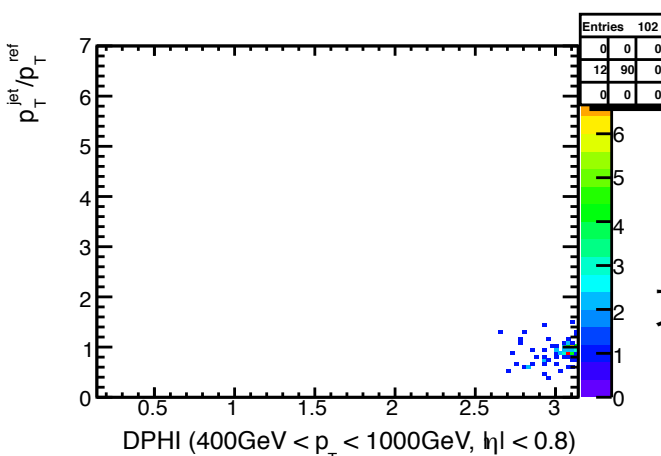
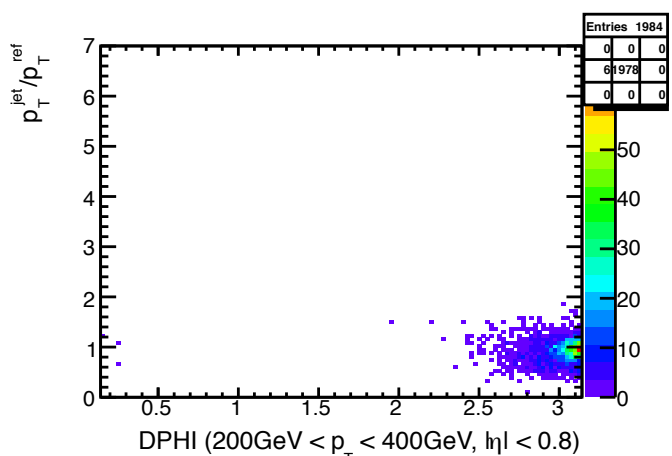
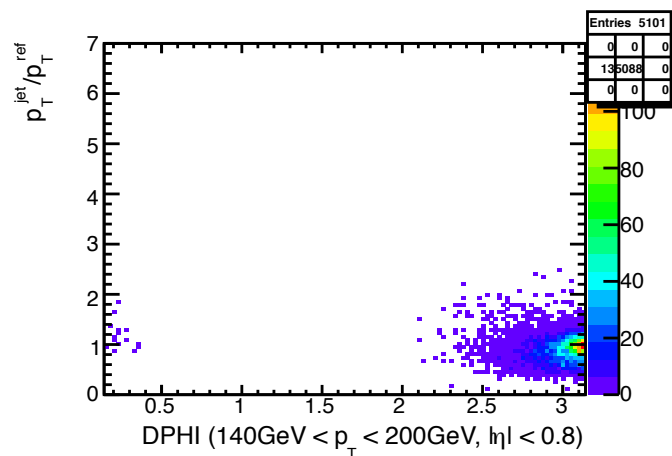
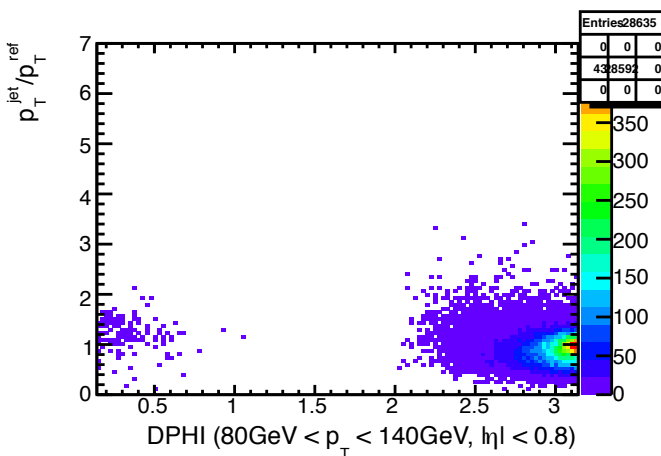
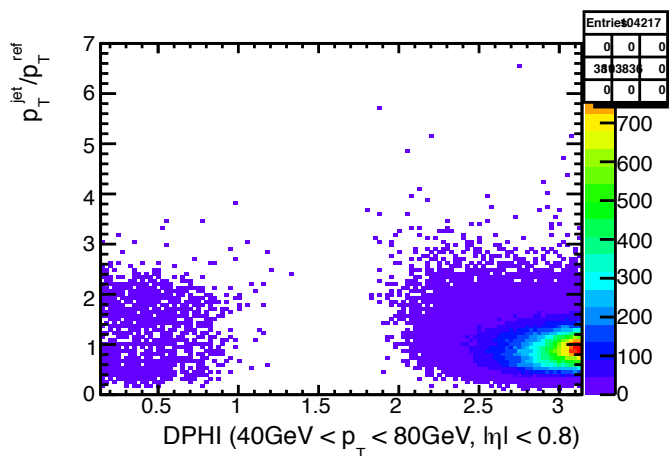
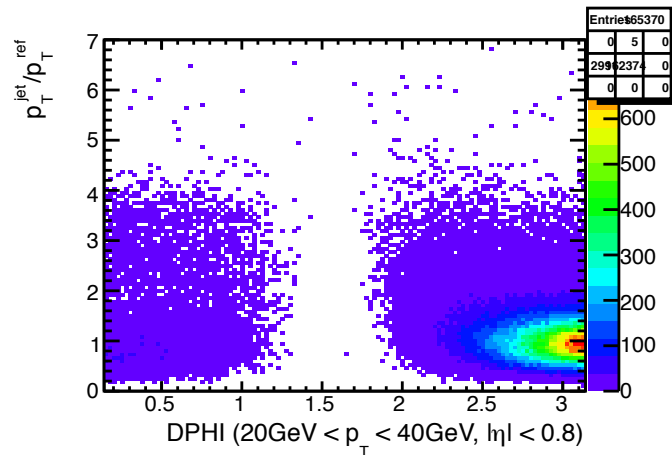
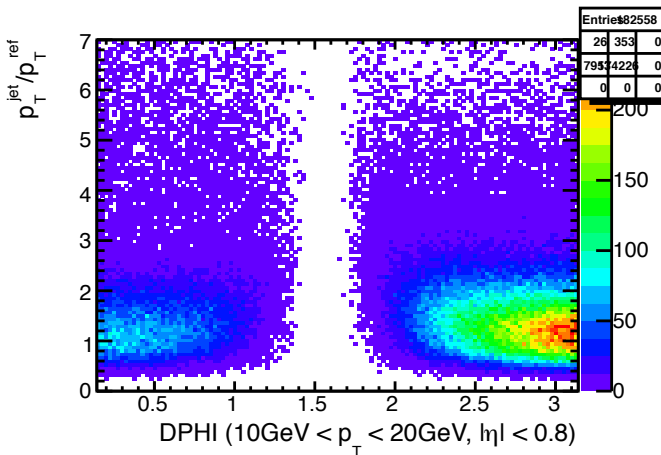
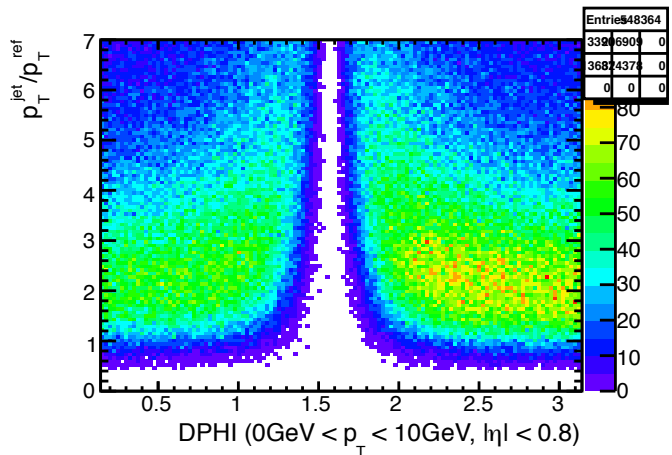


9, Dec, Naoyuki Kamo

状況

- 問題点
 - 結局、CONF-NOTEとconsistentにならなかった
 - 原因がわかっていないが、一部ヒストに明らかにおかしい分布を見つけた (3,4p)。バグには思えないので、c++の仕様の問題な気がする
- 修論に使う絵のこと
 - ZeeはAntiKt4TopoEMについては解析済みファイルとグラフができている
 - 他のjet algorithmも解析コードを走らせているが、今はジョブが終了していない (segmentation faultがおきないことは確認した)
 - オプションを変えるだけでグラフまで作れるようになっているので、back groundで作業できる
 - mc dijetの方は以前作ったグラフを使えるはず
 - ということで、がっつりコードの修正は必要ないと思う
- 変更箇所
 - $\pi - \Delta\Phi$ binを更に荒くして、[0, 0.1, 0.20, 0.35]にした。これは0付近での誤差が大きいと話にならないため
 - fitはcutgaussianで1.6sigmaで行っていい
 - 10GeV以下のjetは無視している

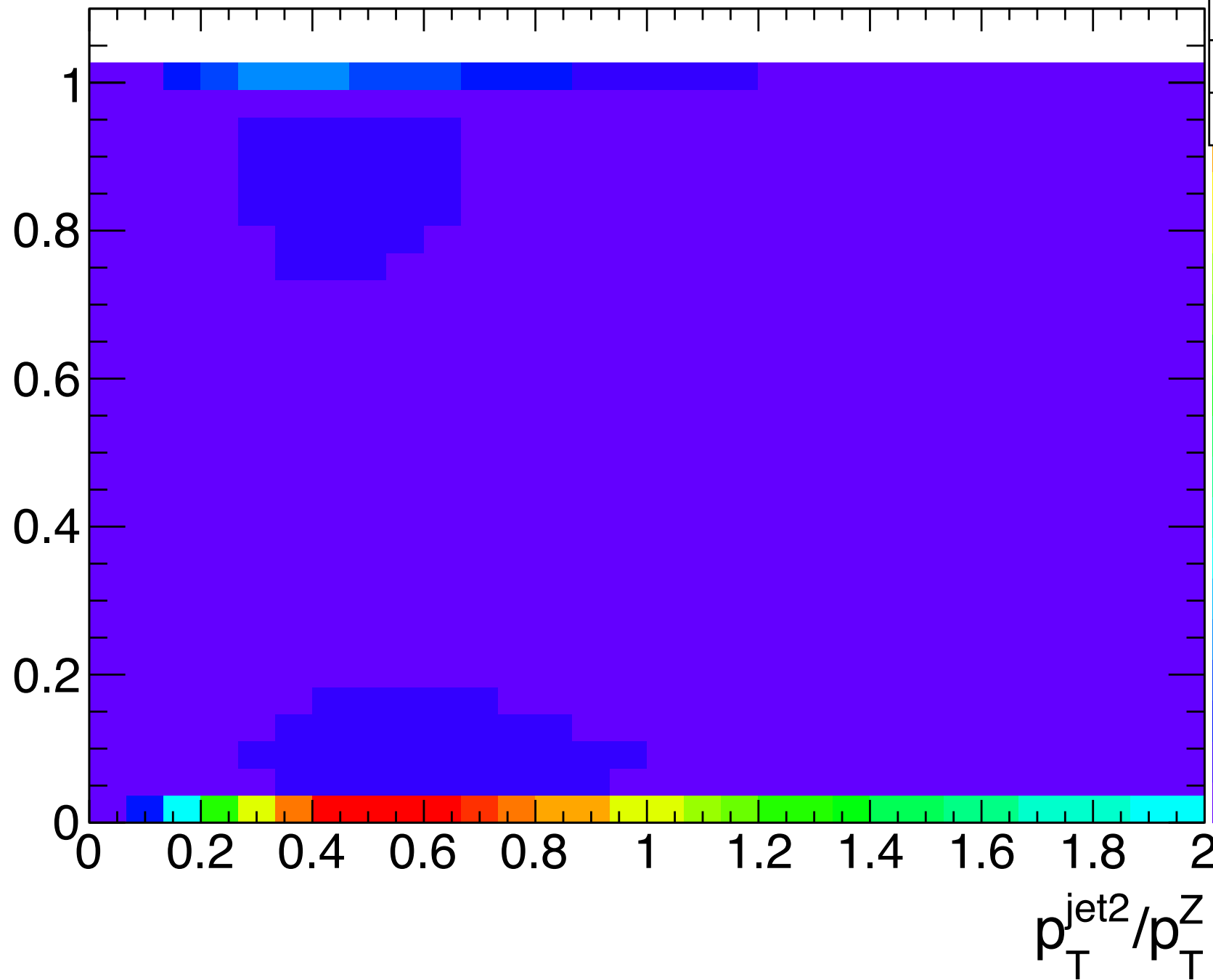
なぜかDPHIにアンダーフローがある



abs(DPHI)しているので
 マイナスはあり得ない...。
 アンダーフローの統計は多くない
 ので、影響は小さいと思う

なぜかpT_jet2/pT_Zにアンダーフローがある

JVF(jet2)



Entries1971446		
0	0	0
9141	24639	1991
0304239	2174	

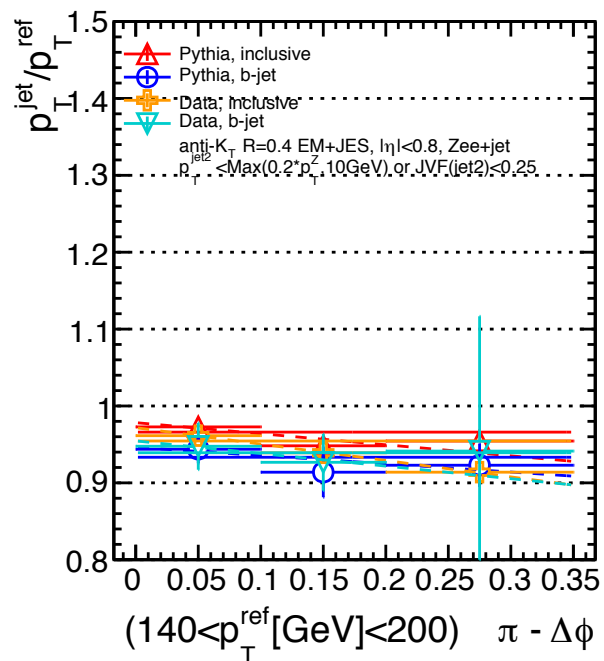
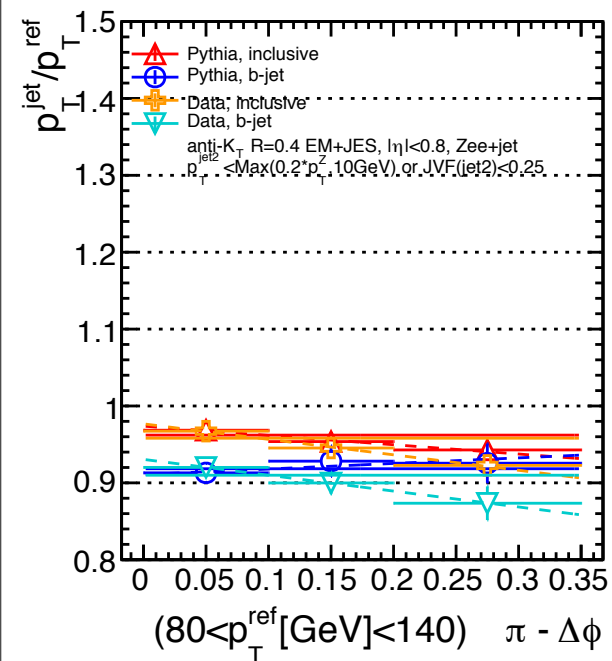
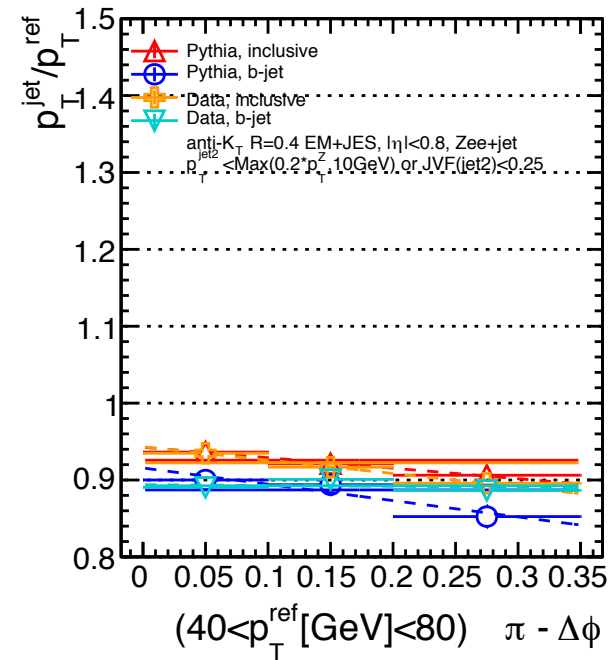
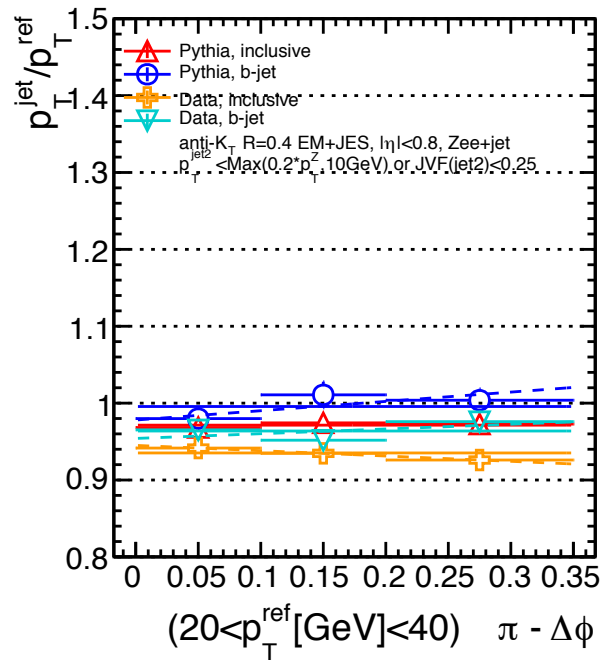
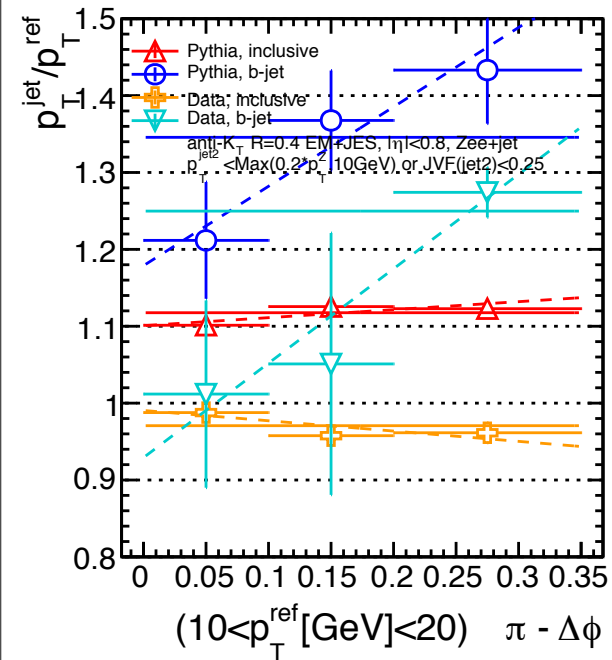
20000

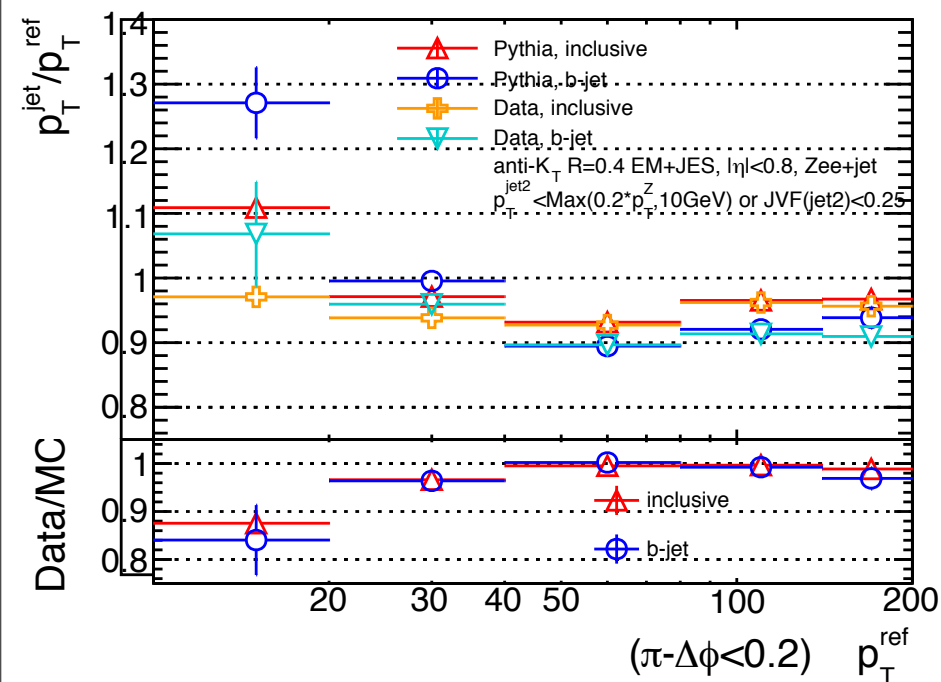
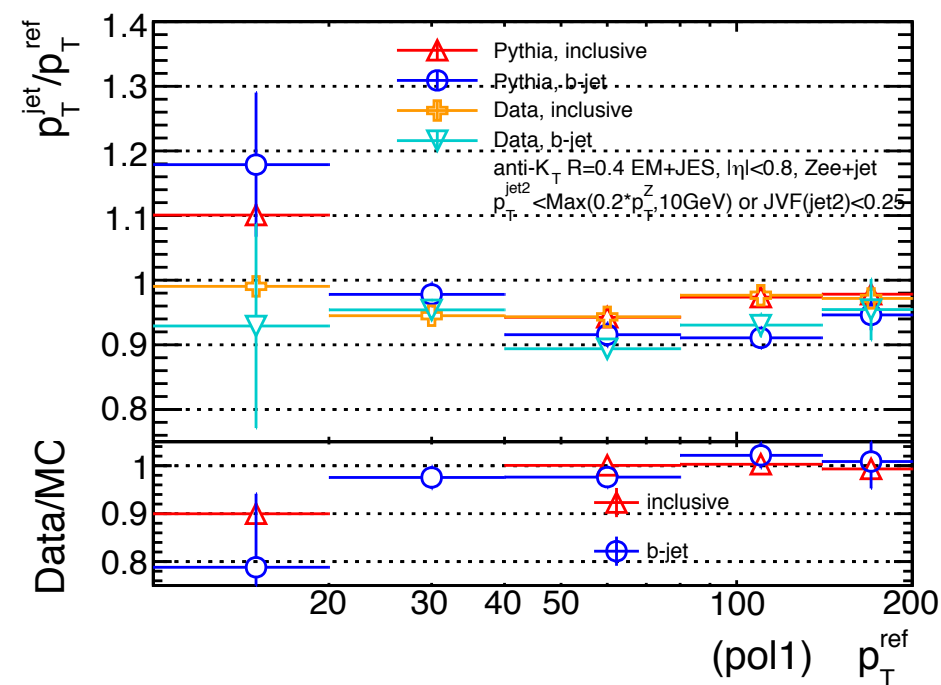
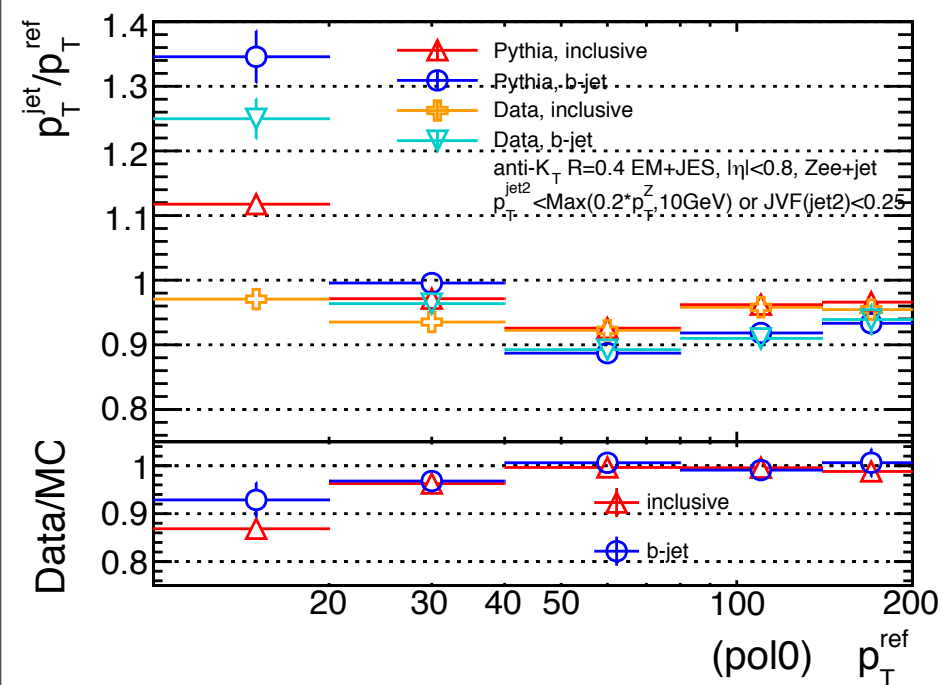
15000

10000

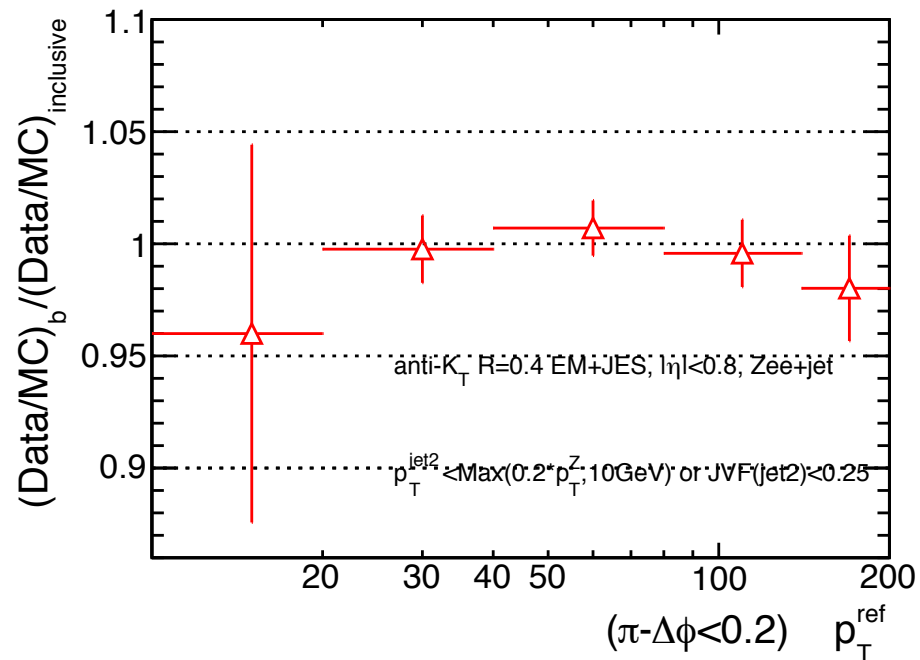
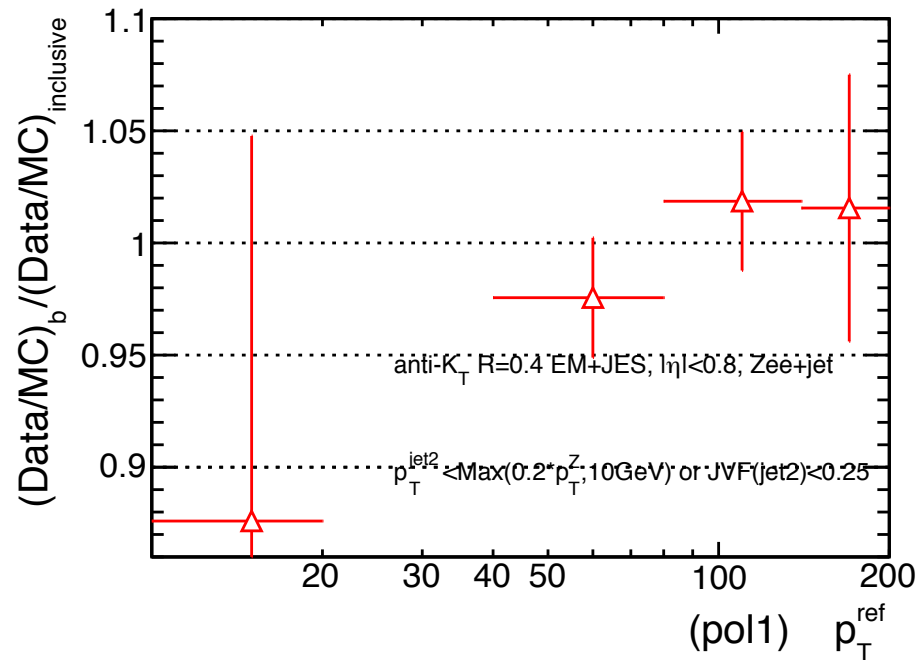
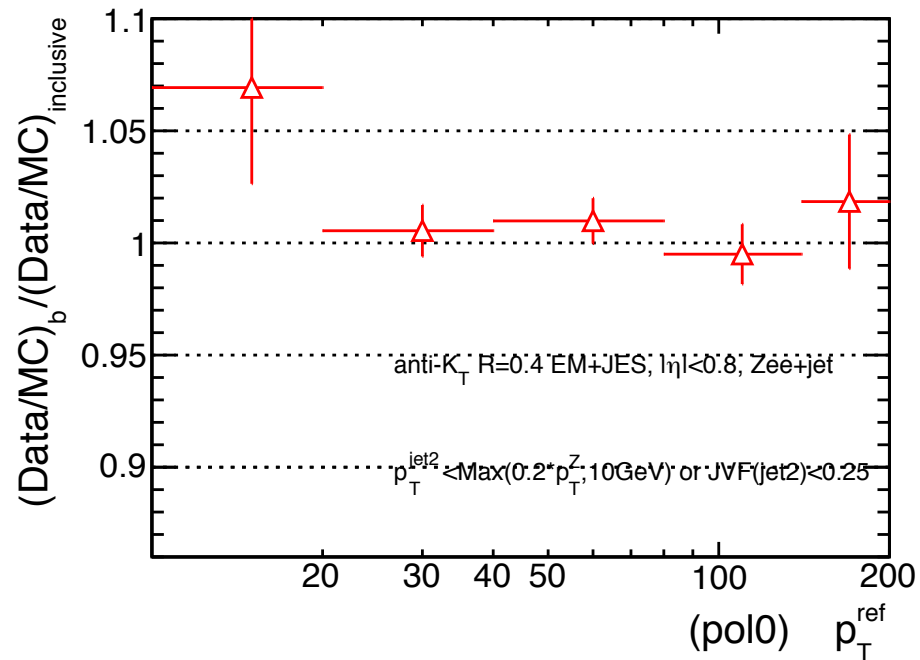
5000

0





理由がよくわからないが
 pol fitがところどころ成功しない



back up

Z + jet

- el_medium++ , mu_medium
- $\Delta R(\text{jet}, \text{el_medium++}) < 0.1$ のjetはelectronとする
- Trigger(zee): EF_e12Tvh_loose1 (multi-electron , unprecaled)
- Trigger(zmumu): EF_mu24i_tight || EF_mu36_tight
- B-tag : $M_{VI} > 0.8 || 9$ (nominal efficiency 70%)

Variable	Selection	description
e_1, e_2	$E_T^{e_{1,2}} > 20 \text{ GeV}$ $80 \text{ GeV} < M_{e^+e^-} < 116 \text{ GeV}$ $ \eta^{e_{1,2}} < 2.47$ excluding $1.37 < \eta^e < 1.52$	electron pre-selection
leading jet	$ \eta^{\text{jet}} < 0.8, JVF > 0.25$ if $p_T < 50 \text{ GeV}$	jet pre-selection
$\Delta R_{j,e} = \sqrt{(\Delta\eta)^2 + (\Delta\phi)^2}$	> 0.35 anti- k_t $R = 0.4$ jets > 0.5 anti- k_t $R = 0.6$ jets	isolation/topology
$p_T^{\text{jet}2}$	$< \max(0.2 \times p_T^Z, 10 \text{ GeV})$	radiation/topology
JVF(jet2)	$> 0.25,$ if $ \eta^{\text{jet}2} < 2.4$ and $p_T < 50 \text{ GeV}$	JVF restriction for sub-leading jets

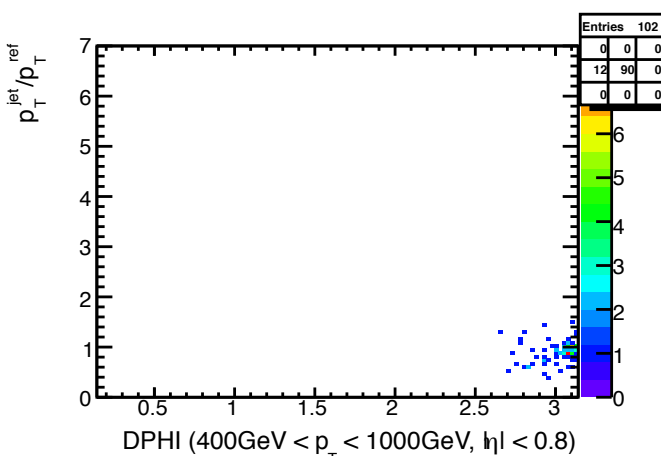
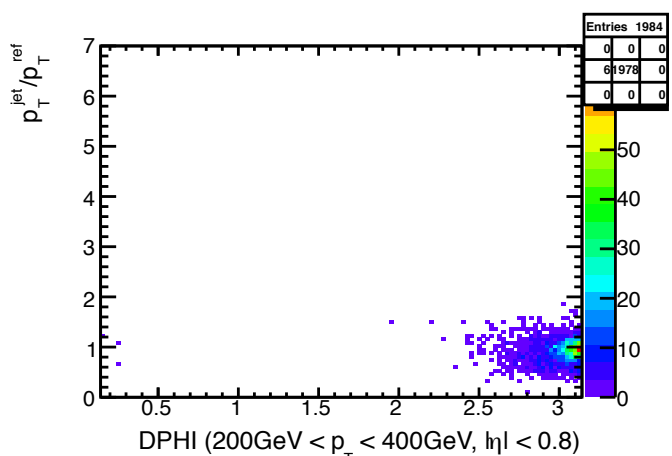
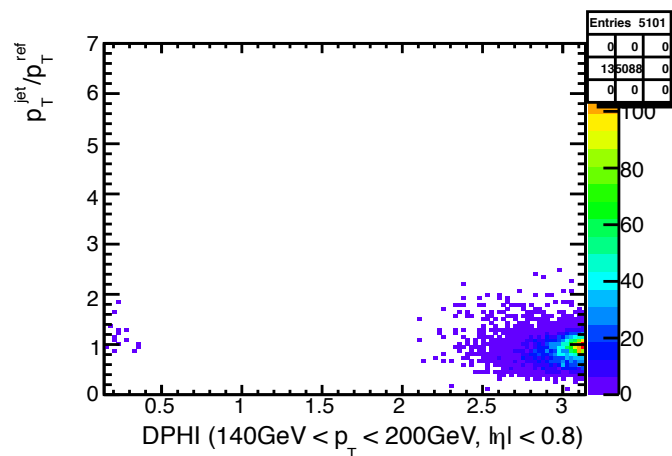
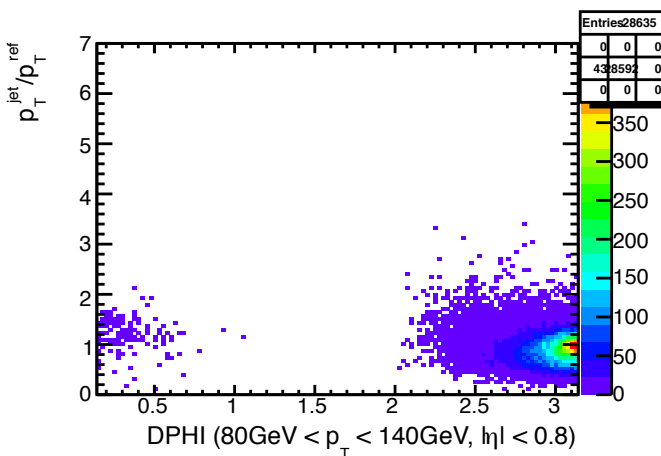
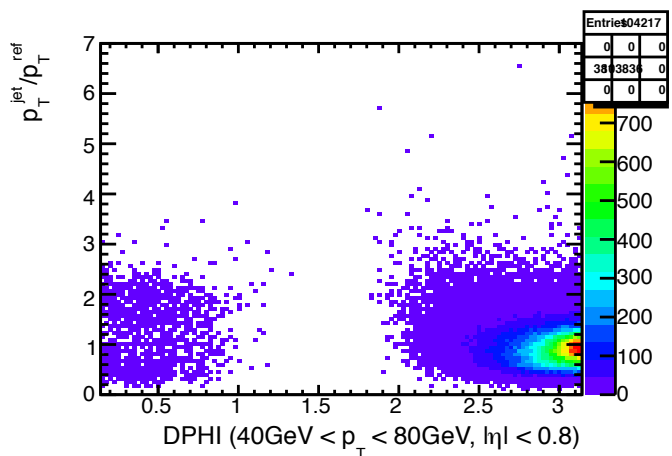
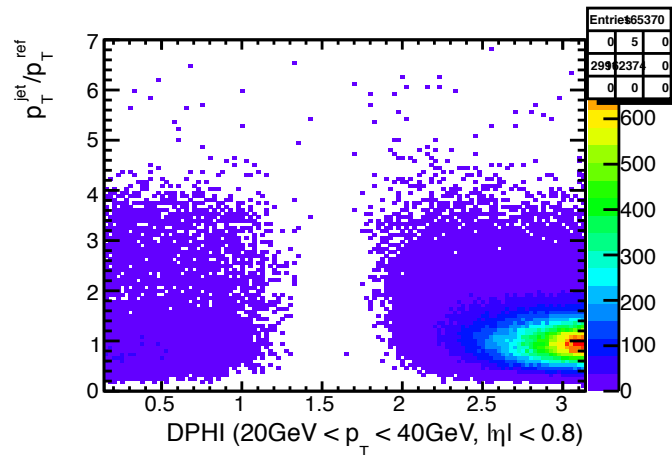
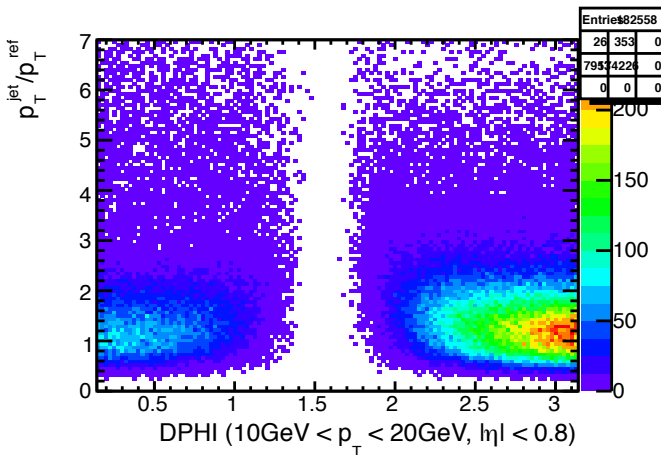
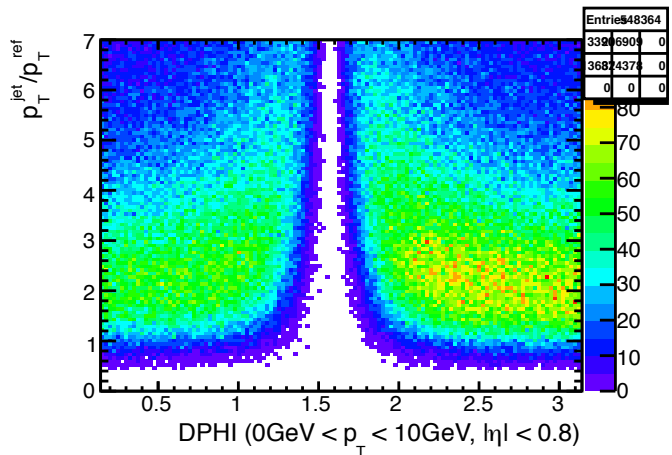
gamma+ jet

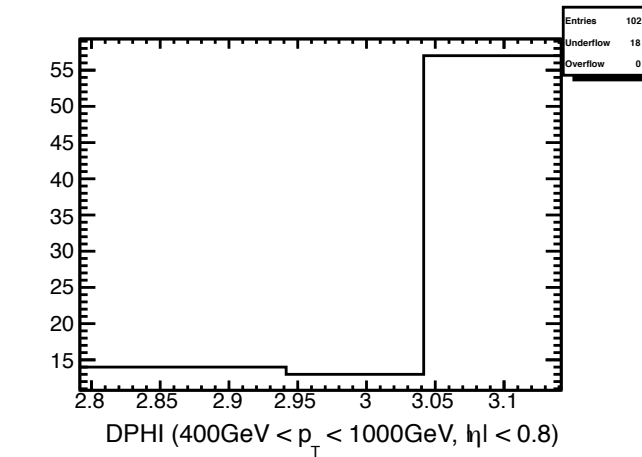
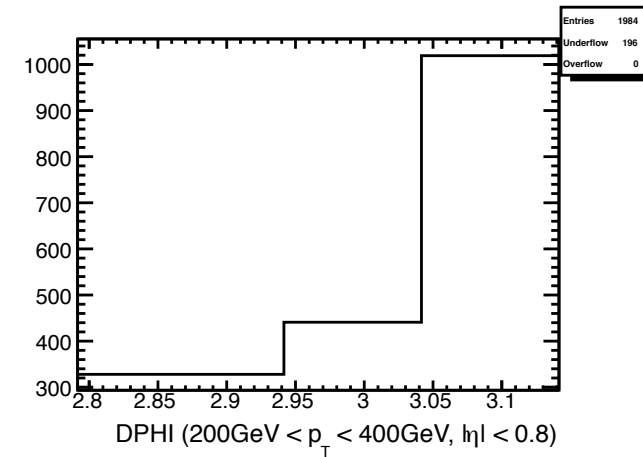
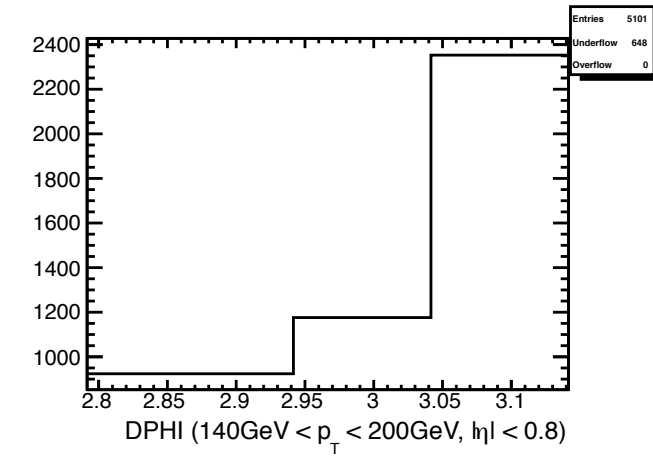
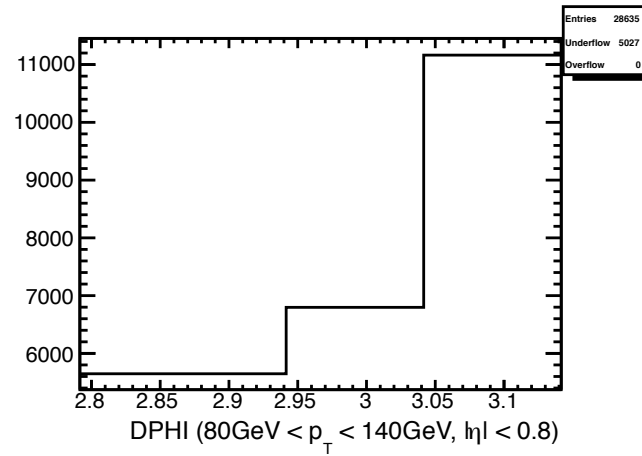
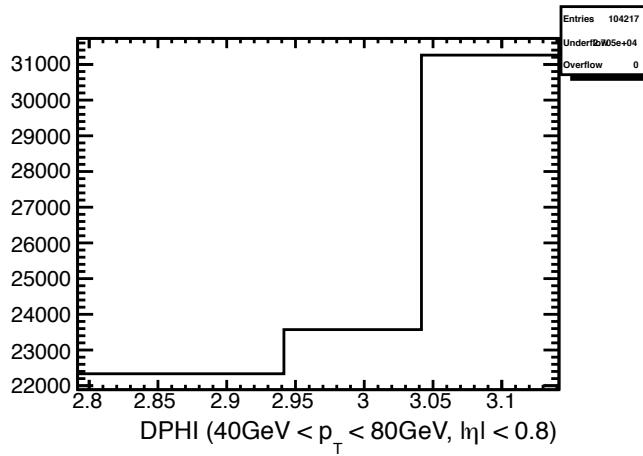
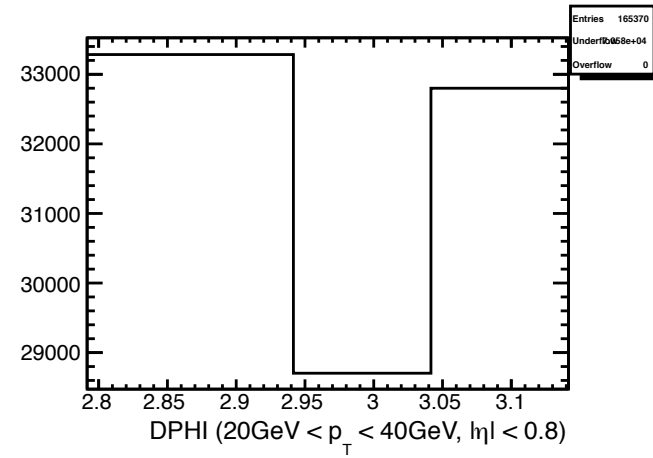
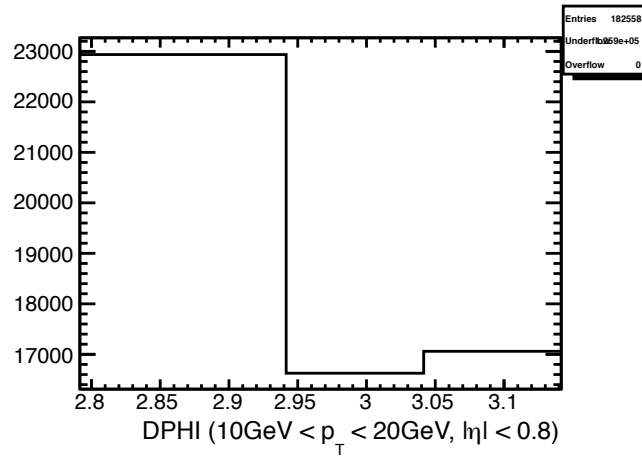
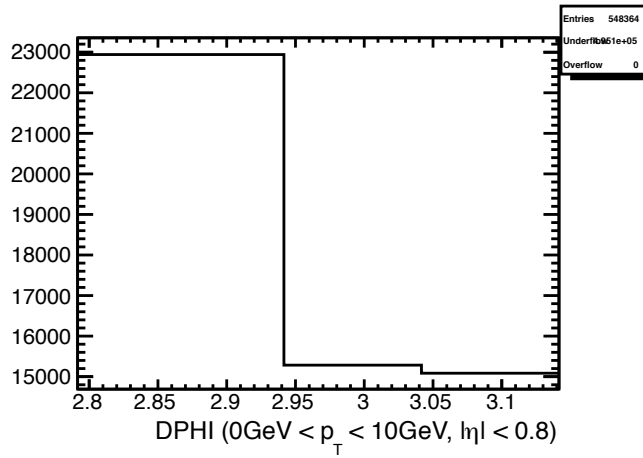
- $\Delta R(\text{jet}, \text{gamma}) < 0.1$ の jet は gamma とする (ただし gamma は下表の条件を満たす)。
- Trigger: EF_g20_loose || EF_g40_loose || EF_g60_loose || EF_g80_loose || EF_g100_loose || EF_g120_loose
- B-tag : $MV1 > 0.8119$ (nominal efficiency 70%)
- selection については <https://twiki.cern.ch/twiki/bin/viewauth/AtlasProtected/GammaJetCalib2012> に詳しく書いてある

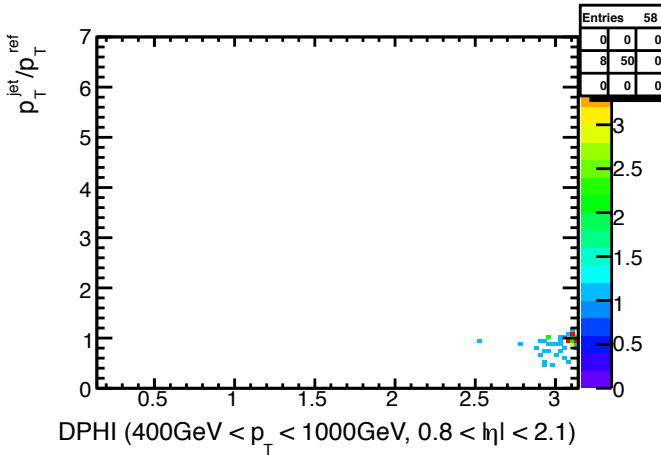
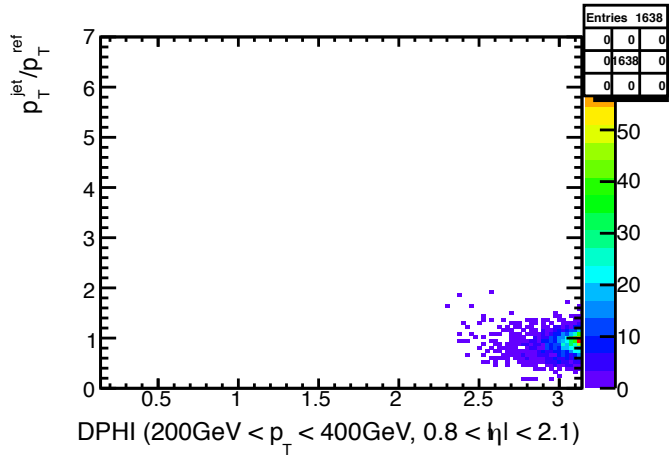
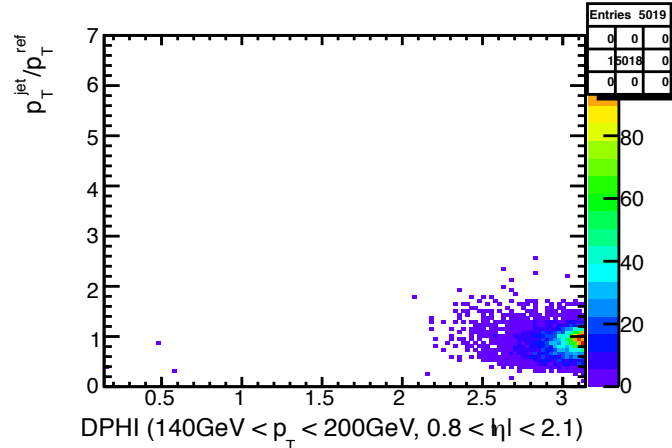
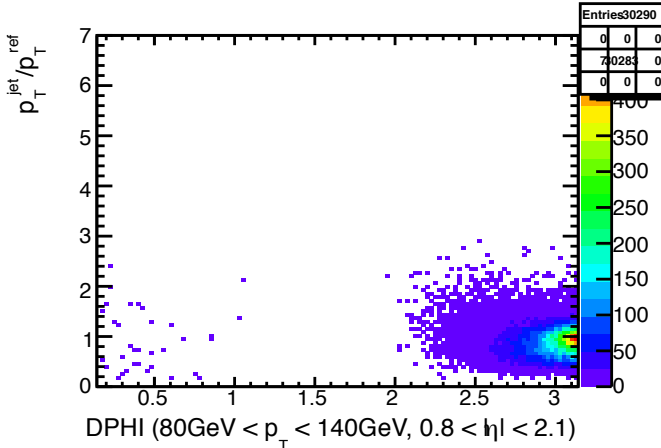
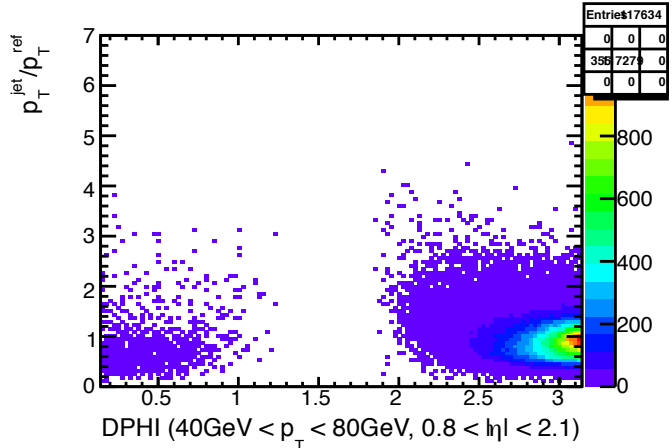
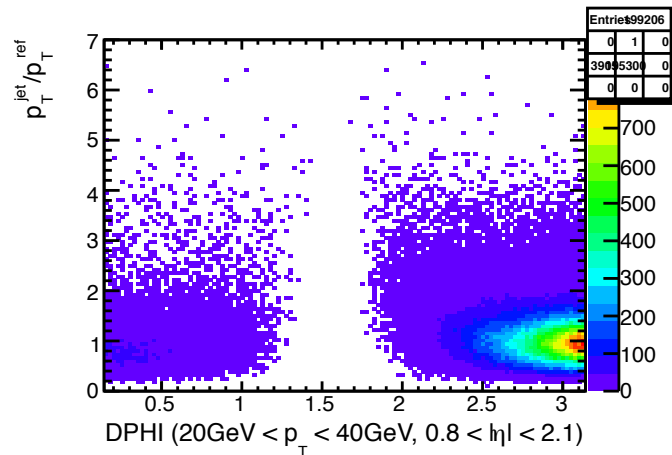
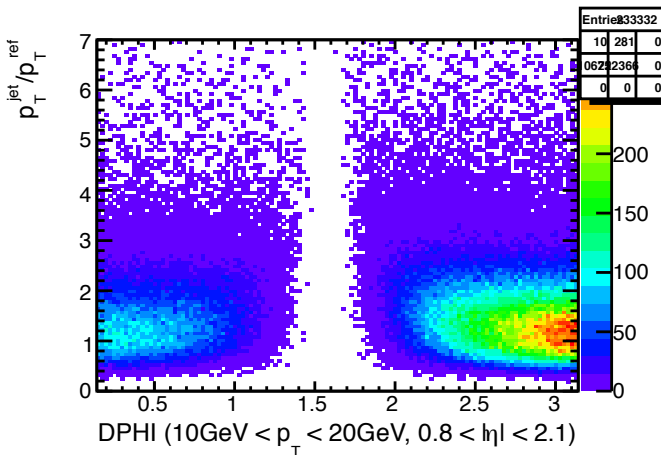
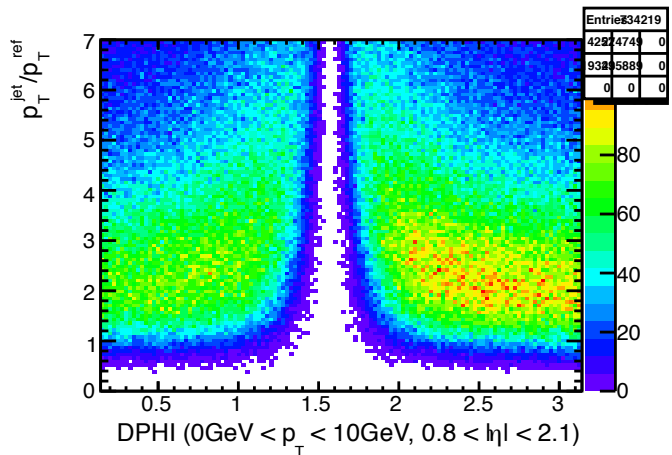
AtlasProtected/GammaJetCalib2012 に詳しく書いてある

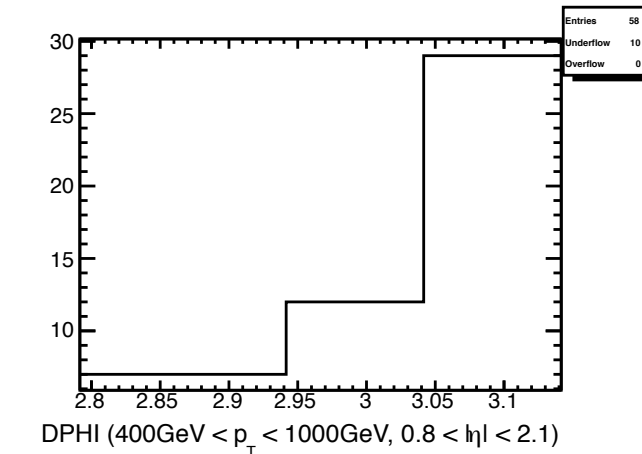
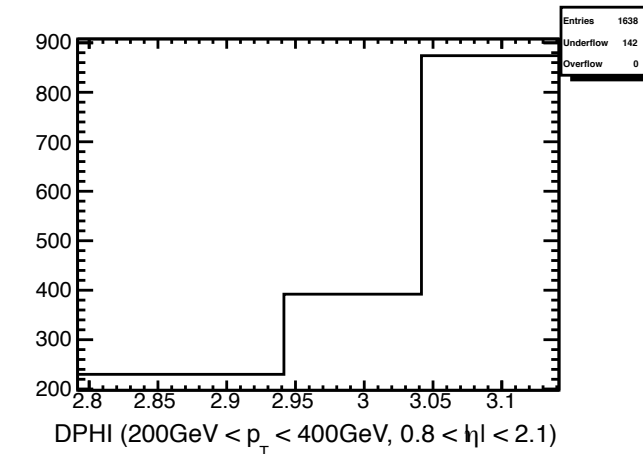
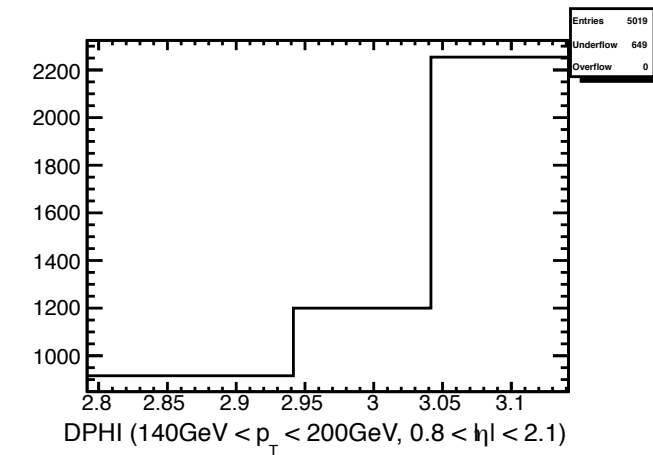
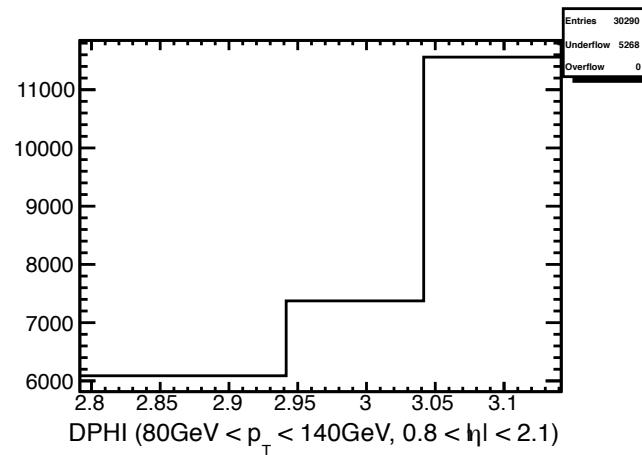
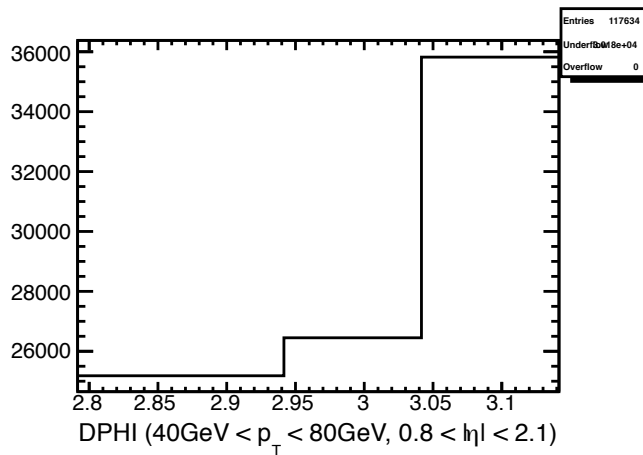
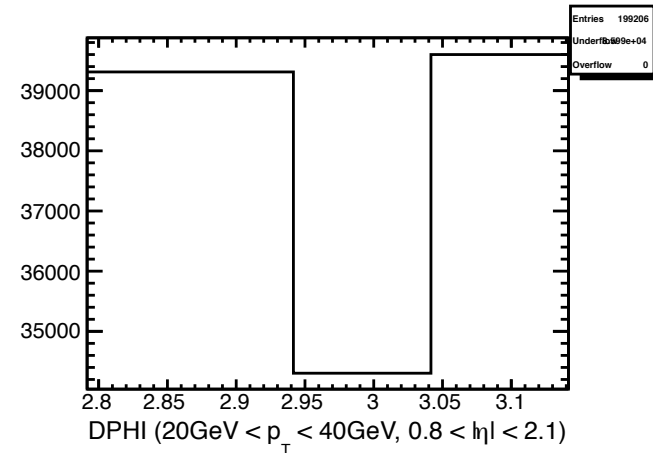
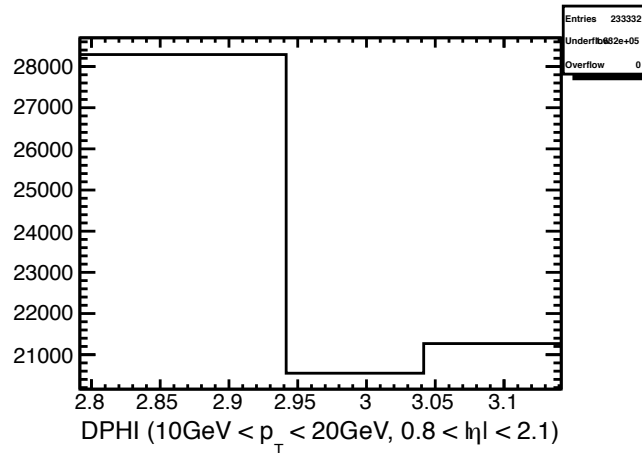
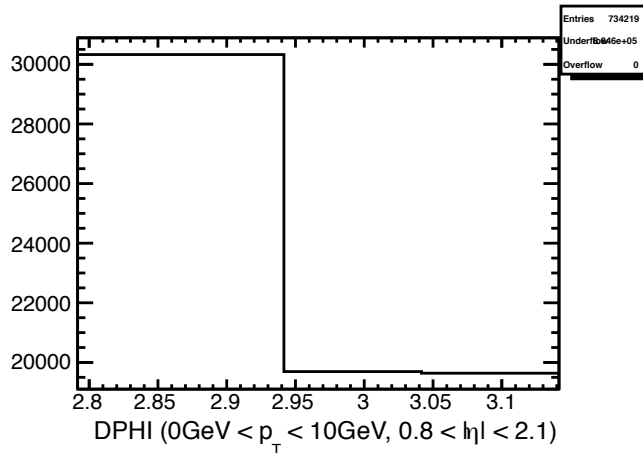
Variable	Selection	description
leading γ	$p_T^\gamma > 85 \text{ GeV}$ and $ \eta^\gamma < 1.37$	photon pre-selection
$E_T^{\gamma \text{ Iso}}$	$< 3 \text{ GeV}$	γ isolation
$E_T^{\gamma \text{ cluster}} / (\sum p_T^{\text{tracks}})$	$\in [0, 2]$ (single-track conversions) $\in [0.5, 1.5]$ (double-track conversions)	jets faking photons
leading jet	$p_T^{\text{jet}} > 12 \text{ GeV}$ and $ \eta^{\text{jet}1} < 0.8$	jet pre-selection
$\Delta\phi_{\text{jet}-\gamma}$	> 2.9 radians	radiation suppression
$p_T^{\text{jet}2}$	$< 0.2 \times p_T^\gamma$	radiation suppression
JVF(jet2)	> 0.25 , if $ \eta^{\text{jet}2} < 2.4$	JVF restriction for sub-leading jets

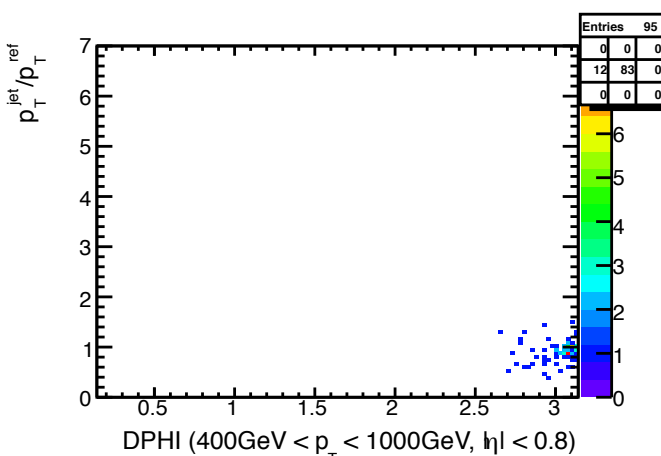
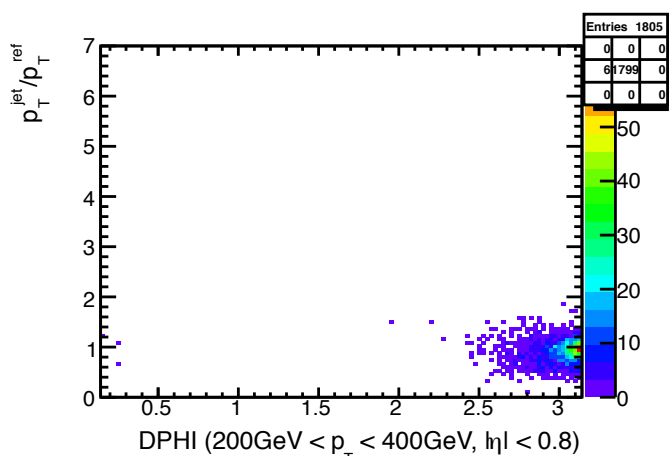
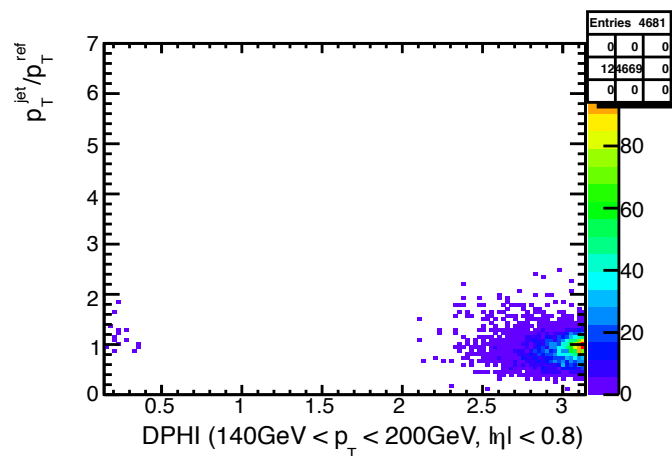
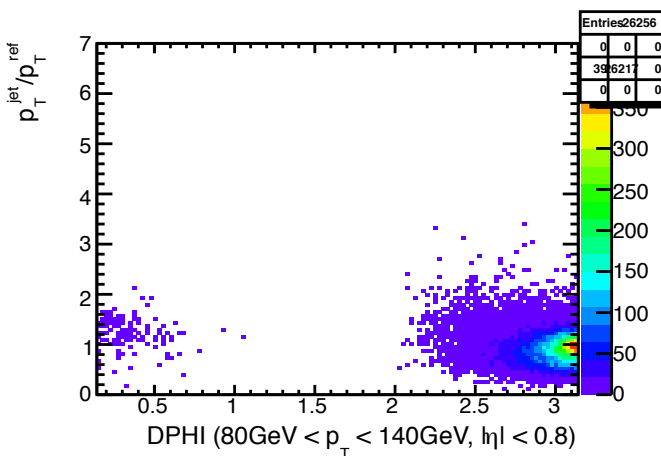
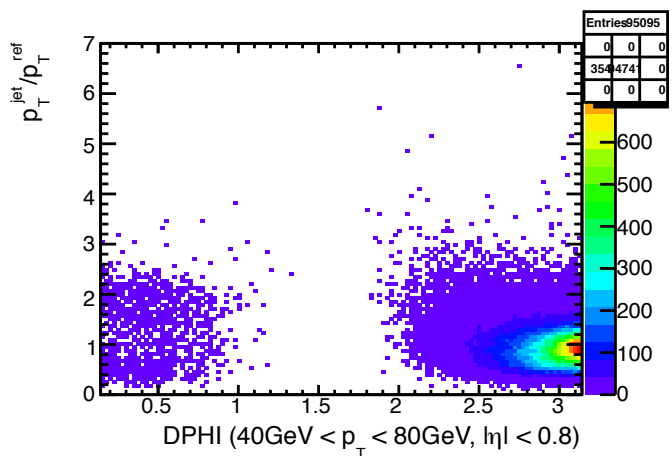
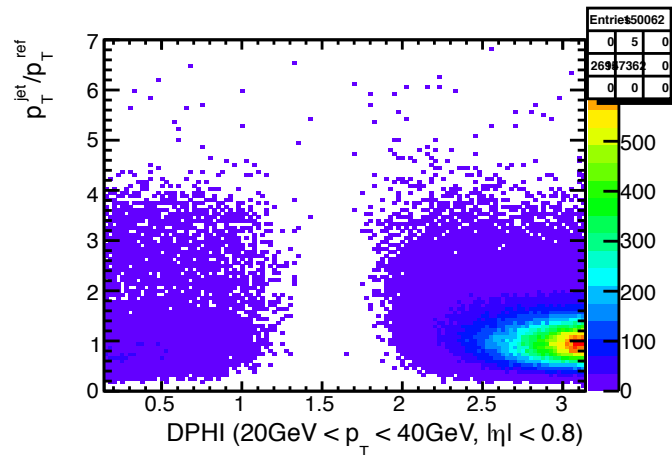
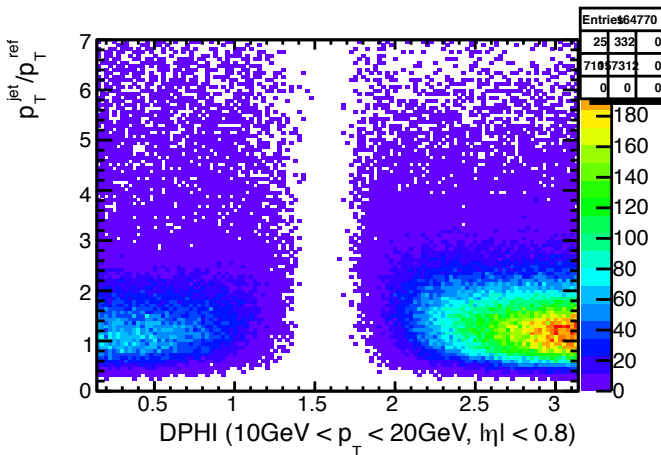
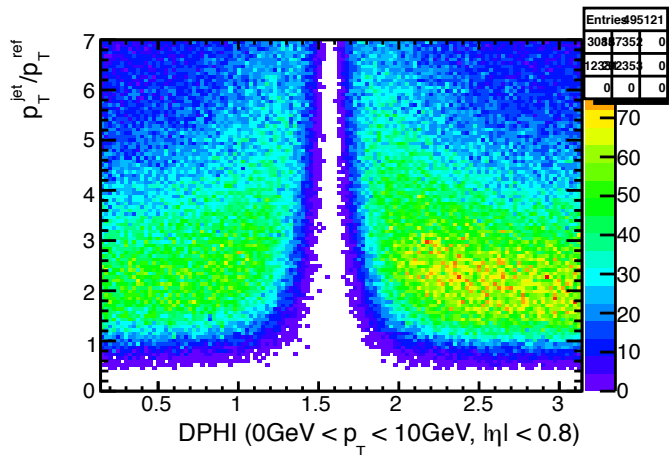
※ $p_T_{\text{gamma}} > 85 \text{ GeV}$ は要求していない

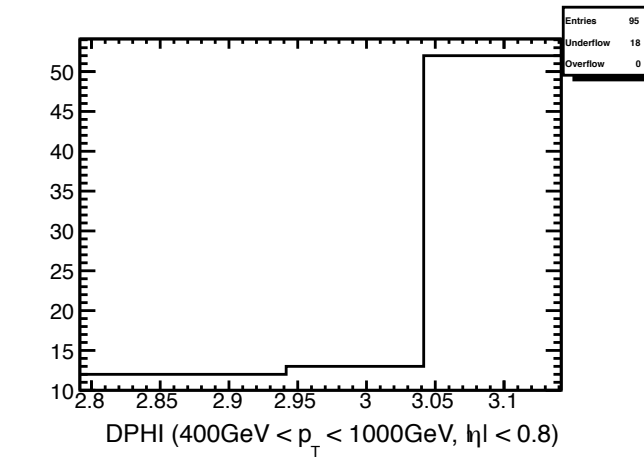
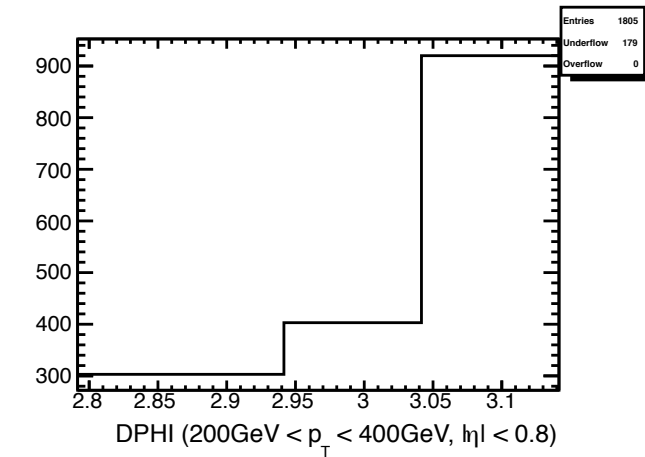
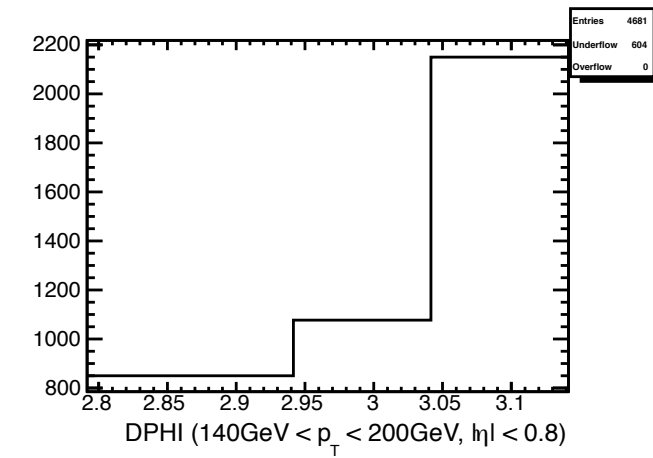
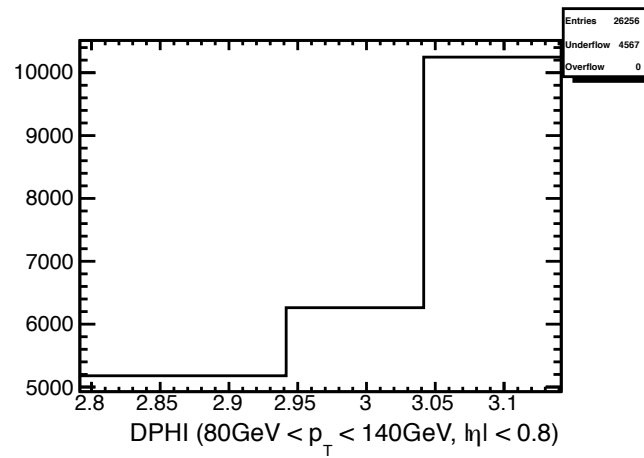
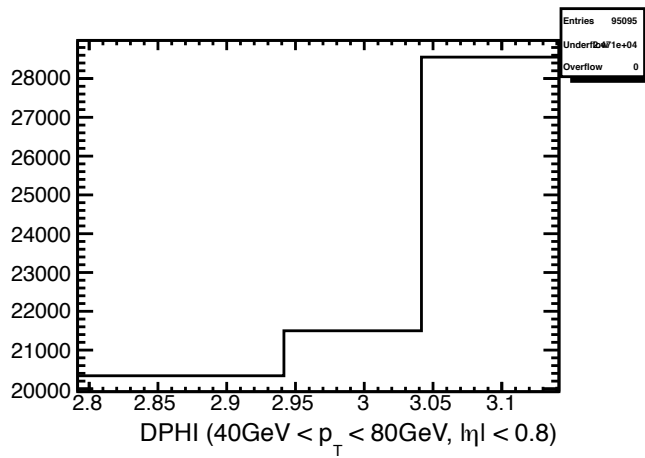
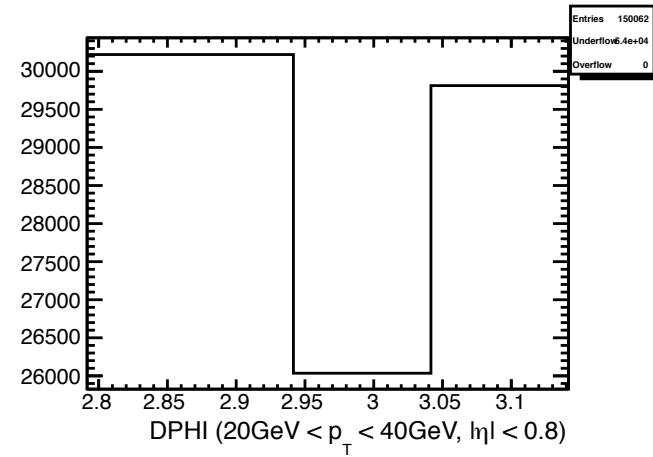
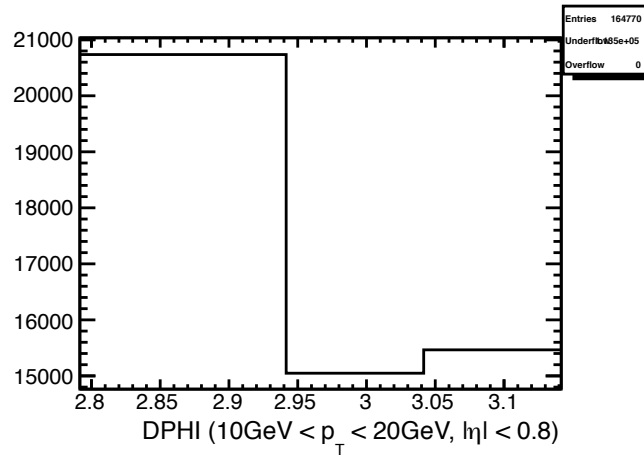
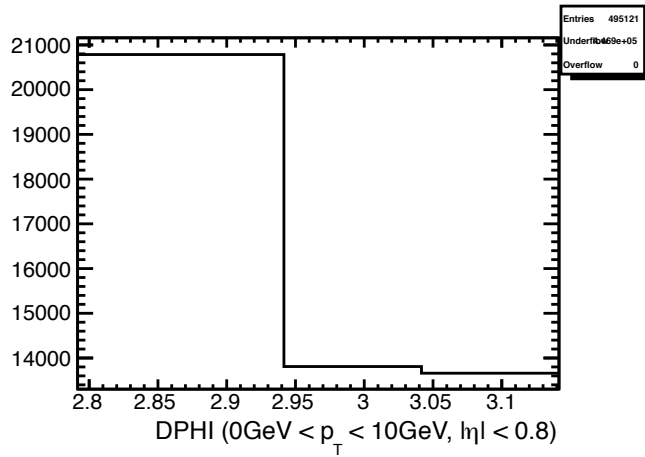


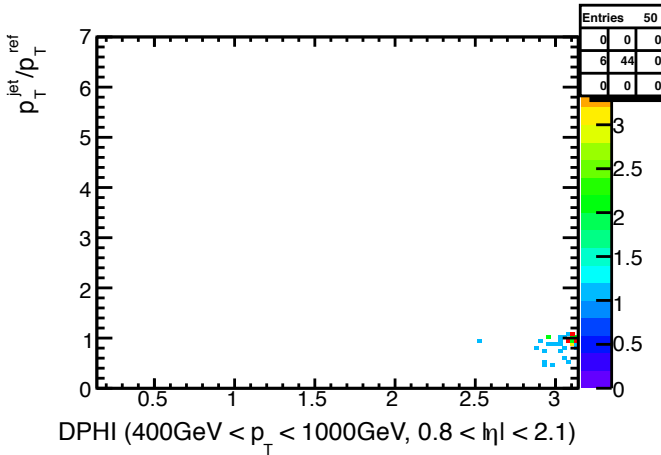
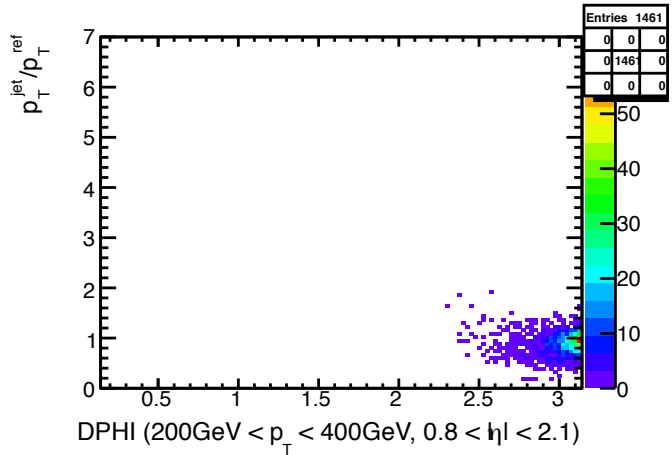
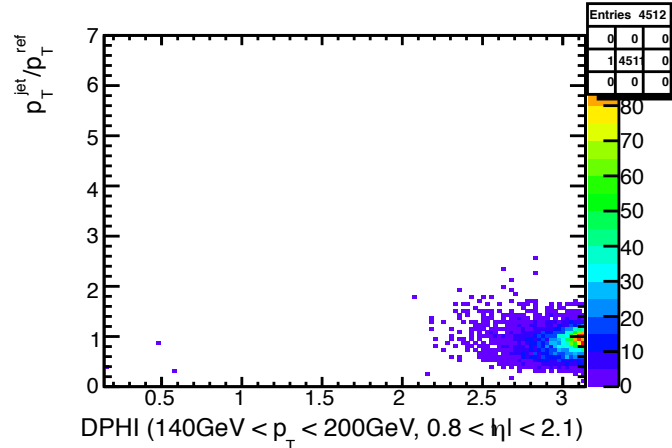
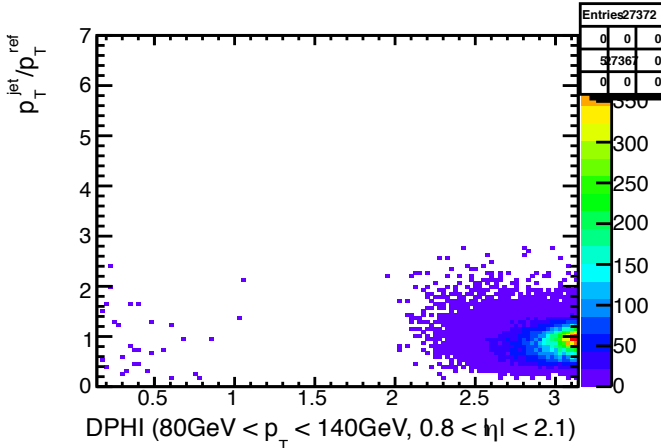
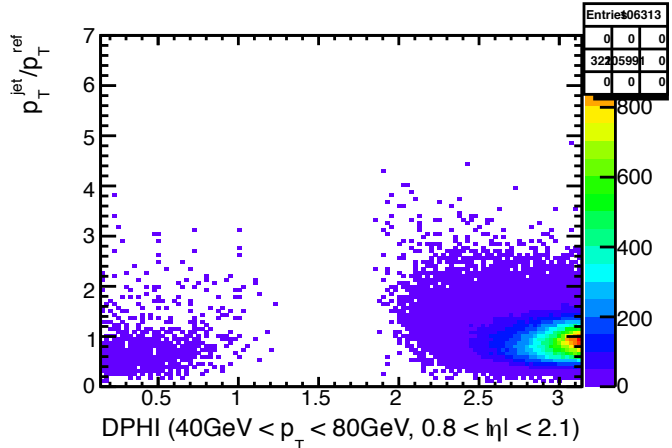
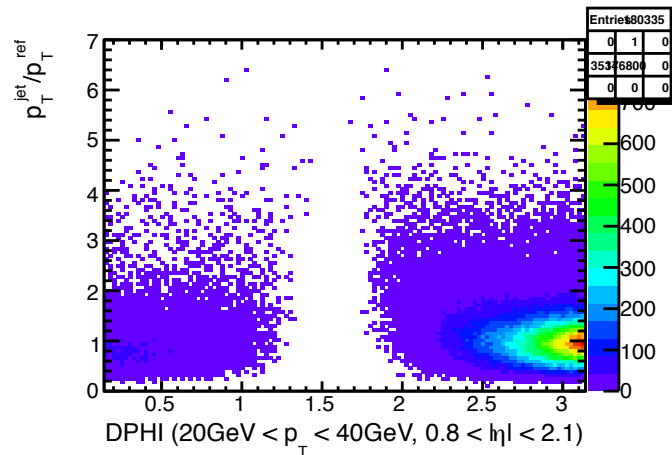
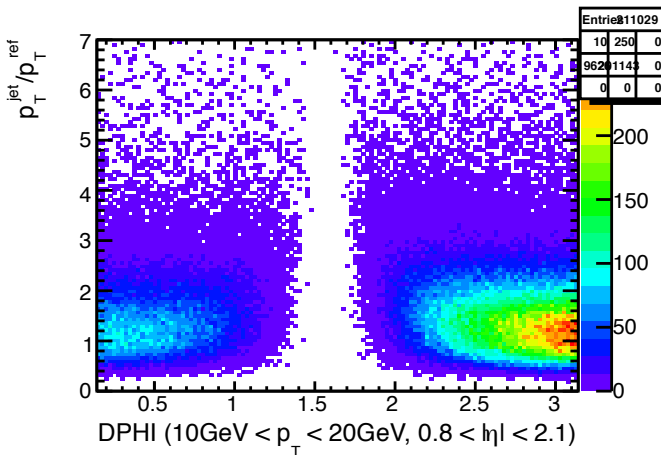
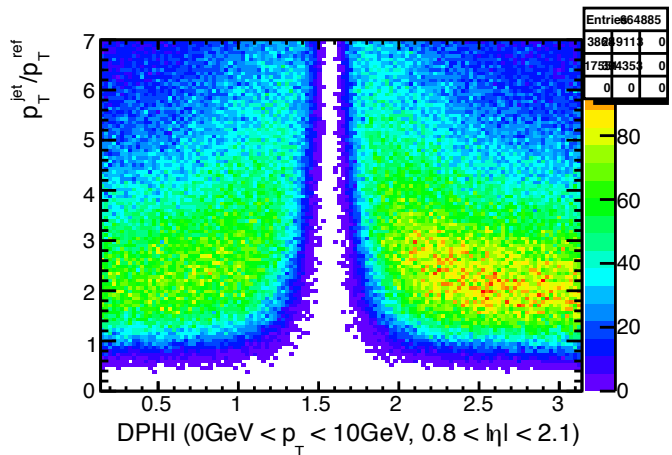


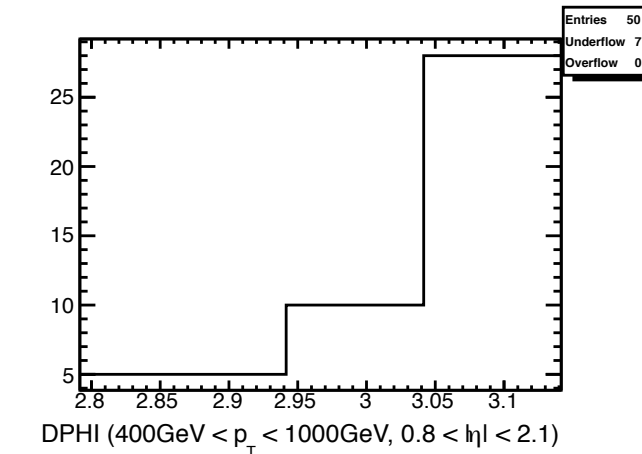
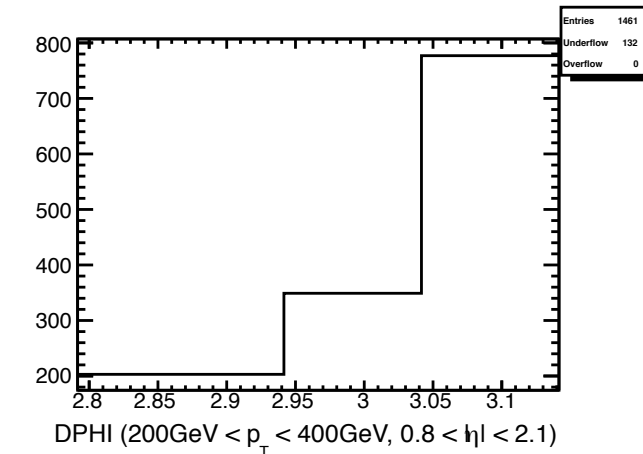
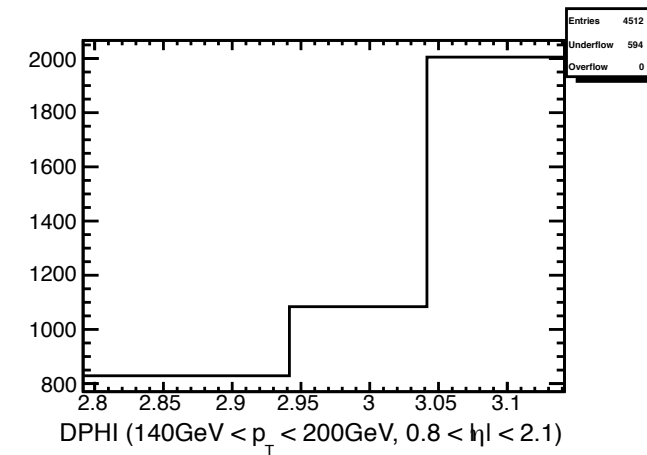
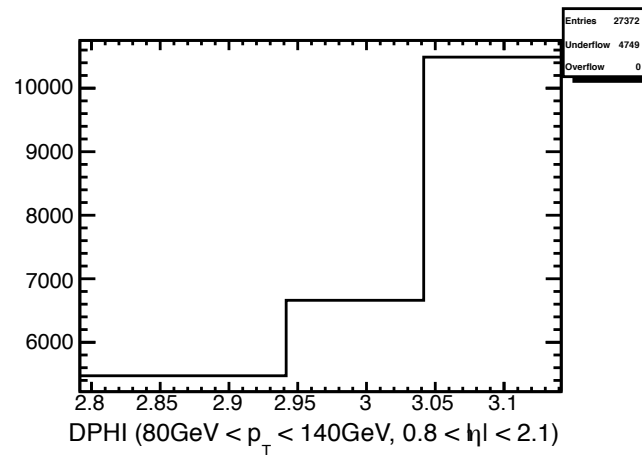
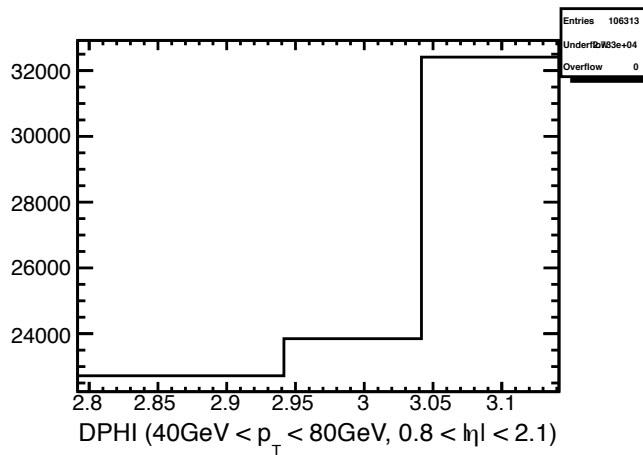
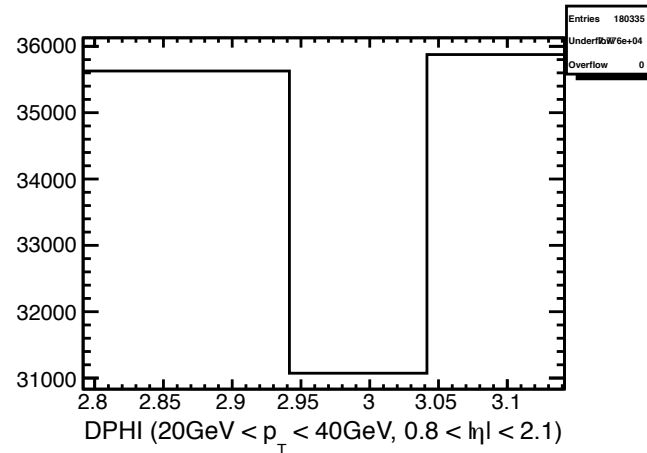
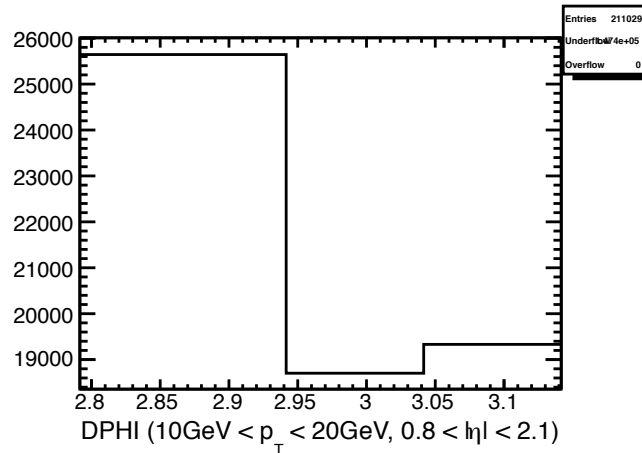
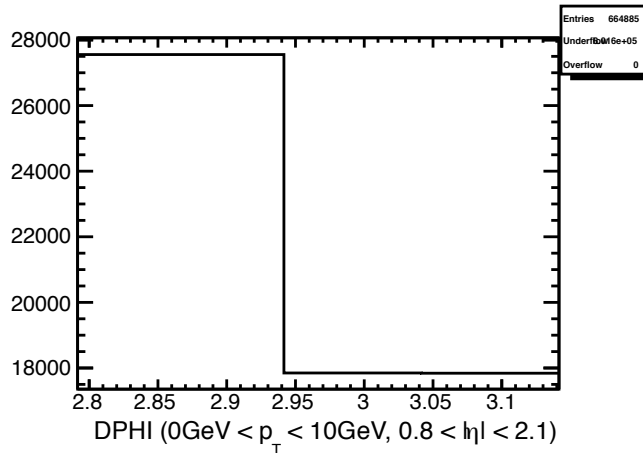


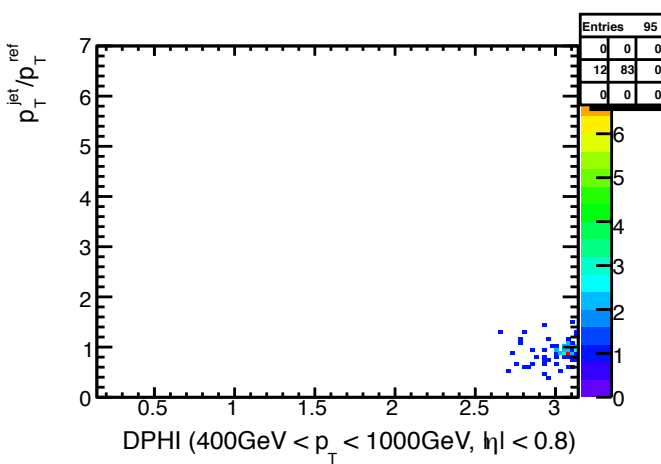
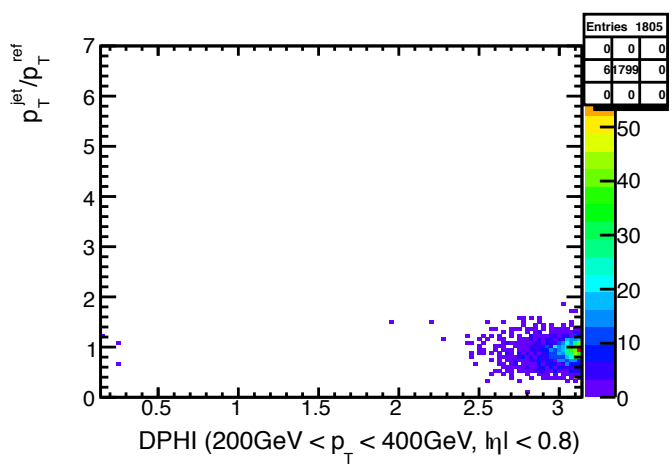
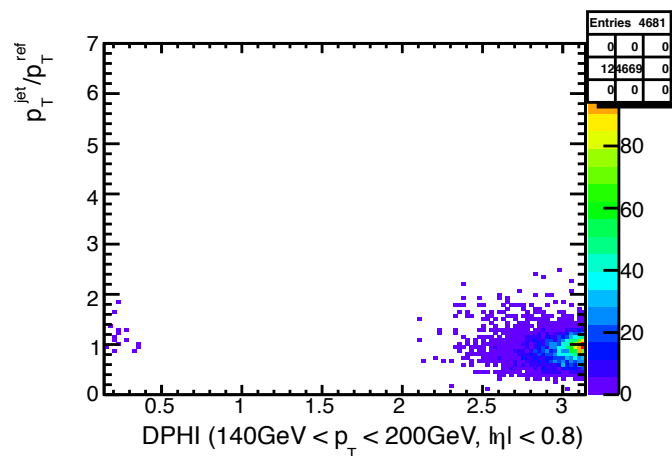
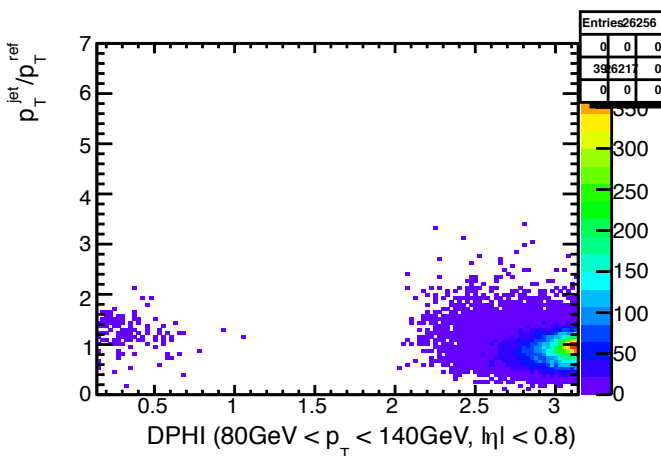
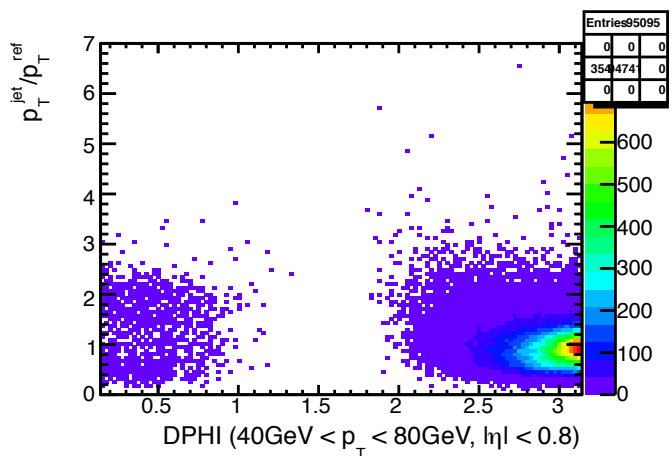
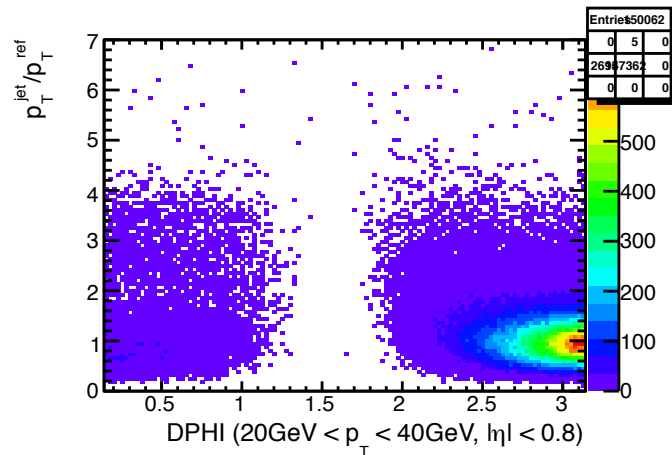
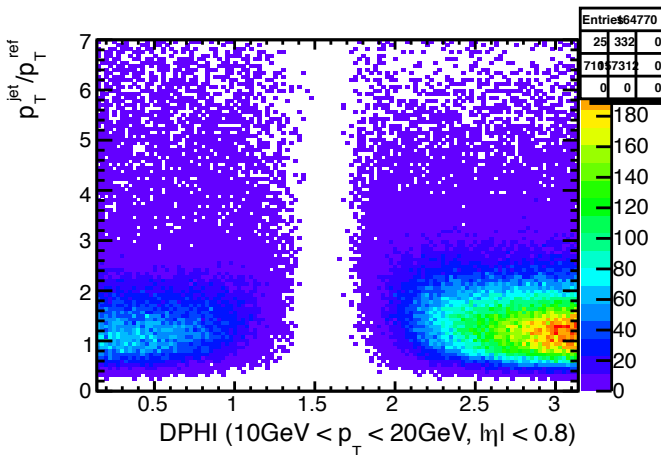
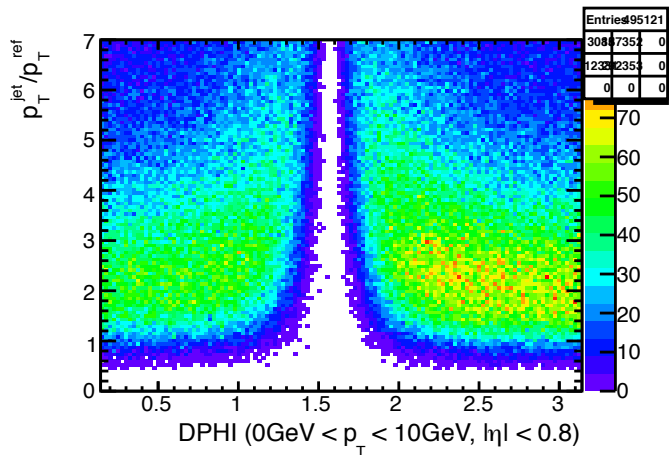


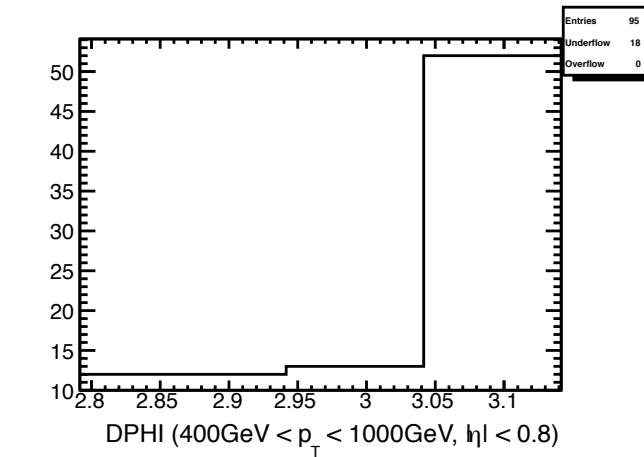
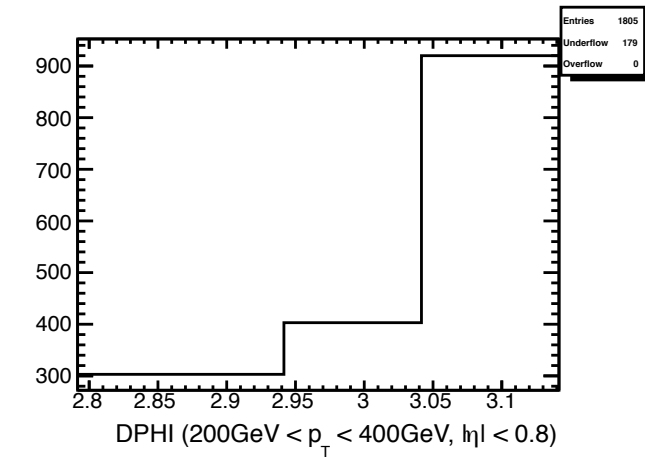
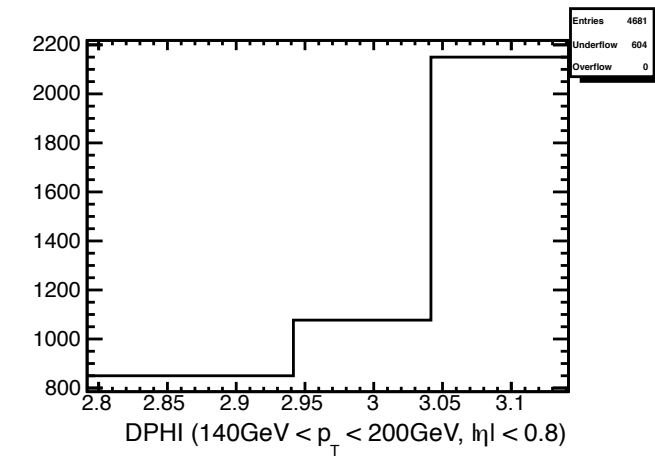
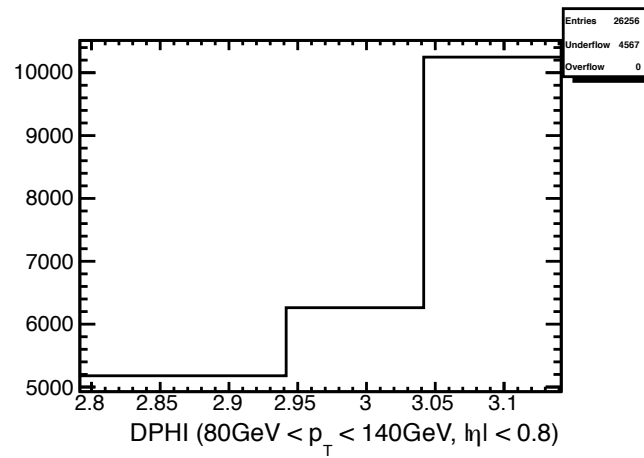
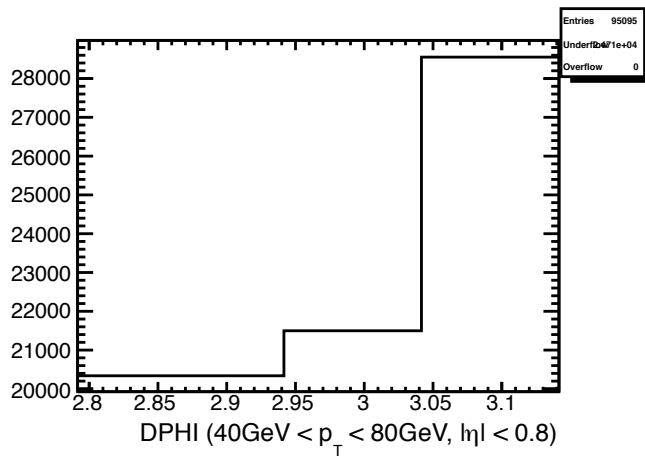
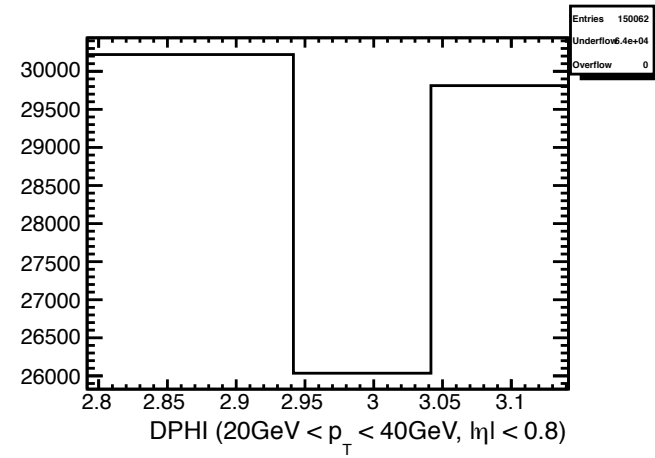
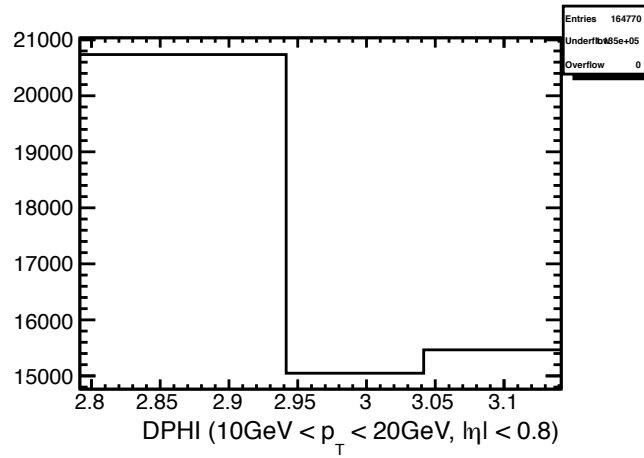
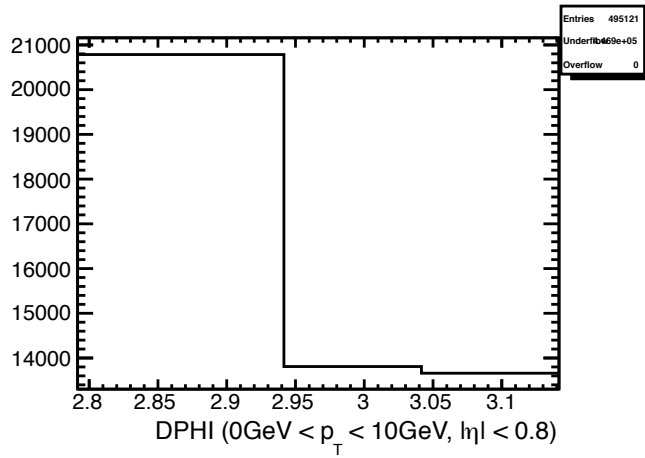


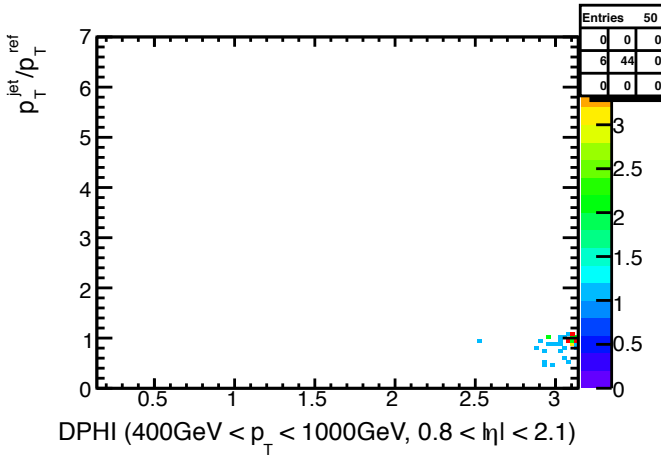
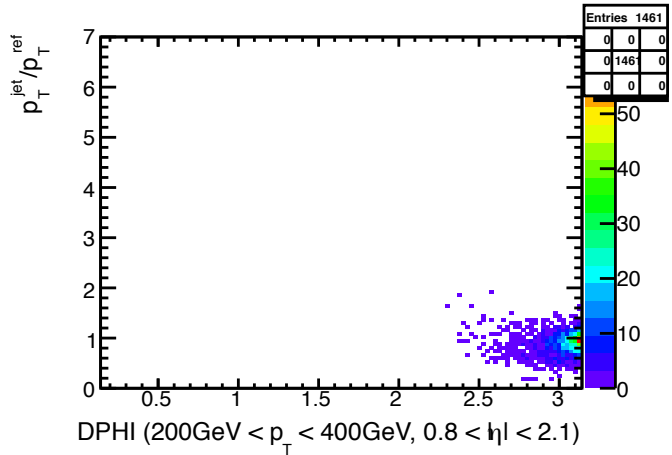
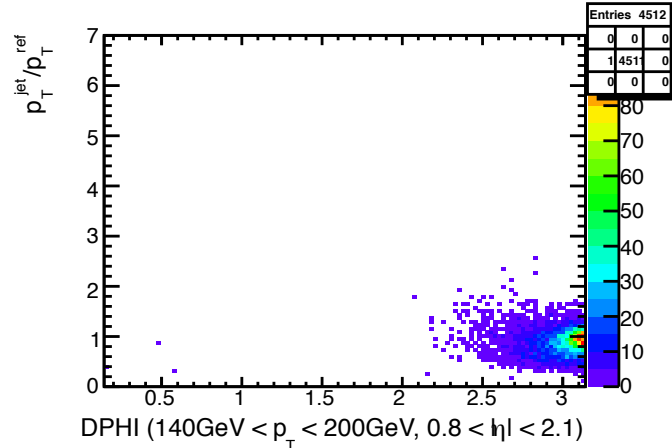
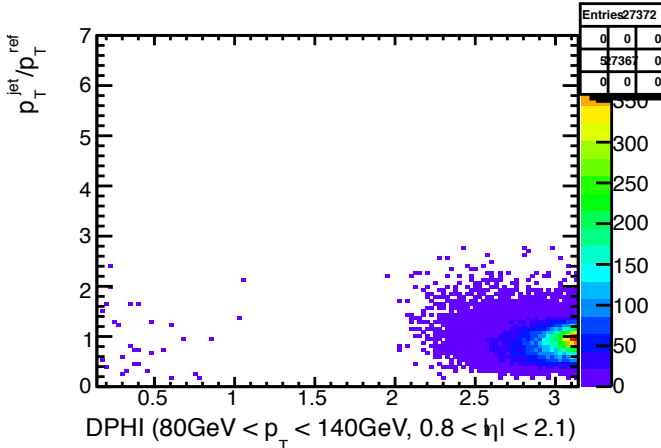
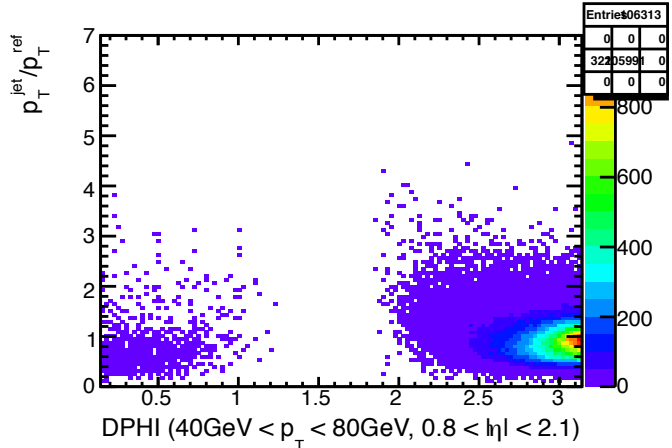
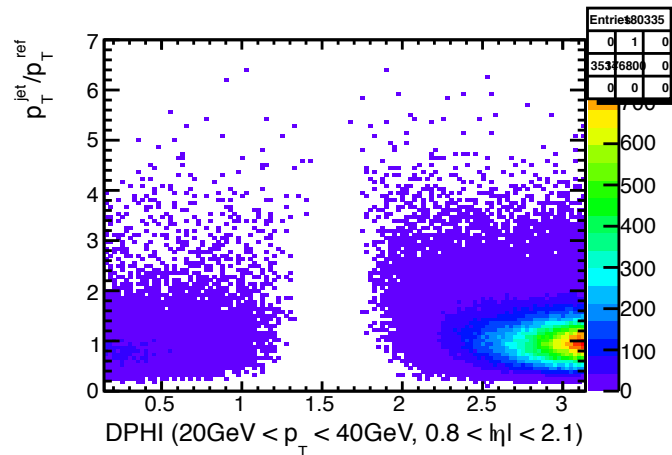
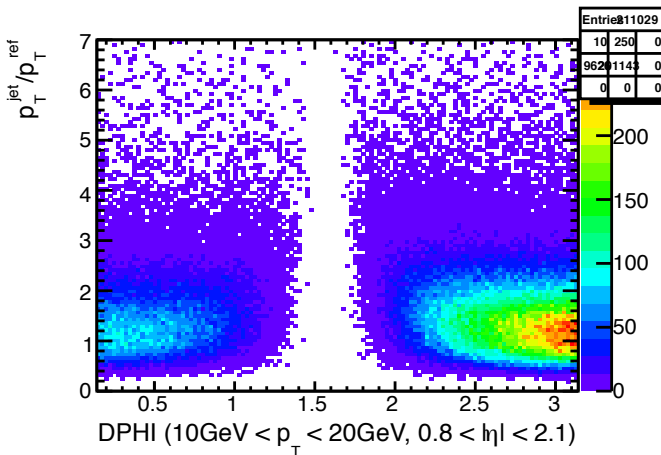
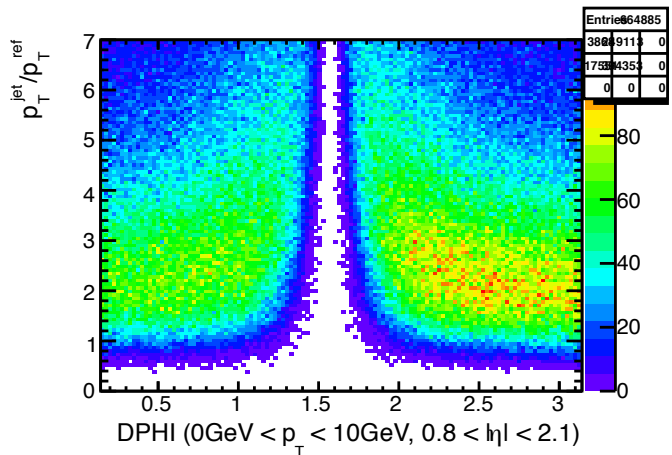


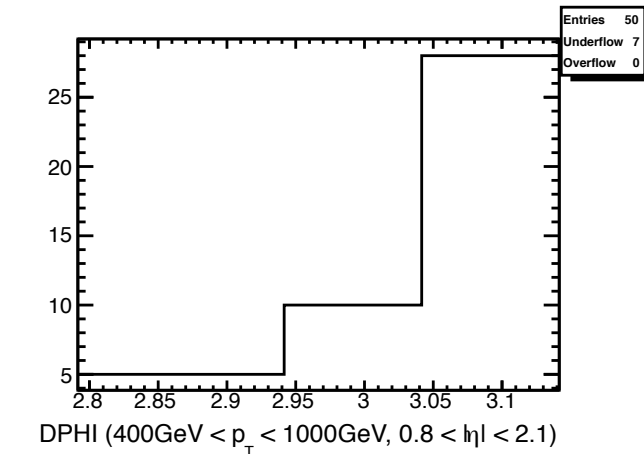
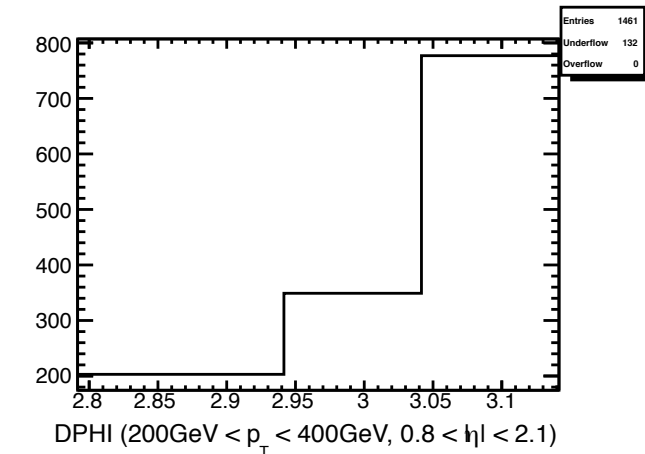
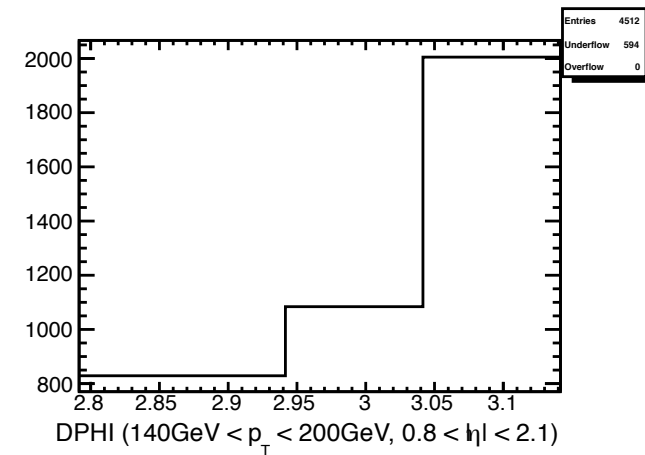
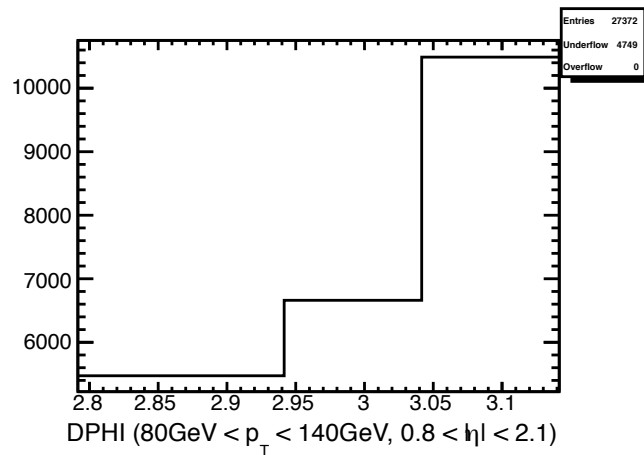
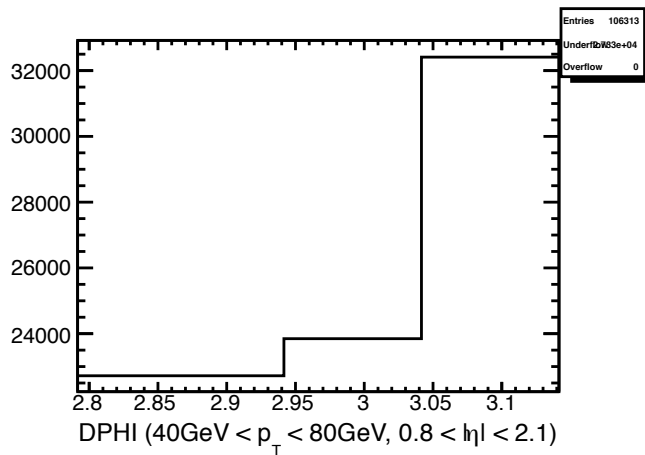
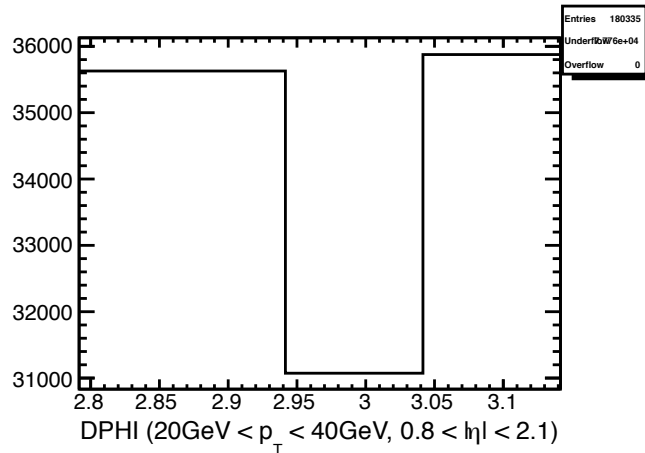
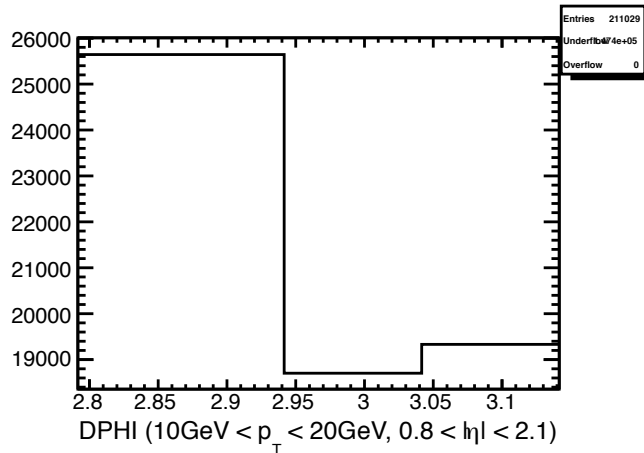
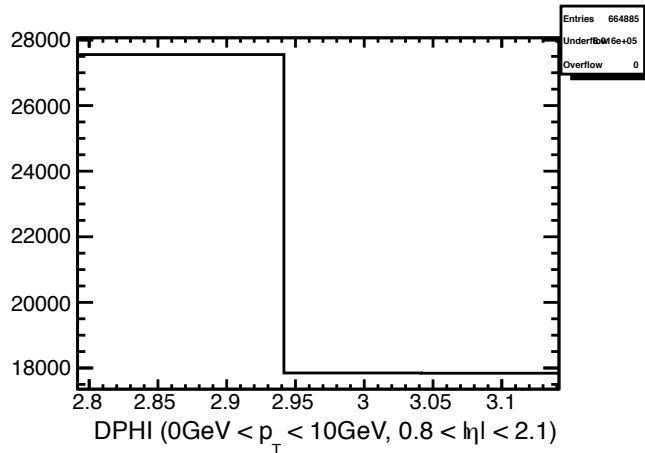


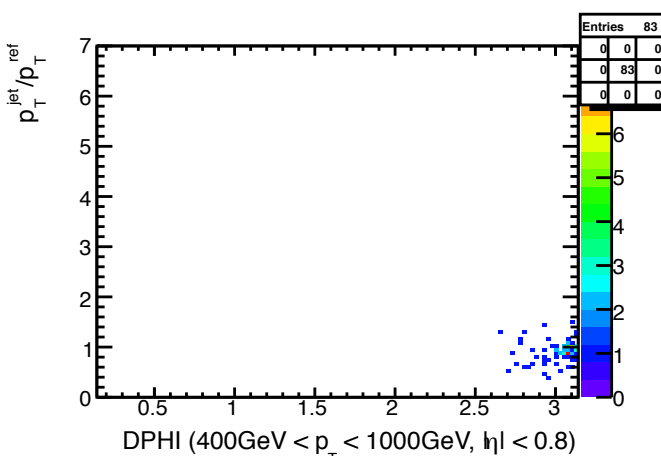
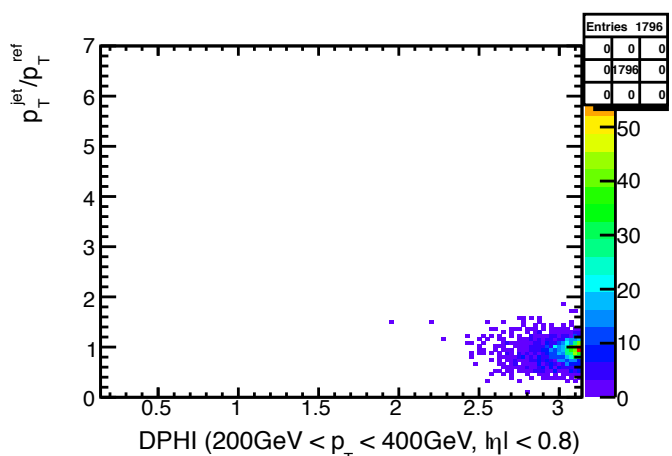
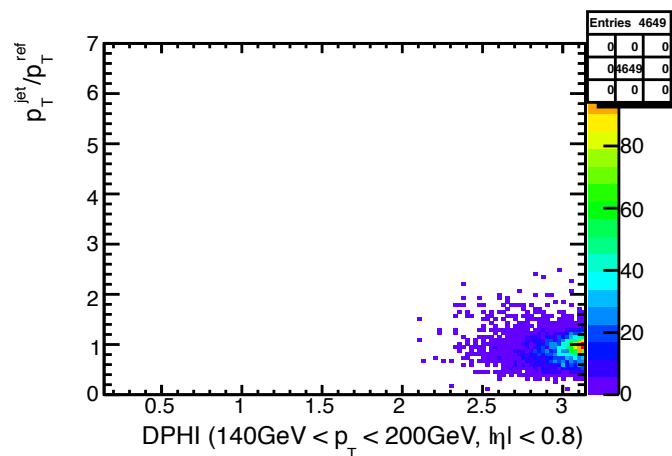
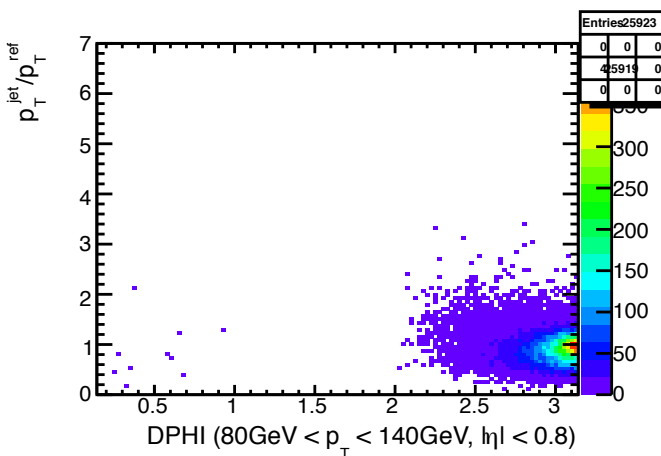
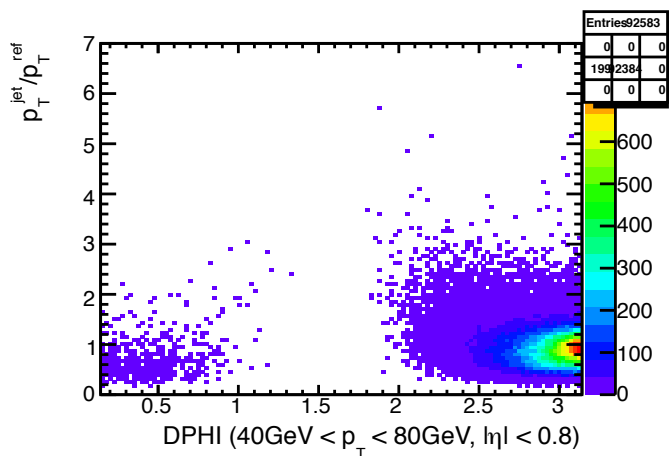
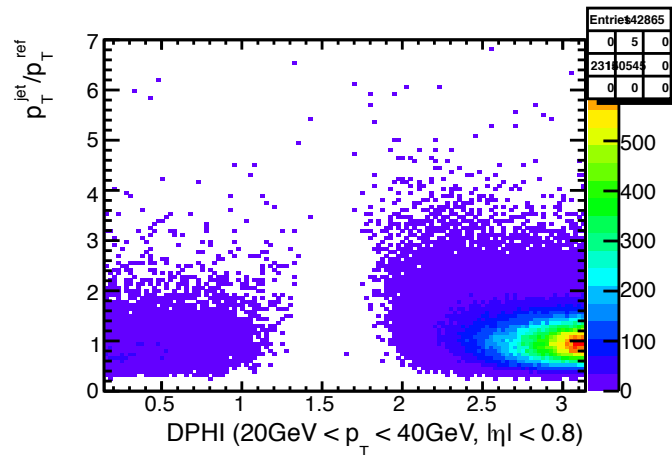
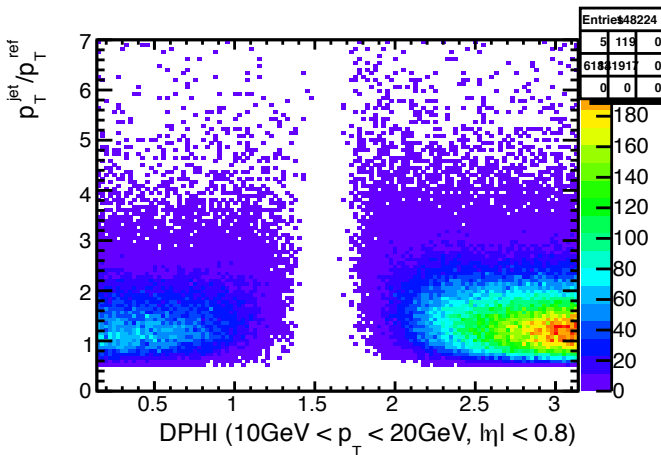
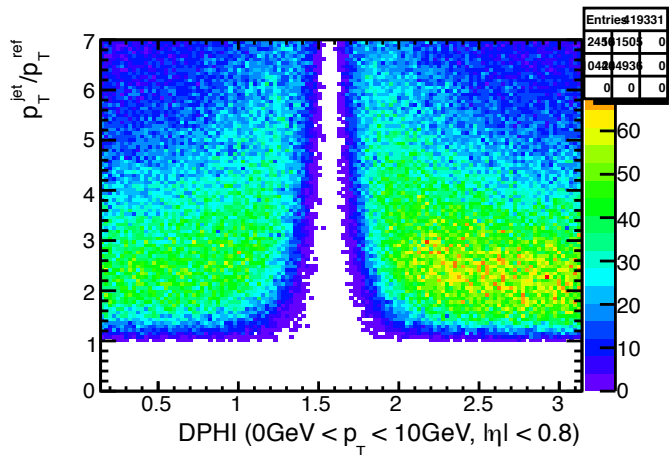


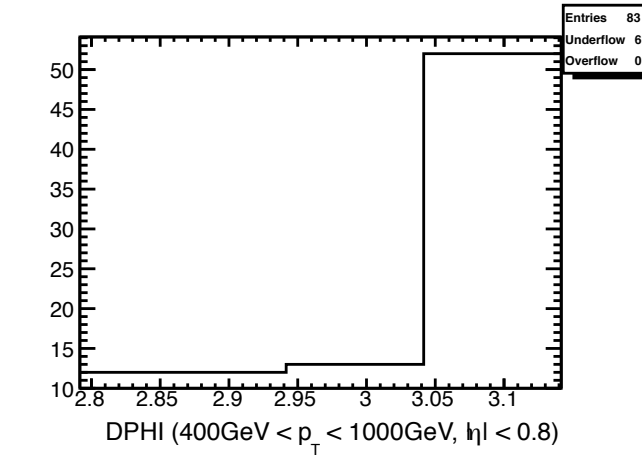
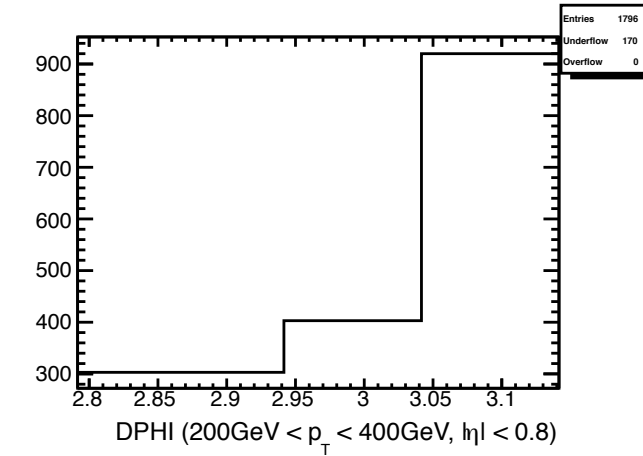
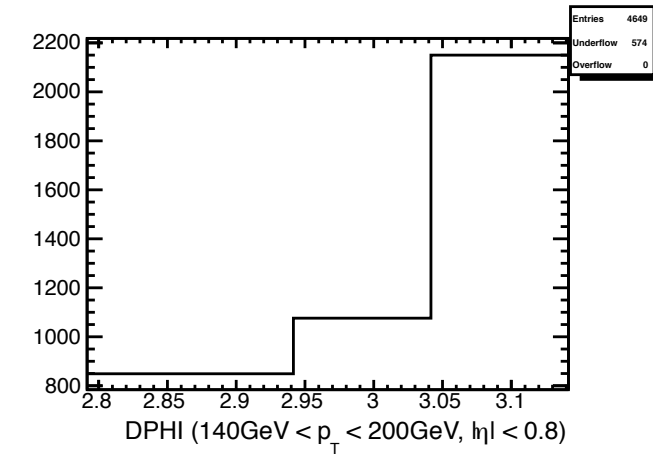
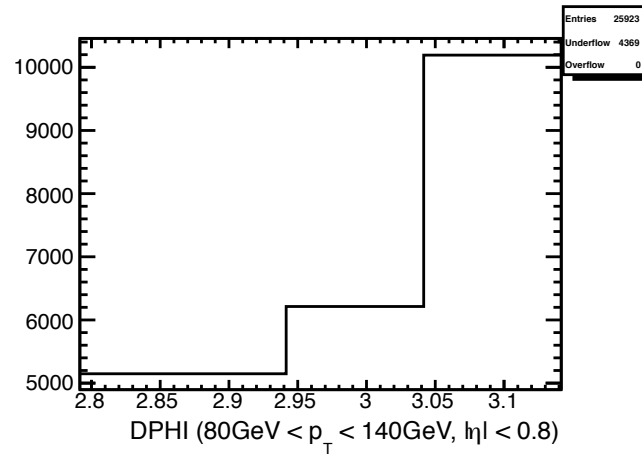
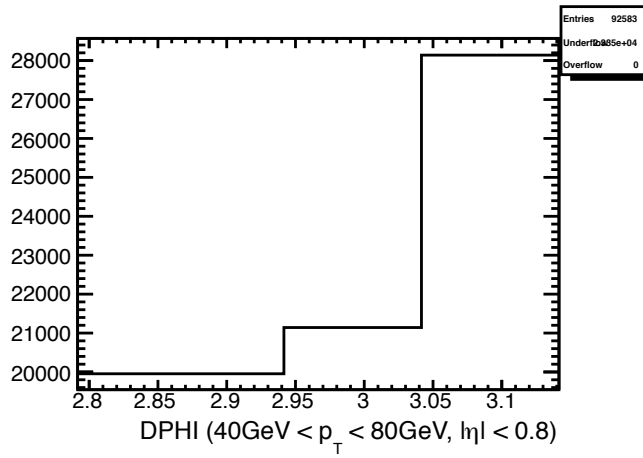
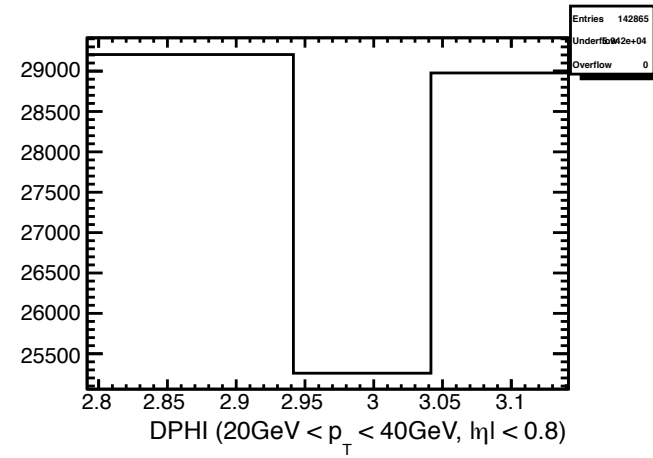
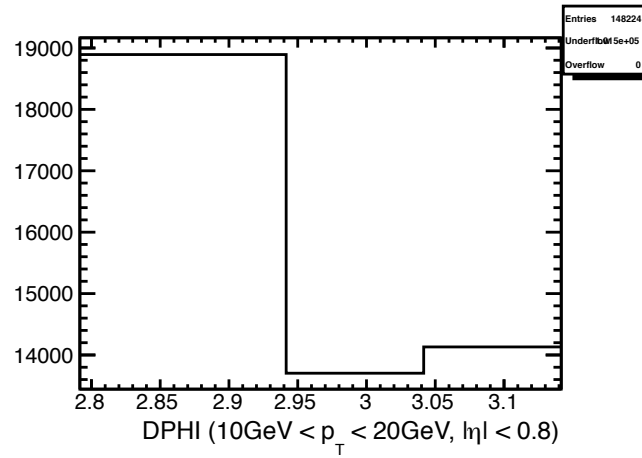
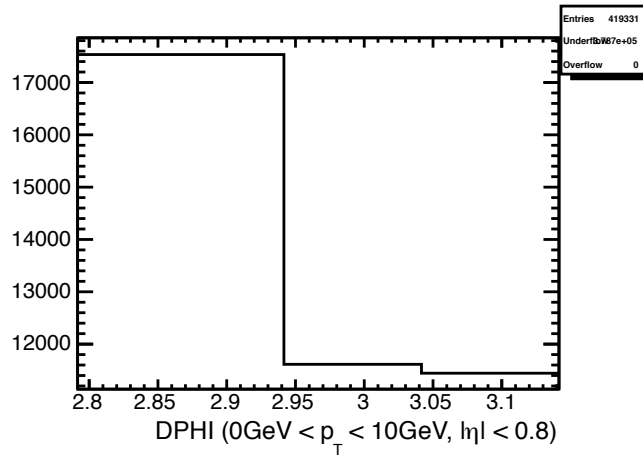


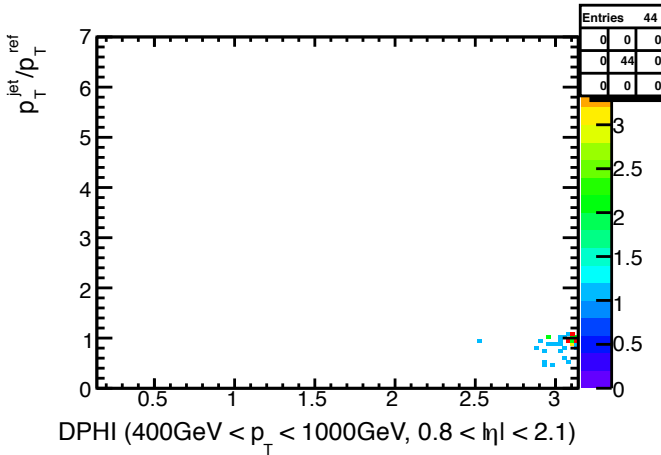
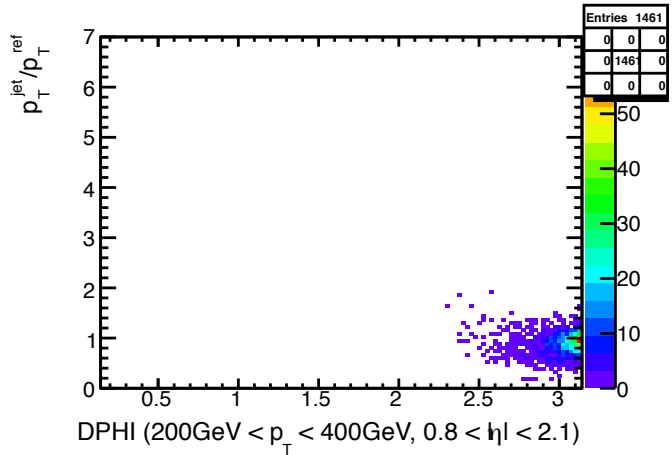
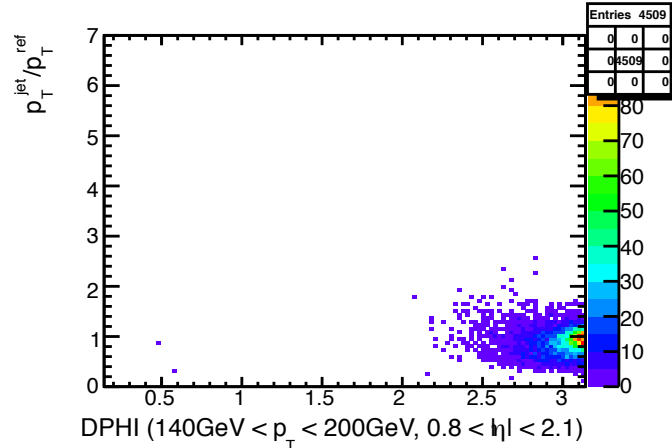
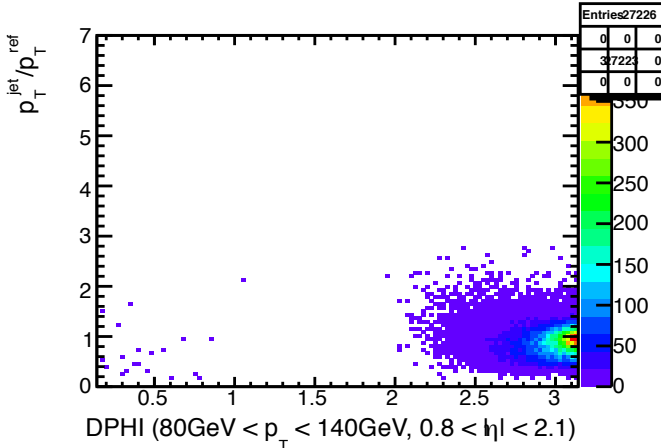
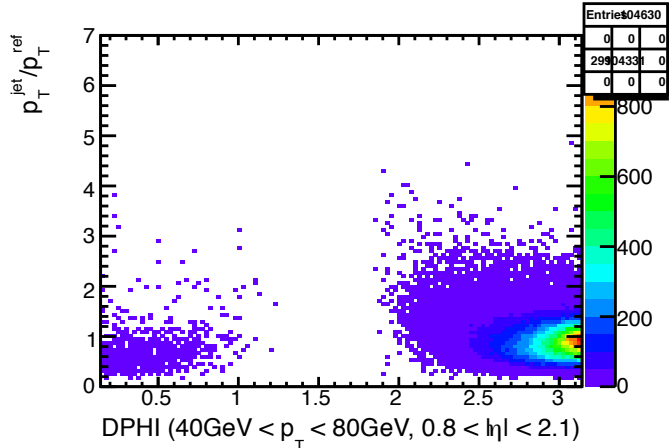
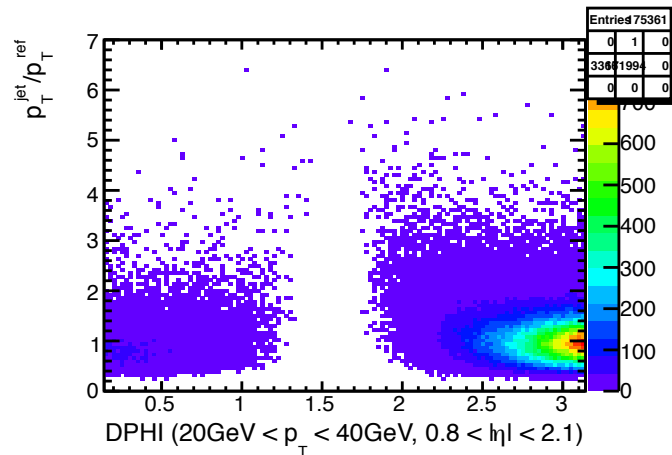
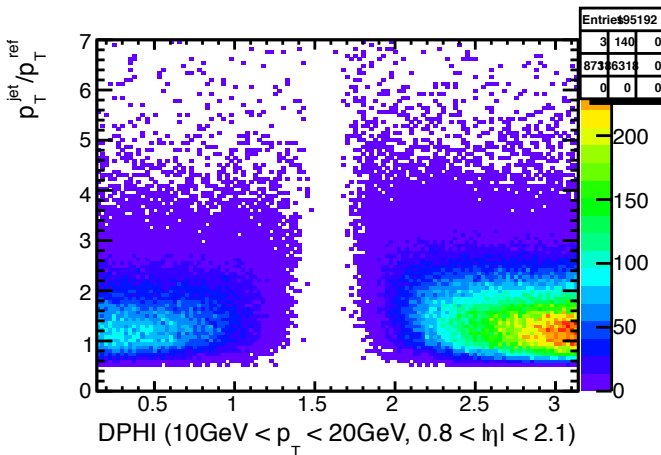
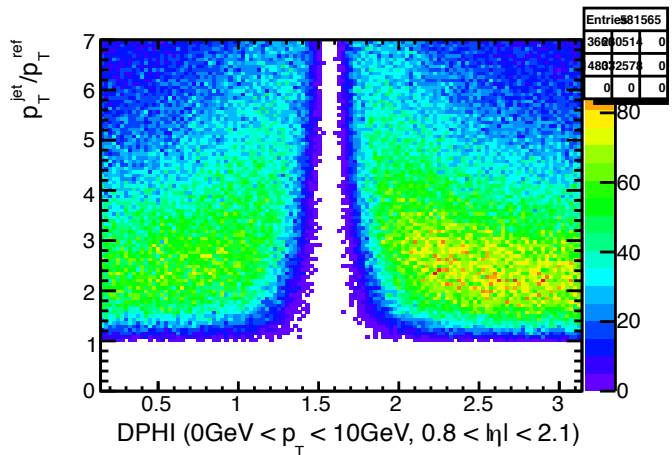


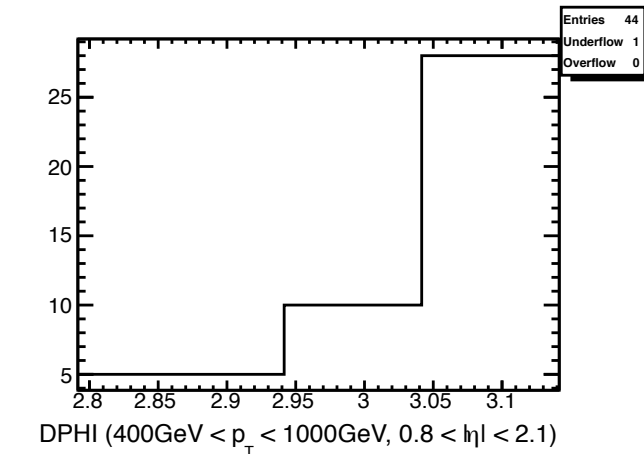
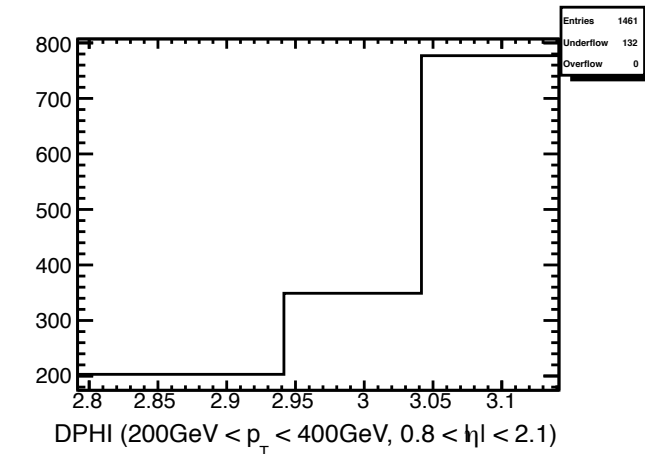
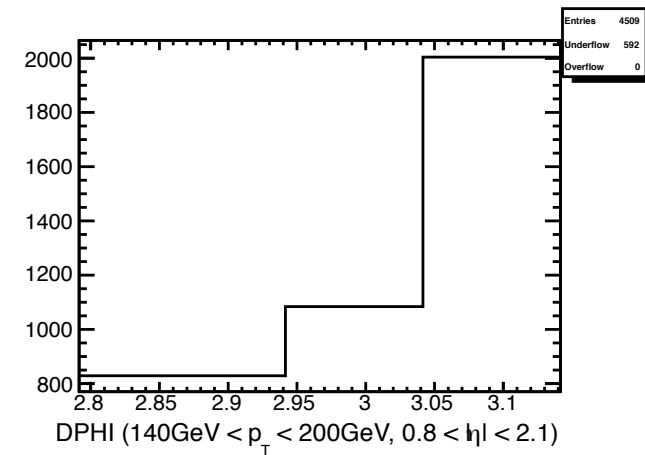
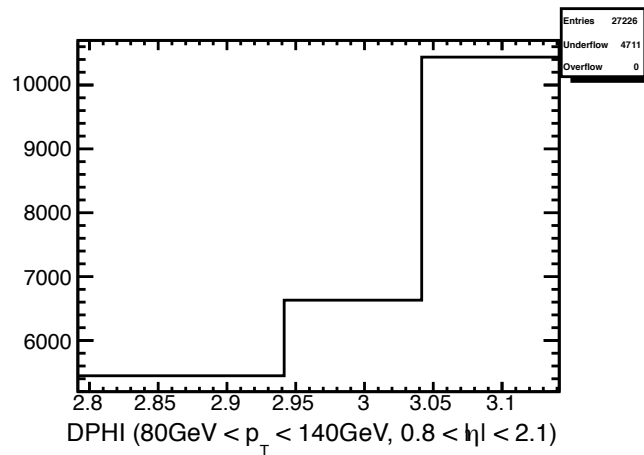
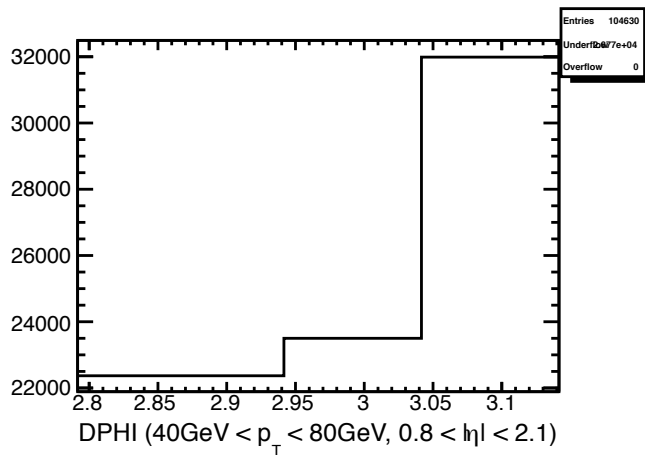
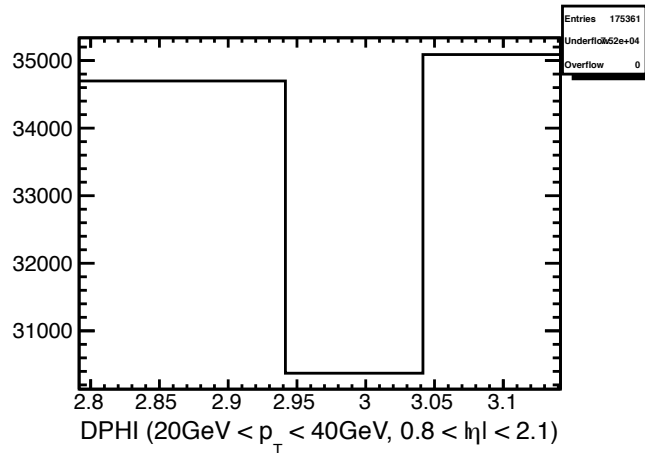
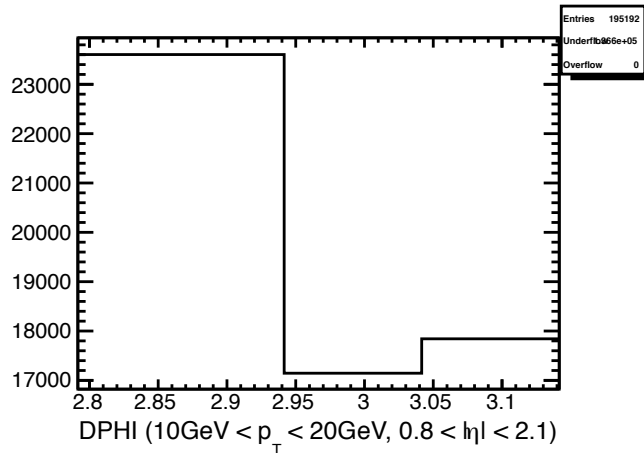
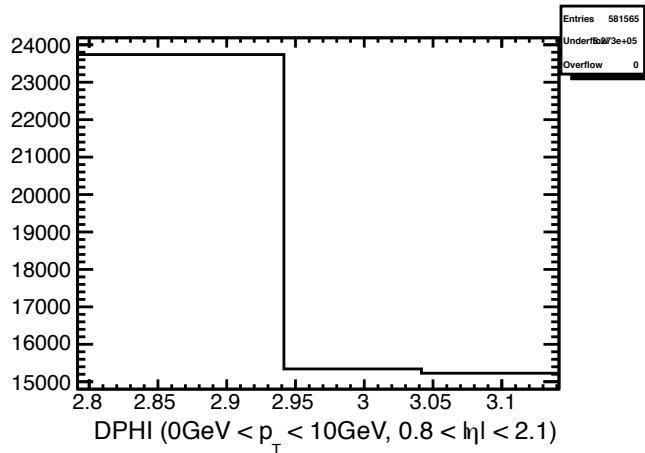


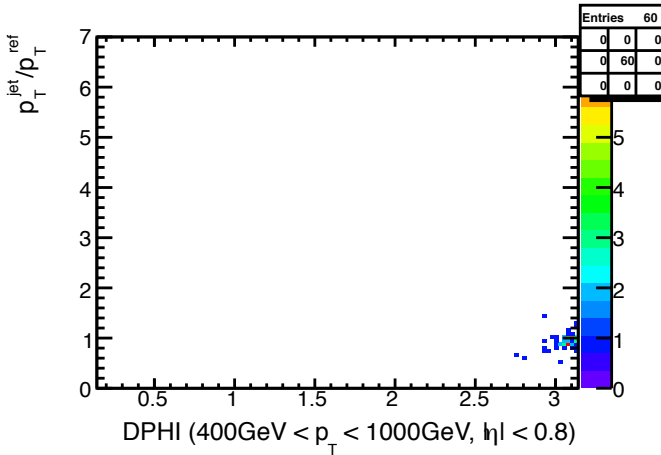
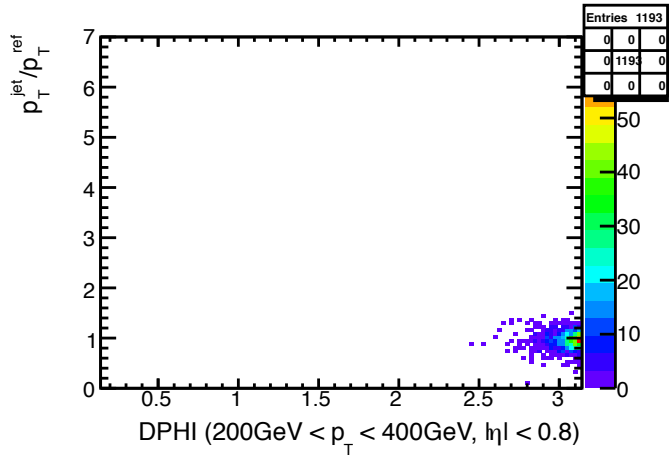
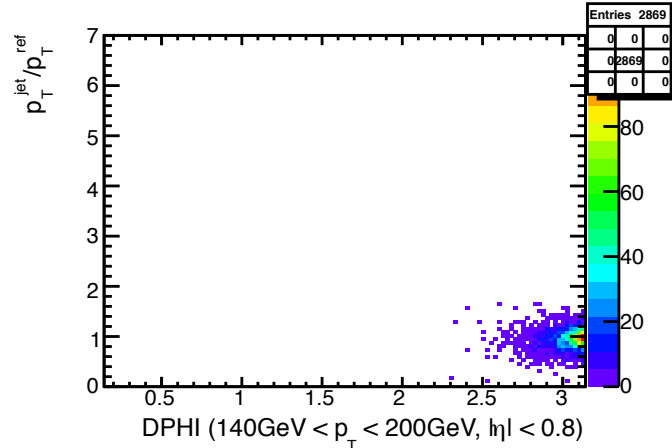
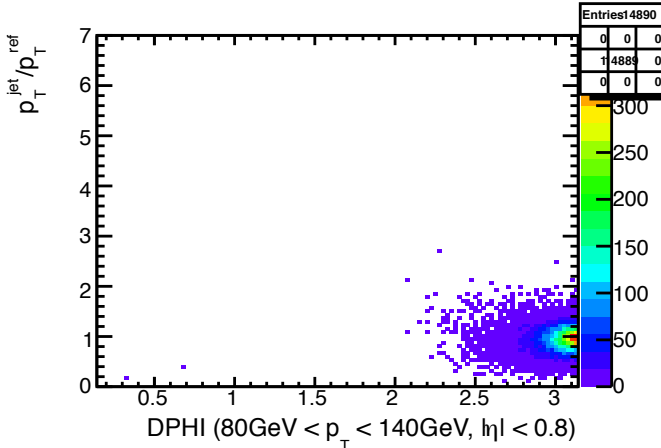
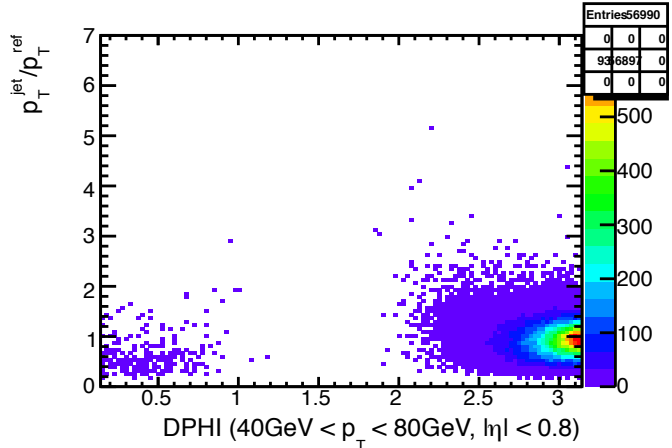
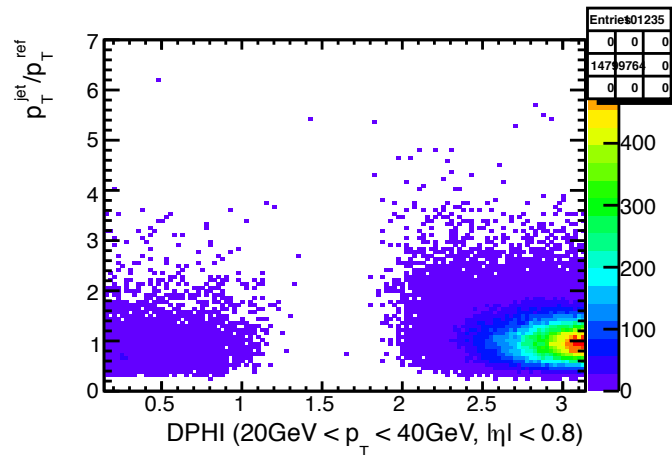
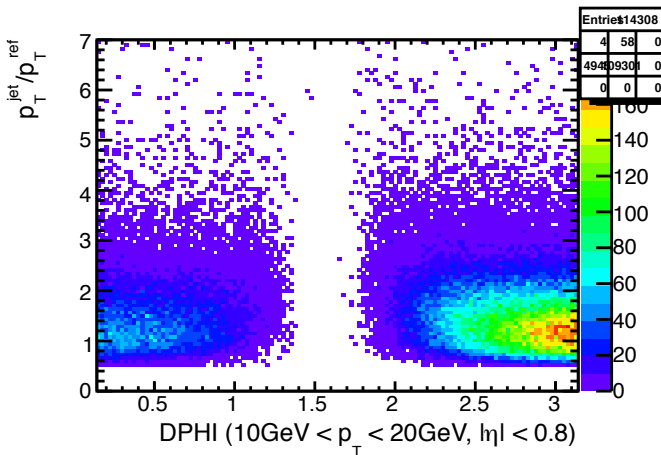
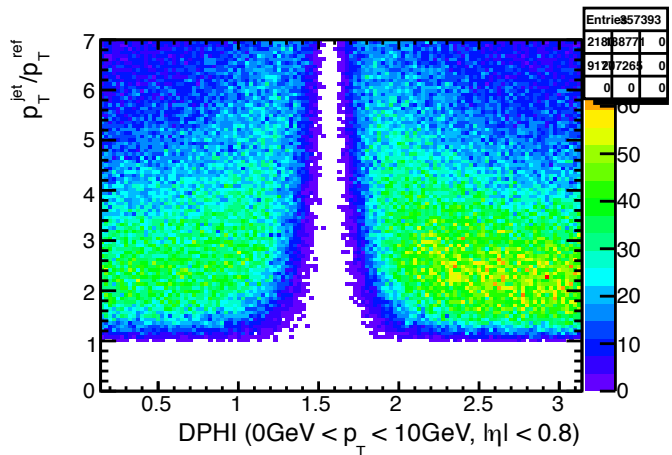


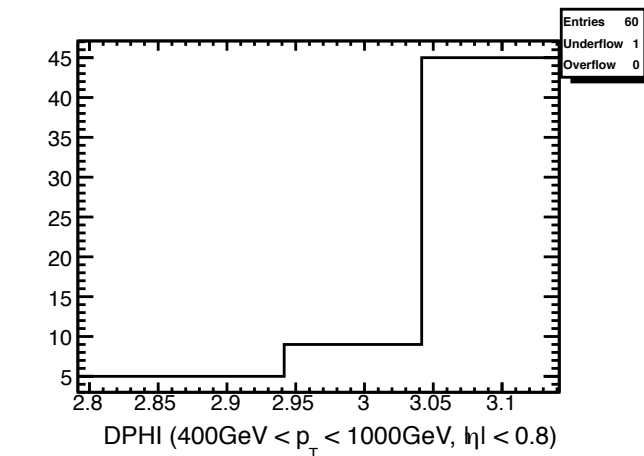
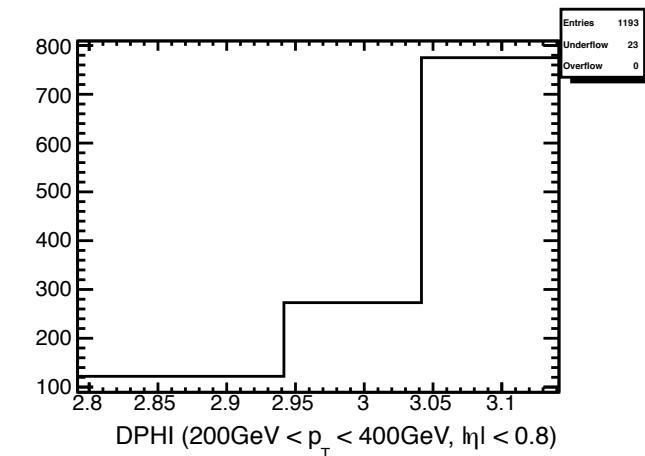
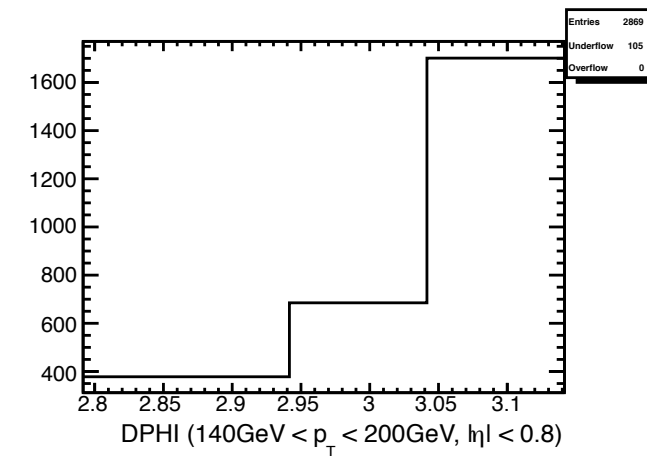
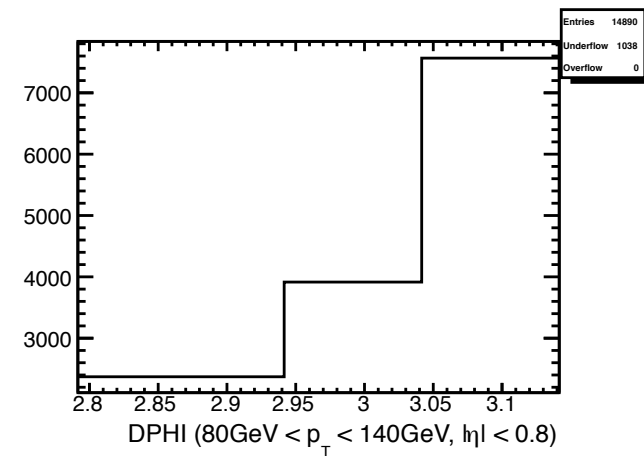
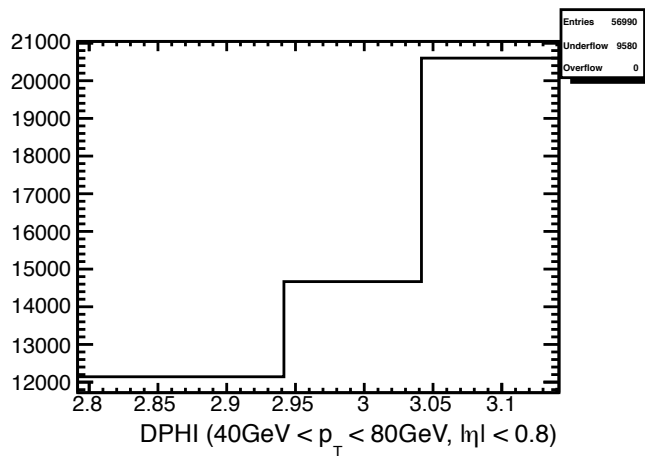
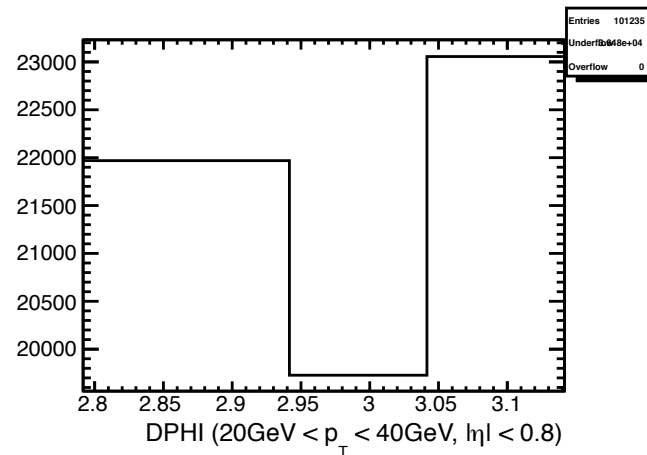
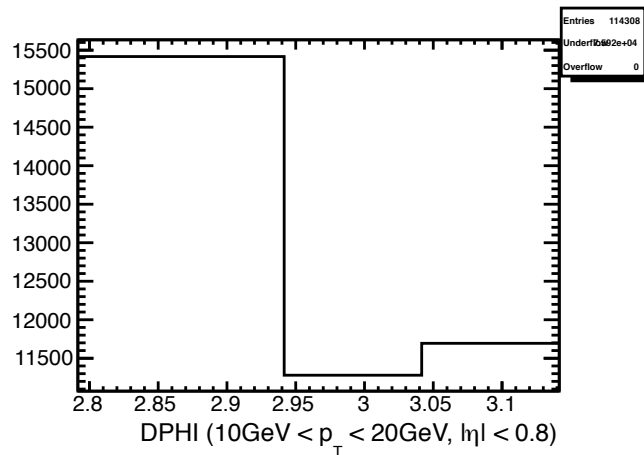
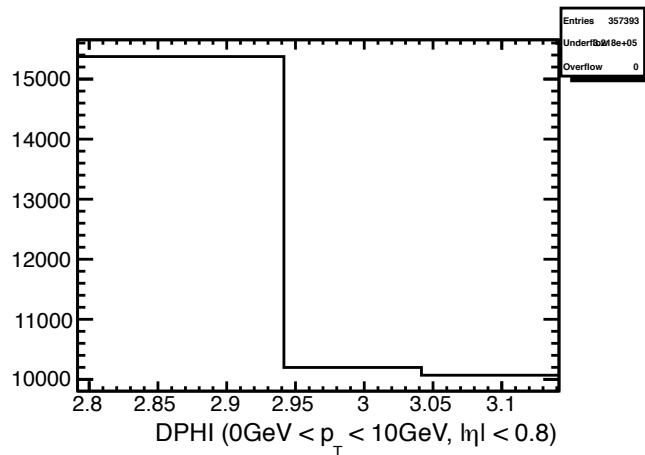


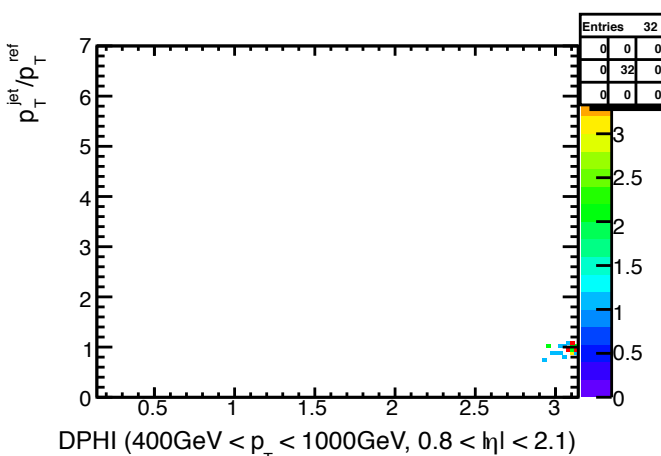
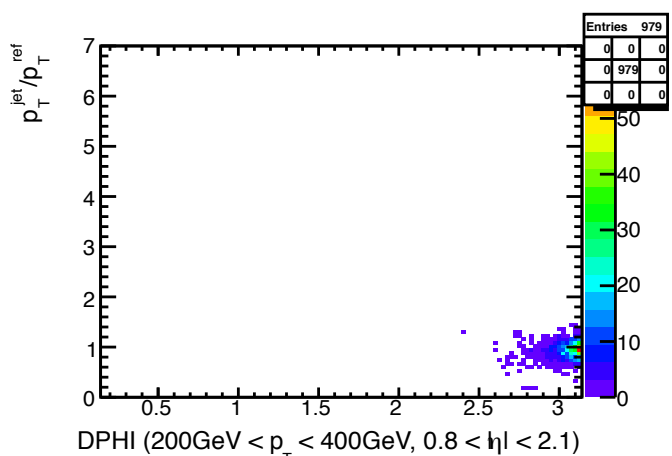
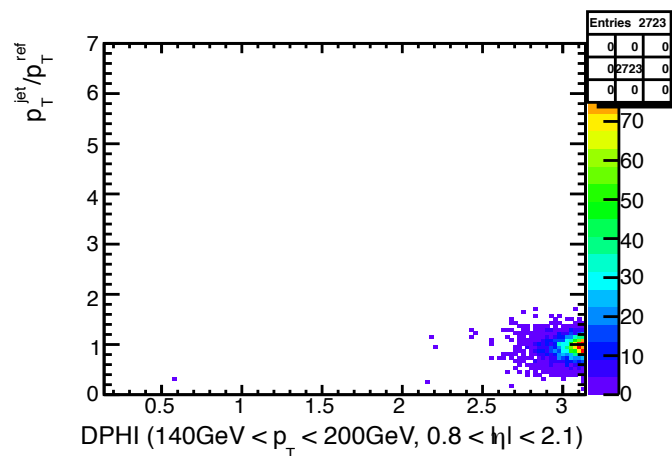
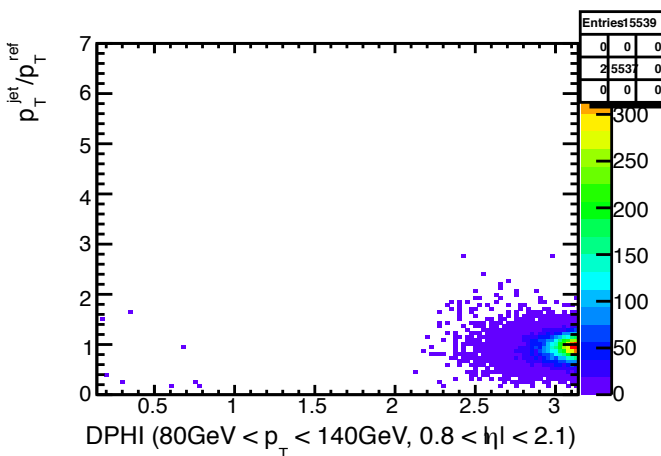
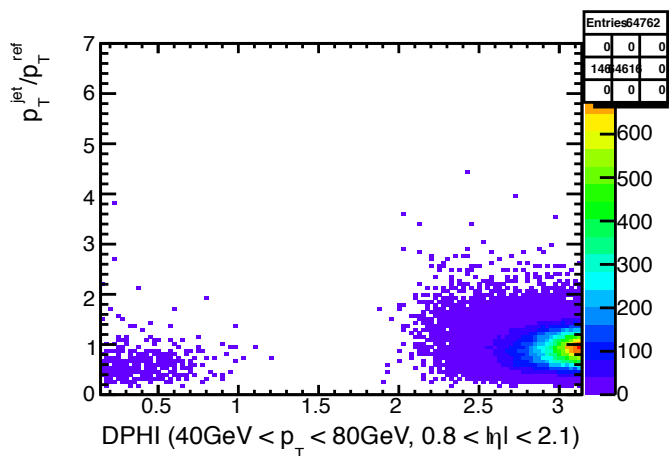
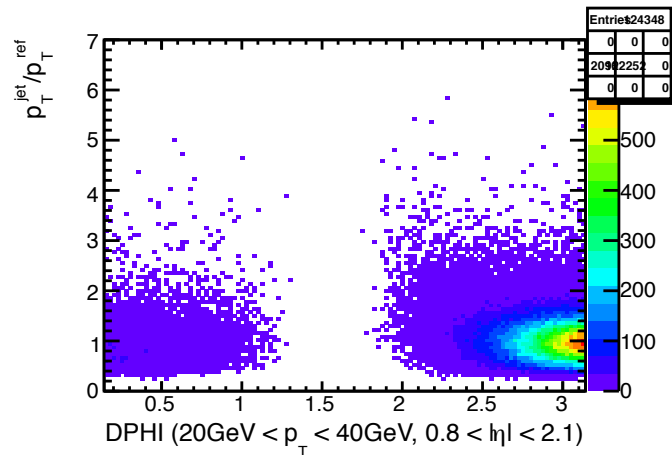
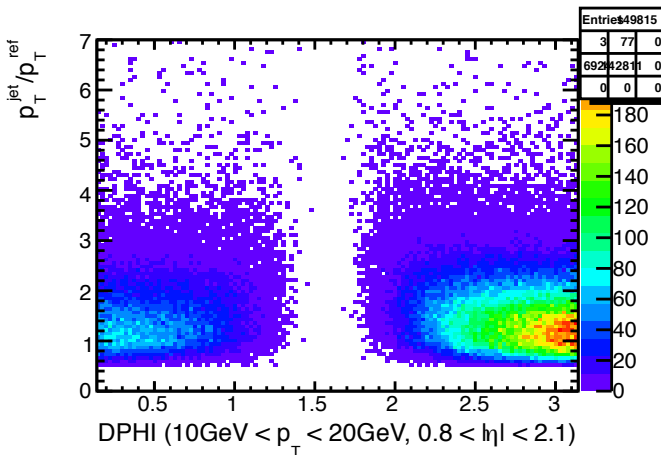
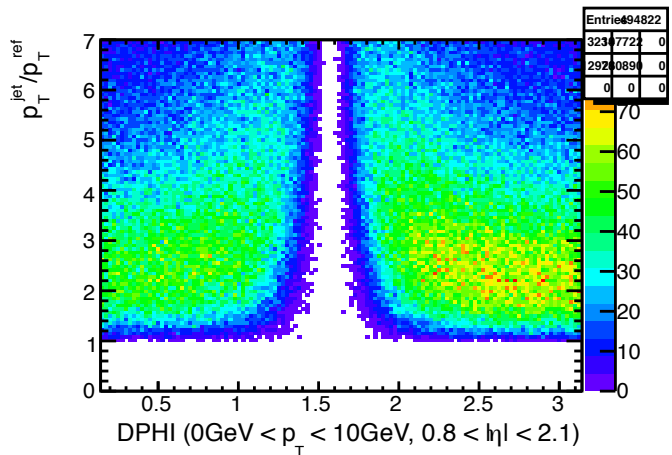


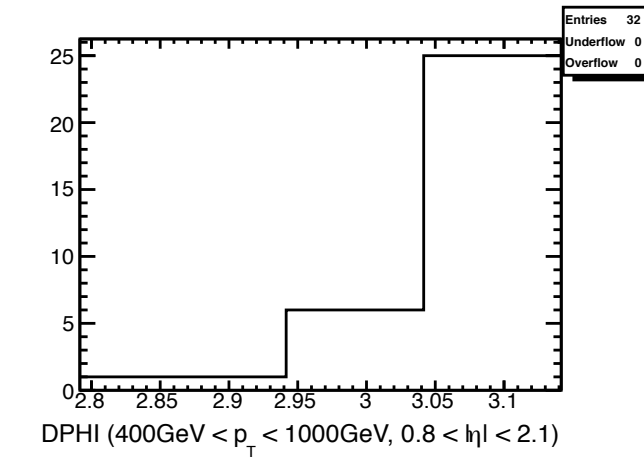
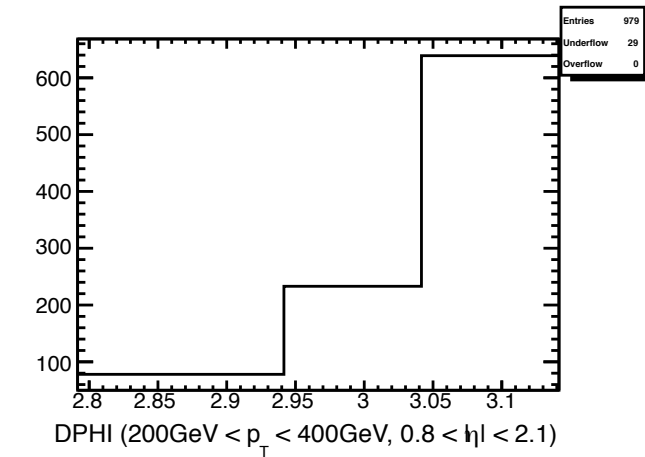
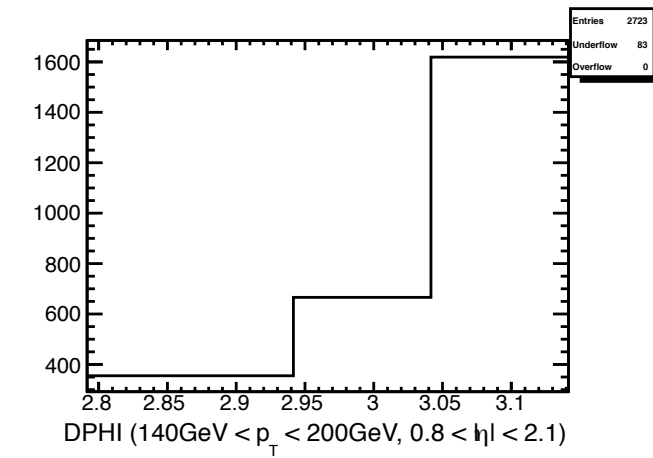
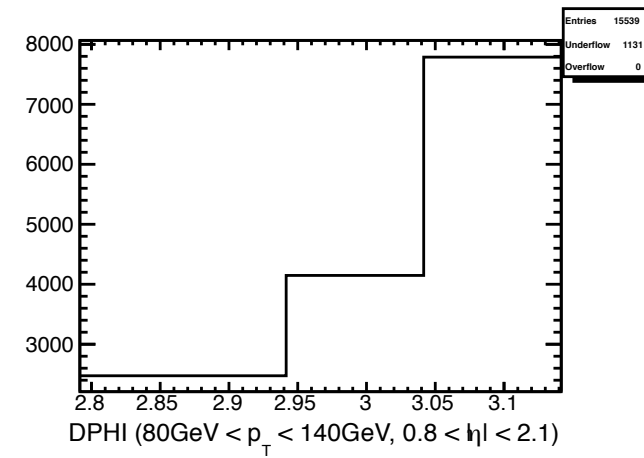
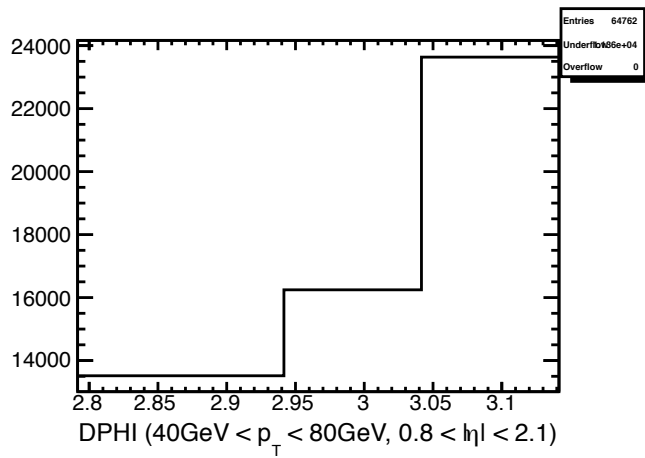
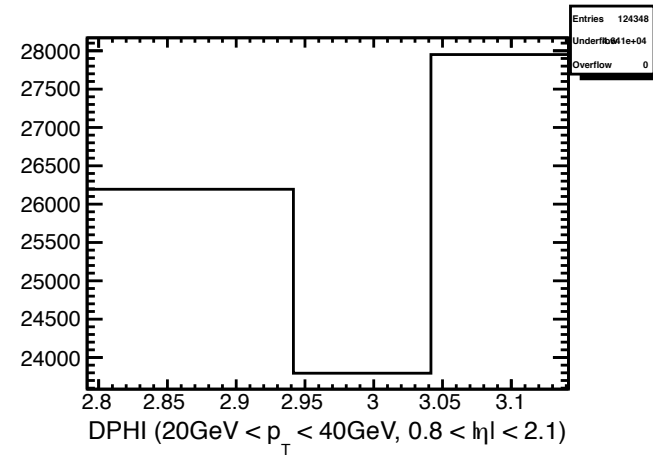
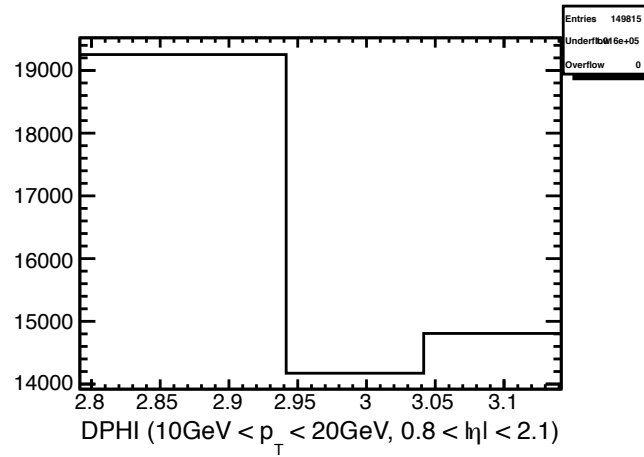
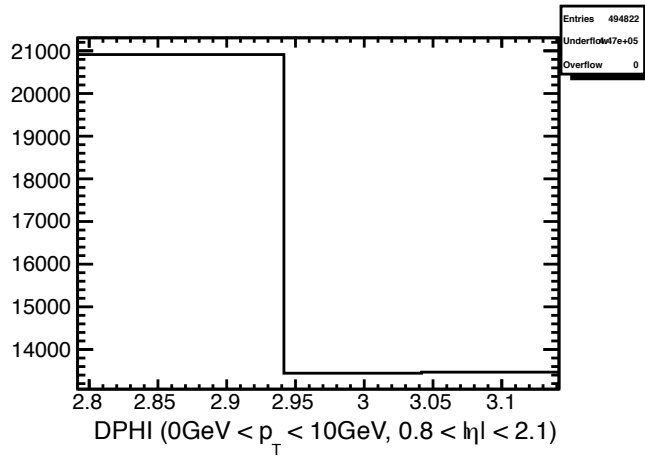


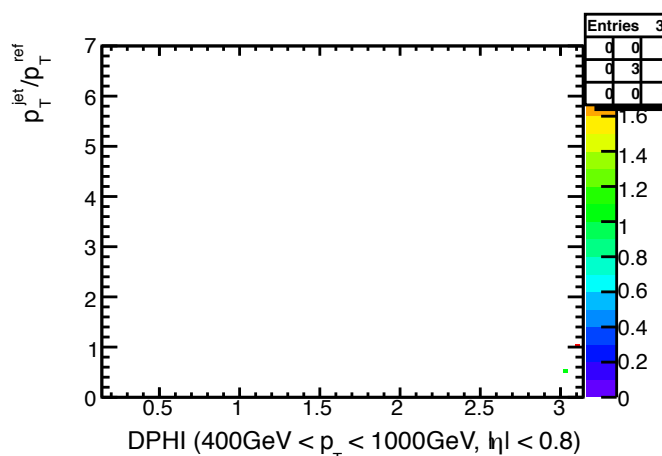
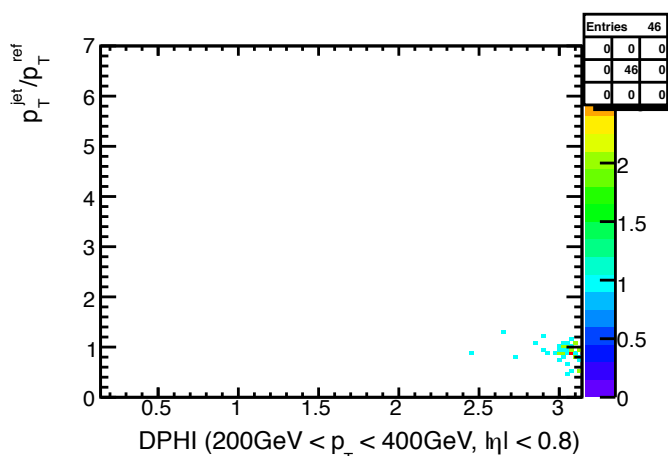
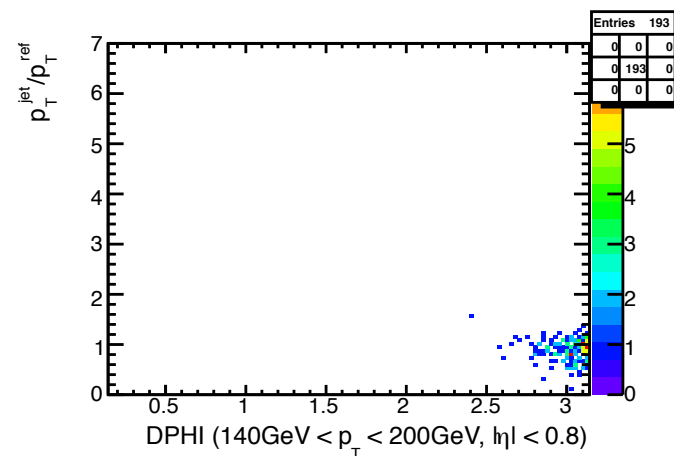
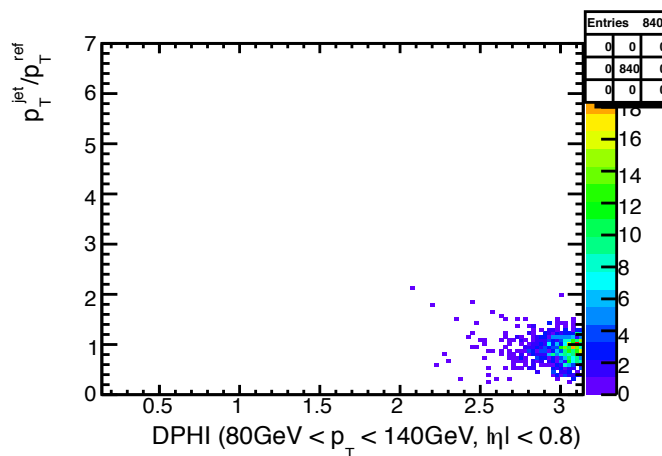
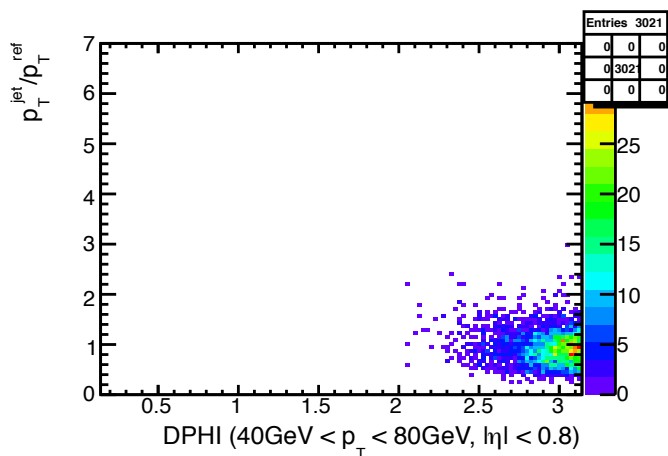
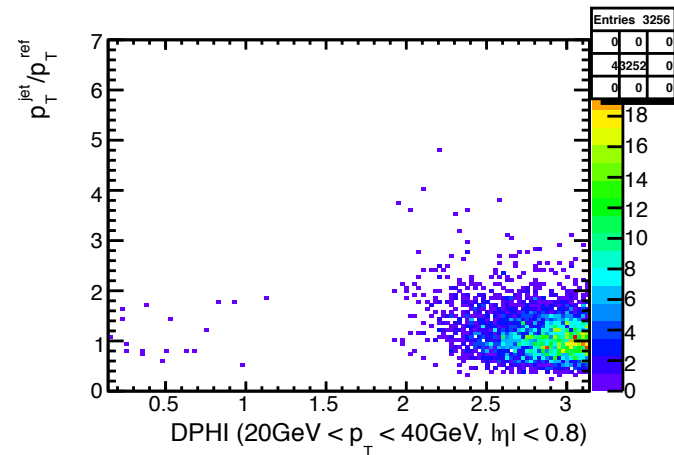
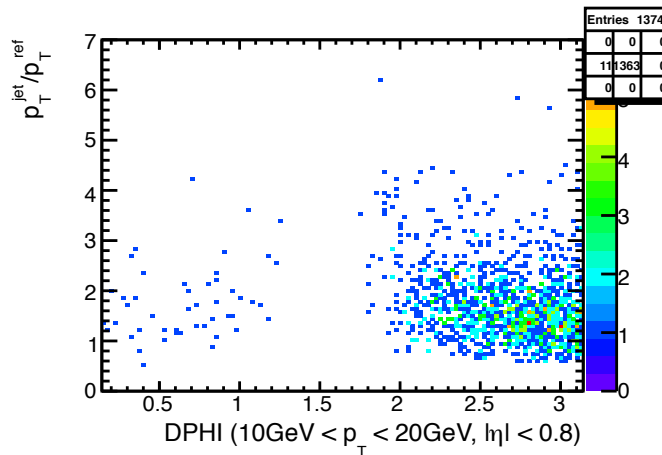
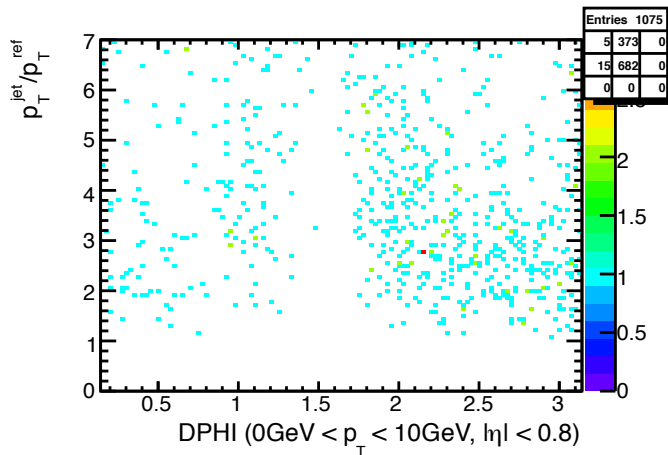


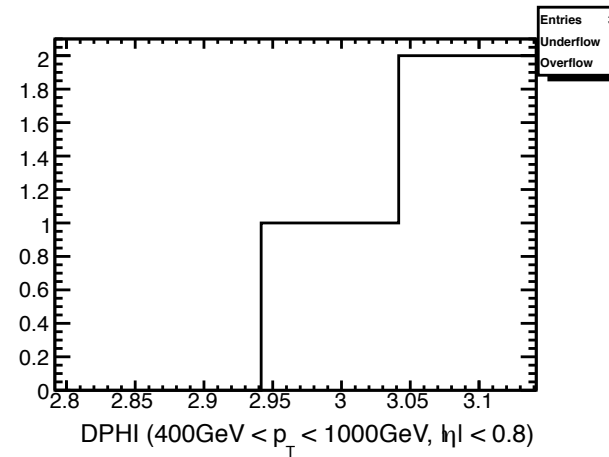
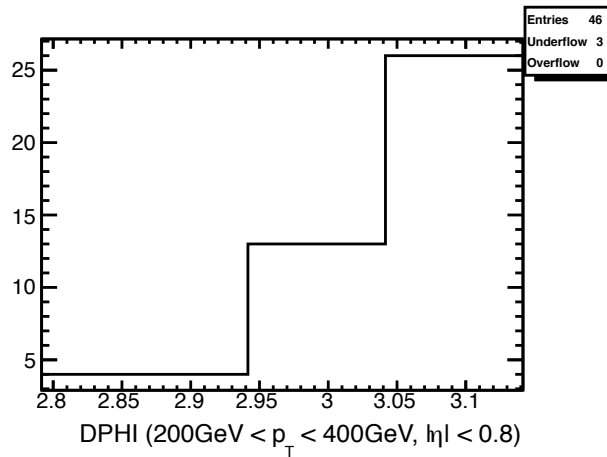
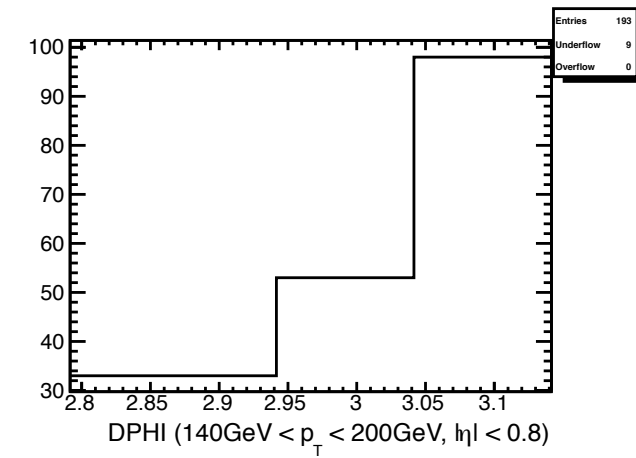
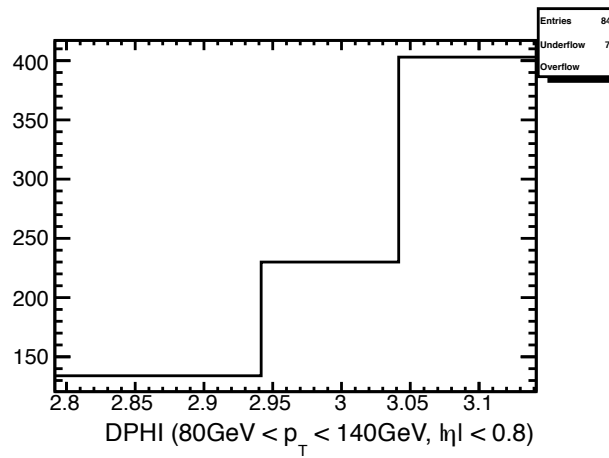
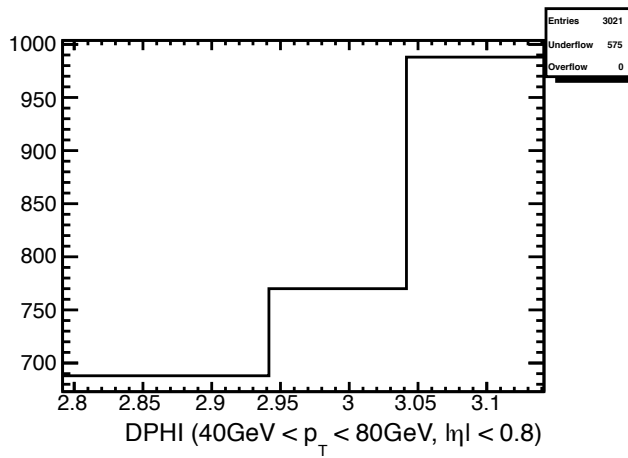
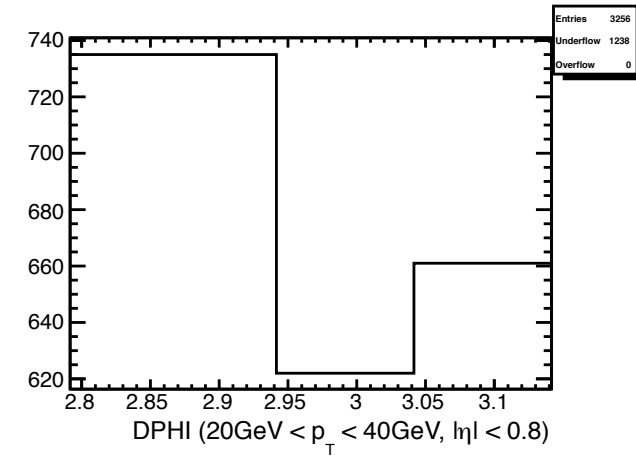
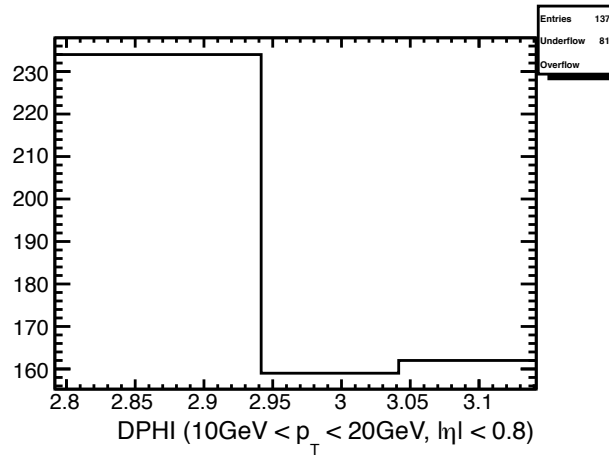
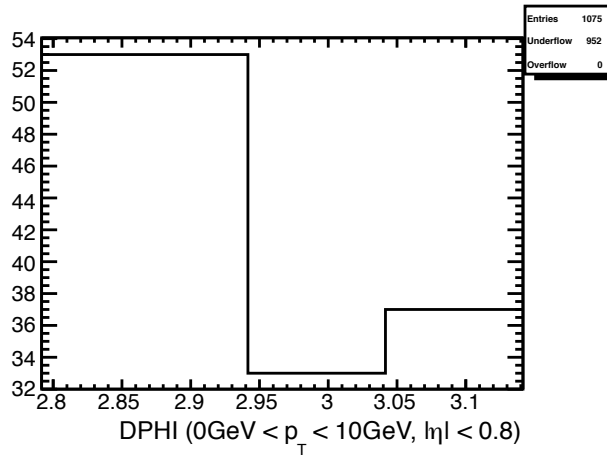


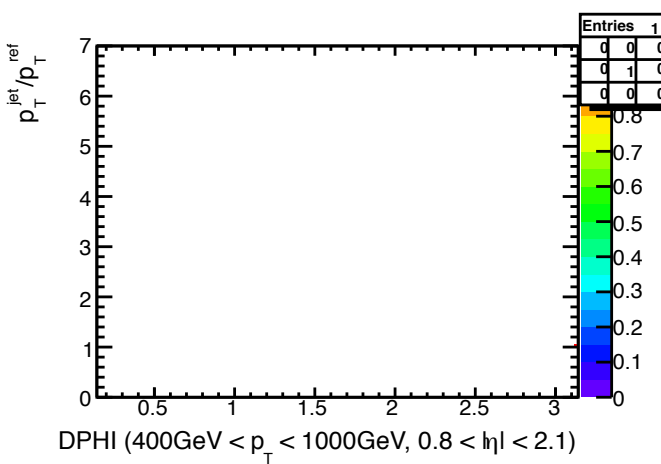
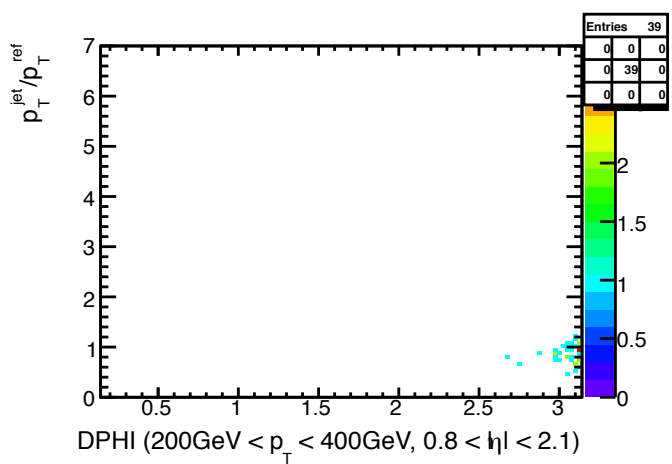
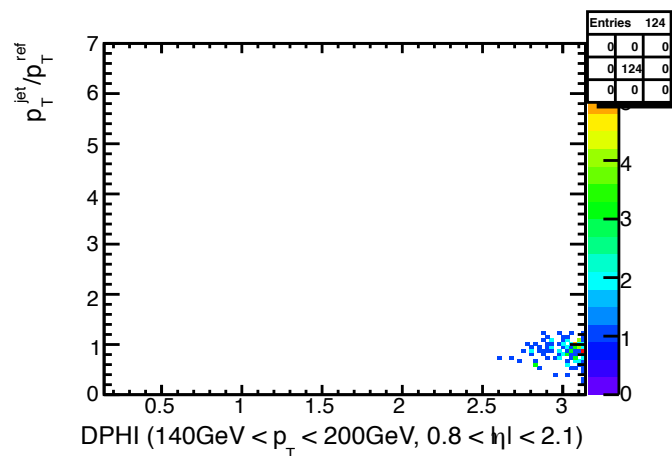
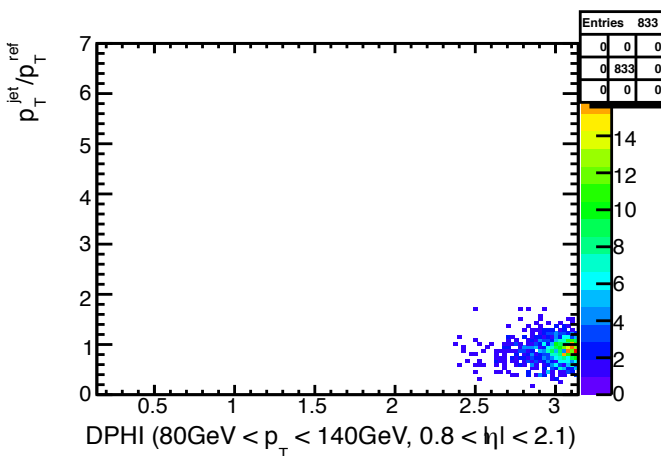
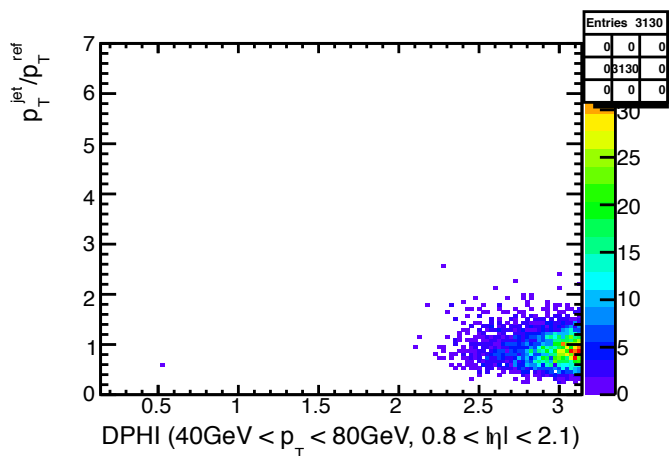
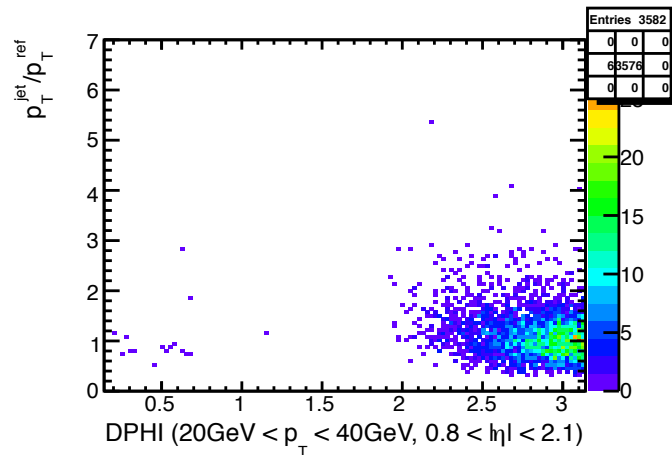
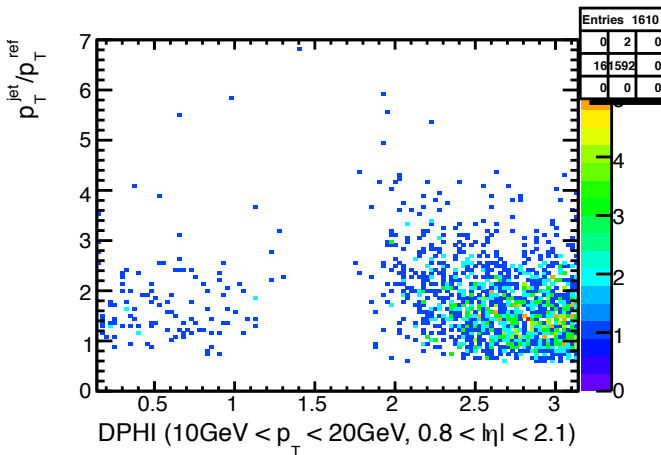
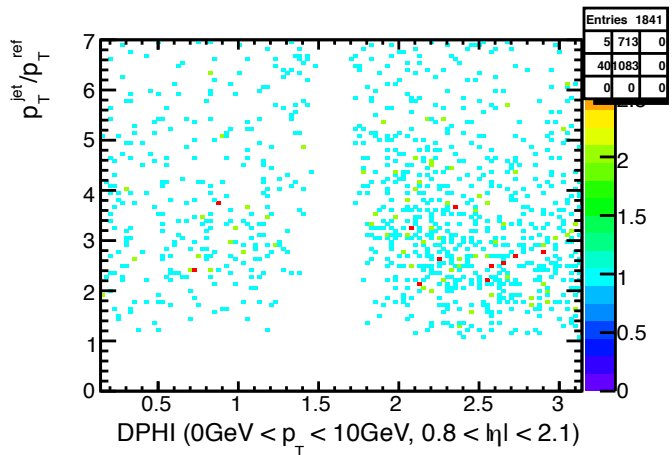


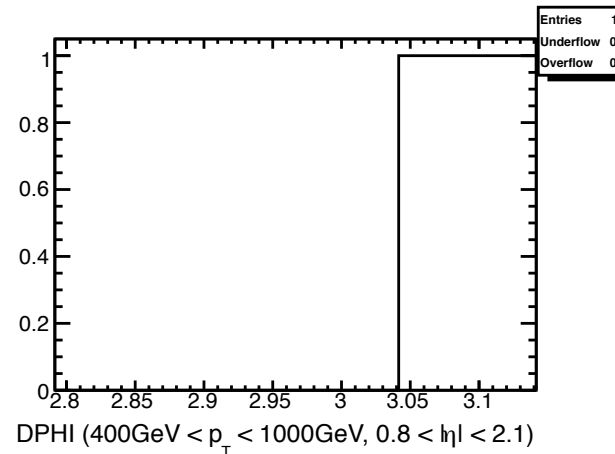
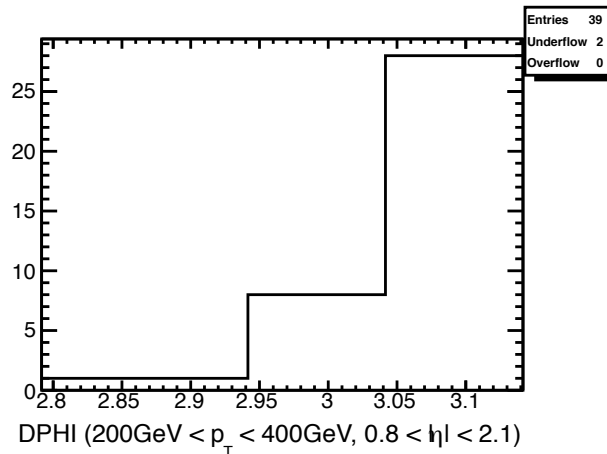
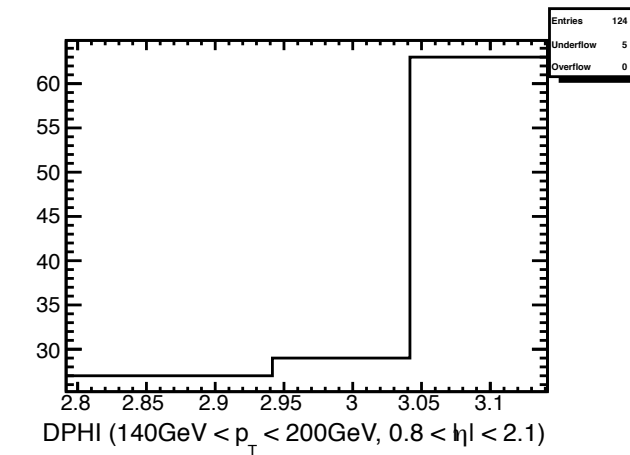
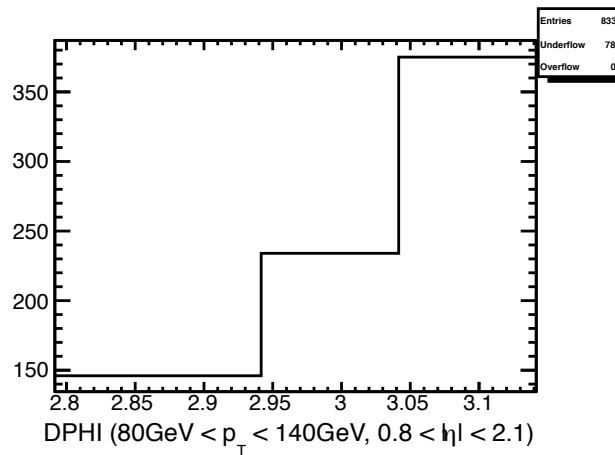
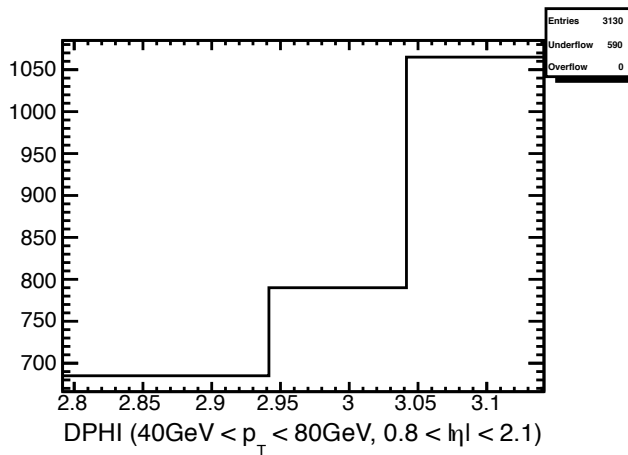
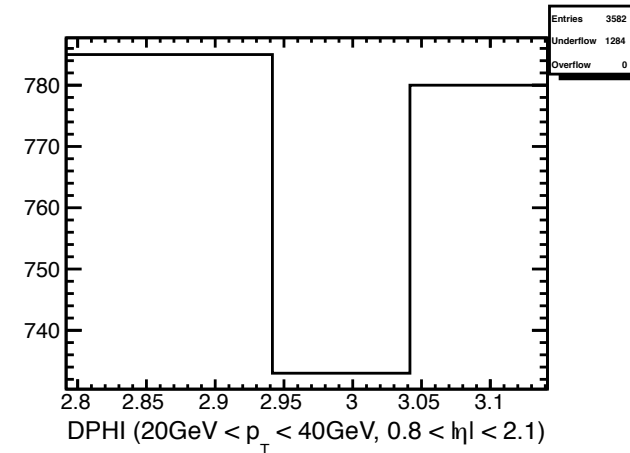
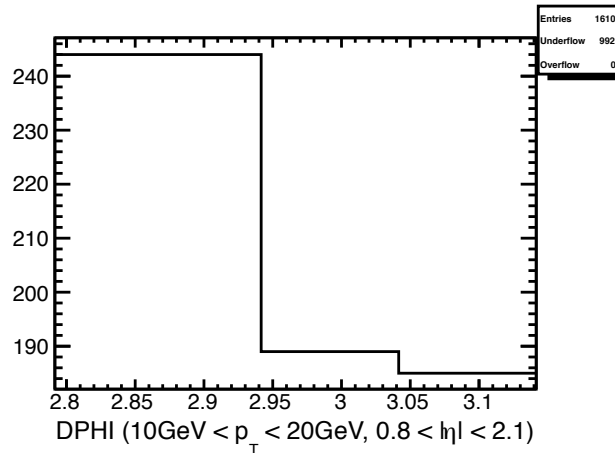
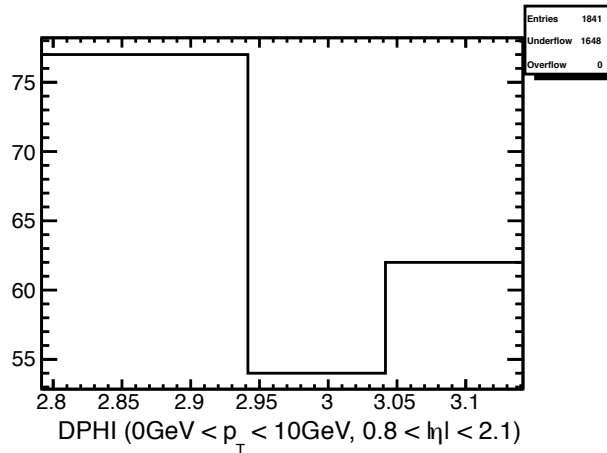


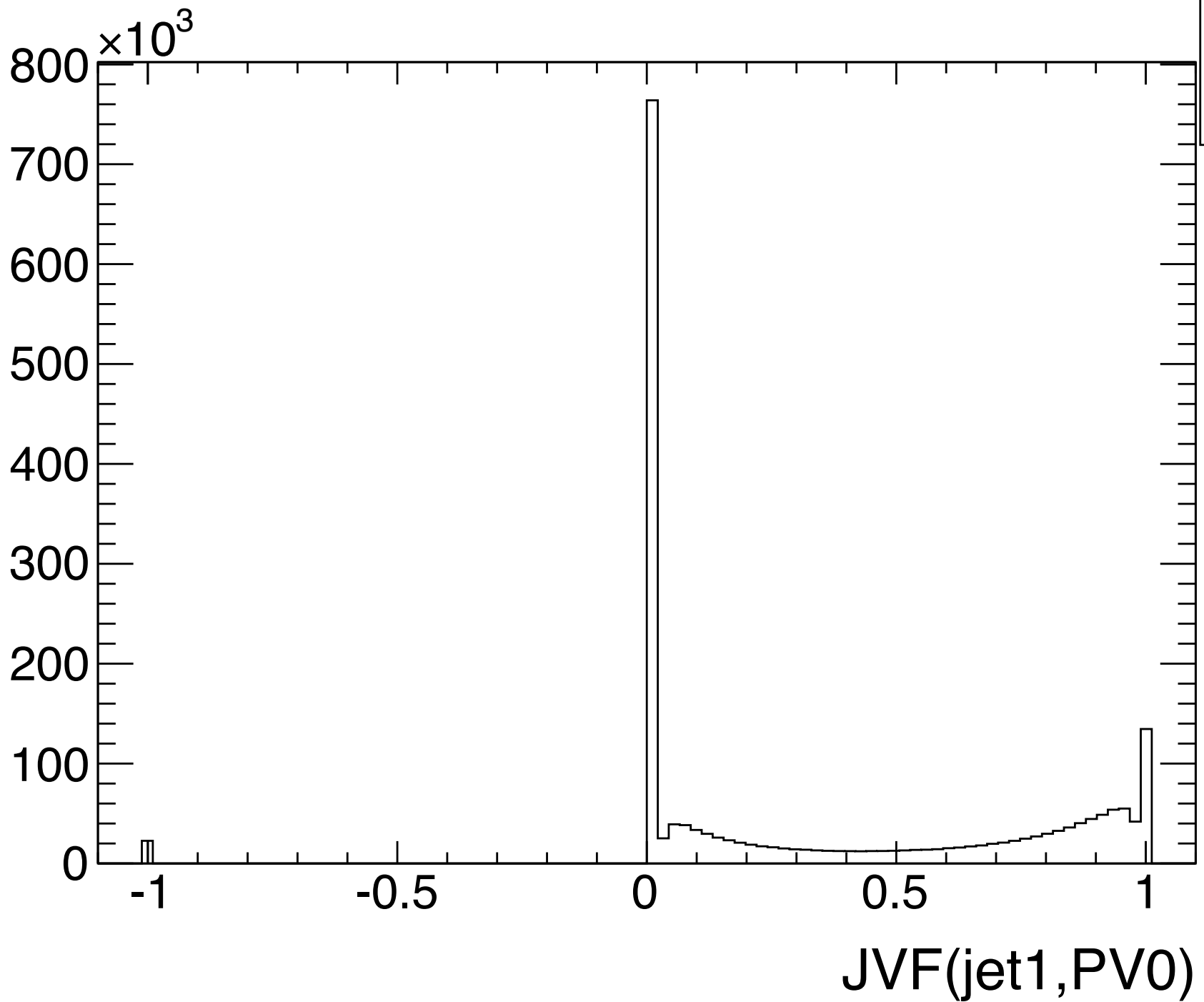






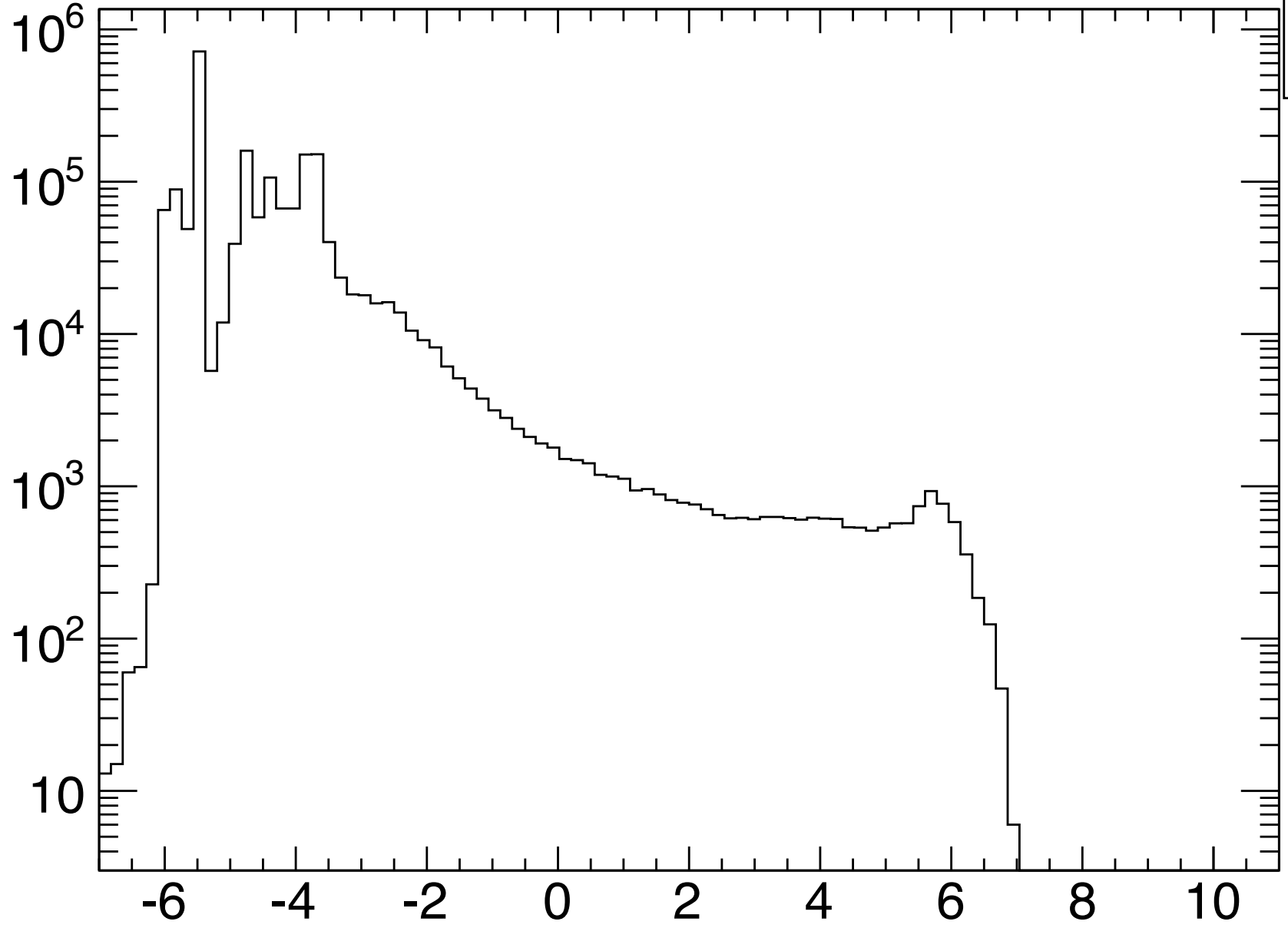






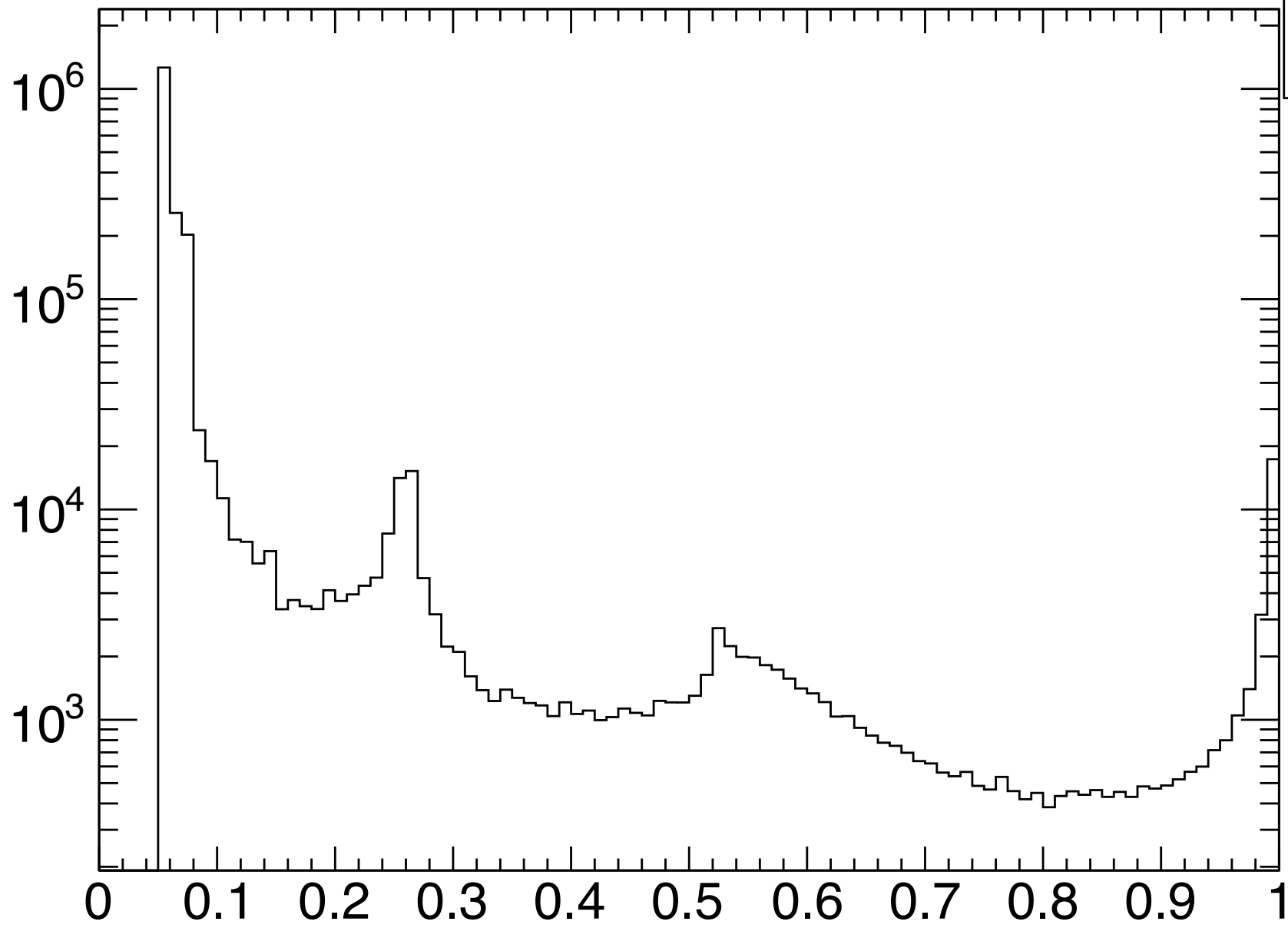
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Underflow	0
Overflow	0

Entries	1971446
Underflow	24
Overflow	0



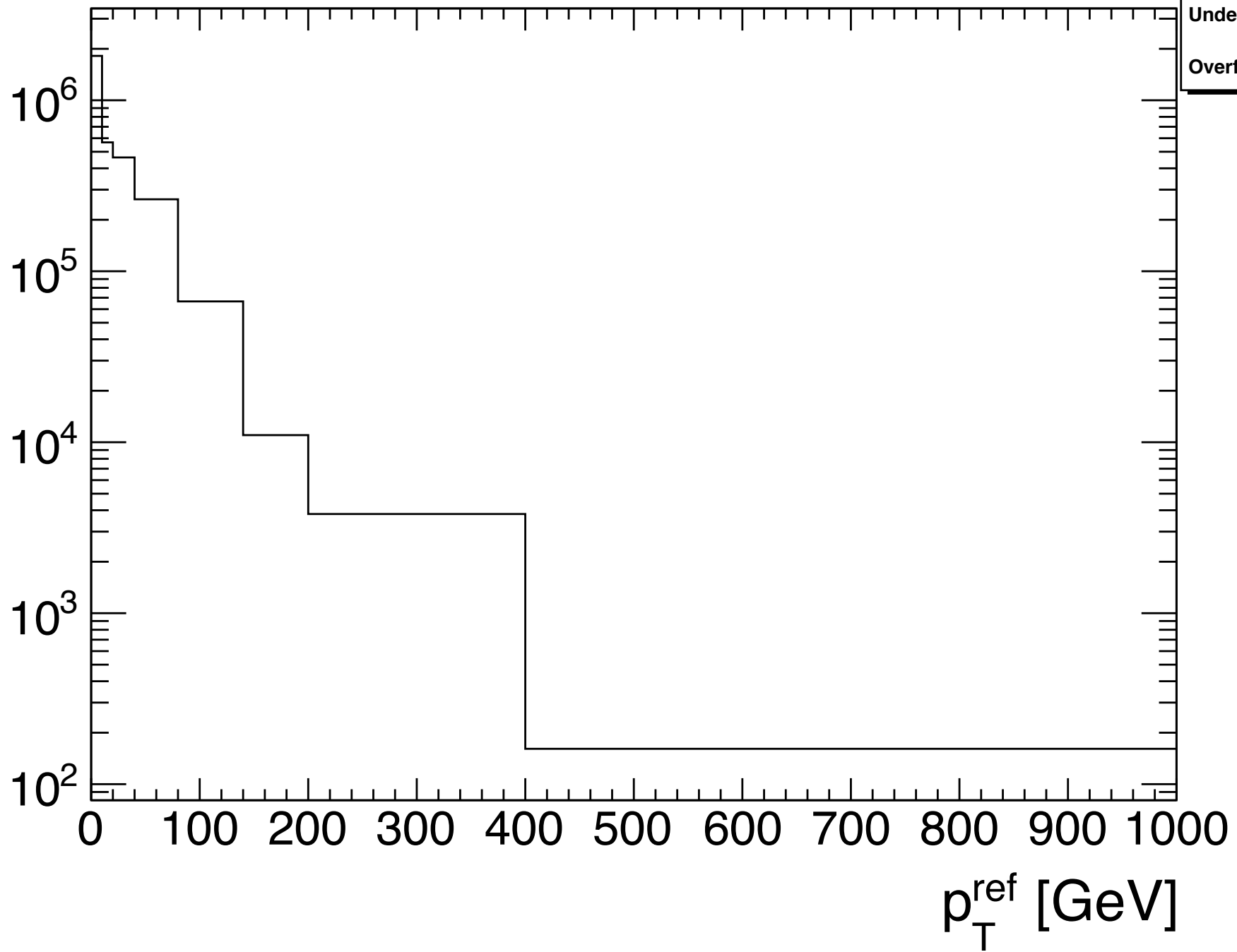
flavor_weight_JetFitterCOMBNN(jet1)

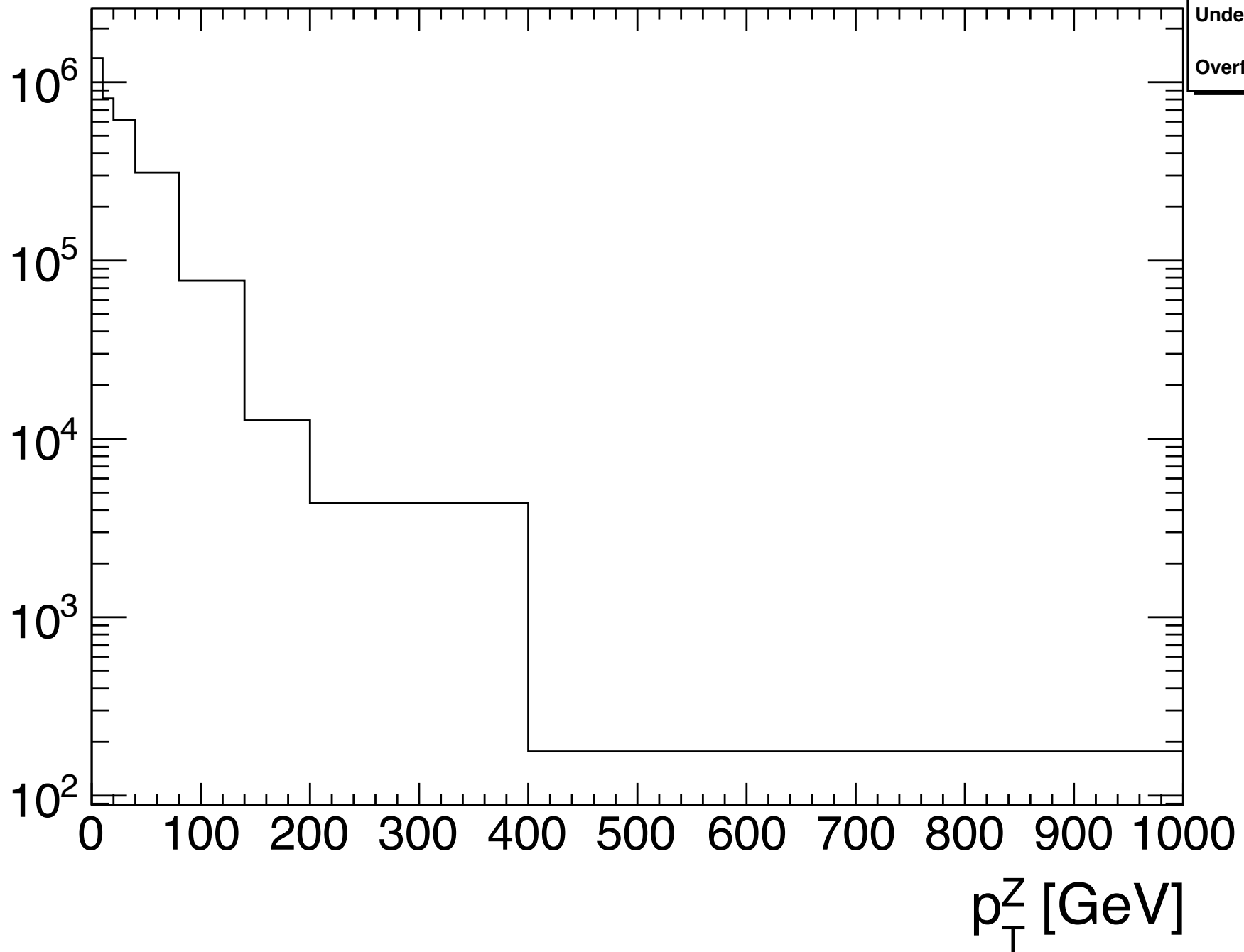
Entries	1971446
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Overflow	0



flavor_weight_MV1(jet1)

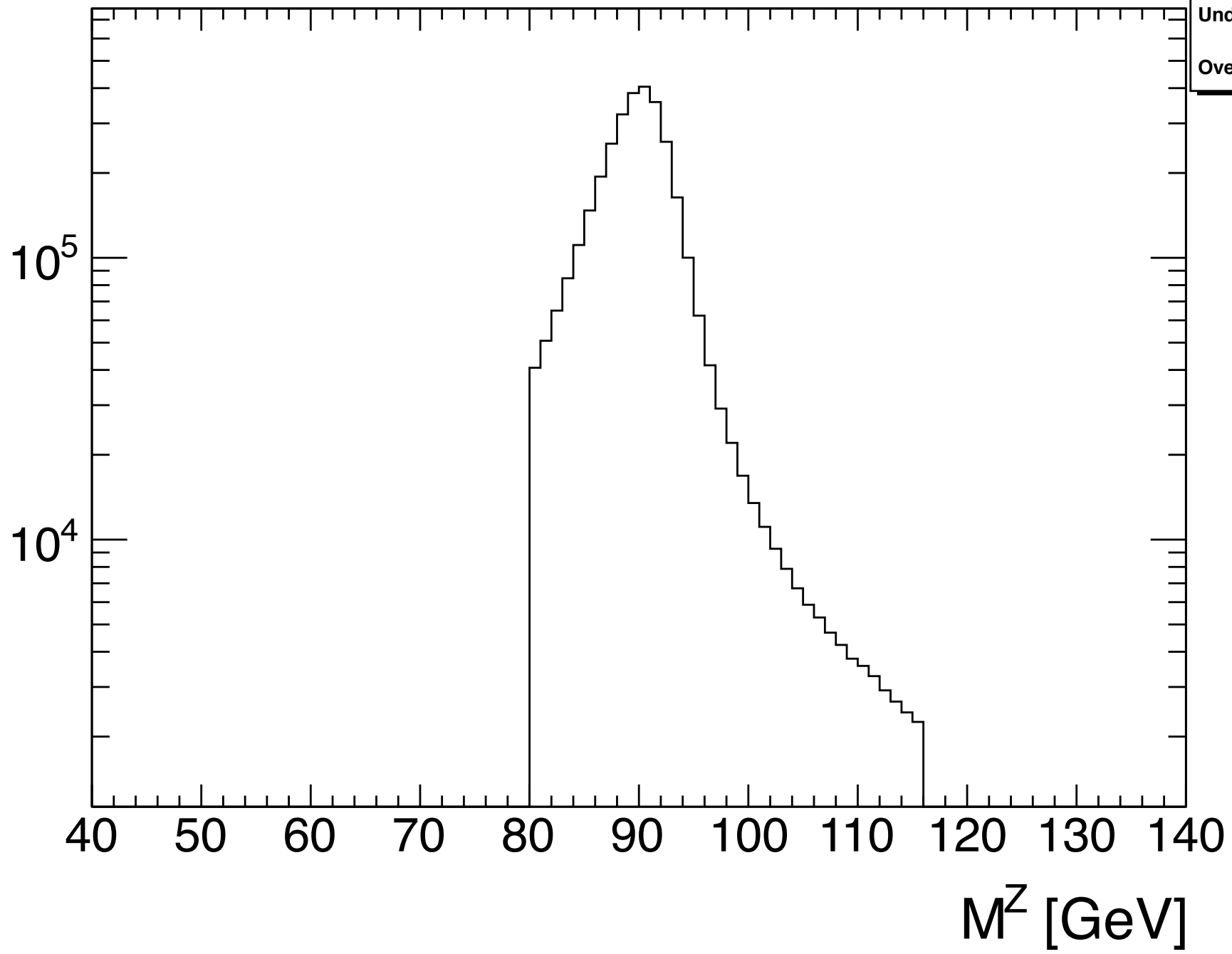
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Overflow	0

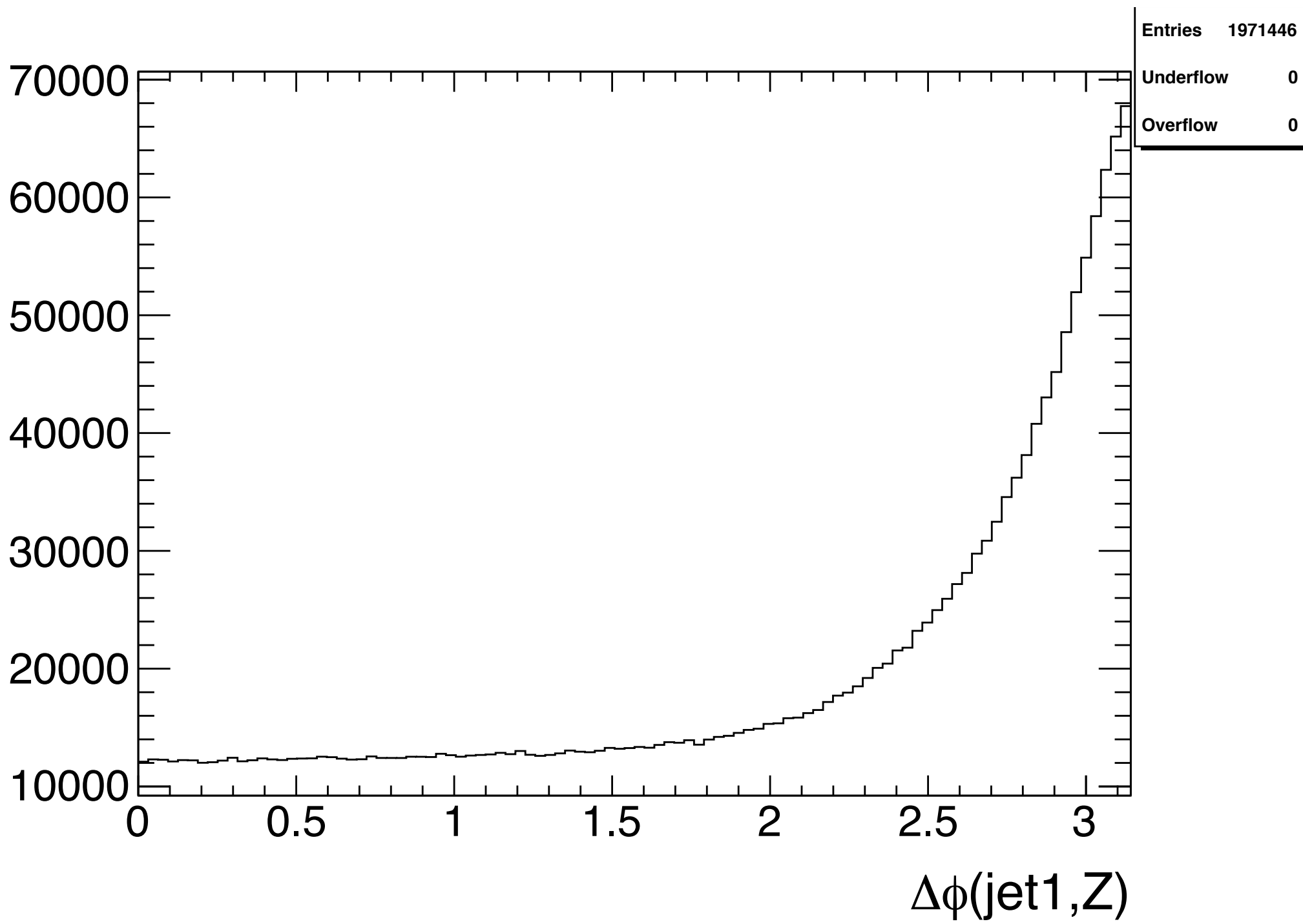




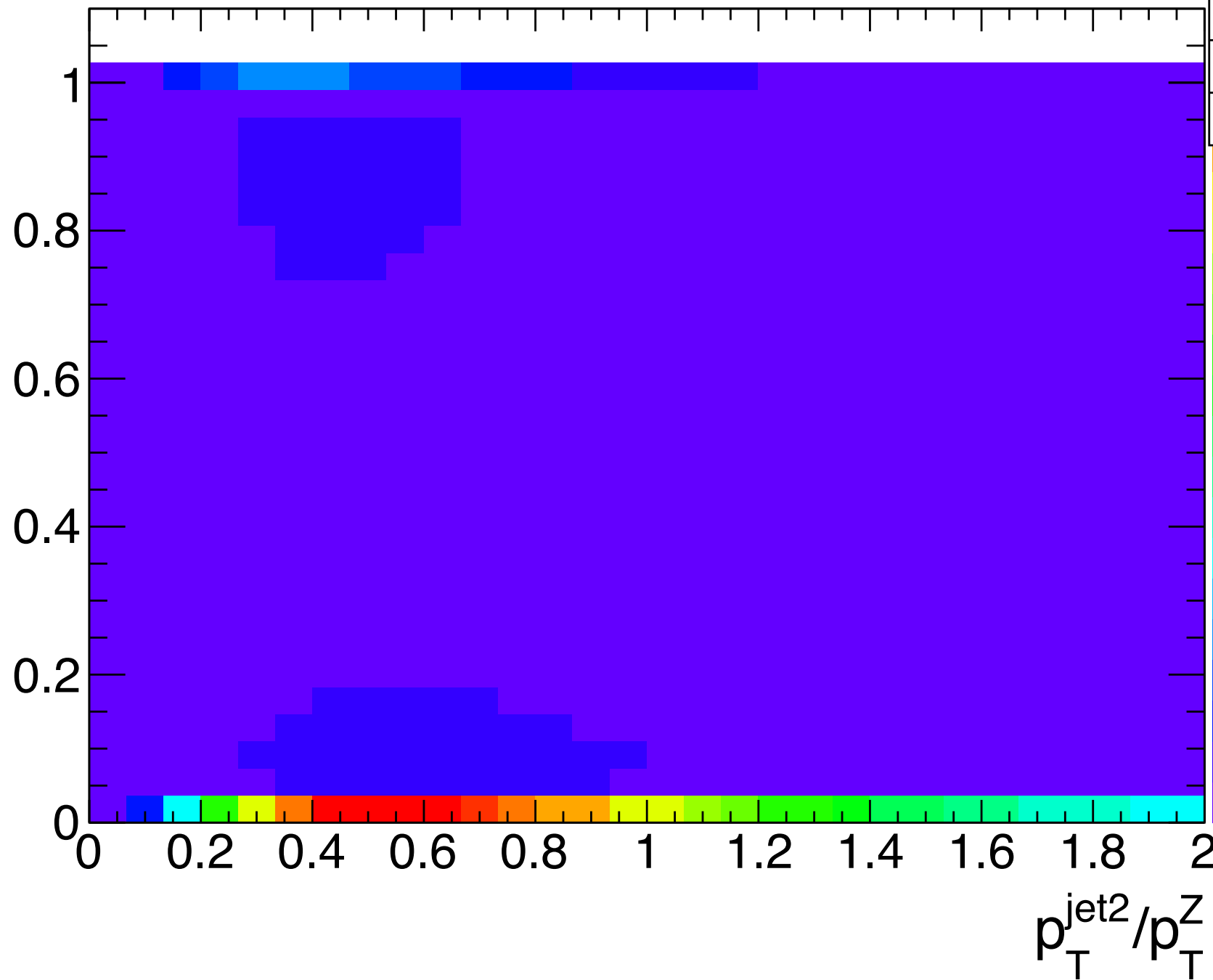
Entries	3199488
Underflow	0
Overflow	0

Entries	3199488
Underflow	0
Overflow	0





JVF(jet2)



Entries1971446		
0	0	0
9114	24639	1991
0304239	2174	

20000

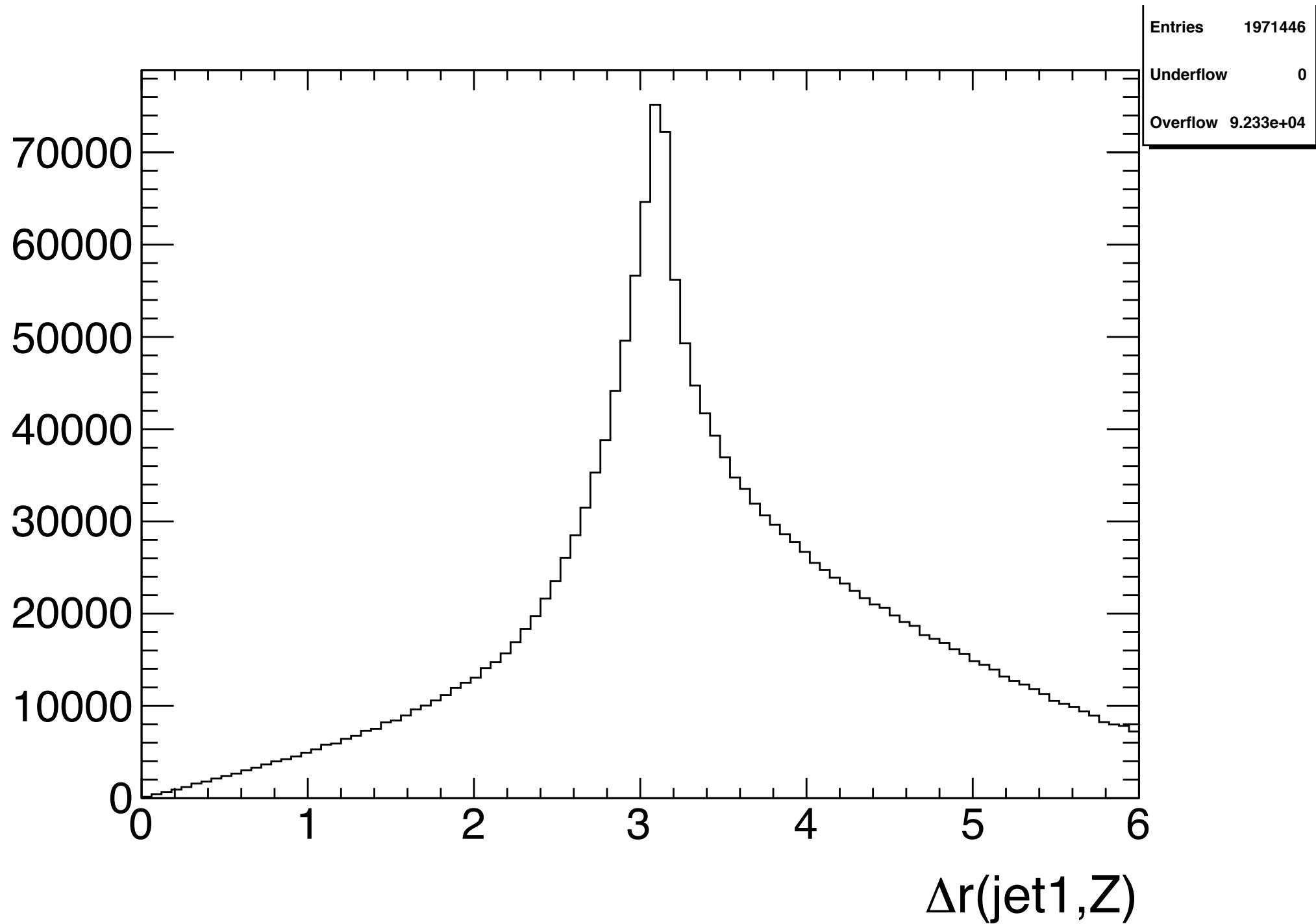
15000

10000

5000

0

p_T^{jet2}/p_T^Z



Z	1.81814e+06	567192	463023	263559	66614	11006	3803	161
Z + 1jet	548364	182558	165370	104217	28635	5101	1984	102
other cuts	495121	164770	150062	95095	26256	4681	1805	95
$\Delta\phi > 2.9$	419331	148224	142865	92583	25923	4649	1796	83
$p_T^{\text{jet2}}/p_T^{\text{ref}} < 0.2$	357393	114308	101235	56990	14890	2869	1193	60
MV1 > 0.8119	1075	1374	3256	3021	840	193	46	3
	0	10	20	40	80	140	200	400
	p_T^{ref} [GeV]							

Z	1.81814e+06	567192	463023	263559	66614	11006	3803	161
Z + 1jet	734219	233332	199206	117634	30290	5019	1638	58
other cuts	664885	211029	180335	106313	27372	4512	1461	50
$\Delta\phi > 2.9$	581565	195192	175361	104630	27226	4509	1461	44
$p_T^{\text{jet2}}/p_T^{\text{ref}} < 0.2$	494822	149815	124348	64762	15539	2723	979	32
$MV1 > 0.8119$	1841	1610	3582	3130	833	124	39	1
	0	10	20	40	80	140	200	400

p_T^{ref} [GeV]

Z	1.81814e+06	567192	463023	263559	66614	11006	3803	161
Z + 1jet	1.26977e+06	384634	297653	159342	37979	5905	1819	59
other cuts	1.14898e+06	347506	268734	143813	34193	5285	1629	51
$\Delta\phi > 2.9$	682644	229712	205275	120673	30769	4999	1596	45
$p_T^{\text{jet2}}/p_T^{\text{ref}} < 0.2$	580706	176424	145869	75026	17591	3031	1065	33
MV1 > 0.8119	2330	1868	3990	3450	894	136	41	1
	0	10	20	40	80	140	200	400
	p_T^{ref} [GeV]							

