

On-line (pre-)selection Requisites for:

- **Jets:** number > 5 , jetId > 2 and $|\eta| < 2.4$
- **Muons:** number > 0 and has softId

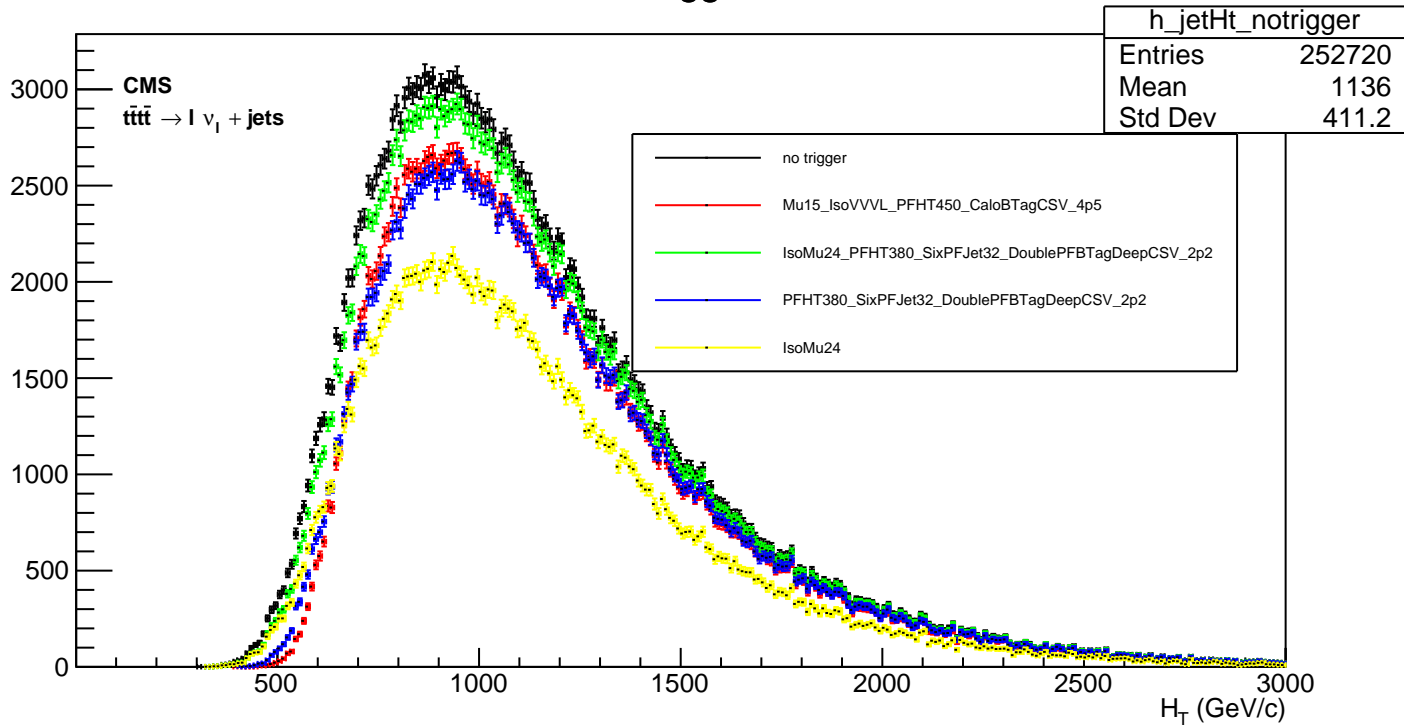
Event Limit: None (see last page)

Off-line (post-)selection Requisites for:

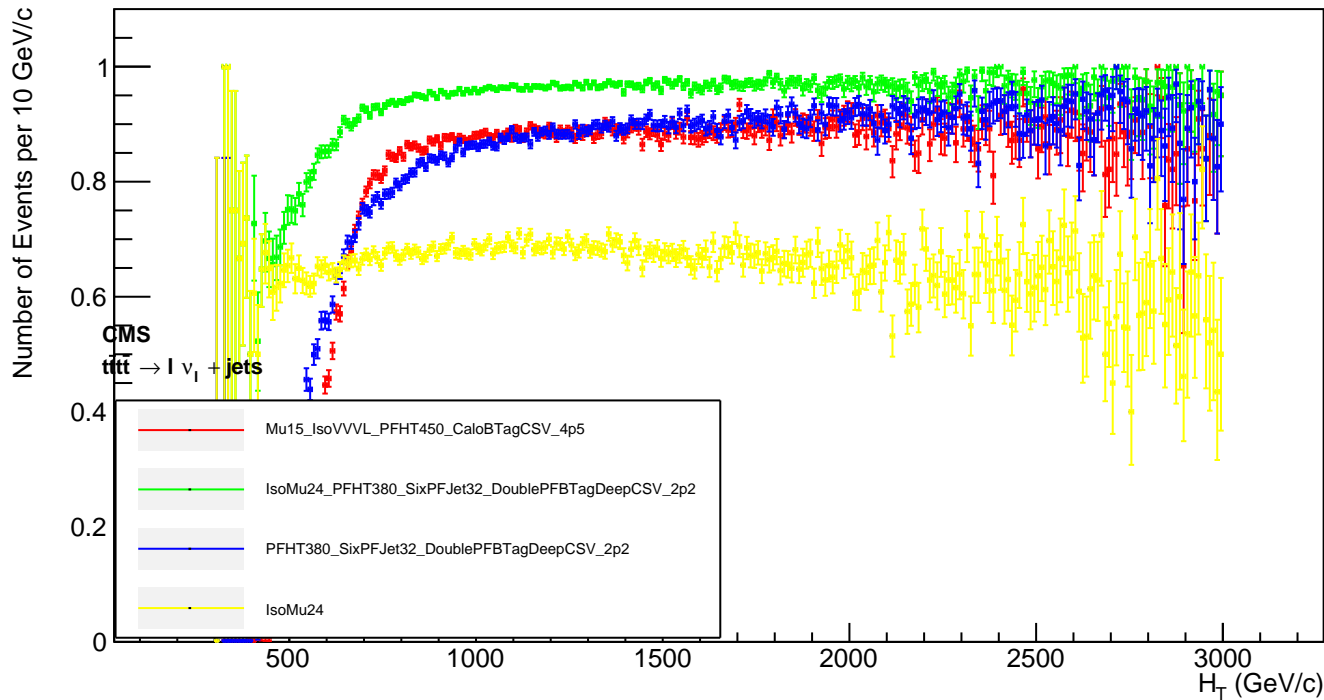
- **Jets:** jetId > 2 , $p_T > 30$ and $|\eta| < 2.4$ (for at least 6)
btagDeepFlavB > 0.7489 (for at least one jet)
- **Muons:** has tightId, $|\eta| < 2.4$ and miniPFRellso_all < 0.15 (for at least 1)

no trigger

Number of Events per 10 GeV/c

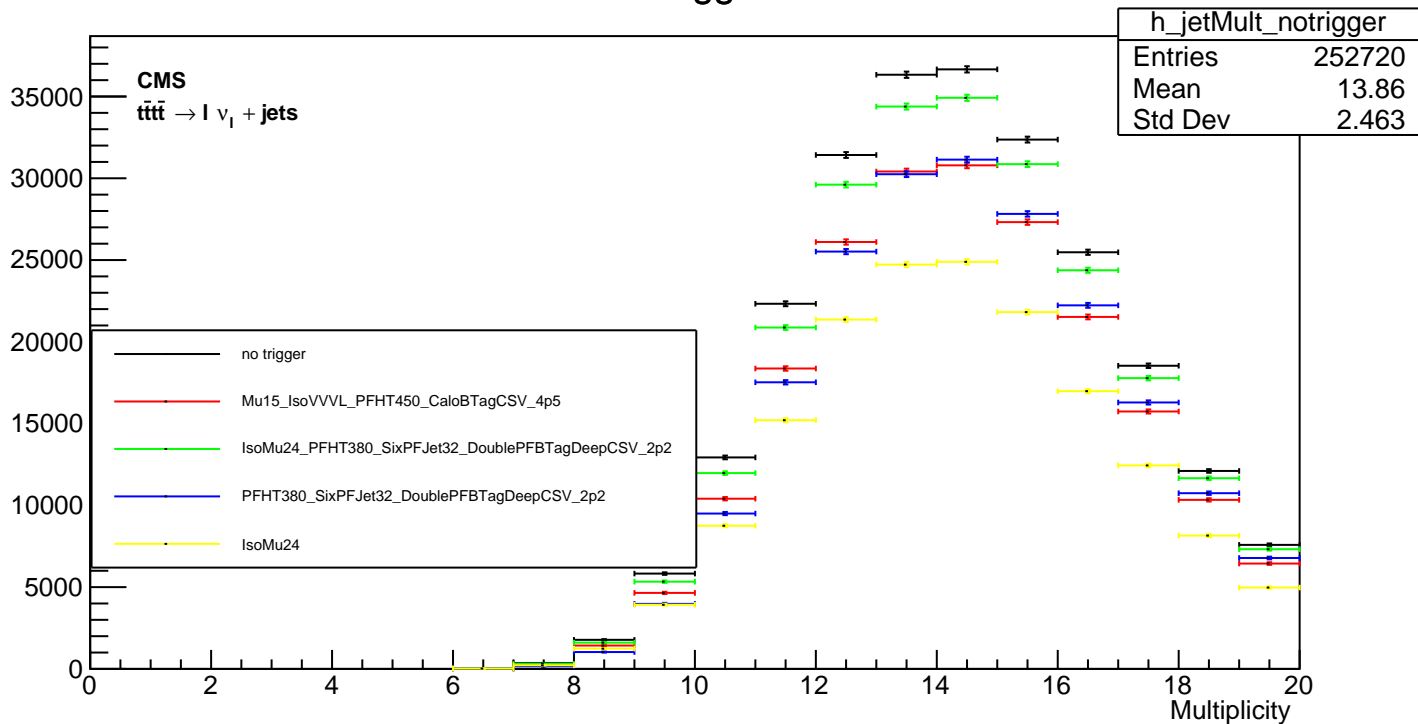


Mu15_IsoVVVL_PFHT450_CaloBTagCSV_4p5



no trigger

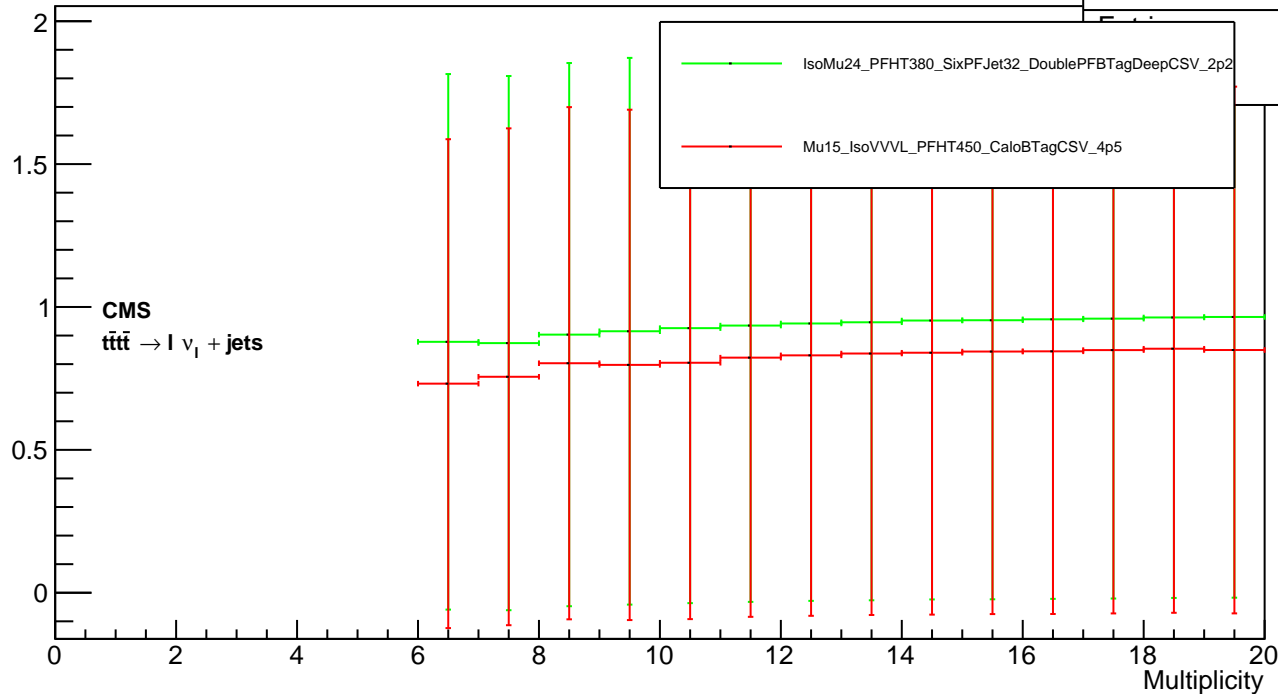
Number of Events per Number of Jets



IsoMu24_PFHT380_SixPFJet32_DoublePFBTagDeepCSV_2p2

Number of Events per Number of Jets

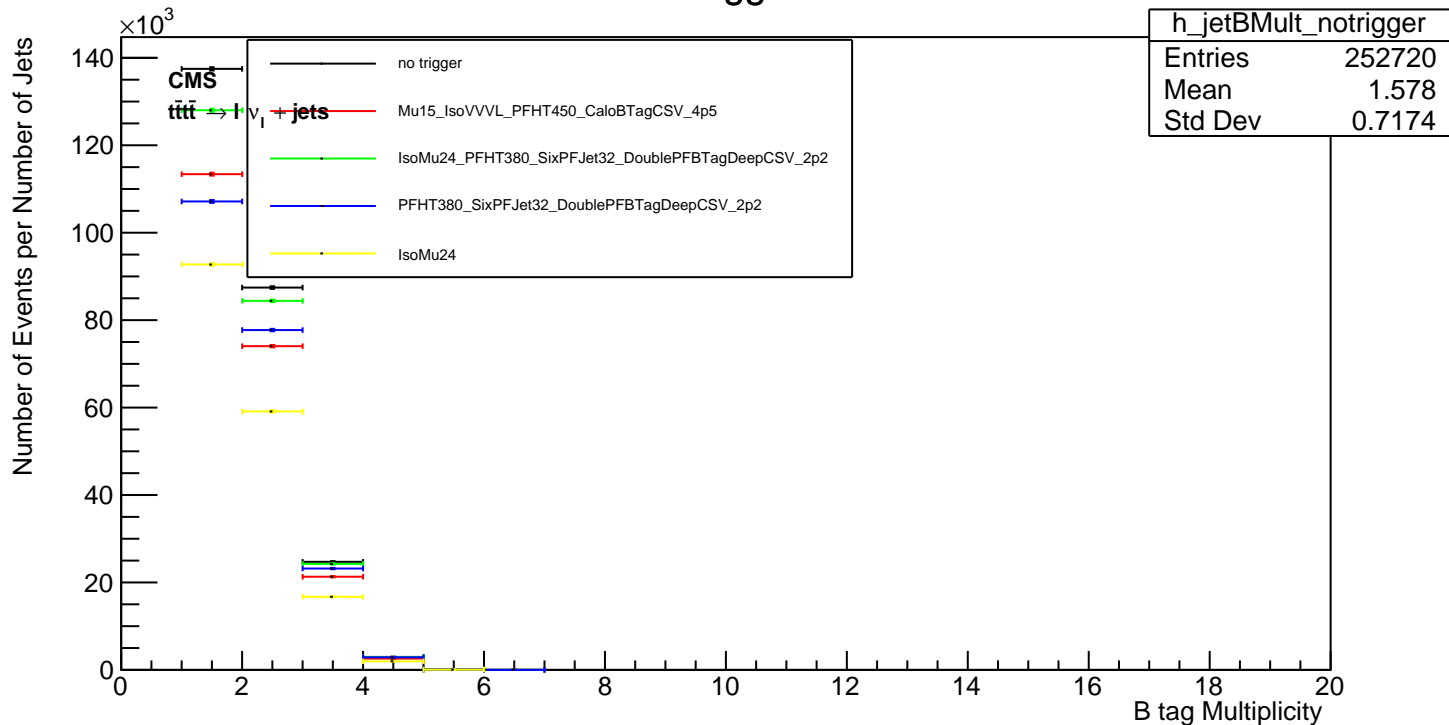
CMS
 $t\bar{t}t\bar{t} \rightarrow l \nu_l + \text{jets}$



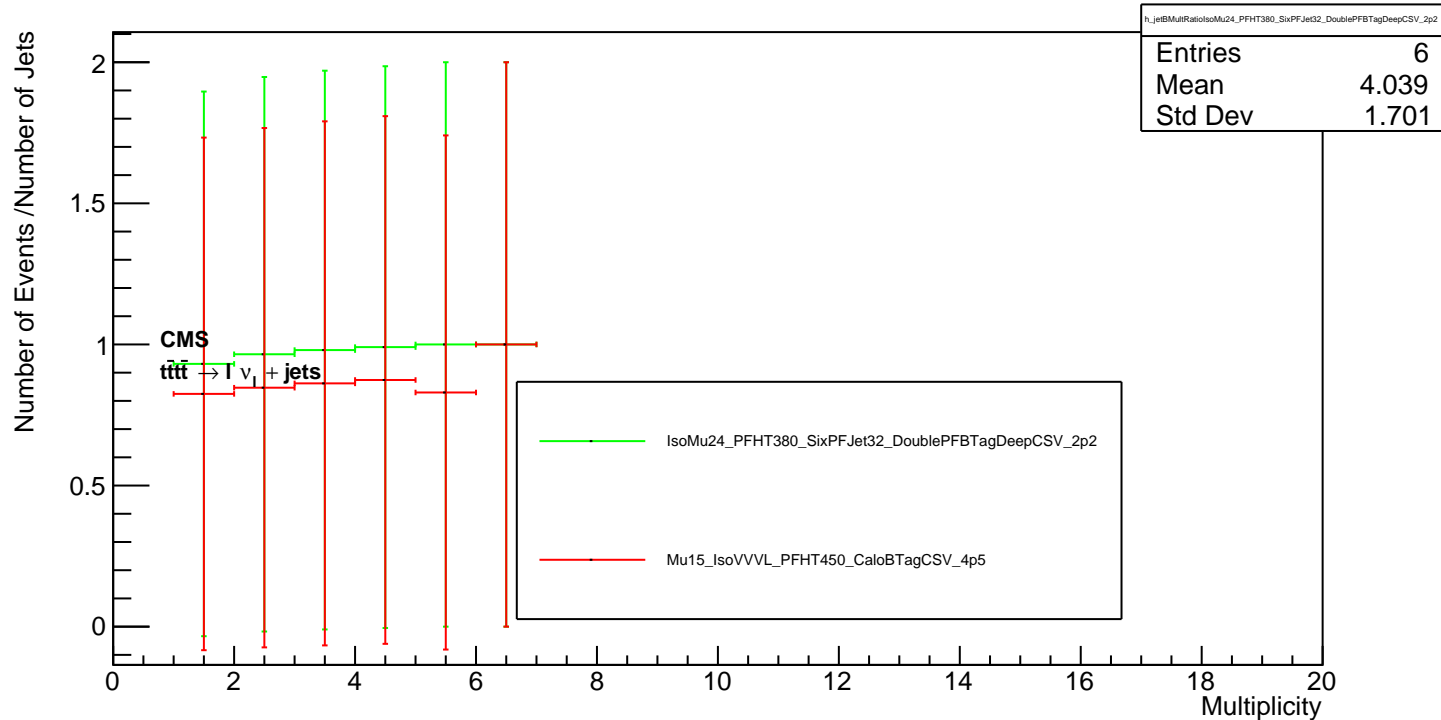
h_jetMultRatioIsoMu24_PFHT380_SixPFJet32_DoublePFBTagDeepCSV_2p2

13
 13.12
 4.012

no trigger

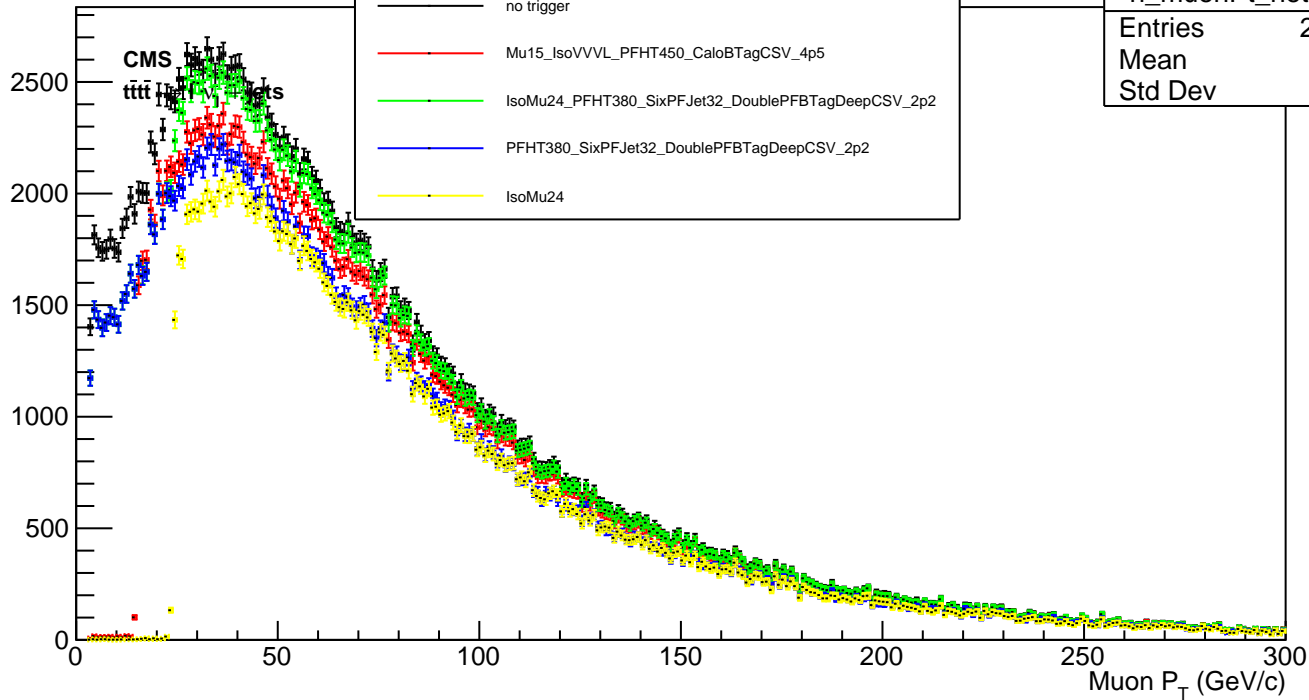


IsoMu24_PFHT380_SixPFJet32_DoublePFBTagDeepCSV_2p2



no trigger

Number of Events per 1 GeV/c

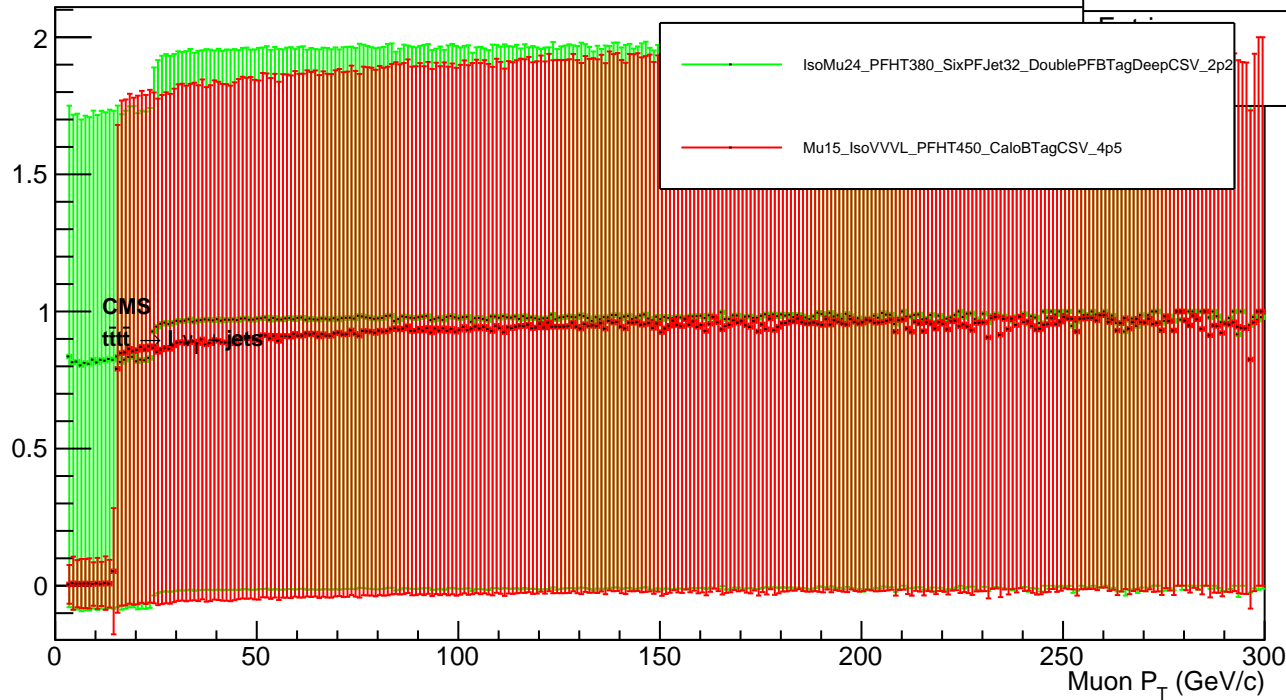


h_muonPt_notrigger

Entries	252720
Mean	72.96
Std Dev	55.72

IsoMu24_PFHT380_SixPFJet32_DoublePFBTagDeepCSV_2p2

Number of Events per 1 GeV/c



no trigger

Number of Events per 1 GeV/c

1
0.8
0.6
0.4
0.2
0



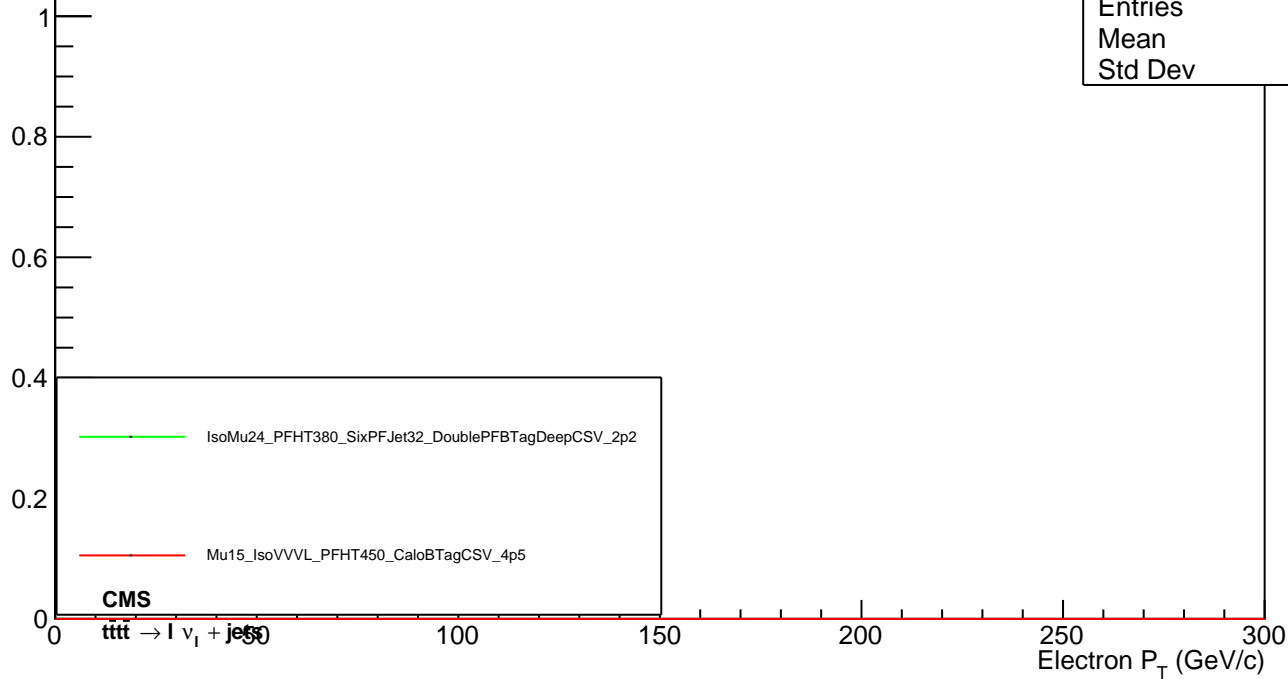
h_elPt_notrigger	
Entries	0
Mean	0
Std Dev	0

Electron P_T (GeV/c)

IsoMu24_PFH380_SixPFJet32_DoublePFBTagDeepCSV_2p2

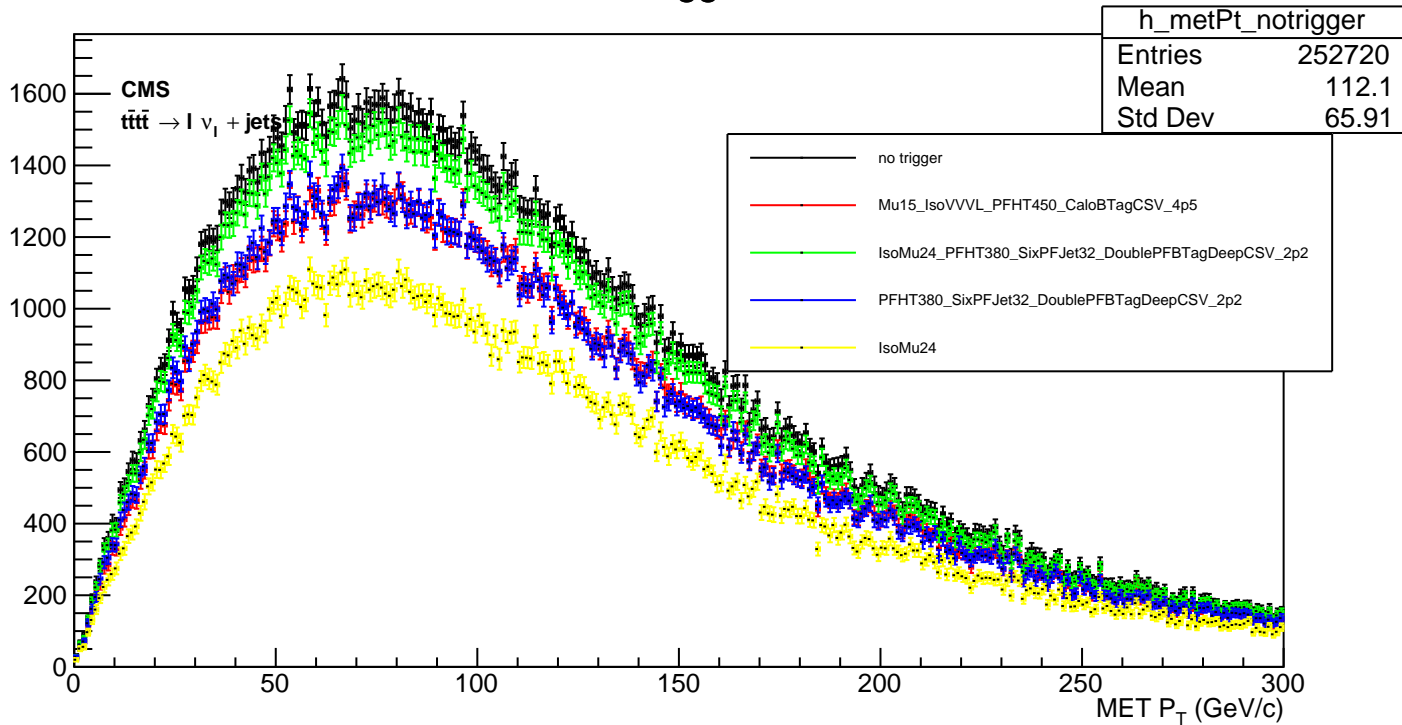
Number of Events per 1 GeV/c

h_elPTratioIsoMu24_PFH380_SixPFJet32_DoublePFBTagDeepCSV_2p2	
Entries	0
Mean	0
Std Dev	0



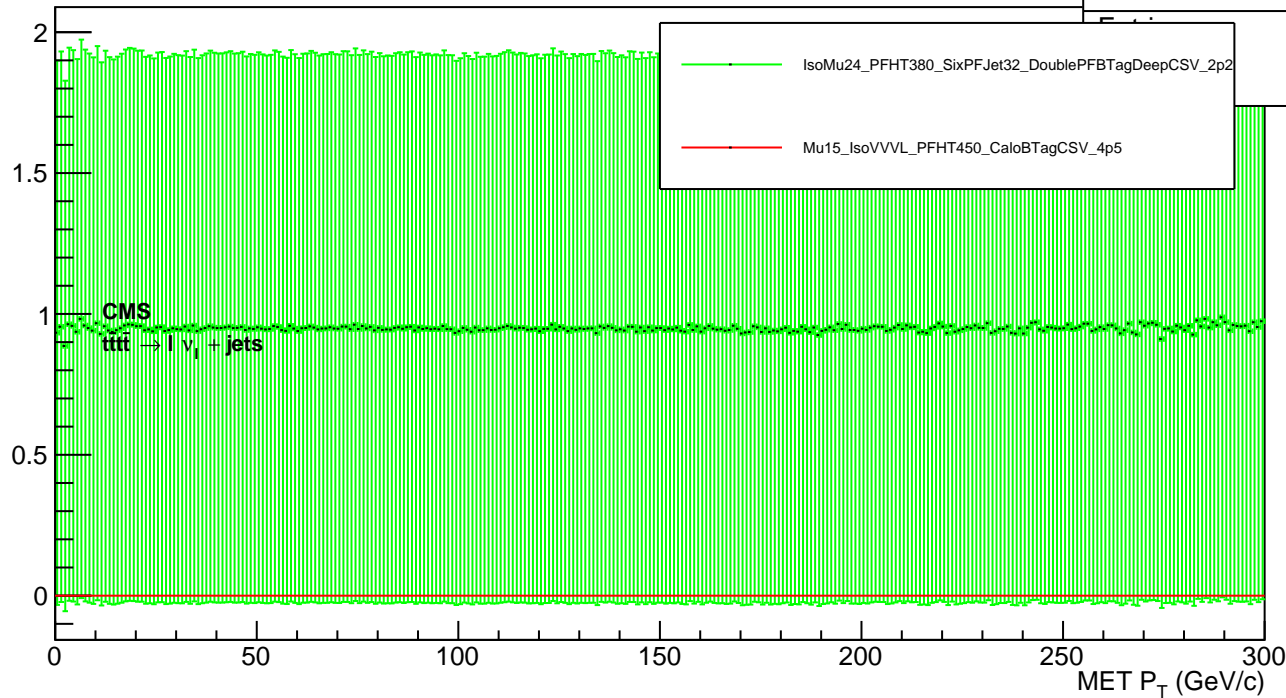
no trigger

Number of Events per 1 GeV/c



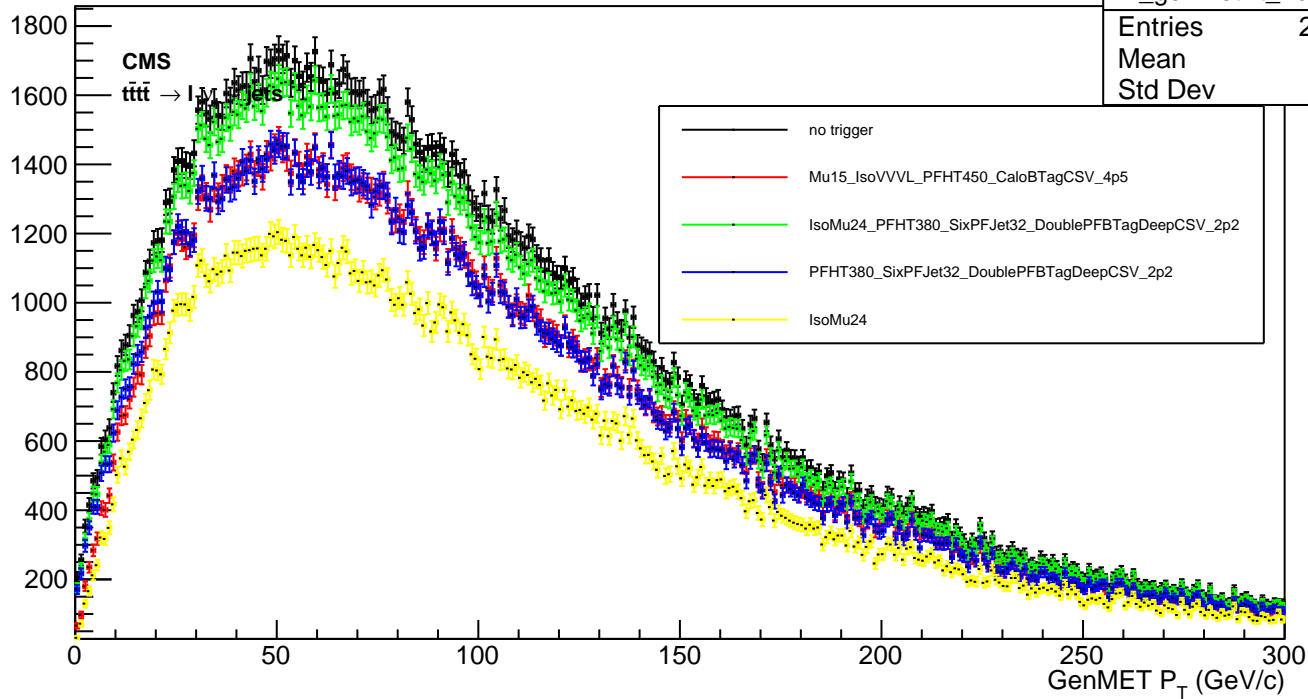
IsoMu24_PFHT380_SixPFJet32_DoublePFBTagDeepCSV_2p2

Number of Events per 1 GeV/c



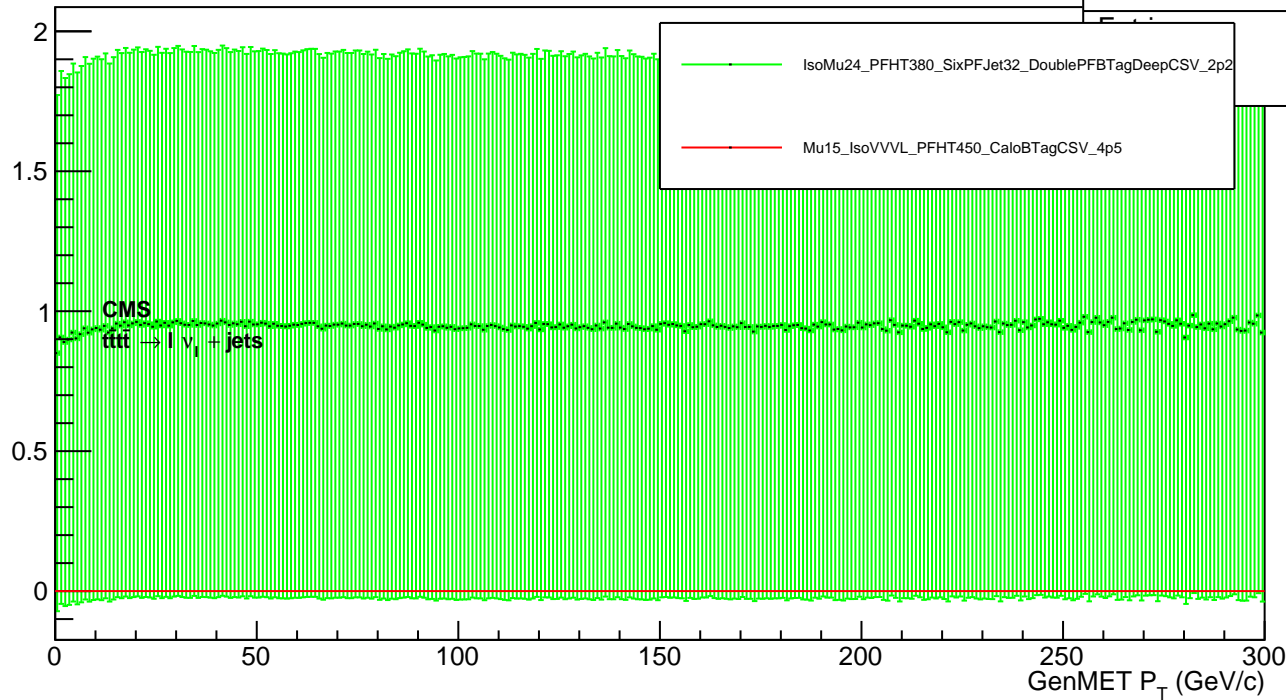
no trigger

Number of Events per 1GeV/c



IsoMu24_PFHT380_SixPFJet32_DoublePFBTagDeepCSV_2p2

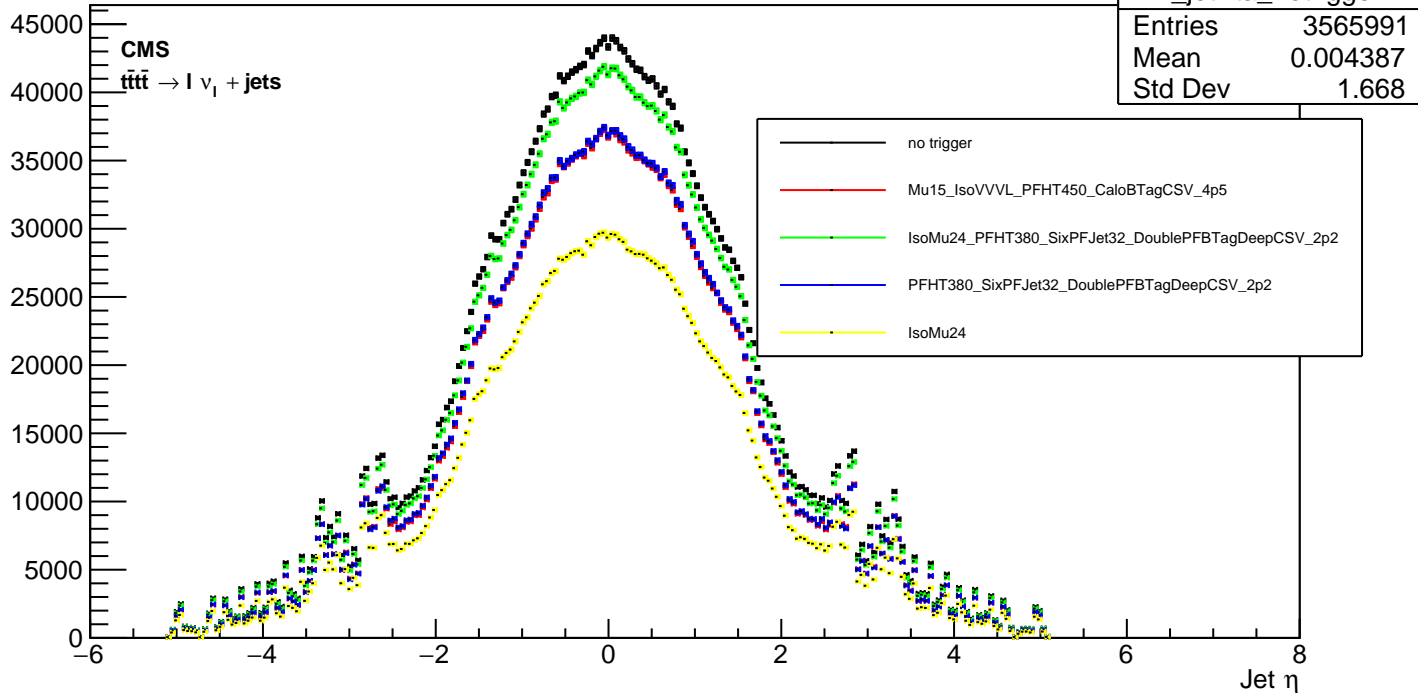
Number of Events per 1 GeV/c



284
150.2
86.59

no trigger

Number of Events per $\delta\eta = 0.046$

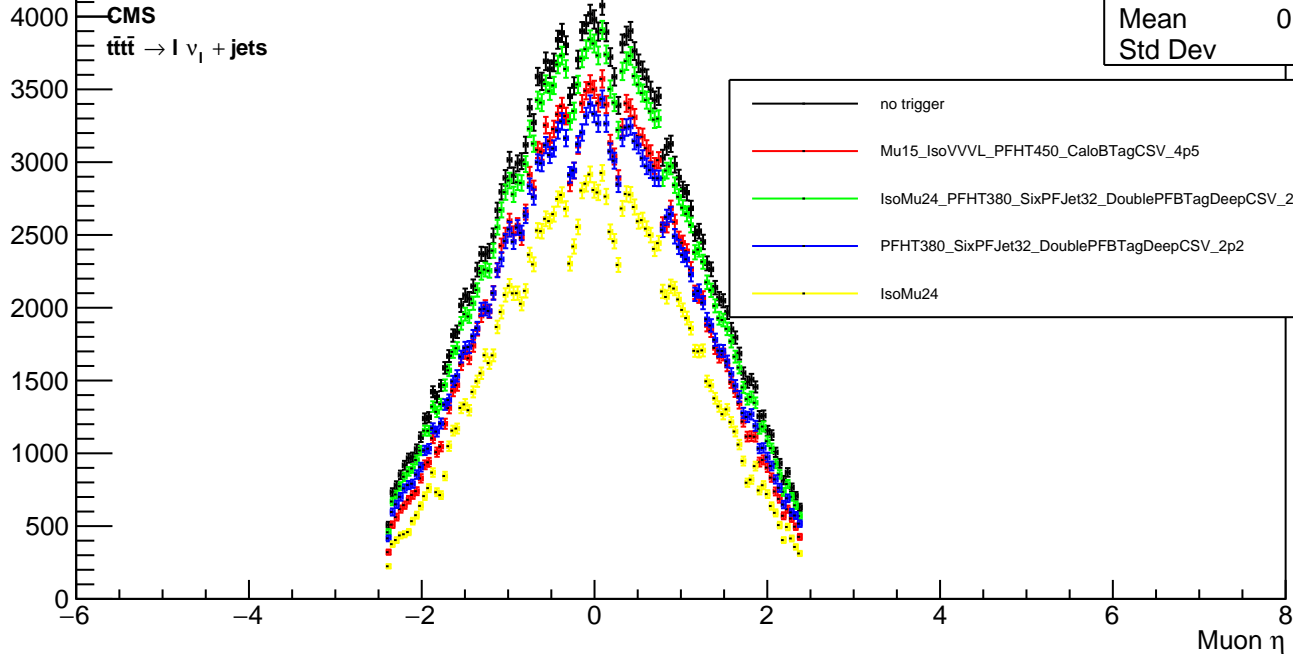
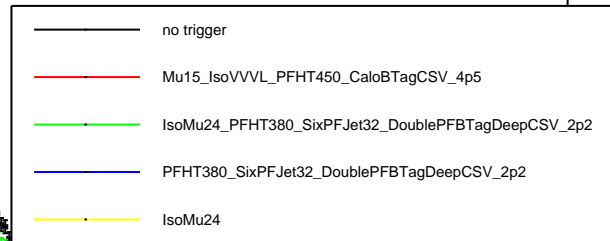


no trigger

Number of Events per $\delta\eta = 0.046$

CMS
 $t\bar{t}\bar{t} \rightarrow l \nu_l + \text{jets}$

h_muonEta_notrigger	
Entries	252720
Mean	0.000157
Std Dev	1.09

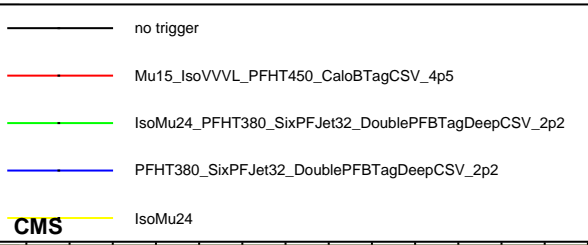


no trigger

Number of Events per $\delta\eta = 0.046$

h_elEta_notrigger	
Entries	0
Mean	0
Std Dev	0

1
0.8
0.6
0.4
0.2
0

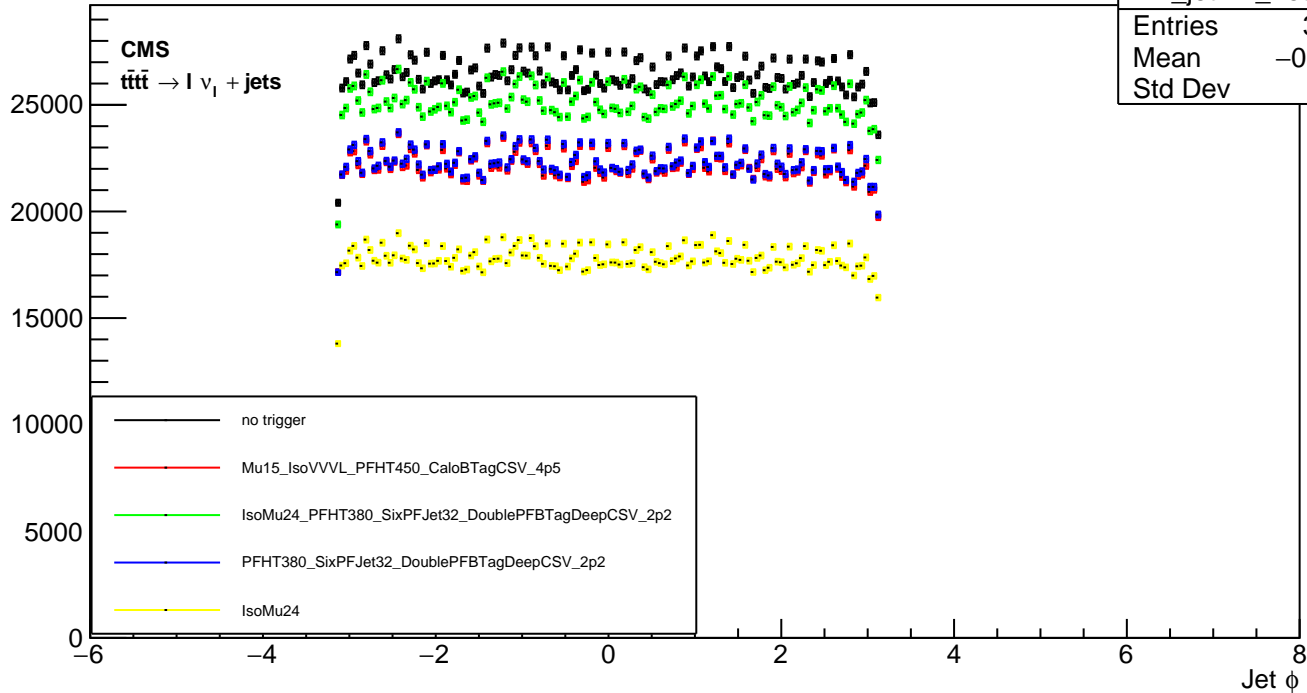


$t\bar{t} \rightarrow l \nu_l + \text{jets}$ -6 -2 0 2 4 6 8

Electron η

no trigger

Number of Events per $\delta\phi = 0.046$

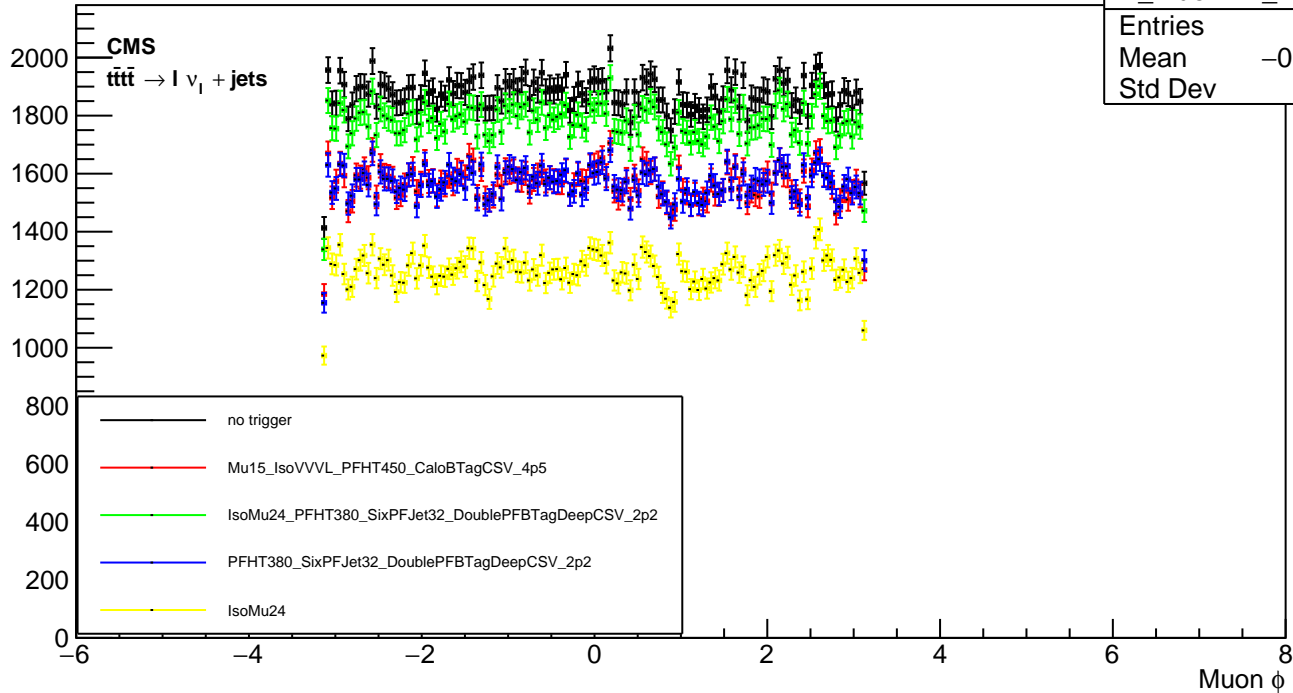


h_jetPhi_notrigger

Entries	3565991
Mean	-0.009322
Std Dev	1.812

no trigger

Number of Events per $\delta\phi = 0.046$



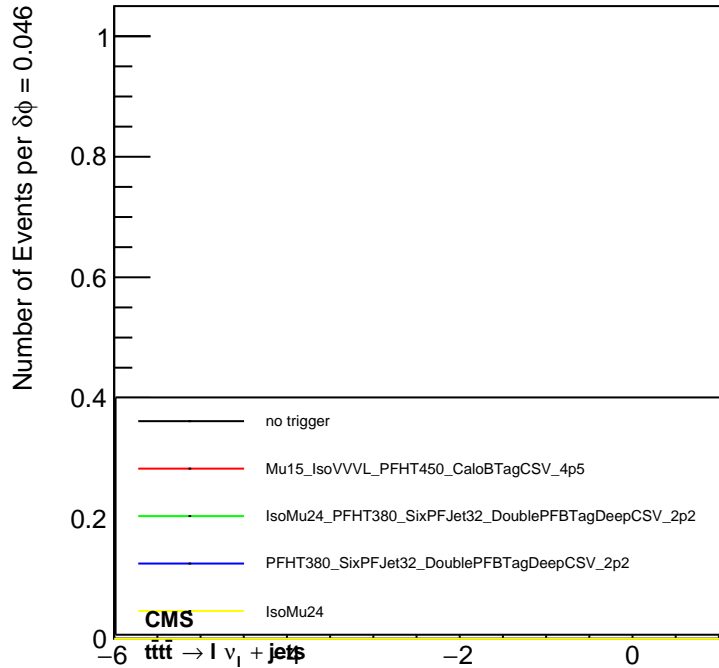
h_muonPhi_notrigger

Entries 252720

Mean -0.006832

Std Dev 1.813

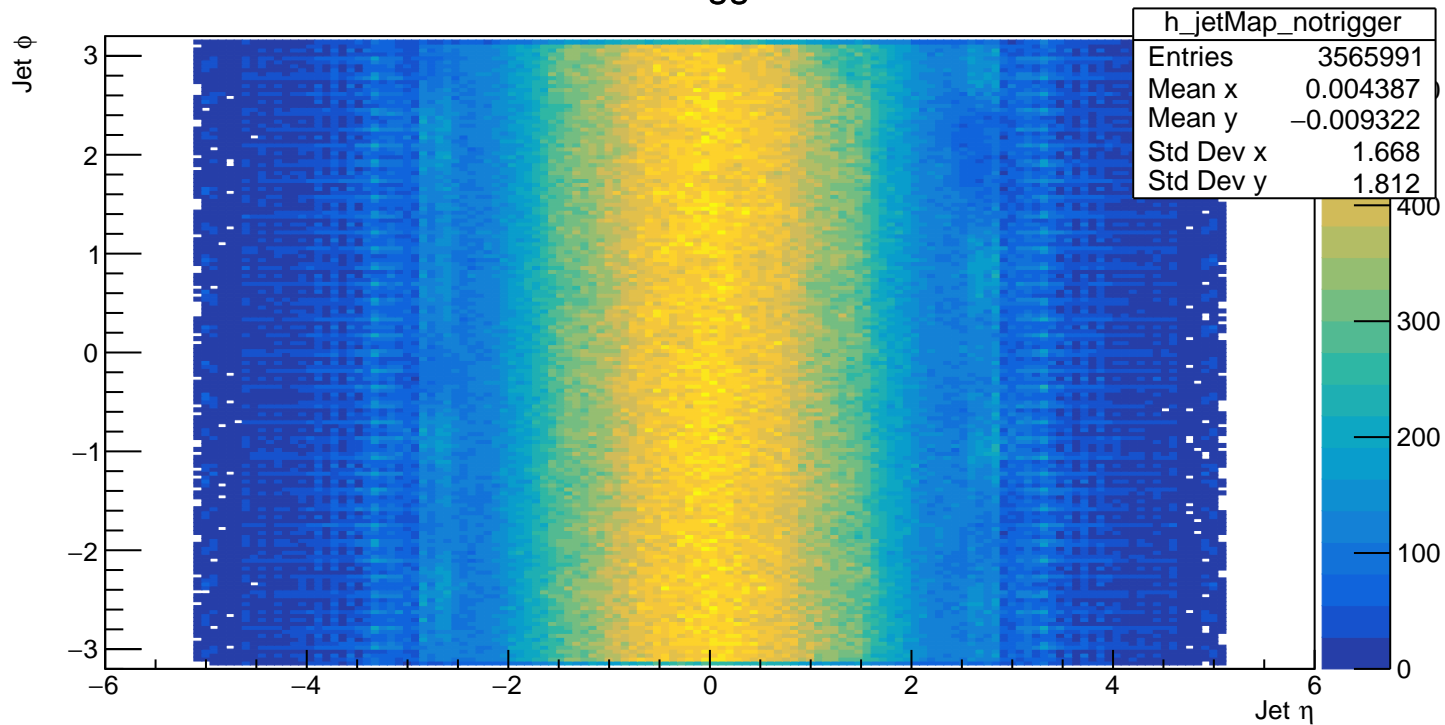
no trigger



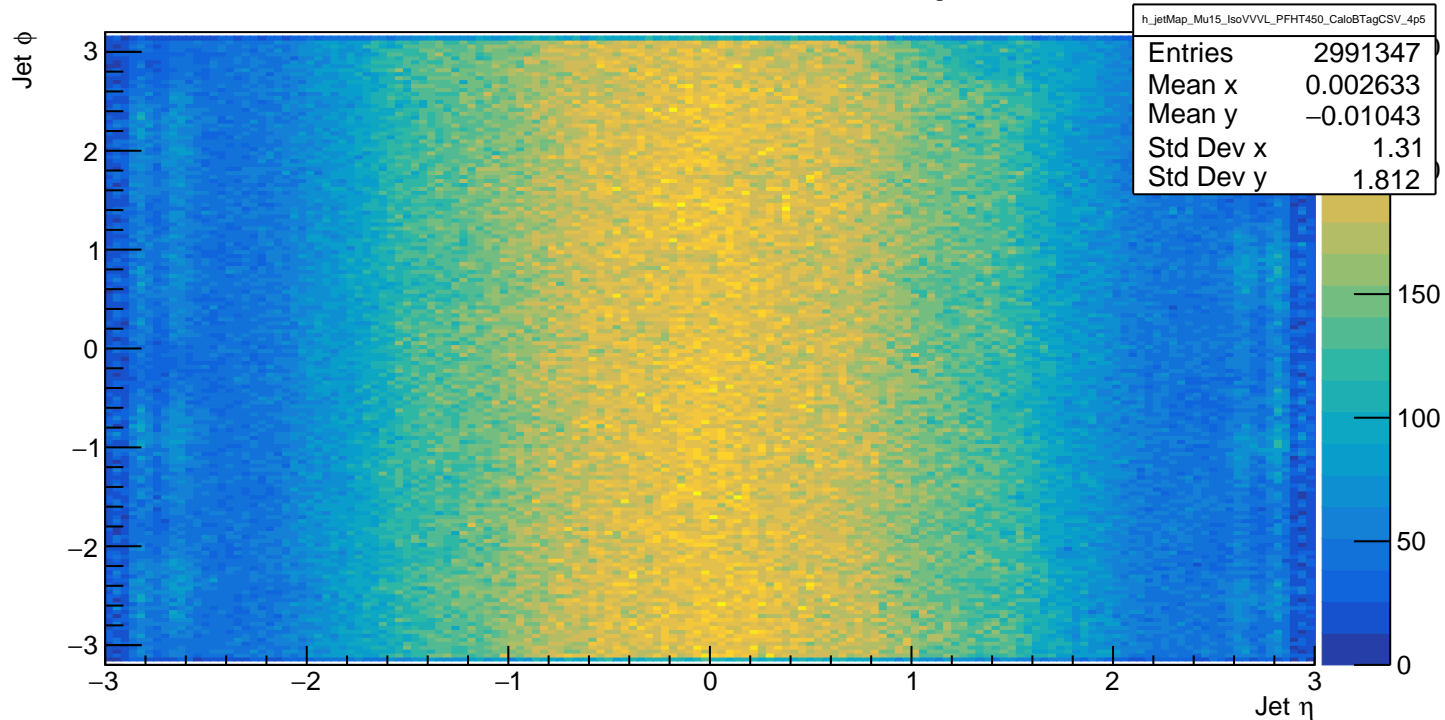
h_elPhi_notrigger	
Entries	0
Mean	0
Std Dev	0

Electron ϕ

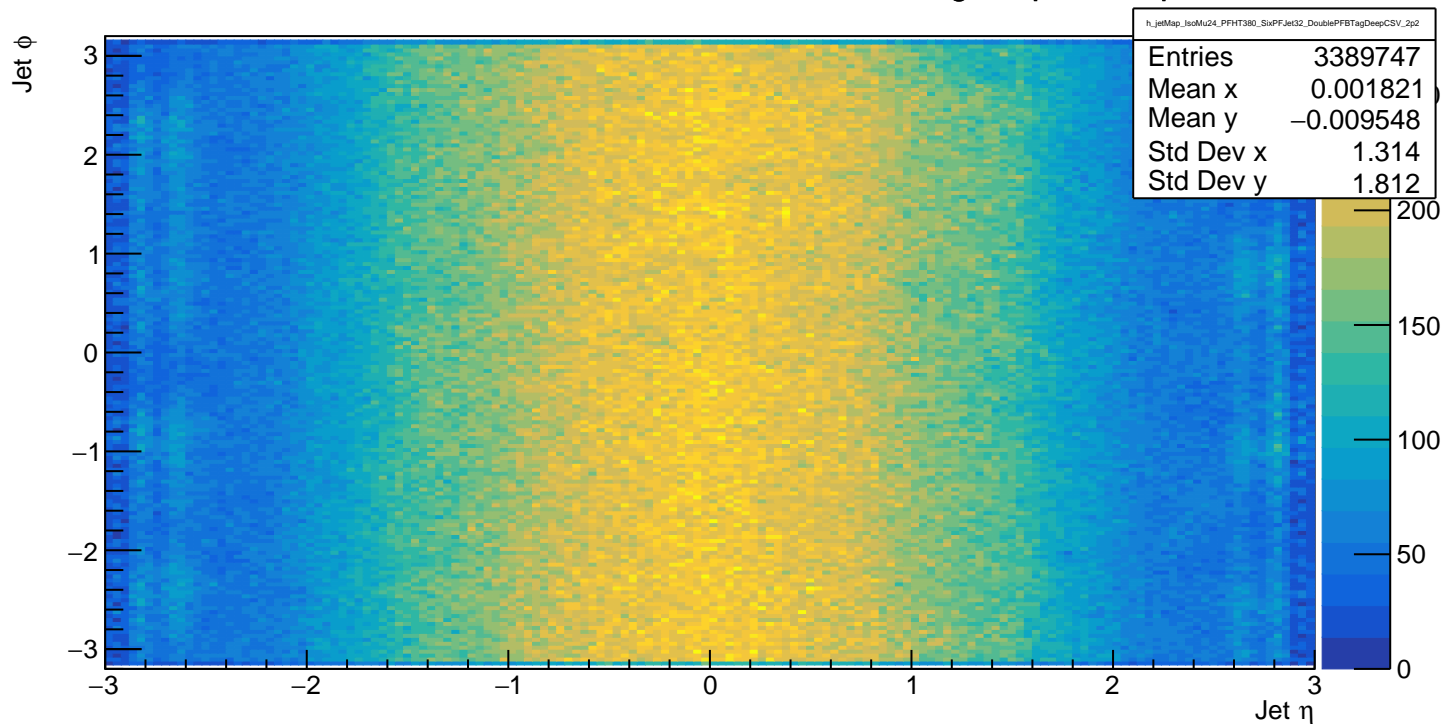
no trigger



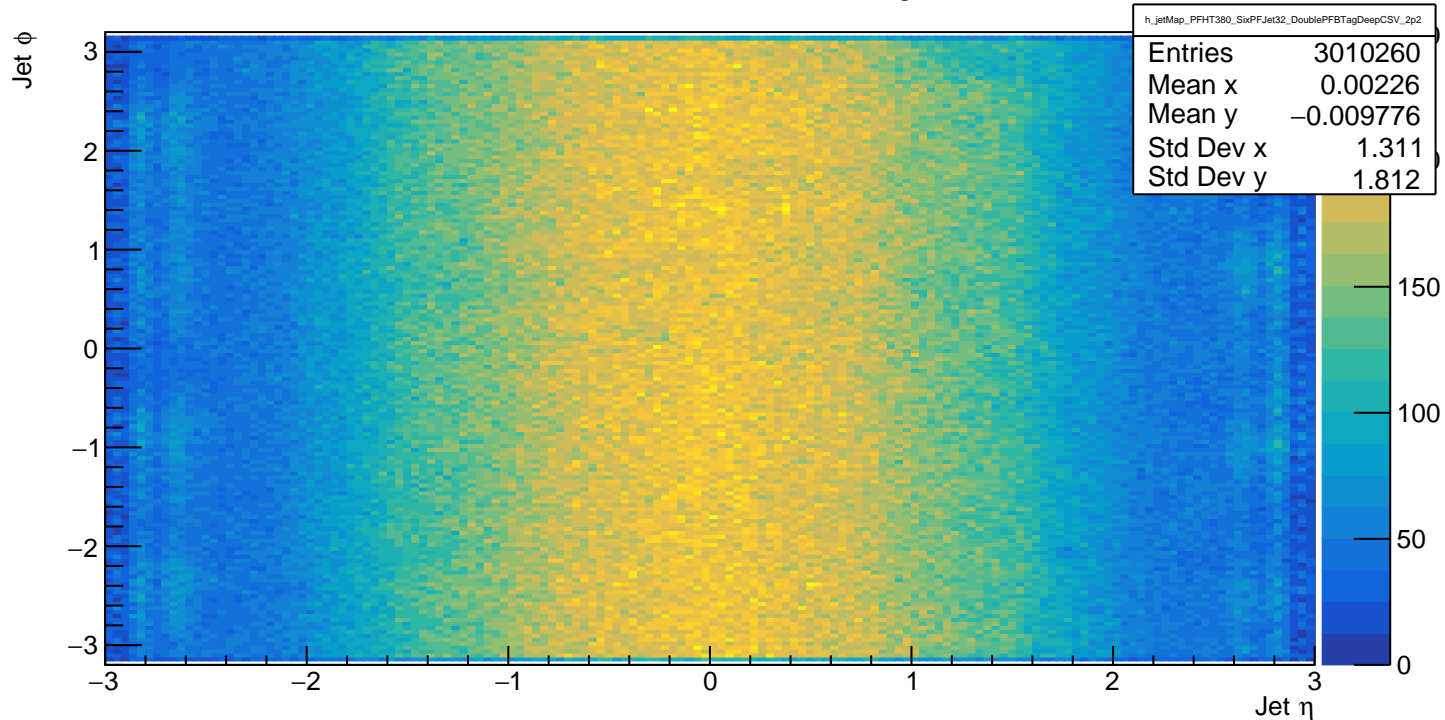
Mu15_IsoVVVL_PFHT450_CaloBTagCSV_4p5



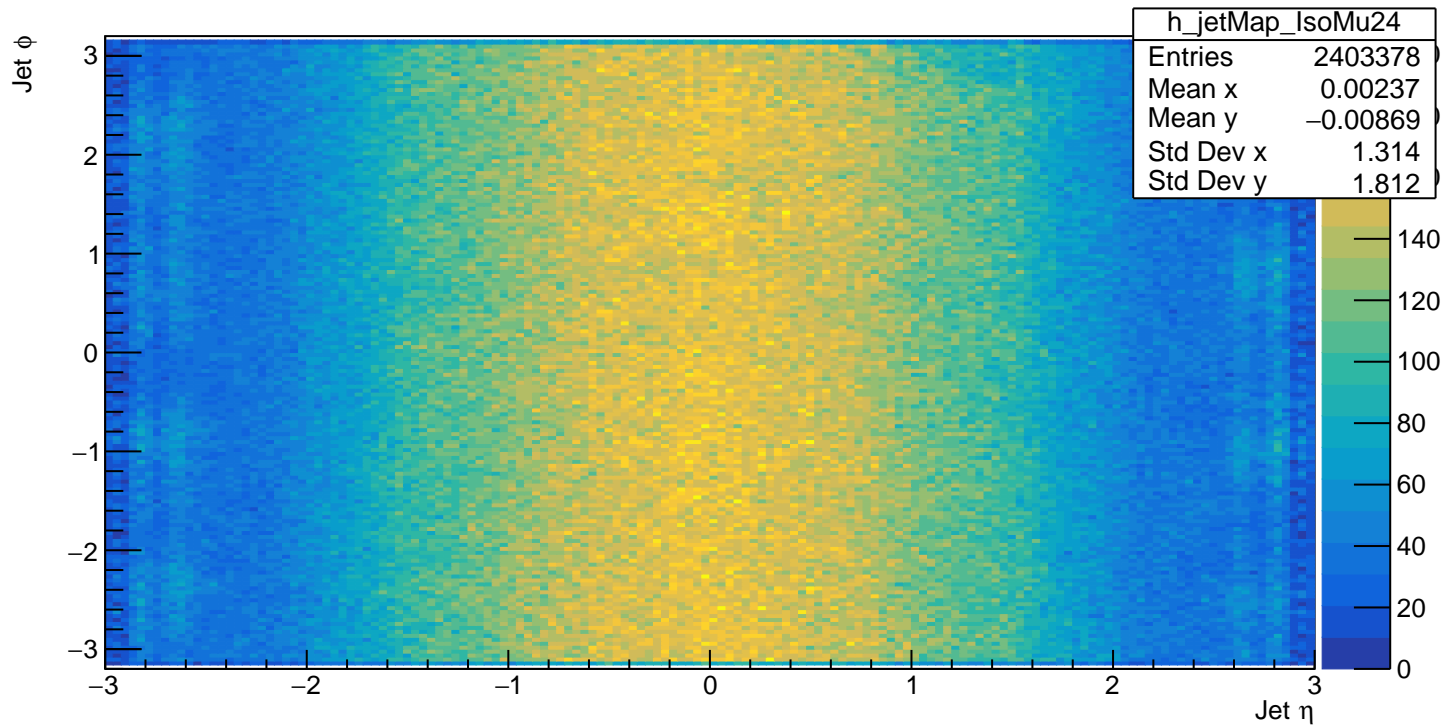
IsoMu24_PFHT380_SixPFJet32_DoublePFBTagDeepCSV_2p2



PFHT380_SixPFJet32_DoublePFBTagDeepCSV_2p2

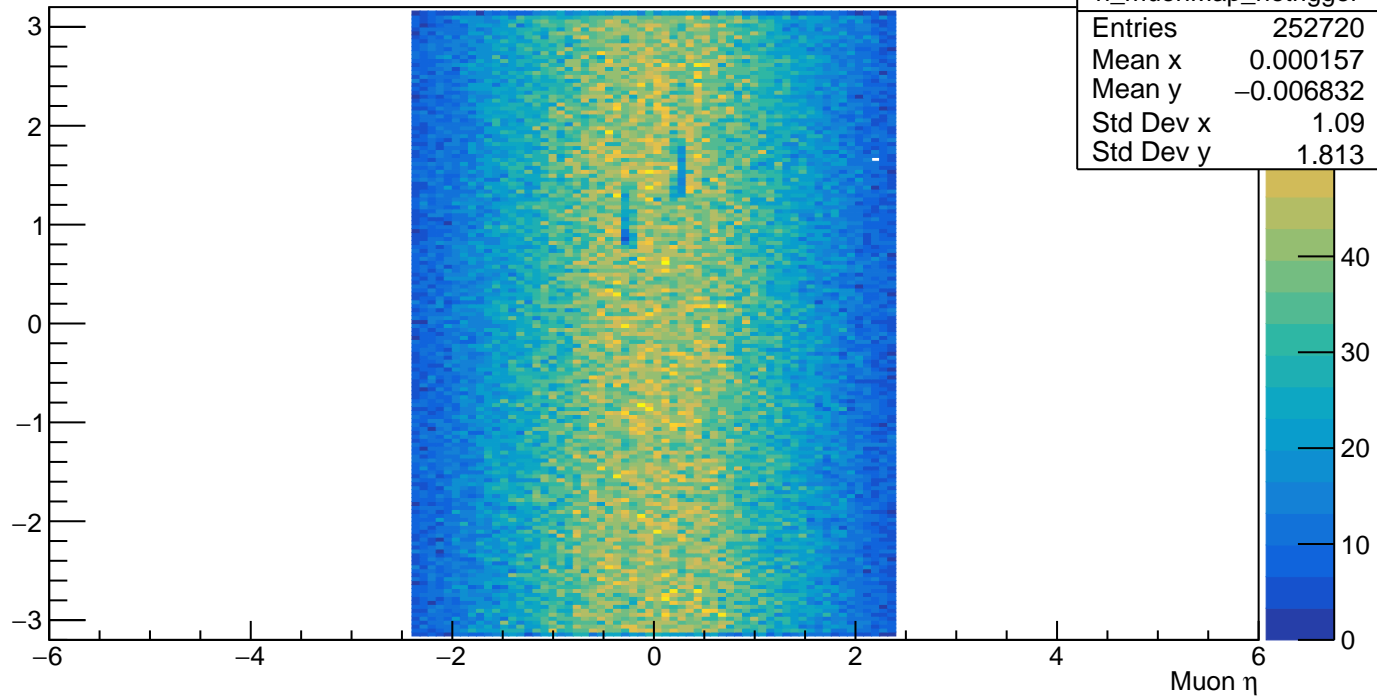


IsoMu24

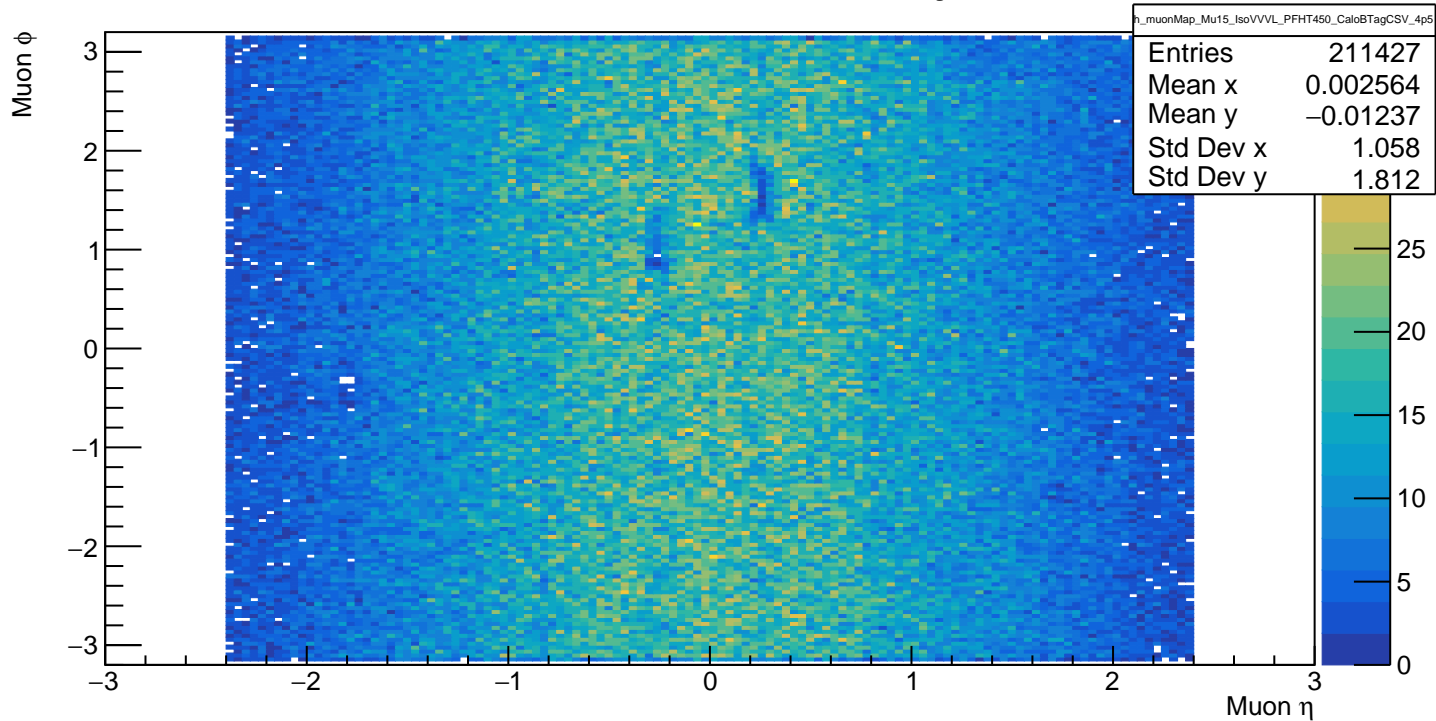


no trigger

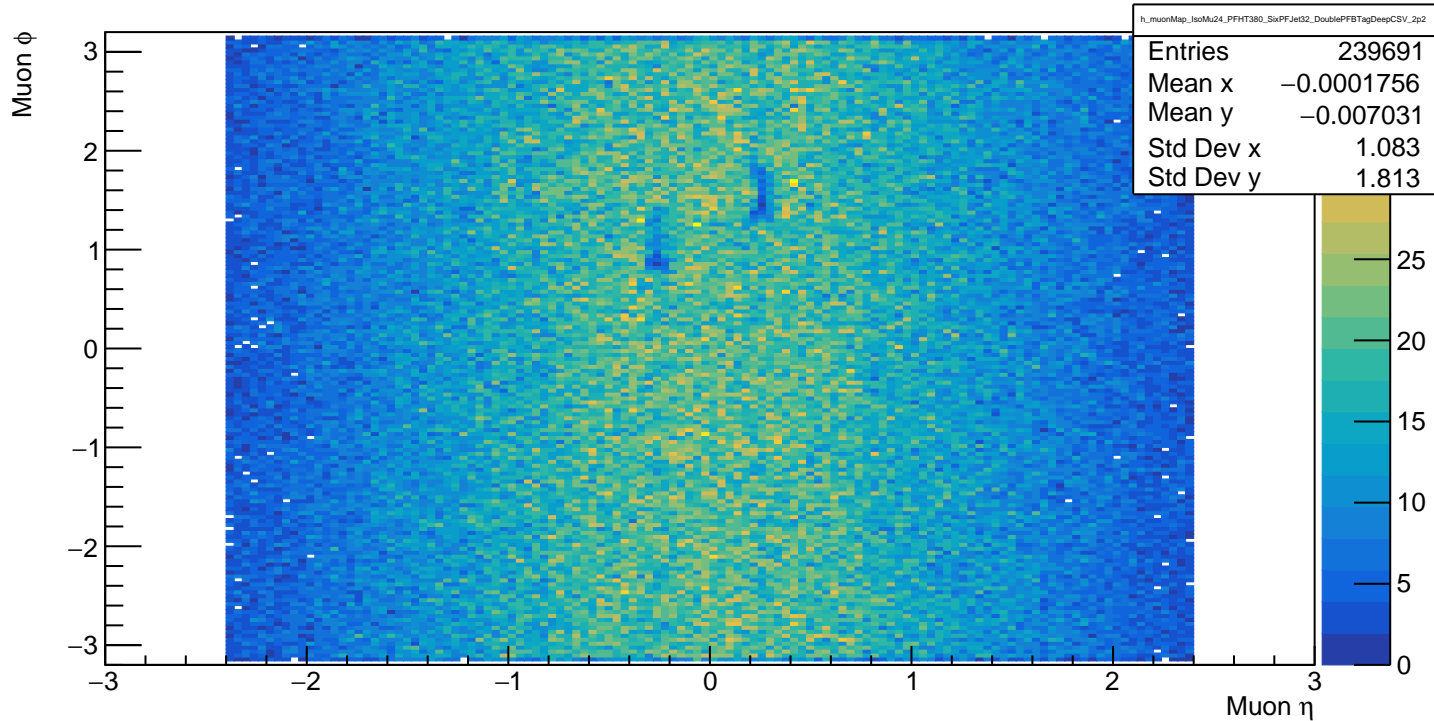
Muon ϕ



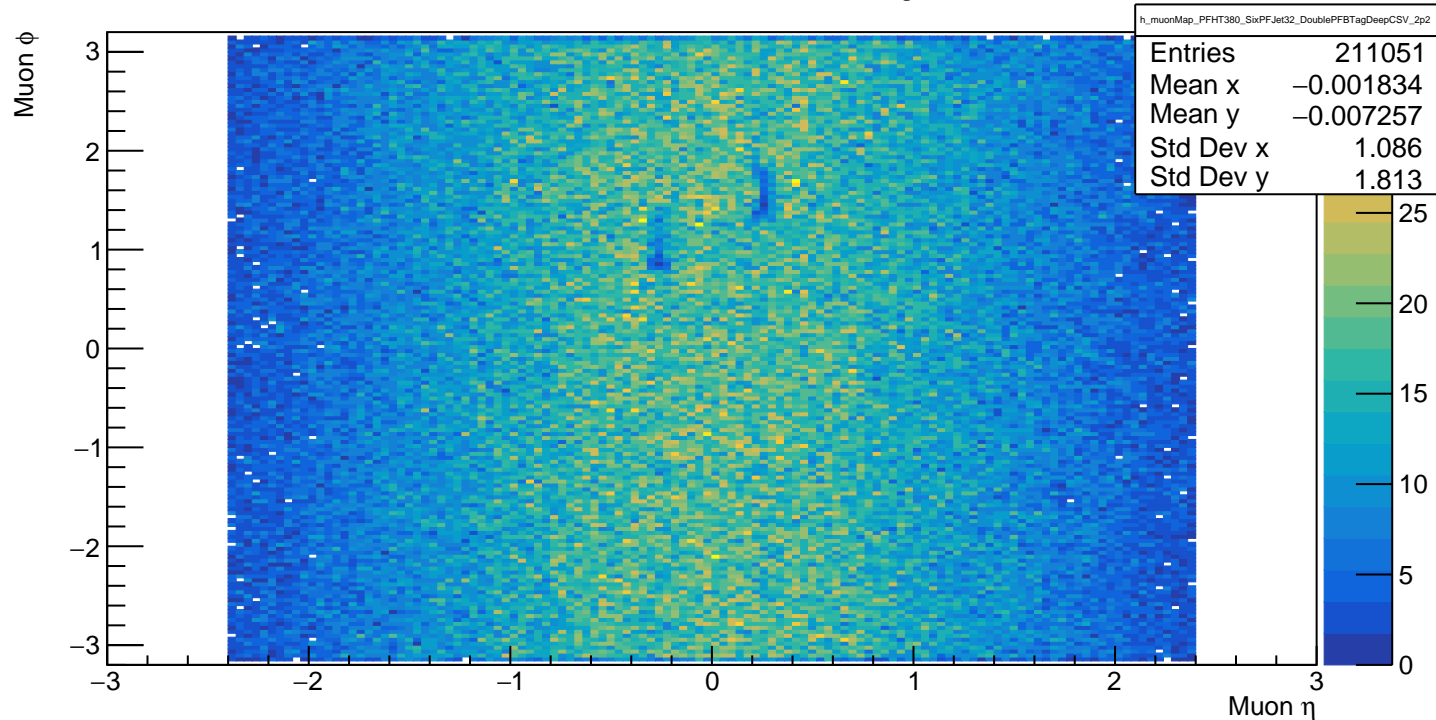
Mu15_IsoVVVL_PFHT450_CaloBTagCSV_4p5



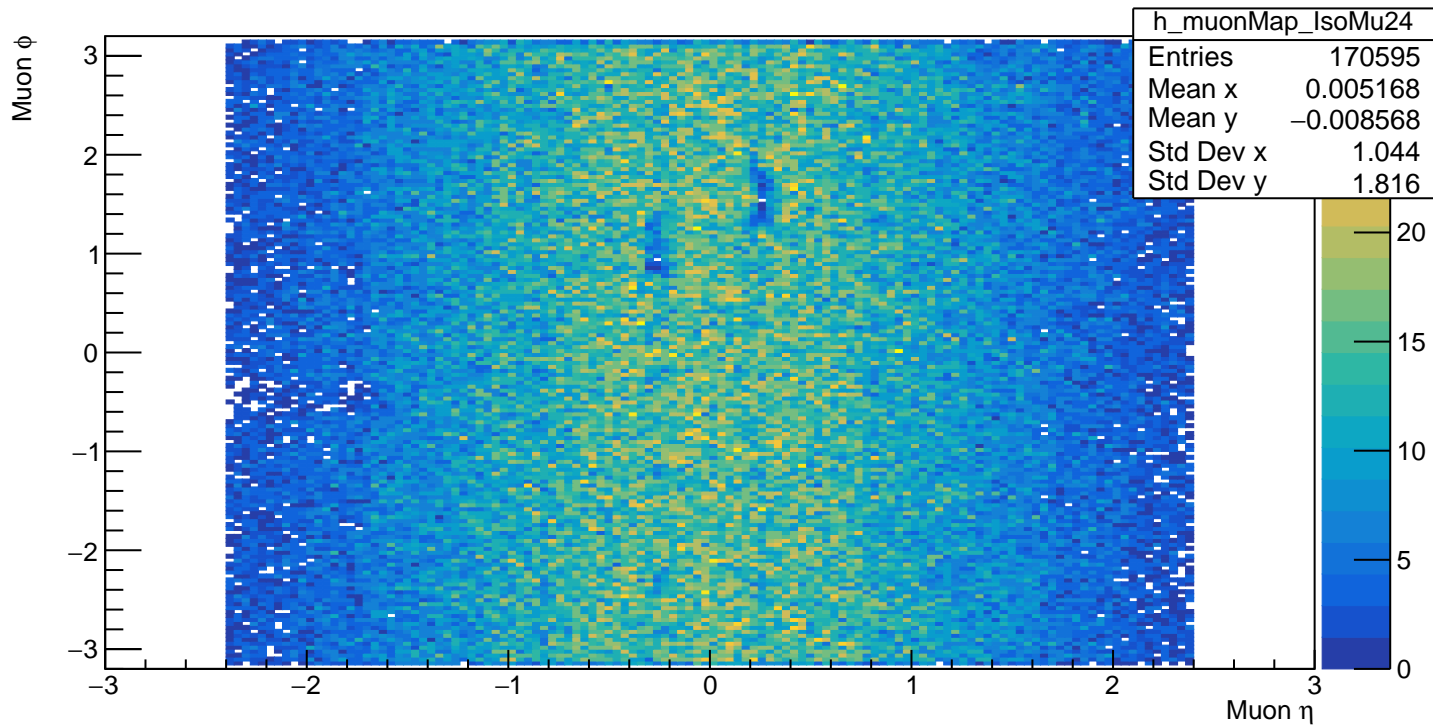
IsoMu24_PFHT380_SixPFJet32_DoublePFBTagDeepCSV_2p2



PFHT380_SixPFJet32_DoublePFBTagDeepCSV_2p2

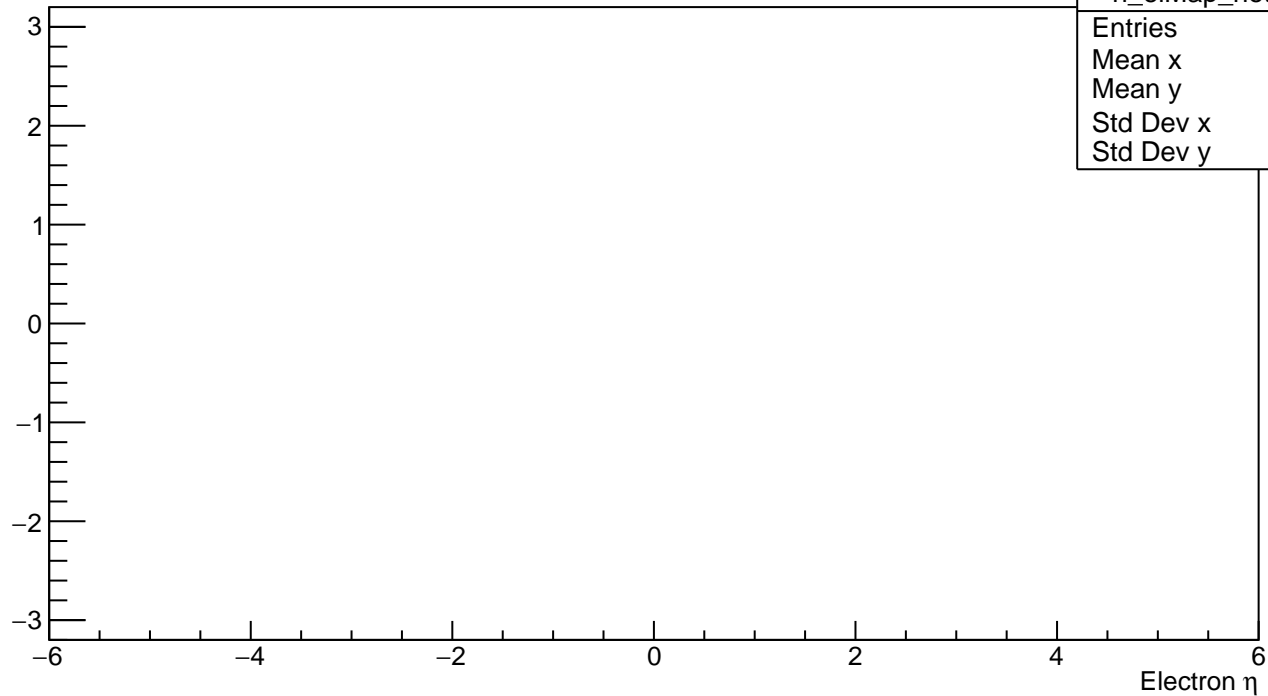


IsoMu24



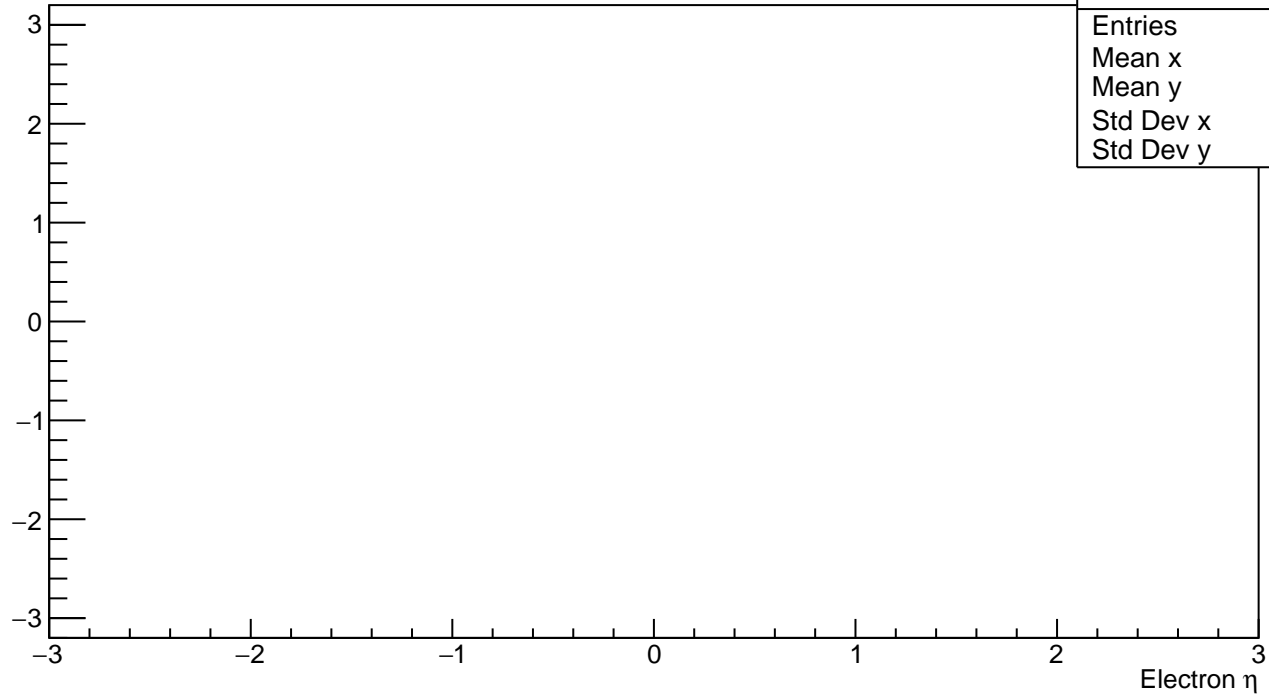
no trigger

Electron ϕ



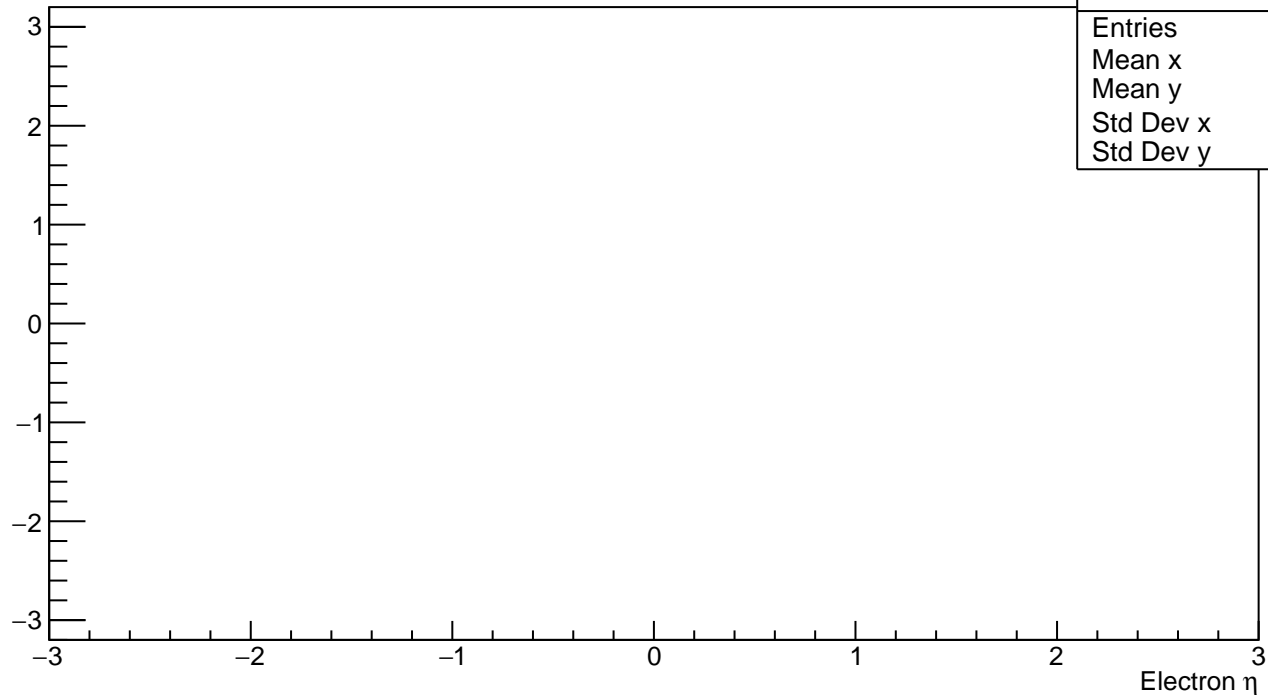
Mu15_IsoVVVL_PFHT450_CaloBTagCSV_4p5

Electron ϕ



IsoMu24_PFHT380_SixPFJet32_DoublePFBTagDeepCSV_2p2

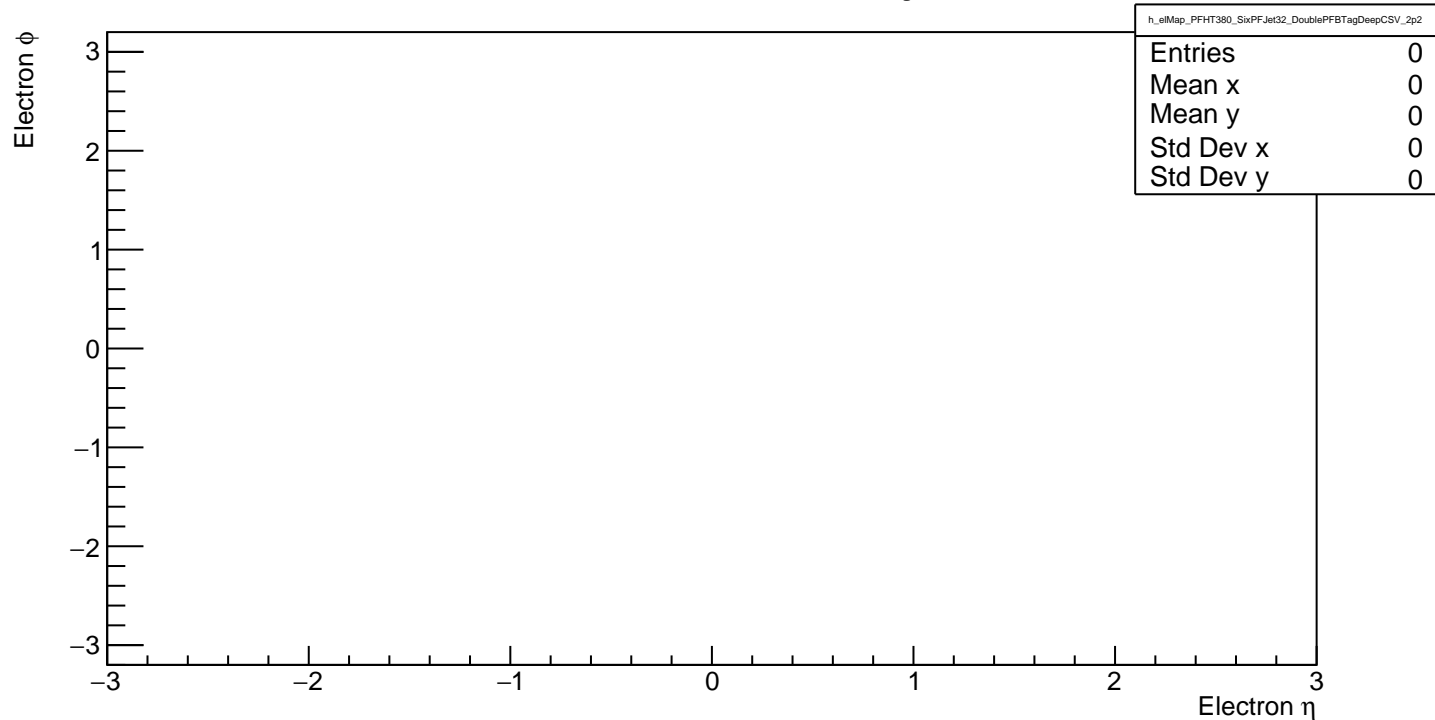
Electron ϕ



h_e1Map_IsoMu24_PFHT380_SixPFJet32_DoublePFBTagDeepCSV_2p2

Entries	0
Mean x	0
Mean y	0
Std Dev x	0
Std Dev y	0

PFHT380_SixPFJet32_DoublePFBTagDeepCSV_2p2



IsoMu24

