

**On-line (pre-)selection Requisites for:**

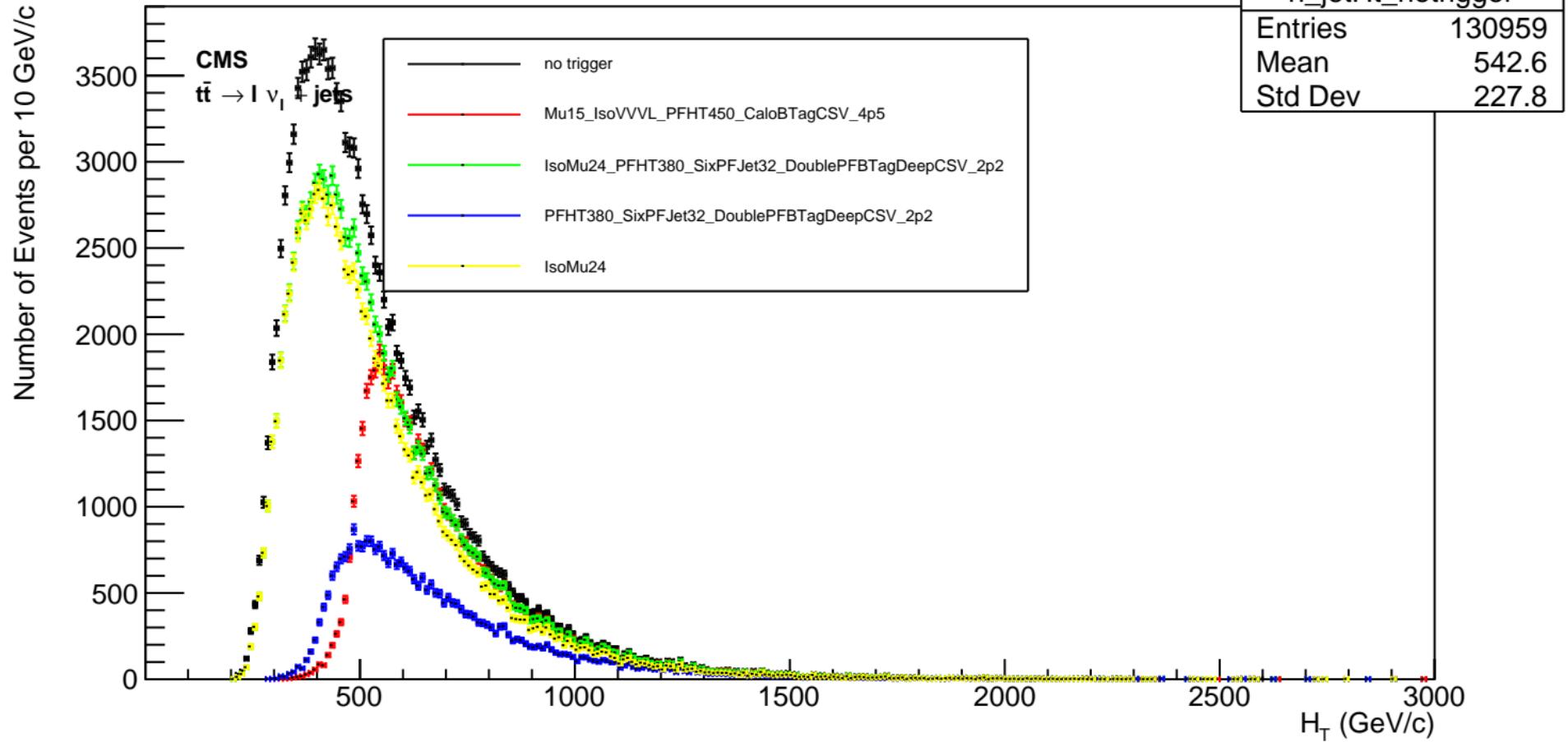
- **Jets:** number > 5 , jetId > 2 and  $|\eta| < 2.4$
- **Muons:** number >0 and has softId

**Event Limit:** None (see last page)

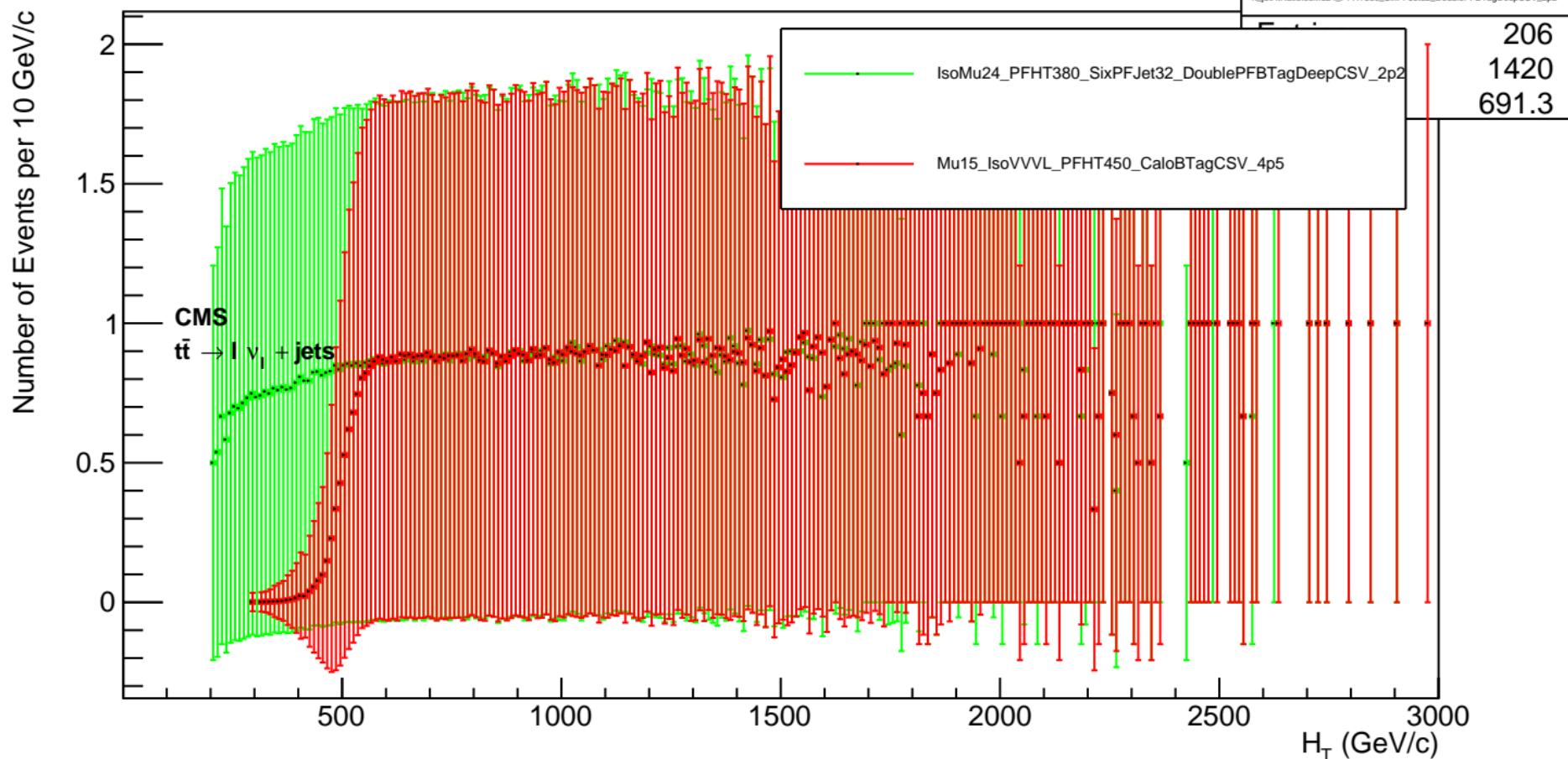
**Off-line (post-)selection Requisites for:**

- **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  $\text{miniPFRellso\_all} < 0.15$  (for at least 1)

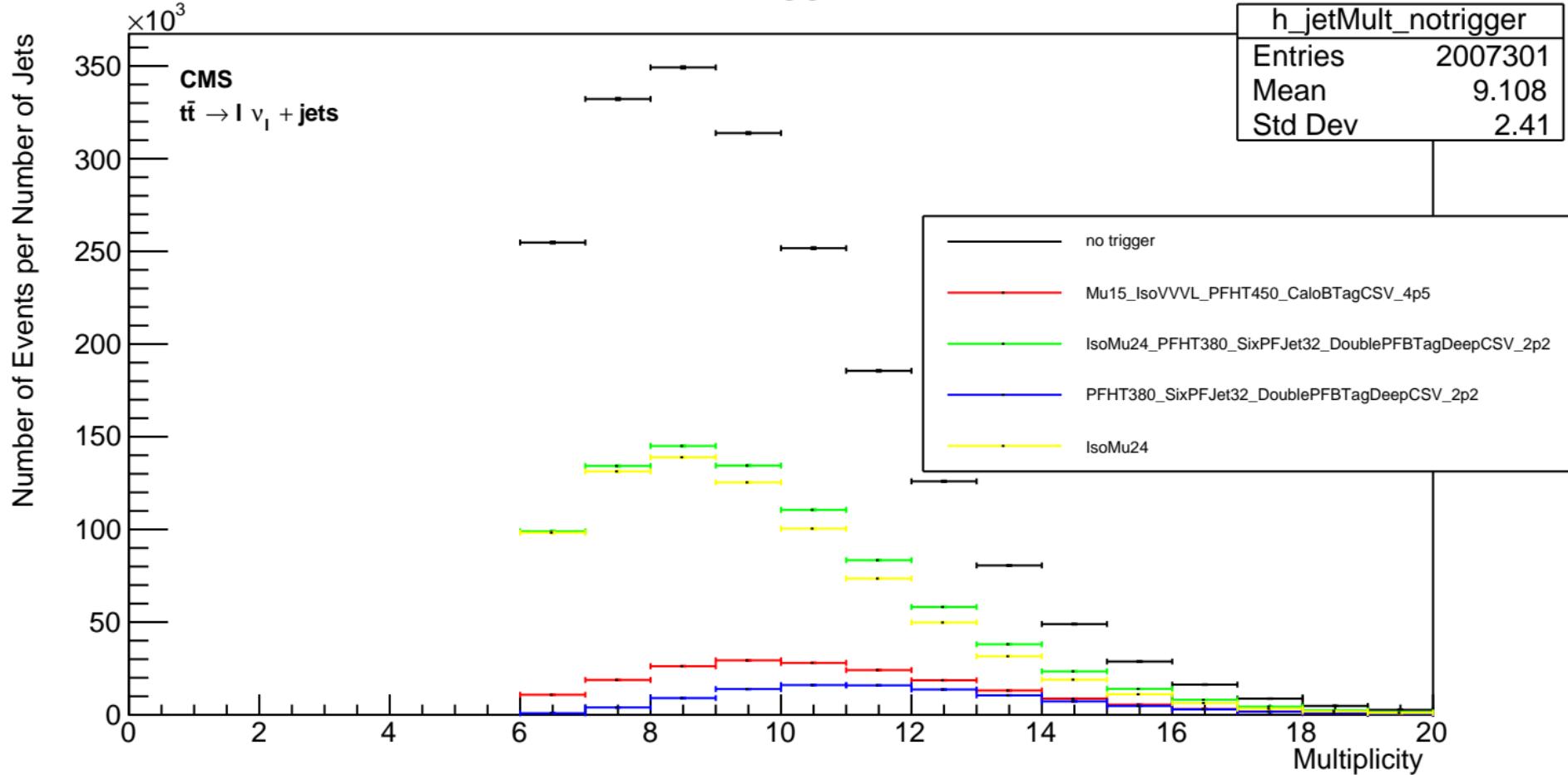
# no trigger



# IsoMu24\_PFHT380\_SixPFJet32\_DoublePFBTagDeepCSV\_2p2

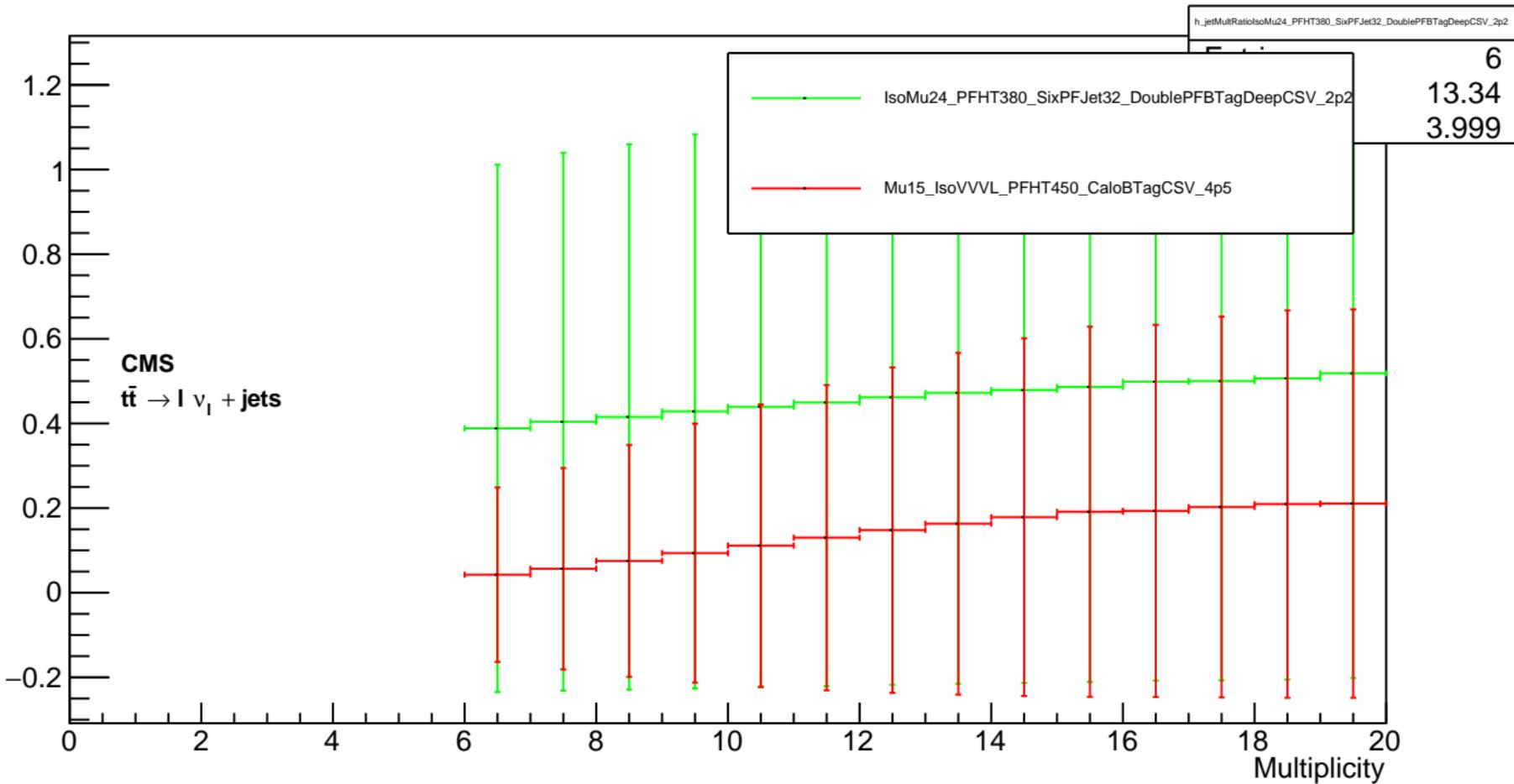


# no trigger



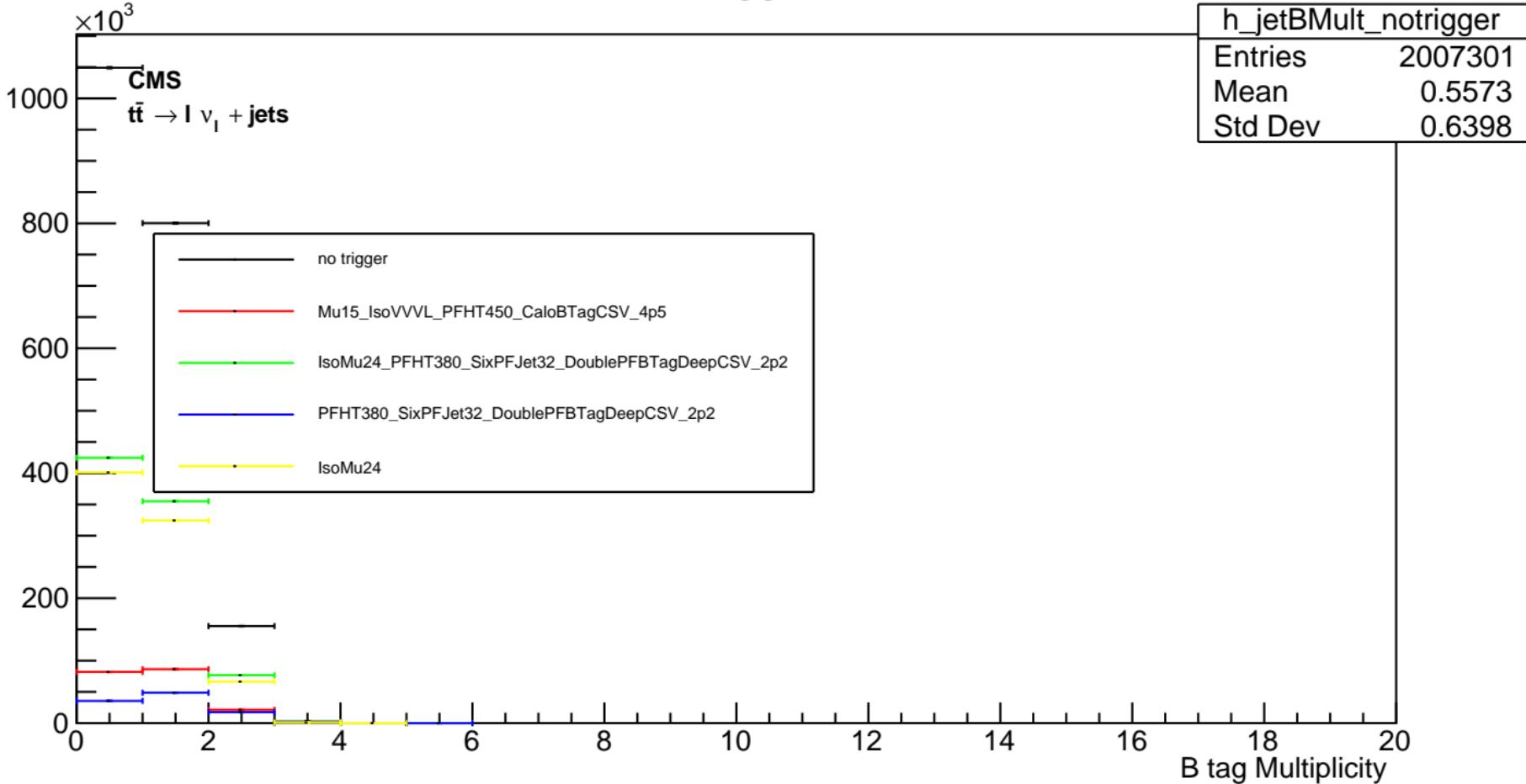
# IsoMu24\_PFHT380\_SixPFJet32\_DoublePFBTagDeepCSV\_2p2

Number of Events per Number of Jets

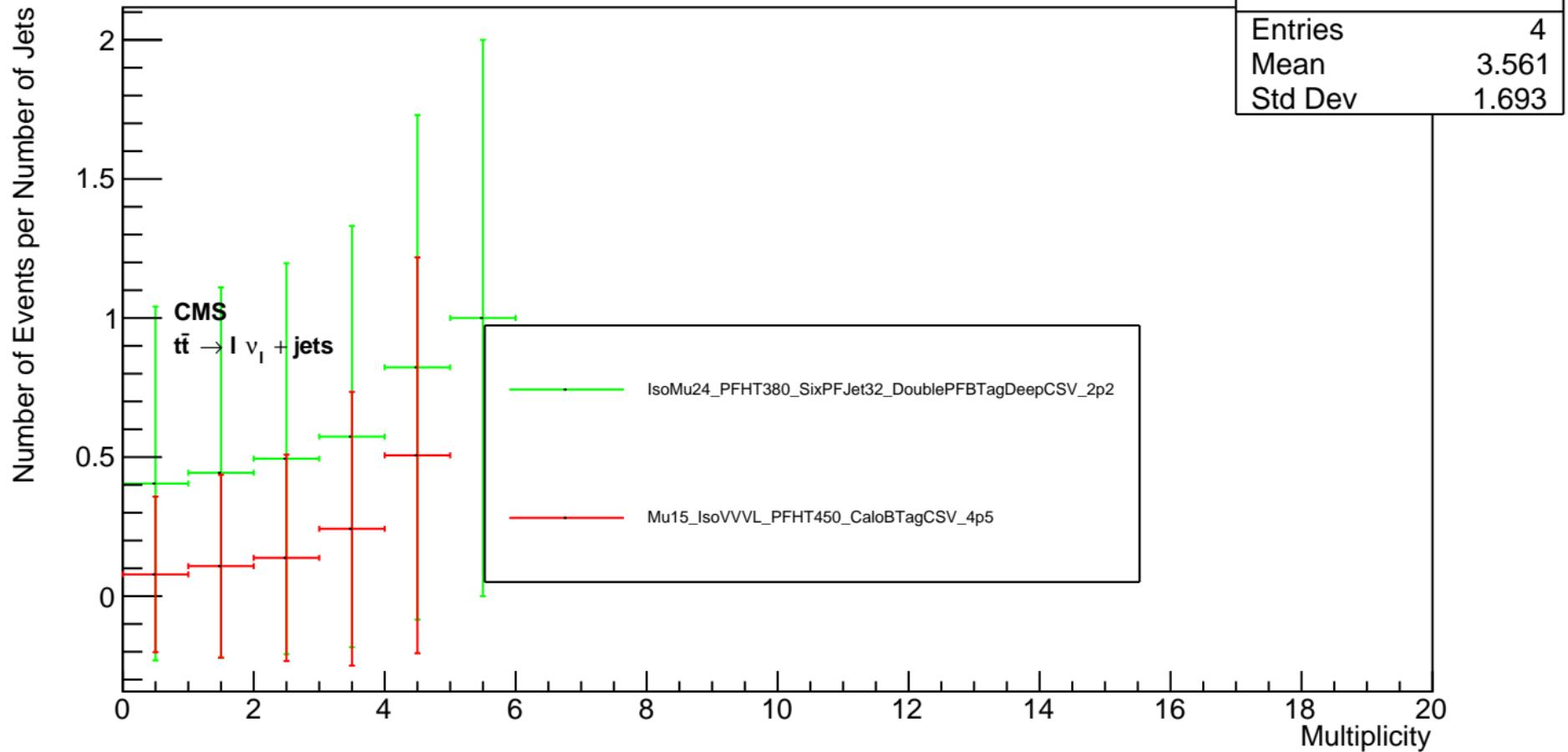


# no trigger

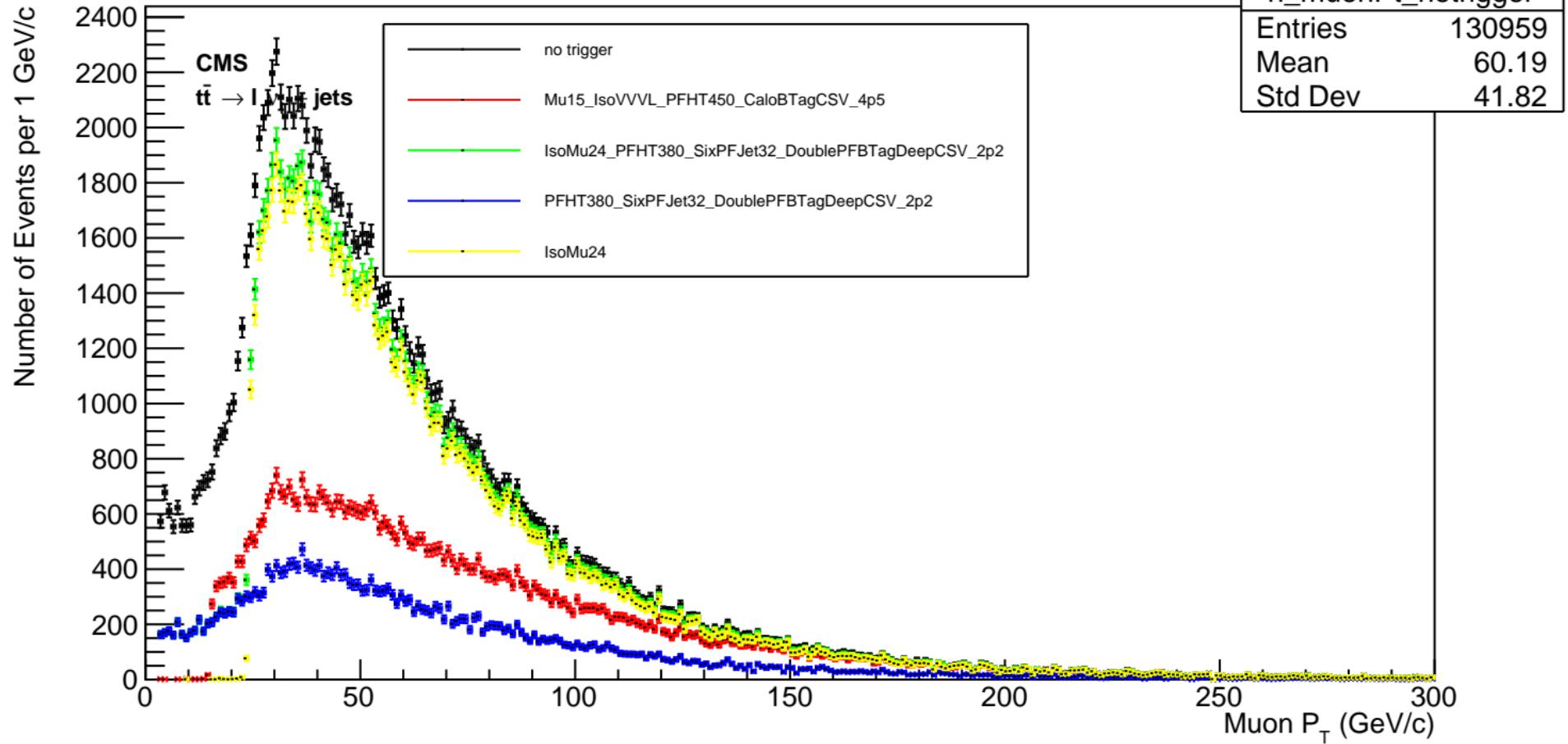
Number of Events per Number of Jets



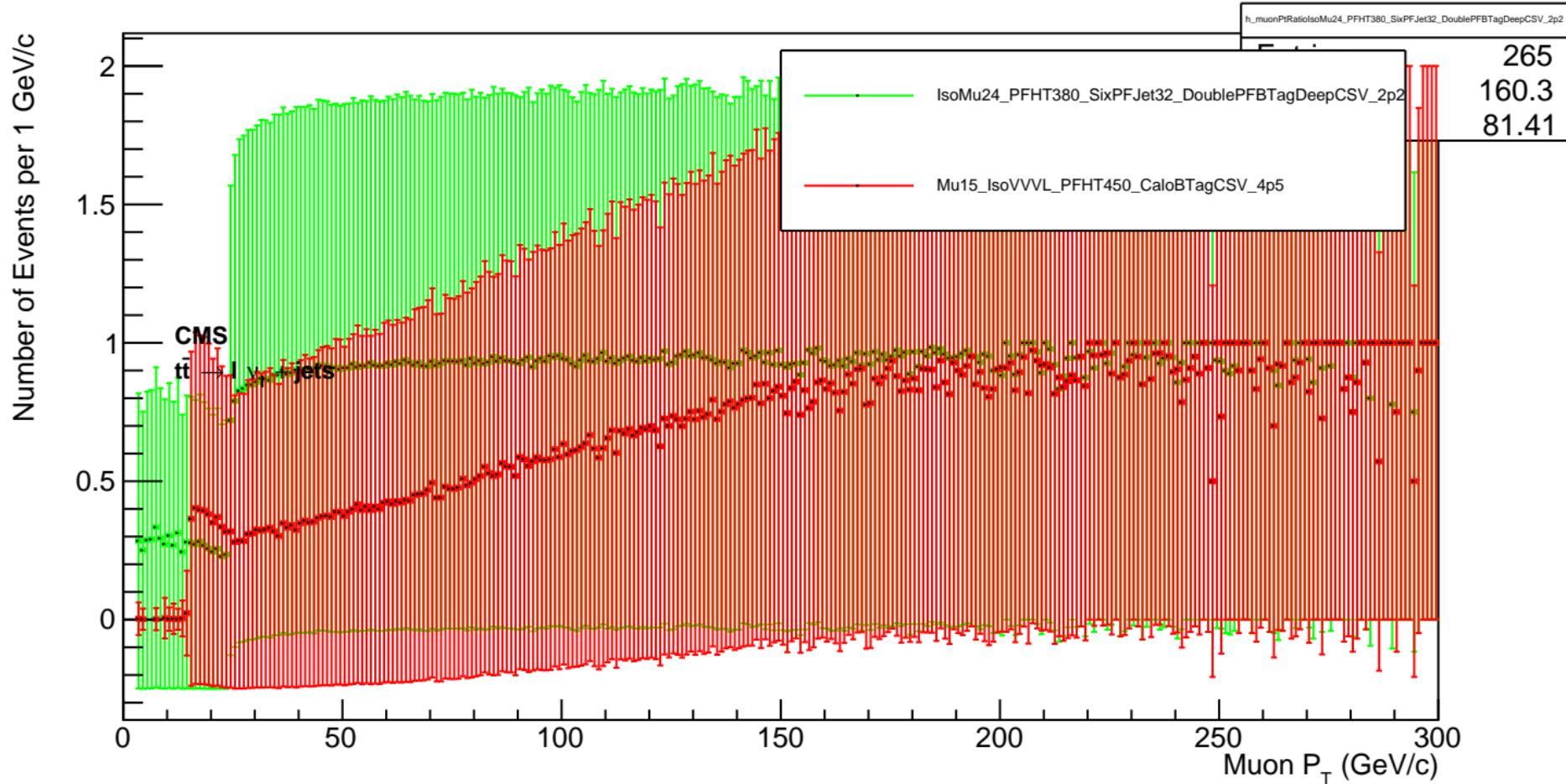
# IsoMu24\_PFHT380\_SixPFJet32\_DoublePFBTagDeepCSV\_2p2



# no trigger

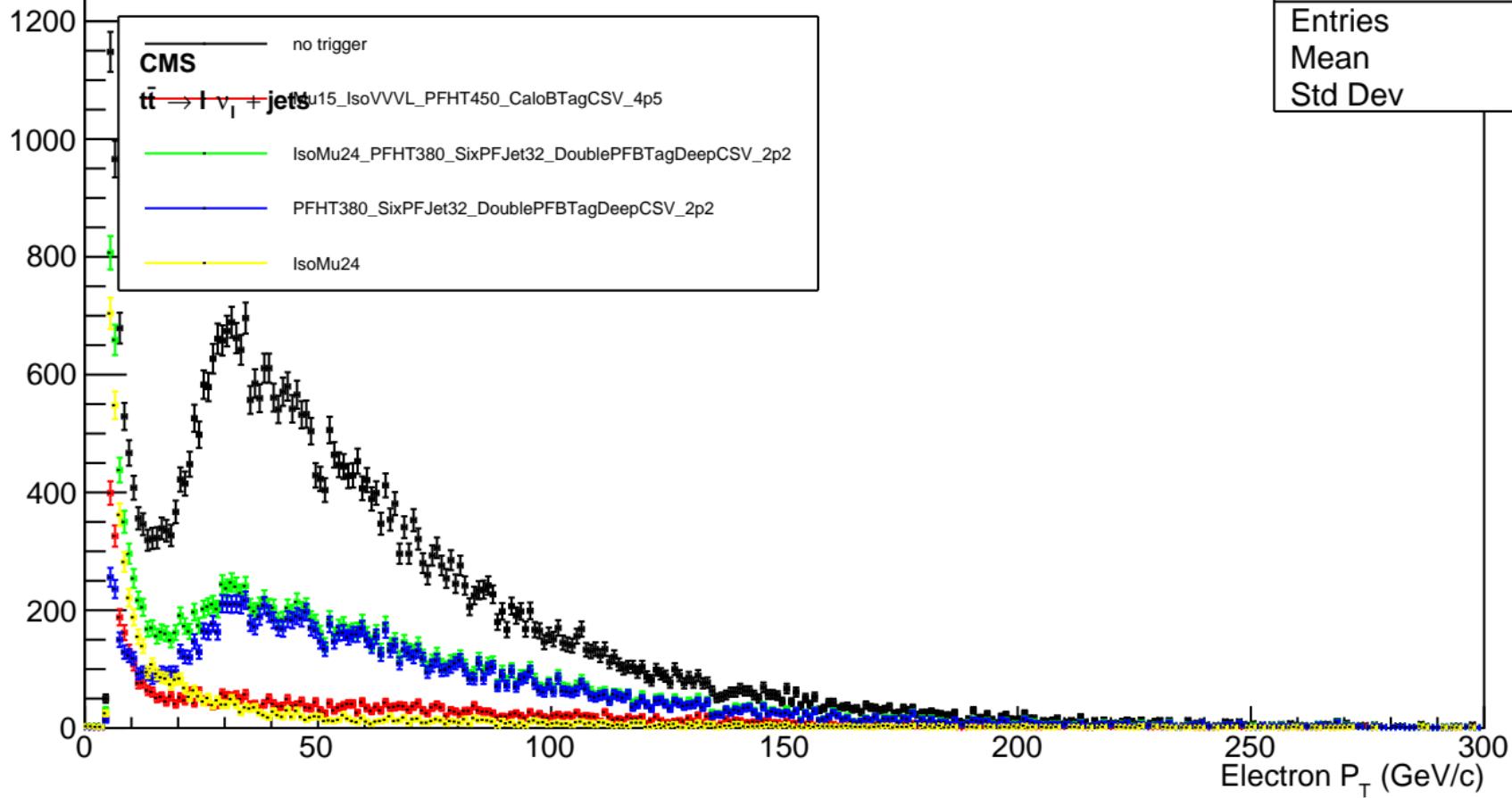


# IsoMu24\_PFHT380\_SixPFJet32\_DoublePFBTagDeepCSV\_2p2



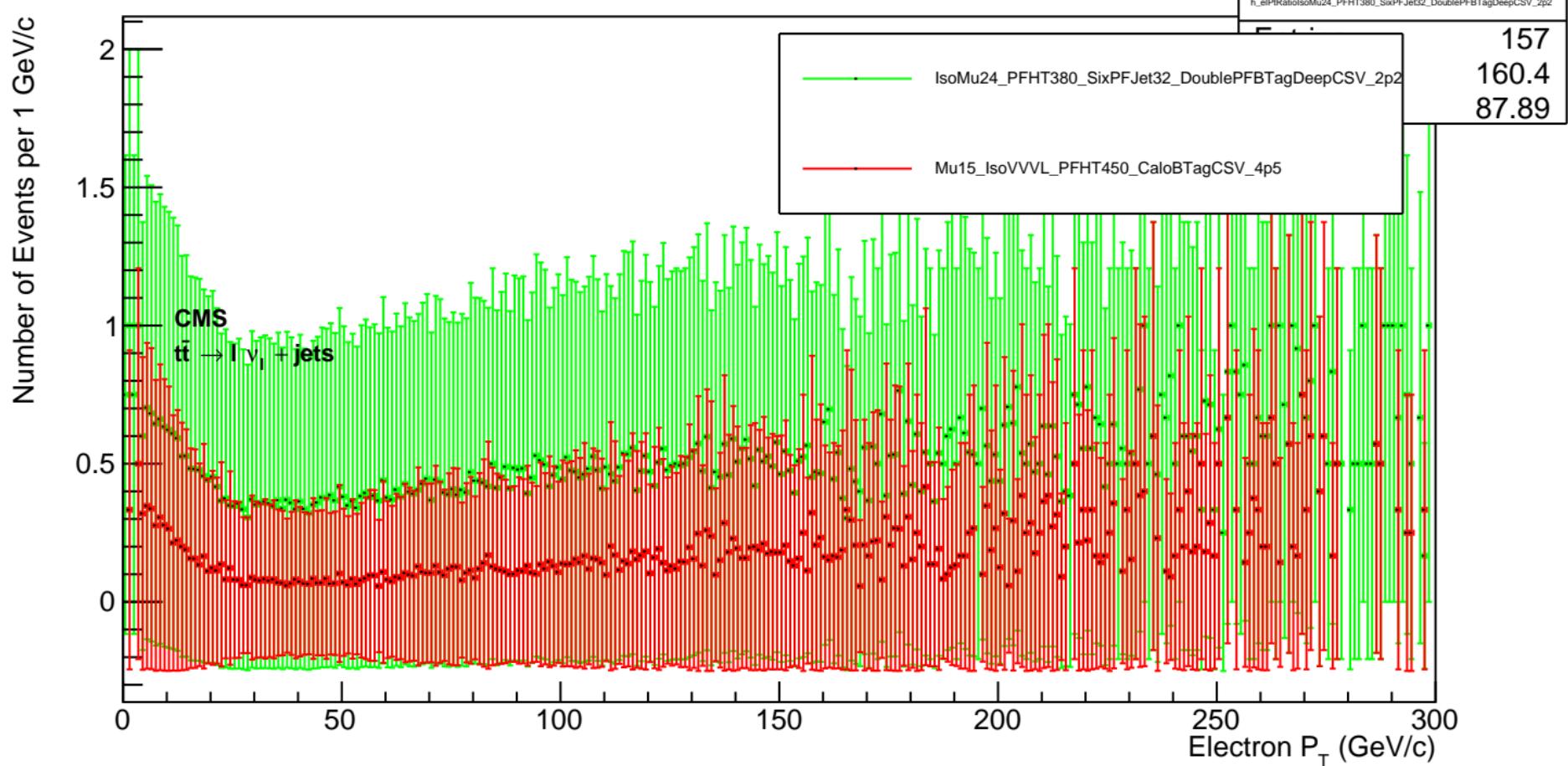
# no trigger

Number of Events per 1 GeV/c



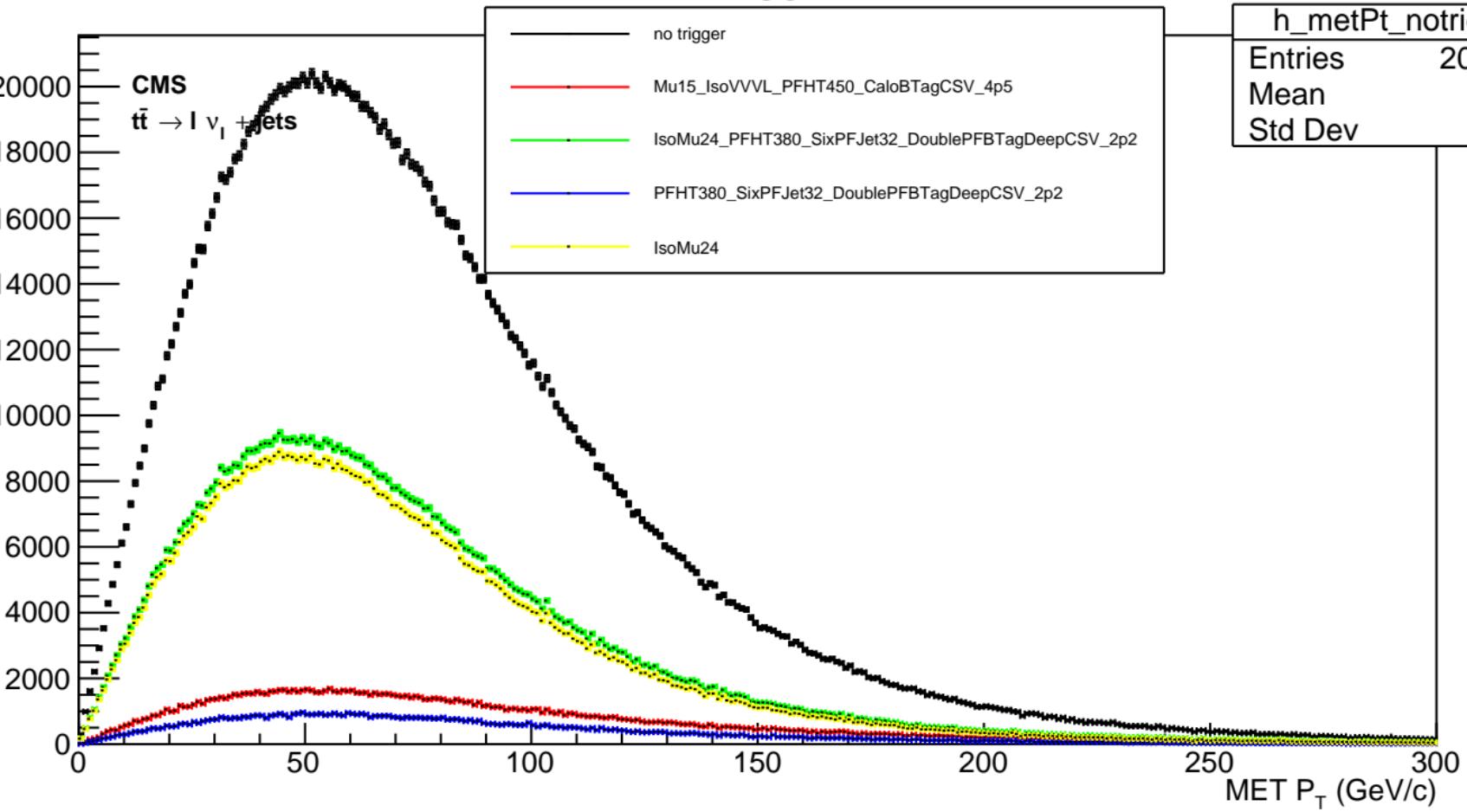
h_elPt_notrigger	
Entries	46431
Mean	58.81
Std Dev	44.96

# IsoMu24\_PFHT380\_SixPFJet32\_DoublePFBTagDeepCSV\_2p2



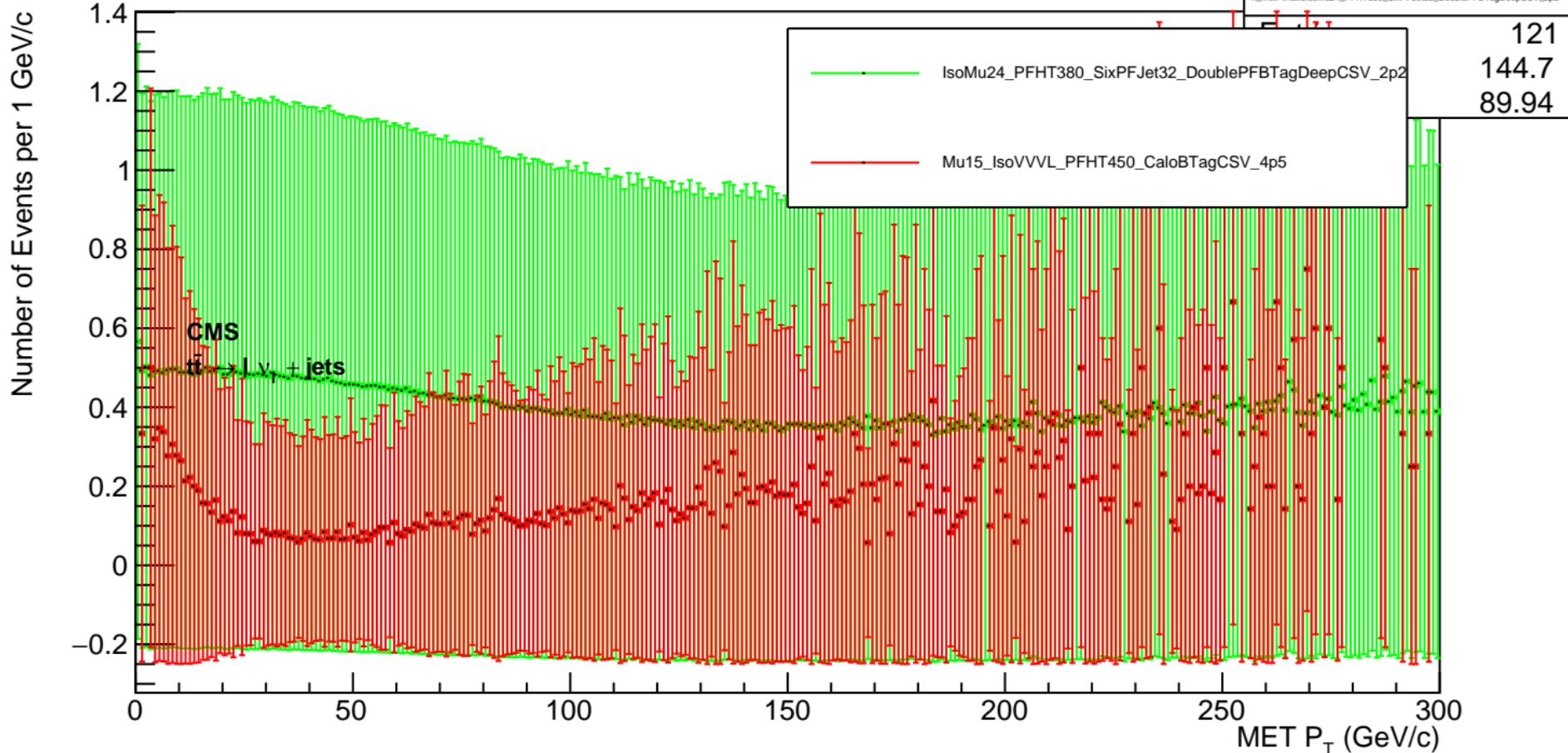
# no trigger

Number of Events per 1 GeV/c

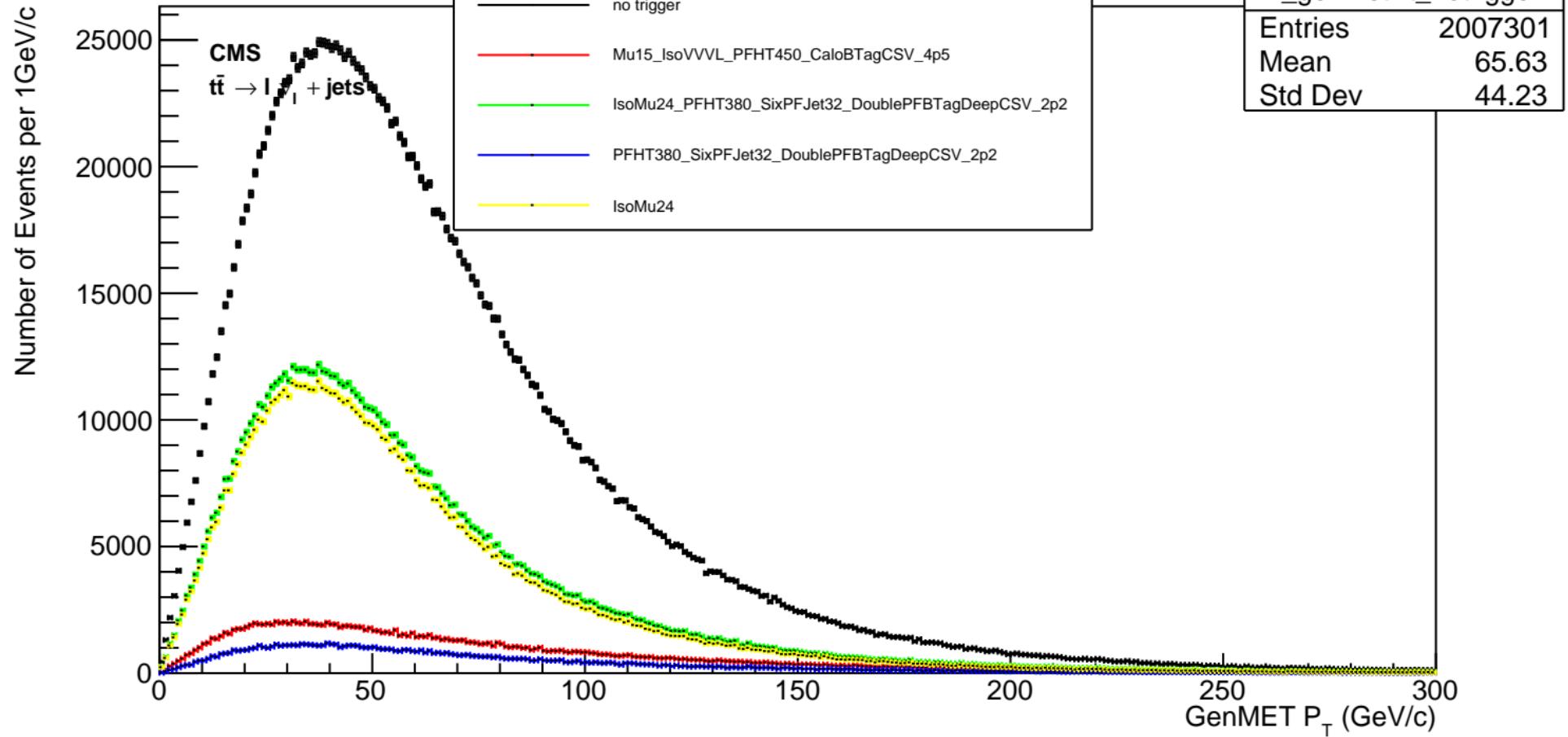


h_metPt_notrigger	
Entries	2007301
Mean	77.06
Std Dev	47.45

# IsoMu24\_PFHT380\_SixPFJet32\_DoublePFBTagDeepCSV\_2p2

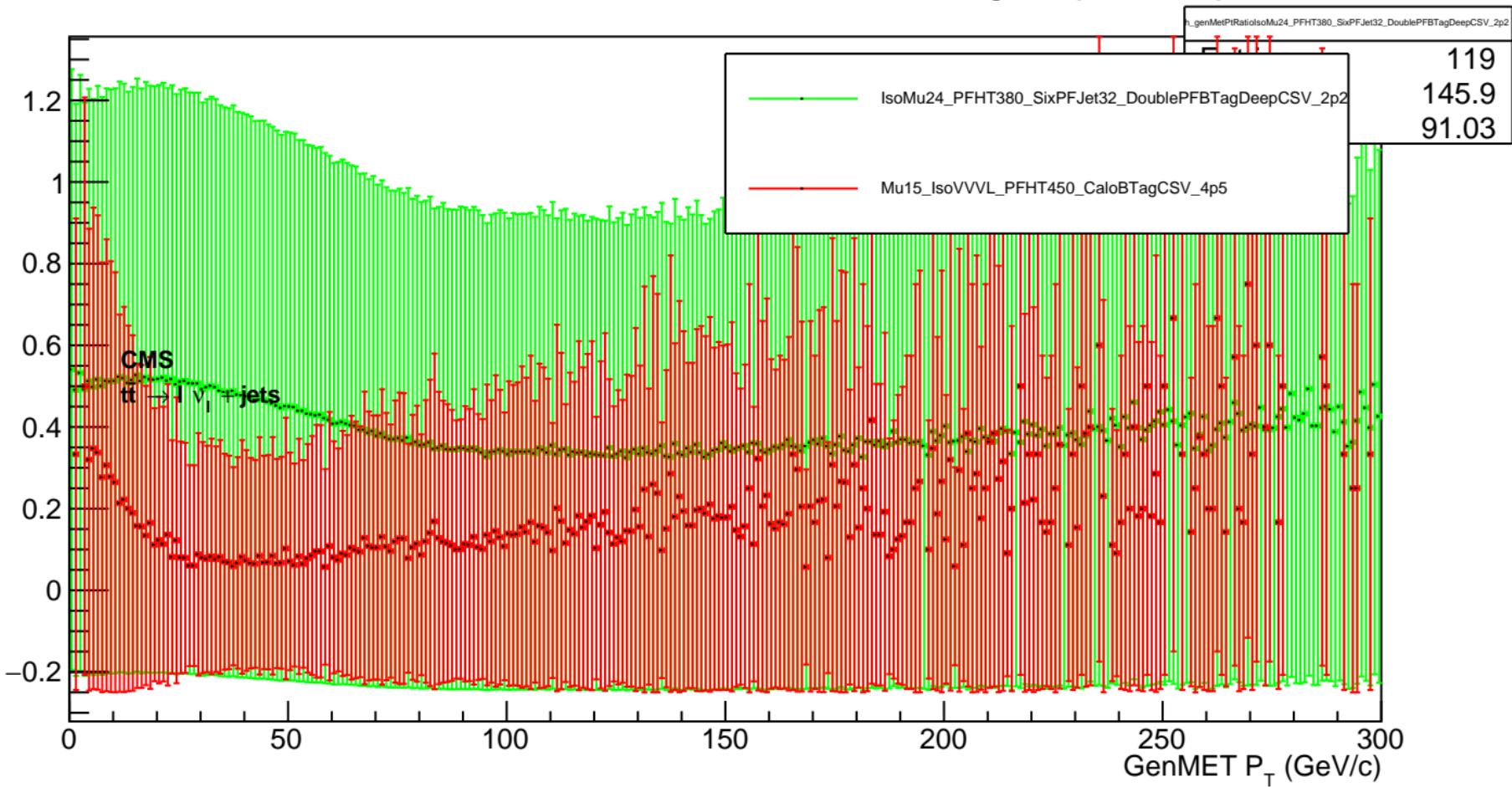


# no trigger

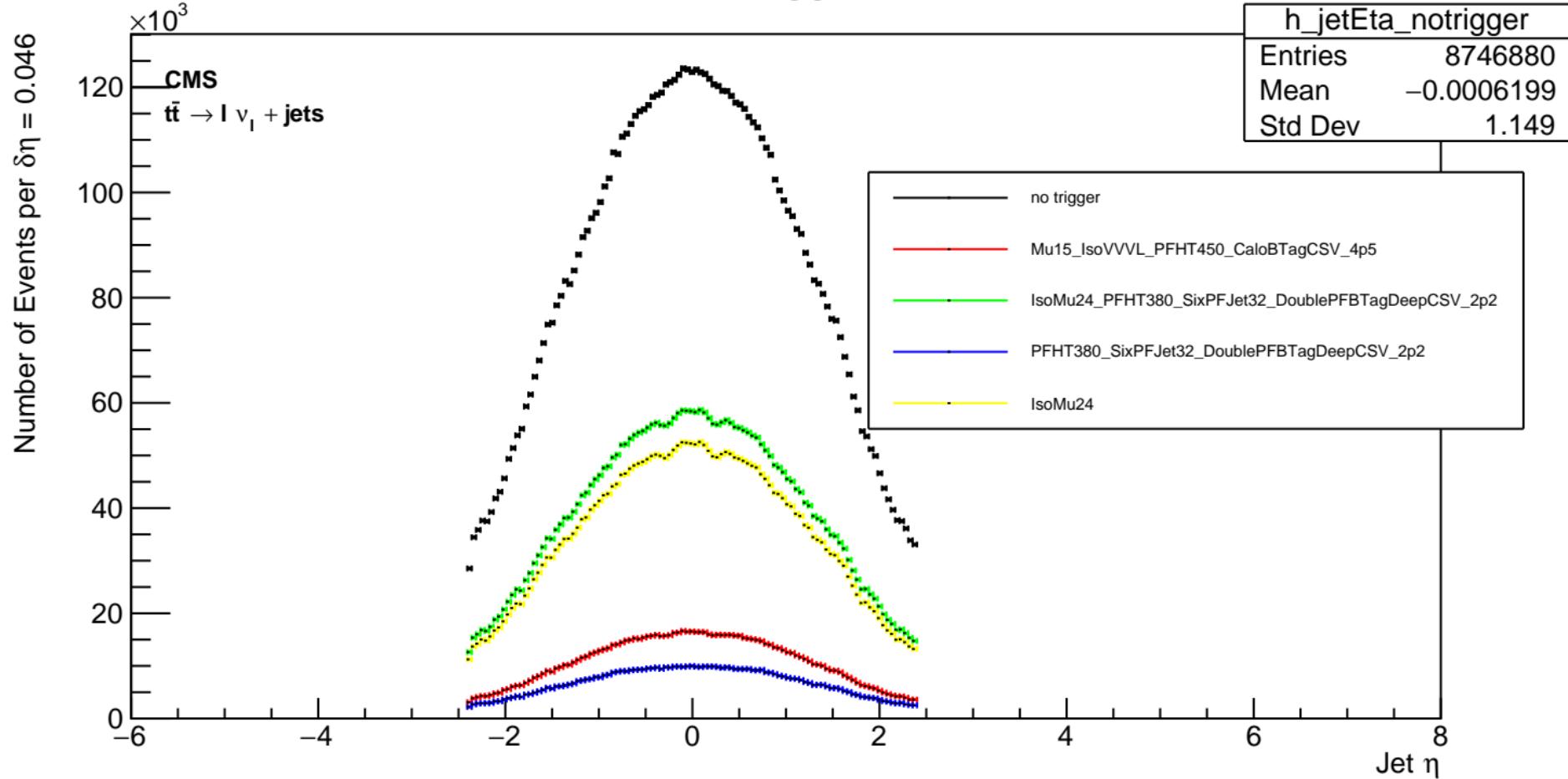


# IsoMu24\_PFHT380\_SixPFJet32\_DoublePFBTagDeepCSV\_2p2

Number of Events per 1 GeV/c

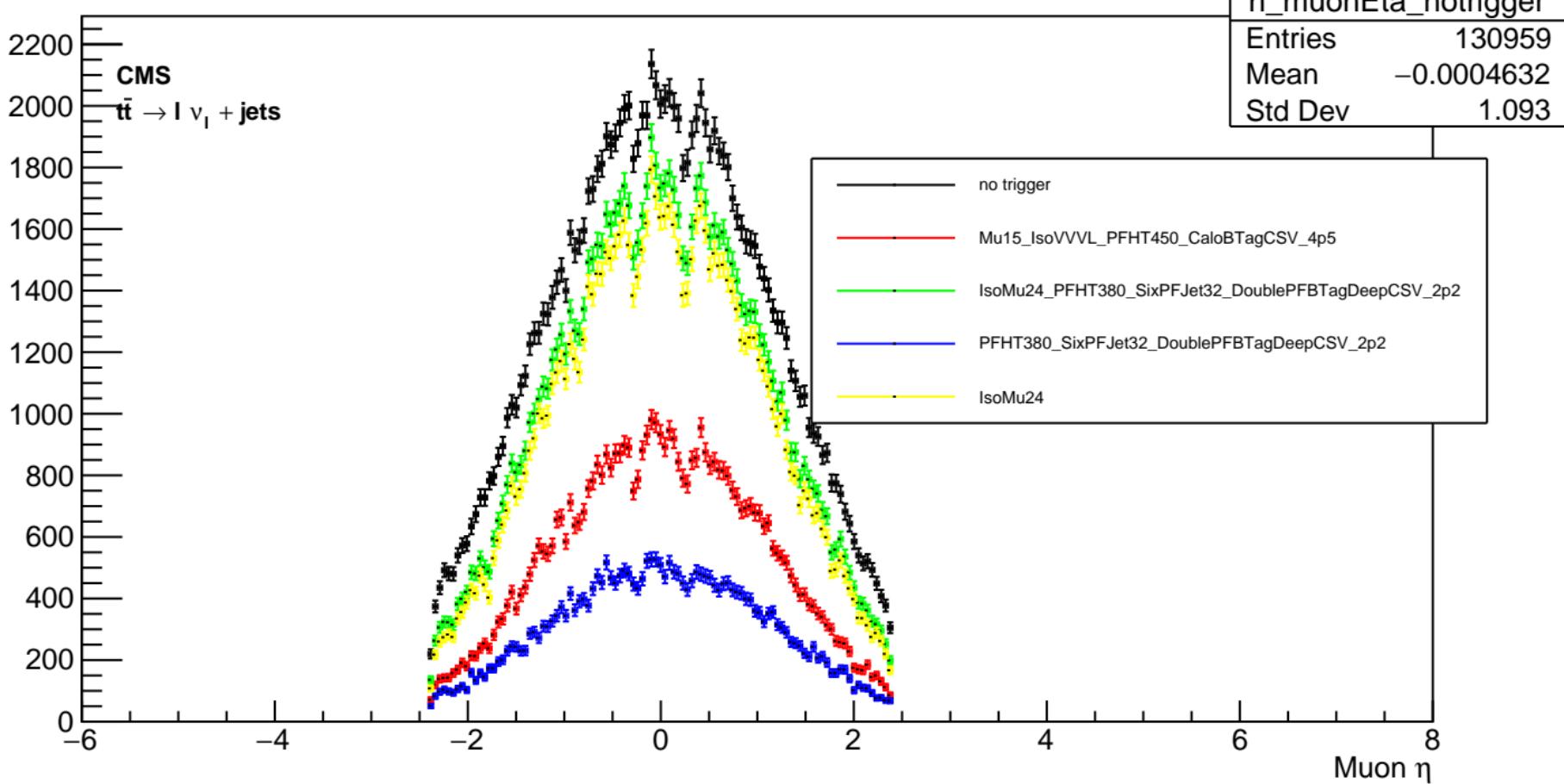


# no trigger



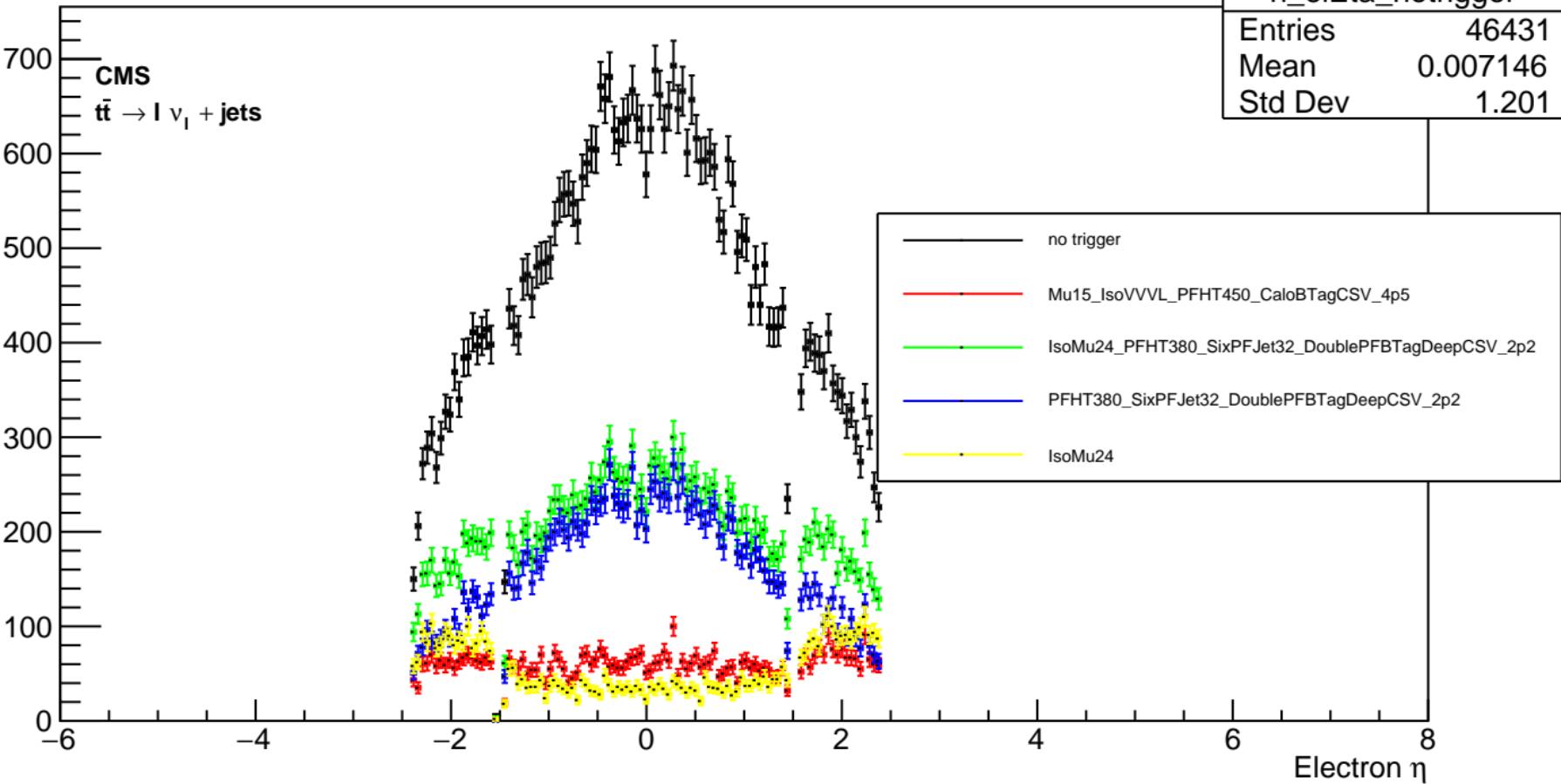
# no trigger

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

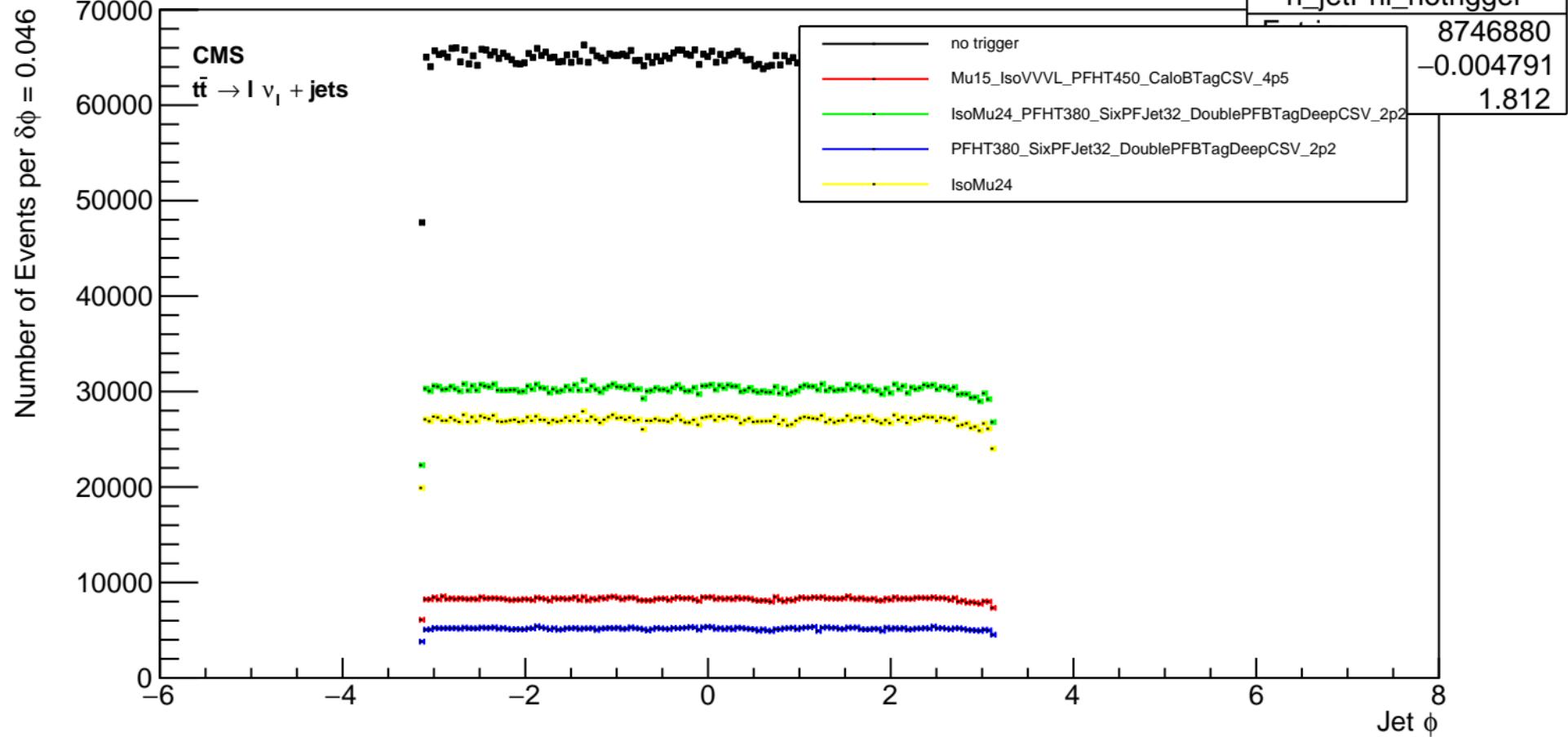


# no trigger

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

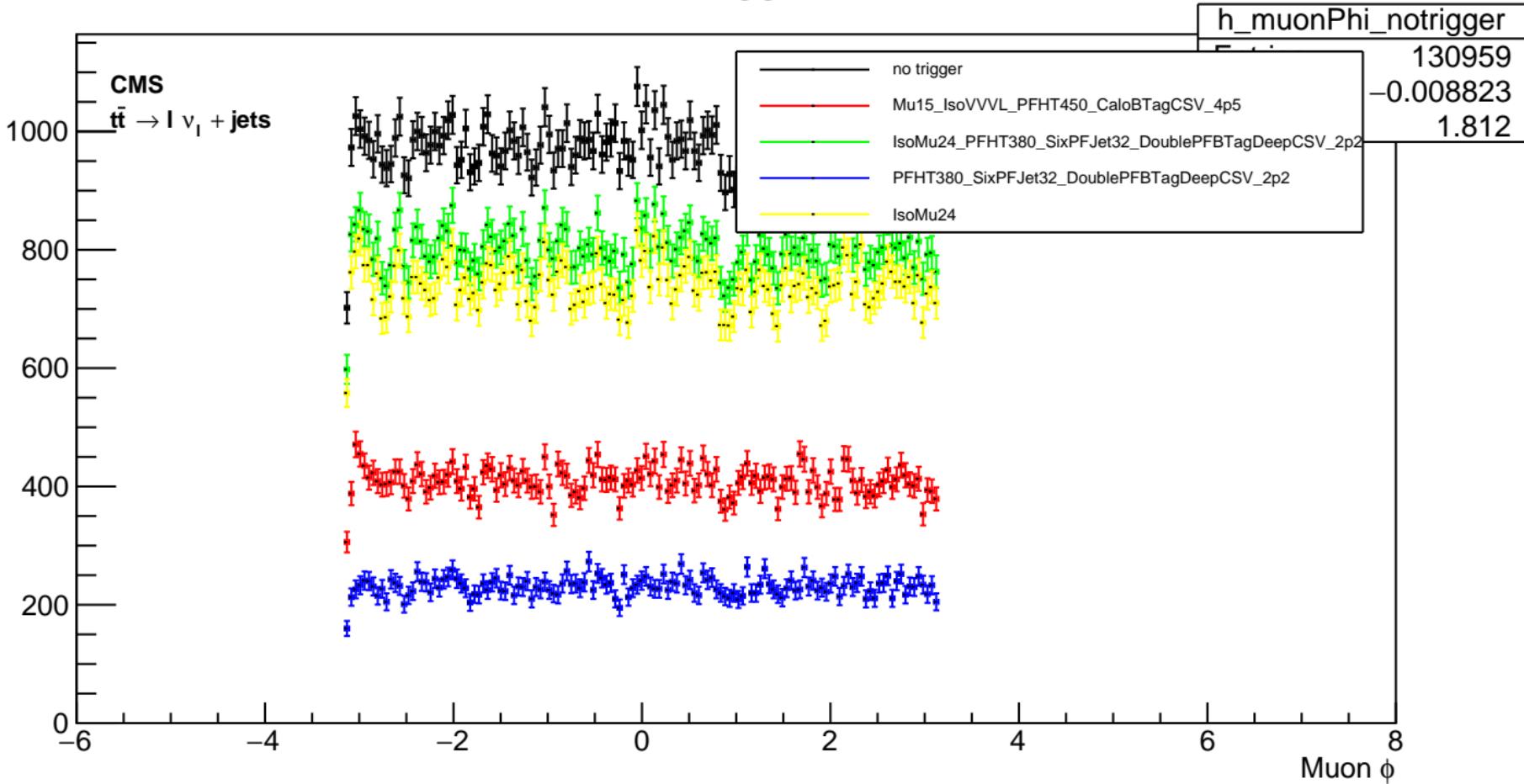


# no trigger



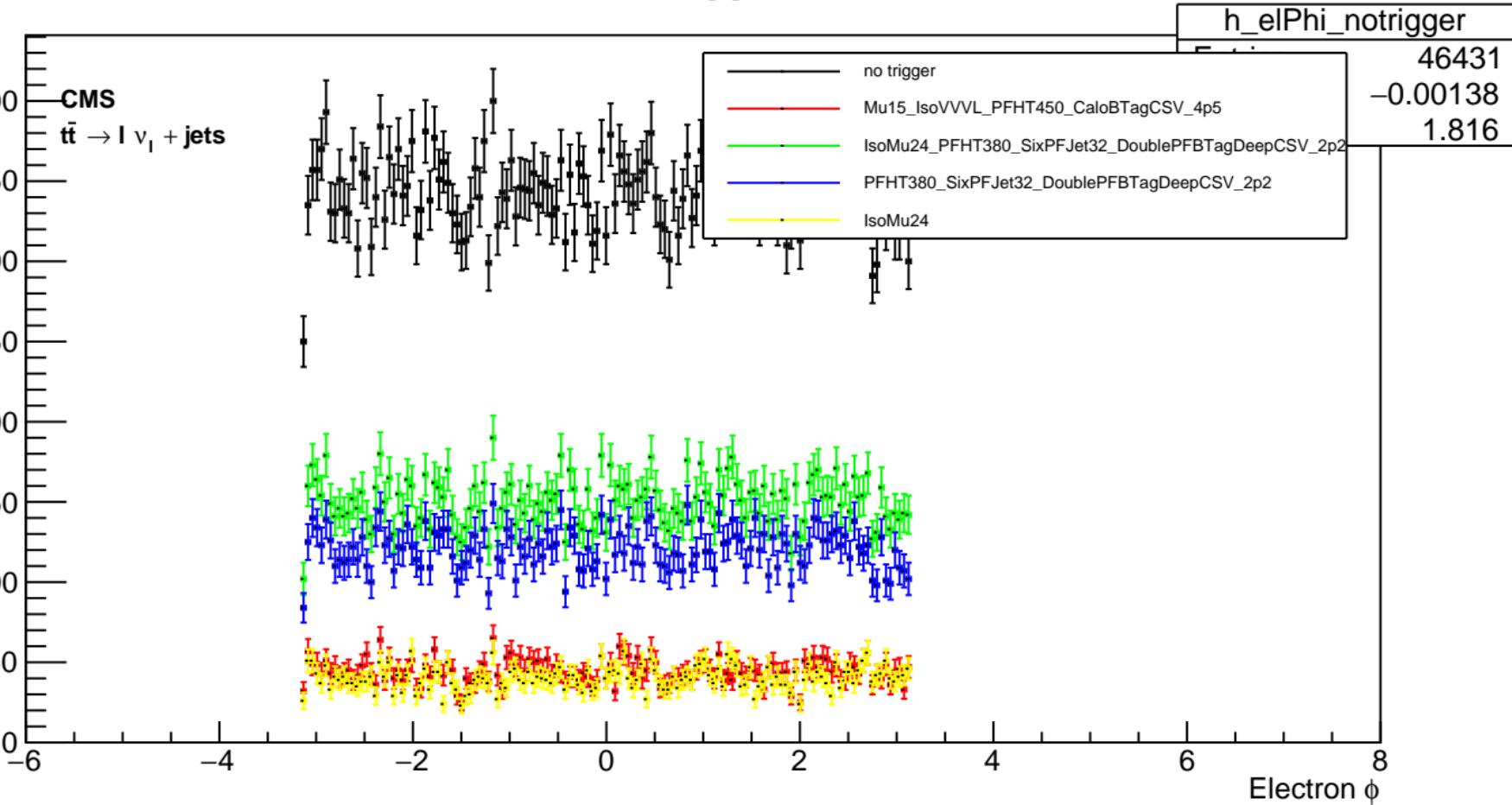
# no trigger

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

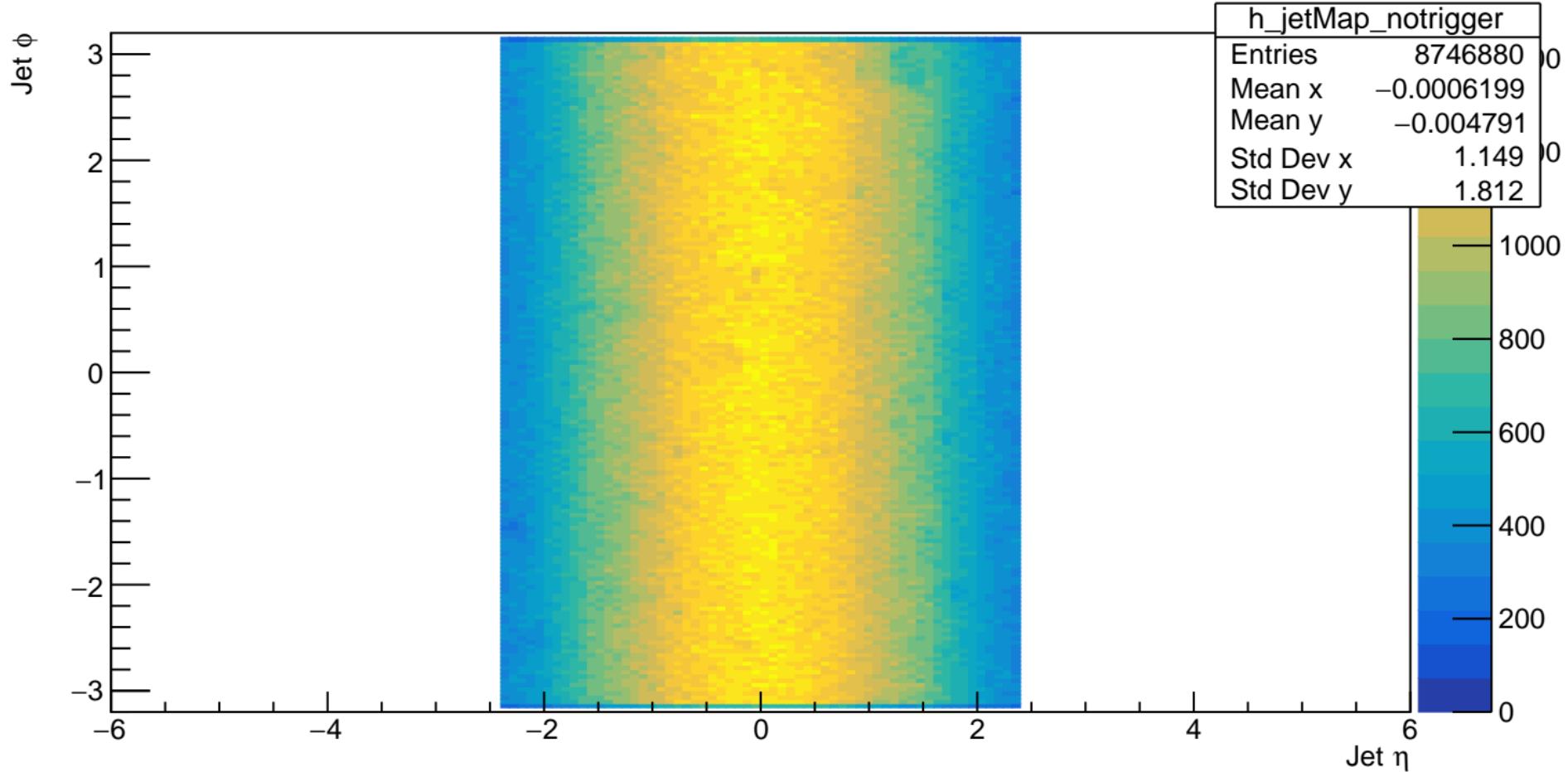


# no trigger

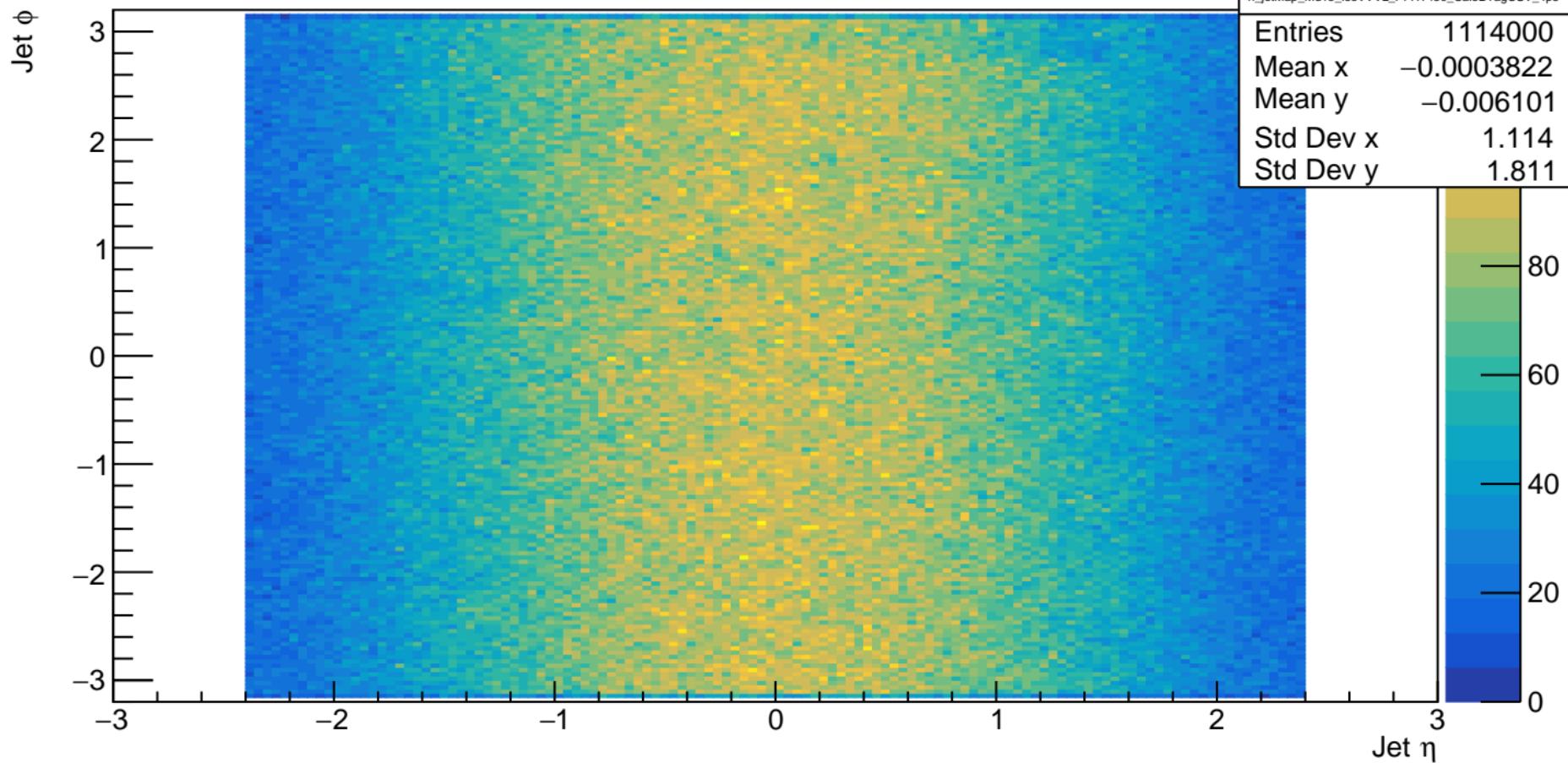
Number of Events per  $\delta\phi = 0.046$



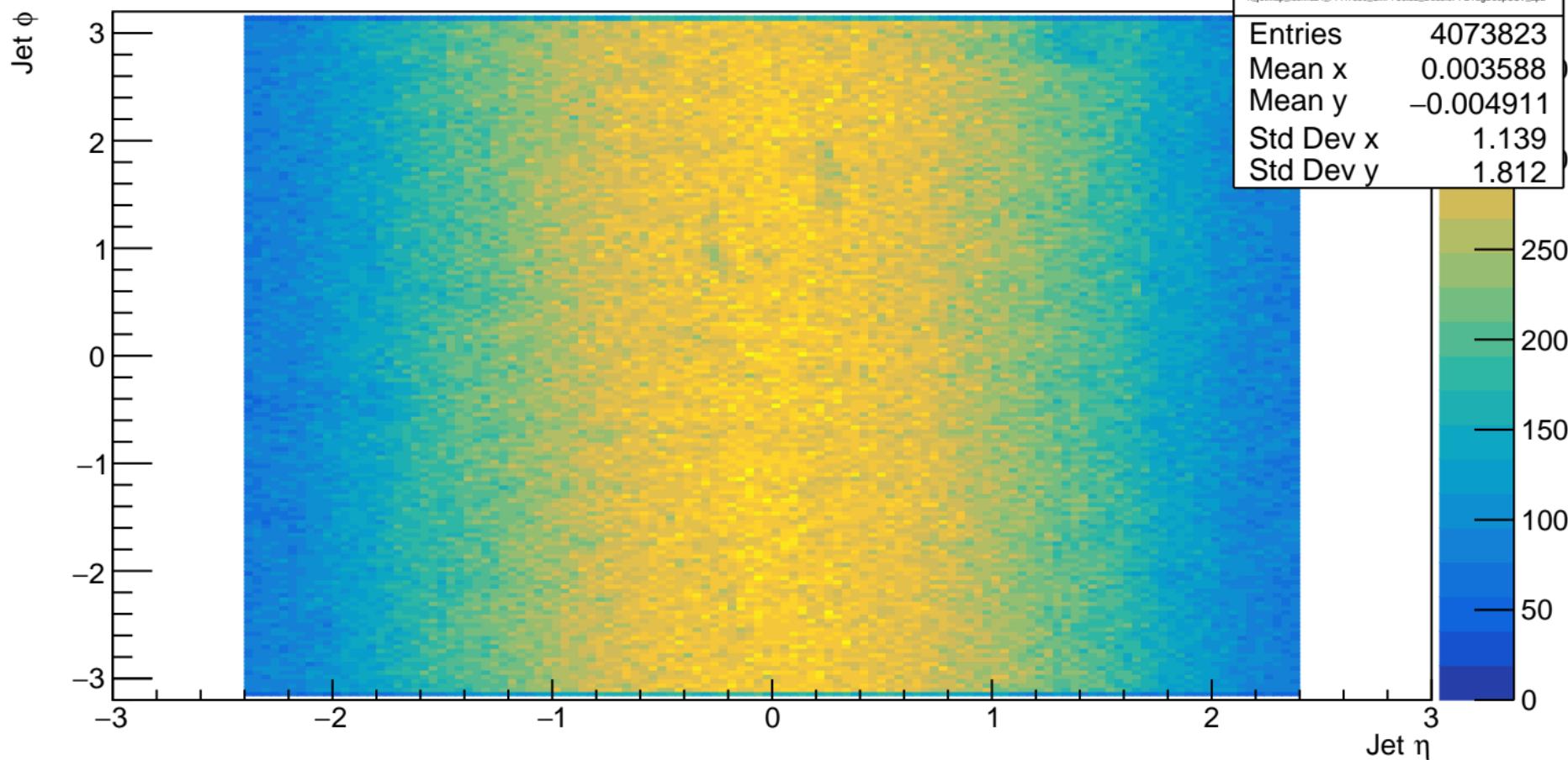
# no trigger



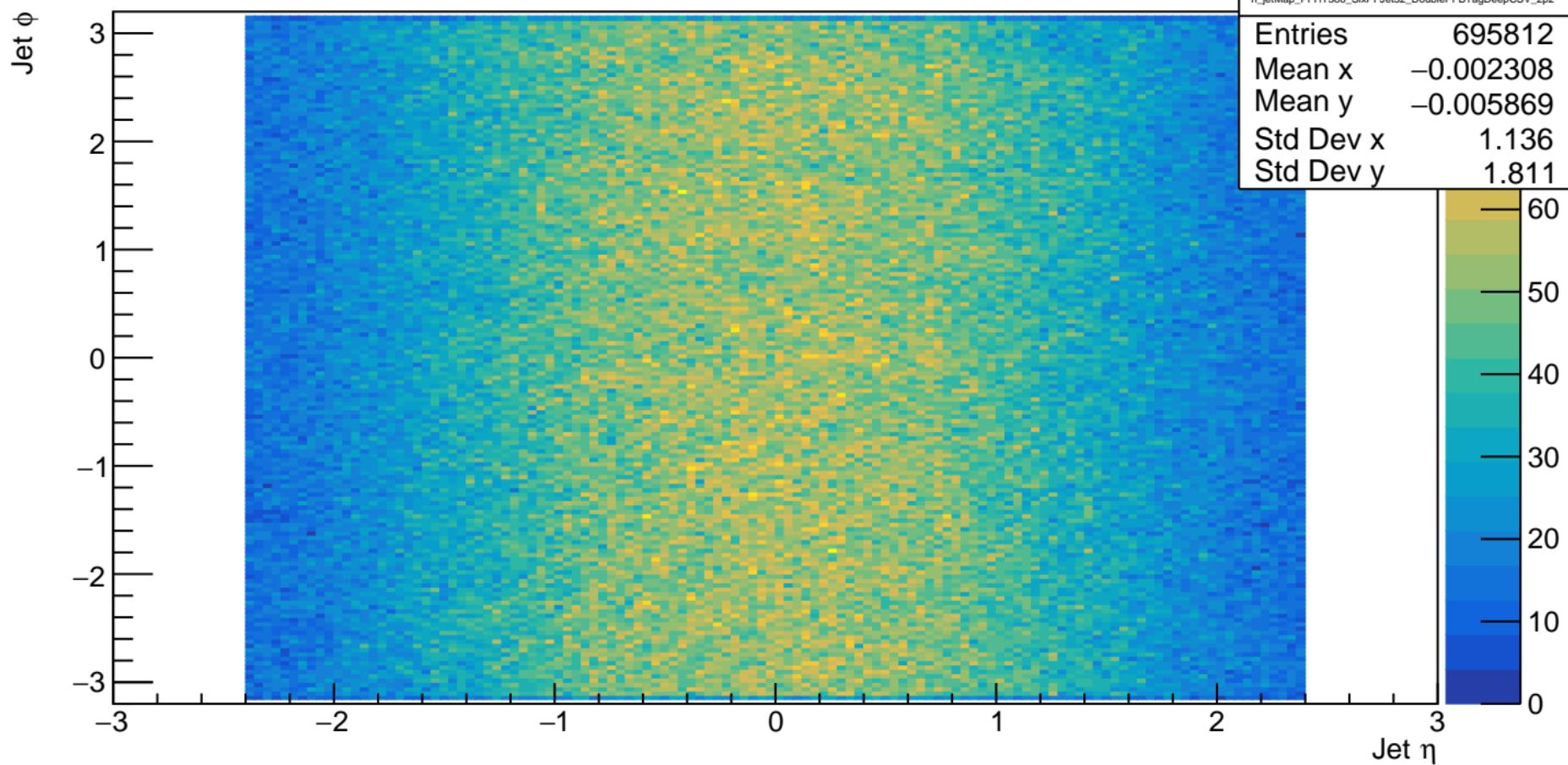
# Mu15\_IsoVVVL\_PFHT450\_CaloBTagCSV\_4p5



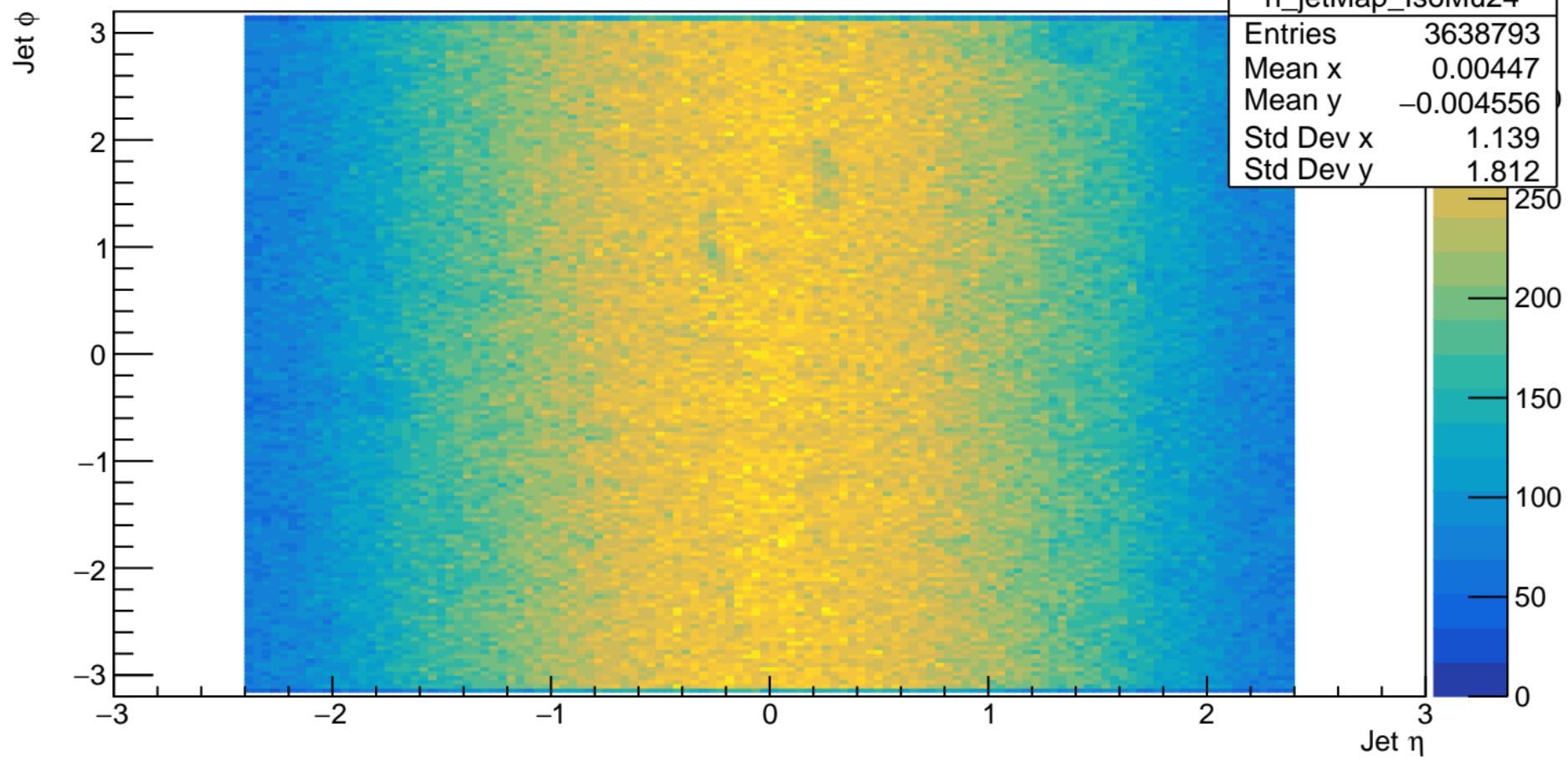
# IsoMu24\_PFHT380\_SixPFJet32\_DoublePFBTagDeepCSV\_2p2



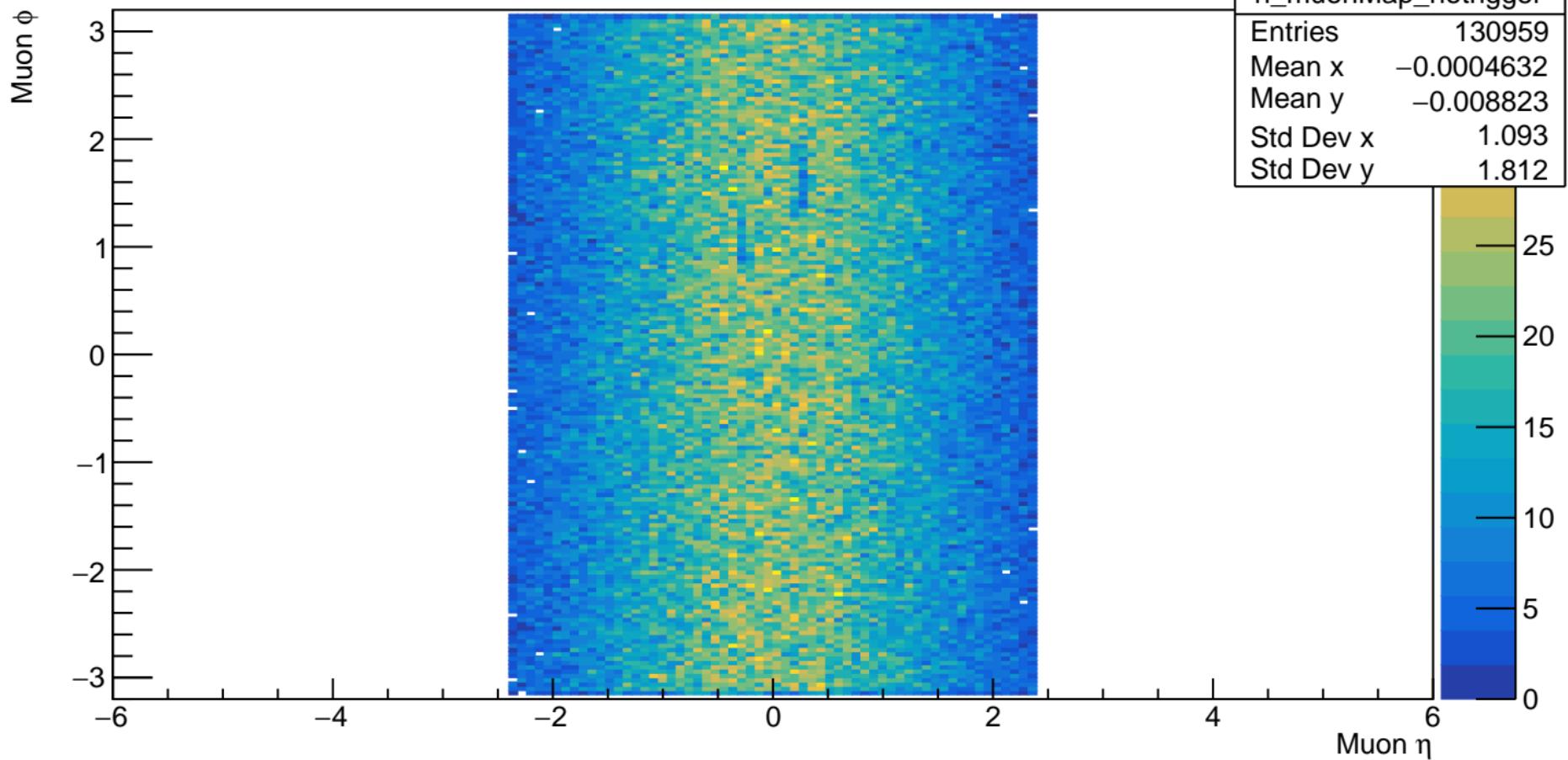
# PFHT380\_SixPFJet32\_DoublePFBTagDeepCSV\_2p2



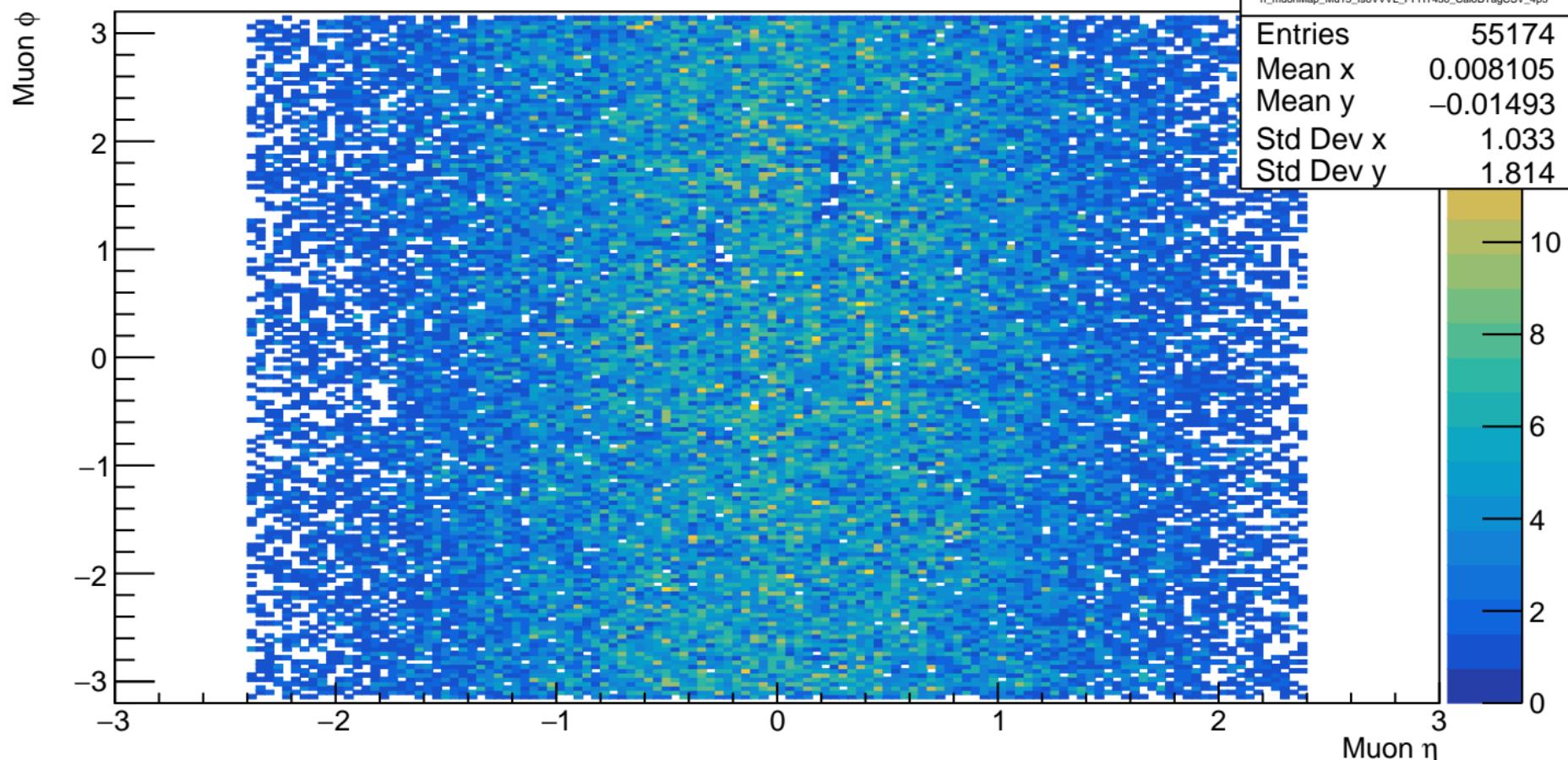
# IsoMu24



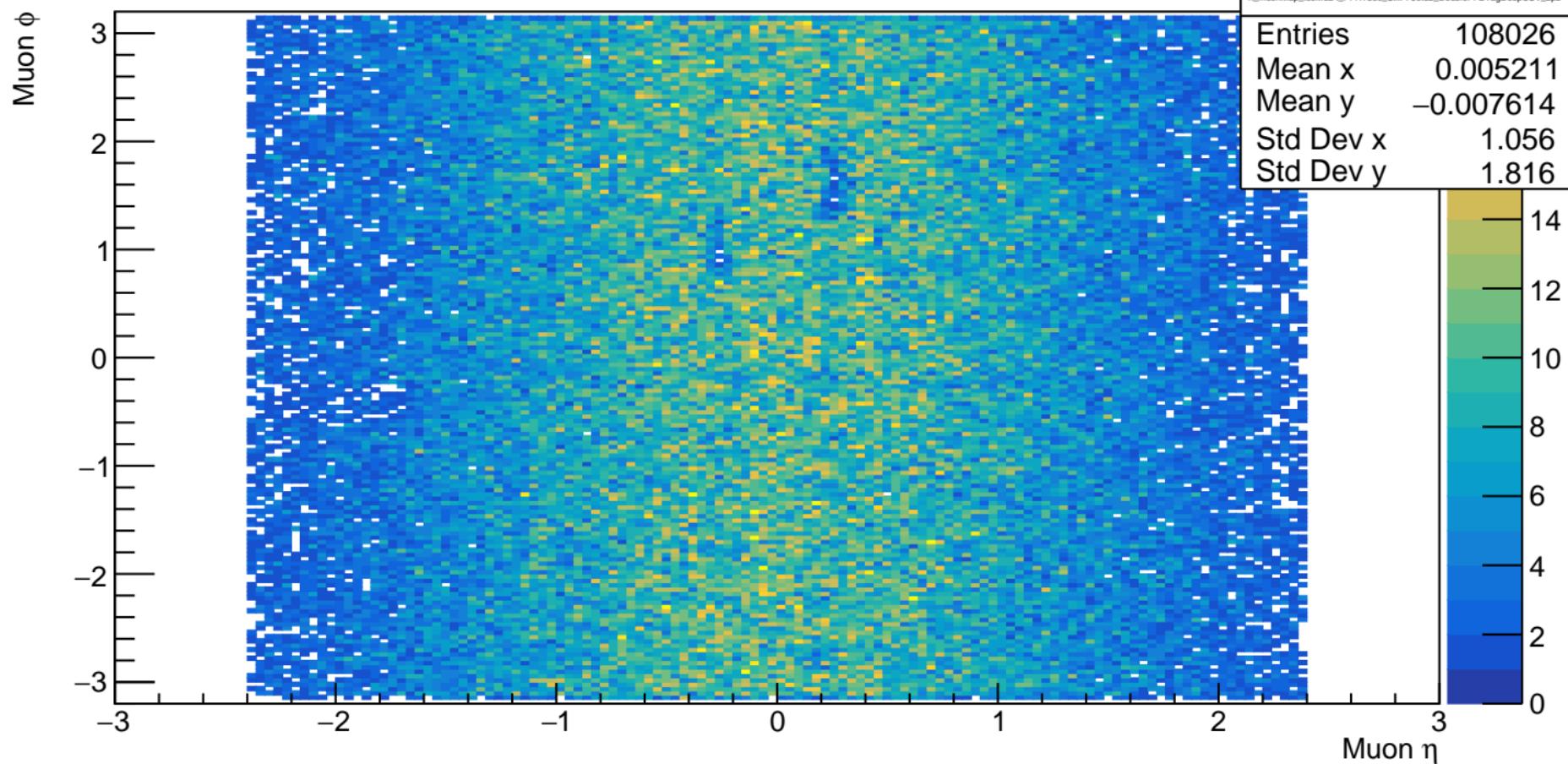
# no trigger



# Mu15\_IsoVVVL\_PFHT450\_CaloBTagCSV\_4p5



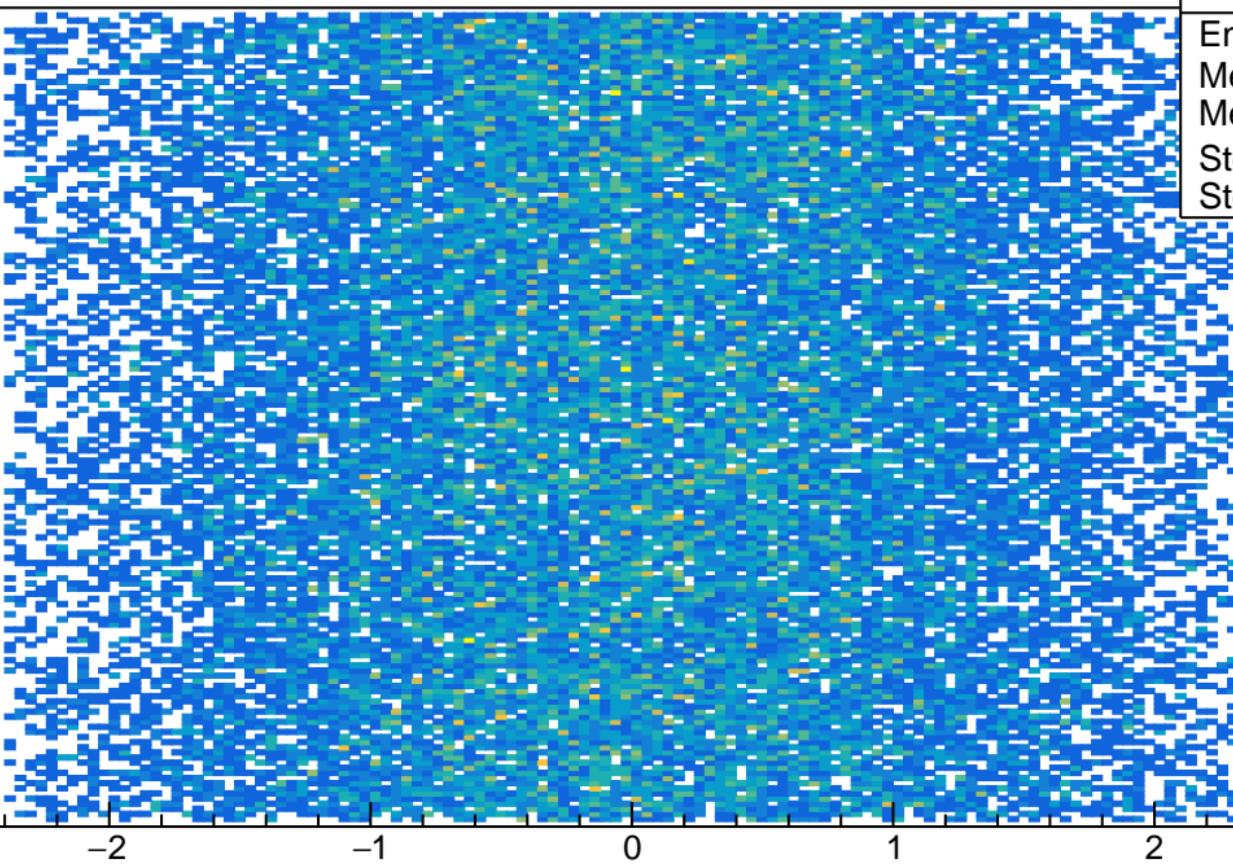
# IsoMu24\_PFHT380\_SixPFJet32\_DoublePFBTagDeepCSV\_2p2



# PFHT380\_SixPFJet32\_DoublePFBTagDeepCSV\_2p2

Muon  $\phi$

3  
2  
1  
0  
-1  
-2  
-3



h\_muonMap\_PFHT380\_SixPFJet32\_DoublePFBTagDeepCSV\_2p2

Entries	31182
Mean x	0.001611
Mean y	0.004582
Std Dev x	1.061
Std Dev y	1.81

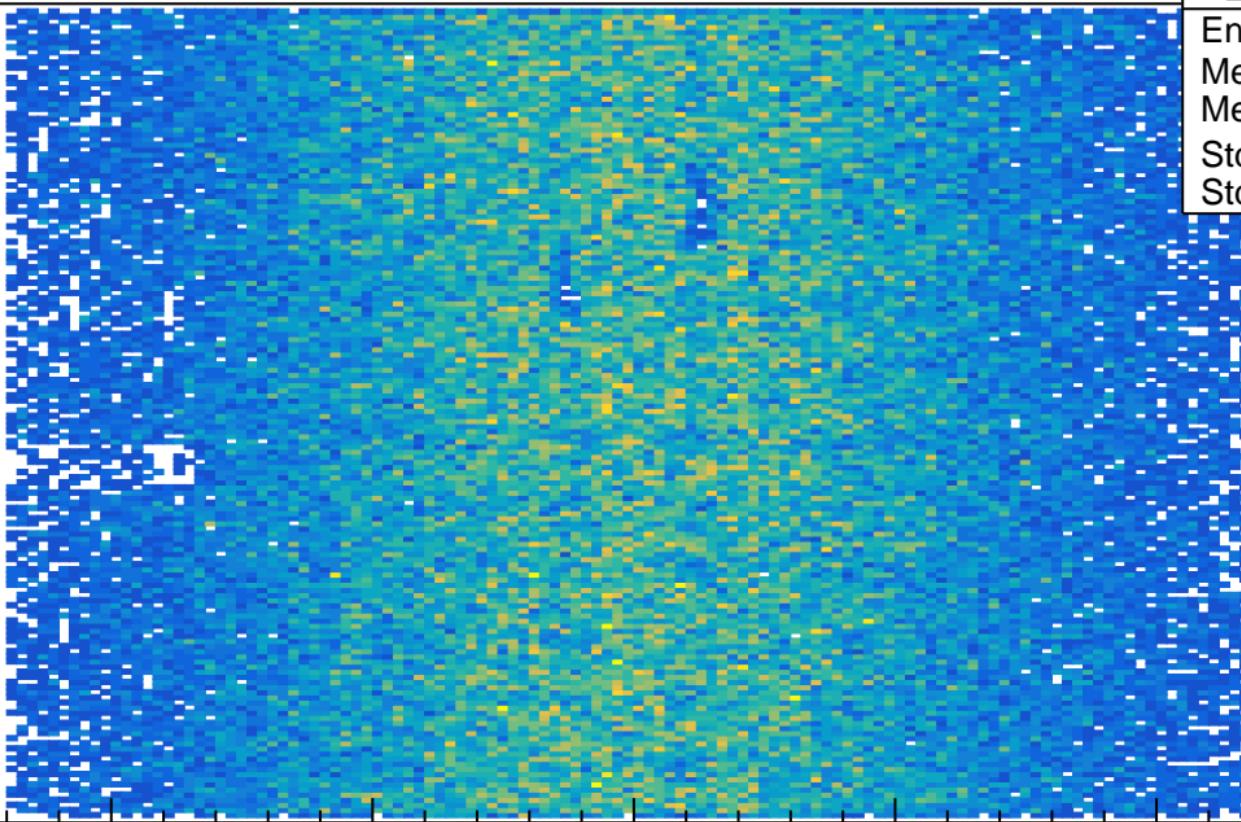
7  
6  
5  
4  
3  
2  
1  
0

Muon  $\eta$

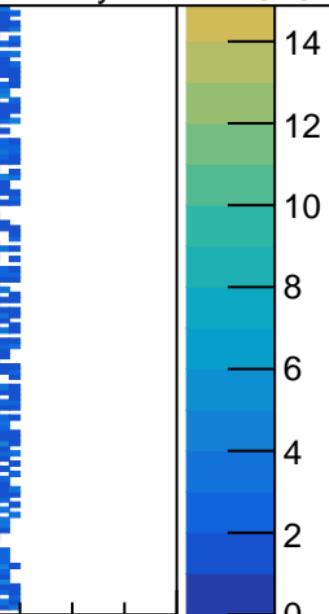
# IsoMu24

Muon  $\phi$

3  
2  
1  
0  
-1  
-2  
-3



h_muonMap_IsoMu24	
Entries	99750
Mean x	0.007093
Mean y	-0.009219
Std Dev x	1.044
Std Dev y	1.816

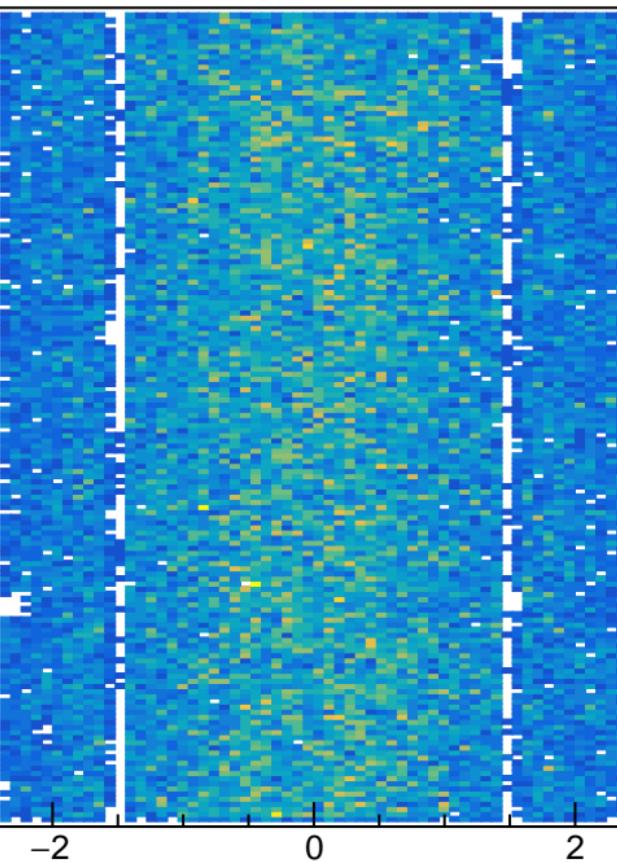


Muon  $\eta$

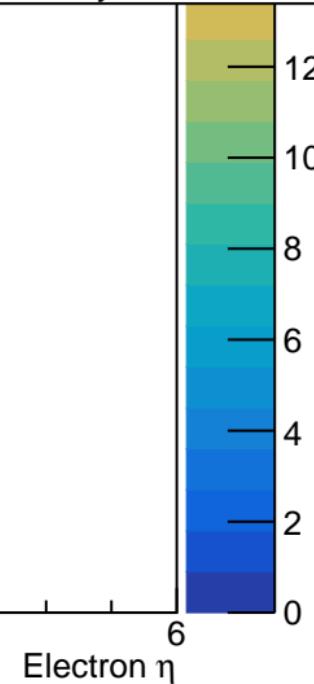
no trigger

Electron  $\phi$

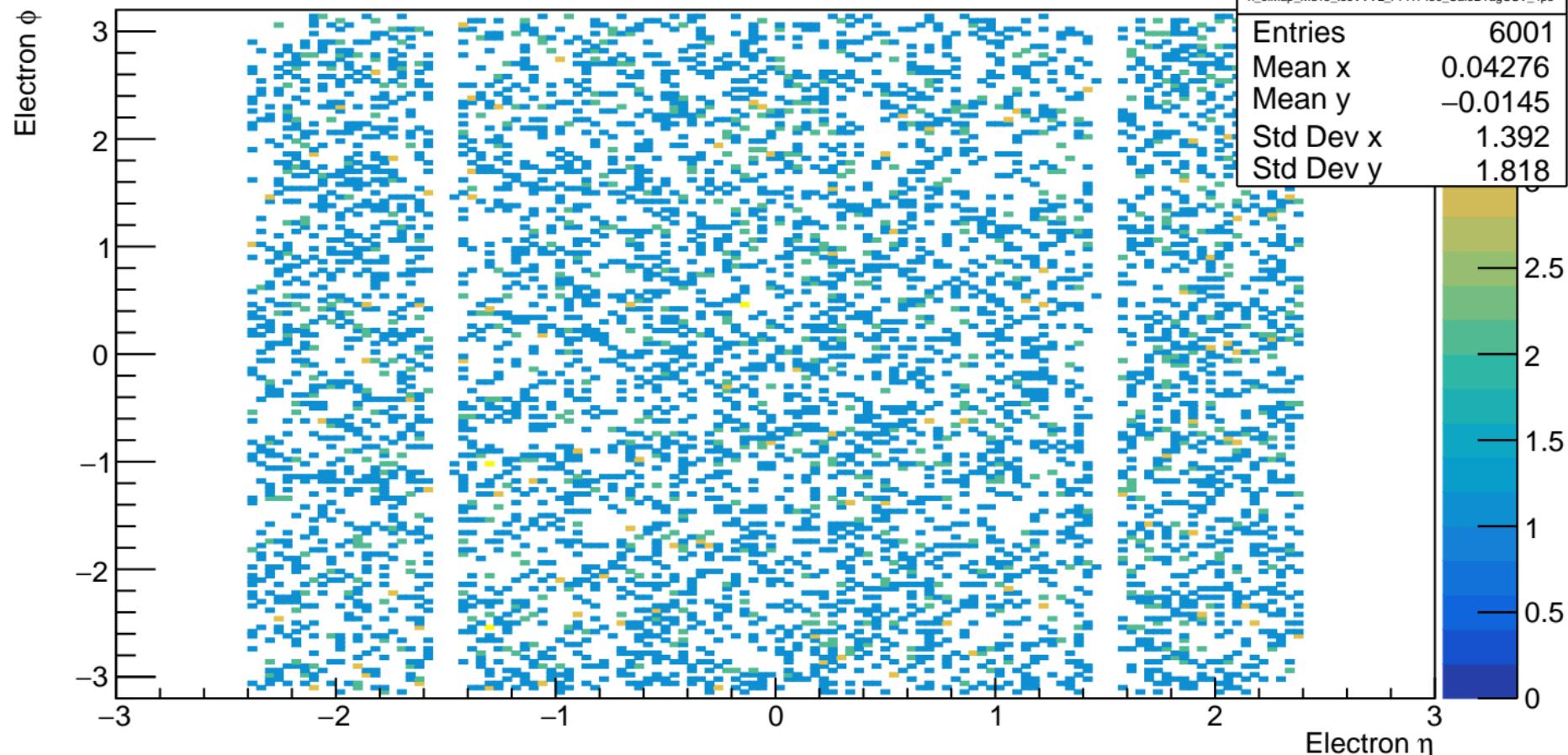
3  
2  
1  
0  
-1  
-2  
-3



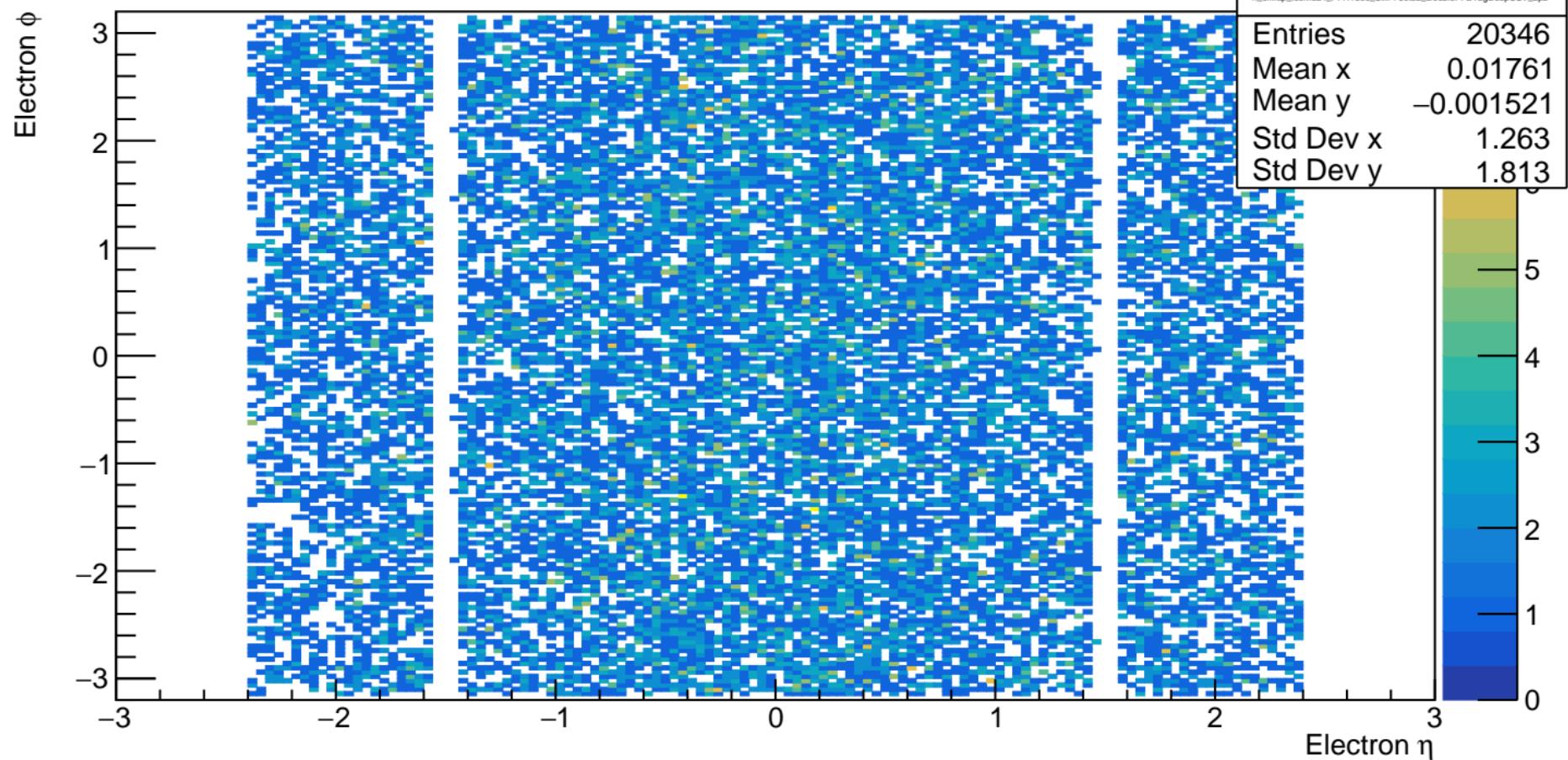
h_elMap_notrigger	
Entries	46431
Mean x	0.007146
Mean y	-0.00138
Std Dev x	1.201
Std Dev y	1.816



# Mu15\_IsoVVVL\_PFHT450\_CaloBTagCSV\_4p5



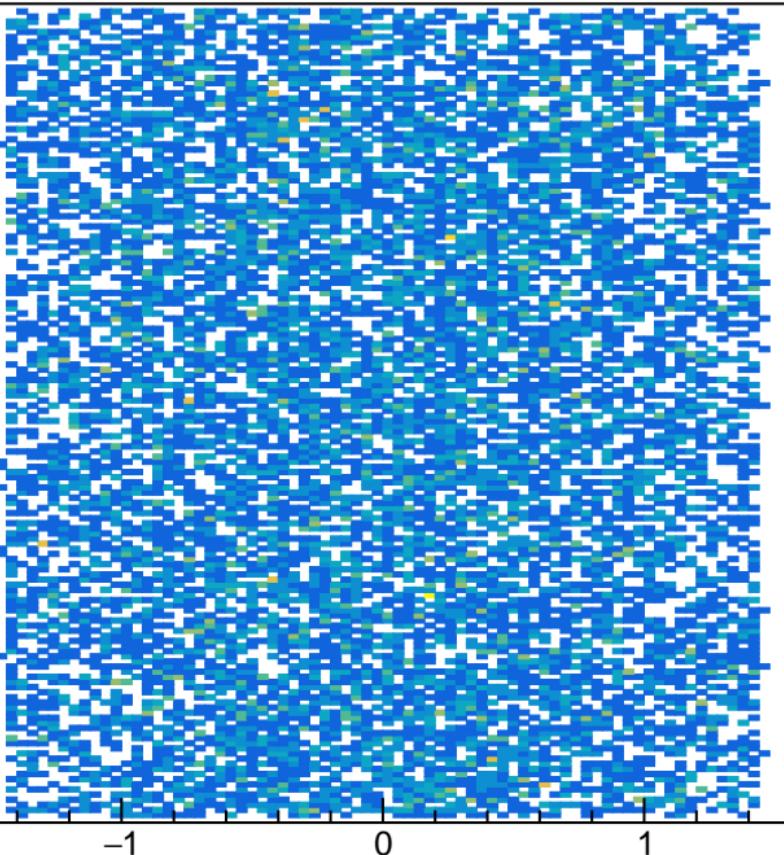
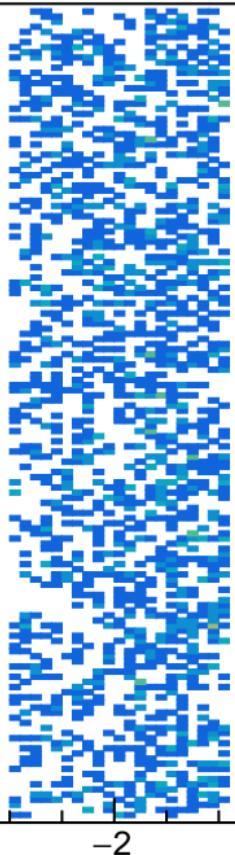
# IsoMu24\_PFHT380\_SixPFJet32\_DoublePFBTagDeepCSV\_2p2



# PFHT380\_SixPFJet32\_DoublePFBTagDeepCSV\_2p2

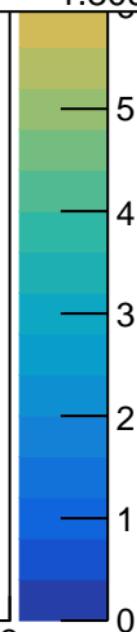
Electron  $\phi$

3  
2  
1  
0  
-1  
-2  
-3



Electron  $\eta$

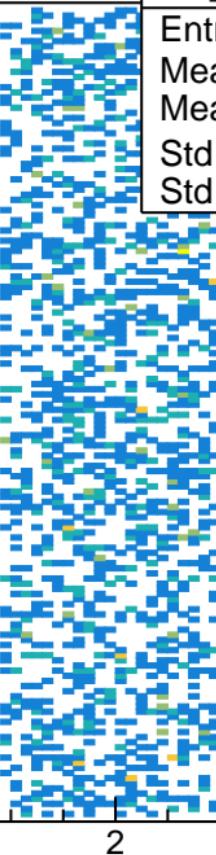
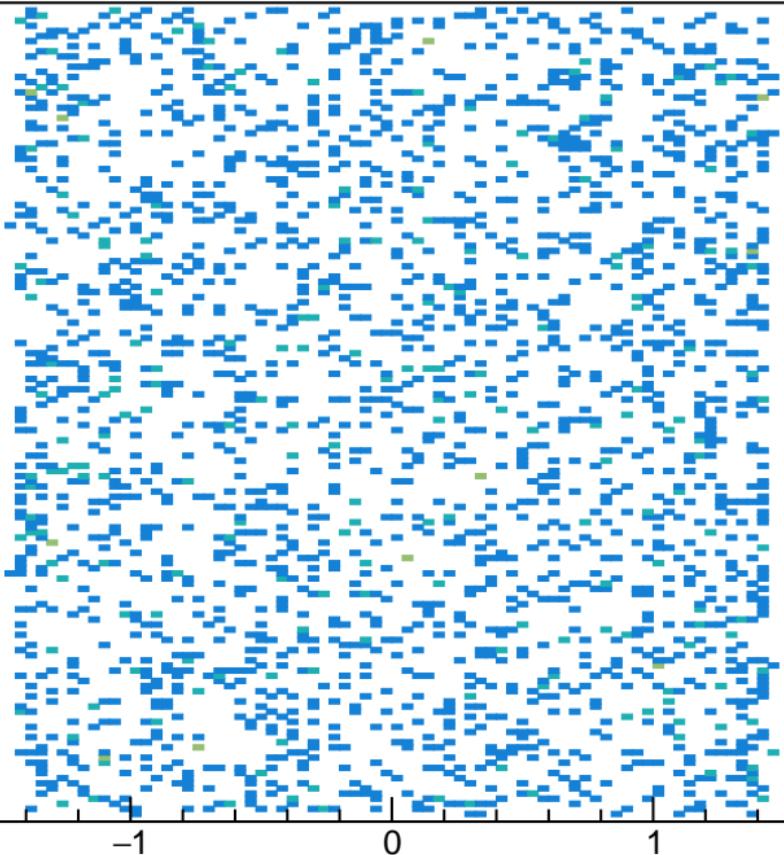
h_elMap_PFHT380_SixPFJet32_DoublePFBTagDeepCSV_2p2	
Entries	16307
Mean x	0.01212
Mean y	-0.01117
Std Dev x	1.155
Std Dev y	1.809



# IsoMu24

Electron  $\phi$

3  
2  
1  
0  
-1  
-2  
-3



h_elMap_IsoMu24	
Entries	5427
Mean x	0.05773
Mean y	0.03903
Std Dev x	1.623
Std Dev y	1.826

Electron  $\eta$

3.5  
3  
2.5  
2  
1.5  
1  
0.5  
0

Total Number of Accepted Events

