

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

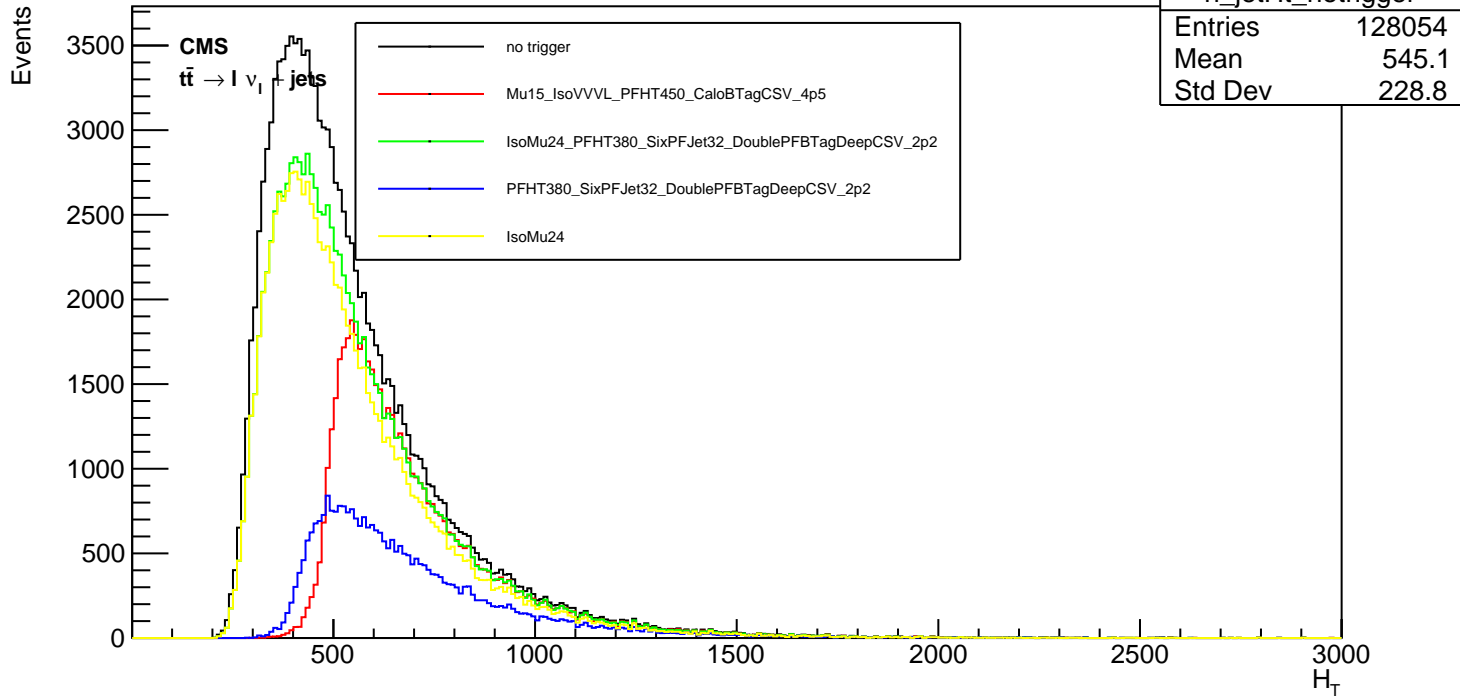
- **Jets:** number  $> 5$  ,  $\text{jetId} > 2$  and  $|\eta| < 2.4$
- **Muons:** number  $> 0$  and has  $\text{softId}$

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

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

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

# no trigger

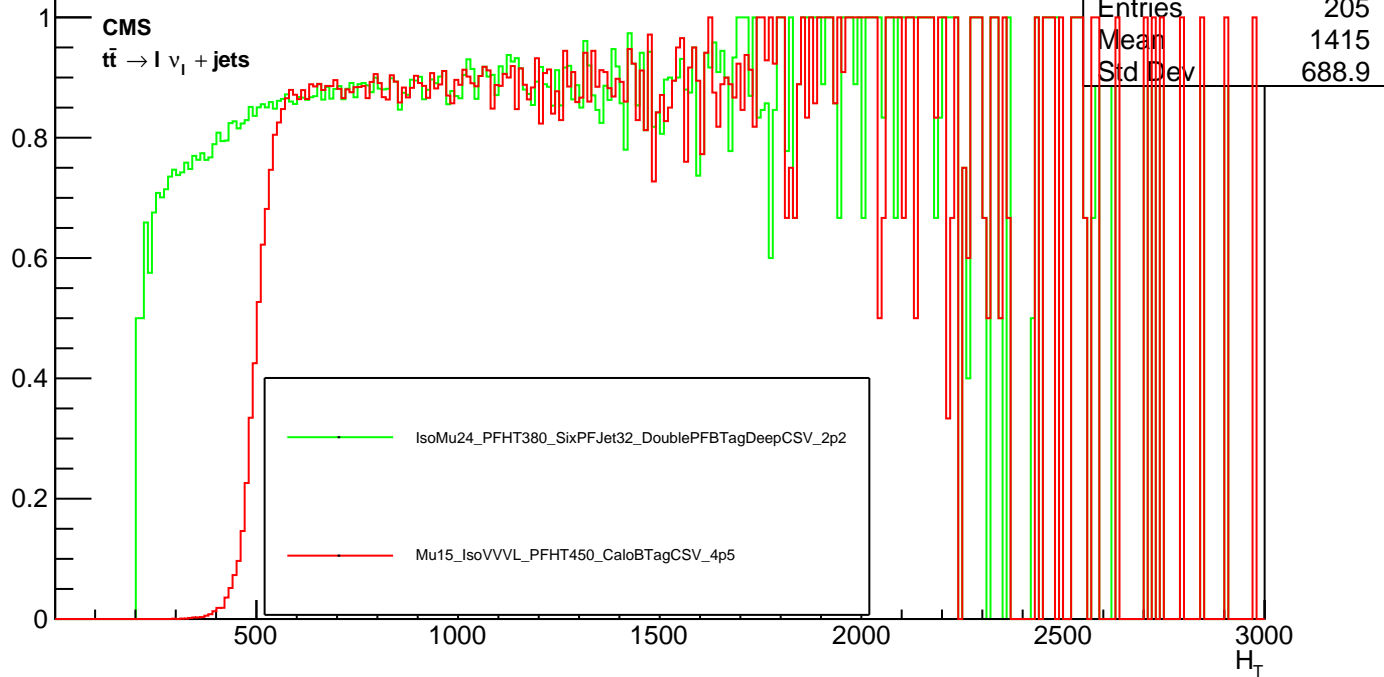


# IsoMu24\_PFH380\_SixPFJet32\_DoublePFBTagDeepCSV\_2p2

Events

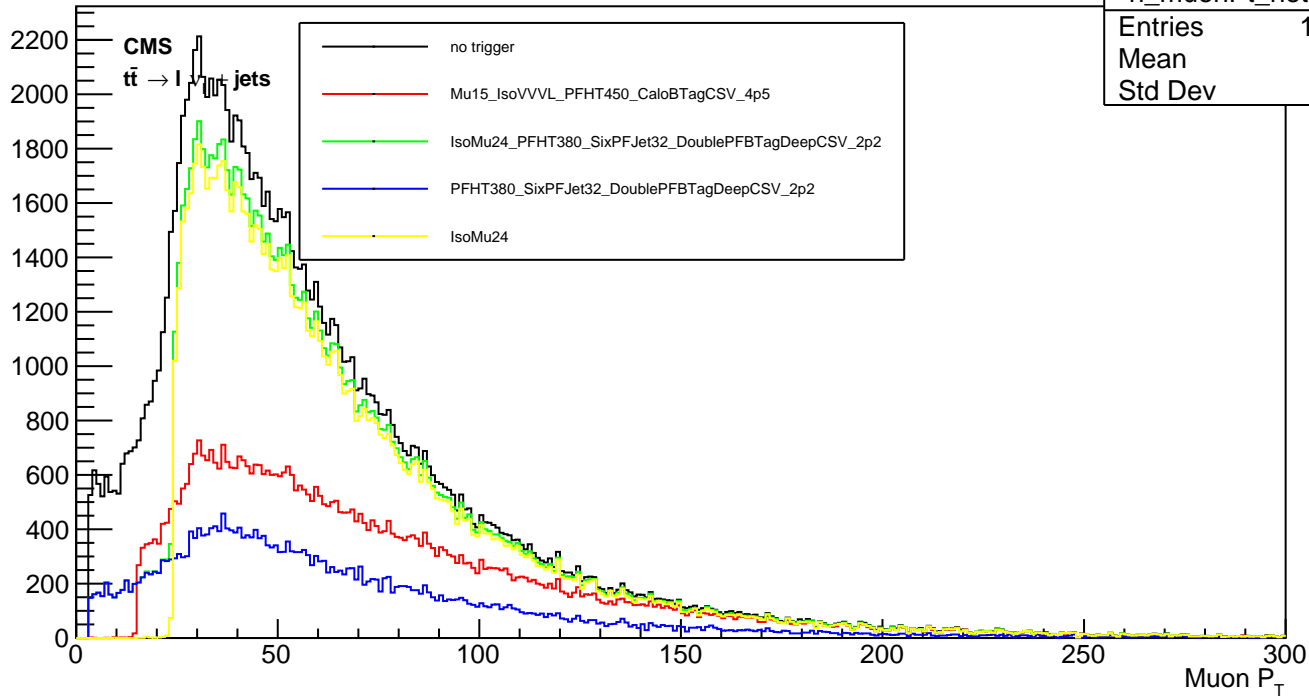
**CMS**

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



# no trigger

Events



h\_muonPt\_notrigger

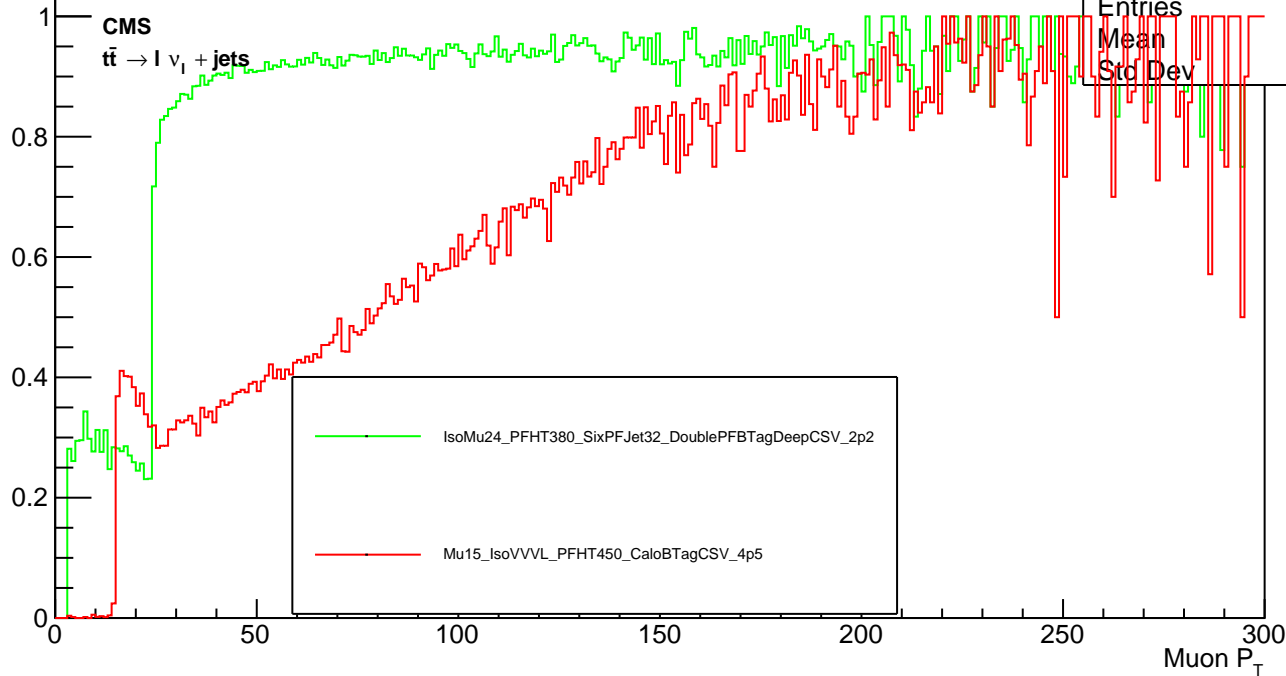
Entries	128054
Mean	60.41
Std Dev	41.91

# IsoMu24\_PFH380\_SixPFJet32\_DoublePFBTagDeepCSV\_2p2

Events

**CMS**

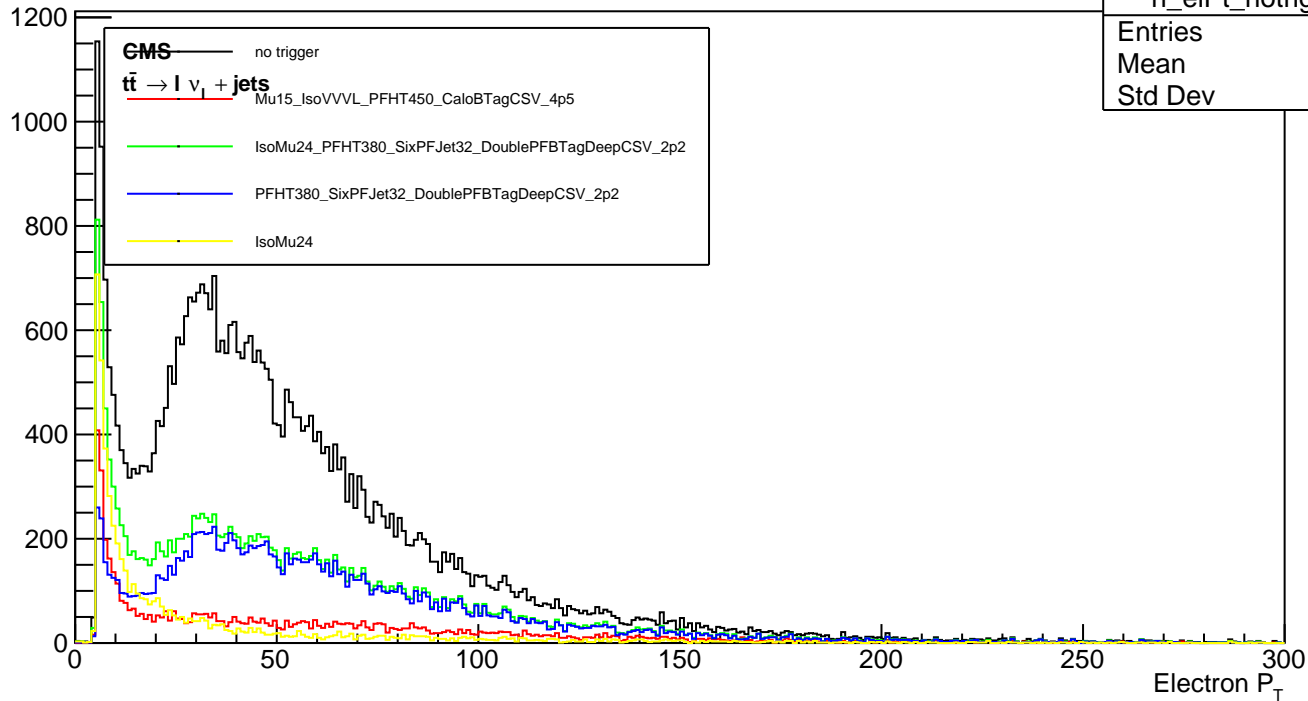
$t\bar{t} \rightarrow l \nu_l + \text{jets}$



h_muonPRatioIsoMu24_PFH380_SixPFJet32_DoublePFBTagDeepCSV_2p2	
Entries	265
Mean	160.2
Std Dev	81.44

# no trigger

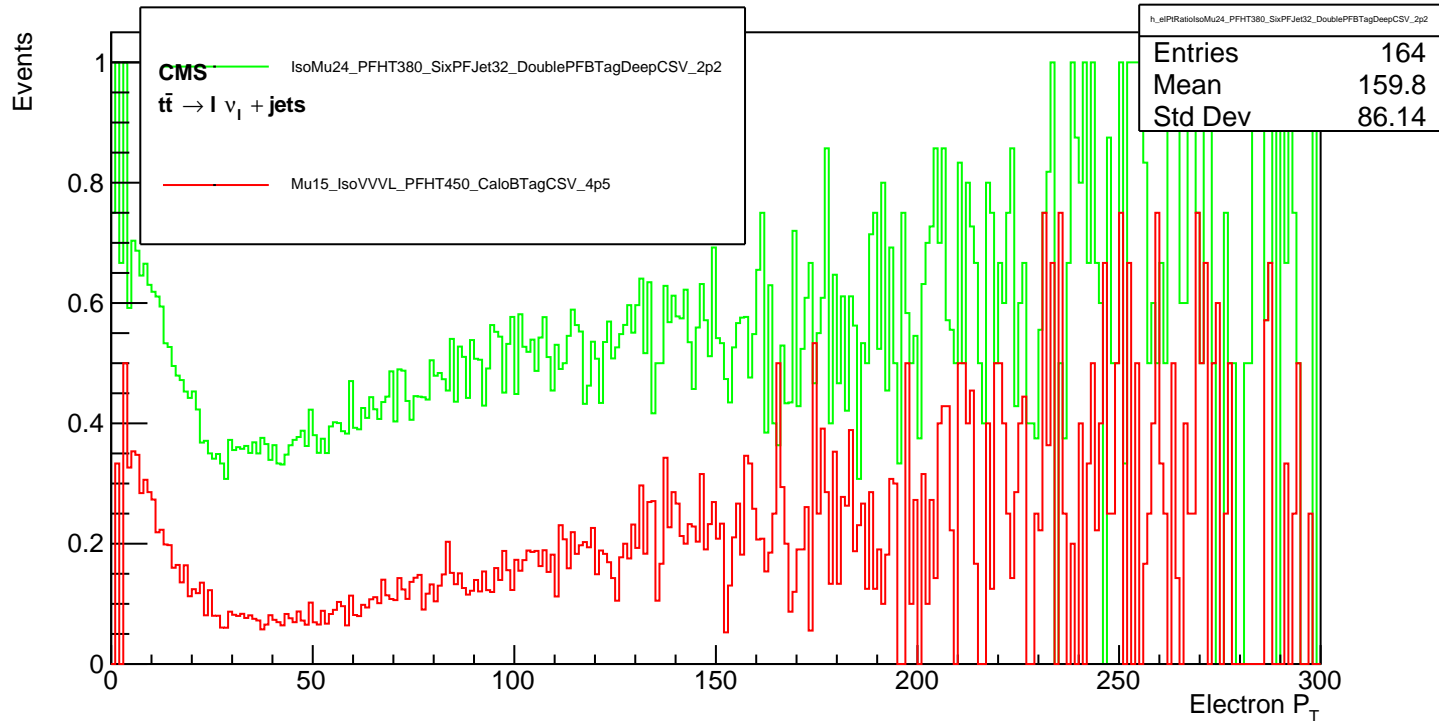
Events



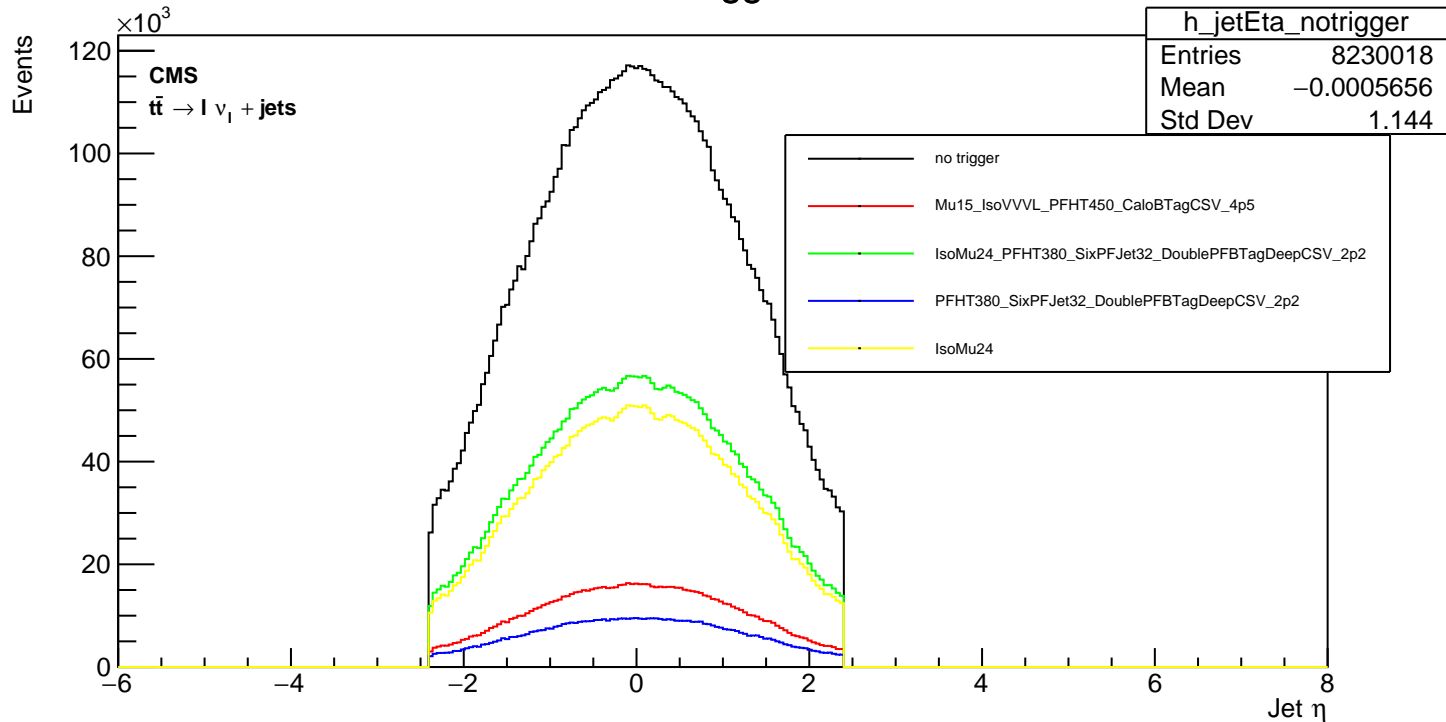
h\_elPt\_notrigger

Entries	43072
Mean	53.89
Std Dev	40.86

# IsoMu24\_PFHT380\_SixPFJet32\_DoublePFBTagDeepCSV\_2p2



## no trigger



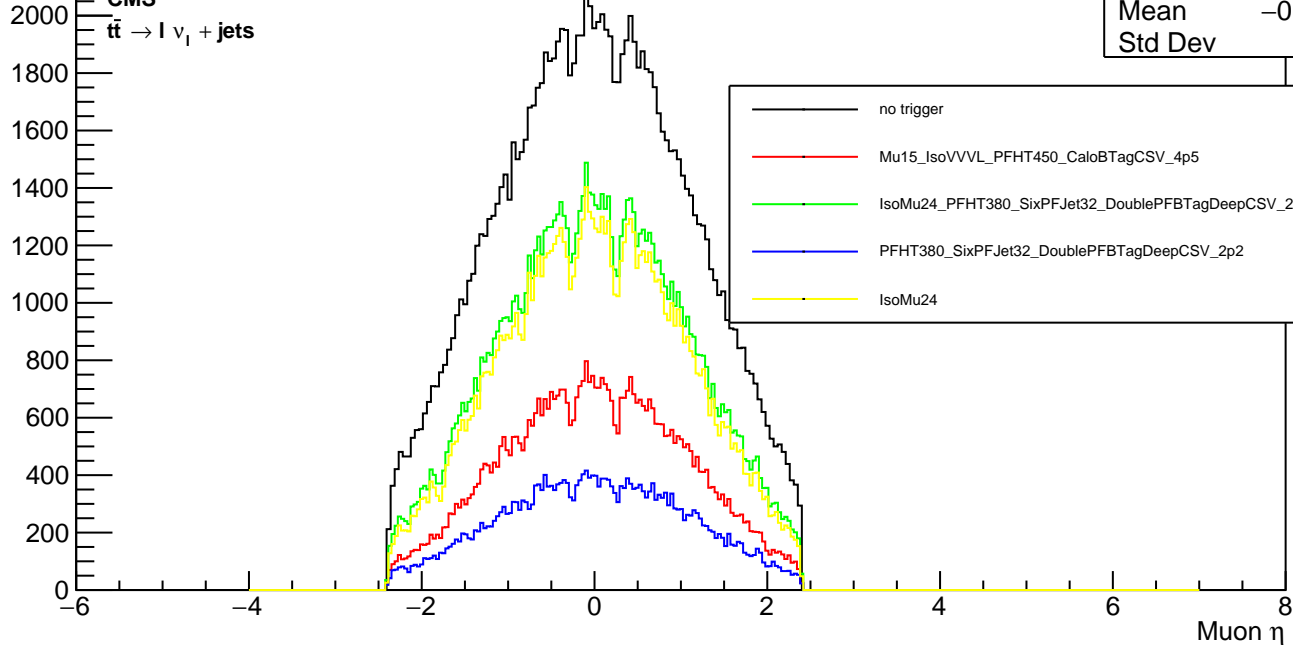


# no trigger

Events

CMS

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



h\_muonEta\_notrigger

Entries 128054

Mean -0.001005

Std Dev 1.091

no trigger

Mu15\_IsoVVVL\_PFHT450\_CaloBTagCSV\_4p5

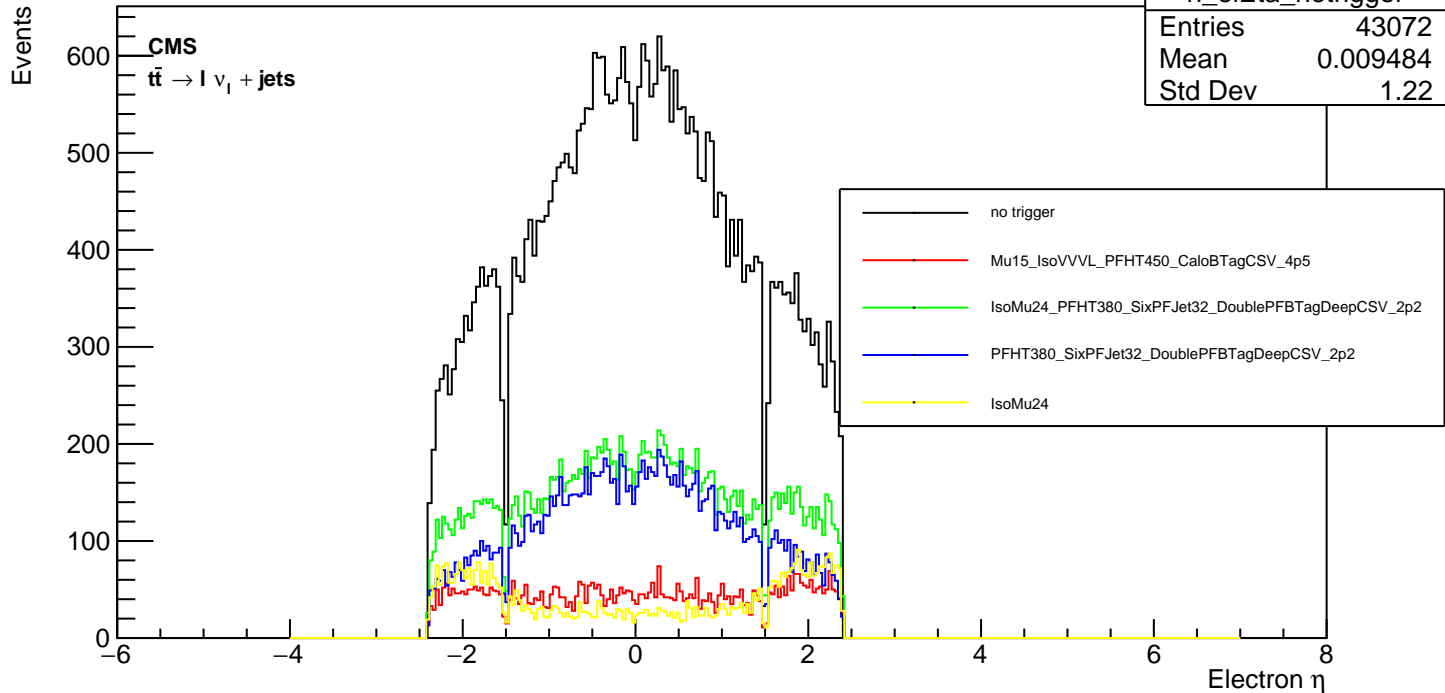
IsoMu24\_PFHT380\_SixPFJet32\_DoublePFBTagDeepCSV\_2p2

PFHT380\_SixPFJet32\_DoublePFBTagDeepCSV\_2p2

IsoMu24

Muon  $\eta$

## no trigger



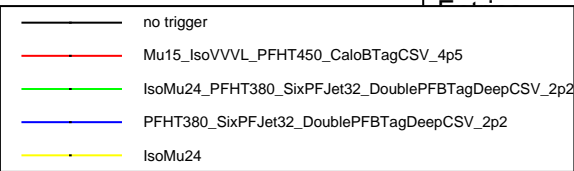
no trigger

Events

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

60000  
50000  
40000  
30000  
20000  
10000  
0

-6 -4 -2 0 2 4 6 8  
Jet  $\phi$



h\_jetPhi\_notrigger

8230018

-0.004917

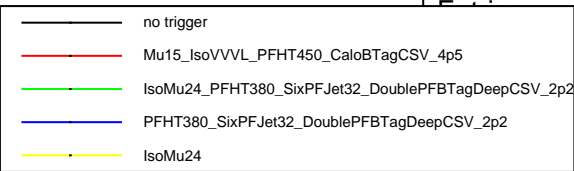
1.812

no trigger

Events

CMS

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

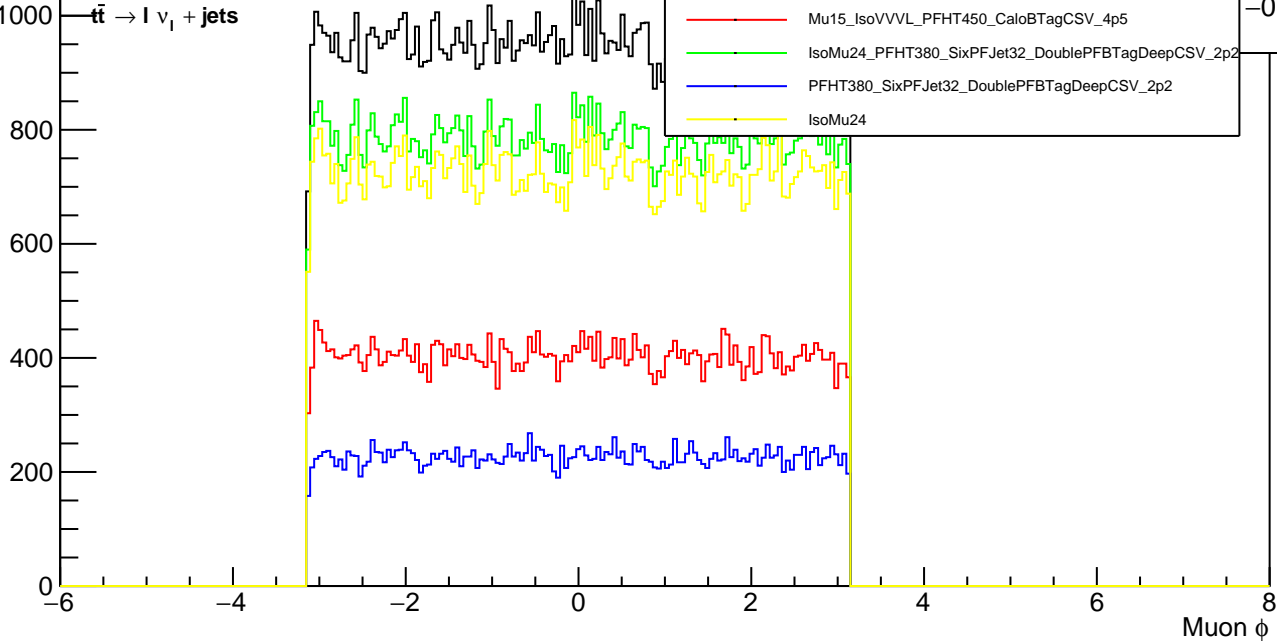


h\_muonPhi\_notrigger

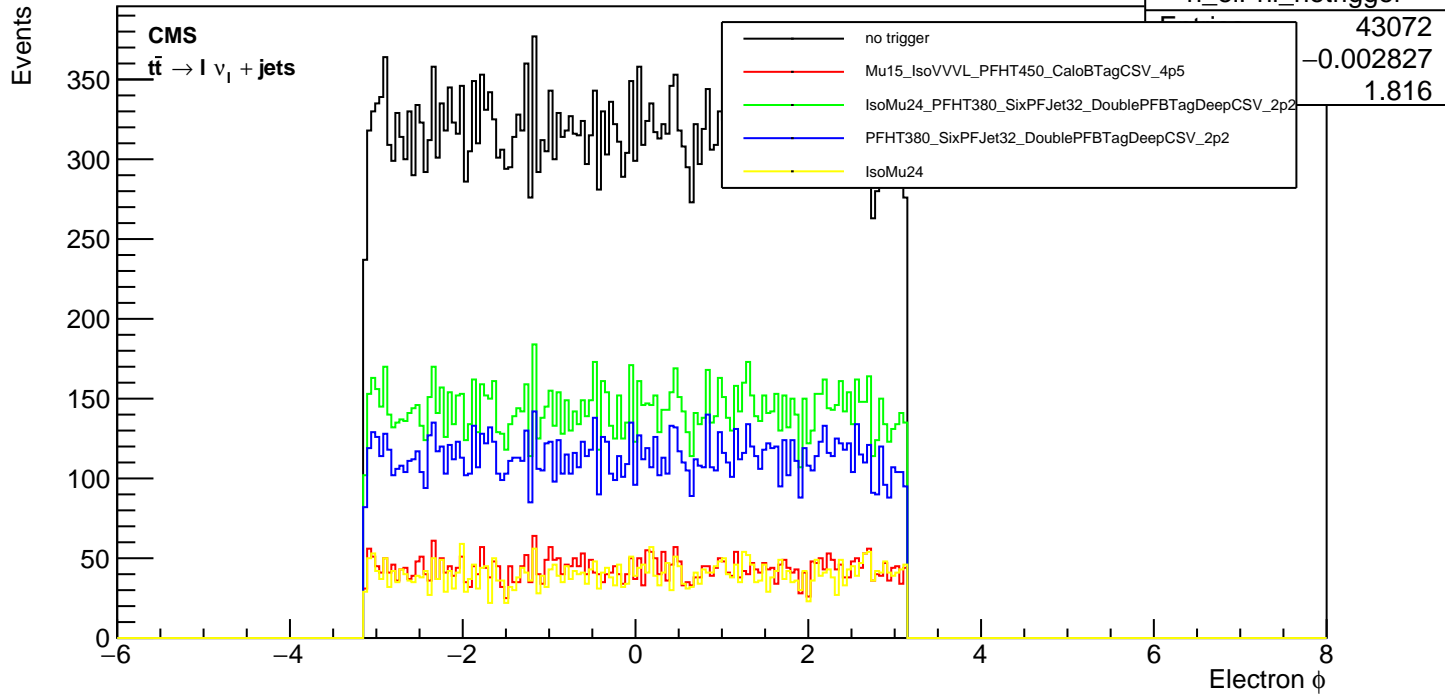
128054

-0.008582

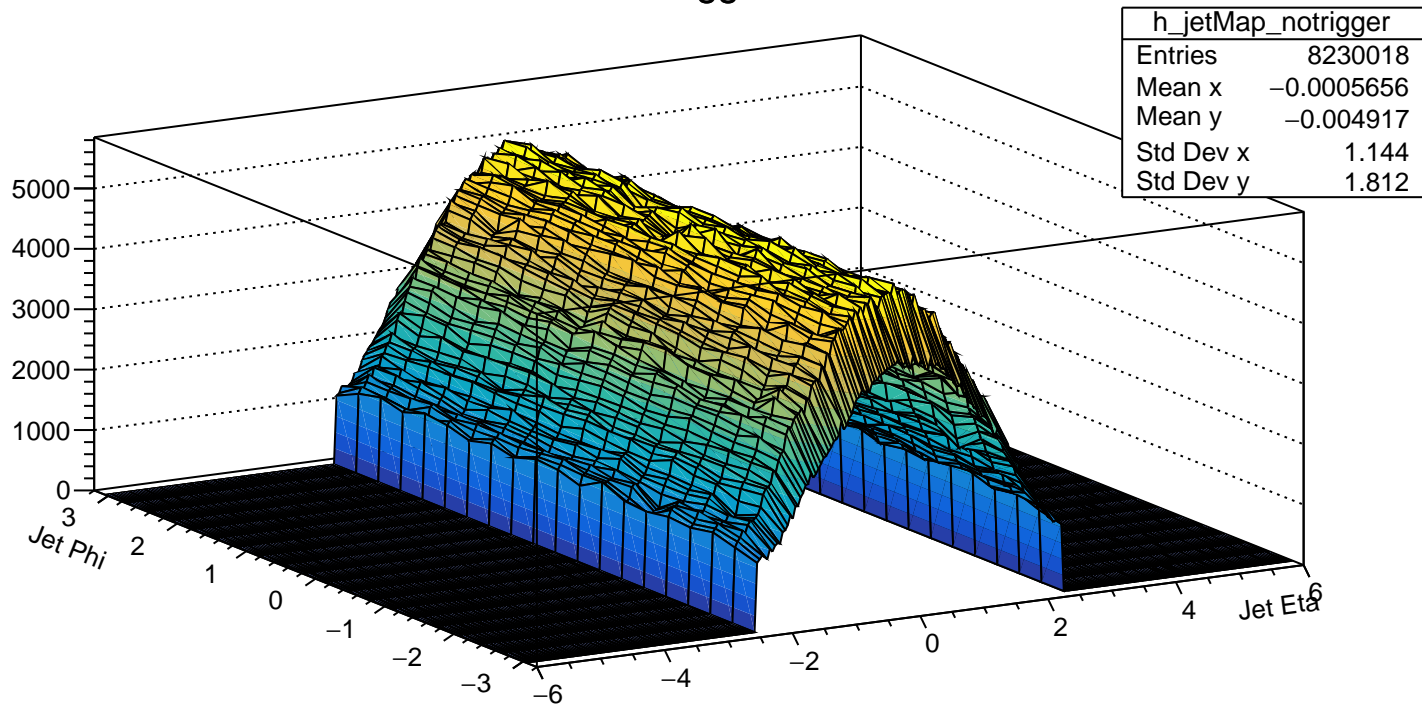
1.812



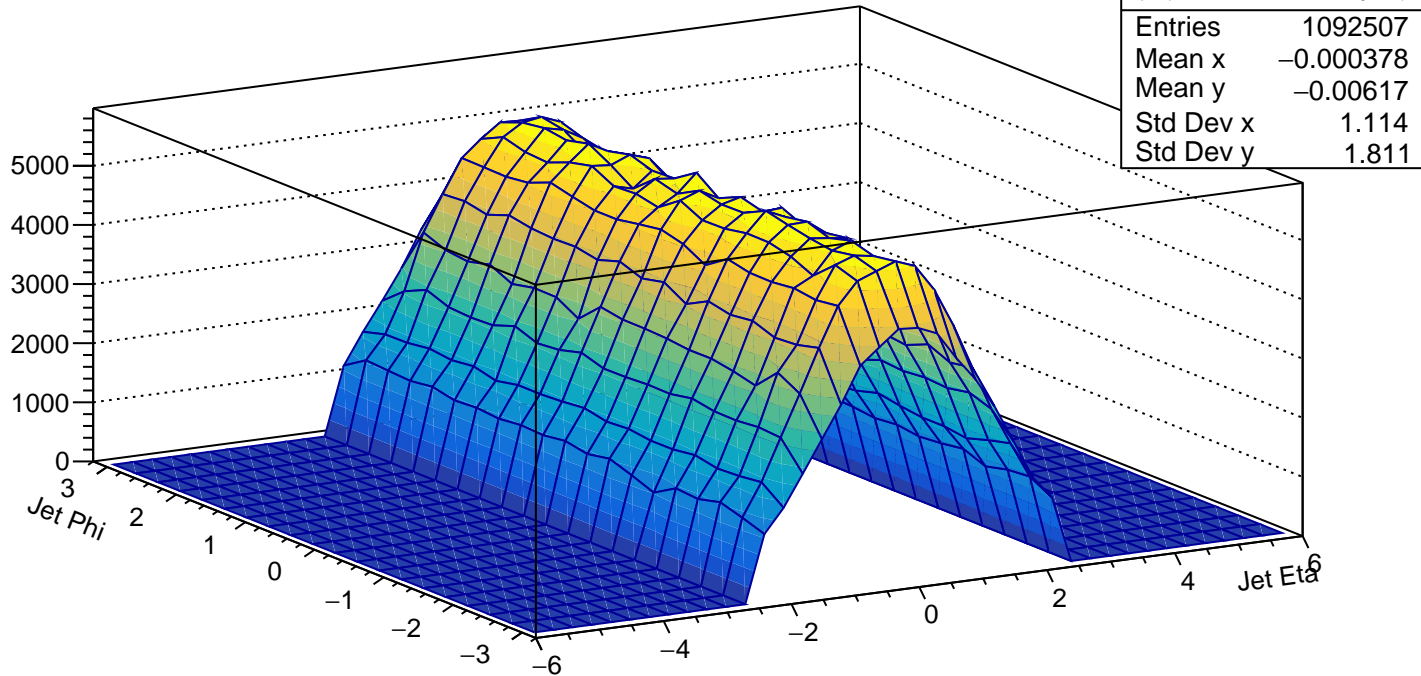
no trigger



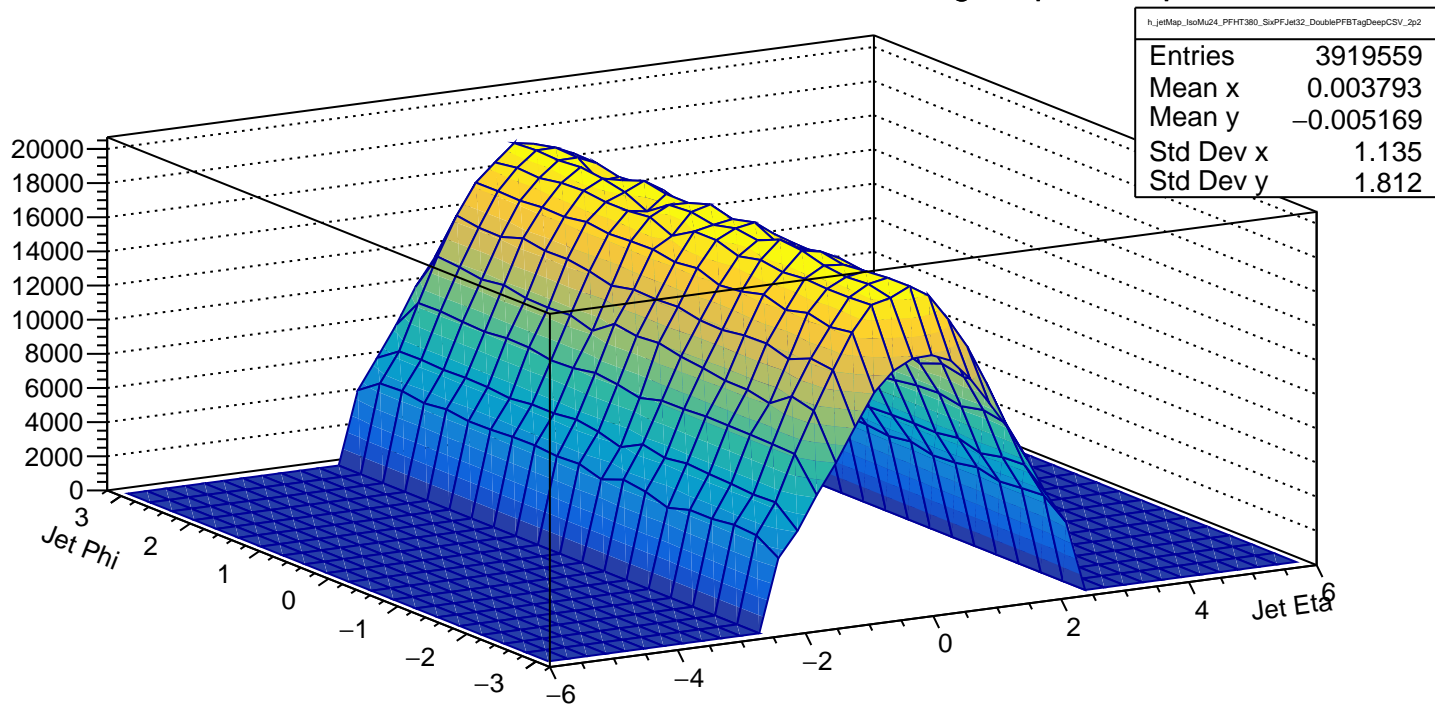
no trigger



# Mu15\_IsoVVVL\_PFHT450\_CaloBTagCSV\_4p5

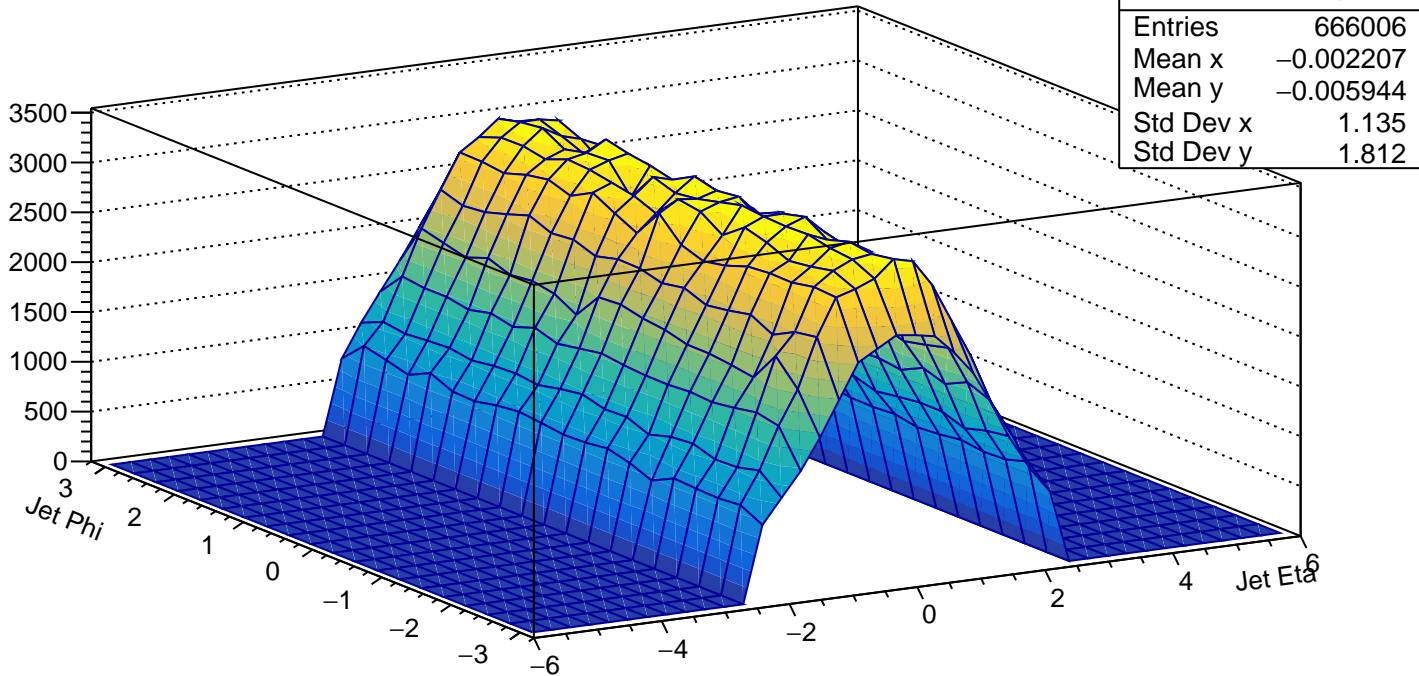


IsoMu24\_PFH380\_SixPFJet32\_DoublePFBTagDeepCSV\_2p2

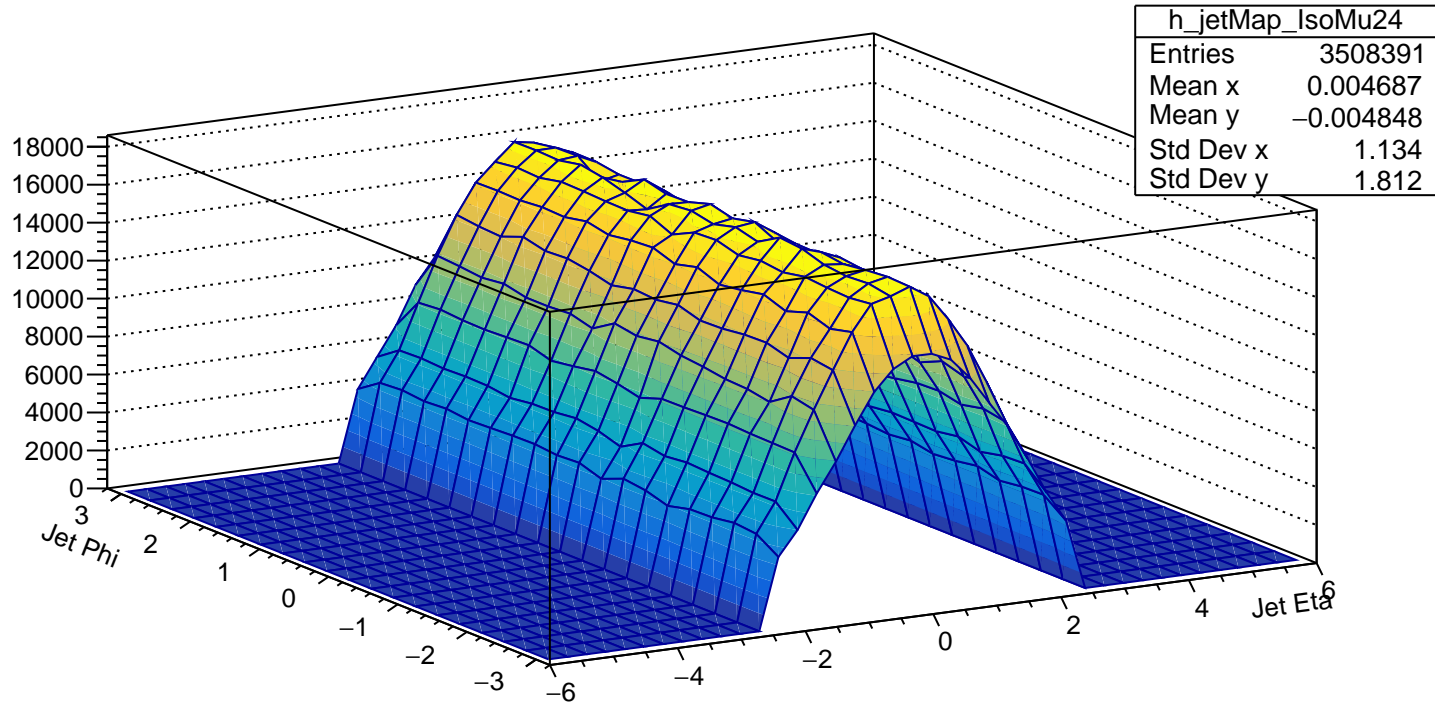




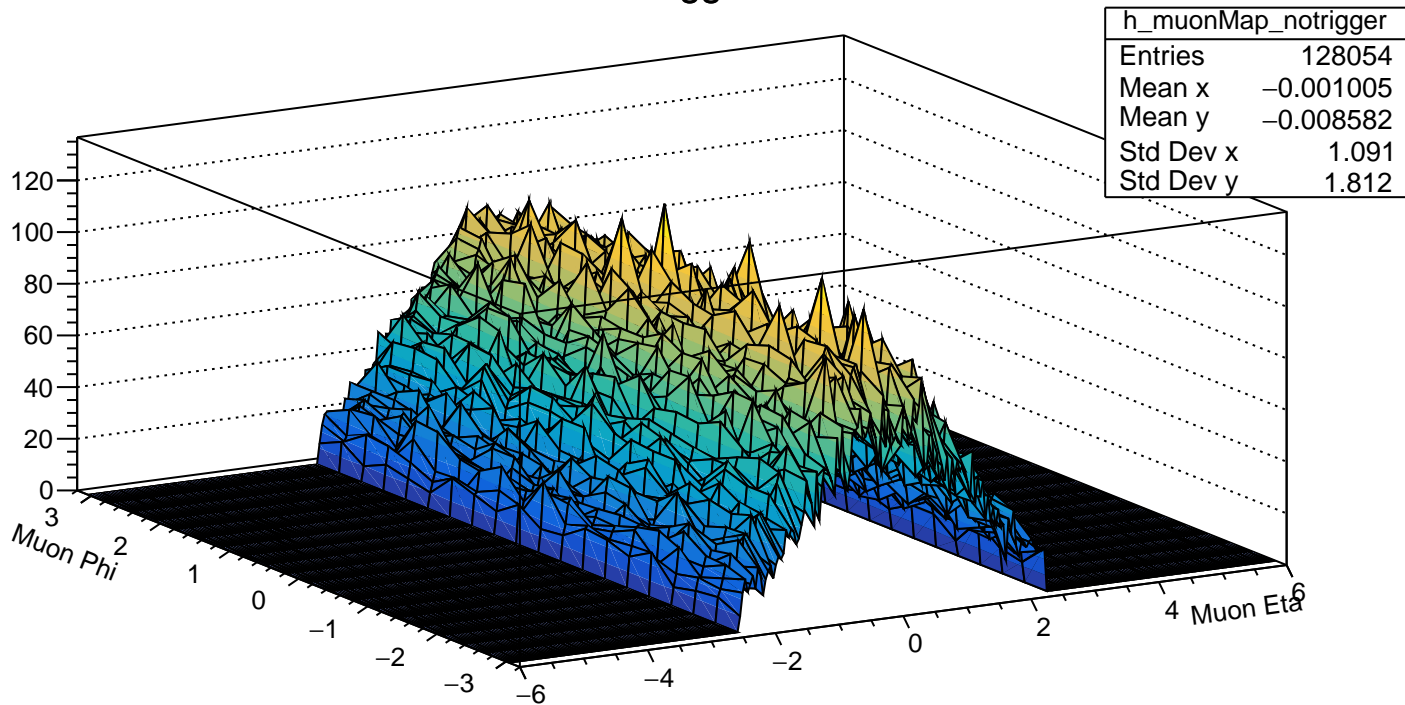
# PFHT380\_SixPFJet32\_DoublePFBTagDeepCSV\_2p2



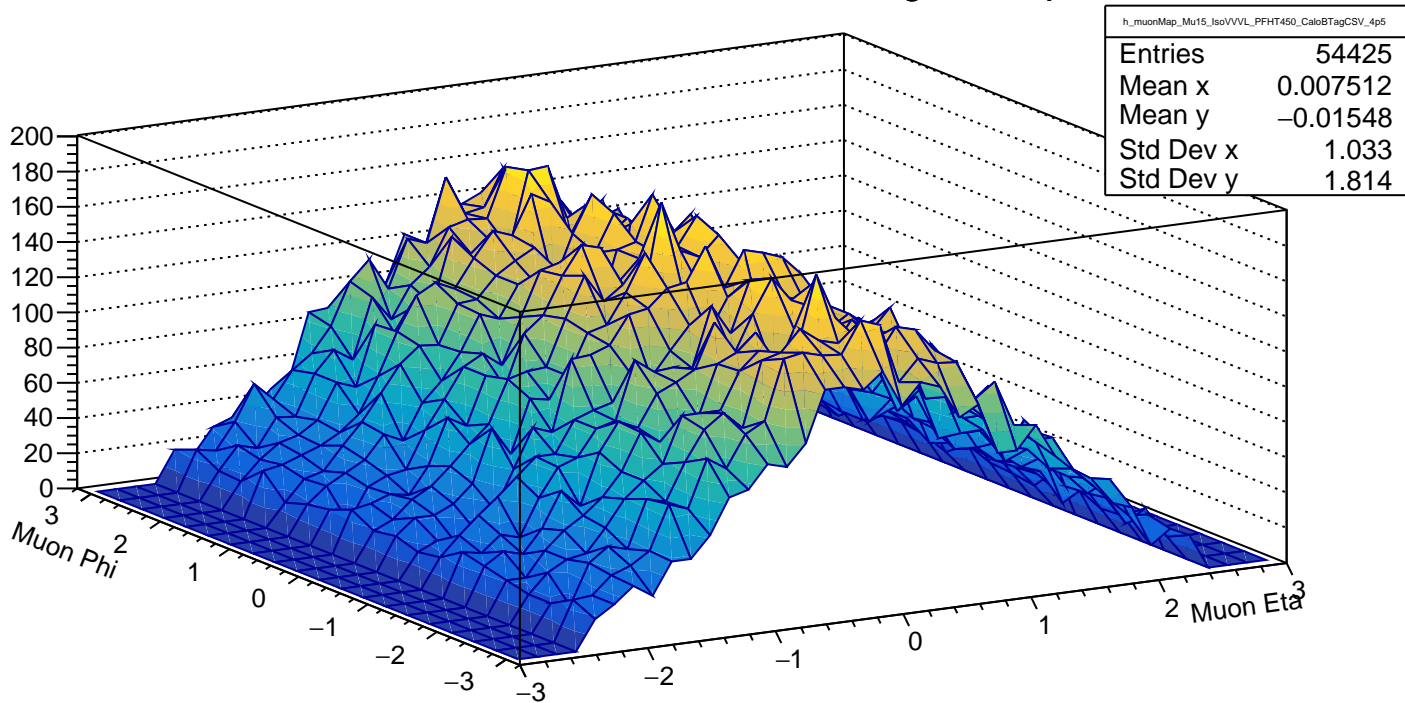
# IsoMu24



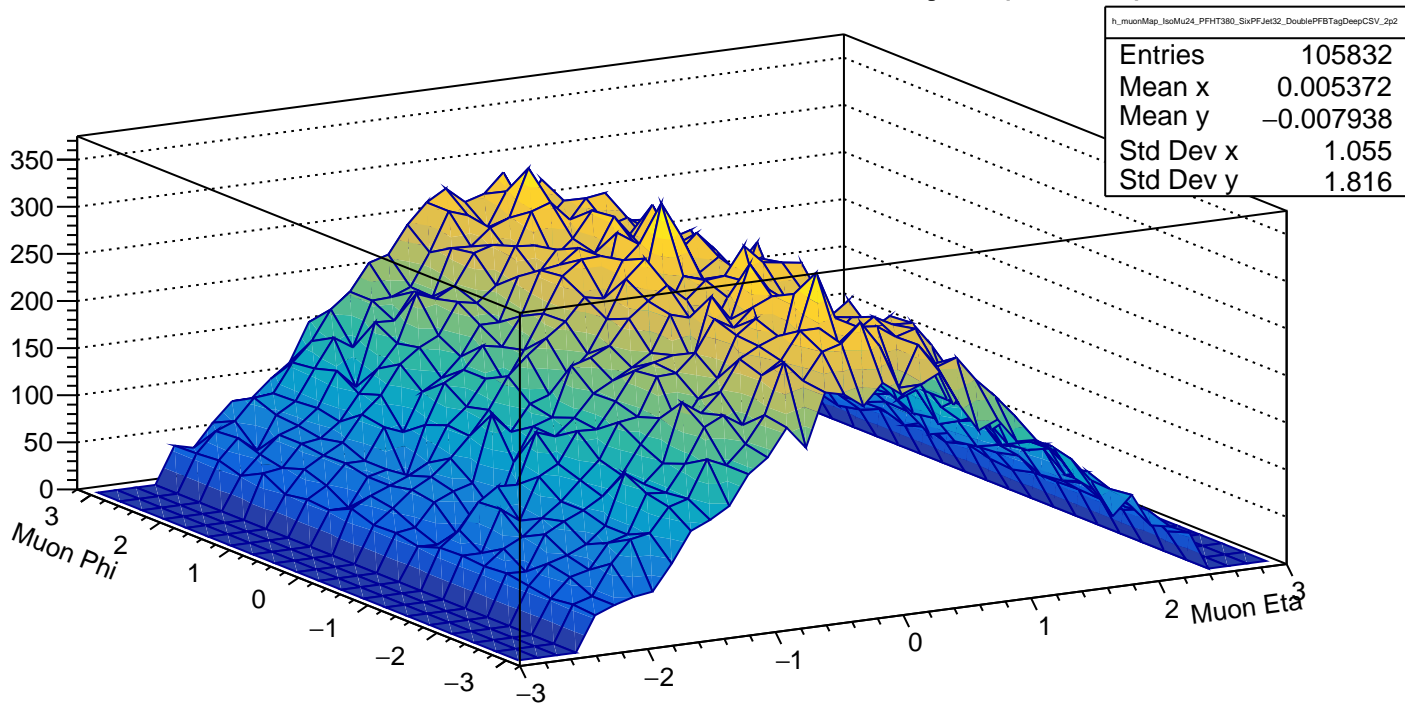
no trigger



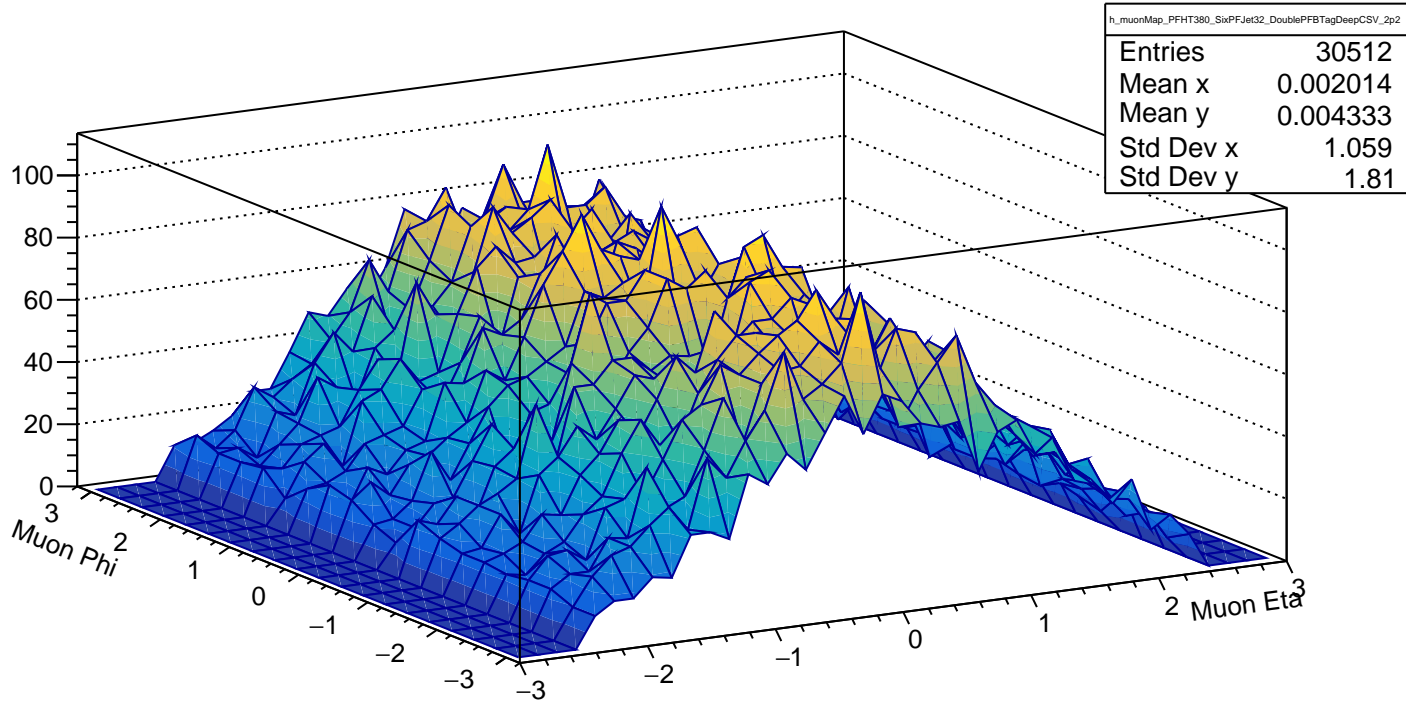
# Mu15\_IsoVVVL\_PFHT450\_CaloBTagCSV\_4p5



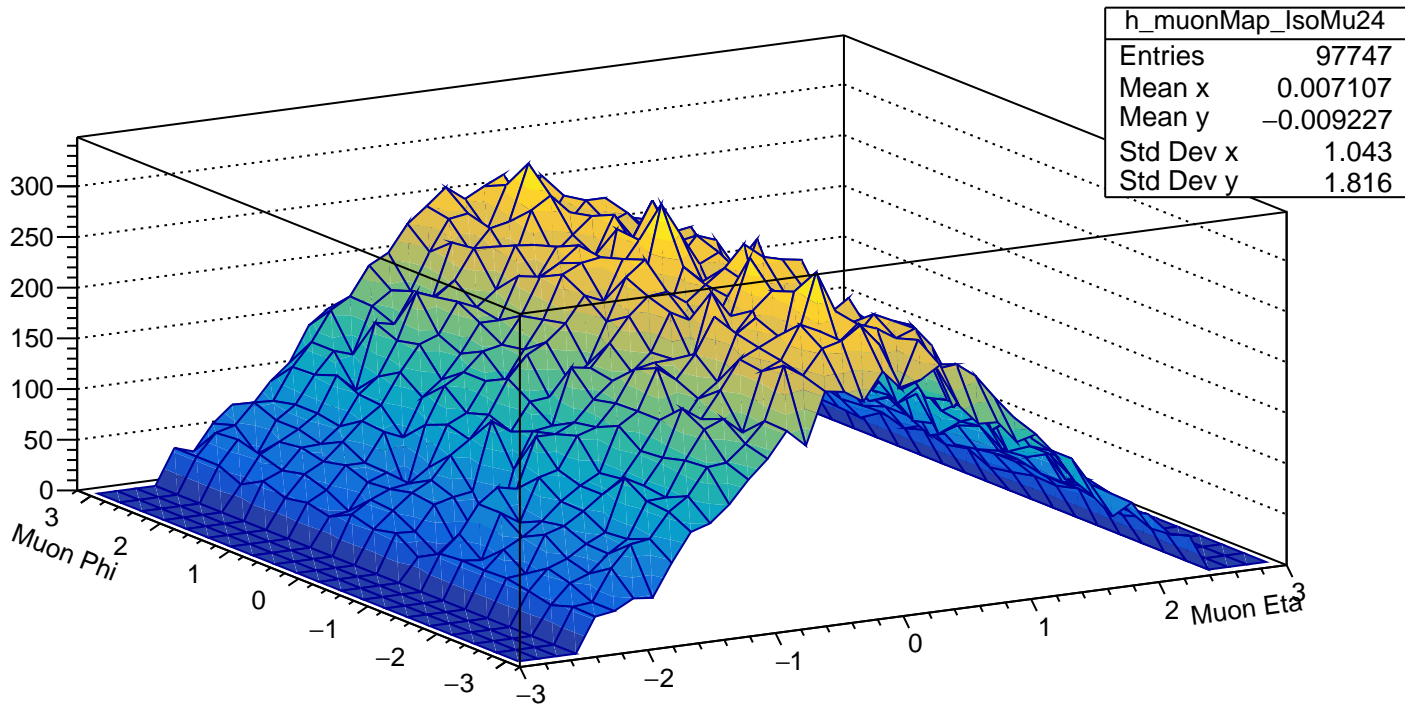
# IsoMu24\_PFH380\_SixPFJet32\_DoublePFBTagDeepCSV\_2p2



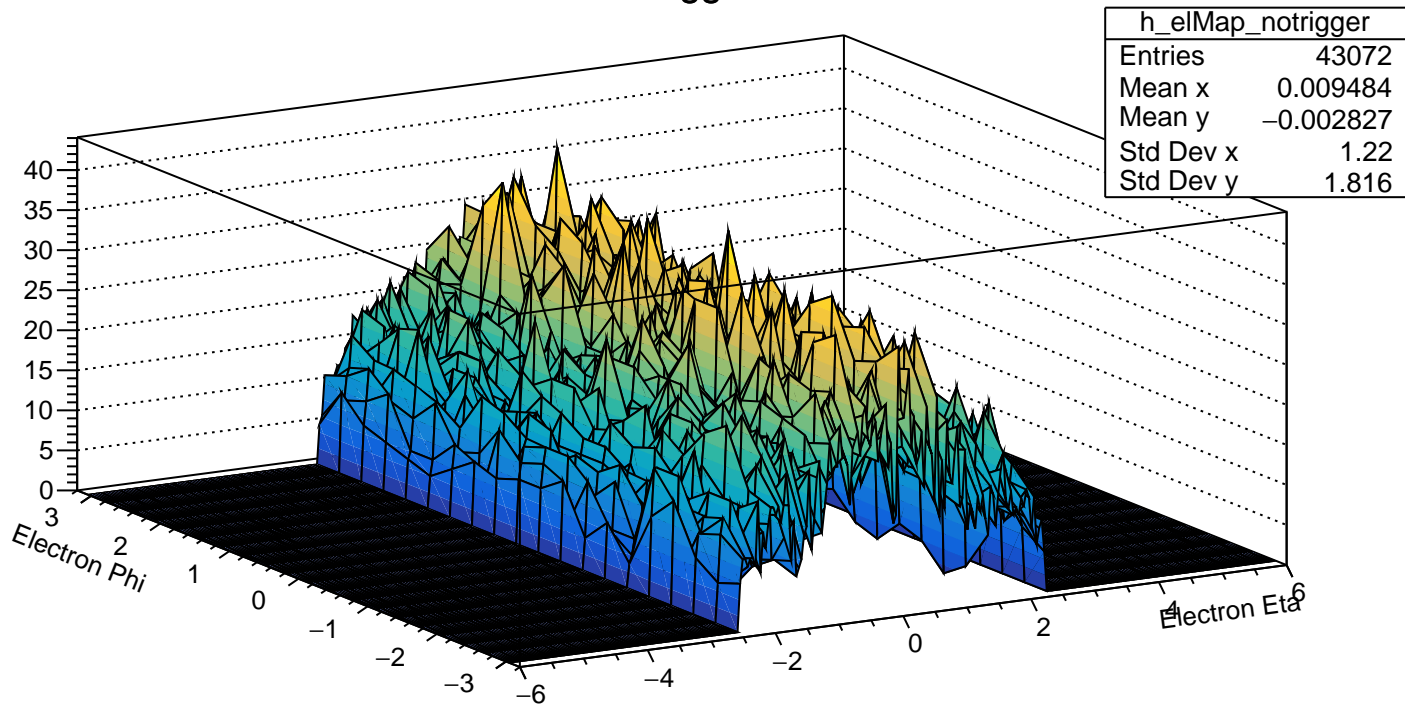
# PFHT380\_SixPFJet32\_DoublePFBTagDeepCSV\_2p2



# IsoMu24

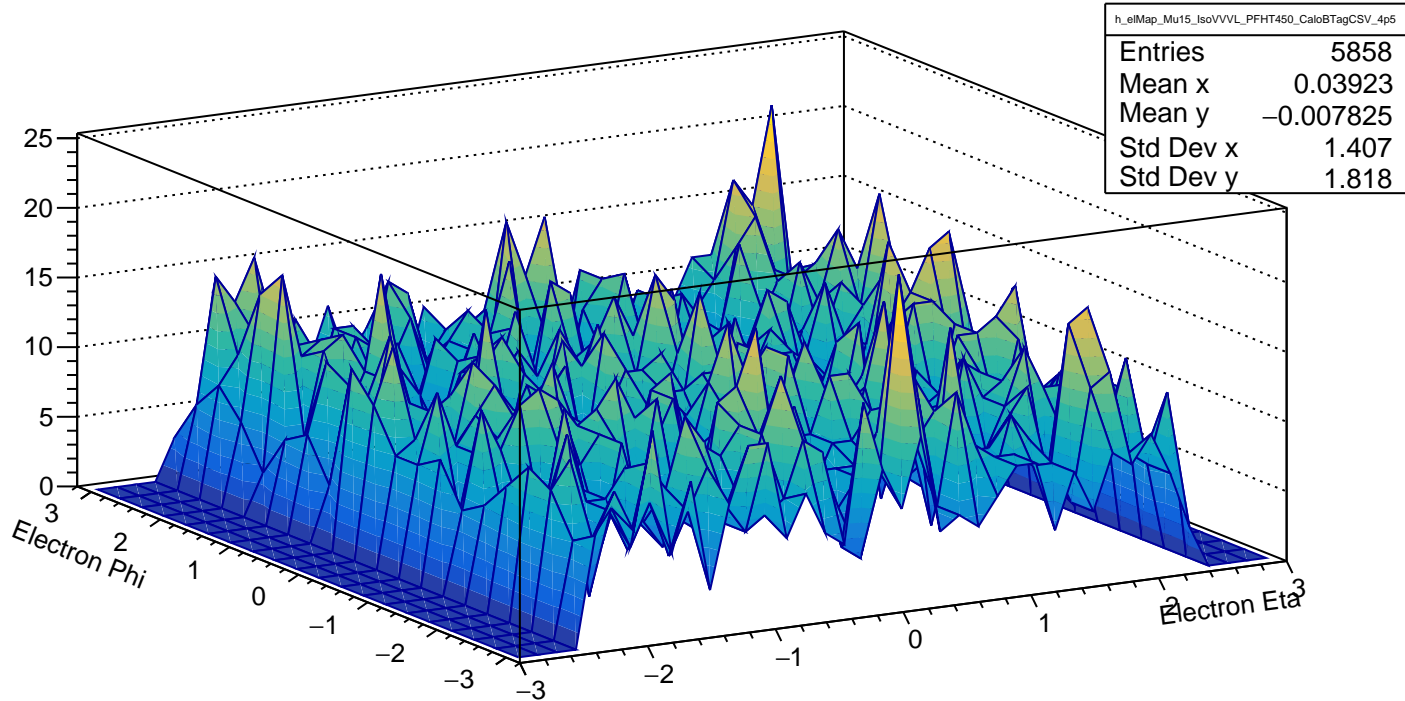


no trigger

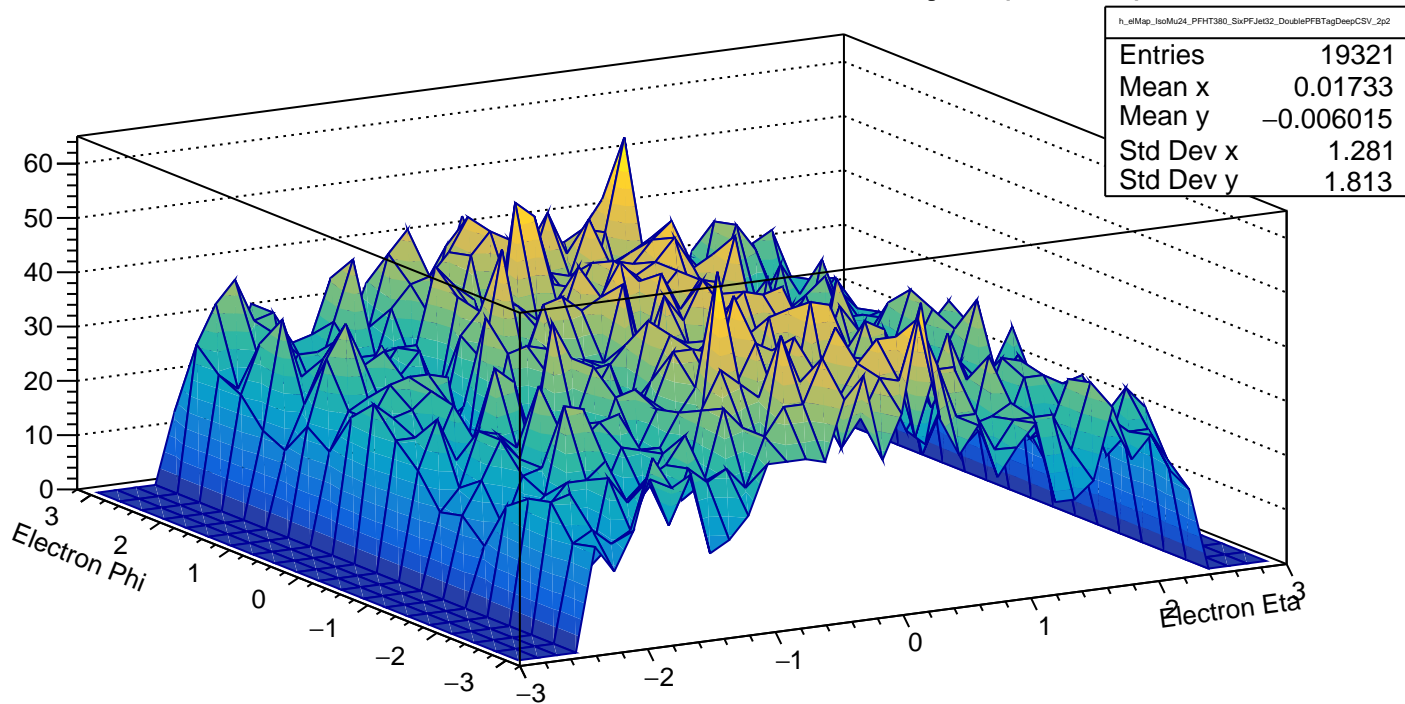




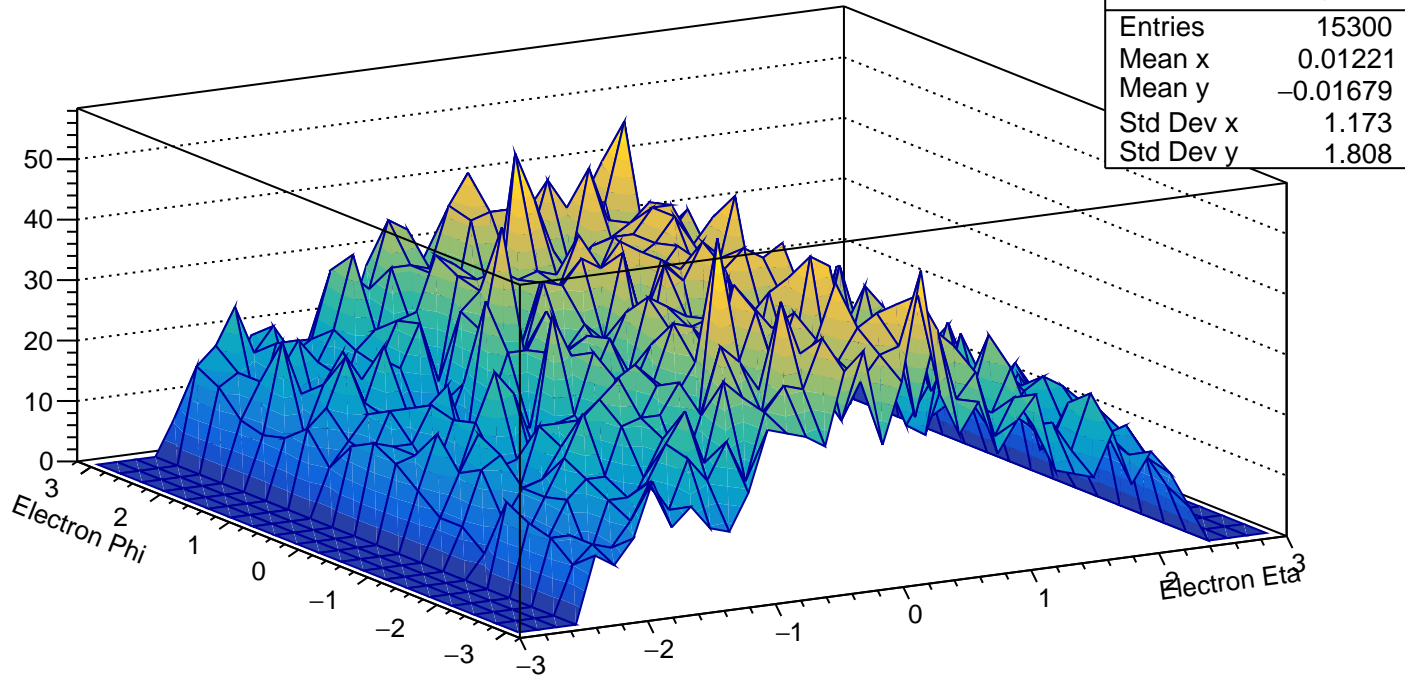
# Mu15\_IsoVVVL\_PFHT450\_CaloBTagCSV\_4p5



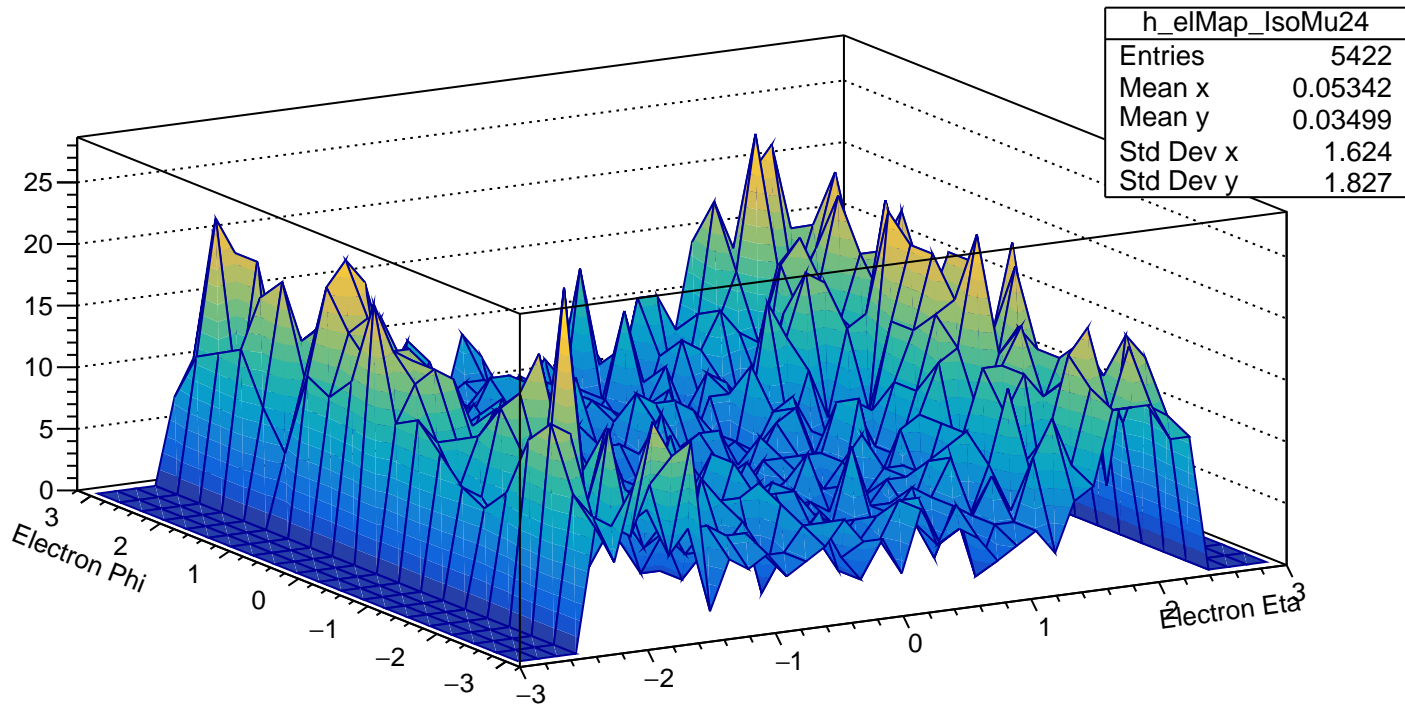
# IsoMu24\_PFH380\_SixPFJet32\_DoublePFBTagDeepCSV\_2p2



# PFHT380\_SixPFJet32\_DoublePFBTagDeepCSV\_2p2

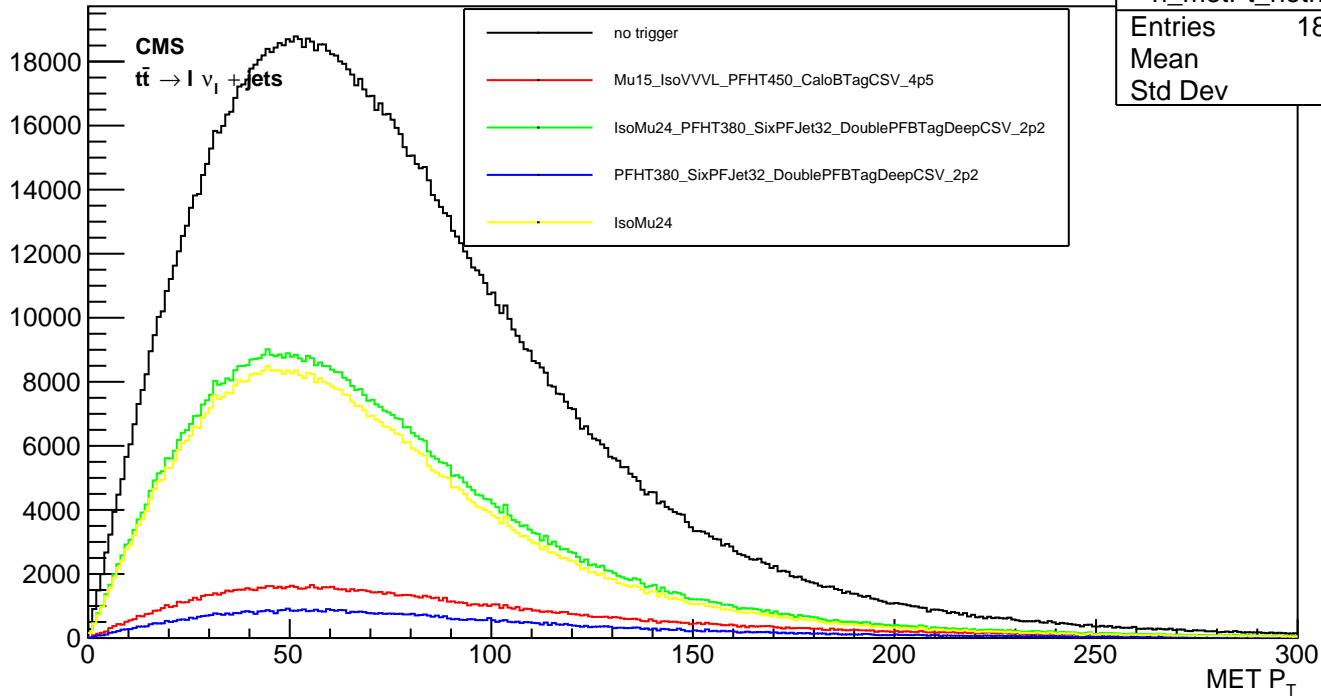


# IsoMu24



# no trigger

Events



h\_metPt\_notrigger

Entries	1863716
Mean	77.52
Std Dev	47.72

# IsoMu24\_PFHT380\_SixPFJet32\_DoublePFBTagDeepCSV\_2p2

Events

**CMS**

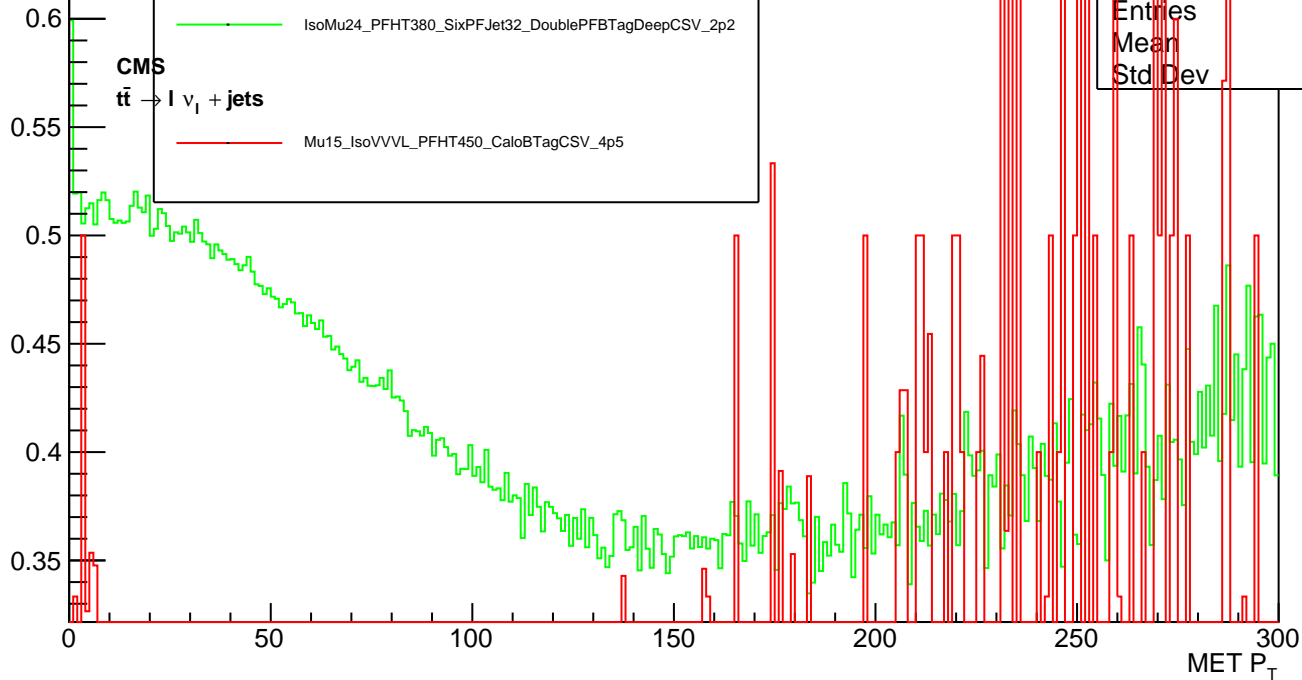
**$t\bar{t} \rightarrow l \nu_l + \text{jets}$**

IsoMu24\_PFHT380\_SixPFJet32\_DoublePFBTagDeepCSV\_2p2

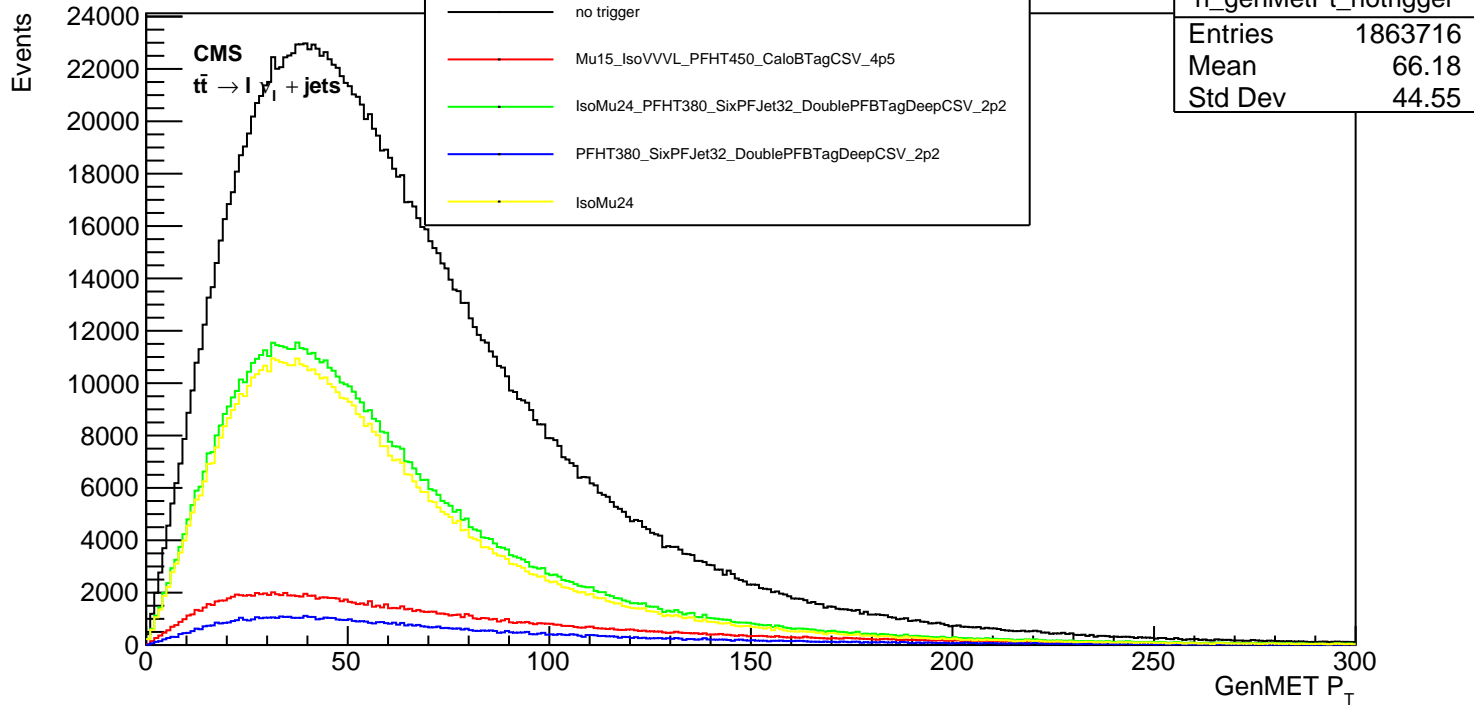
Mu15\_IsoVVVL\_PFHT450\_CaloBTagCSV\_4p5

h\_metPtRatioIsoMu24\_PFHT380\_SixPFJet32\_DoublePFBTagDeepCSV\_2p2

Entries	123
Mean	143.7
Std Dev	90.04



# no trigger



# IsoMu24\_PFHT380\_SixPFJet32\_DoublePFBTagDeepCSV\_2p2

Events

