

50 GeV (40%)

Gen ctau 1mm: 120683(c1:95841(79.42%[79.42%]),c2:3680(3.05%[3.84%]),c3:2610(2.16%[70.92%]),c4:1150(0.95%[44.06%]))

Reco ctau 1mm: 120683(c1:77197(63.97%[63.97%]),c2:3149(2.61%[4.08%]),c3:2277(1.89%[72.31%]),c4:816(0.68%[35.84%]))

Gen ctau 10mm: 134299(c1:107480(80.03%[80.03%]),c2:4760(3.54%[4.43%]),c3:3369(2.51%[70.78%]),c4:1463(1.09%[43.43%]))

Reco ctau 10mm: 134299(c1:87266(64.98%[64.98%]),c2:4110(3.06%[4.71%]),c3:3024(2.25%[73.58%]),c4:1105(0.82%[36.54%]))

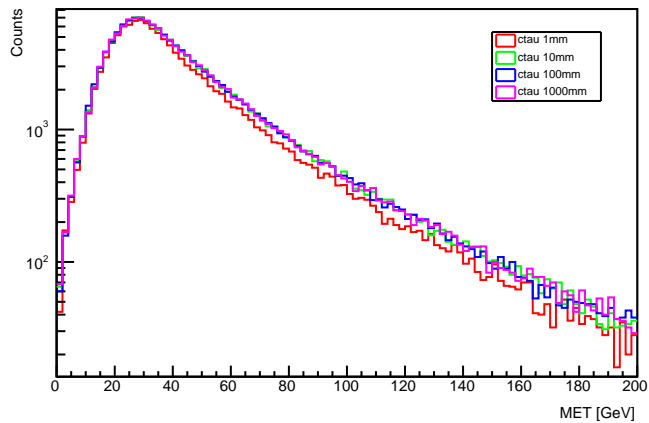
Gen ctau 100mm: 134709(c1:108084(80.24%[80.24%]),c2:4734(3.51%[4.38%]),c3:3353(2.49%[70.83%]),c4:1437(1.07%[42.86%]))

Reco ctau 100mm: 134709(c1:87779(65.16%[65.16%]),c2:4222(3.13%[4.81%]),c3:3054(2.27%[72.34%]),c4:1075(0.80%[35.20%]))

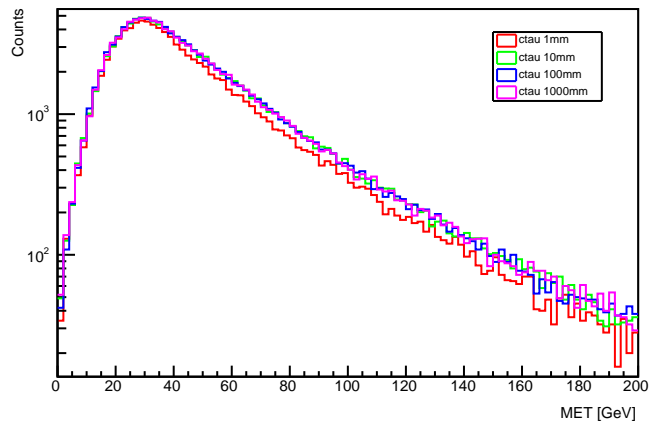
Gen ctau 1000mm: 134531(c1:107567(79.96%[79.96%]),c2:4791(3.56%[4.45%]),c3:3387(2.52%[70.70%]),c4:1326(0.99%[39.15%]))

Reco ctau 1000mm: 134531(c1:87546(65.07%[65.07%]),c2:4994(3.71%[5.70%]),c3:3415(2.54%[68.38%]),c4:1062(0.79%[31.10%]))

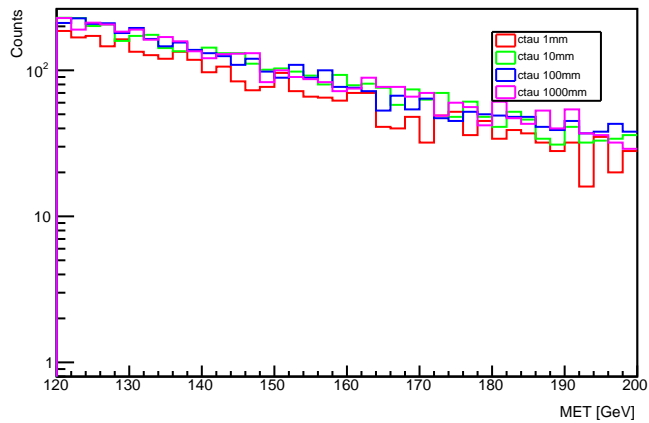
gen leading MET: no cuts



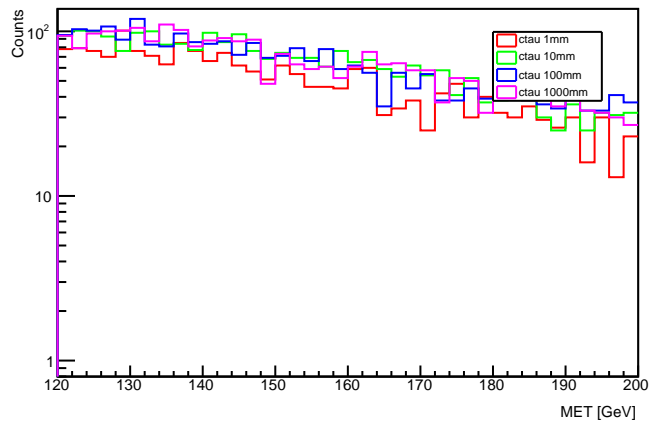
gen leading MET: n_jet >= 1, j1pt > 30 GeV



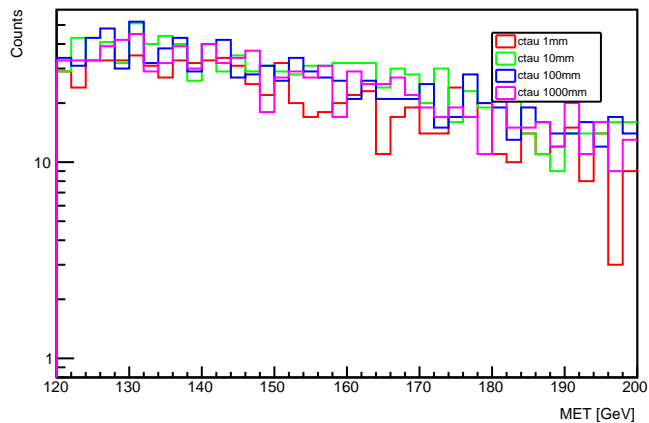
gen leading MET: MET > 120 GeV



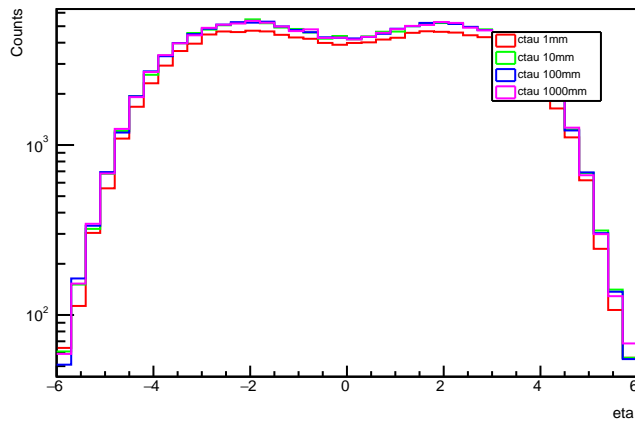
gen leading MET: j1pt > 120, at most 2 jets w/ pt > 30 GeV



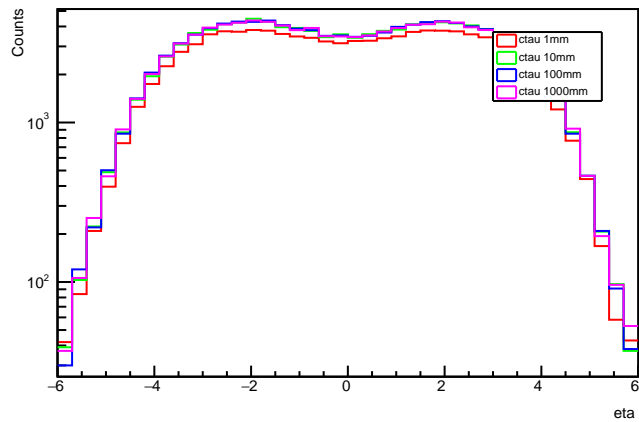
gen leading MET: at least 2 mu w/ vx < 740 cm, |vz| < 960 cm & |eta| < 2.4



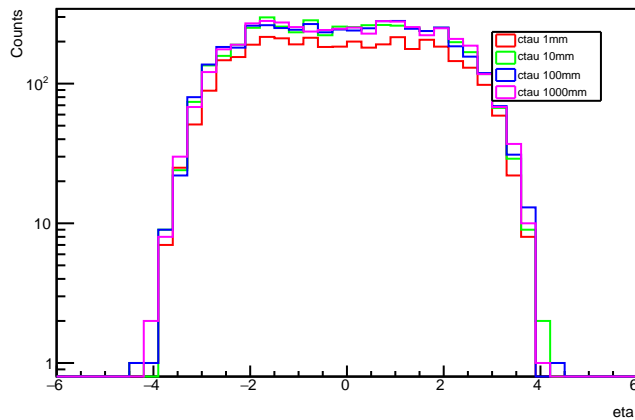
gen leading Met eta: no cuts



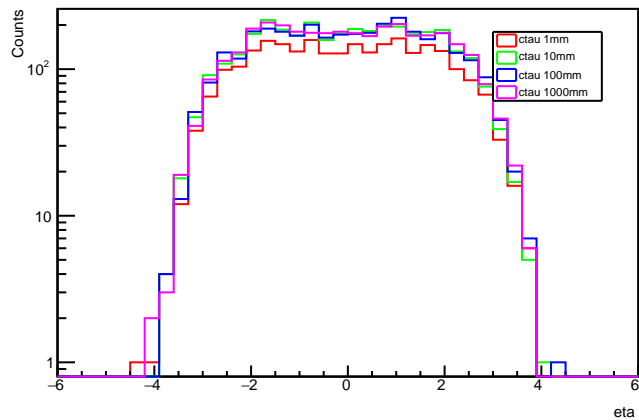
gen leading Met eta: n_jet >=1, j1pt > 30 GeV



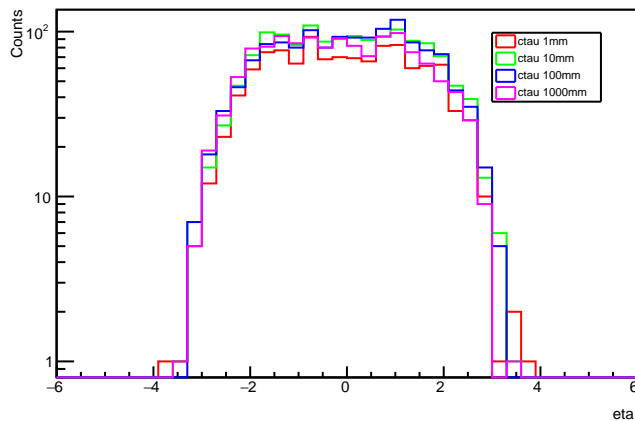
gen leading Met eta: MET > 120 GeV



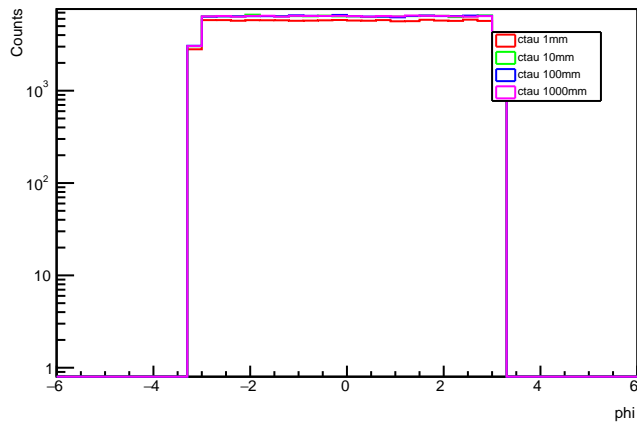
gen leading Met eta: j1pt >120, at most 2 jets w/ pt >30 GeV



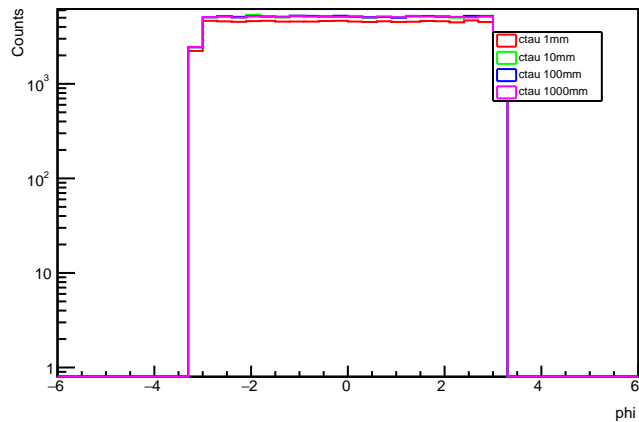
gen leading Met eta: at least 2 mu w/ vxz < 740 cm, |vz| < 960 cm & |eta| < 2.4



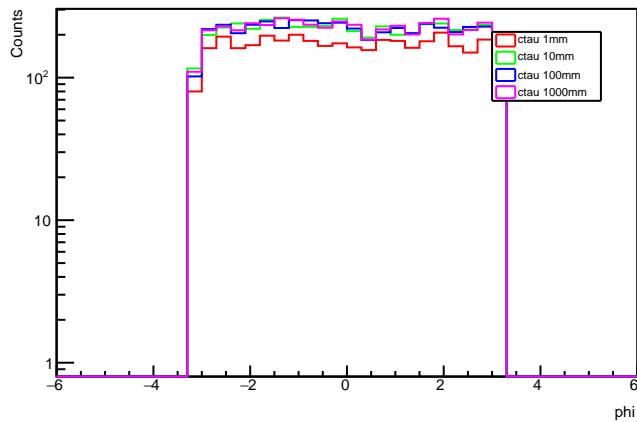
gen leading Met phi: no cuts



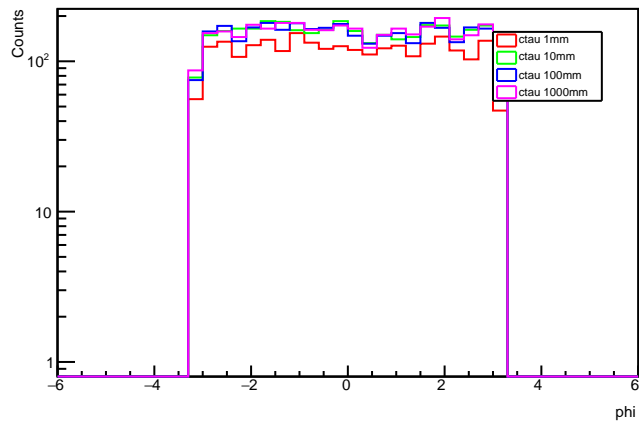
gen leading Met phi: n_jet >=1, j1pt > 30 GeV



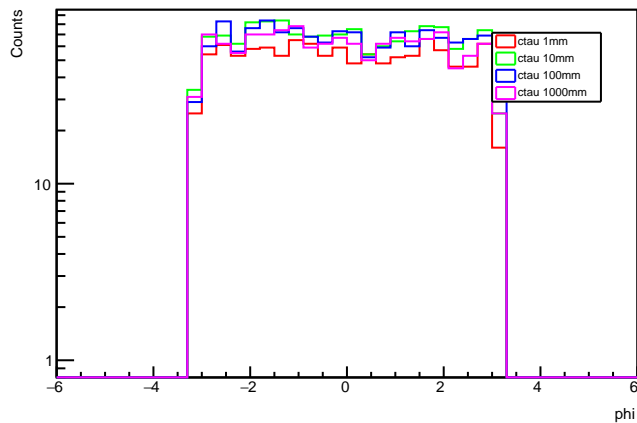
gen leading Met phi: MET > 120 GeV



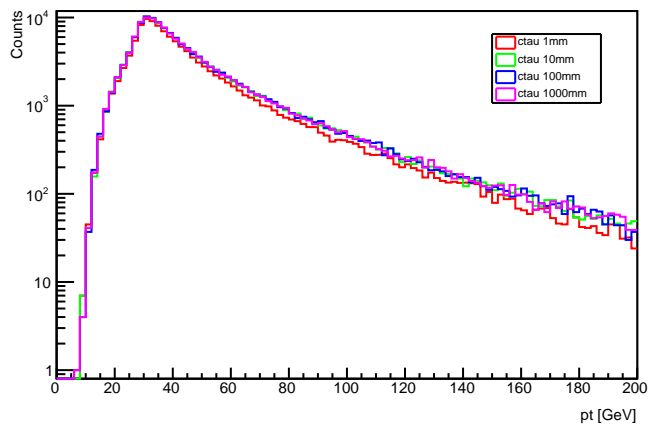
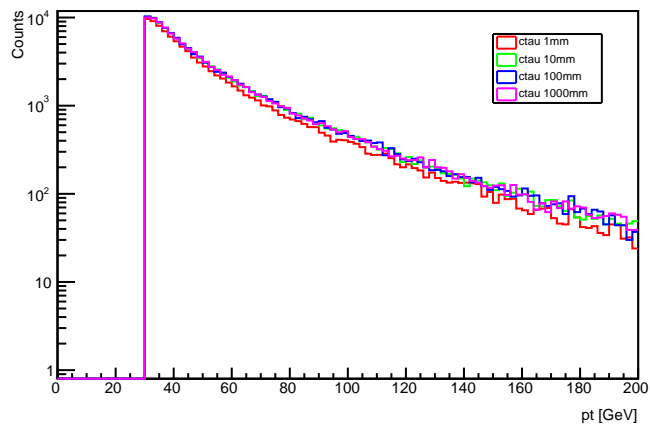
gen leading Met phi: j1pt >120, at most 2 jets w/ pt >30 GeV



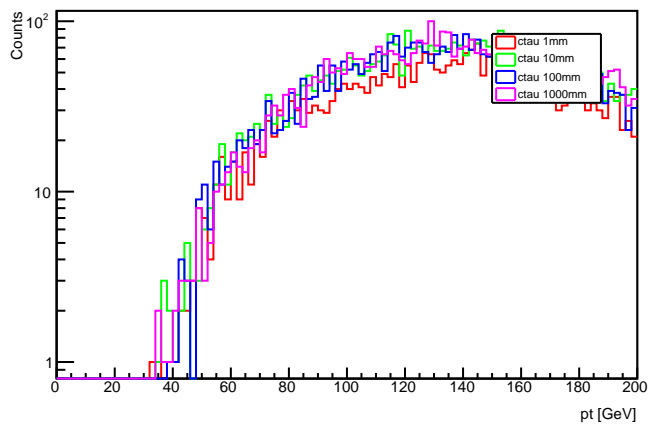
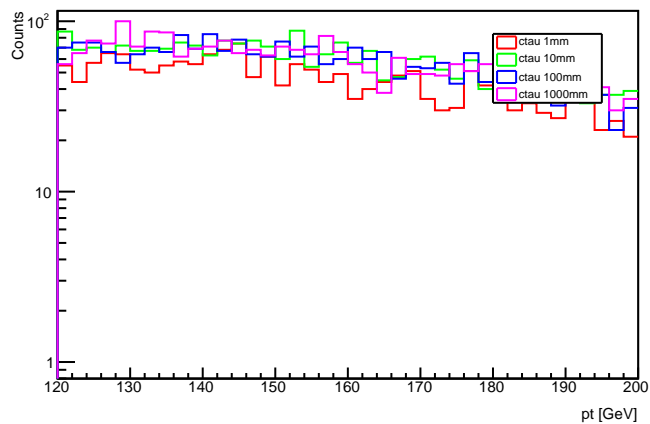
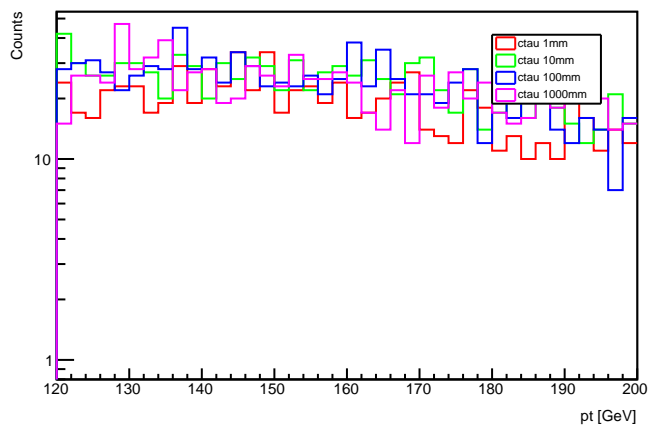
gen leading Met phi: at least 2 mu w/ vxy < 740 cm, |vz| < 960 cm & |eta| < 2.4



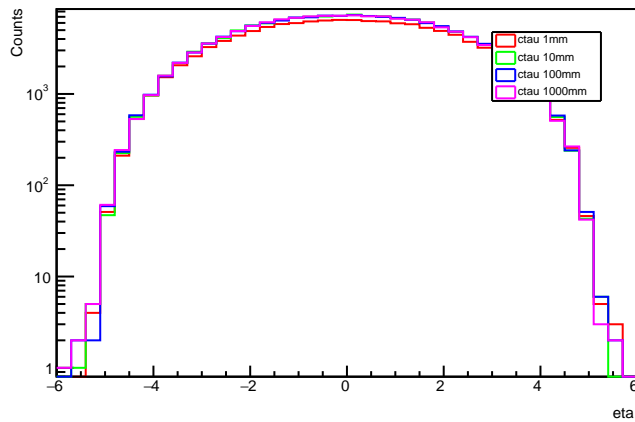
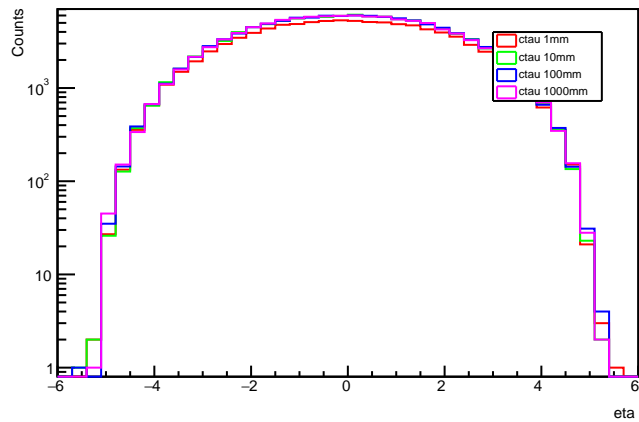
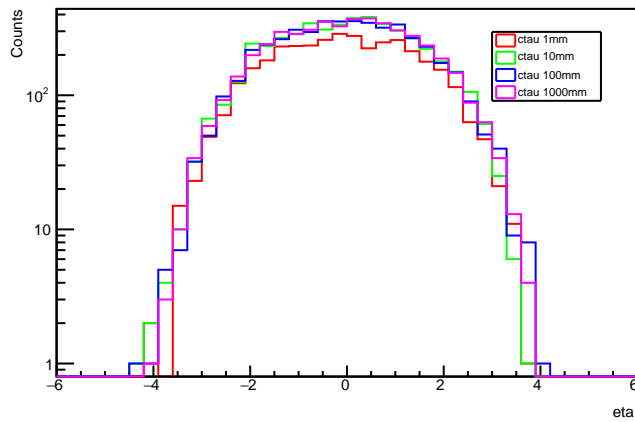
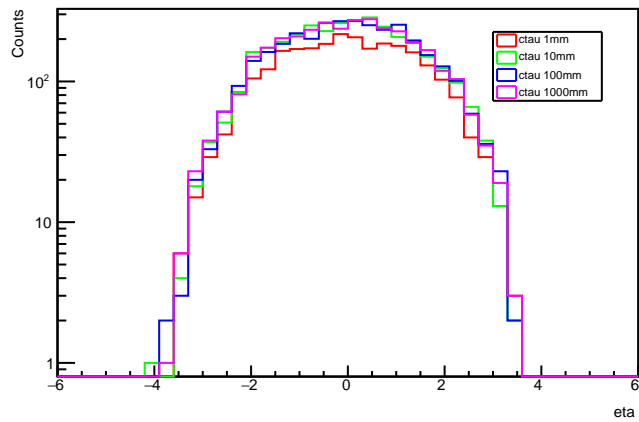
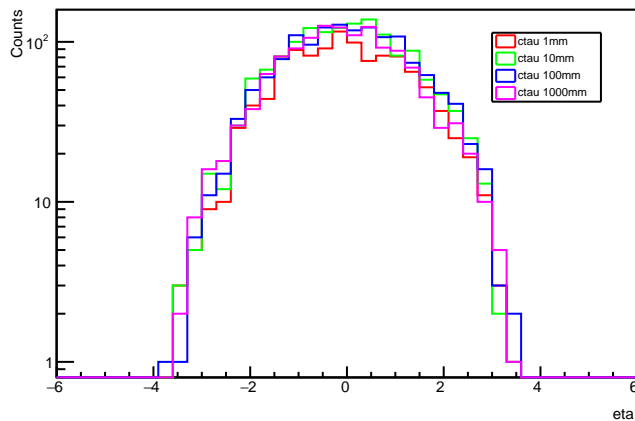
gen leading Jet pt: no cuts

gen leading Jet pt: $n_{\text{jet}} \geq 1$, $j1pt > 30$ GeV

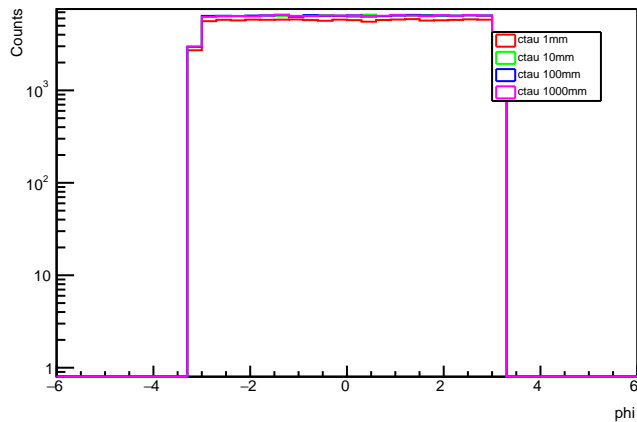
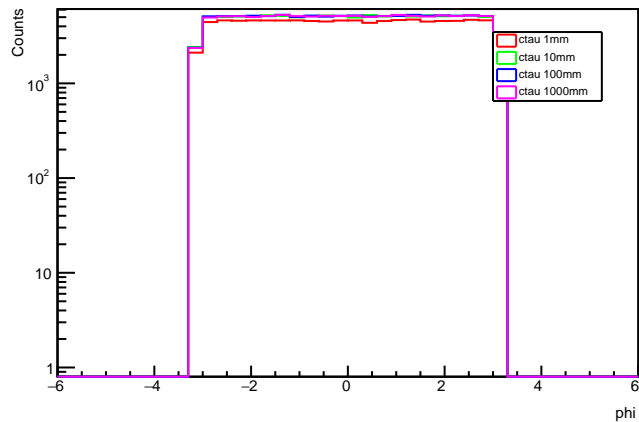
gen leading Jet pt: MET > 120 GeV

gen leading Jet pt: $j1pt > 120$, at most 2 jets w/ $pt > 30$ GeVgen leading Jet pt: at least 2 mu w/ $v_{xy} < 740$ cm, $|v_z| < 960$ cm & $|\eta| < 2.4$ 

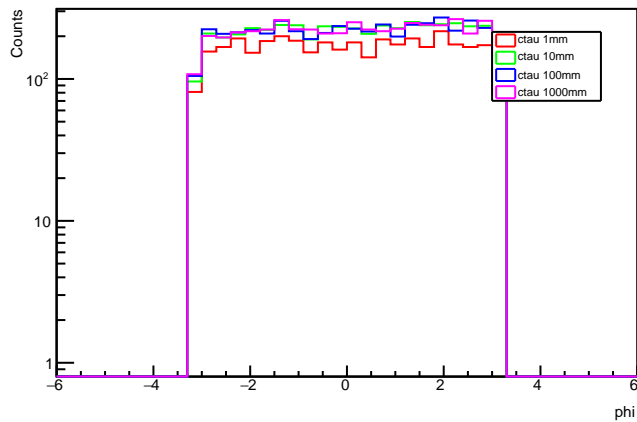
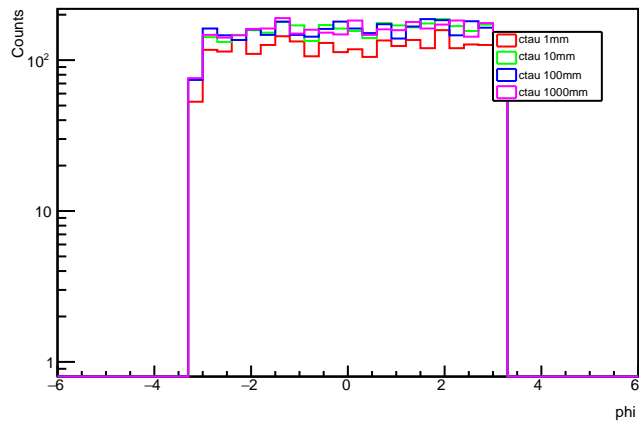
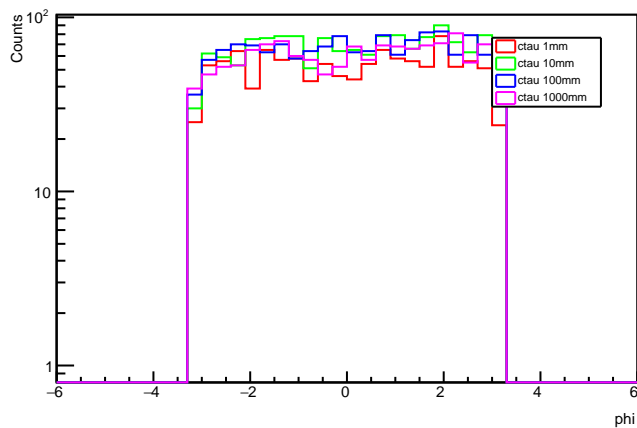
gen leading Jet eta: no cuts

gen leading Jet eta: $n_{\text{jet}} \geq 1$, $j1_{\text{pt}} > 30 \text{ GeV}$ gen leading Jet eta: $\text{MET} > 120 \text{ GeV}$ gen leading Jet eta: $j1_{\text{pt}} > 120$, at most 2 jets w/ $p_{\text{T}} > 30 \text{ GeV}$ gen leading Jet eta: at least 2 mu w/ $v_{xy} < 740 \text{ cm}$, $|v_z| < 960 \text{ cm}$ & $|\text{eta}| < 2.4$ 

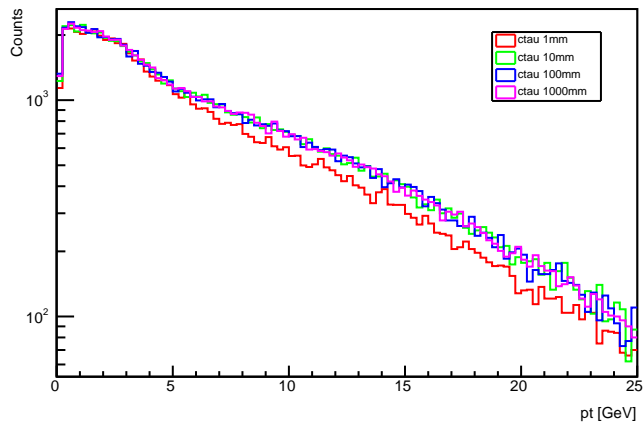
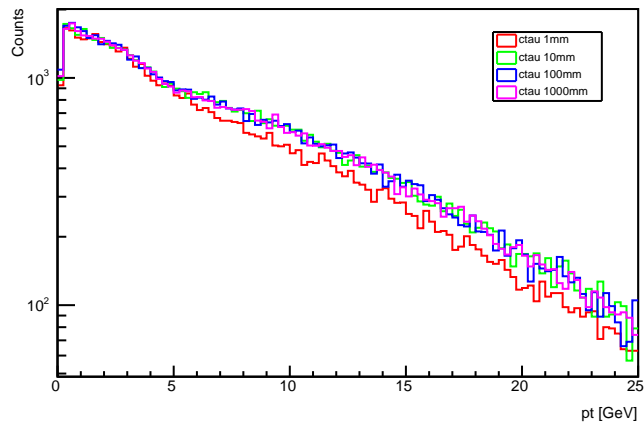
gen leading Jet phi: no cuts

gen leading Jet phi: $n_{\text{jet}} \geq 1$, $j_{1pt} > 30$ GeV

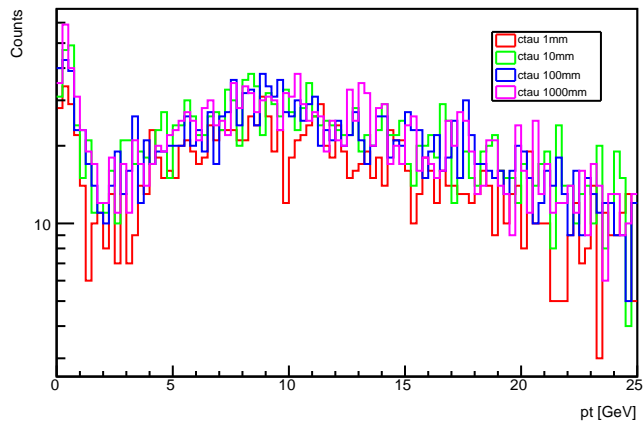
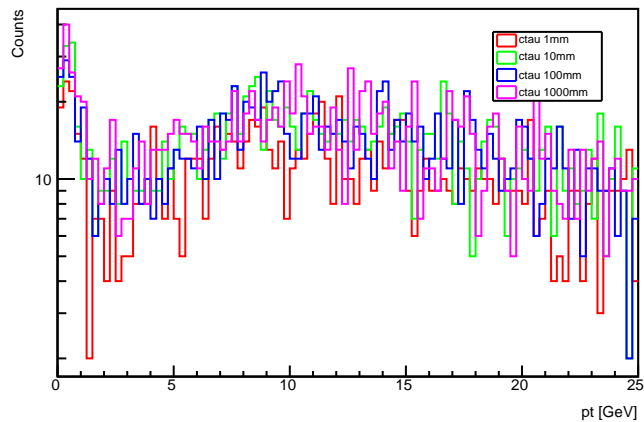
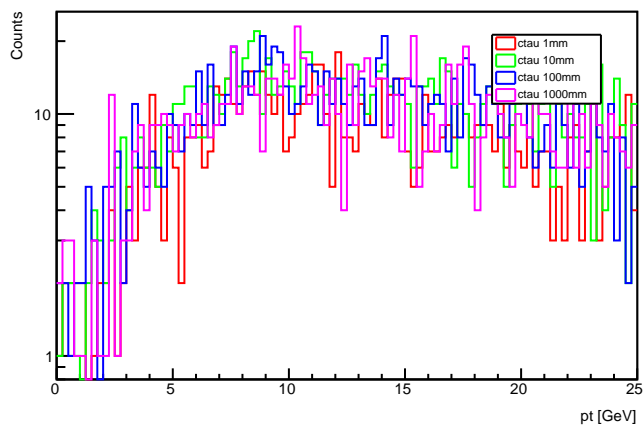
gen leading Jet phi: MET > 120 GeV

gen leading Jet phi: $j_{1pt} > 120$, at most 2 jets w/ $p_T > 30$ GeVgen leading Jet phi: at least 2 mu w/ $v_{xy} < 740$ cm, $|v_z| < 960$ cm & $|\eta| < 2.4$ 

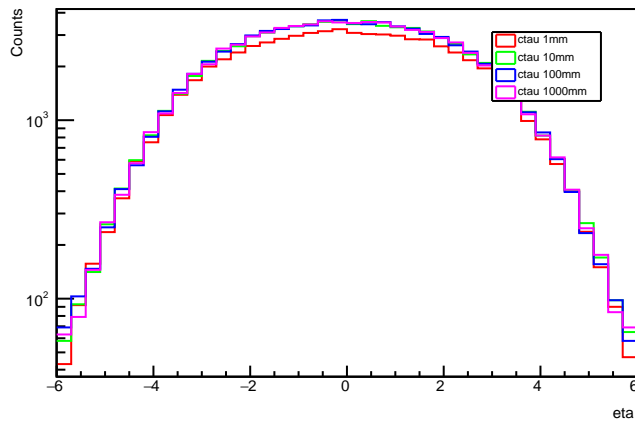
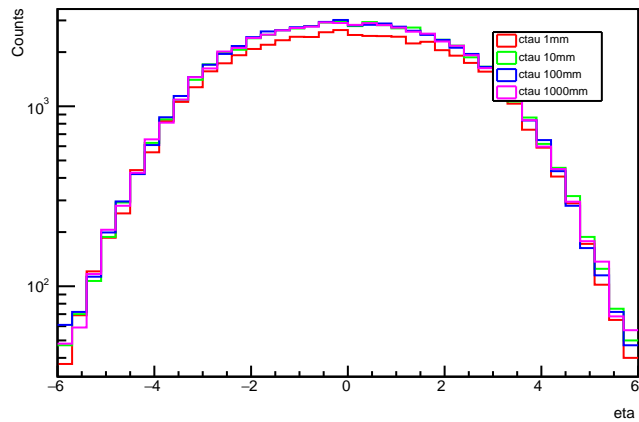
gen leading Mu pt: no cuts

gen leading Mu pt: $n_{\text{jet}} \geq 1$, $j1pt > 30$ GeV

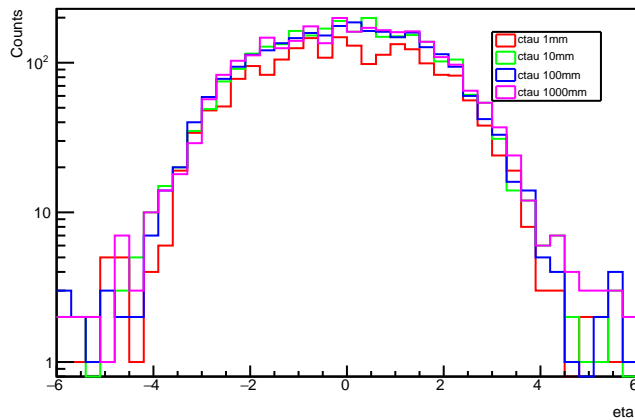
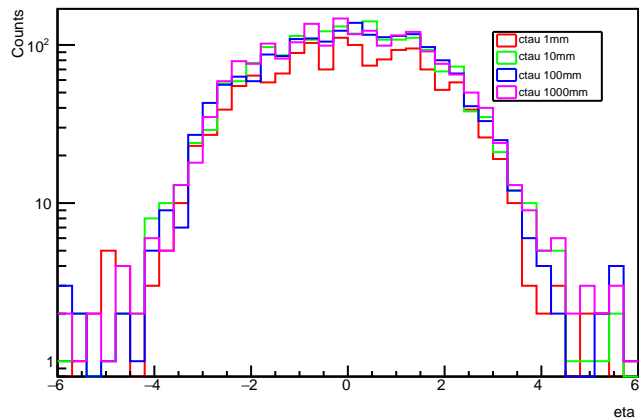
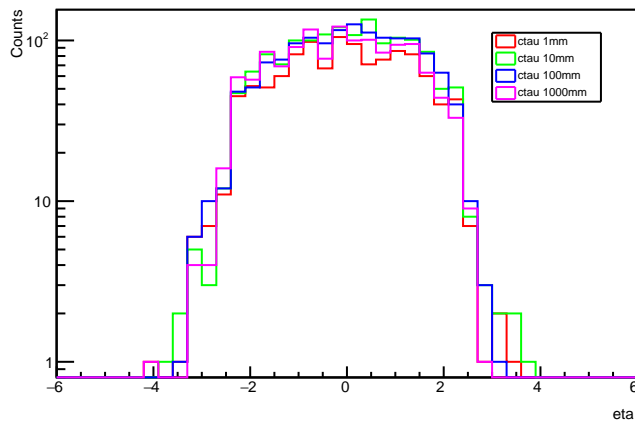
gen leading Mu pt: MET > 120 GeV

gen leading Mu pt: $j1pt > 120$, at most 2 jets w/ $pt > 30$ GeVgen leading Mu pt: at least 2 mu w/ $v_{xy} < 740$ cm, $|v_z| < 960$ cm & $|\eta_{\text{jet}}| < 2.4$ 

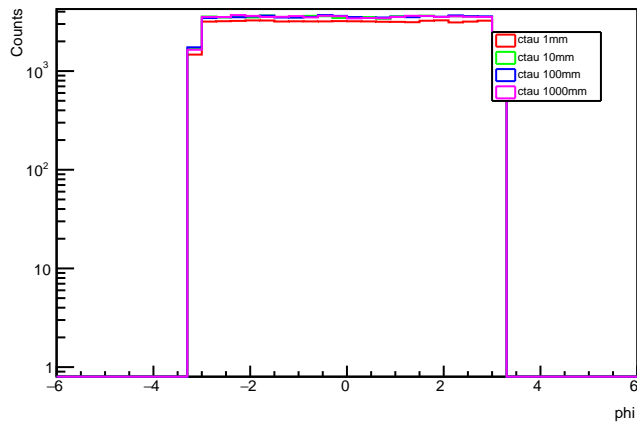
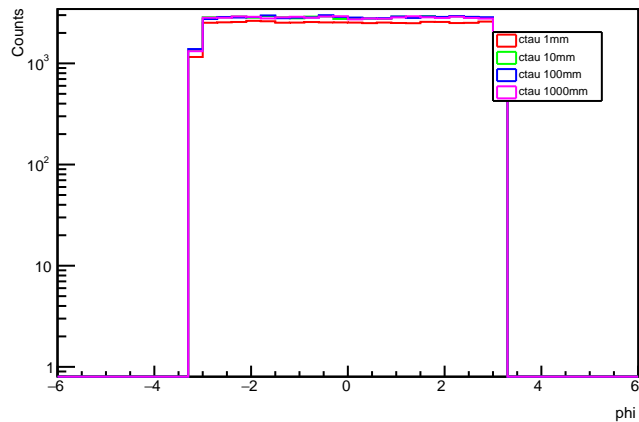
gen leading Mu eta: no cuts

gen leading Mu eta: $n_{\text{jet}} \geq 1$, $j_{1\text{pt}} > 30$ GeV

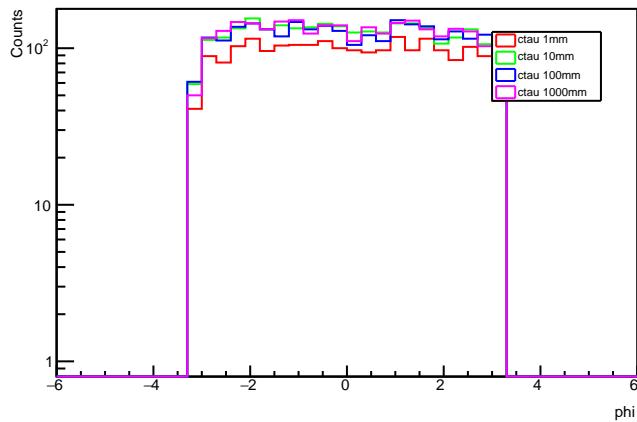
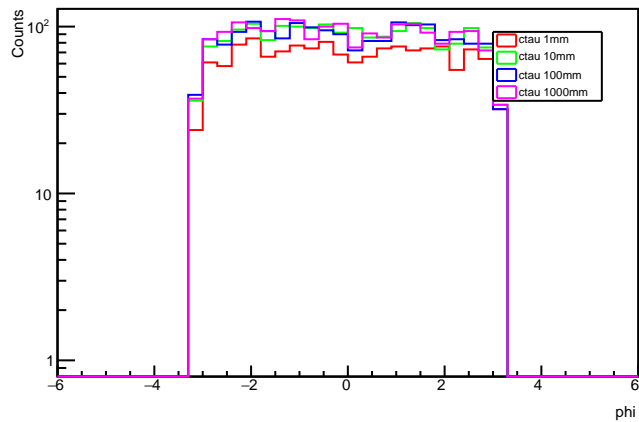
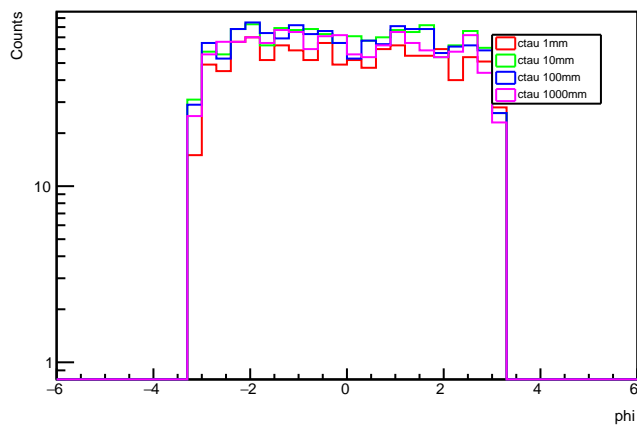
gen leading Mu eta: MET > 120 GeV

gen leading Mu eta: $j_{1\text{pt}} > 120$, at most 2 jets w/ $p_T > 30$ GeVgen leading Mu eta: at least 2 mu w/ $v_{xy} < 740$ cm, $|v_z| < 960$ cm & $|\eta| < 2.4$ 

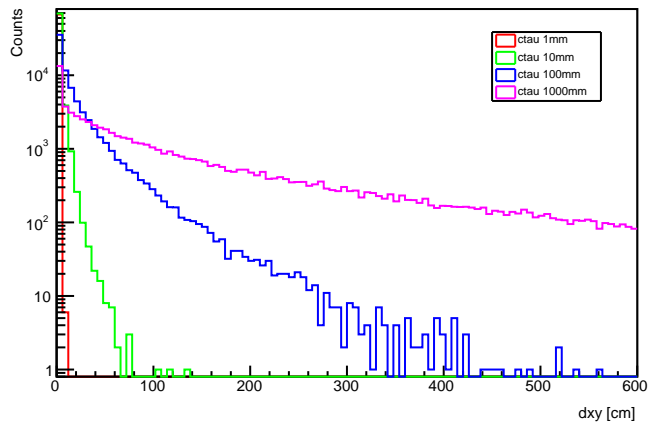
gen leading Mu phi: no cuts

gen leading Mu phi: $n_{\text{jet}} \geq 1$, $j1pt > 30$ GeV

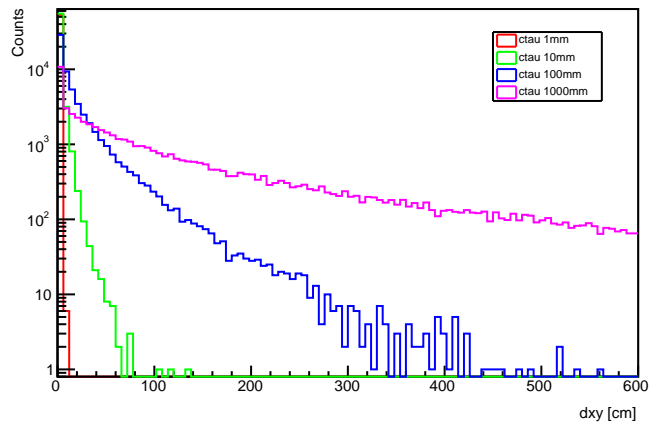
gen leading Mu phi: MET > 120 GeV

gen leading Mu phi: $j1pt > 120$, at most 2 jets w/ $p_T > 30$ GeVgen leading Mu phi: at least 2 mu w/ $v_{xy} < 740$ cm, $|v_z| < 960$ cm & $|\eta| < 2.4$ 

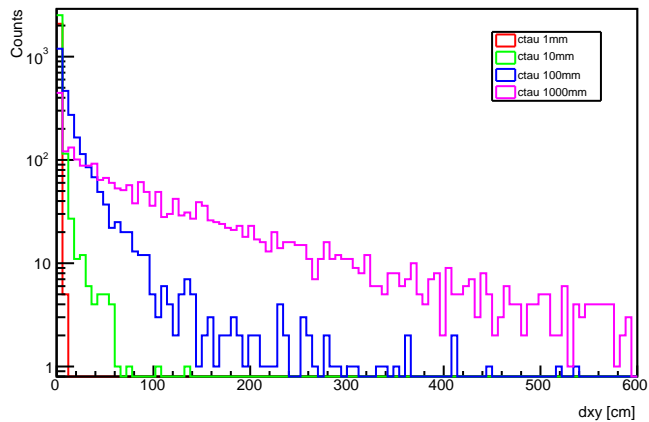
gen leading Mu vxy: no cuts



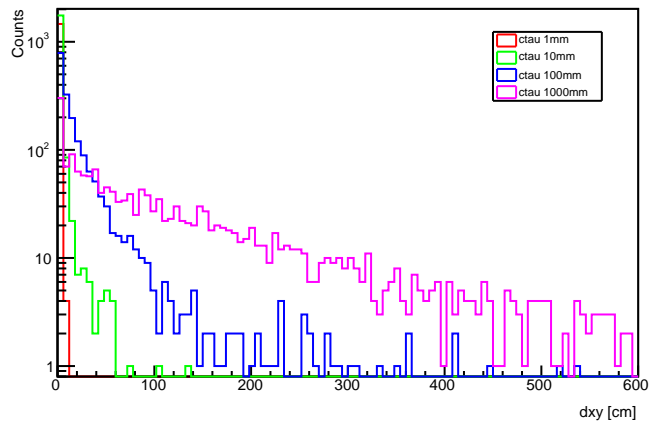
gen leading Mu vxy: n_jet >=1, j1pt > 30 GeV



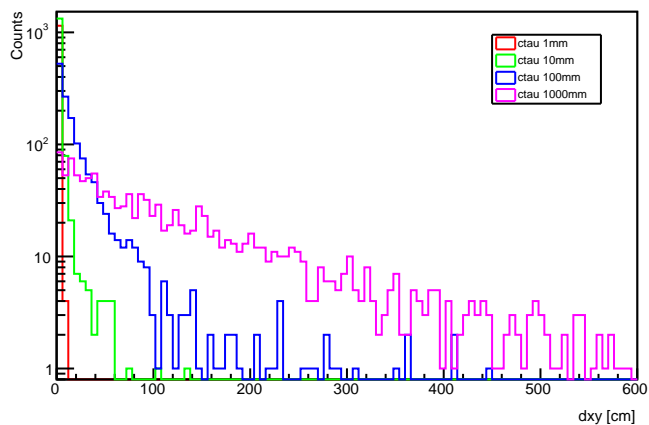
gen leading Mu vxy: MET > 120 GeV



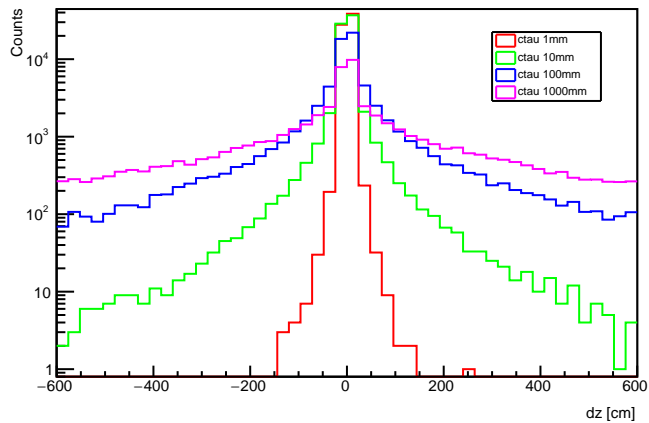
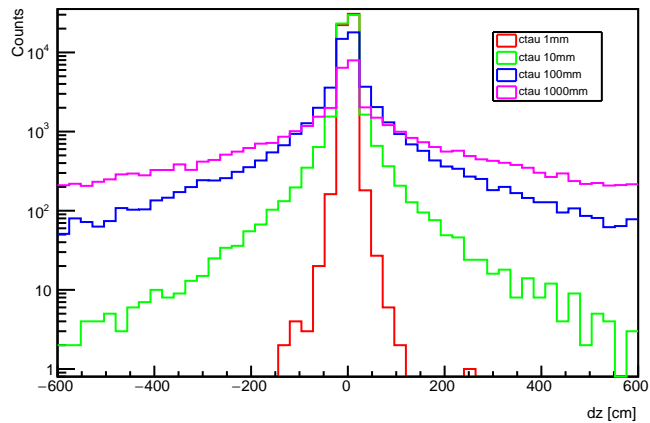
gen leading Mu vxy: j1pt >120, at most 2 jets w/ pt >30 GeV



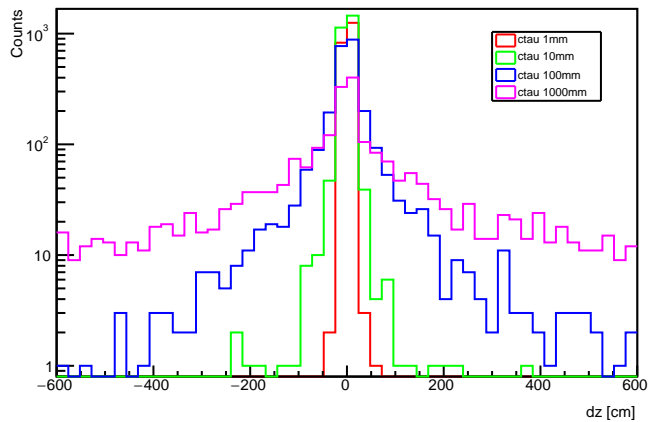
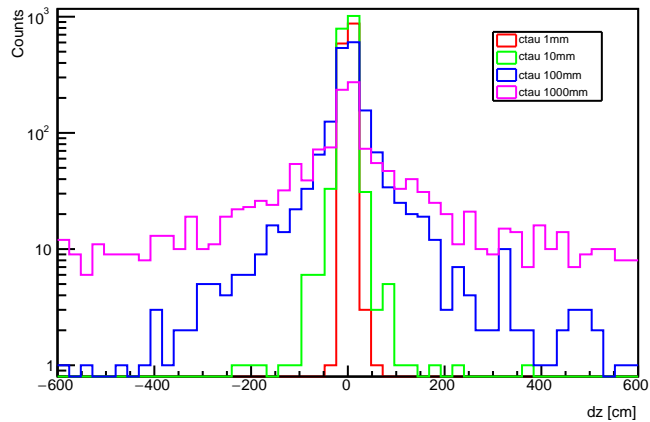
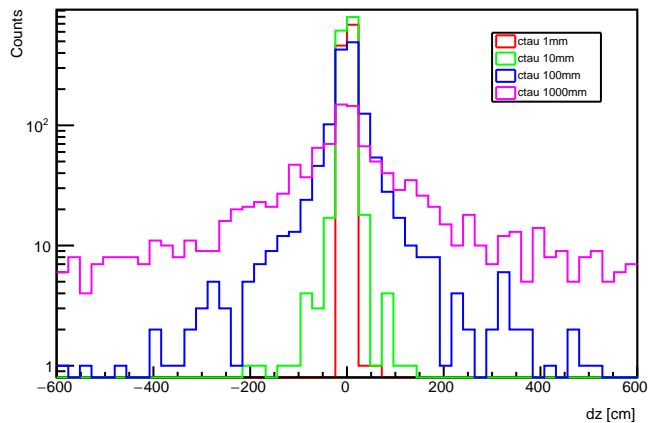
gen leading Mu vxy: at least 2 mu w/ vxy<740 cm, |vz|<960cm & |eta|<2.4



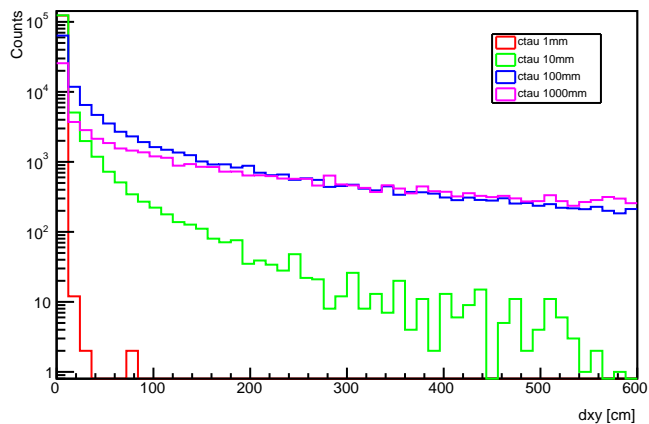
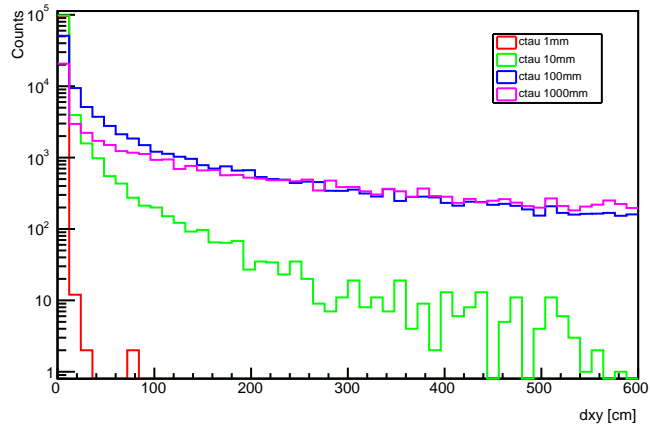
gen leading Mu vz: no cuts

gen leading Mu vz: $n_{\text{jet}} \geq 1$, $j1pt > 30$ GeV

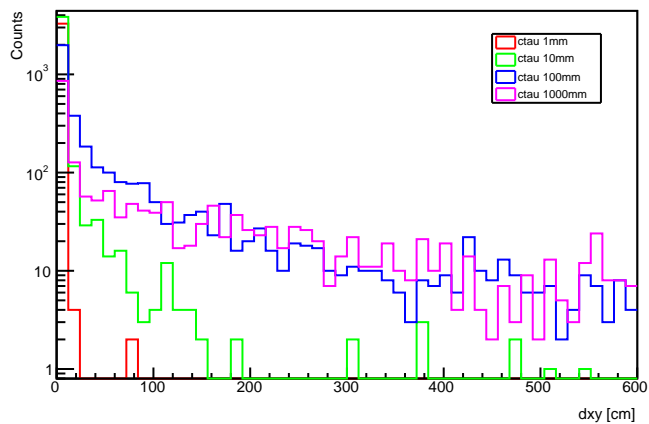
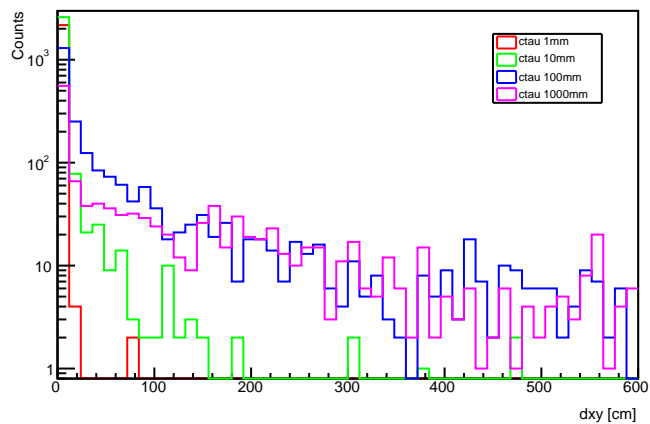
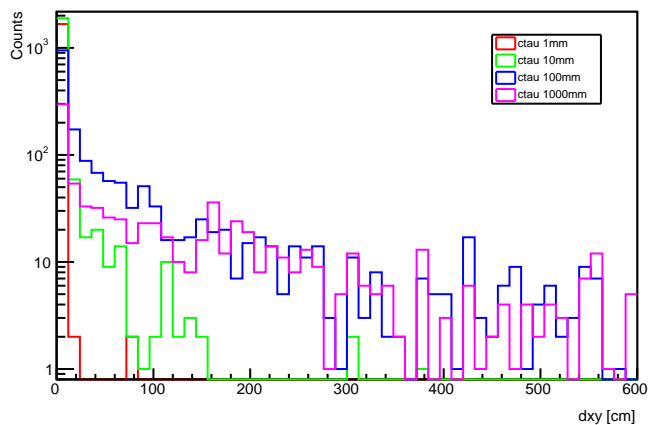
gen leading Mu vz: MET > 120 GeV

gen leading Mu vz: $j1pt > 120$, at most 2 jets w/ $pt > 30$ GeVgen leading Mu vz: at least 2 mu w/ $v_{xy} < 740$ cm, $|v_z| < 960$ cm & $|\eta_{\text{jet}}| < 2.4$ 

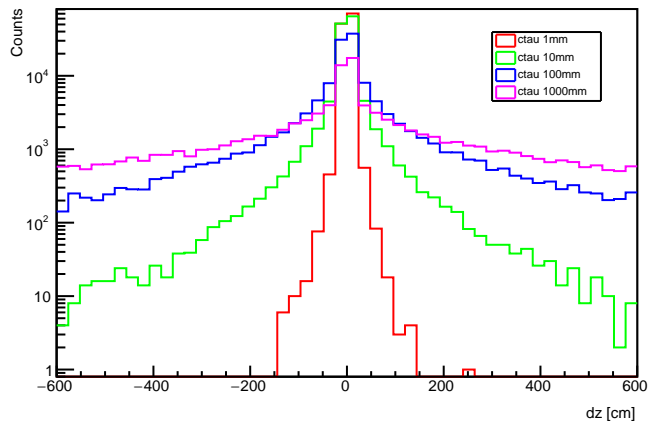
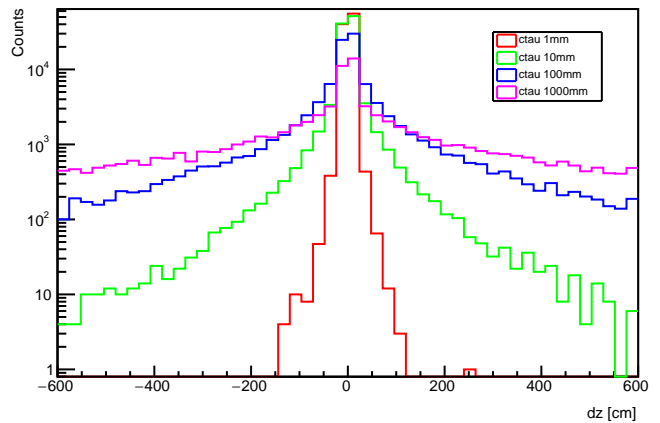
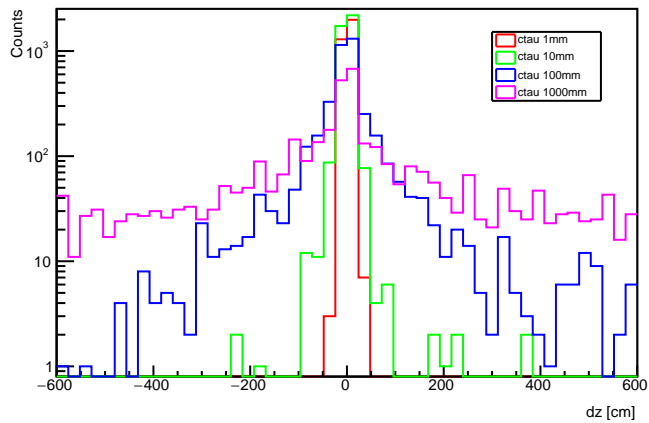
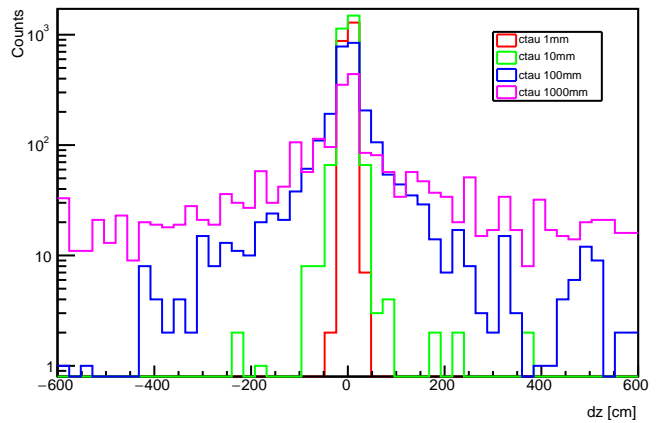
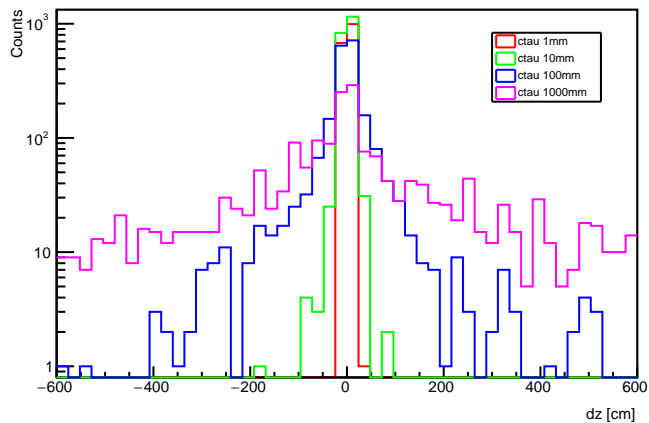
gen all Mu vxy: no cuts

gen all Mu vxy: $n_{\text{jet}} \geq 1$, $j_{1\text{pt}} > 30$ GeV

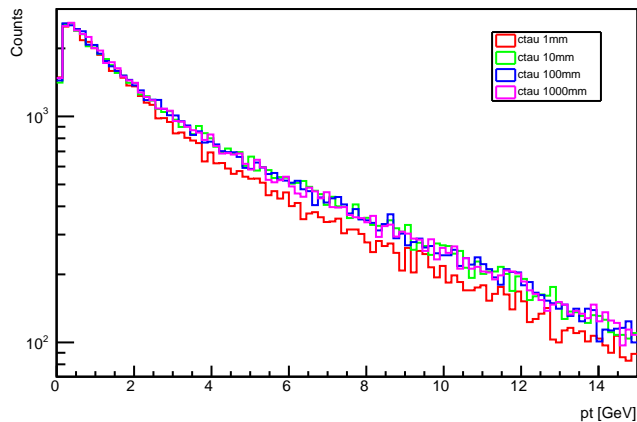
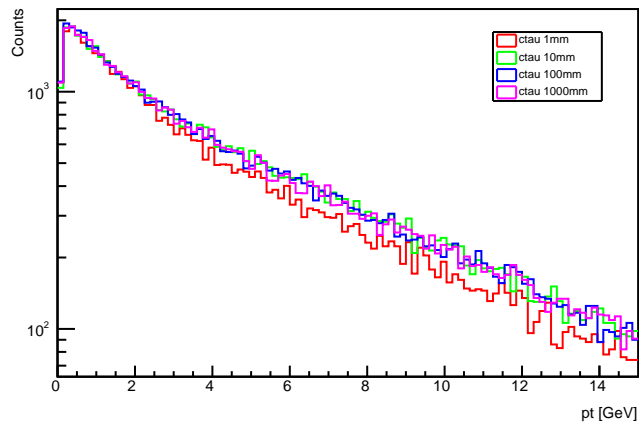
gen all Mu vxy: MET > 120 GeV

gen all Mu vxy: $j_{1\text{pt}} > 120$, at most 2 jets w/ $p_t > 30$ GeVgen all Mu vxy: at least 2 mu w/ $v_{xy} < 740$ cm, $|v_z| < 960$ cm & $|\eta| < 2.4$ 

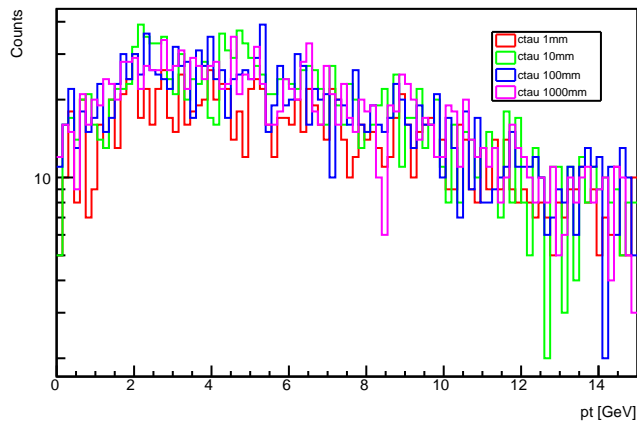
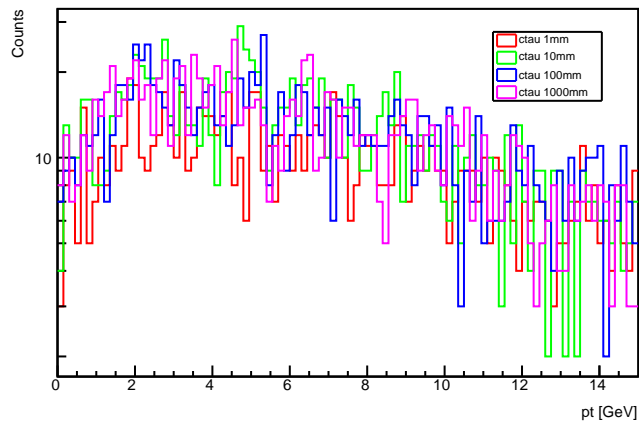
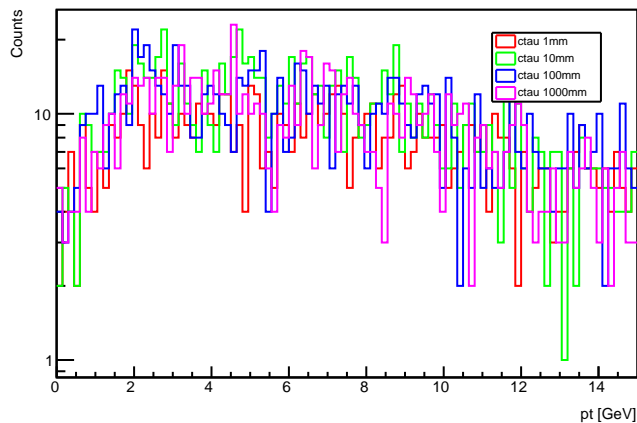
gen all Mu vz: no cuts

gen all Mu vz: $n_{\text{jet}} \geq 1$, $j_{1\text{pt}} > 30 \text{ GeV}$ gen all Mu vz: $\text{MET} > 120 \text{ GeV}$ gen all Mu vz: $j_{1\text{pt}} > 120$, at most 2 jets w/ $p_t > 30 \text{ GeV}$ gen all Mu vz: at least 2 mu w/ $v_{xy} < 740 \text{ cm}$, $|v_z| < 960 \text{ cm}$ & $|\eta| < 2.4$ 

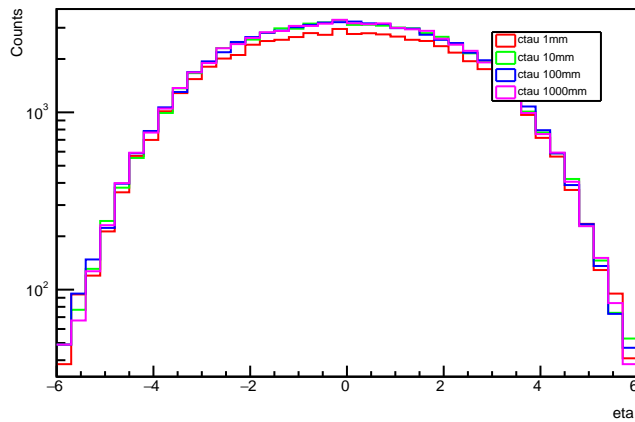
gen subleading Mu pt: no cuts

gen subleading Mu pt: $n_{\text{jet}} \geq 1$, $j1\text{pt} > 30$ GeV

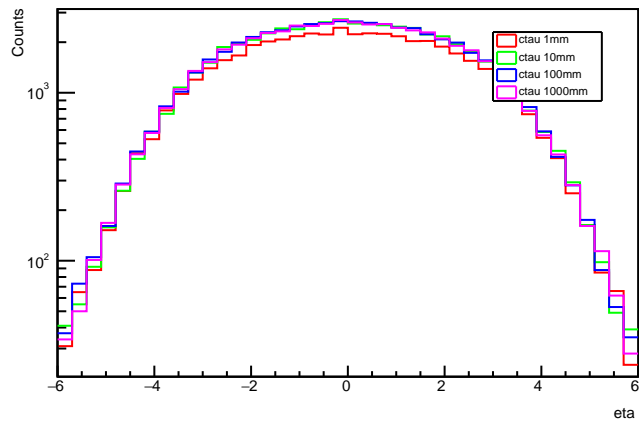
gen subleading Mu pt: MET > 120 GeV

gen subleading Mu pt: $j1\text{pt} > 120$, at most 2 jets w/ $\text{pt} > 30$ GeVgen subleading Mu pt: at least 2 mu w/ $v_{xy} < 740$ cm, $|v_z| < 960$ cm & $|\text{eta}| < 2.4$ 

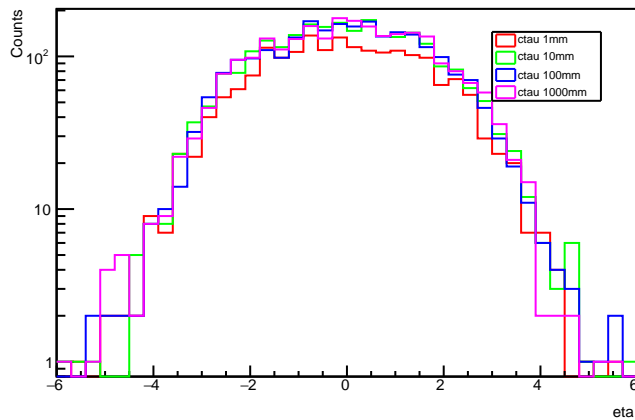
gen subleading Mu eta: no cuts



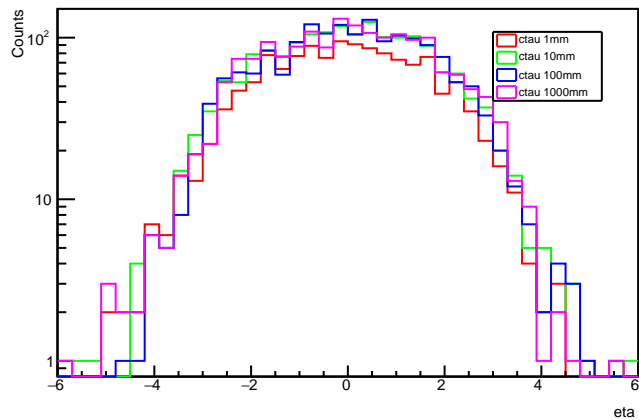
gen subleading Mu eta: n_jet >=1, j1pt > 30 GeV



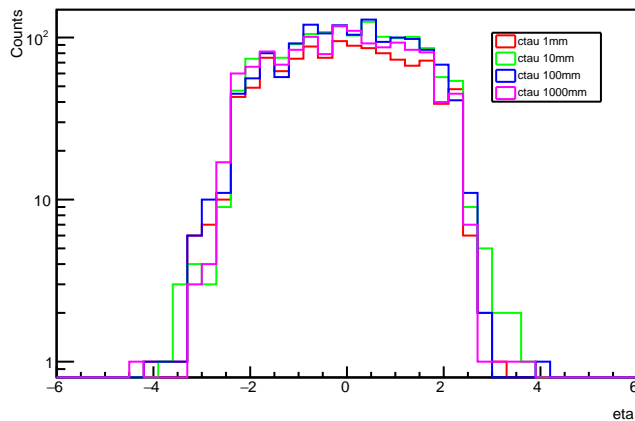
gen subleading Mu eta: MET > 120 GeV



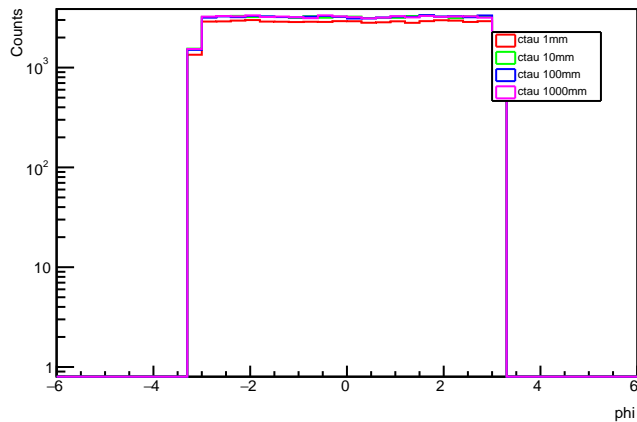
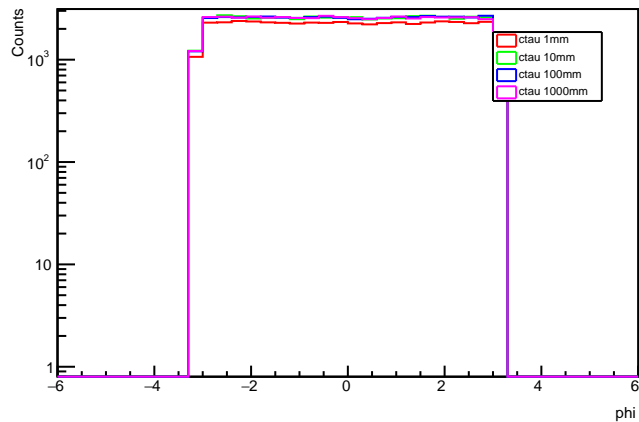
gen subleading Mu eta: j1pt >120, at most 2 jets w/ pt >30 GeV



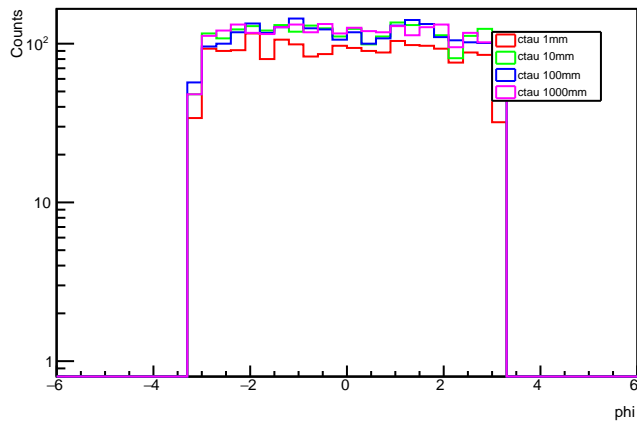
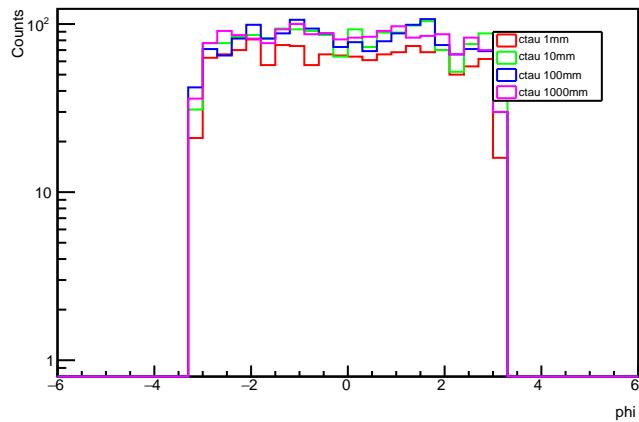
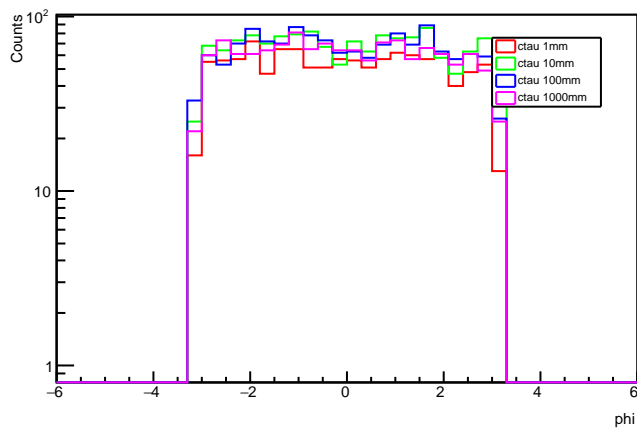
gen subleading Mu eta: at least 2 mu w/ vxy < 740 cm, |vz| < 960 cm & |eta| < 2.4



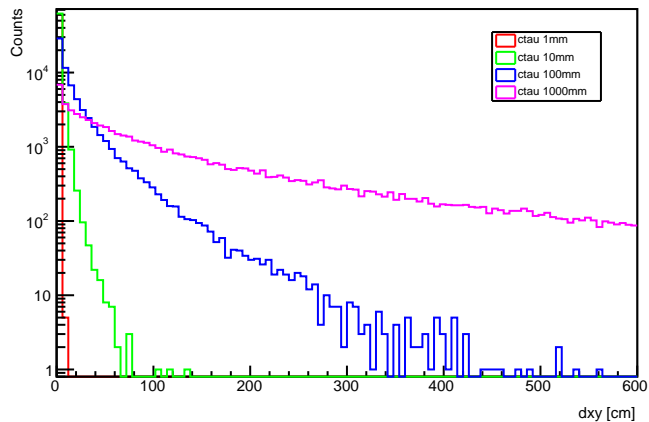
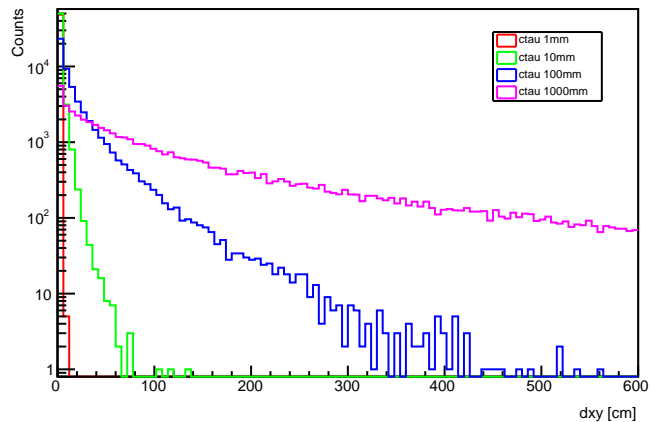
gen subleading Mu phi: no cuts

gen subleading Mu phi: $n_{\text{jet}} \geq 1$, $j1_{\text{pt}} > 30$ GeV

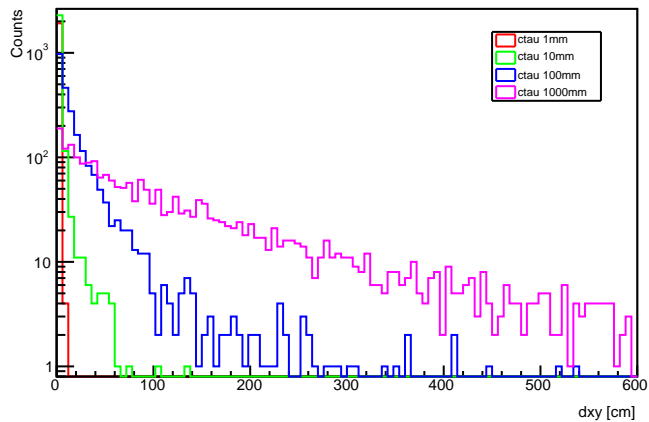
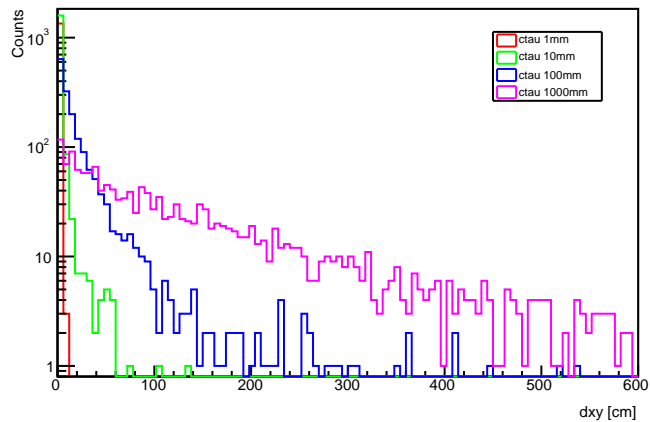
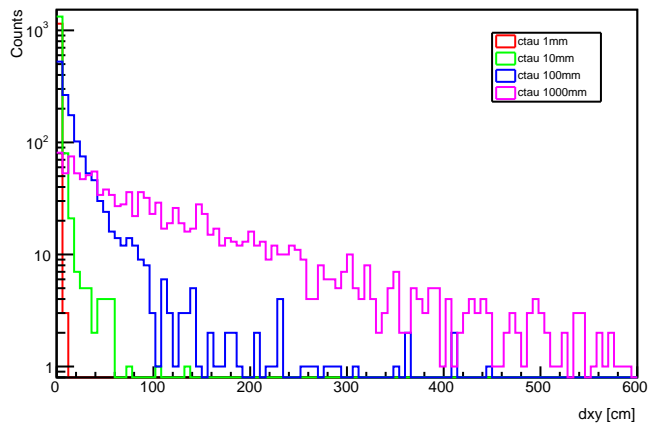
gen subleading Mu phi: MET > 120 GeV

gen subleading Mu phi: $j1_{\text{pt}} > 120$, at most 2 jets w/ $p_T > 30$ GeVgen subleading Mu phi: at least 2 mu w/ $v_{xy} < 740$ cm, $|v_z| < 960$ cm & $|\eta_{\text{jet}}| < 2.4$ 

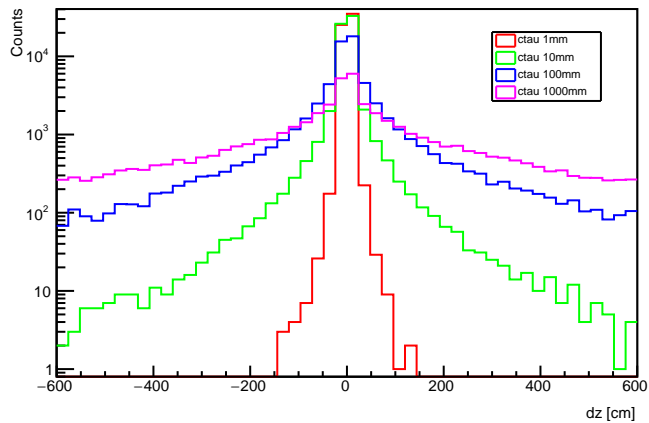
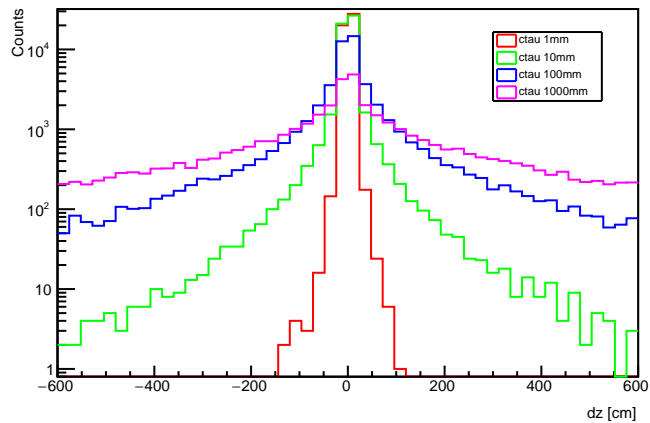
gen subleading Mu vxy: no cuts

gen subleading Mu vxy: $n_{\text{jet}} \geq 1$, $j_{1\text{pt}} > 30$ GeV

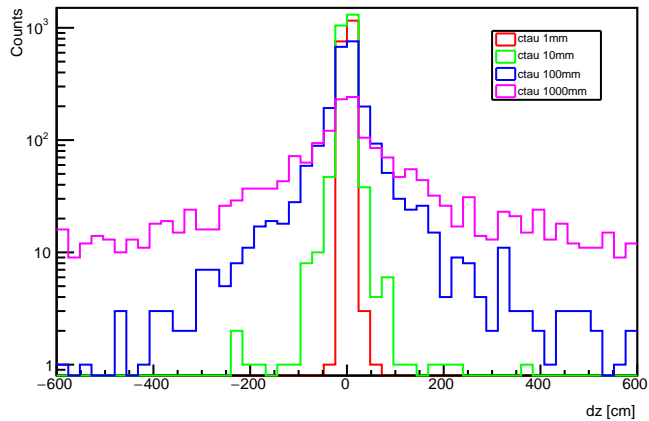
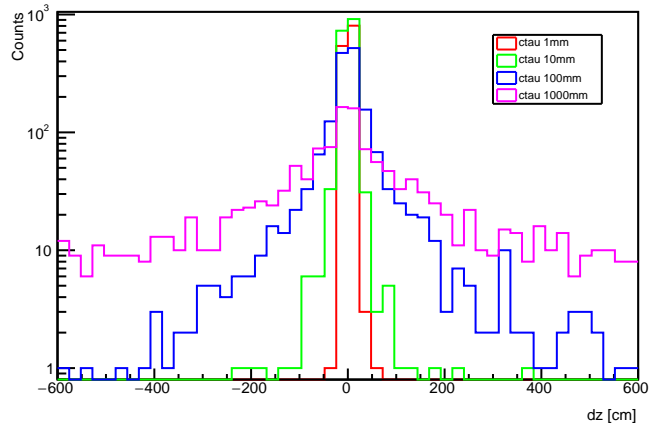
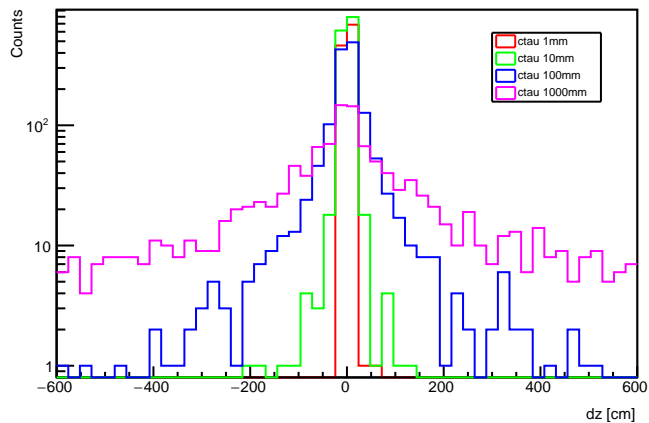
gen subleading Mu vxy: MET > 120 GeV

gen subleading Mu vxy: $j_{1\text{pt}} > 120$, at most 2 jets w/ $p_t > 30$ GeVgen subleading Mu vxy: at least 2 mu w/ $v_{xy} < 740$ cm, $|v_z| < 960$ cm & $|\eta| < 2.4$ 

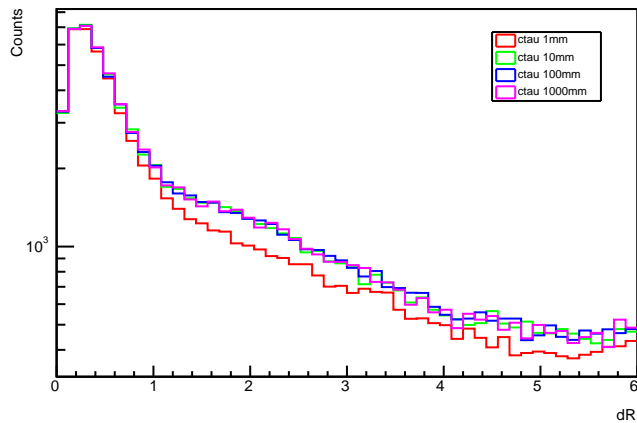
gen subleading Mu vz: no cuts

gen subleading Mu vz: $n_{\text{jet}} \geq 1, j_{1\text{pt}} > 30 \text{ GeV}$ 

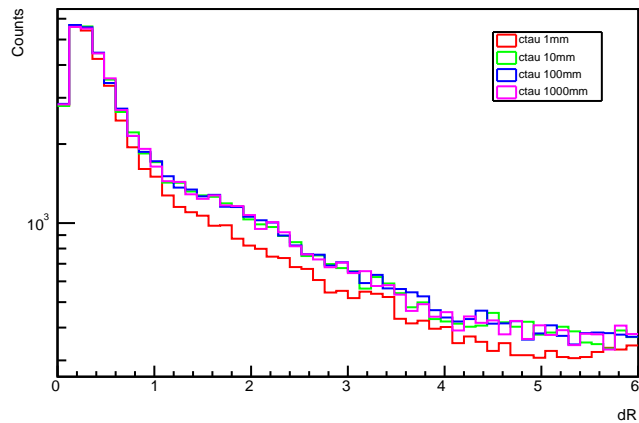
gen subleading Mu vz: MET > 120 GeV

gen subleading Mu vz: $j_{1\text{pt}} > 120, \text{ at most 2 jets w/ } p_t > 30 \text{ GeV}$ gen subleading Mu vz: at least 2 mu w/ $v_{xy} < 740 \text{ cm}, |v_z| < 960 \text{ cm} \text{ \& } |j_{\text{eta}}| < 2.4$ 

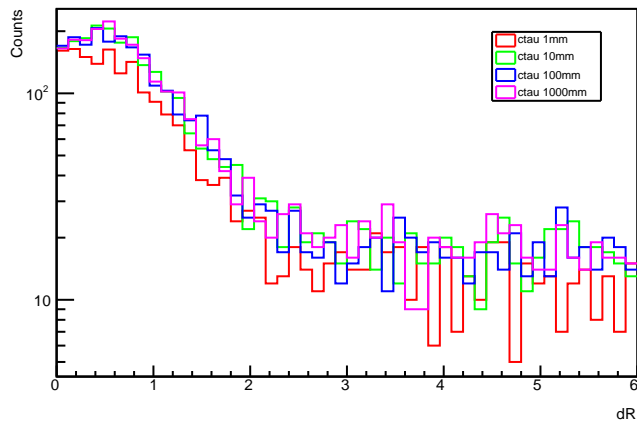
dR: gen leading mu and subleading mu: no cuts



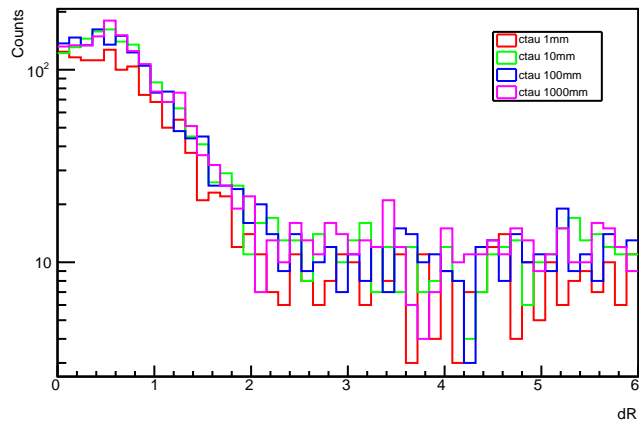
dR: gen leading mu and subleading mu: $n_{\text{jet}} \geq 1$, $j_{1\text{pt}} > 30$ GeV



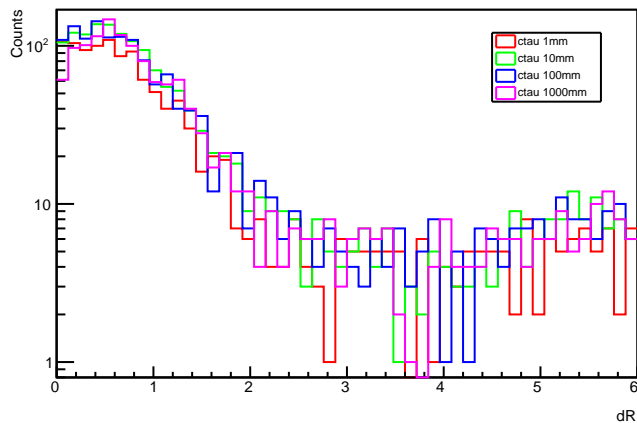
dR: gen leading mu and subleading mu: MET > 120 GeV



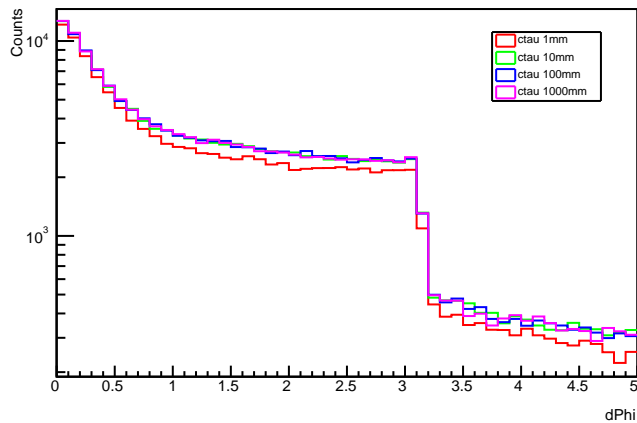
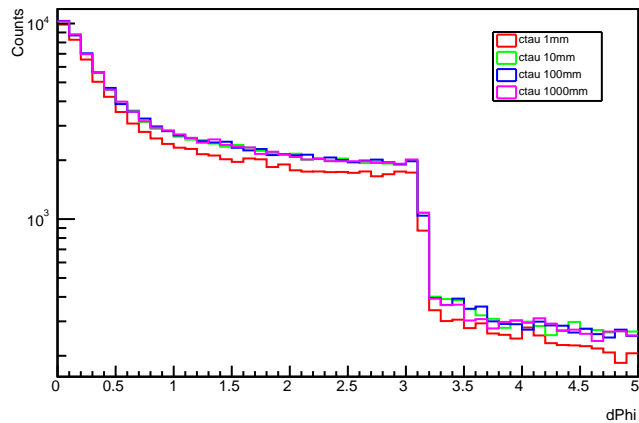
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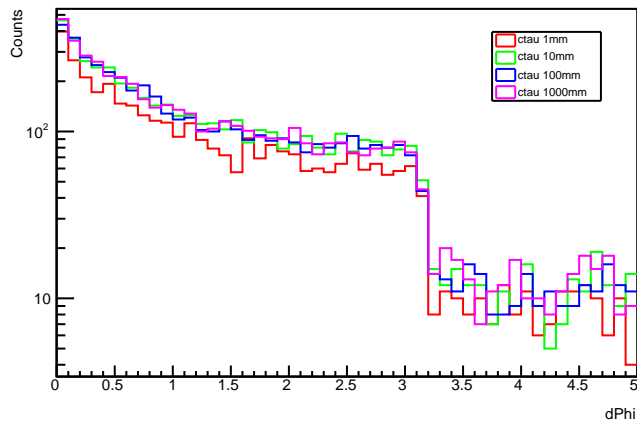
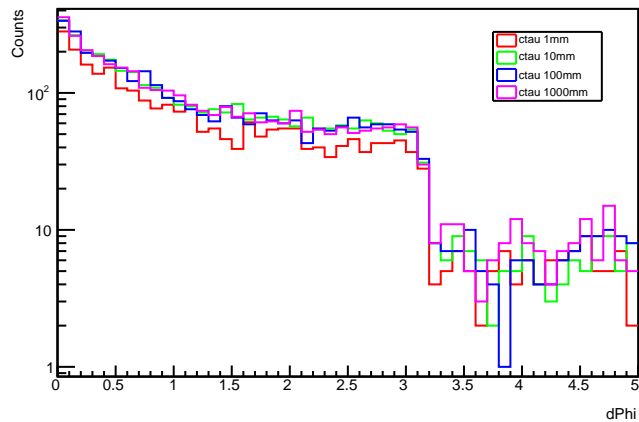
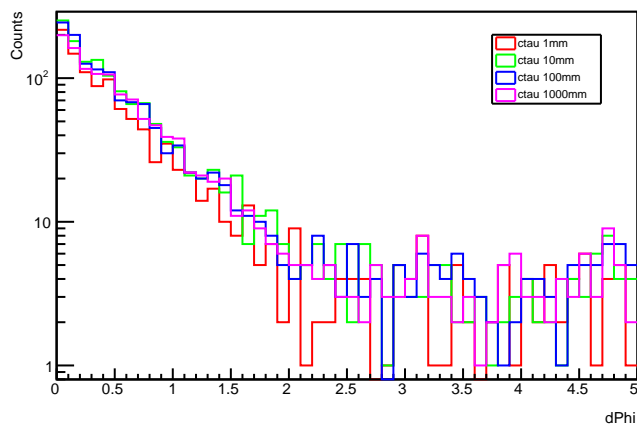
dR: gen leading mu and subleading mu: at least 2 mu w/ $v_{xy} < 740$ cm, $|v_z| < 960$ cm & $|\text{jet}_a| < 2.4$



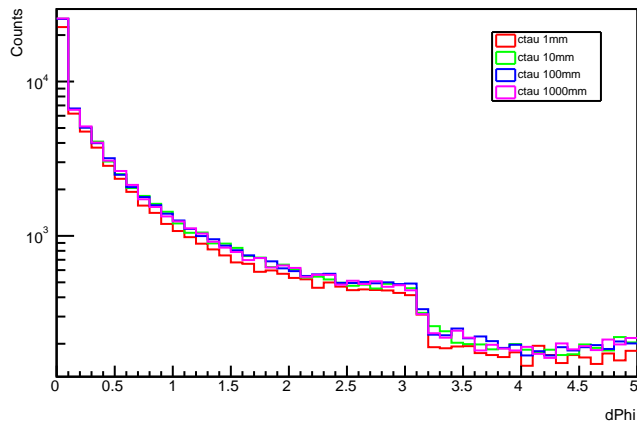
dPhi: gen MET and leading mu: no cuts

dPhi: gen MET and leading mu: $n_{\text{jet}} \geq 1$, $j_{1\text{pt}} > 30$ GeV

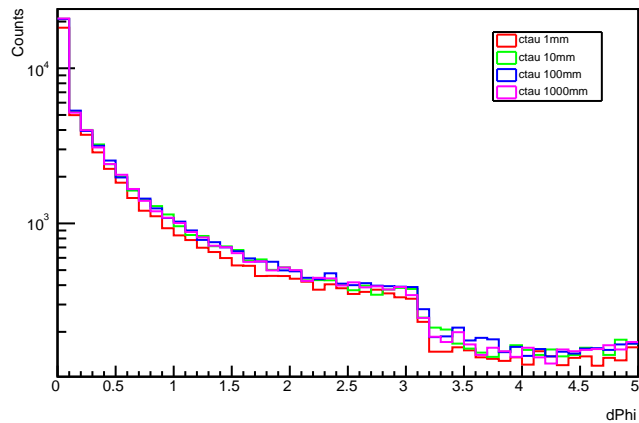
dPhi: gen MET and leading mu: MET > 120 GeV

dPhi: gen MET and leading mu: $j_{1\text{pt}} > 120$, at most 2 jets w/ $p_t > 30$ GeVdPhi: gen MET and leading mu: at least 2 mu w/ $v_{xy} < 740$ cm, $|v_z| < 960$ cm & $|\eta| < 2.4$ 

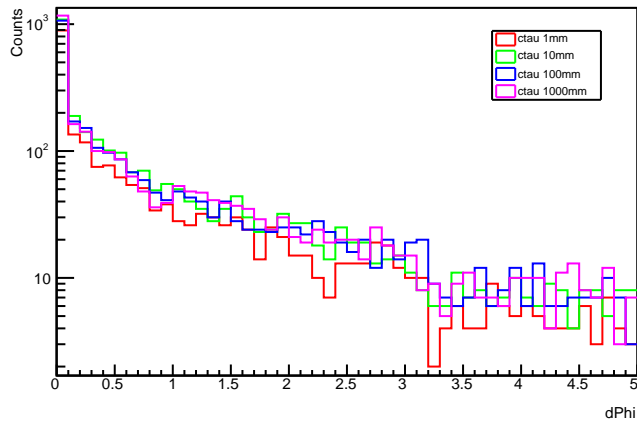
dPhi: gen leading mu and subleading mu: no cuts



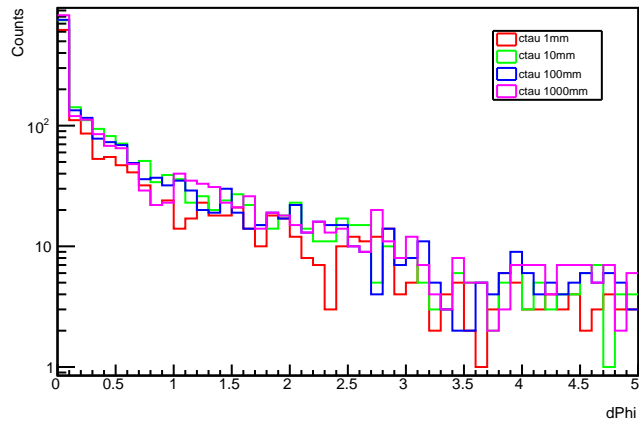
dPhi: gen leading mu and subleading mu: $n_{\text{jet}} \geq 1$, $j_{1\text{pt}} > 30$ GeV



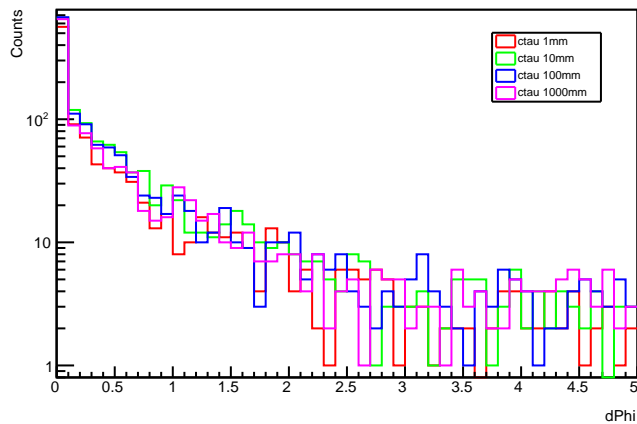
dPhi: gen leading mu and subleading mu: MET > 120 GeV



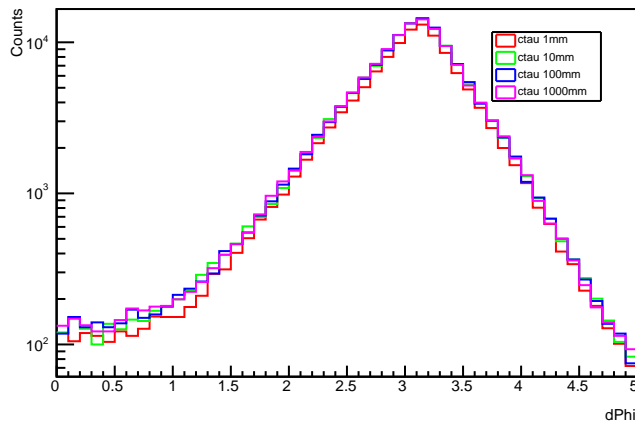
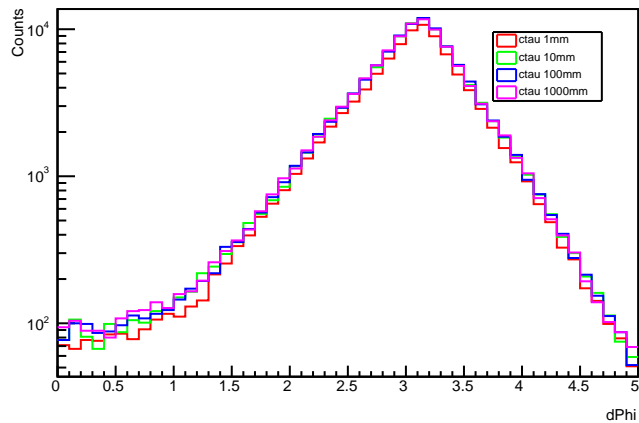
dPhi: gen leading mu and subleading mu: $j_{1\text{pt}} > 120$, at most 2 jets w/ $p_{\text{T}} > 30$ GeV



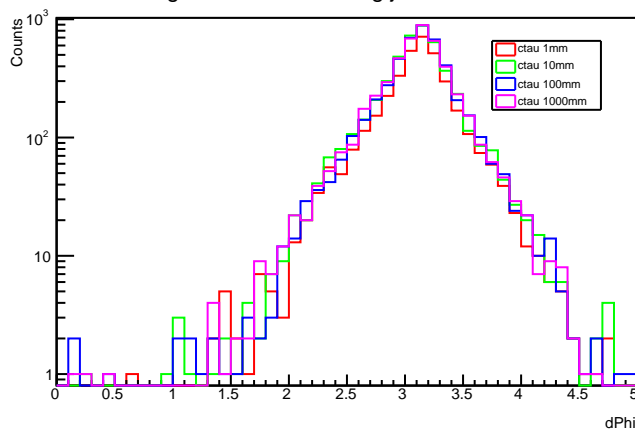
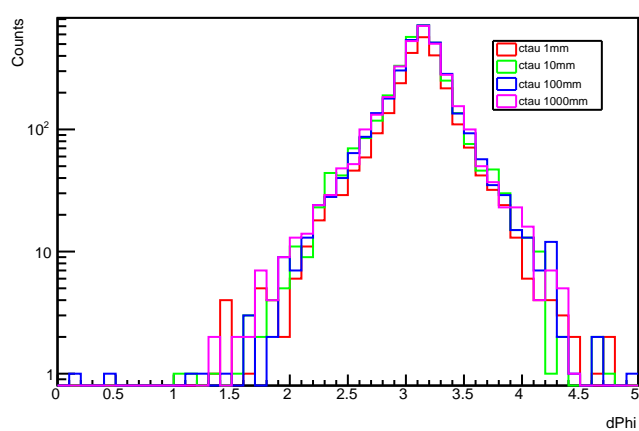
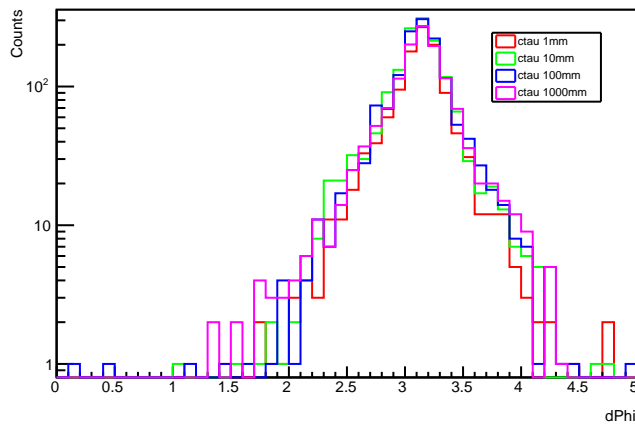
dPhi: gen leading mu and subleading mu: at least 2 mu w/ $v_{xy} < 740$ cm, $|\nu_z| < 960$ cm & $|\eta| < 2.4$



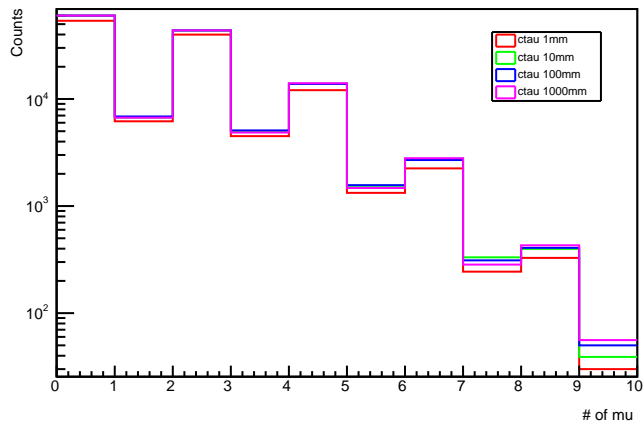
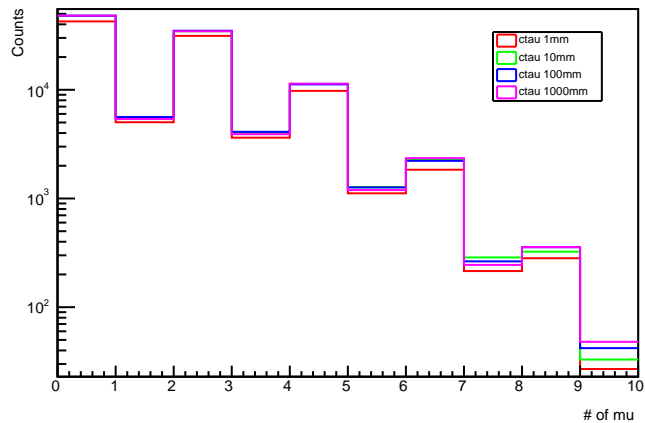
dPhi: gen MET and leading jet: no cuts

dPhi: gen MET and leading jet: $n_{\text{jet}} \geq 1$, $j_{1\text{pt}} > 30$ GeV

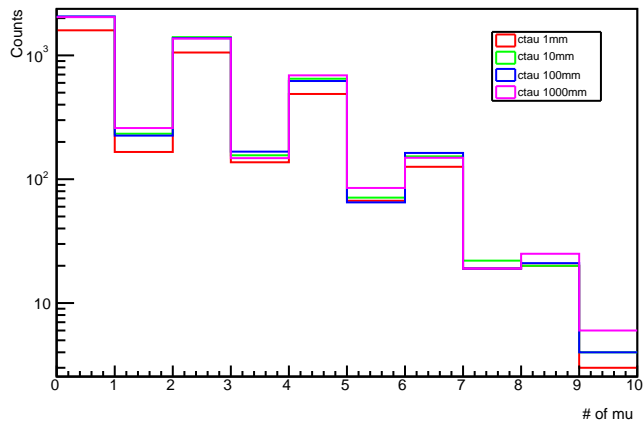
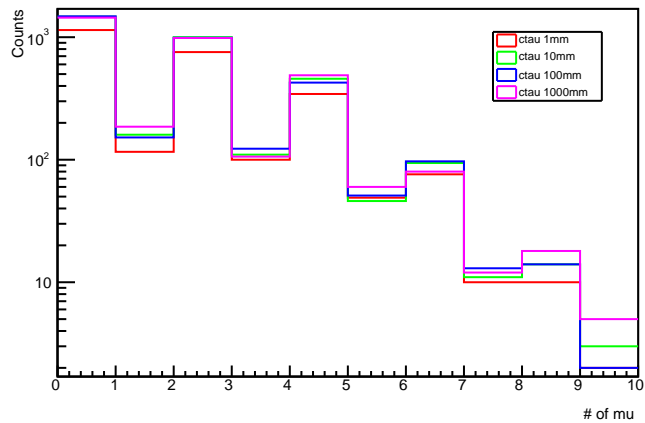
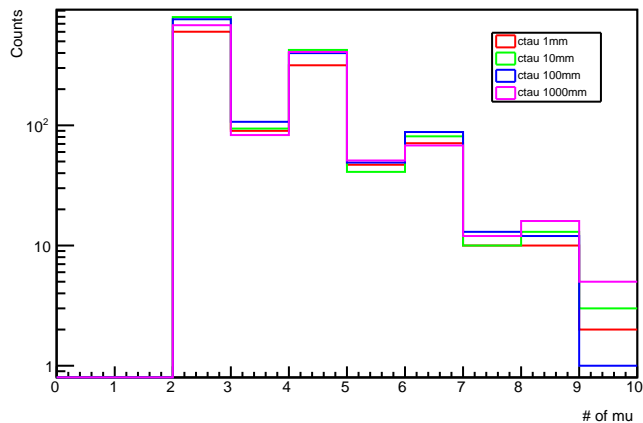
dPhi: gen MET and leading jet: MET > 120 GeV

dPhi: gen MET and leading jet: $j_{1\text{pt}} > 120$, at most 2 jets w/ $p_t > 30$ GeVdPhi: gen MET and leading jet: at least 2 mu w/ $v_{xy} < 740$ cm, $|v_z| < 960$ cm & $|\eta_{\text{jet}}| < 2.4$ 

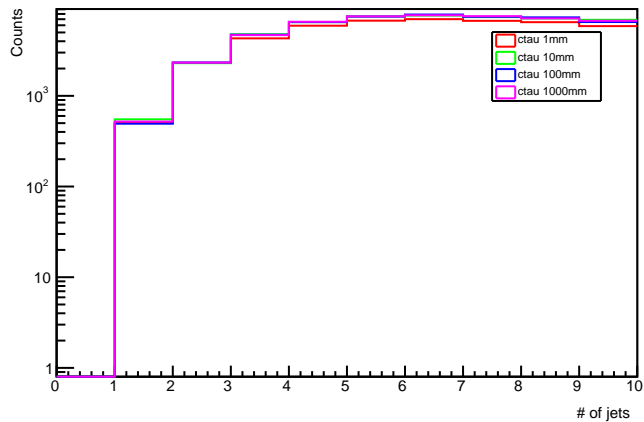
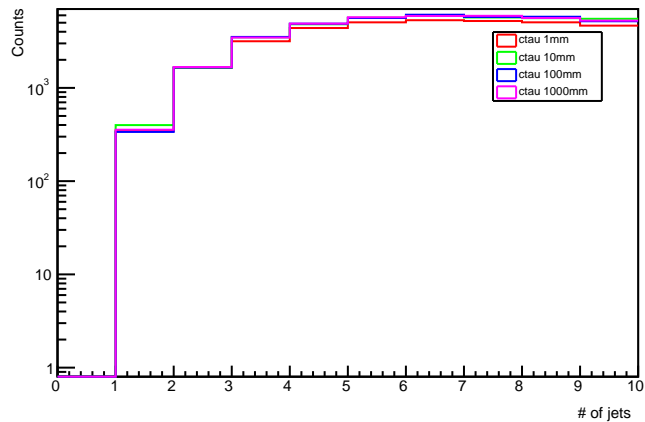
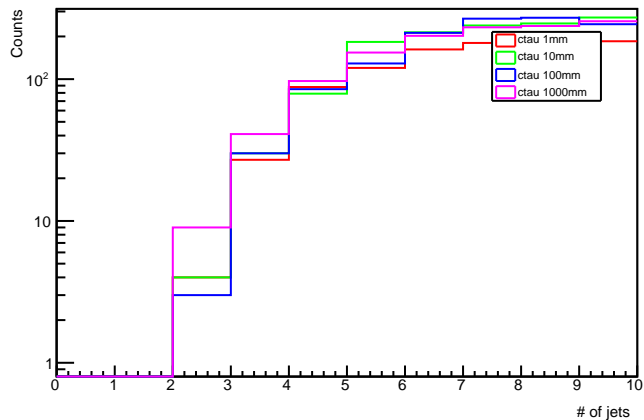
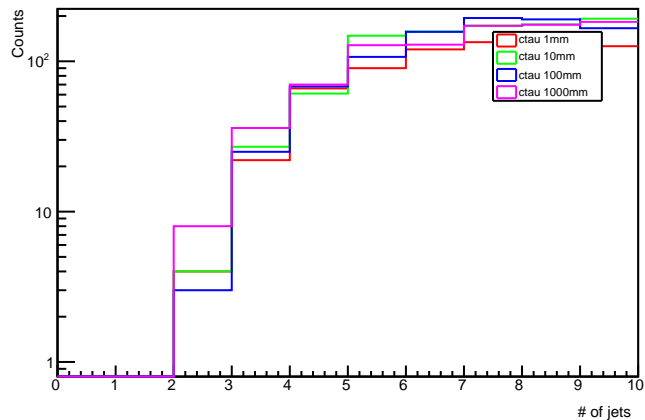
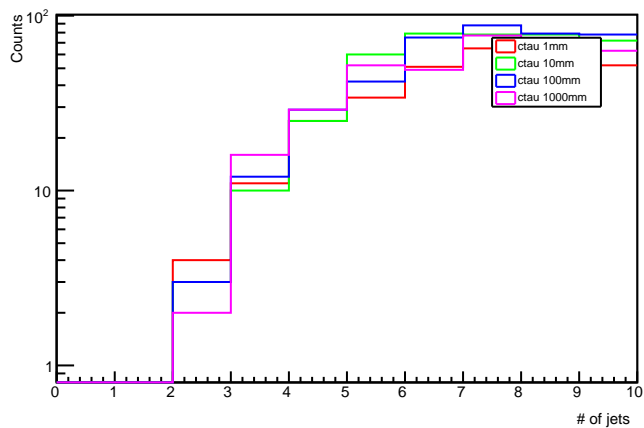
gen number of mu: no cuts

gen number of mu: $n_{\text{jet}} \geq 1, j_{1\text{pt}} > 30 \text{ GeV}$ 

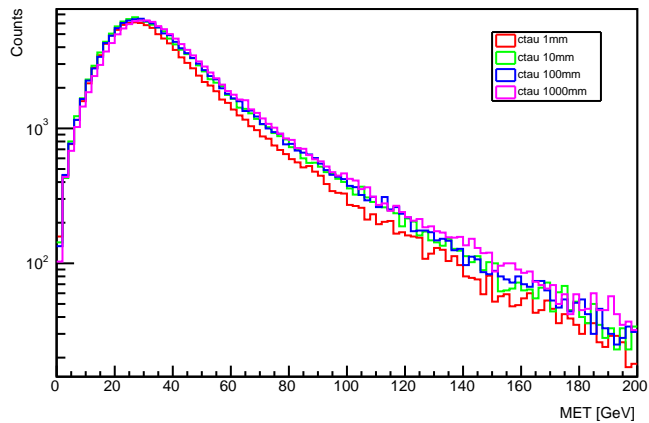
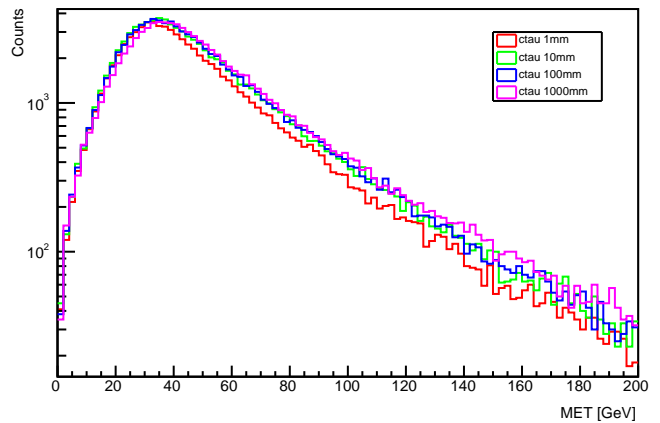
gen number of mu: MET > 120 GeV

gen number of mu: $j_{1\text{pt}} > 120$, at most 2 jets w/ $p_t > 30 \text{ GeV}$ gen number of mu: at least 2 mu w/ $v_{xy} < 740 \text{ cm}$, $|v_z| < 960 \text{ cm}$ & $|\text{eta}| < 2.4$ 

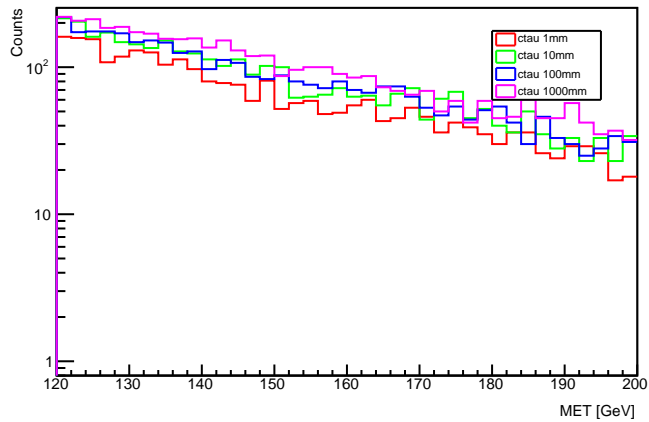
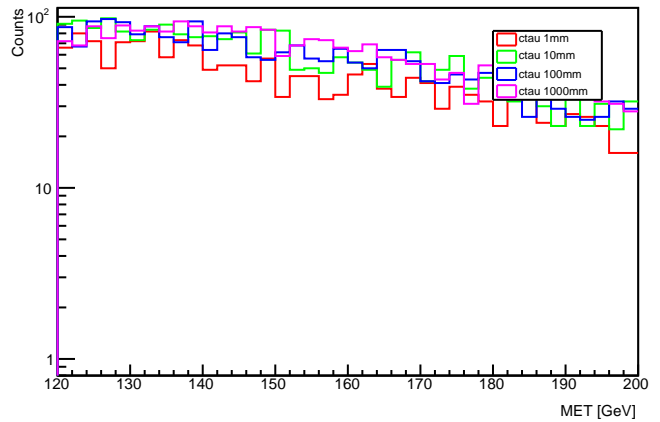
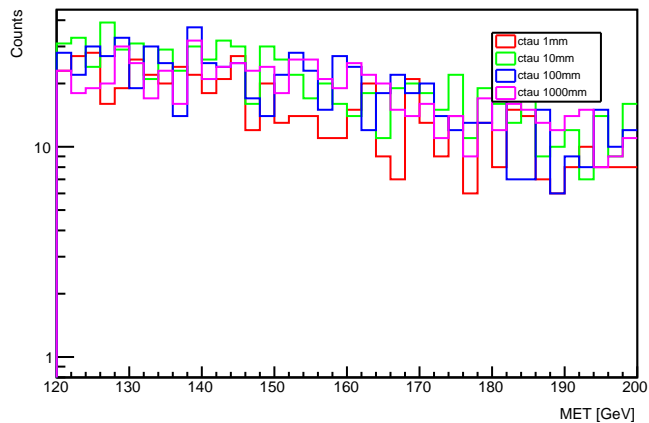
gen number of jets: no cuts

gen number of jets: $n_{\text{jet}} \geq 1$, $j1_{\text{pt}} > 30 \text{ GeV}$ gen number of jets: $\text{MET} > 120 \text{ GeV}$ gen number of jets: $j1_{\text{pt}} > 120$, at most 2 jets w/ $p_t > 30 \text{ GeV}$ gen number of jets: at least 2 mu w/ $v_{xy} < 740 \text{ cm}$, $|v_z| < 960 \text{ cm}$ & $|\eta_a| < 2.4$ 

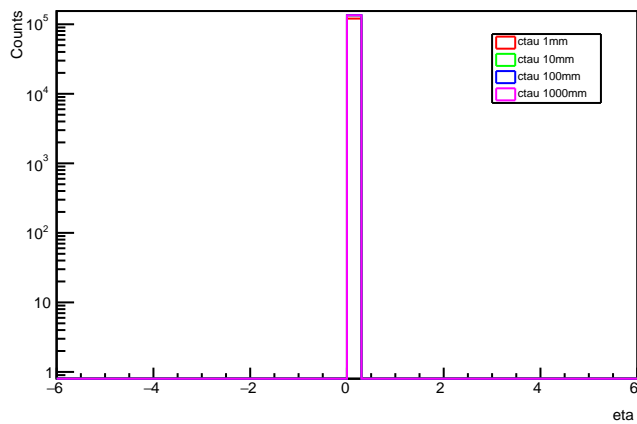
reco leading MET: no cuts

reco leading MET: $n_{\text{jet}} \geq 1$, $j_{1\text{pt}} > 30$ GeV

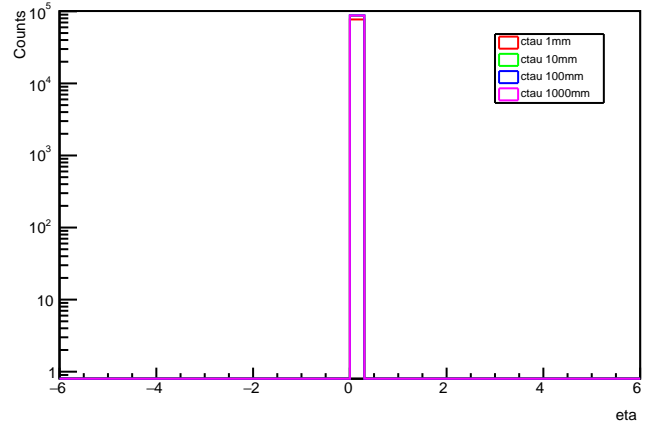
reco leading MET: MET > 120 GeV

reco leading MET: $j_{1\text{pt}} > 120$, at most 2 jets w/ $pt > 30$ GeVreco leading MET: at least 2 mu w/ $v_{xy} < 740$ cm, $|v_z| < 960$ cm & $|\eta| < 2.4$ 

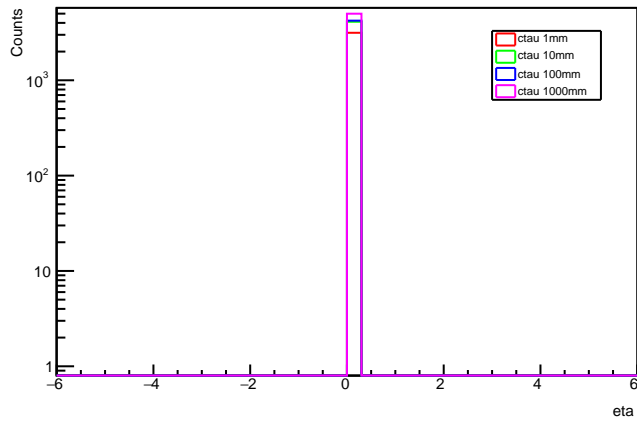
reco leading Met eta: no cuts



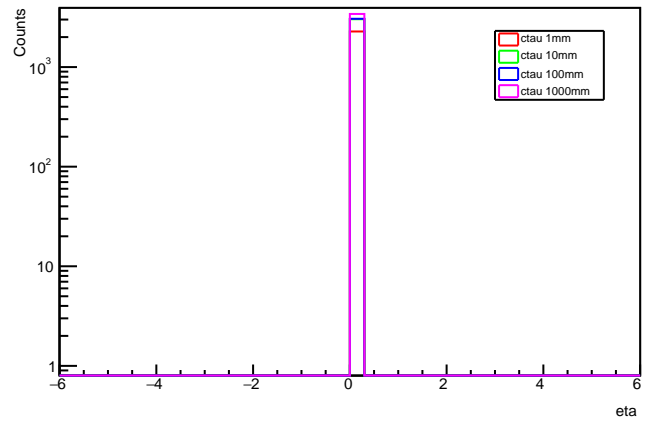
reco leading Met eta: n_jet >=1, j1pt > 30 GeV



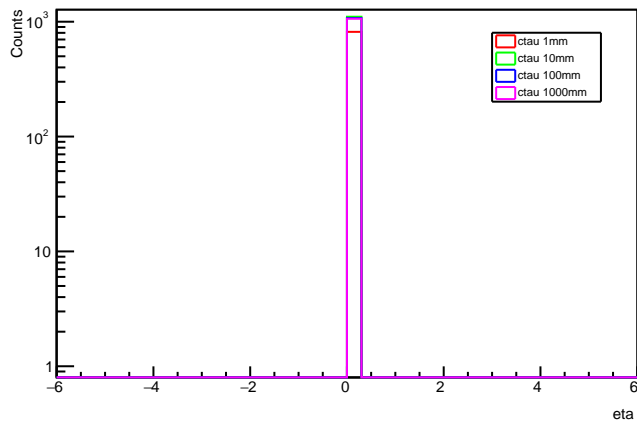
reco leading Met eta: MET > 120 GeV



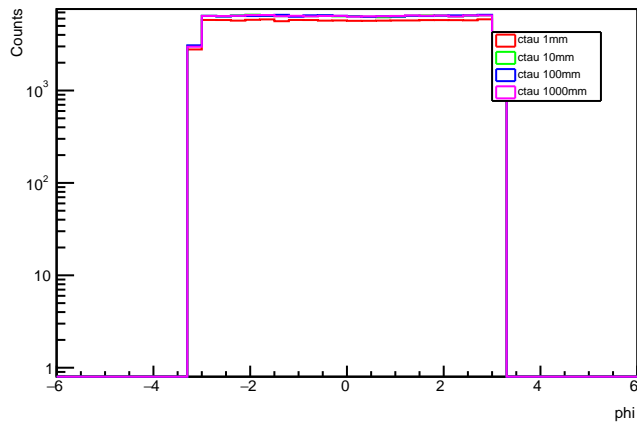
reco leading Met eta: j1pt >120, at most 2 jets w/ pt >30 GeV



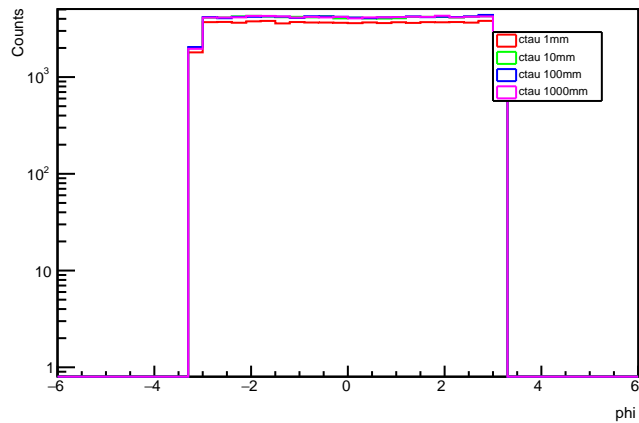
reco leading Met eta: at least 2 mu w/ vx < 740 cm, |vz| < 960 cm & |eta| < 2.4



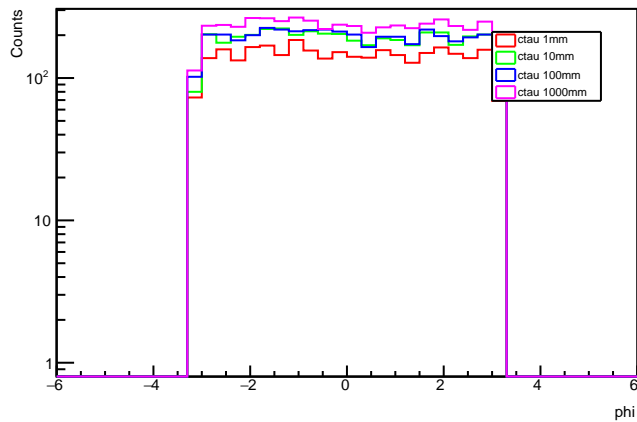
reco leading Met phi: no cuts



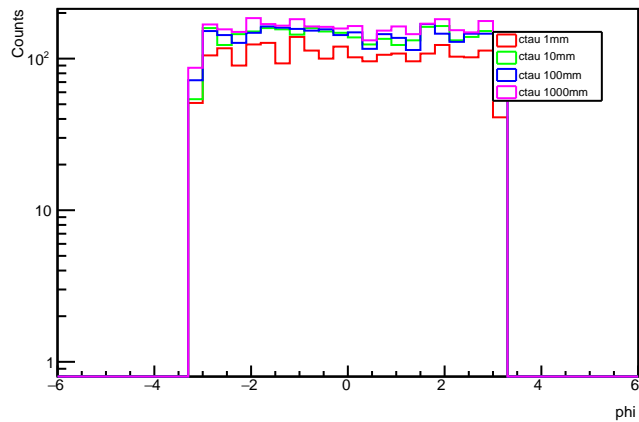
reco leading Met phi: n_jet >=1, j1pt > 30 GeV



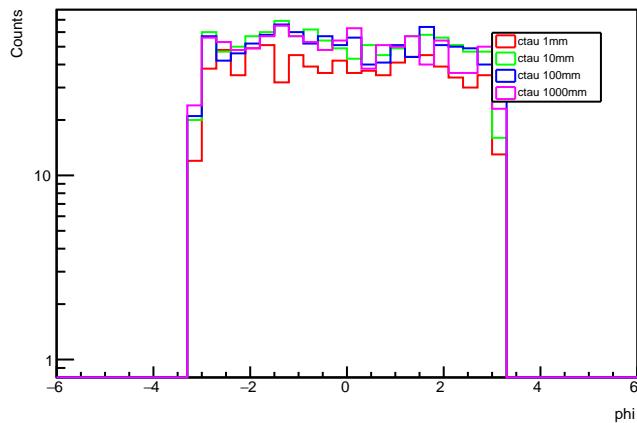
reco leading Met phi: MET > 120 GeV



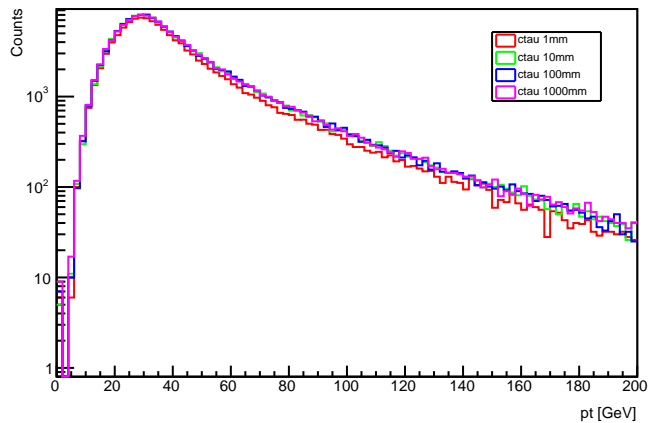
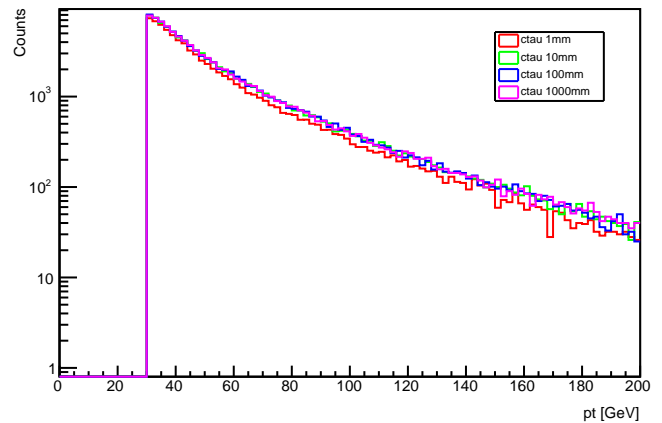
reco leading Met phi: j1pt >120, at most 2 jets w/ pt >30 GeV



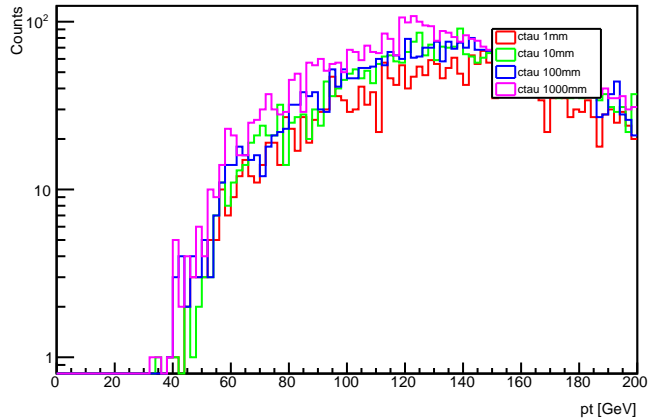
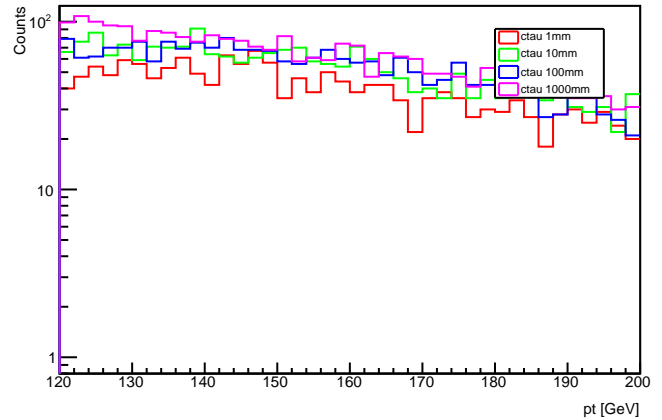
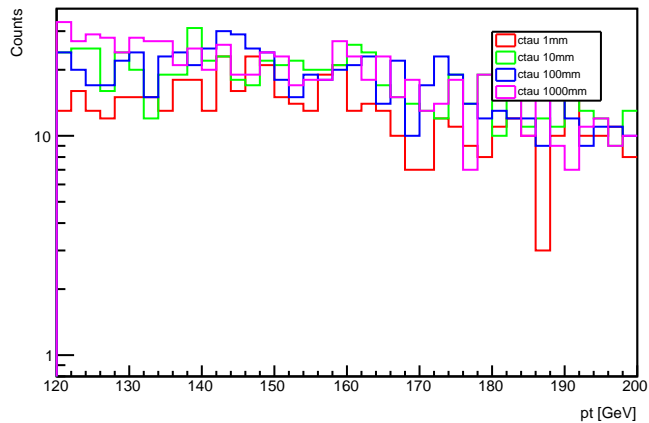
reco leading Met phi: at least 2 mu w/ vxy < 740 cm, |vz| < 960 cm & |eta| < 2.4



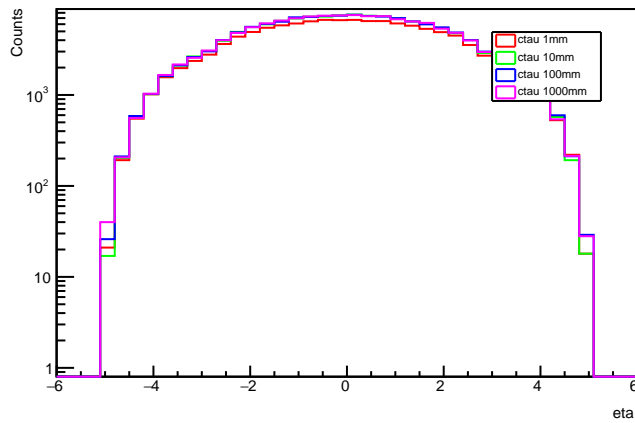
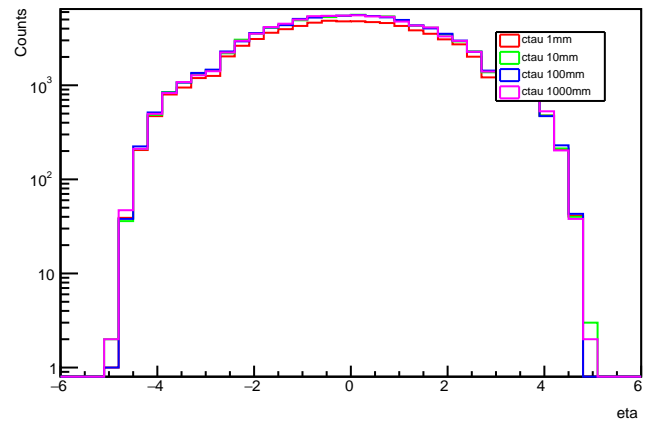
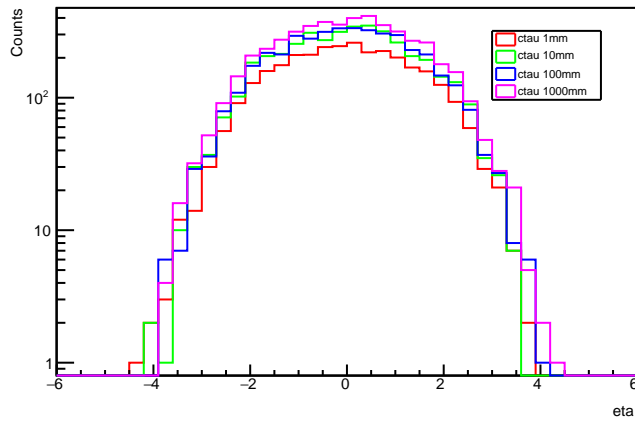
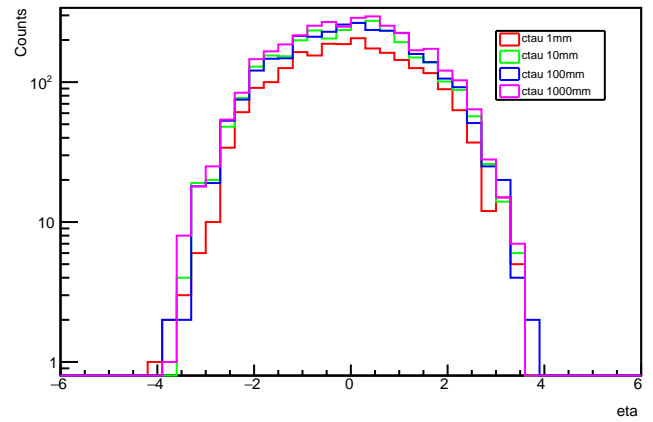
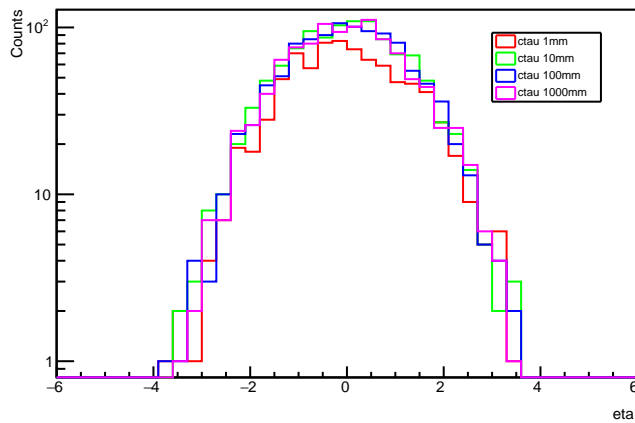
reco leading Jet pt: no cuts

reco leading Jet pt: $n_{\text{jet}} \geq 1$, $j1pt > 30$ GeV

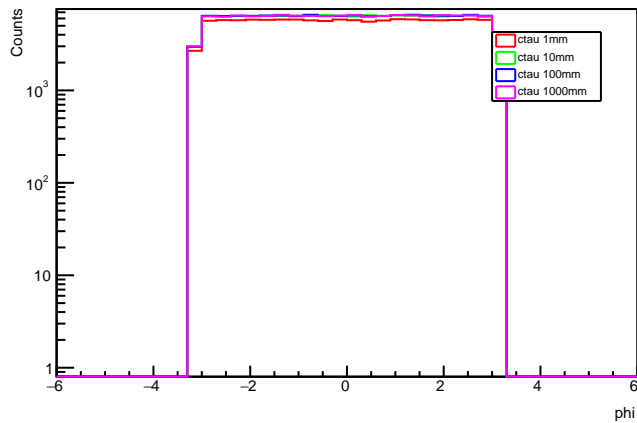
reco leading Jet pt: MET > 120 GeV

reco leading Jet pt: $j1pt > 120$, at most 2 jets w/ $pt > 30$ GeVreco leading Jet pt: at least 2 mu w/ $vxy < 740$ cm, $|vz| < 960$ cm & $|\eta| < 2.4$ 

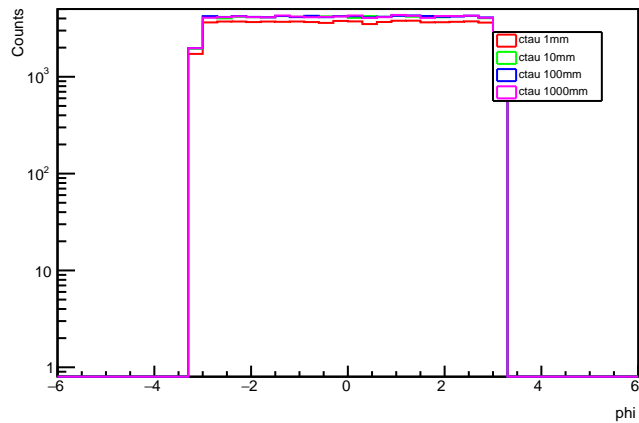
reco leading Jet eta: no cuts

reco leading Jet eta: $n_{\text{jet}} \geq 1$, $j_{1\text{pt}} > 30$ GeVreco leading Jet eta: $\text{MET} > 120$ GeVreco leading Jet eta: $j_{1\text{pt}} > 120$, at most 2 jets w/ $p_T > 30$ GeVreco leading Jet eta: at least 2 mu w/ $v_{xy} < 740$ cm, $|v_z| < 960$ cm & $|\eta| < 2.4$ 

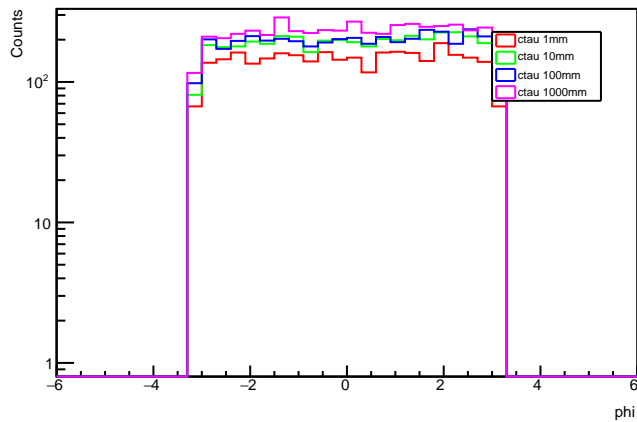
reco leading Jet phi: no cuts



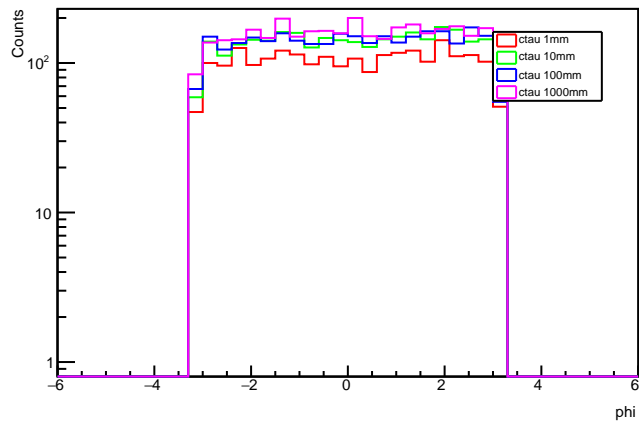
reco leading Jet phi: n_jet >=1, j1pt > 30 GeV



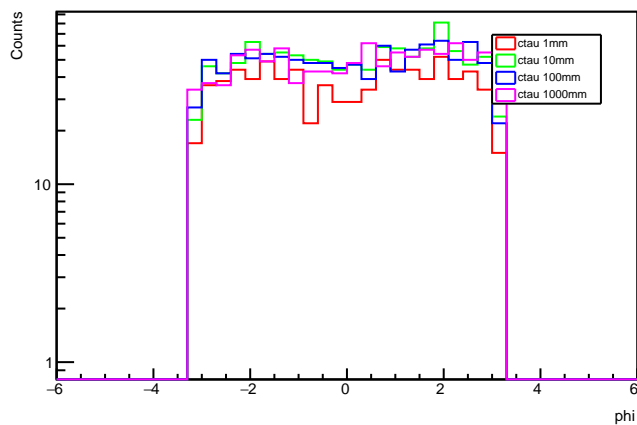
reco leading Jet phi: MET > 120 GeV



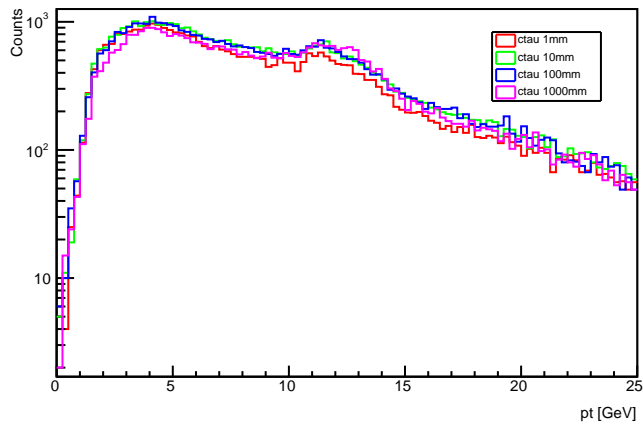
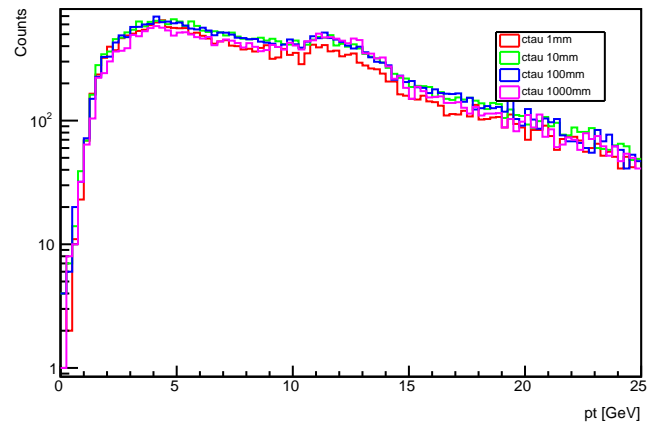
reco leading Jet phi: j1pt >120, at most 2 jets w/ pt >30 GeV



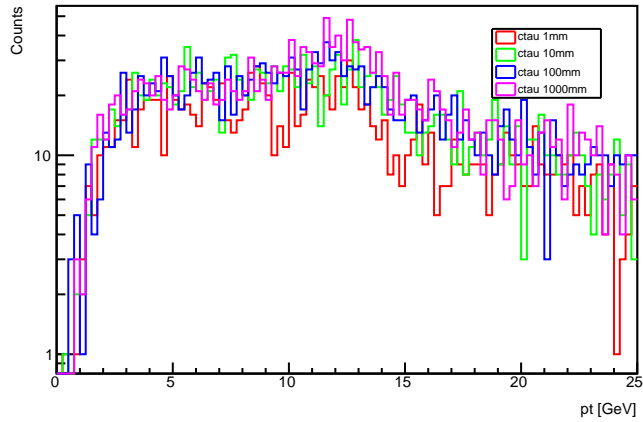
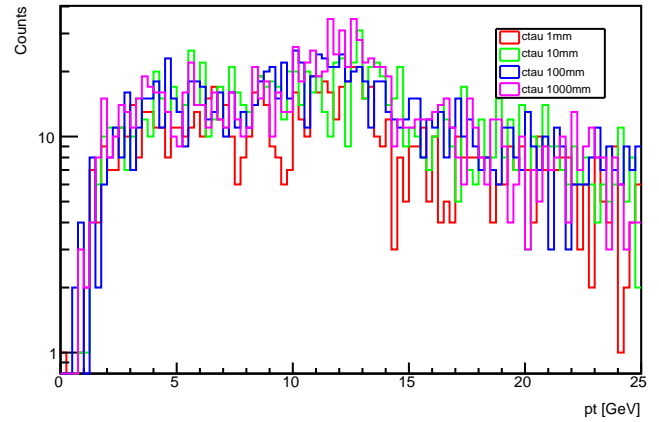
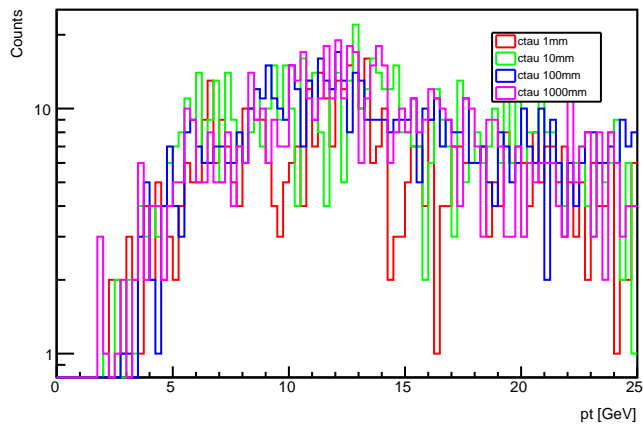
reco leading Jet phi: at least 2 mu w/ vxy < 740 cm, |vz| < 960 cm & |eta| < 2.4



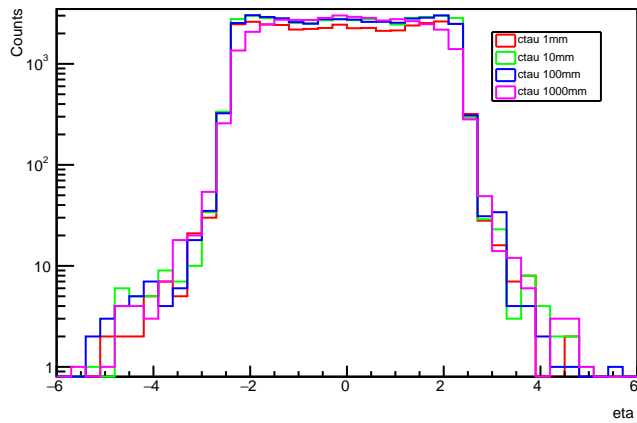
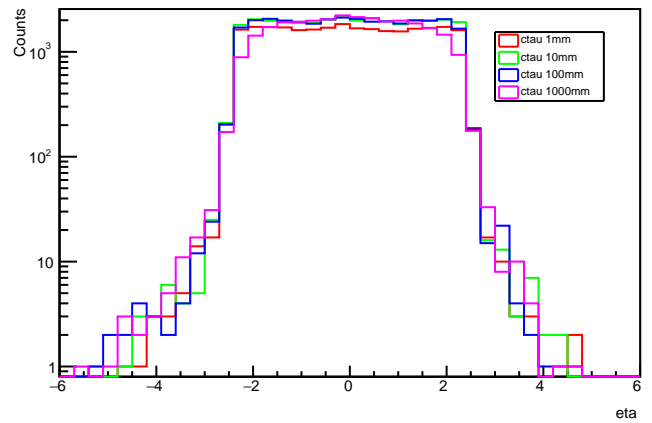
reco leading Mu pt: no cuts

reco leading Mu pt: $n_{\text{jet}} \geq 1$, $j_{1\text{pt}} > 30$ GeV

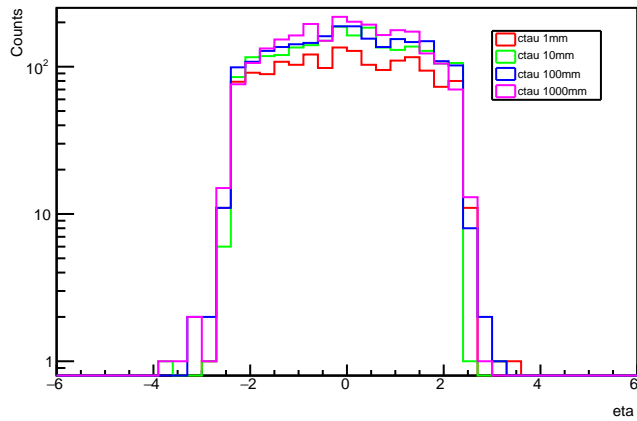
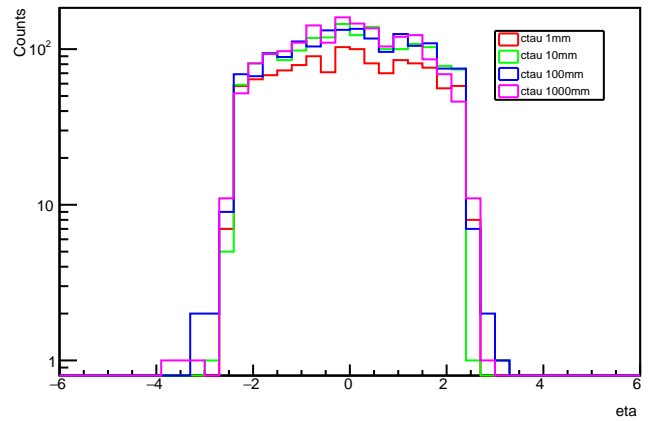
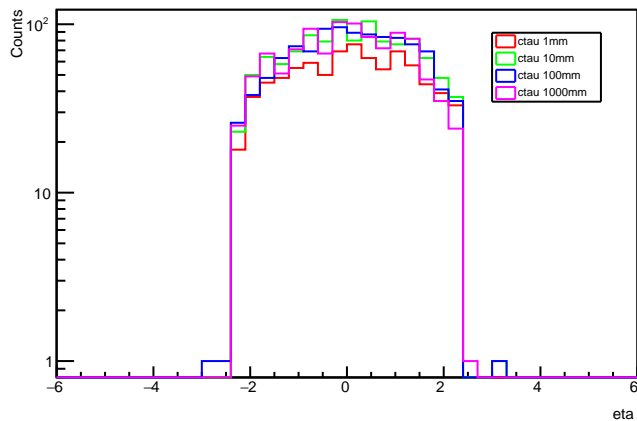
reco leading Mu pt: MET > 120 GeV

reco leading Mu pt: $j_{1\text{pt}} > 120$, at most 2 jets w/ $p_{\text{T}} > 30$ GeVreco leading Mu pt: at least 2 mu w/ $v_{xy} < 740$ cm, $|v_z| < 960$ cm & $|\eta| < 2.4$ 

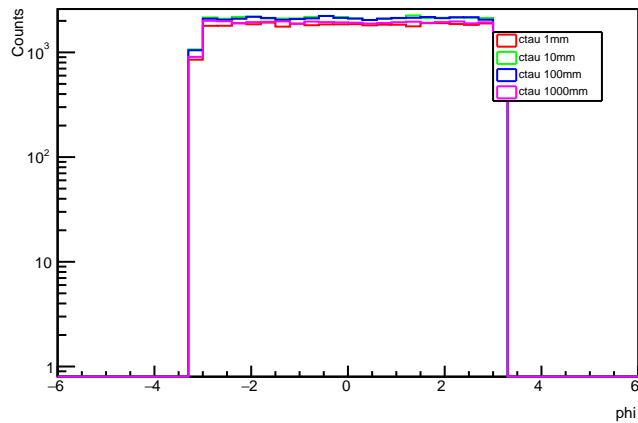
reco leading Mu eta: no cuts

reco leading Mu eta: $n_{\text{jet}} \geq 1$, $j_{1\text{pt}} > 30$ GeV

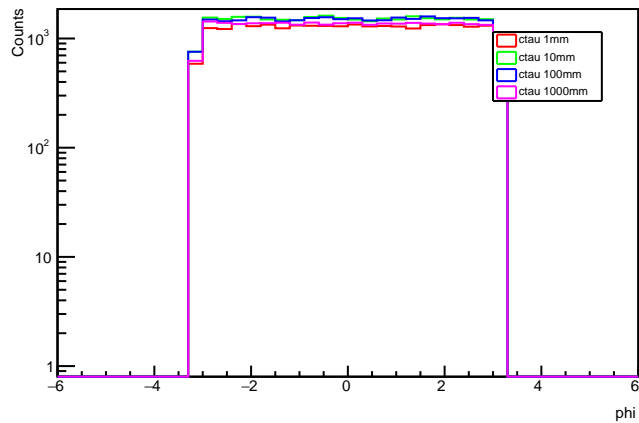
reco leading Mu eta: MET > 120 GeV

reco leading Mu eta: $j_{1\text{pt}} > 120$, at most 2 jets w/ $p_t > 30$ GeVreco leading Mu eta: at least 2 mu w/ $v_{xy} < 740$ cm, $|v_z| < 960$ cm & $|\eta| < 2.4$ 

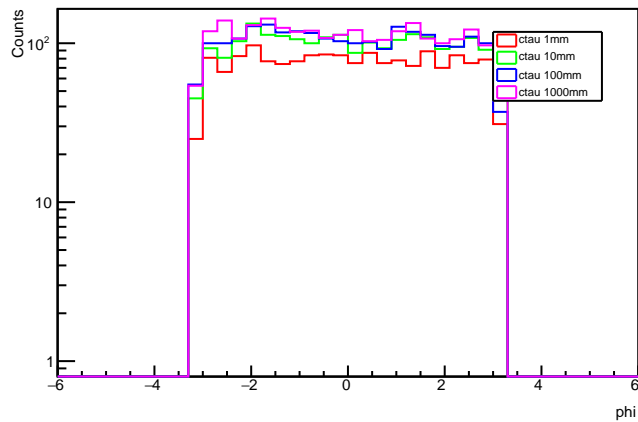
reco leading Mu phi: no cuts



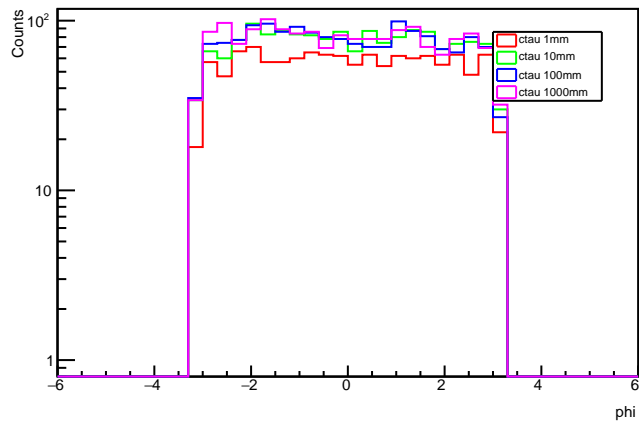
reco leading Mu phi: n_jet >=1, j1pt > 30 GeV



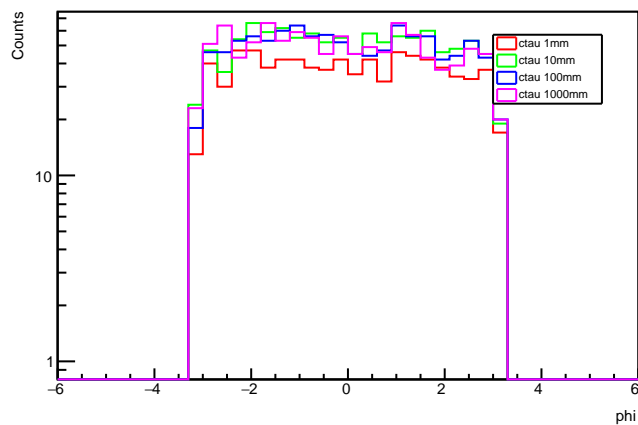
reco leading Mu phi: MET > 120 GeV



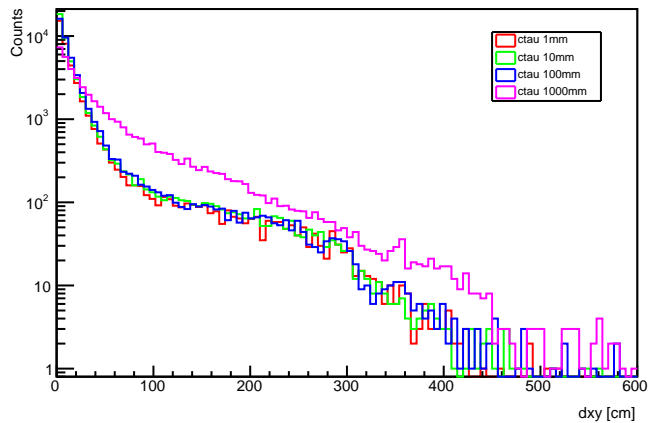
reco leading Mu phi: j1pt >120, at most 2 jets w/ pt >30 GeV



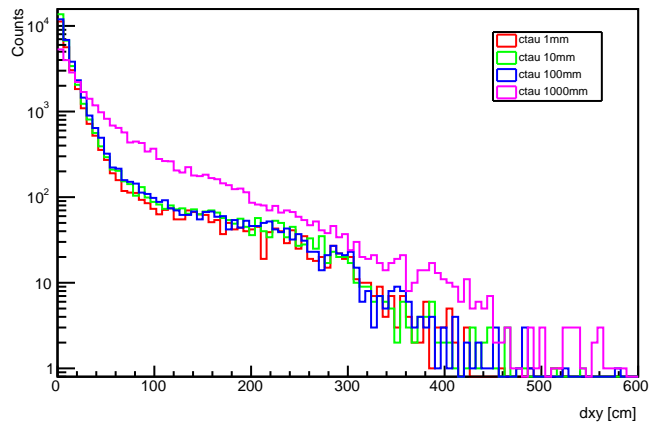
reco leading Mu phi: at least 2 mu w/ vx < 740 cm, |vz| < 960 cm & |eta| < 2.4



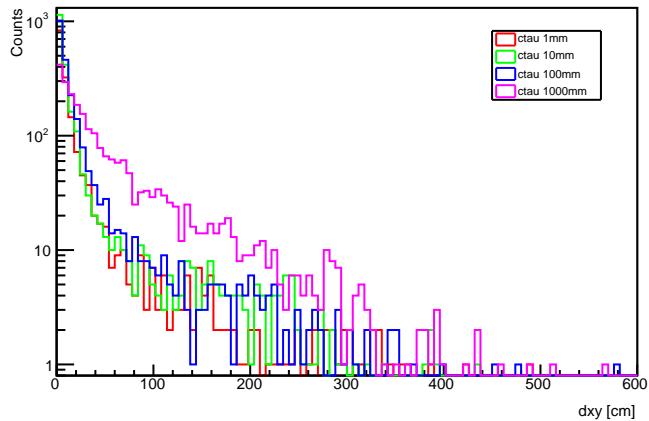
reco leading Mu vxy: no cuts



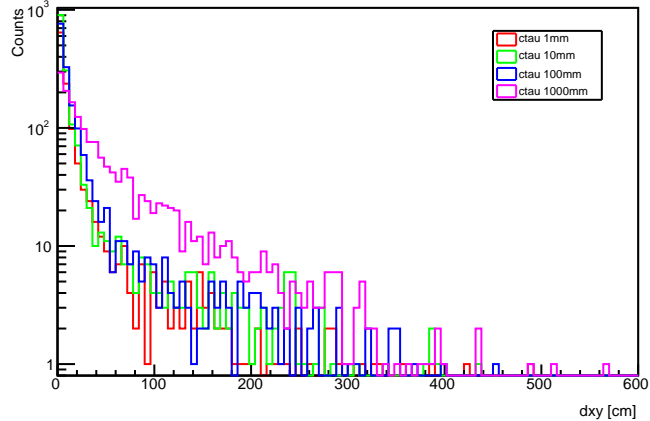
reco leading Mu vxy: n_jet >=1, j1pt > 30 GeV



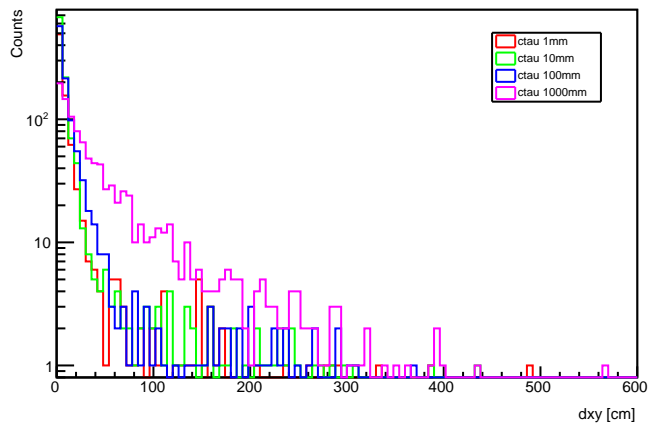
reco leading Mu vxy: MET > 120 GeV



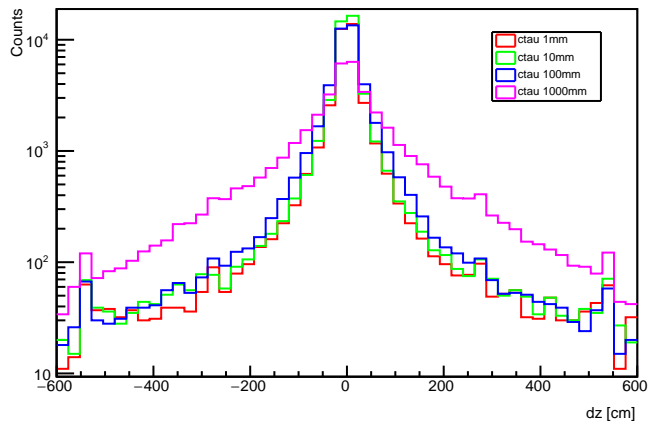
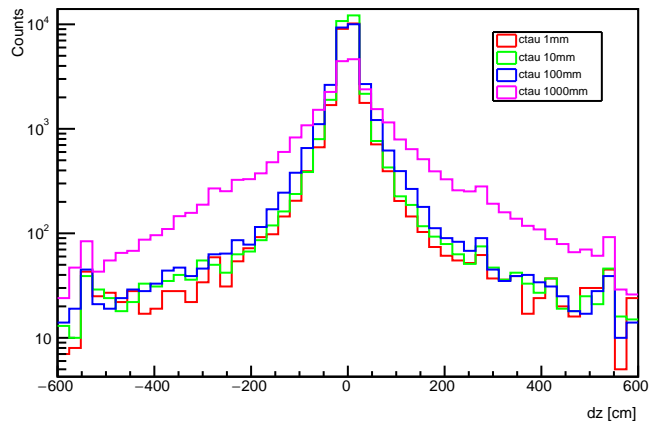
reco leading Mu vxy: j1pt >120, at most 2 jets w/ pt >30 GeV



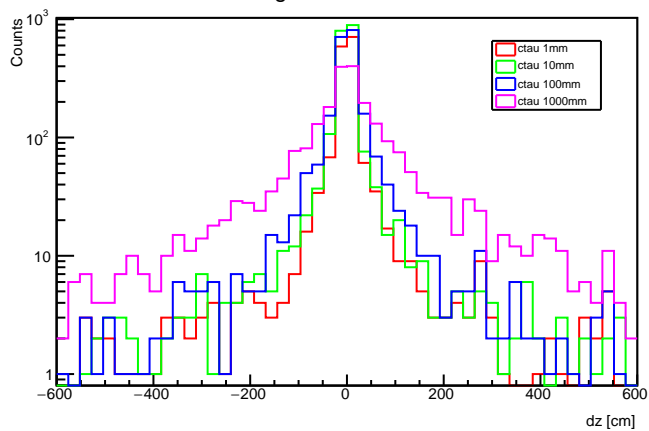
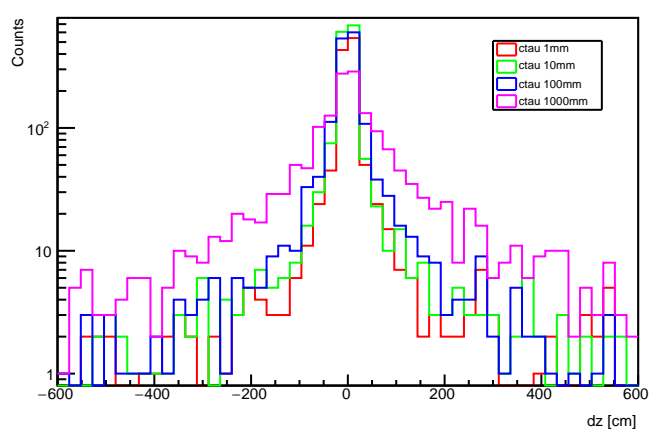
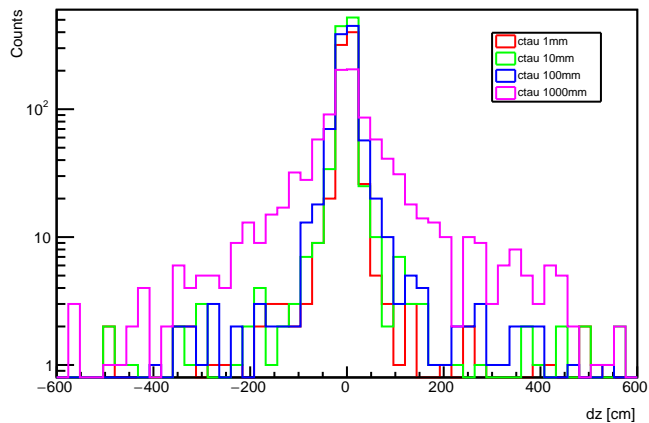
reco leading Mu vxy: at least 2 mu w/ vxy < 740 cm, |vz| < 960 cm & |eta| < 2.4



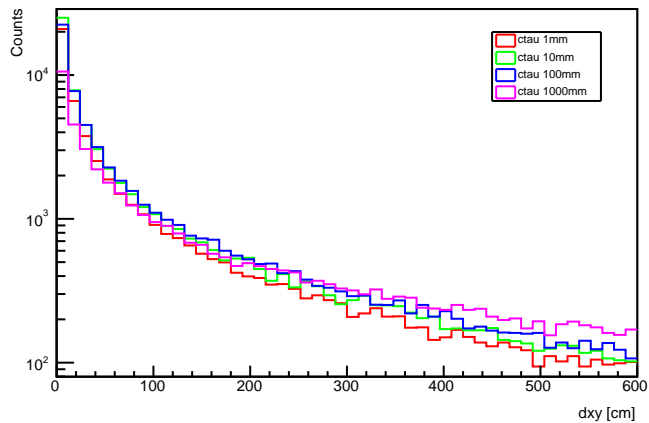
reco leading Mu vz: no cuts

reco leading Mu vz: $n_{\text{jet}} \geq 1, j_{1\text{pt}} > 30 \text{ GeV}$ 

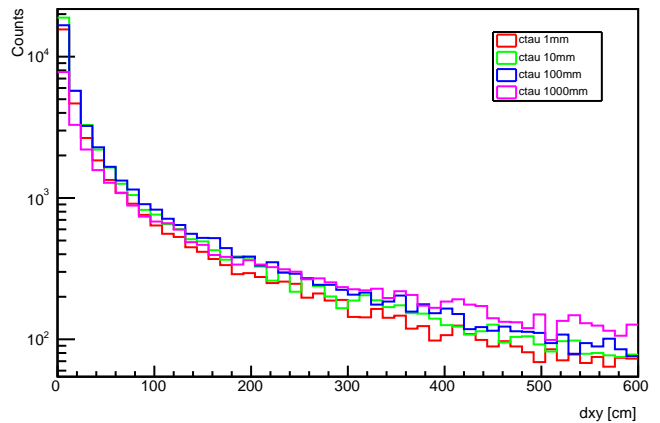
reco leading Mu vz: MET > 120 GeV

reco leading Mu vz: $j_{1\text{pt}} > 120$, at most 2 jets w/ $p_t > 30 \text{ GeV}$ reco leading Mu vz: at least 2 mu w/ $v_{xy} < 740 \text{ cm}$, $|v_z| < 960 \text{ cm}$ & $|\eta| < 2.4$ 

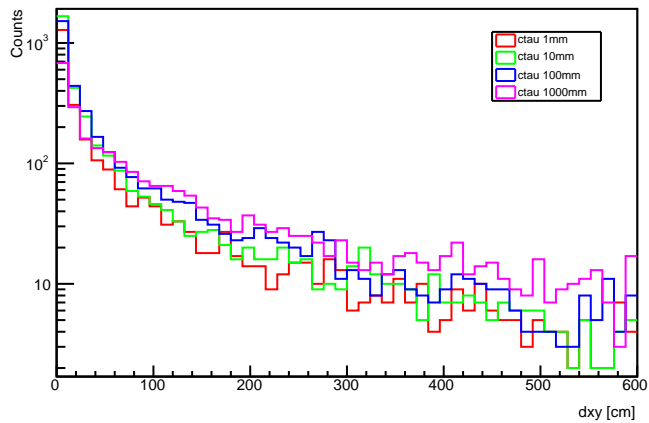
reco all Mu vxy: no cuts



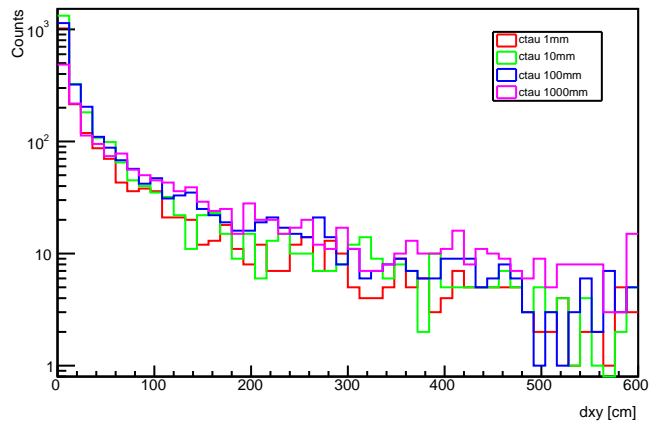
reco all Mu vxy: n_jet >=1, j1pt > 30 GeV



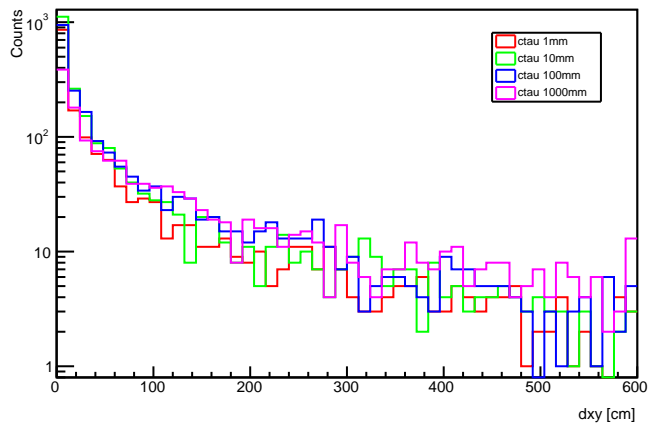
reco all Mu vxy: MET > 120 GeV



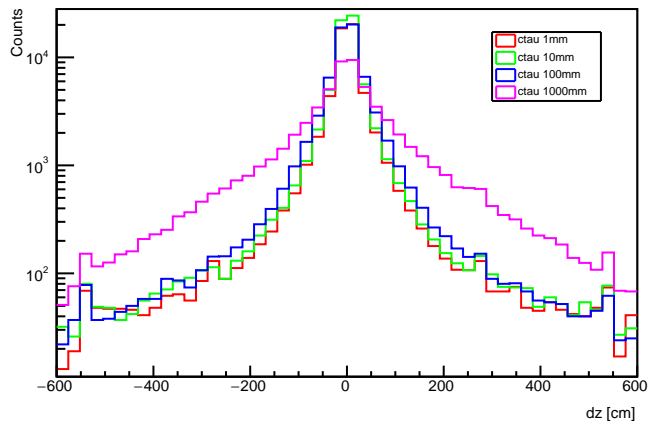
reco all Mu vxy: j1pt >120, at most 2 jets w/ pt >30 GeV



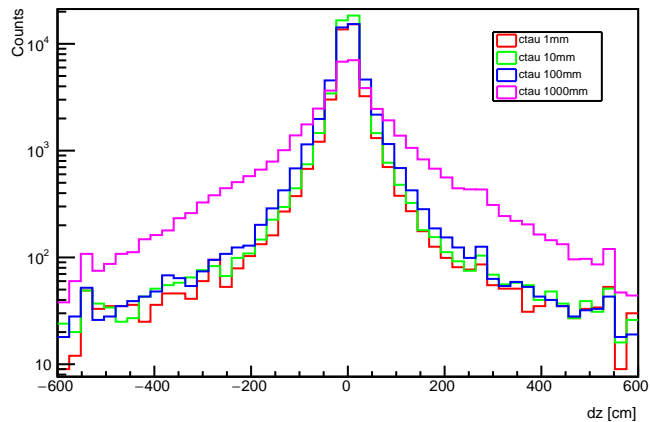
reco all Mu vxy: at least 2 mu w/ vxy < 740 cm, |vz| < 960 cm & |eta| < 2.4



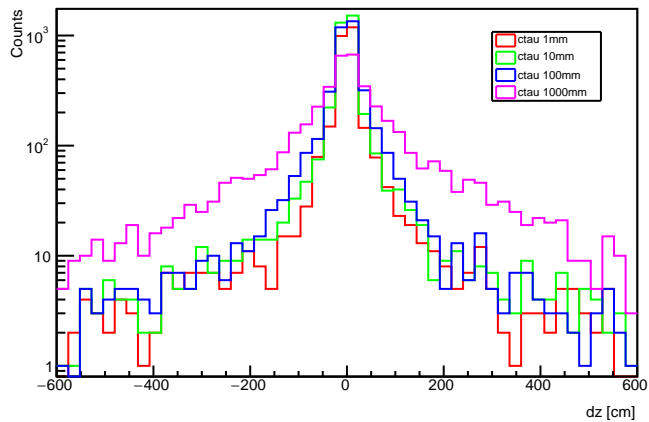
reco all Mu vz: no cuts



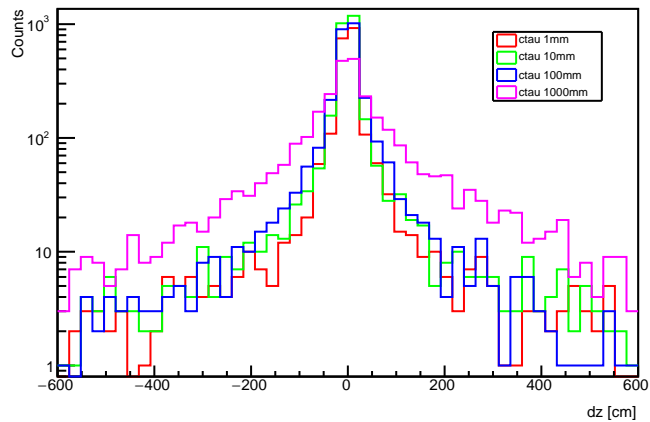
reco all Mu vz: n_jet >=1, j1pt > 30 GeV



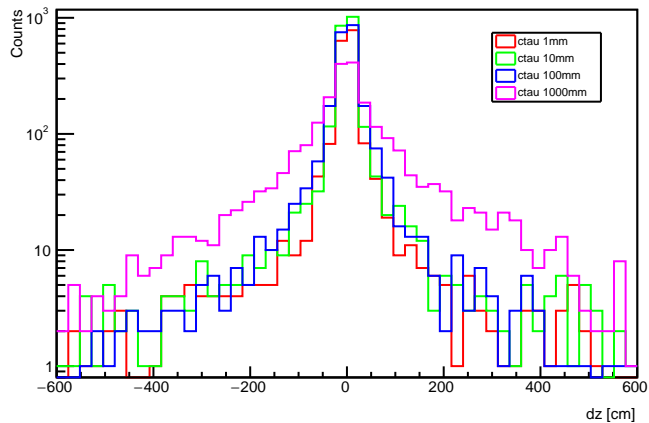
reco all Mu vz: MET > 120 GeV



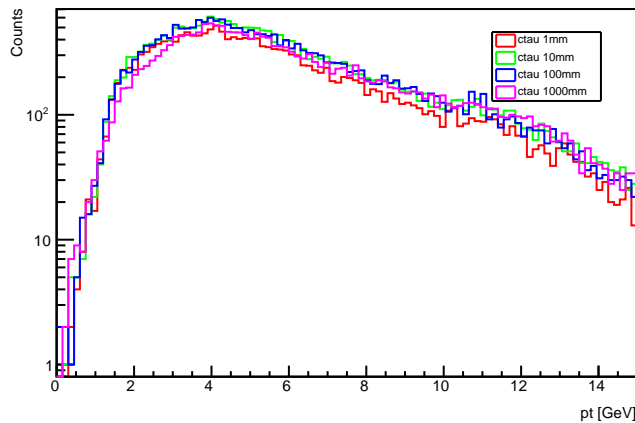
reco all Mu vz: j1pt >120, at most 2 jets w/ pt >30 GeV



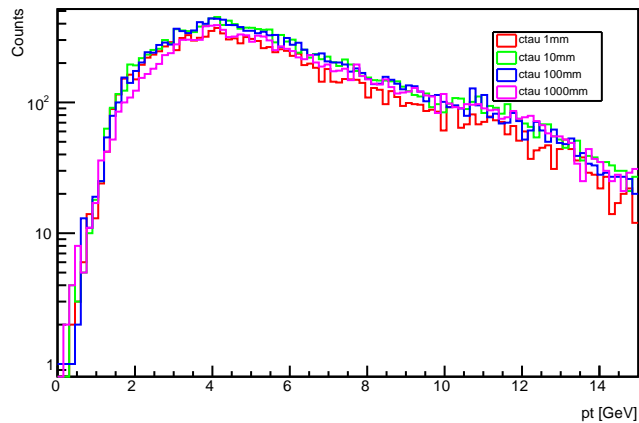
reco all Mu vz: at least 2 mu w/ vxy < 740 cm, |vz| < 960 cm & |eta| < 2.4



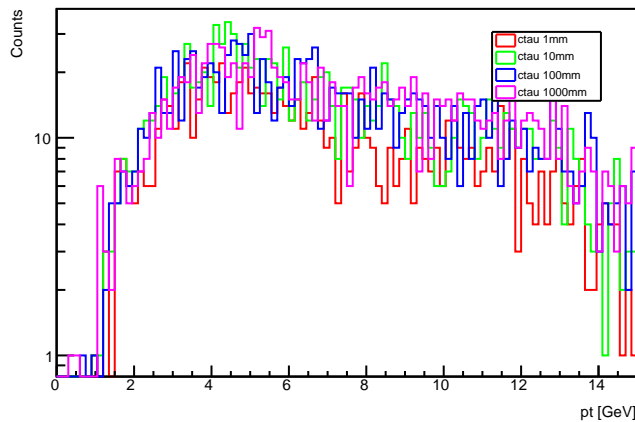
reco subleading Mu pt: no cuts



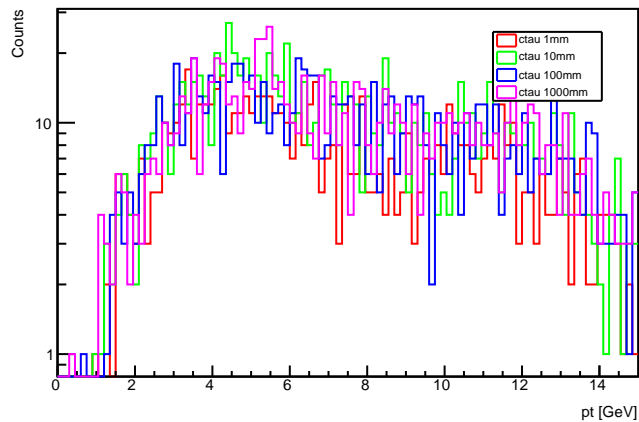
reco subleading Mu pt: n_jet >=1, j1pt > 30 GeV



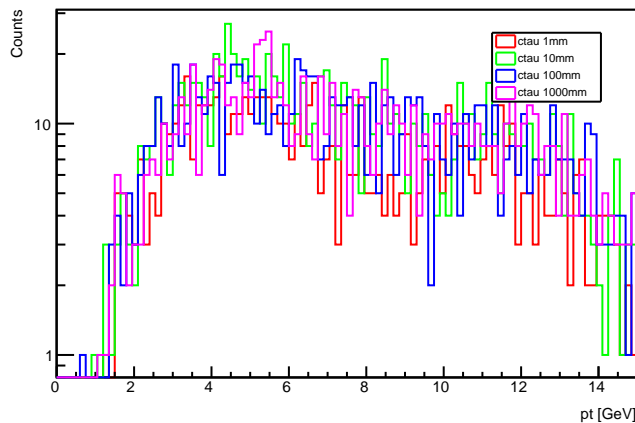
reco subleading Mu pt: MET > 120 GeV



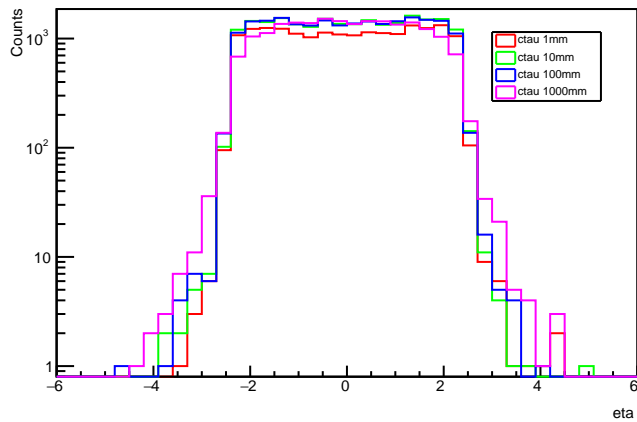
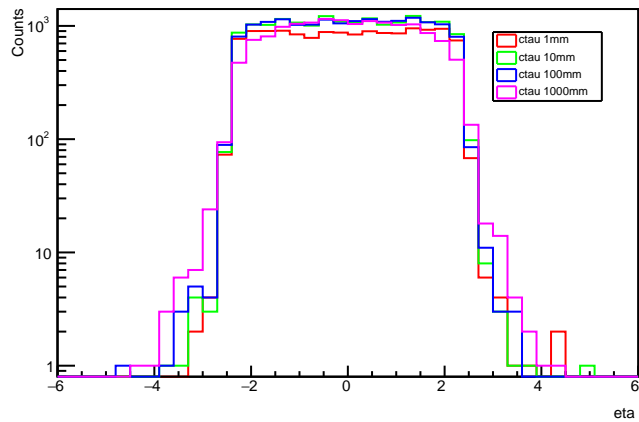
reco subleading Mu pt: j1pt >120, at most 2 jets w/ pt >30 GeV



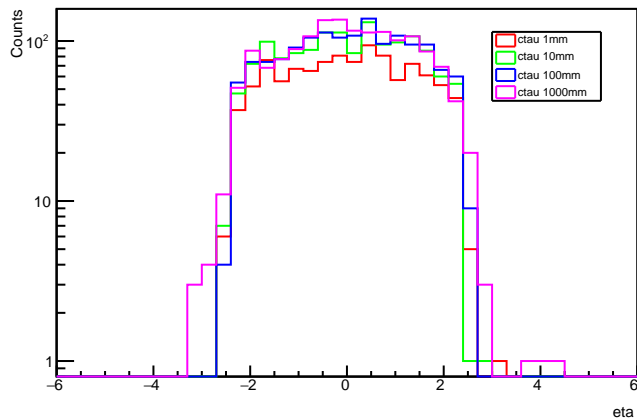
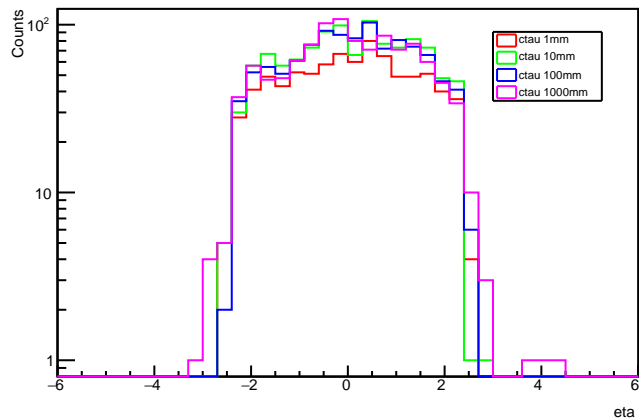
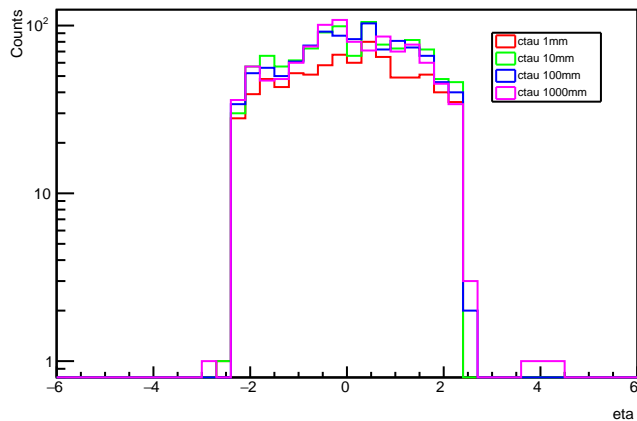
reco subleading Mu pt: at least 2 mu w/ vxy < 740 cm, |vz| < 960 cm & |eta| < 2.4



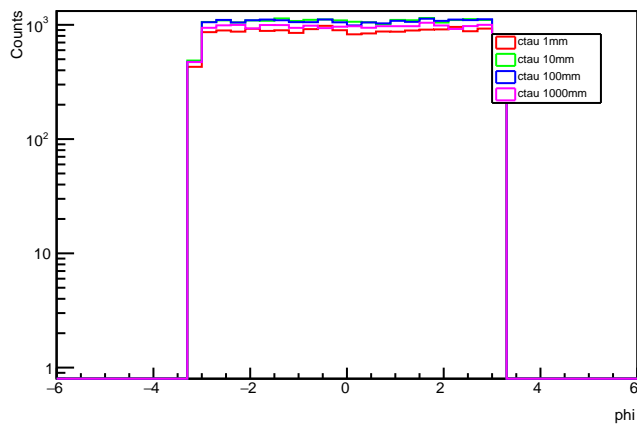
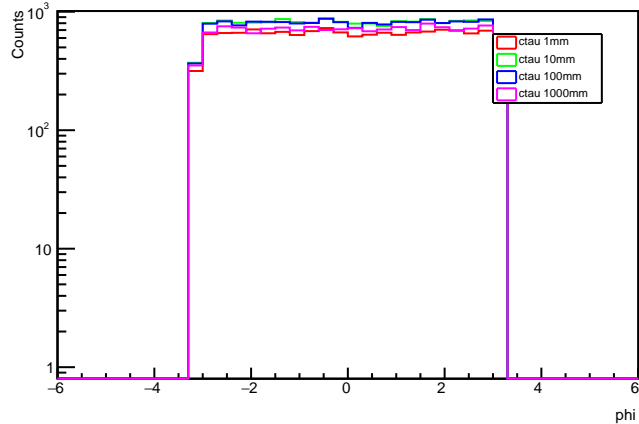
reco subleading Mu eta: no cuts

reco subleading Mu eta: $n_{\text{jet}} \geq 1$, $j1_{\text{pt}} > 30$ GeV

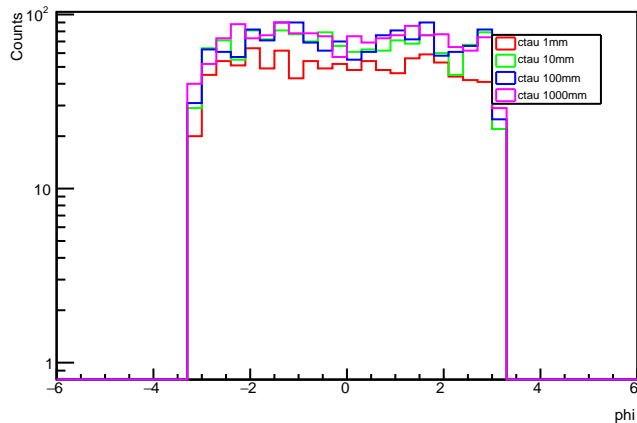
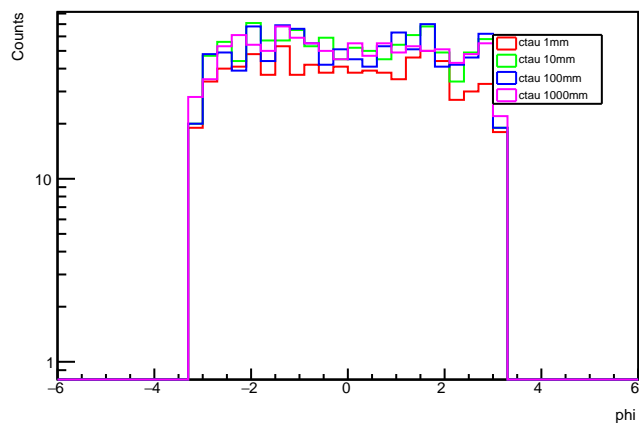
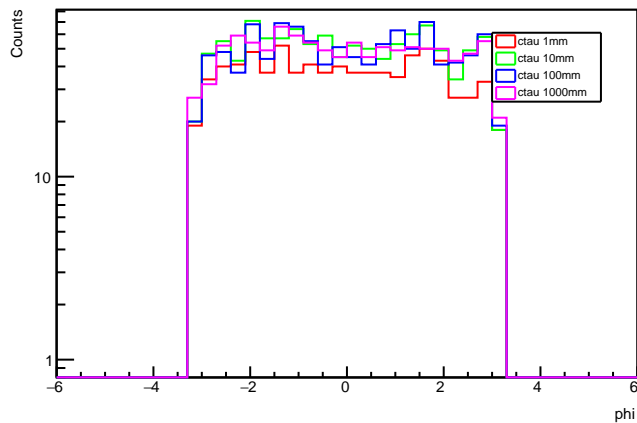
reco subleading Mu eta: MET > 120 GeV

reco subleading Mu eta: $j1_{\text{pt}} > 120$, at most 2 jets w/ $pt > 30$ GeVreco subleading Mu eta: at least 2 mu w/ $v_{xy} < 740$ cm, $|v_z| < 960$ cm & $|\eta| < 2.4$ 

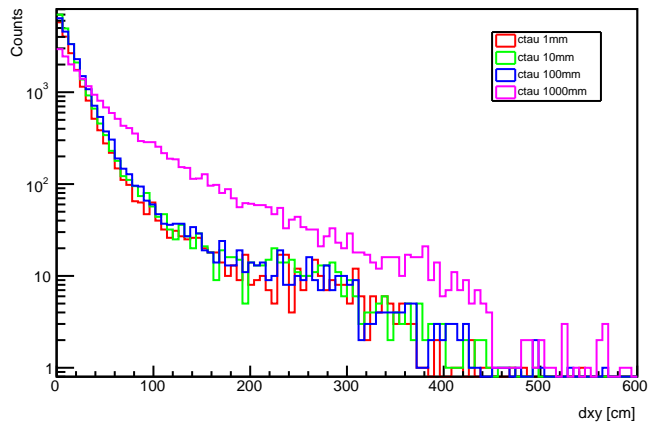
reco subleading Mu phi: no cuts

reco subleading Mu phi: $n_{\text{jet}} \geq 1$, $j1pt > 30$ GeV

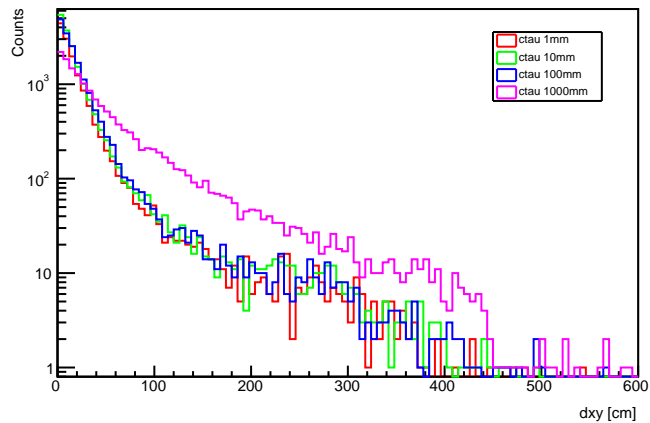
reco subleading Mu phi: MET > 120 GeV

reco subleading Mu phi: $j1pt > 120$, at most 2 jets w/ $p_T > 30$ GeVreco subleading Mu phi: at least 2 mu w/ $v_{xy} < 740$ cm, $|v_z| < 960$ cm & $|\eta| < 2.4$ 

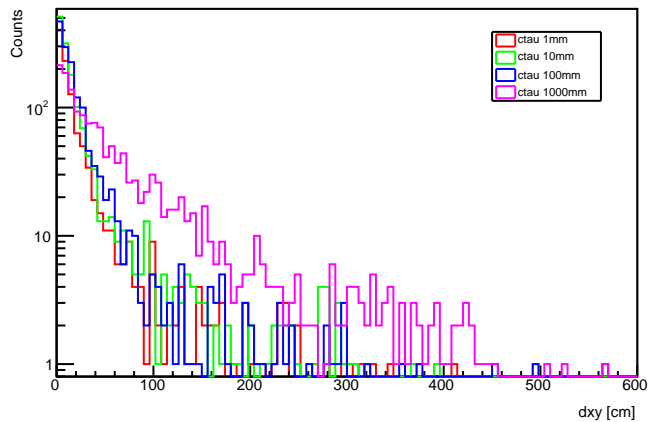
reco subleading Mu vxy: no cuts



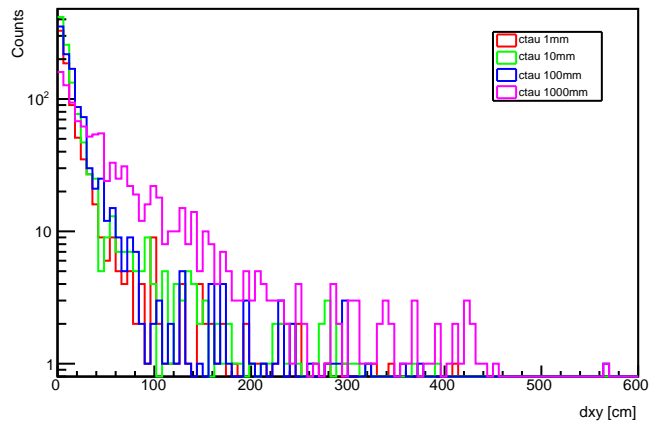
reco subleading Mu vxy: n_jet >=1, j1pt > 30 GeV



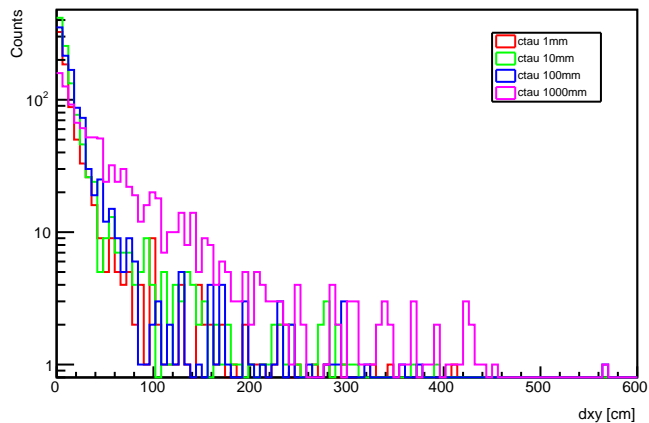
reco subleading Mu vxy: MET > 120 GeV



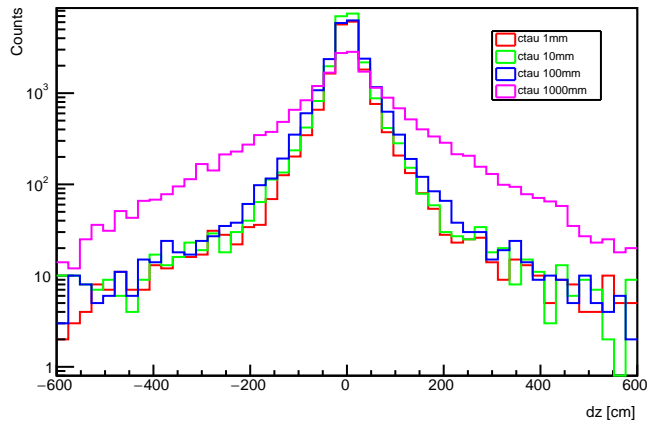
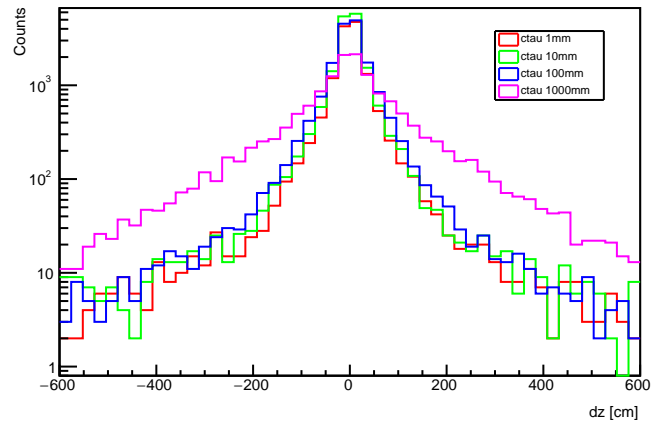
reco subleading Mu vxy: j1pt >120, at most 2 jets w/ pt >30 GeV



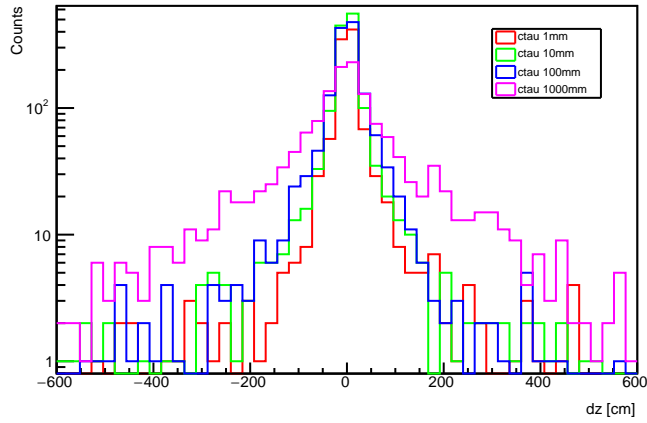
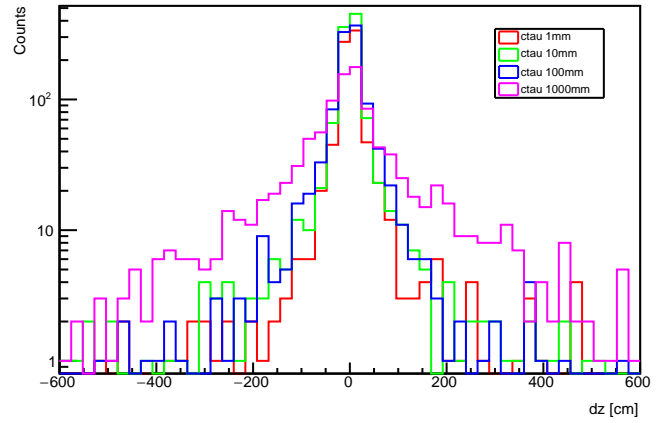
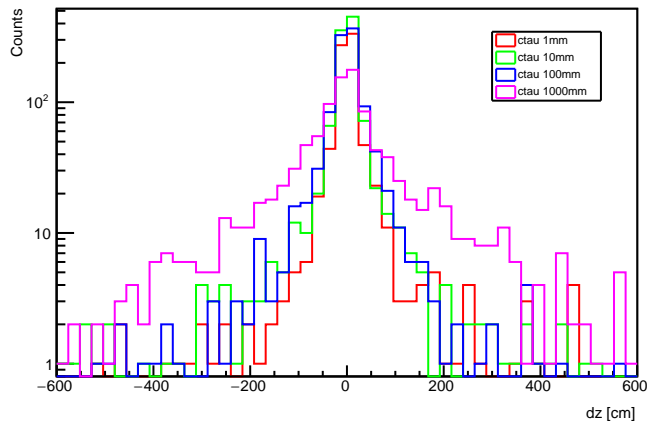
reco subleading Mu vxy: at least 2 mu w/ vxy < 740 cm, |vz| < 960 cm & |eta| < 2.4



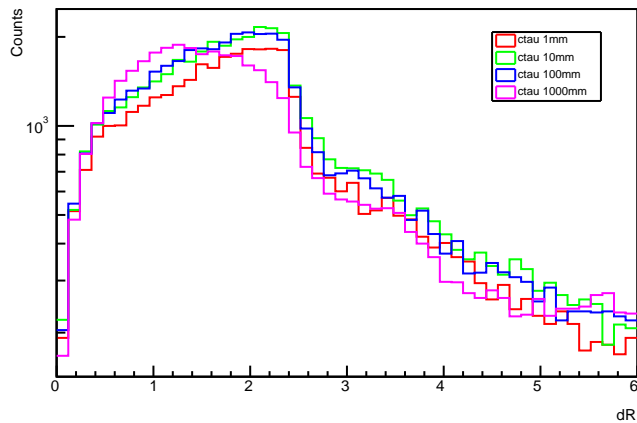
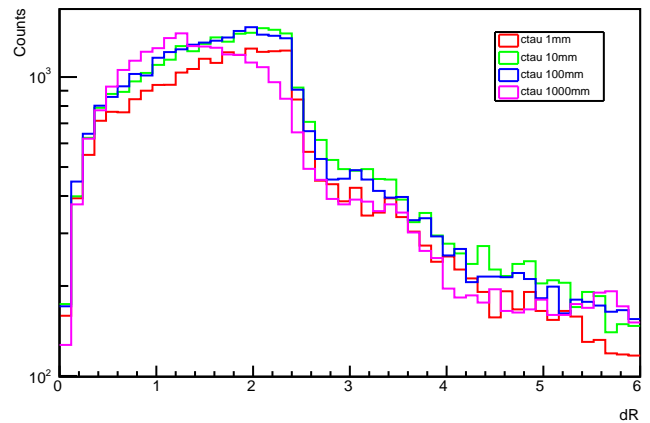
reco subleading Mu vz: no cuts

reco subleading Mu vz: $n_{\text{jet}} \geq 1$, $j_{1\text{pt}} > 30$ GeV

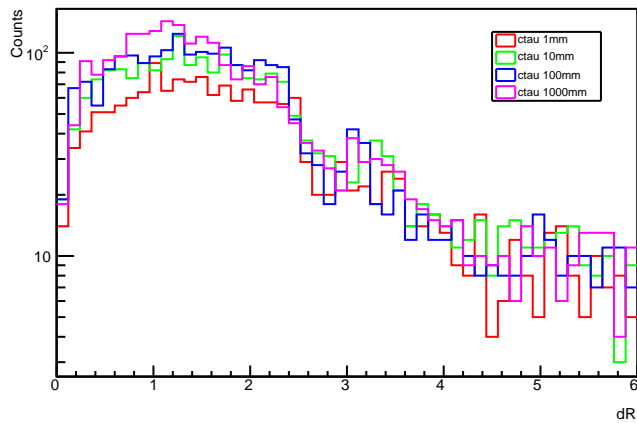
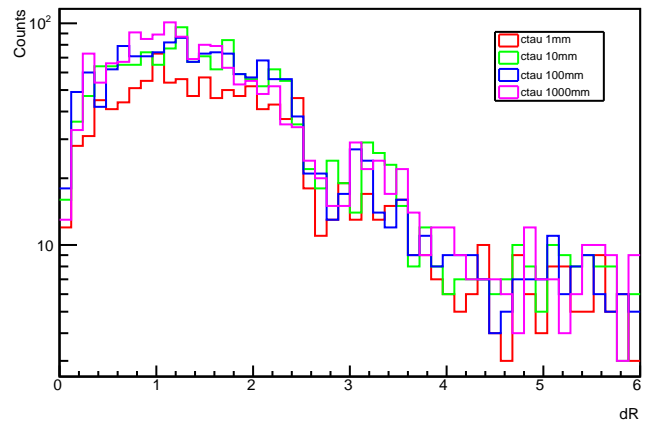
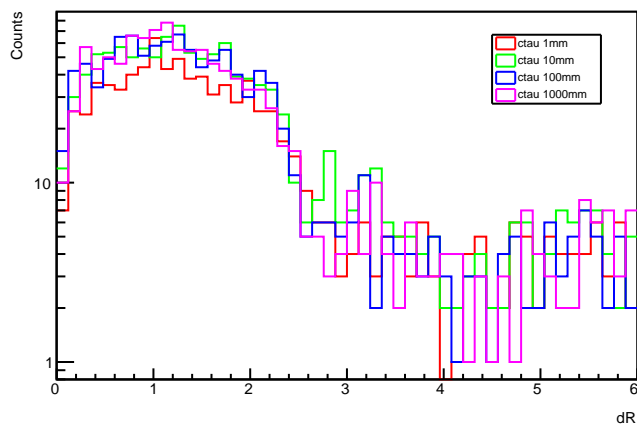
reco subleading Mu vz: MET > 120 GeV

reco subleading Mu vz: $j_{1\text{pt}} > 120$, at most 2 jets w/ $p_t > 30$ GeVreco subleading Mu vz: at least 2 mu w/ $v_{xy} < 740$ cm, $|v_z| < 960$ cm & $|\eta_a| < 2.4$ 

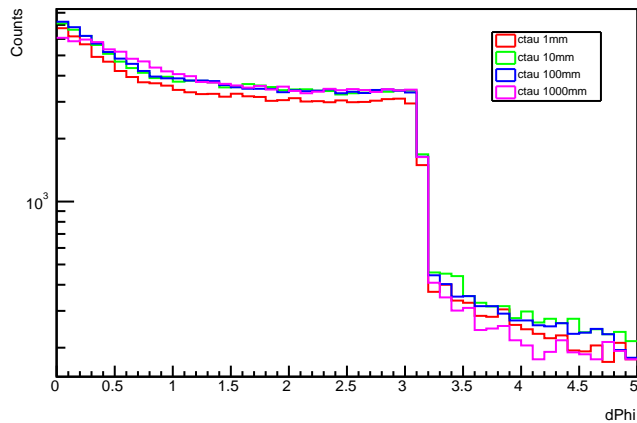
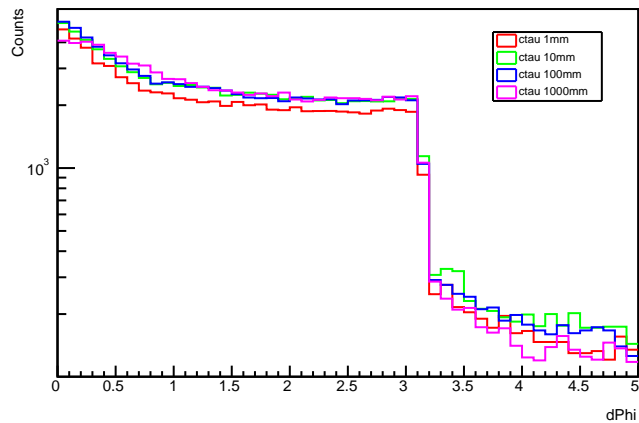
dR: reco leading mu and subleading mu: no cuts

dR: reco leading mu and subleading mu: $n_{\text{jet}} \geq 1, j_{1\text{pt}} > 30 \text{ GeV}$ 

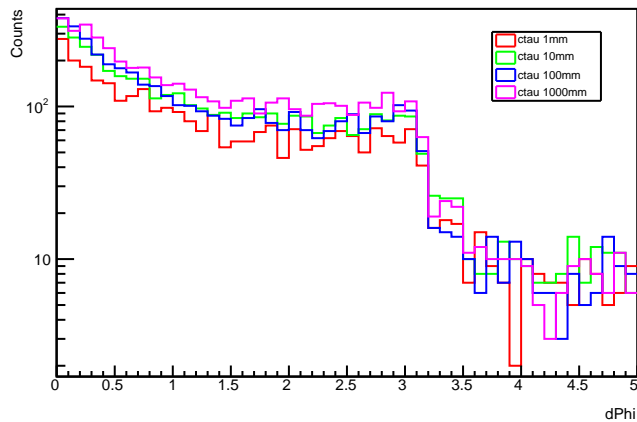
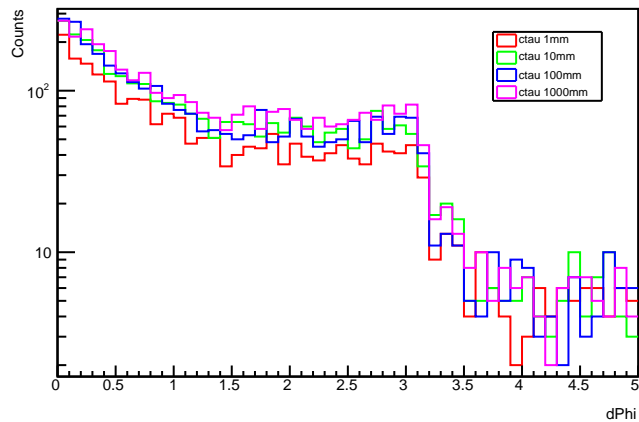
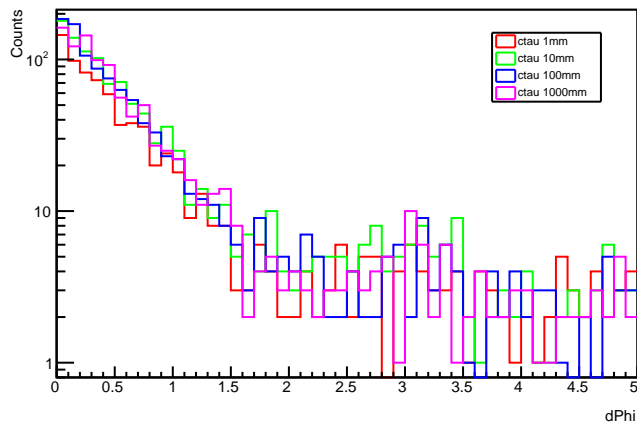
dR: reco leading mu and subleading mu: MET > 120 GeV

dR: reco leading mu and subleading mu: $j_{1\text{pt}} > 120$, at most 2 jets w/ pt > 30 GeVdR: reco leading mu and subleading mu: at least 2 mu w/ $v_{xy} < 740 \text{ cm}$, $|v_z| < 960 \text{ cm}$ & $|\eta| < 2.4$ 

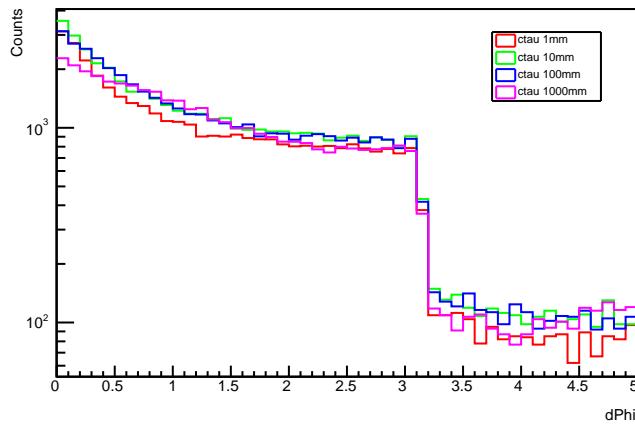
dPhi: reco MET and leading mu: no cuts

dPhi: reco MET and leading mu: $n_{\text{jet}} \geq 1, j_{1\text{pt}} > 30 \text{ GeV}$ 

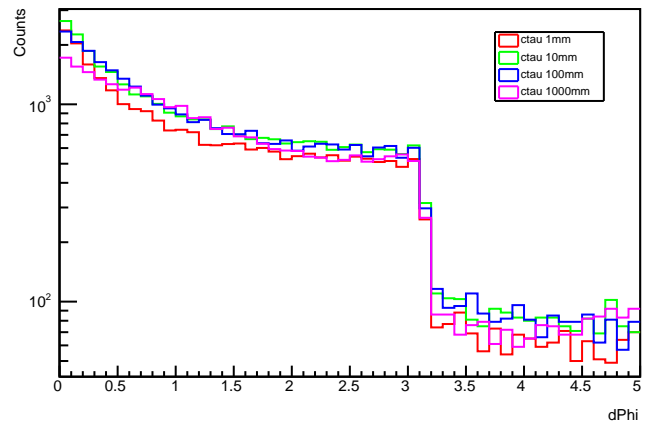
dPhi: reco MET and leading mu: MET > 120 GeV

dPhi: reco MET and leading mu: $j_{1\text{pt}} > 120$, at most 2 jets w/ $p_t > 30 \text{ GeV}$ dPhi: reco MET and leading mu: at least 2 mu w/ $v_{xy} < 740 \text{ cm}$, $|v_z| < 960 \text{ cm}$ & $|\eta_{\text{jet}}| < 2.4$ 

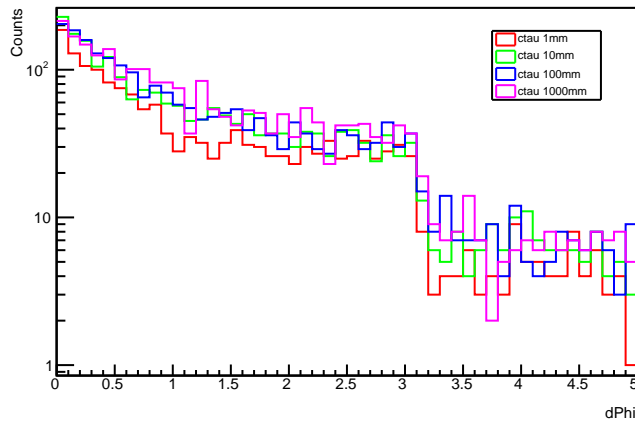
dPhi: reco leading mu and subleading mu: no cuts



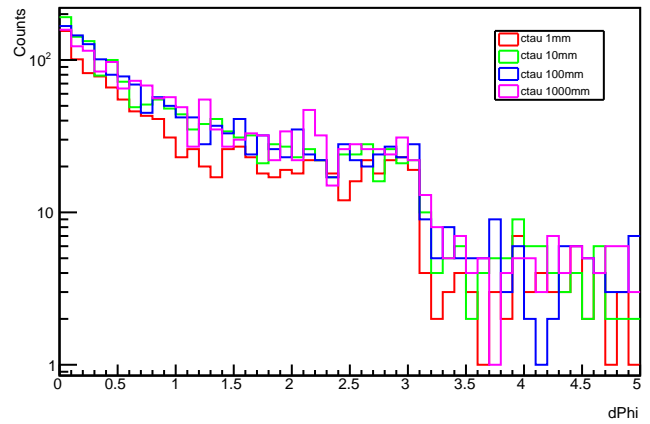
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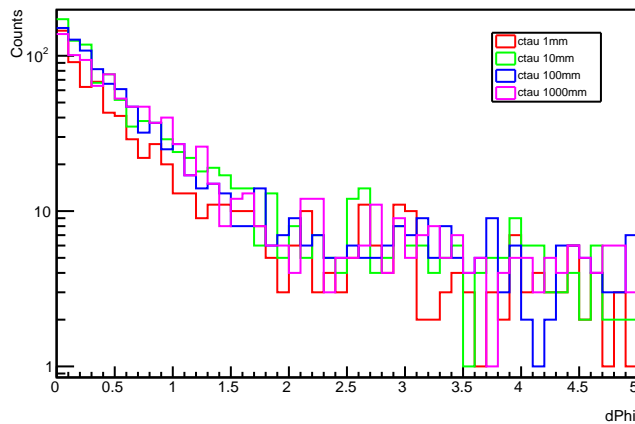
dPhi: reco leading mu and subleading mu: MET > 120 GeV



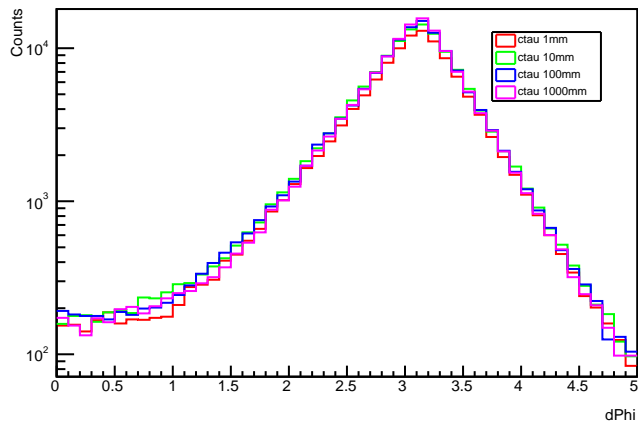
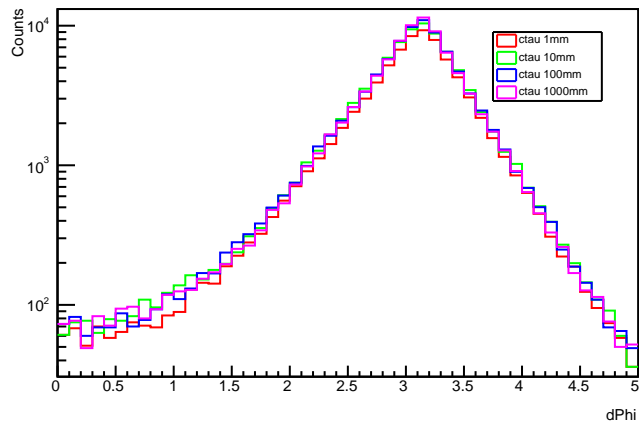
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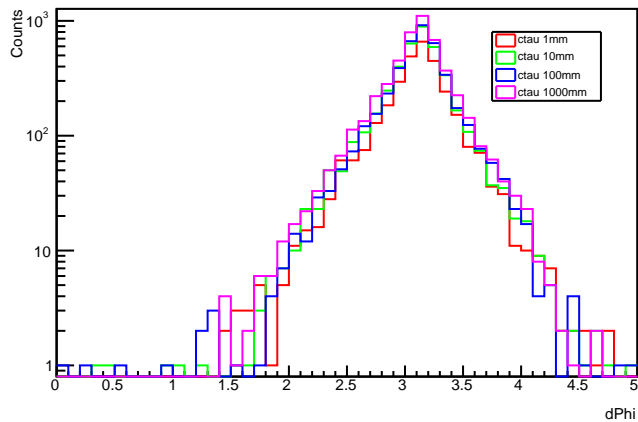
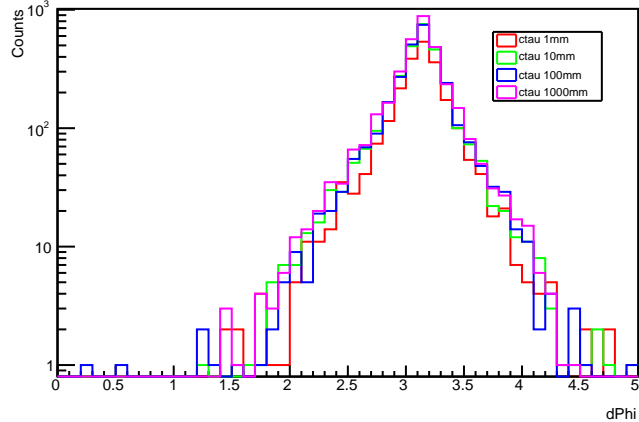
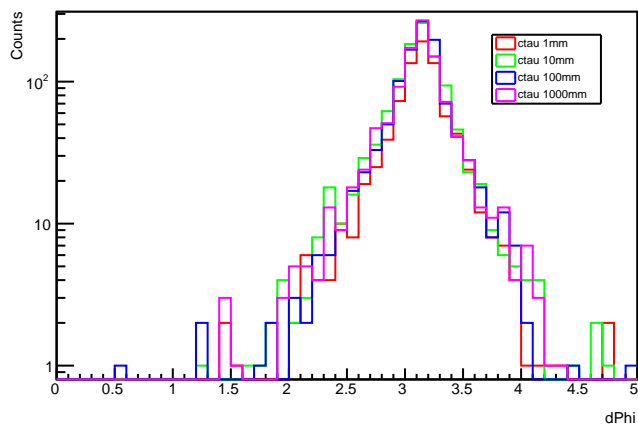
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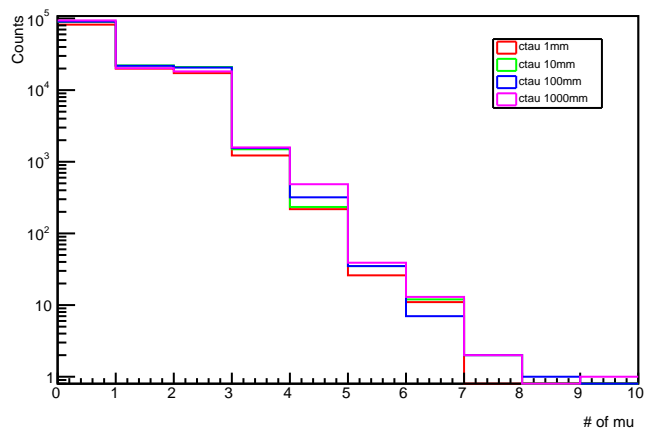
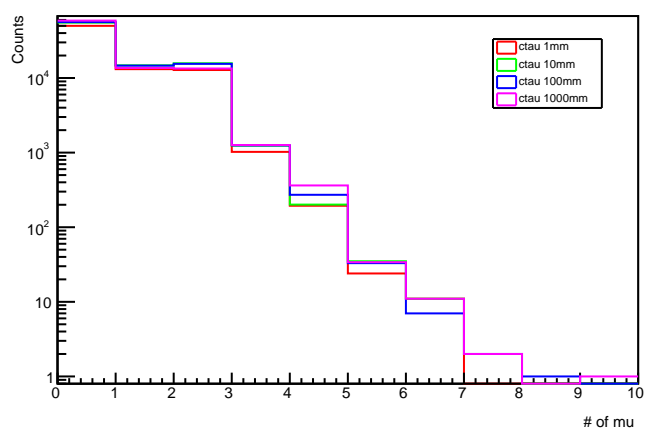
dPhi: reco MET and leading jet: no cuts

dPhi: reco MET and leading jet: $n_{\text{jet}} \geq 1$, $j1_{\text{pt}} > 30$ GeV

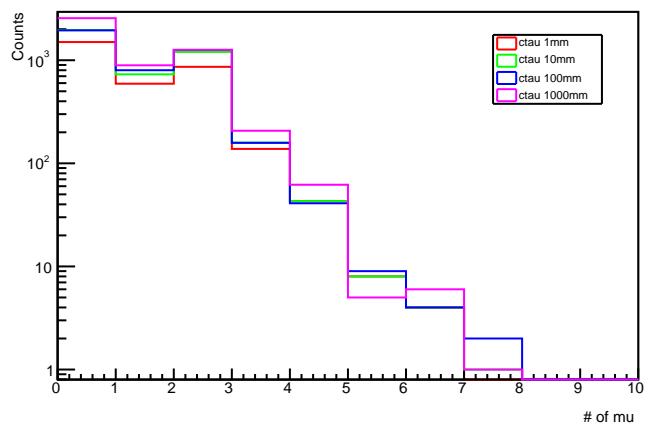
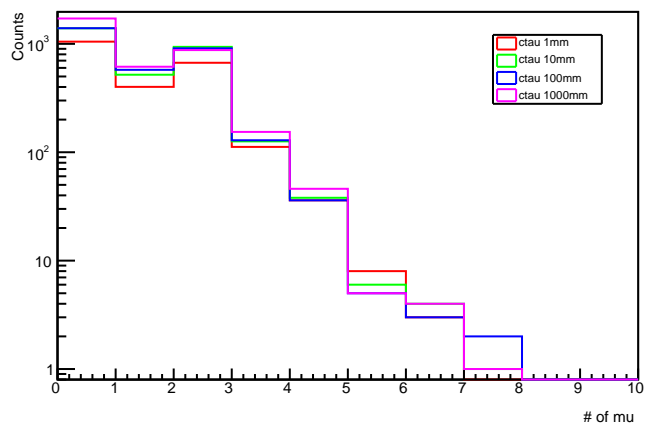
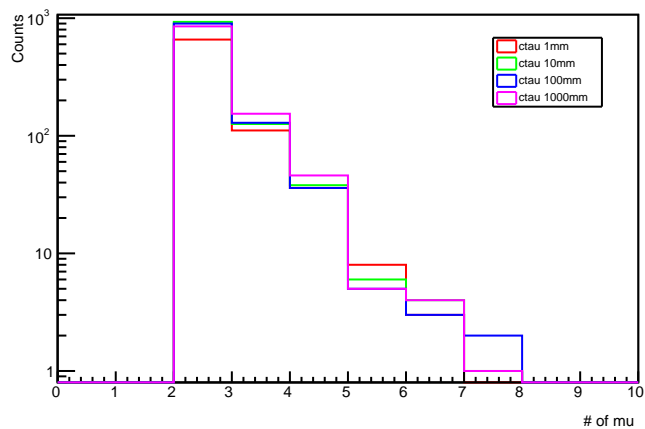
dPhi: reco MET and leading jet: MET > 120 GeV

dPhi: reco MET and leading jet: $j1_{\text{pt}} > 120$, at most 2 jets w/ $p_{\text{T}} > 30$ GeVdPhi: reco MET and leading jet: at least 2 mu w/ $v_{xy} < 740$ cm, $|v_z| < 960$ cm & $|\eta| < 2.4$ 

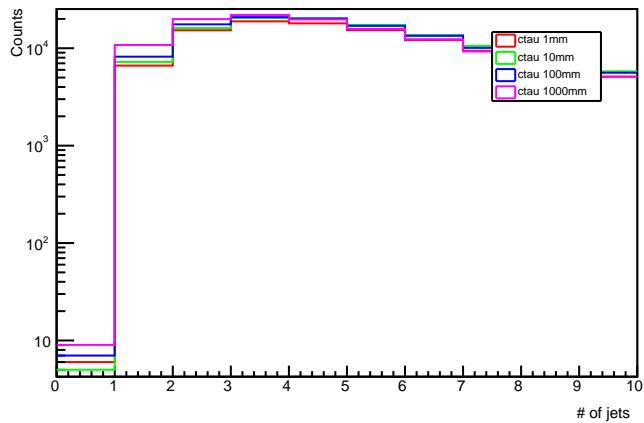
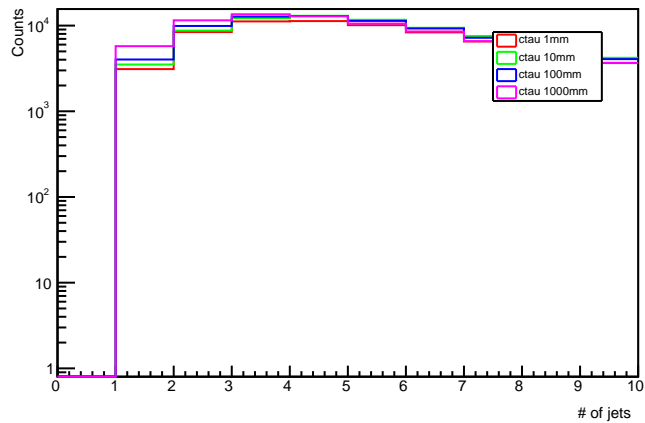
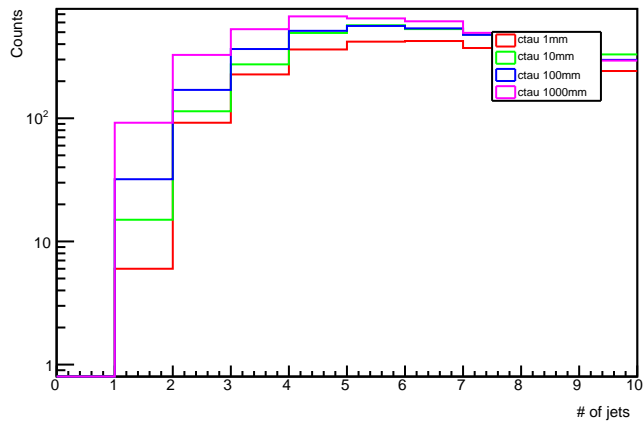
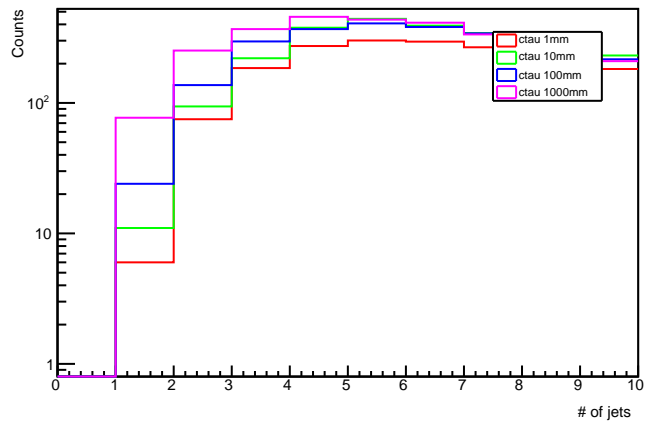
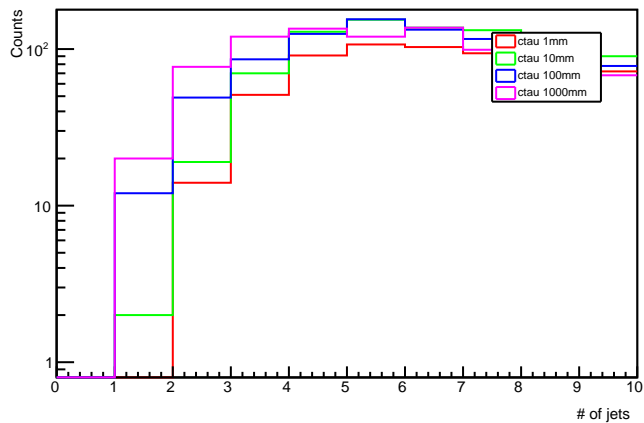
reco number of mu: no cuts

reco number of mu: $n_{\text{jet}} \geq 1, j_{1\text{pt}} > 30 \text{ GeV}$ 

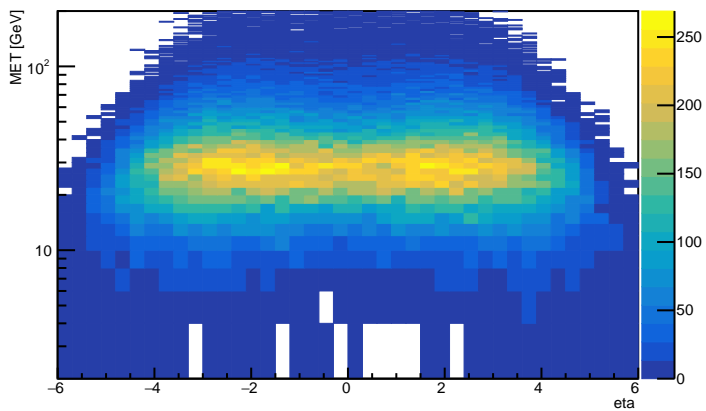
reco number of mu: MET > 120 GeV

reco number of mu: $j_{1\text{pt}} > 120$, at most 2 jets w/ $p_t > 30 \text{ GeV}$ reco number of mu: at least 2 mu w/ $v_{xy} < 740 \text{ cm}$, $|v_z| < 960 \text{ cm}$ & $|\eta| < 2.4$ 

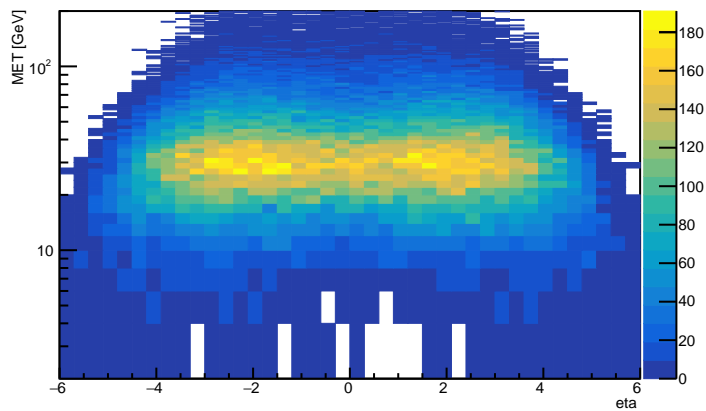
reco number of jets: no cuts

reco number of jets: $n_{\text{jet}} \geq 1$, $j_{1\text{pt}} > 30 \text{ GeV}$ reco number of jets: $\text{MET} > 120 \text{ GeV}$ reco number of jets: $j_{1\text{pt}} > 120$, at most 2 jets w/ $p_t > 30 \text{ GeV}$ reco number of jets: at least 2 mu w/ $v_{xy} < 740 \text{ cm}$, $|v_z| < 960 \text{ cm}$ & $|\eta| < 2.4$ 

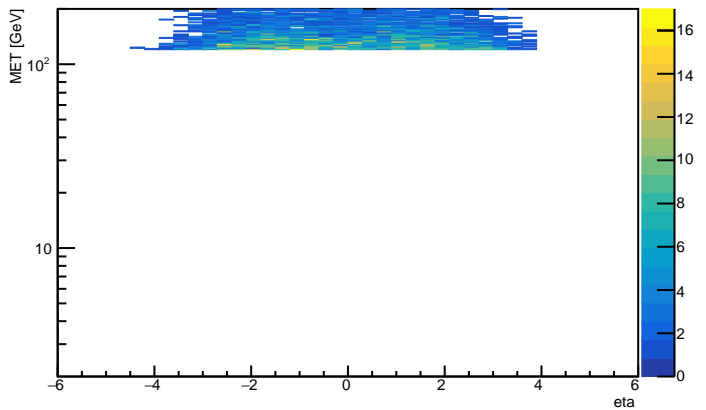
ctau 1mm gen leading Met eta vs pt: no cuts



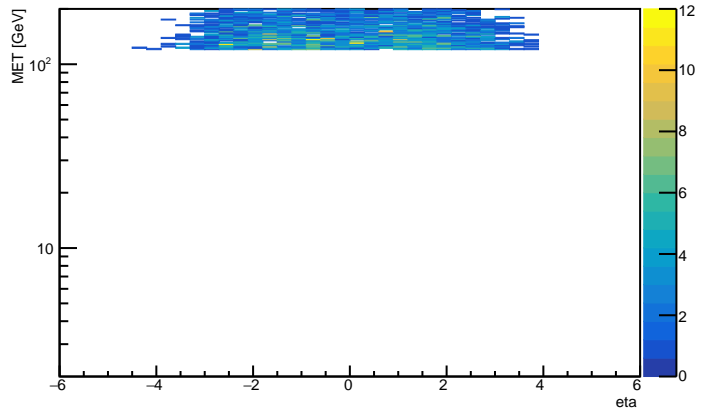
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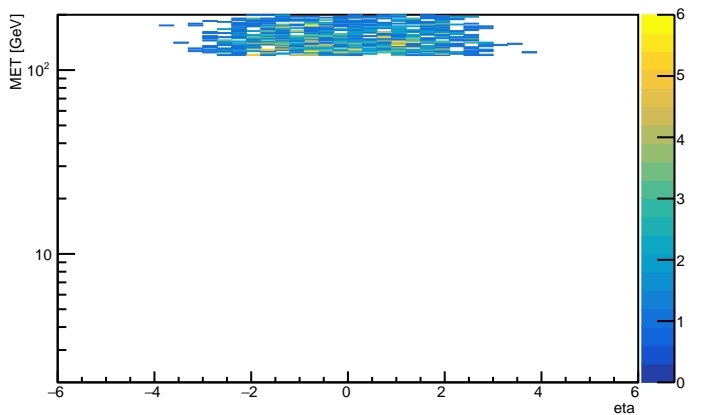
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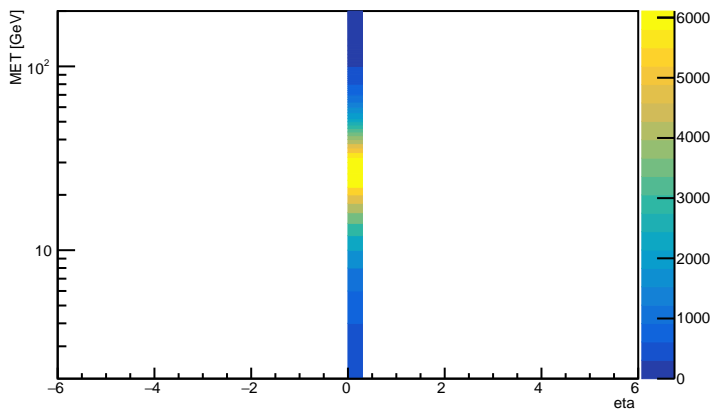
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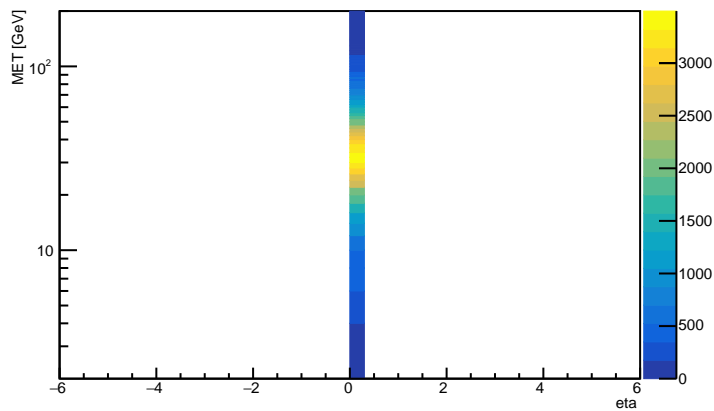
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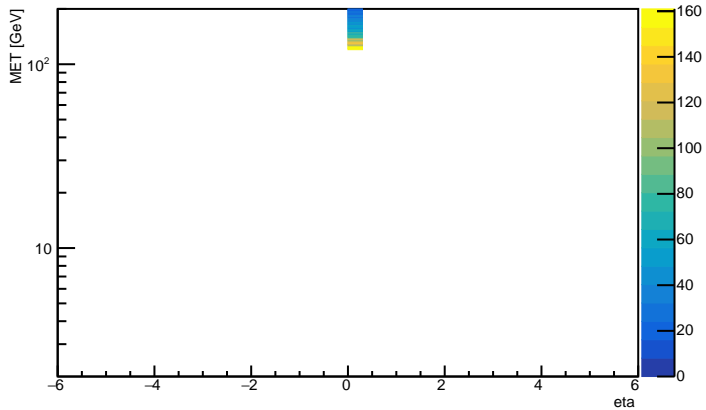
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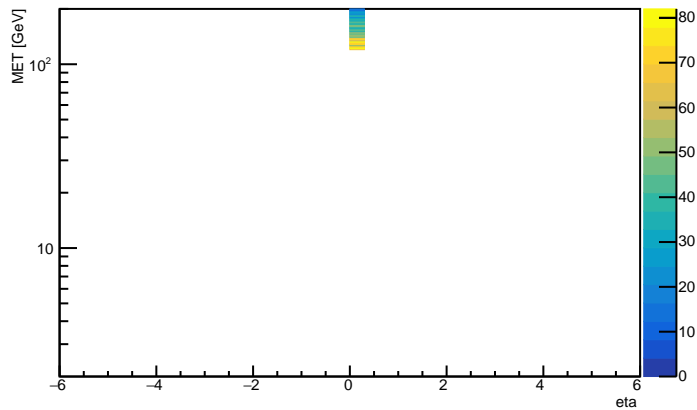
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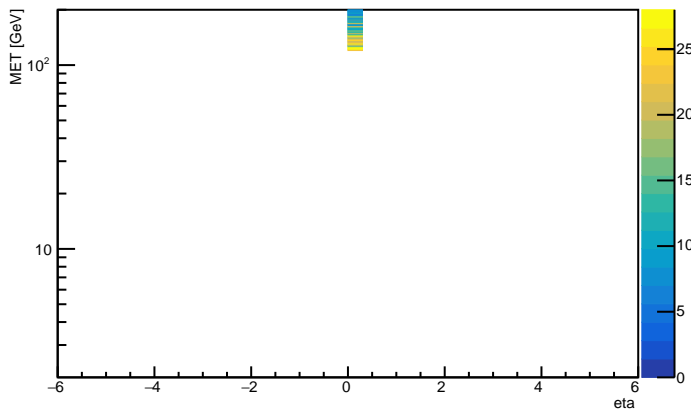
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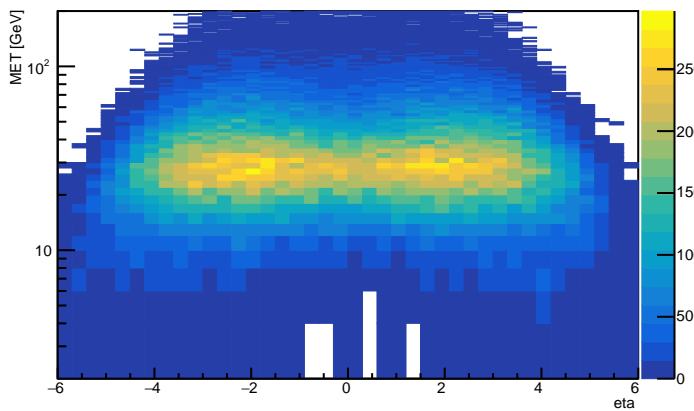
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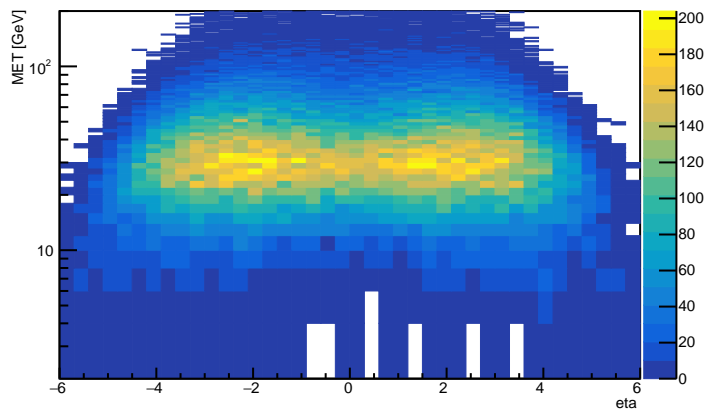
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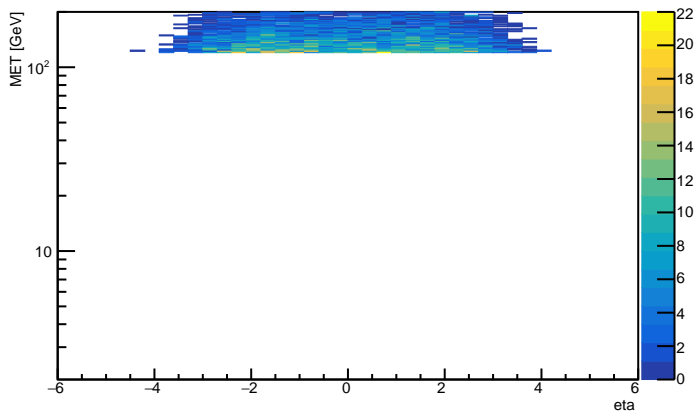
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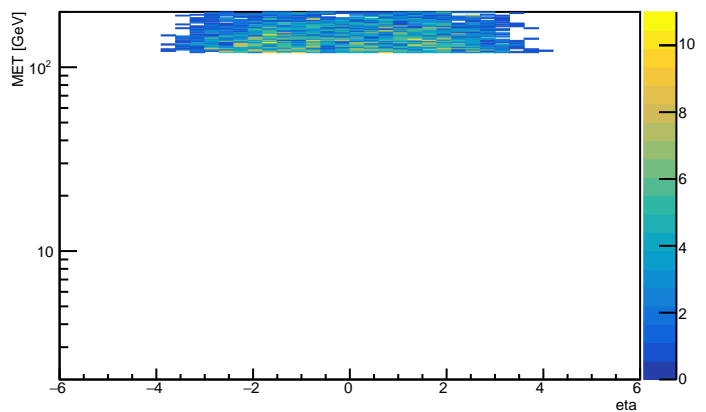
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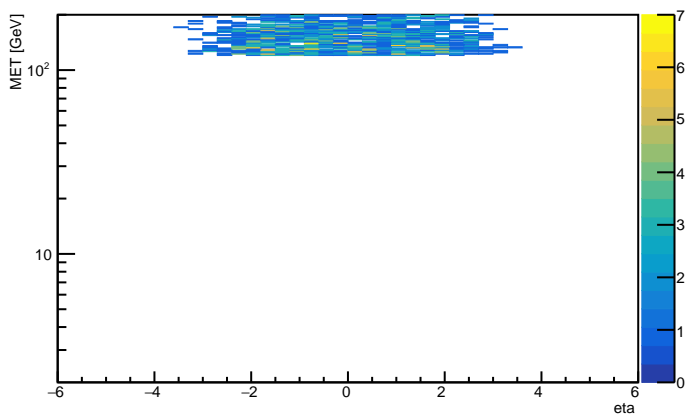
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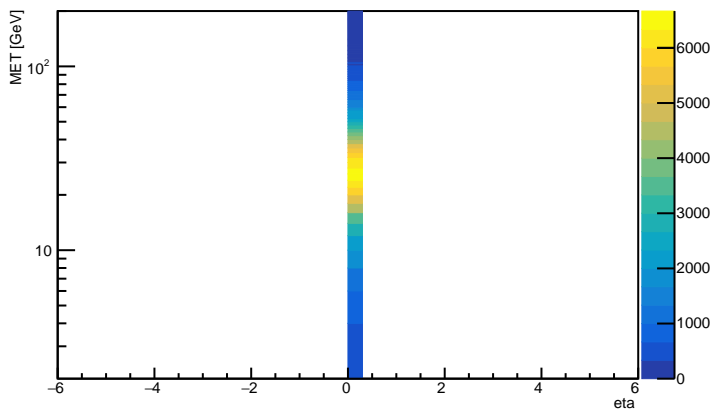
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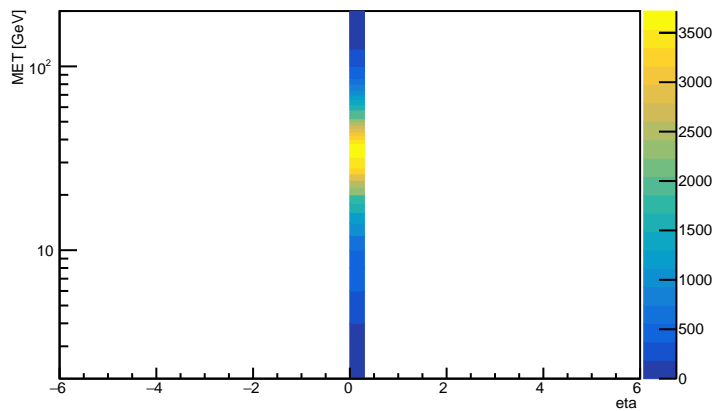
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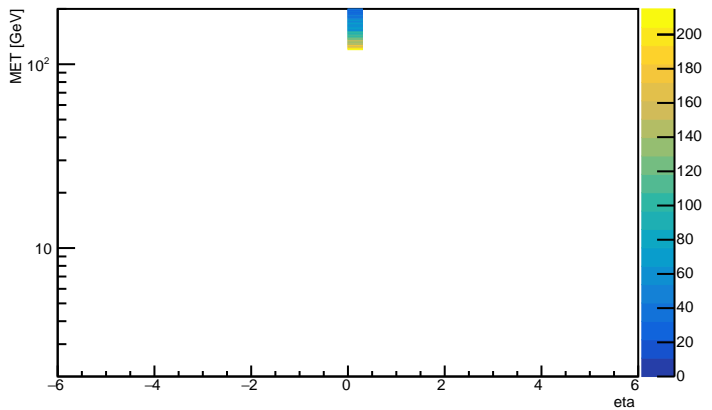
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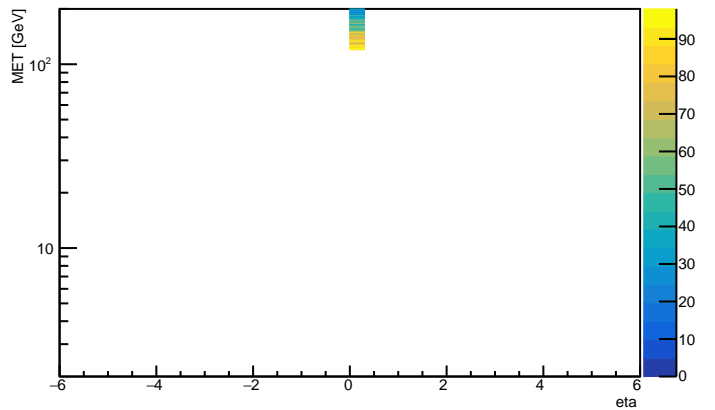
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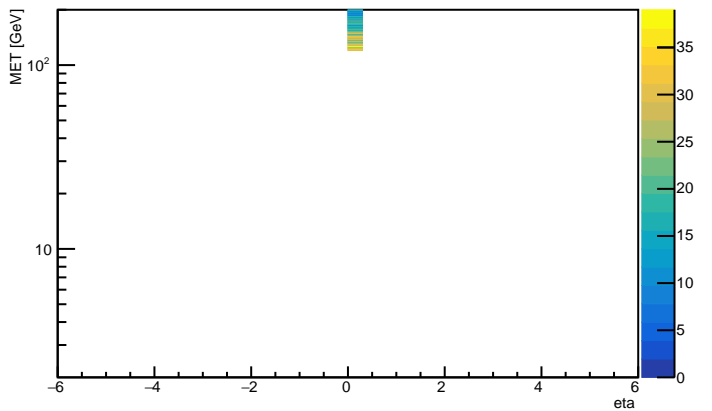
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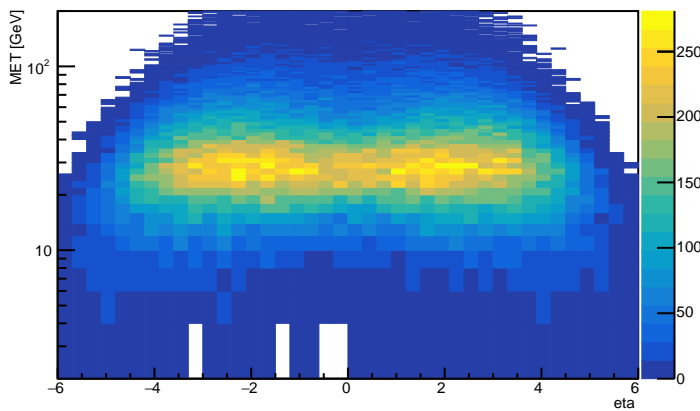
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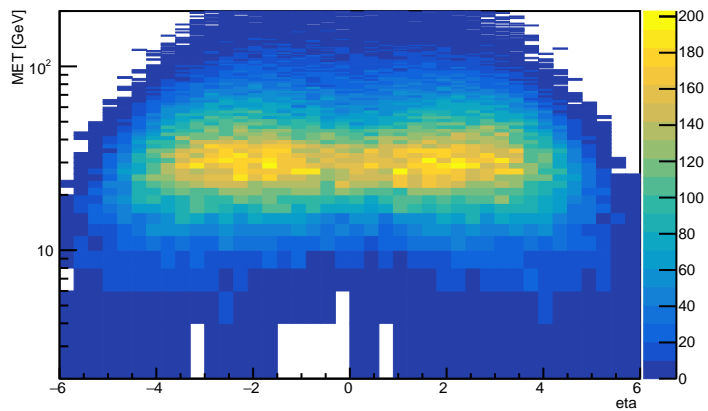
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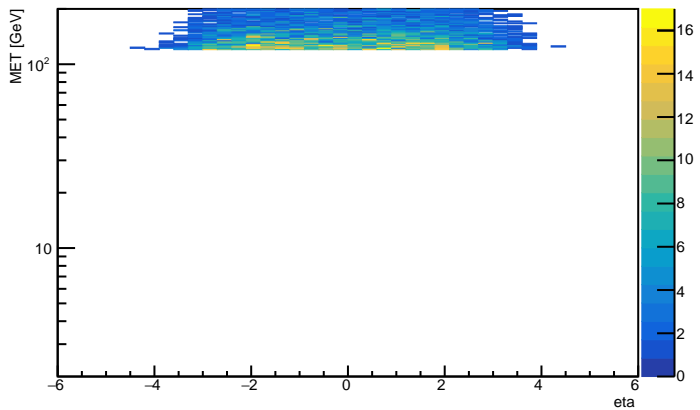
ctau 100mm gen leading Met eta vs pt: no cuts



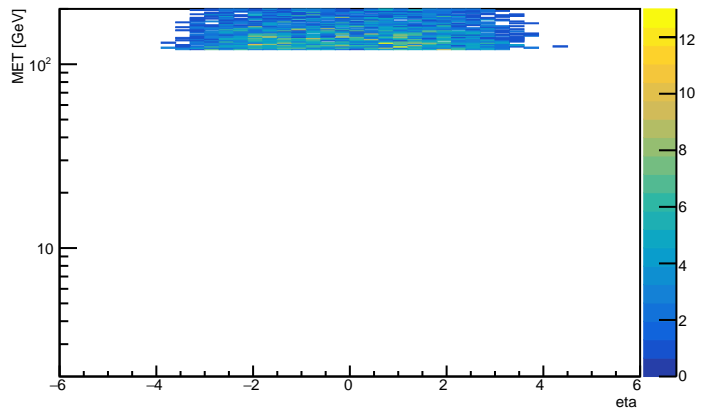
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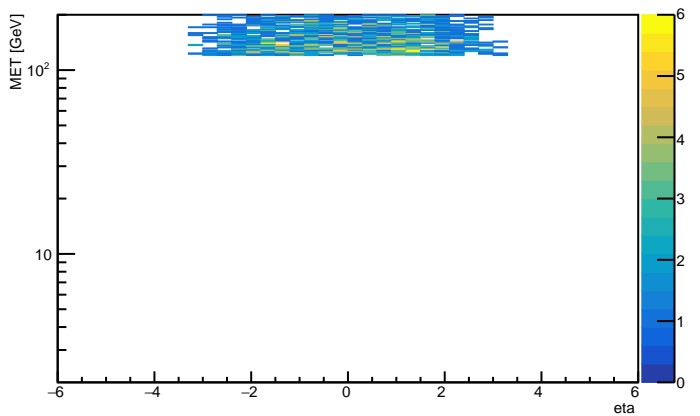
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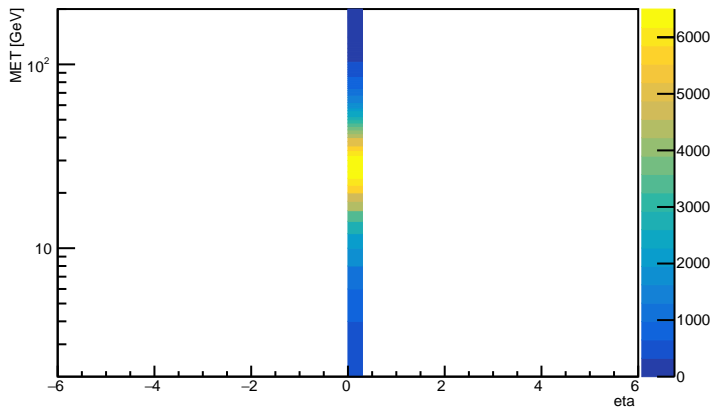
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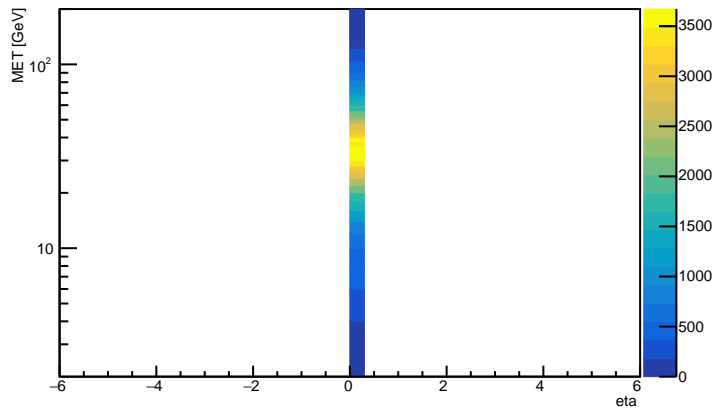
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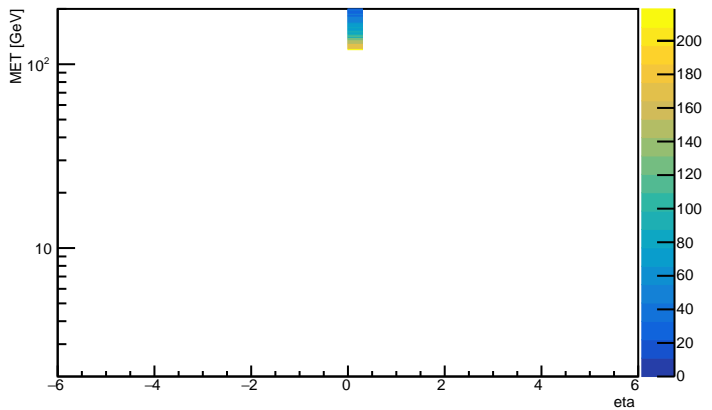
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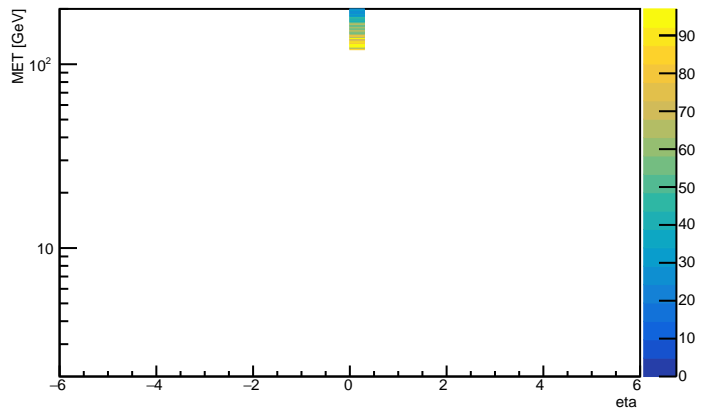
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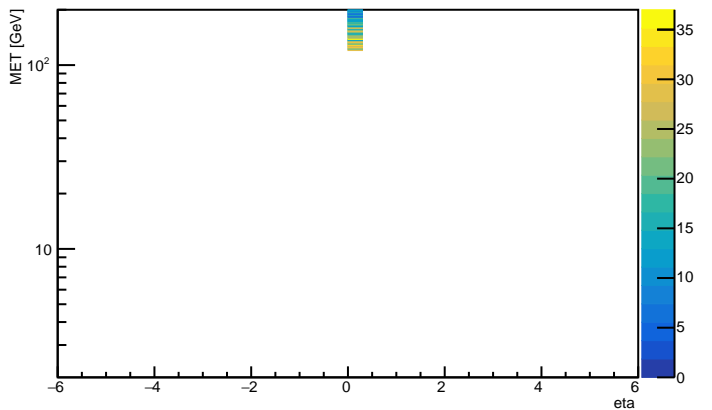
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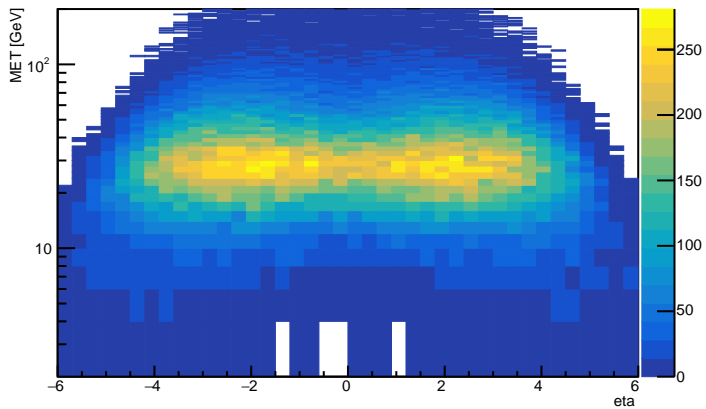
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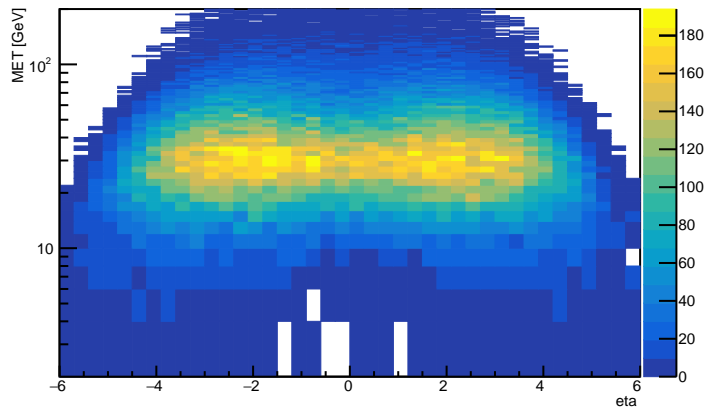
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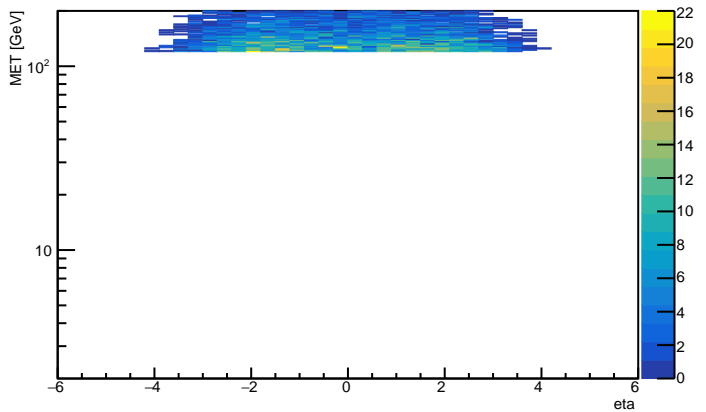
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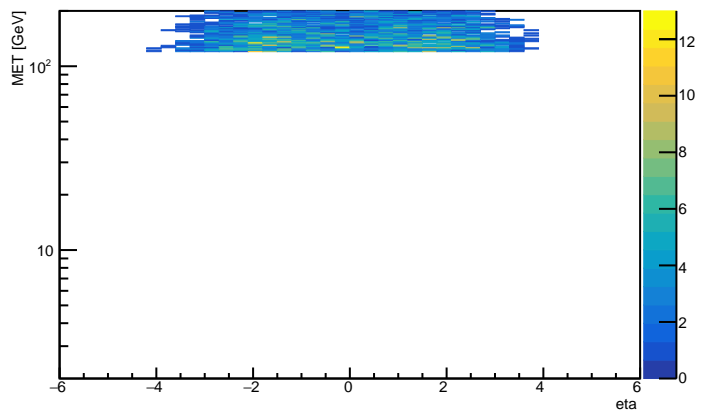
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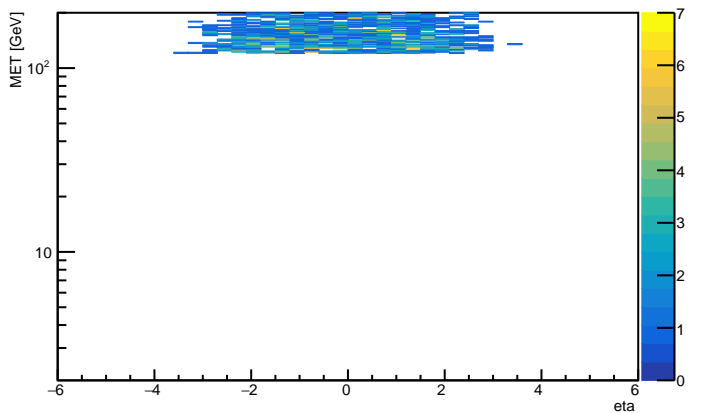
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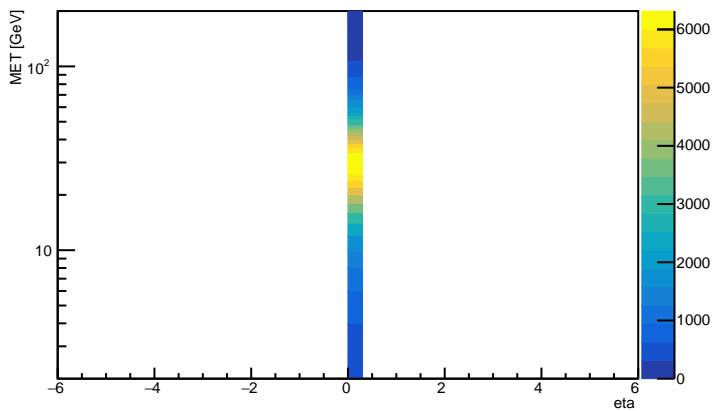
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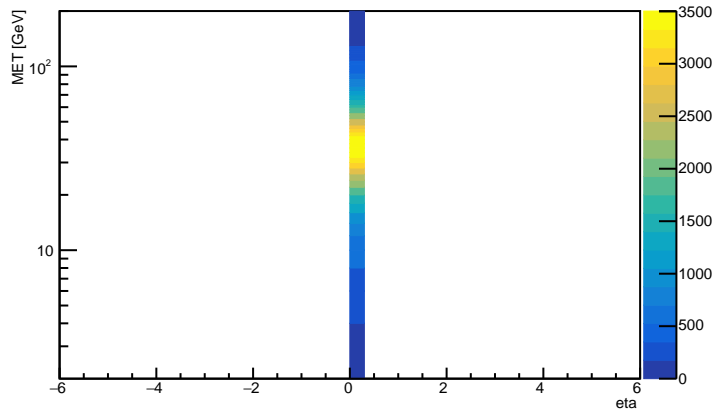
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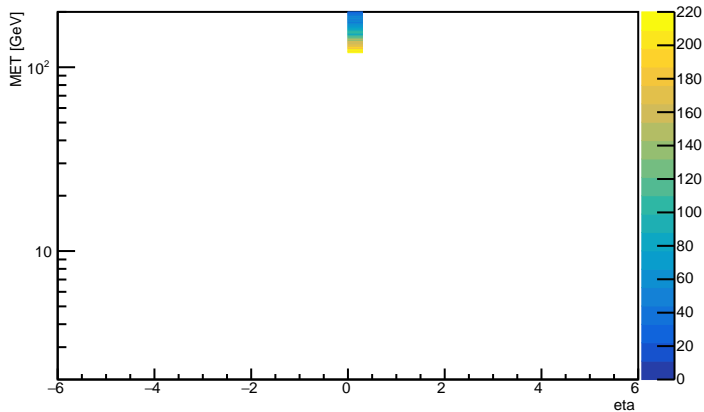
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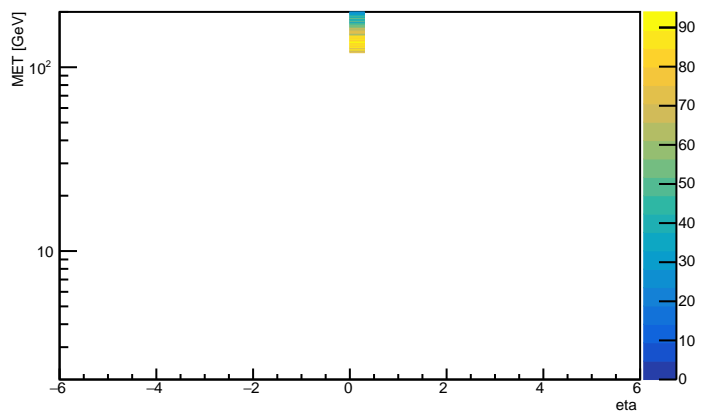
ctau 1000mm reco leading Met eta vs pt: $n_{\text{jet}} \geq 1$, $j_1 \text{pt} > 30 \text{ GeV}$



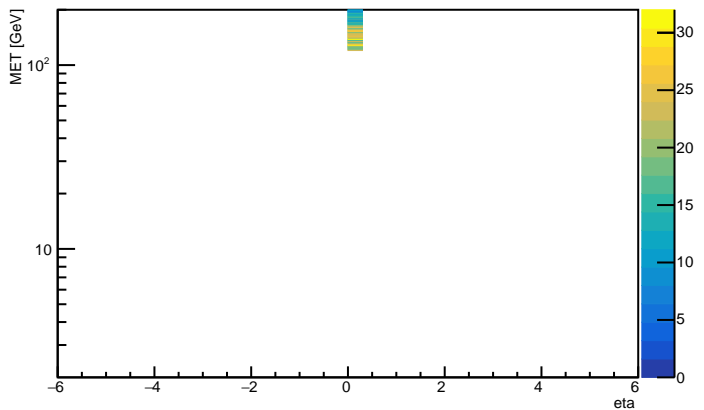
ctau 1000mm reco leading Met eta vs pt: MET > 120 GeV



ctau 1000mm reco leading Met eta vs pt: $j_1 \text{pt} > 120$, at most 2 jets w/ $\text{pt} > 30 \text{ GeV}$

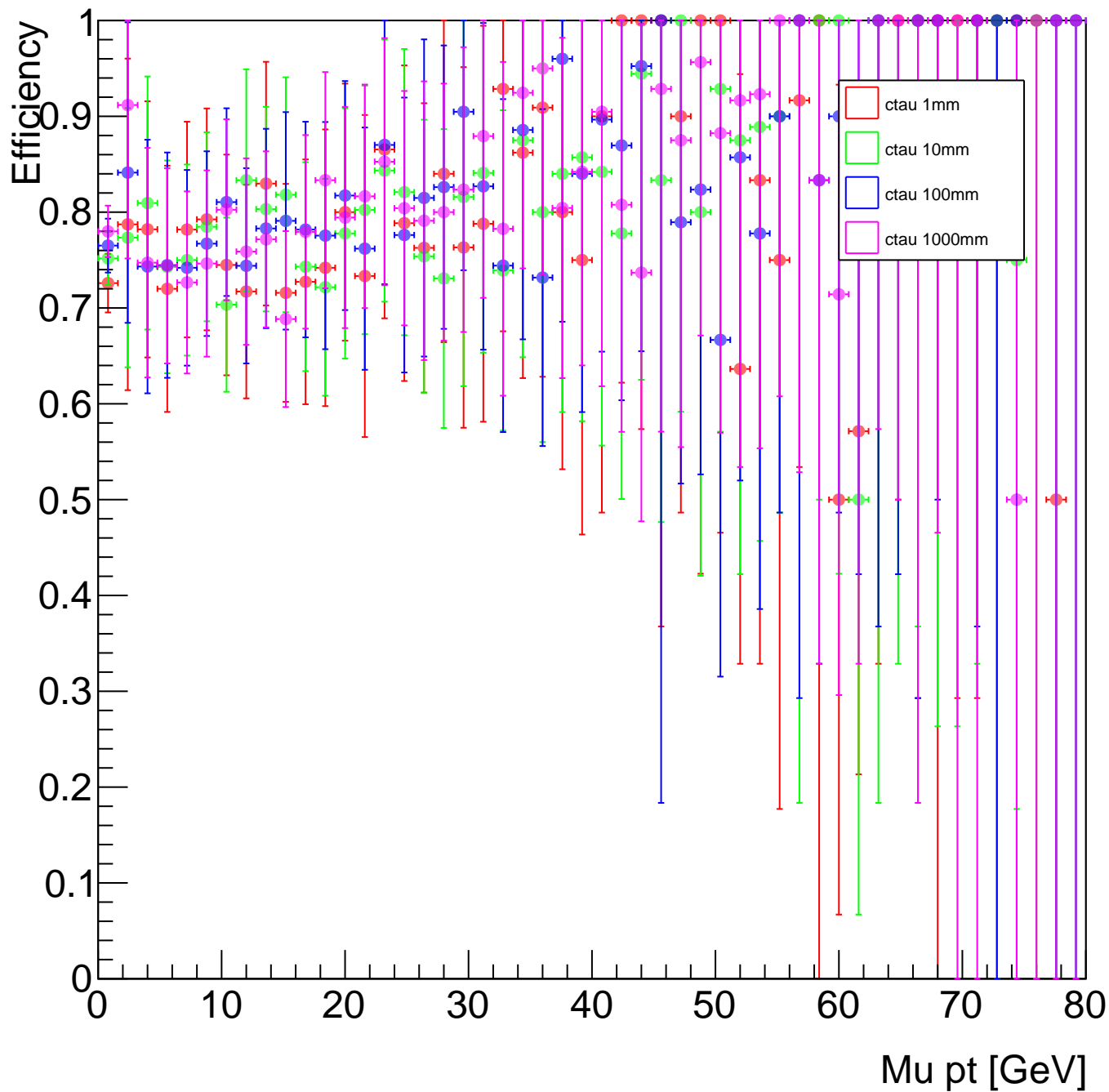


ctau 1000mm reco leading Met eta vs pt: at least 2 mu w/ $v_{xy} < 740 \text{ cm}$, $|v_z| < 960 \text{ cm}$ & $|\text{eta}| < 2.4$

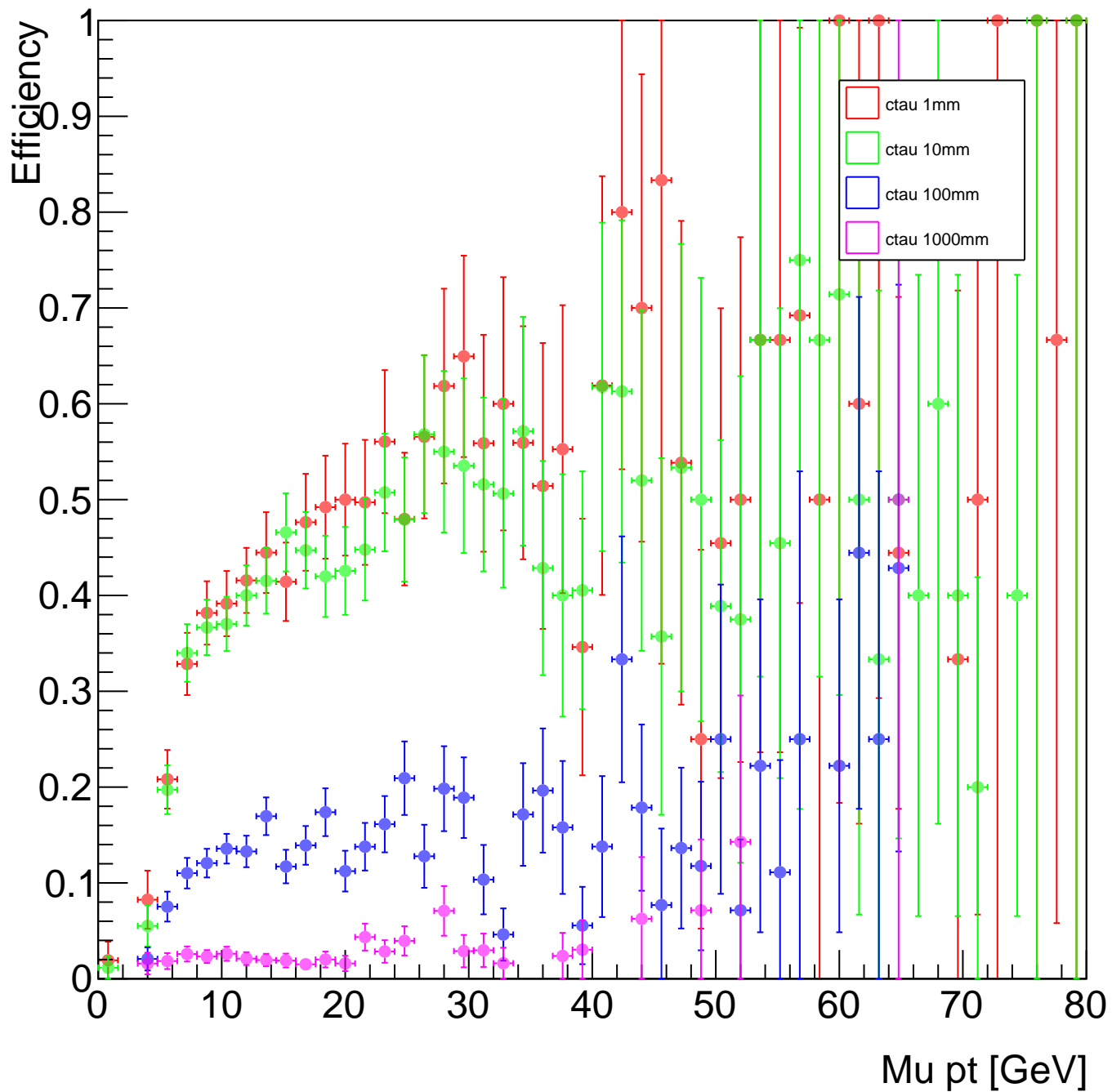


efficiencies

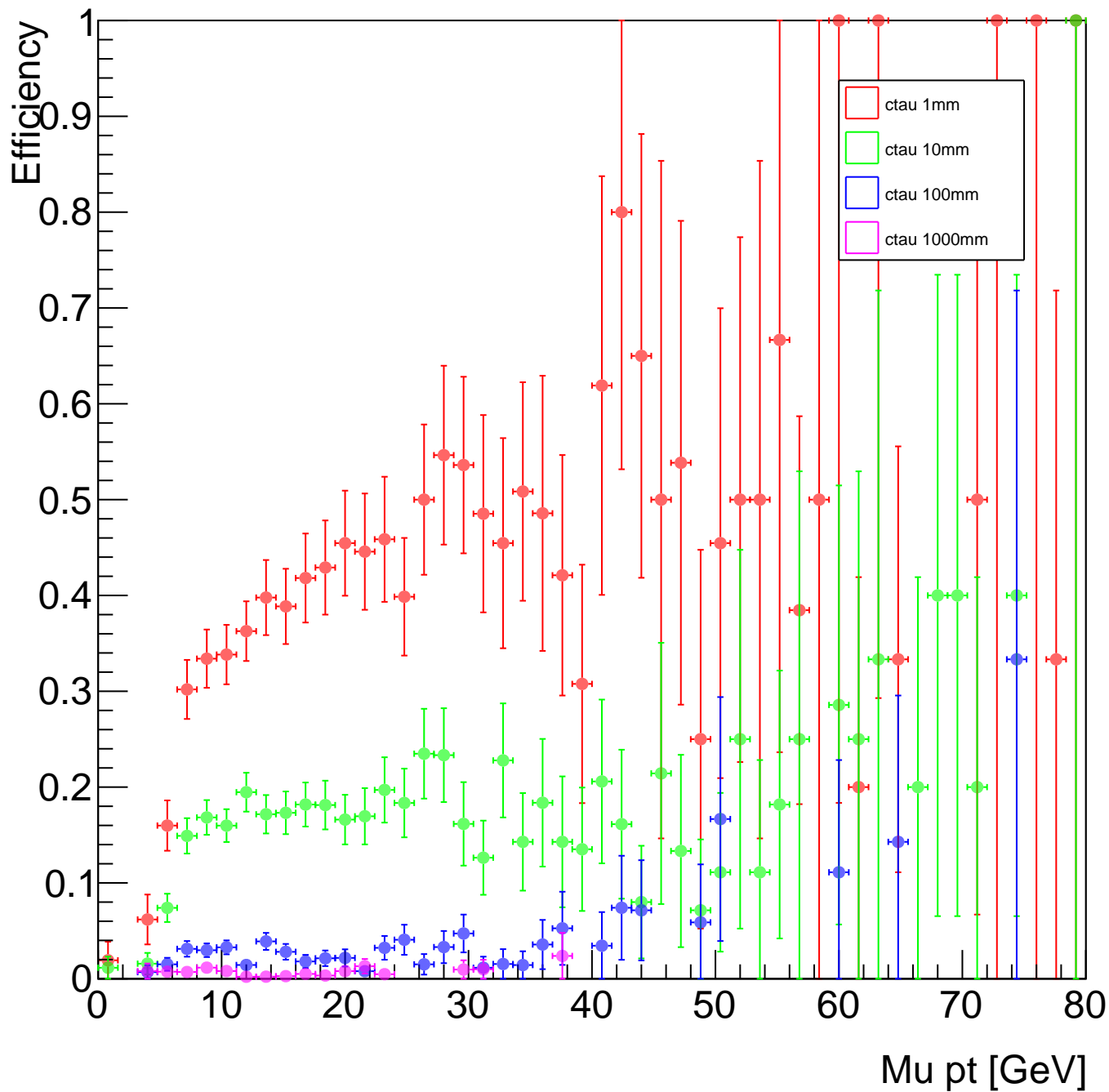
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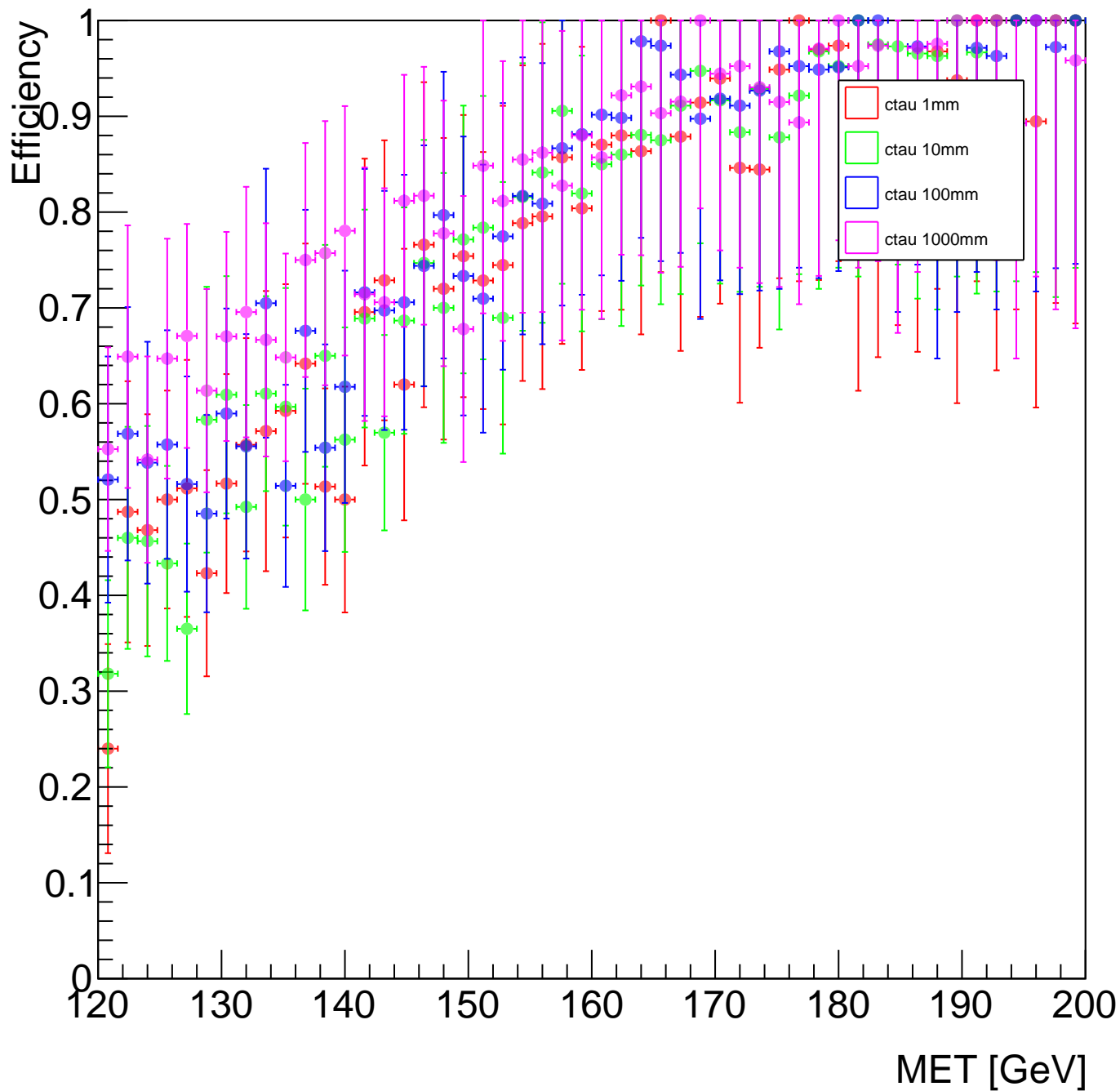
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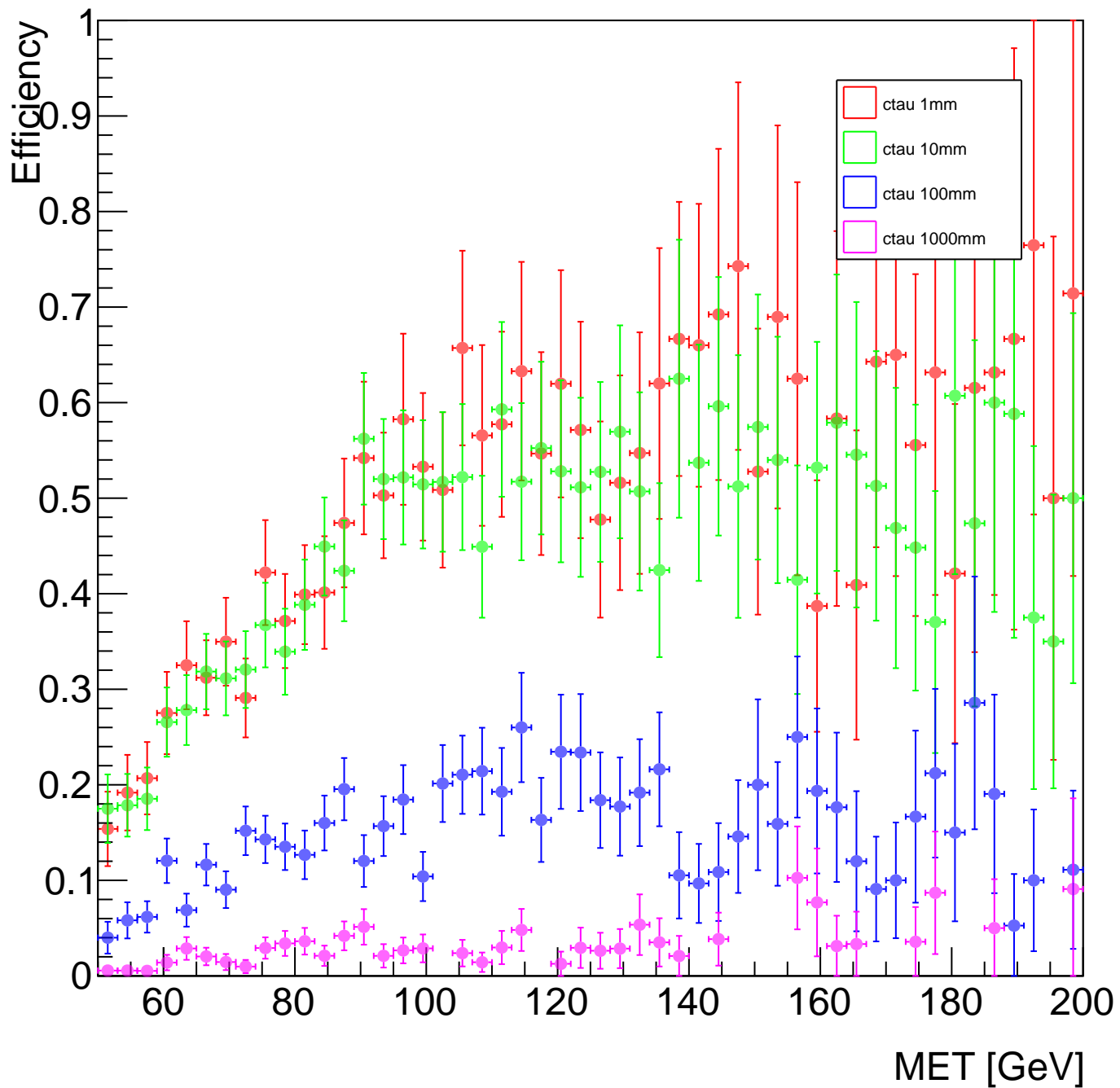
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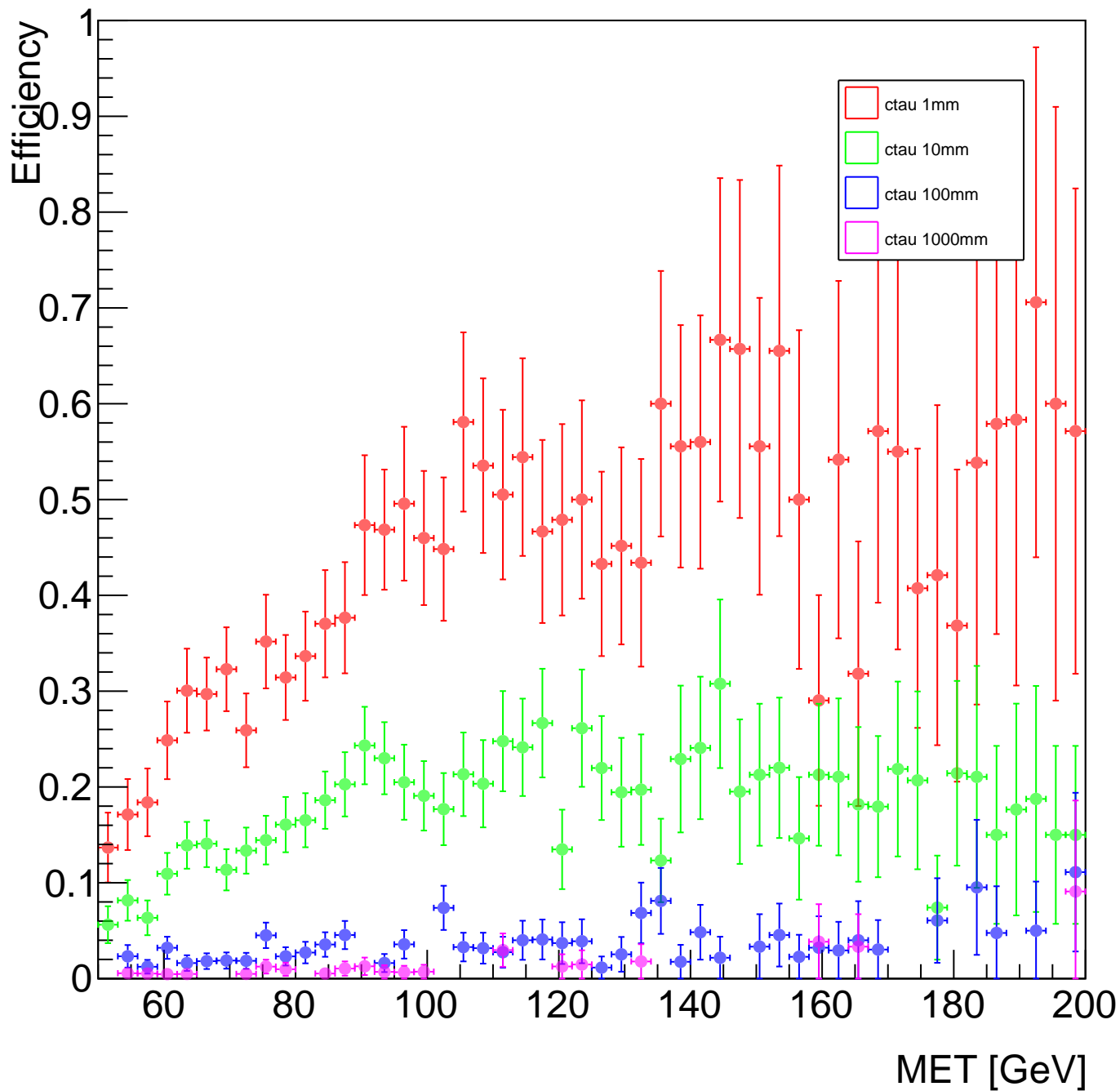
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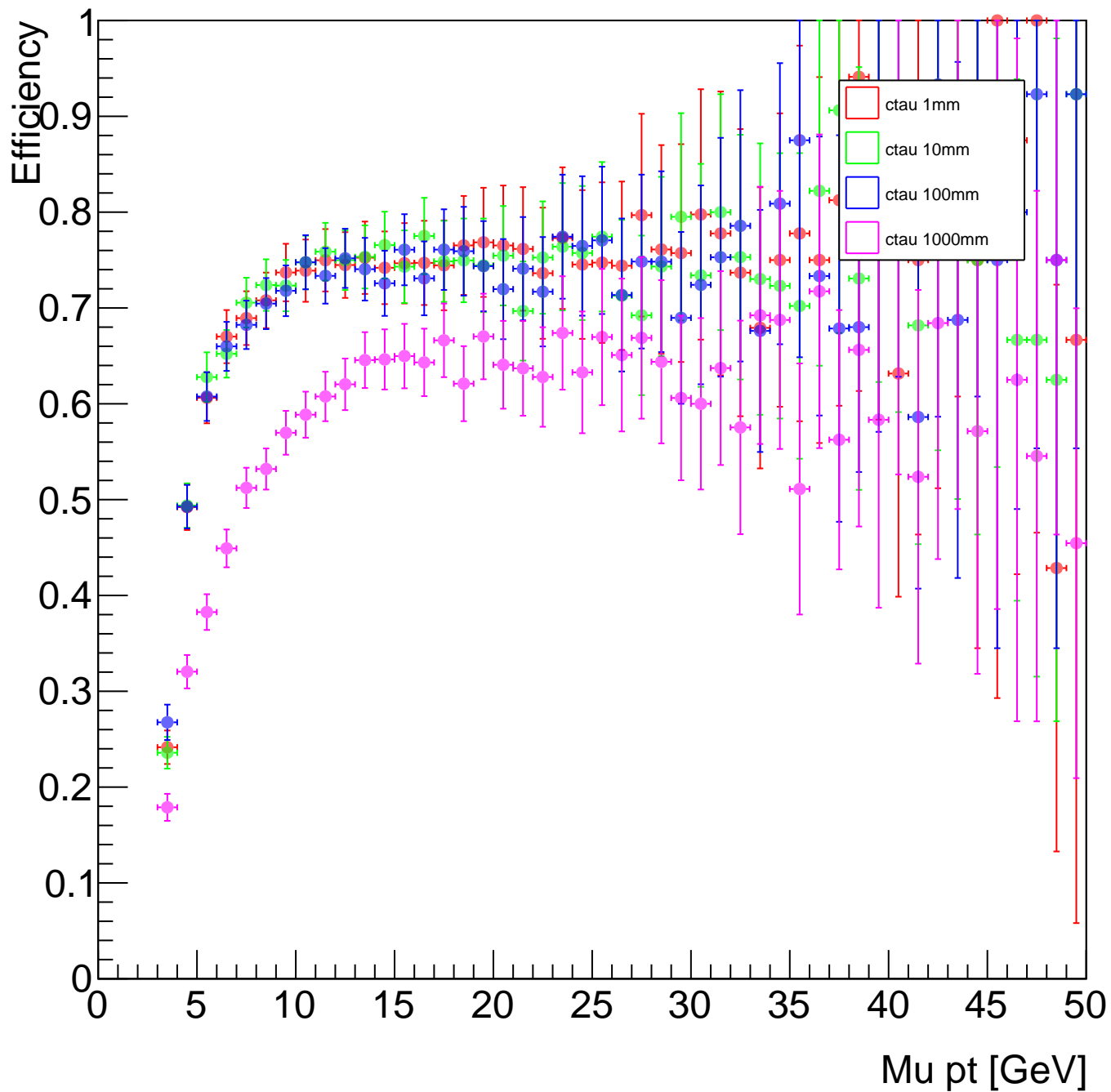
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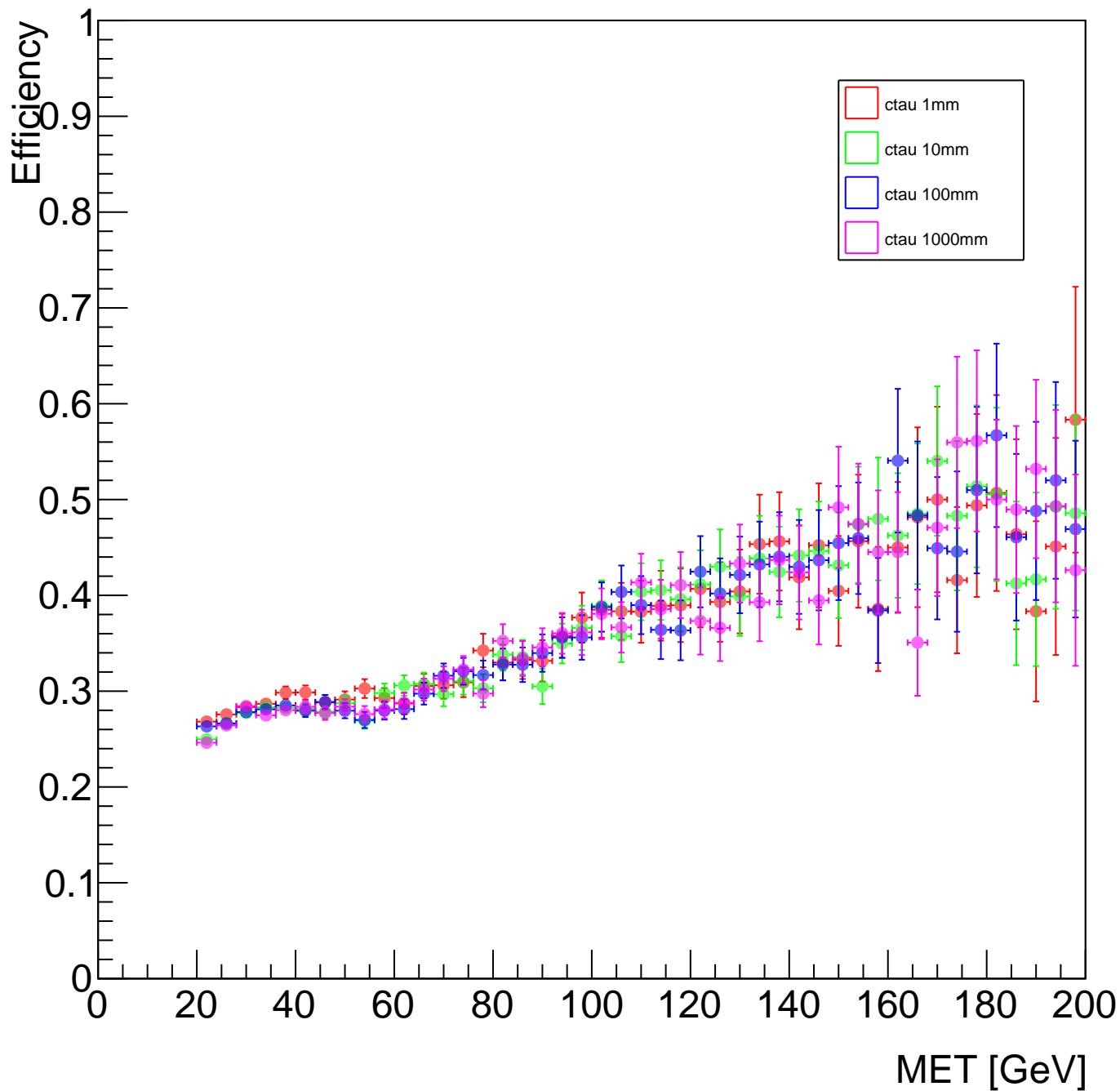
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recoefficiency mu



recoefficiency met



recoefficiency met

