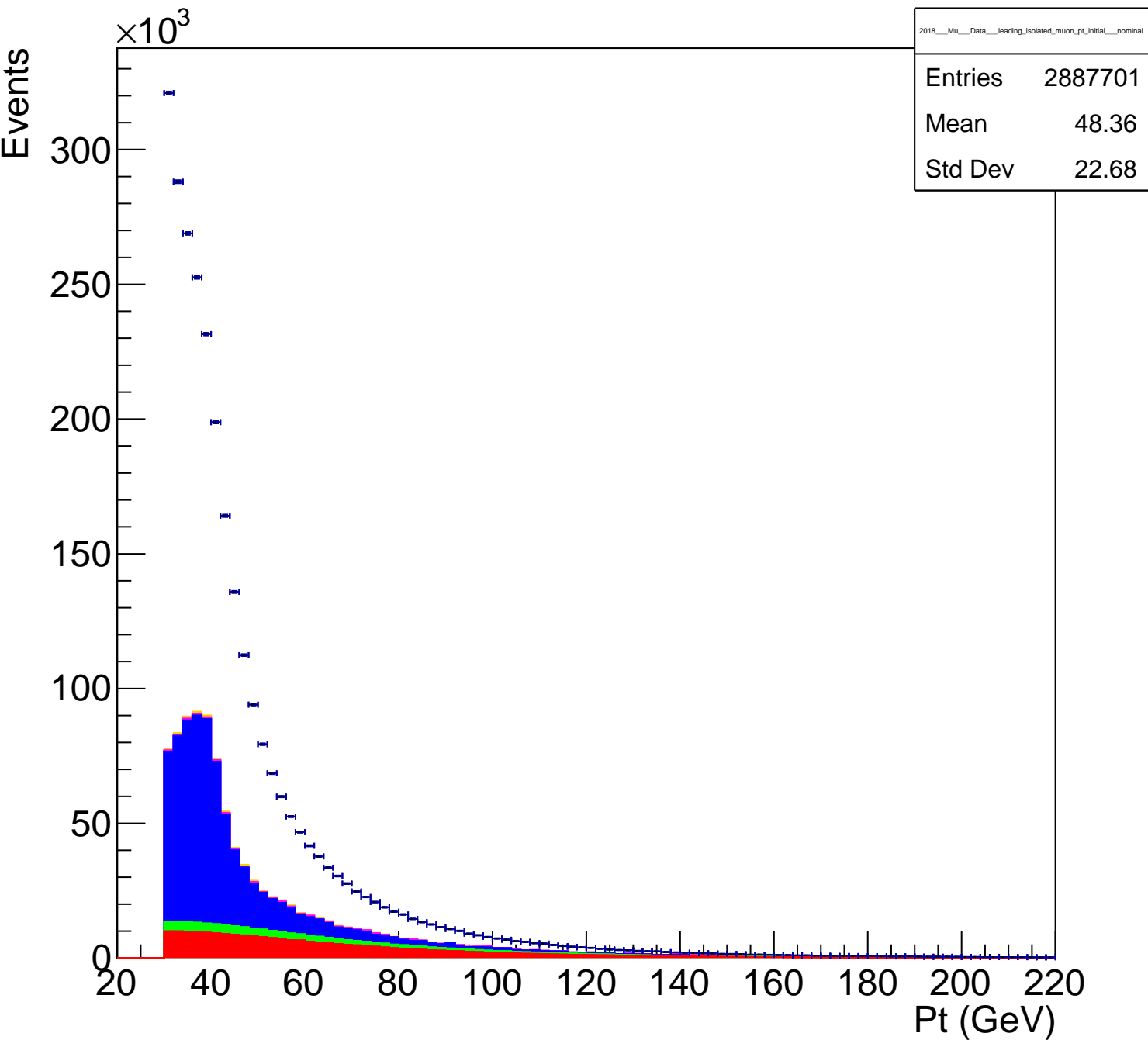
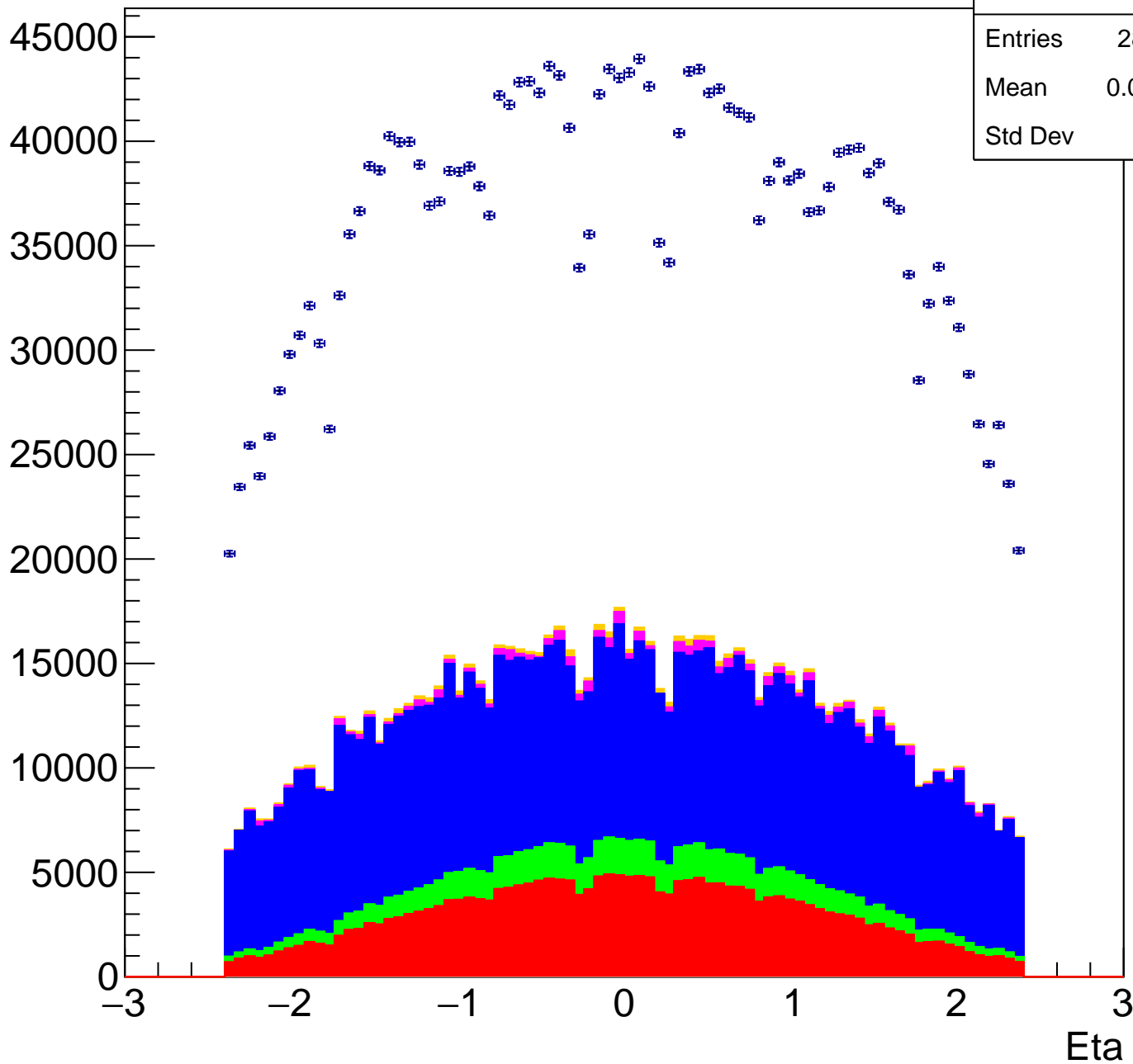


Leading Isolated Muon Transverse Momentum (One Muon, No Electrons)



Leading Isolated Muon Pseudorapidity (One Muon, No Electrons)

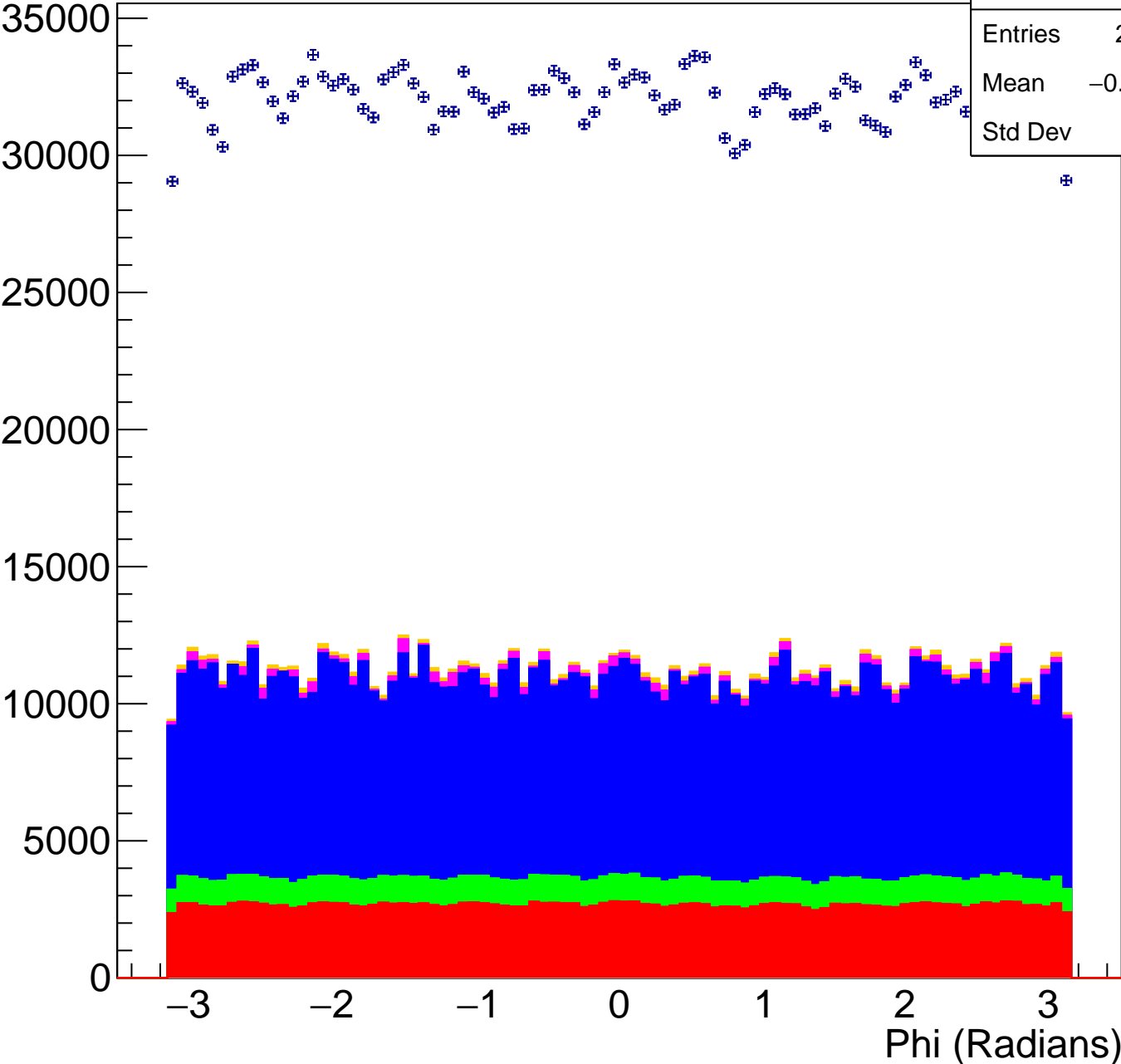
2018_Mu_Data_leading_isolated_muon_eta_initial_nominal	
Entries	2887701
Mean	0.007593
Std Dev	1.287



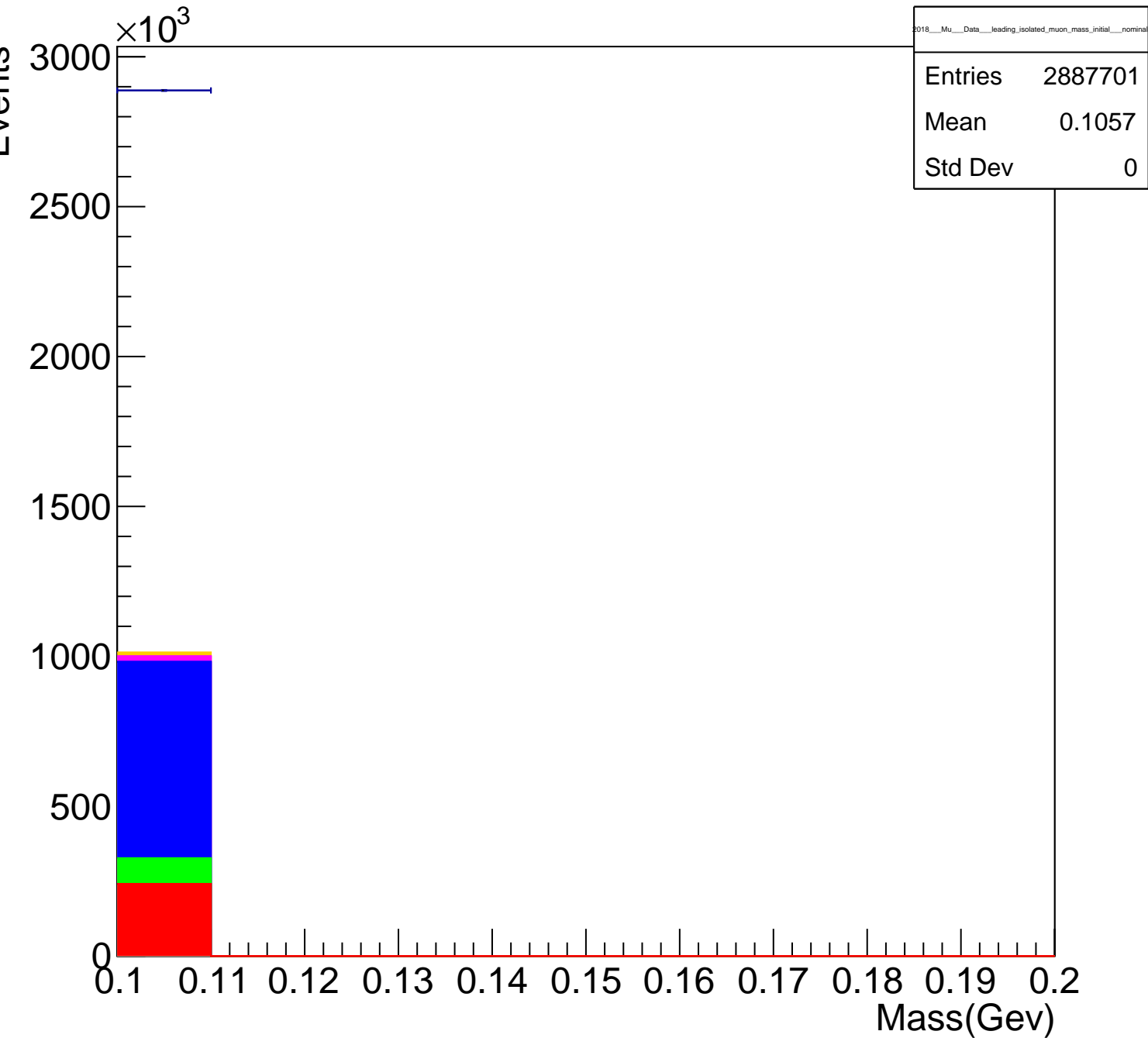
Leading Isolated Muon Angle (One Muon, No Electrons)

2018_Mu_Data_leading_isolated_muon_phi_initial_nominal

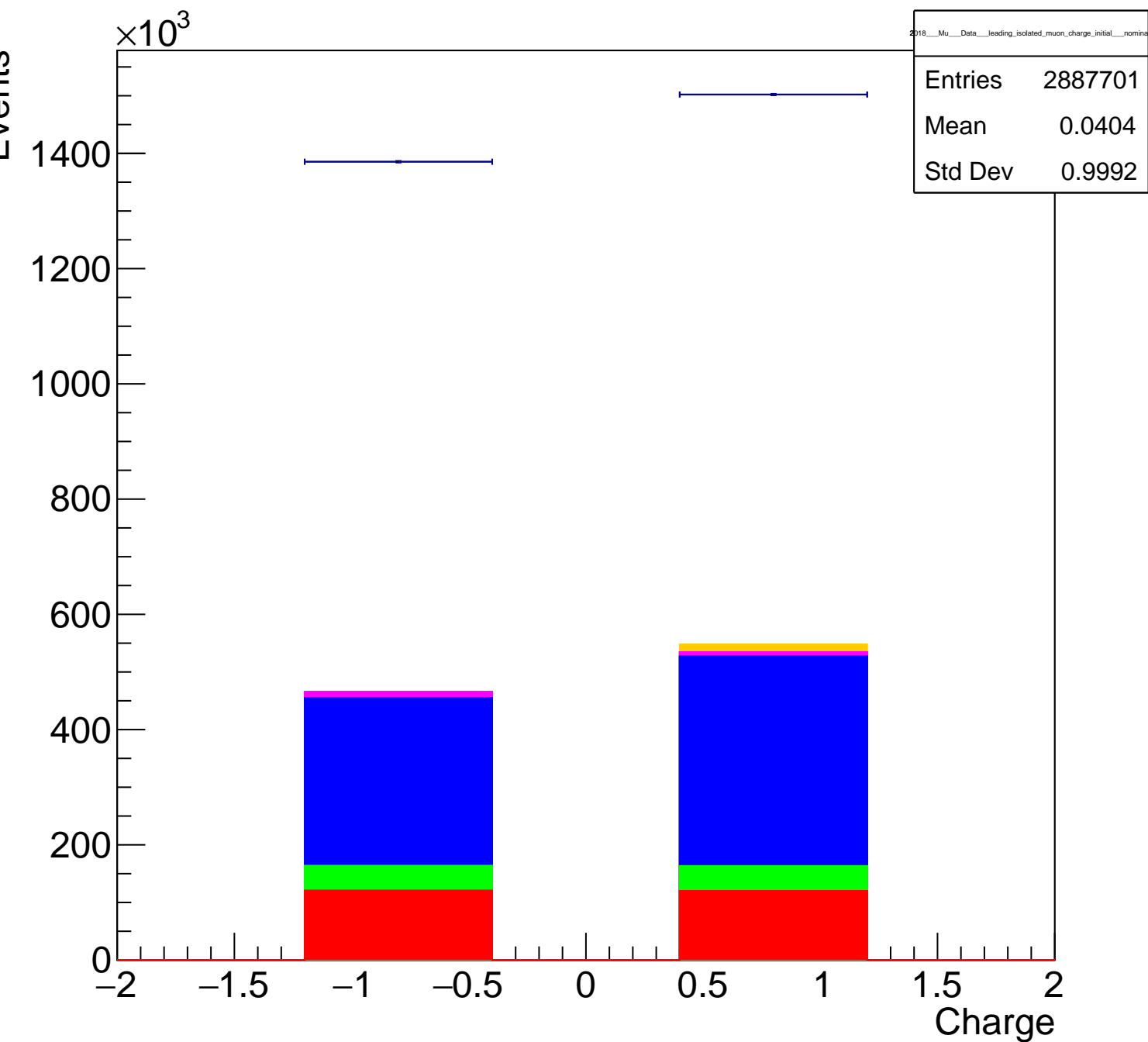
Entries	2887701
Mean	-0.004235
Std Dev	1.815



Leading Isolated Muon Mass (One Muon, No Electrons)

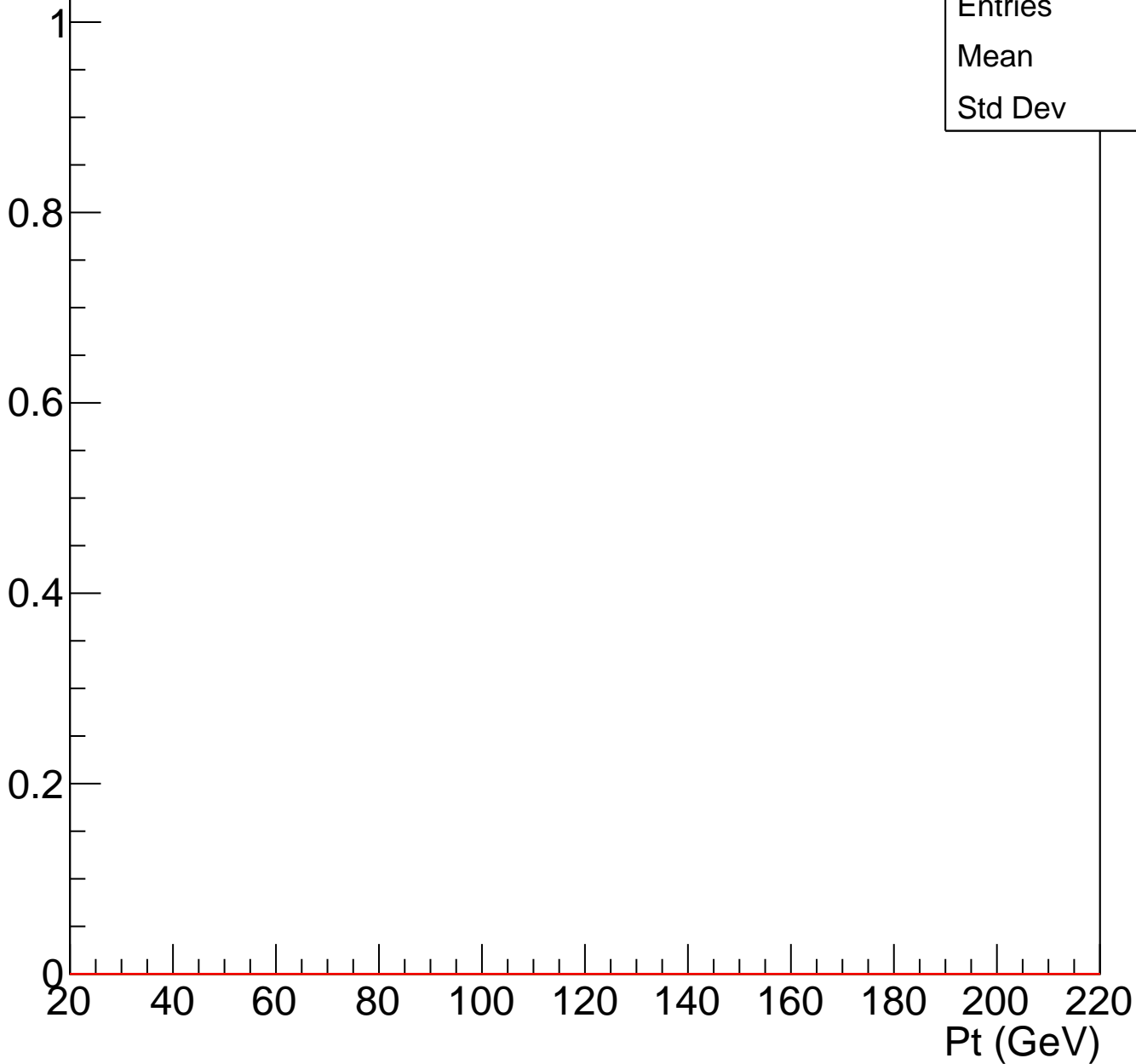


Leading Isolated Muon Charge (One Muon, No Electrons)



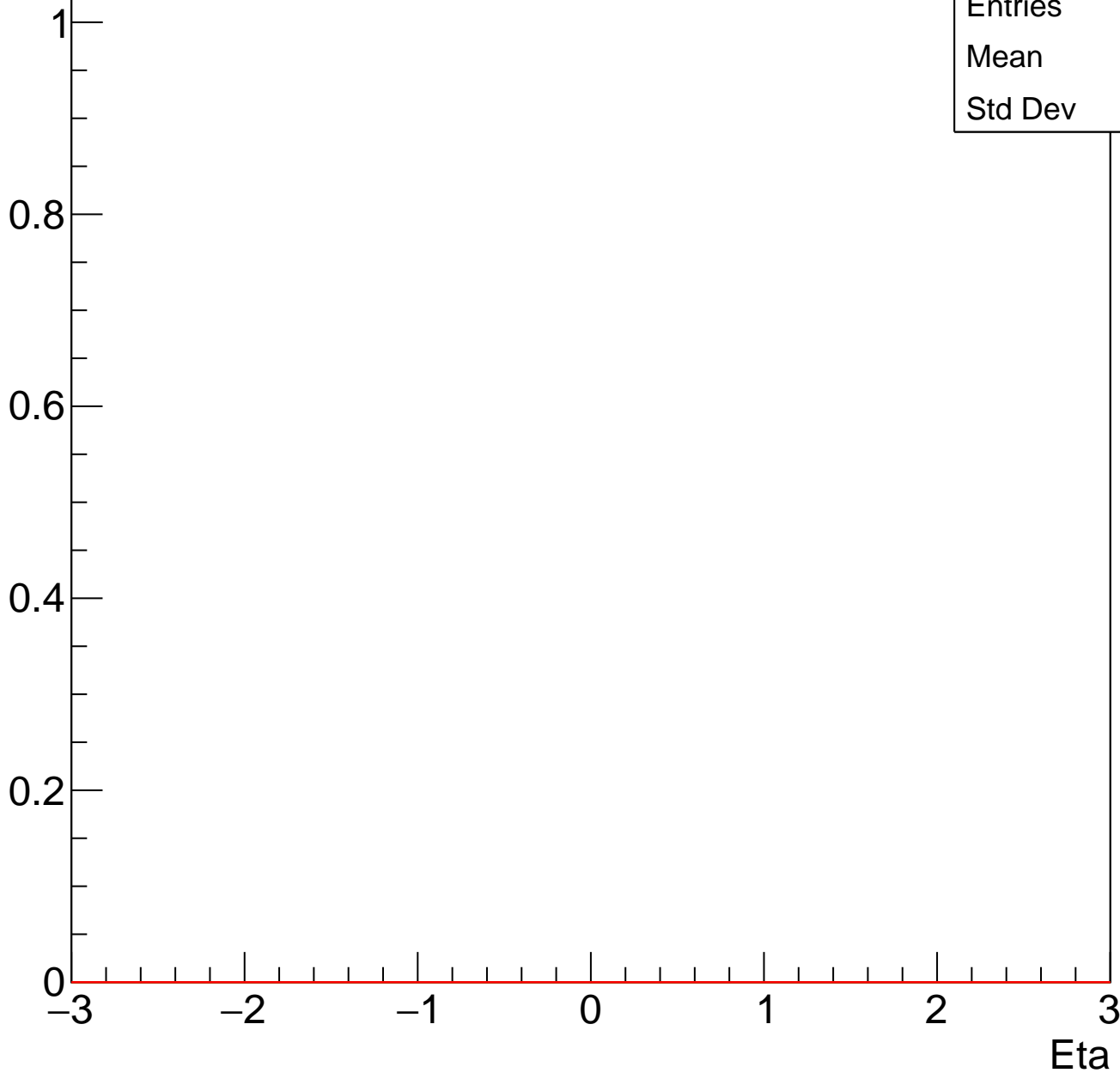
Leading Isolated Electron Transverse Momentum (One Electron, No Muons)

Events



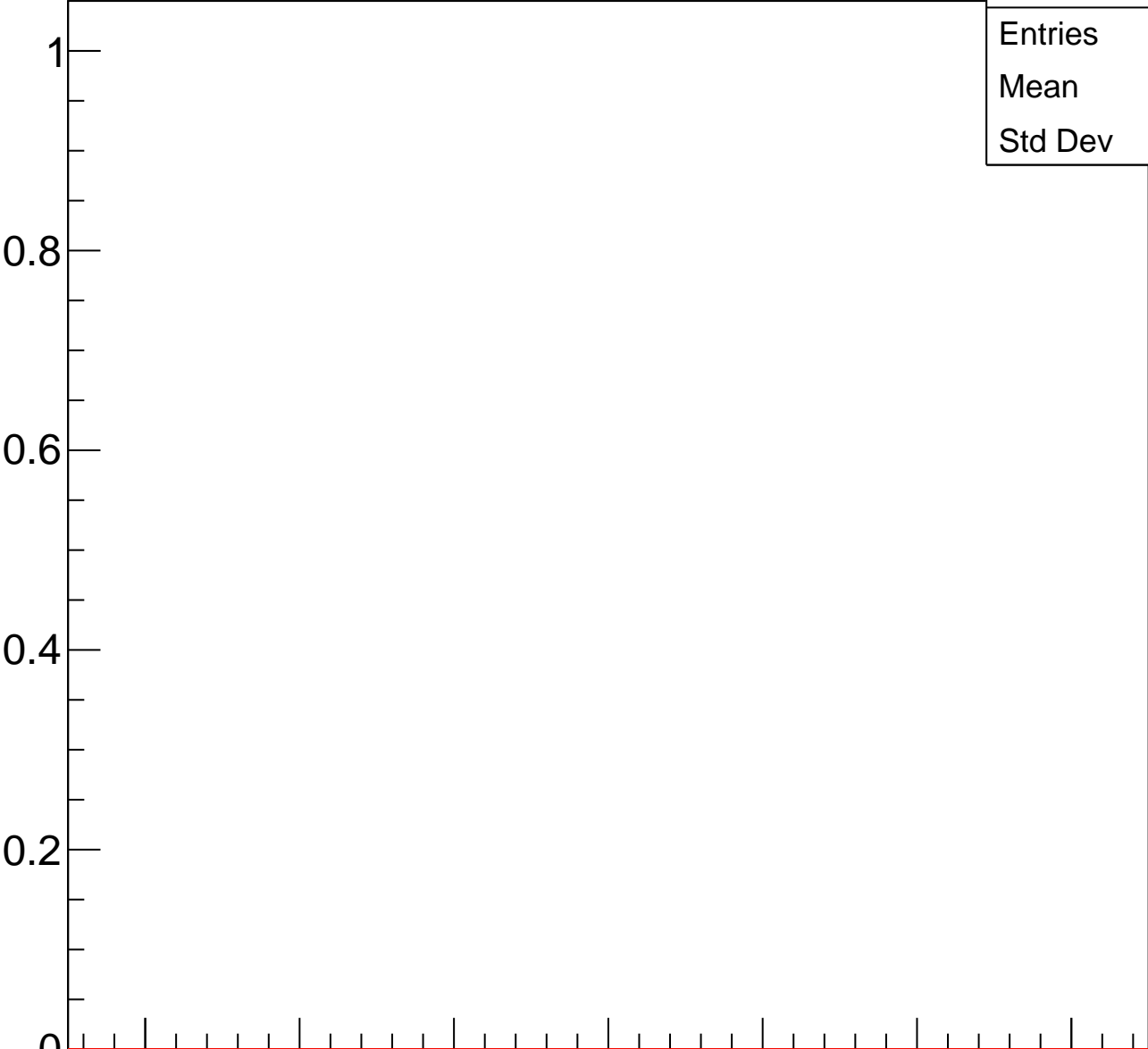
Leading Isolated Electron Pseudorapidity (One Electron, No Muons)

Events



Leading Isolated Electron Angle (One Electron, No Muons)

Events



2018__Mu__Data__leading_isolated_electron_phi_initial__nominal	
Entries	0
Mean	0
Std Dev	0

Phi (Radians)

Leading Isolated Electron Mass (One Electron, No Muons)

Events

1

0.8

0.6

0.4

0.2

0

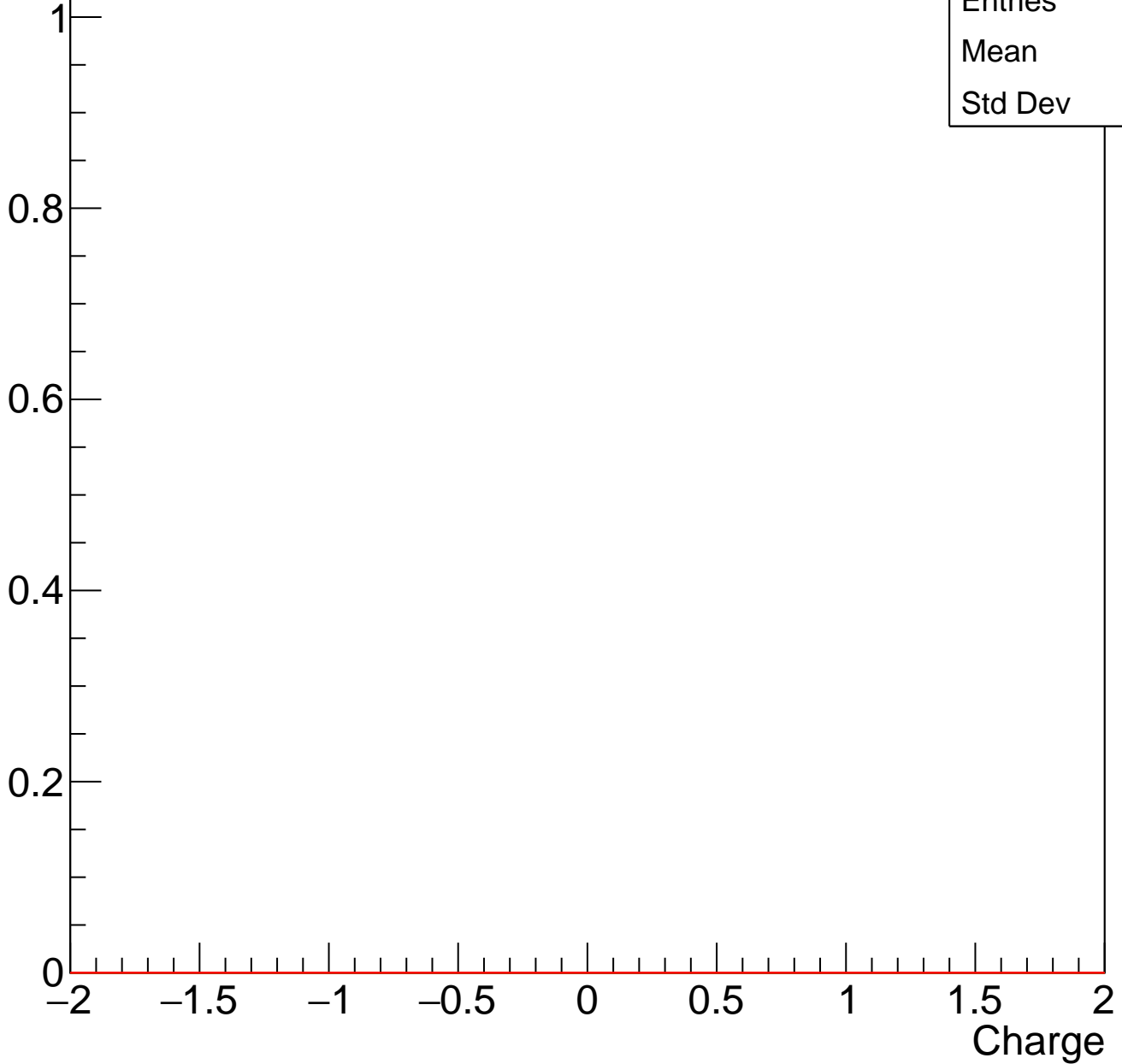
0.00010.00020.00030.00040.00050.00060.00070.00080.00090.001

Mass(Gev)

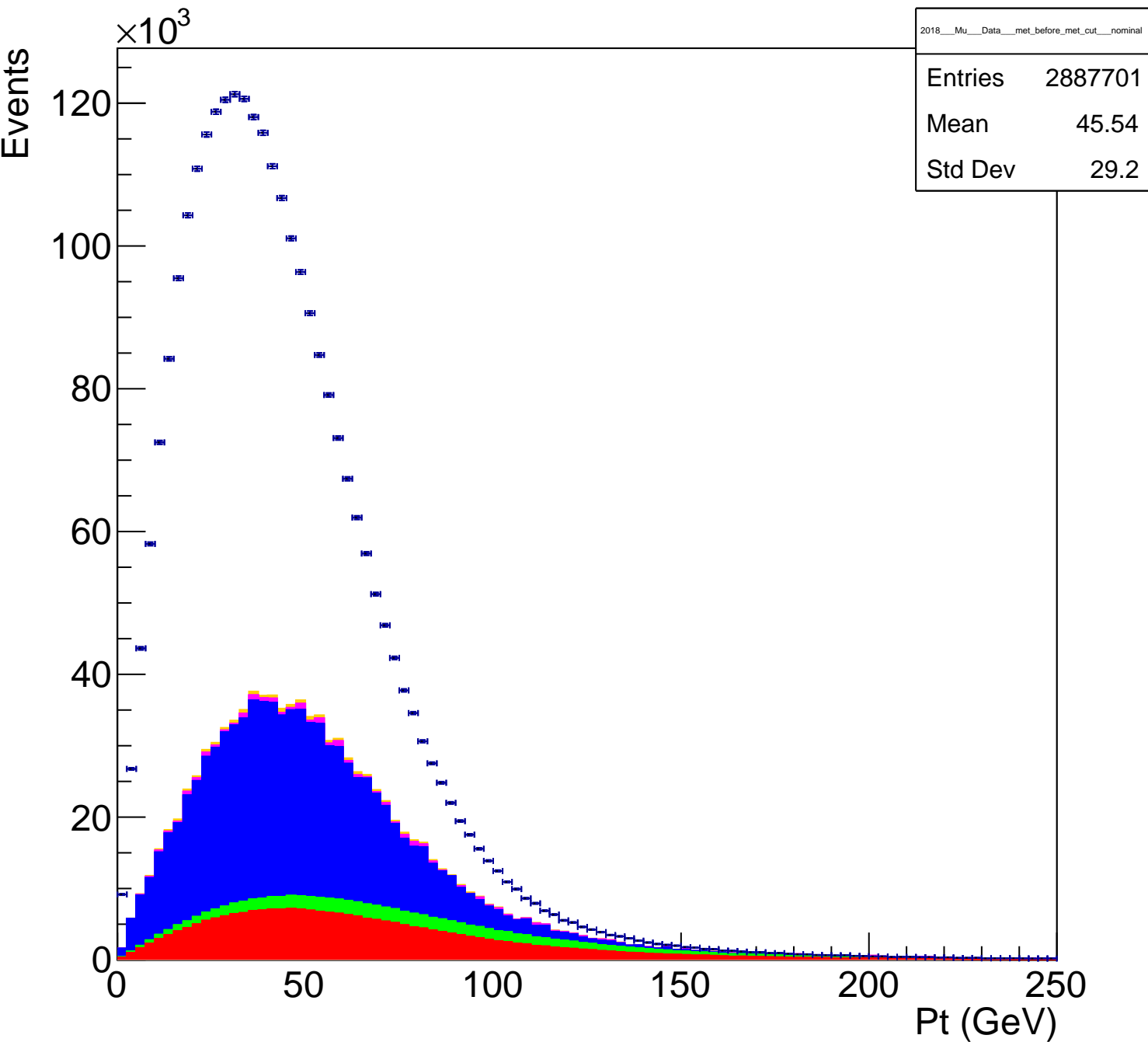
2018_Mu_Data_leading_isolated_electron_mass_initial_nominal	
Entries	0
Mean	0
Std Dev	0

Leading Isolated Electron Charge (One Electron, No Muons)

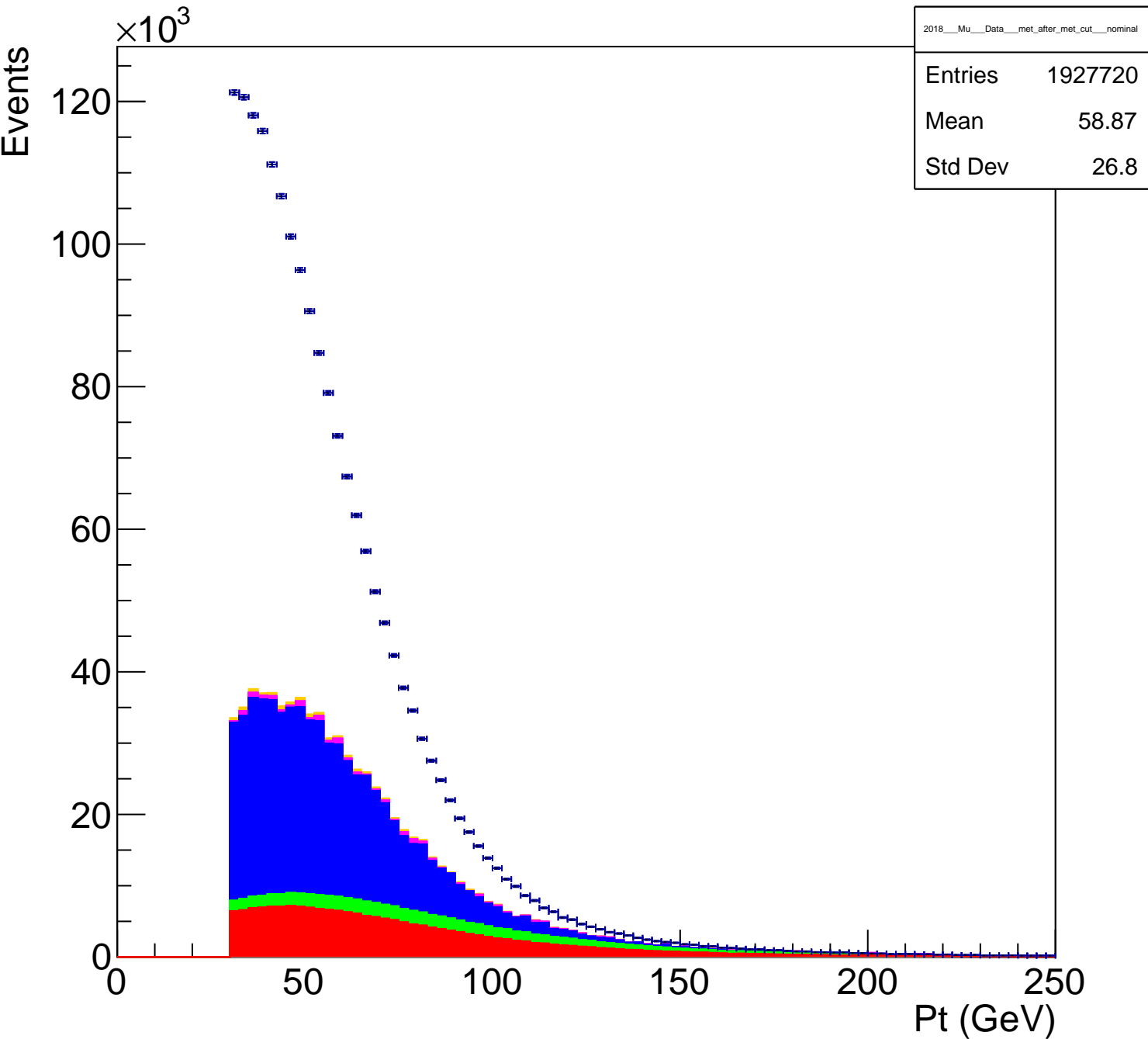
Events



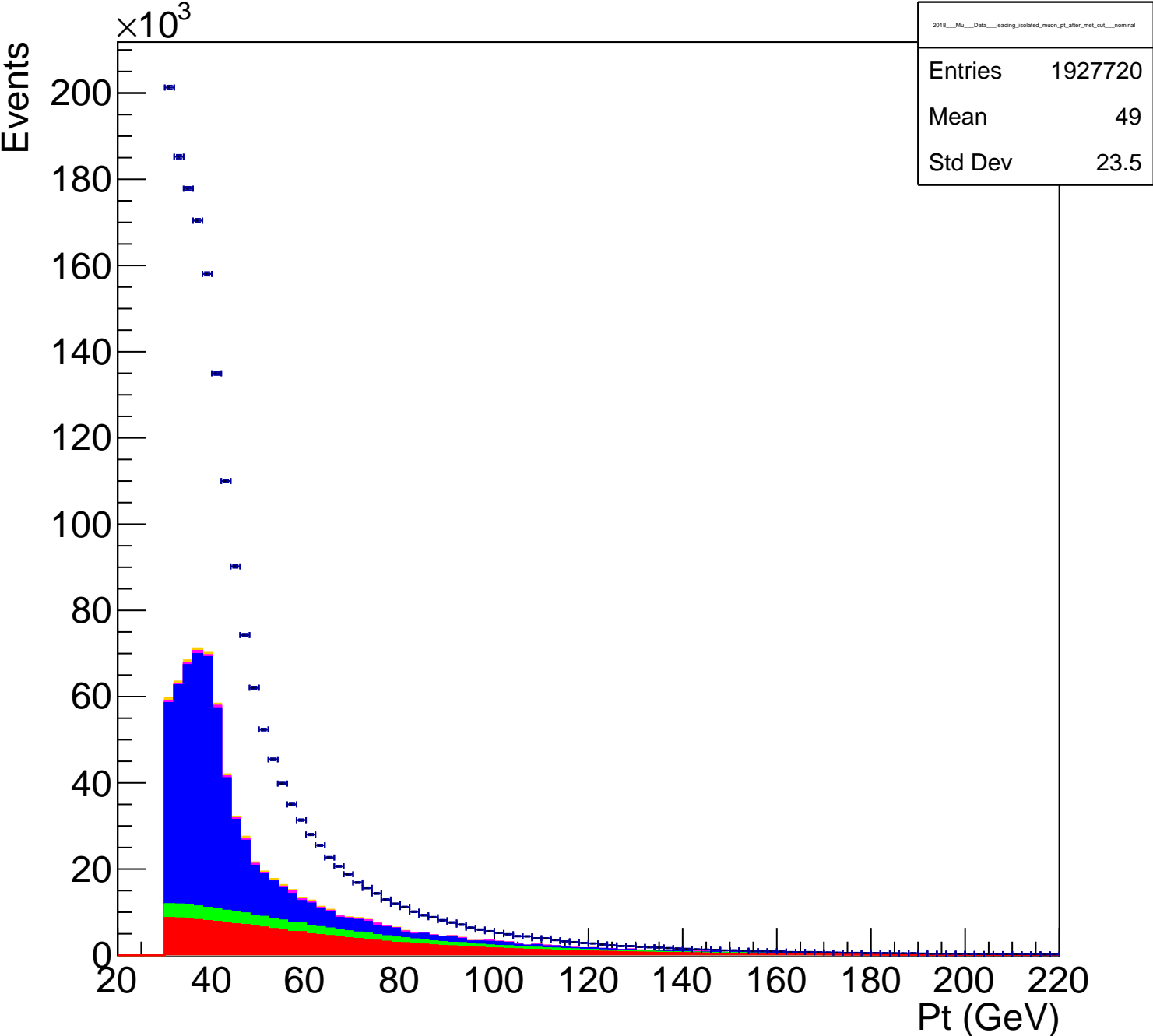
MET Before MET Cut



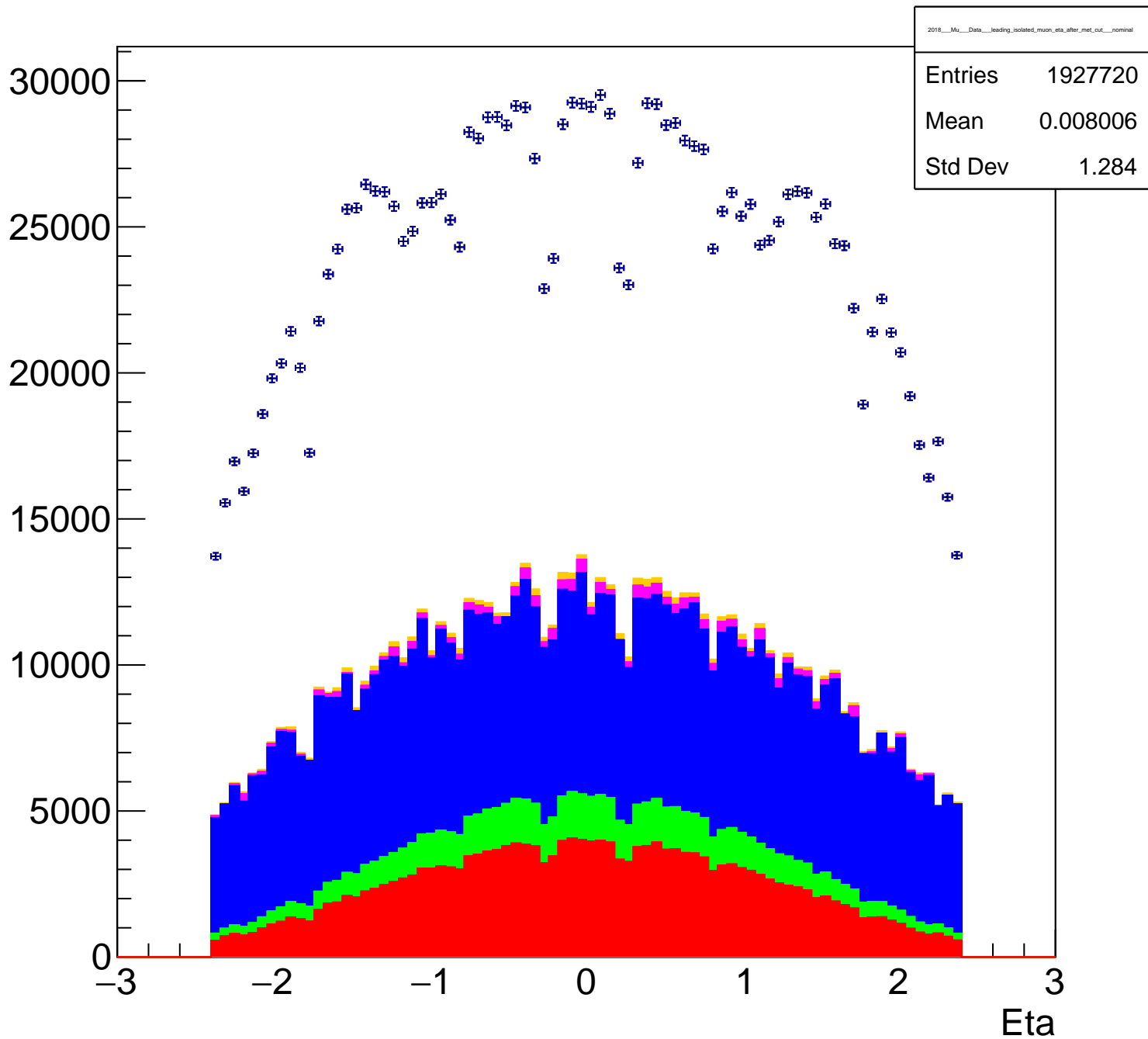
MET After MET Cut



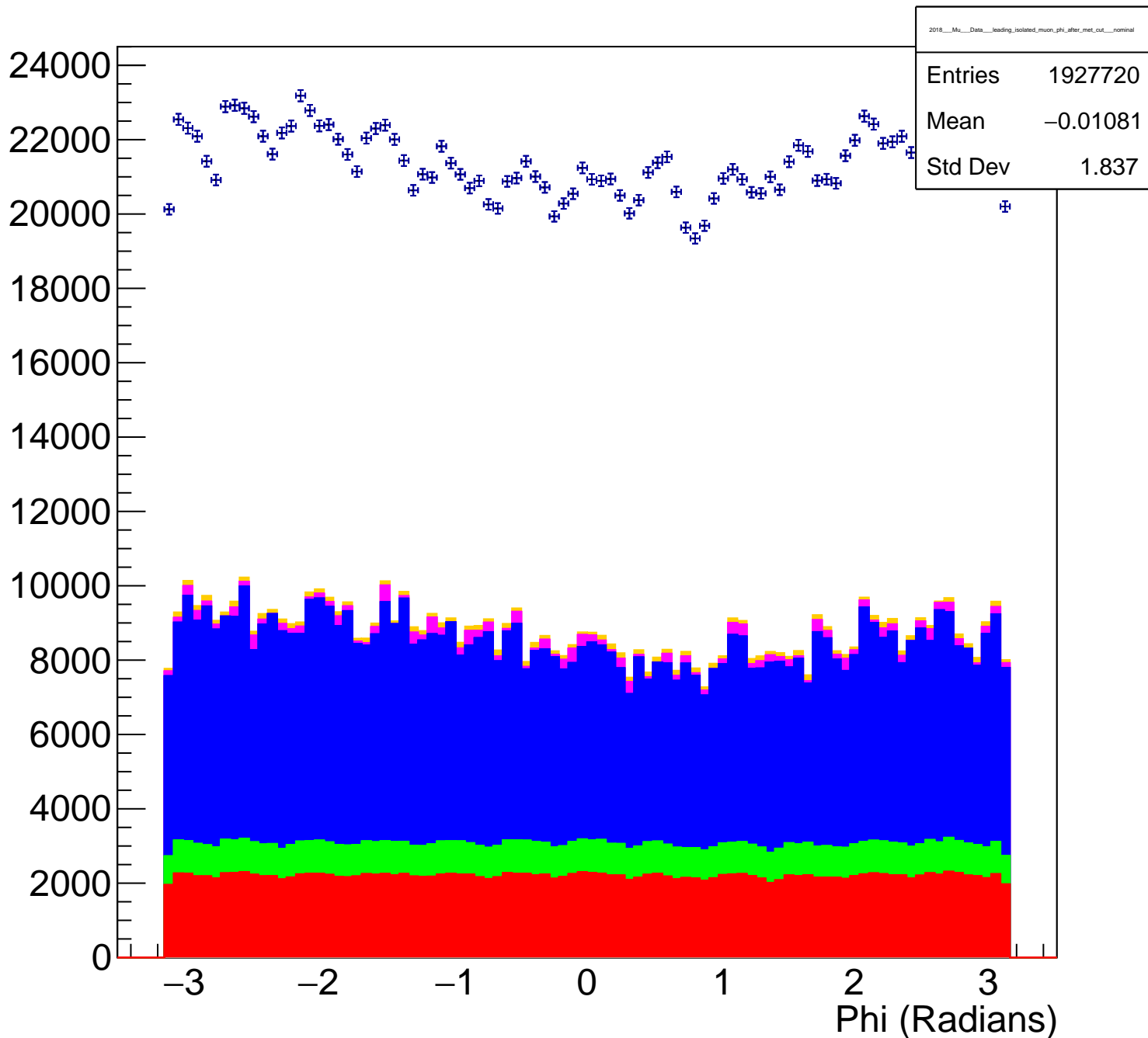
Leading Isolated Muon Transverse Momentum After MET Cut



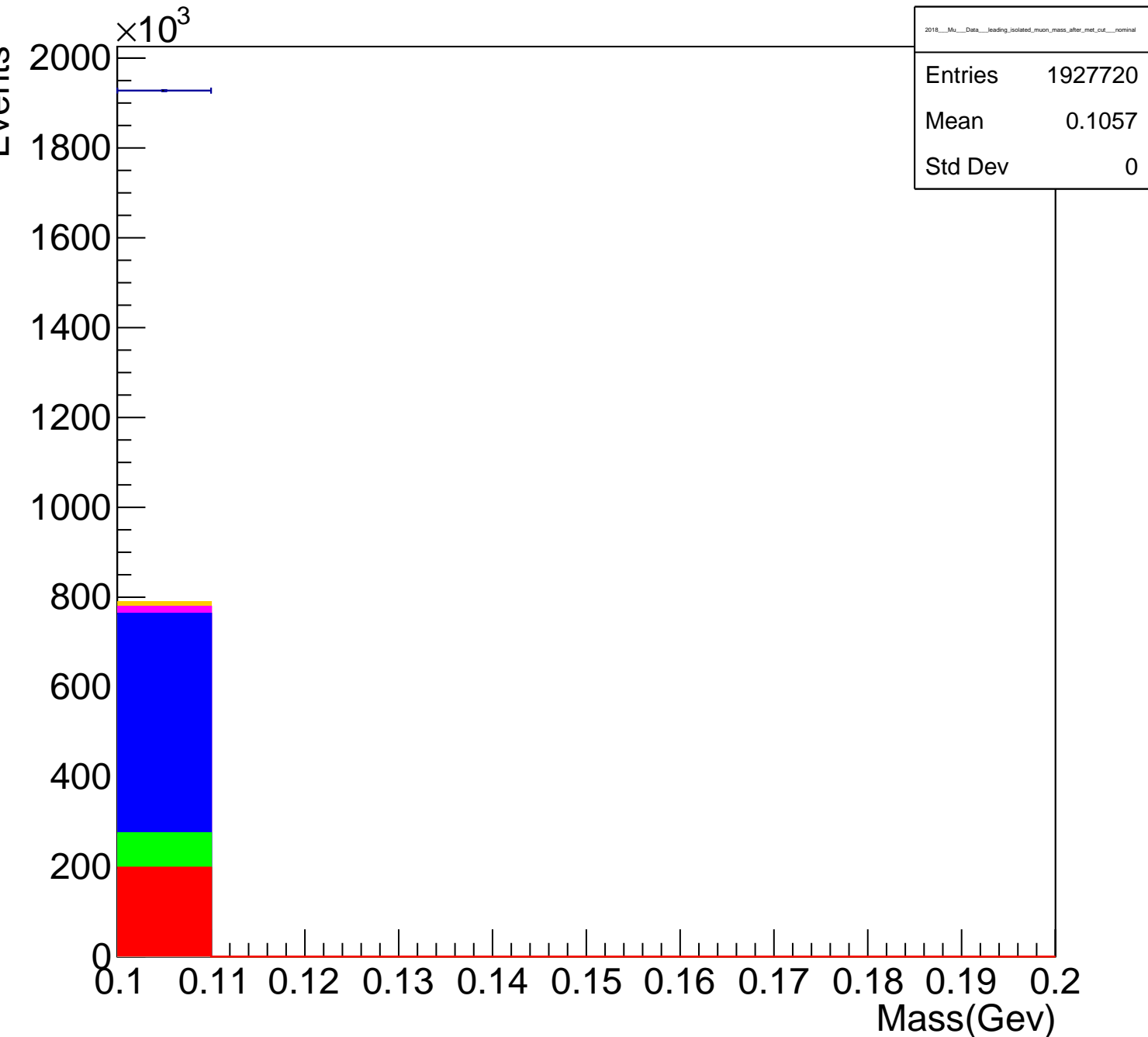
Leading Isolated Muon Pseudorapidity After MET Cut



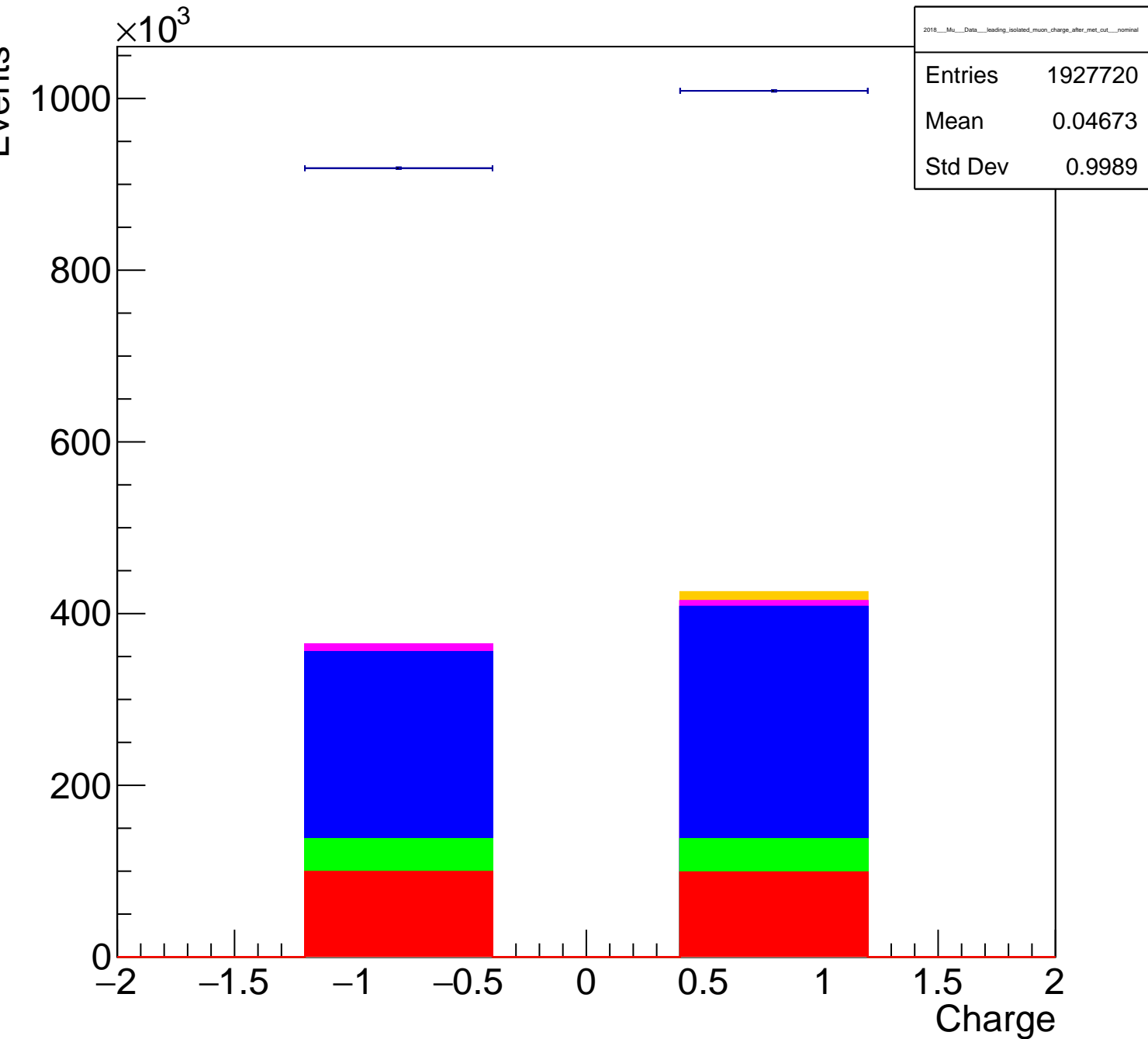
Leading Isolated Muon Angle After MET Cut



Leading Isolated Muon Mass After MET Cut

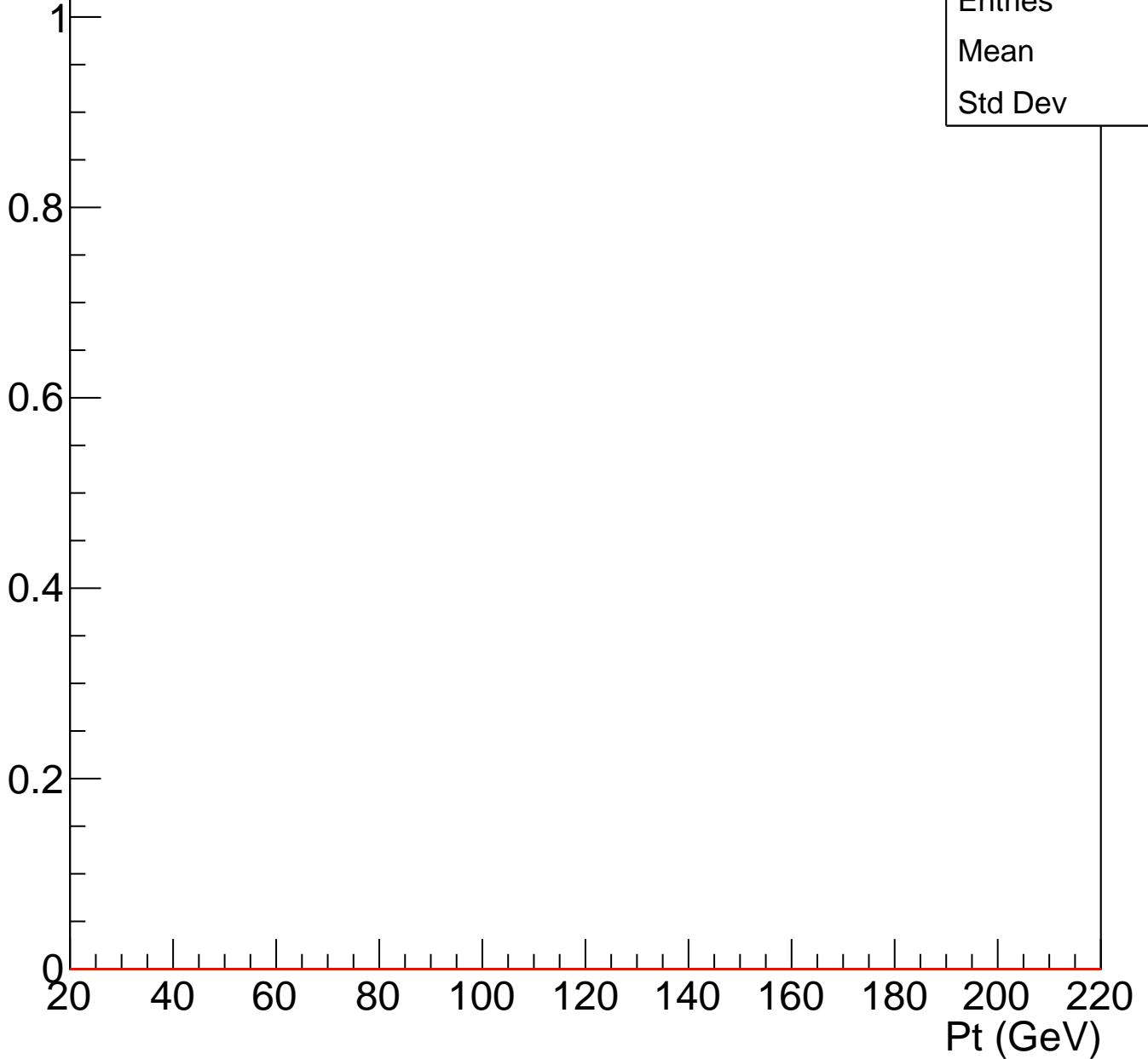


Leading Isolated Muon Charge After MET Cut



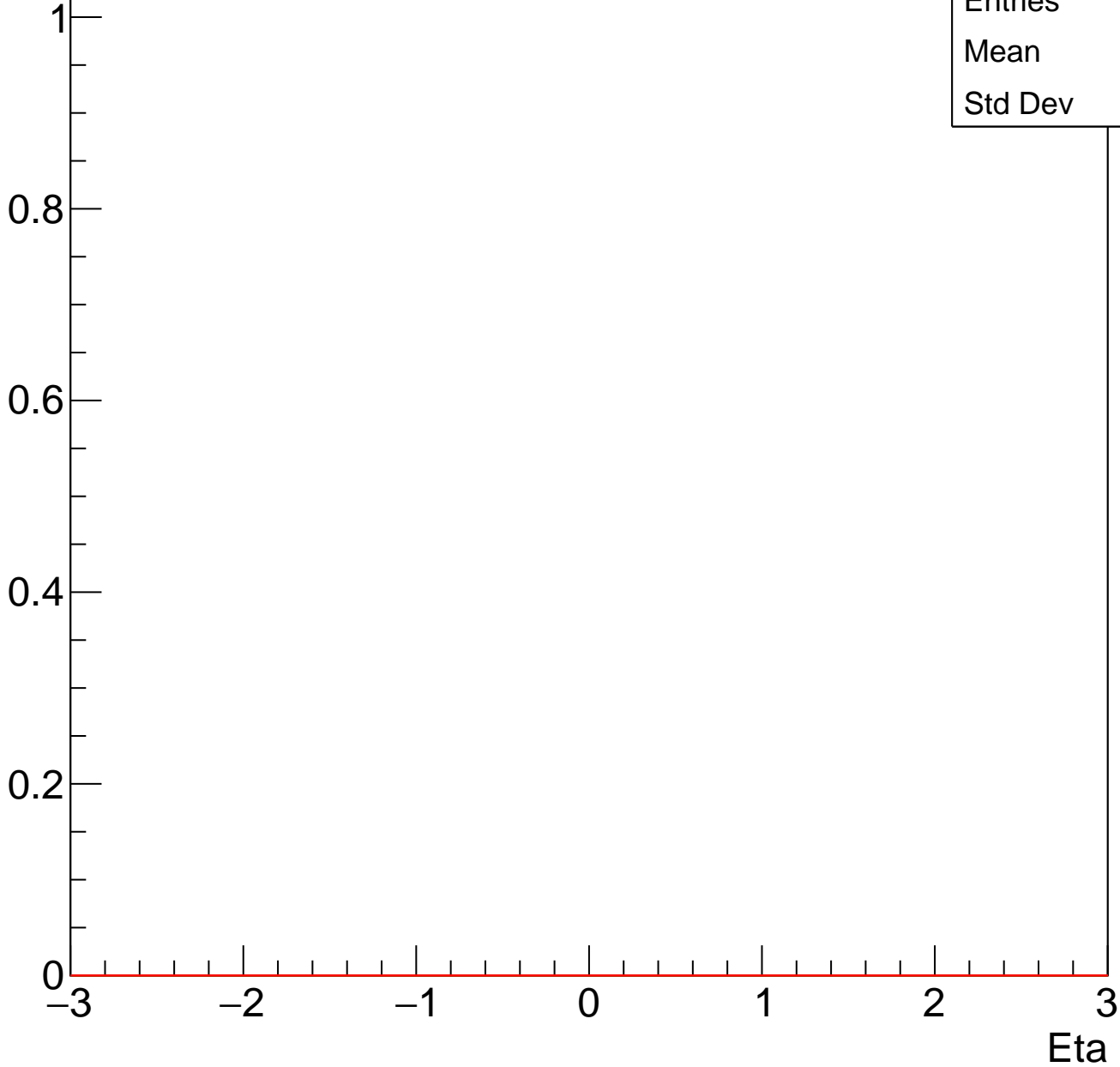
Leading Isolated Electron Transverse Momentum After MET Cut

Events



Leading Isolated Electron Pseudorapidity After MET Cut

Events



Leading Isolated Electron Angle After MET Cut

Events

1
0.8
0.6
0.4
0.2
0

-3 -2 -1 0 1 2 3

Phi (Radians)

2018_Mu_Data_leading_isolated_electron_phi_after_met_cut_nominal	
Entries	0
Mean	0
Std Dev	0

Leading Isolated Electron Mass After MET Cut

Events

1

0.8

0.6

0.4

0.2

0

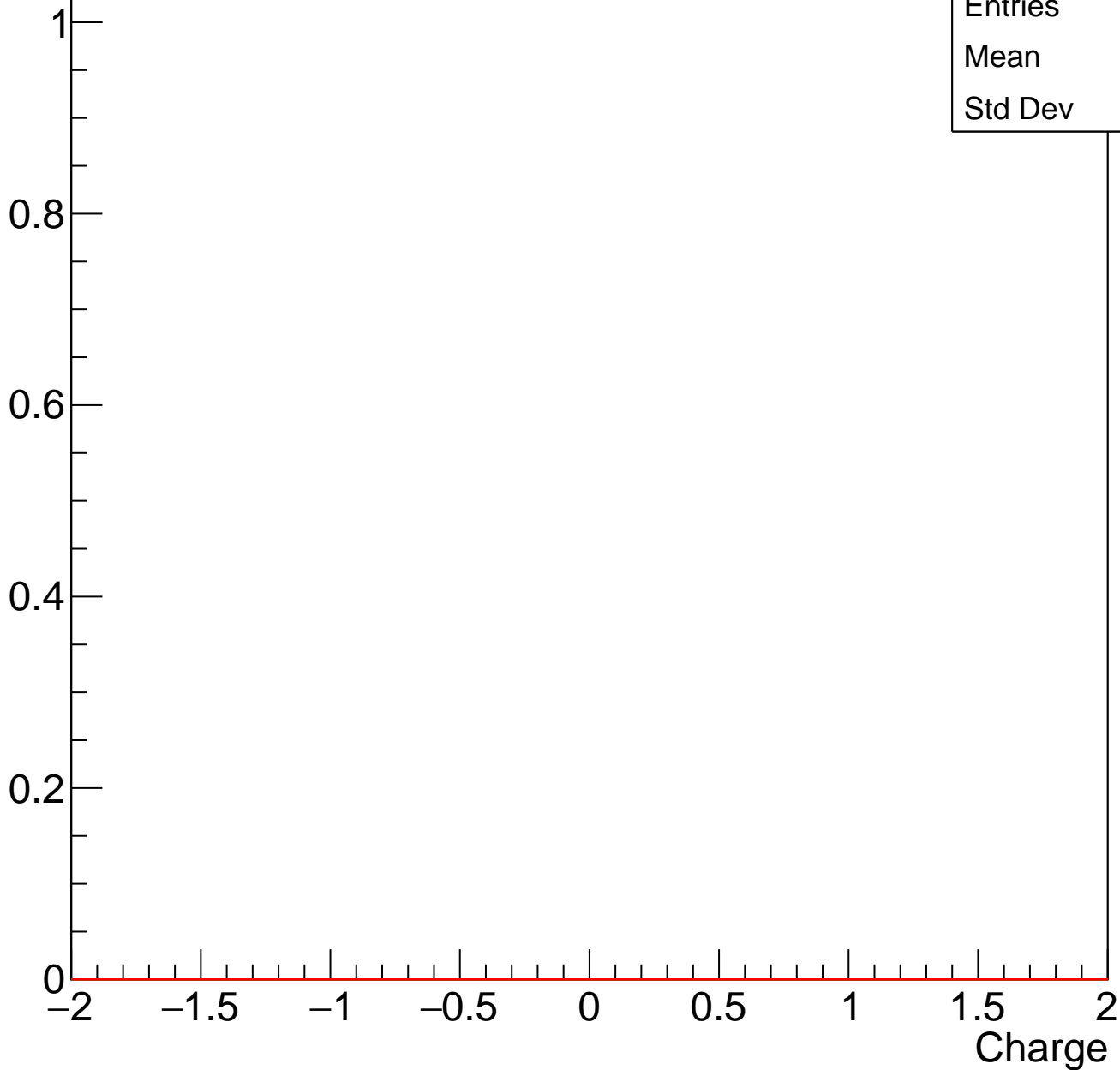
0.00010.00020.00030.00040.00050.00060.00070.00080.00090.001

Mass(Gev)

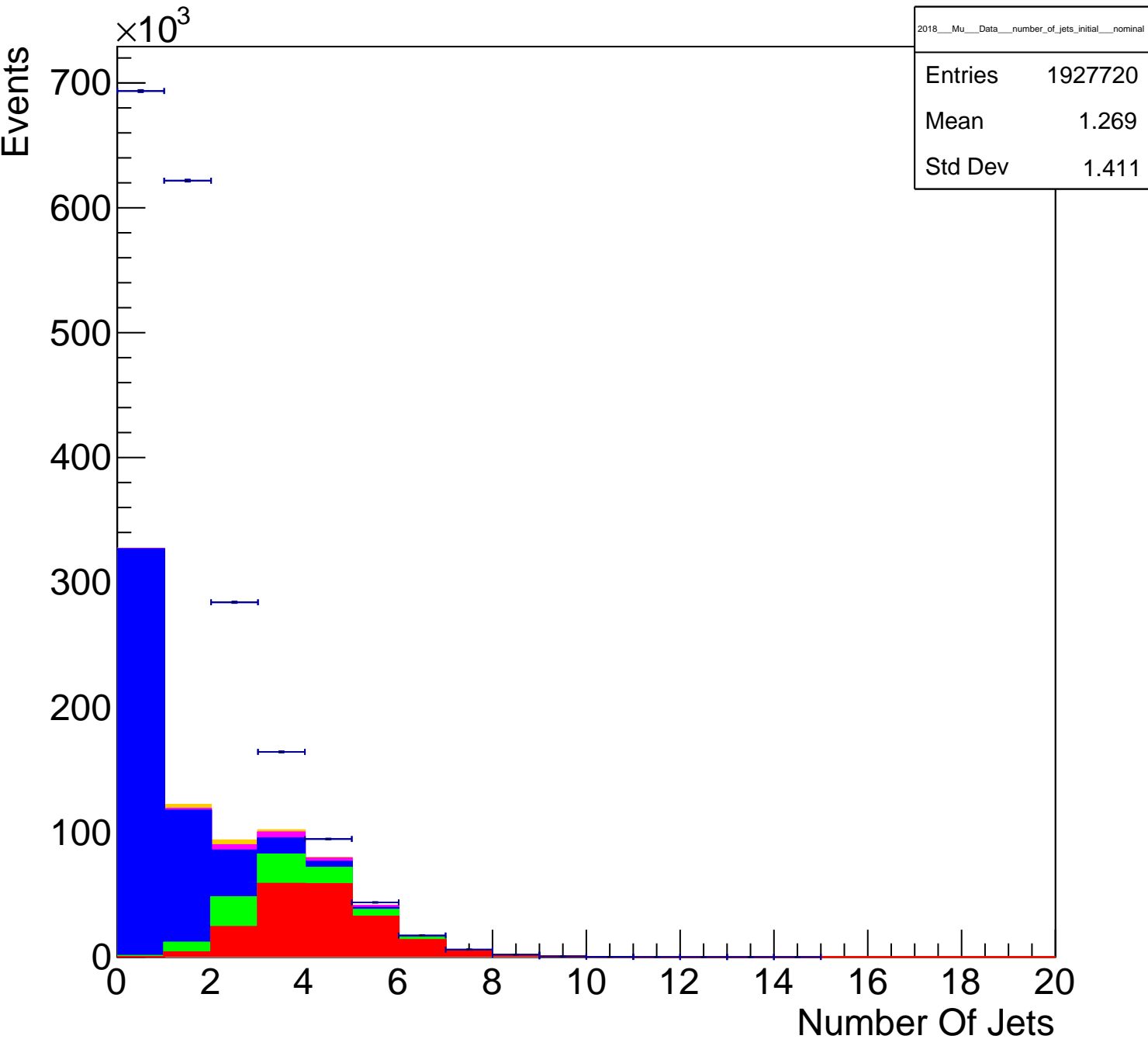
2018_Mu_Data_leading_isolated_electron_mass_after_met_cut_nominal	
Entries	0
Mean	0
Std Dev	0

Leading Isolated Electron Charge After MET Cut

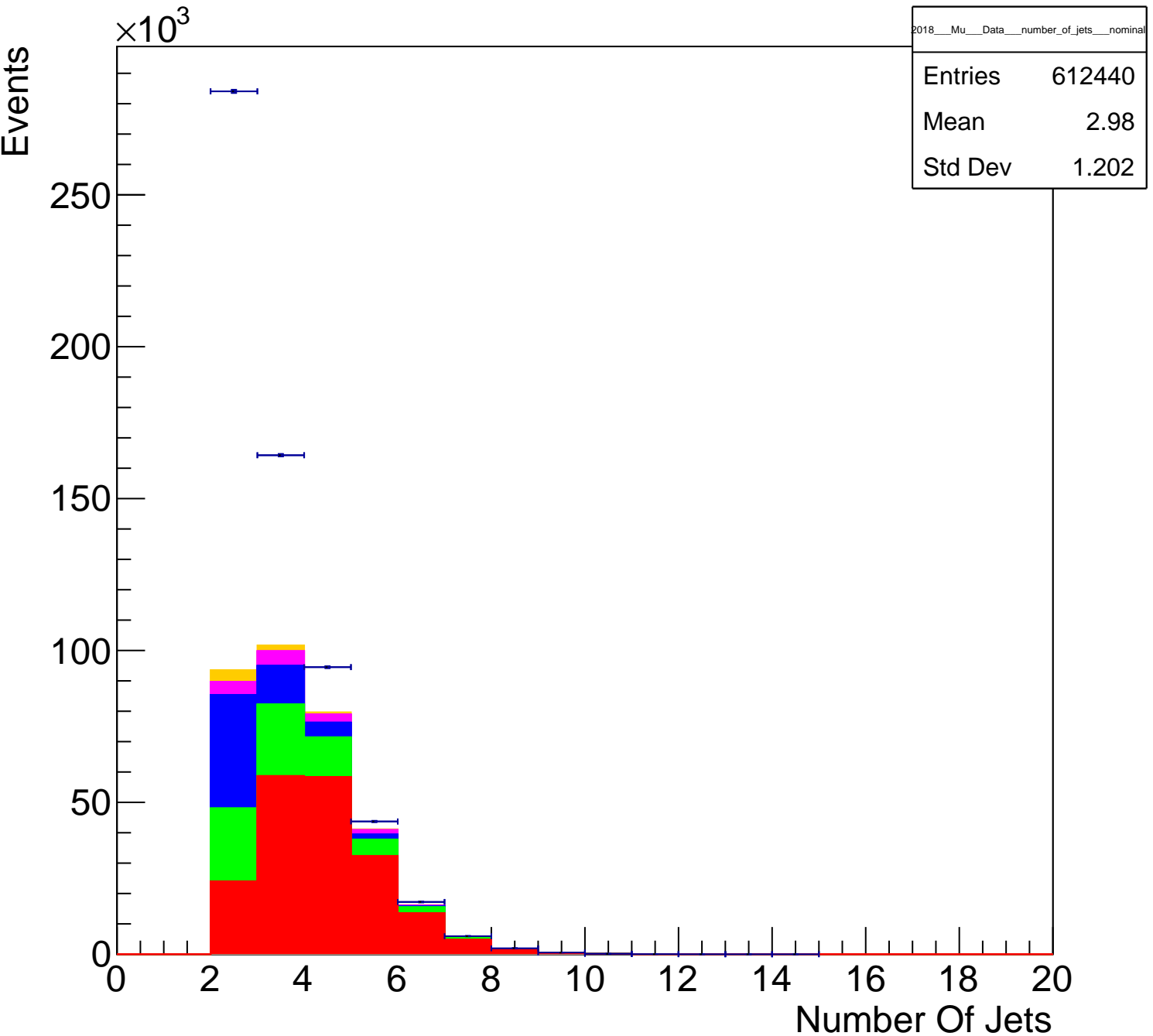
Events



Number of Jets Before Jet Cut



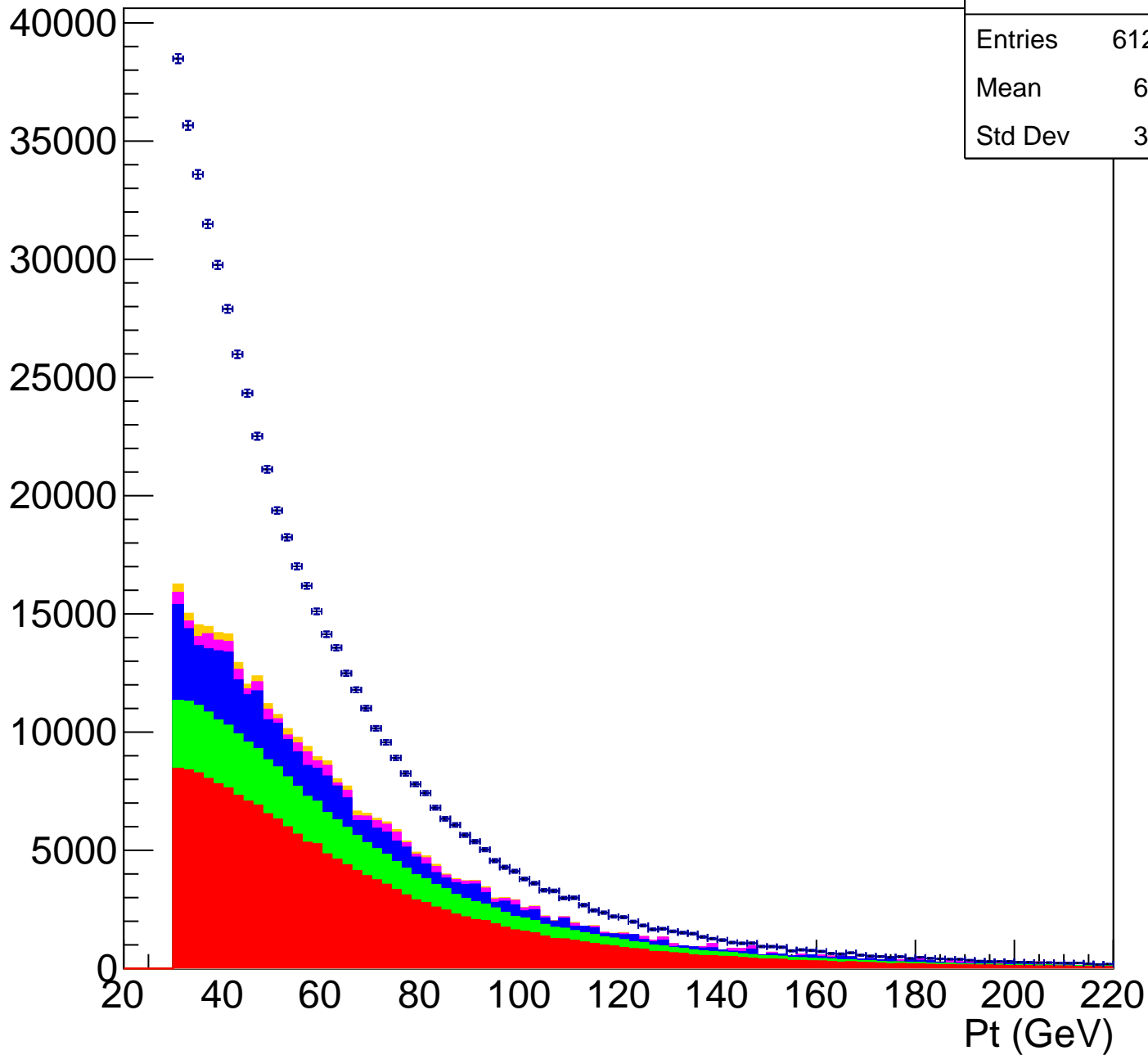
Number Of Jets



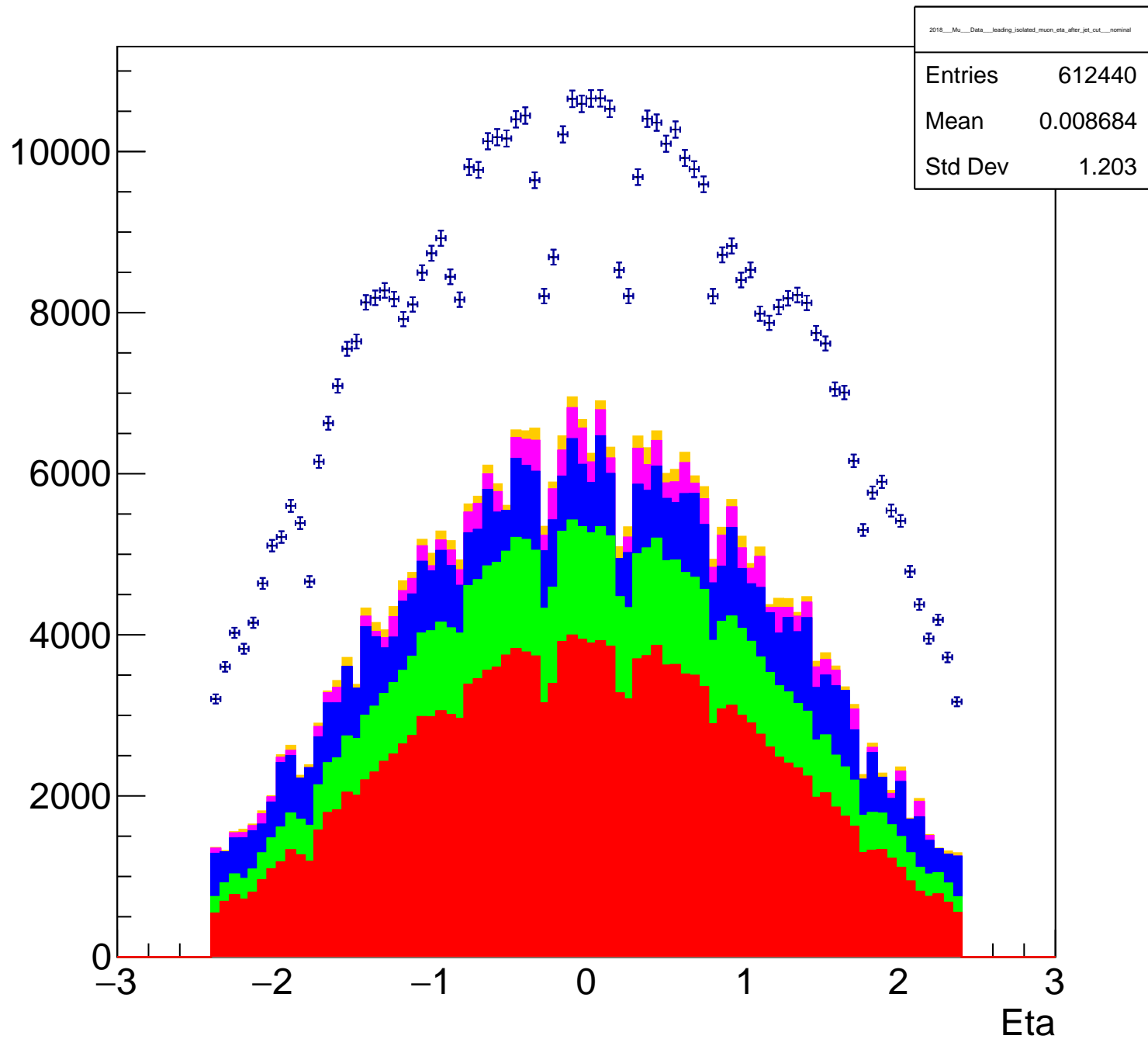
Leading Isolated Muon Transverse Momentum After Jet Cut

2018_Mu_Data_leading_isolated_muon_pt_after_jet_cut_nominal

Entries	612440
Mean	61.39
Std Dev	31.62

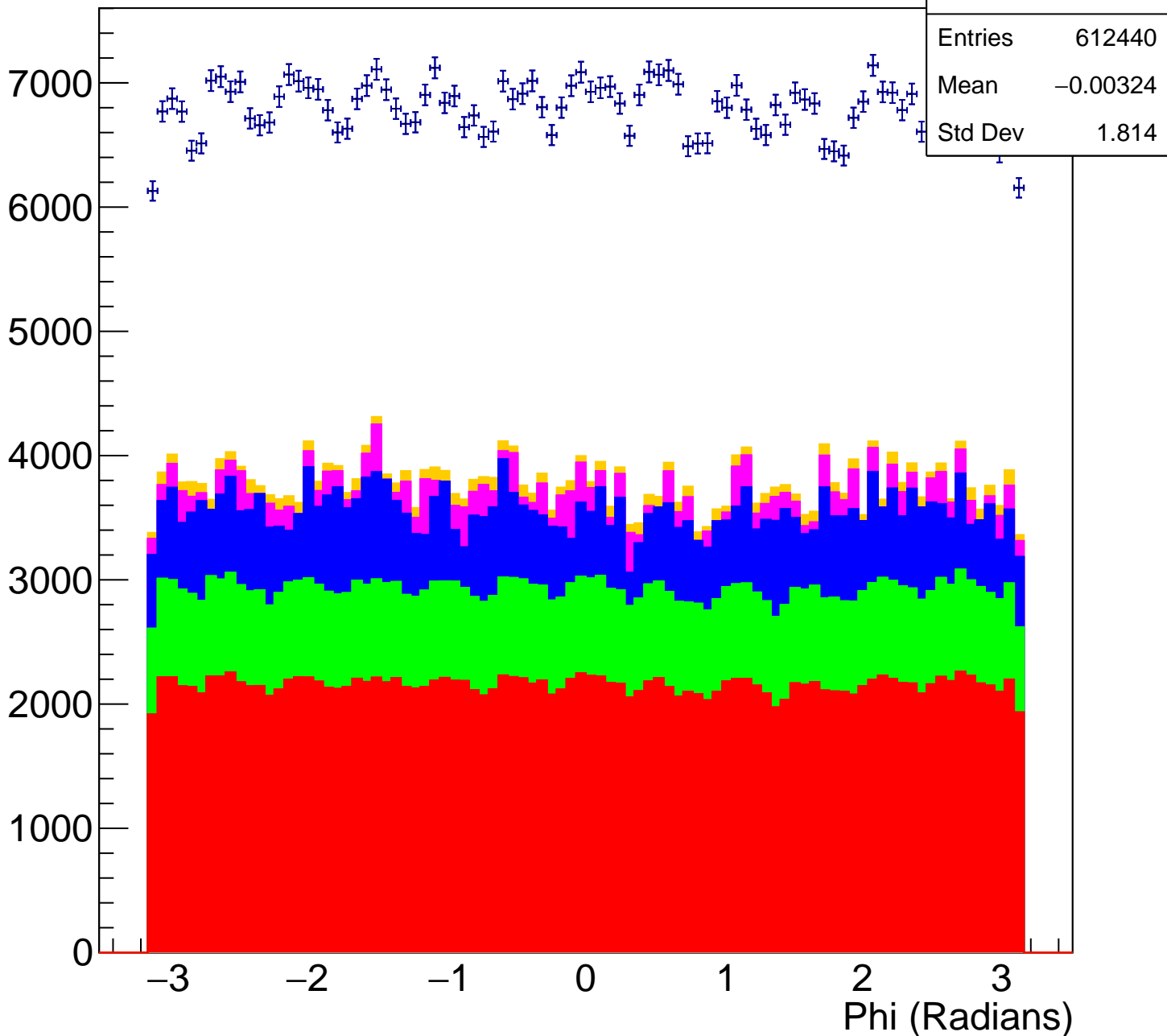


Leading Isolated Muon Pseudorapidity After Jet Cut

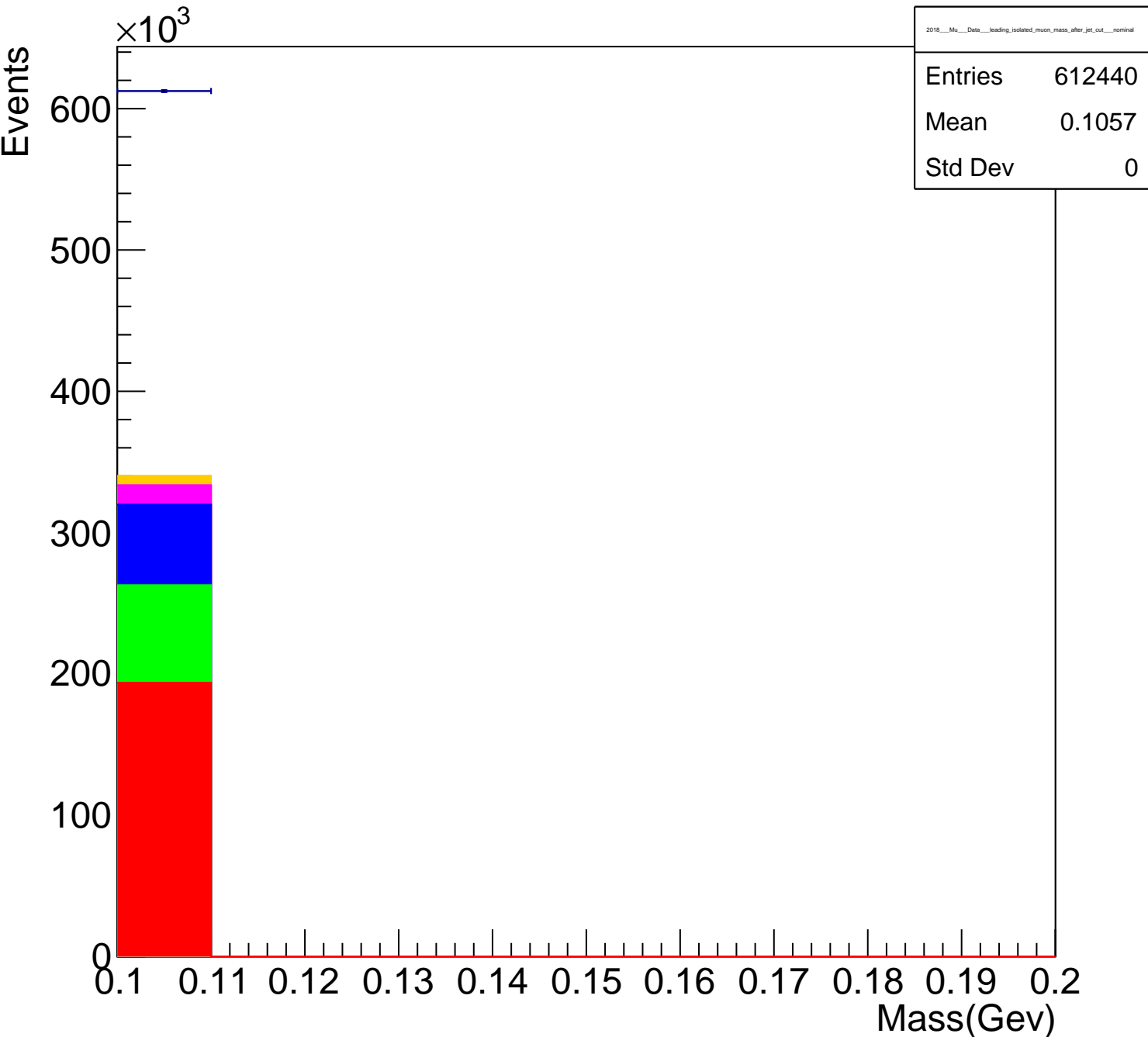


Leading Isolated Muon Angle After Jet Cut

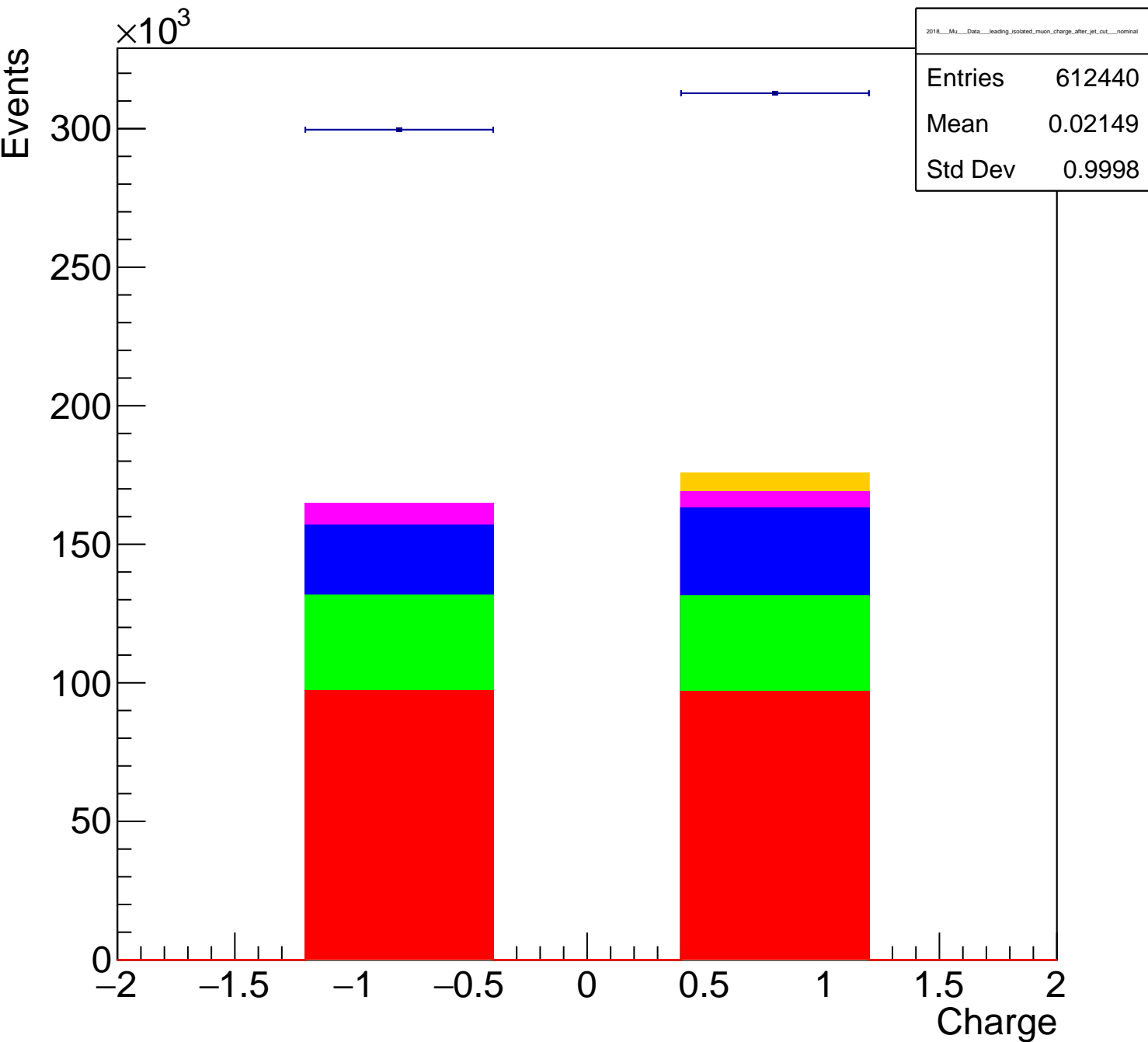
Events



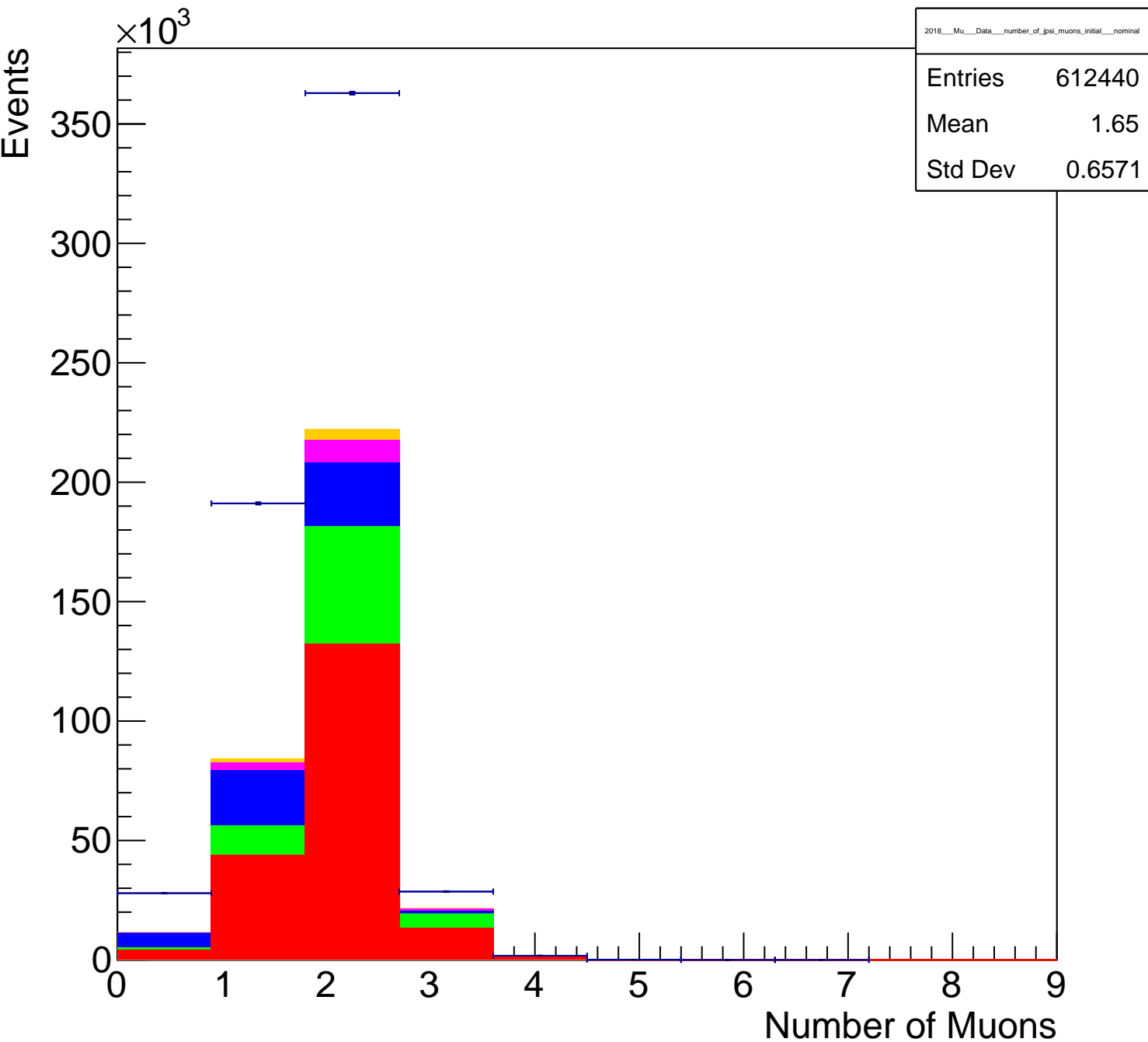
Leading Isolated Muon Mass After Jet Cut



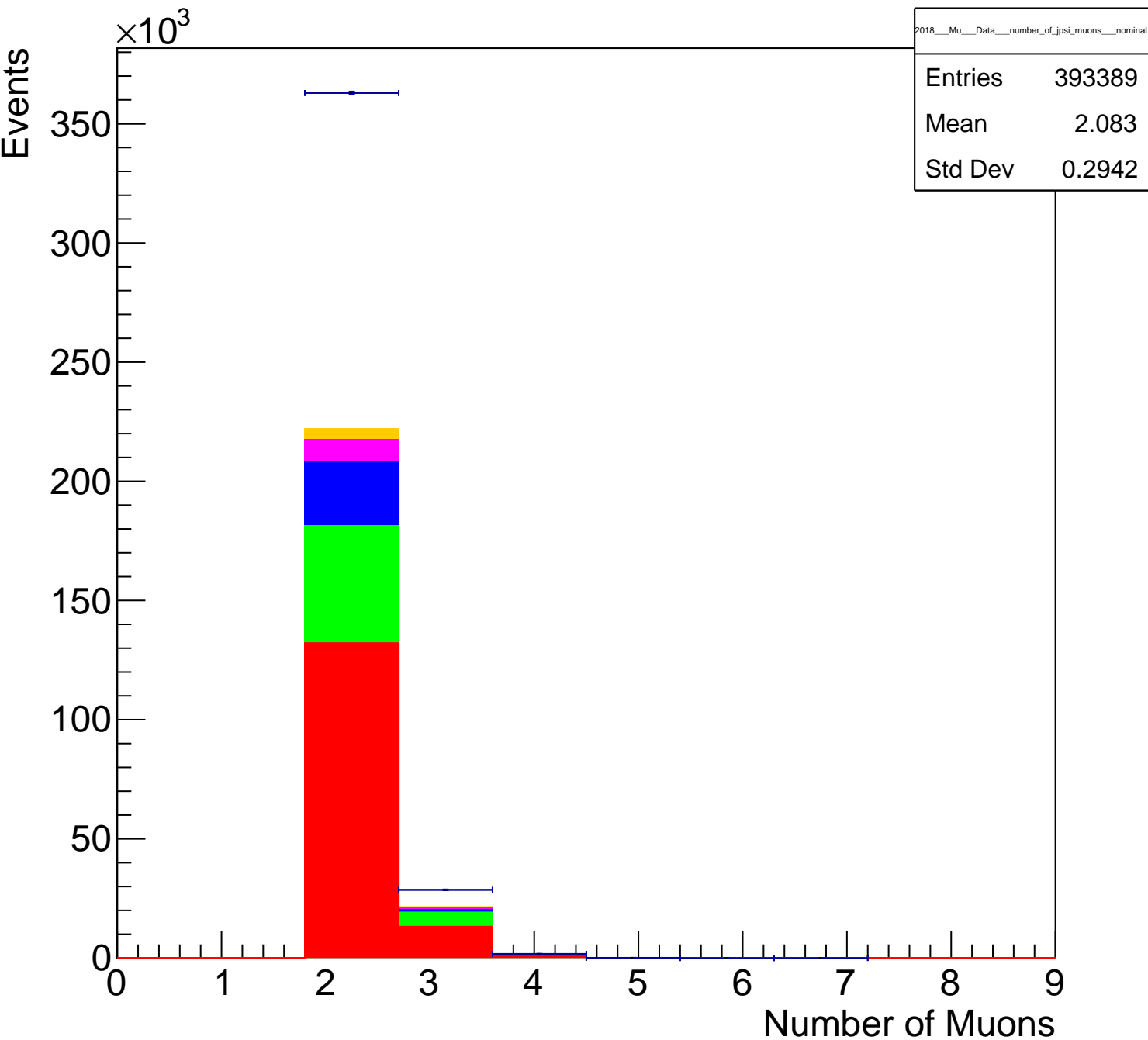
Leading Isolated Muon Charge After Jet Cut



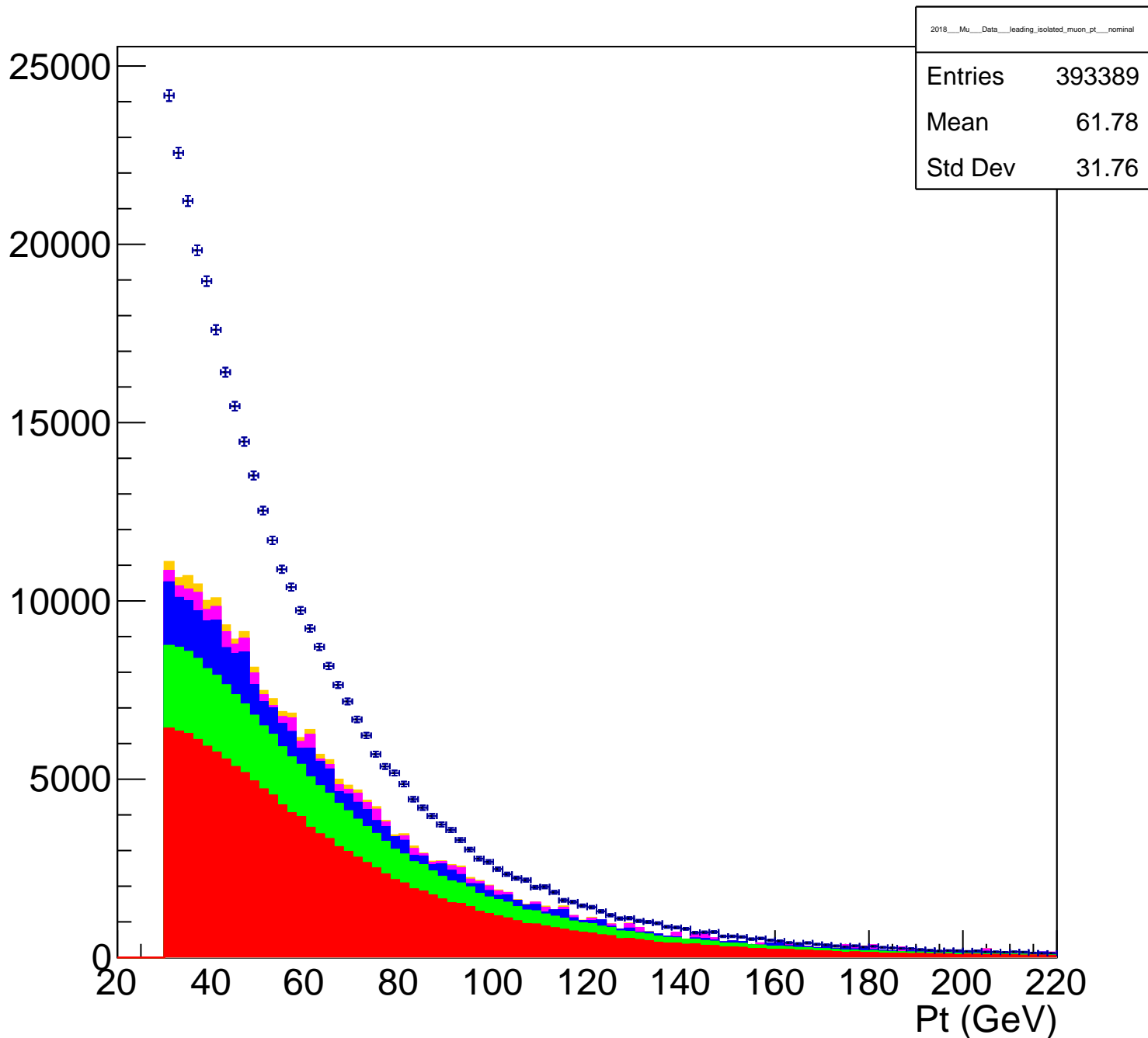
Number of JPsi Muons Before JPsi Muon Cut



Number of JPsi Muons



Leading Isolated Muon Transverse Momentum



Leading Isolated Muon Pseudorapidity

Events

7000

6000

5000

4000

3000

2000

1000

0

-3

-2

-1

0

1

2

3

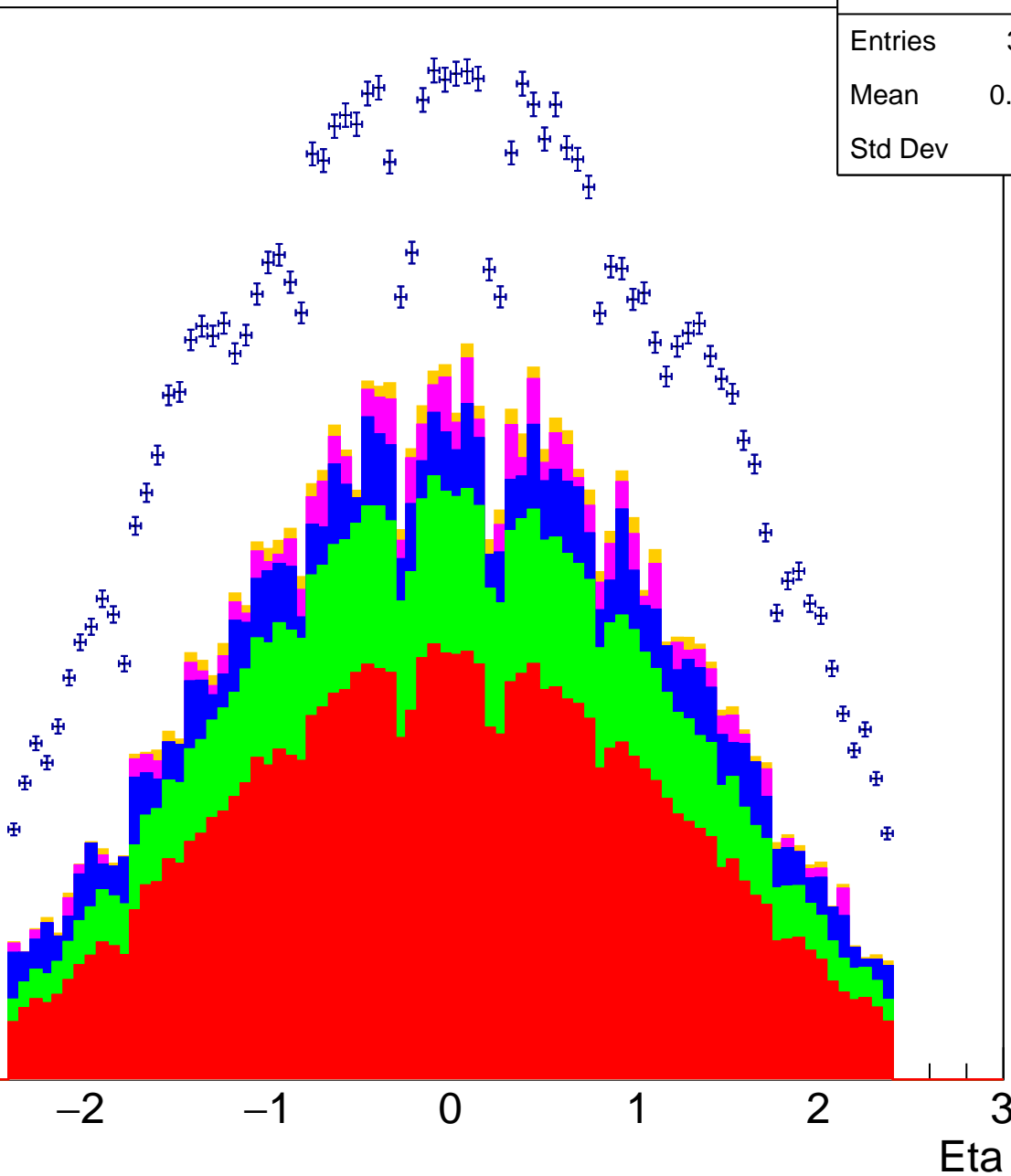
Eta

2018_Mu_Data_leading_isolated_muon_eta_nominal

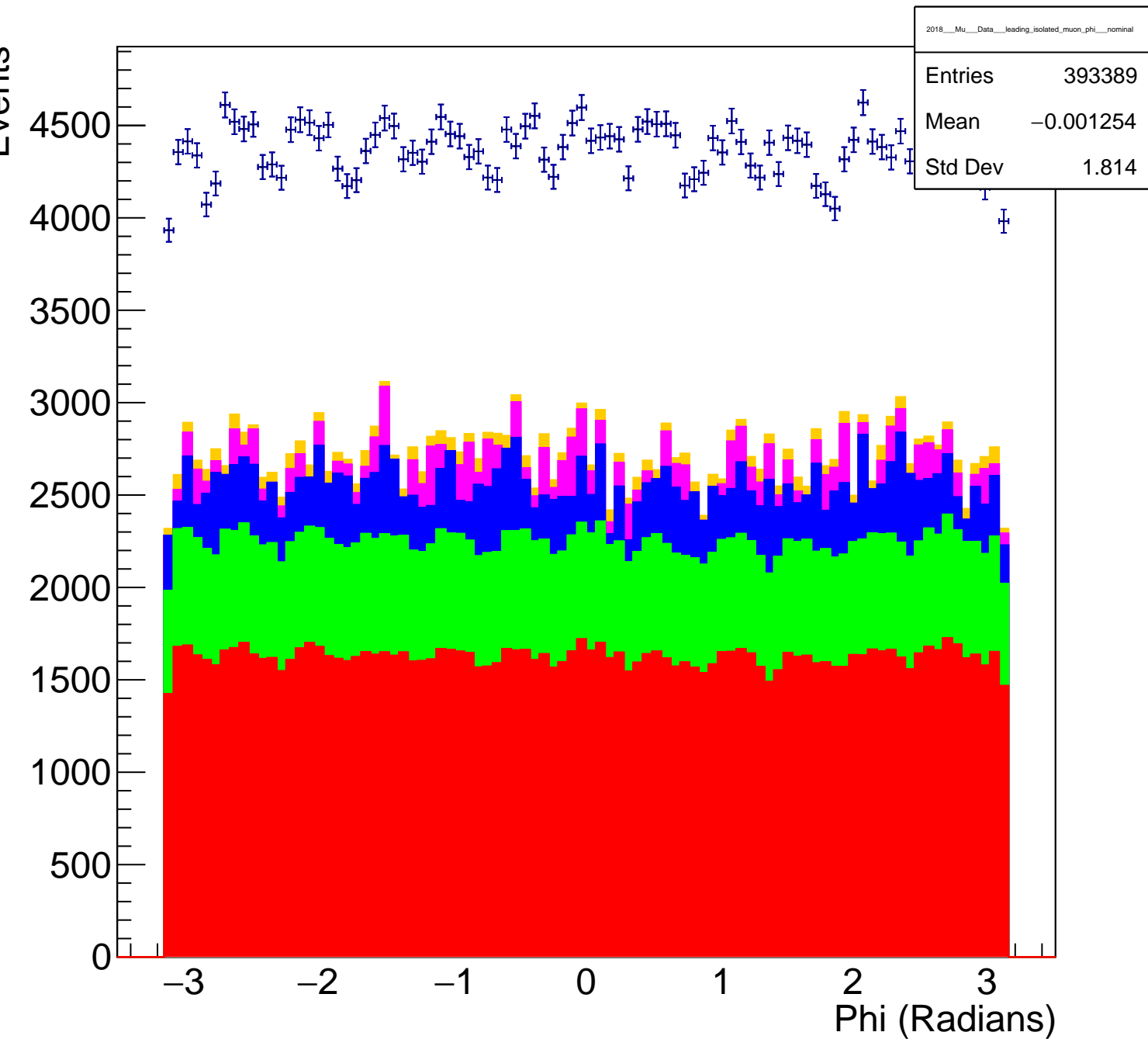
Entries 393389

Mean 0.005921

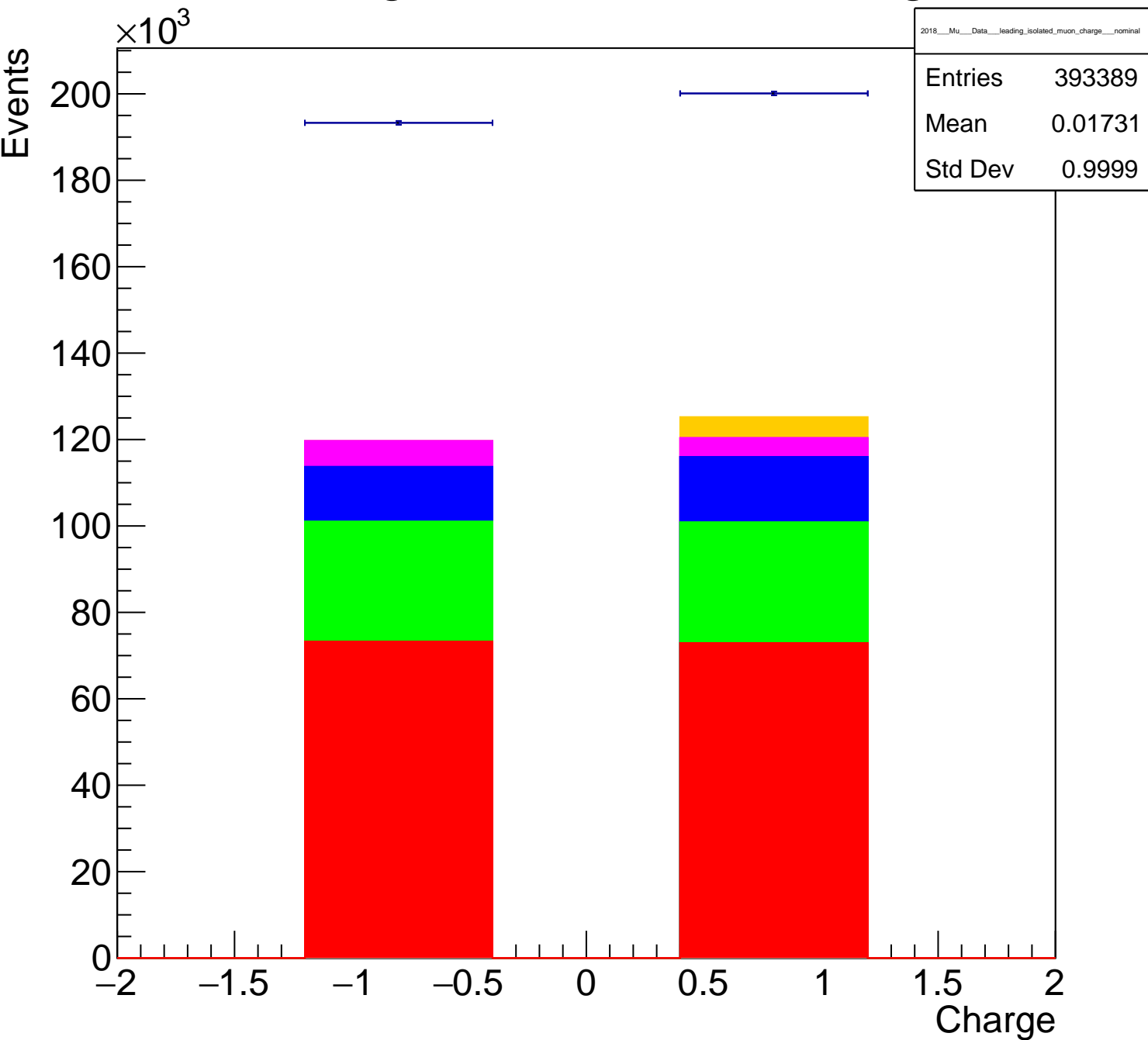
Std Dev 1.178



Leading Isolated Muon Angle



Leading Isolated Muon Charge



Jet Transverse Momentum for Leading Jet

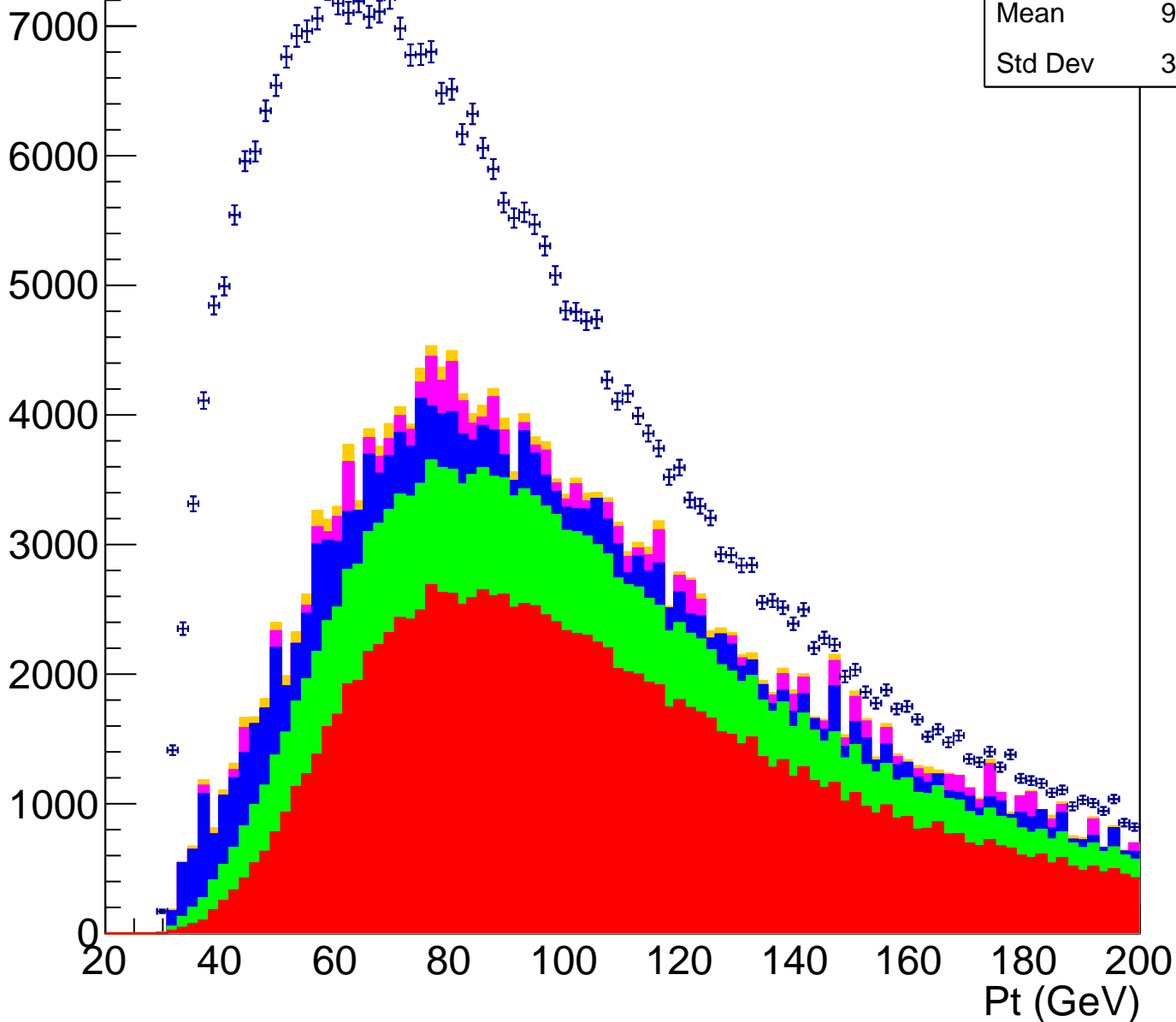
Events

2018_Mu_Data_jet1_pt_nominal

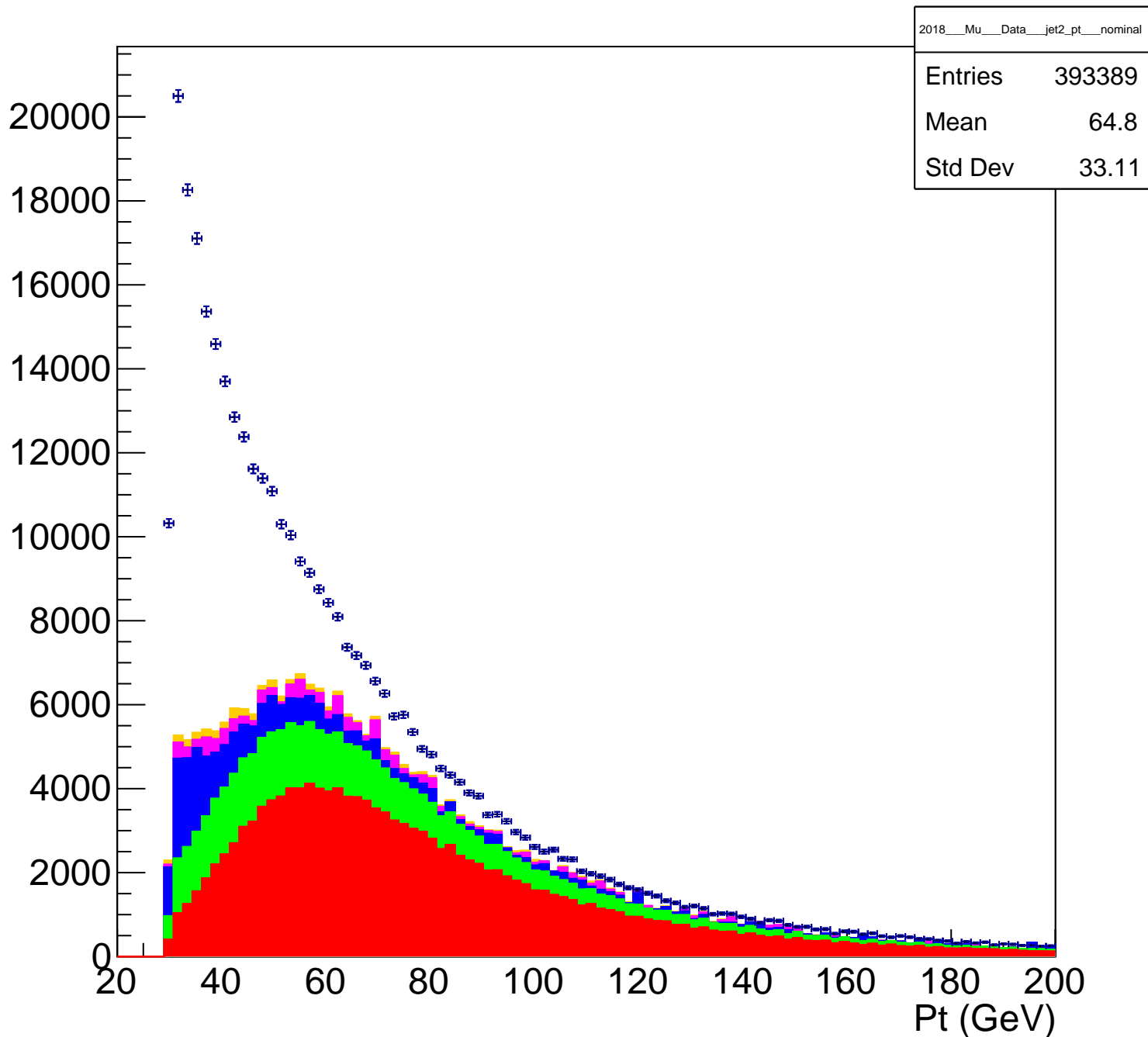
Entries 393389

Mean 91.68

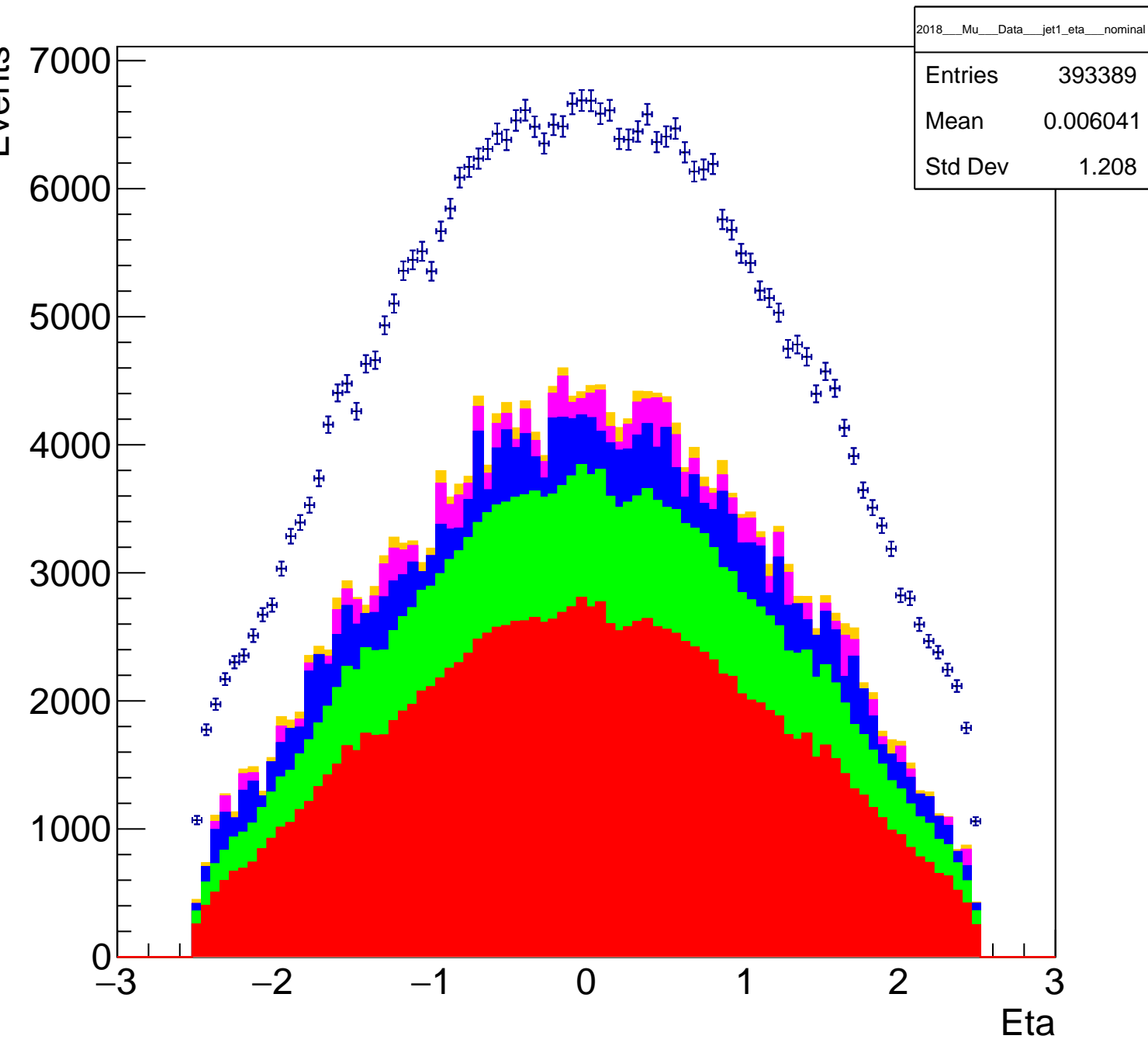
Std Dev 39.59



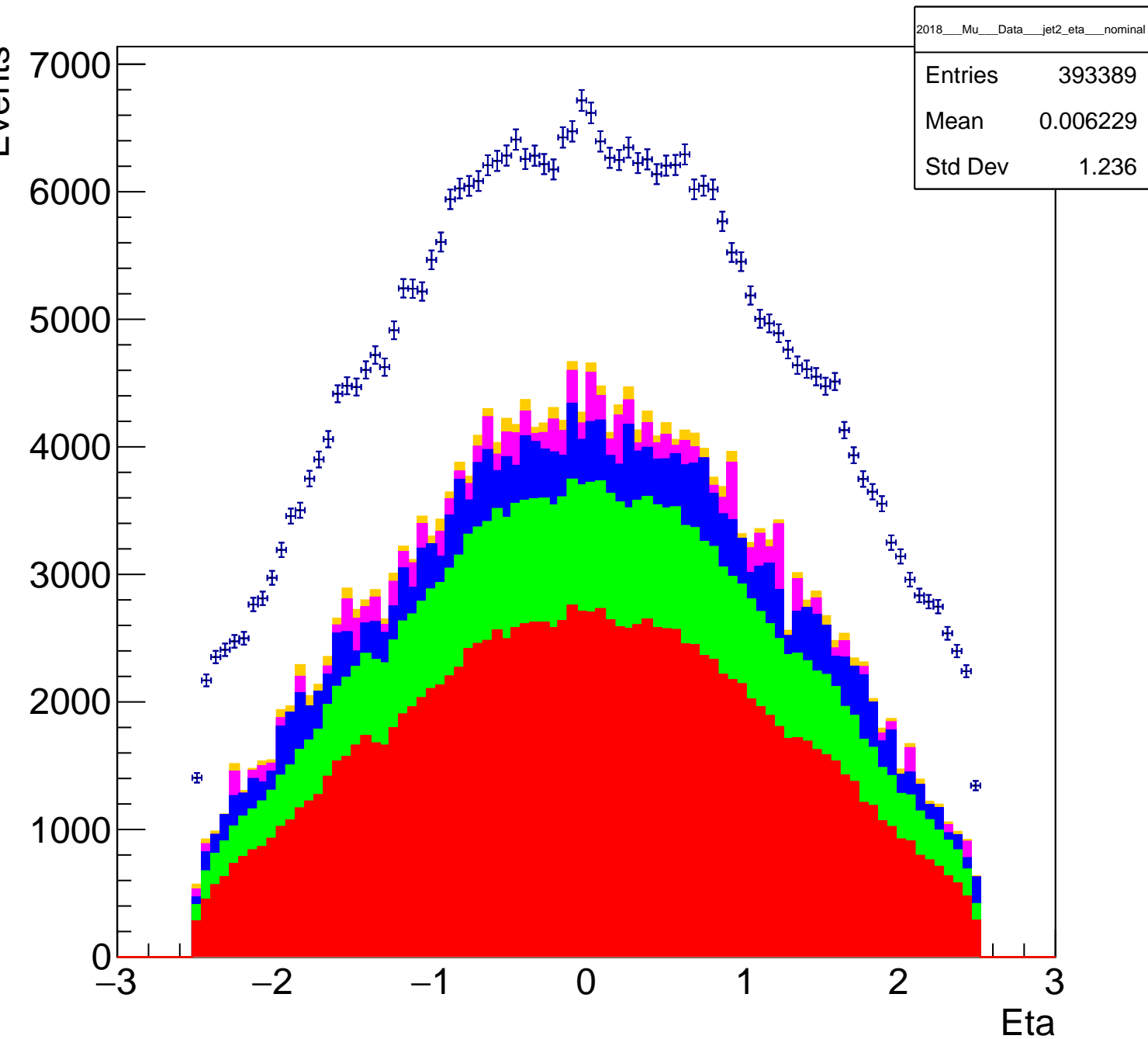
Jet Transverse Momentum for Subleading Jet



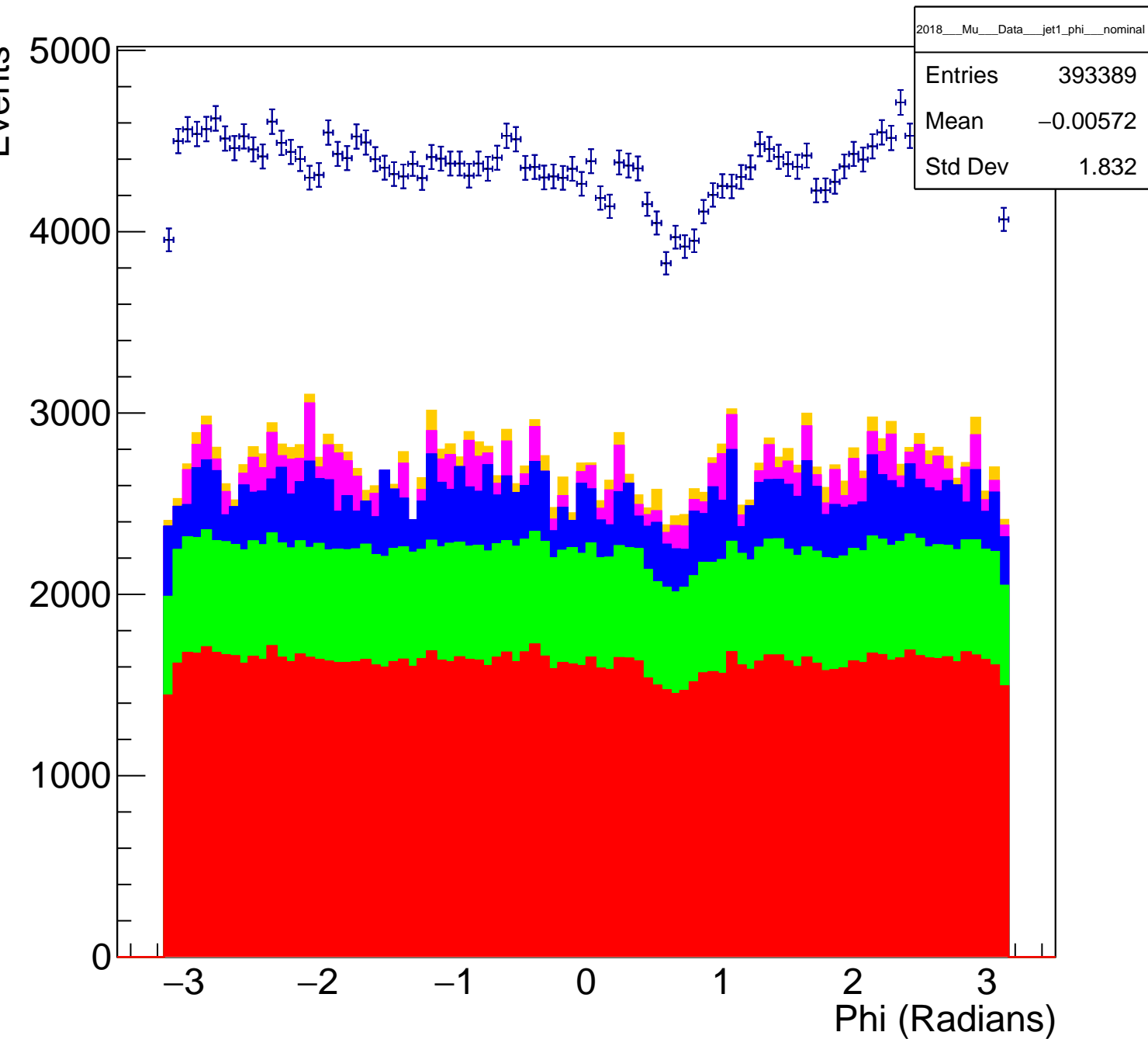
Jet Pseudorapidity for Leading Jet



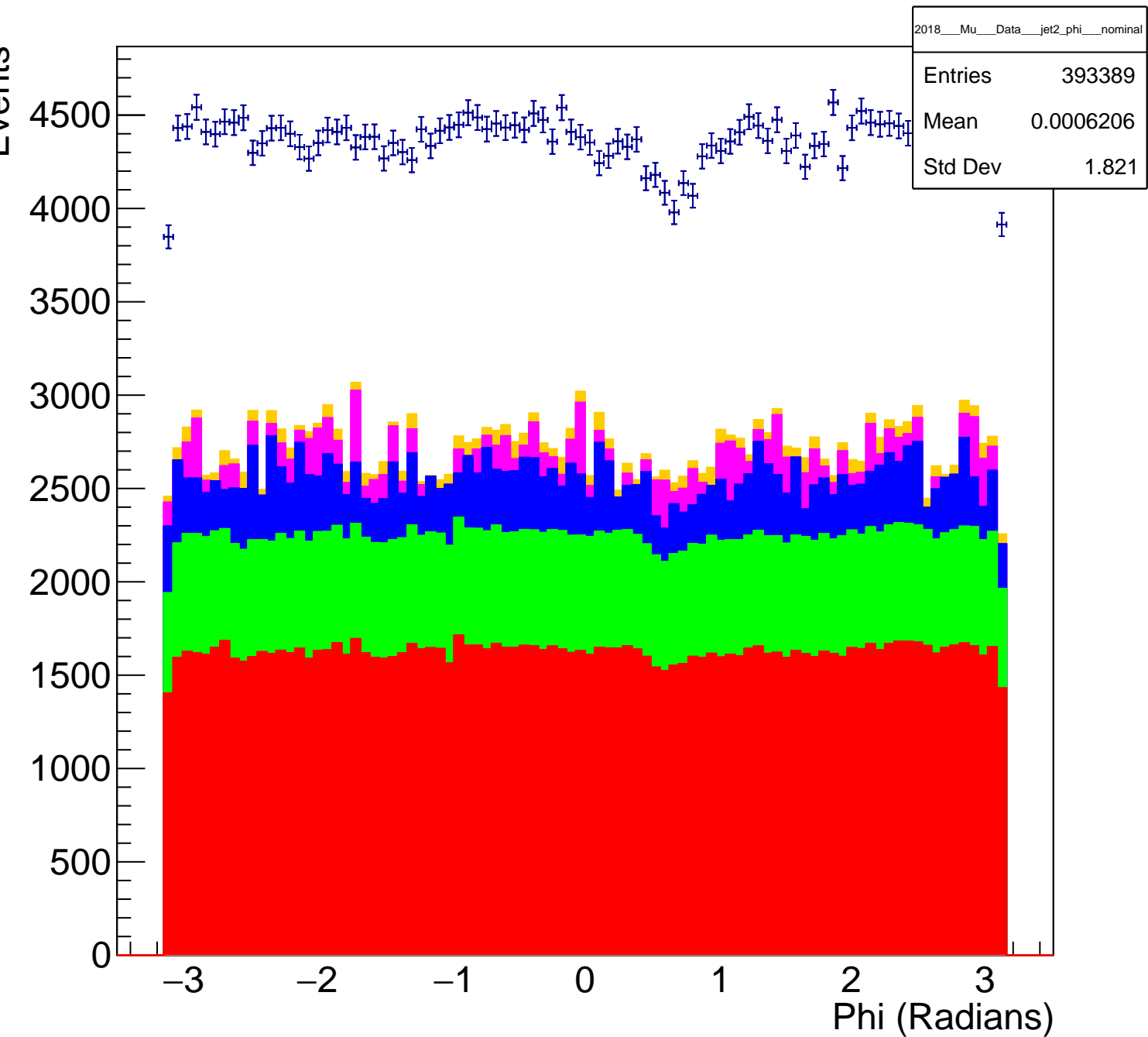
Jet Pseudorapidity for Subleading Jet



Jet Angle for Leading Jet



Jet Angle for Subleading Jet



Transverse Mass

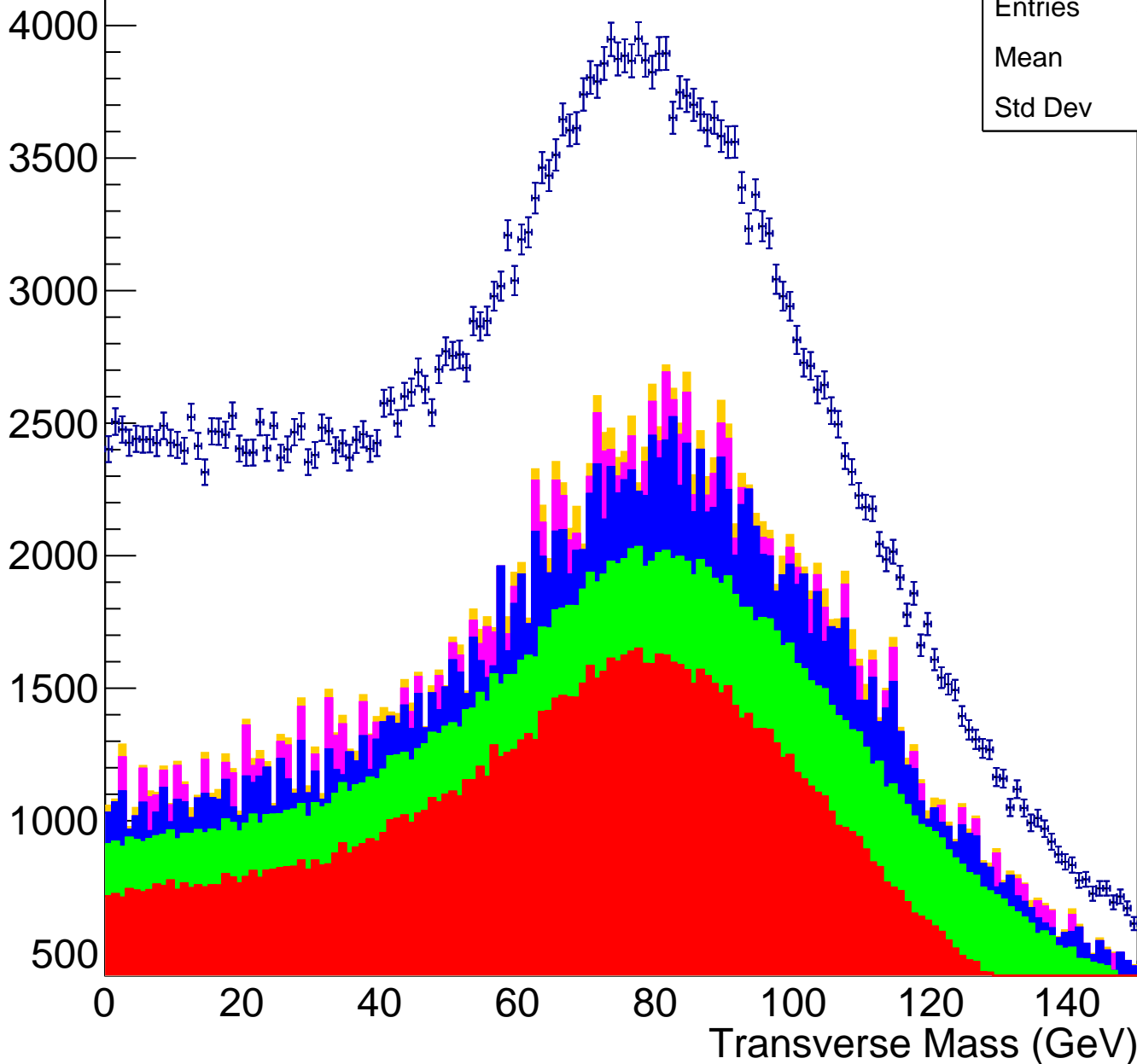
Events

2018__Mu__Data__transverse_mass__nominal

Entries 393389

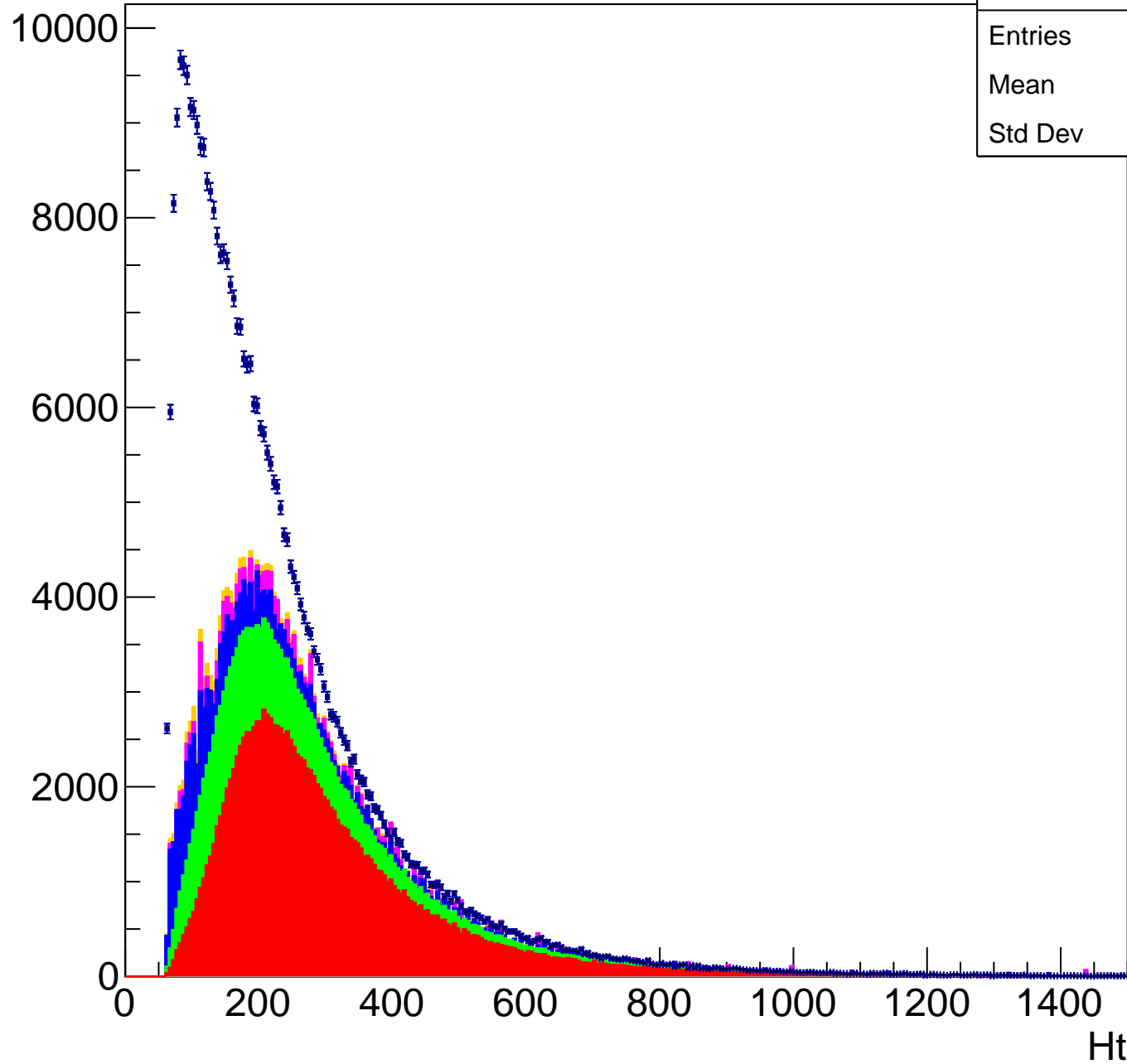
Mean 67.67

Std Dev 36.81

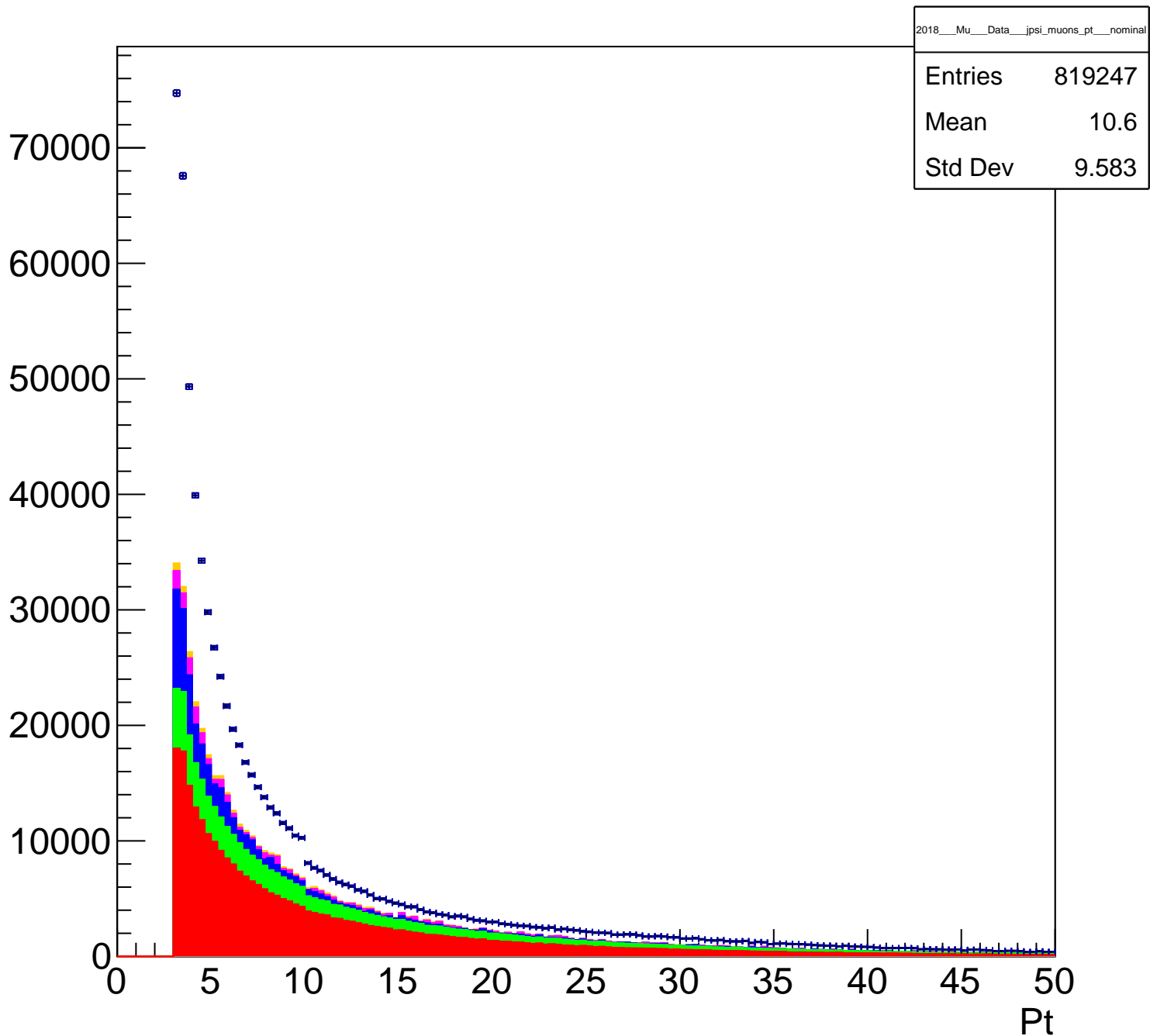


Ht

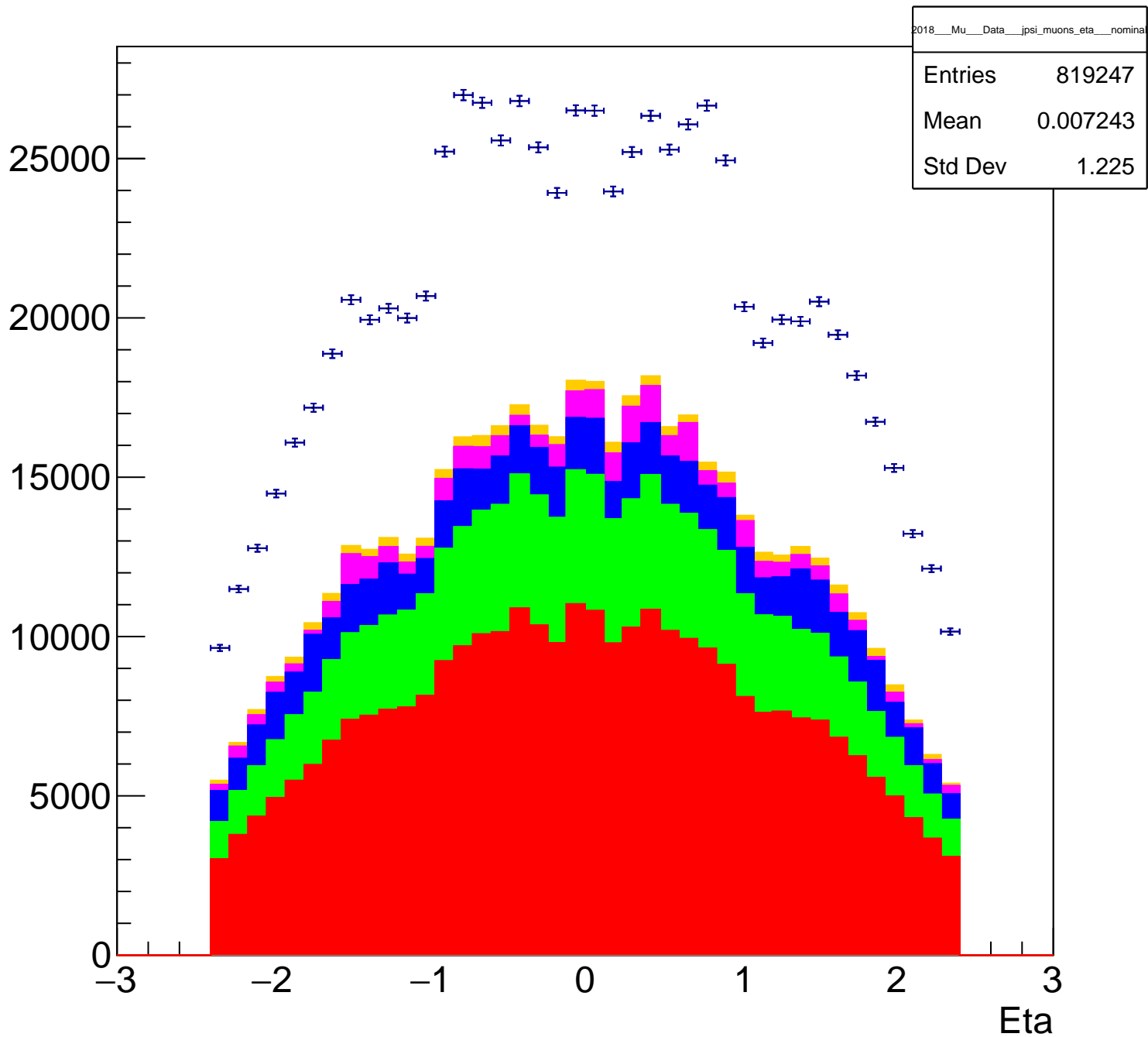
2018__Mu__Data__ht__nominal	
Entries	393389
Mean	231.9
Std Dev	163.9



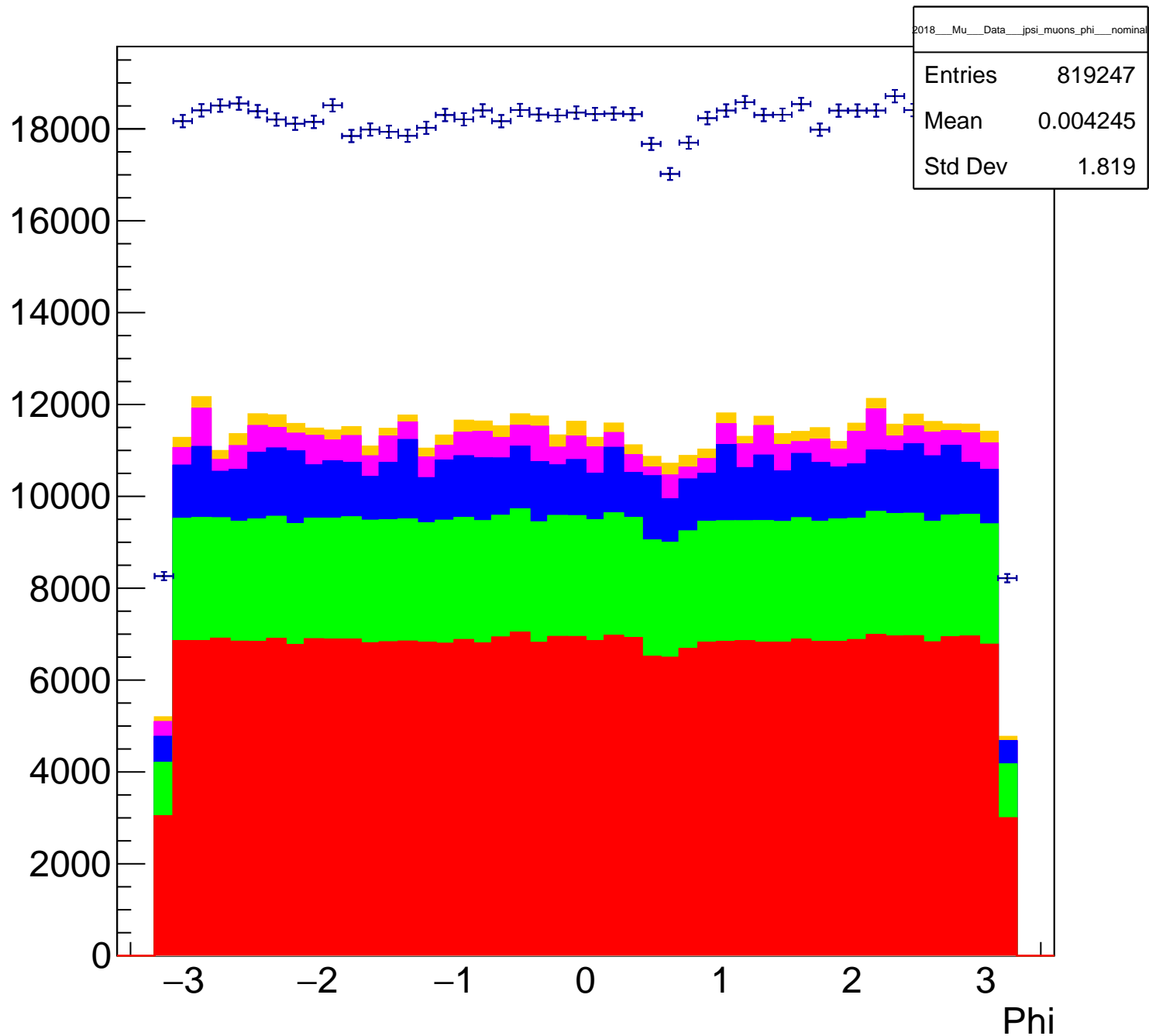
Transverse Momentum for JPsi Muons



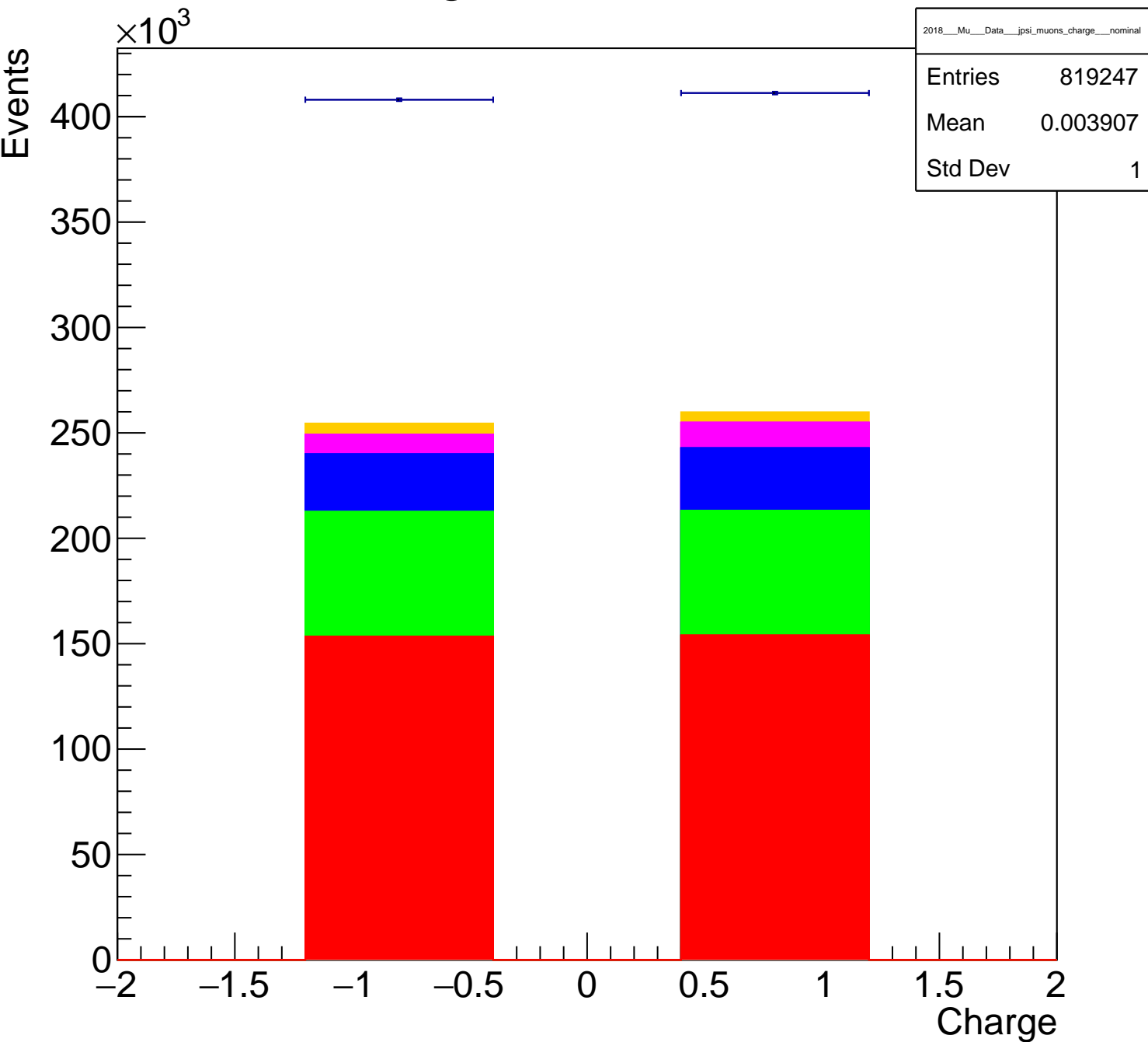
Pseudorapidity for JPsi Muons



Angle for JPsi Muons

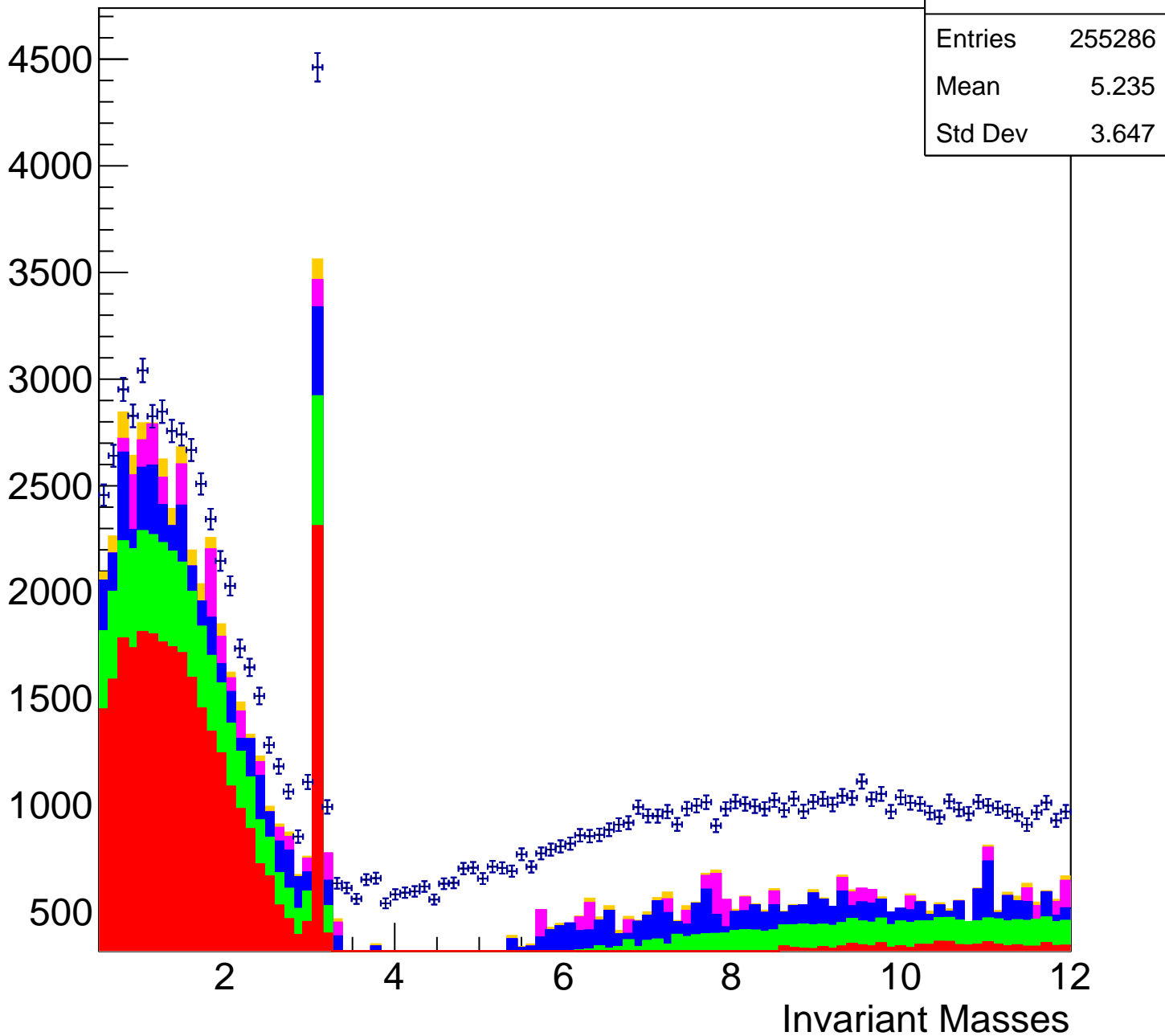


Charge of JPsi Muons



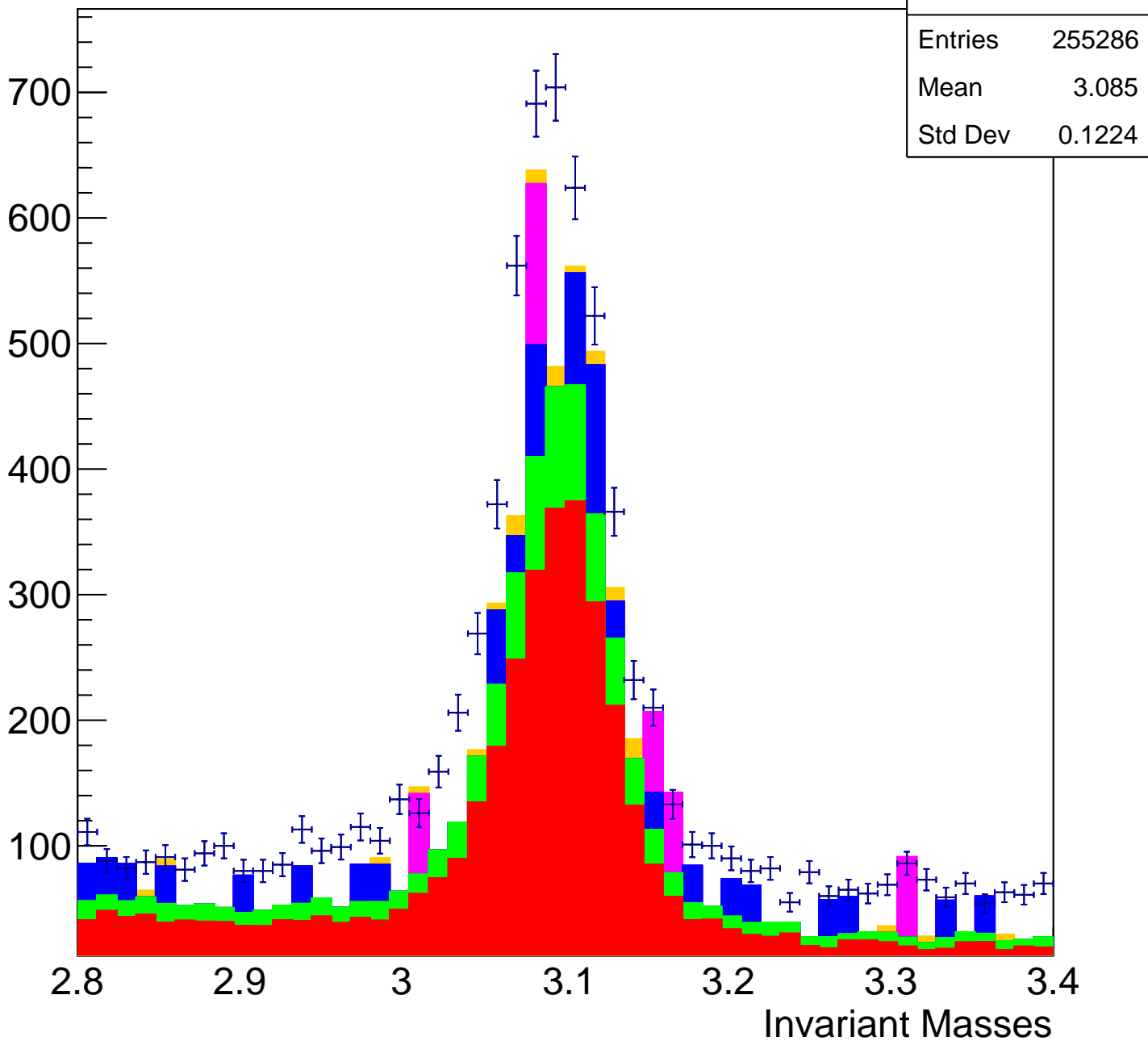
Invariant Masses for J/Psi Candidate Muons (Oppositely Charged)

Events



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

Events

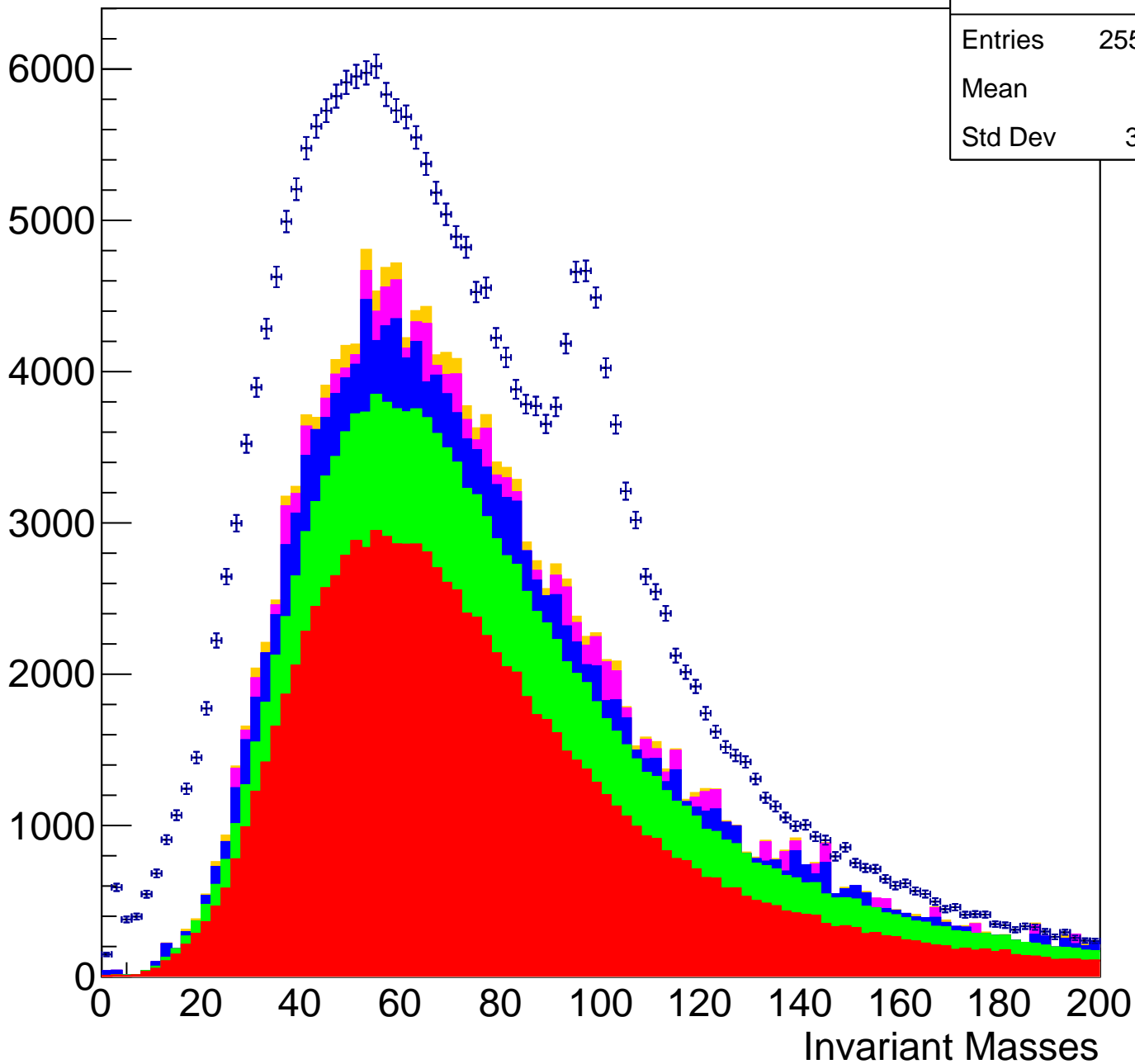


Invariant Masses for J/Psi Candidate And Isolated Muons

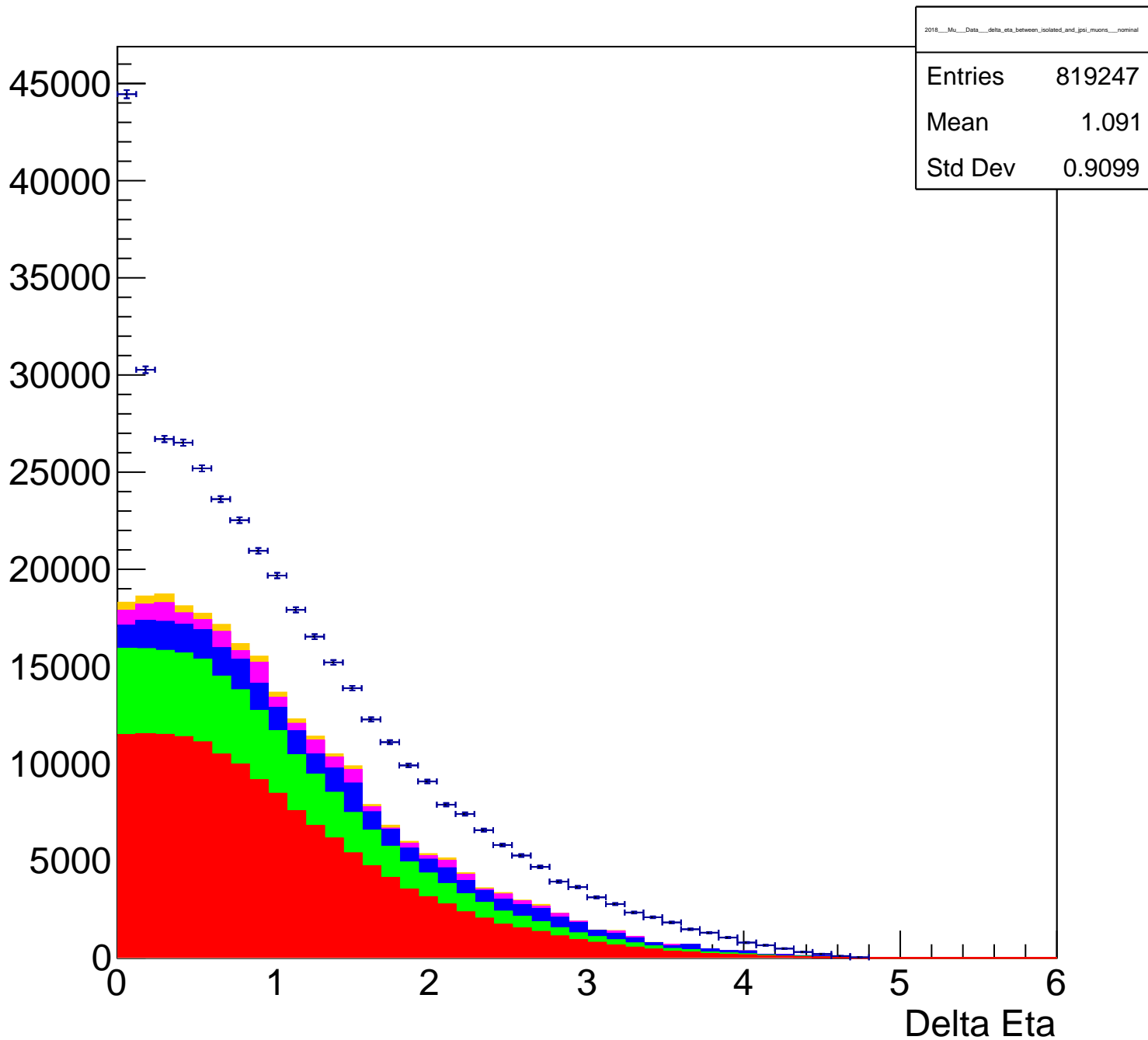
Events

2018_Mu_Data_invariant_mass_psi_and_isolated_muons_nominal

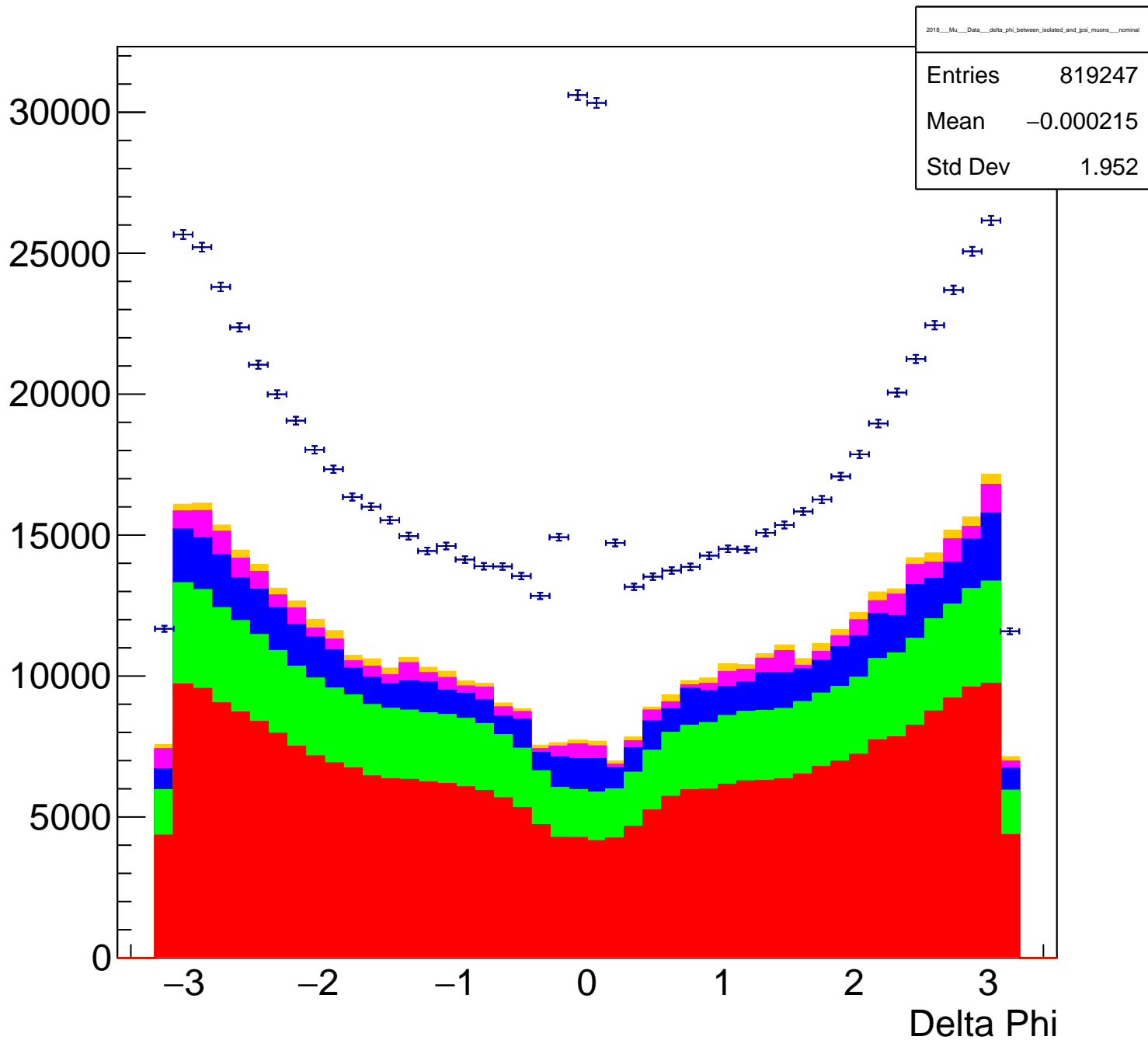
Entries	255286
Mean	74.6
Std Dev	37.21



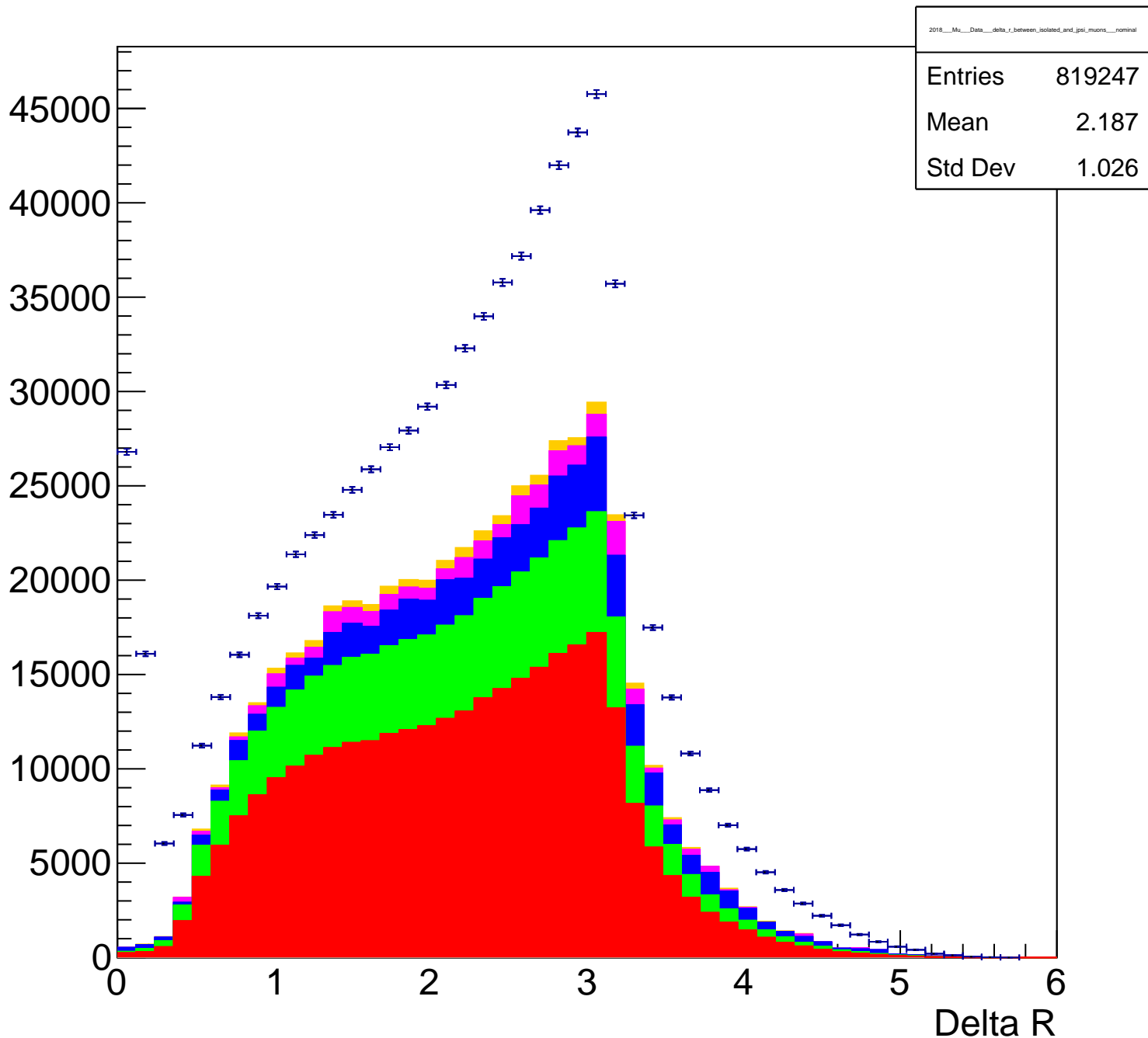
Delta Eta for Isolated Muon - JPsi Muons



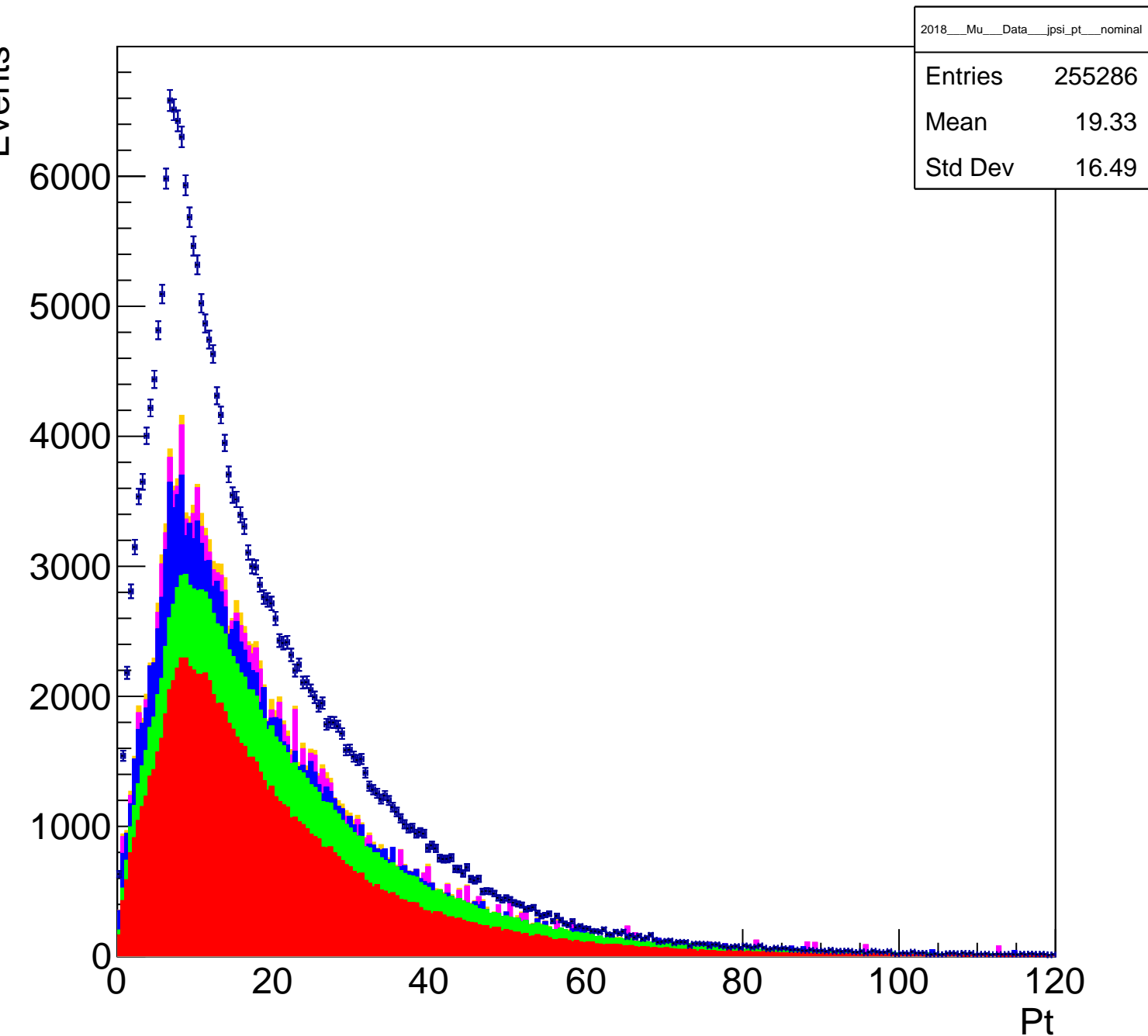
Delta Phi for Isolated Muon - JPsi Muons



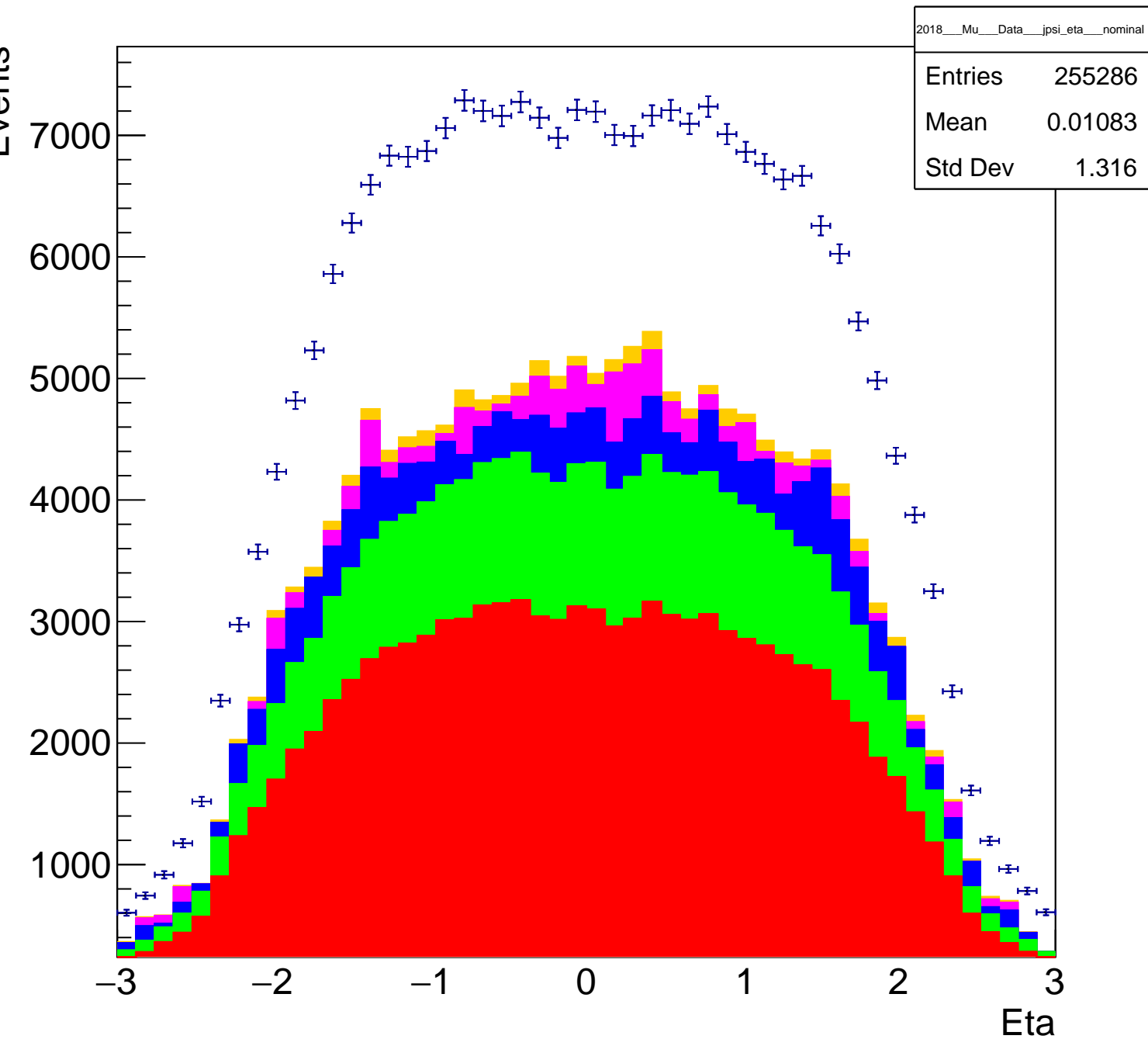
Delta R for Isolated and JPsi Muons



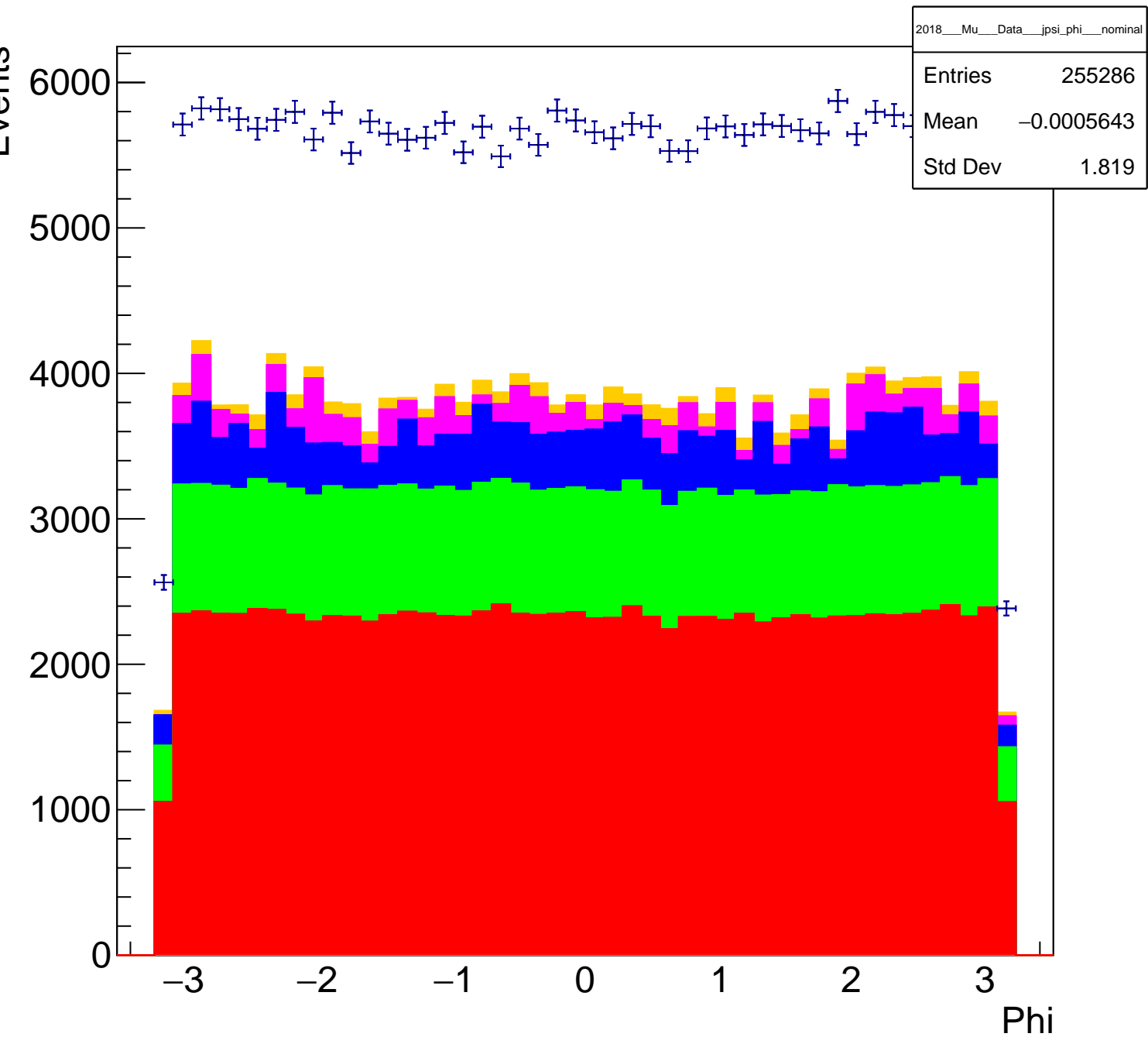
Transverse Momentum for JPsi



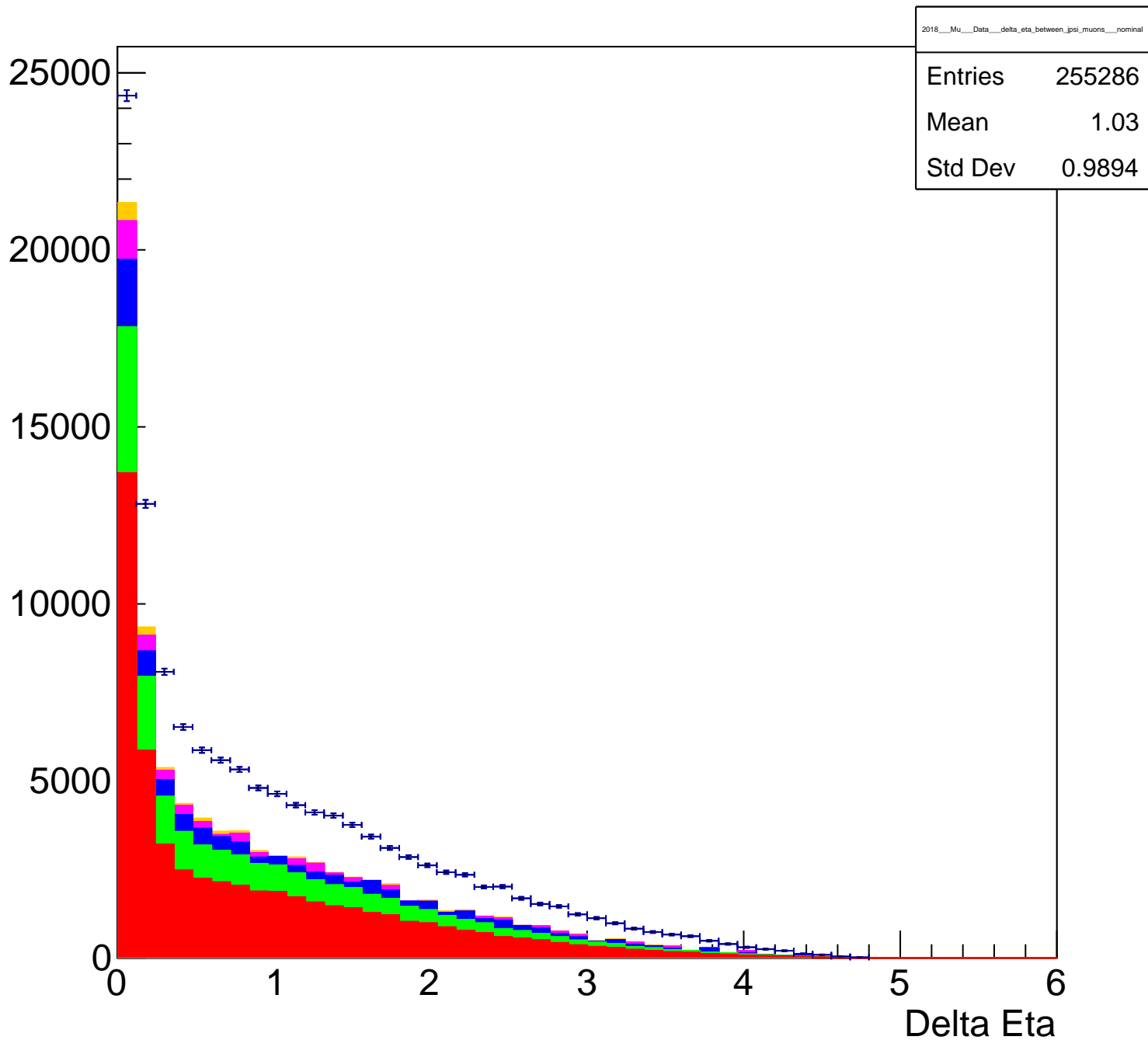
Pseudorapidity for JPsi



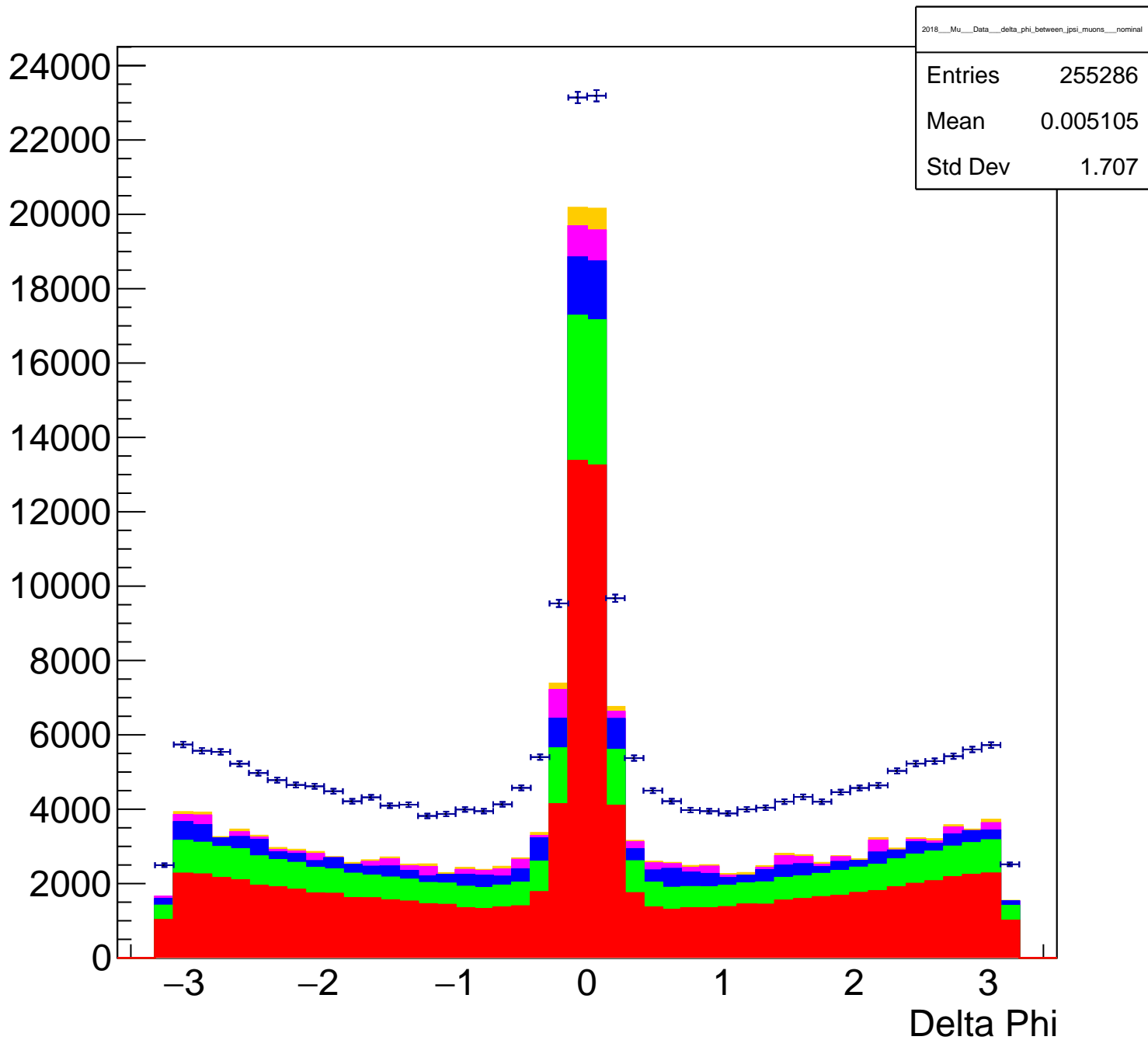
Angle for JPsi



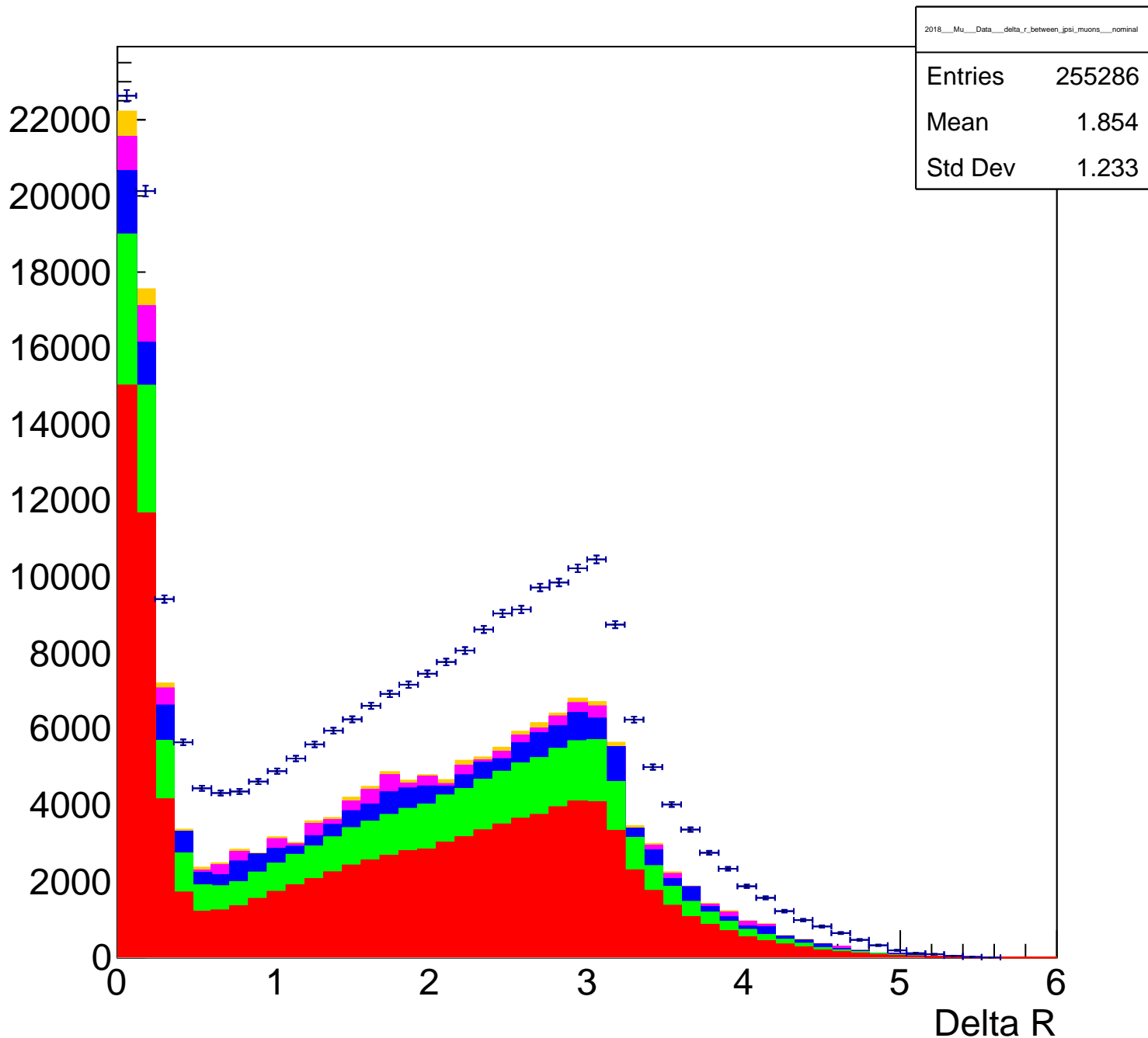
Delta Eta for JPsi Muons



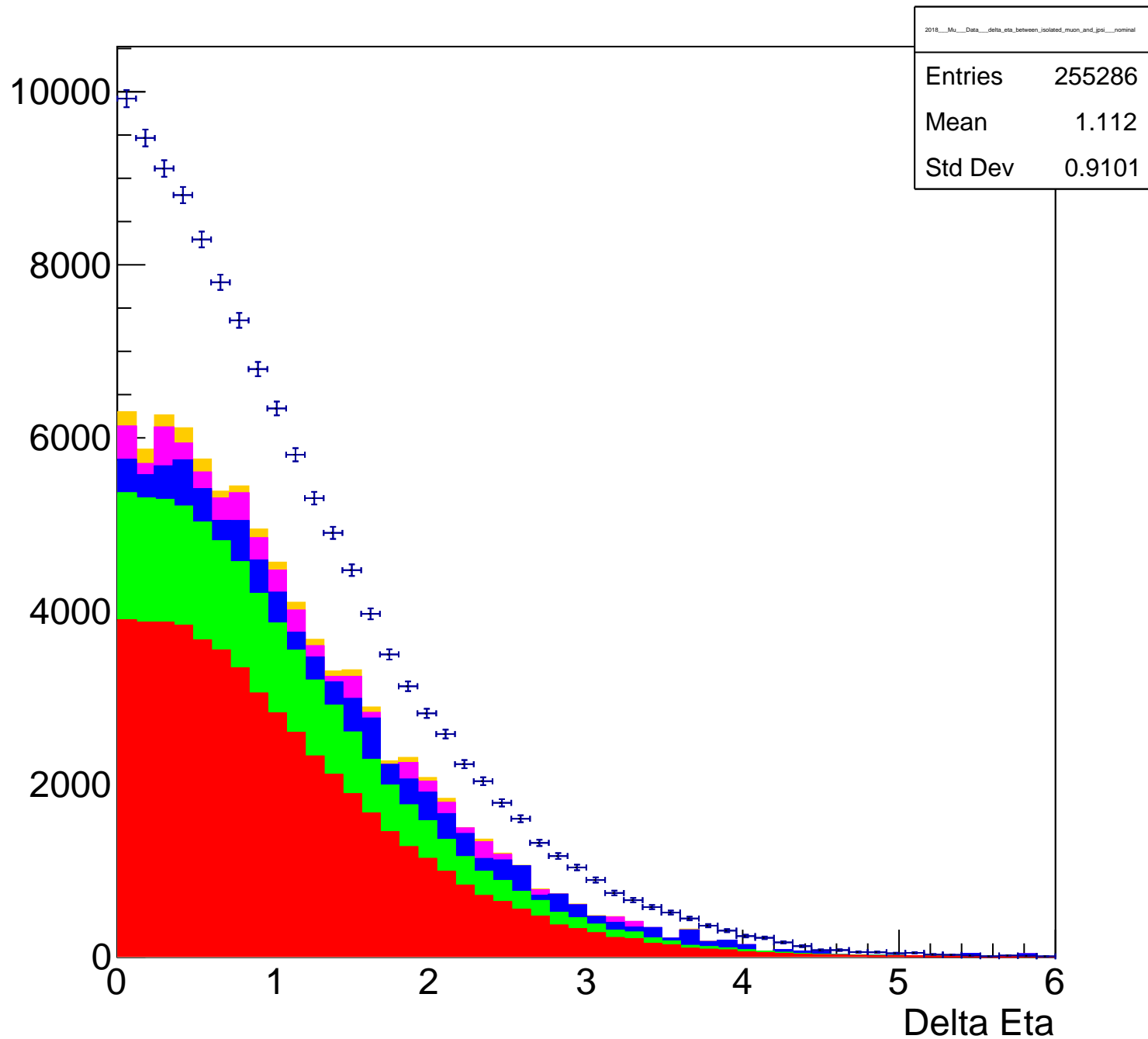
Delta Phi for JPsi Muons



Delta R for JPsi Muons

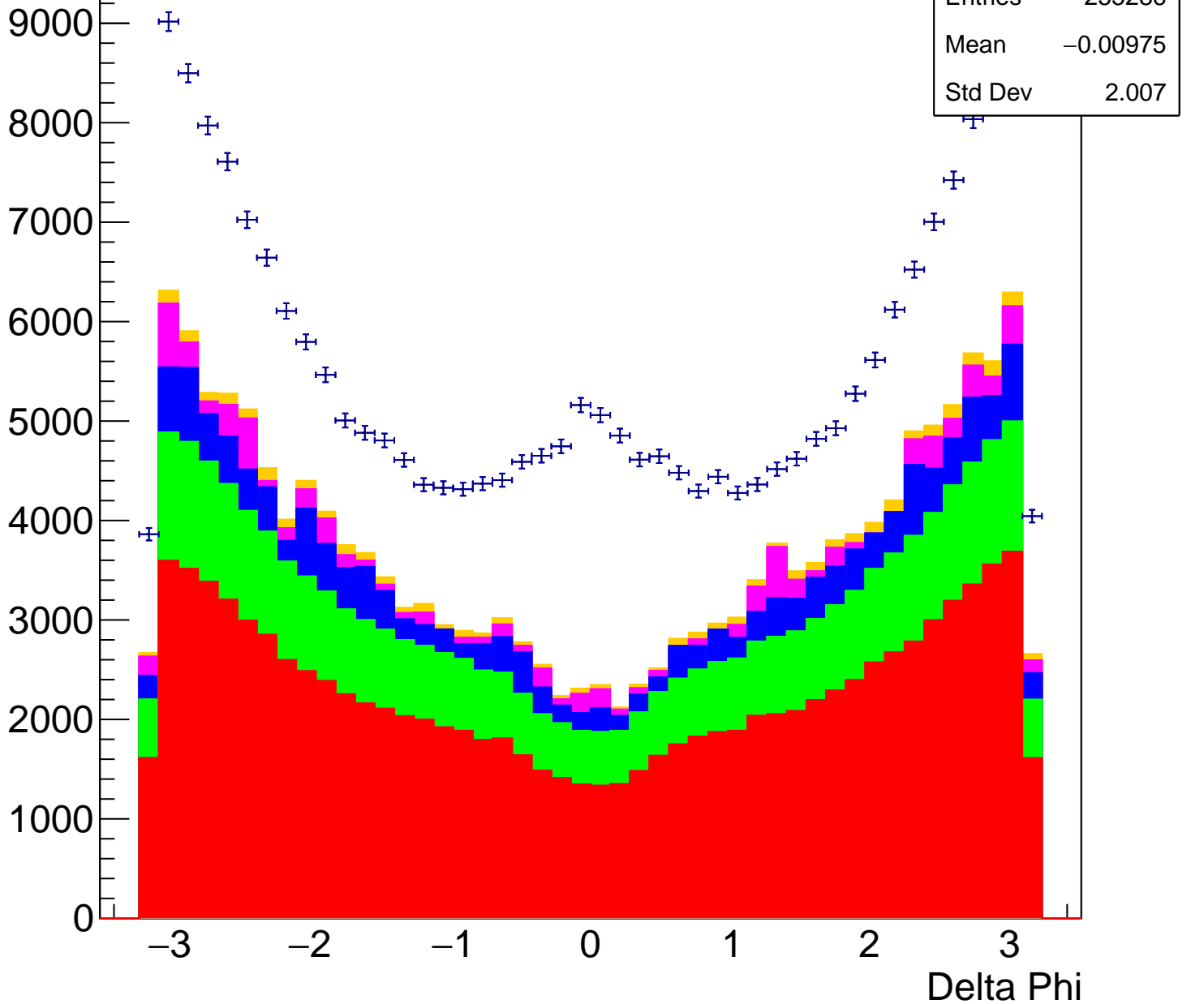


Delta Eta for Isolated Muon And JPsi

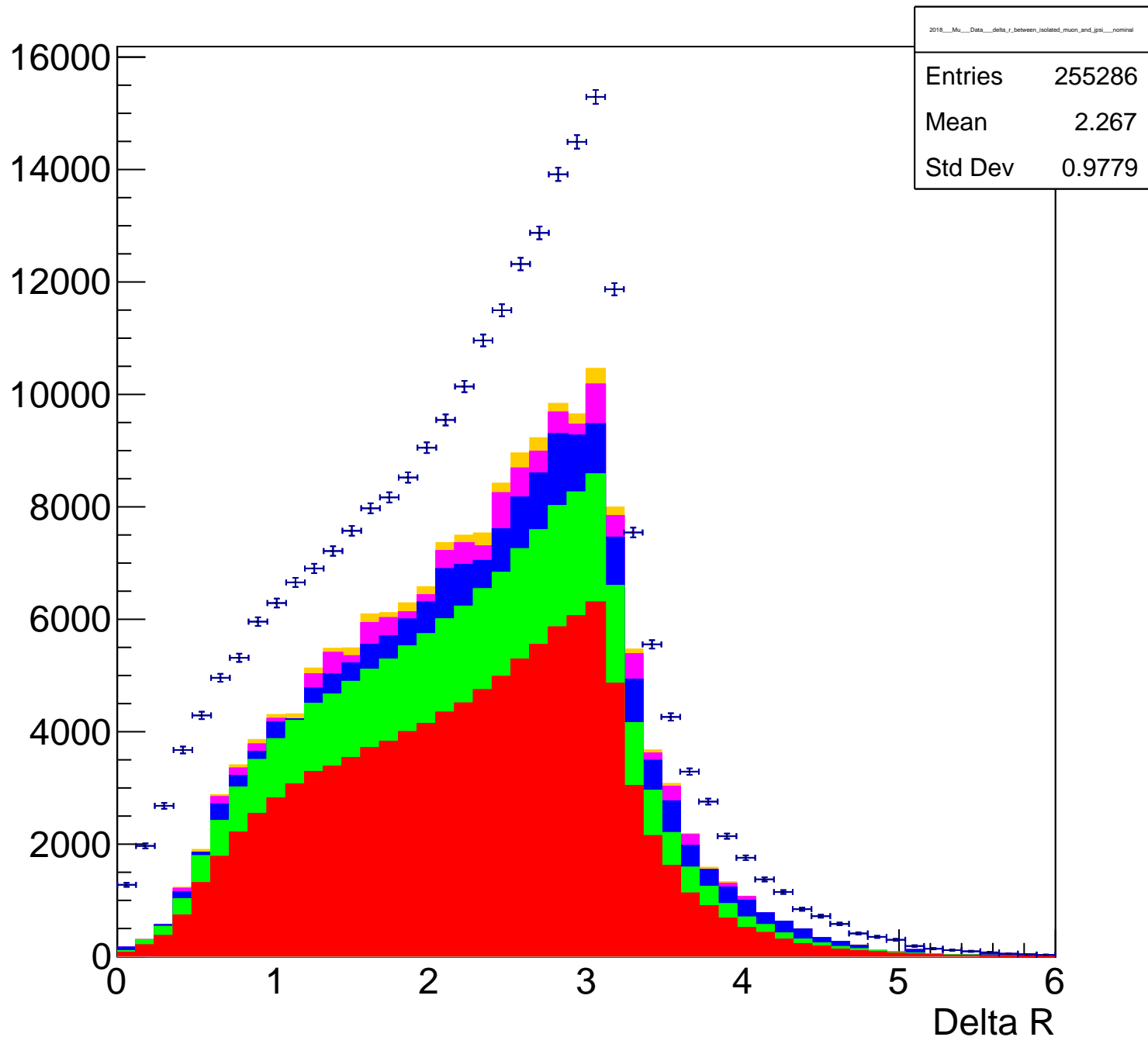


Delta Phi for Isolated Muon And JPsi

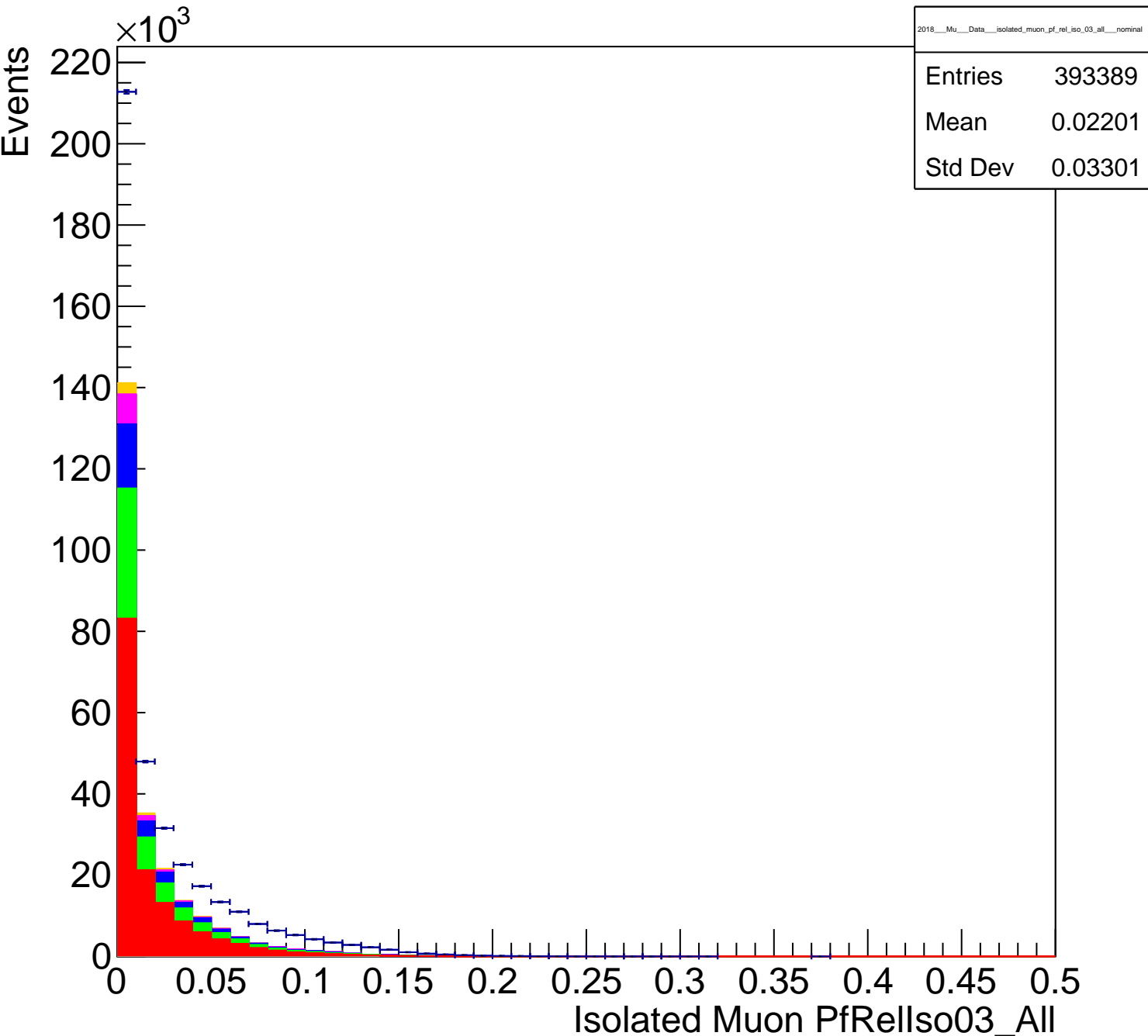
Events



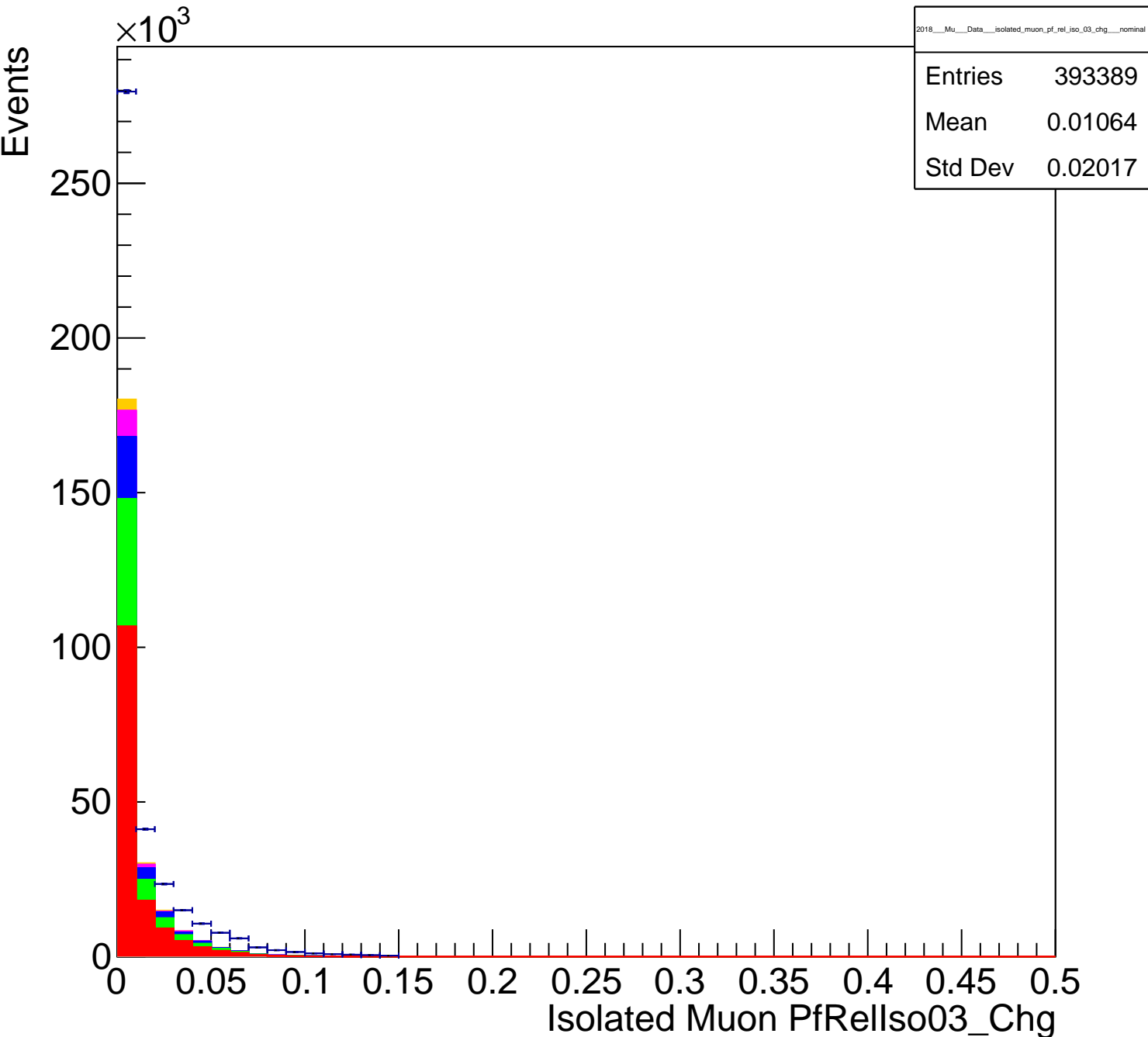
Delta R for Isolated Muon And JPsi



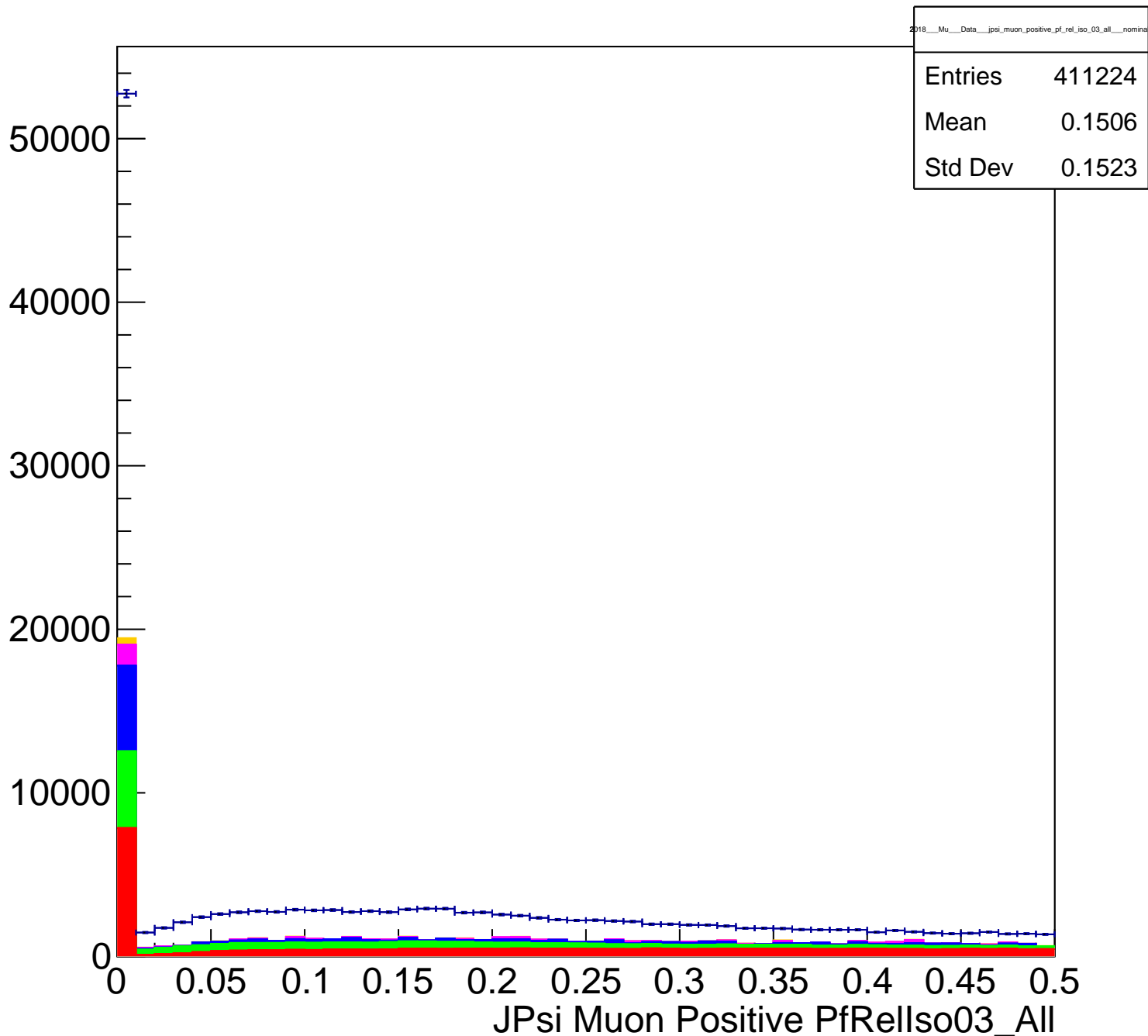
Isolated Muon PfRelIso03_All



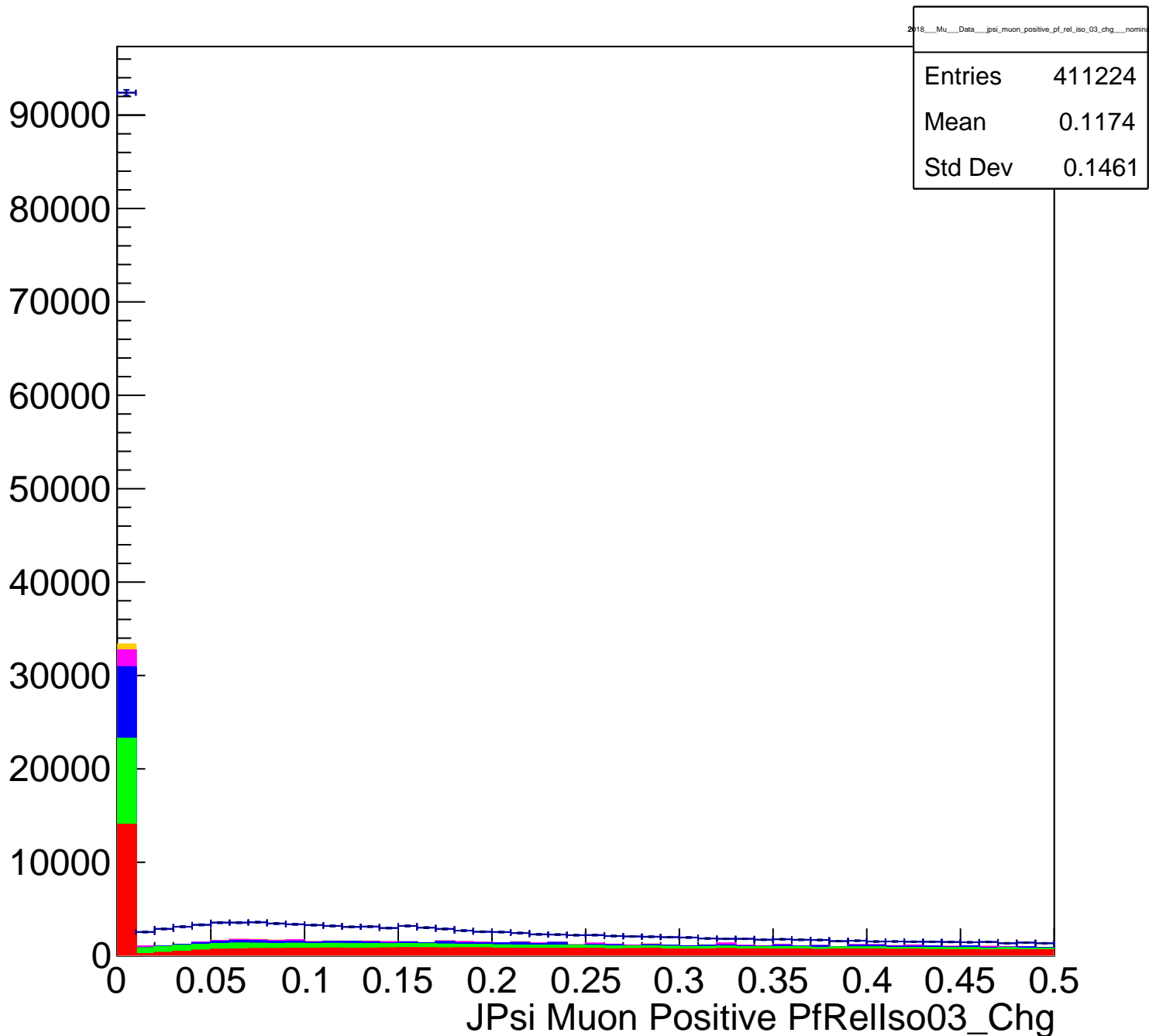
Isolated Muon PfRelIso03_Chg



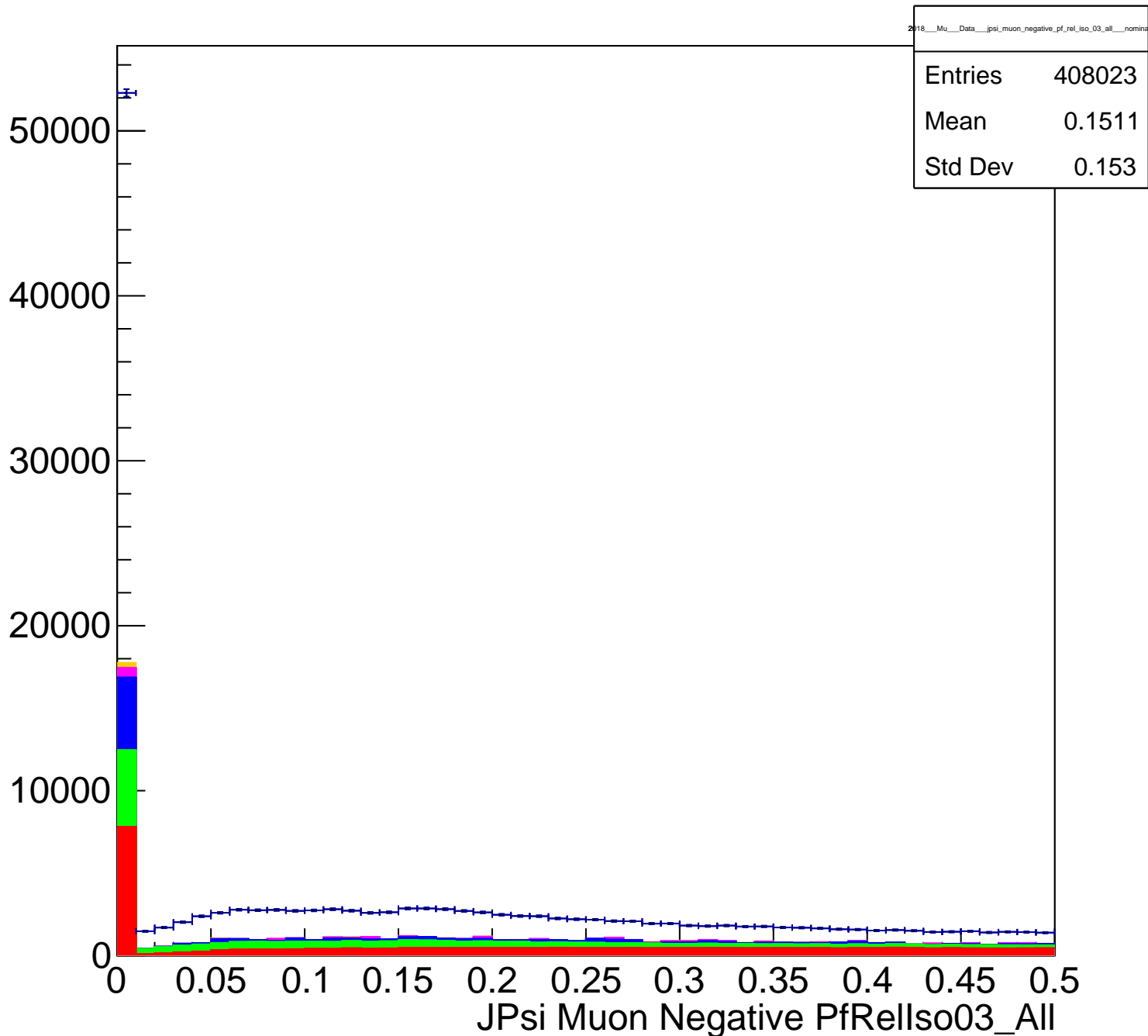
JPsi Muon Positive PfRelIso03_All



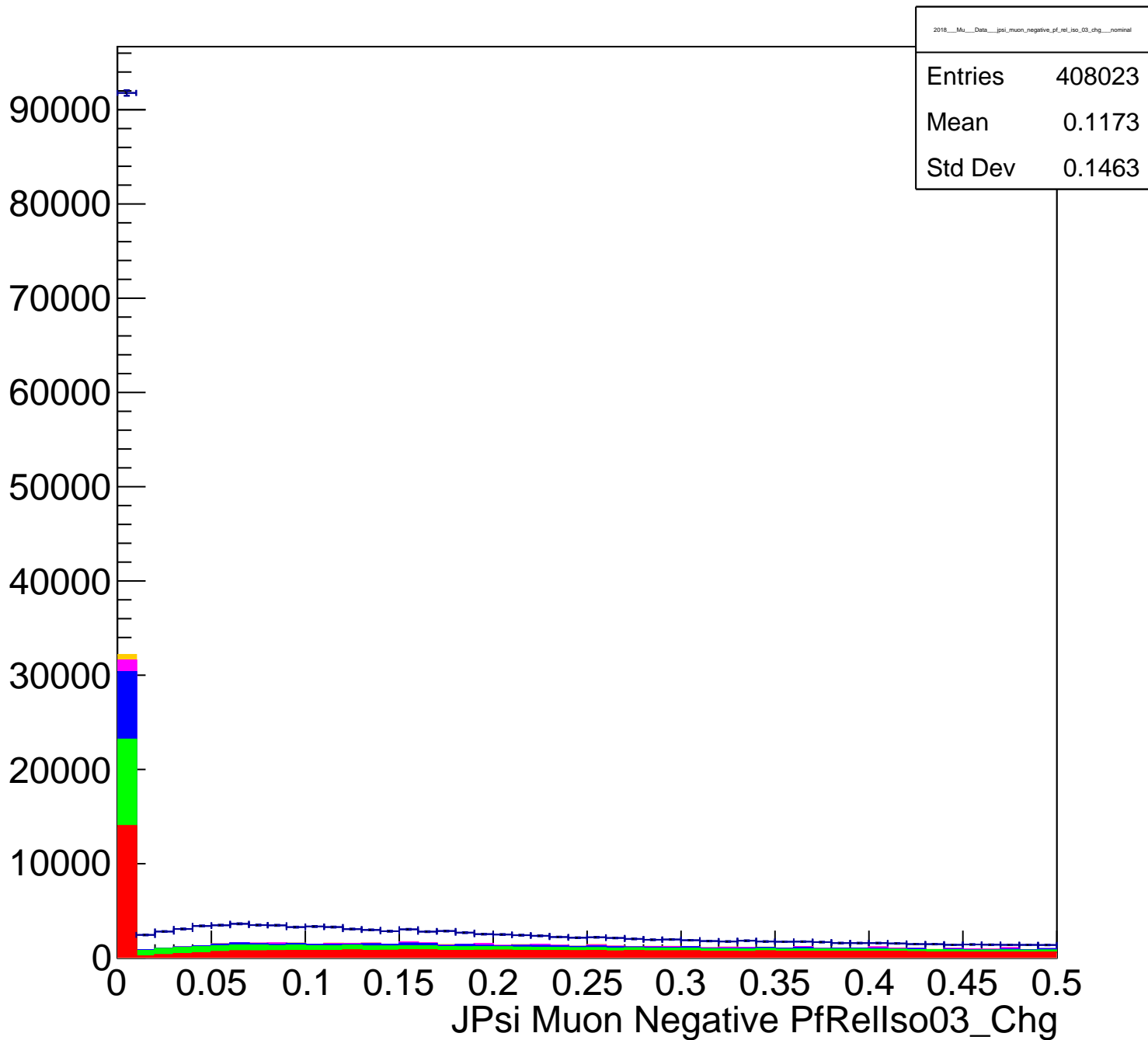
JPsi Muon Positive PfRelIso03_Chg



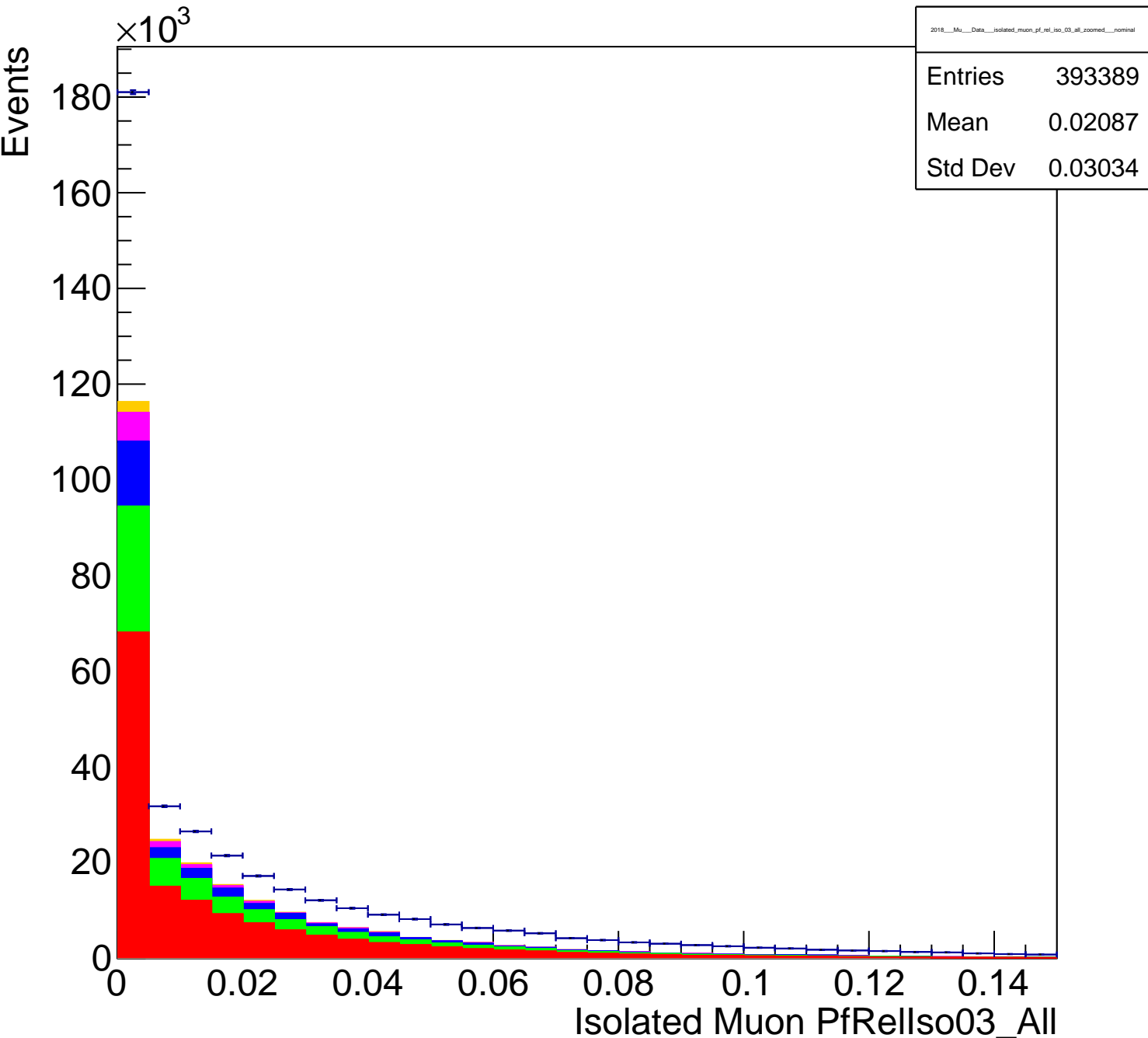
JPsi Muon Negative PfRelIso03_All



JPsi Muon Negative PfRelIso03_Chg

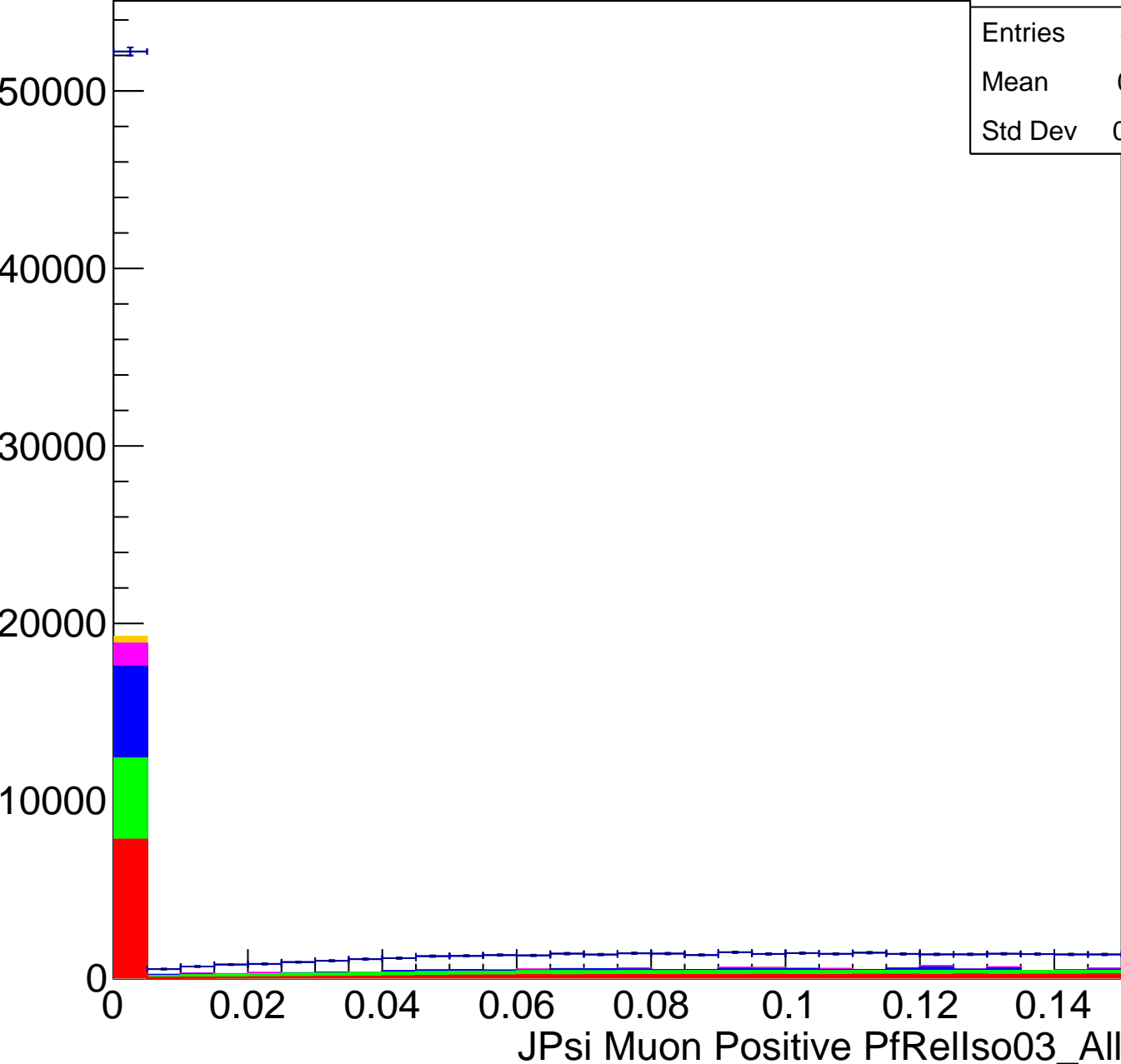


Isolated Muon PfRelIso03_All Zoomed

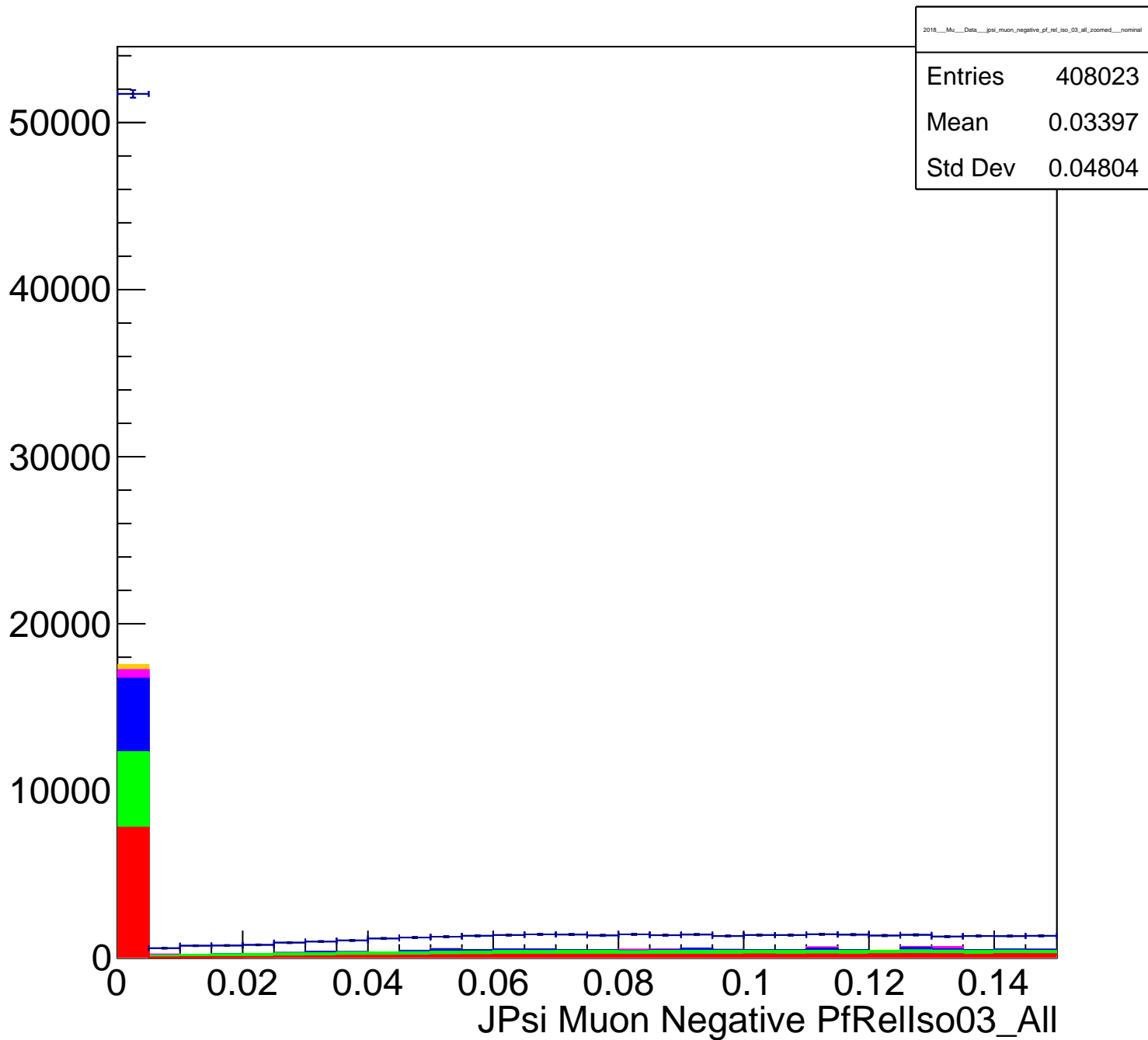


JPsi Muon Positive PfRellso03_All Zoomed

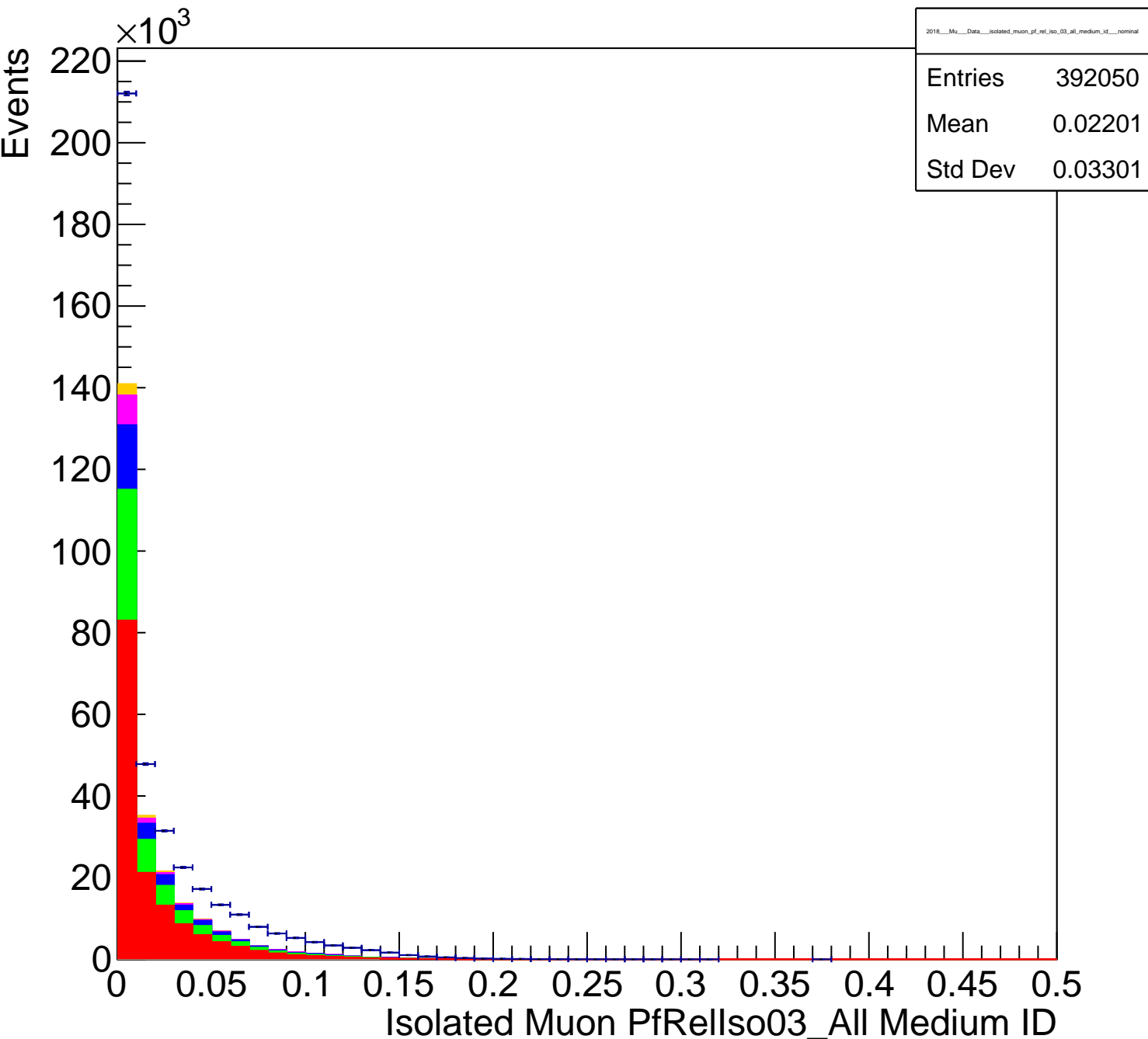
2018__Mu__Data__jpsi_muon_positive_pf_rel_iso_03_all_zoomed__nominal	
Entries	411224
Mean	0.03421
Std Dev	0.04827



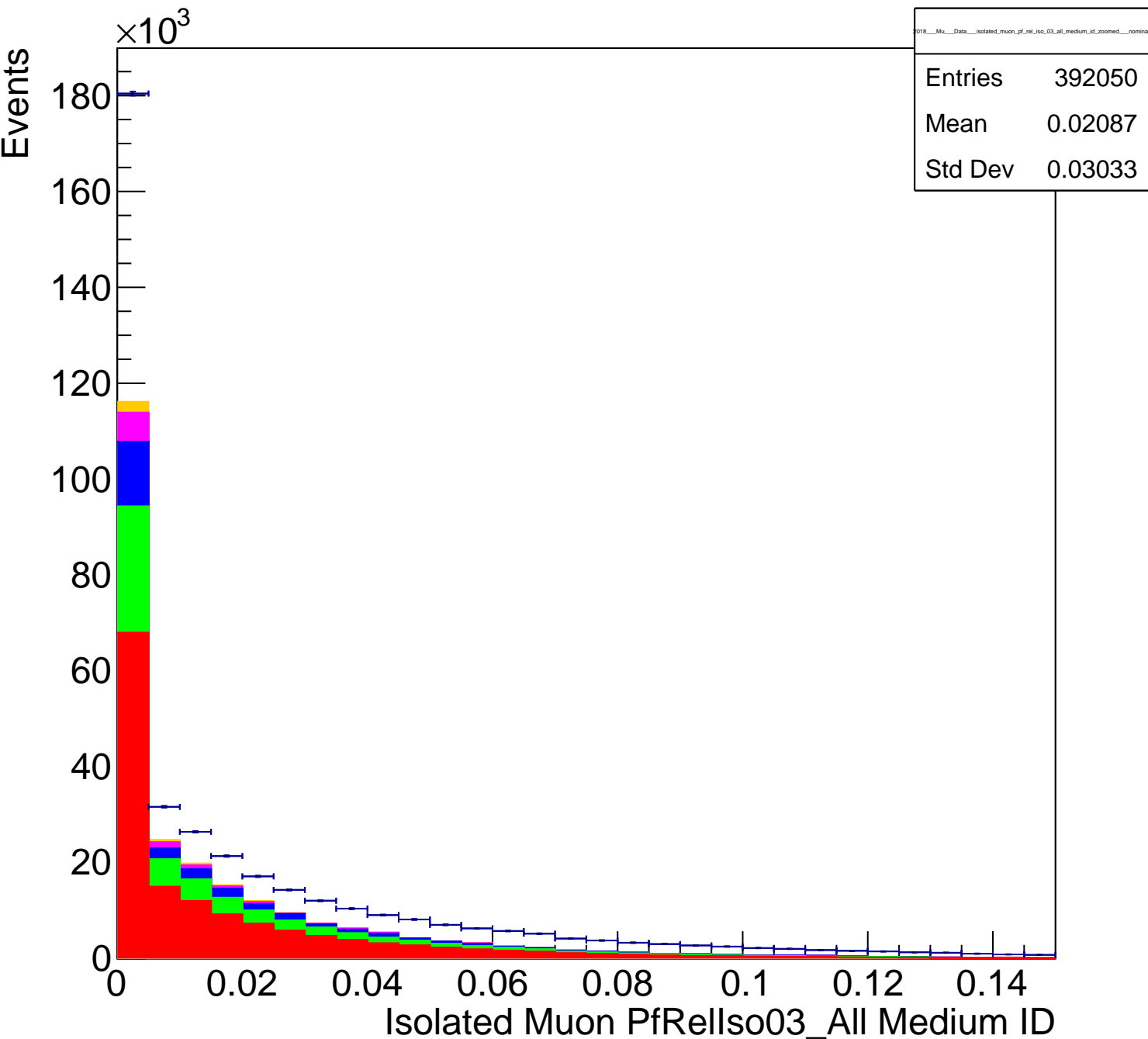
JPsi Muon Negative PfRellso03_All Zoomed



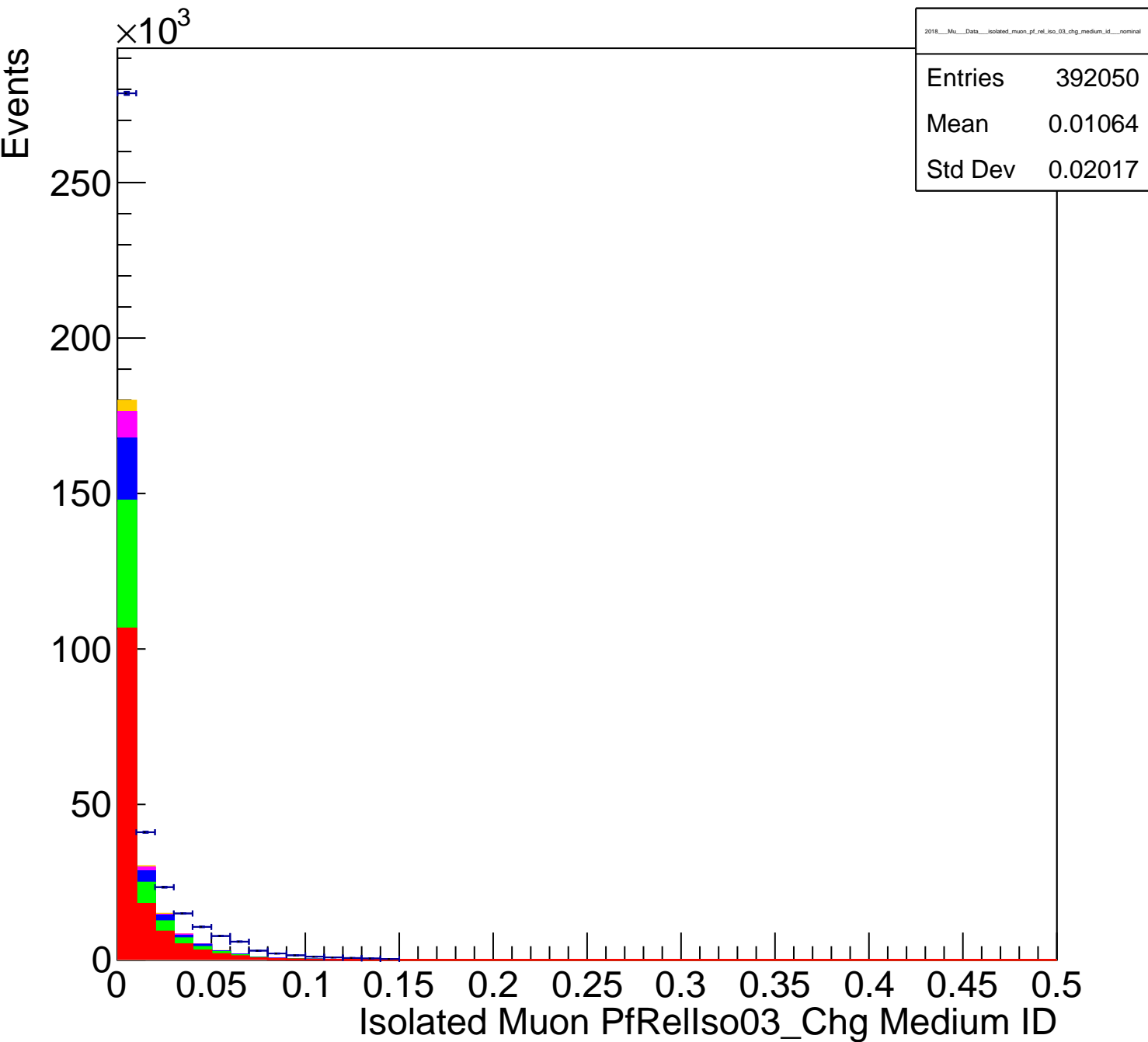
Isolated Muon PfRelIso03_All Medium ID



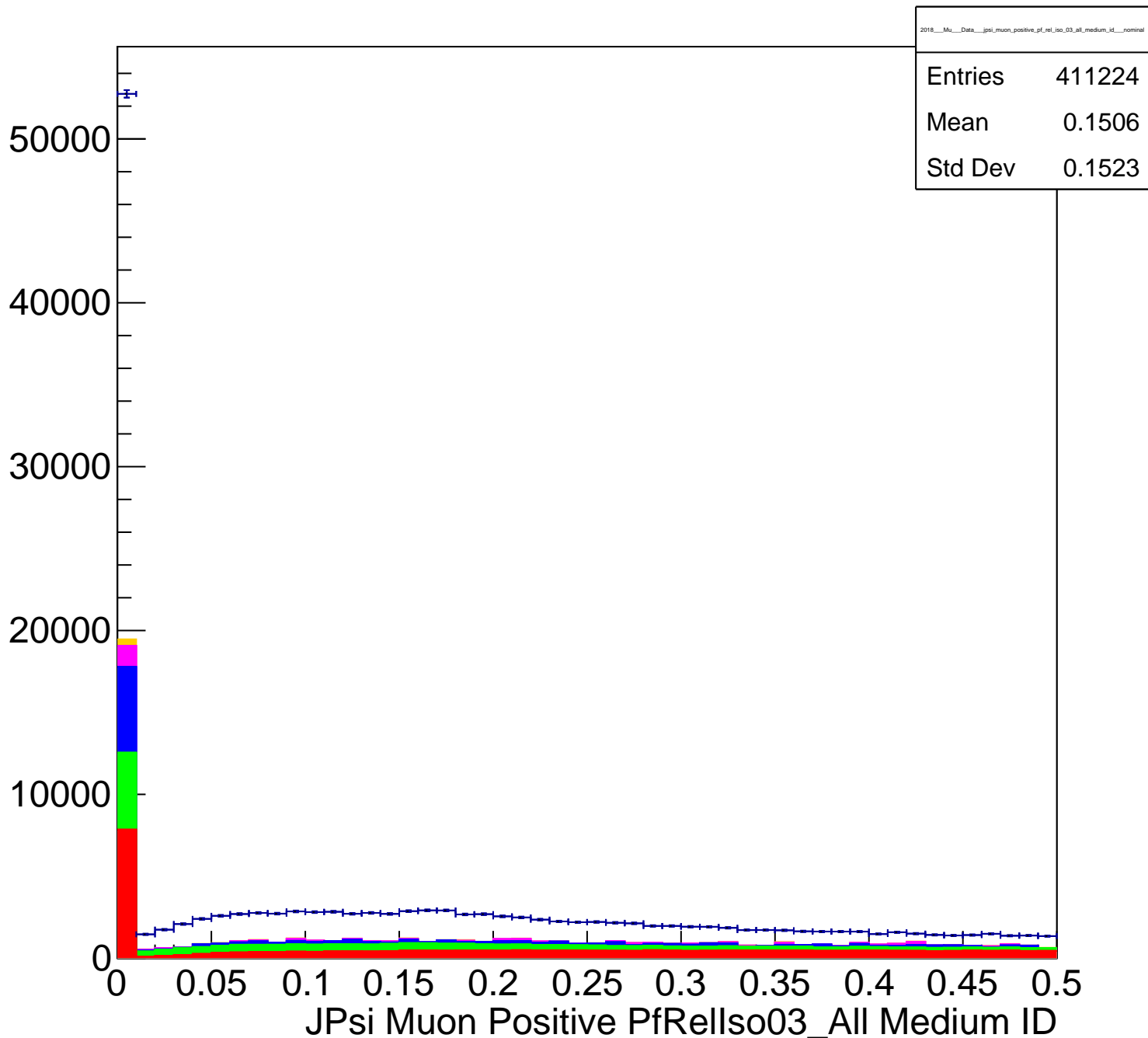
Isolated Muon PfRelIso03_All Medium ID Zoomed



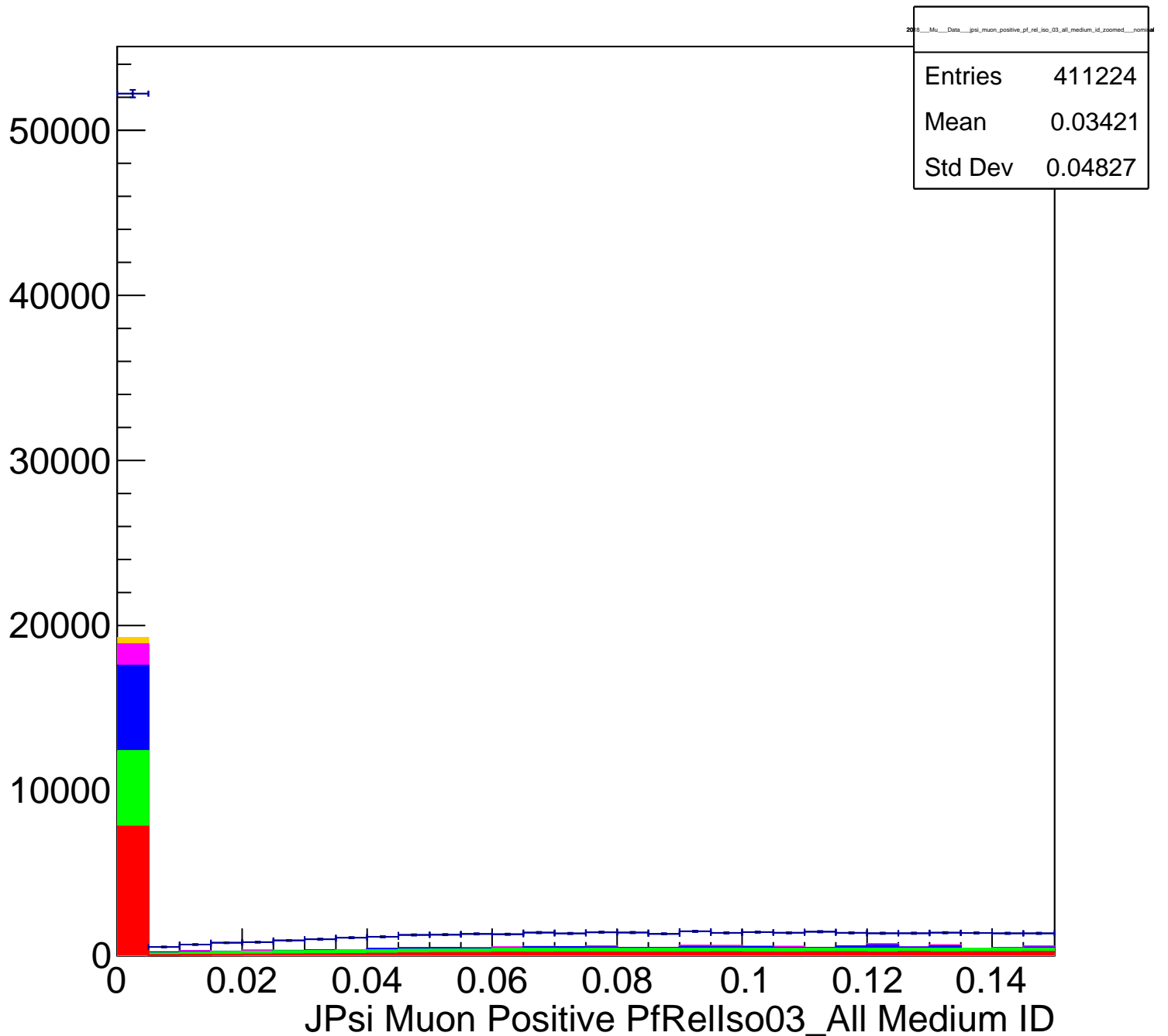
Isolated Muon PfRelIso03_Chg Medium ID



JPsi Muon Positive PfRelIso03_All Medium ID

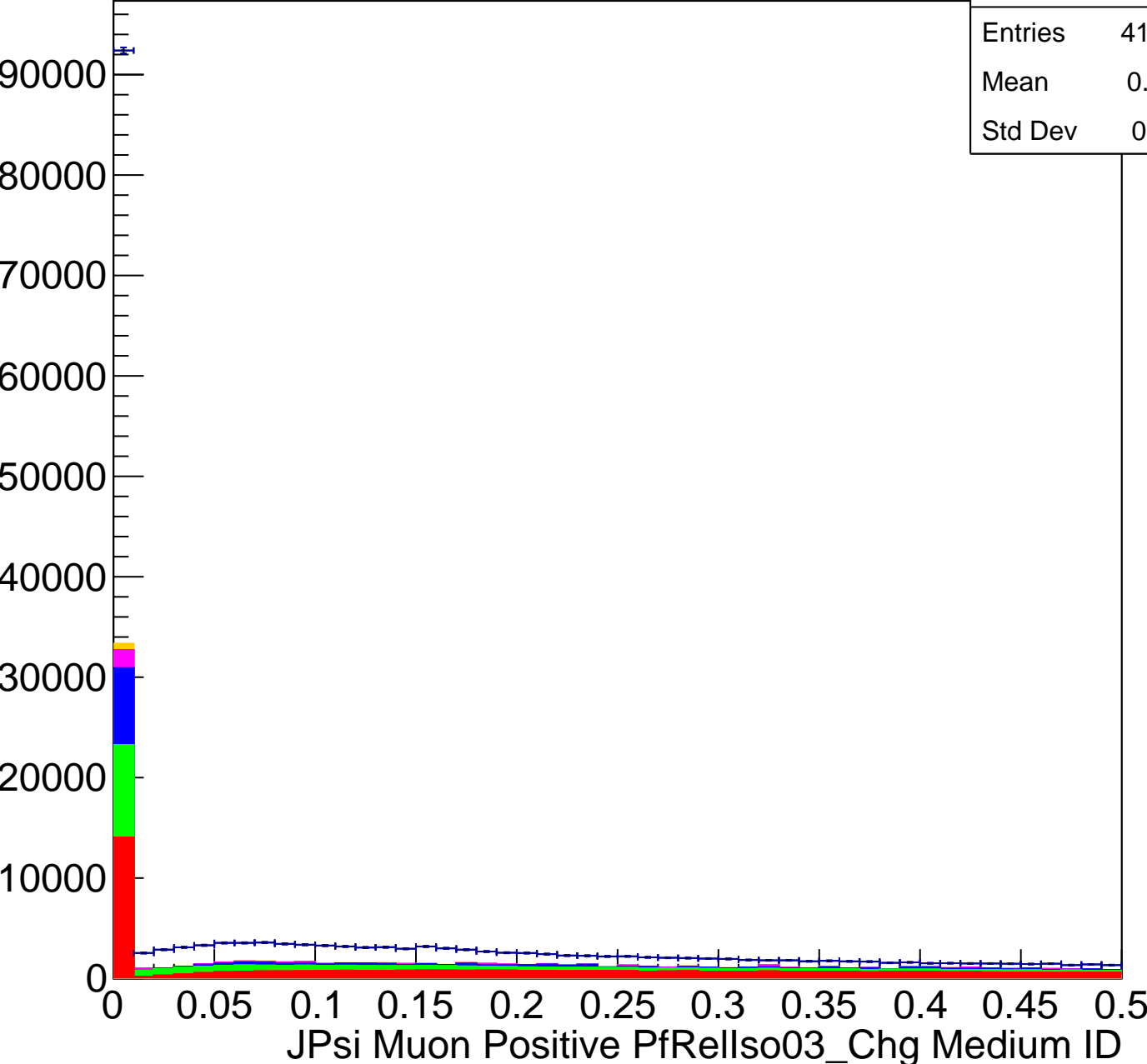


JPsi Muon Positive PfRelIso03_All Zoomed Medium ID



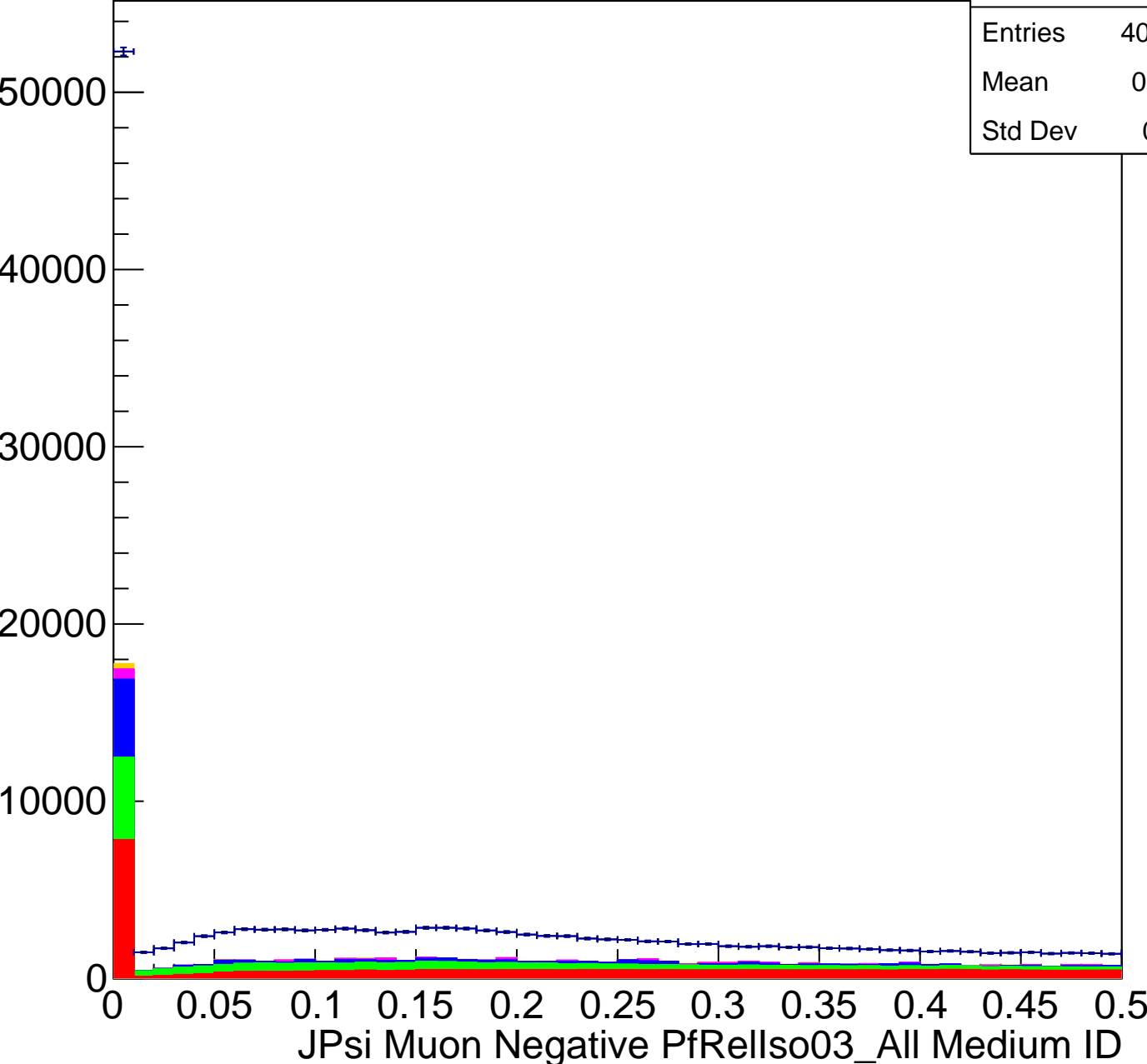
JPsi Muon Positive PfRelIso03_Chg Medium ID

2018_Mu_Data_jpsi_muon_positive_pf_rel_iso_03_chg_medium_id_nominal	
Entries	411224
Mean	0.1174
Std Dev	0.1461



JPsi Muon Negative PfRelIso03_All Medium ID

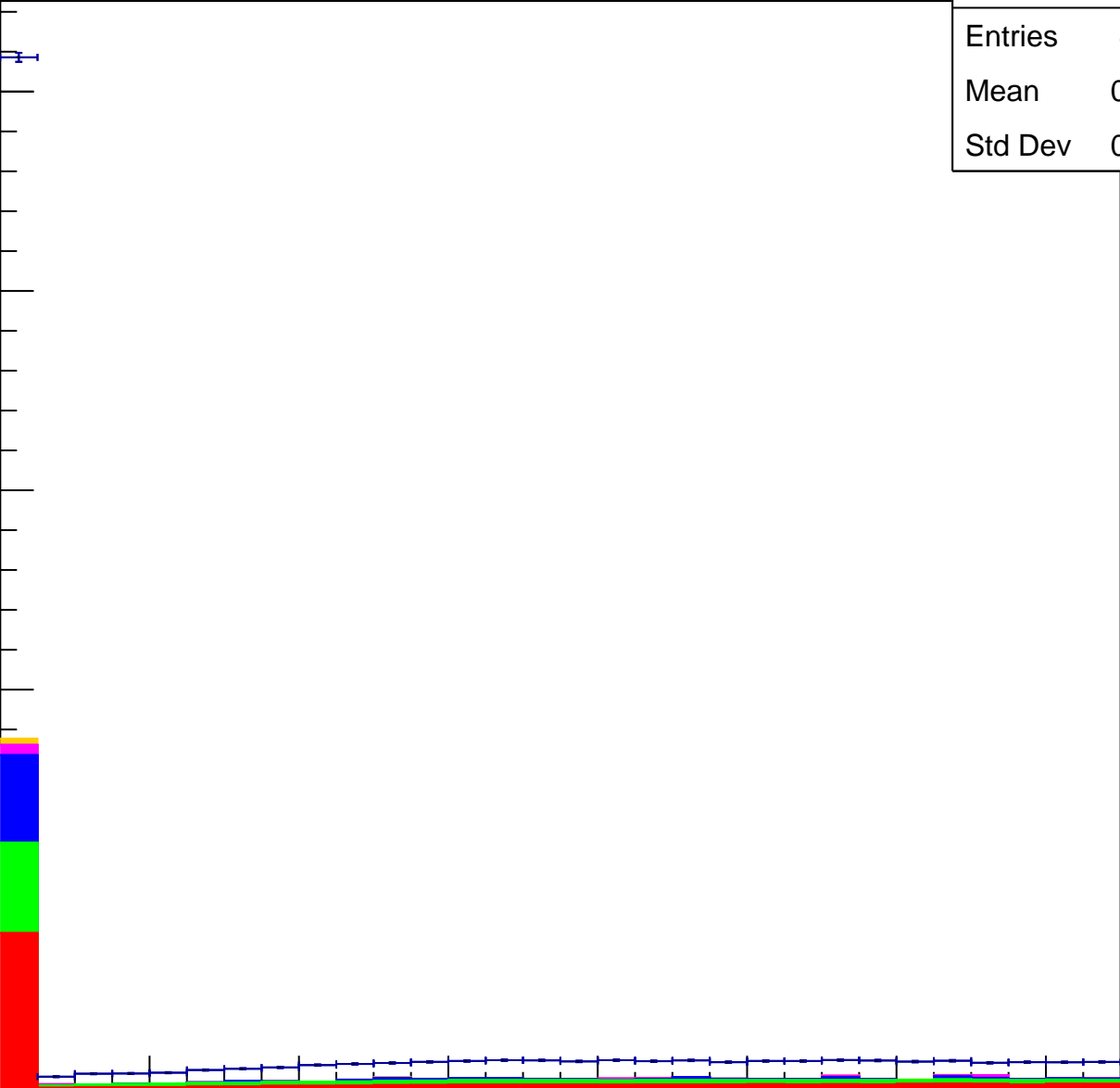
2018_Mu_Data_jpsi_muon_negative_pf_rel_iso_03_all_medium_id_nominal	
Entries	408023
Mean	0.1511
Std Dev	0.153



JPsi Muon Negative PfRelIso03_All Zoomed Medium ID

2016_MuonData_jpsi_muon_negative_pf_rel_iso_03_all_medium_id_zoomed_normal	
Entries	408023
Mean	0.03397
Std Dev	0.04804

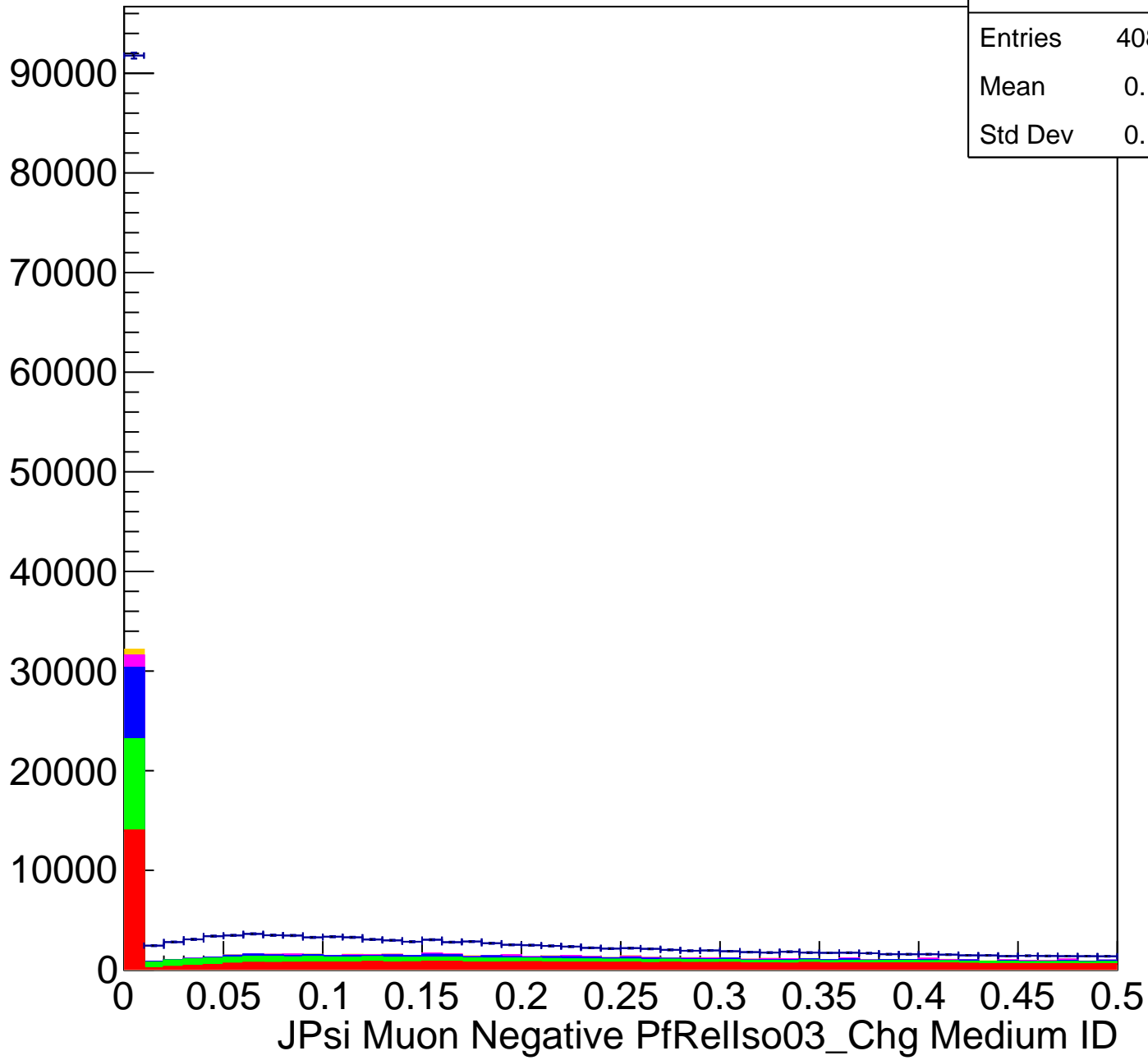
50000
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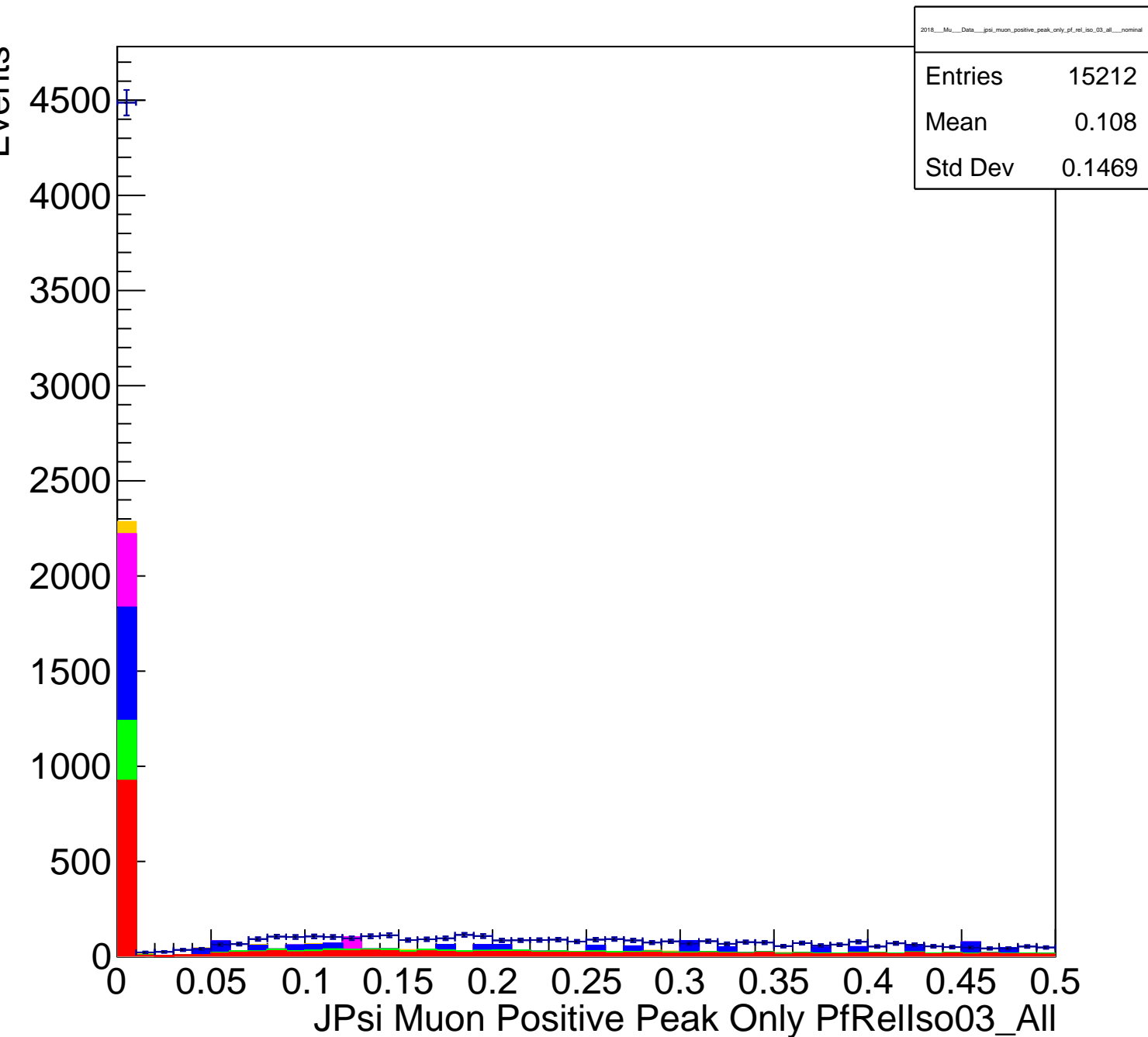
JPsi Muon Negative PfRelIso03_All Medium ID

JPsi Muon Negative PfRelIso03_Chg Medium ID

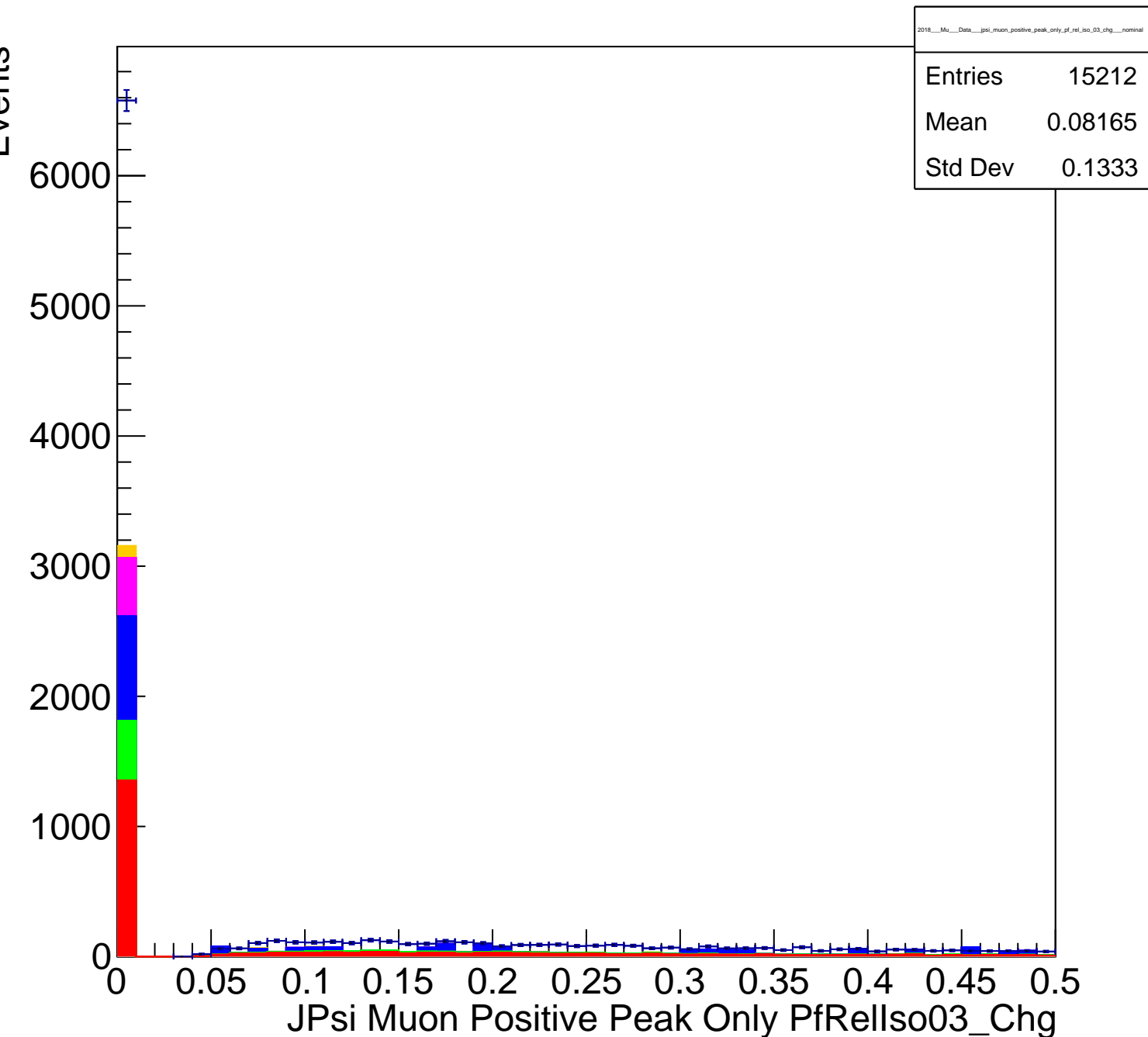
2018_Mu_Data_jpsi_muon_negative_pf_rel_iso_03_chg_medium_id_nominal	
Entries	408023
Mean	0.1173
Std Dev	0.1463



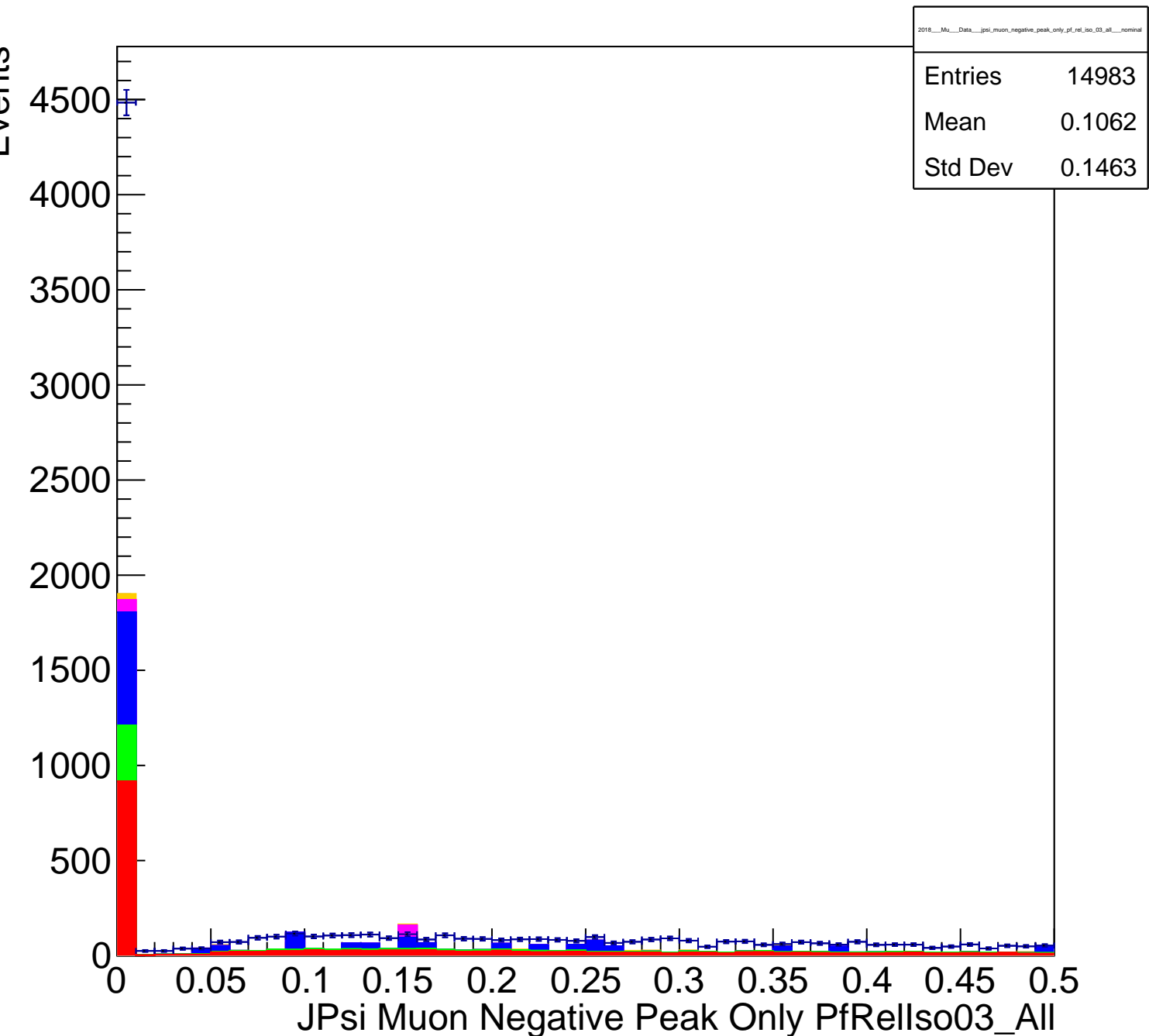
JPsi Muon Positive Peak Only PfRelIso03_All



JPsi Muon Positive Peak Only PfRelIso03_Chg



JPsi Muon Negative Peak Only PfRelIso03_All



JPsi Muon Negative Peak Only PfRelIso03_Chg

