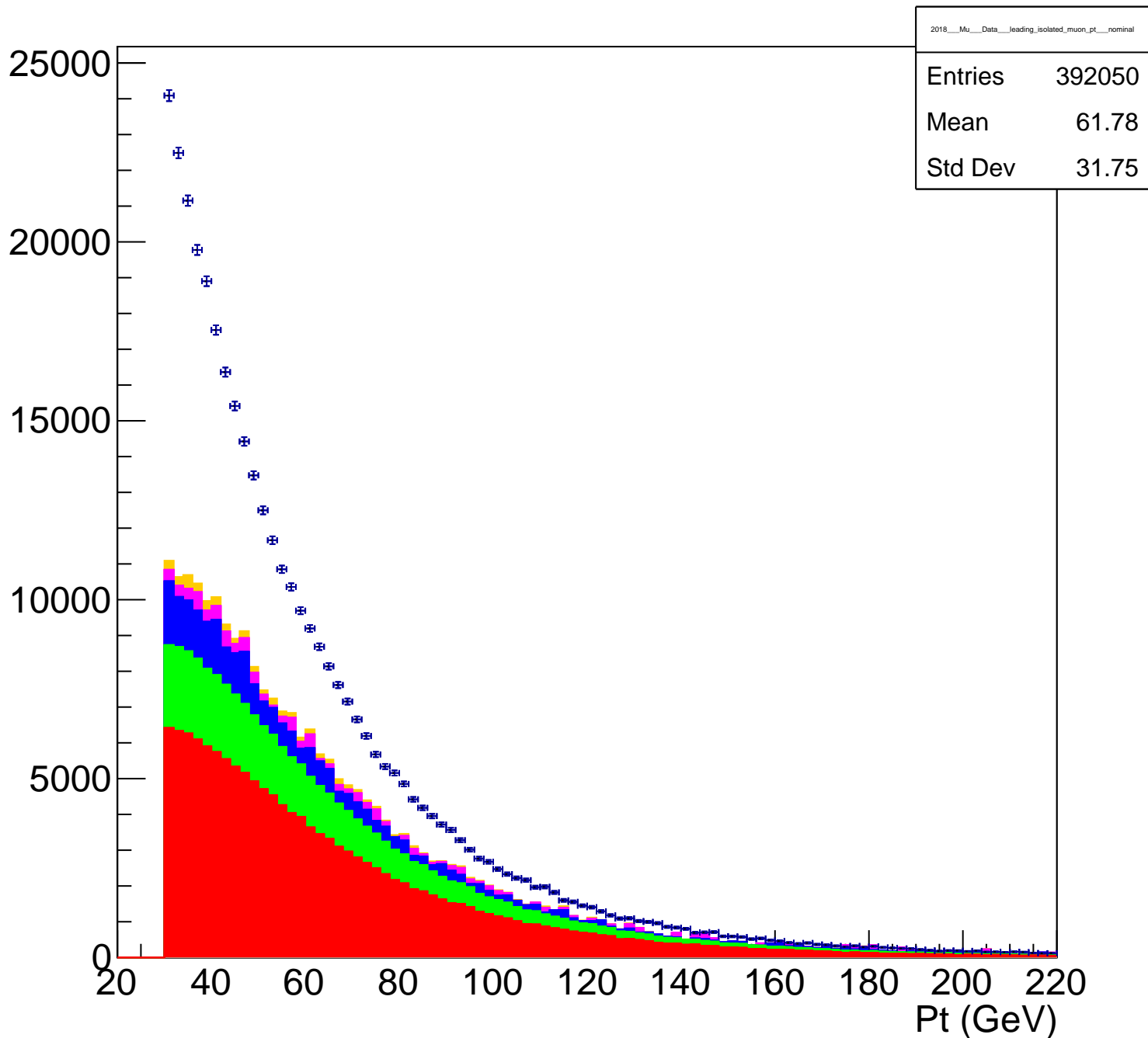
Number of JPsi Muons Before JPsi Muon Cut



Number of JPsi Muons



Leading Isolated Muon Transverse Momentum



Leading Isolated Muon Pseudorapidity

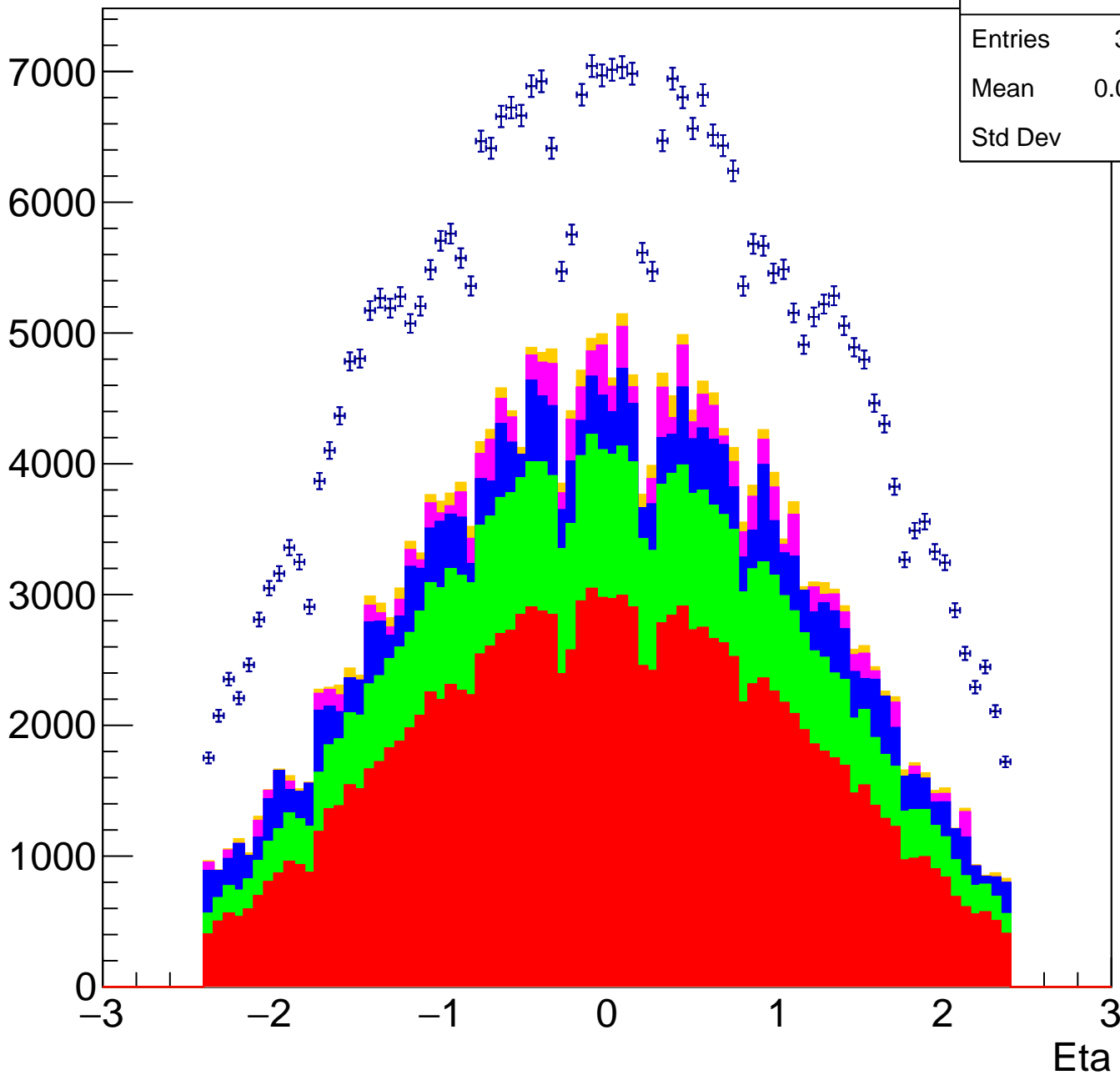
Events

2018_Mu_Data_leading_isolated_muon_eta_nominal

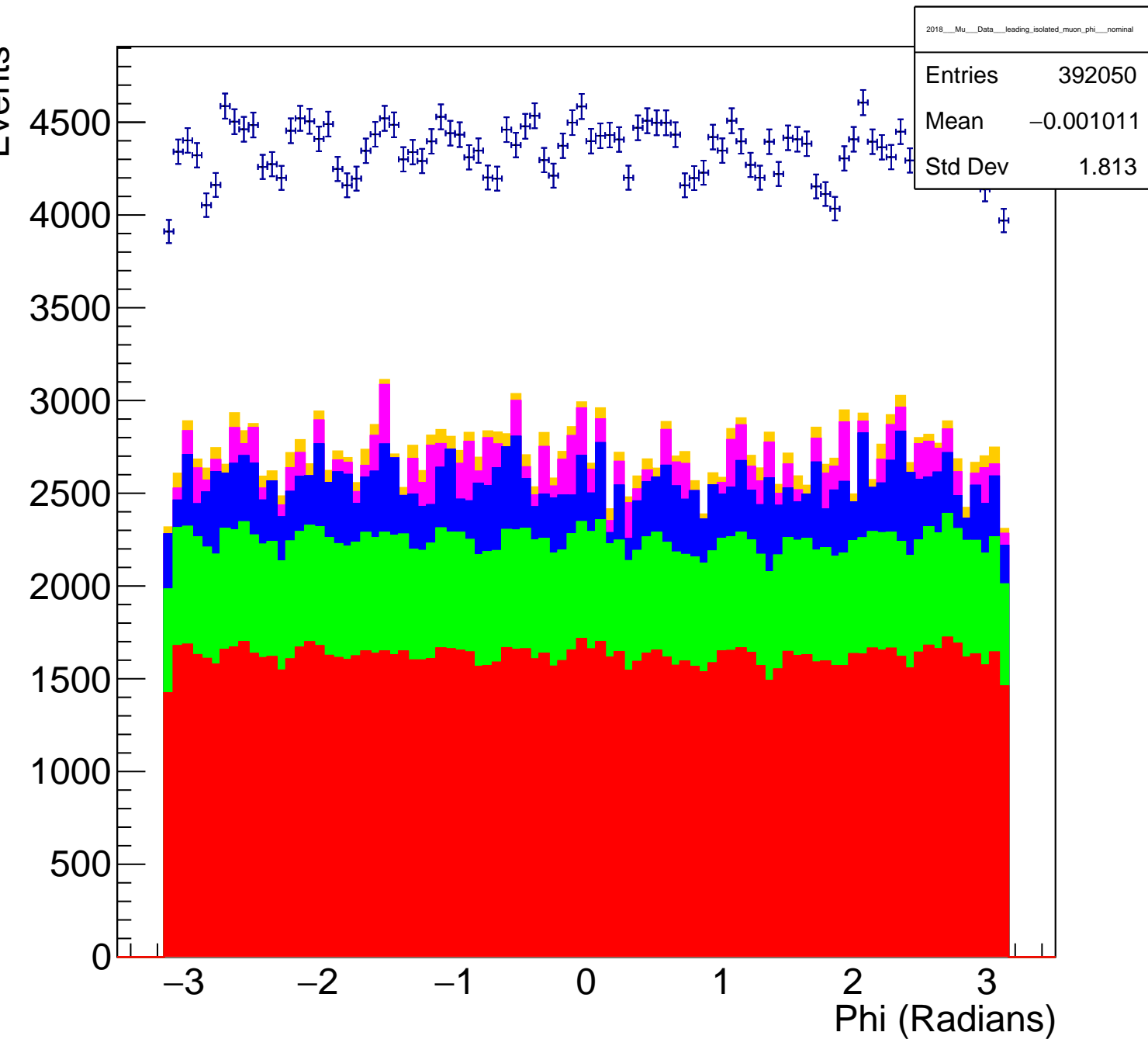
Entries 392050

Mean 0.006202

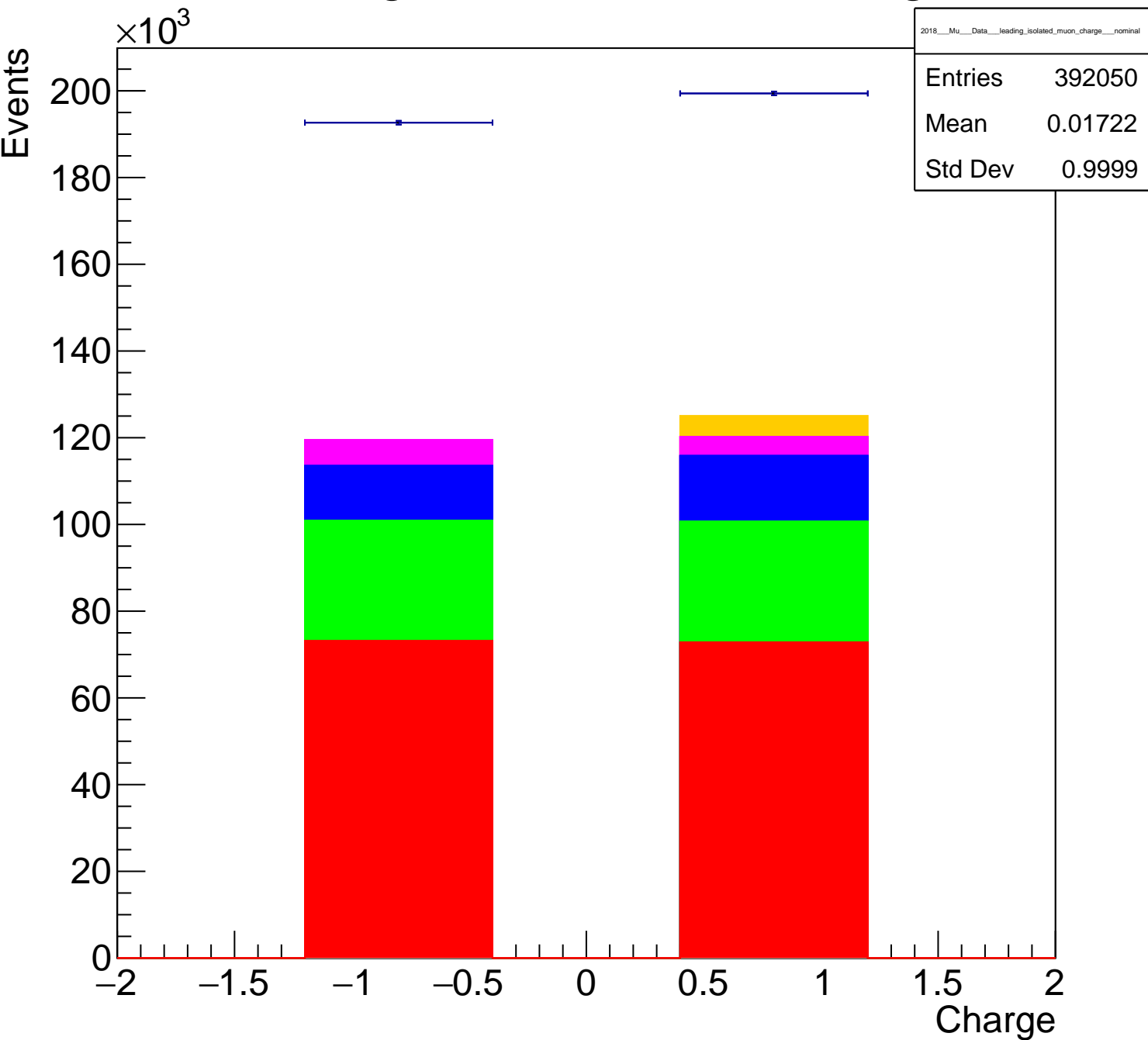
Std Dev 1.178



Leading Isolated Muon Angle



Leading Isolated Muon Charge



Jet Transverse Momentum for Leading Jet

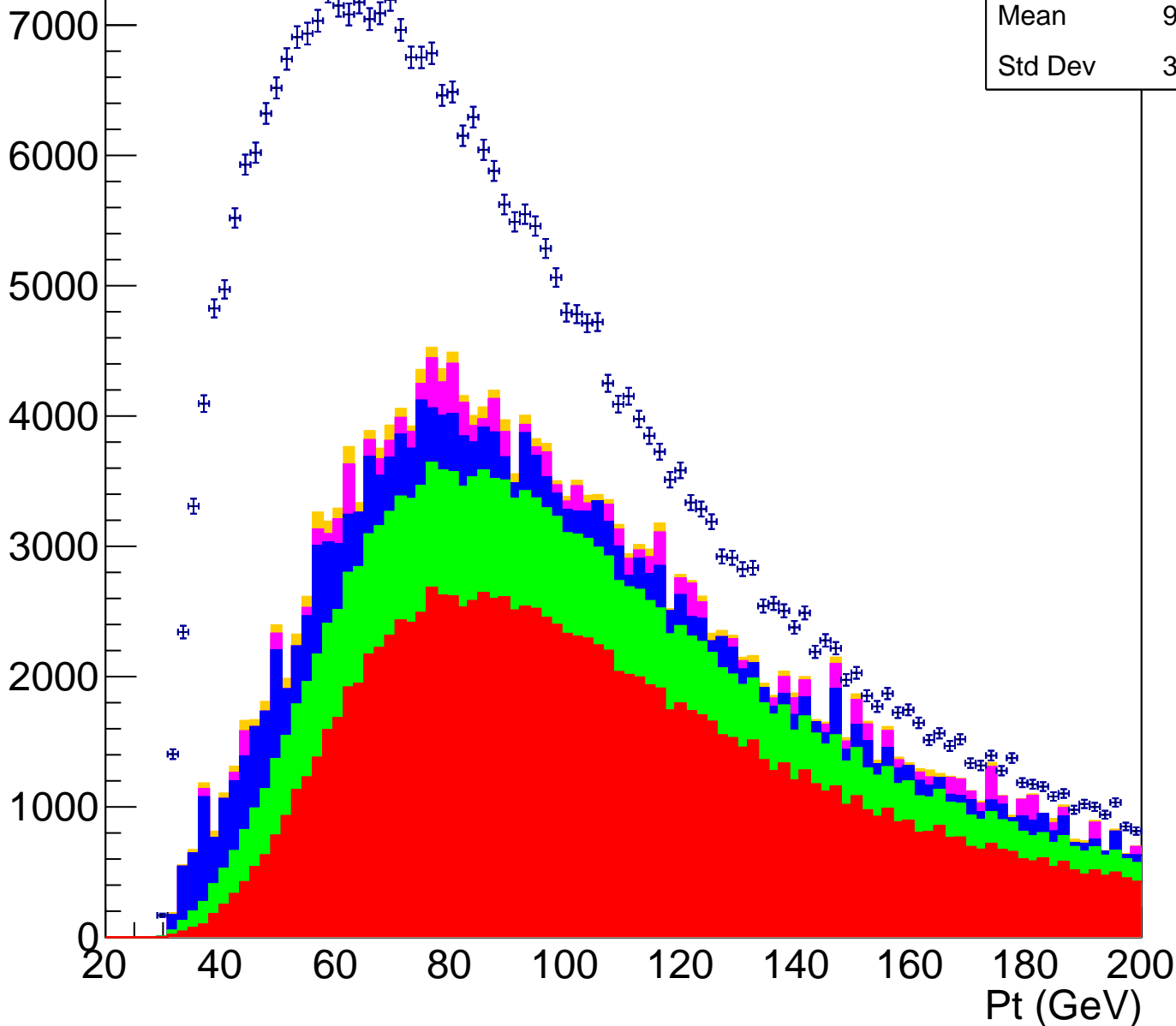
Events

2018__Mu__Data__jet1_pt__nominal

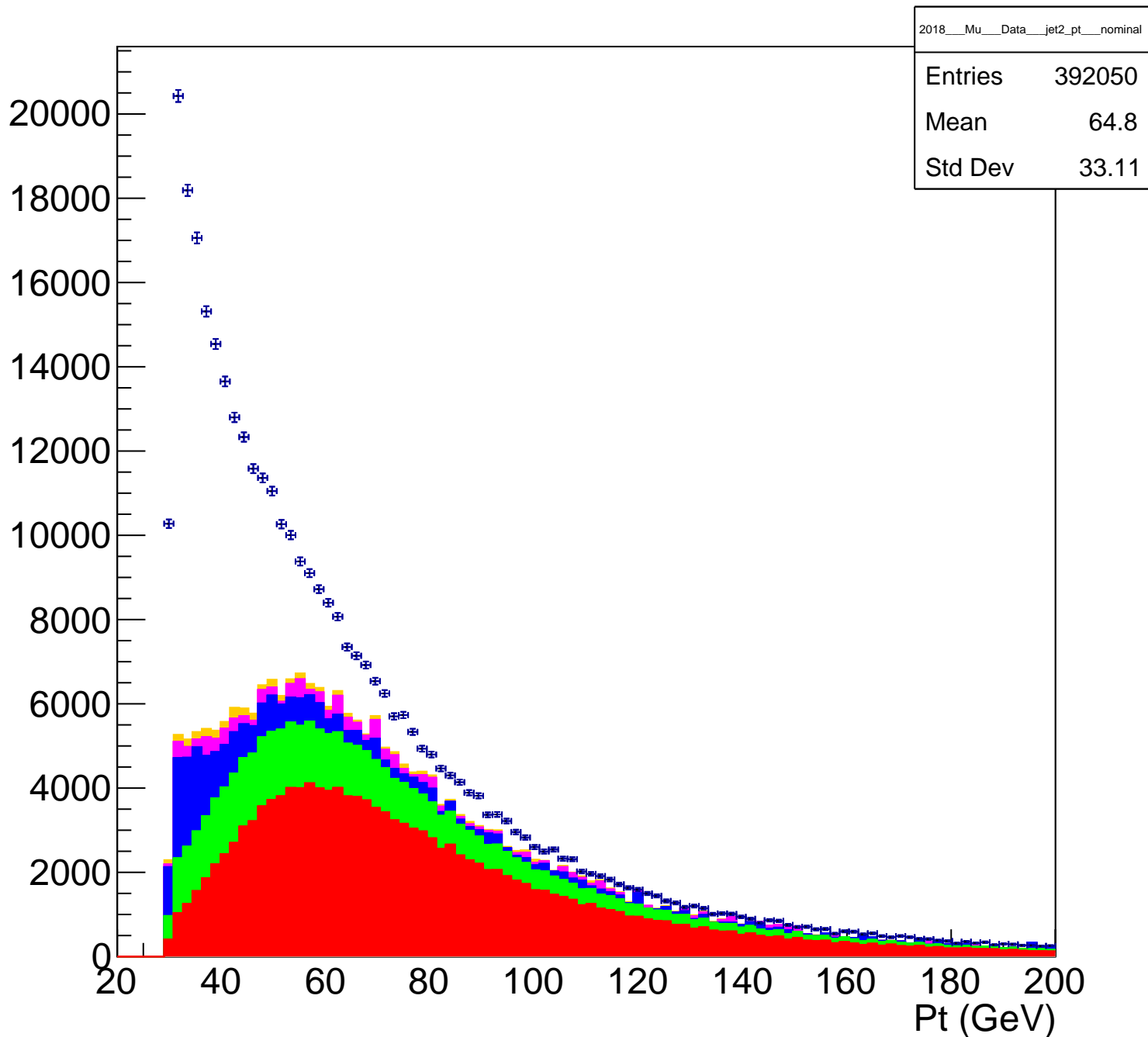
Entries 392050

Mean 91.68

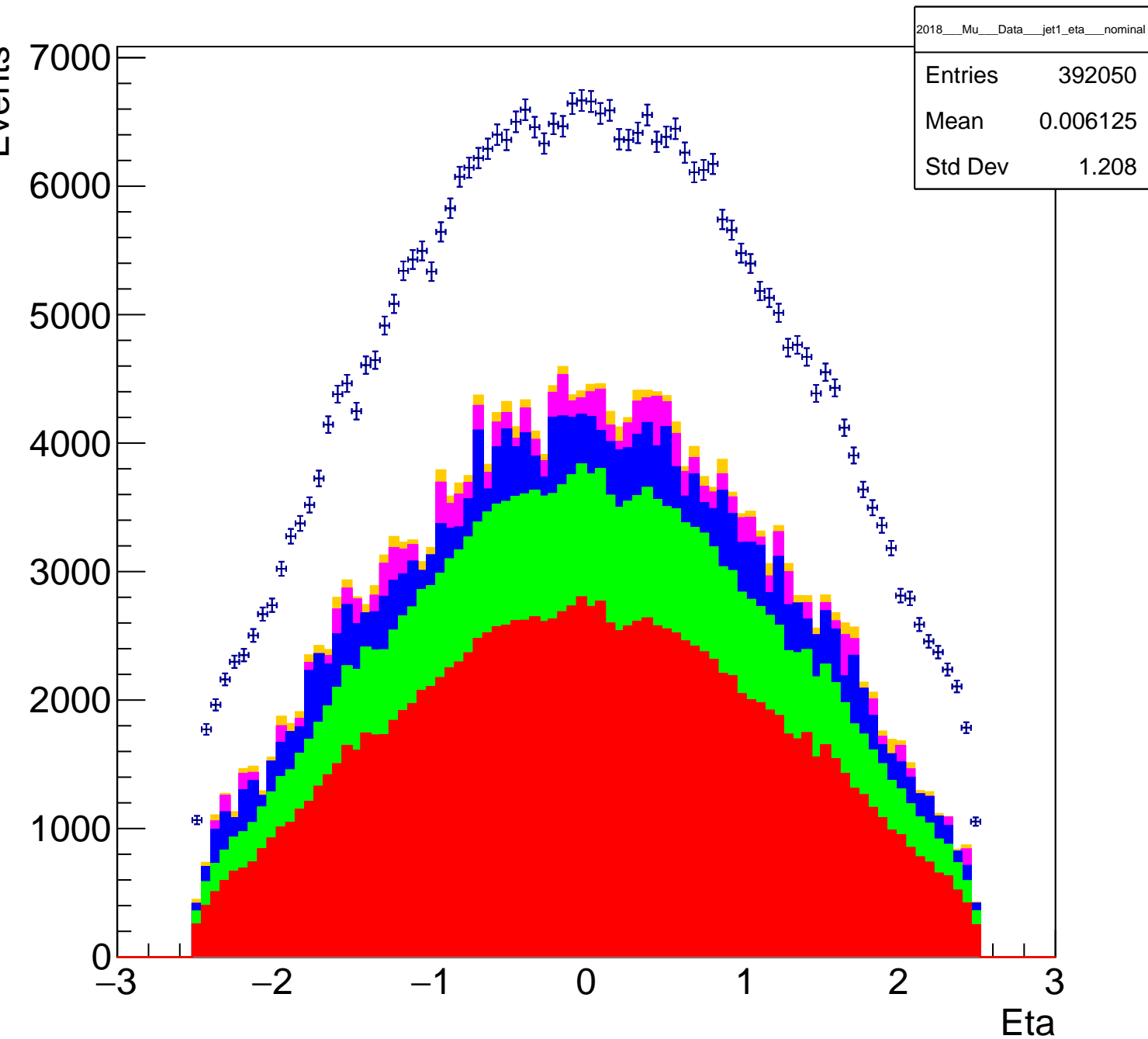
Std Dev 39.59



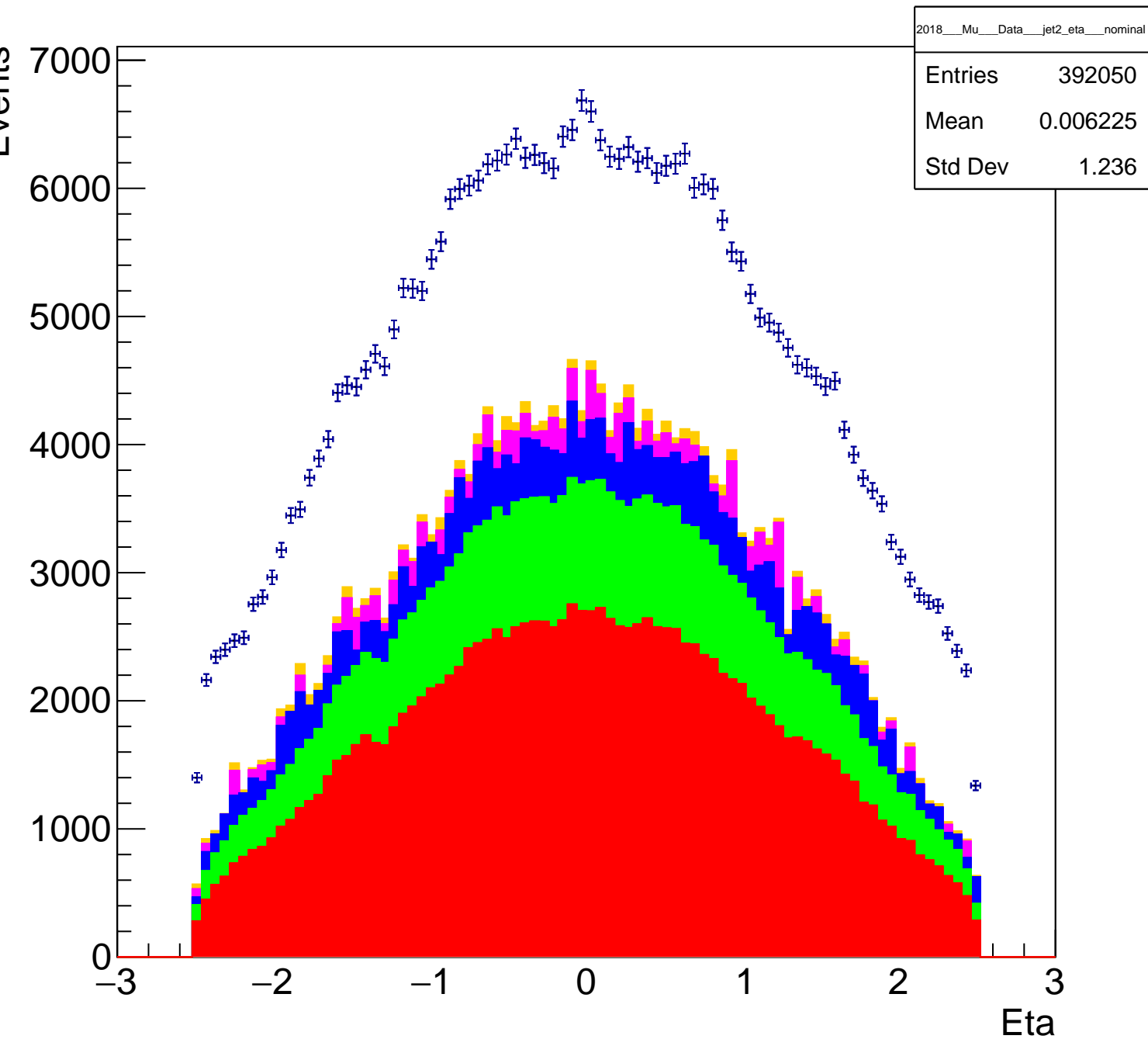
Jet Transverse Momentum for Subleading Jet



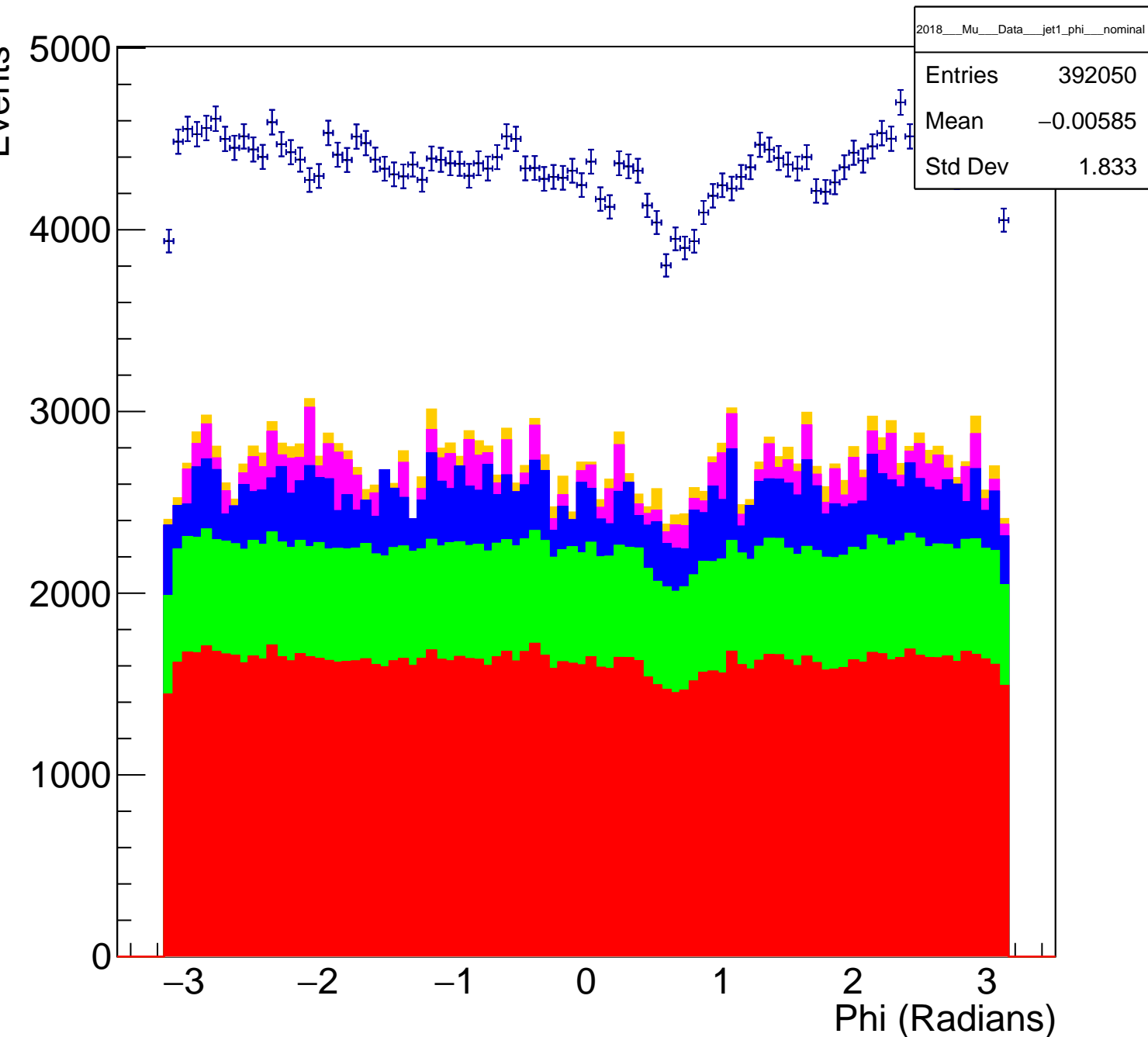
Jet Pseudorapidity for Leading Jet



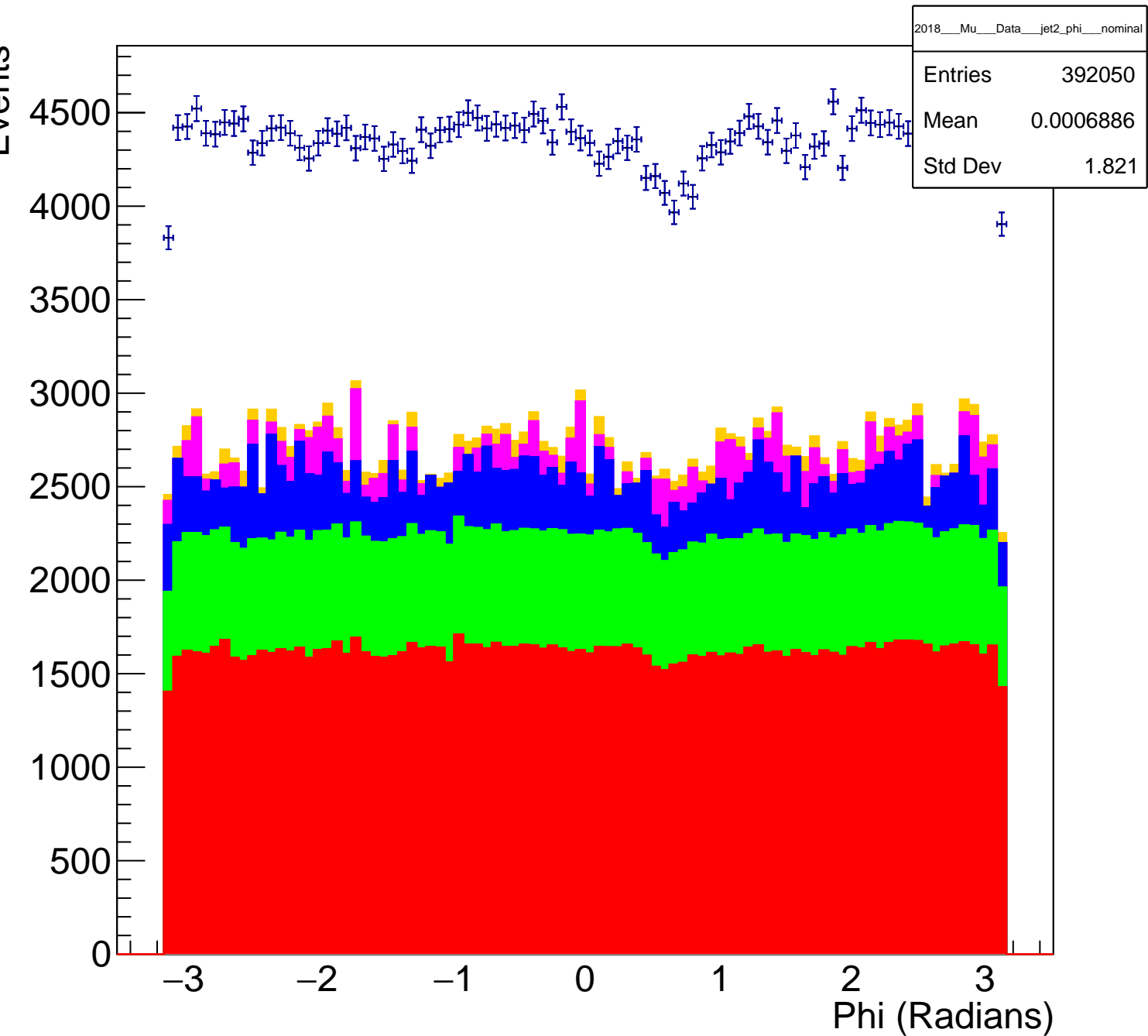
Jet Pseudorapidity for Subleading Jet



Jet Angle for Leading Jet



Jet Angle for Subleading Jet



Transverse Mass

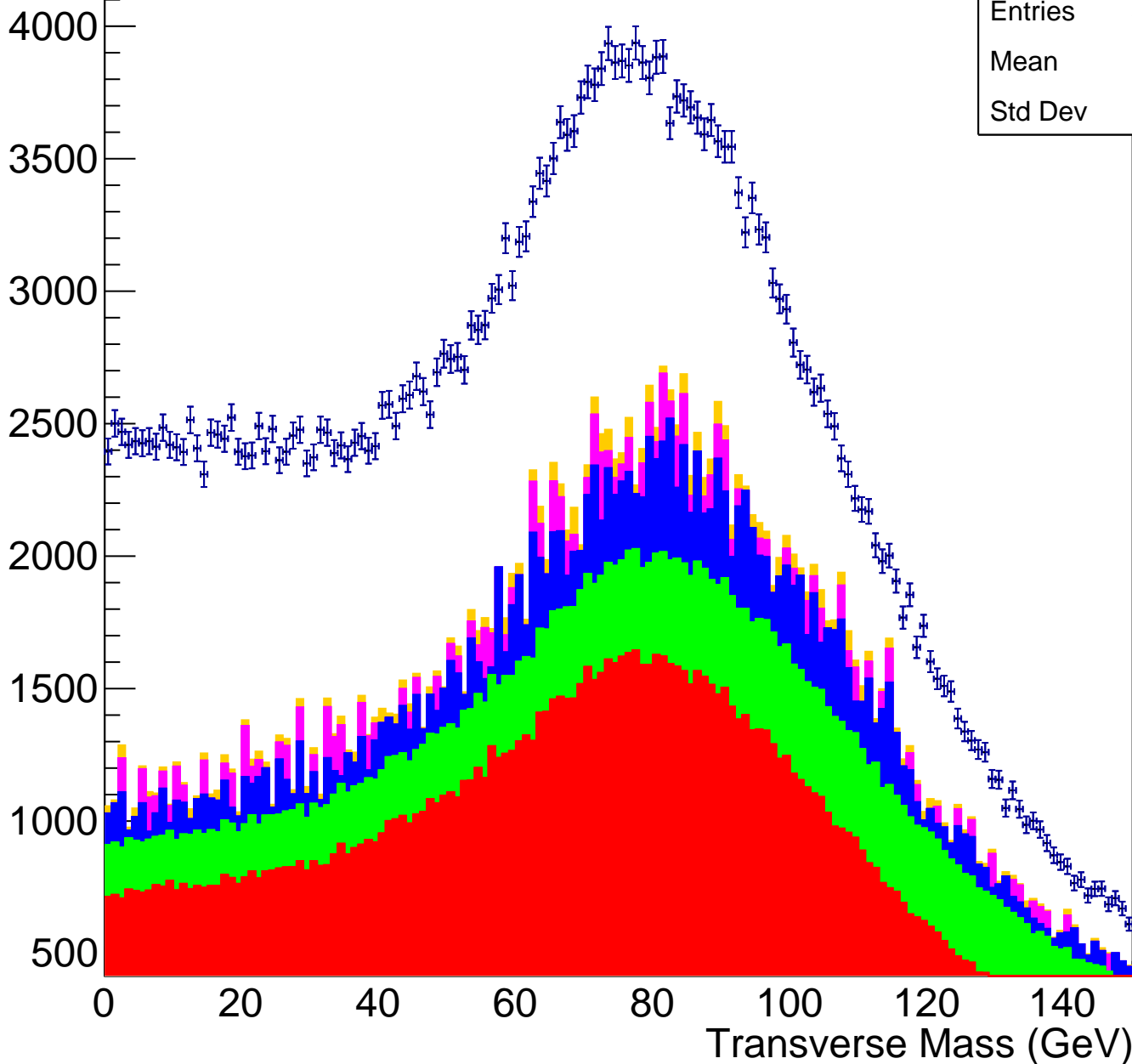
Events

2018__Mu__Data__transverse_mass__nominal

Entries 392050

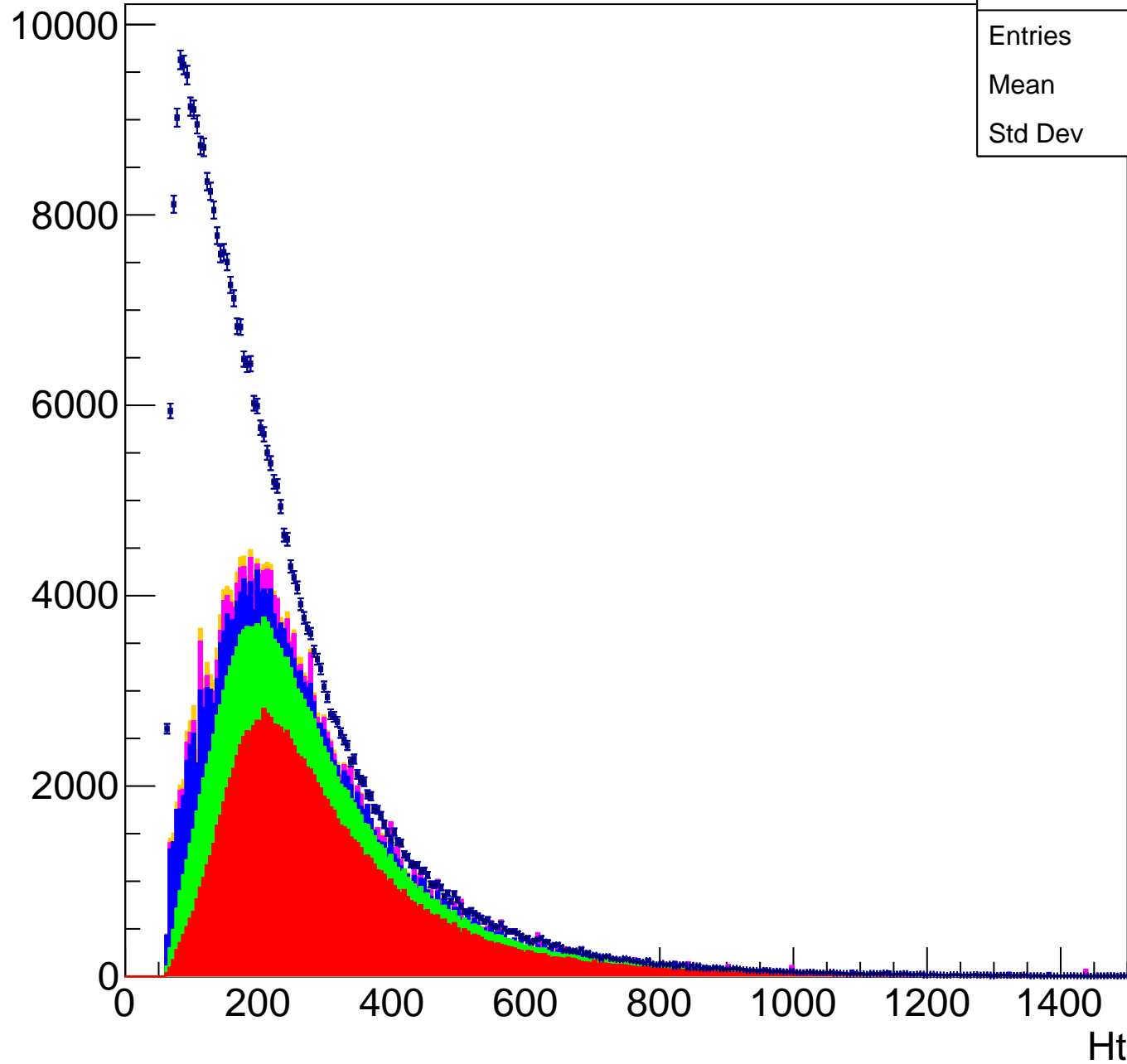
Mean 67.67

Std Dev 36.81

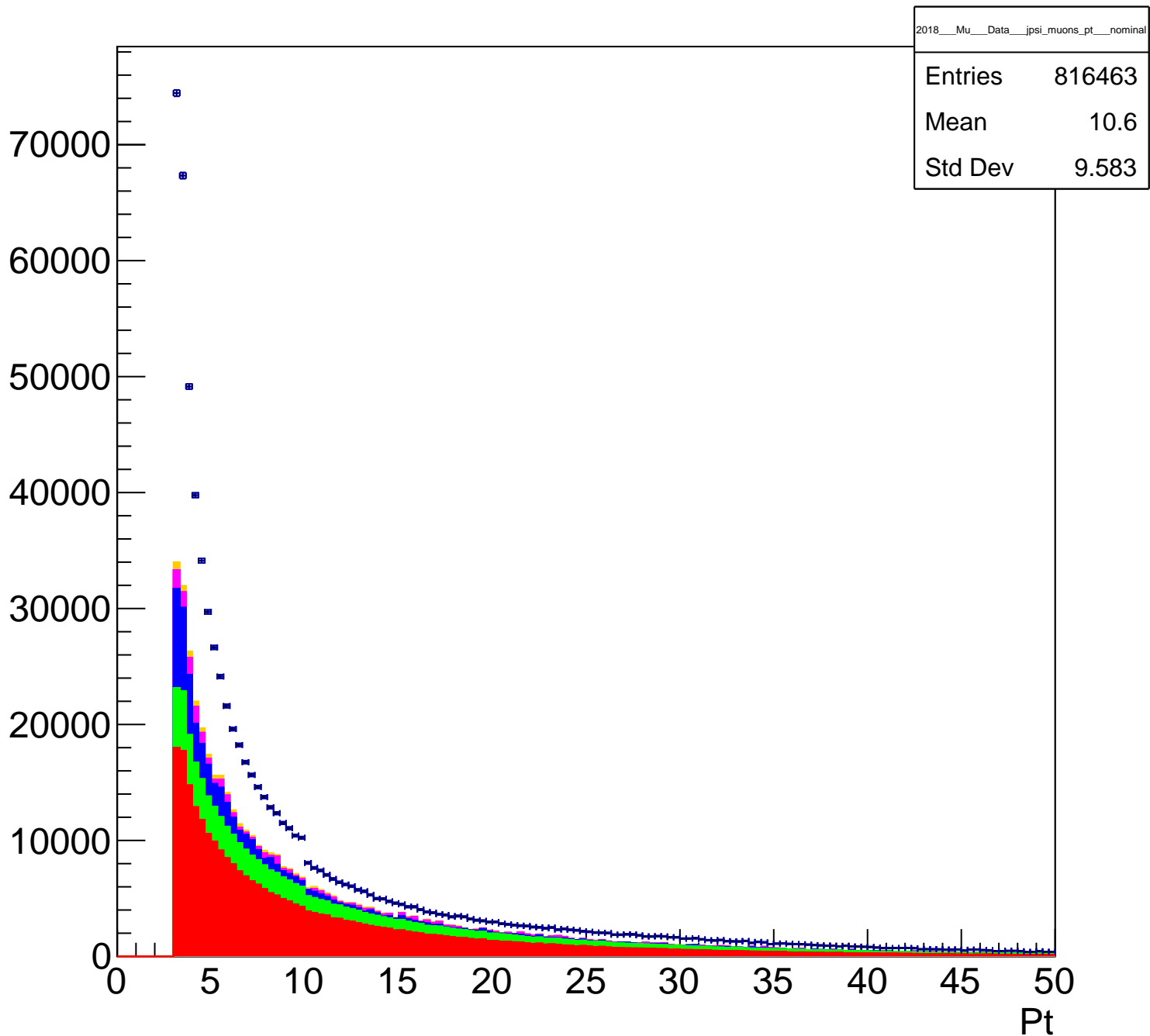


Ht

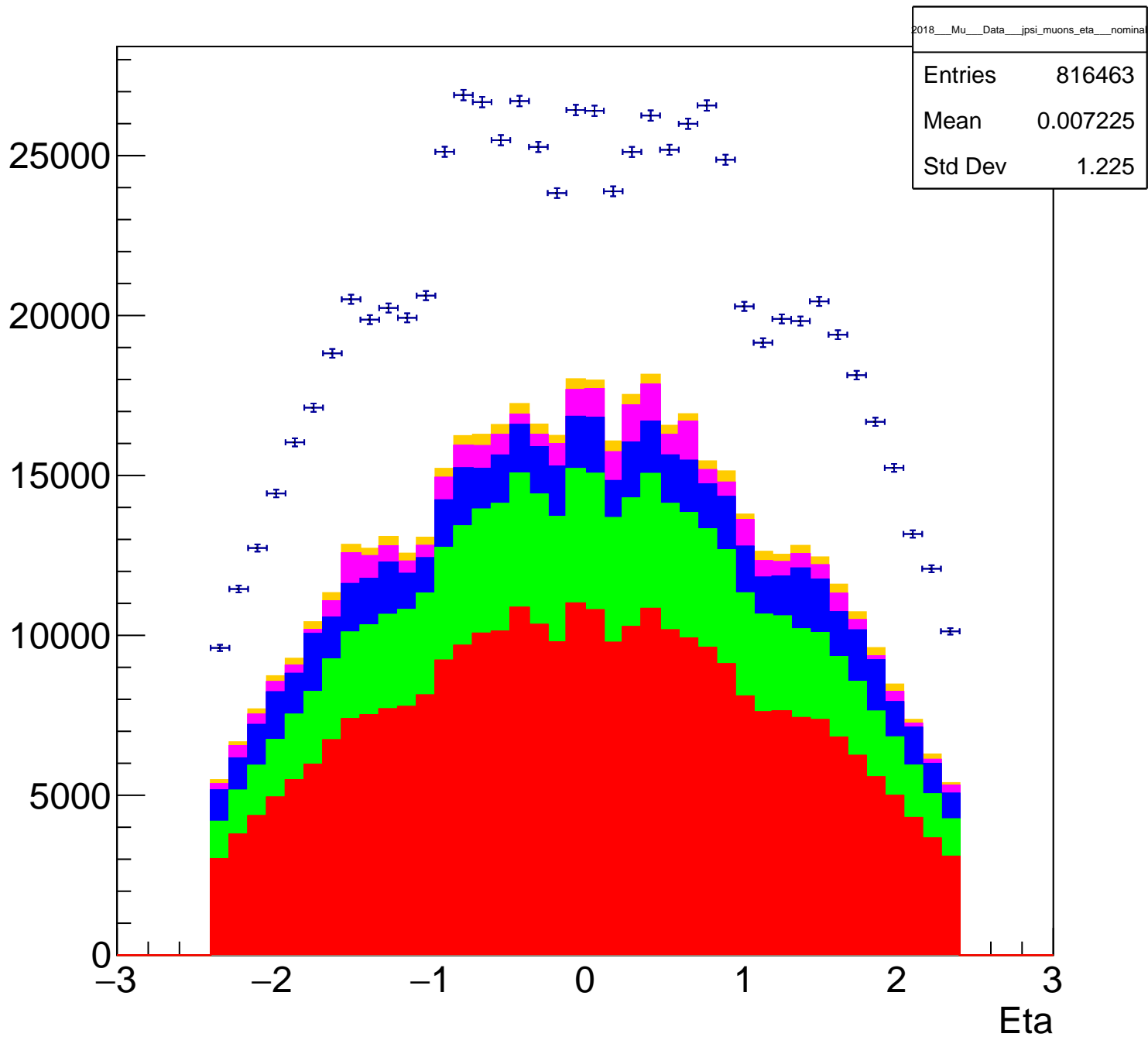
| | |
|-----------------------------|--------|
| 2018__Mu__Data__ht__nominal | |
| Entries | 392050 |
| Mean | 231.9 |
| Std Dev | 163.9 |



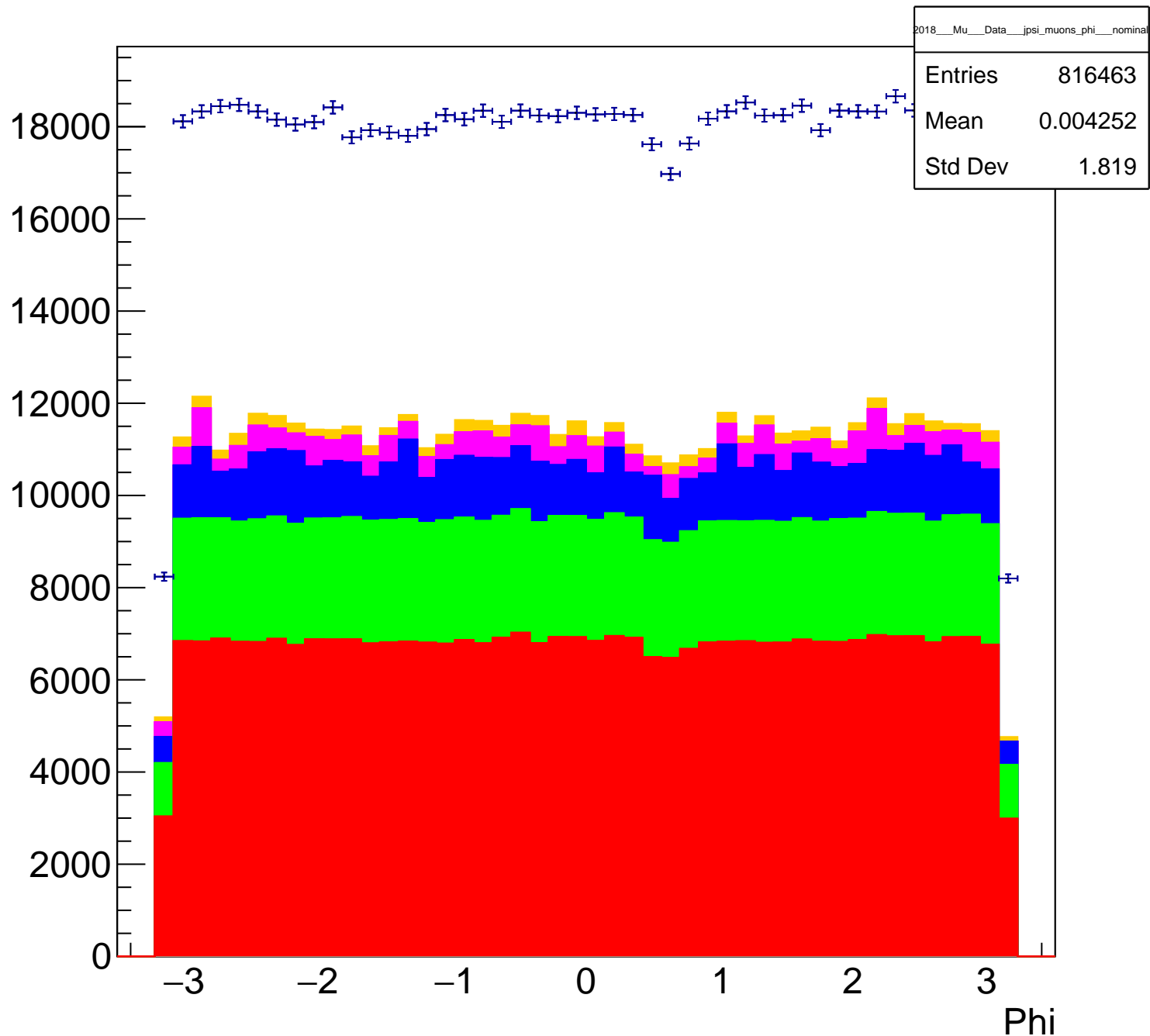
Transverse Momentum for JPsi Muons



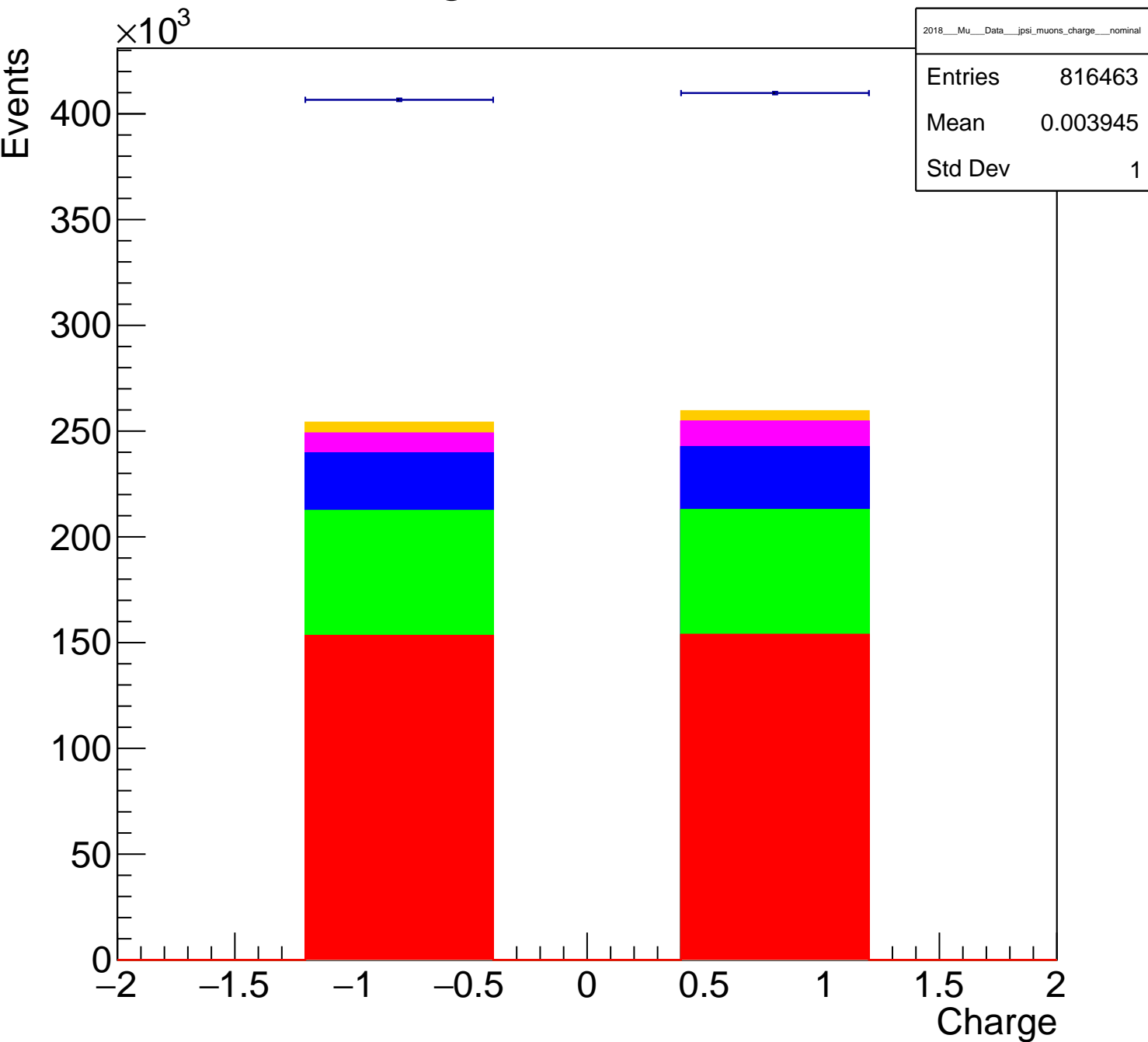
Pseudorapidity for JPsi Muons



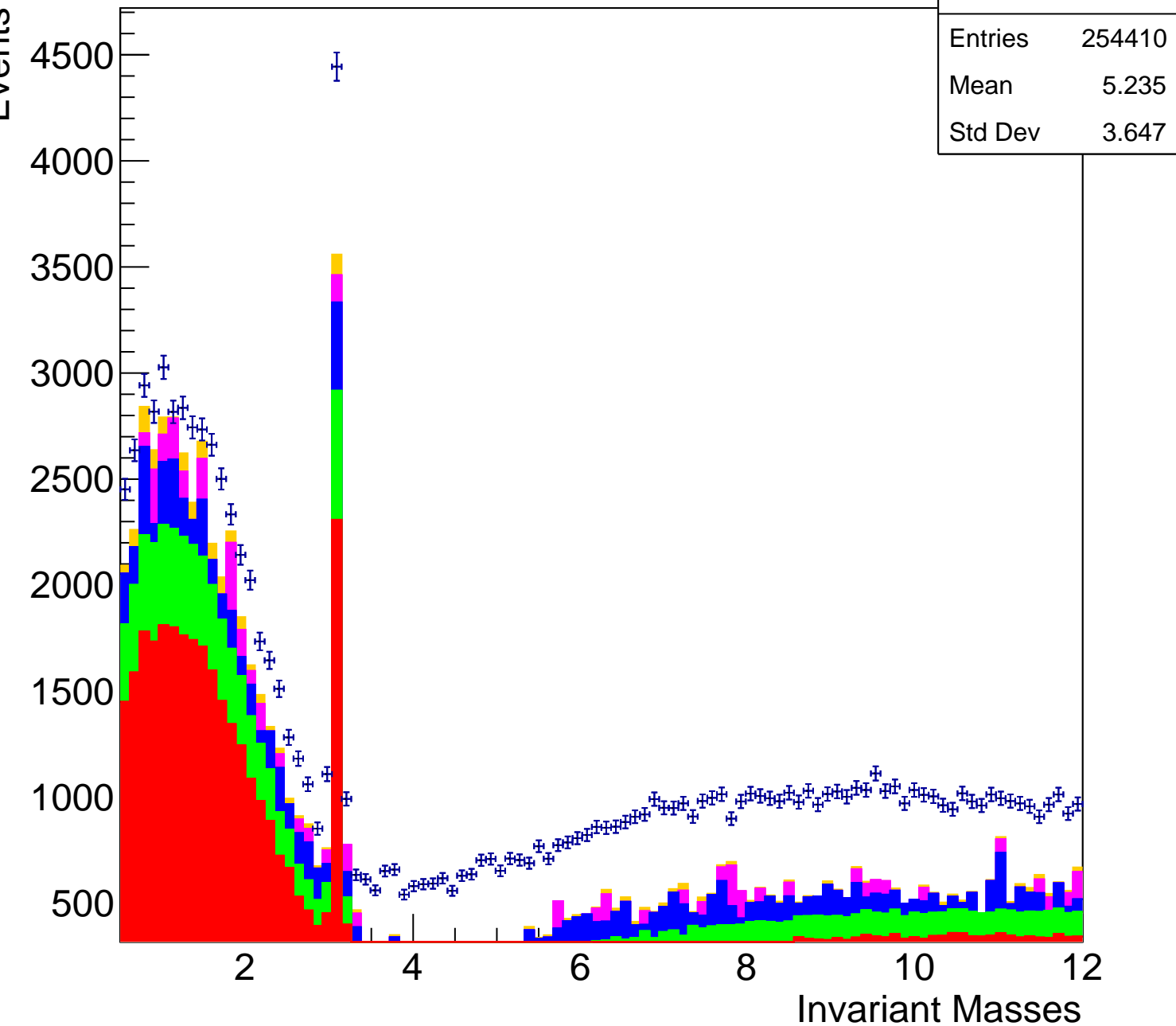
Angle for JPsi Muons



Charge of JPsi Muons

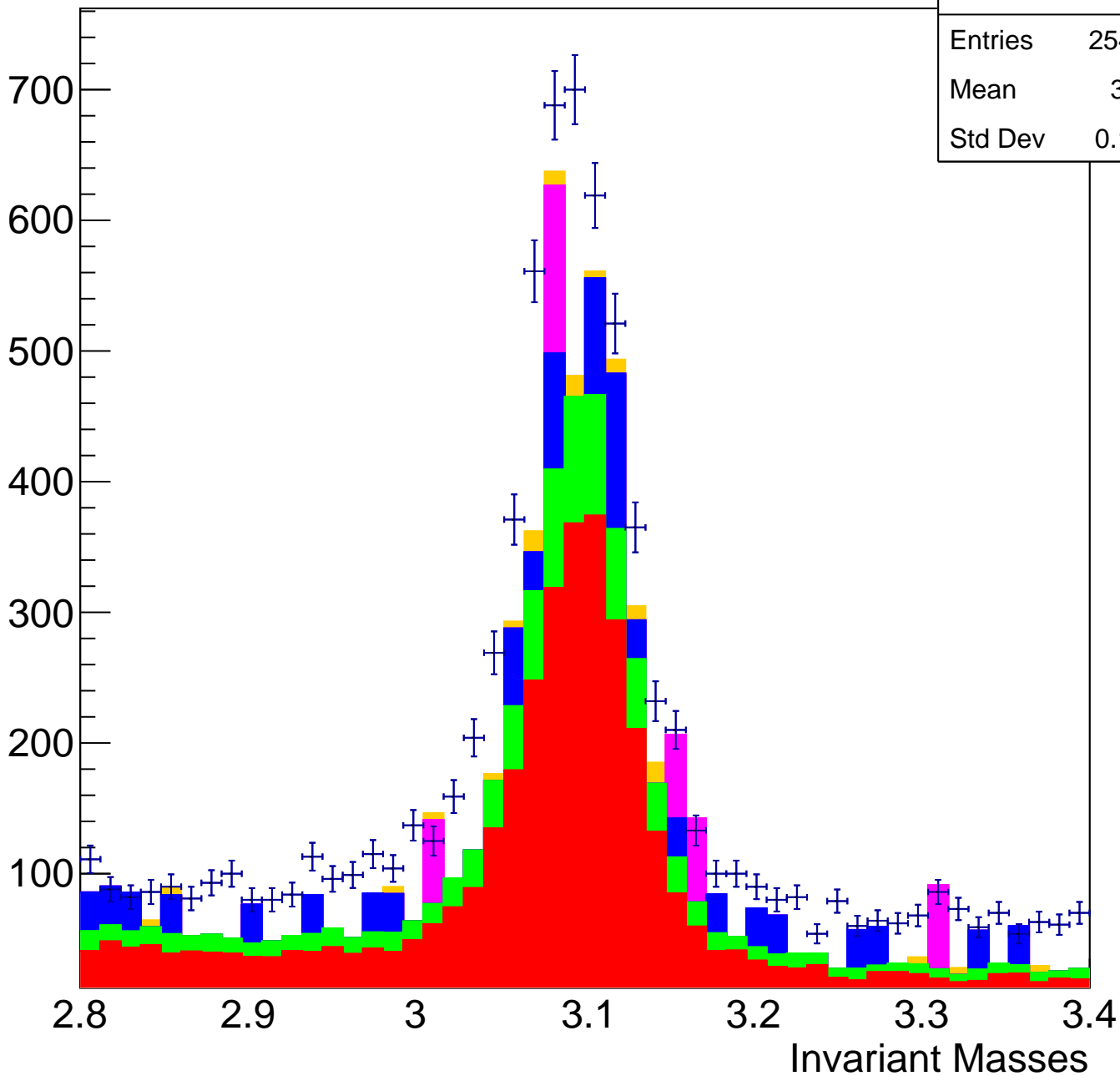


Invariant Masses for J/Psi Candidate Muons (Oppositely Charged)



Invariant Masses for J/Psi Candidate Muons (Oppositely Charged)

Events

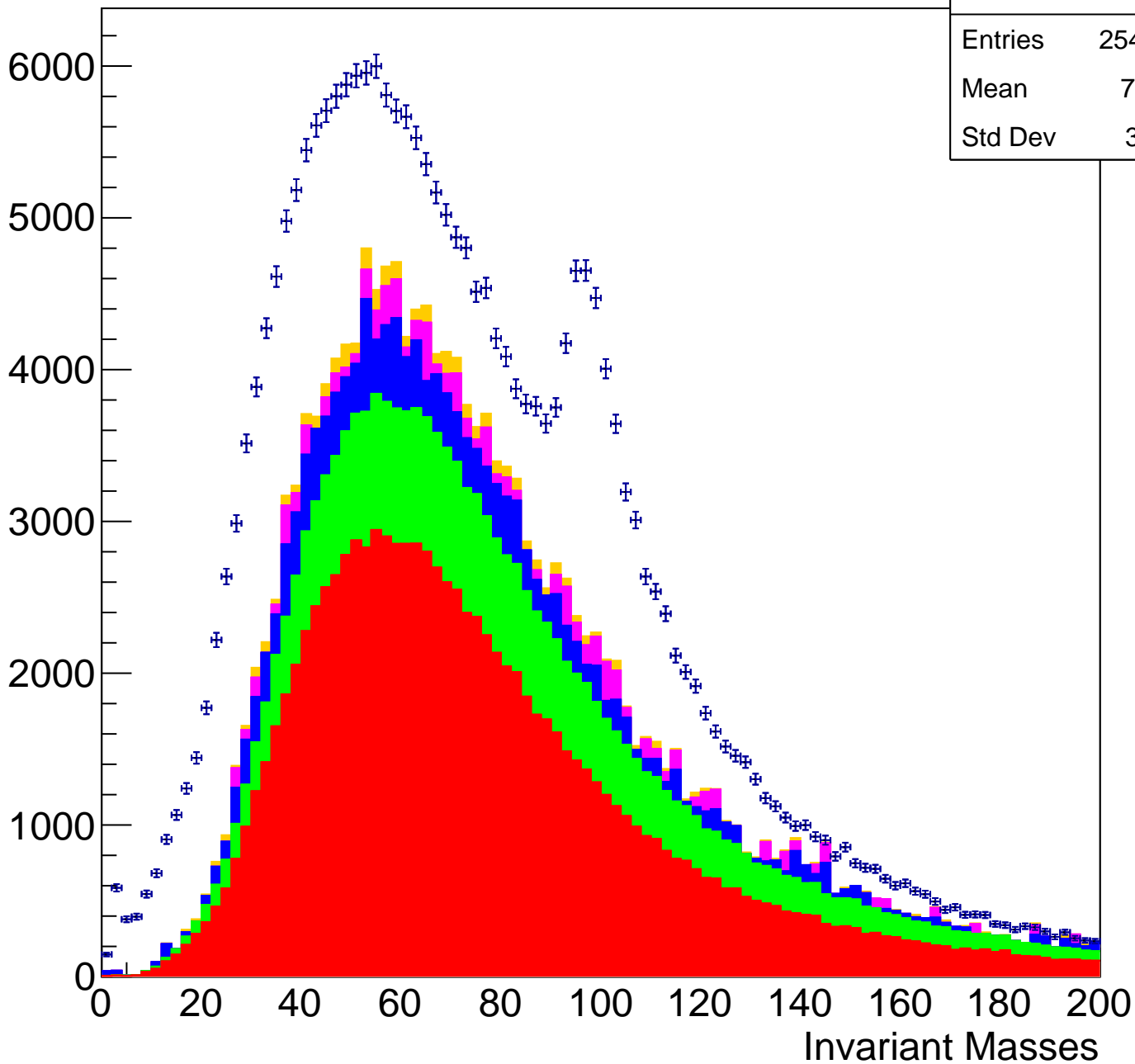


Invariant Masses for J/Psi Candidate And Isolated Muons

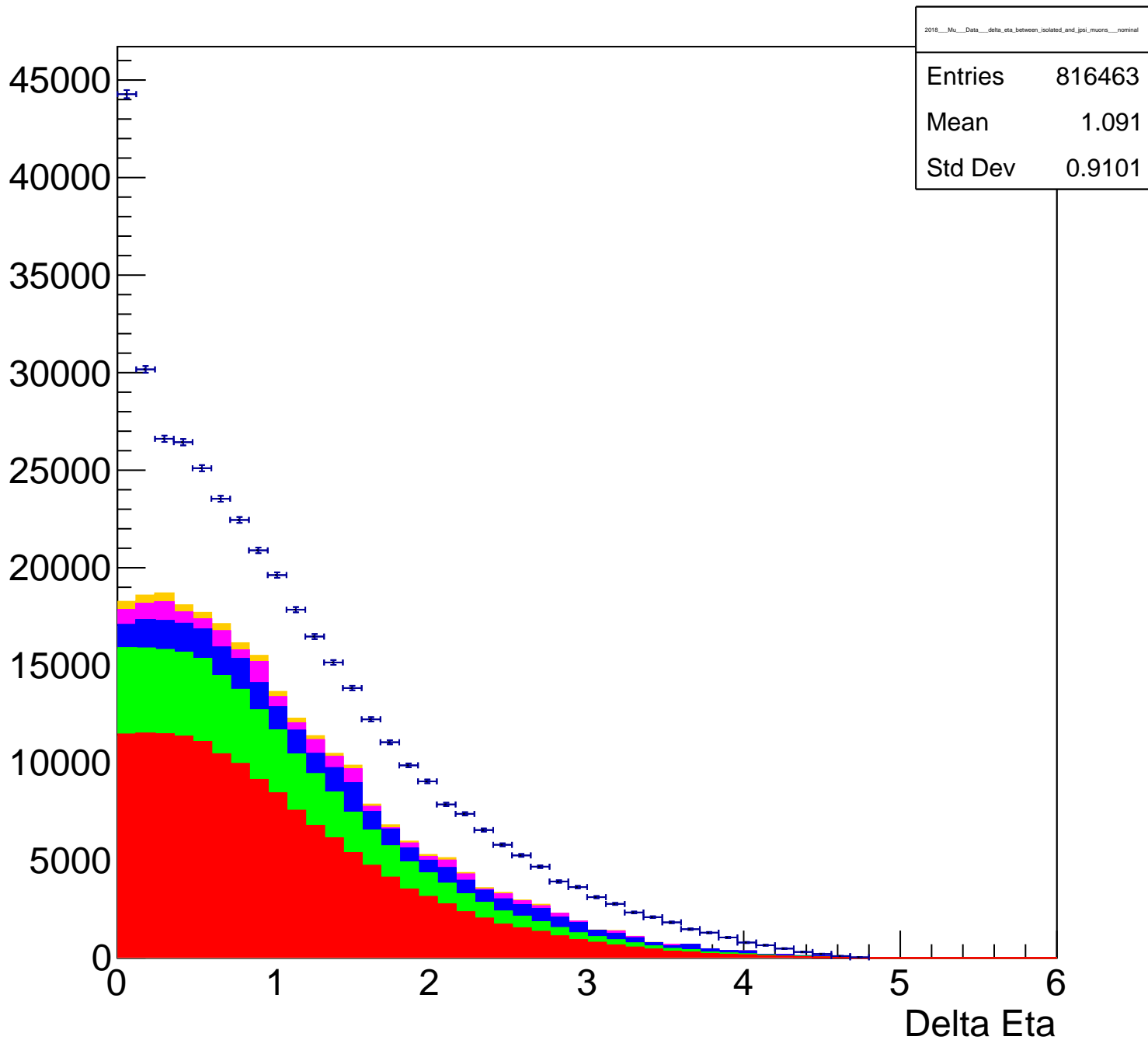
Events

2018_Mu_Data_invariant_mass_psi_and_isolated_muons_nominal

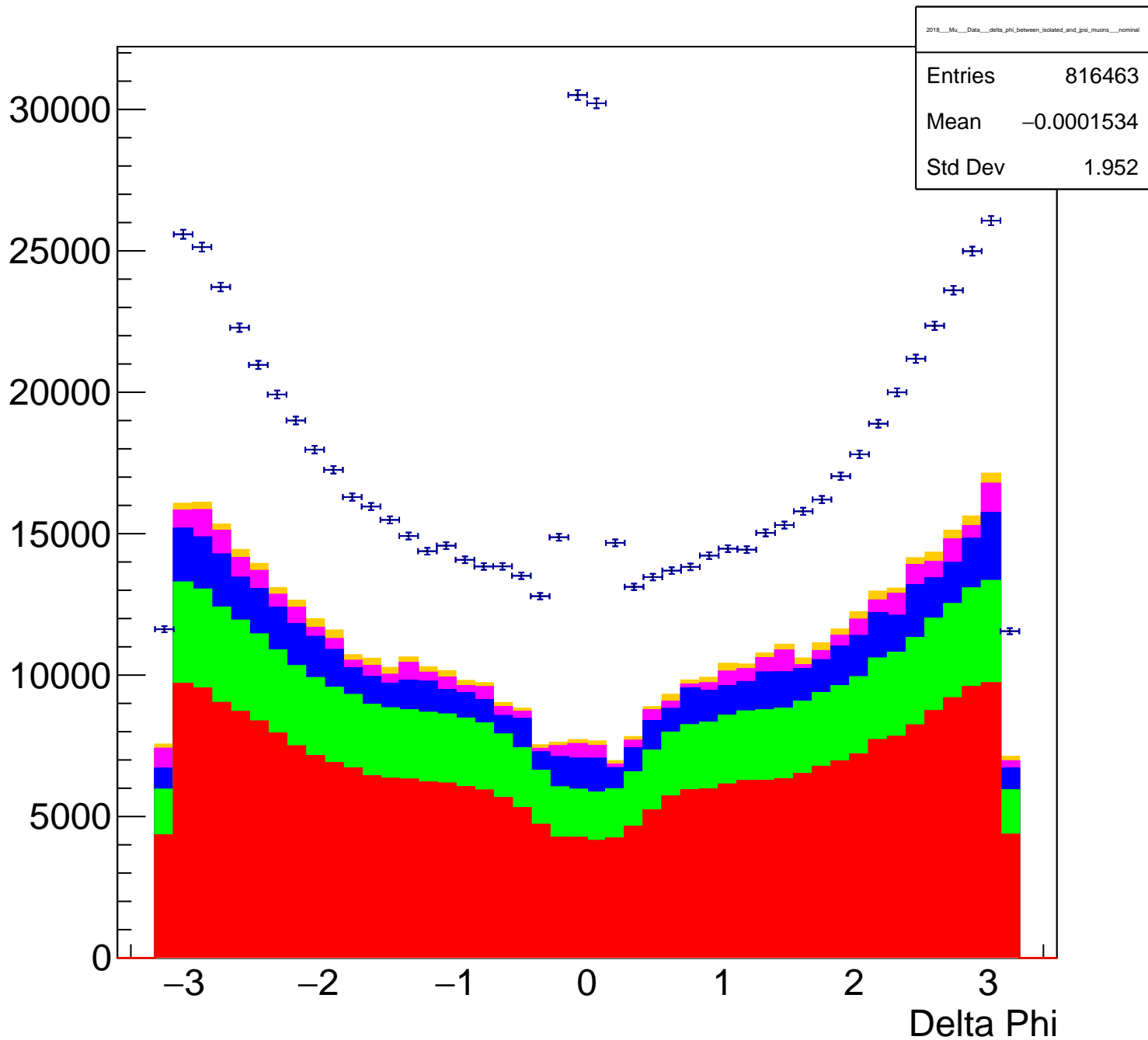
| | |
|---------|--------|
| Entries | 254410 |
| Mean | 74.59 |
| Std Dev | 37.21 |



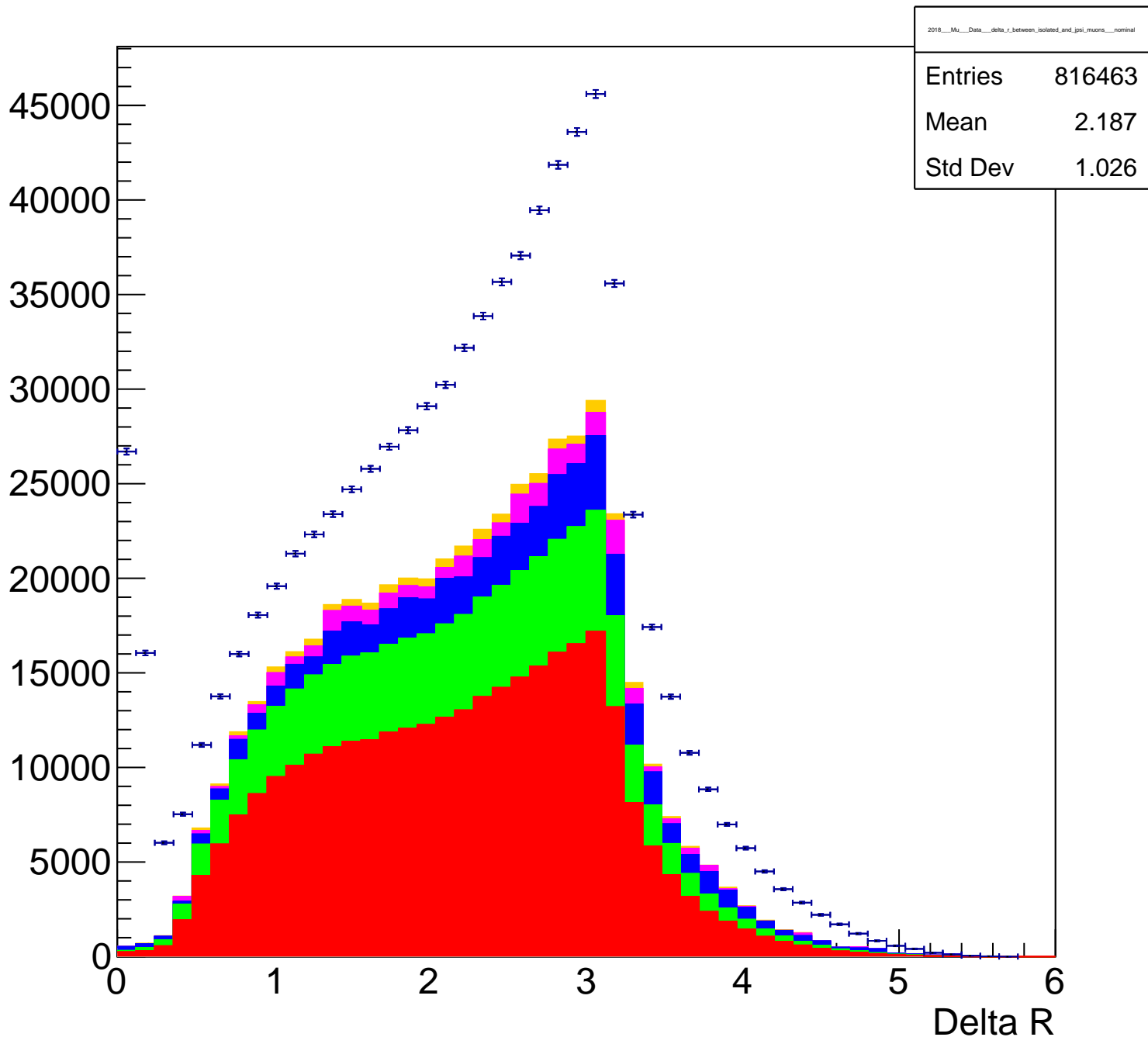
Delta Eta for Isolated Muon - JPsi Muons



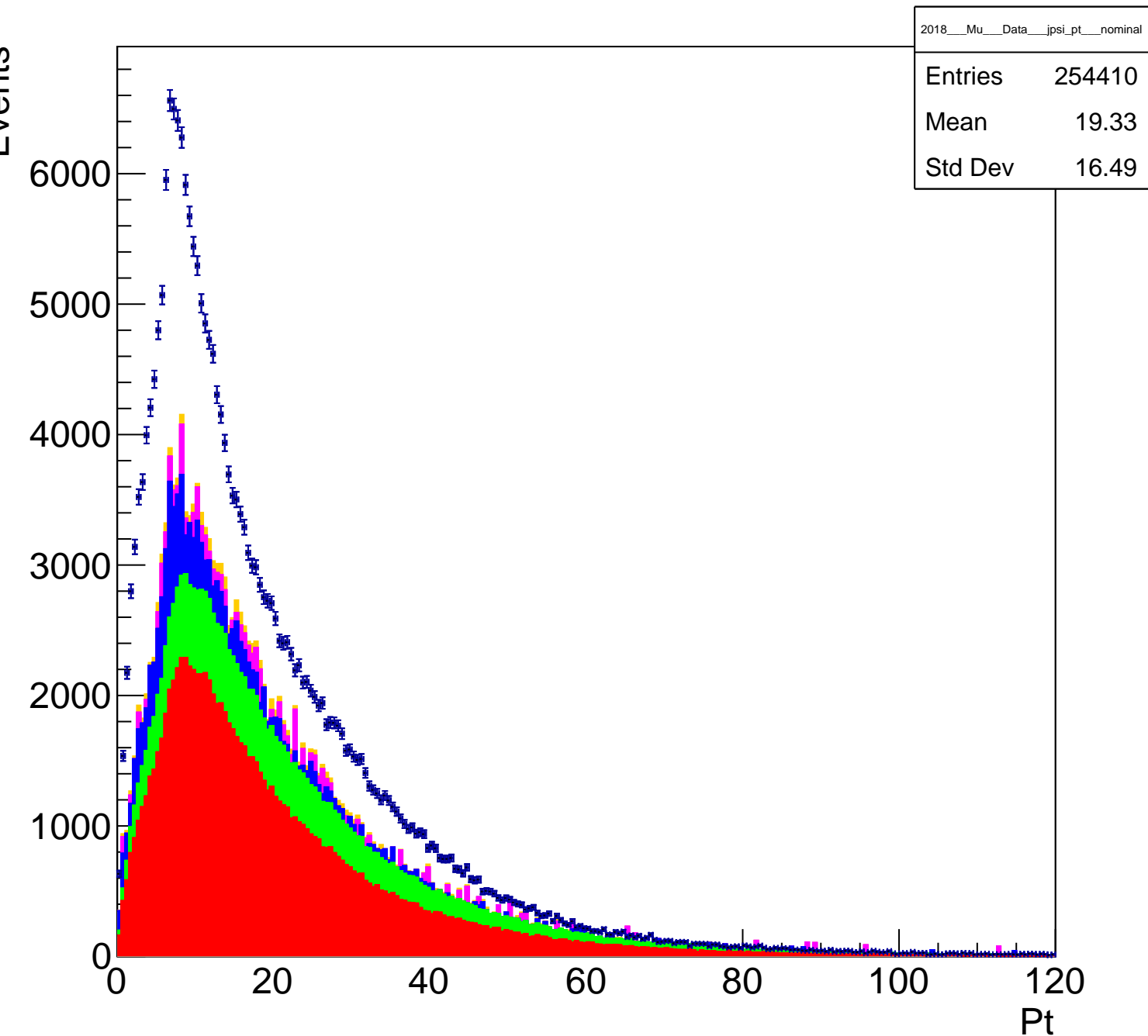
Delta Phi for Isolated Muon - JPsi Muons



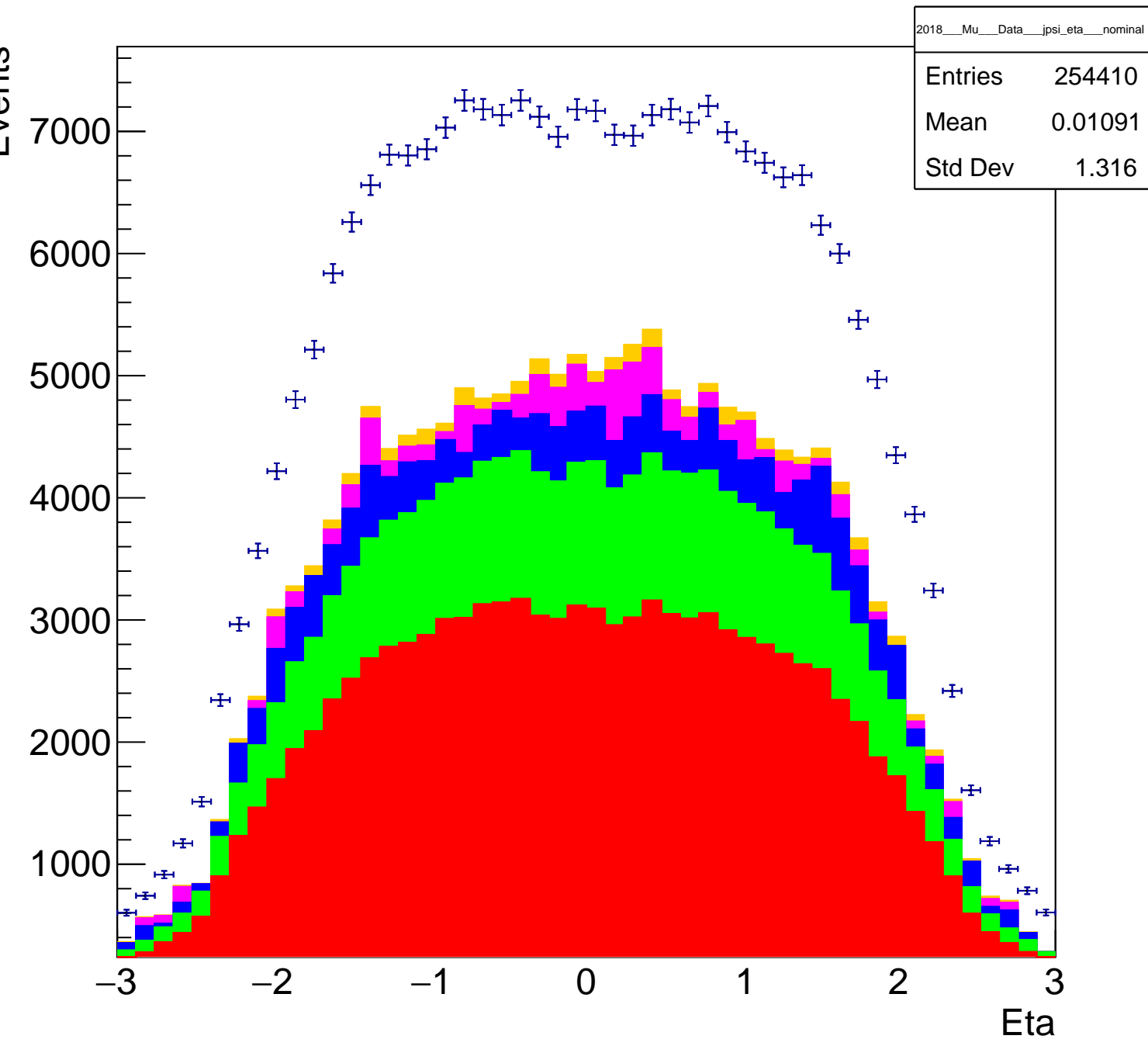
Delta R for Isolated and JPsi Muons



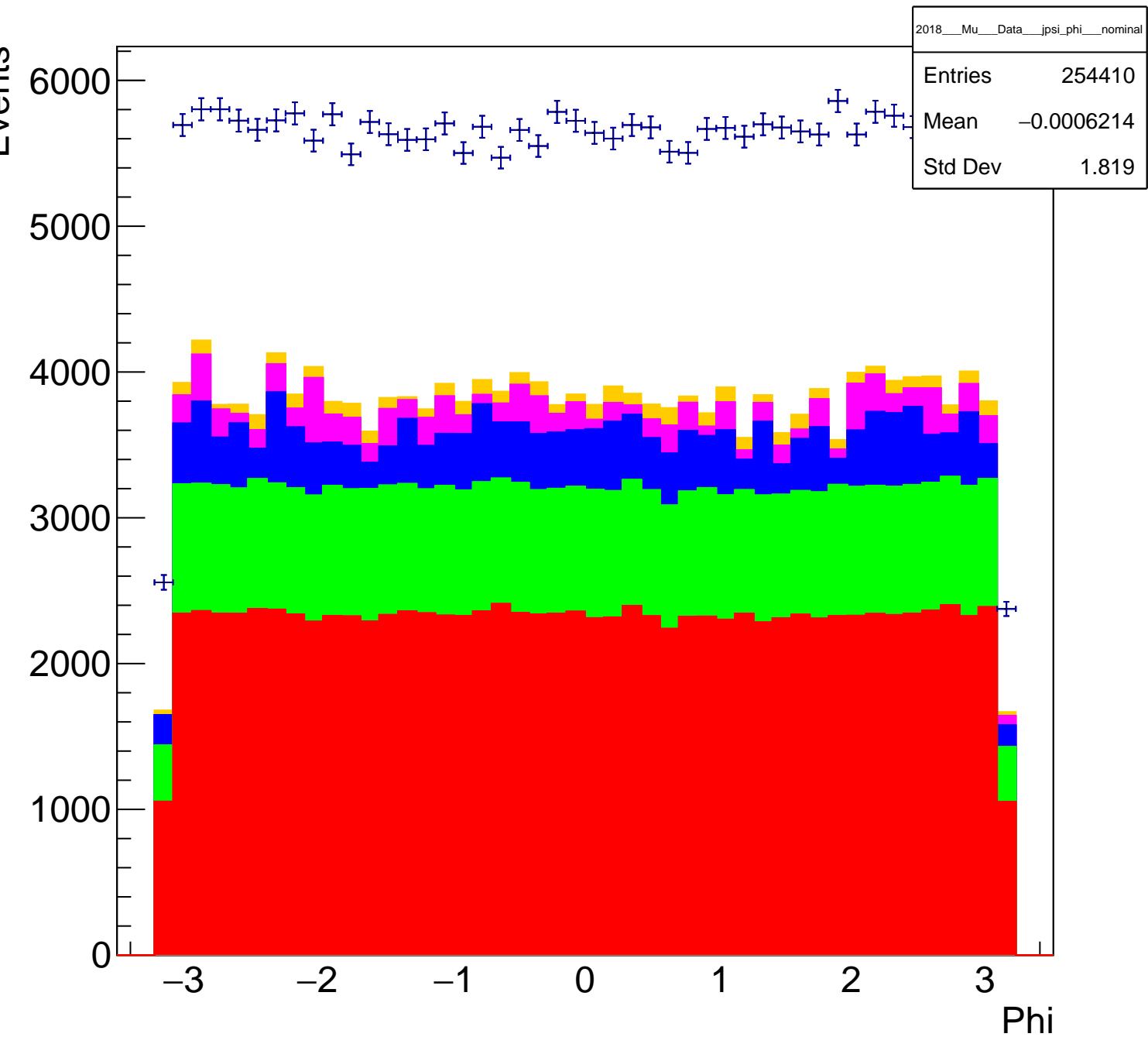
Transverse Momentum for JPsi



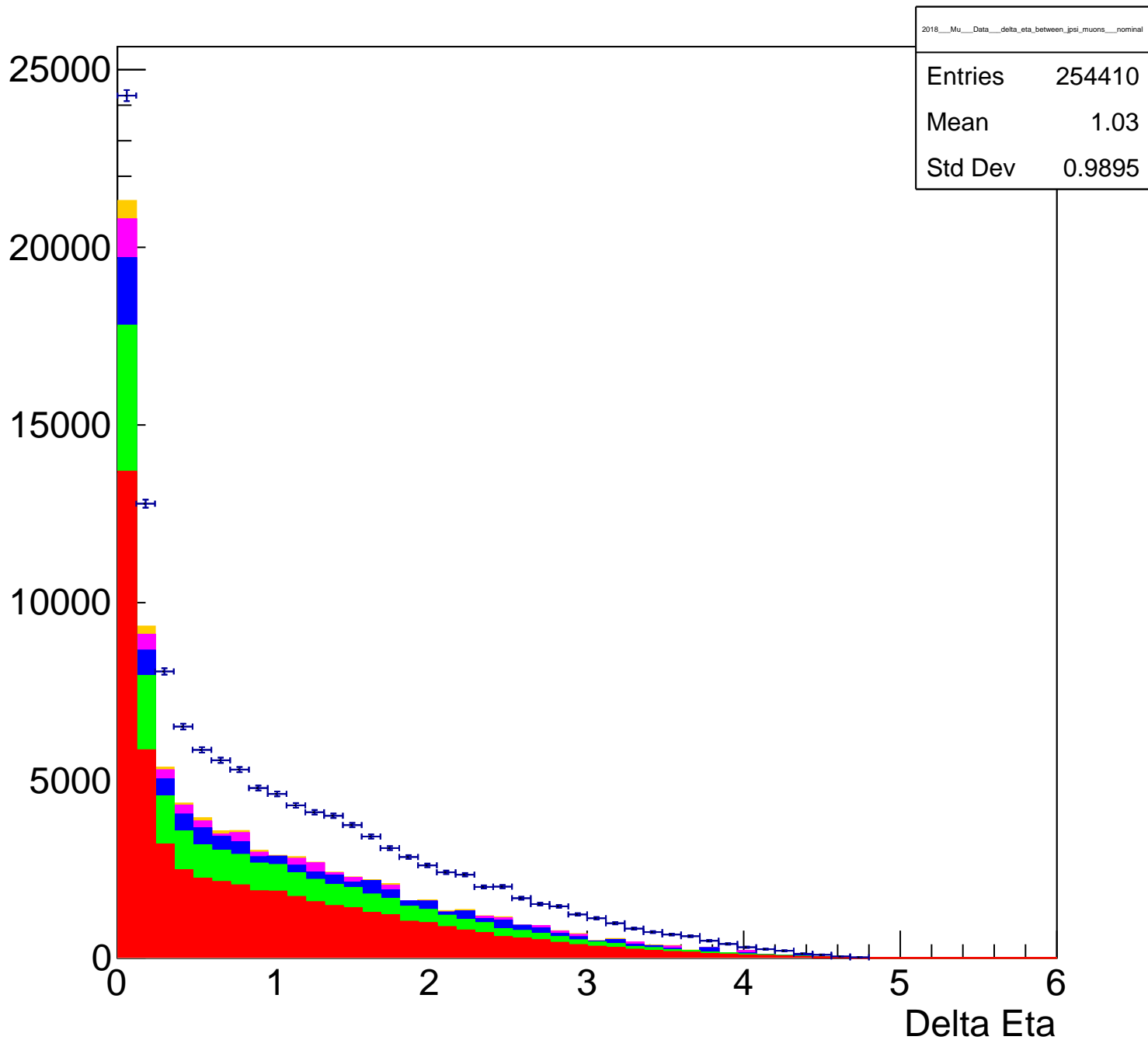
Pseudorapidity for JPsi



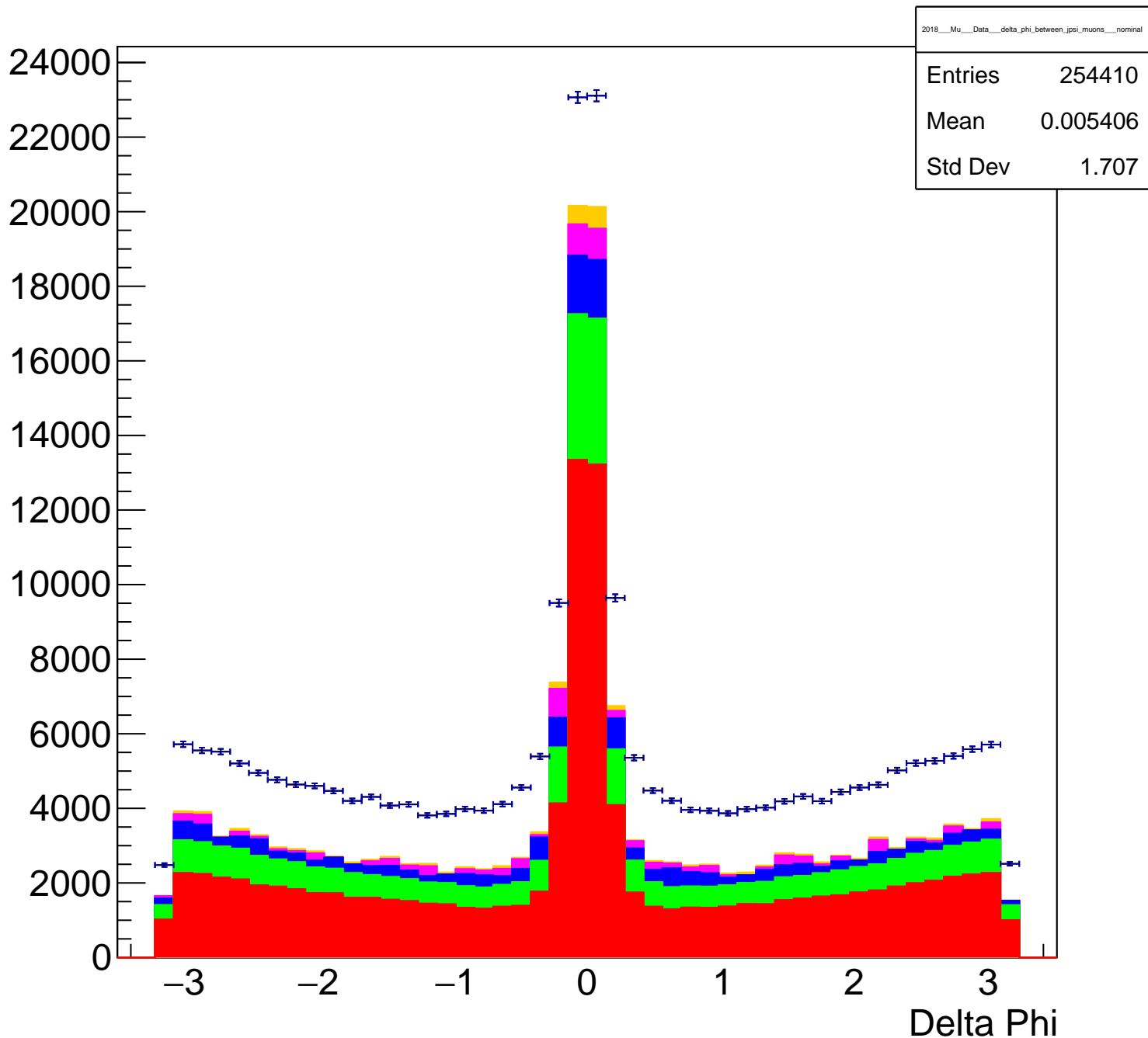
Angle for JPsi



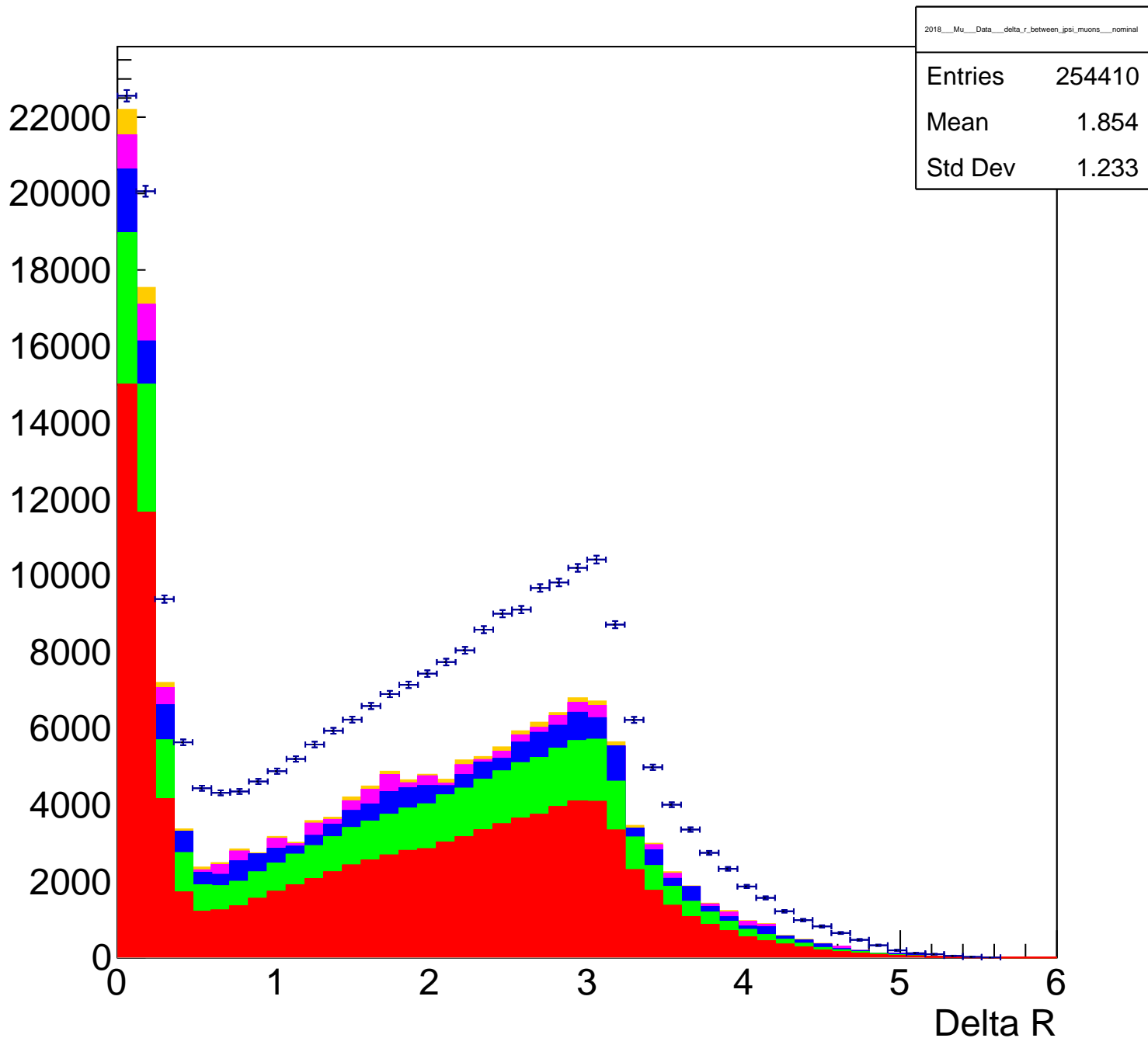
Delta Eta for JPsi Muons



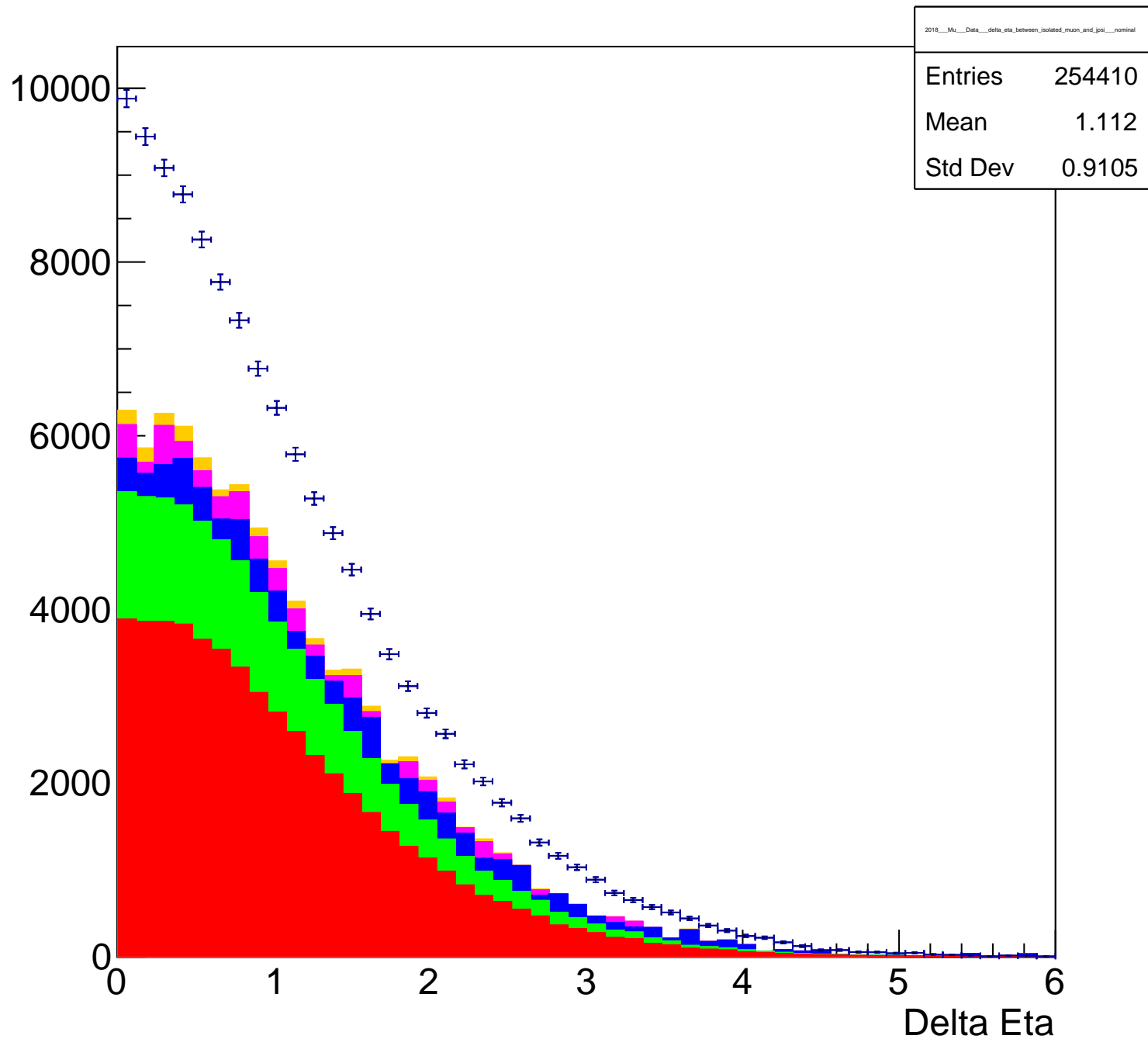
Delta Phi for JPsi Muons



Delta R for JPsi Muons

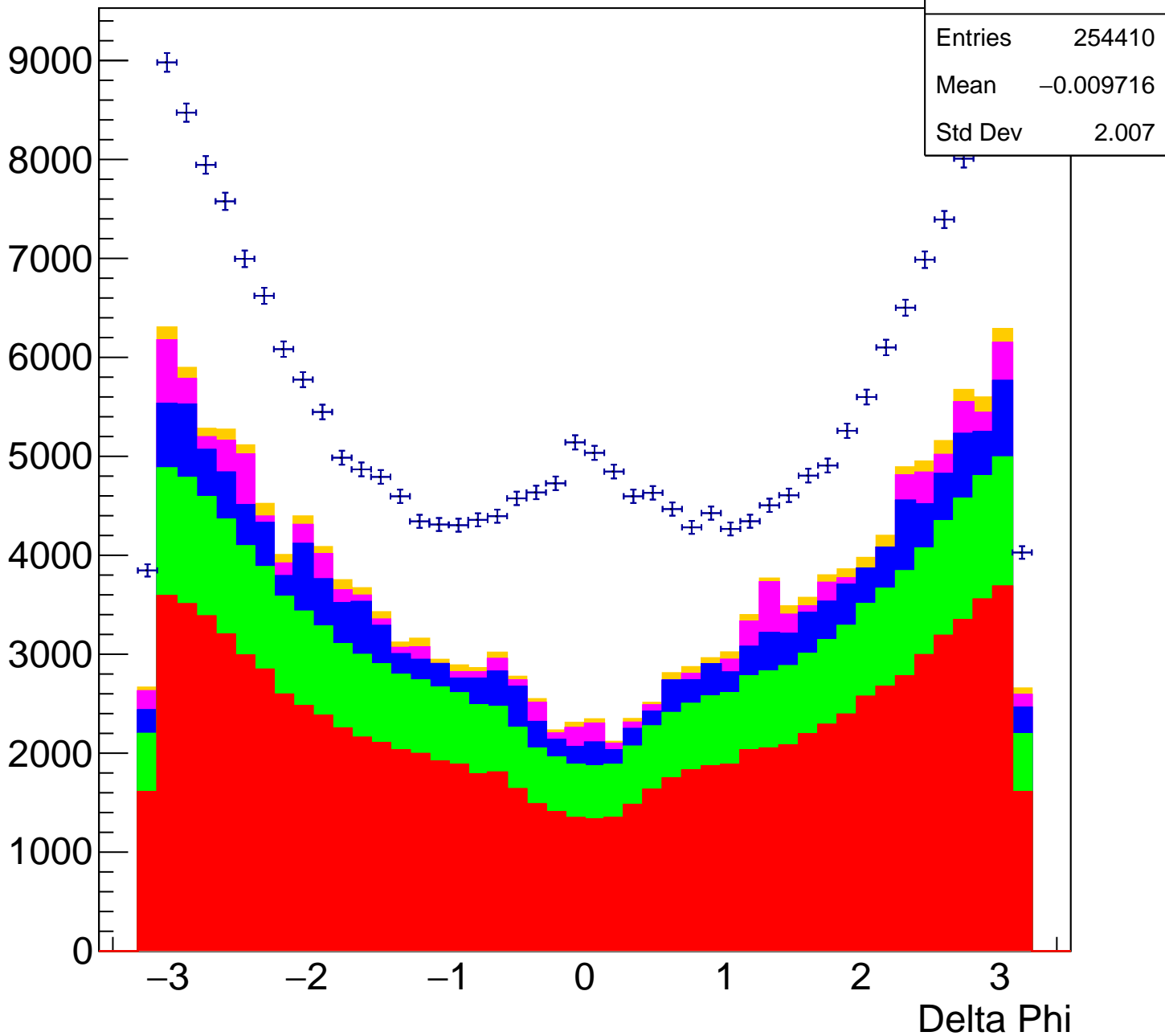


Delta Eta for Isolated Muon And JPsi

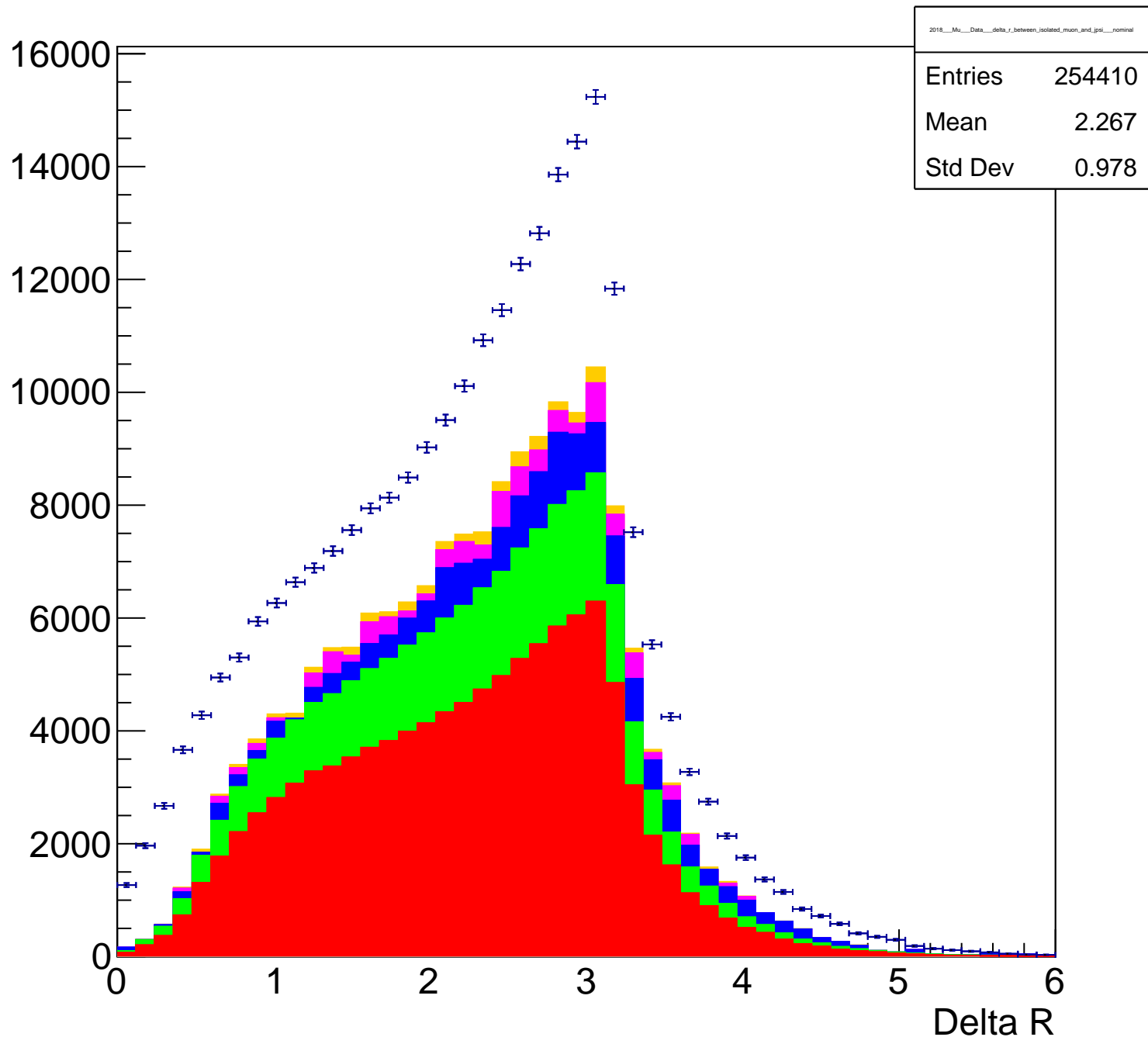


Delta Phi for Isolated Muon And JPsi

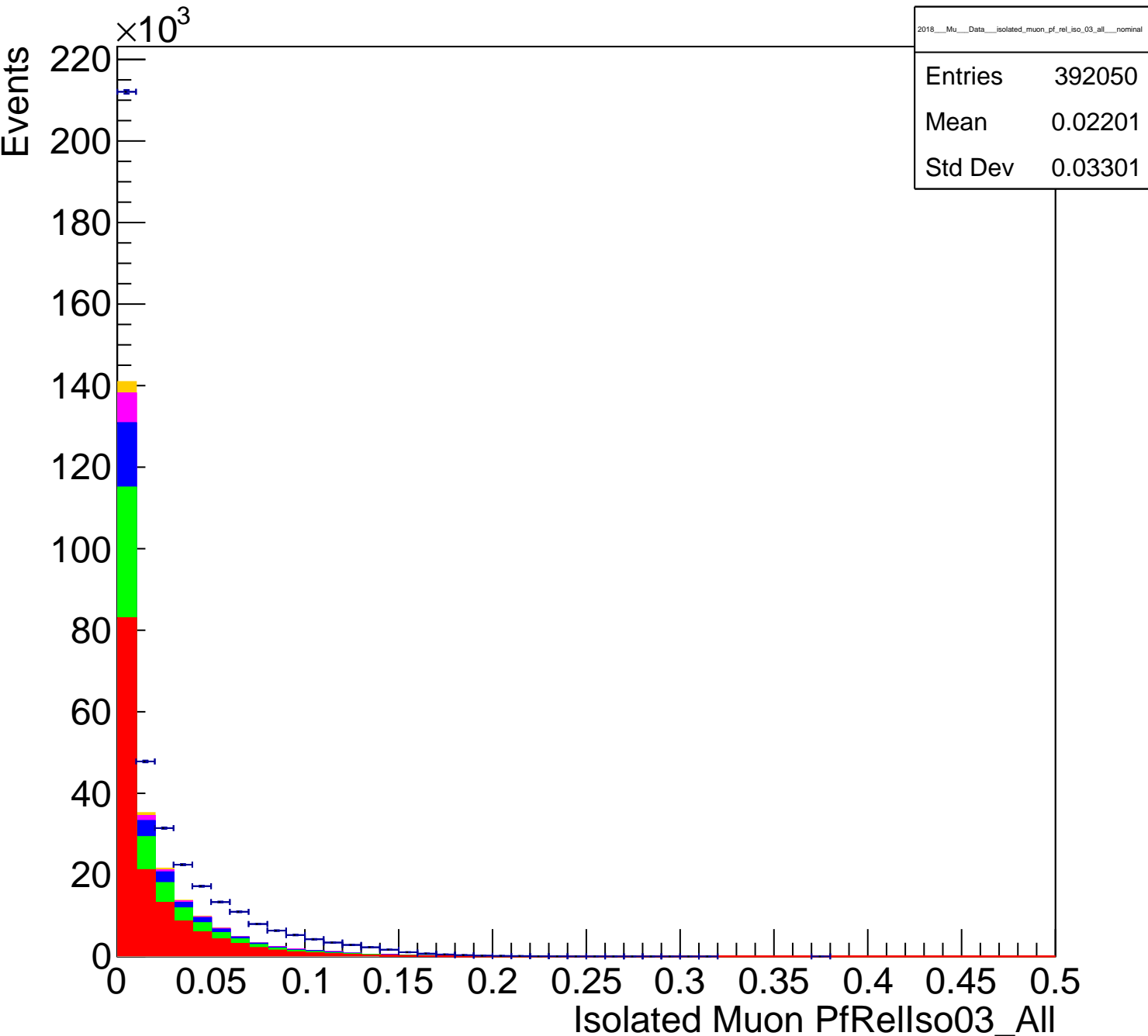
Events



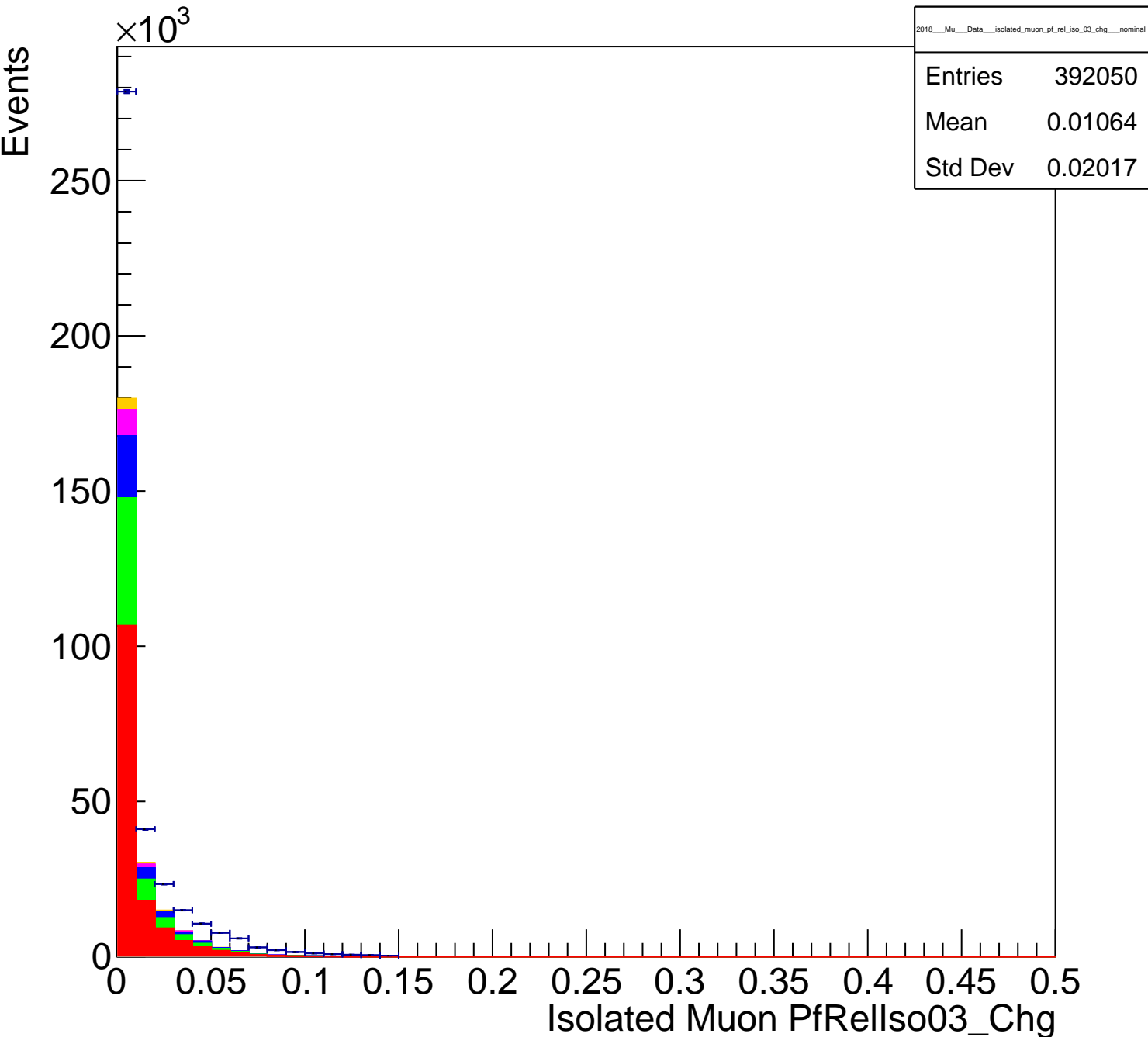
Delta R for Isolated Muon And JPsi



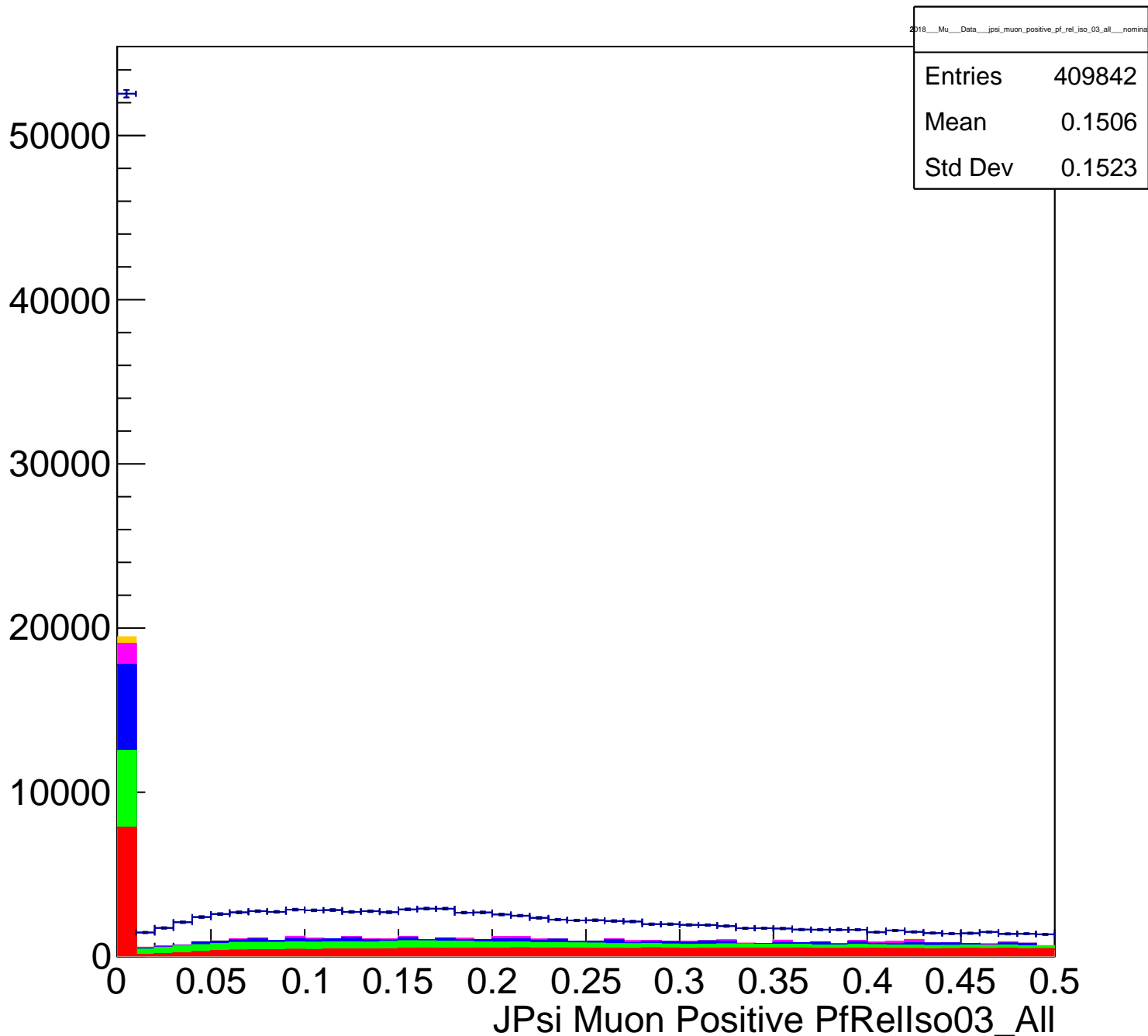
Isolated Muon PfRelIso03_All



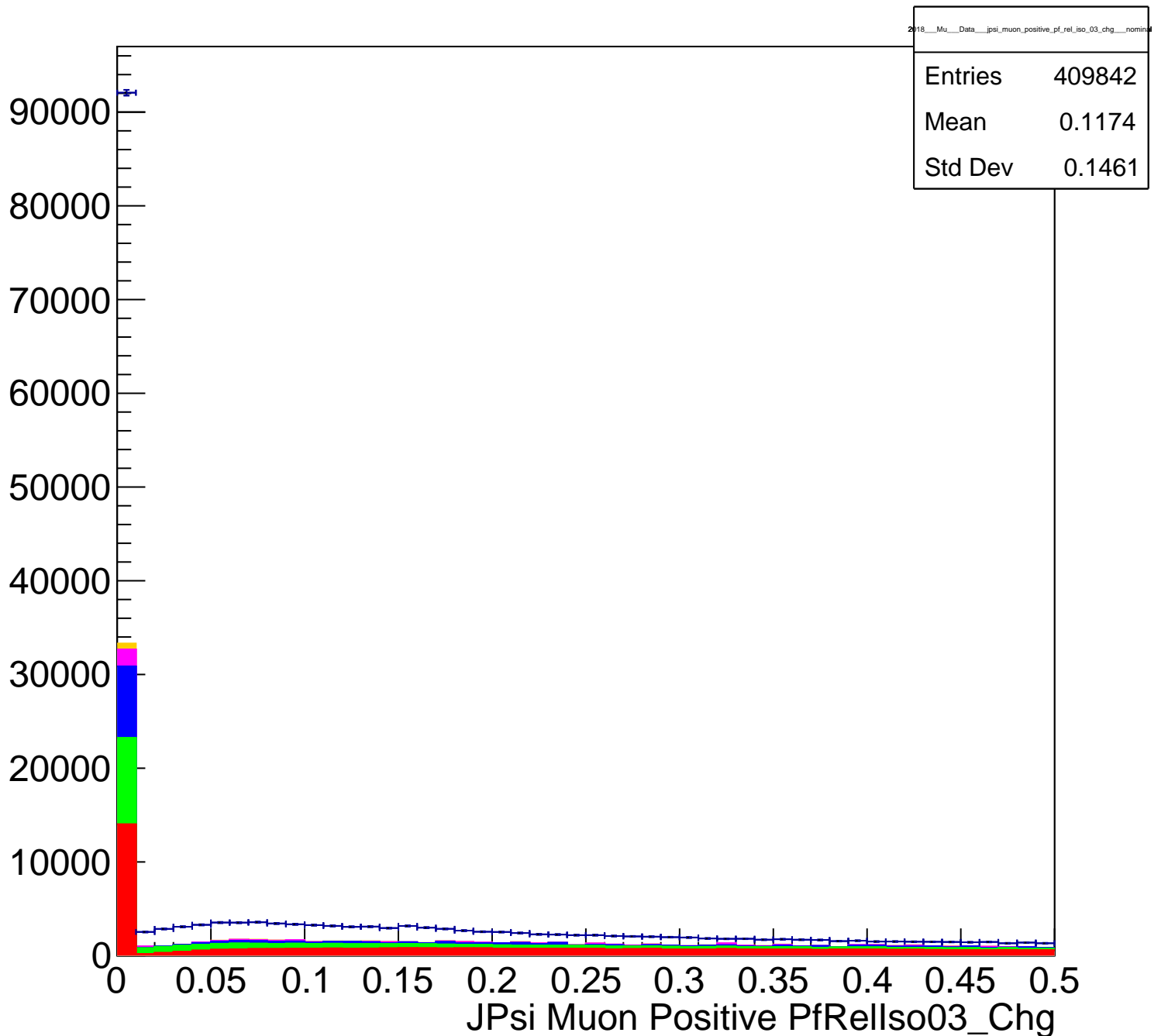
Isolated Muon PfRelIso03_Chg



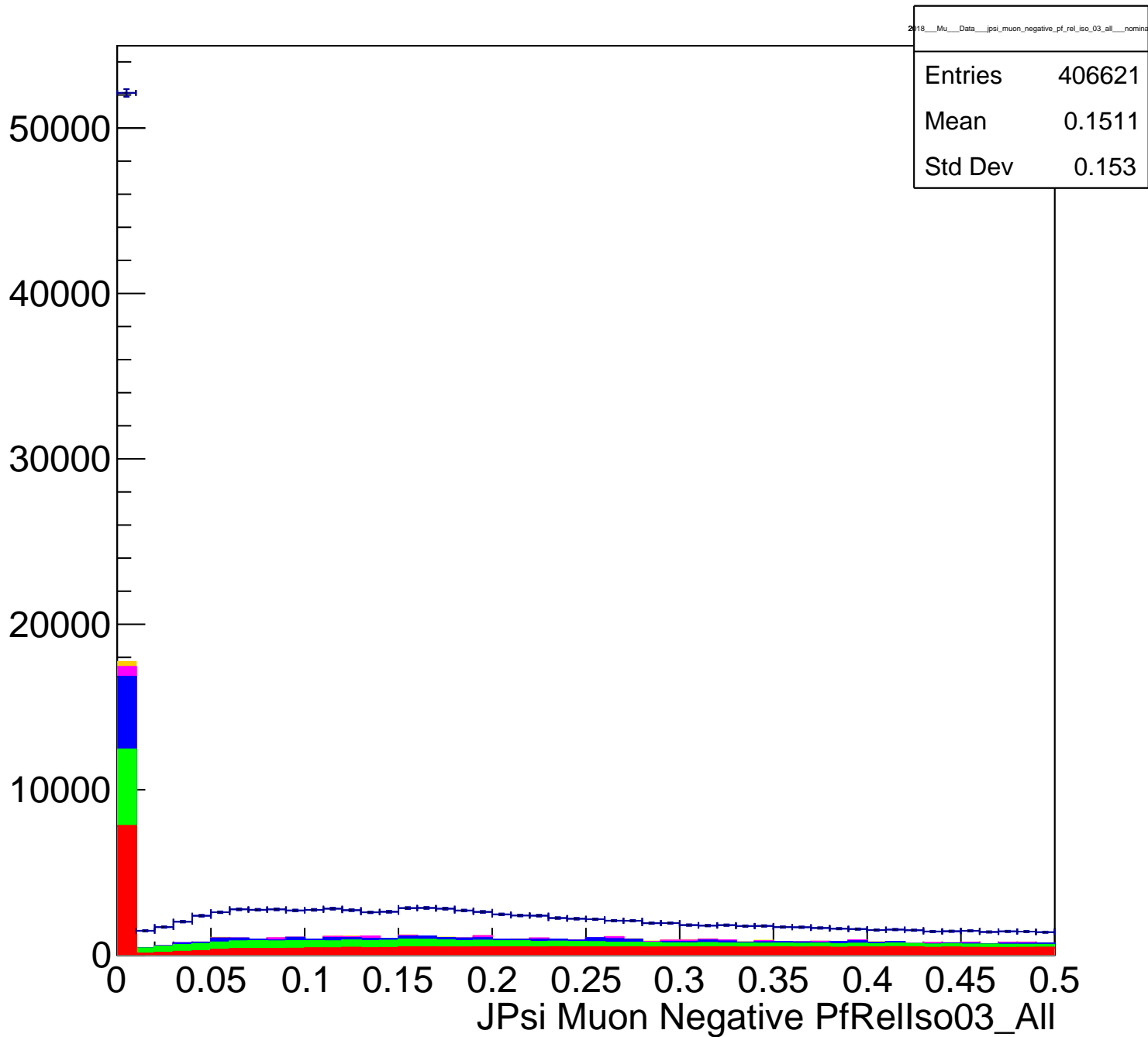
JPsi Muon Positive PfRelIso03_All



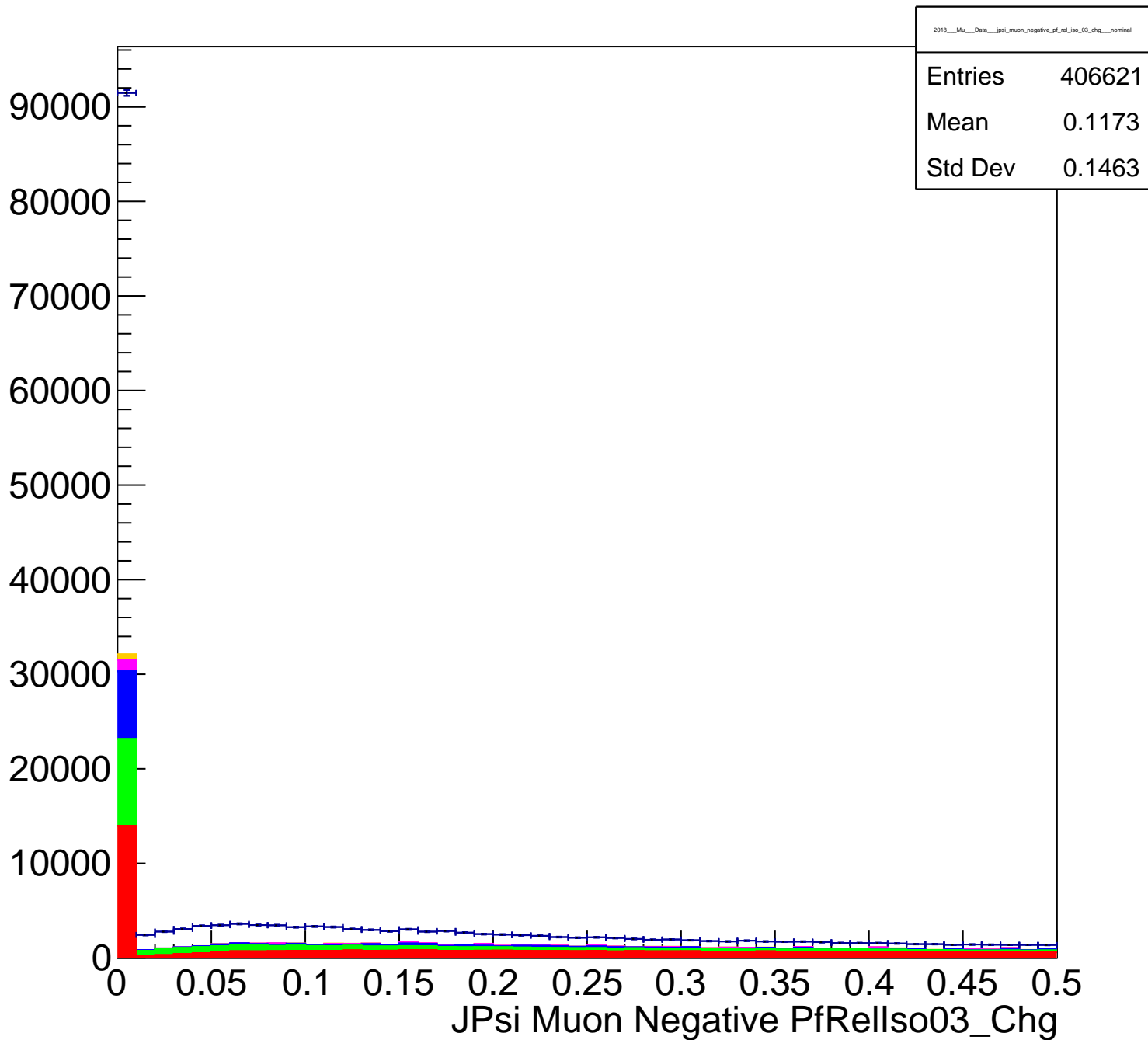
JPsi Muon Positive PfRelIso03_Chg



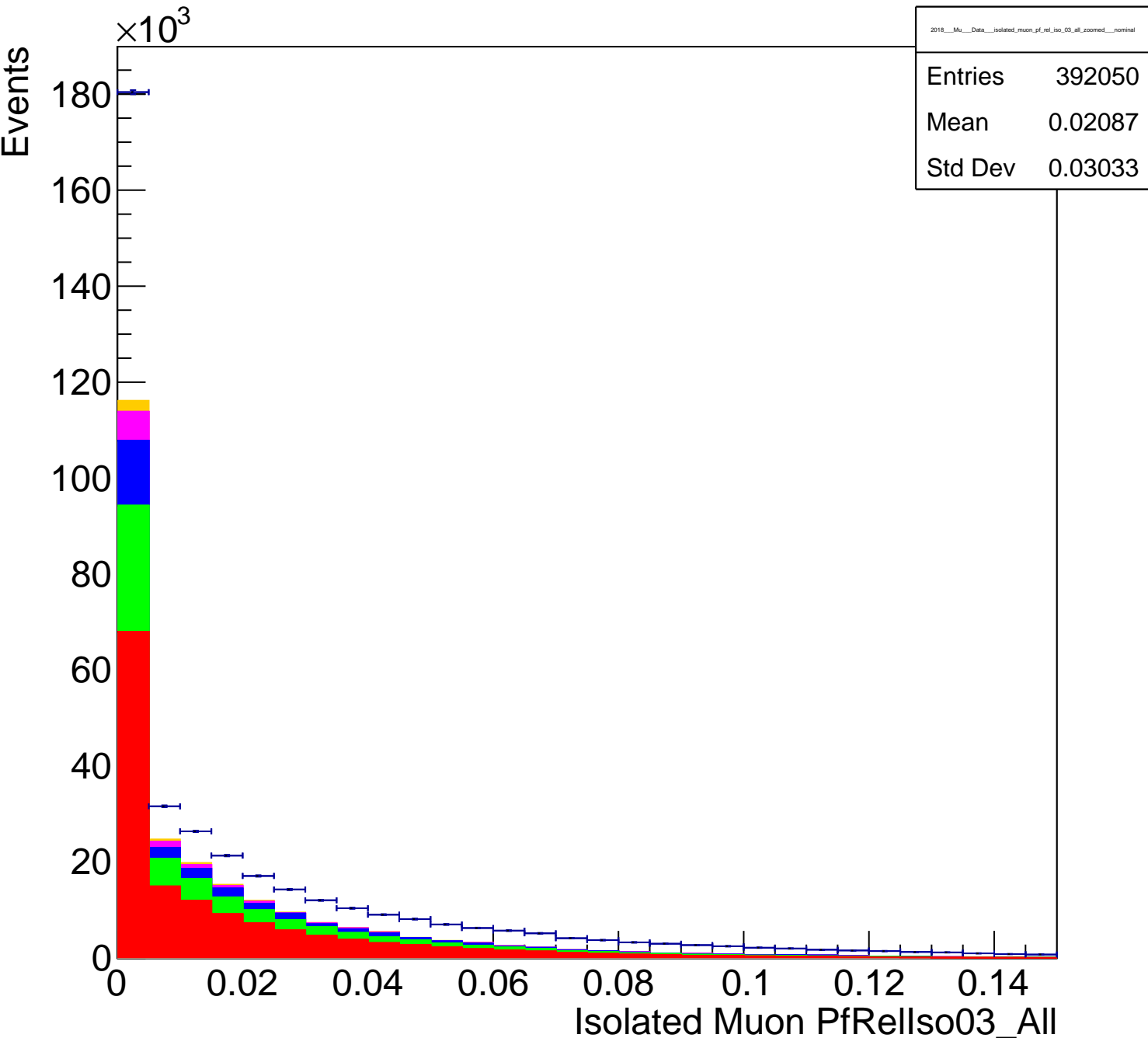
JPsi Muon Negative PfRelIso03_All



JPsi Muon Negative PfRelIso03_Chg

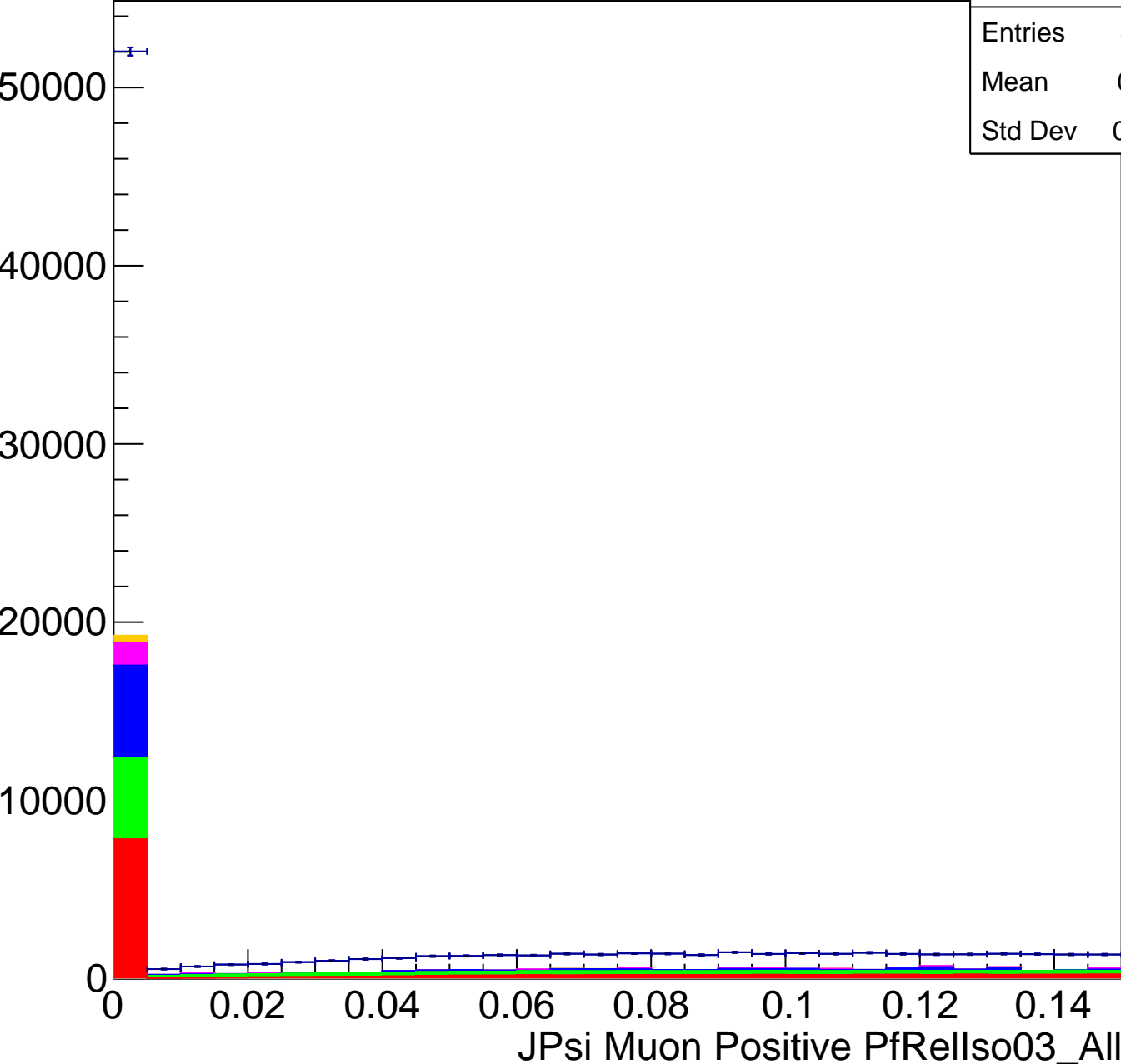


Isolated Muon PfRelIso03_All Zoomed

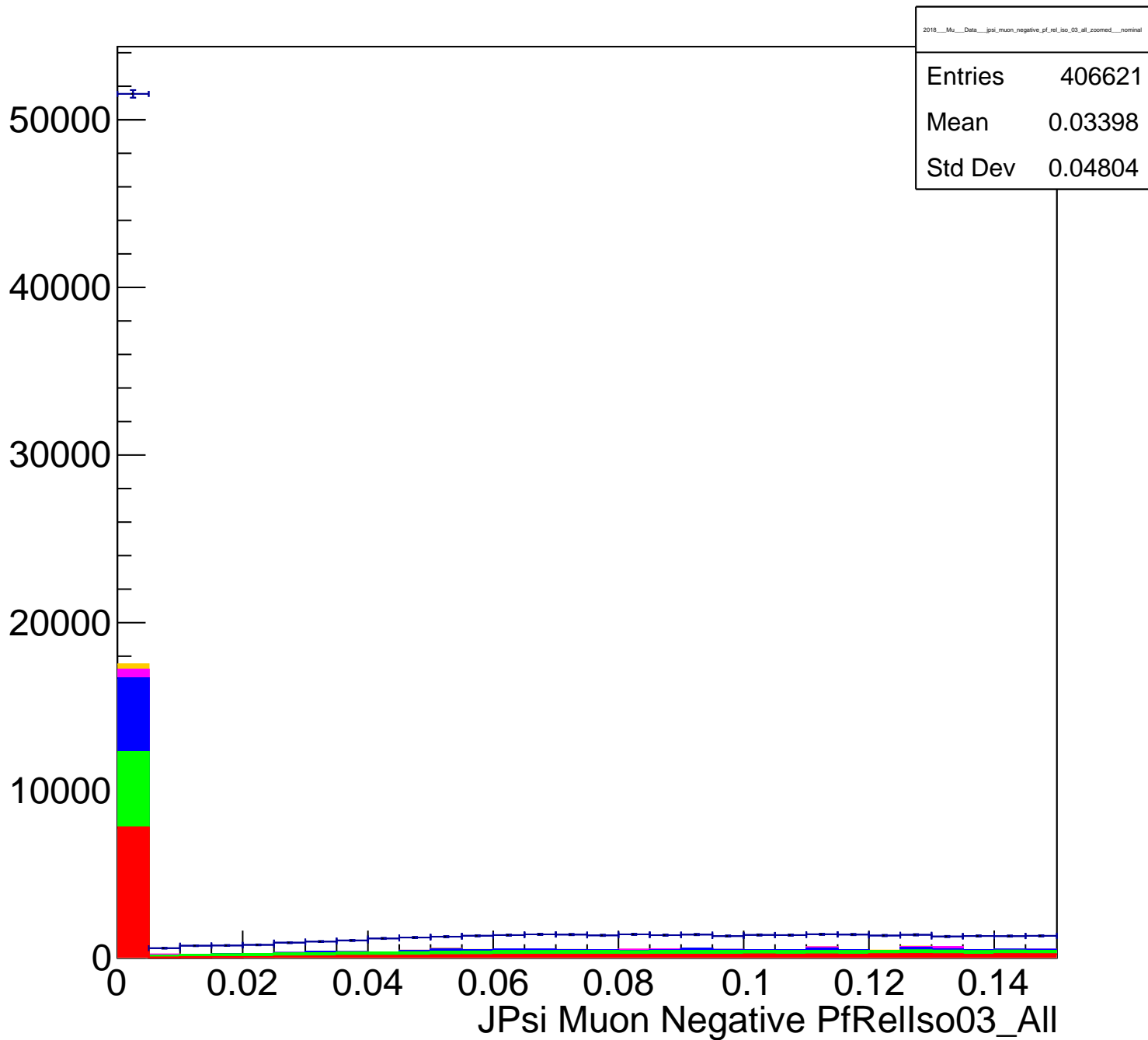


JPsi Muon Positive PfRellso03_All Zoomed

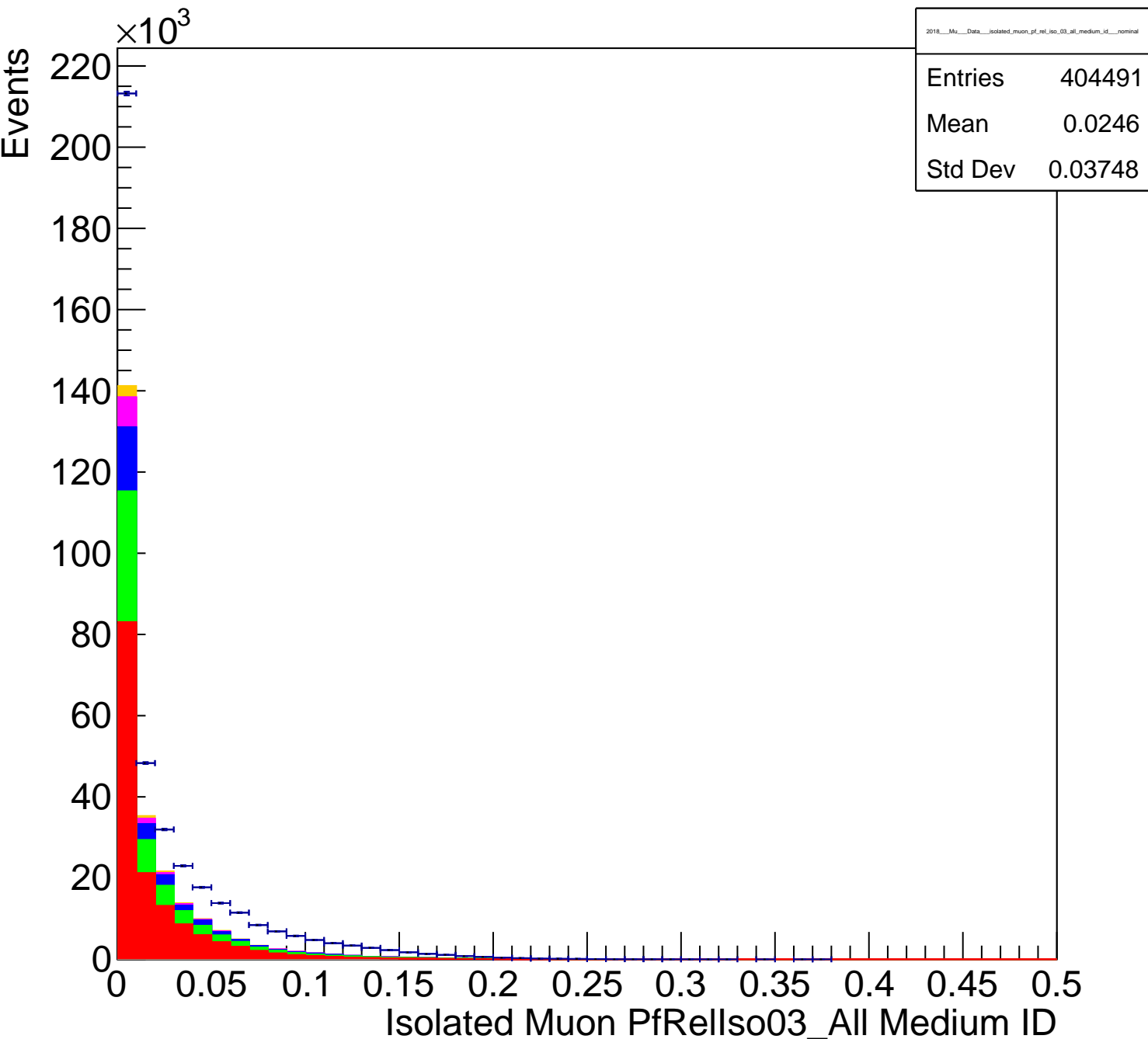
| | |
|--|---------|
| 2018_Mu_Data_jpsi_muon_positive_pf_rel_iso_03_all_zoomed_nominal | |
| Entries | 409842 |
| Mean | 0.03421 |
| Std Dev | 0.04826 |



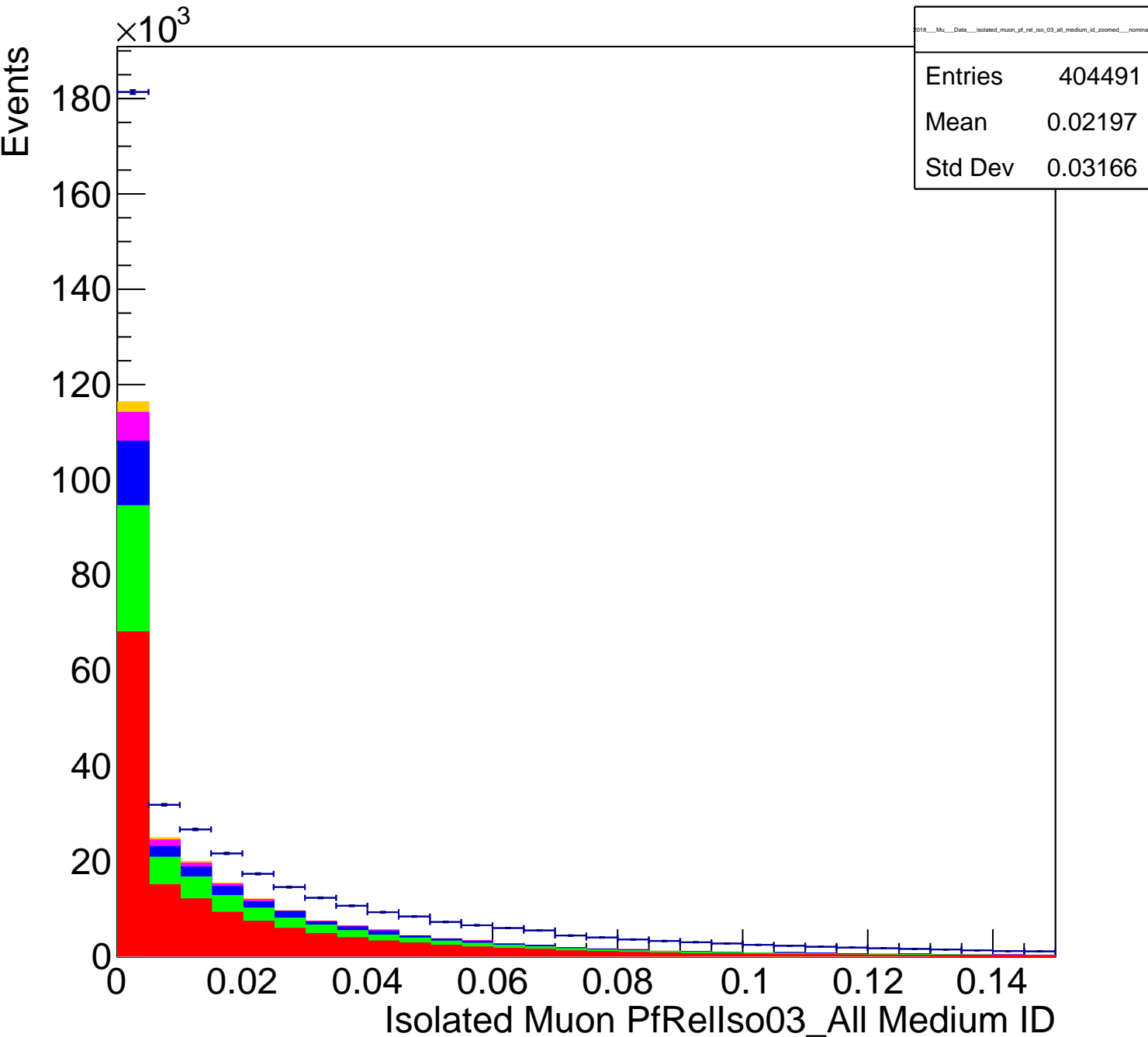
JPsi Muon Negative PfRellso03_All Zoomed



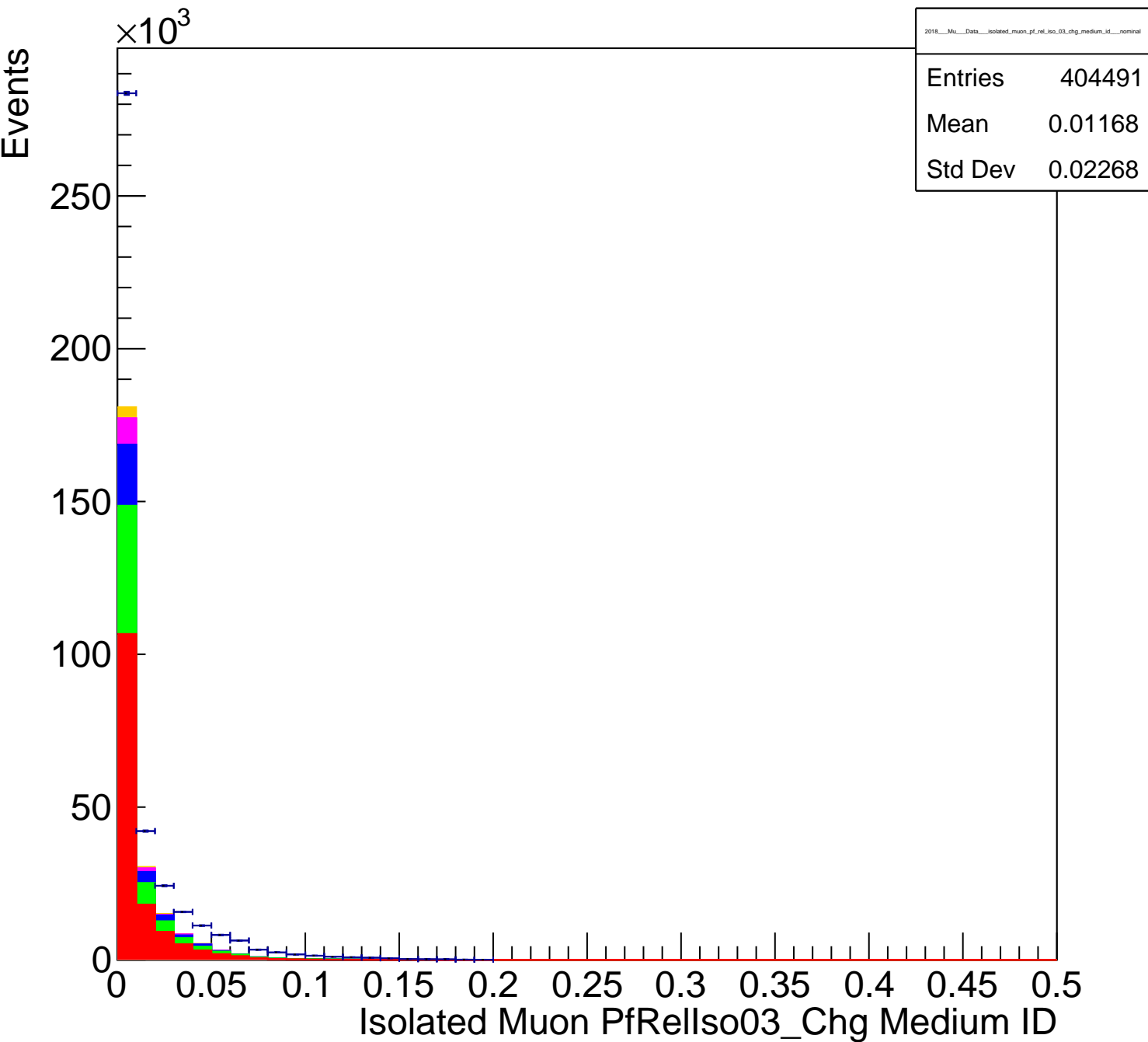
Isolated Muon PfRelIso03_All Medium ID



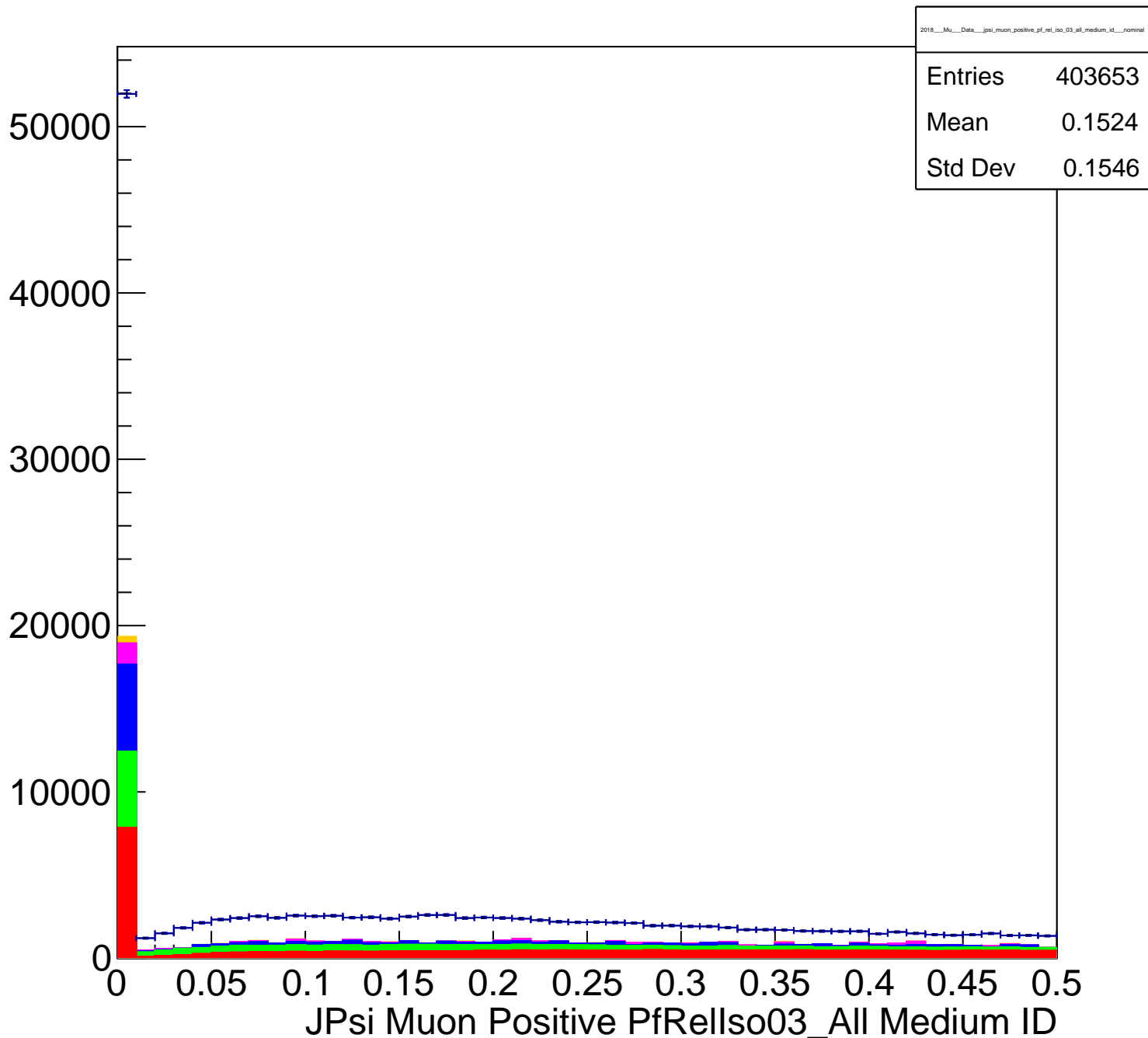
Isolated Muon PfRelIso03_All Medium ID Zoomed



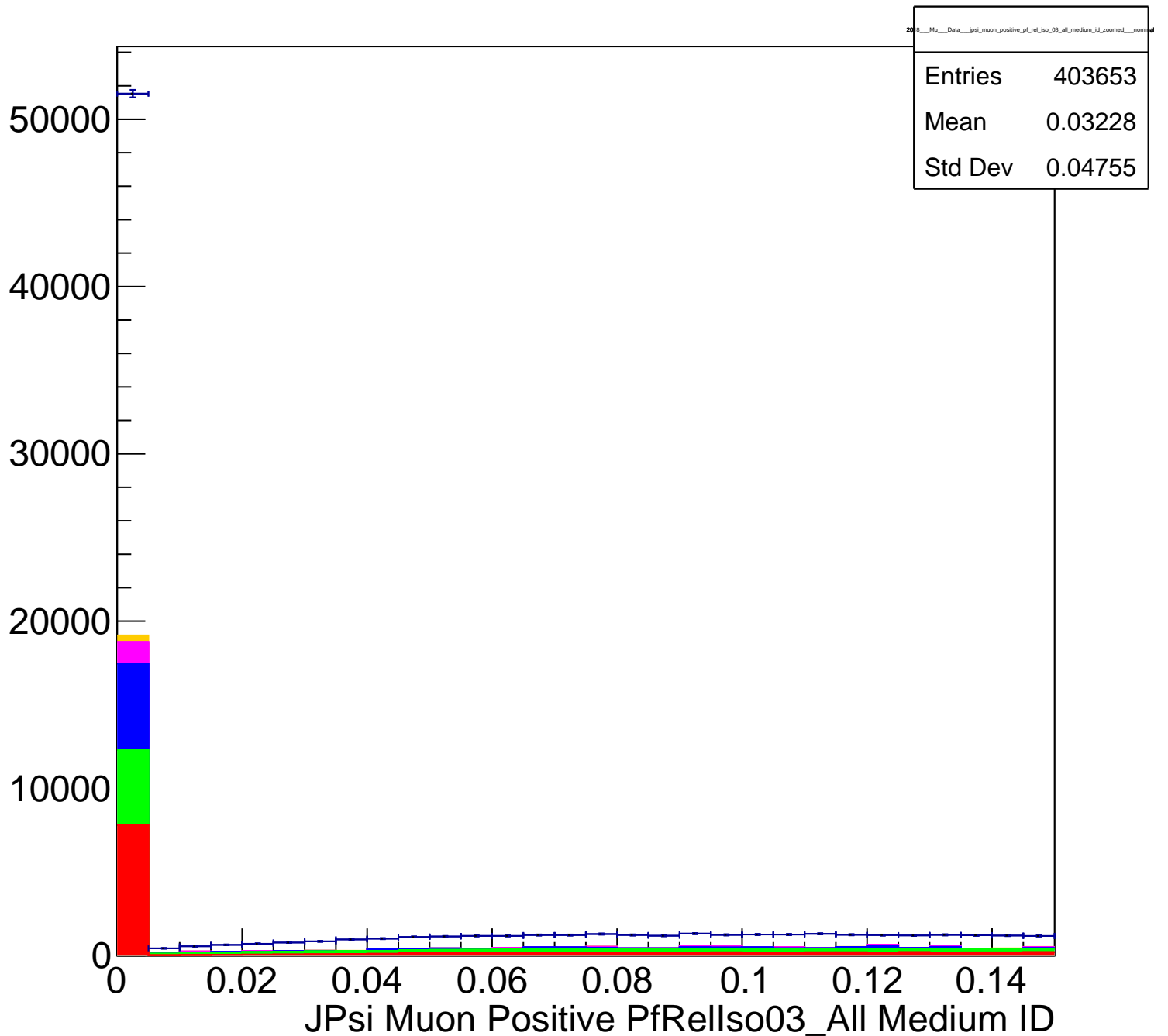
Isolated Muon PfRelIso03_Chg Medium ID



JPsi Muon Positive PfRelIso03_All Medium ID

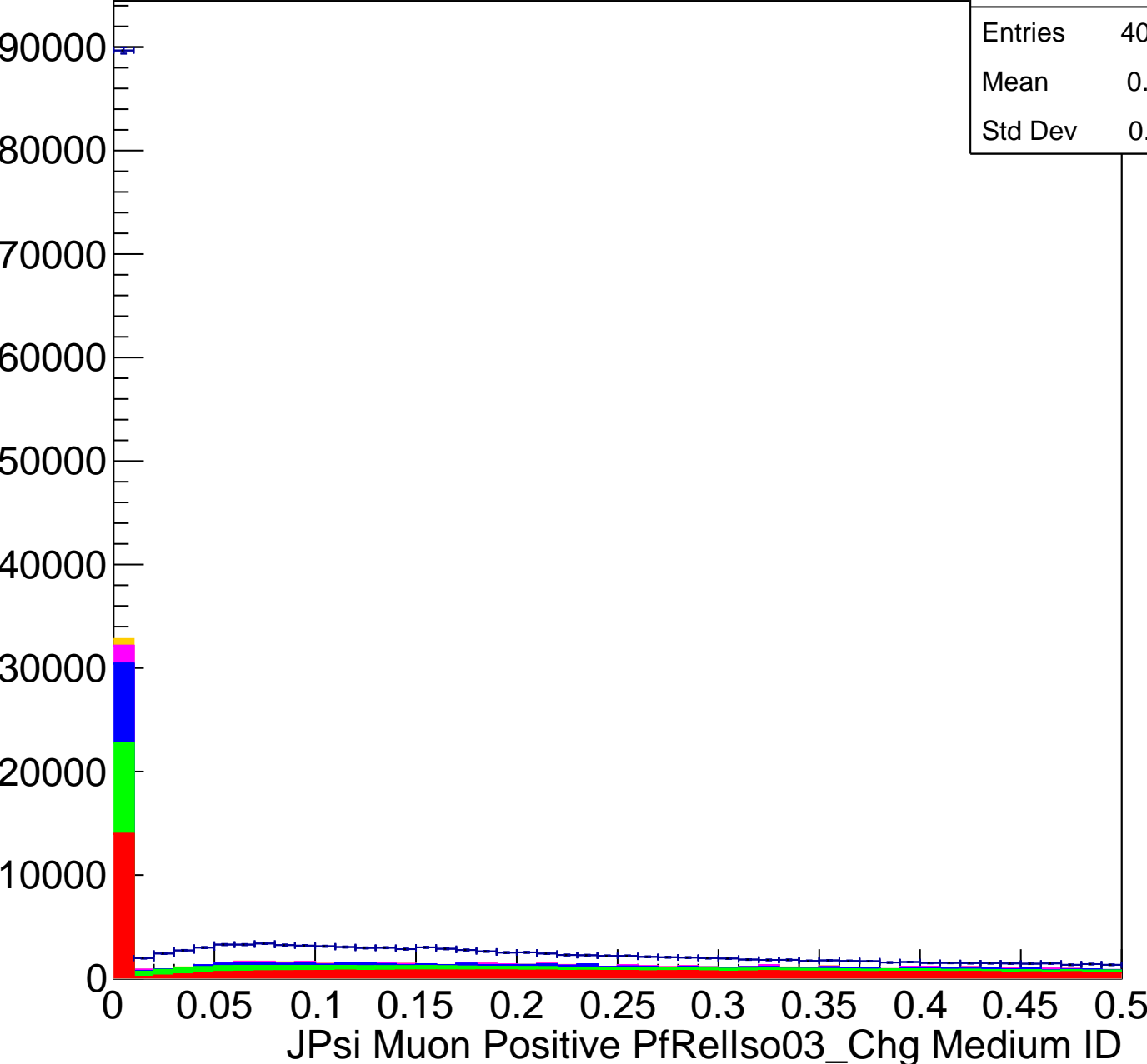


JPsi Muon Positive PfRelIso03_All Zoomed Medium ID



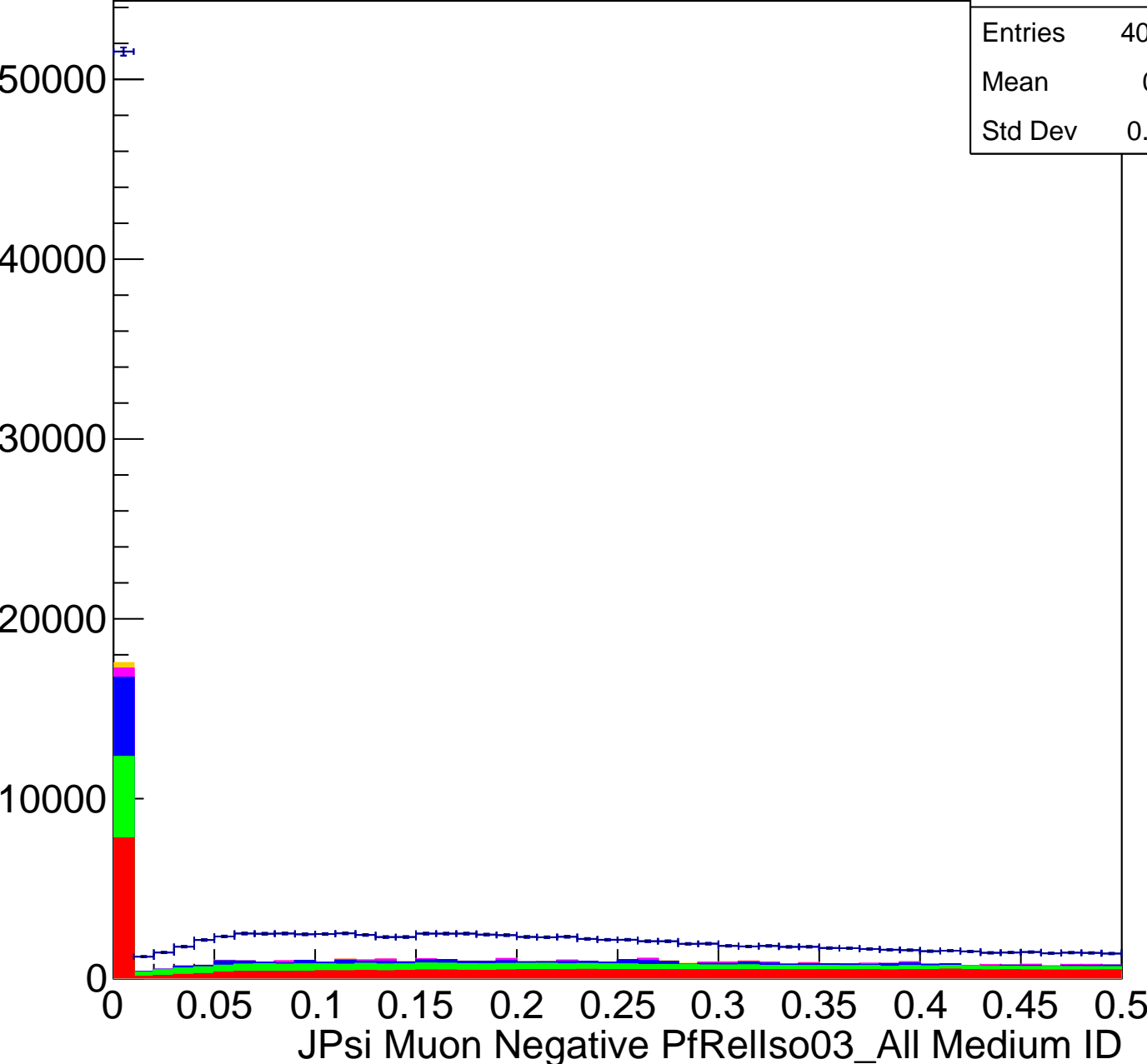
JPsi Muon Positive PfRelIso03_Chg Medium ID

| | |
|---|--------|
| 2018_Mu_Data_jpsi_muon_positive_pf_rel_iso_03_chg_medium_id_nominal | |
| Entries | 403653 |
| Mean | 0.1197 |
| Std Dev | 0.1475 |



JPsi Muon Negative PfRelIso03_All Medium ID

| | |
|---|--------|
| 2018_Mu_Data_jpsi_muon_negative_pf_rel_iso_03_all_medium_id_nominal | |
| Entries | 400369 |
| Mean | 0.153 |
| Std Dev | 0.1554 |



JPsi Muon Negative PfRelIso03_All Zoomed Medium ID

| | |
|---------|---------|
| Entries | 400369 |
| Mean | 0.032 |
| Std Dev | 0.04727 |

50000

40000

30000

20000

10000

0

0

0.02

0.04

0.06

0.08

0.1

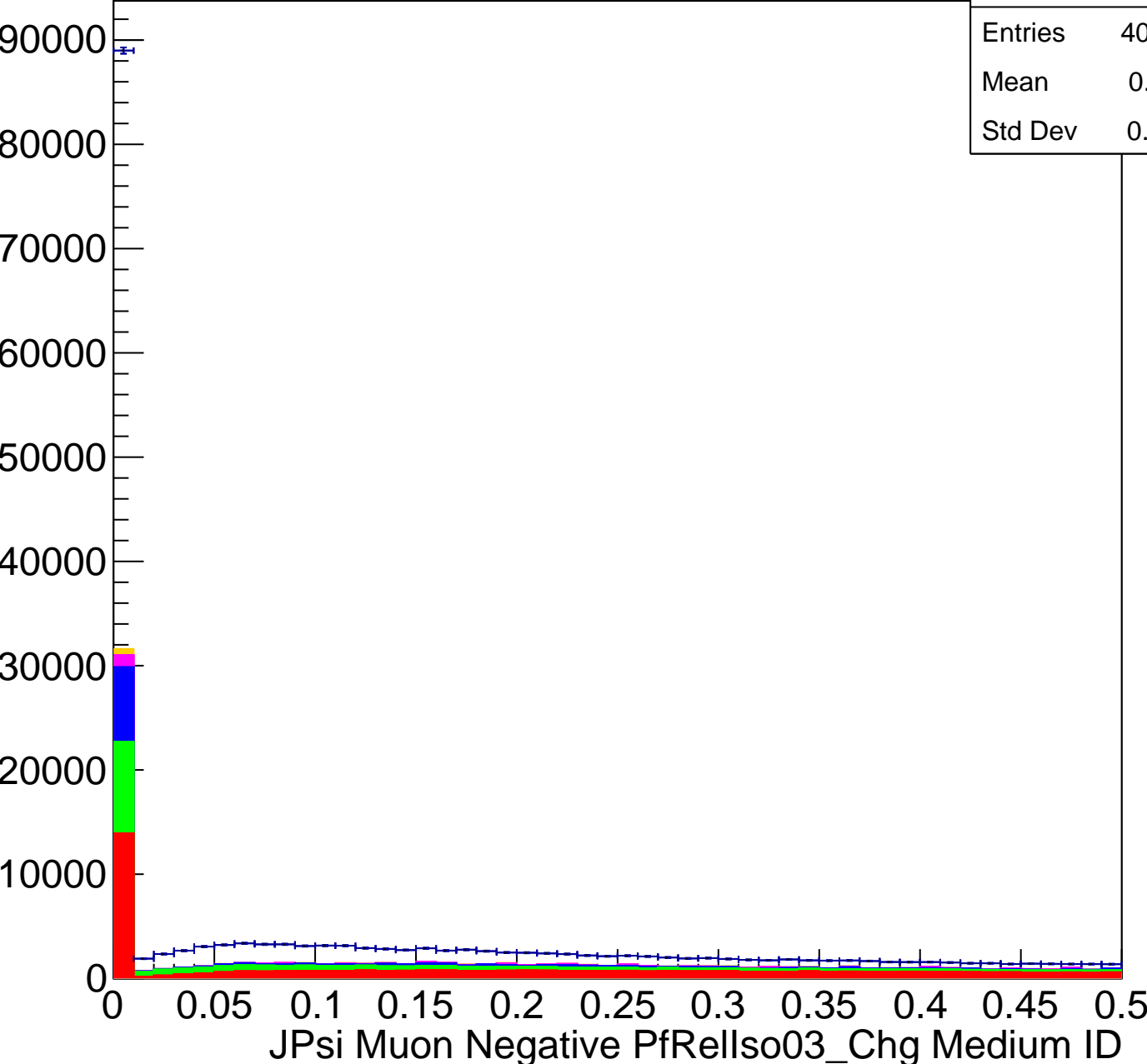
0.12

0.14

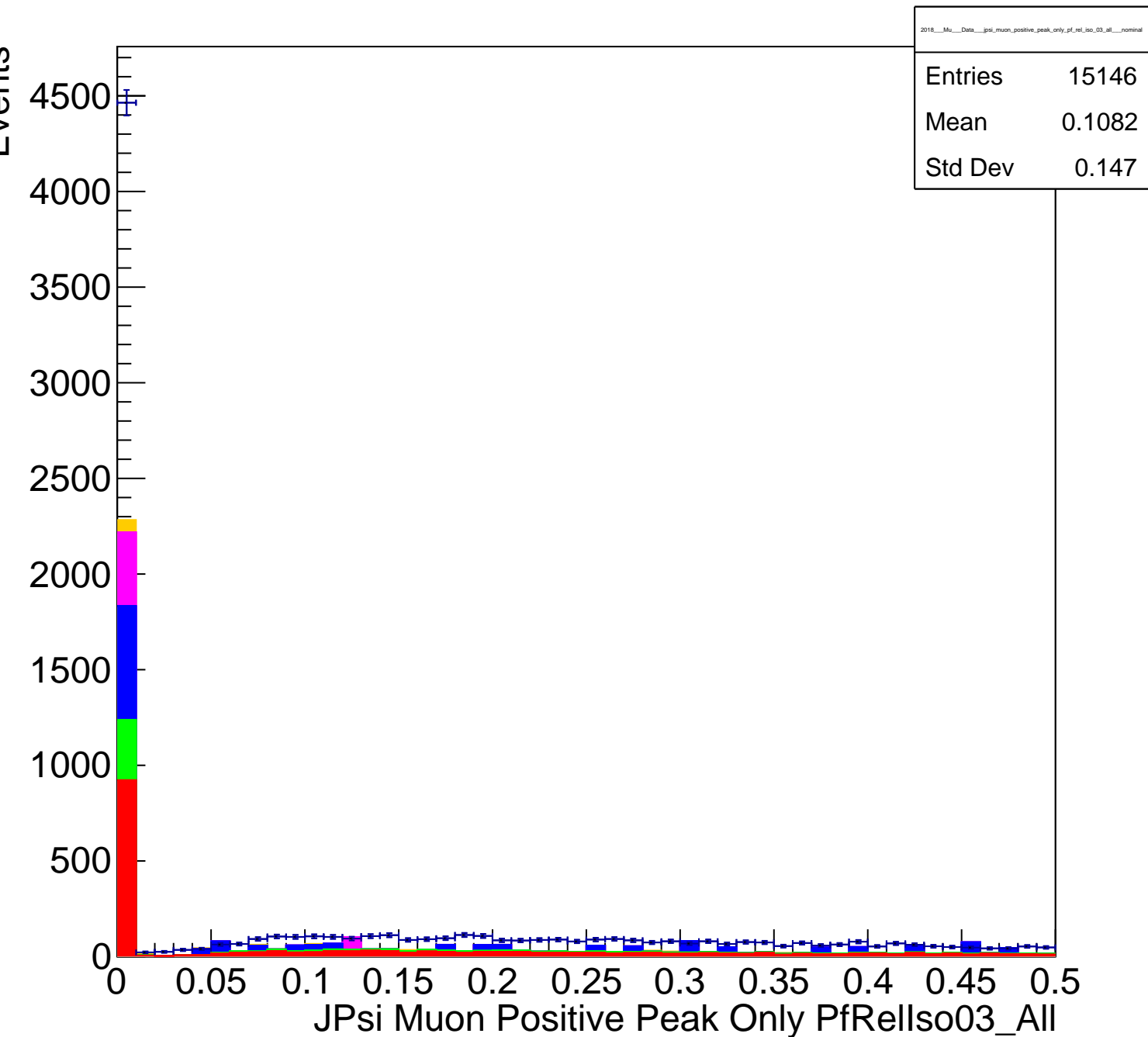
JPsi Muon Negative PfRelIso03_All Medium ID

JPsi Muon Negative PfRelIso03_Chg Medium ID

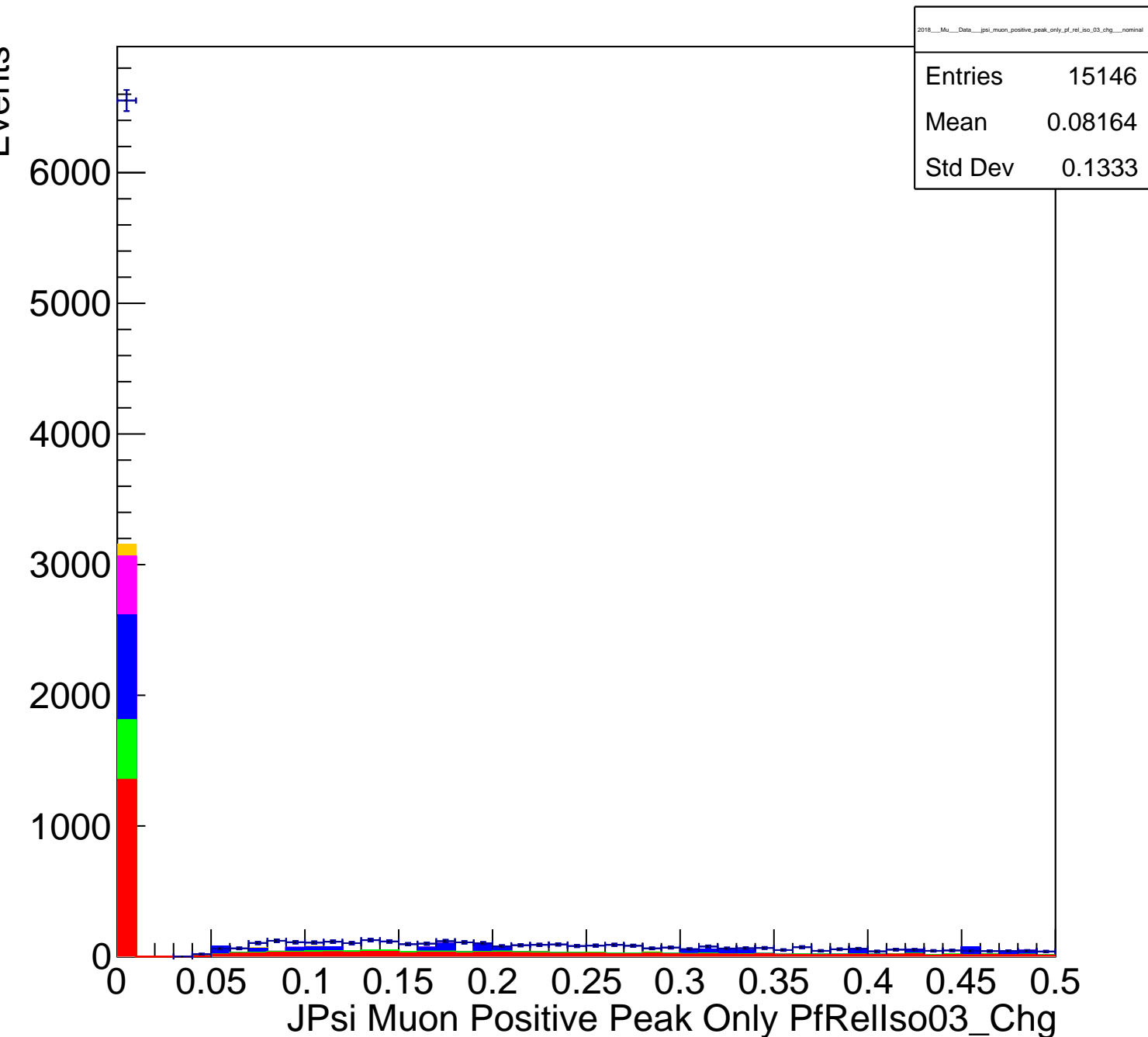
| | |
|---|--------|
| 2018_Mu_Data_jpsi_muon_negative_pf_rel_iso_03_chg_medium_id_nominal | |
| Entries | 400369 |
| Mean | 0.1196 |
| Std Dev | 0.1477 |



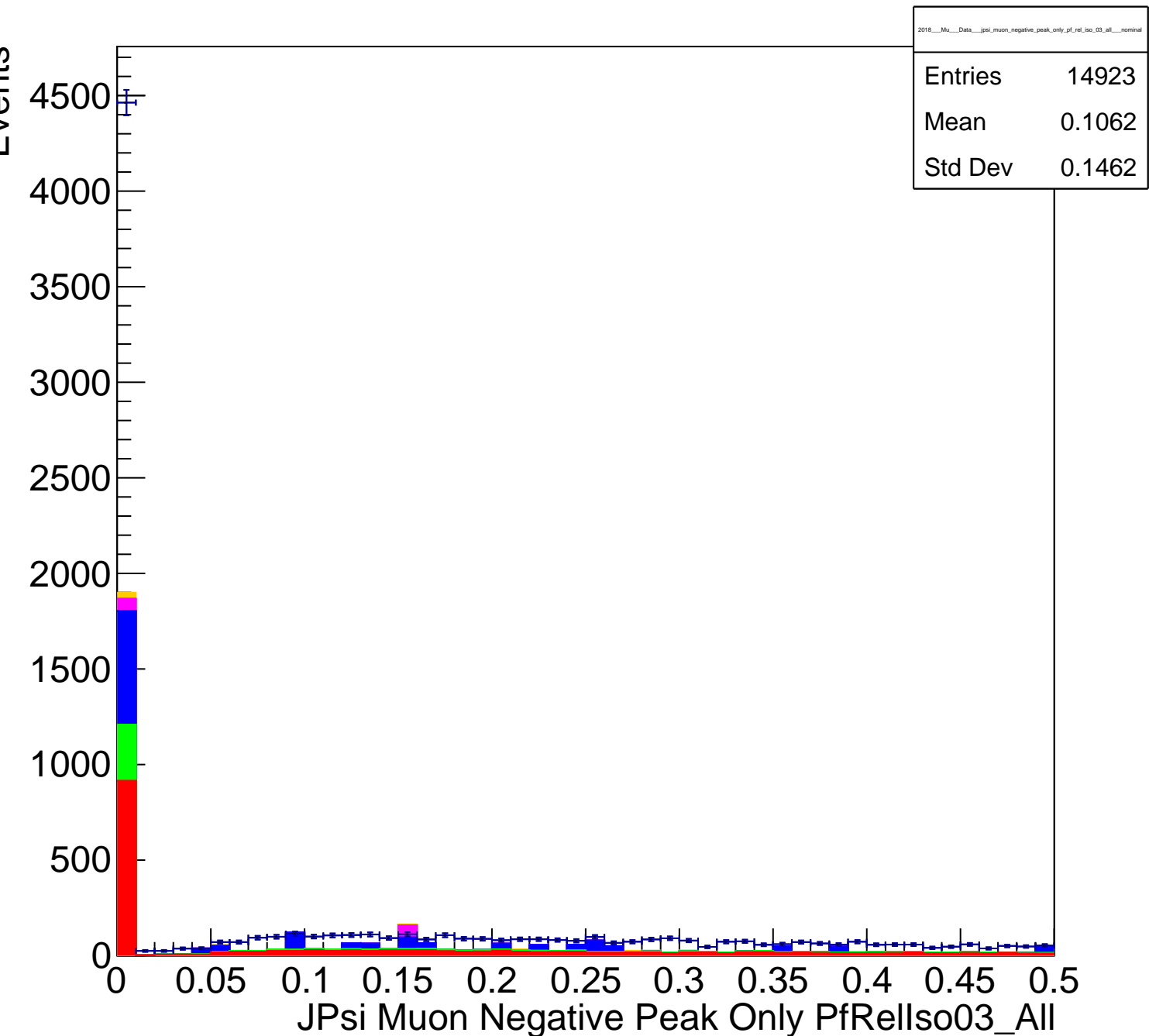
JPsi Muon Positive Peak Only PfRelIso03_All



JPsi Muon Positive Peak Only PfRelIso03_Chg



JPsi Muon Negative Peak Only PfRelIso03_All



JPsi Muon Negative Peak Only PfRelIso03_Chg

