

On-line (pre-)selection Requisites for:

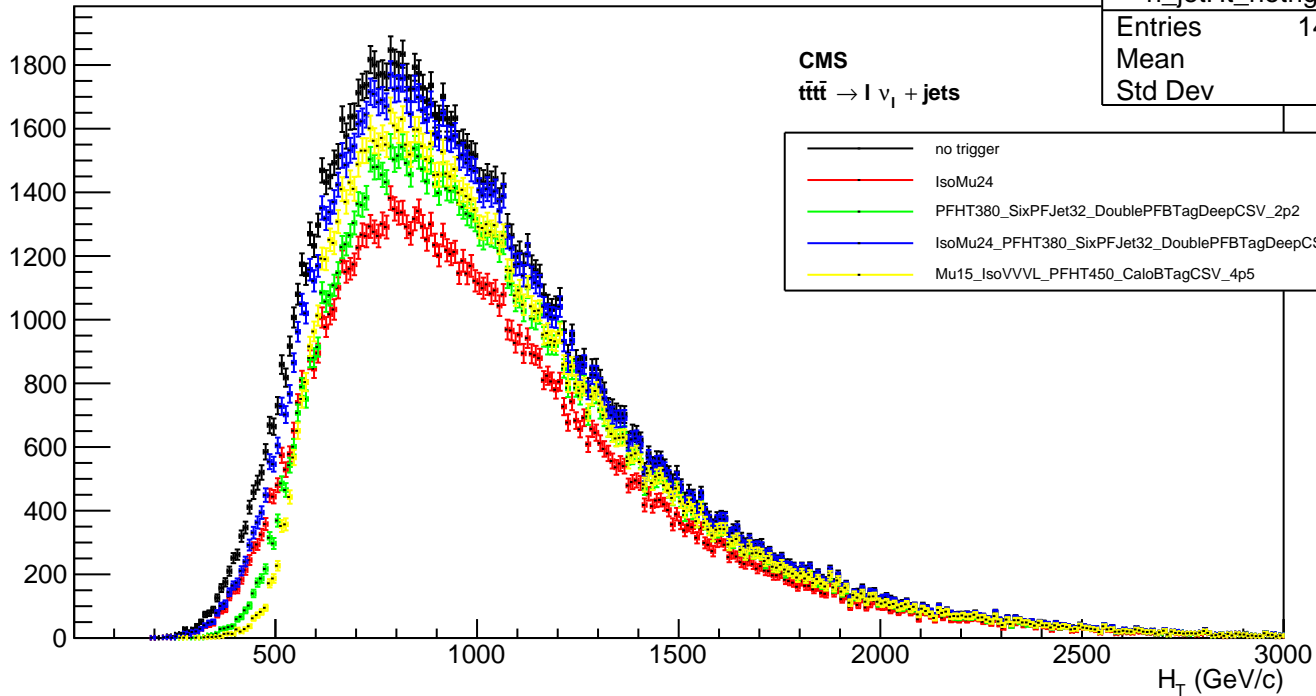
- **Jets:** number > 5
- **Muons plus Electrons:** number > 0

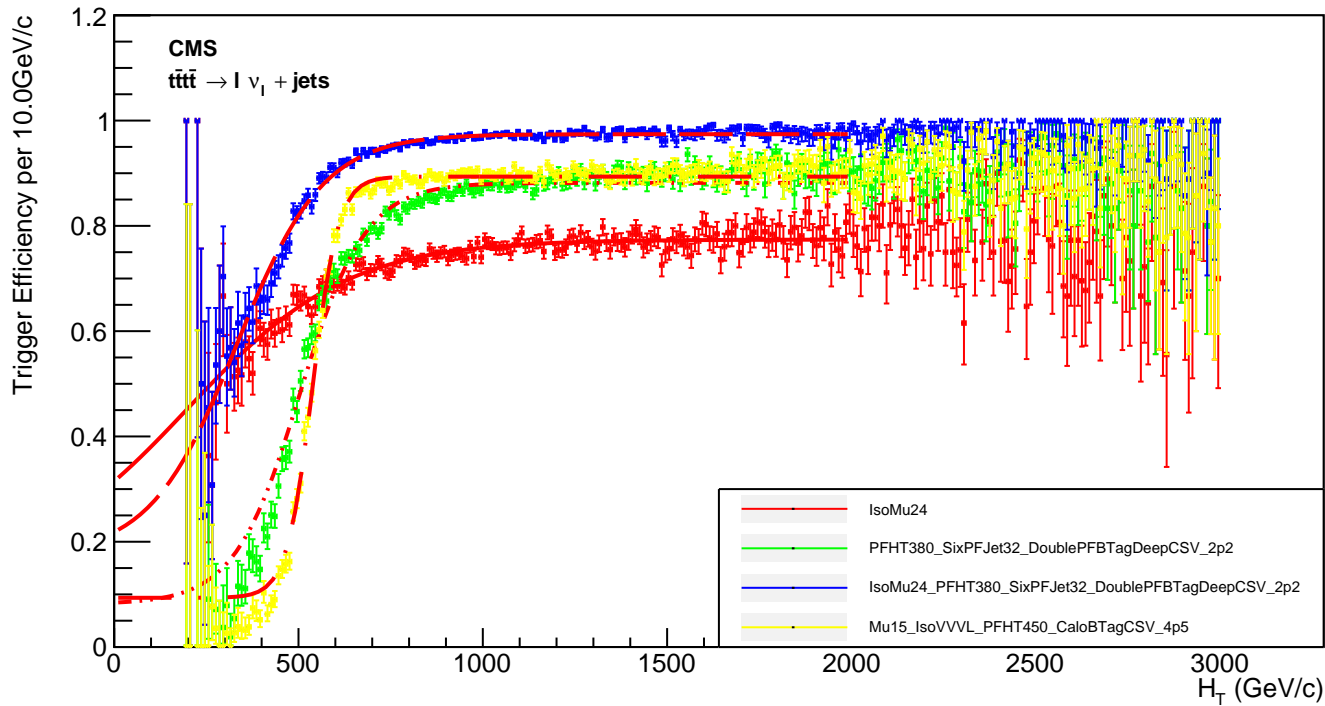
Event Limit: None (see last page)

Off-line (post-)selection Requisites for:

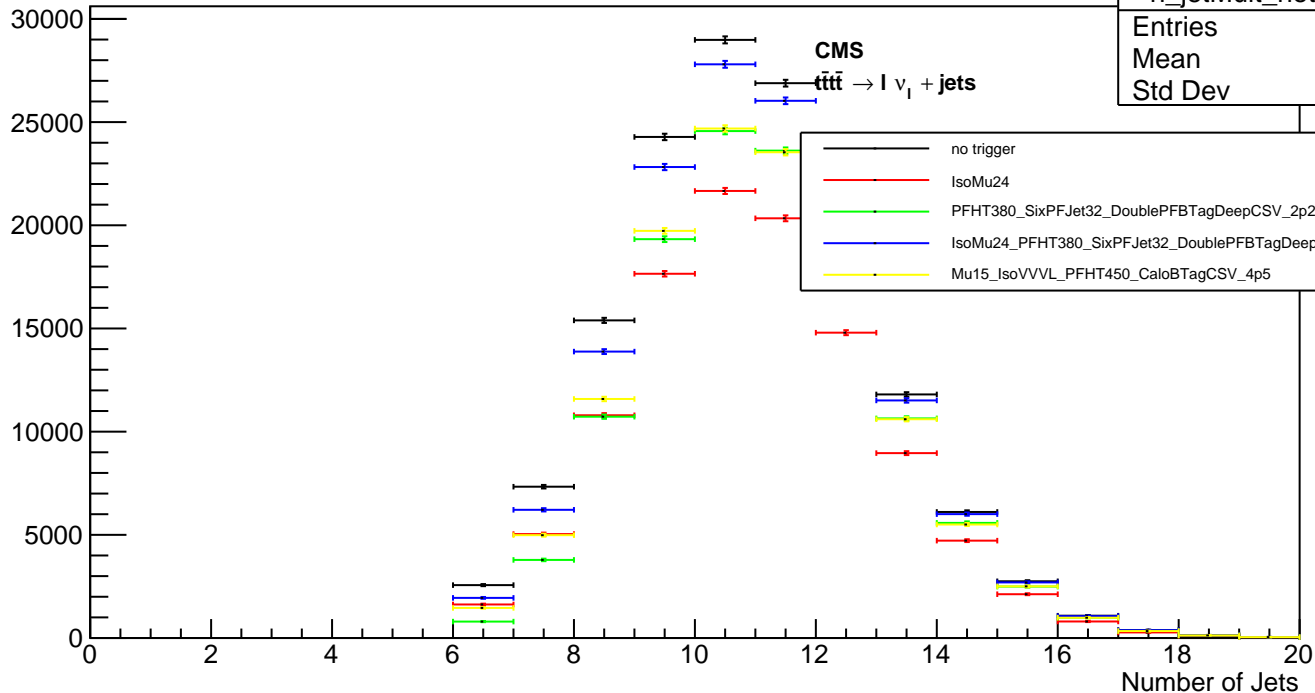
- **Jets:** $\text{jetId} > 2$, $p_T > 20$ and $|\eta| < 2.4$ (for at least 6 jets)
 $\text{btagDeepFlavB} > 0.7489$ (for at least one jet)
- **Muons:** has tightId, $|\eta| < 2.4$ and $\text{miniPFRellso_all} < 0.15$ (for at least 1)

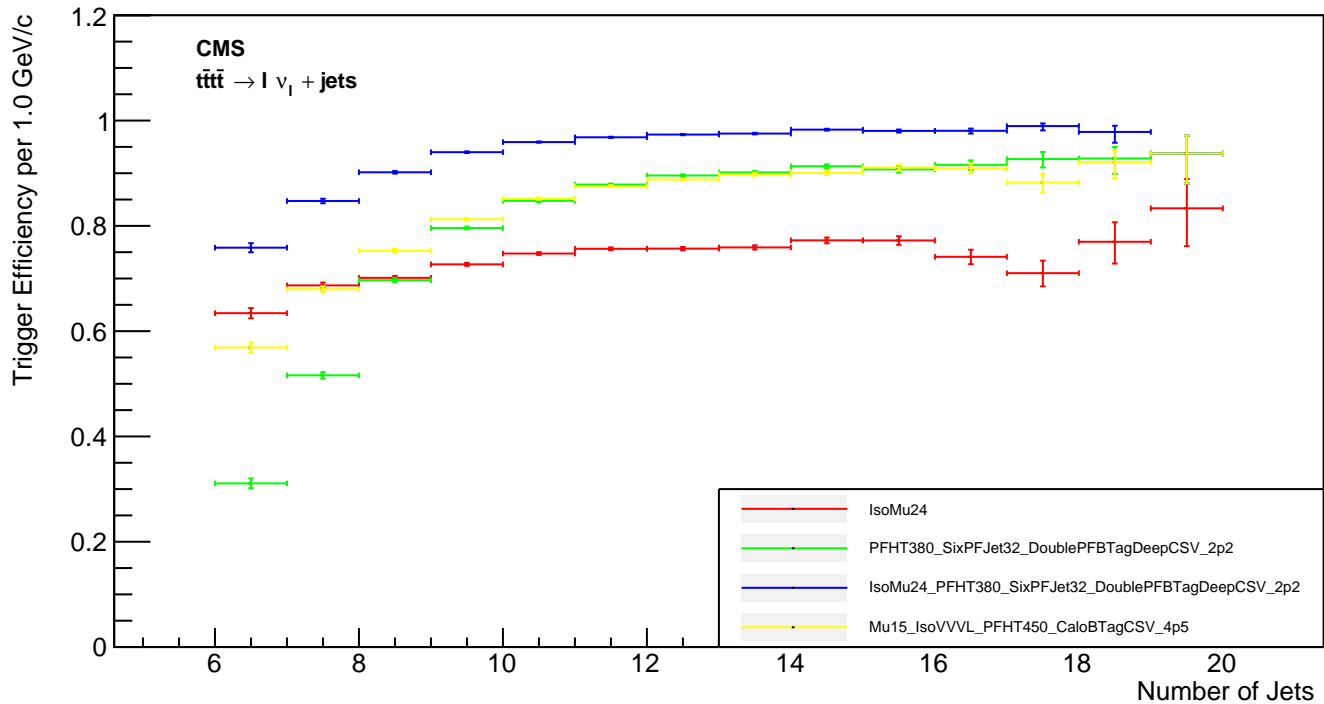
Number of Events per 10 GeV/c



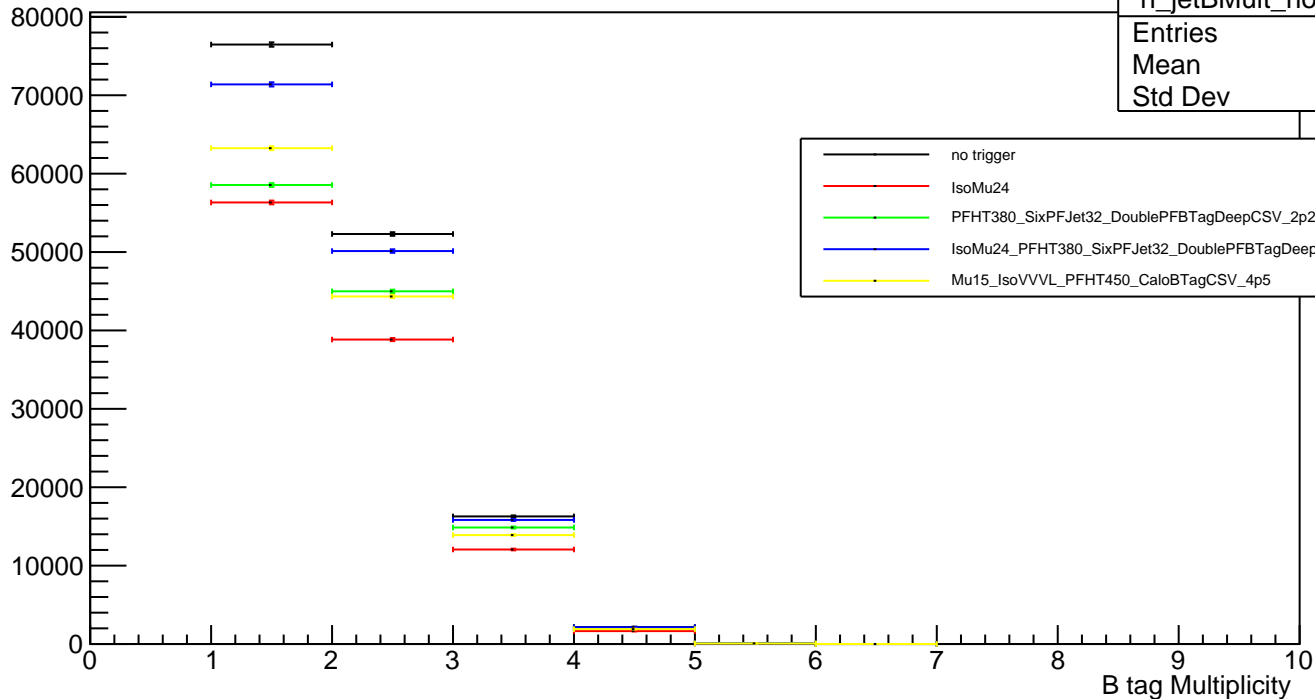


Number of Events per Number of Jets





Number of Events per Number of Jets



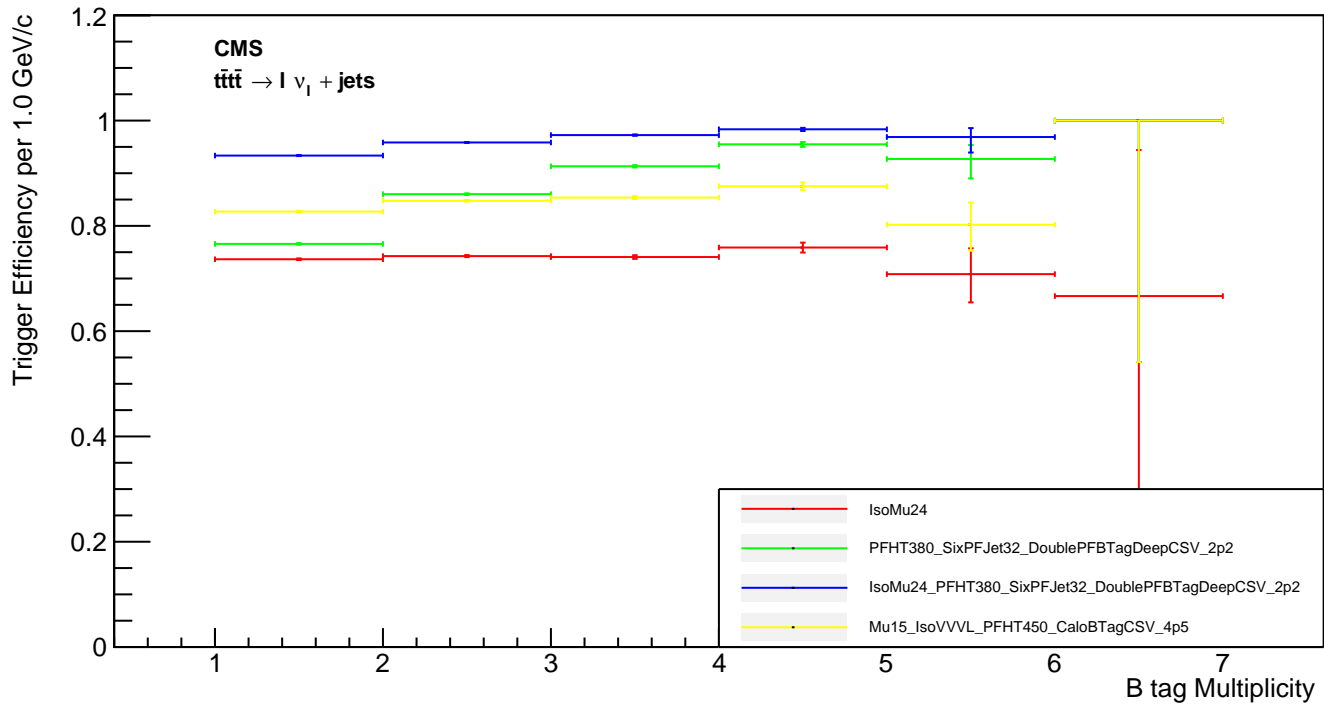
h_jetBMult_notrigger

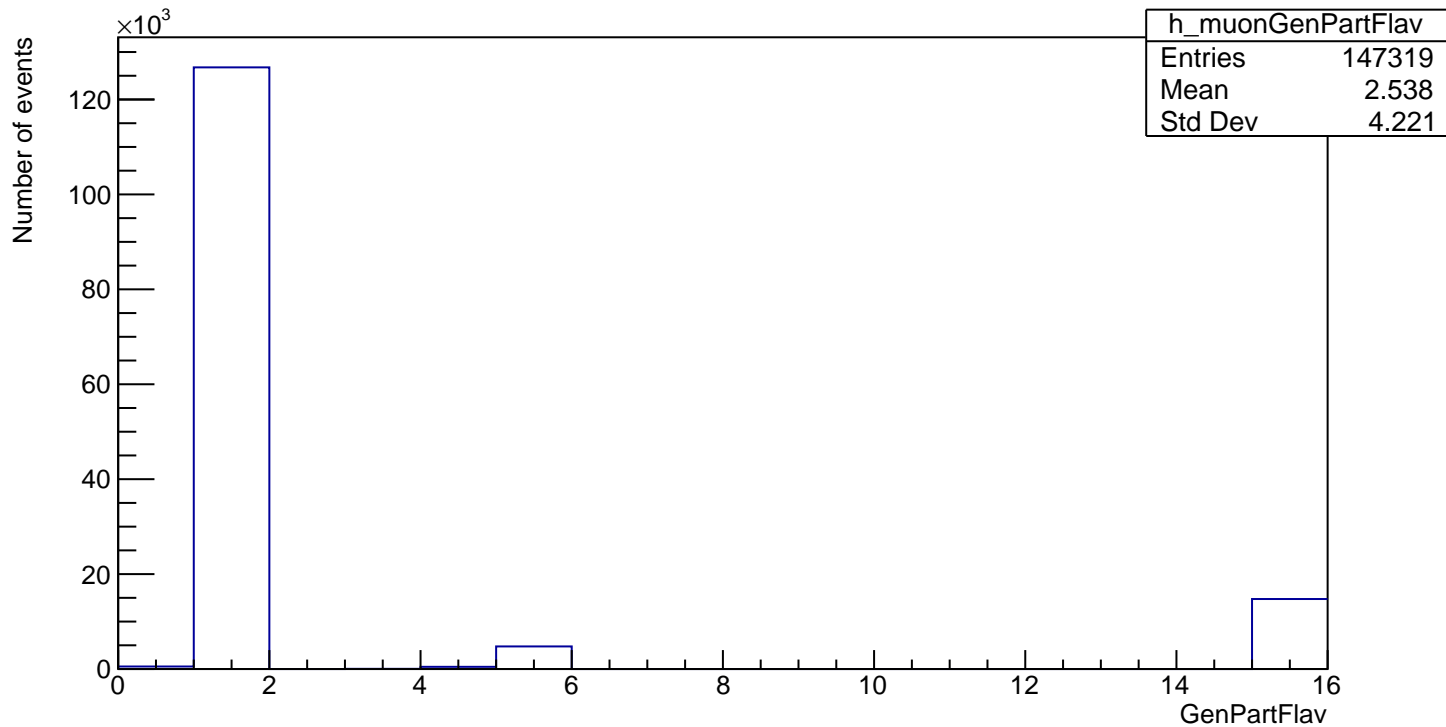
Entries 147319

Mean 2.123

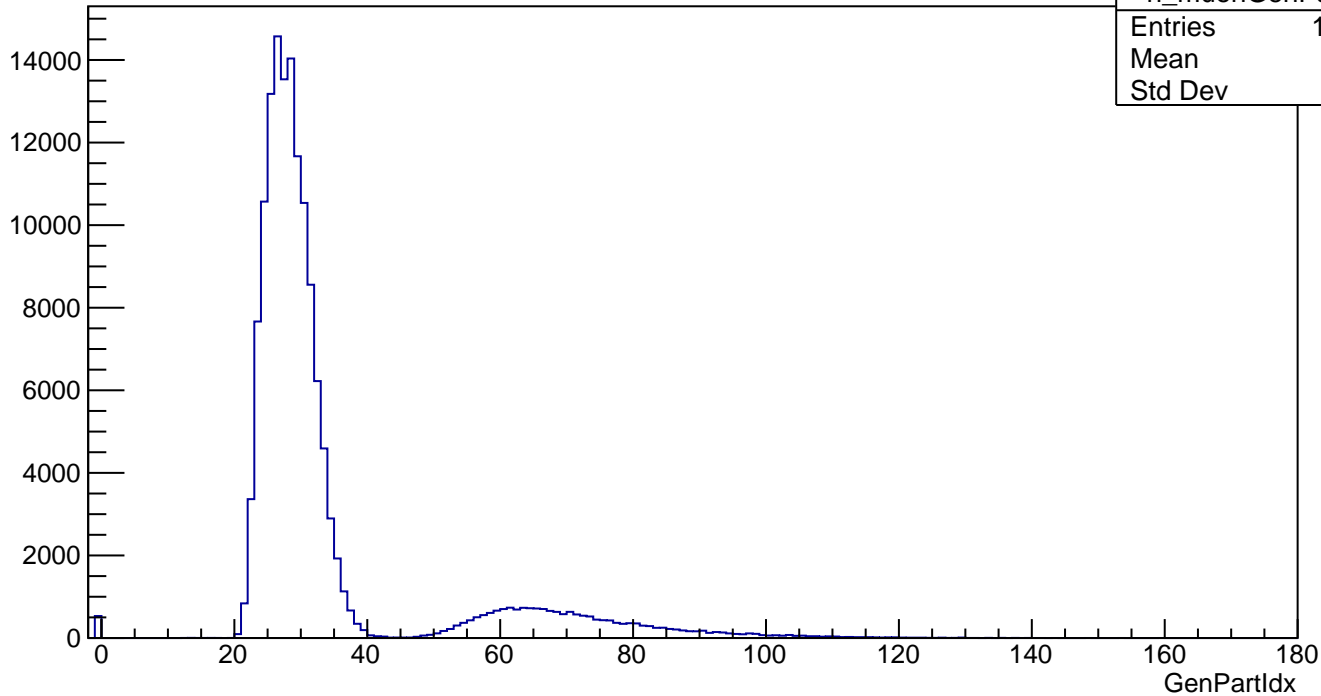
Std Dev 0.7434

- no trigger
- IsoMu24
- PFHT380_SixPFJet32_DoublePFBTagDeepCSV_2p2
- IsoMu24_PFHT380_SixPFJet32_DoublePFBTagDeepCSV_2p2
- Mu15_IsoVVVL_PFHT450_CaloBTagCSV_4p5





Number of events



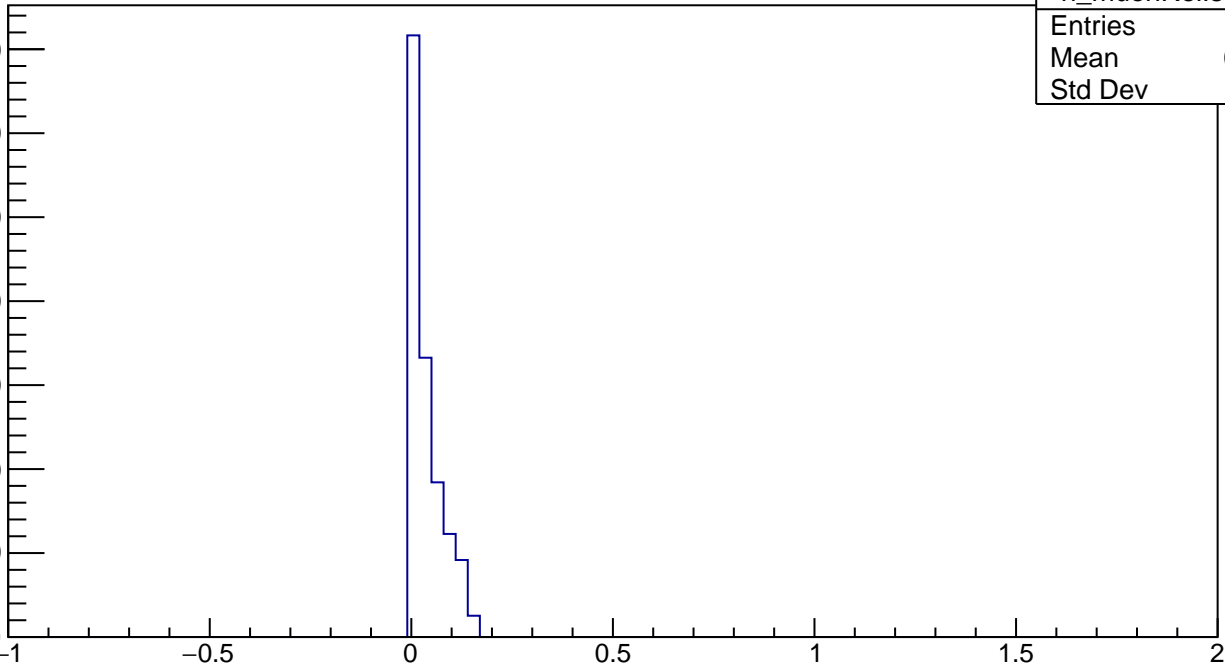
Number of Events

70000
60000
50000
40000
30000
20000
10000
0

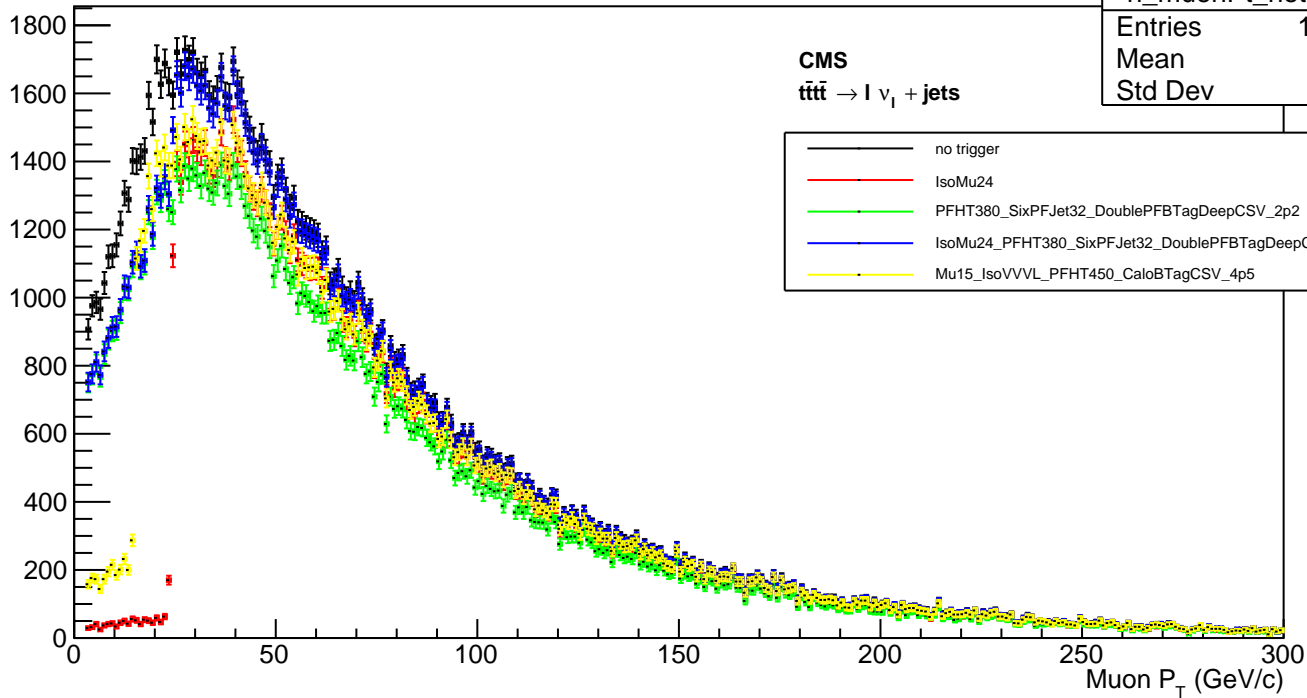
-1 -0.5 0 0.5 1 1.5 2

muonRelIso04_all

| h_muonRelIso04_all | |
|--------------------|---------|
| Entries | 147319 |
| Mean | 0.03618 |
| Std Dev | 0.03983 |

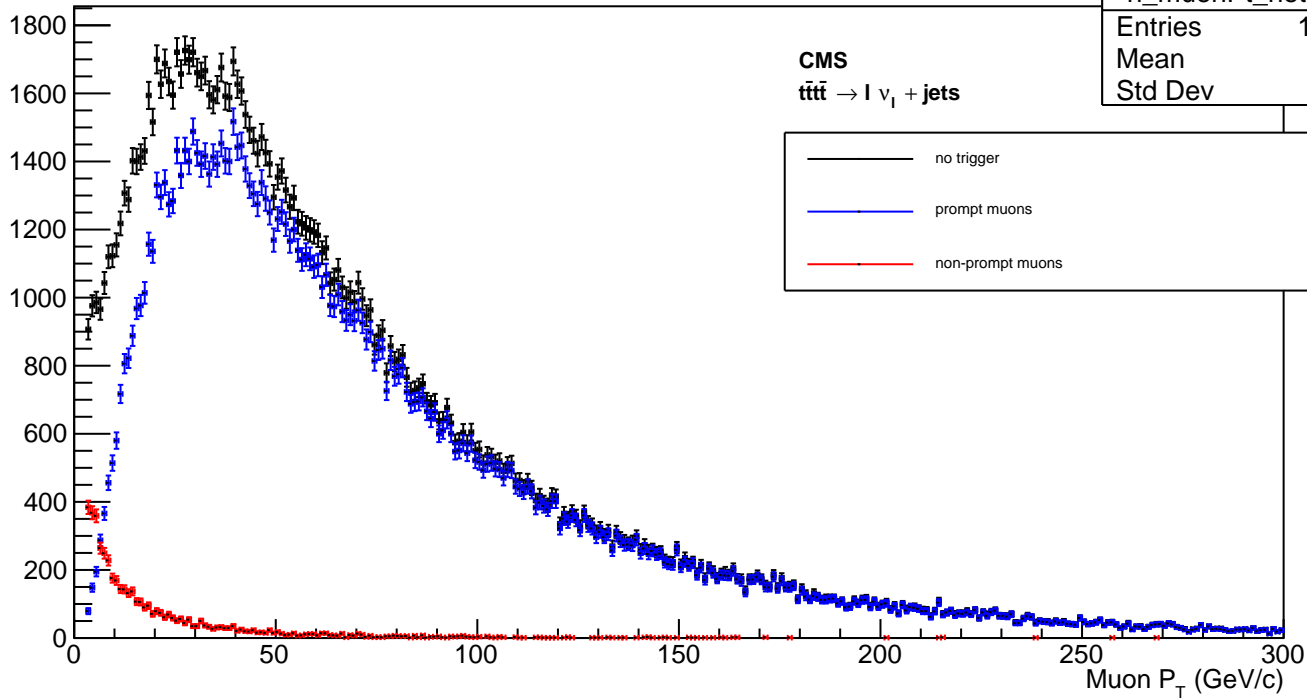


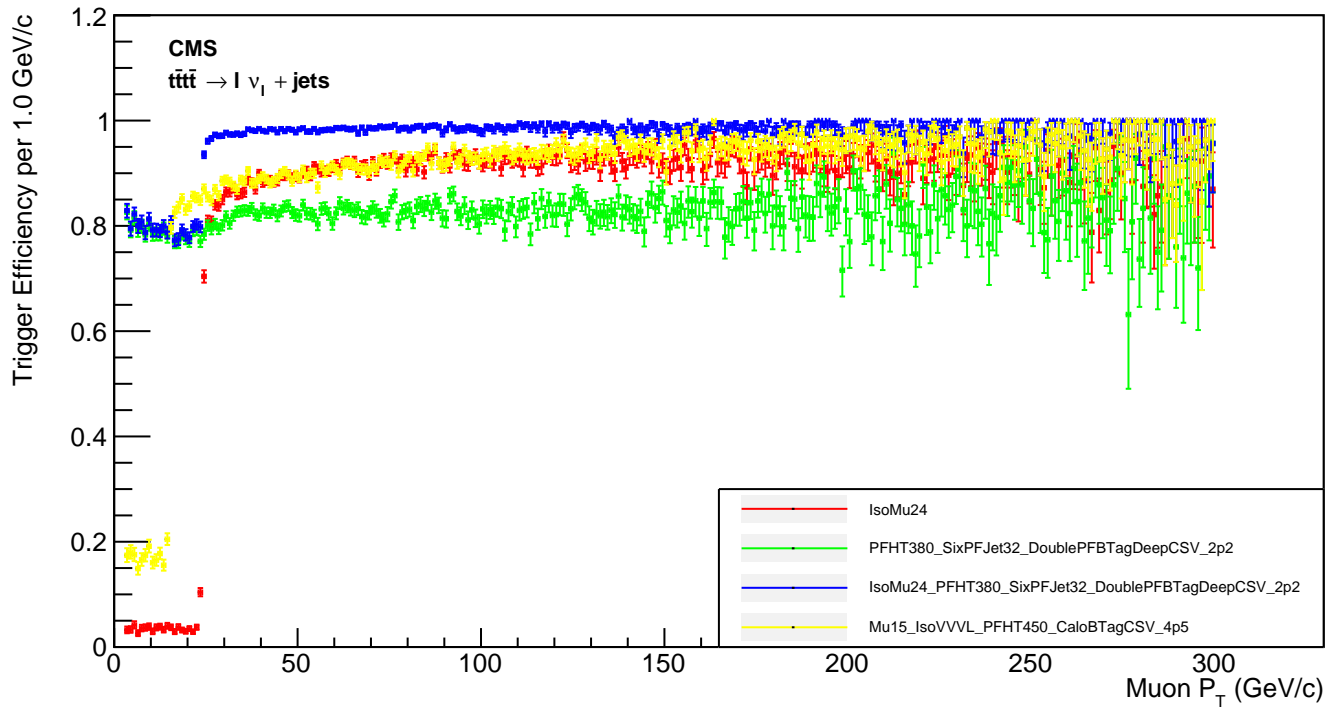
Number of Events per 1 GeV/c



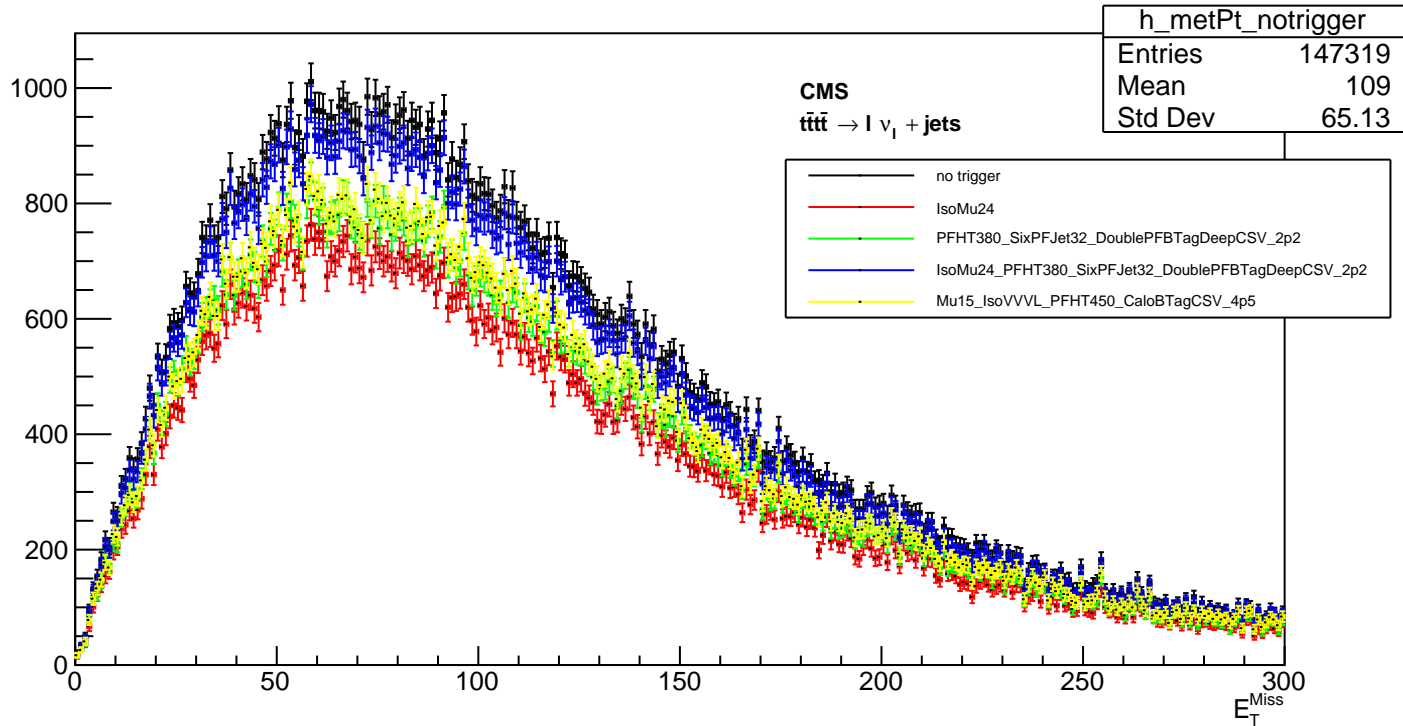
| h_muonPt_notrigger | |
|--------------------|--------|
| Entries | 147319 |
| Mean | 68.13 |
| Std Dev | 53.75 |

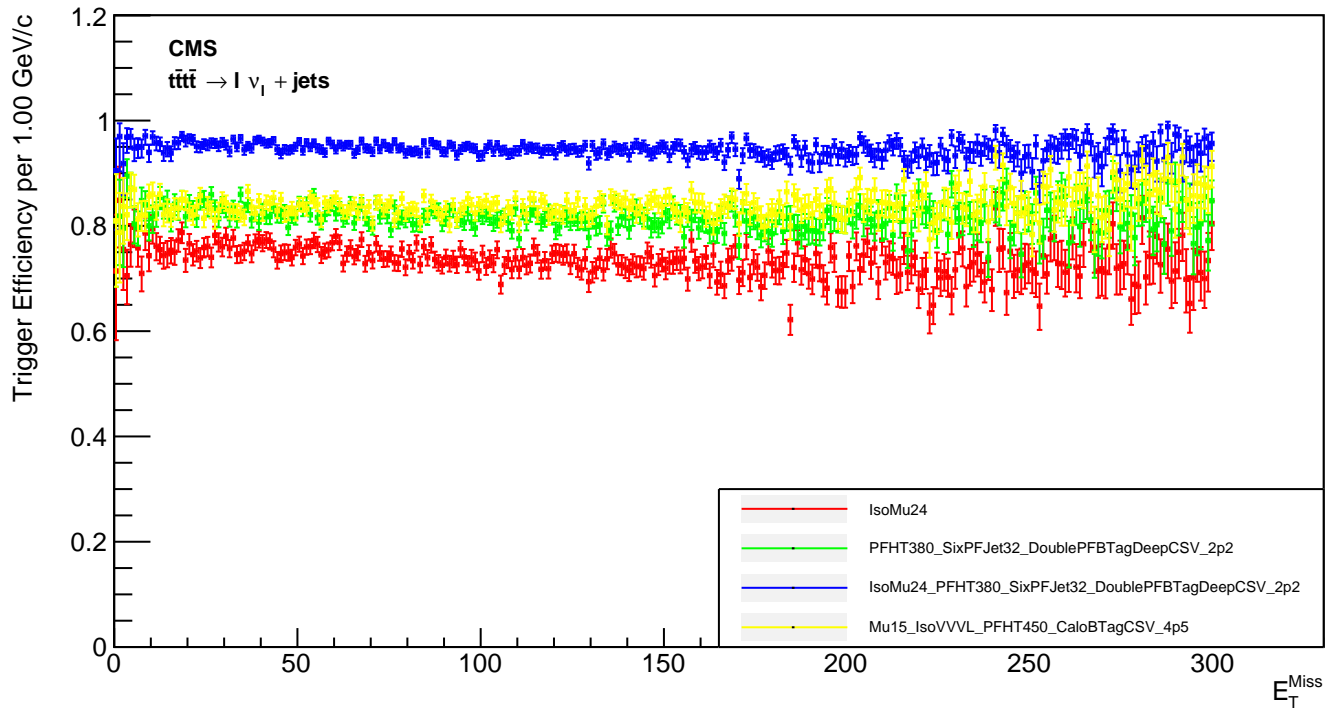
Number of Events per 1 GeV/c



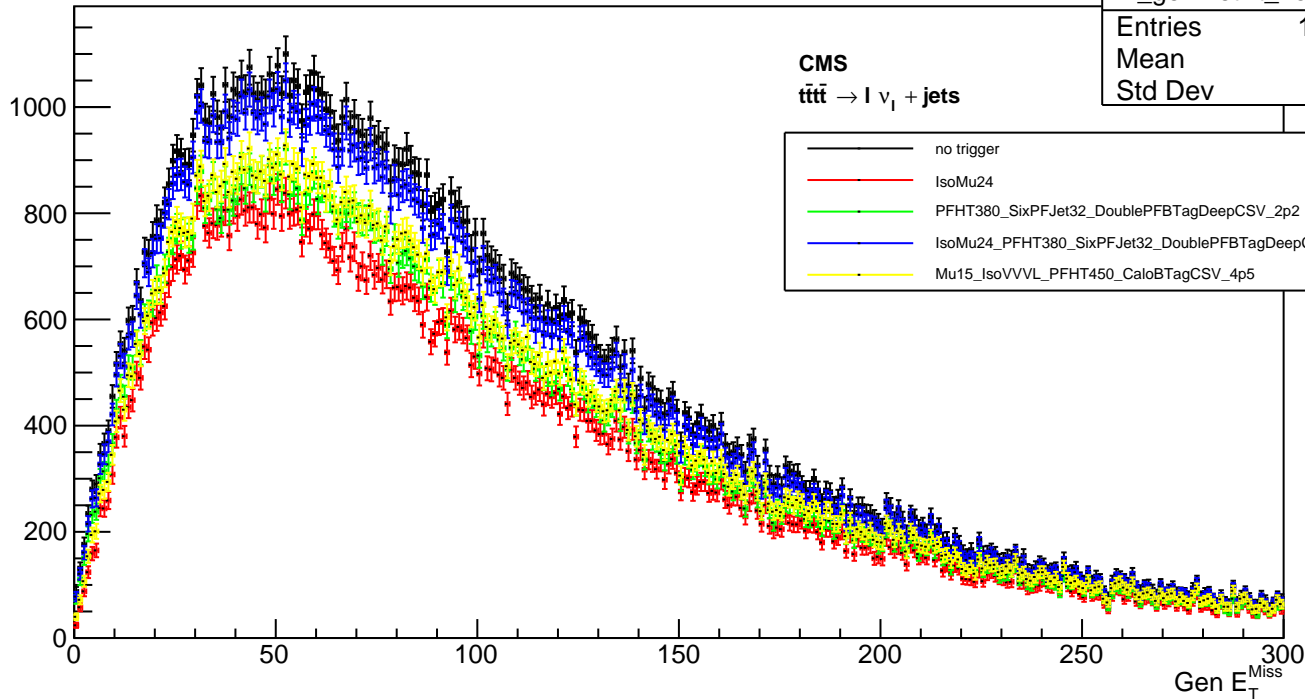


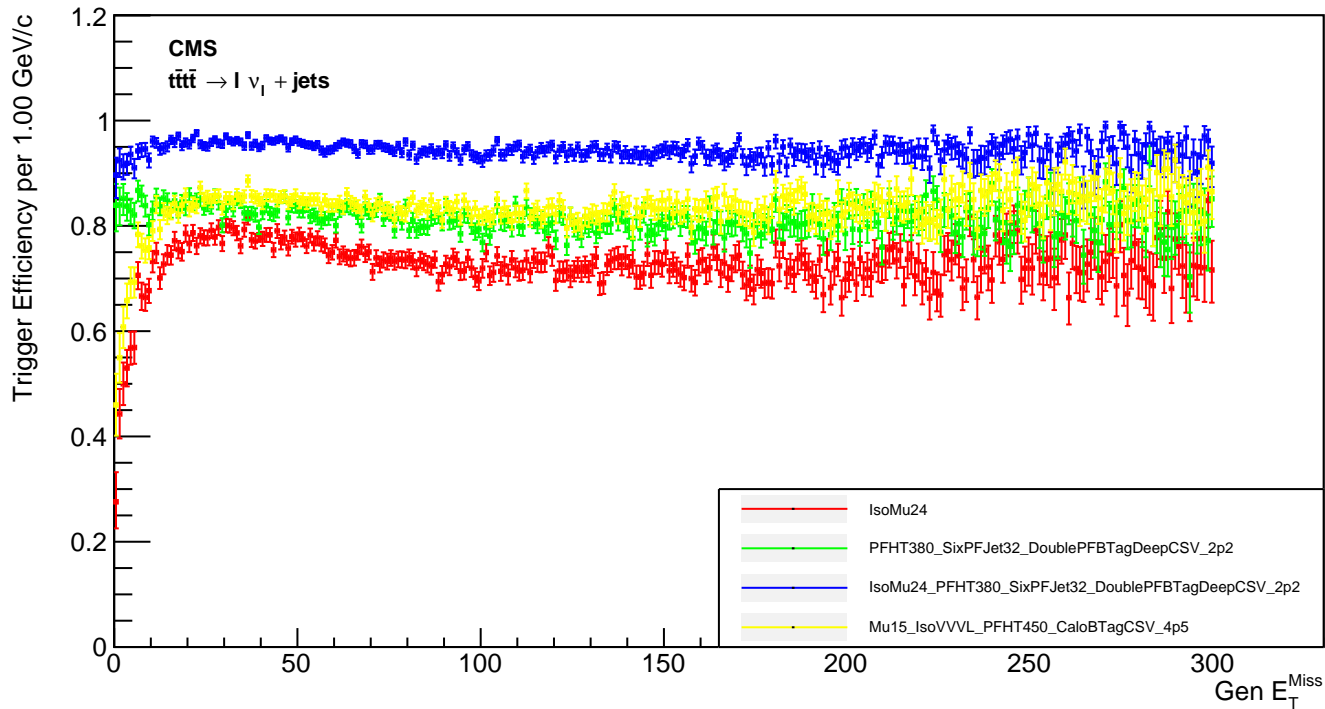
Number of Events per 1 GeV/c



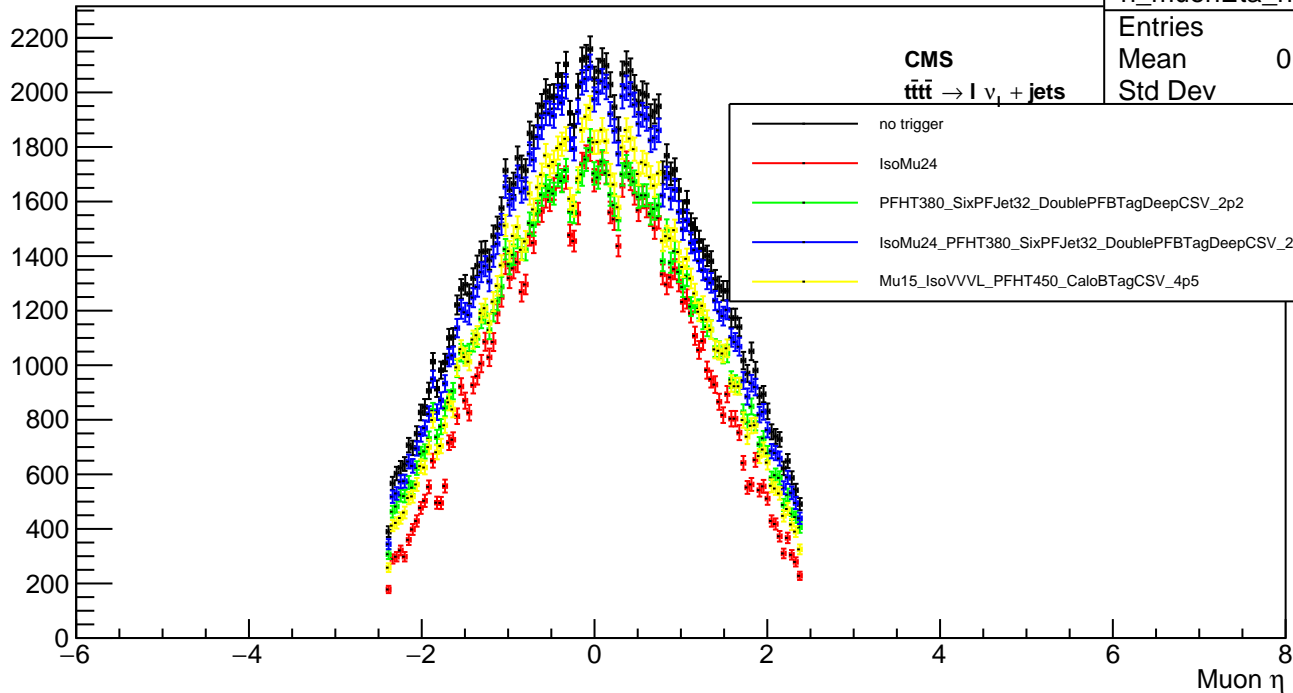


Number of Events per 1GeV/c





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



CMS

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

h_muonEta_notrigger

Entries 147319

Mean 0.002562

Std Dev 1.15

no trigger

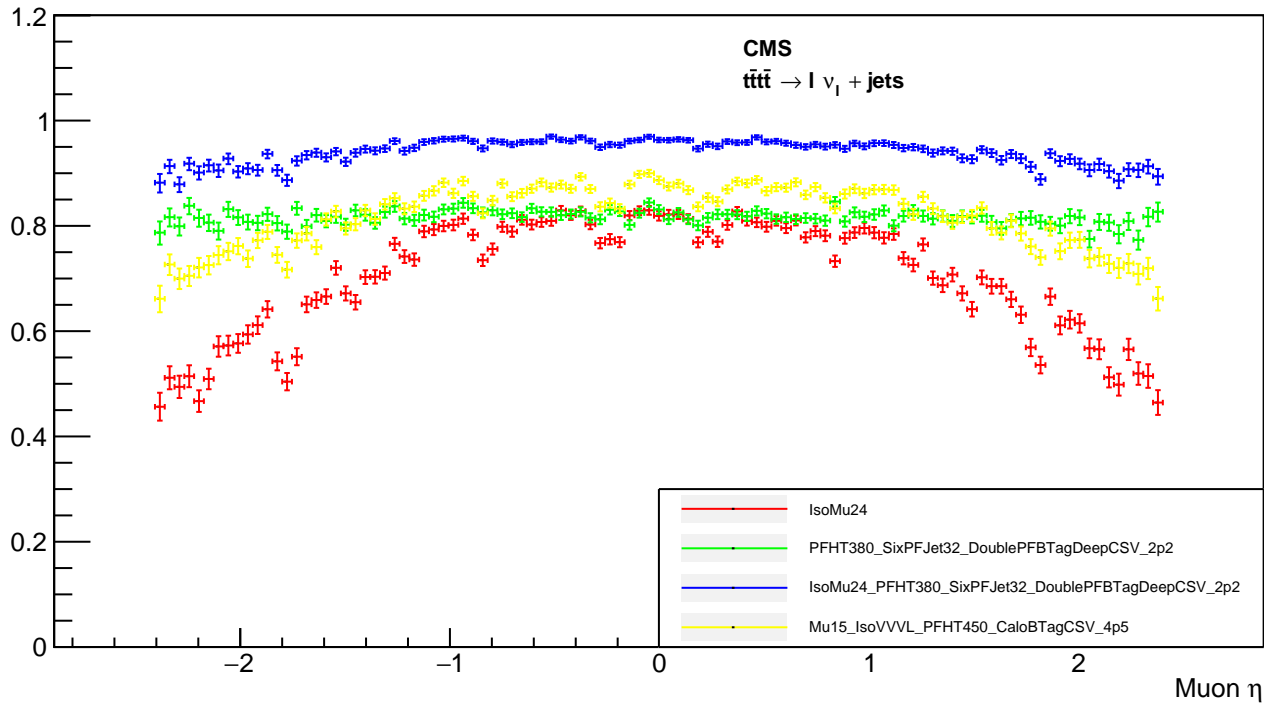
IsoMu24

PFHT380_SixPFJet32_DoublePFBTagDeepCSV_2p2

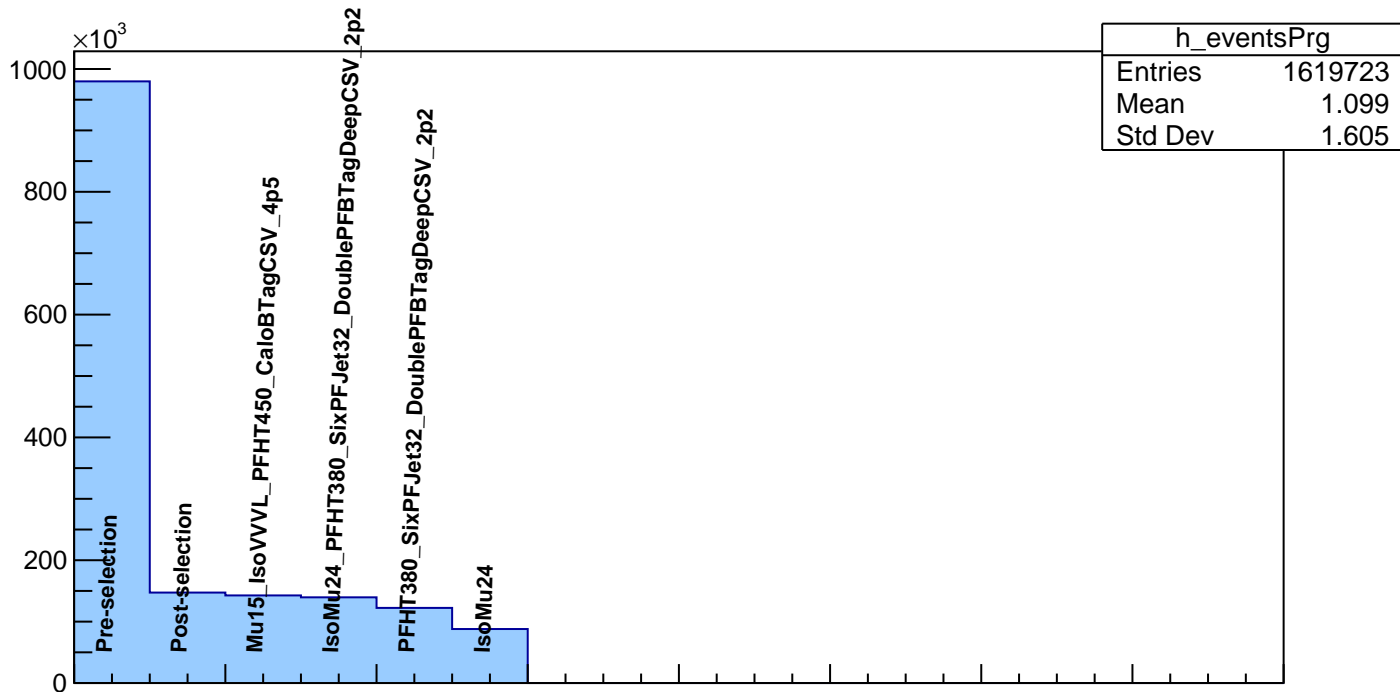
IsoMu24_PFHT380_SixPFJet32_DoublePFBTagDeepCSV_2p2

Mu15_IsoVVVL_PFHT450_CaloBTagCSV_4p5

Trigger Efficiency per 0.04666666666667 GeV/c



Total Number of Accepted Events



Cuts and Triggers