

ctau 100mm

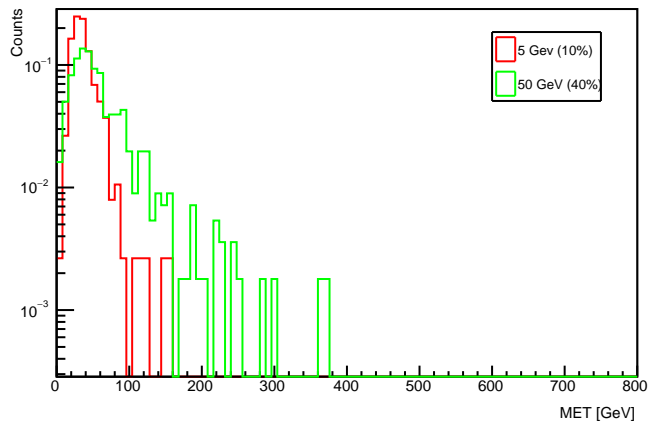
Gen 5 GeV (10%): 378(c1:281(74.34%[74.34%]),c2:3(0.79%[1.07%]),c3:1(0.26%[33.33%]),c4:0(0.00%[0.00%]))

Reco 5 GeV (10%): 378(c1:223(58.99%[58.99%]),c2:0(0.00%[0.00%]),c3:0(0.00%[0.00%]),c4:0(0.00%[0.00%]))

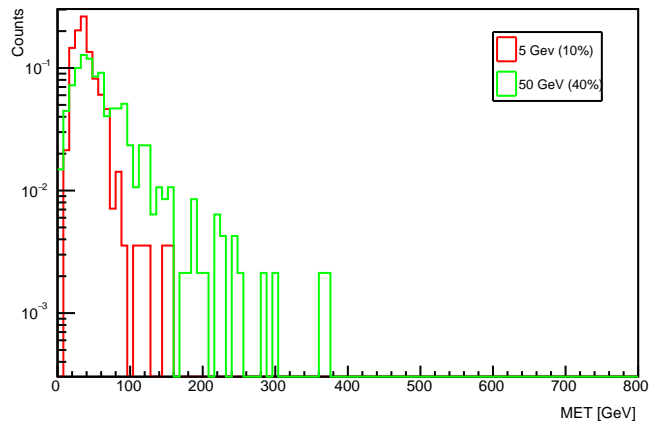
Gen 50 GeV (40%): 558(c1:470(84.23%[84.23%]),c2:48(8.60%[10.21%]),c3:36(6.45%[75.00%]),c4:17(3.05%[47.22%]))

Reco 50 GeV (40%): 558(c1:430(77.06%[77.06%]),c2:46(8.24%[10.70%]),c3:34(6.09%[73.91%]),c4:15(2.69%[44.12%]))

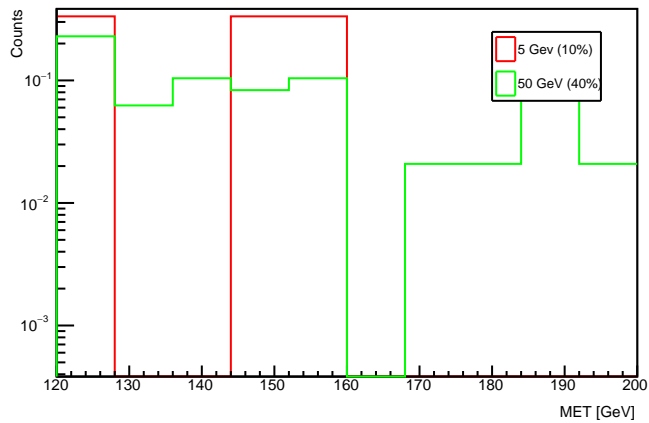
gen leading MET: no cuts



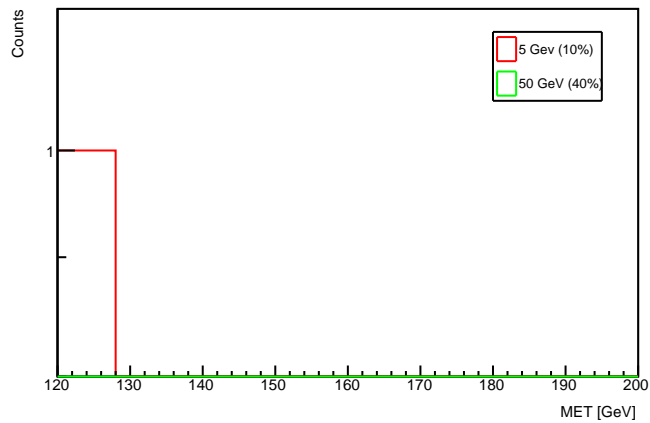
gen leading MET: n_jet >=1, j1pt > 30 GeV



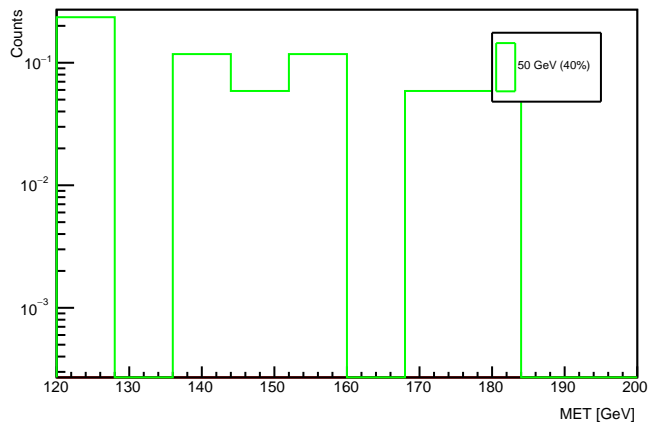
gen leading MET: MET > 120 GeV



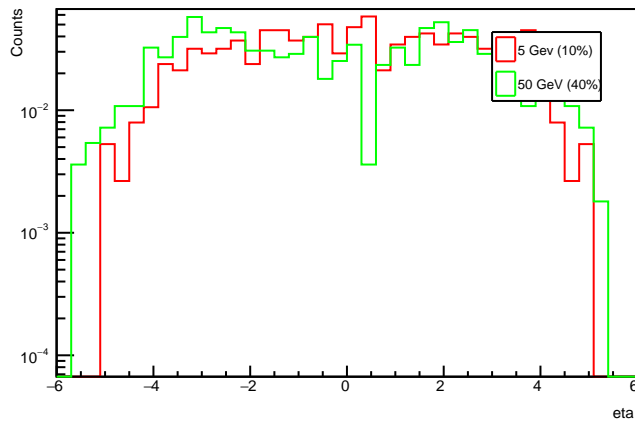
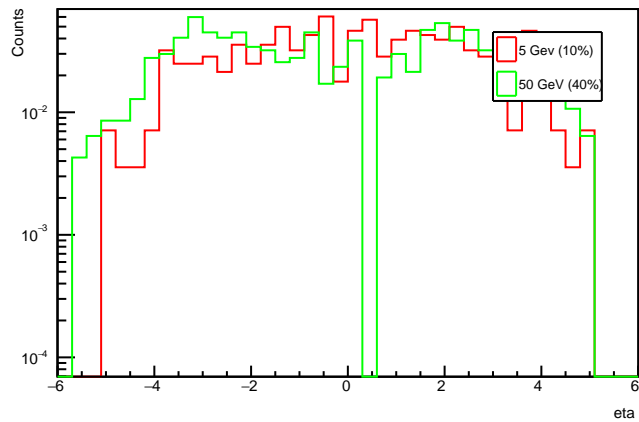
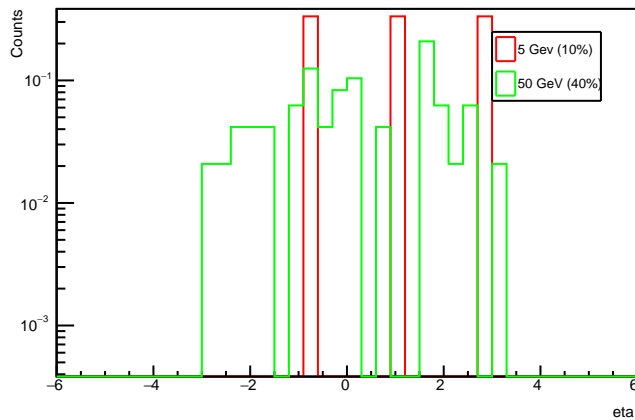
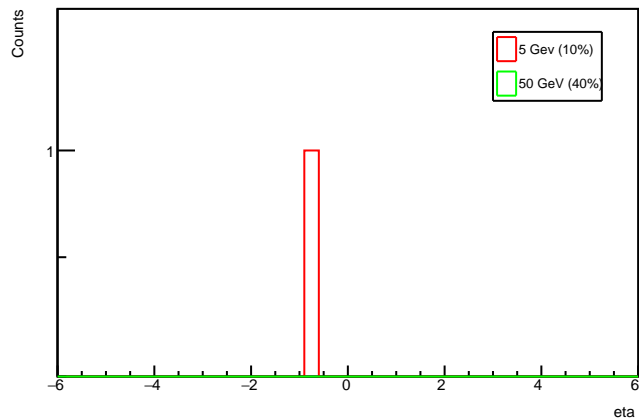
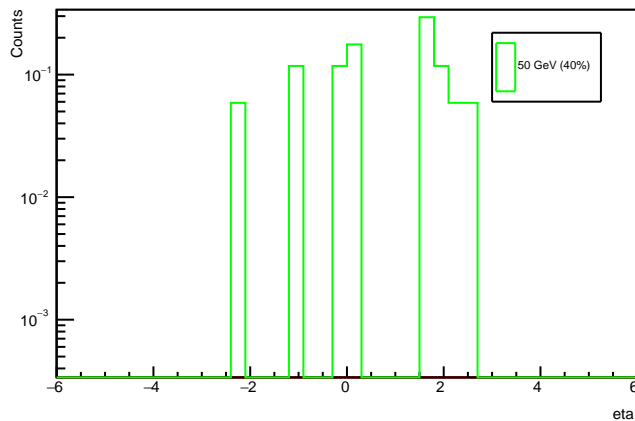
gen leading MET: j1pt >120, at most 2 jets w/ pt >30 GeV



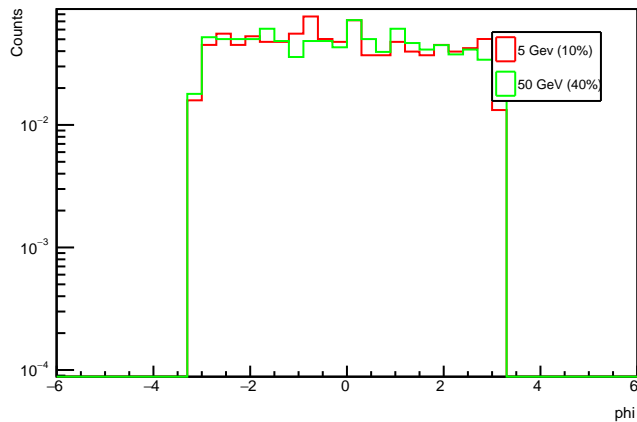
gen leading MET: at least 2 mu w/ vx < 740 cm, |vz| < 960 cm & |eta| < 2.4



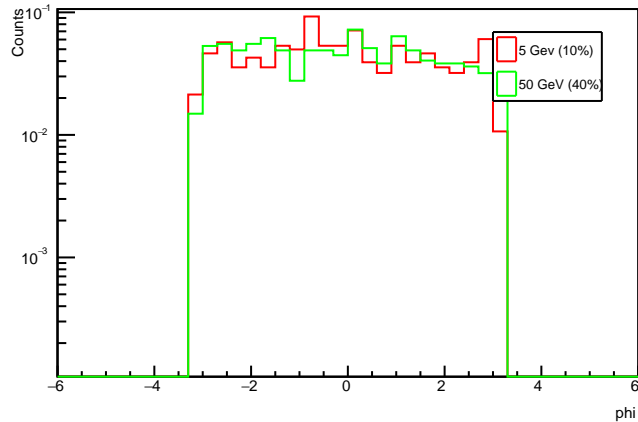
gen leading Met eta: no cuts

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

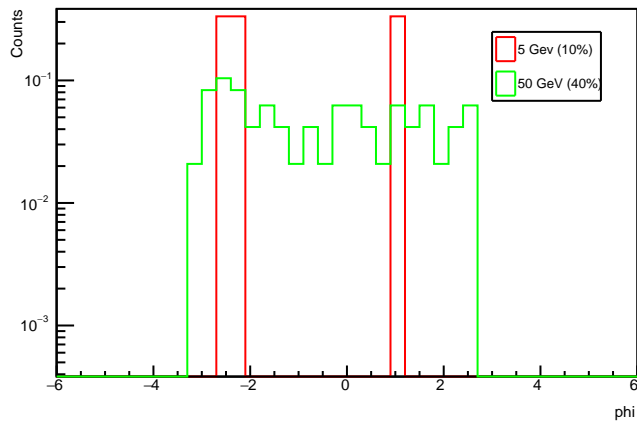
gen leading Met phi: no cuts



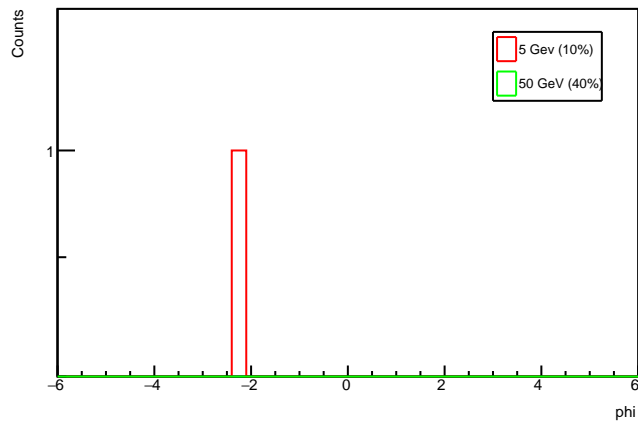
gen leading Met phi: n_jet >=1, j1pt > 30 GeV



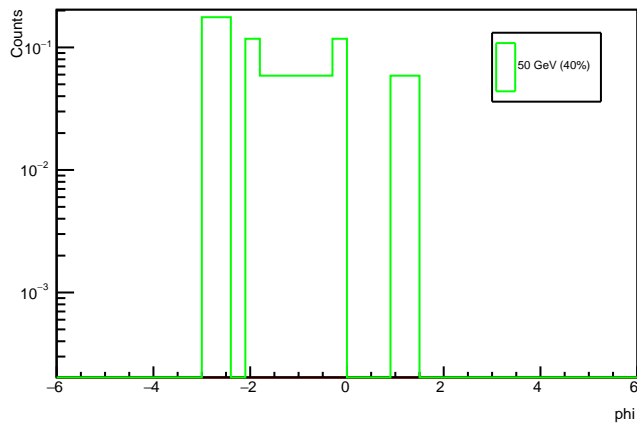
gen leading Met phi: MET > 120 GeV



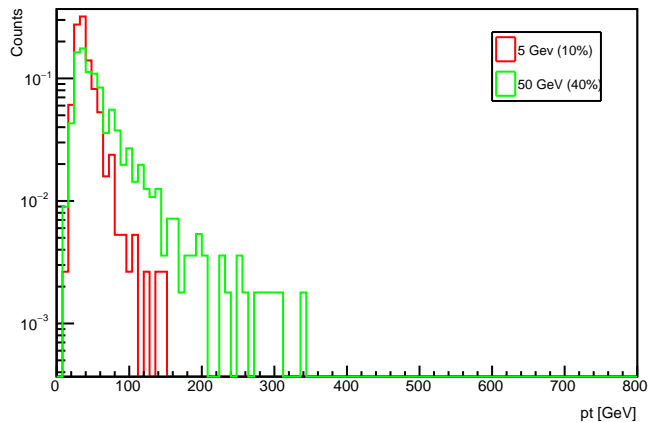
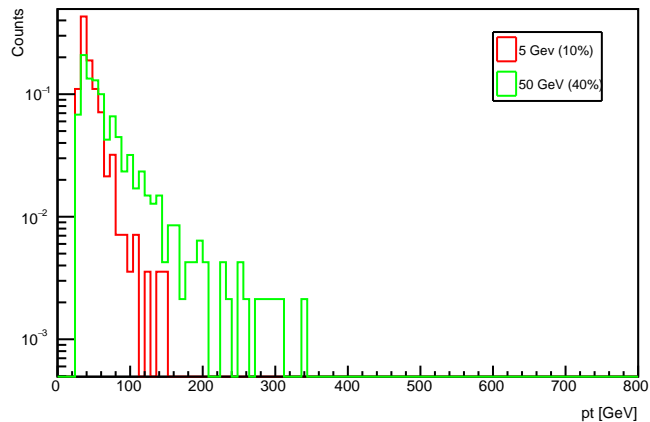
gen leading Met phi: j1pt >120, at most 2 jets w/ pt >30 GeV



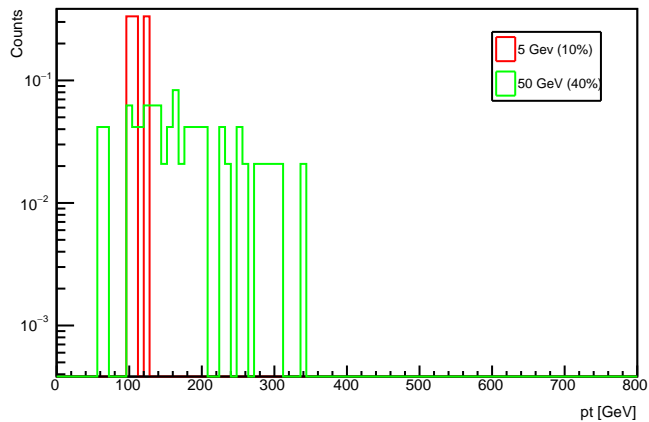
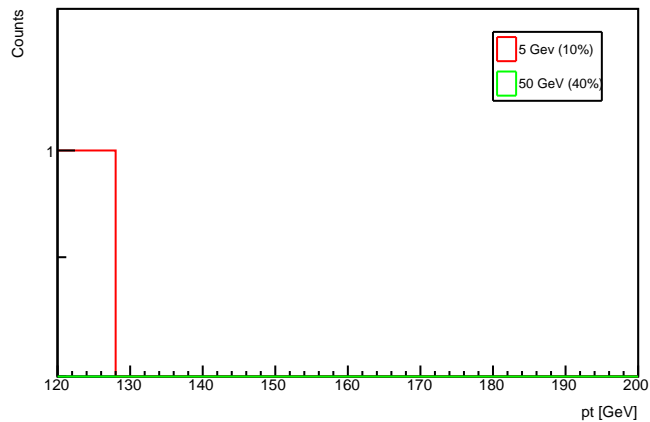
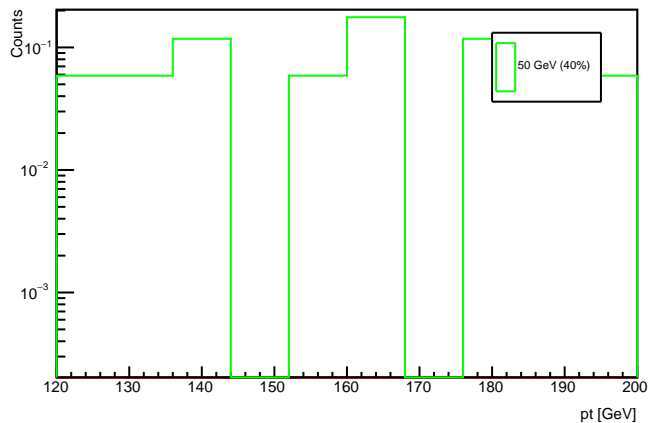
gen leading Met phi: at least 2 mu w/ vx < 740 cm, |vz| < 960 cm & |eta| < 2.4



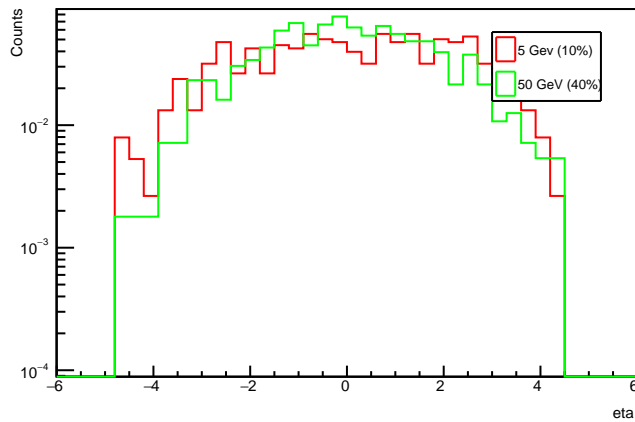
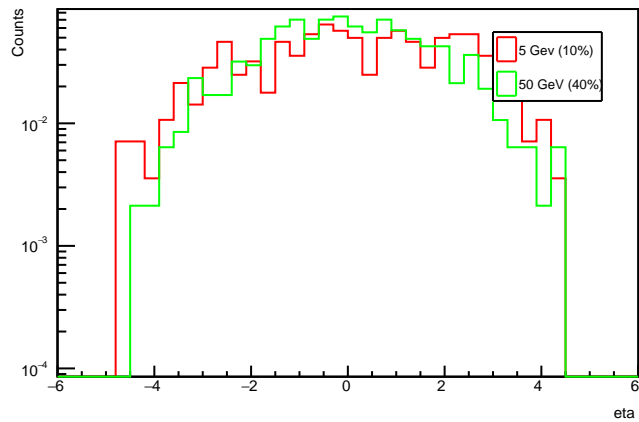
gen leading Jet pt: no cuts

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

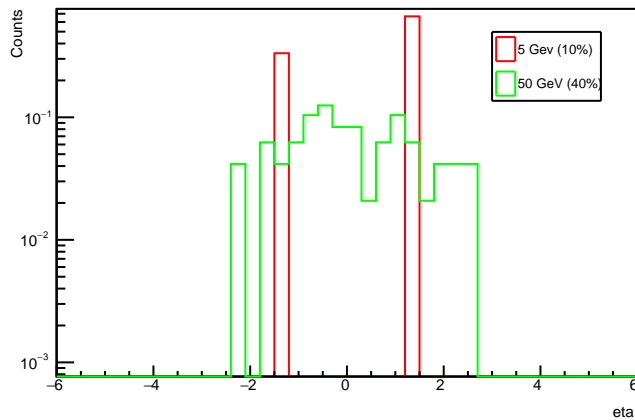
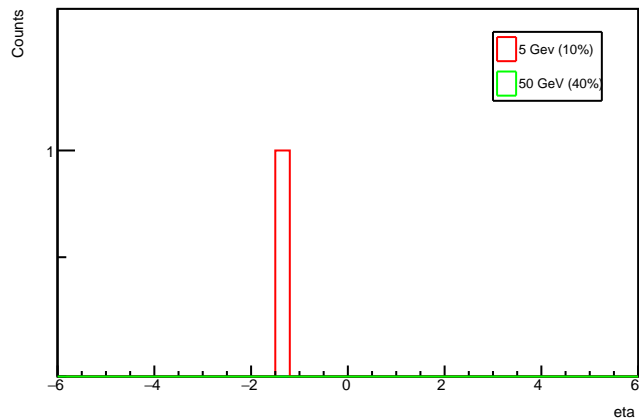
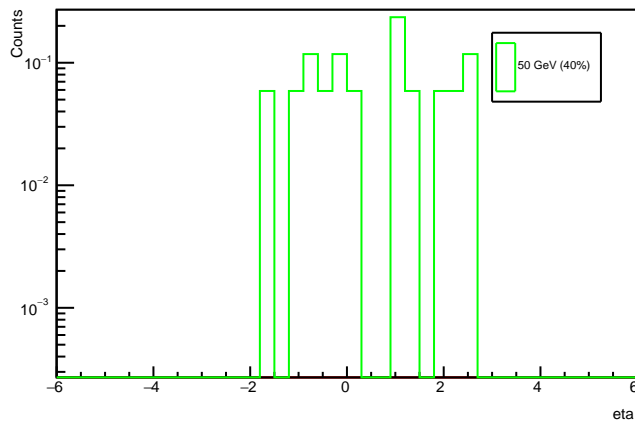
gen leading Jet pt: MET > 120 GeV

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 & $|\eta| < 2.4$ 

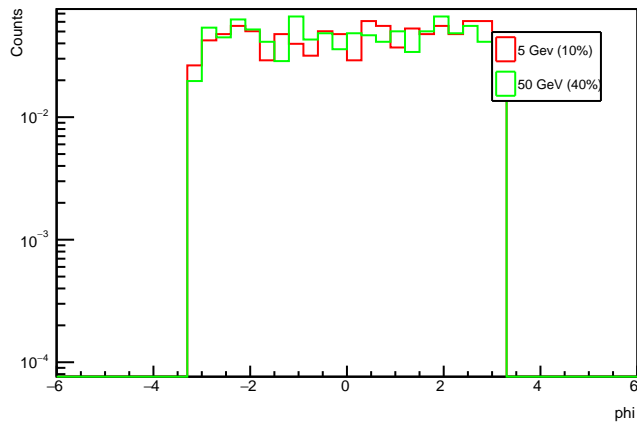
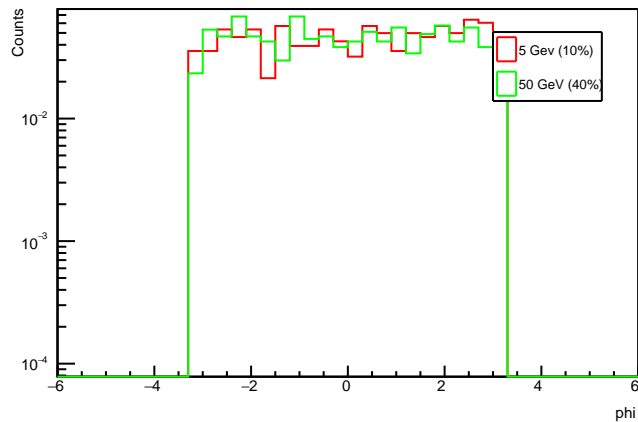
gen leading Jet eta: no cuts

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

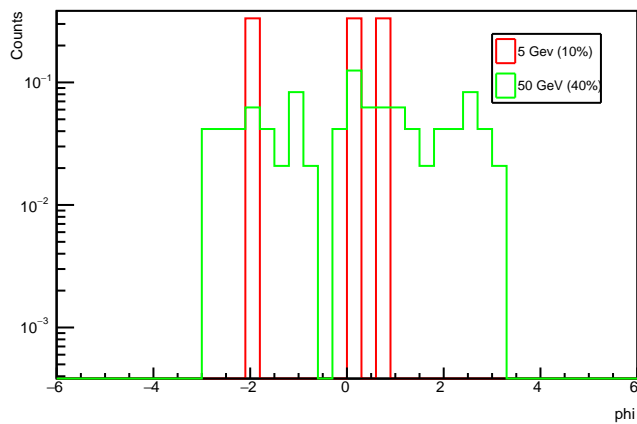
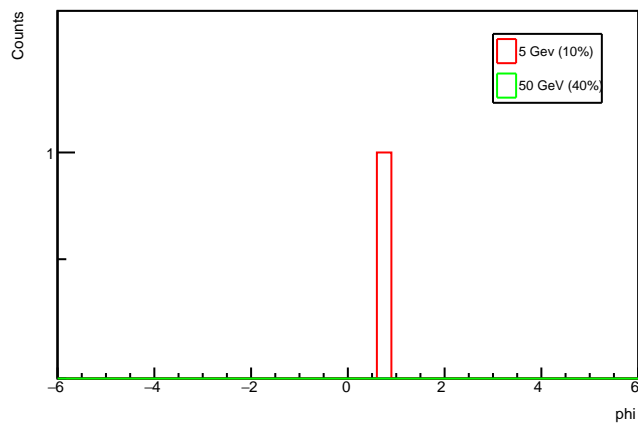
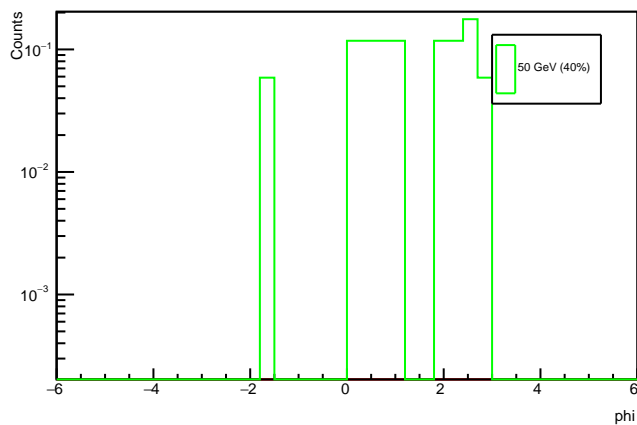
gen leading Jet eta: MET > 120 GeV

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

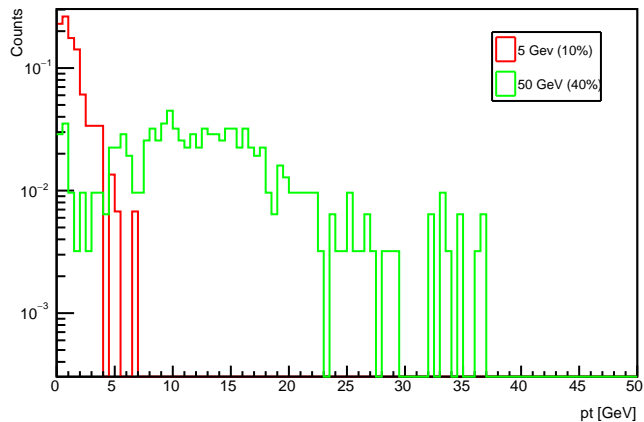
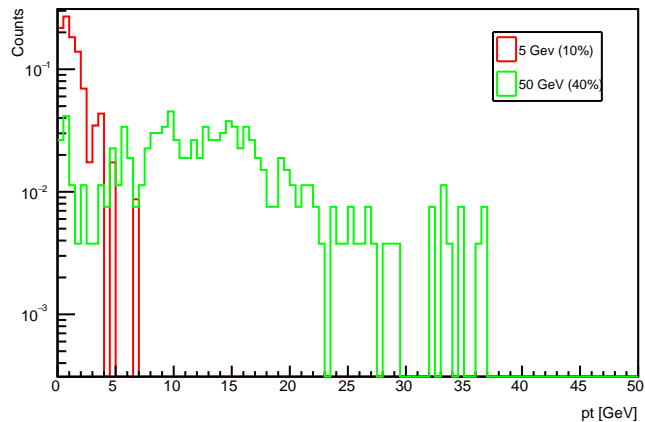
gen leading Jet phi: no cuts

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

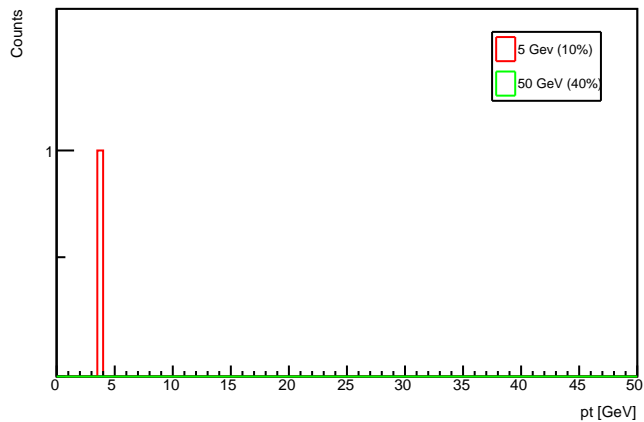
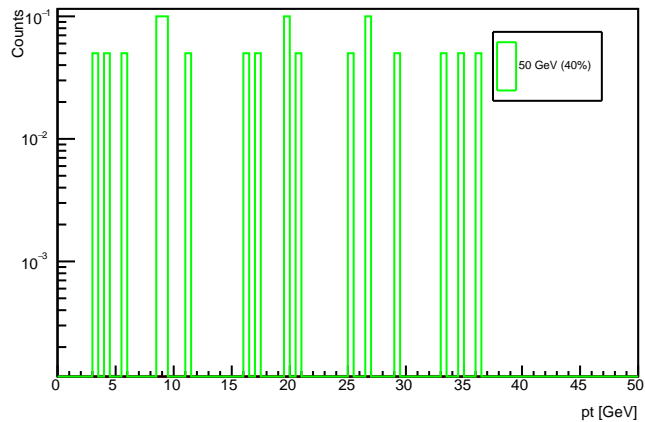
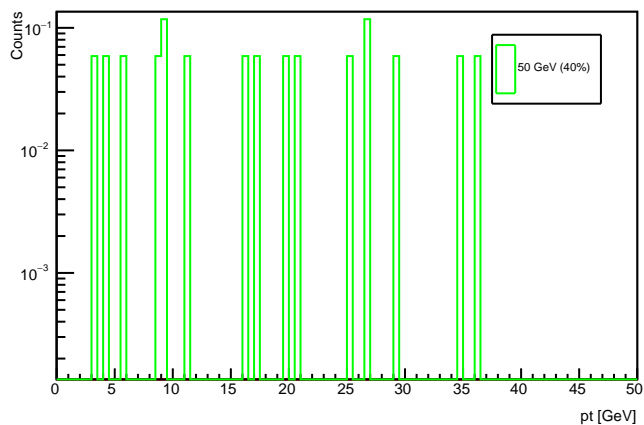
gen leading Jet phi: MET > 120 GeV

gen leading Jet phi: $j_{1\text{pt}} > 120$, 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 & $|\eta_{\text{jet}}| < 2.4$ 

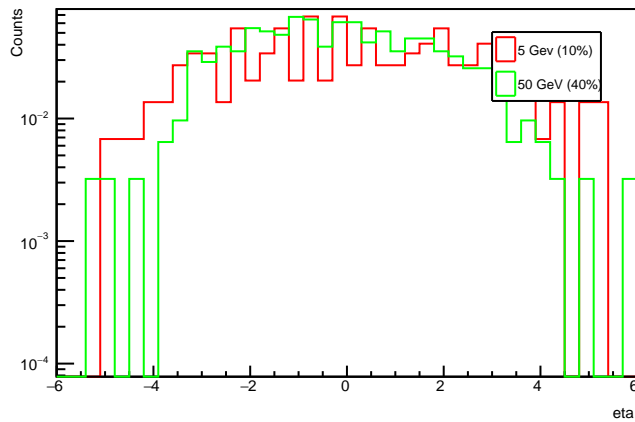
ctau 100mm leading vs subleading Mu pt: no cuts

ctau 100mm leading vs subleading Mu pt: $n_{\text{jet}} \geq 1$, $j1pt > 30$ GeV

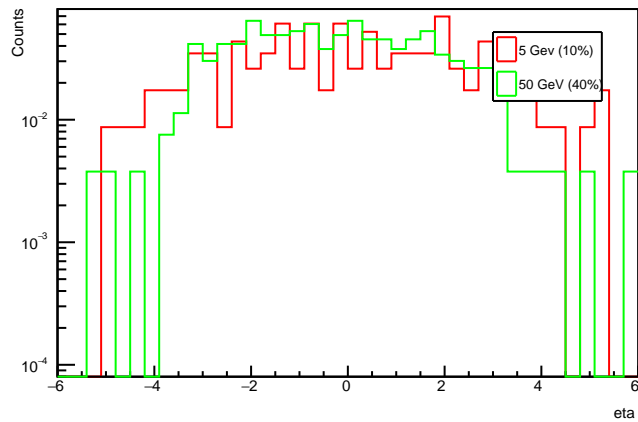
ctau 100mm leading vs subleading Mu pt: MET > 120 GeV

ctau 100mm leading vs subleading Mu pt: $j1pt > 120$, at most 2 jets w/ $pt > 30$ GeVctau 100mm leading vs subleading Mu pt: at least 2 mu w/ $v_{xy} < 740$ cm, $|v_z| < 960$ cm & $|\eta_{\text{jet}}| < 2.4$ 

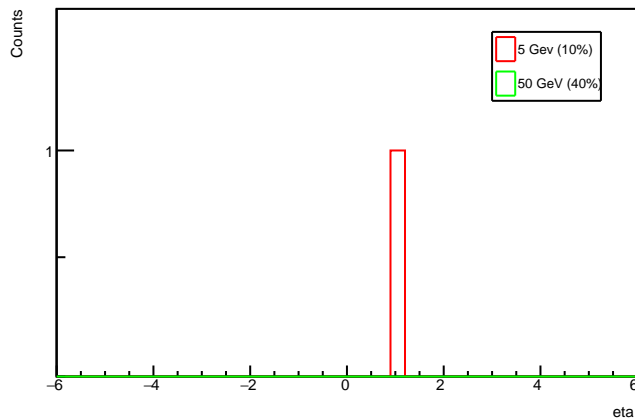
gen leading Mu eta: no cuts



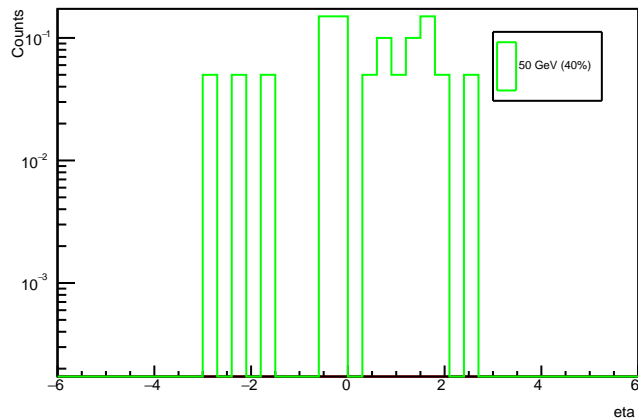
gen leading Mu eta: $n_{\text{jet}} \geq 1$, $j1pt > 30$ GeV



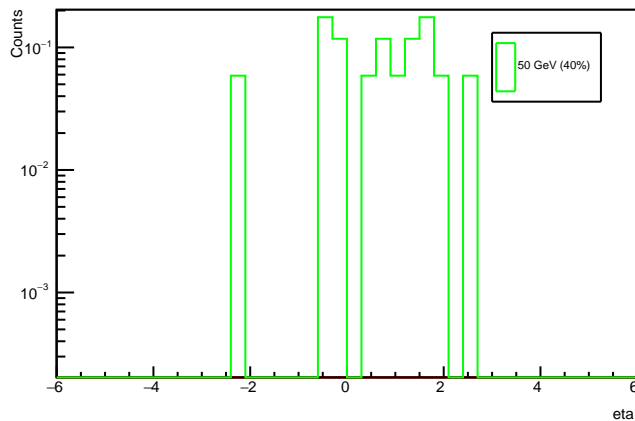
gen leading Mu eta: MET > 120 GeV



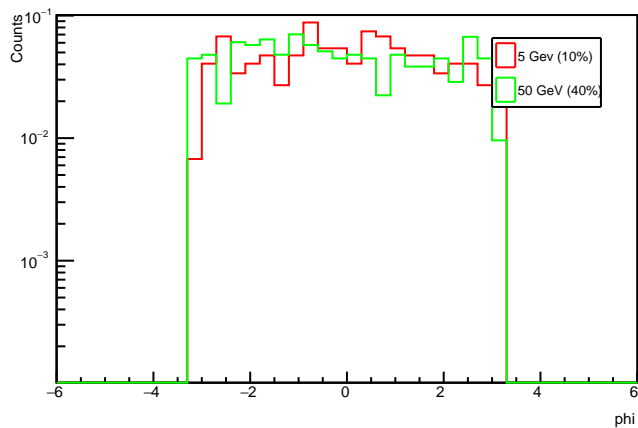
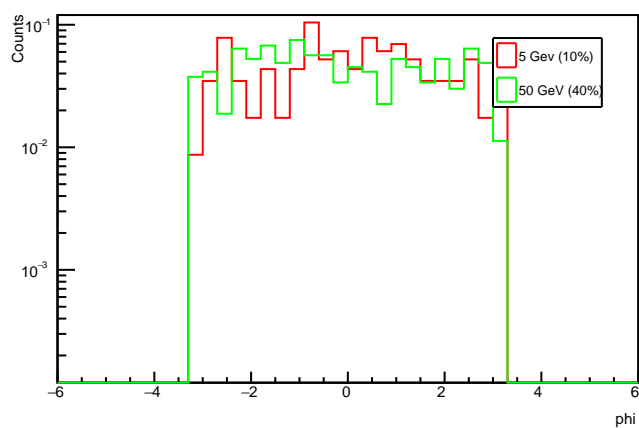
gen leading Mu eta: $j1pt > 120$, at most 2 jets w/ $pt > 30$ GeV



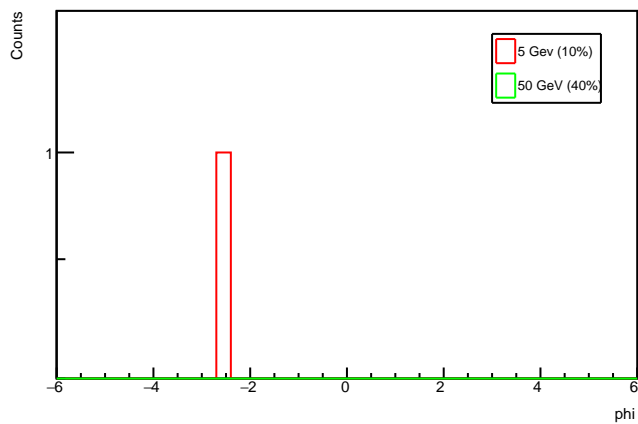
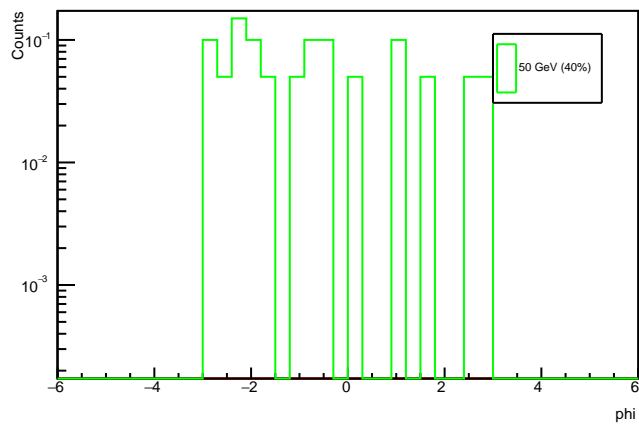
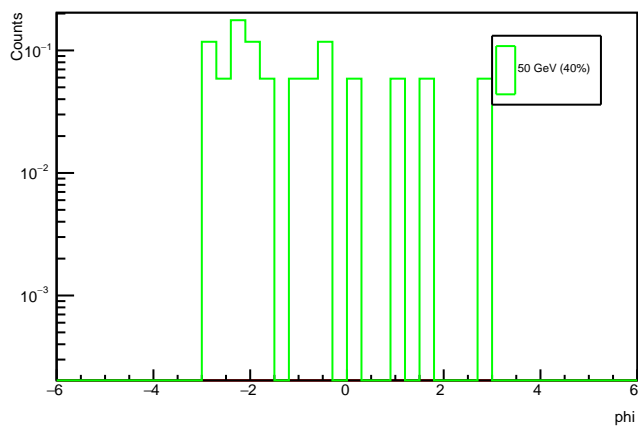
gen leading Mu eta: at least 2 mu w/ $vxy < 740$ cm, $|vz| < 960$ cm & $|\eta| < 2.4$



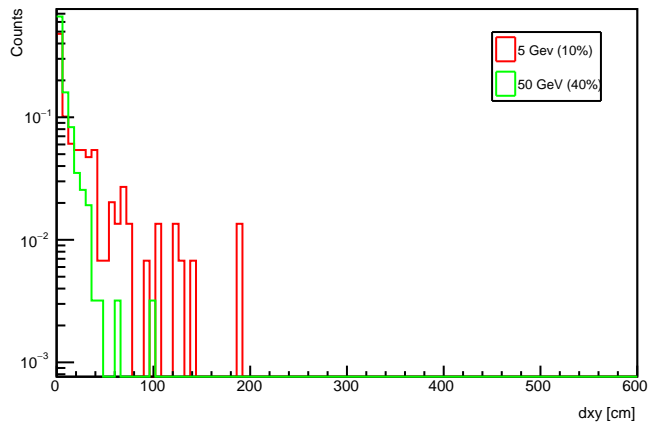
gen leading Mu phi: no cuts

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

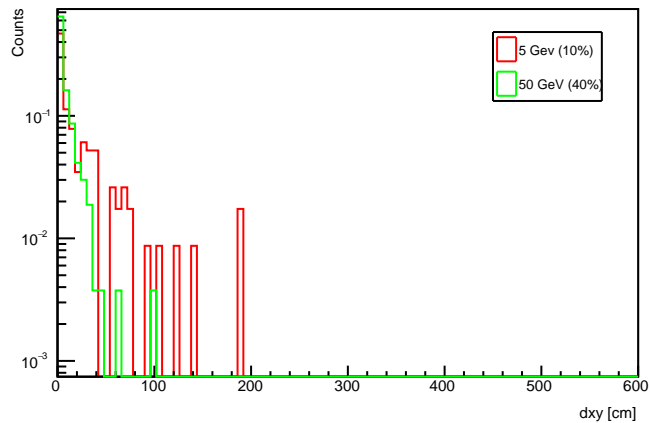
gen leading Mu phi: MET > 120 GeV

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

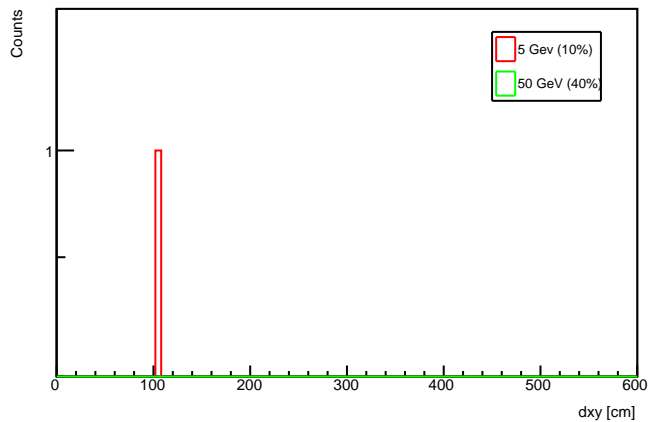
gen leading Mu vxy: no cuts



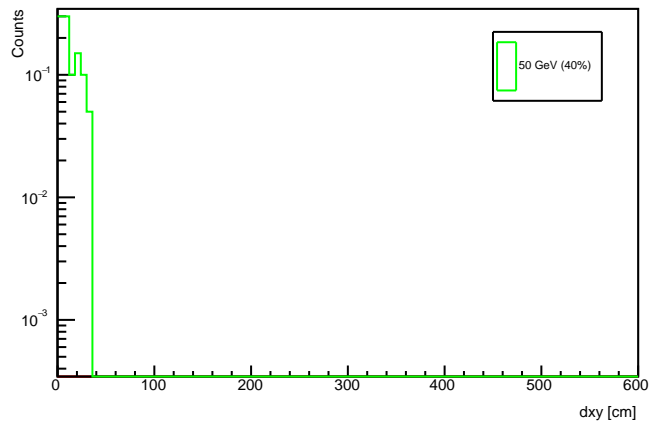
gen leading Mu vxy: n_jet >=1, j1pt > 30 GeV



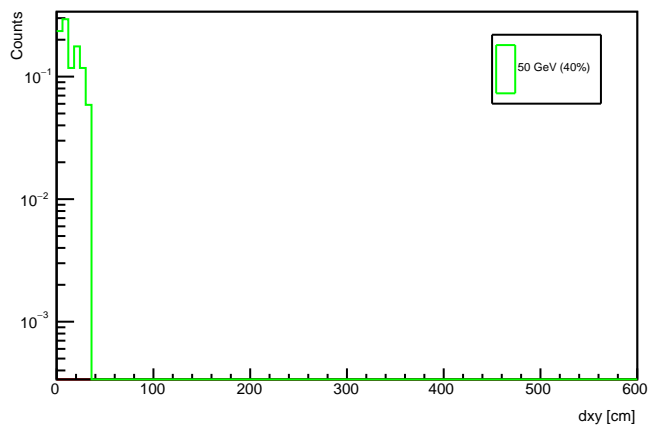
gen leading Mu vxy: MET > 120 GeV



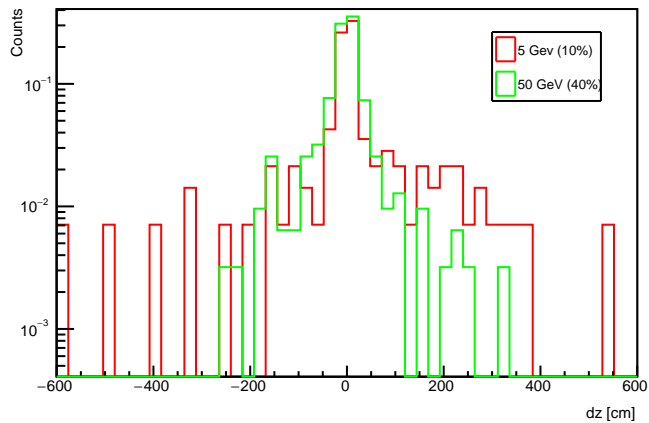
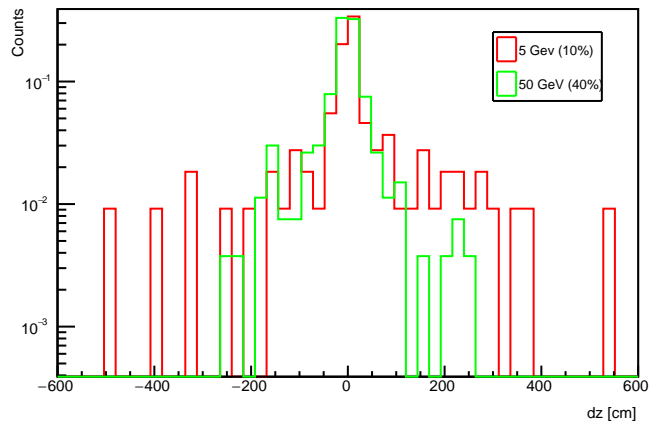
gen leading Mu vxy: j1pt >120, at most 2 jets w/ pt >30 GeV



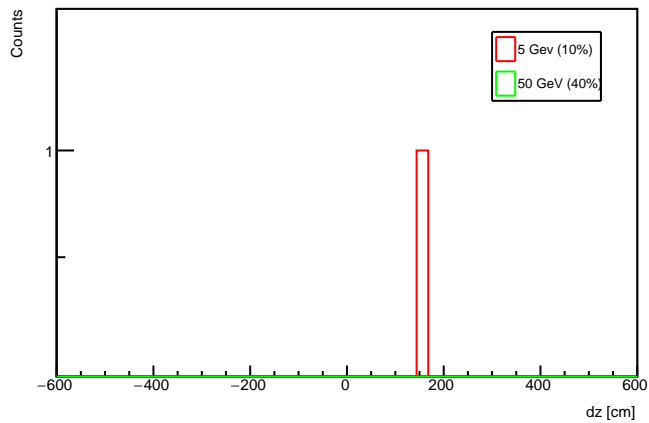
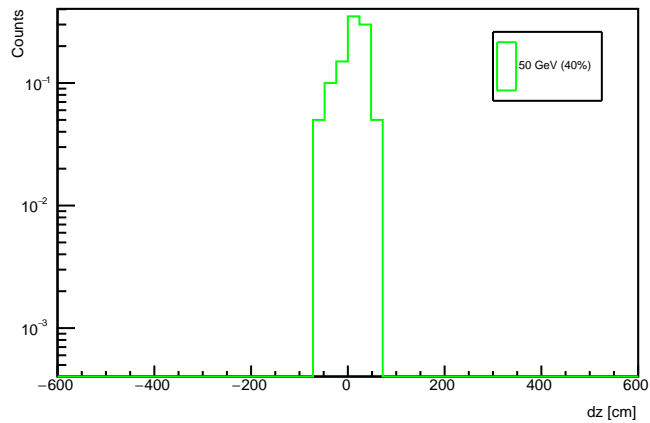
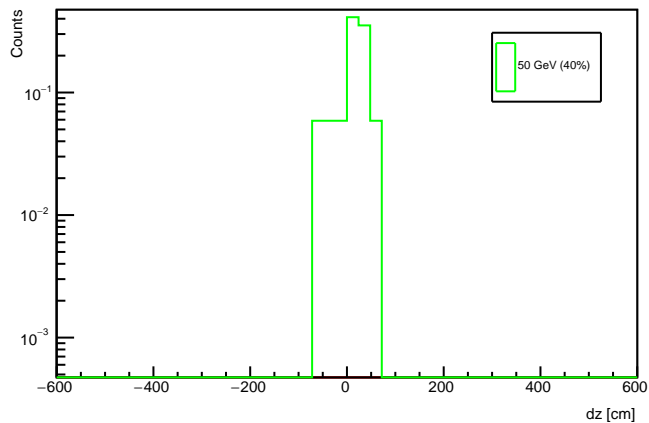
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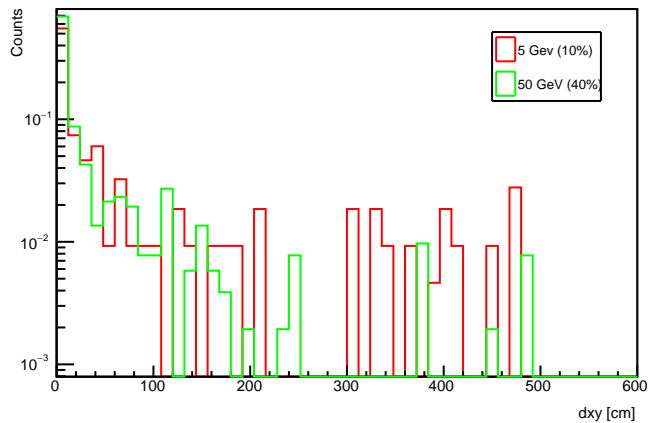
gen leading Mu vz: no cuts

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

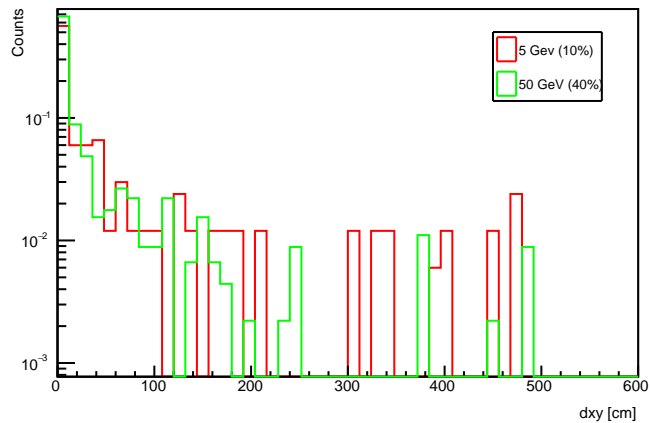
gen leading Mu vz: MET > 120 GeV

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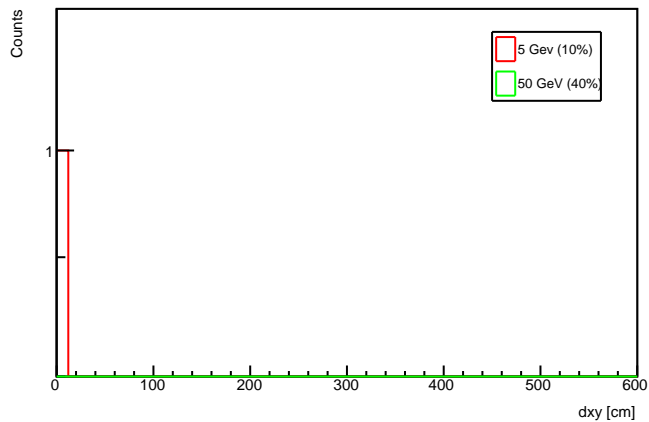
gen all Mu vxy: no cuts



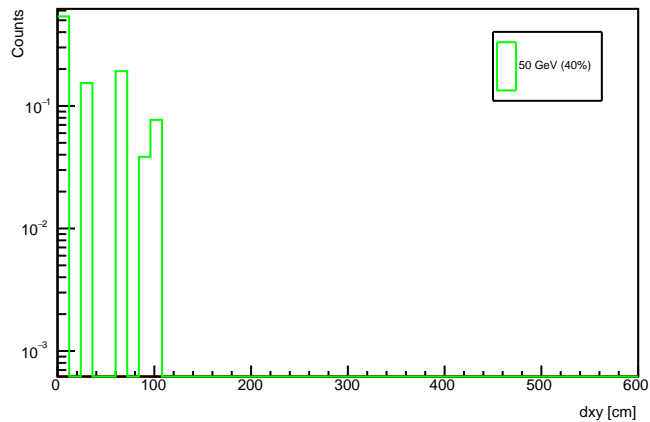
gen all Mu vxy: n_jet >=1, j1pt > 30 GeV



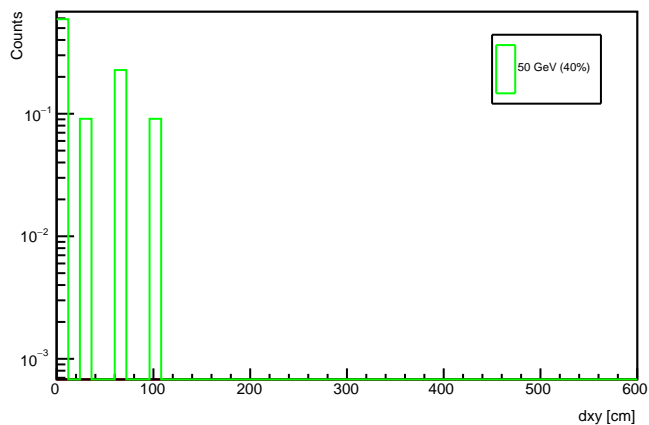
gen all Mu vxy: MET > 120 GeV



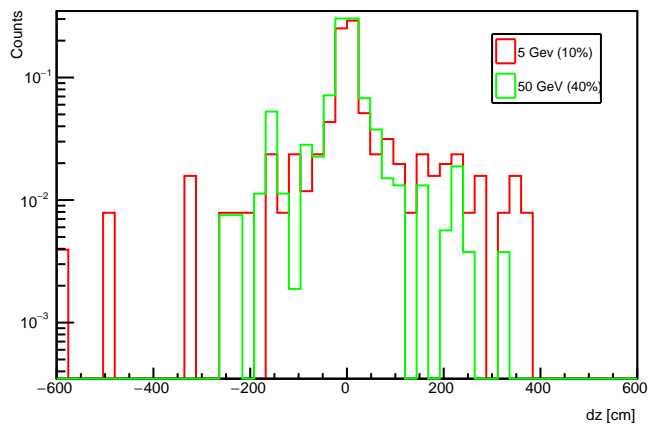
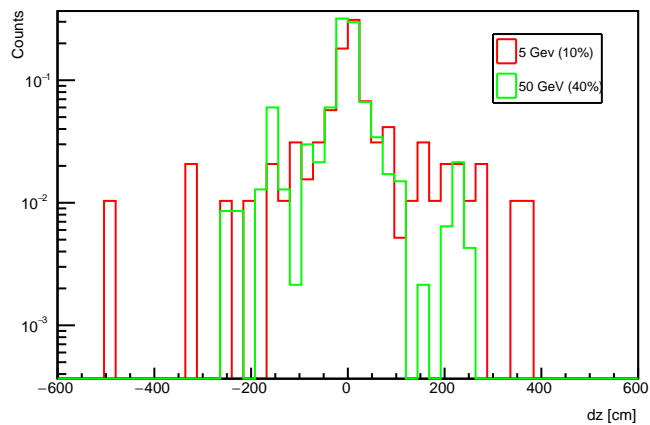
gen all Mu vxy: j1pt >120, at most 2 jets w/ pt >30 GeV



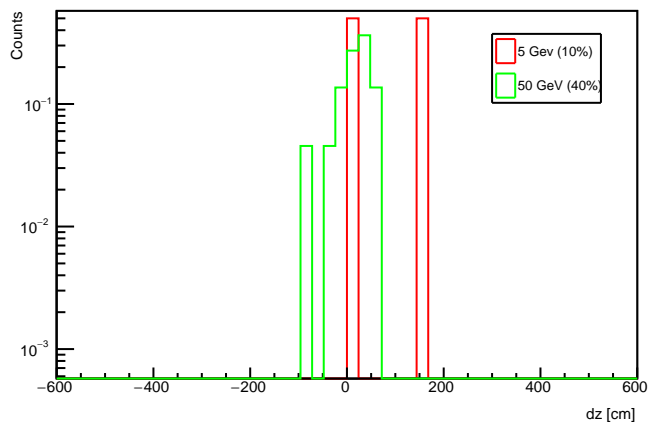
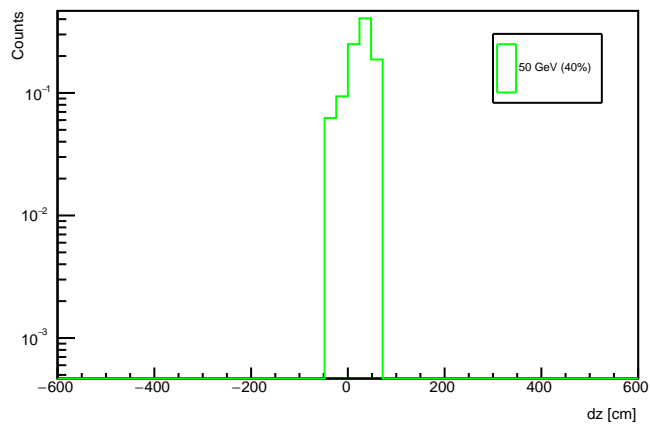
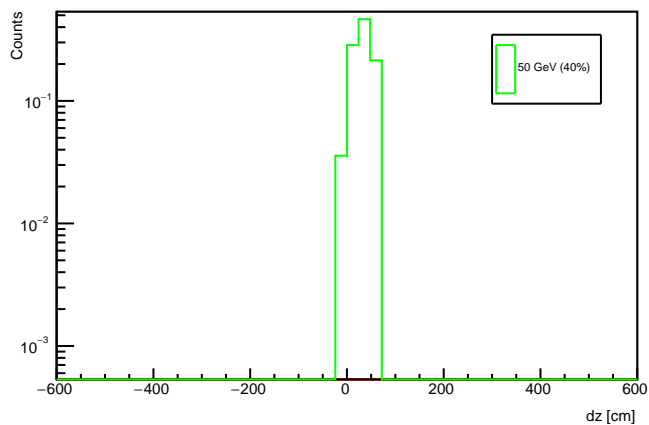
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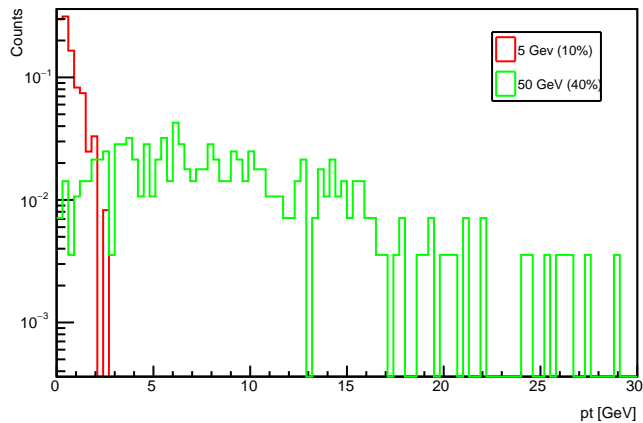
gen all Mu vz: no cuts

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

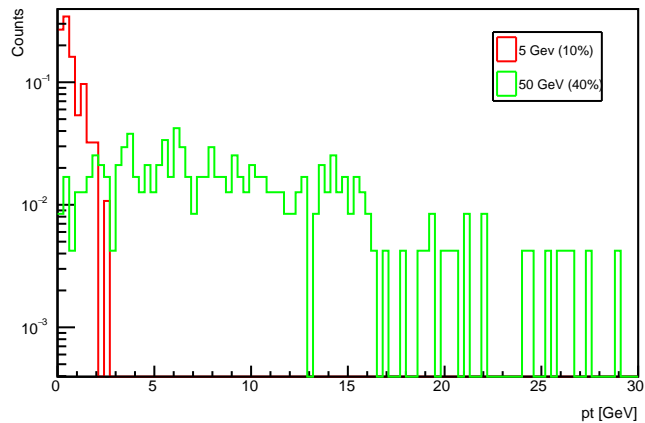
gen all Mu vz: MET > 120 GeV

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

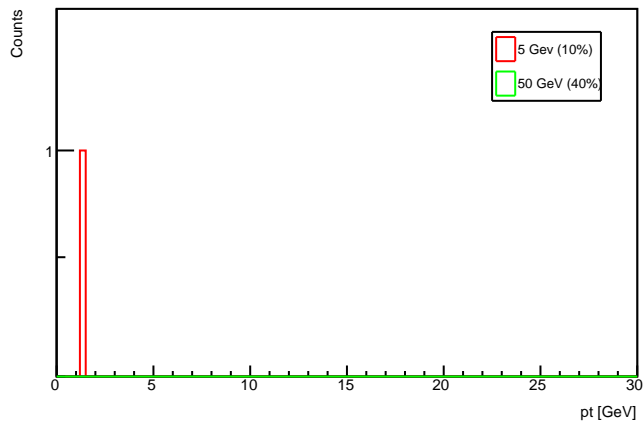
ctau 100mm leading vs subleading Mu pt: no cuts



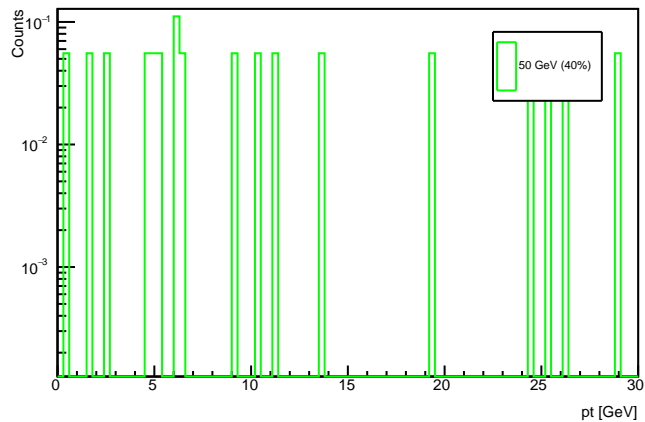
ctau 100mm leading vs subleading Mu pt: $n_{\text{jet}} \geq 1$, $j1pt > 30$ GeV



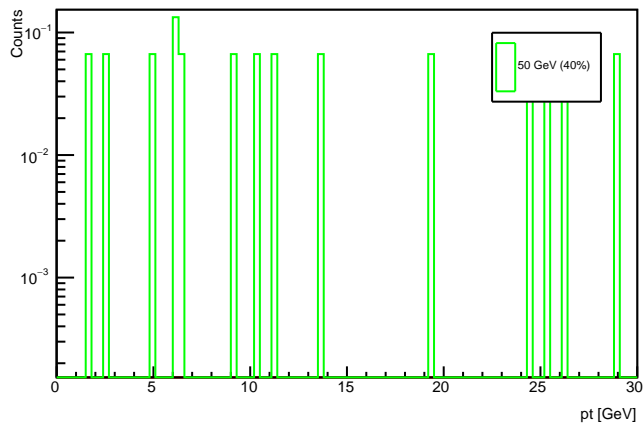
ctau 100mm leading vs subleading Mu pt: MET > 120 GeV



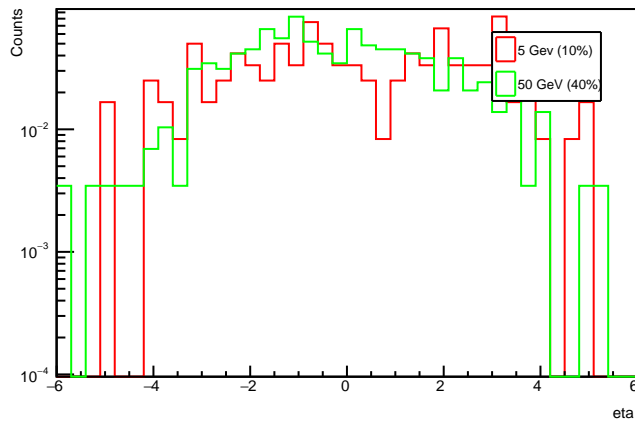
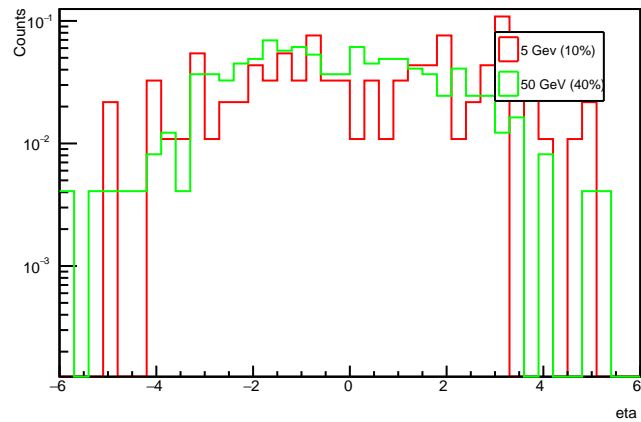
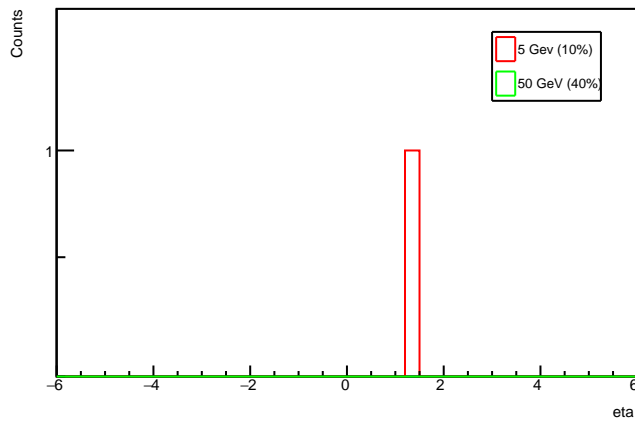
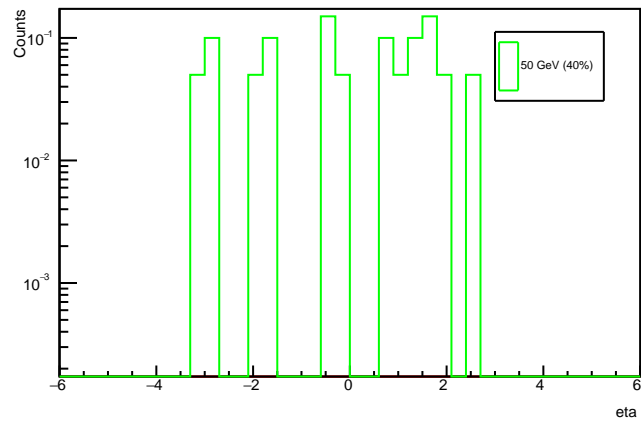
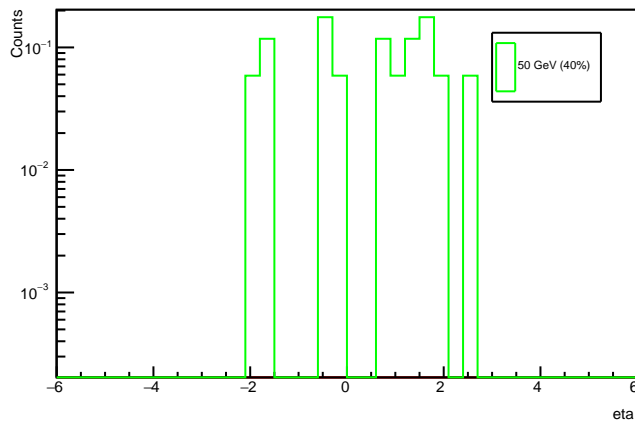
ctau 100mm leading vs subleading Mu pt: $j1pt > 120$, at most 2 jets w/ $pt > 30$ GeV



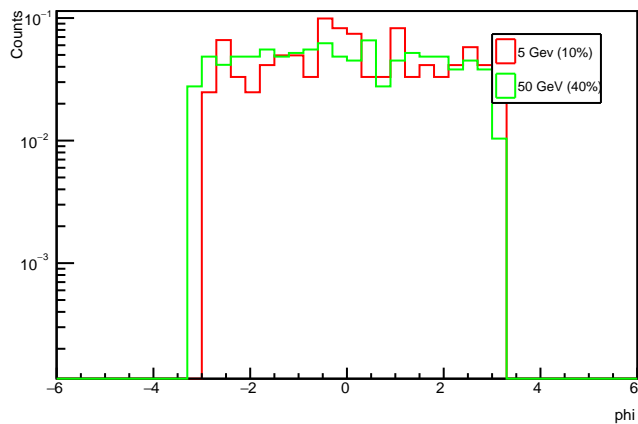
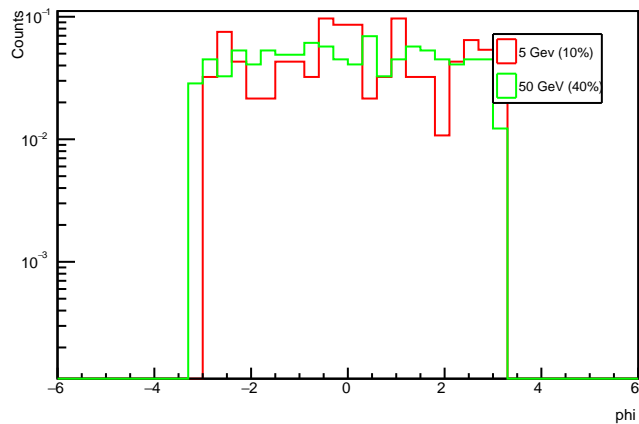
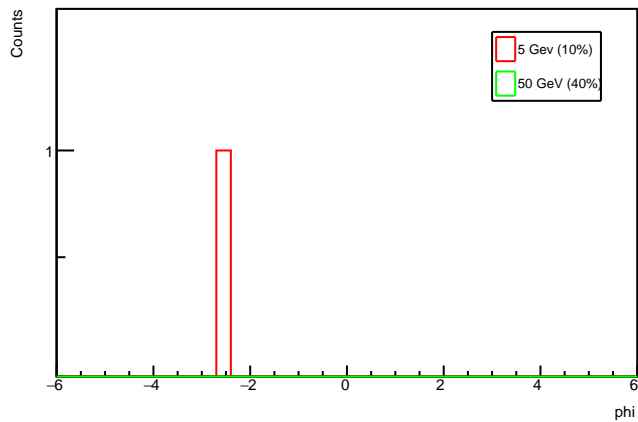
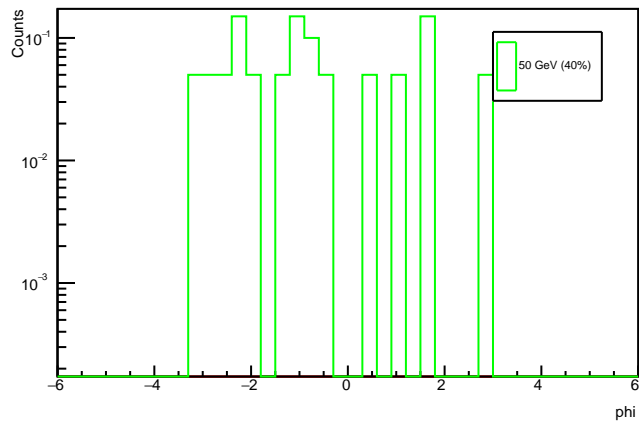
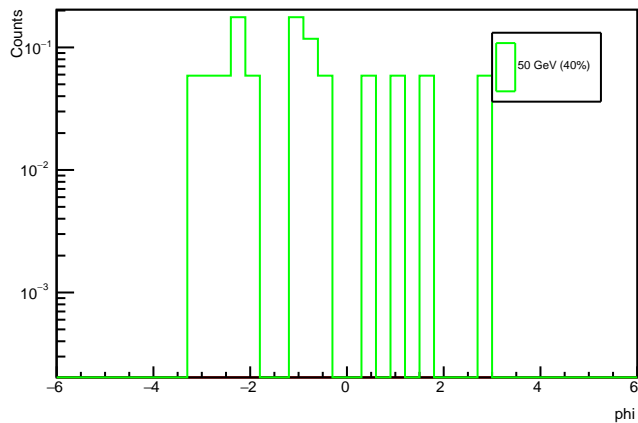
ctau 100mm leading vs subleading Mu pt: at least 2 mu w/ $v_{xy} < 740$ cm, $|v_z| < 960$ cm & $|\eta_{\text{jet}}| < 2.4$



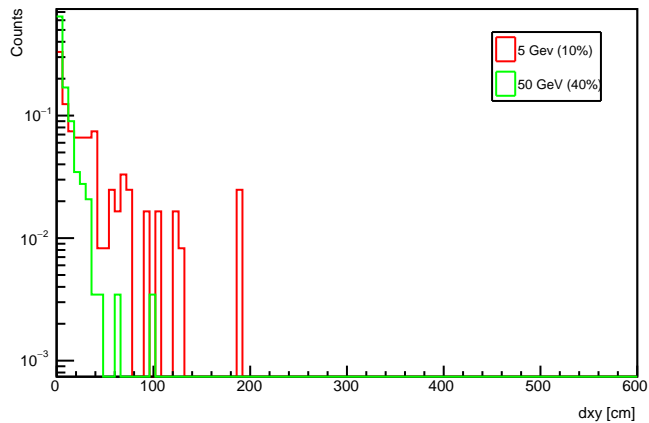
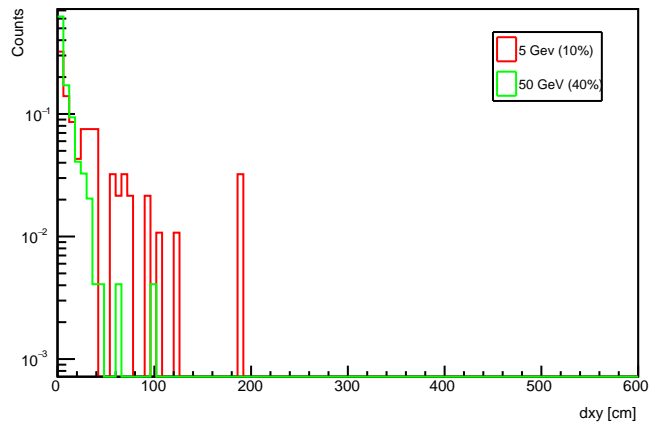
gen subleading Mu eta: no cuts

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

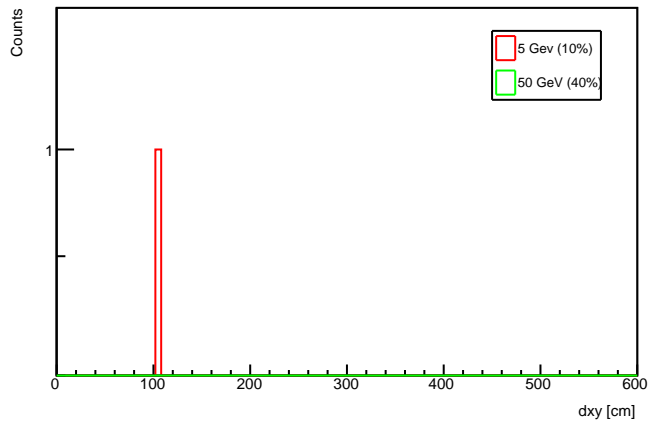
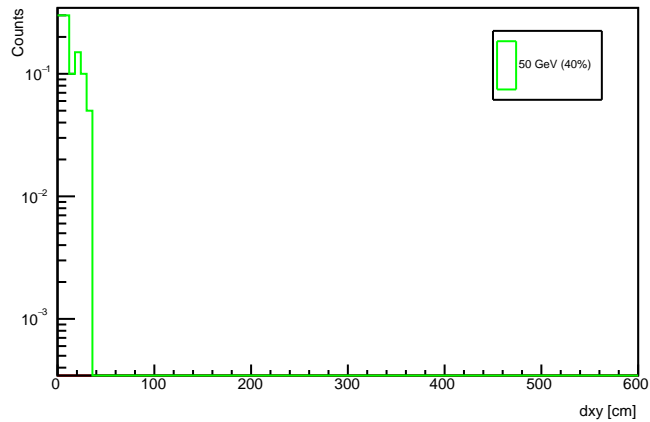
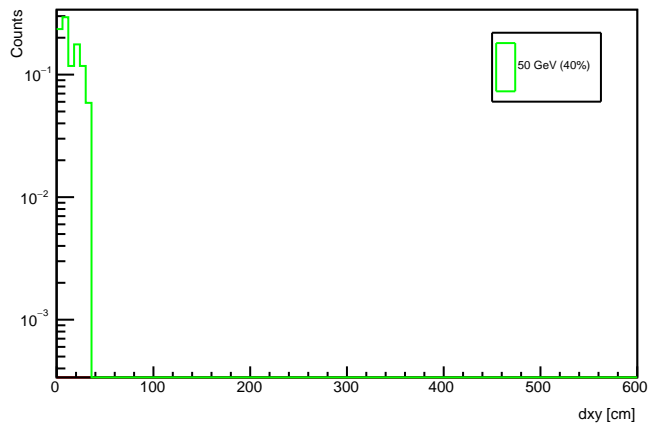
gen subleading Mu phi: no cuts

gen subleading Mu phi: $n_{\text{jet}} \geq 1$, $j_{1\text{pt}} > 30$ GeVgen subleading Mu phi: $\text{MET} > 120$ GeVgen subleading Mu phi: $j_{1\text{pt}} > 120$, 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 & $|\eta_{\text{jet}}| < 2.4$ 

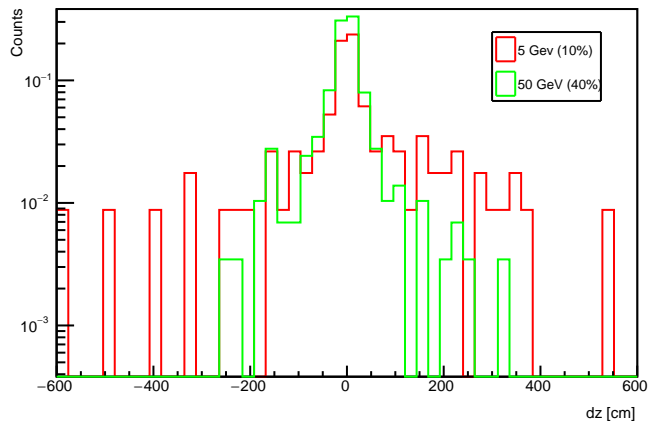
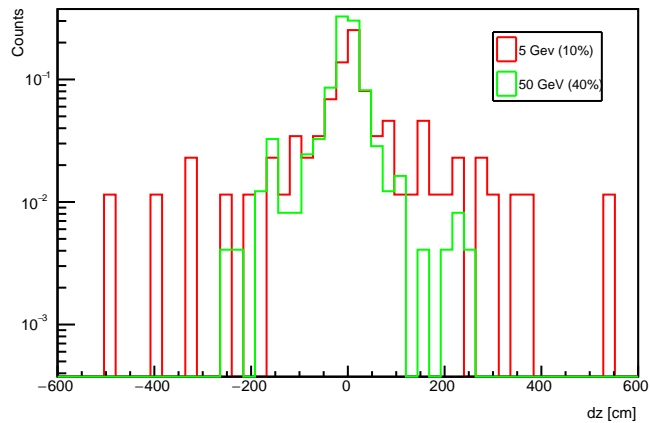
gen subleading Mu vxy: no cuts

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

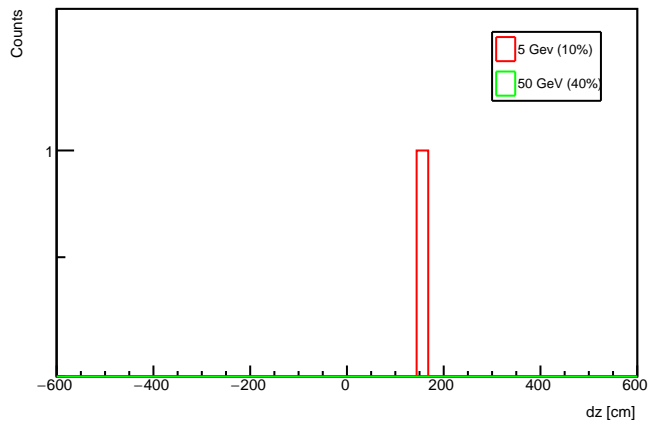
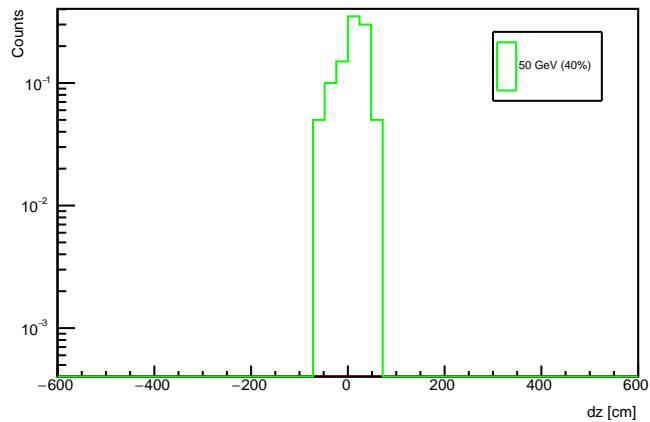
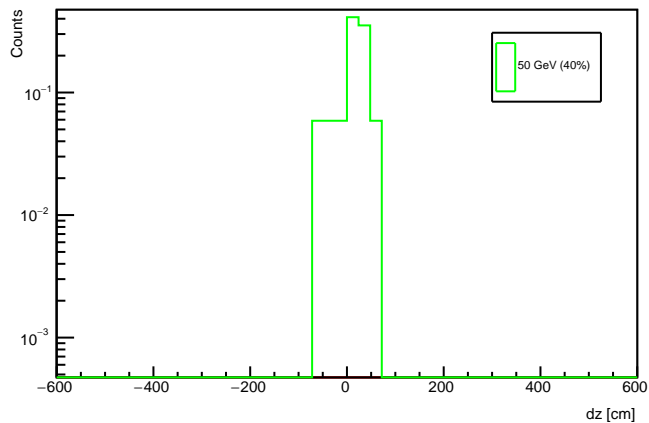
gen subleading Mu vxy: MET > 120 GeV

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

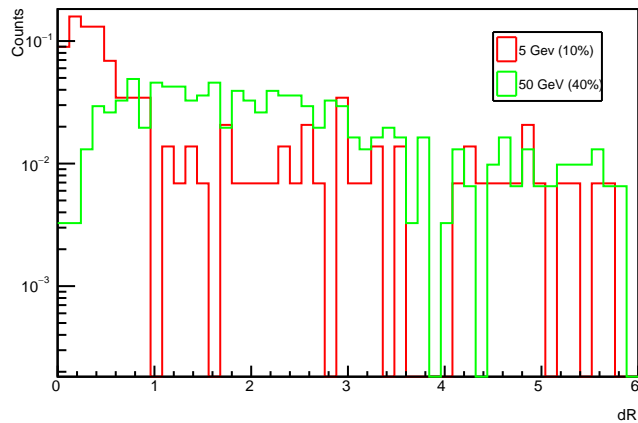
gen subleading Mu vz: no cuts

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

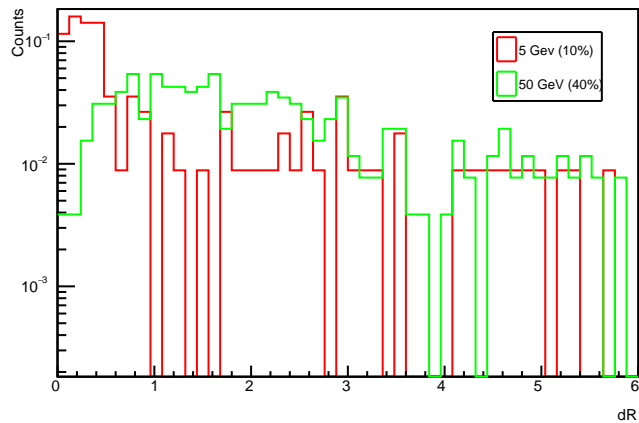
gen subleading Mu vz: MET > 120 GeV

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

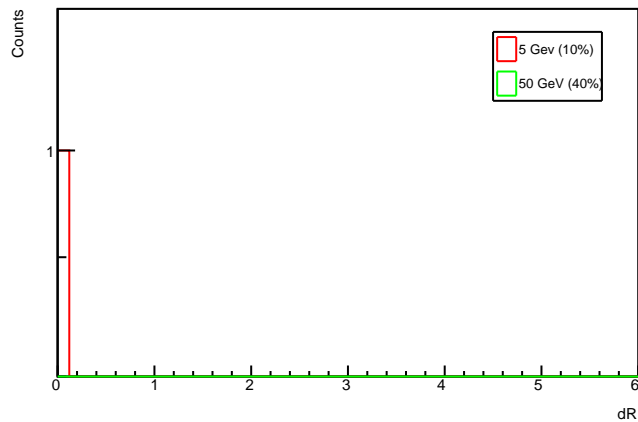
dR: gen leading mu and subleading mu: no cuts



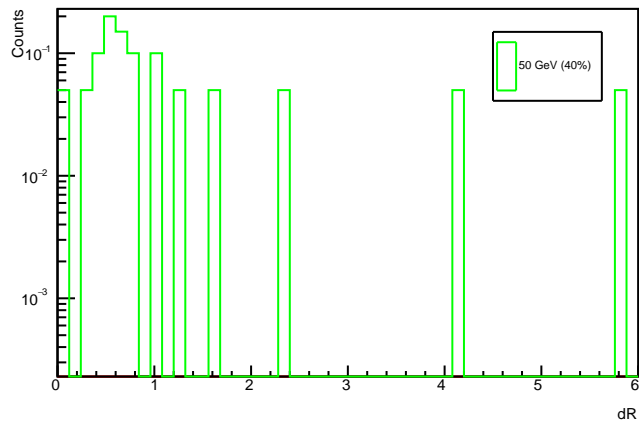
dR: gen leading mu and subleading mu: $n_{\text{jet}} \geq 1$, $j_{1\text{pt}} > 30$ GeV



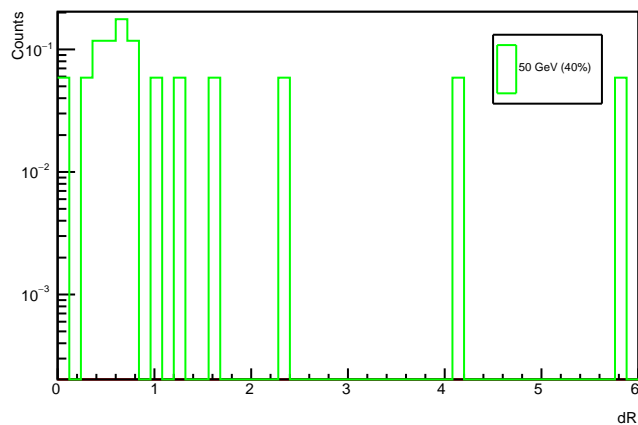
dR: gen leading mu and subleading mu: MET > 120 GeV



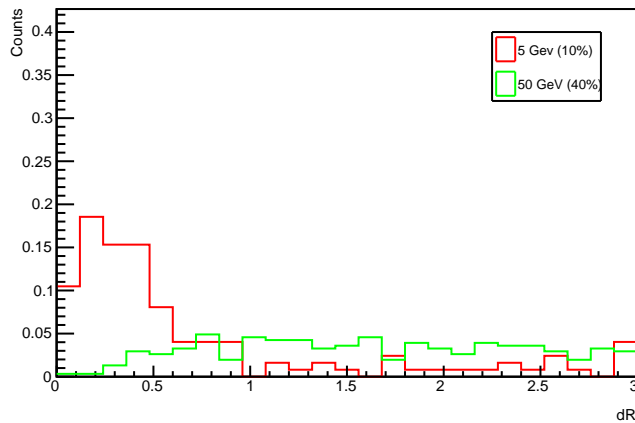
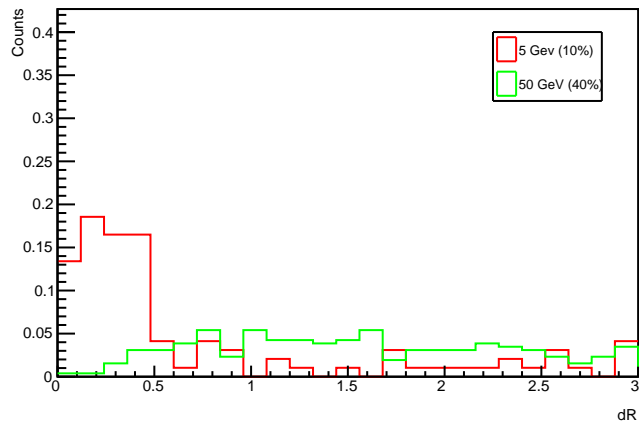
dR: gen leading mu and subleading mu: $j_{1\text{pt}} > 120$, at most 2 jets w/ $p_t > 30$ GeV



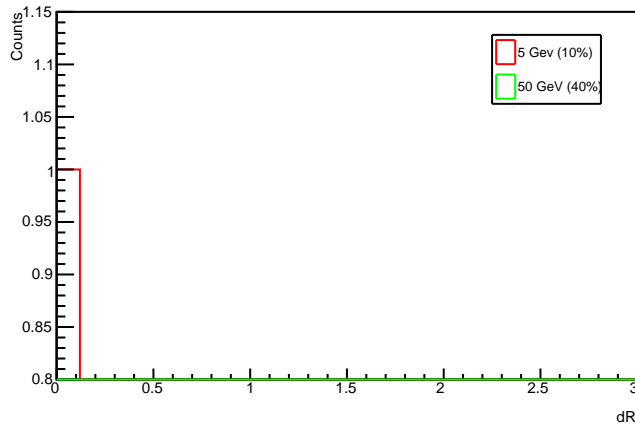
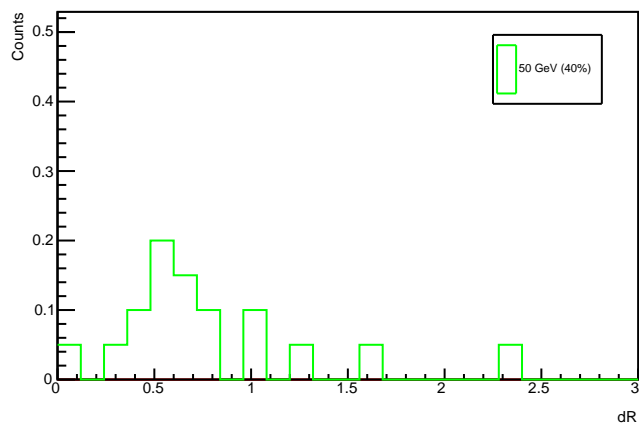
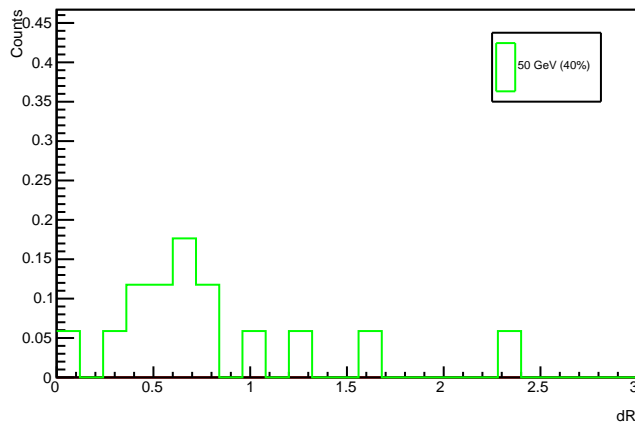
dR: gen leading mu and subleading mu: at least 2 mu w/ $v_{xy} < 740$ cm, $|v_z| < 960$ cm & $|\eta_{\text{jet}}| < 2.4$



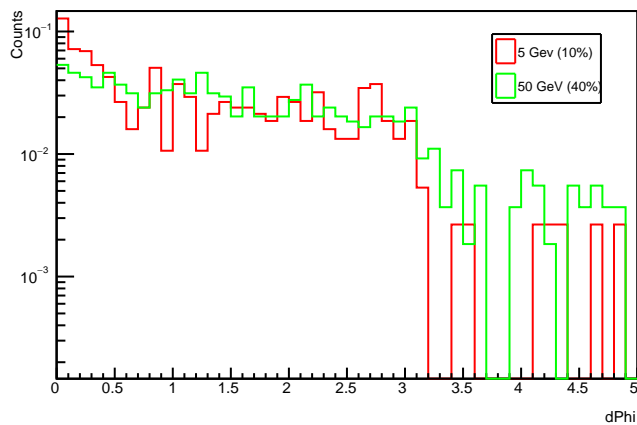
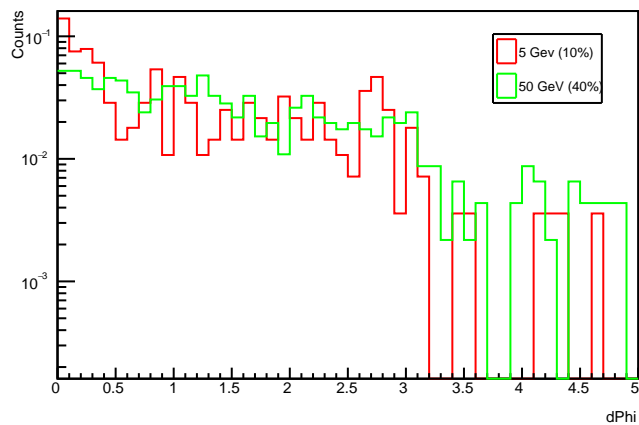
dR: gen leading mu and subleading mu: no cuts

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

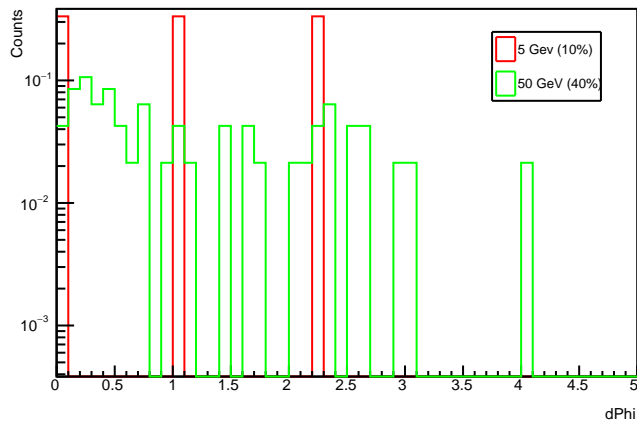
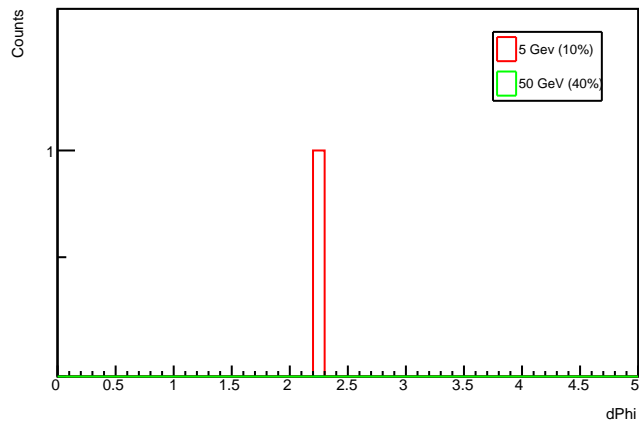
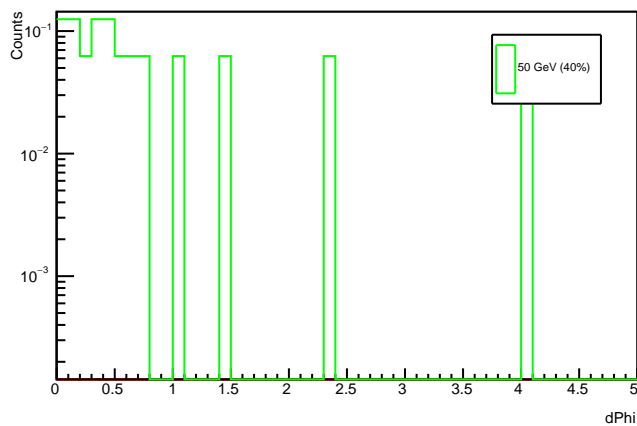
dR: gen leading mu and subleading mu: MET > 120 GeV

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

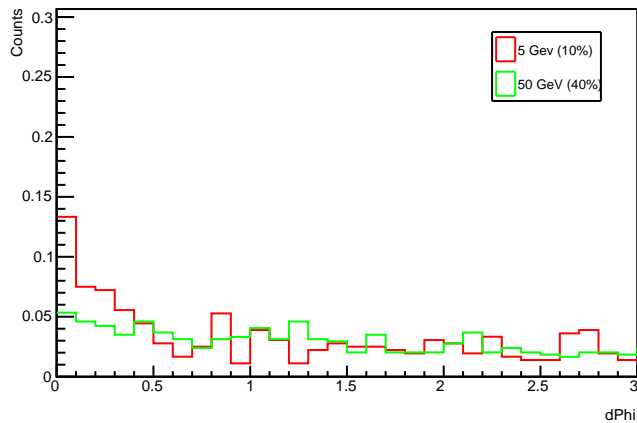
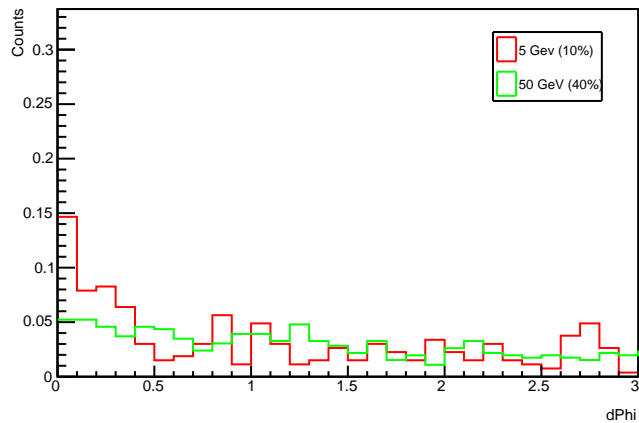
dPhi: gen MET and leading mu: no cuts

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

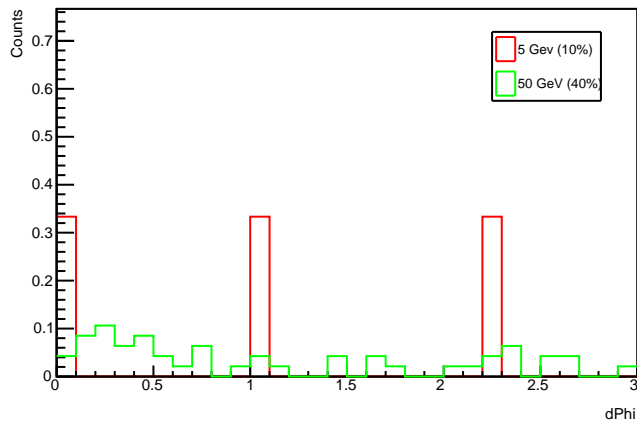
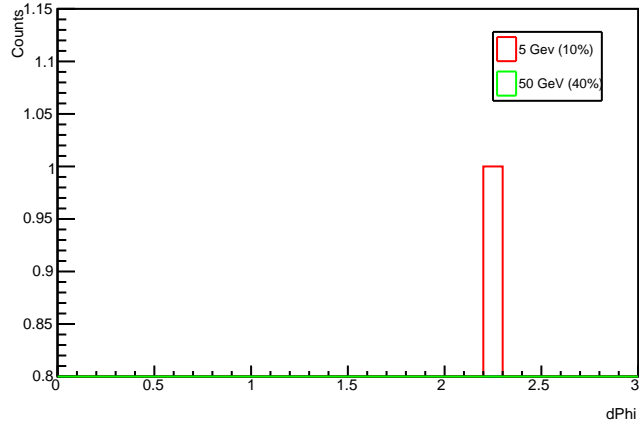
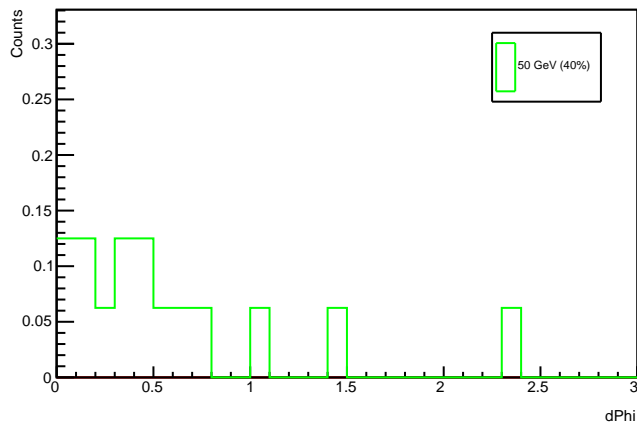
dPhi: gen MET and leading mu: MET > 120 GeV

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 & $|j_{\text{eta}}| < 2.4$ 

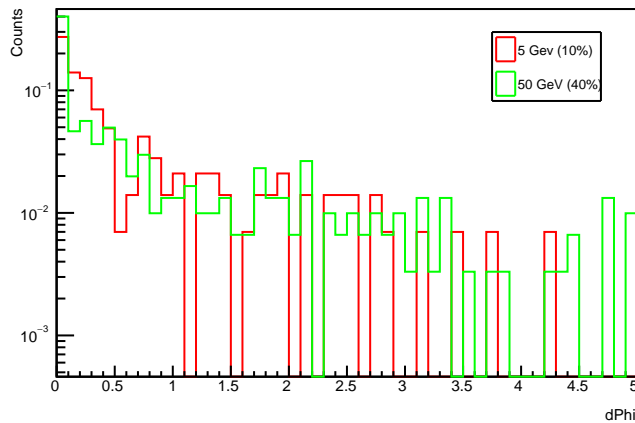
dPhi: gen MET and leading mu: no cuts

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

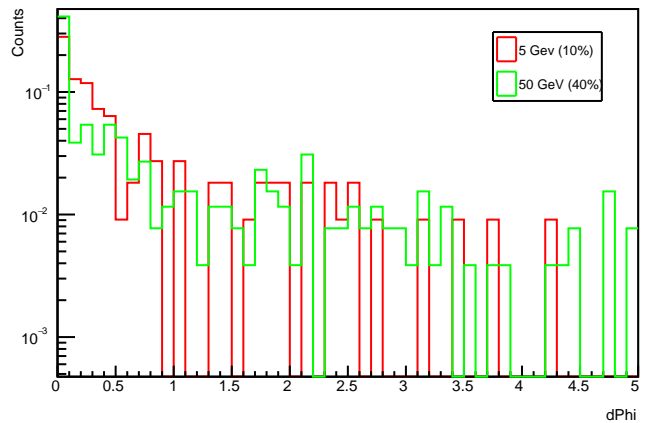
dPhi: gen MET and leading mu: MET > 120 GeV

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 & $|\eta_{\text{jet}}| < 2.4$ 

dPhi: gen leading mu and subleading mu: no cuts



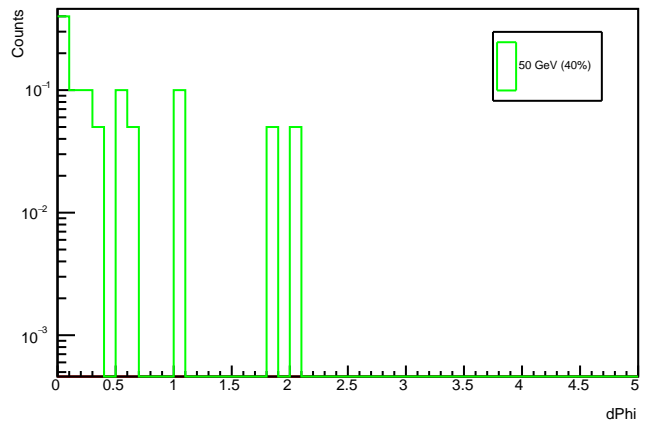
dPhi: gen leading mu and subleading mu: n_jet >=1, j1pt > 30 GeV



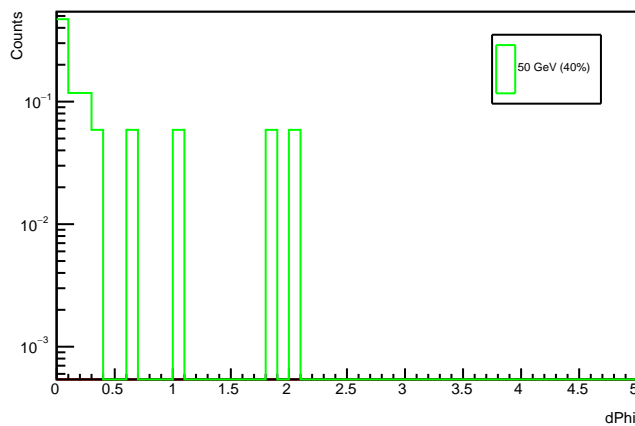
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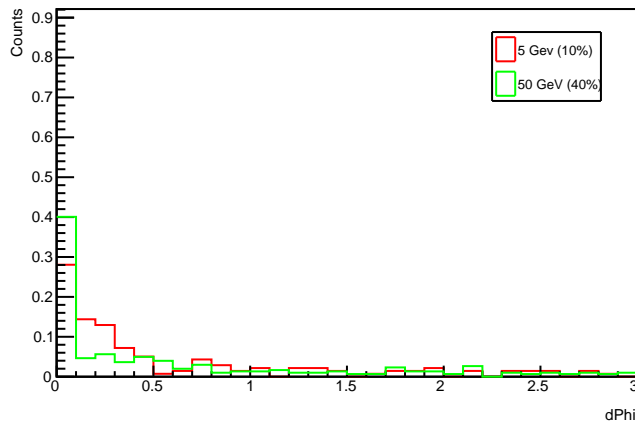
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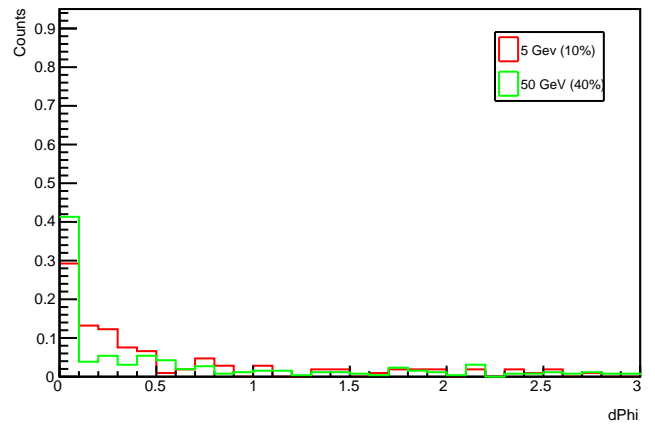
dPhi: gen leading mu and subleading mu: at least 2 mu w/ vxxy < 740 cm, |vz| < 960 cm & |eta| < 2.4



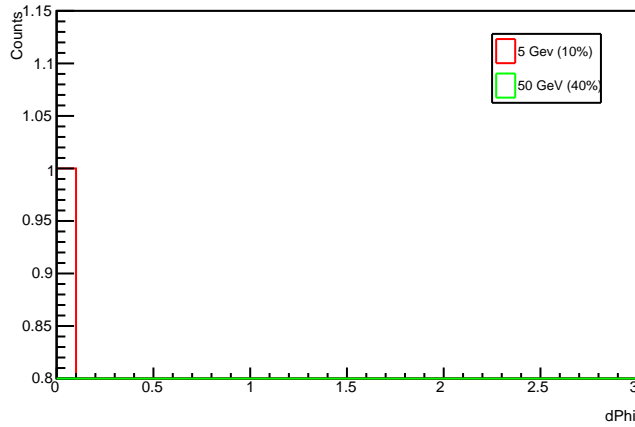
dPhi: gen leading mu and subleading mu: no cuts



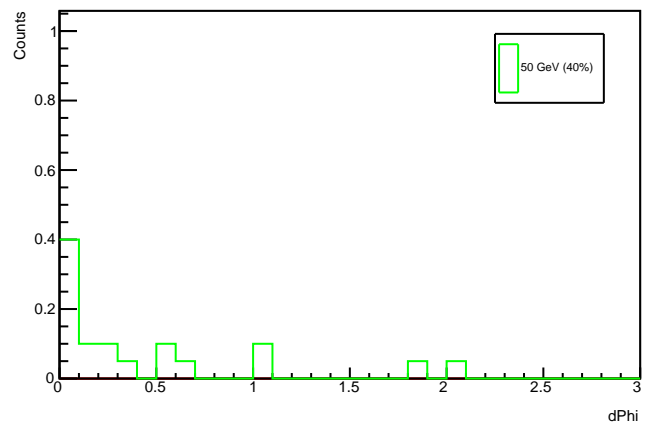
dPhi: gen leading mu and subleading mu: n_jet >=1, j1pt > 30 GeV



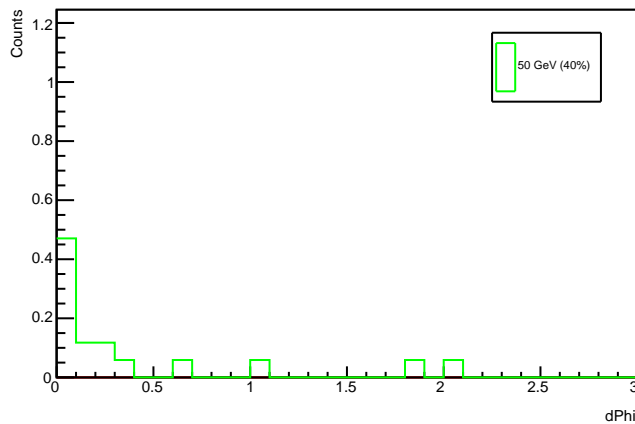
dPhi: gen leading mu and subleading mu: MET > 120 GeV



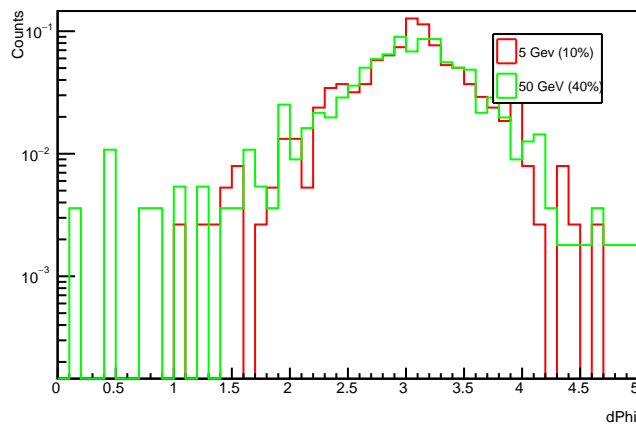
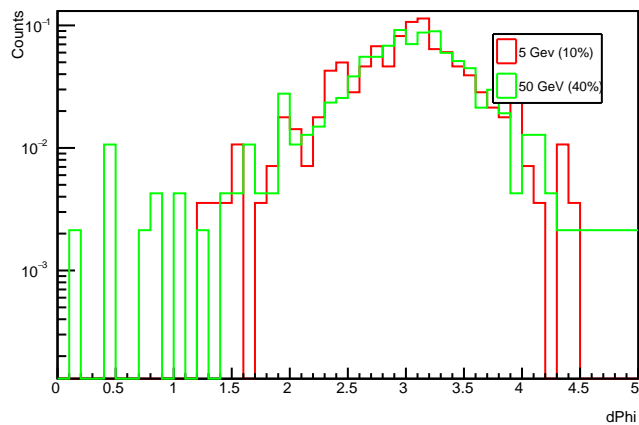
dPhi: gen leading mu and subleading mu: j1pt >120, at most 2 jets w/ pt >30 GeV



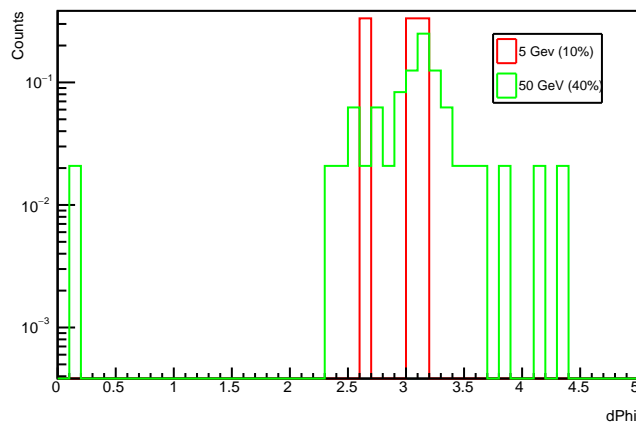
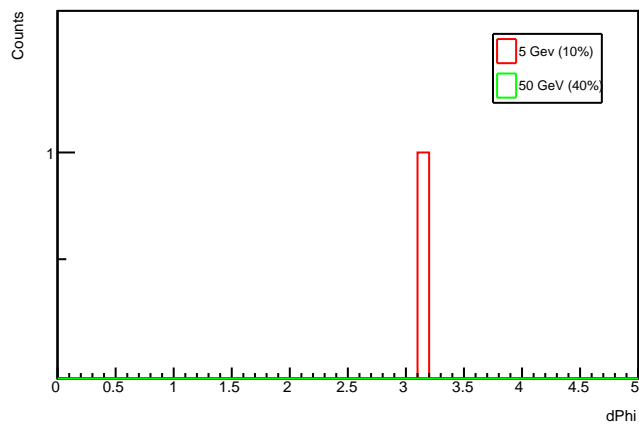
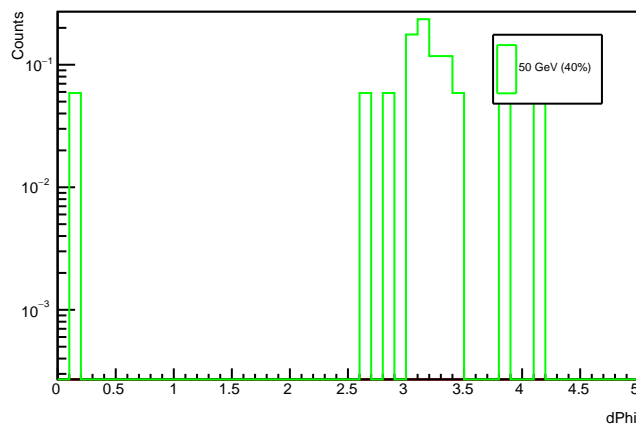
dPhi: gen leading mu and subleading mu: at least 2 mu w/ vx < 740 cm, |vz| < 960 cm & |eta| < 2.4



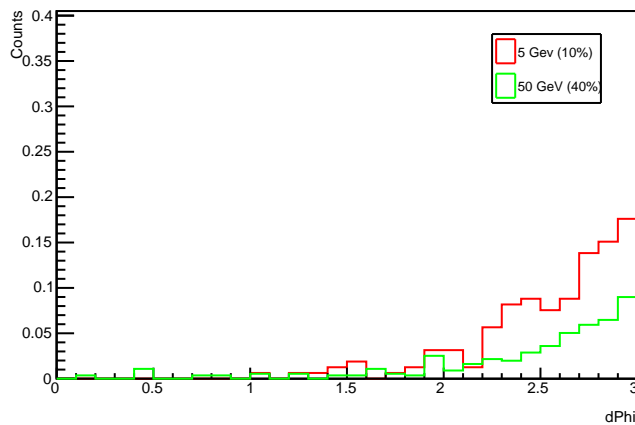
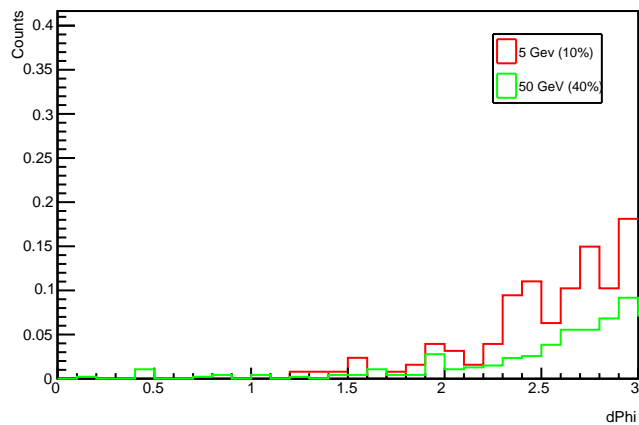
dPhi: gen MET and leading jet: no cuts

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

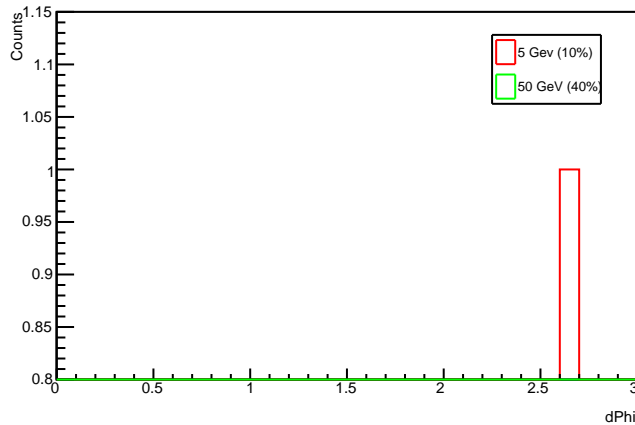
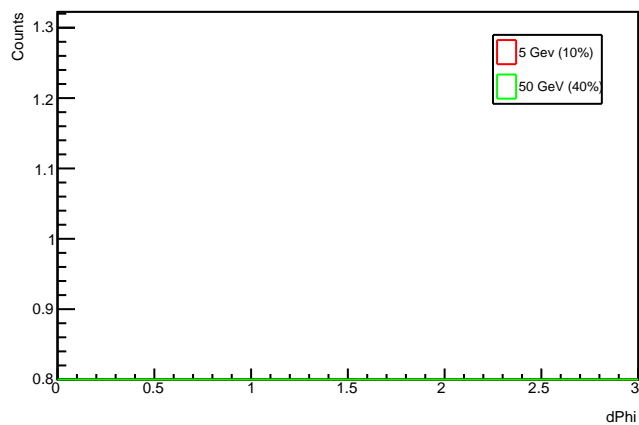
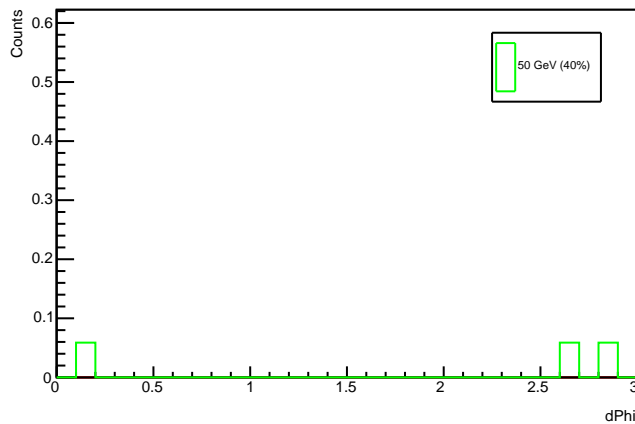
dPhi: gen MET and leading jet: MET > 120 GeV

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 & $|\eta_{\text{jet}}| < 2.4$ 

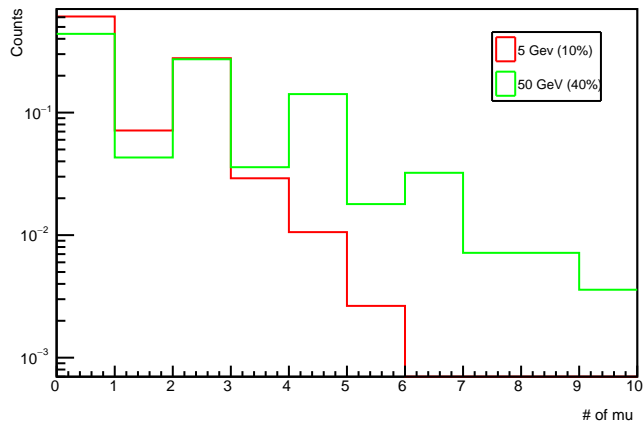
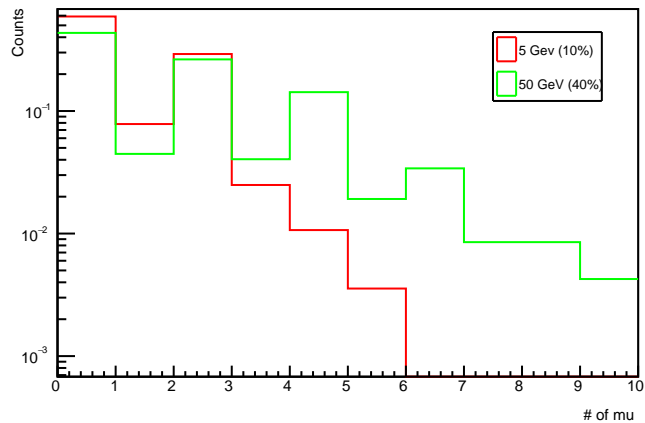
dPhi: gen MET and leading jet: no cuts

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

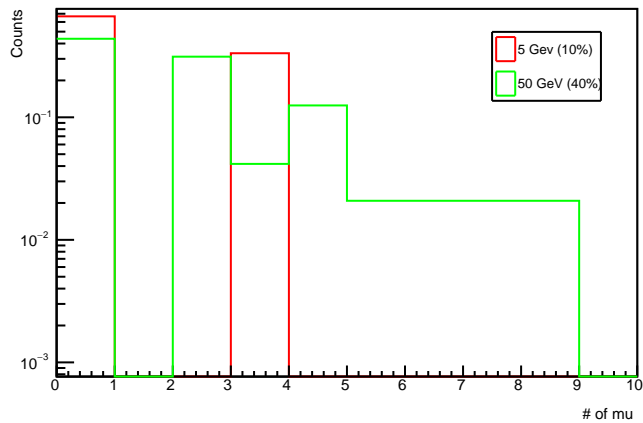
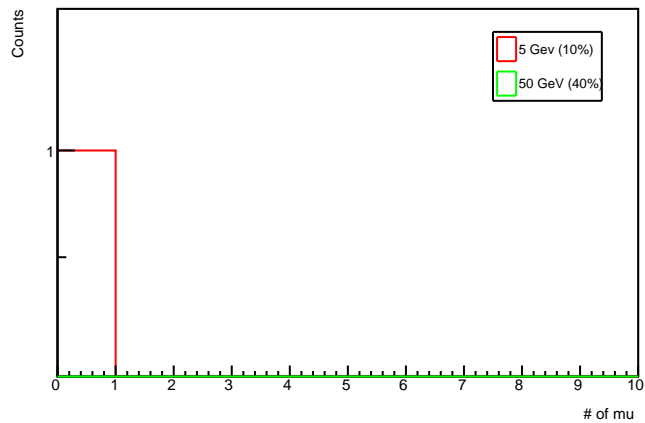
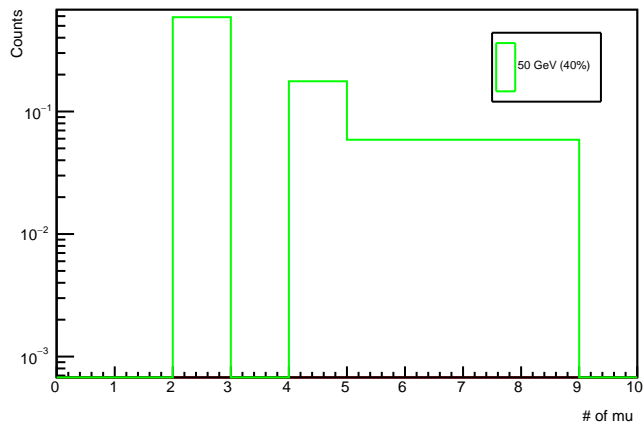
dPhi: gen MET and leading jet: MET > 120 GeV

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 & $|\eta| < 2.4$ 

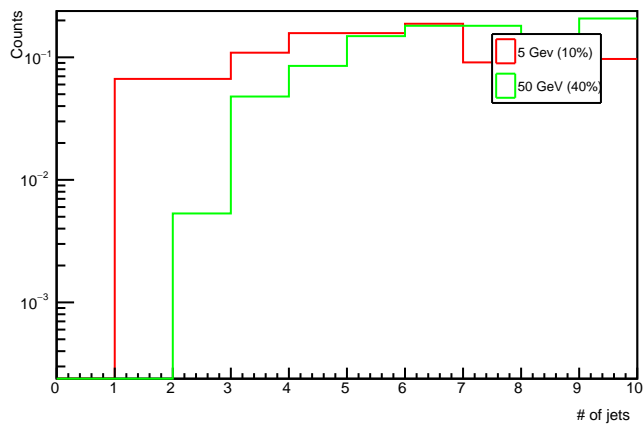
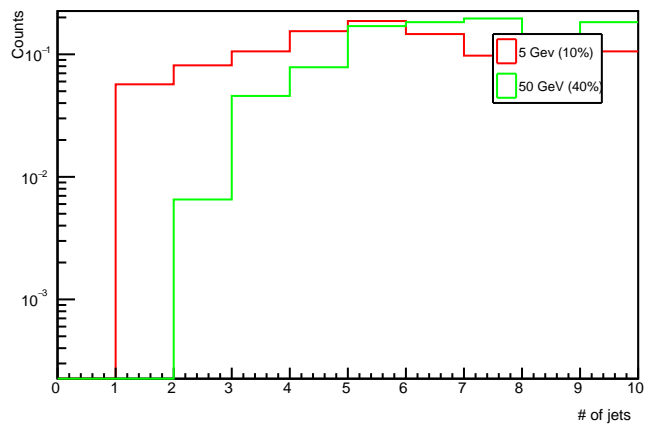
gen number of mu: no cuts

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

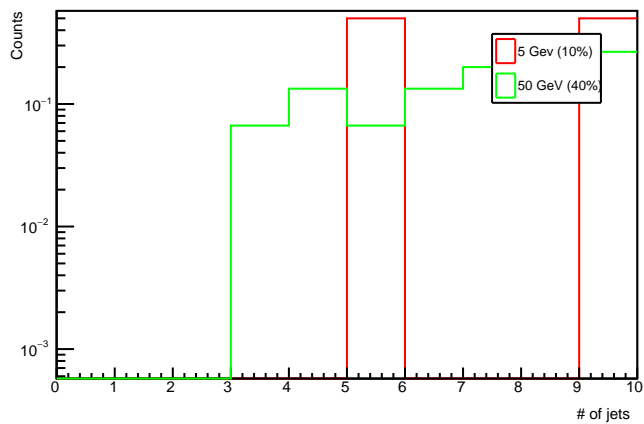
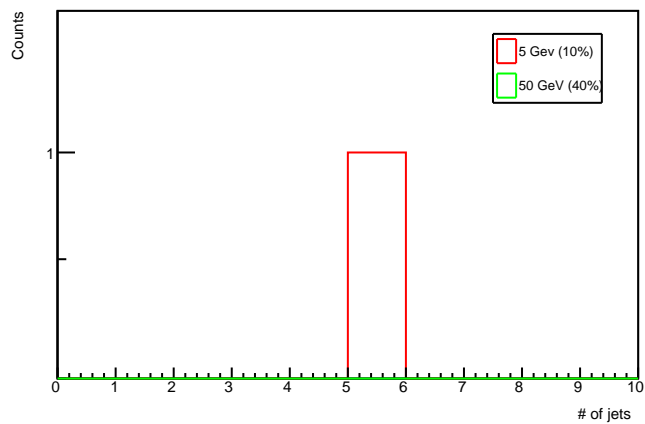
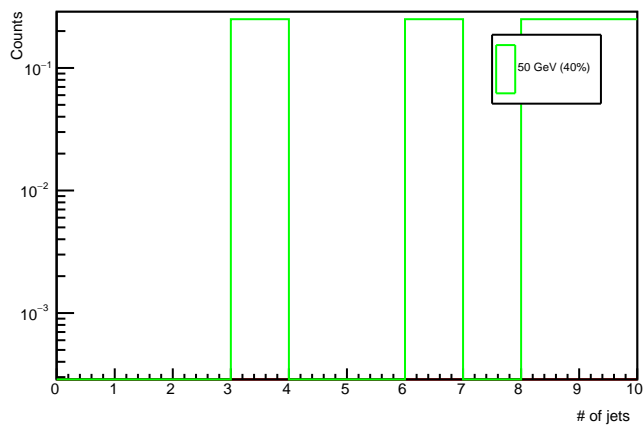
gen number of mu: MET > 120 GeV

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

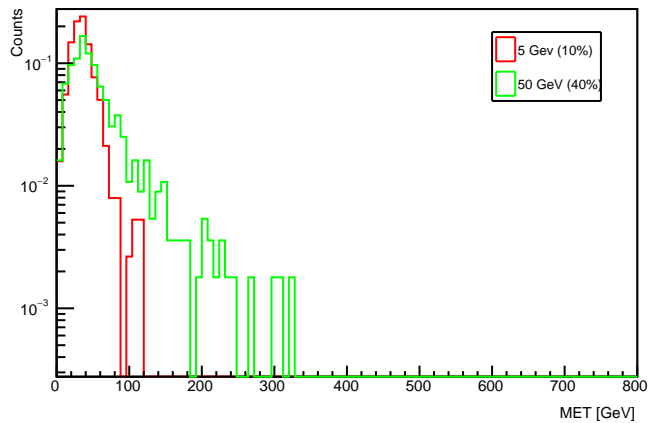
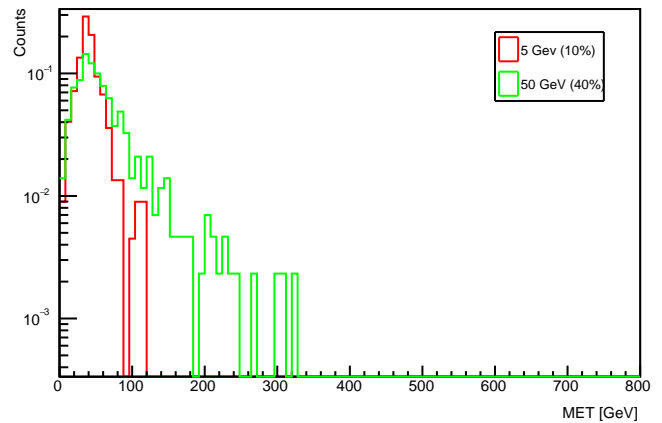
gen number of jets: no cuts

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

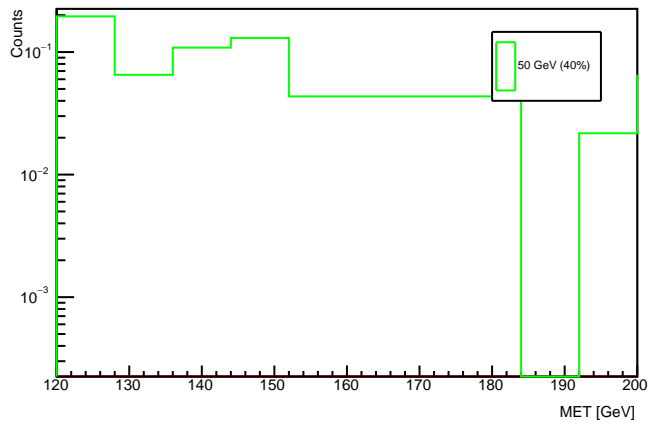
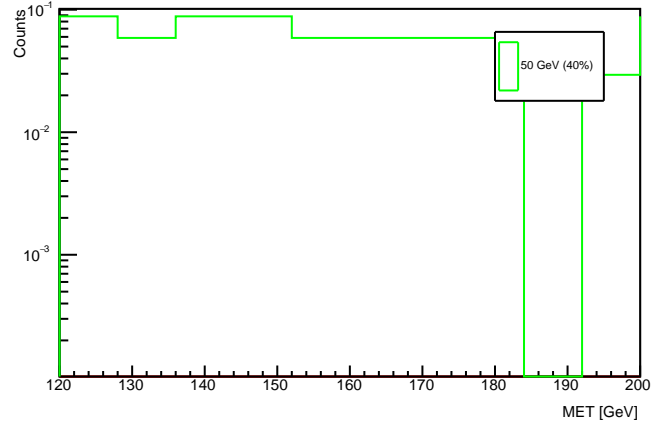
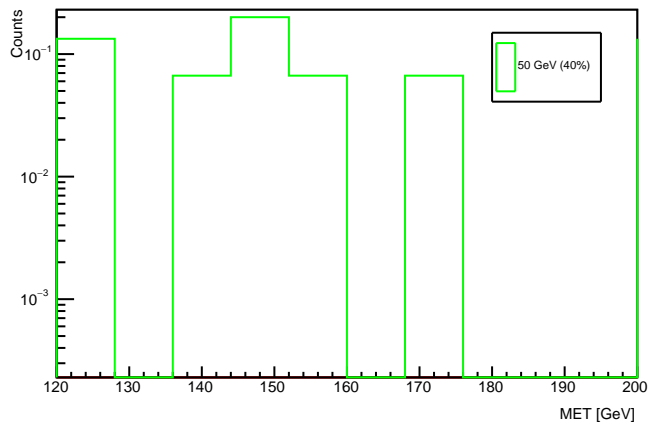
gen number of jets: MET > 120 GeV

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

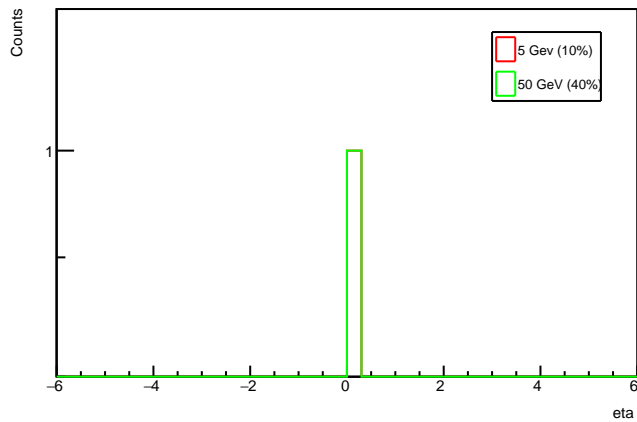
reco leading MET: no cuts

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

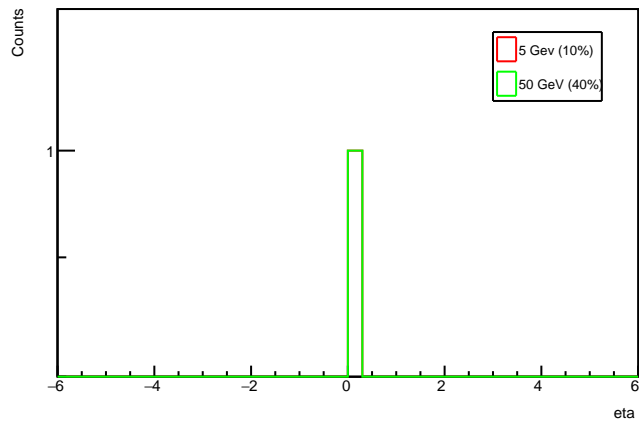
reco leading MET: MET > 120 GeV

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 & $|\eta| < 2.4$ 

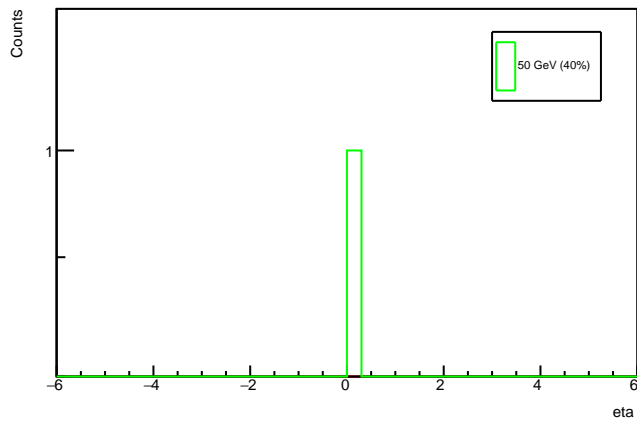
reco leading Met eta: no cuts



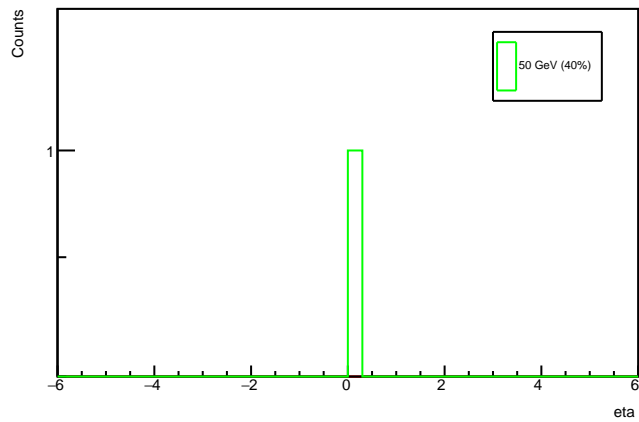
reco leading Met eta: n_jet >=1, j1pt > 30 GeV



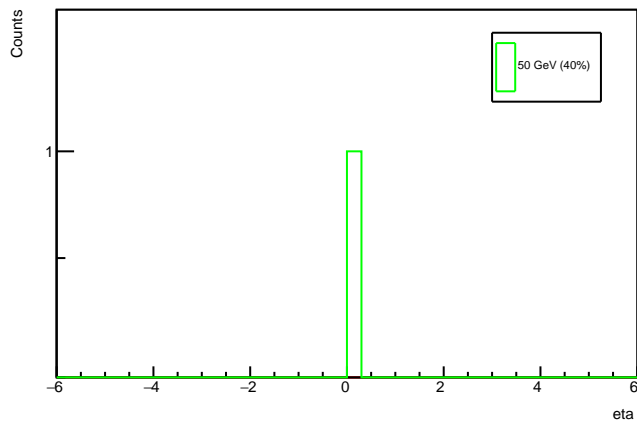
reco leading Met eta: MET > 120 GeV



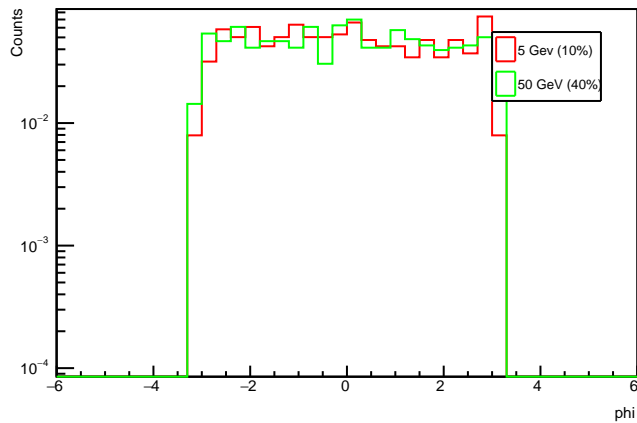
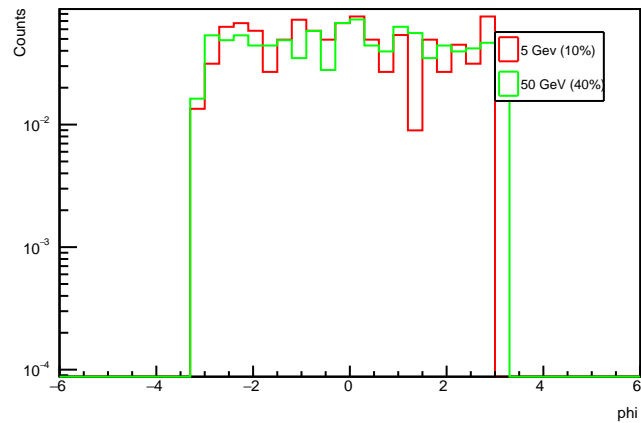
reco leading Met eta: j1pt > 120, at most 2 jets w/ pt > 30 GeV



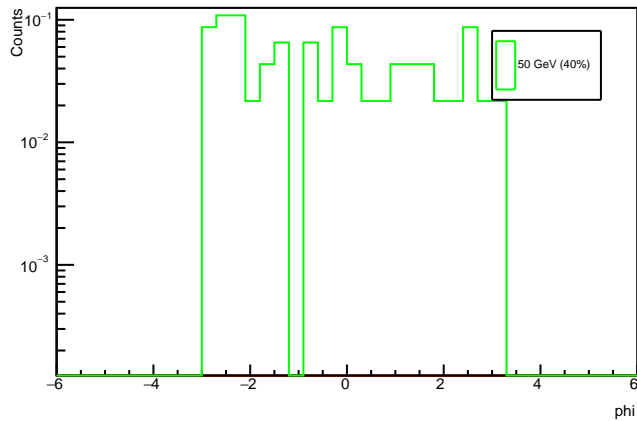
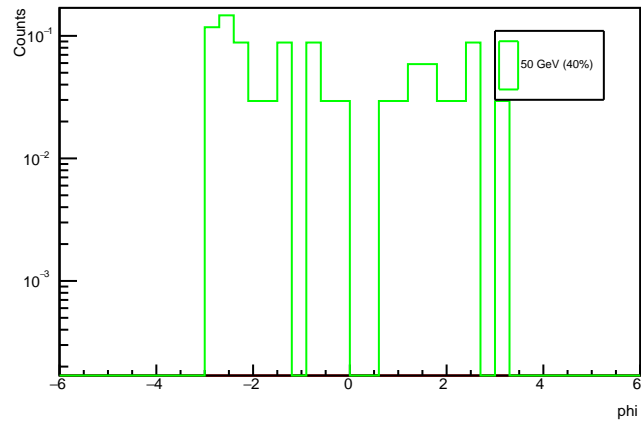
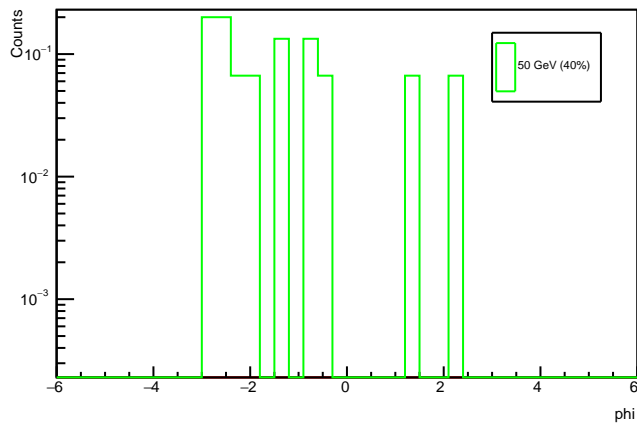
reco leading Met eta: at least 2 mu w/ vx < 740 cm, |vz| < 960 cm & |eta| < 2.4



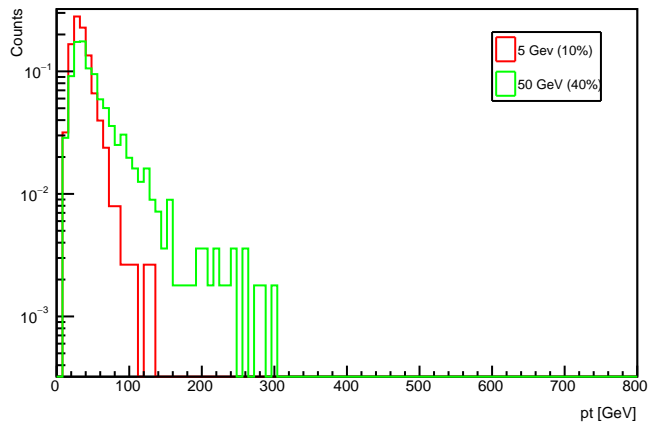
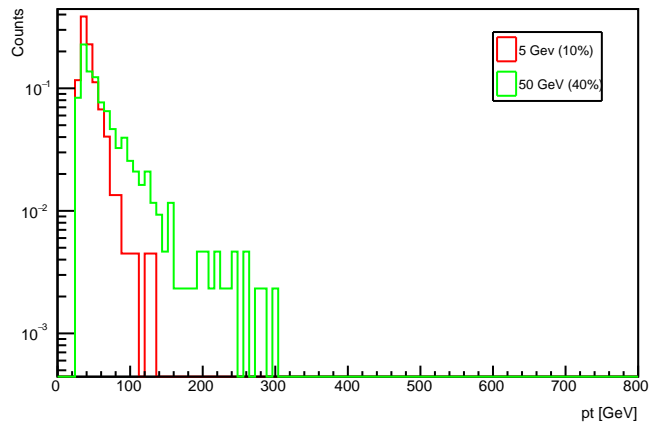
reco leading Met phi: no cuts

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

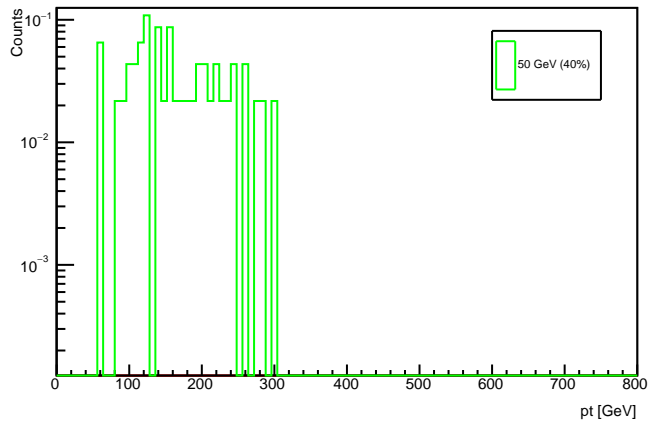
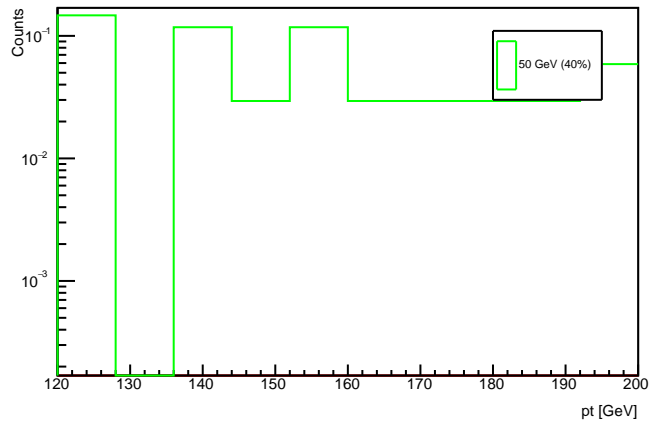
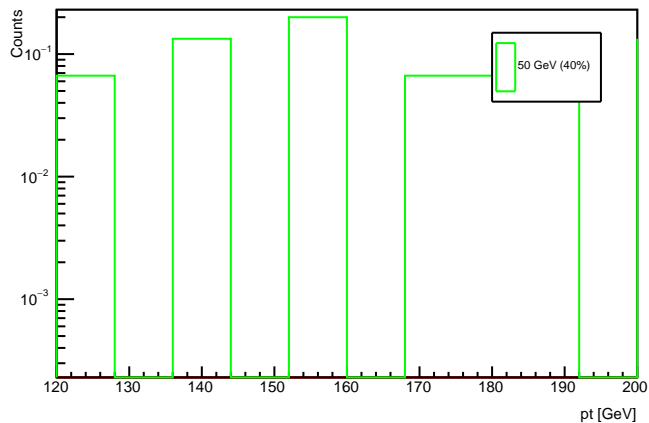
reco leading Met phi: MET > 120 GeV

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

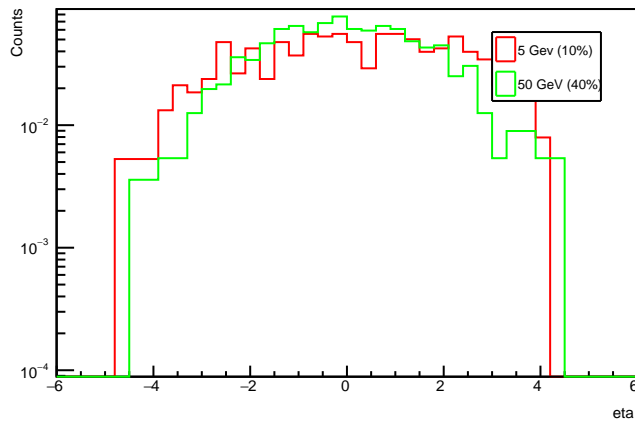
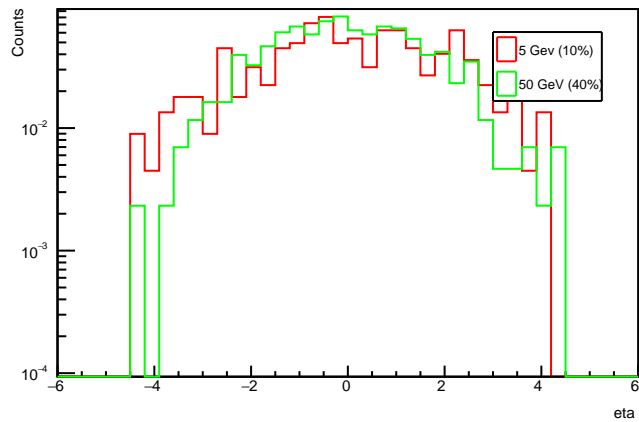
reco leading Jet pt: no cuts

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

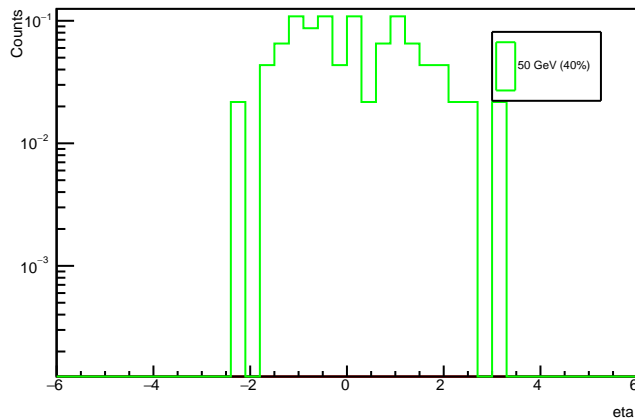
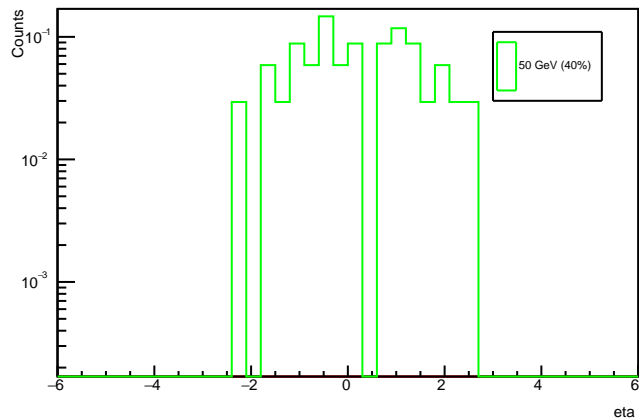
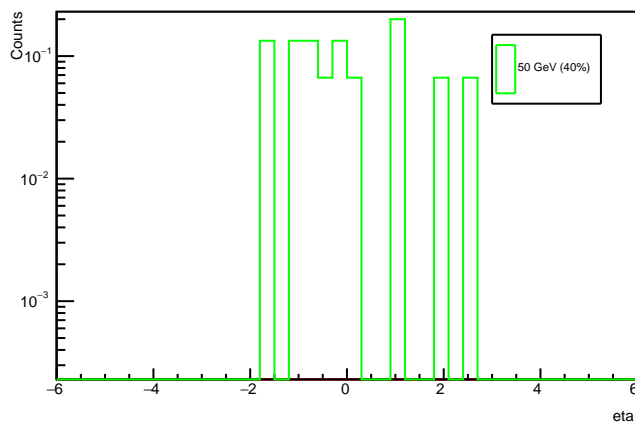
reco leading Jet pt: MET > 120 GeV

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

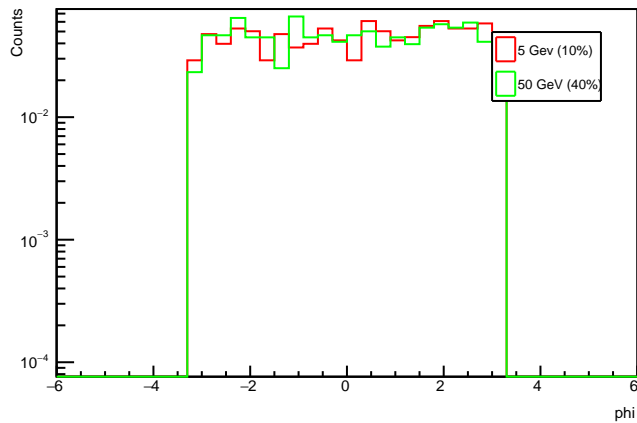
reco leading Jet eta: no cuts

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

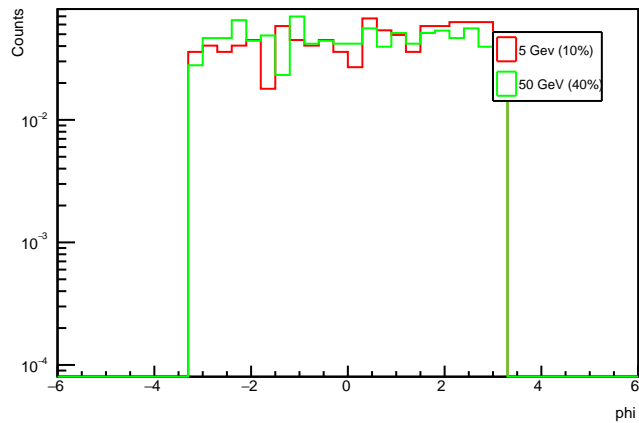
reco leading Jet eta: MET > 120 GeV

reco 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 & $|\eta| < 2.4$ 

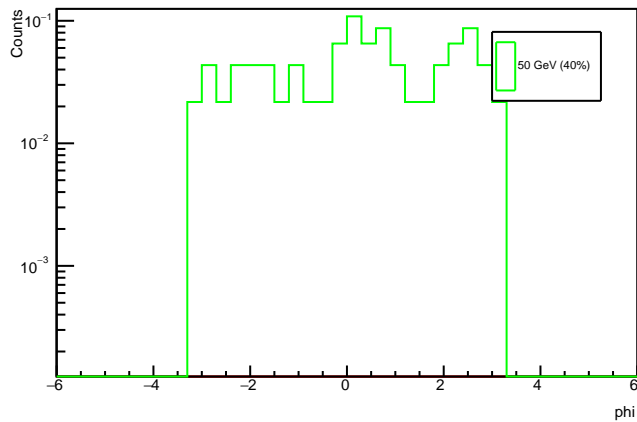
reco leading Jet phi: no cuts



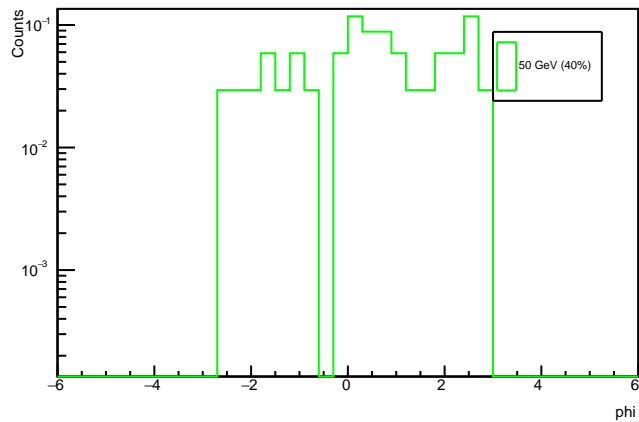
reco leading Jet phi: n_jet >= 1, j1pt > 30 GeV



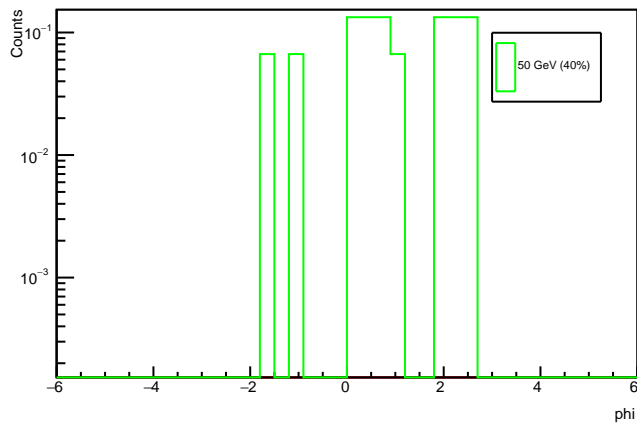
reco leading Jet phi: MET > 120 GeV



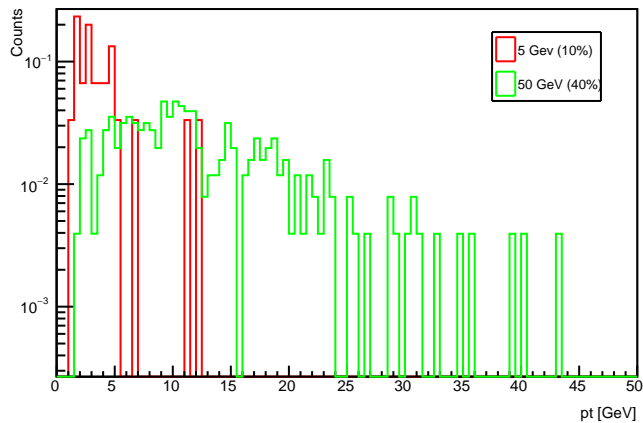
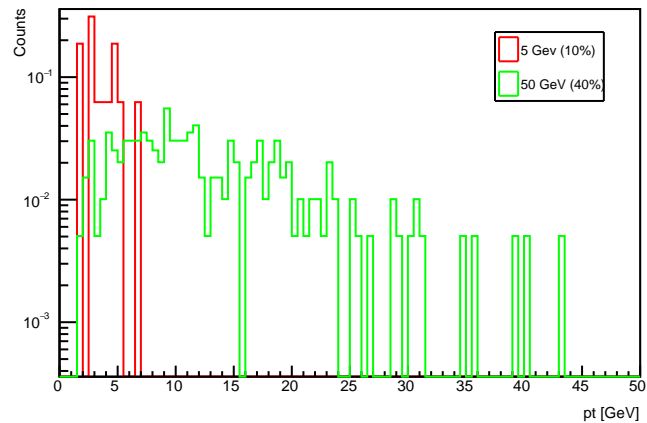
reco leading Jet phi: j1pt > 120, at most 2 jets w/ pt > 30 GeV



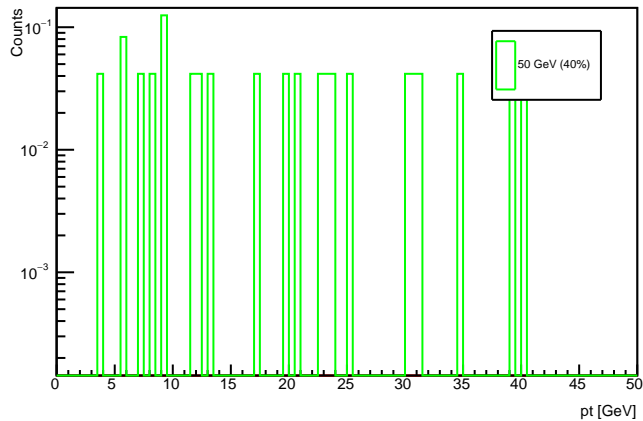
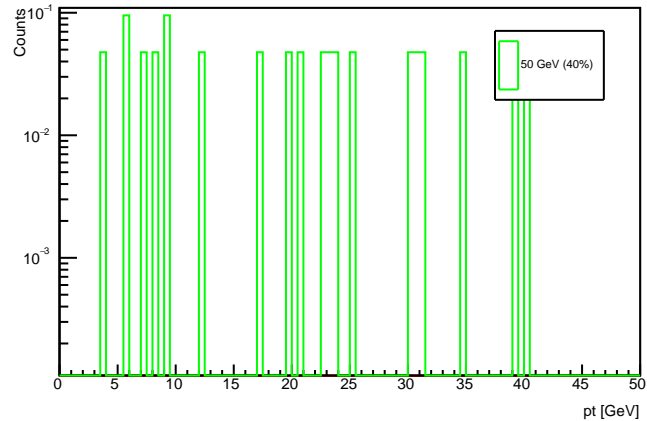
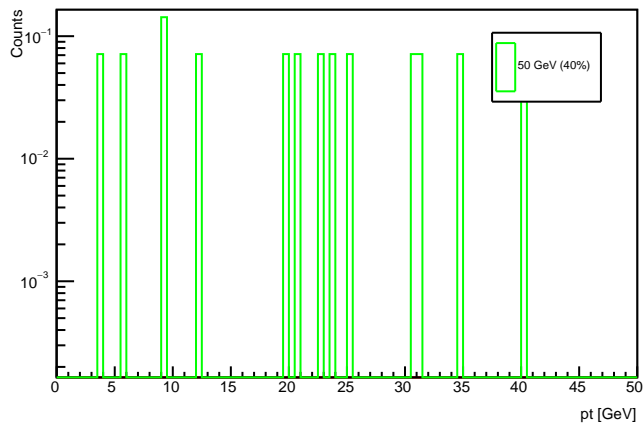
reco leading Jet phi: at least 2 mu w/ vxy < 740 cm, |vz| < 960 cm & |eta| < 2.4



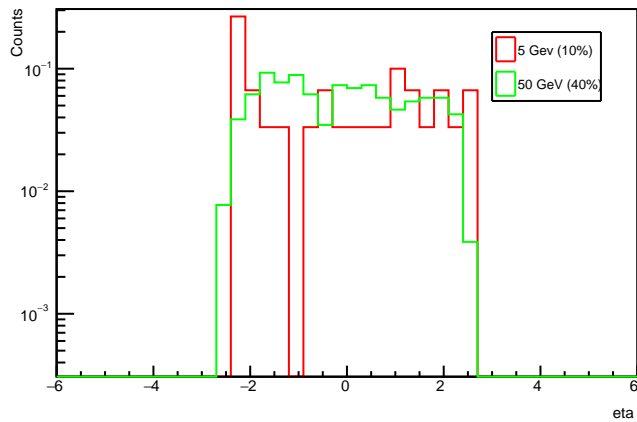
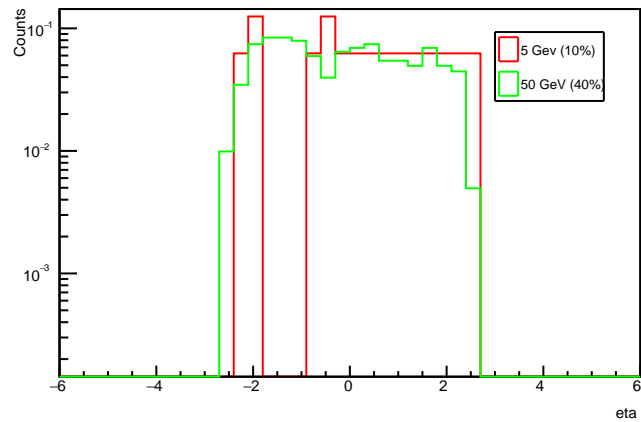
reco leading Mu pt: no cuts

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

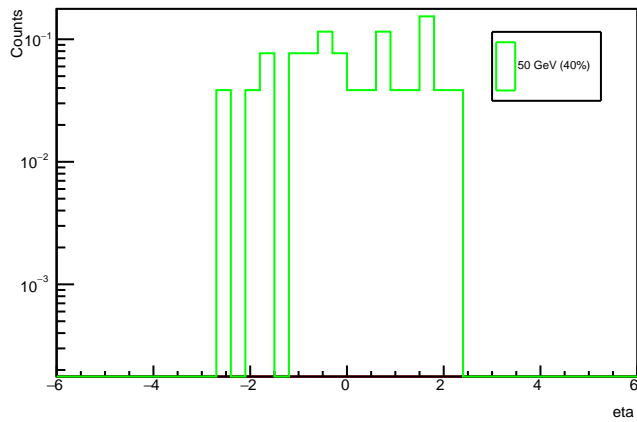
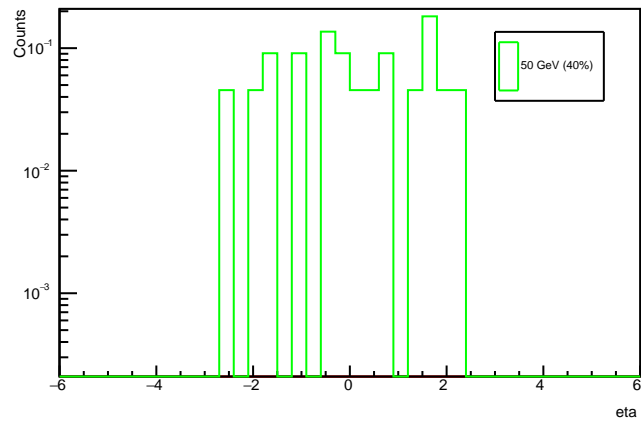
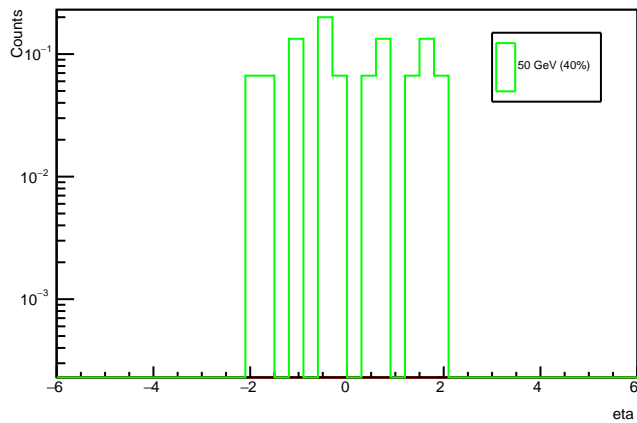
reco leading Mu pt: MET > 120 GeV

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

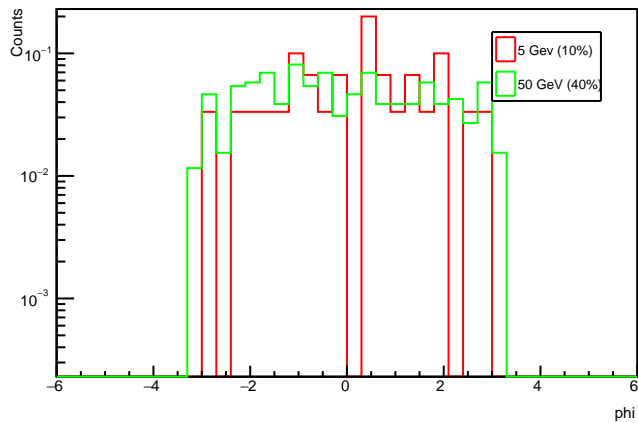
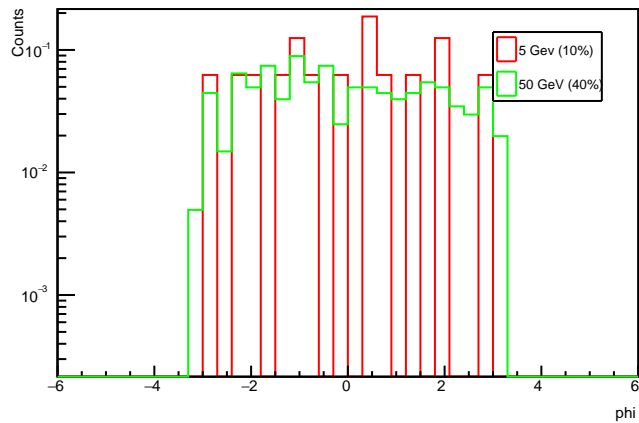
reco leading Mu eta: no cuts

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

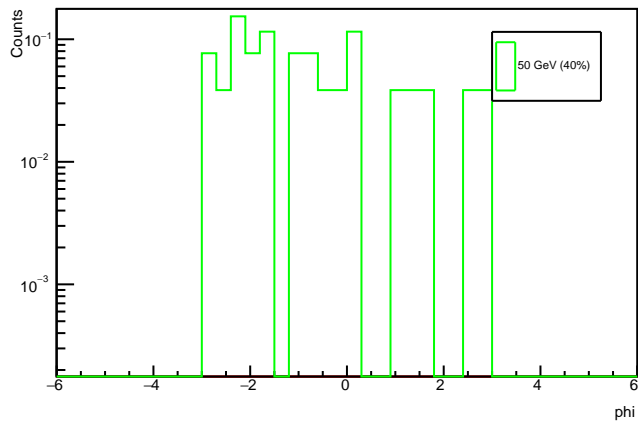
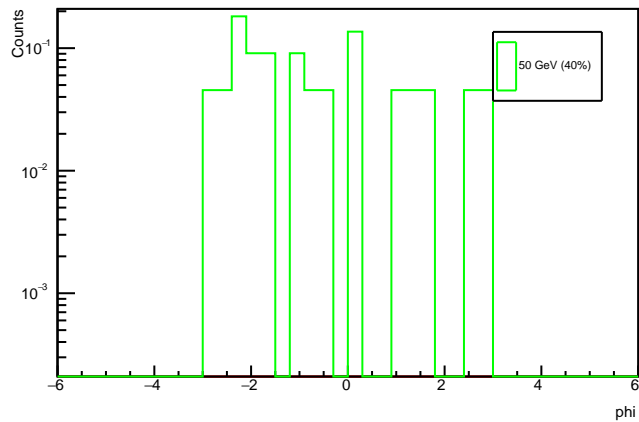
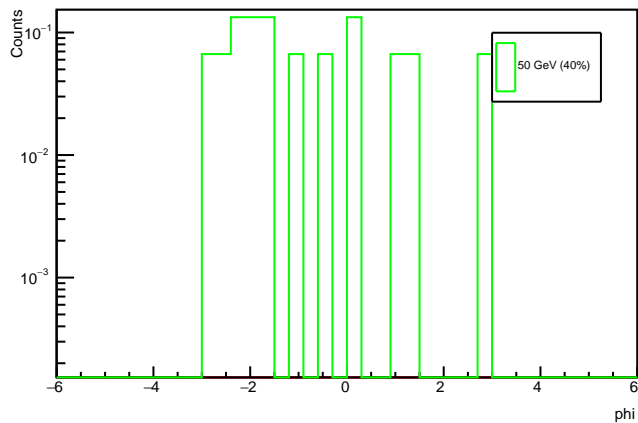
reco leading Mu eta: MET > 120 GeV

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 & $|\eta| < 2.4$ 

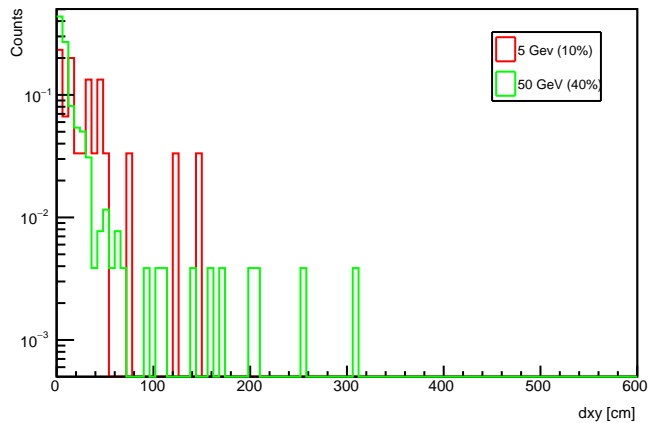
reco leading Mu phi: no cuts

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

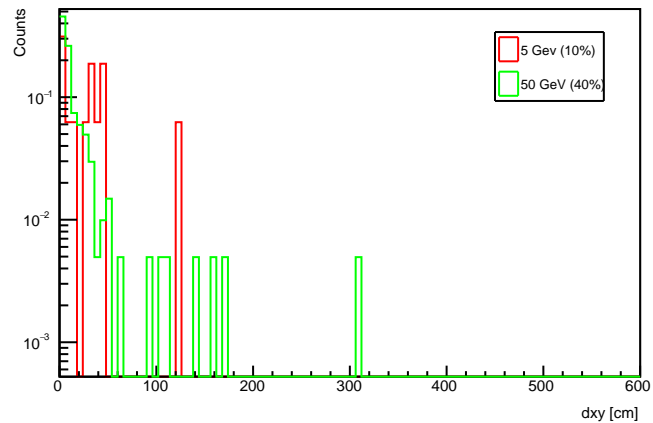
reco leading Mu phi: MET > 120 GeV

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

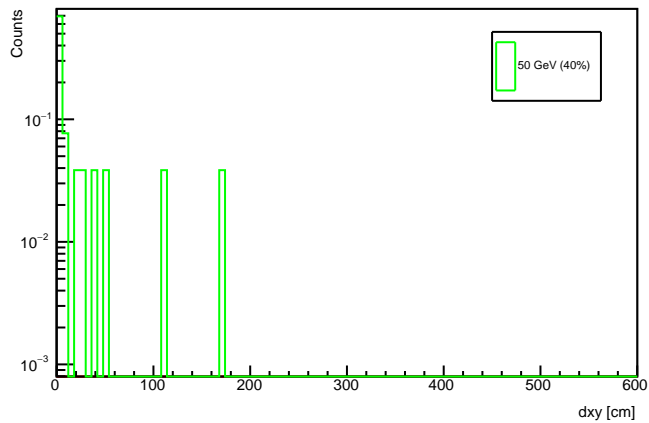
reco leading Mu vxy: no cuts



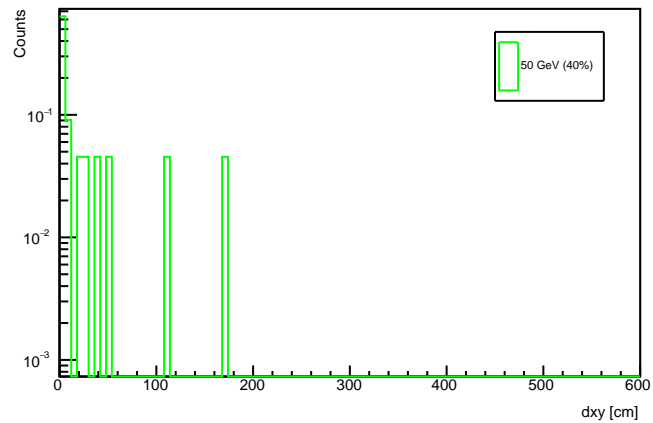
reco leading Mu vxy: n_jet >=1, j1pt > 30 GeV



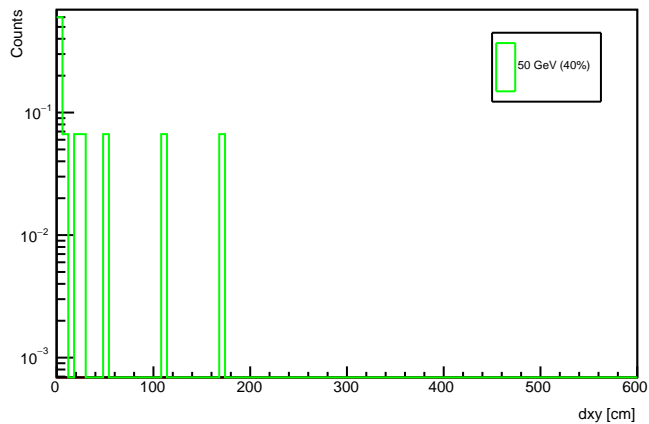
reco leading Mu vxy: MET > 120 GeV



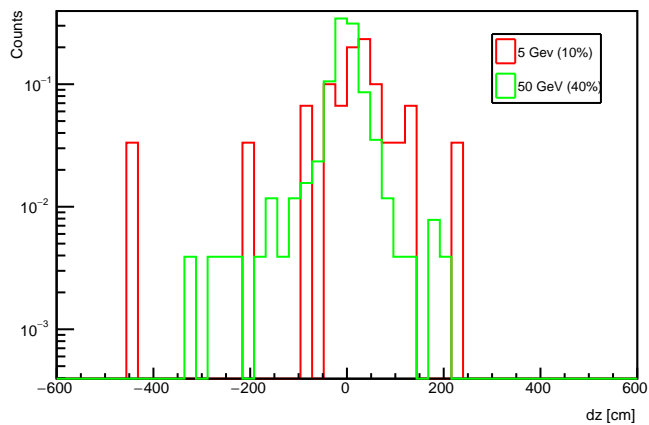
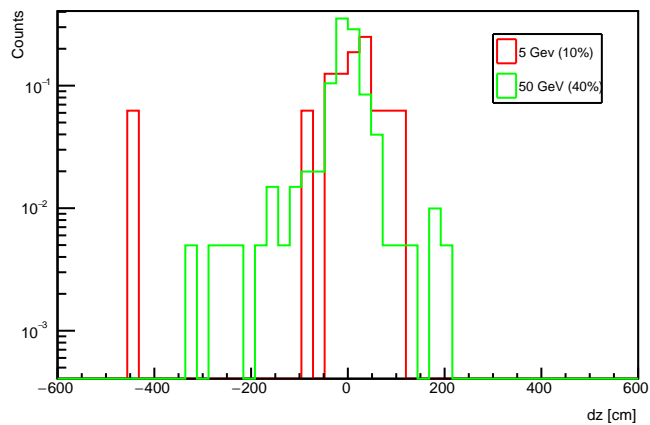
reco leading Mu vxy: j1pt >120, at most 2 jets w/ pt >30 GeV



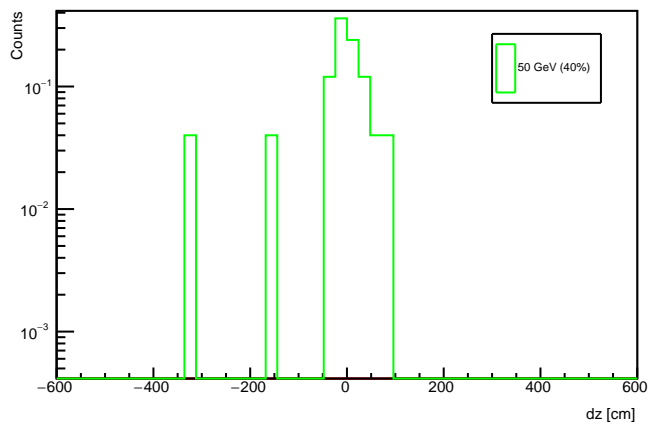
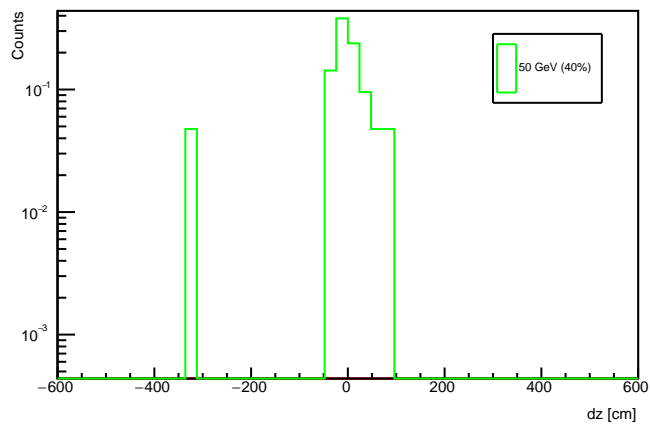
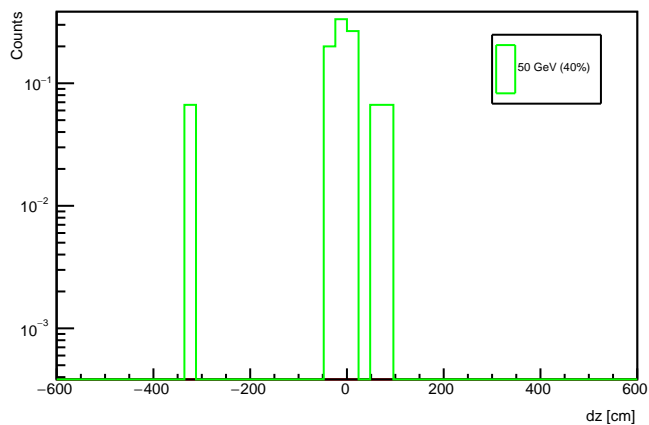
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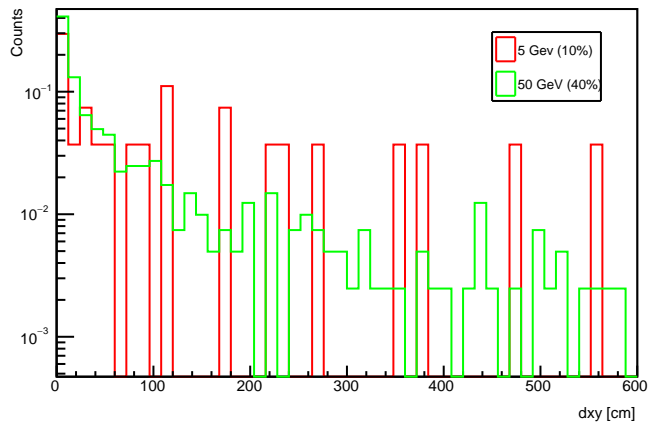
reco leading Mu vz: no cuts

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

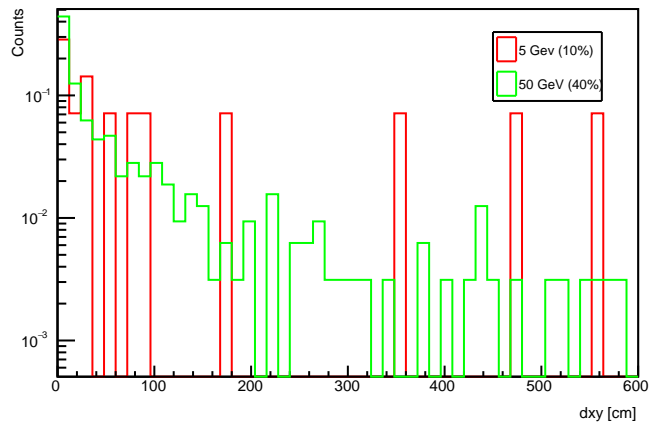
reco leading Mu vz: MET > 120 GeV

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

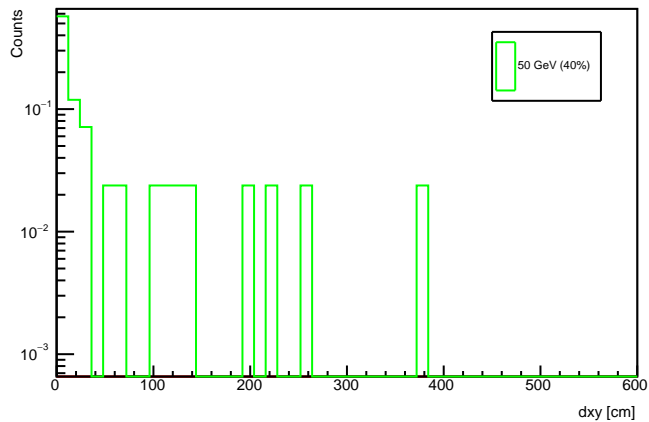
reco all Mu vxy: no cuts



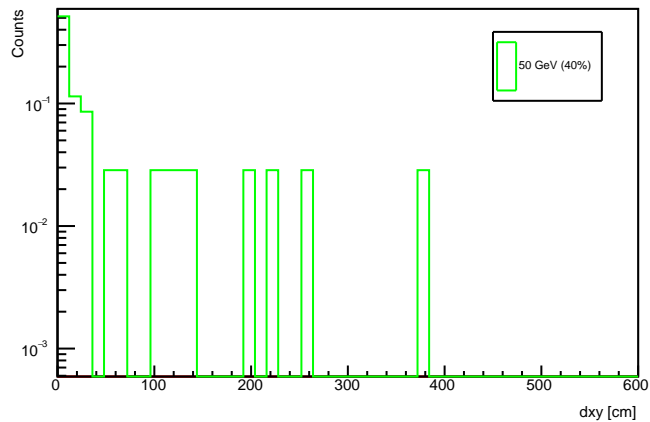
reco all Mu vxy: n_jet >=1, j1pt > 30 GeV



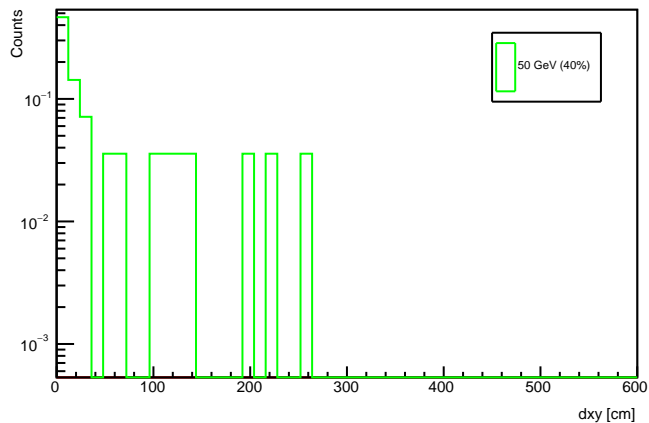
reco all Mu vxy: MET > 120 GeV



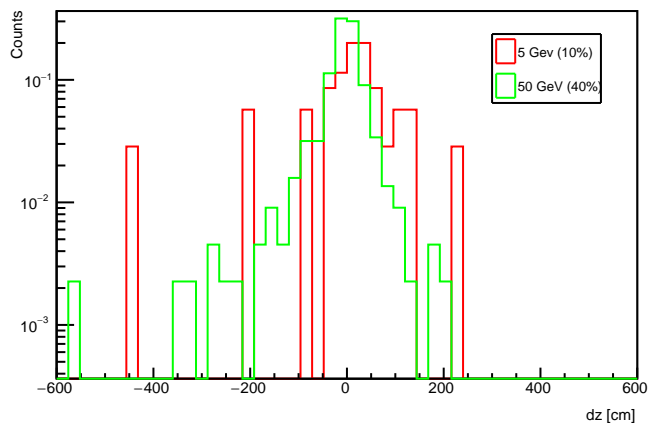
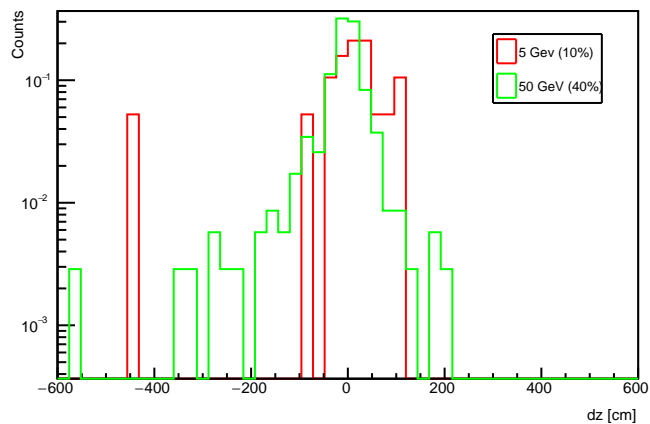
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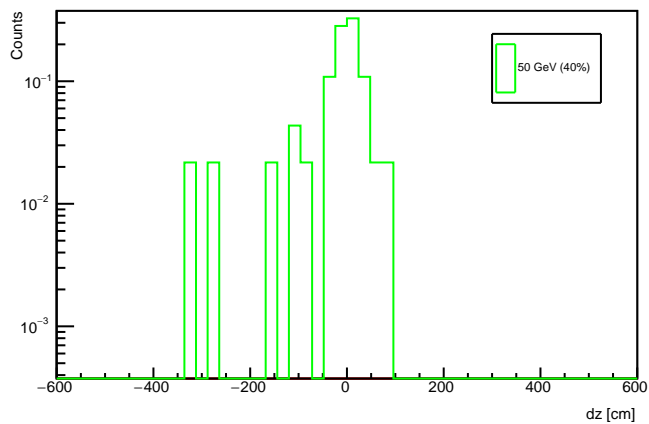
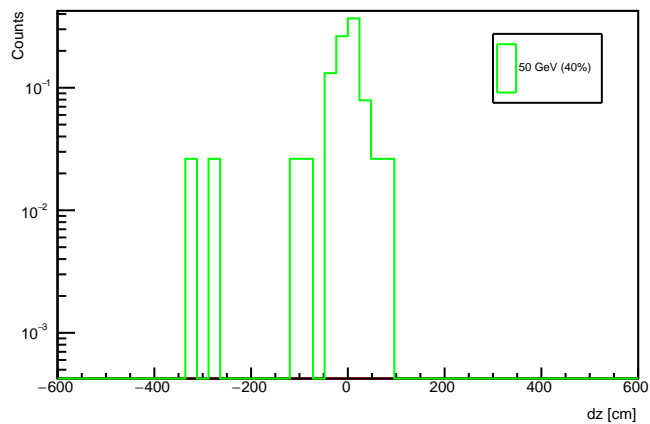
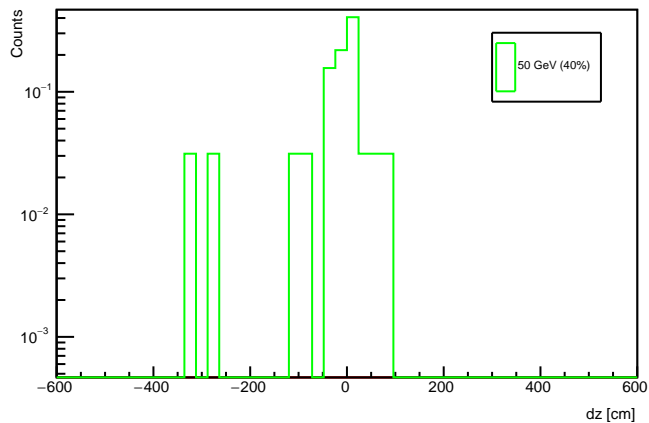
reco all Mu vxy: at least 2 mu w/ vxy < 740 cm, |vz| < 960 cm & |eta| < 2.4



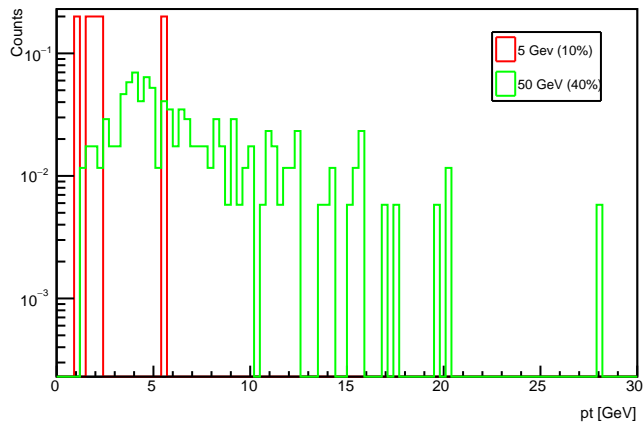
reco all Mu vz: no cuts

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

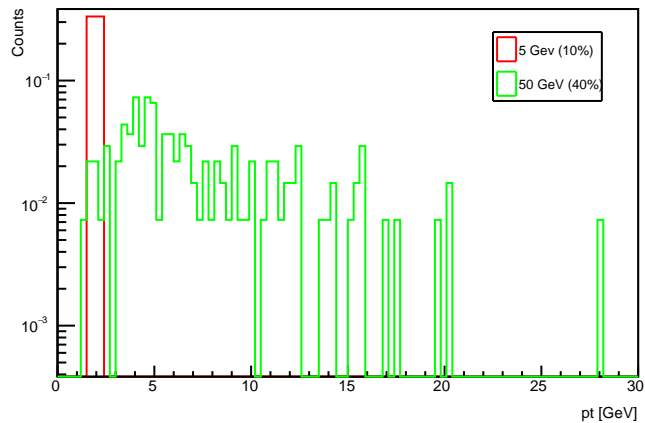
reco all Mu vz: MET > 120 GeV

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

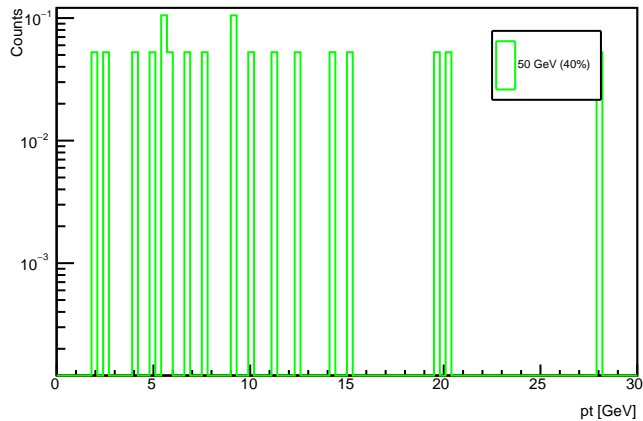
ctau 100mm leading vs subleading Mu pt: no cuts



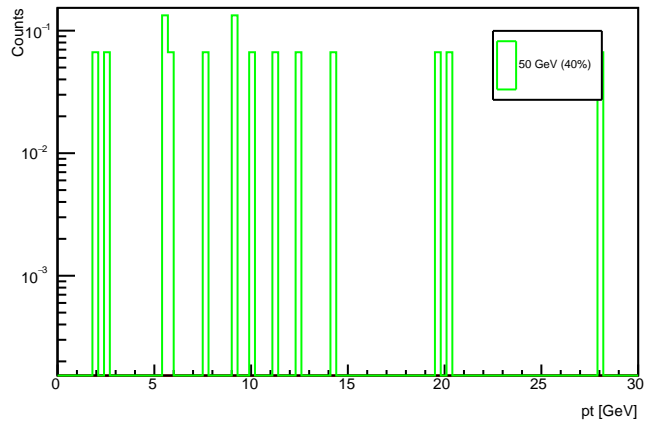
ctau 100mm leading vs subleading Mu pt: $n_{\text{jet}} \geq 1$, $j_{1\text{pt}} > 30$ GeV



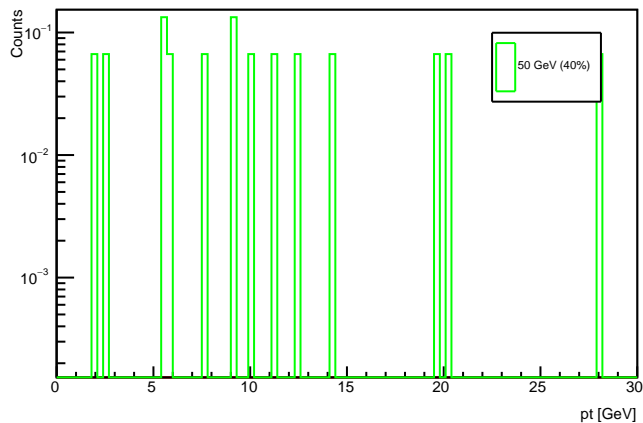
ctau 100mm leading vs subleading Mu pt: MET > 120 GeV



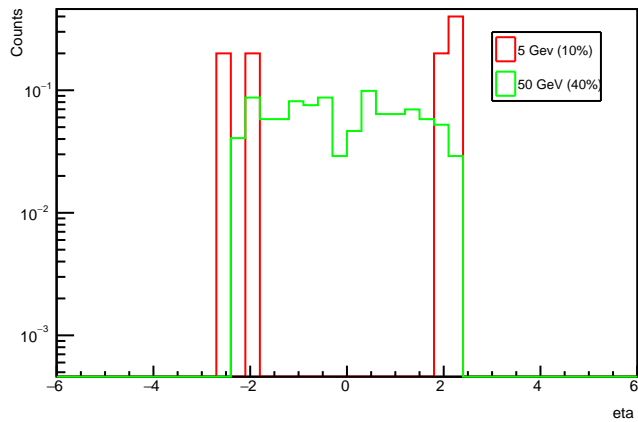
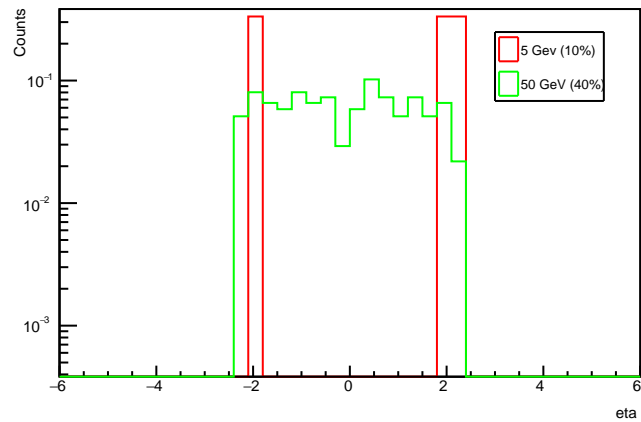
ctau 100mm leading vs subleading Mu pt: $j_{1\text{pt}} > 120$, at most 2 jets w/ $pt > 30$ GeV



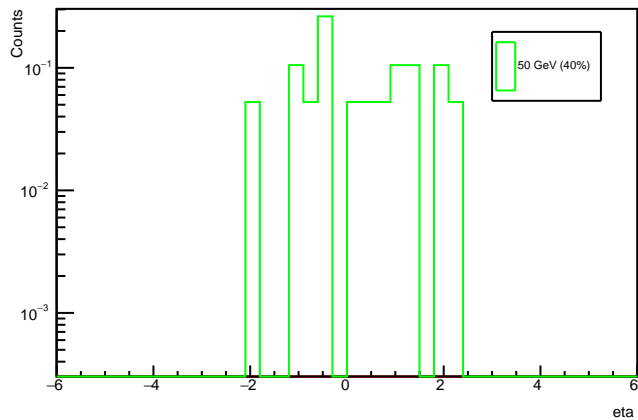
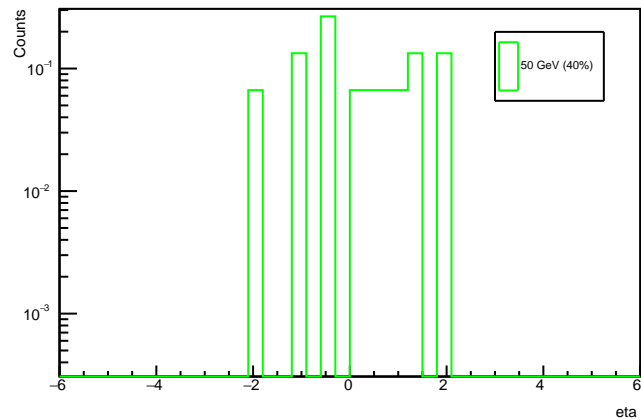
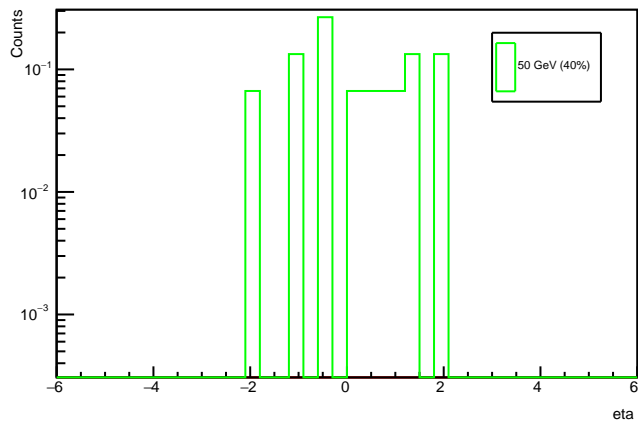
ctau 100mm leading vs subleading Mu pt: at least 2 mu w/ $v_{xy} < 740$ cm, $|v_z| < 960$ cm & $|\eta_{\text{jet}}| < 2.4$



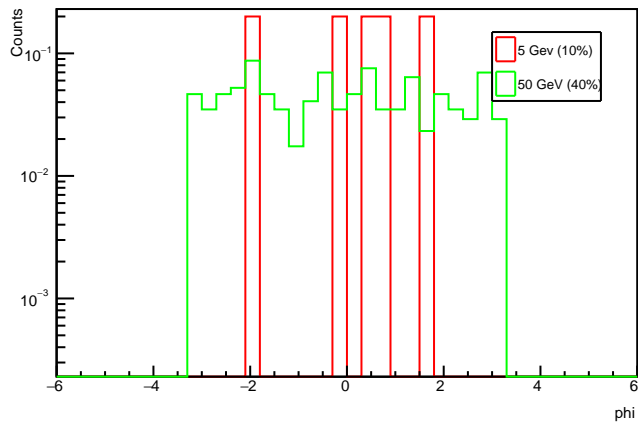
reco subleading Mu eta: no cuts

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

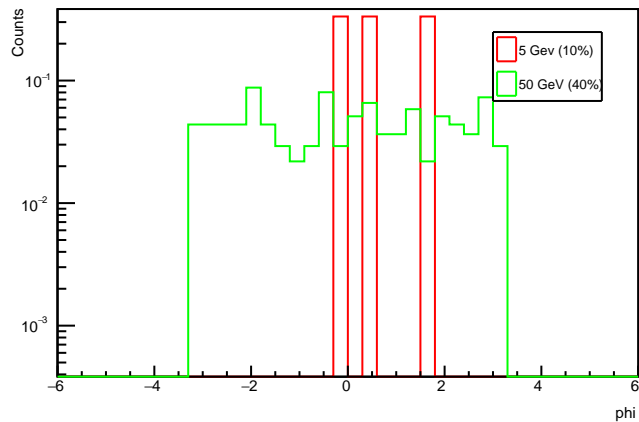
reco subleading Mu eta: MET > 120 GeV

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

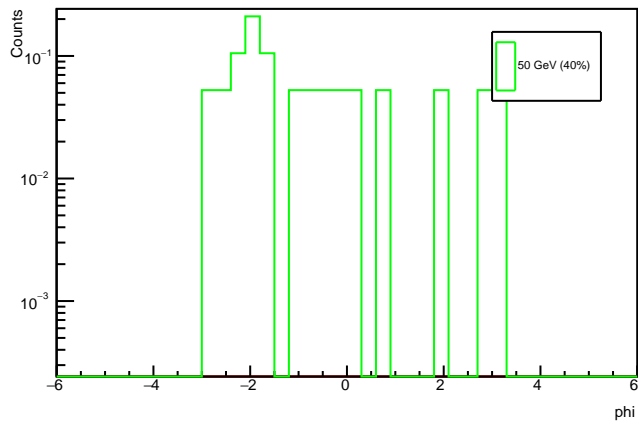
reco subleading Mu phi: no cuts



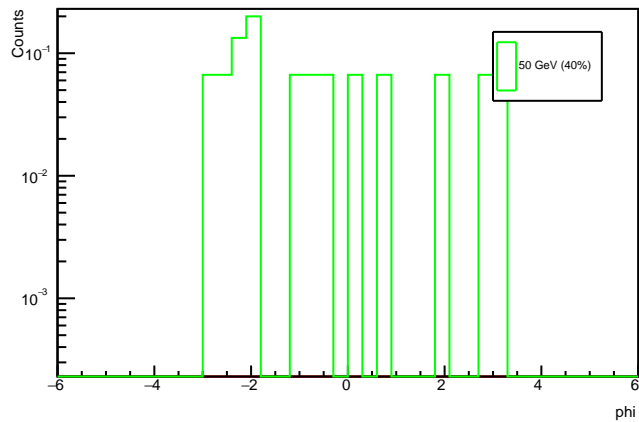
reco subleading Mu phi: n_jet >= 1, j1pt > 30 GeV



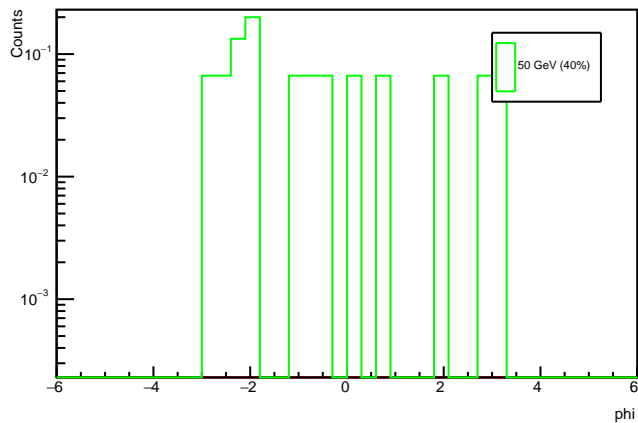
reco subleading Mu phi: MET > 120 GeV



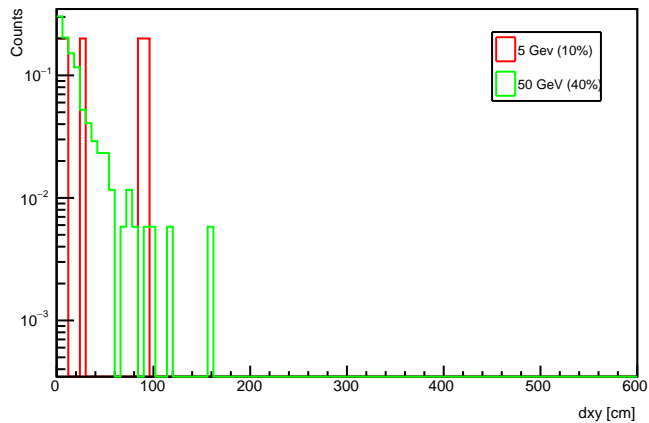
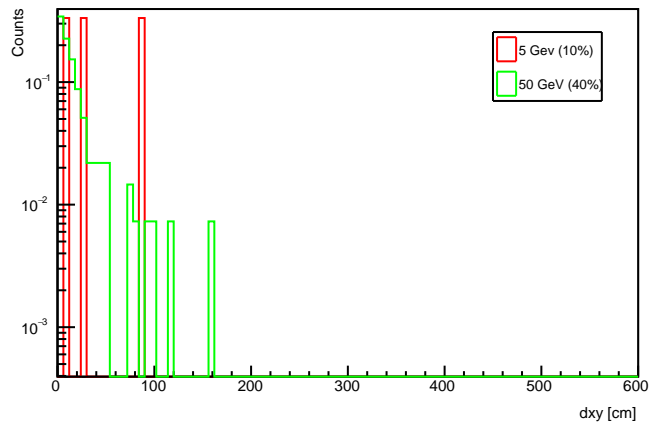
reco subleading Mu phi: j1pt > 120, at most 2 jets w/ pt > 30 GeV



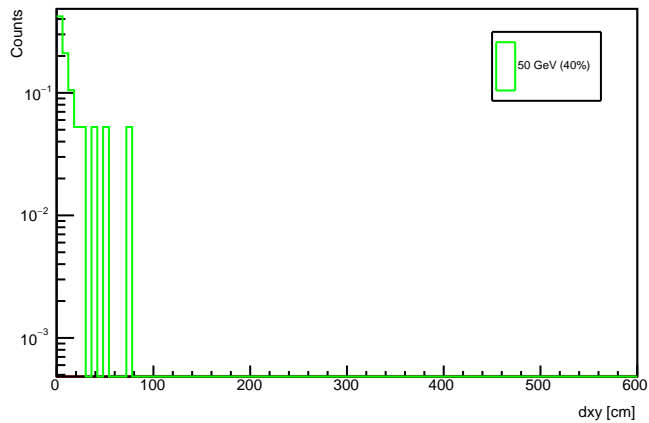
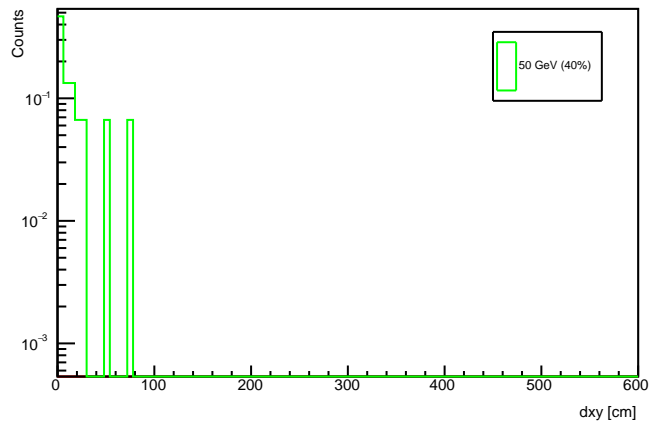
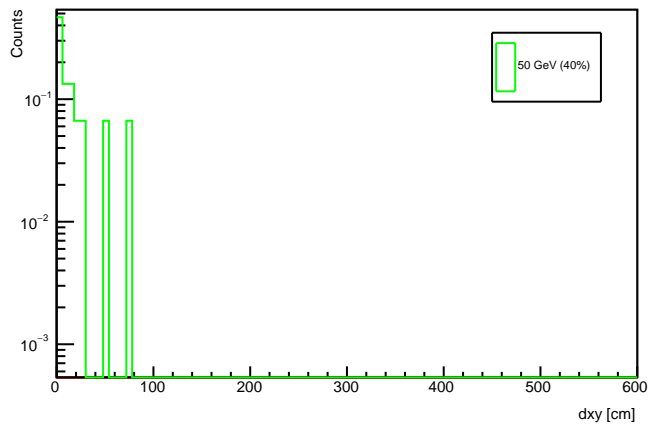
reco subleading Mu phi: at least 2 mu w/ vxy < 740 cm, |vz| < 960 cm & |eta| < 2.4



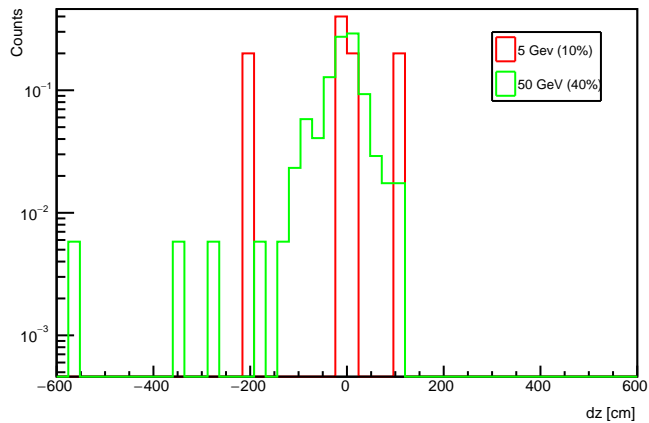
reco subleading Mu vxy: no cuts

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

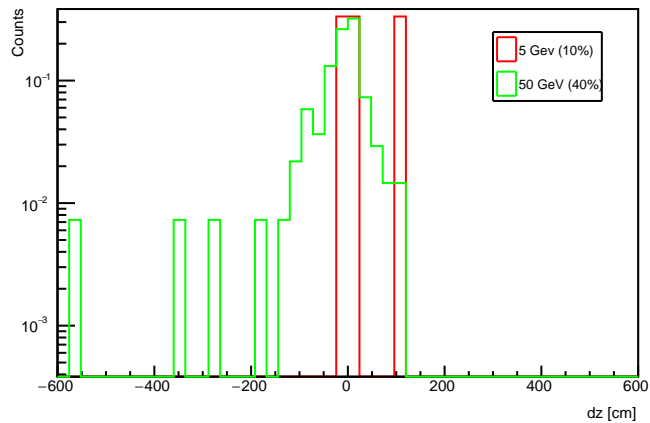
reco subleading Mu vxy: MET > 120 GeV

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

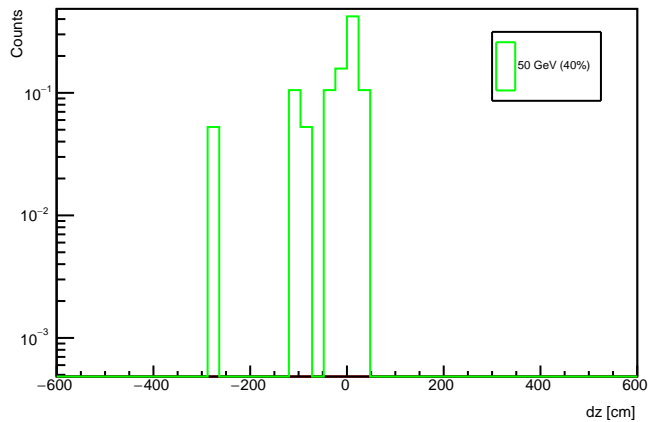
reco subleading Mu vz: no cuts



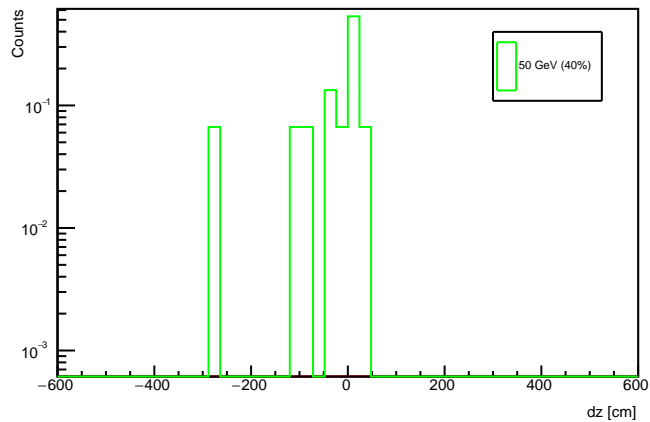
reco subleading Mu vz: n_jet >=1, j1pt > 30 GeV



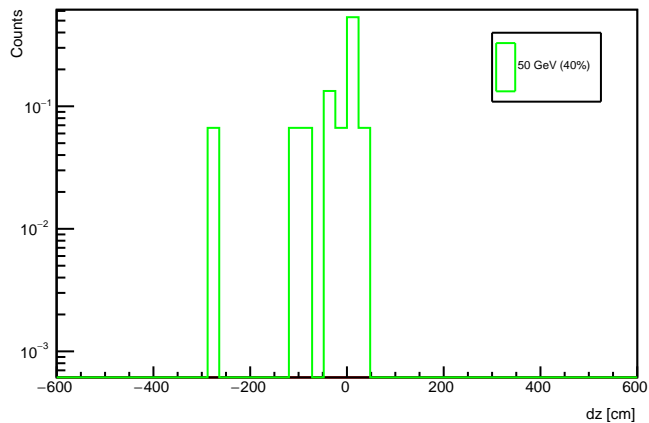
reco subleading Mu vz: MET > 120 GeV



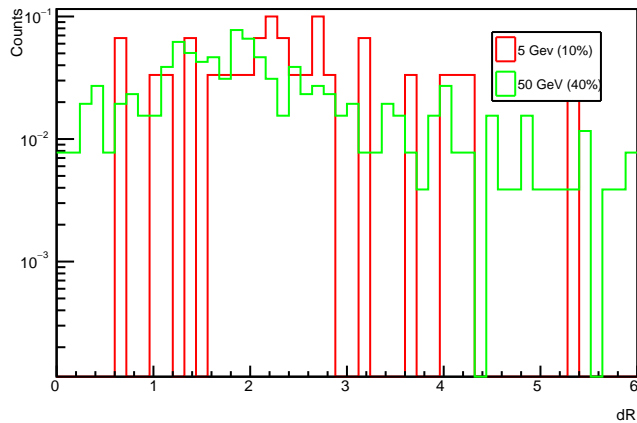
reco subleading Mu vz: j1pt >120, at most 2 jets w/ pt >30 GeV



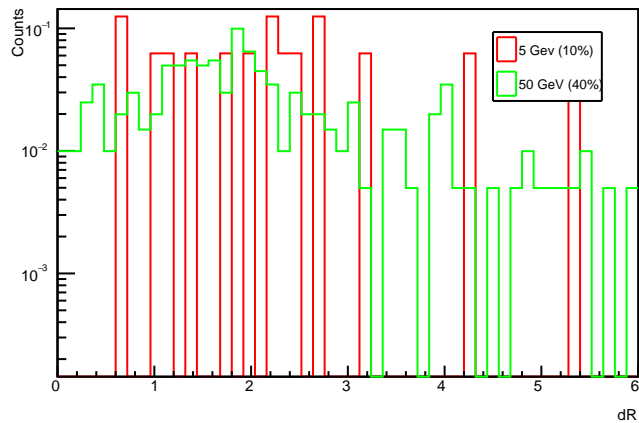
reco subleading Mu vz: at least 2 mu w/ vxy < 740 cm, |vz| < 960 cm & |eta| < 2.4



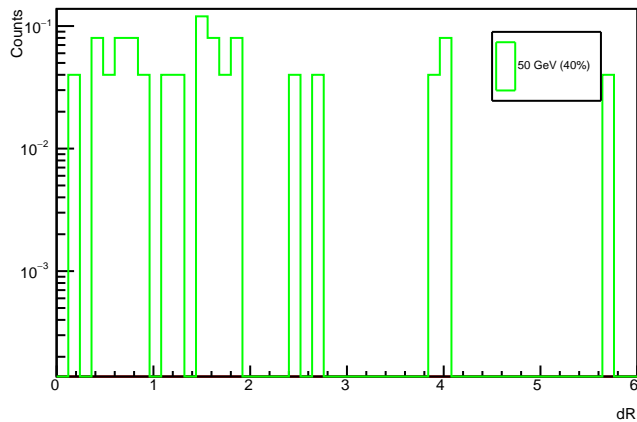
dR: reco leading mu and subleading mu: no cuts



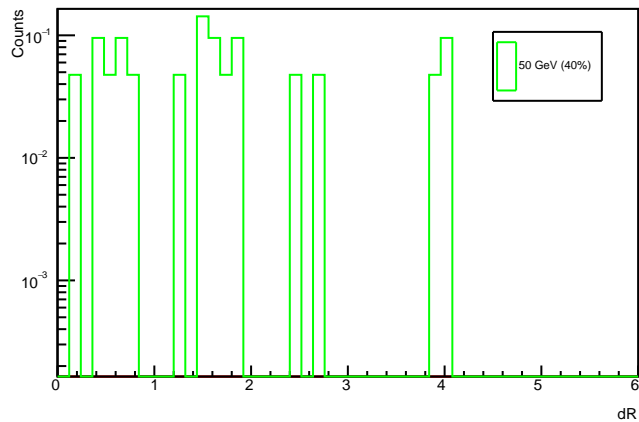
dR: reco leading mu and subleading mu: $n_{\text{jet}} \geq 1$, $j_{1\text{pt}} > 30$ GeV



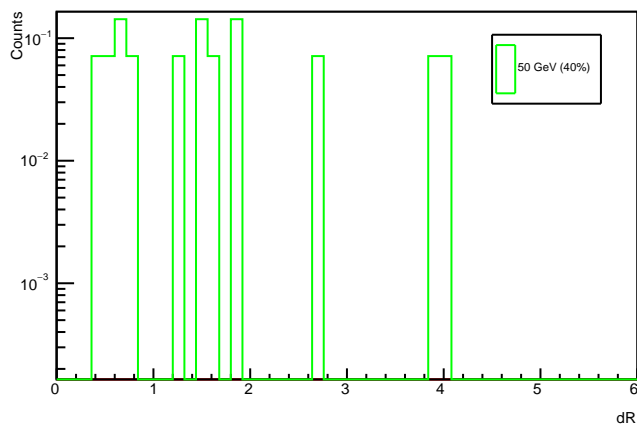
dR: reco leading mu and subleading mu: MET > 120 GeV



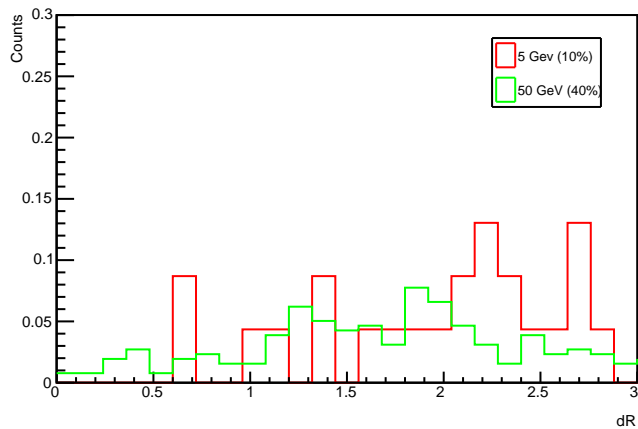
dR: reco leading mu and subleading mu: $j_{1\text{pt}} > 120$, at most 2 jets w/ $p_t > 30$ GeV



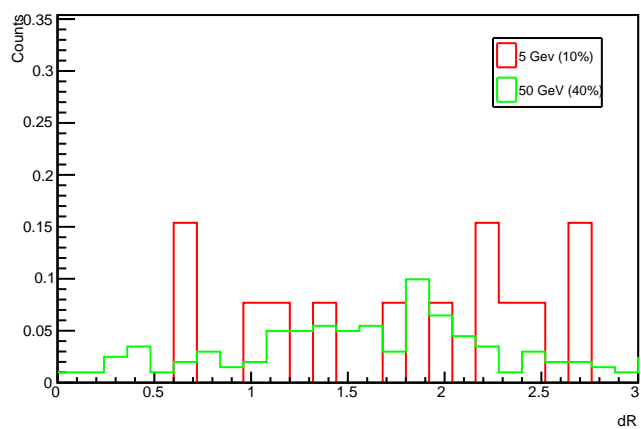
dR: reco leading mu and subleading mu: at least 2 mu w/ $v_{xy} < 740$ cm, $|v_z| < 960$ cm & $|\eta| < 2.4$



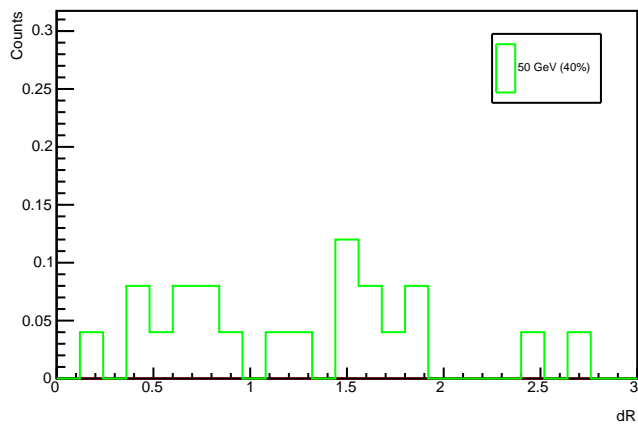
dR: reco leading mu and subleading mu: no cuts



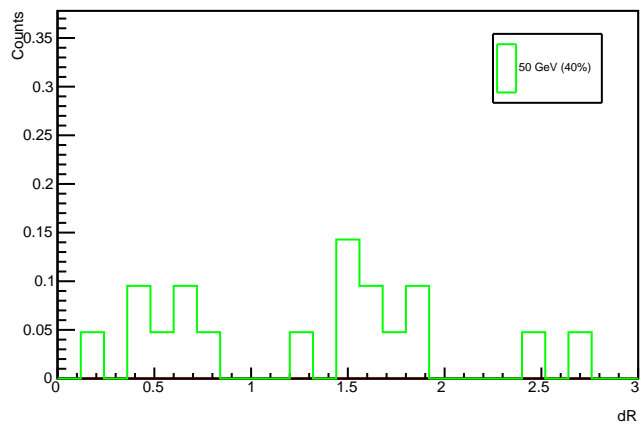
dR: reco leading mu and subleading mu: $n_{\text{jet}} \geq 1$, $j_{1\text{pt}} > 30$ GeV



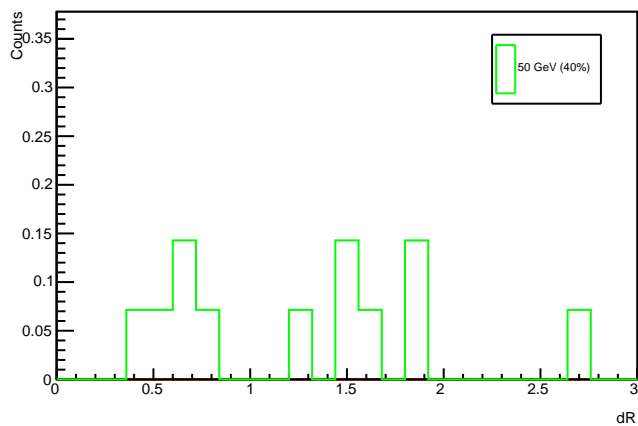
dR: reco leading mu and subleading mu: MET > 120 GeV



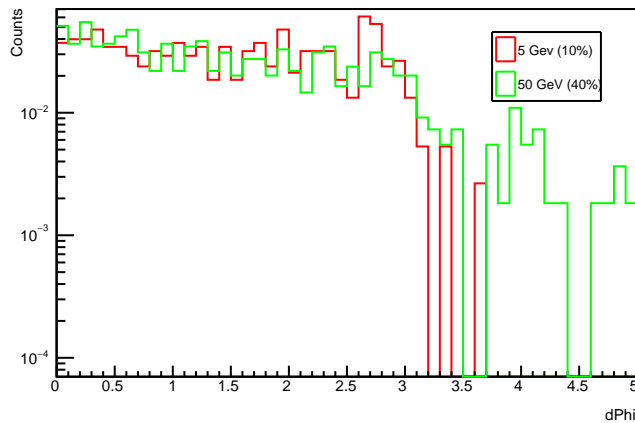
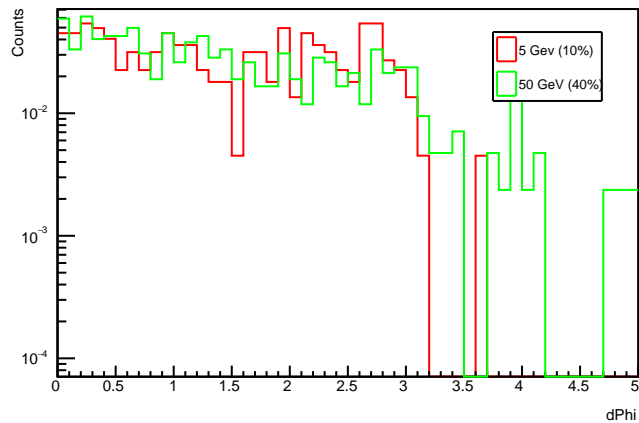
dR: reco leading mu and subleading mu: $j_{1\text{pt}} > 120$, at most 2 jets w/ $p_{\text{T}} > 30$ GeV



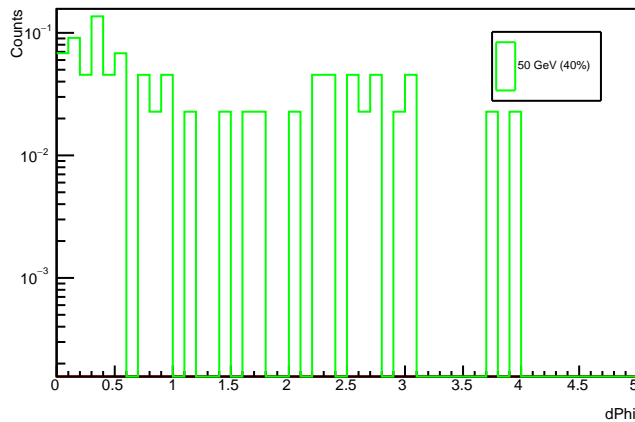
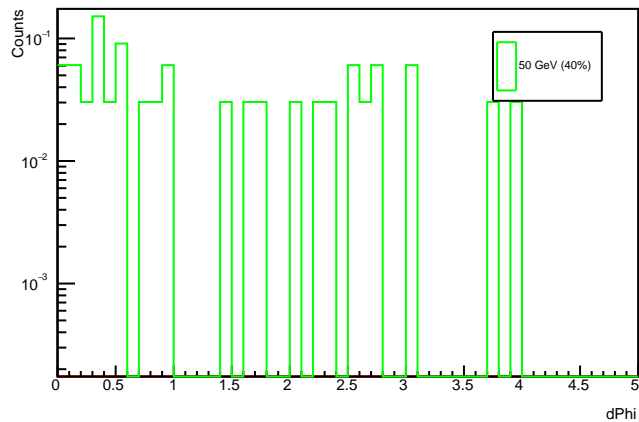
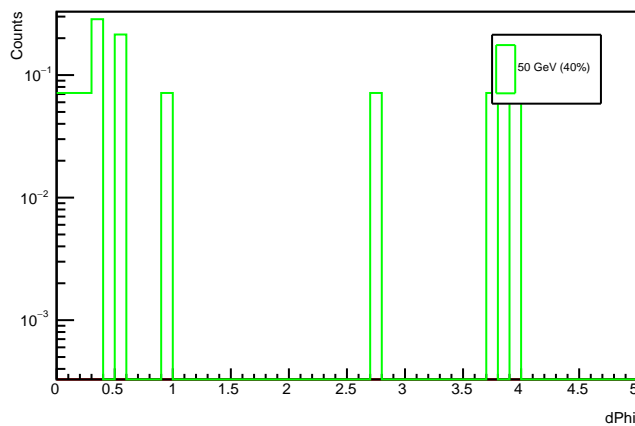
dR: reco leading mu and subleading mu: at least 2 mu w/ $v_{xy} < 740$ cm, $|v_z| < 960$ cm & $|\eta| < 2.4$



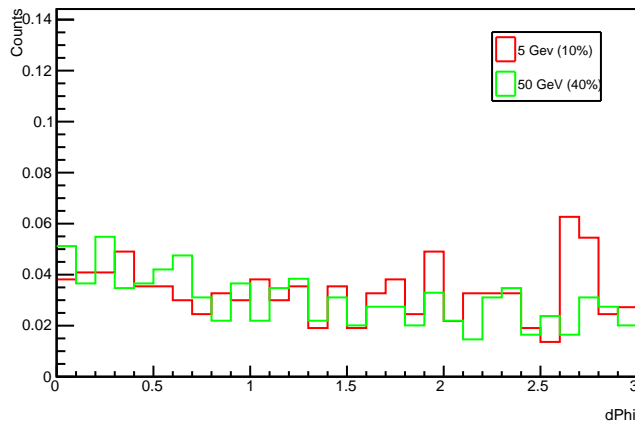
dPhi: reco MET and leading mu: no cuts

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

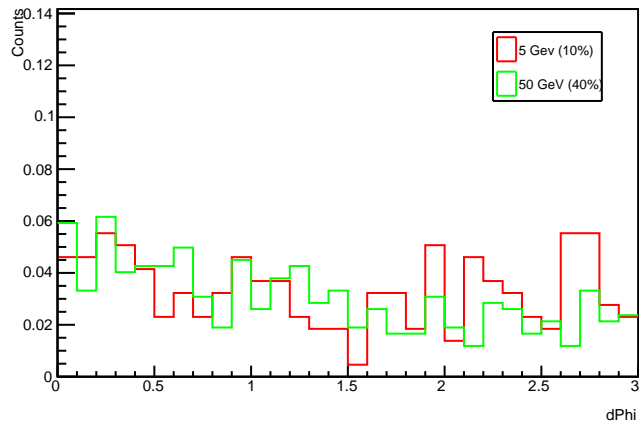
dPhi: reco MET and leading mu: MET > 120 GeV

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

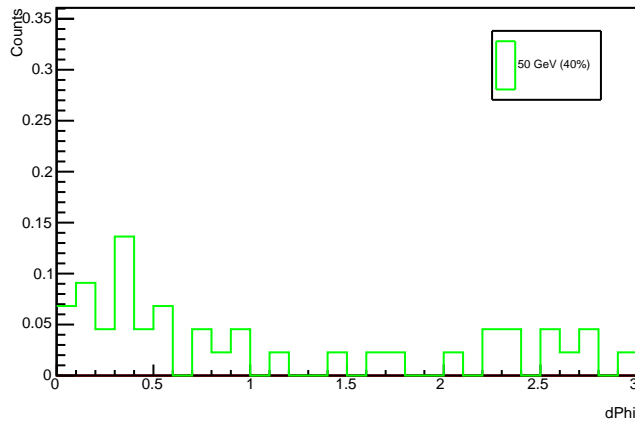
dPhi: reco MET and leading mu: no cuts



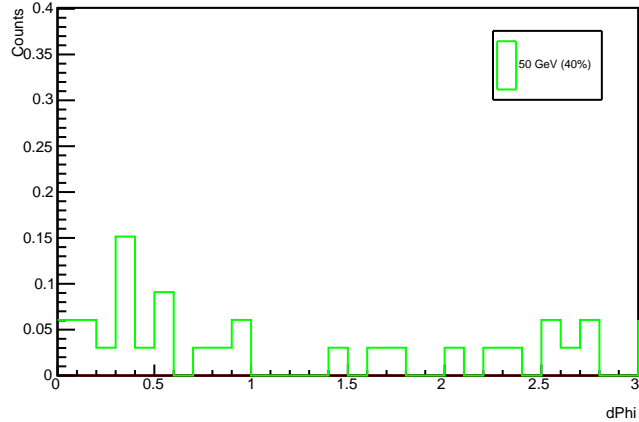
dPhi: reco MET and leading mu: $n_{\text{jet}} \geq 1$, $j_{1\text{pt}} > 30$ GeV



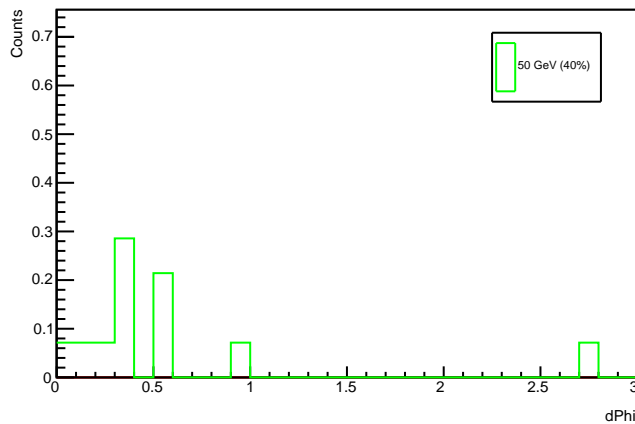
dPhi: reco MET and leading mu: MET > 120 GeV



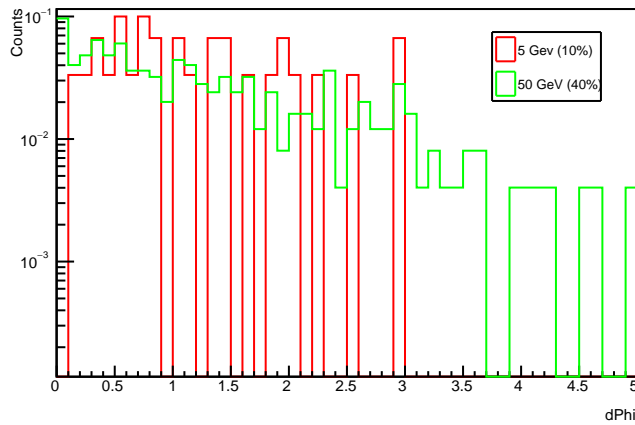
dPhi: reco MET and leading mu: $j_{1\text{pt}} > 120$, at most 2 jets w/ $p_t > 30$ GeV



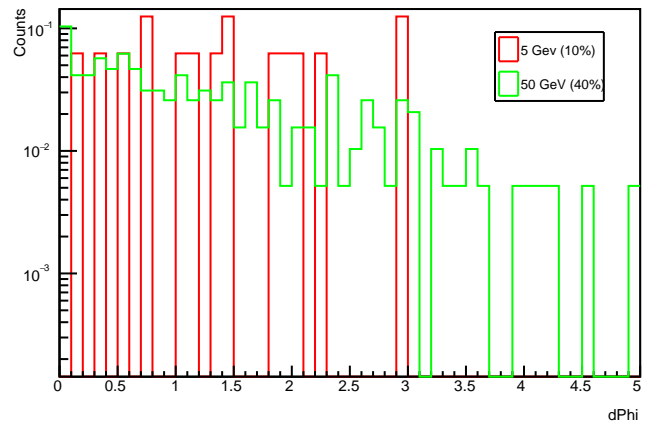
dPhi: reco MET and leading mu: at least 2 mu w/ $v_{xy} < 740$ cm, $|v_z| < 960$ cm & $|\eta_{\text{jet}}| < 2.4$



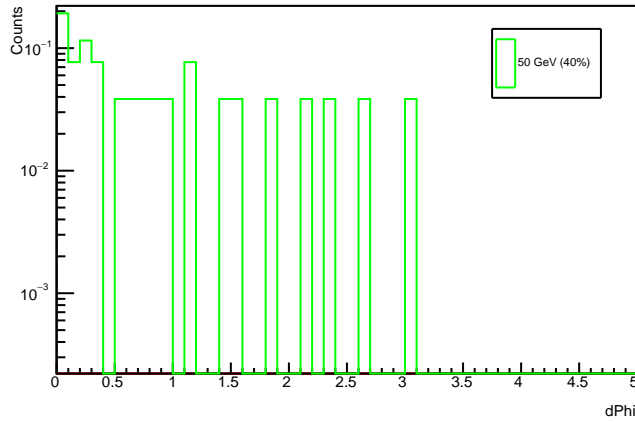
dPhi: reco leading mu and subleading mu: no cuts



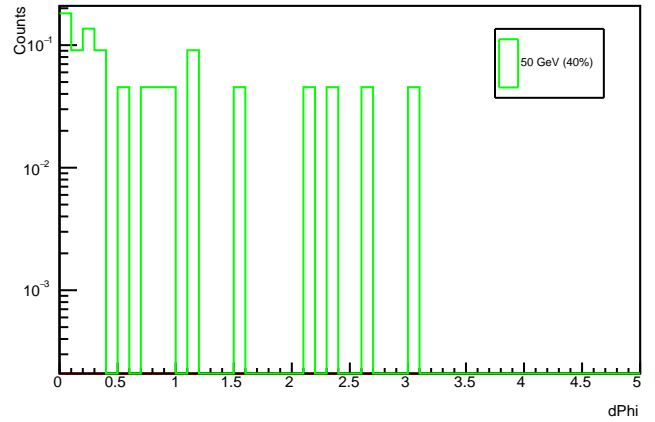
dPhi: reco leading mu and subleading mu: n_jet >= 1, j1pt > 30 GeV



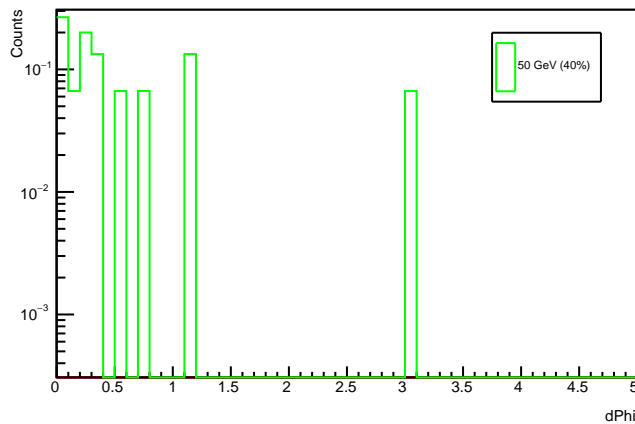
dPhi: reco leading mu and subleading mu: MET > 120 GeV



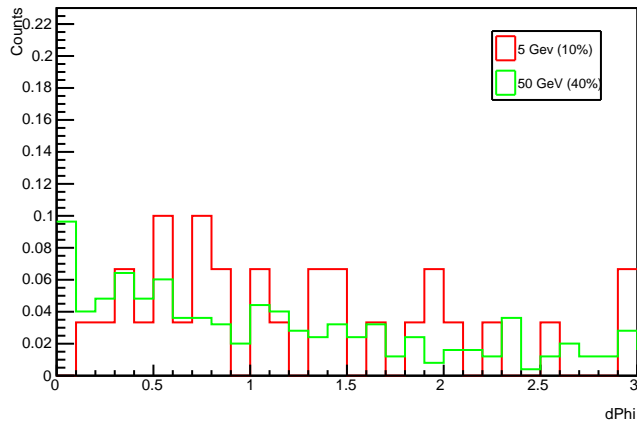
dPhi: reco leading mu and subleading mu: j1pt > 120, at most 2 jets w/ pt > 30 GeV



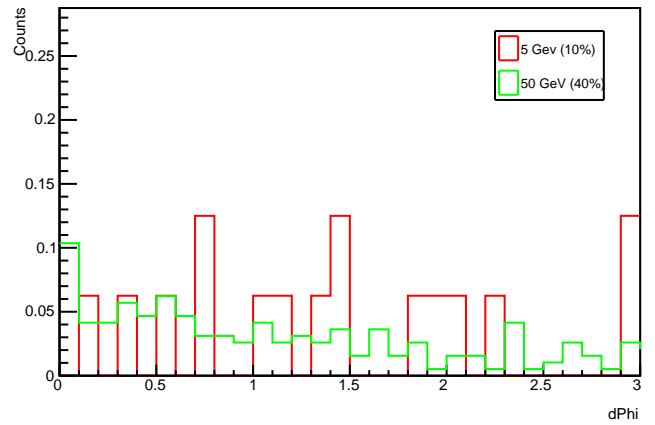
dPhi: reco leading mu and subleading mu: at least 2 mu w/ vx < 740 cm, |vz| < 960 cm & |eta| < 2.4



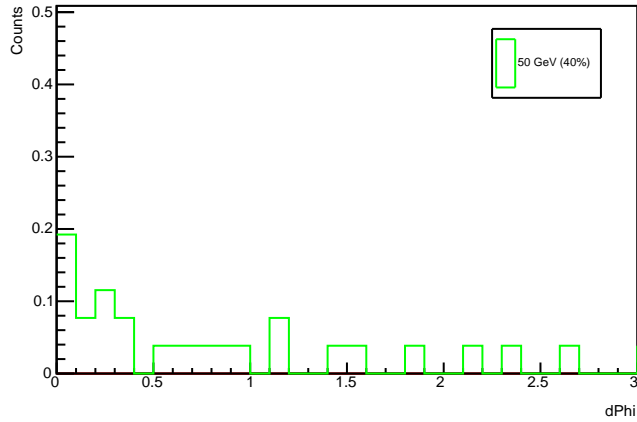
dPhi: reco leading mu and subleading mu: no cuts



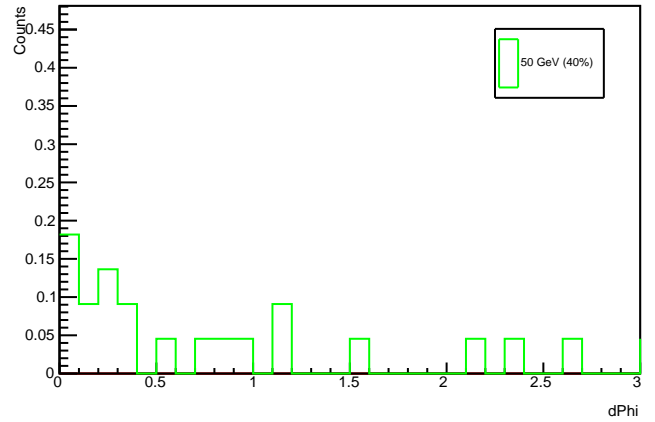
dPhi: reco leading mu and subleading mu: $n_{\text{jet}} \geq 1$, $j_{1\text{pt}} > 30$ GeV



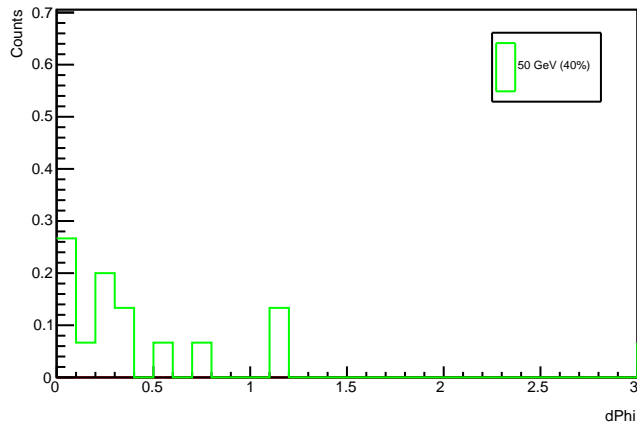
dPhi: reco leading mu and subleading mu: MET > 120 GeV



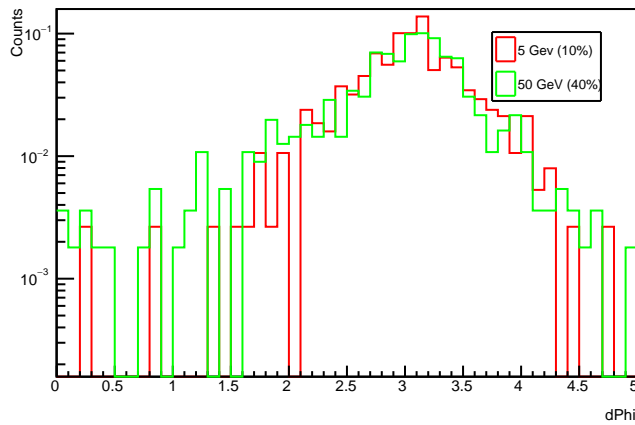
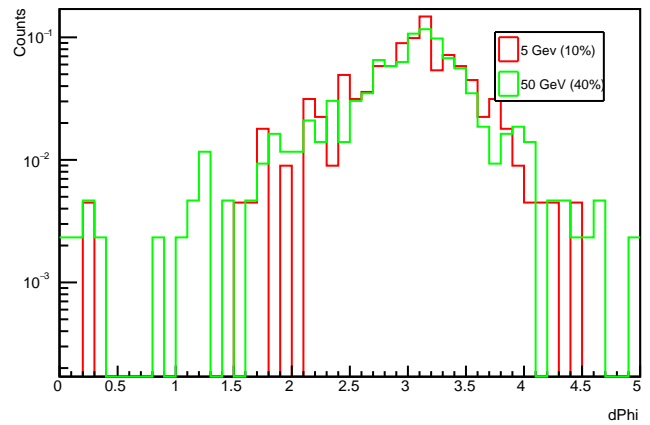
dPhi: reco leading mu and subleading mu: $j_{1\text{pt}} > 120$, at most 2 jets w/ $p_{\text{T}} > 30$ GeV



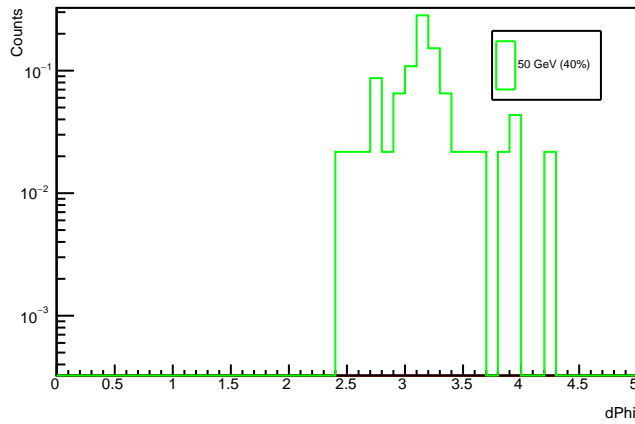
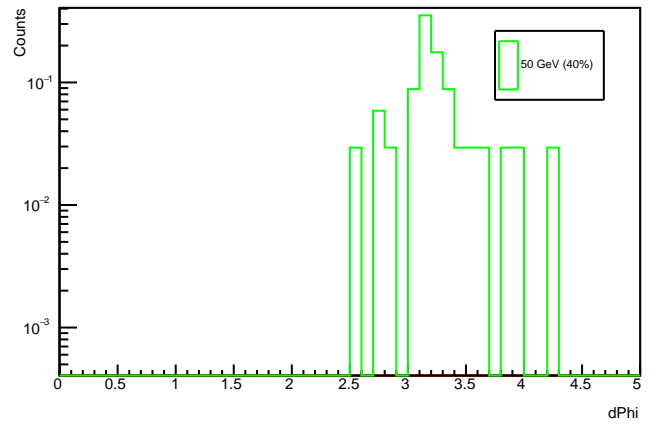
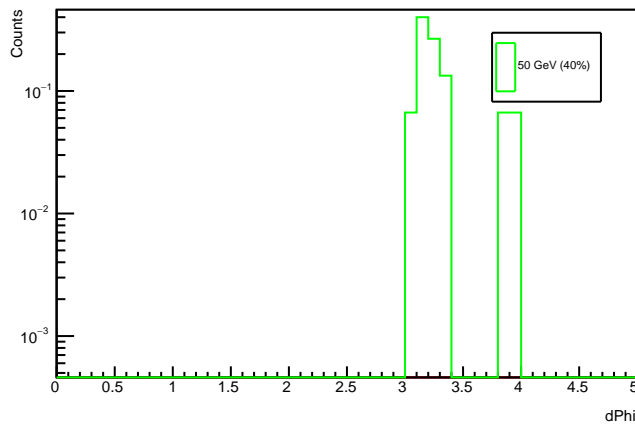
dPhi: reco leading mu and subleading mu: at least 2 mu w/ $v_{\text{T}} < 740$ cm, $|v_z| < 960$ cm & $|\text{eta}| < 2.4$



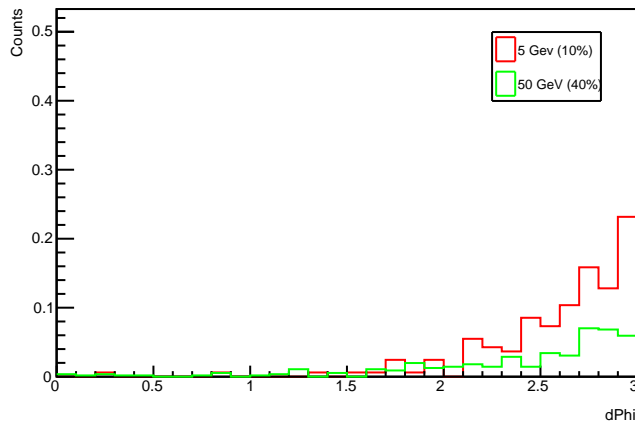
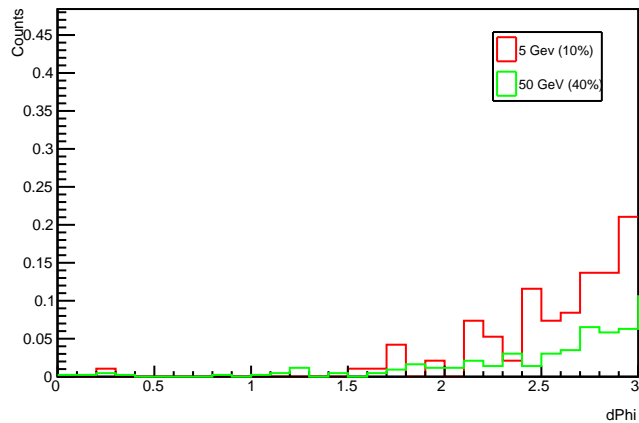
dPhi: reco MET and leading jet: no cuts

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

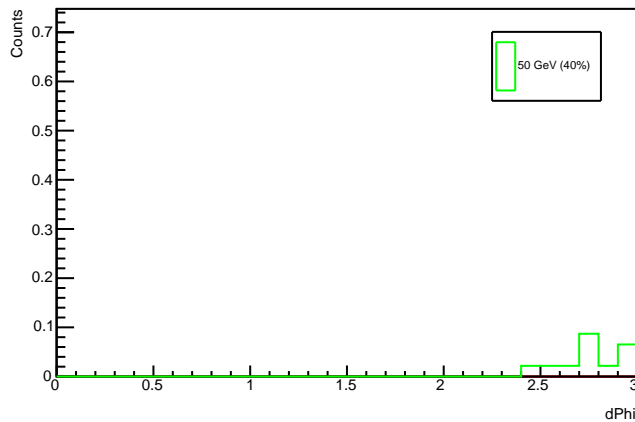
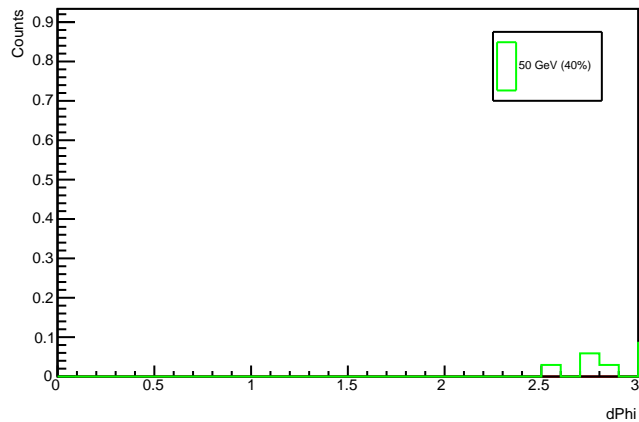
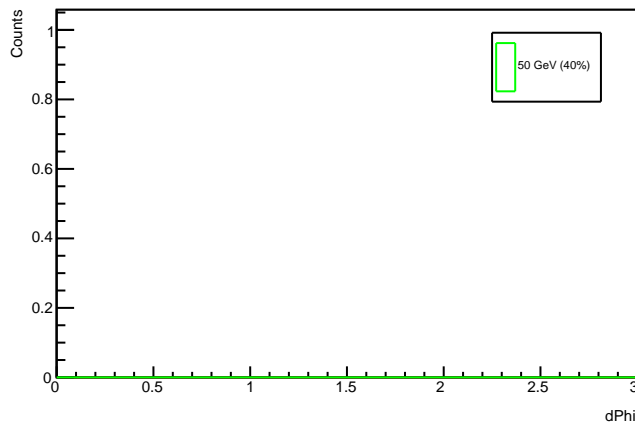
dPhi: reco MET and leading jet: MET > 120 GeV

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

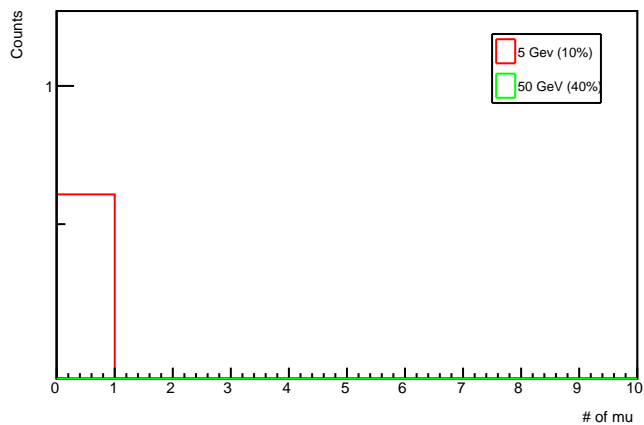
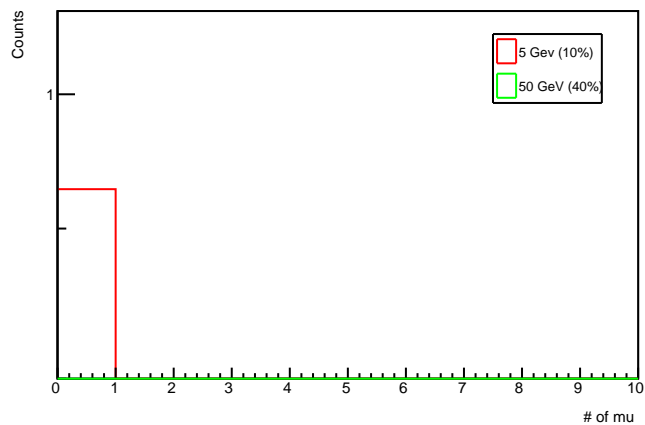
dPhi: reco MET and leading jet: no cuts

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

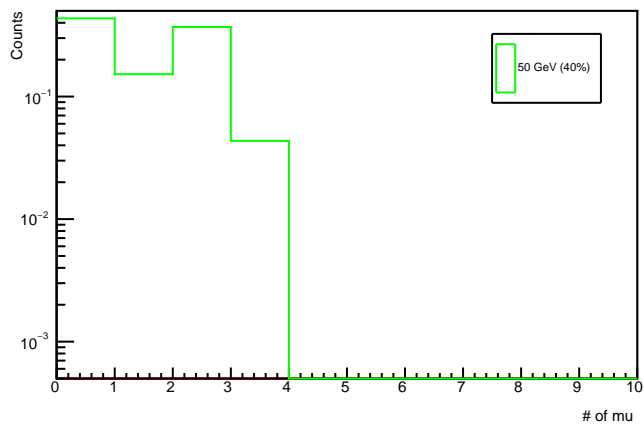
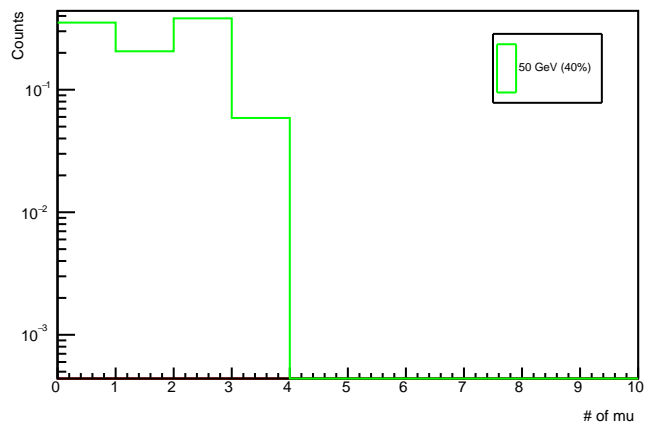
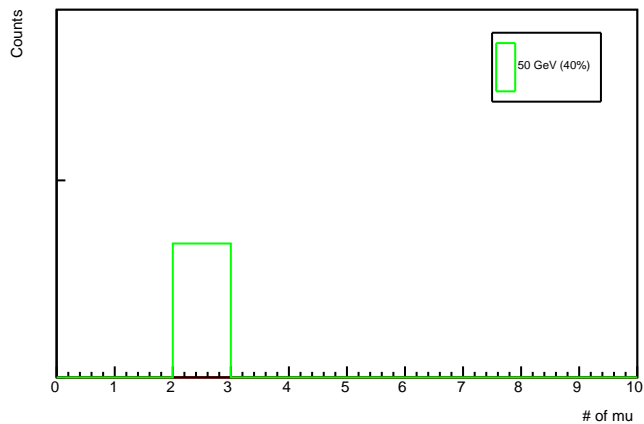
dPhi: reco MET and leading jet: MET > 120 GeV

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

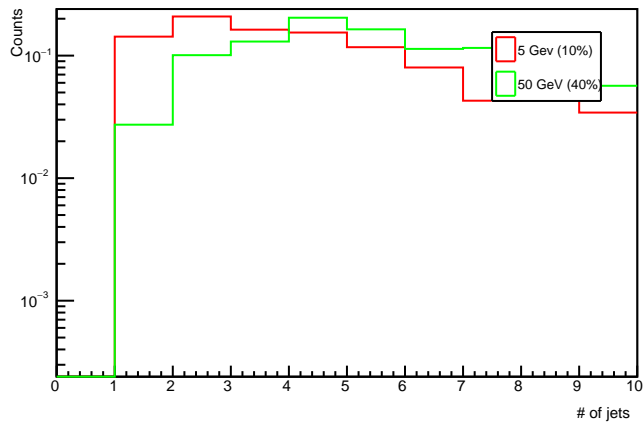
reco number of mu: no cuts

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

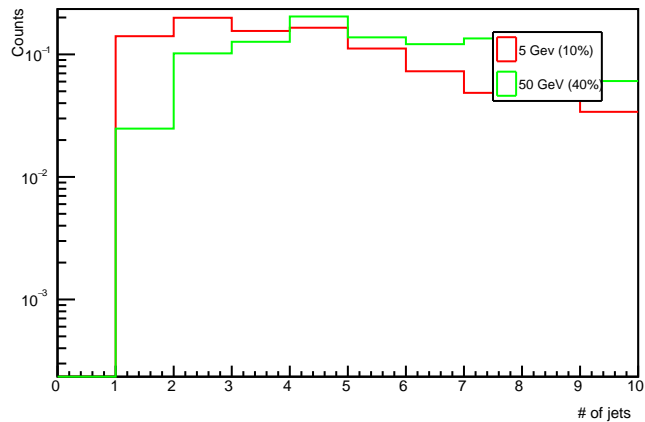
reco number of mu: MET > 120 GeV

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

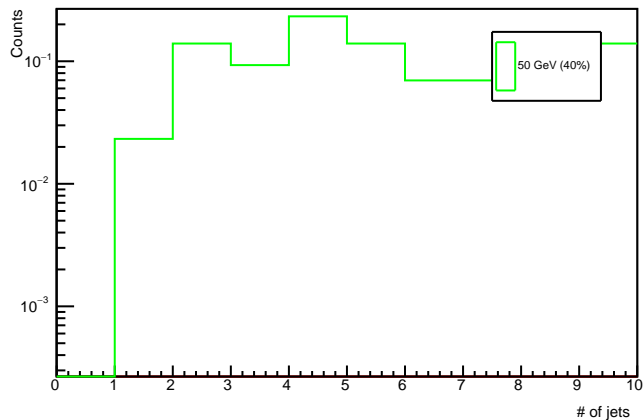
reco number of jets: no cuts



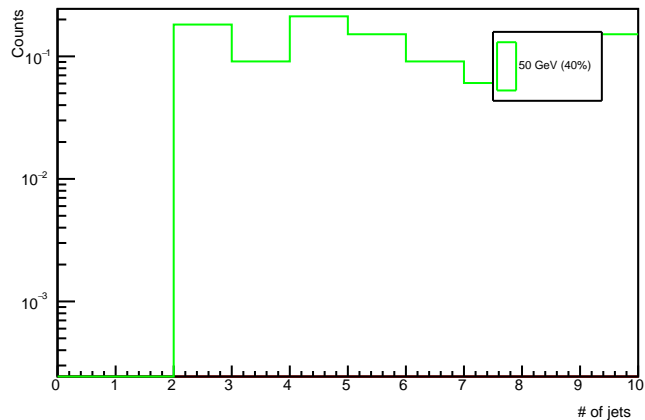
reco number of jets: $n_{\text{jet}} \geq 1$, $j_{1\text{pt}} > 30$ GeV



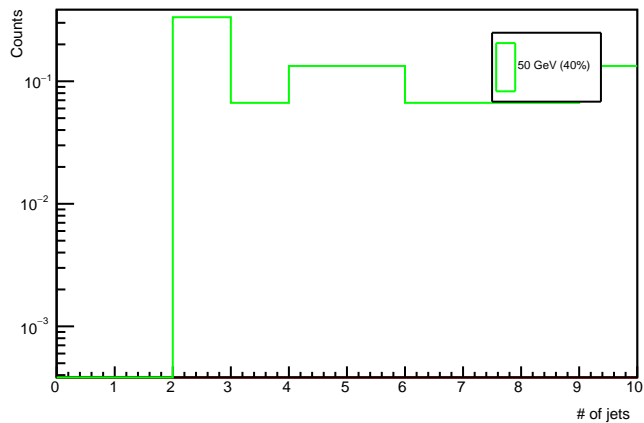
reco number of jets: $\text{MET} > 120$ GeV



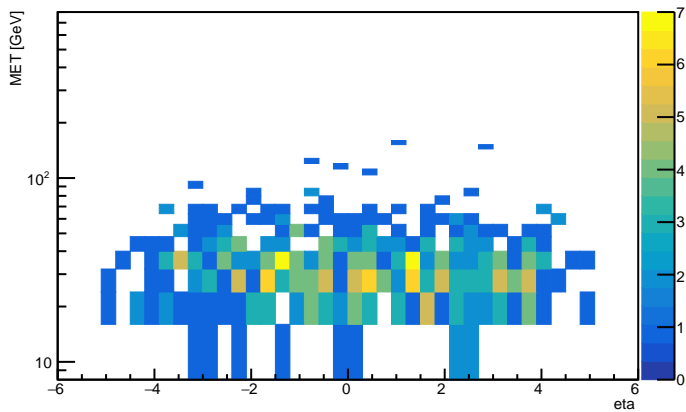
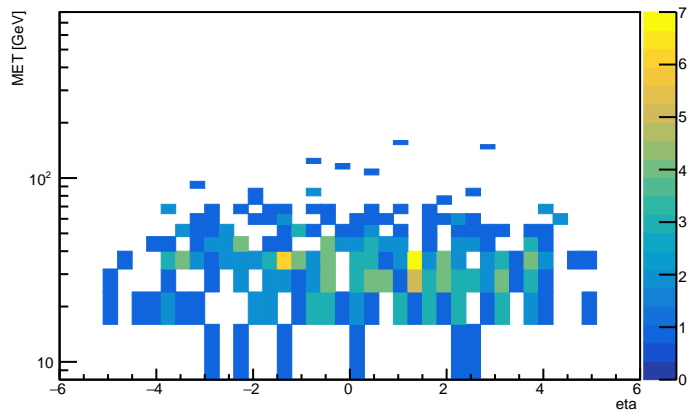
reco number of jets: $j_{1\text{pt}} > 120$, at most 2 jets w/ $p_t > 30$ GeV



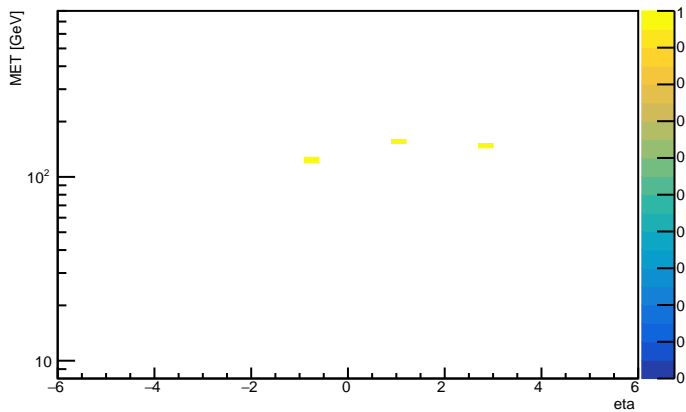
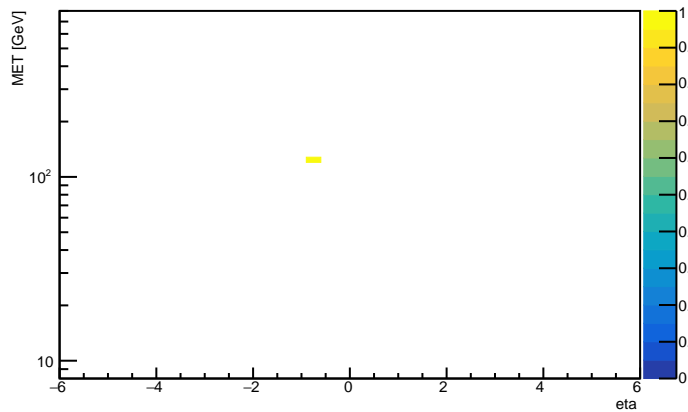
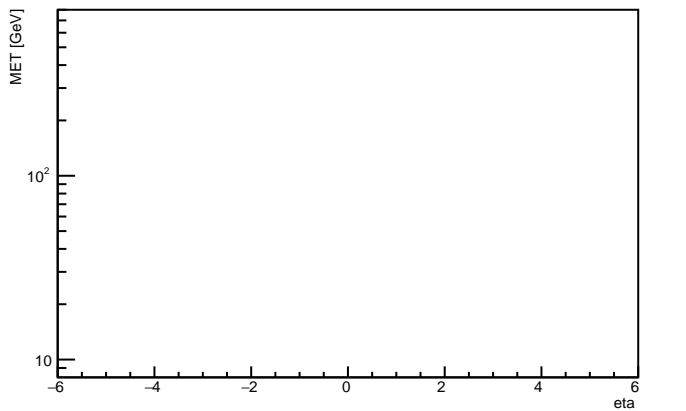
reco number of jets: at least 2 mu w/ $v_{xy} < 740$ cm, $|v_z| < 960$ cm & $|\eta_{\text{jet}}| < 2.4$



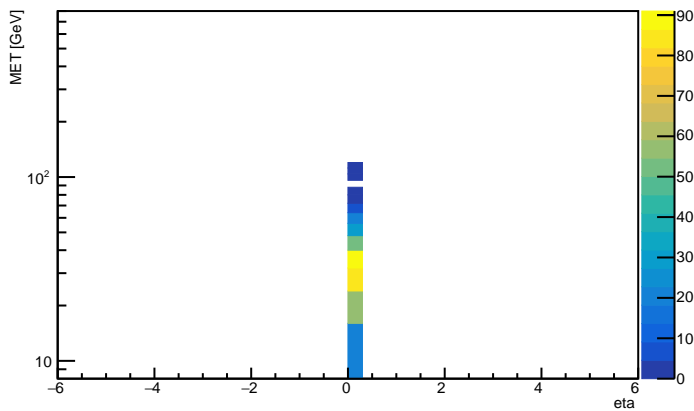
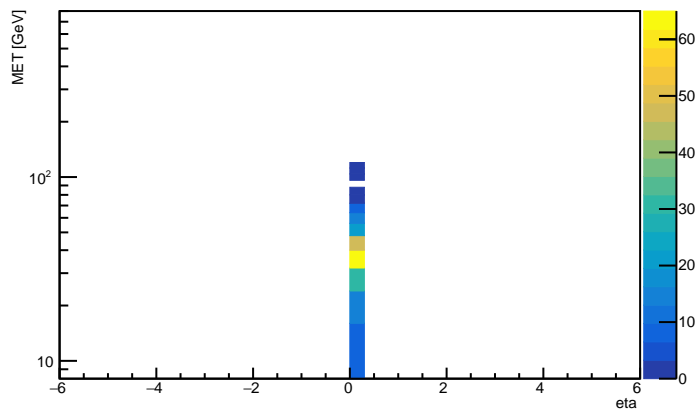
5 GeV (10%) ctau 100mm gen leading Met eta vs pt: no cuts

5 GeV (10%) ctau 100mm gen leading Met eta vs pt: $n_{\text{jet}} \geq 1$, $j1pt > 30$ GeV

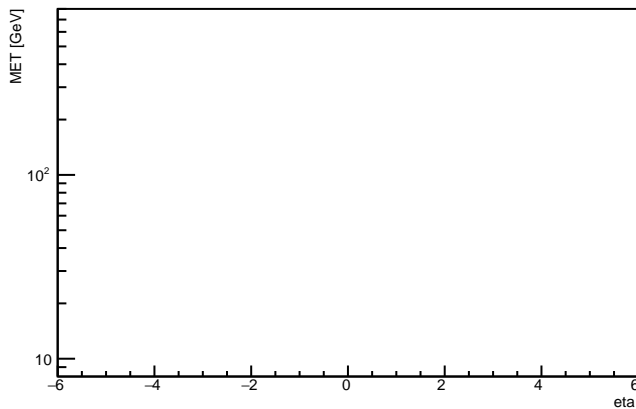
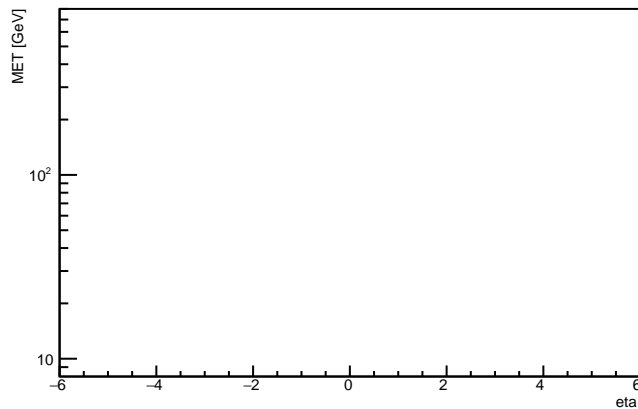
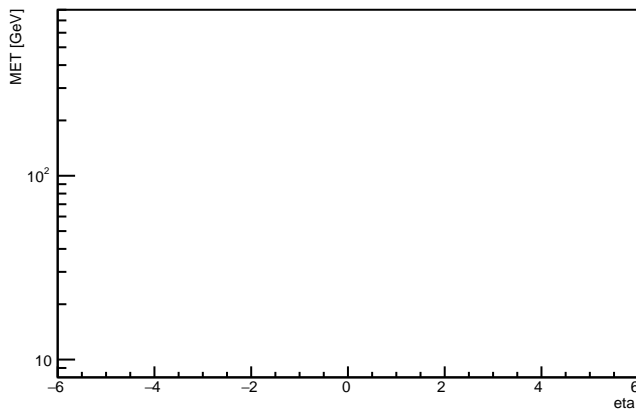
5 GeV (10%) ctau 100mm gen leading Met eta vs pt: MET > 120 GeV

5 GeV (10%) ctau 100mm gen leading Met eta vs pt: $j1pt > 120$, at most 2 jets w/ $pt > 30$ GeV5 GeV (10%) ctau 100mm gen leading Met eta vs pt: at least 2 mu w/ $vxy < 740$ cm, $|vz| < 960$ cm & $|eta_{\text{jet}}| < 2.4$ 

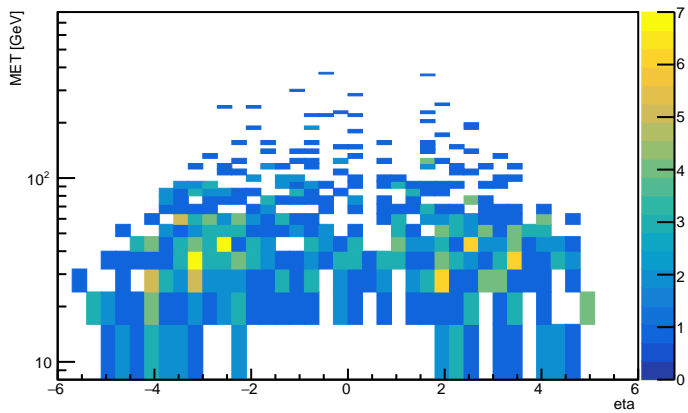
5 GeV (10%) ctau 100mm reco leading Met eta vs pt: no cuts

5 GeV (10%) ctau 100mm reco leading Met eta vs pt: $n_{\text{jet}} \geq 1$, $j1pt > 30$ GeV

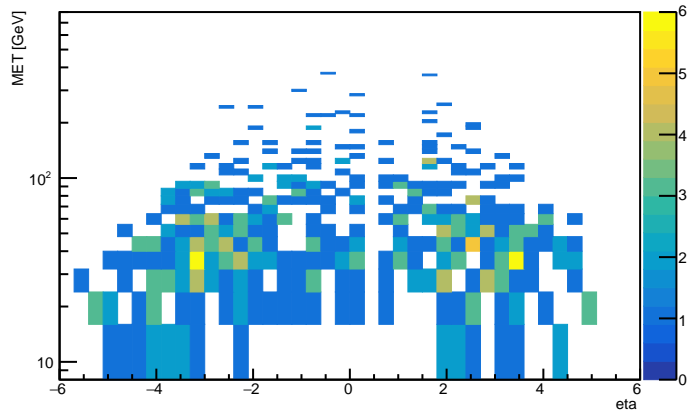
5 GeV (10%) ctau 100mm reco leading Met eta vs pt: MET > 120 GeV

5 GeV (10%) ctau 100mm reco leading Met eta vs pt: $j1pt > 120$, at most 2 jets w/ $pt > 30$ GeV5 GeV (10%) ctau 100mm reco leading Met eta vs pt: at least 2 mu w/ $vxy < 740$ cm, $|vz| < 960$ cm & $|\eta| < 2.4$ 

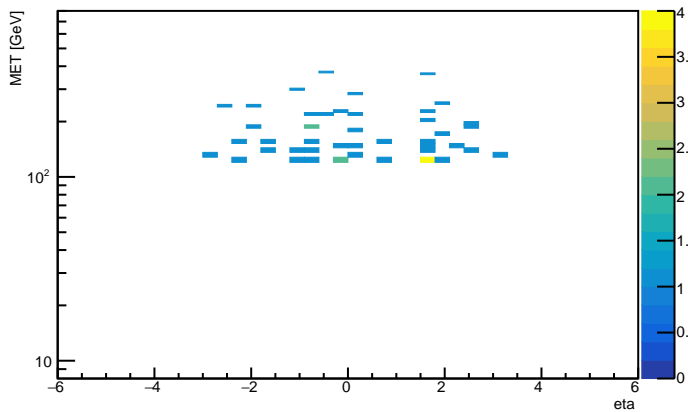
50 GeV (40%) ctau 100mm gen leading Met eta vs pt: no cuts



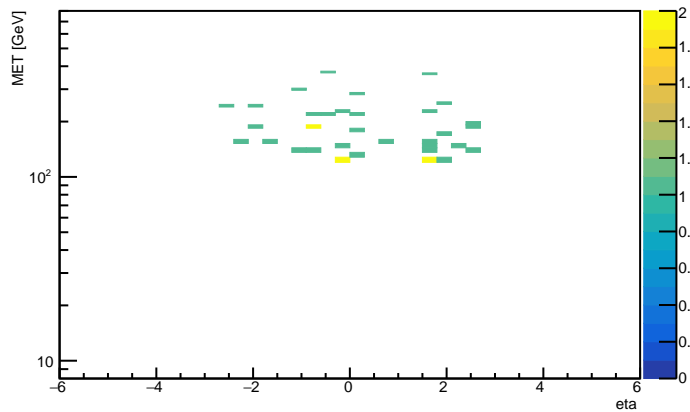
50 GeV (40%) ctau 100mm gen leading Met eta vs pt: $n_{jet} \geq 1$, $j_{1pt} > 30$ GeV



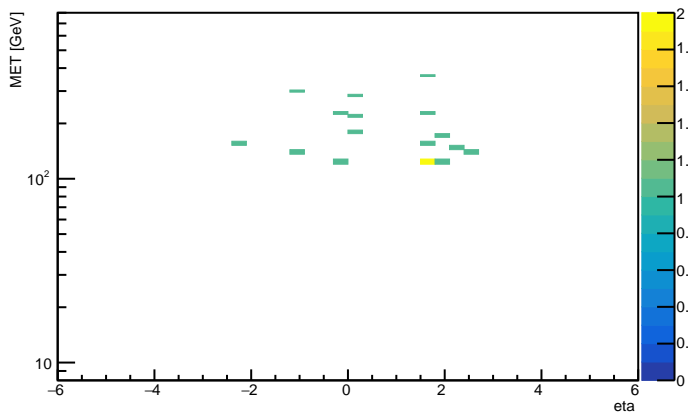
50 GeV (40%) ctau 100mm gen leading Met eta vs pt: MET > 120 GeV



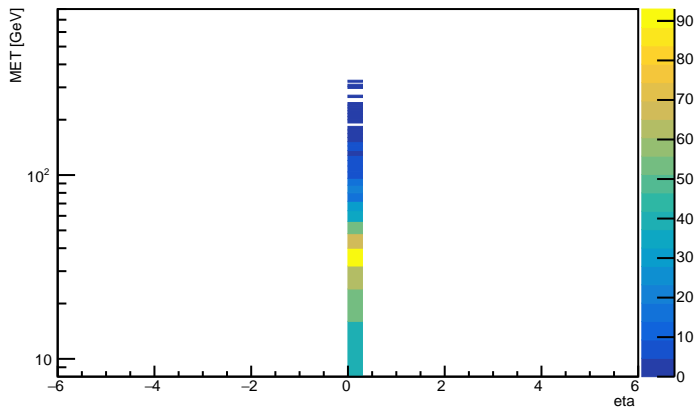
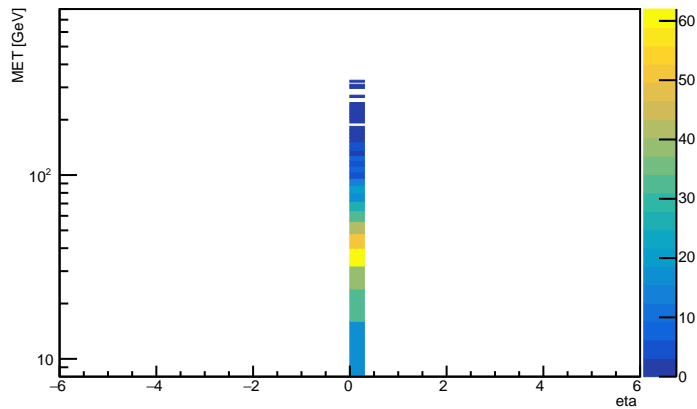
50 GeV (40%) ctau 100mm gen leading Met eta vs pt: $j_{1pt} > 120$, at most 2 jets w/ $pt > 30$ GeV



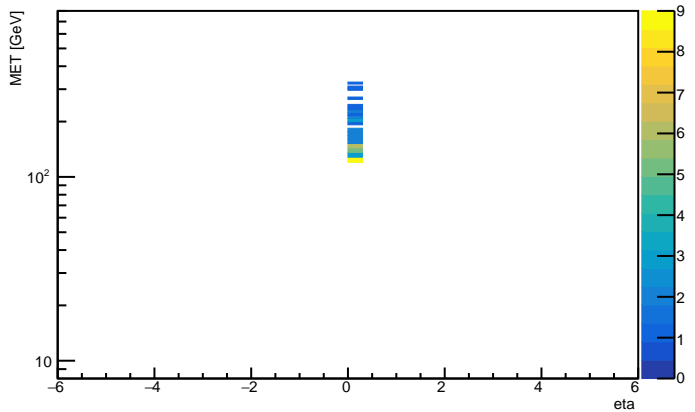
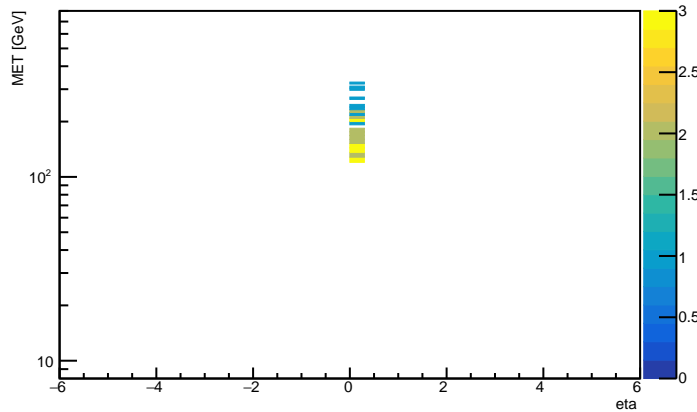
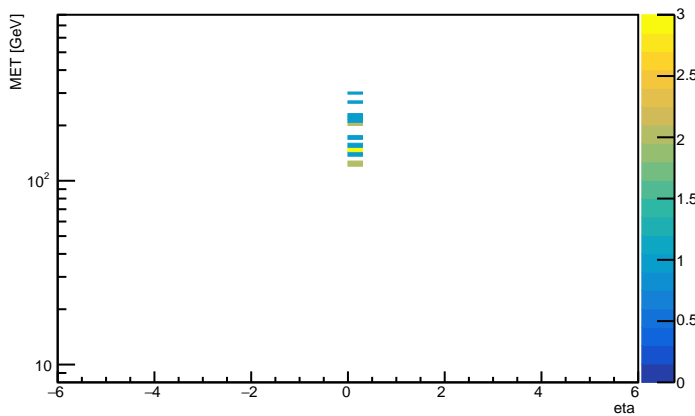
50 GeV (40%) ctau 100mm gen leading Met eta vs pt: at least 2 mu w/ $v_{xy} < 740$ cm, $|v_z| < 960$ cm & $|\eta| < 2.4$



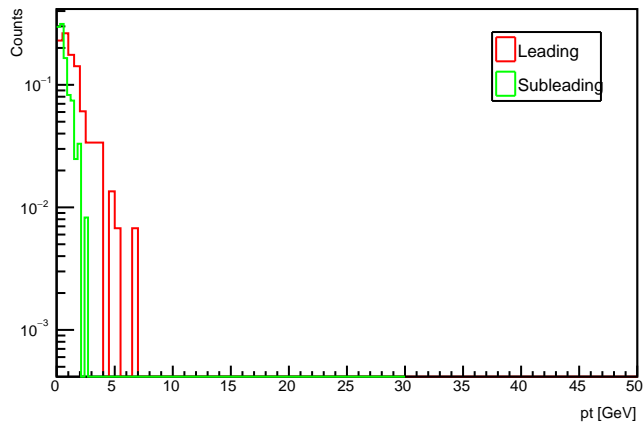
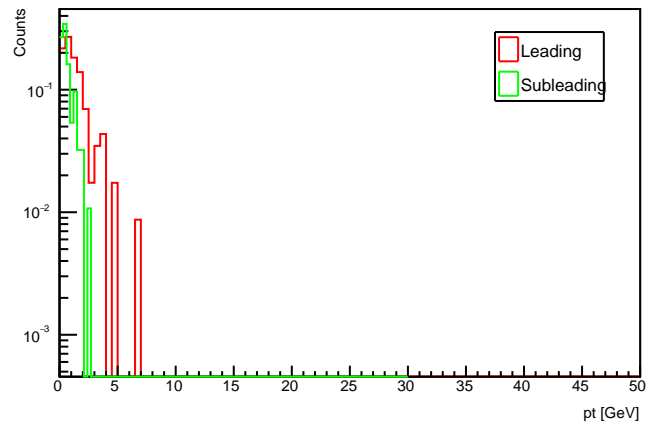
50 GeV (40%) ctau 100mm reco leading Met eta vs pt: no cuts

50 GeV (40%) ctau 100mm reco leading Met eta vs pt: $n_{\text{jet}} \geq 1$, $j_{1\text{pt}} > 30$ GeV

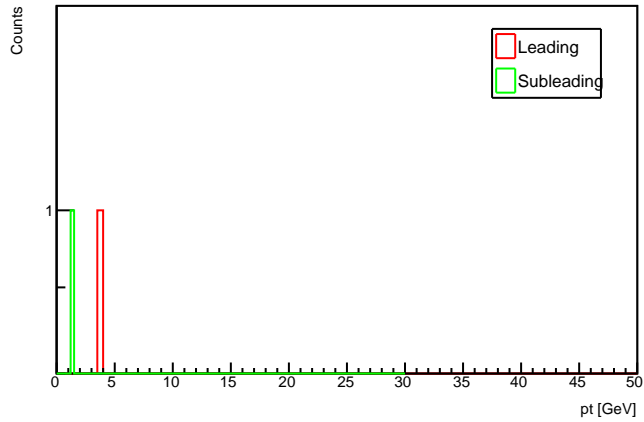
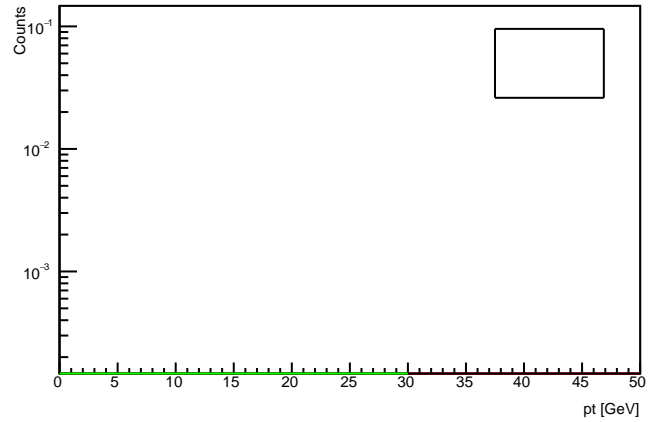
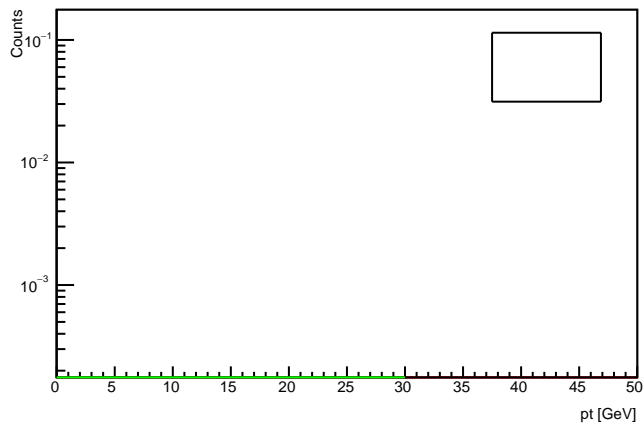
50 GeV (40%) ctau 100mm reco leading Met eta vs pt: MET > 120 GeV

50 GeV (40%) ctau 100mm reco leading Met eta vs pt: $j_{1\text{pt}} > 120$, at most 2 jets w/ $p_t > 30$ GeV50 GeV (40%) ctau 100mm reco leading Met eta vs pt: at least 2 mu w/ $v_{xy} < 740$ cm, $|v_z| < 960$ cm & $|\eta_{\text{jet}}| < 2.4$ 

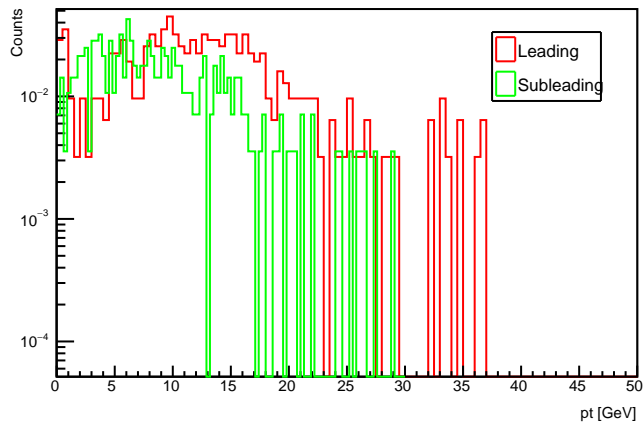
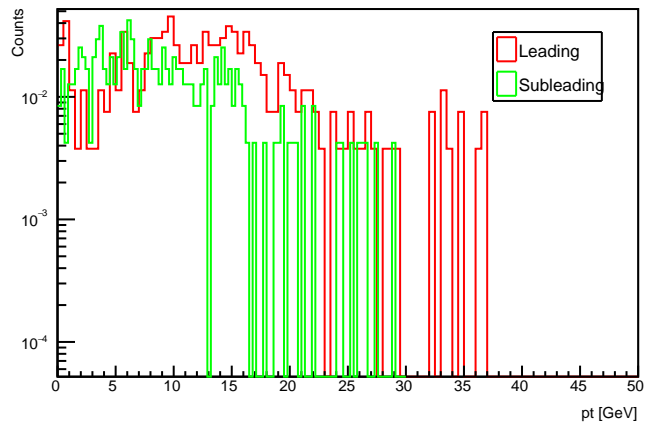
5 Gev (10%) leading vs subleading Mu pt: no cuts

5 Gev (10%) leading vs subleading Mu pt: $n_{\text{jet}} \geq 1$, $j_1 \text{pt} > 30 \text{ GeV}$ 

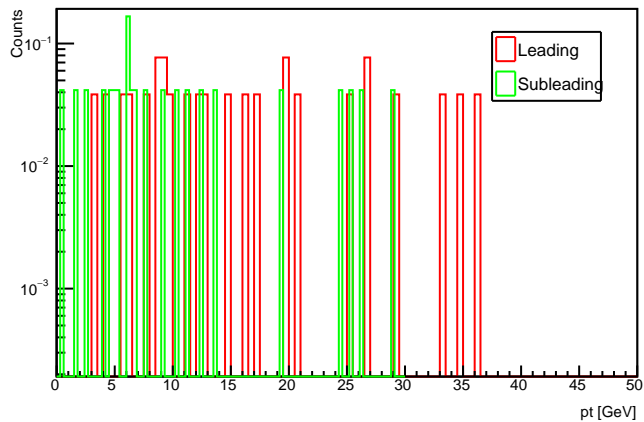
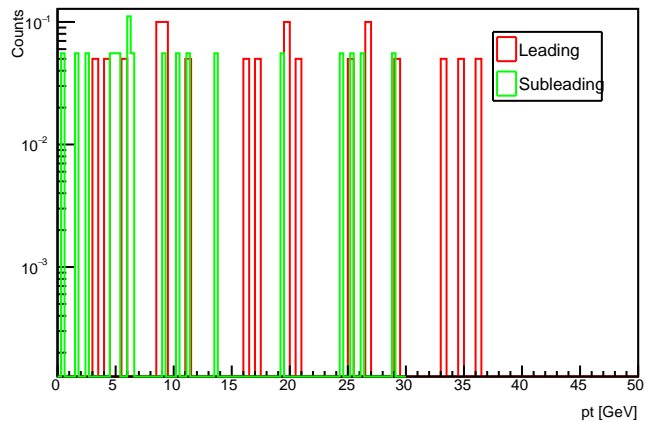
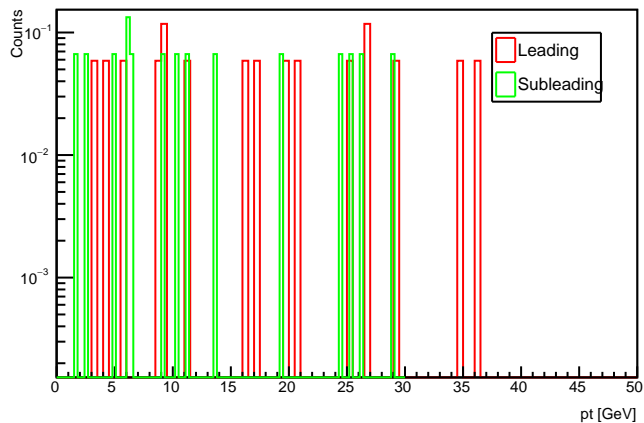
5 Gev (10%) leading vs subleading Mu pt: MET > 120 GeV

5 Gev (10%) leading vs subleading Mu pt: $j_1 \text{pt} > 120$, at most 2 jets w/ $\text{pt} > 30 \text{ GeV}$ 5 Gev (10%) leading vs subleading Mu pt: at least 2 mu w/ $v_{xy} < 740 \text{ cm}$, $|v_z| < 960 \text{ cm}$ & $|\text{eta}| < 2.4$ 

50 GeV (40%) leading vs subleading Mu pt: no cuts

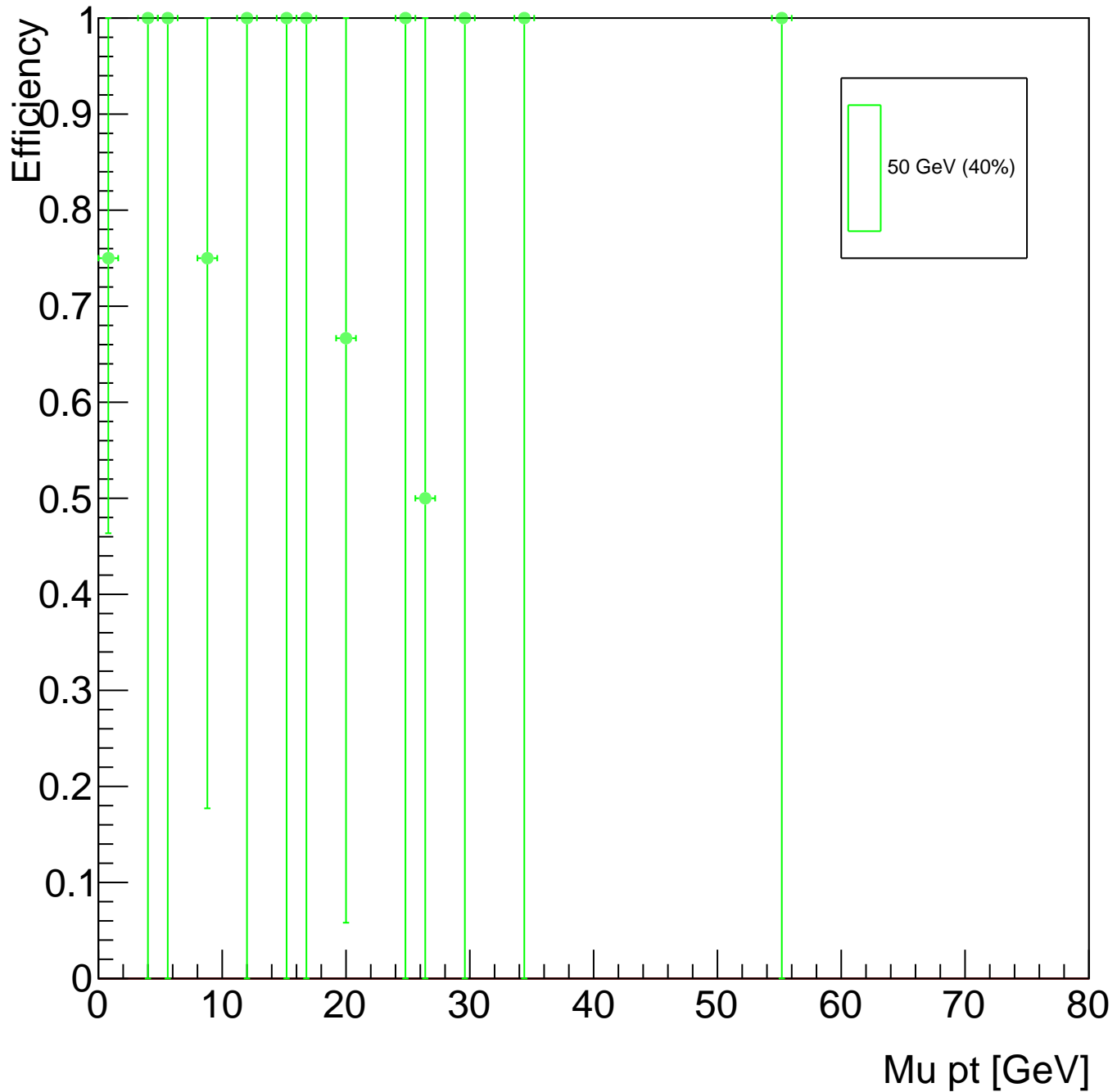
50 GeV (40%) leading vs subleading Mu pt: $n_{\text{jet}} \geq 1$, $j_1 \text{pt} > 30 \text{ GeV}$ 

50 GeV (40%) leading vs subleading Mu pt: MET > 120 GeV

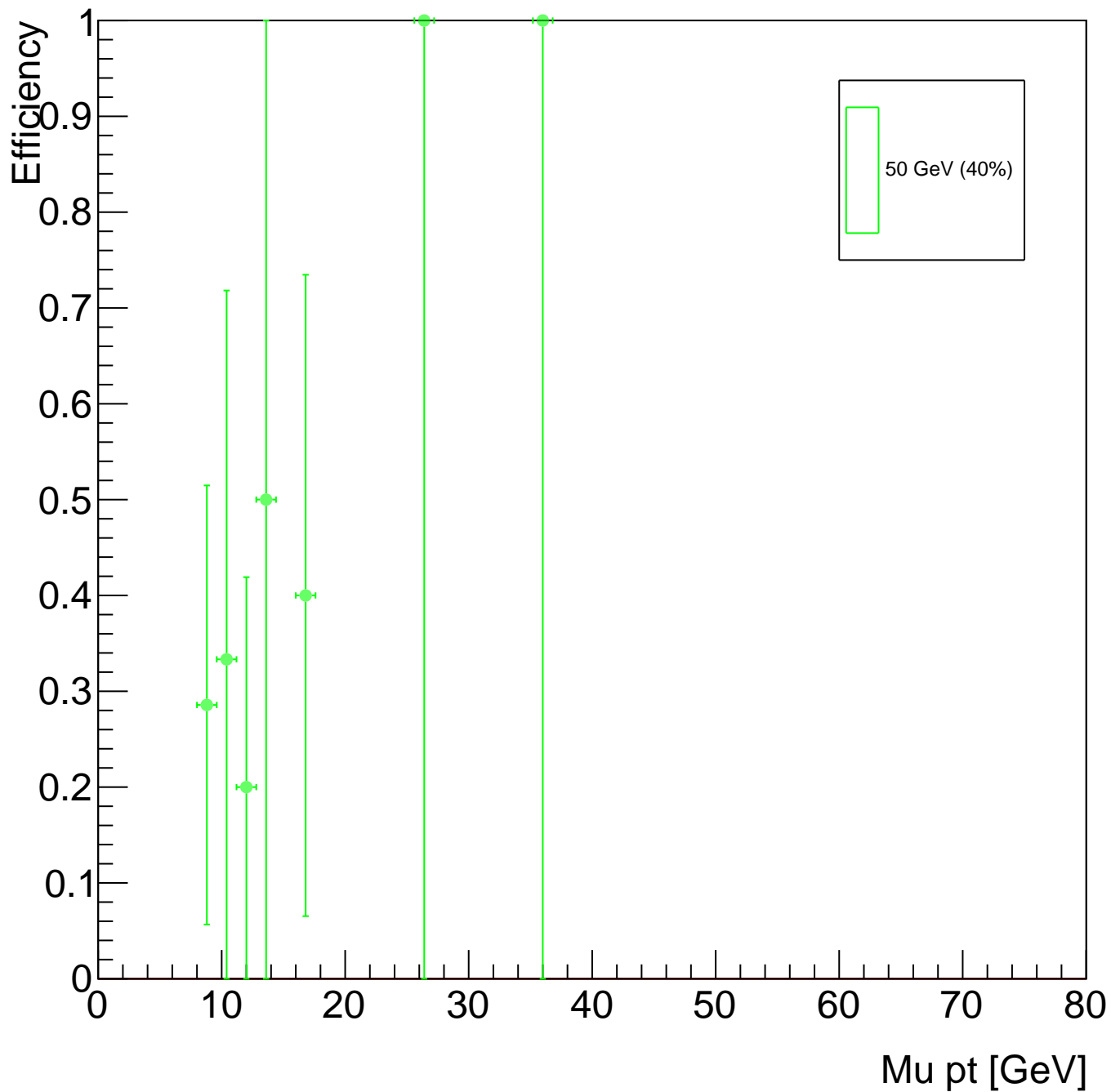
50 GeV (40%) leading vs subleading Mu pt: $j_1 \text{pt} > 120$, at most 2 jets w/ $\text{pt} > 30 \text{ GeV}$ 50 GeV (40%) leading vs subleading Mu pt: at least 2 mu w/ $v_{xy} < 740 \text{ cm}$, $|v_z| < 960 \text{ cm}$ & $|\eta| < 2.4$ 

efficiencies

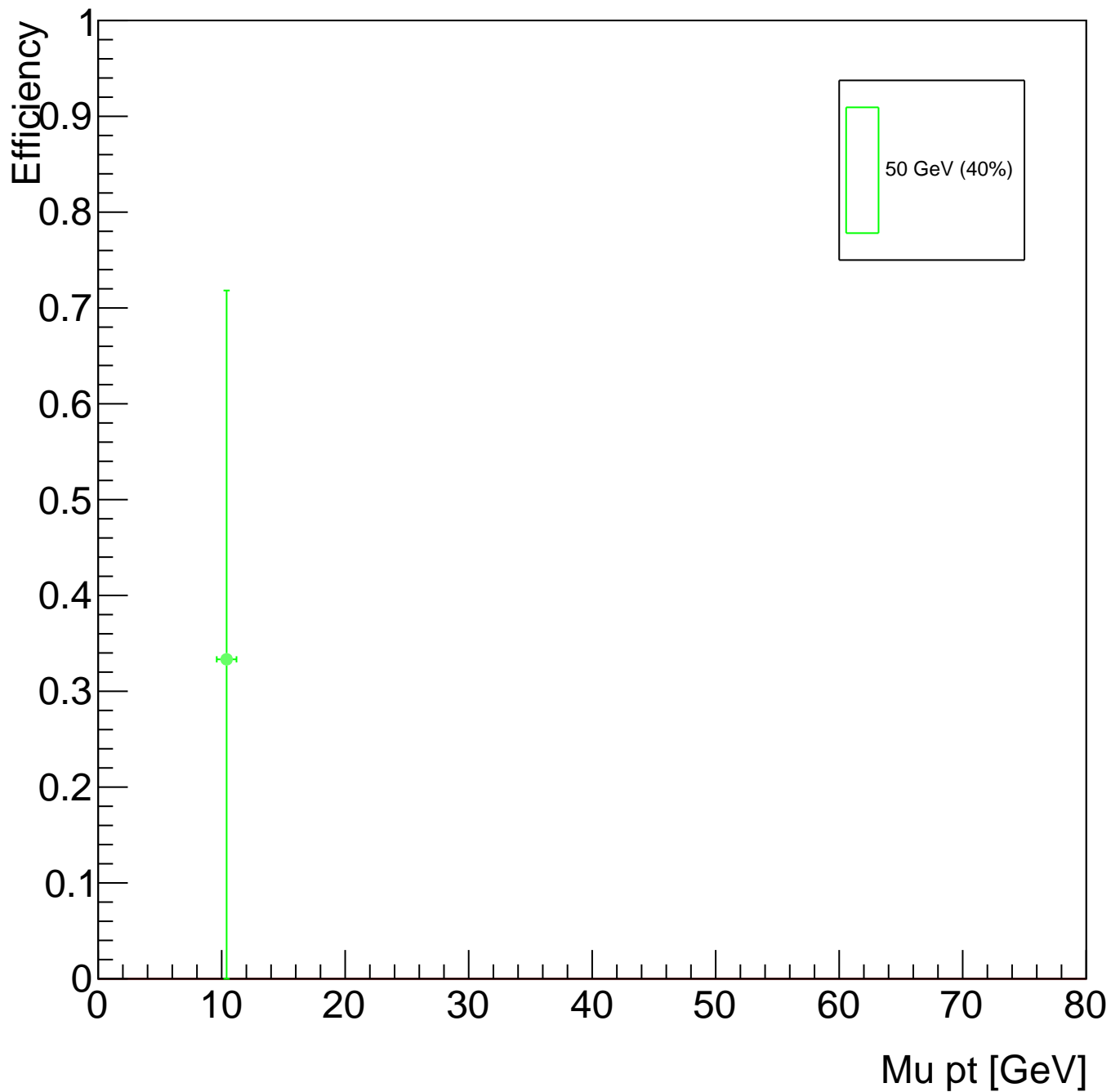
trigefficiency HLT_PFMET120_PFMHT120



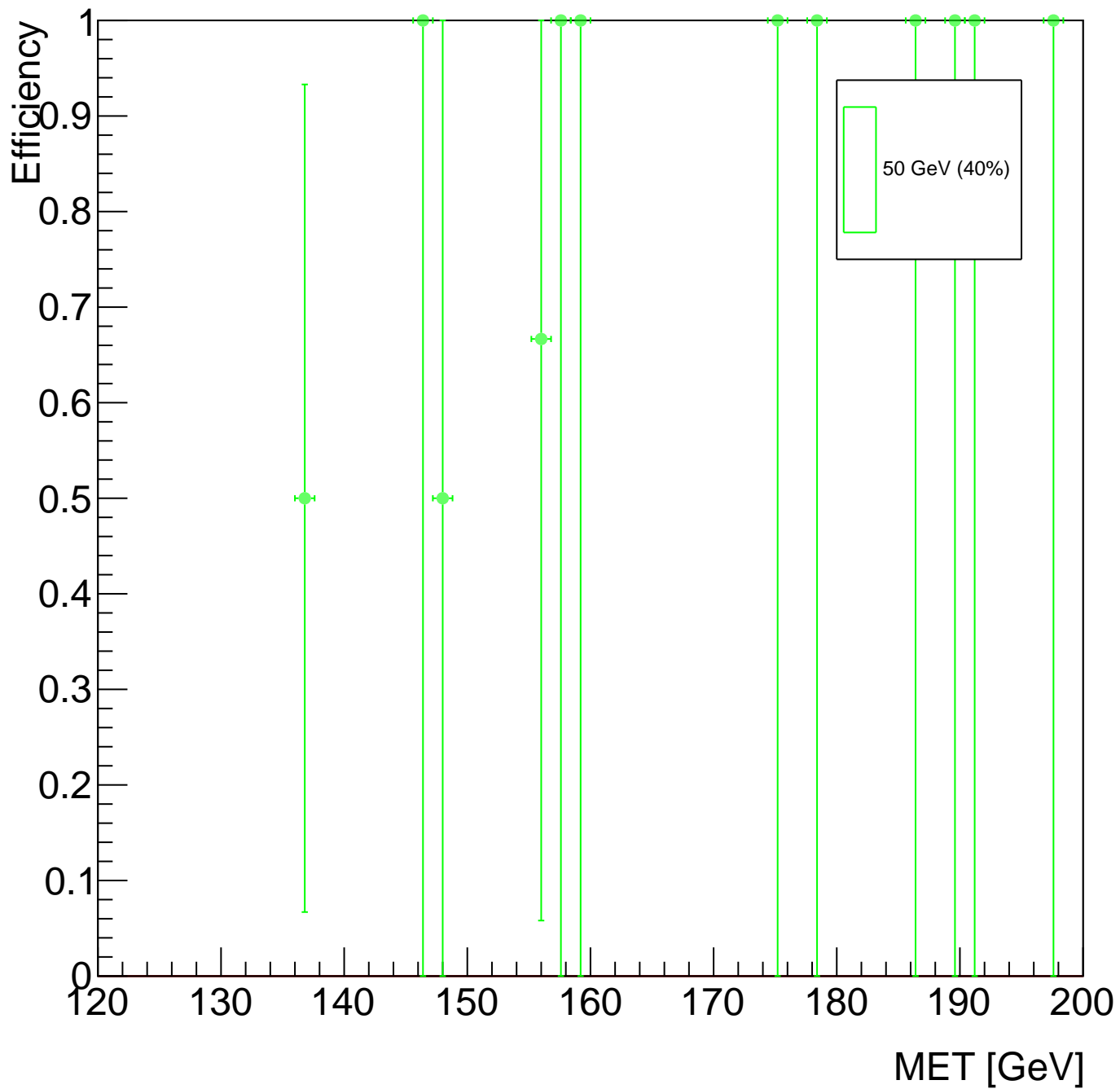
trigefficiency HLT_DoubleMu3_DCA_PFMET50_PFMHT60



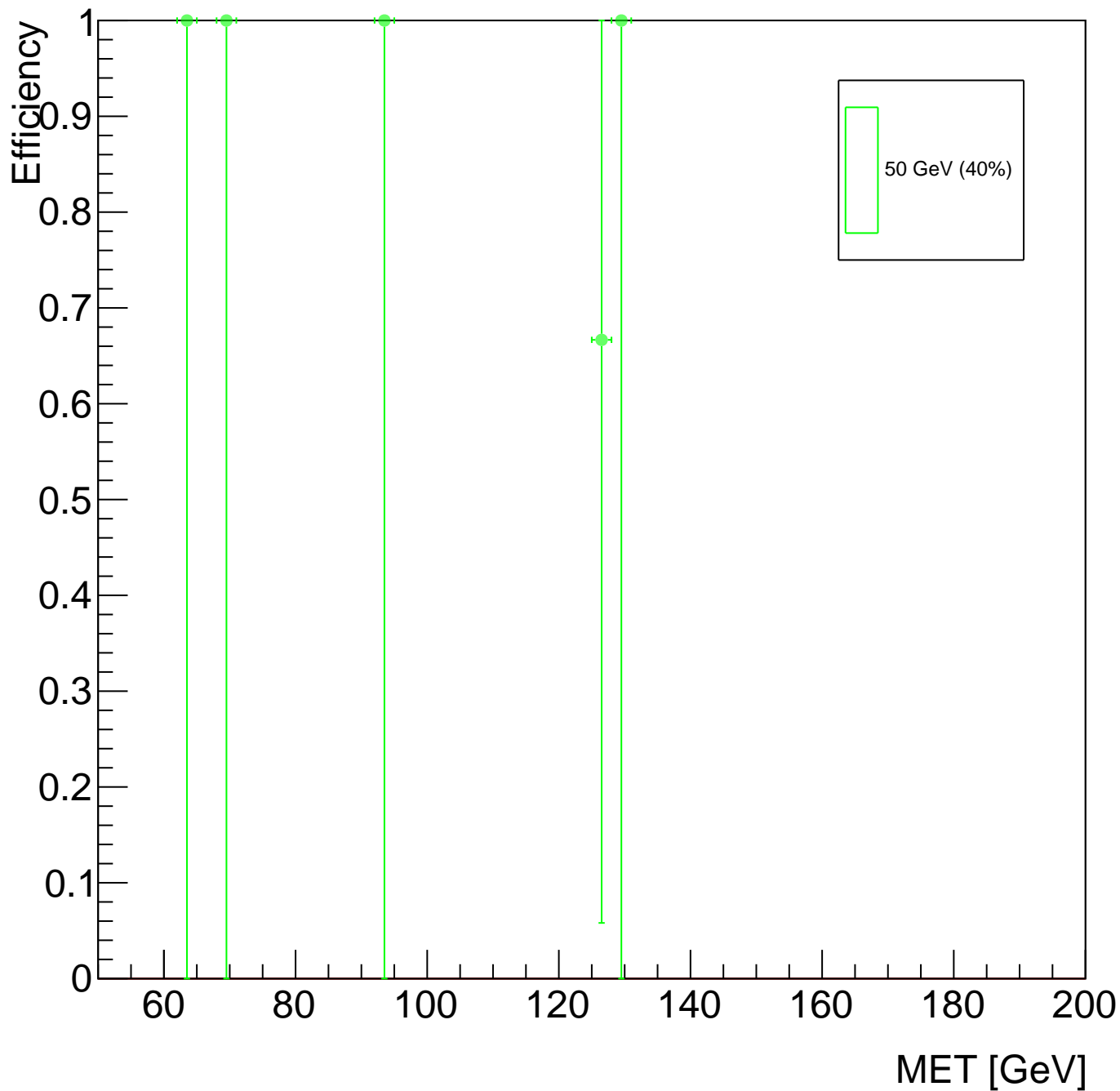
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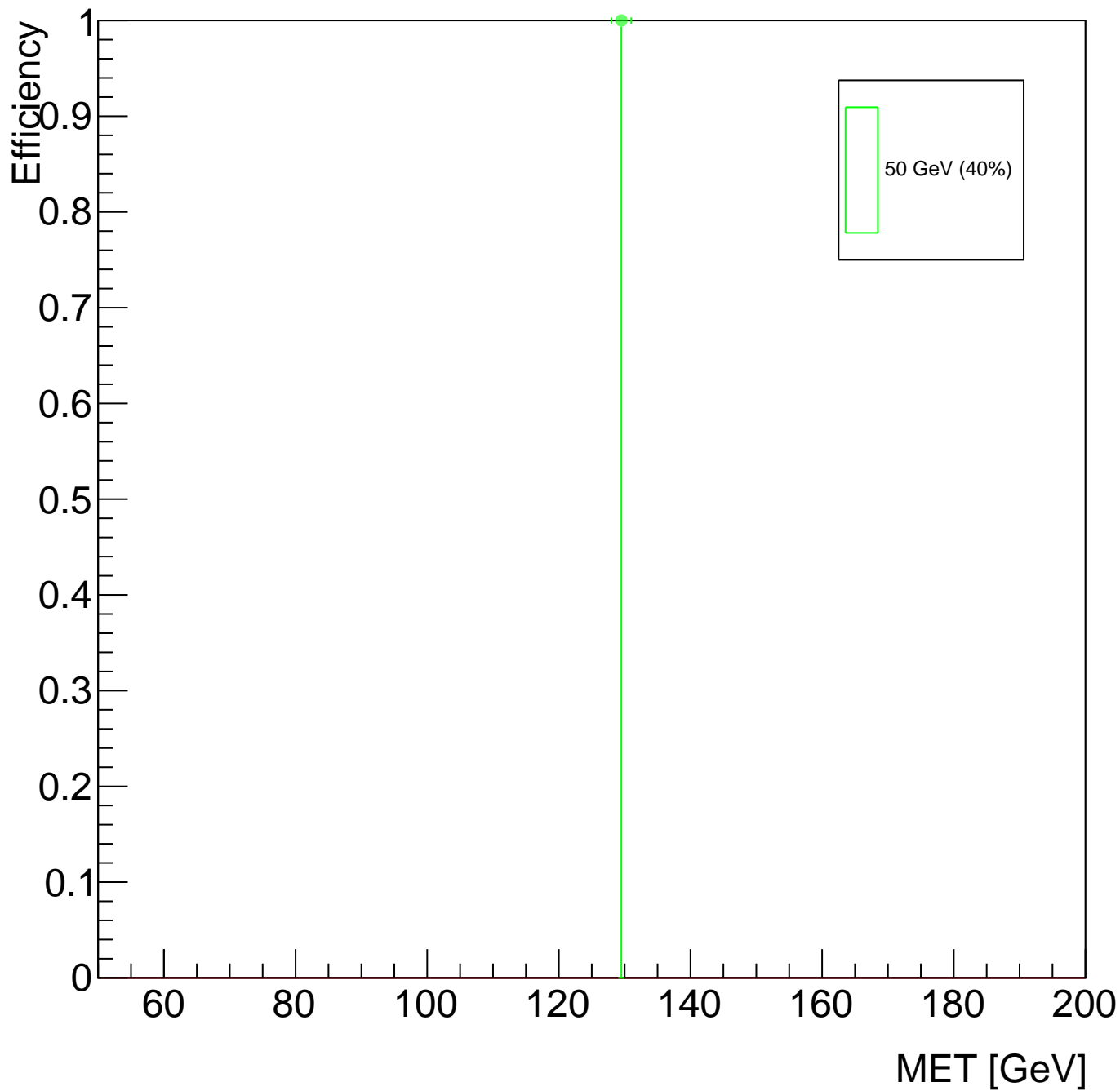
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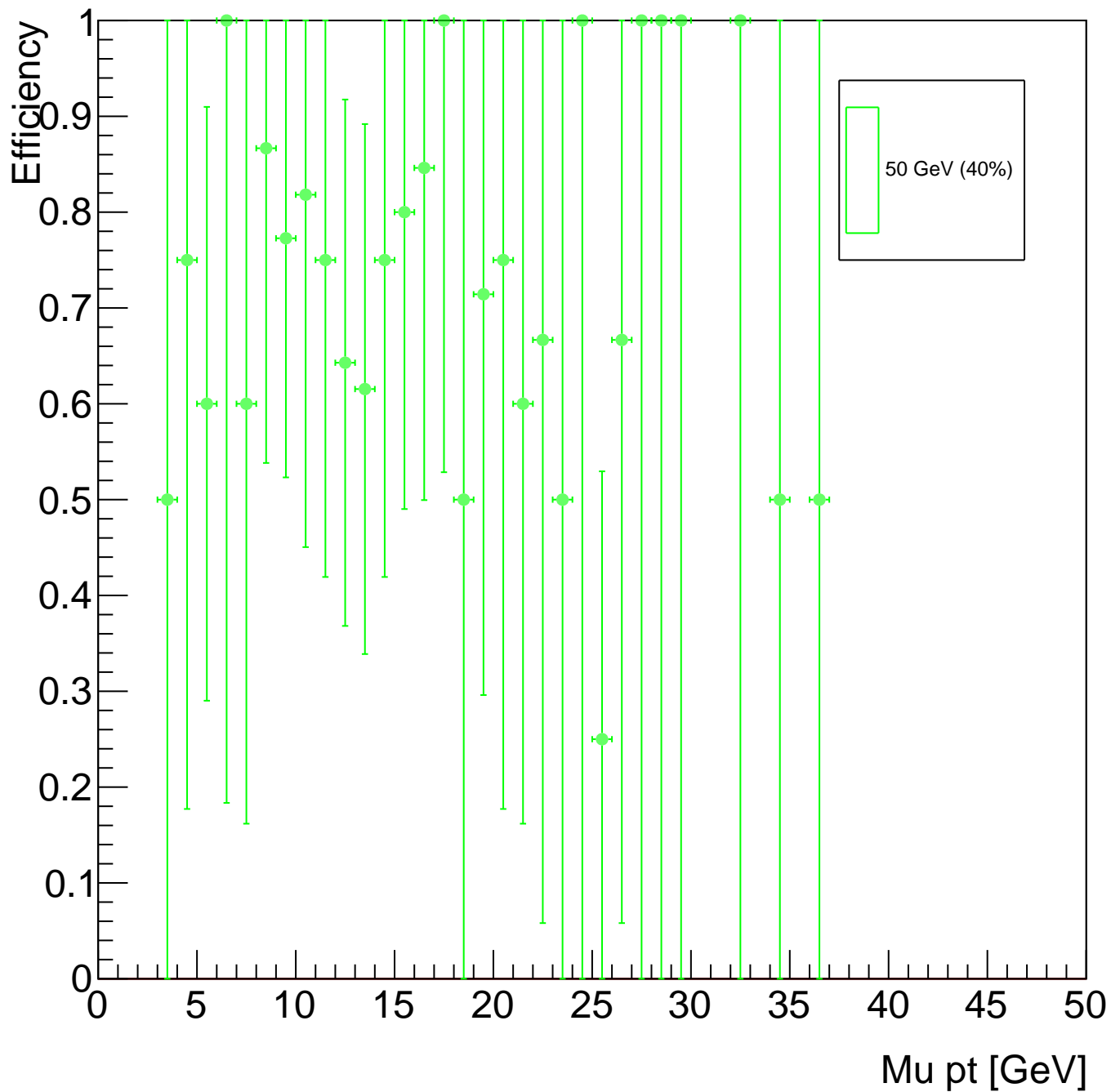
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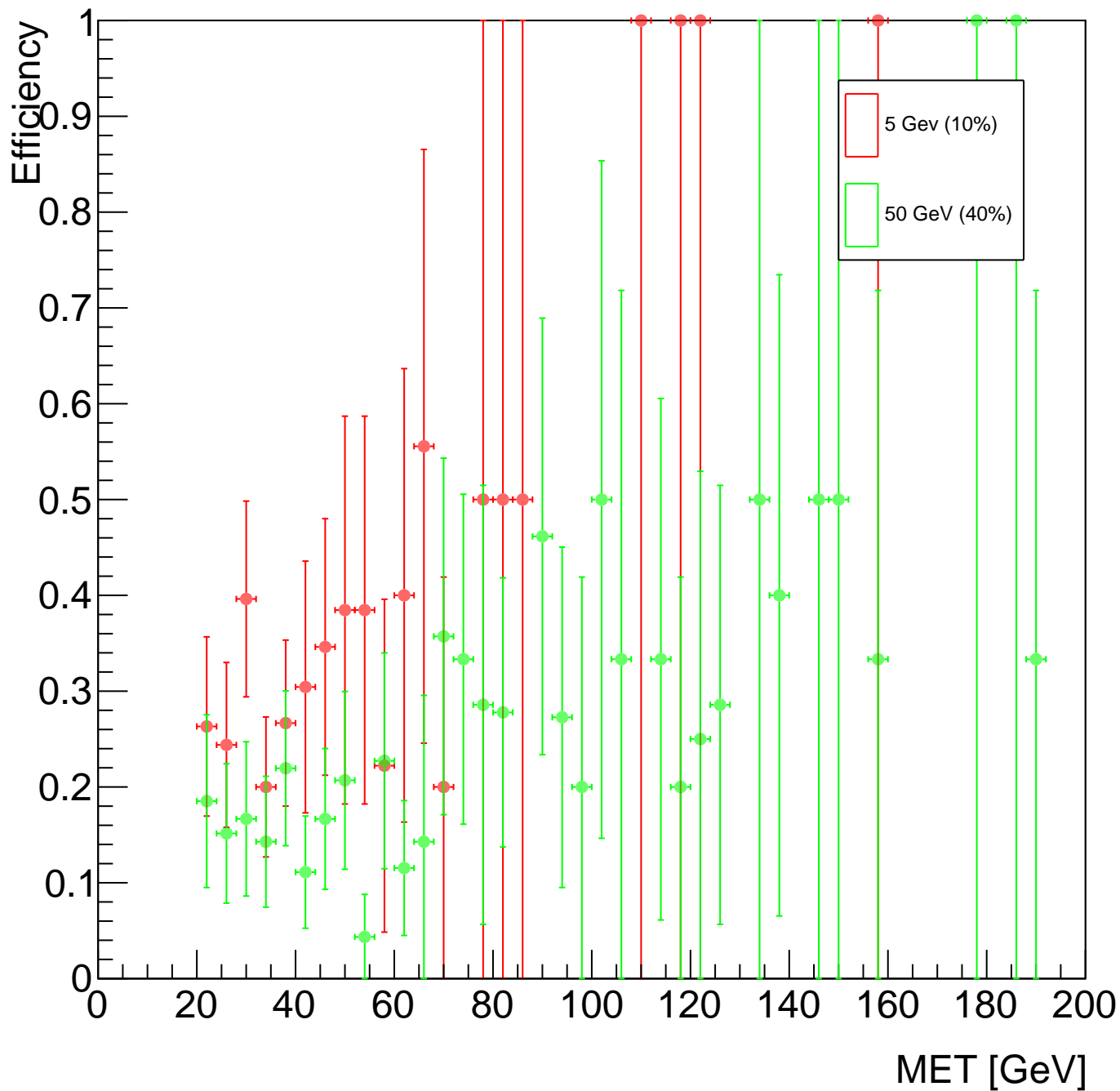
trigefficiency HLT_DoubleMu3_DZ_PFMET50_PFMHT60



recoefficiency mu



recoefficiency met



recoefficiency met

