

TDR Summary

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05/ 09 / 2013
v 0.01

コンテンツ

1. イントロダクション

2. Cut条件

各StepのCut条件を説明

3. Rate Reductionの表

Rate Reductionの結果の表

4. Histograms

各StepのHistogram

1: イントロダクション

1: イントロダクション

- レートリダクションを次の4ステップについて調べた(カットは[EndCap Trigger](#)についてかけた)
 - * Step1: 25ns ランから L1_MU15 = true のイベント
 - * Step2: EI/FI カット
 - * Step3: TILE カット (Run2向け)
 - * Step4: NSW カット (Run3向け)

2:カット条件

Step 1:情報 & カット条件

- 25nsラン3つからスタート

* /gpfs/fs2001/tkunigo/TDR/step00/*/*.root

- skim code

<https://svnweb.cern.ch/cern/wsvn/atlas-tkunigo/tkunigo/TDR/step01/?>

- 条件

L1_MU15 = True

Step 2:情報

- Step1でskimしたeventからスタート

* `/gpfs/fs2001/tkunigo/TDR/step01/*.root`

- skim code

[https://svnweb.cern.ch/cern/wsvn/atlas-tkunigo/tkunigo/TDR/step02/?](https://svnweb.cern.ch/cern/wsvn/atlas-tkunigo/tkunigo/TDR/step02/)

Step 2: カット条件

1. efficiencyが70%以上のSSCについて

2. その他のSSCについて

I. $d\theta < 0.2$ && $d\phi < 0.2$

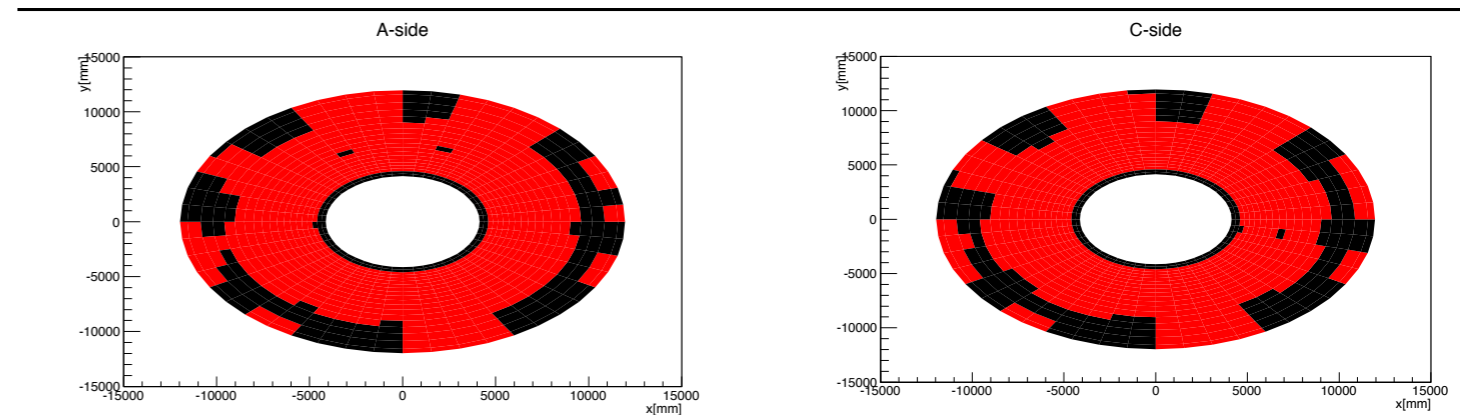
No cut

No cut

II. else

Cut!!

By. Takuya TASHIRO



Check: EI/FI data is 8ch OR,
so I used these central value

Step 3:情報

- Step2でskimしたeventからスタート

* `/gpfs/fs2001/tkunigo/TDR/step02/*.root`

- skim code

[https://svnweb.cern.ch/cern/wsvn/atlas-tkunigo/tkunigo/TDR/step02/?](https://svnweb.cern.ch/cern/wsvn/atlas-tkunigo/tkunigo/TDR/step02/)

Step 3: Cut 条件

1. TILE の energy は Gausでsmearingする ($\sigma = 200\text{MeV}$) (これによりOffline→Onlineに近い情報にする。smearingの方法はTILE teamからのsuggestionによるもの)
2. hitのあったTGC Sectorに対応するTILE ModuleのEnergy2つを調べる
3. 2つのうち、どちらかでもTILE Threshold(500MeV)よりも低ければそのTriggerをkillする

Step 3:検証

L1_MU15

Ev: 62

A[m1]: 41.6481

A[m2]: 6.39346

Ev: 74

A[m1]: -583.928

A[m2]: 1888.96

Ev: 78

C[m1]: -190.644

C[m2]: -85.5642

Ev: 84

A[m1]: -66.0927

A[m2]: 273.376

Ev: 97

A[m1]: -91.8926

A[m2]: 297.567

L1_MU20

Ev: 62

A[m1]: -37.434

A[m2]: -223.749

Ev: 74

A[m1]: 235.577

A[m2]: 1511.74

Ev: 78

C[m1]: -31.3149

C[m2]: -244.238

Ev: 84

A[m1]: -64.7696

A[m2]: -232.359

Ev: 97

A[m1]: 119.821

A[m2]: -515.896

異なる



Step 4: 情報

- Step3でskimしたeventからスタート

* `/gpfs/fs2001/tkunigo/TDR/step03/*.root`

- skim code

[https://svnweb.cern.ch/cern/wsvn/atlas-tkunigo/tkunigo/TDR/step03/?](https://svnweb.cern.ch/cern/wsvn/atlas-tkunigo/tkunigo/TDR/step03/)

Step 4: Cut 条件

$d\theta$, $d\eta$, $d\phi$ について独立にcutをかけた
それぞれのThresholdは $|\eta|$ によって、
次のように決まっている

By. Yu SUZUKI

$ \eta $	$d\theta$	$d\eta$	$d\phi$
1.3 - 1.5	0.015	0.05	0.06
1.5 - 1.7	0.015	0.05	0.06
1.7 - 1.9	0.010	0.05	0.06
1.9 - 2.1	0.025	0.05	0.06
2.1 - 2.3	0.07	0.07	0.06
2.3 -	0.07	0.07	0.06

3: Rate Reduction の表

各Fill条件について

1. all Rol:

全てのTriggerをFill

2. 1 fill/event

1 event に対して 1 TriggerのみをFill

(Fillする優先順位 RPC < EndCap < Forward)

3. w staco($dR < 0.1$)

2. のうちからstacoでassociateされたTriggerをFill ($dR < 0.1$)

PT5について

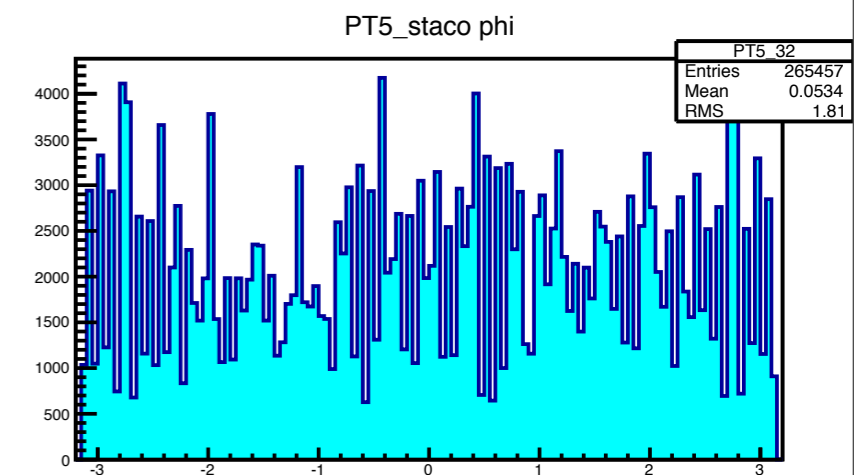
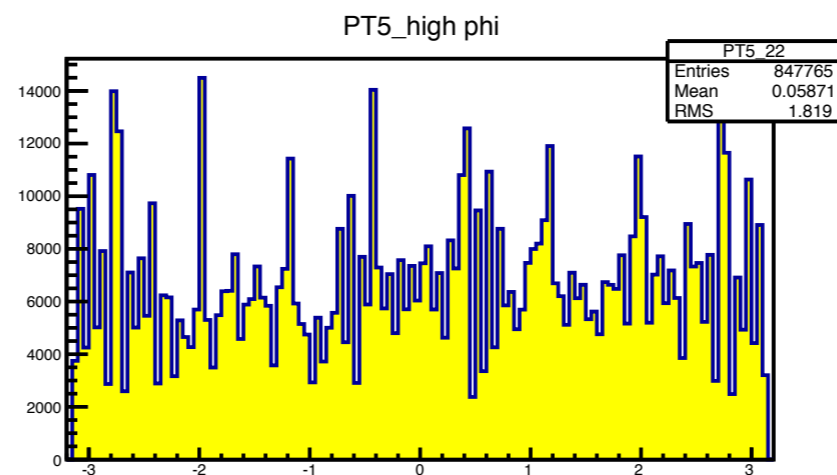
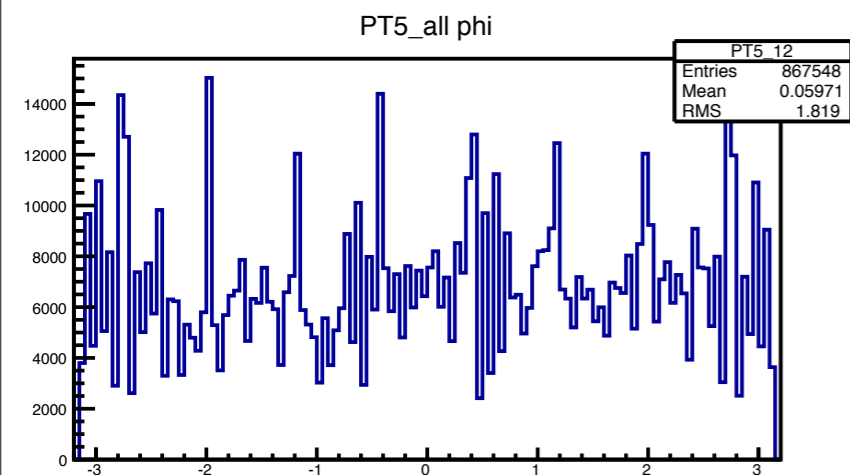
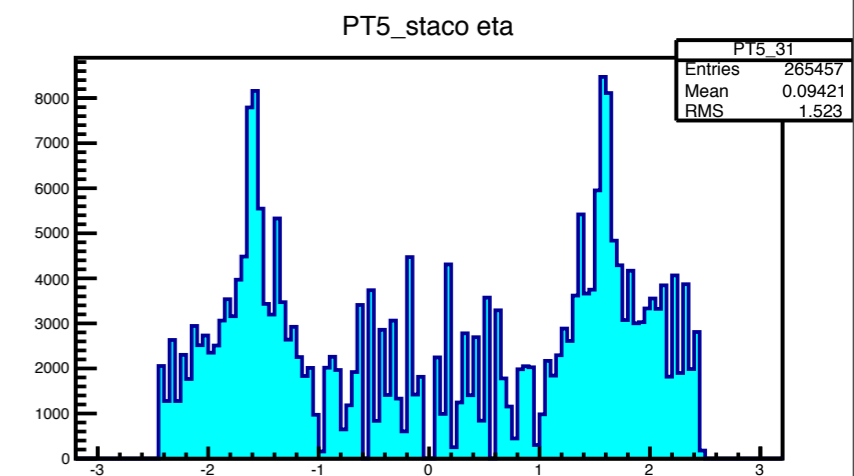
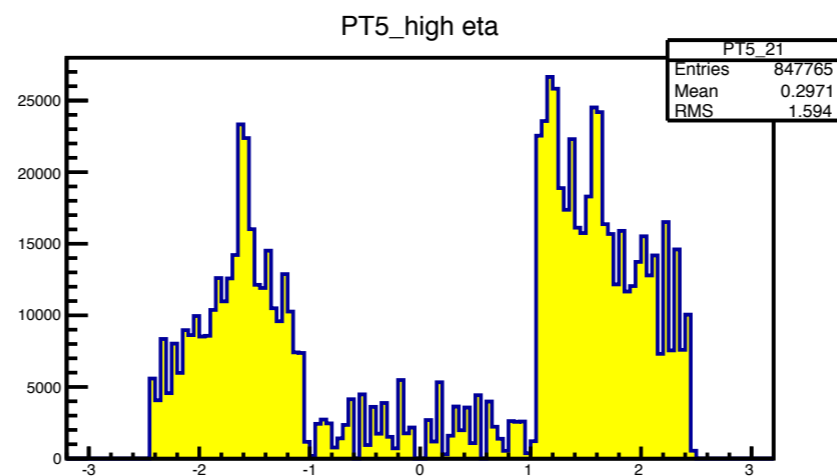
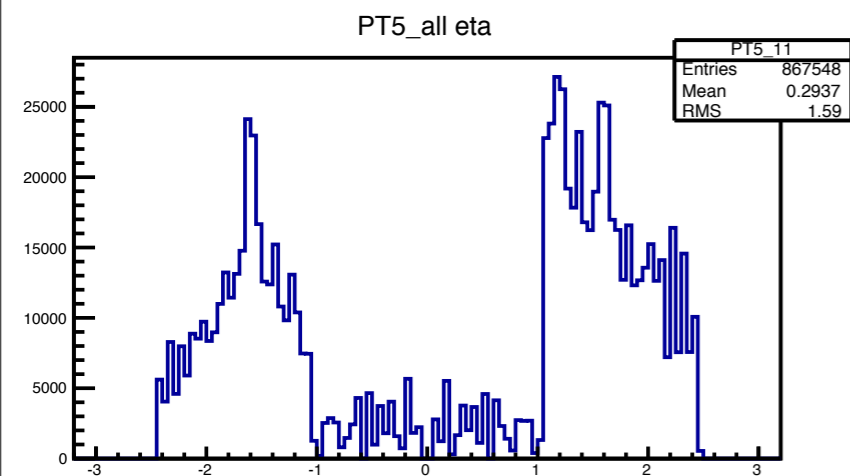
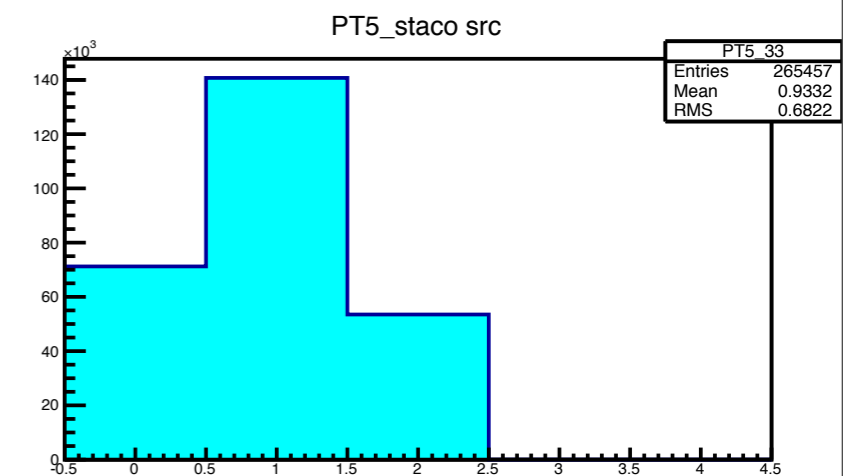
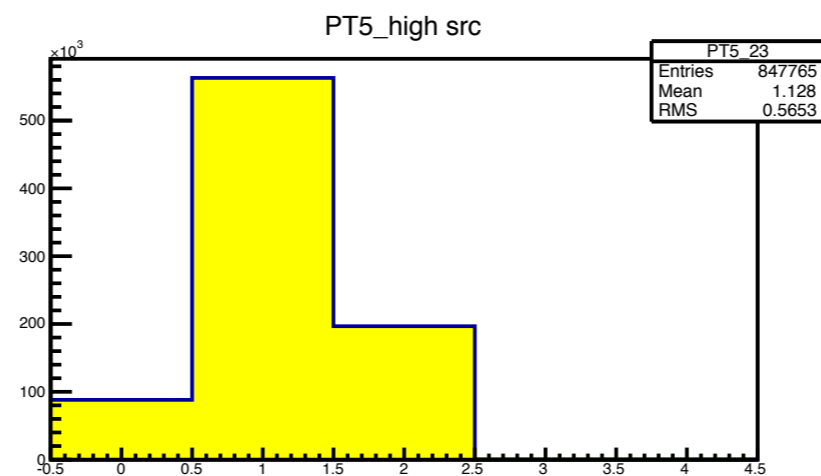
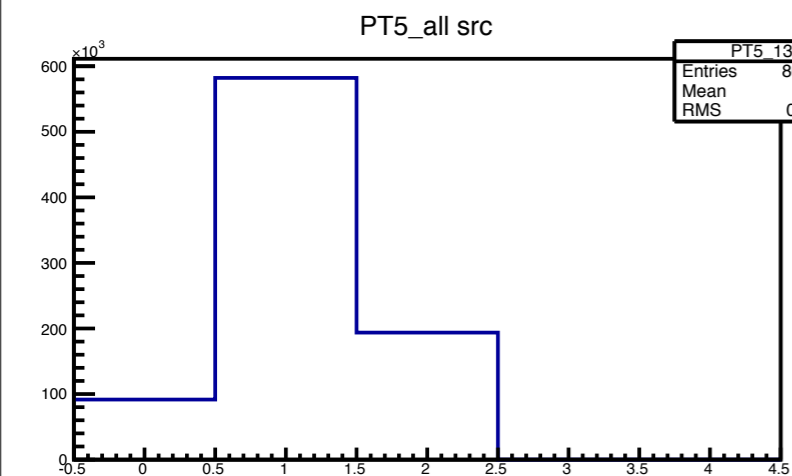
	all RoI		1 fill/event		w staco(dR<0.1)	
S1 (before EI/FI cut)	867548		847765		265457	
	91596 (RPC)	775952 (TGC)	88138(RPC)	759627(TGC)	71224(RPC)	194233 (TGC)
S2 (EI/FI cut)	560763		546751		252153	
	91596 (RPC)	469167 (TGC)	90179 (RPC)	456572 (TGC)	72915 (RPC)	179238 (TGC)
S3 (TILE cut)	514112		500664		250770	
	91596 (RPC)	422516 (TGC)	90183(RPC)	410481(TGC)	72917(RPC)	177853(TGC)
S4 (NSW cut)	223402		217052		183954	
	91596 (RPC)	131806 (TGC)	90248(RPC)	126804(TGC)	72975(RPC)	110979(TGC)

PT6について

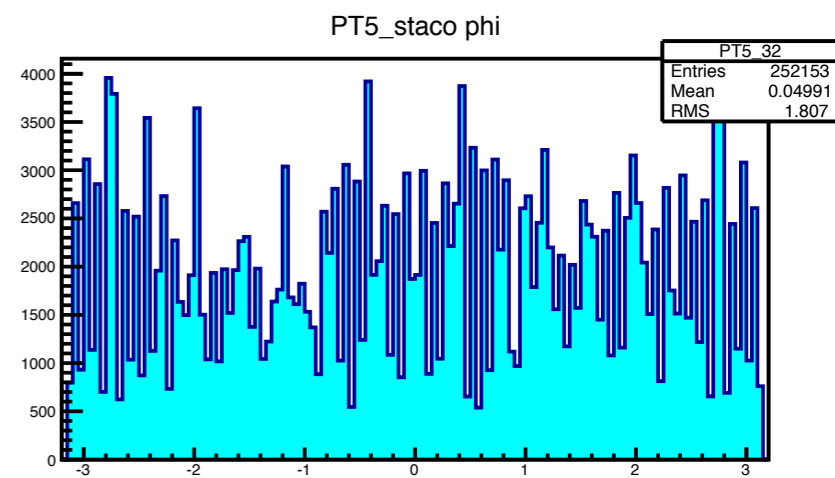
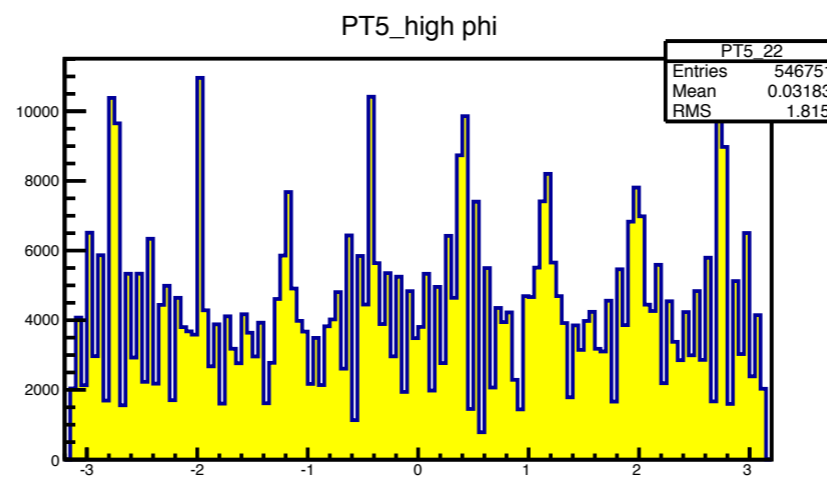
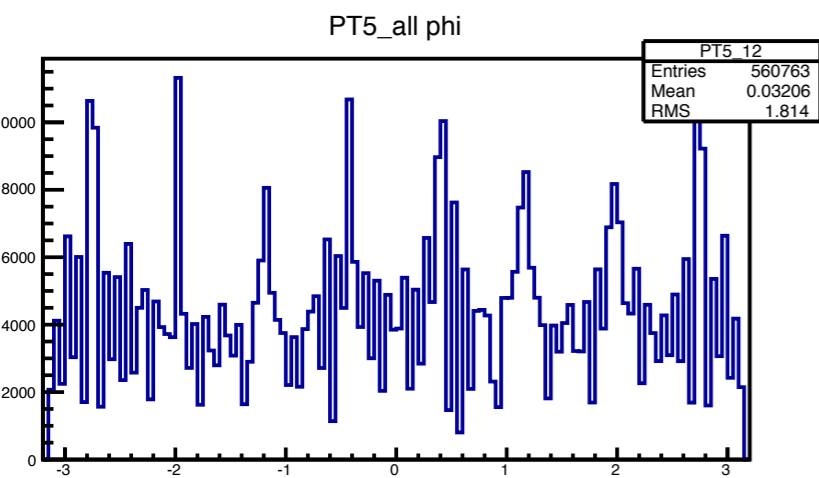
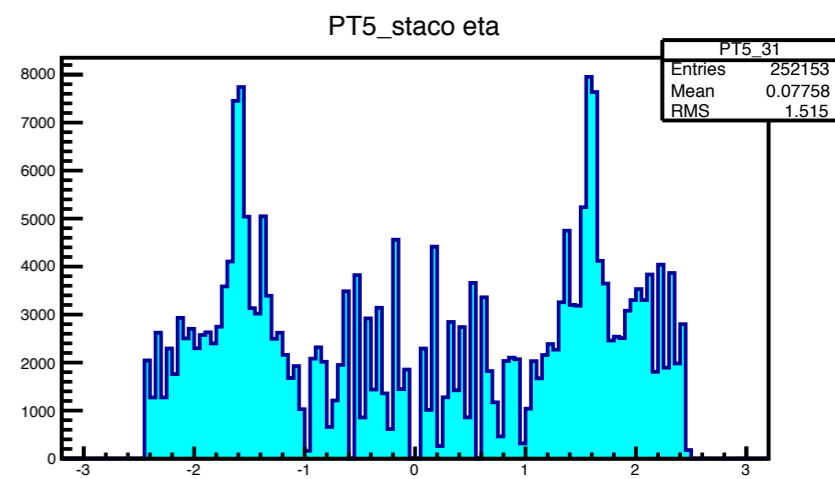
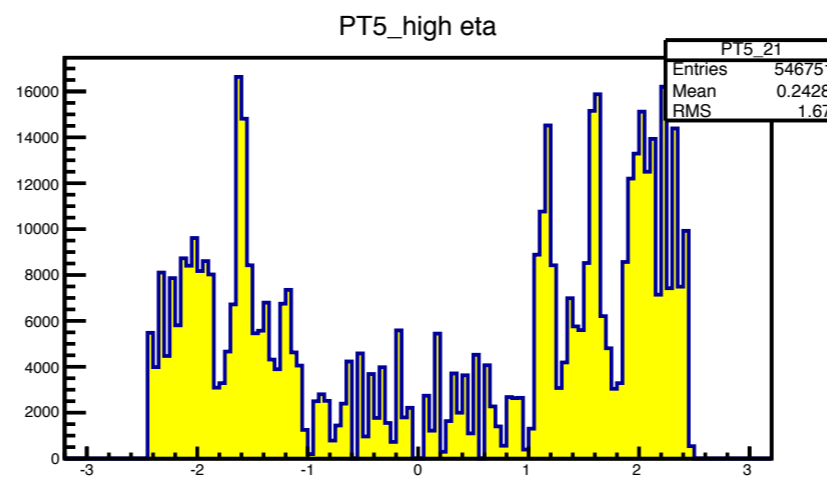
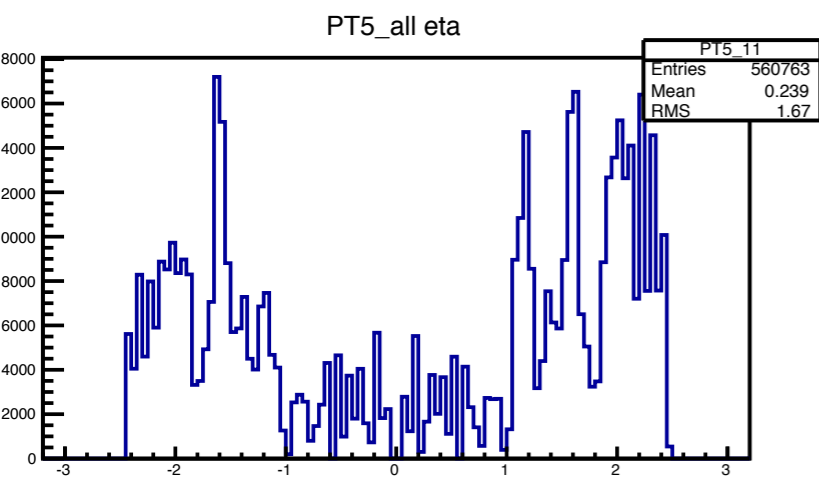
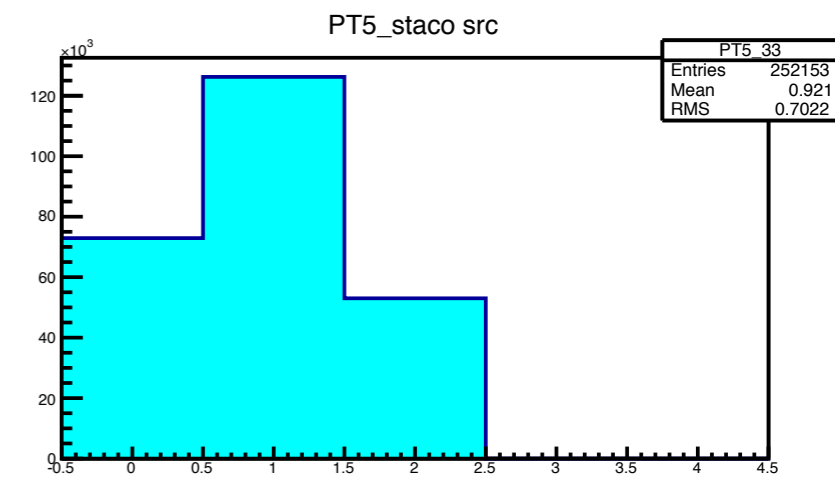
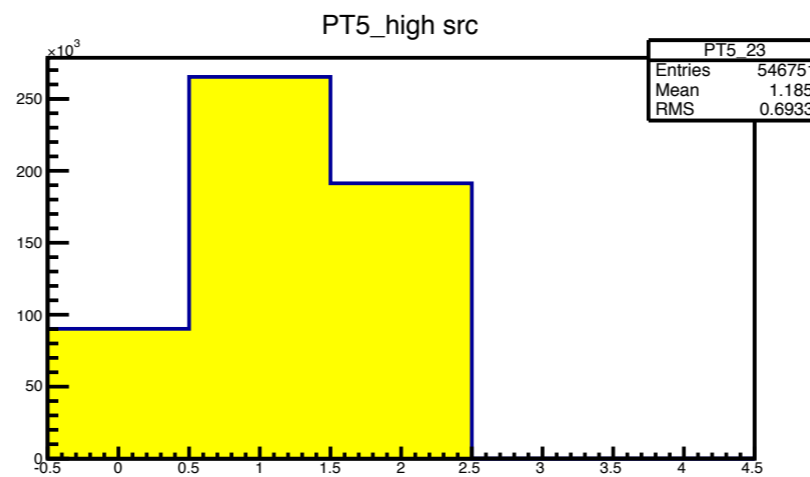
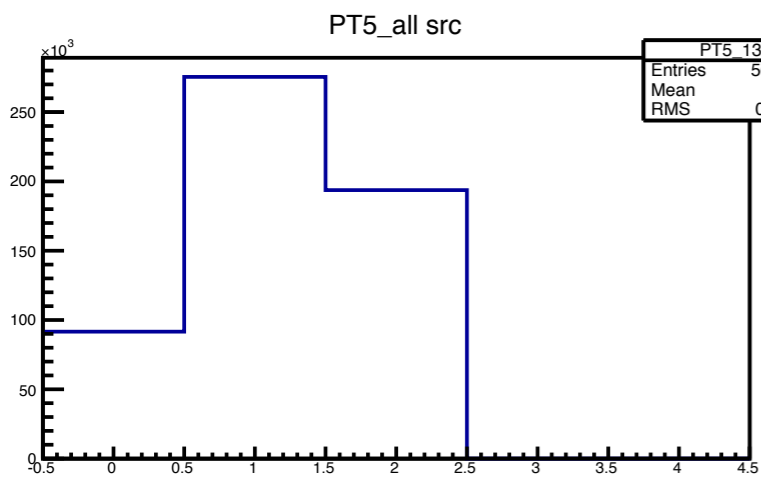
	all RoI		1 fill/event		w staco(dR<0.1)	
S1 (before EI/FI cut)	609212		595890		157250	
	53748 (RPC)	555464 (TGC)	51591 (RPC)	544299 (TGC)	41145 (RPC)	116105 (TGC)
S2 (EI/FI cut)	376096		366918		148302	
	53748 (RPC)	322348 (TGC)	52915 (RPC)	314003 (TGC)	42245 (RPC)	106057 (TGC)
S3 (TILE cut)	342618		333795		147558	
	53748 (RPC)	288870 (TGC)	52916 (RPC)	280879 (TGC)	42245 (RPC)	105313 (TGC)
S4 (NSW cut)	136889		132683		110757	
	53748 (RPC)	83141 (TGC)	52944 (RPC)	79739 (TGC)	42268 (RPC)	68489 (TGC)

4: Histograms

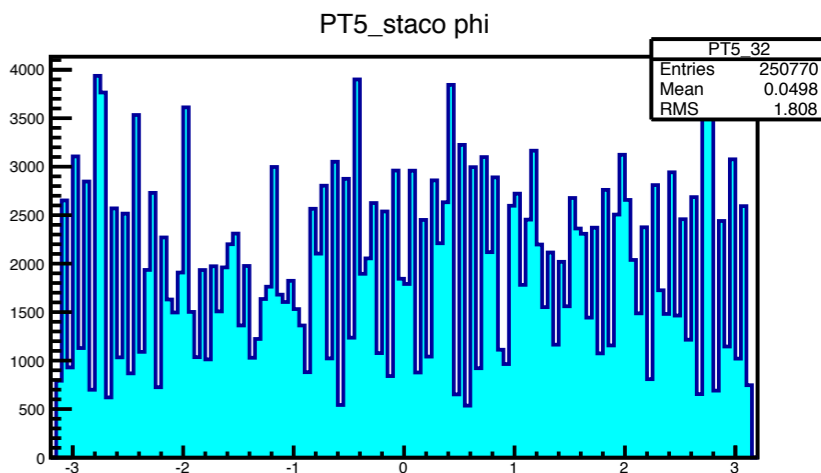
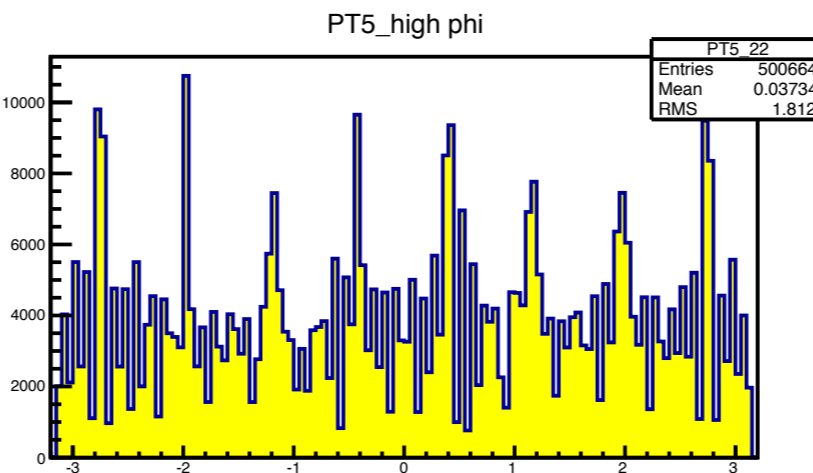
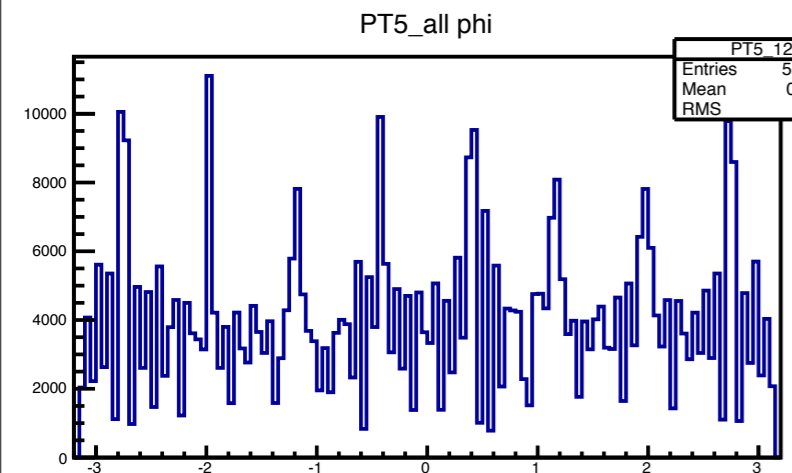
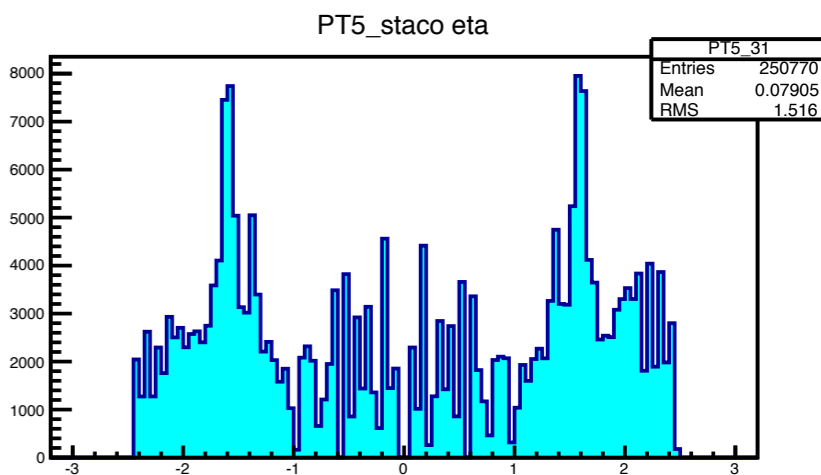
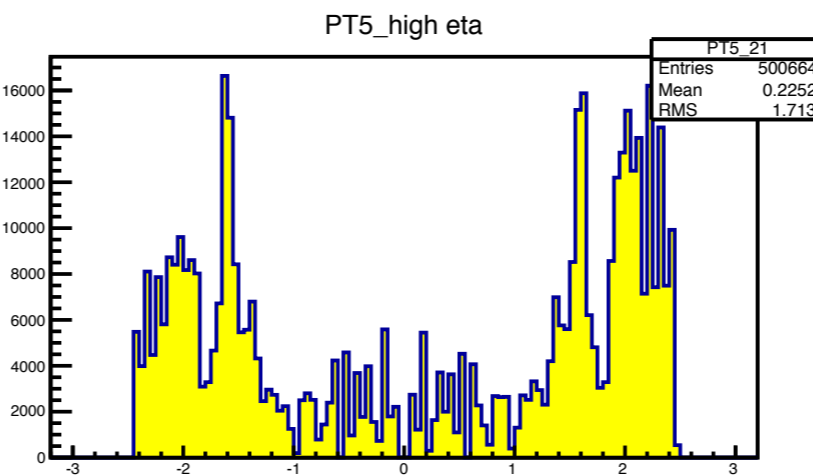
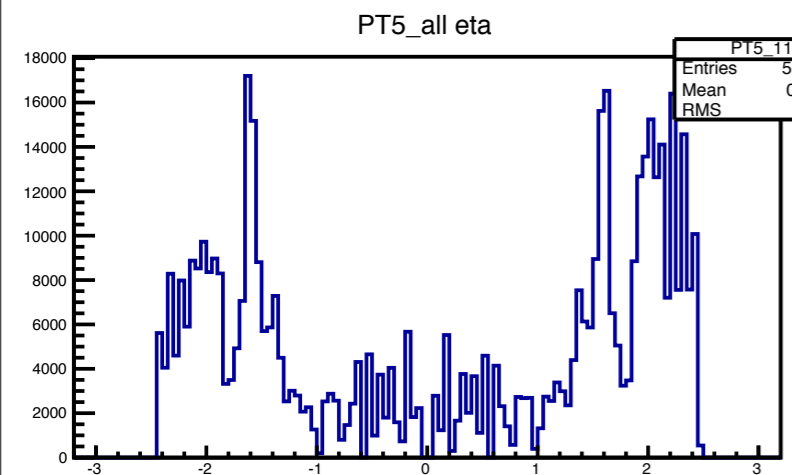
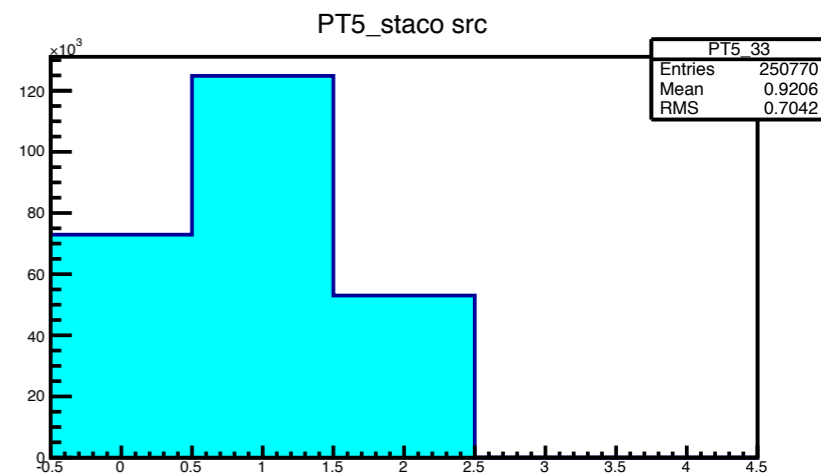
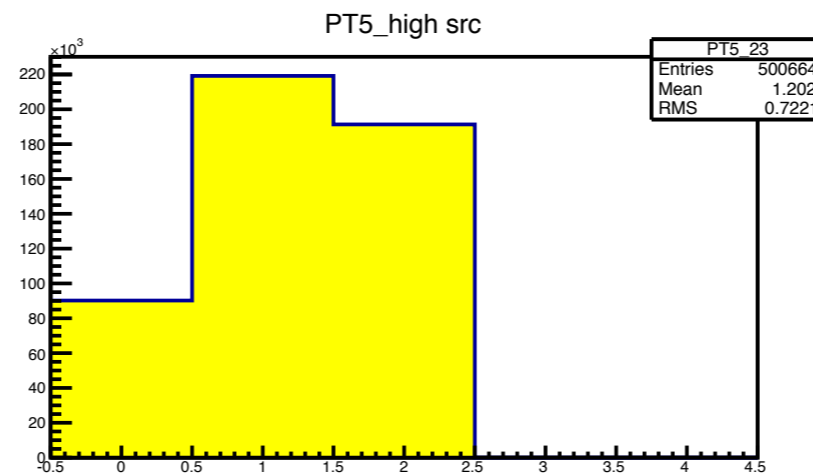
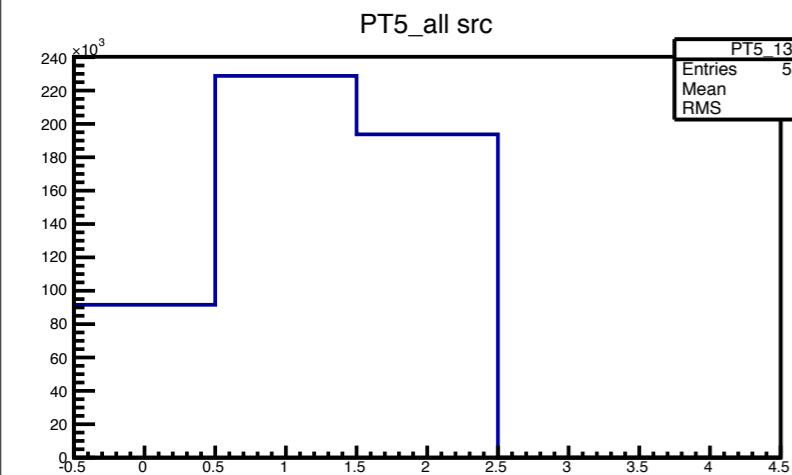
Step 1: PT5



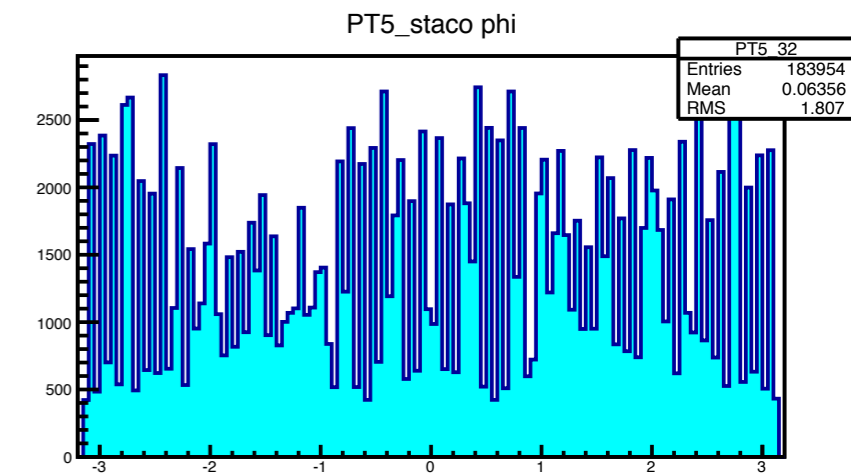
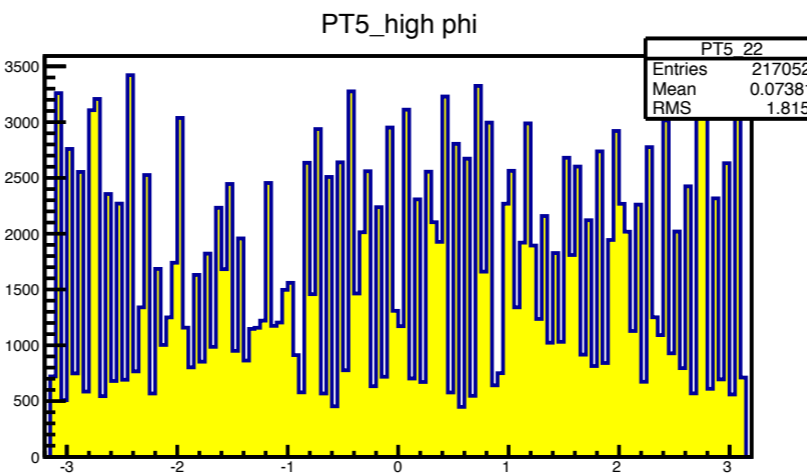
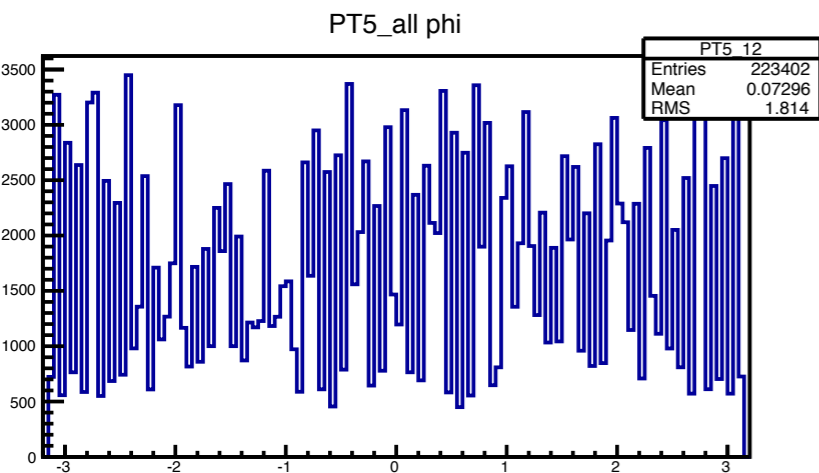
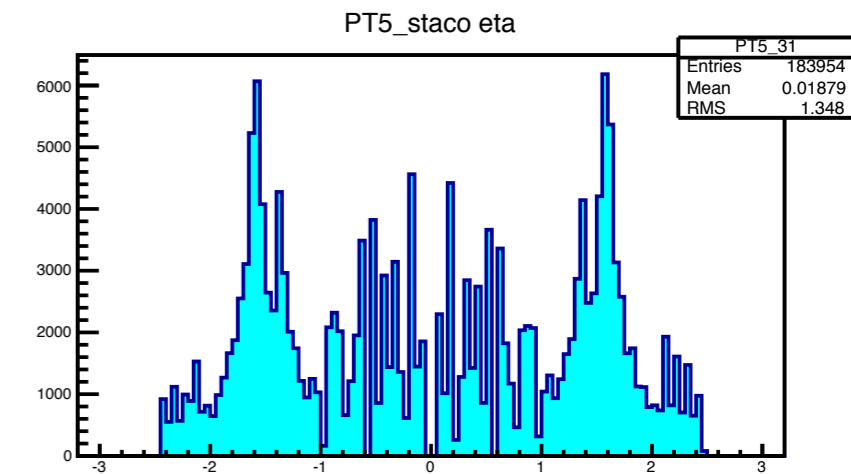
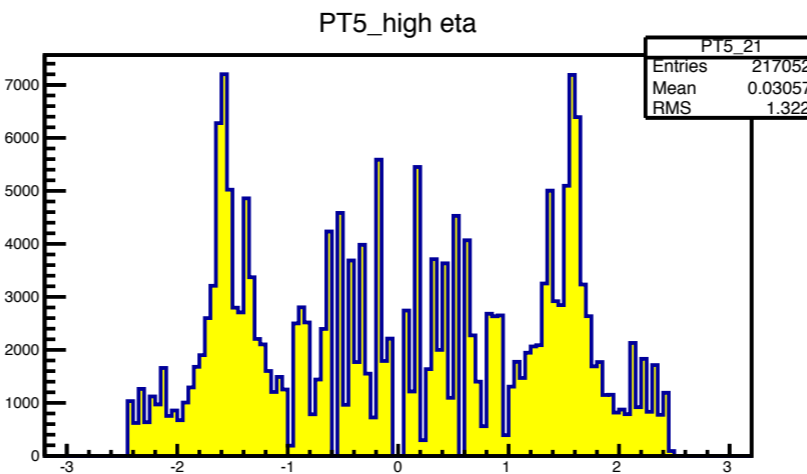
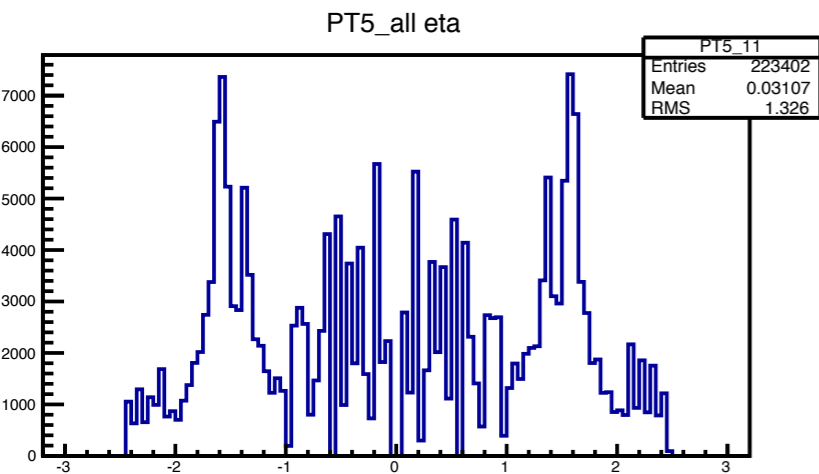
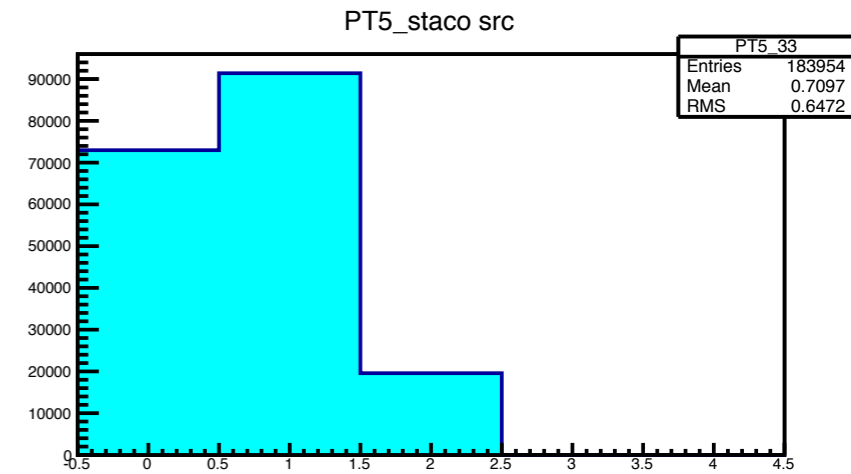
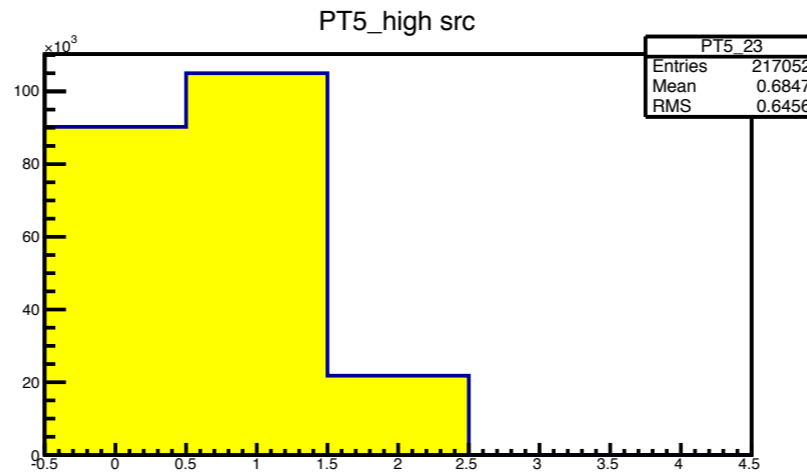
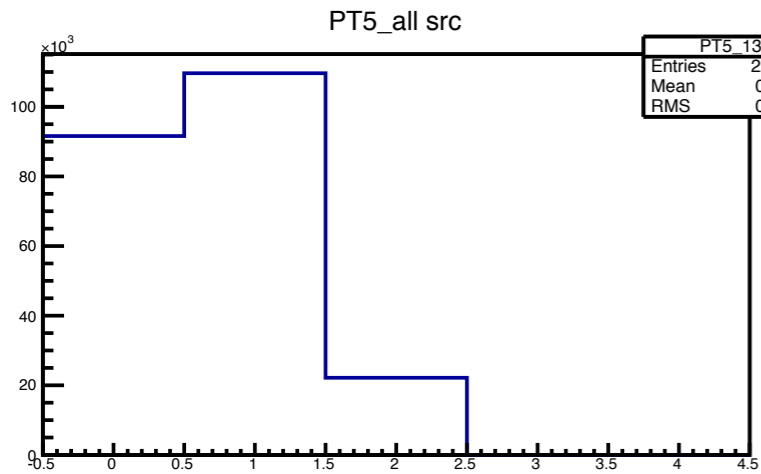
Step 2: PT5



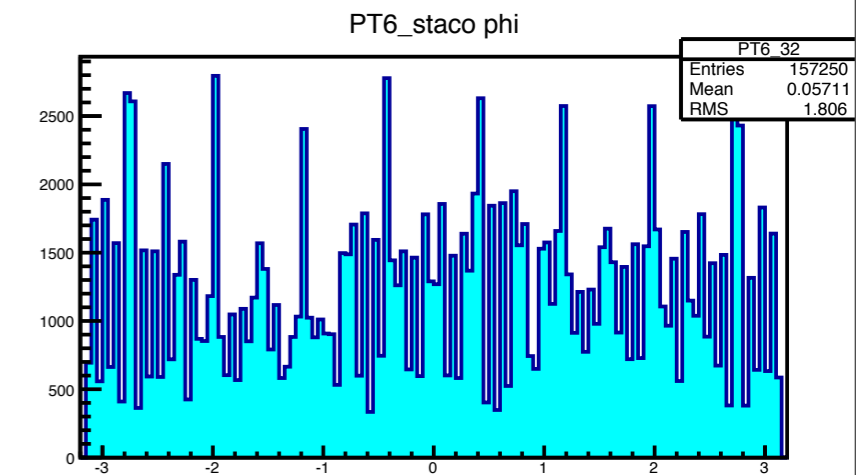
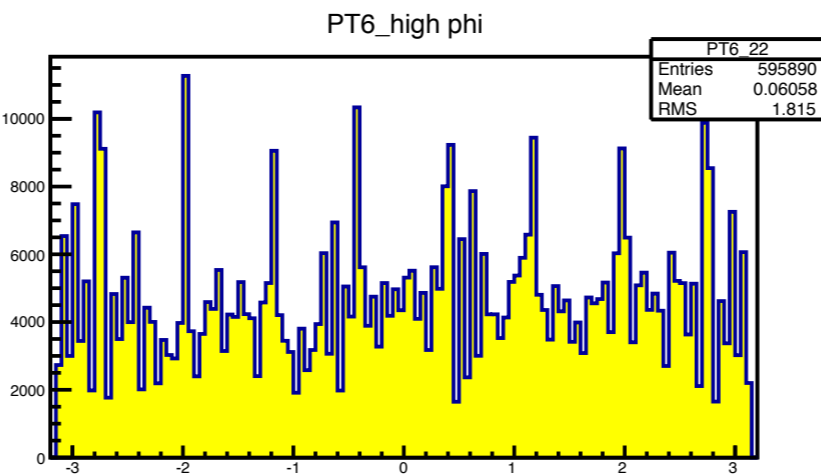
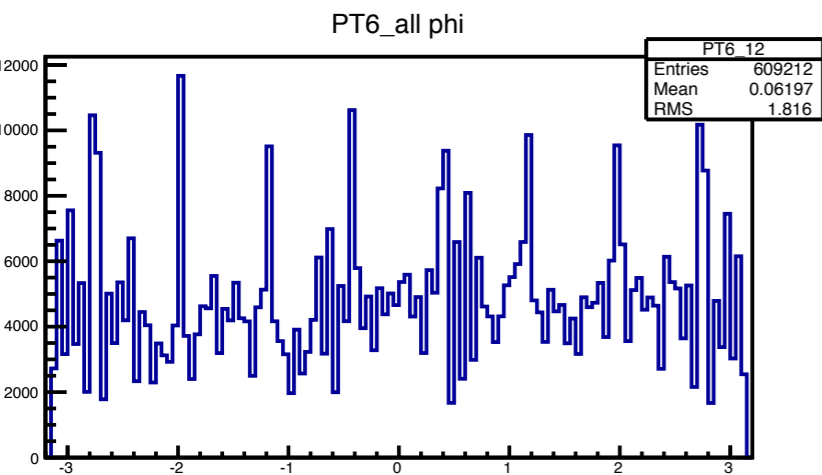
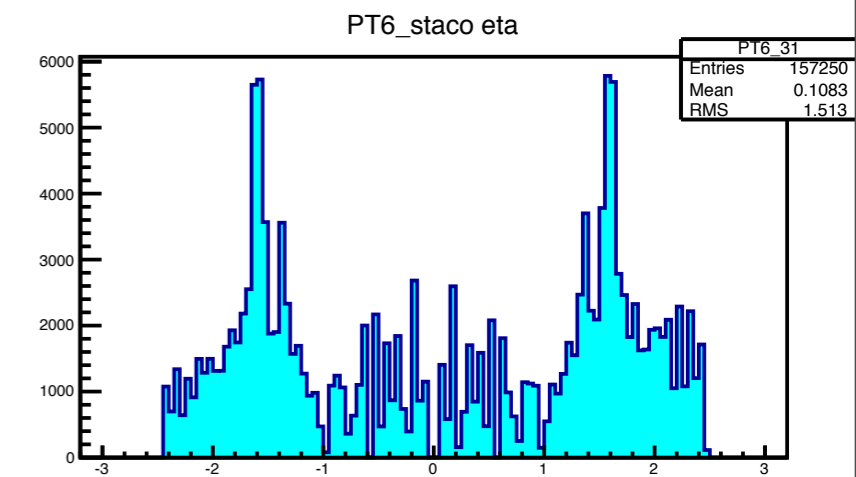
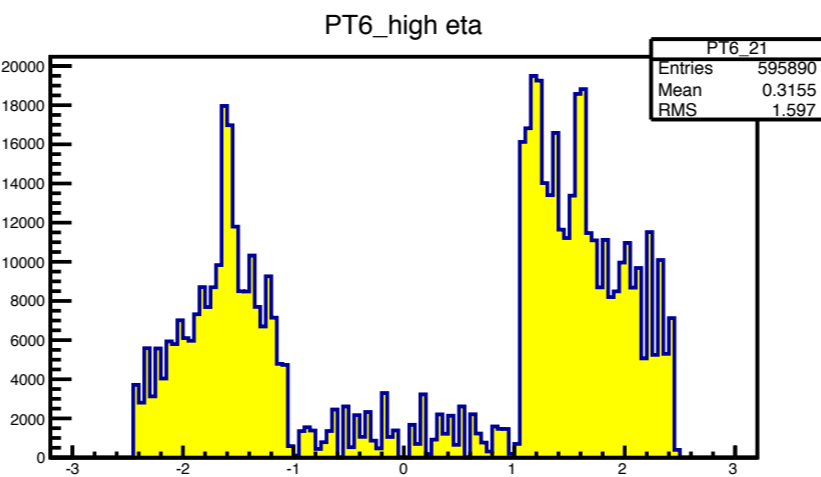
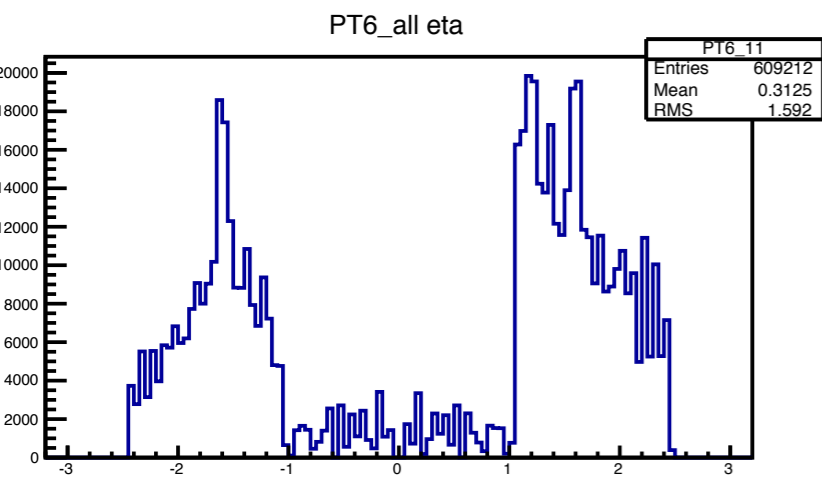
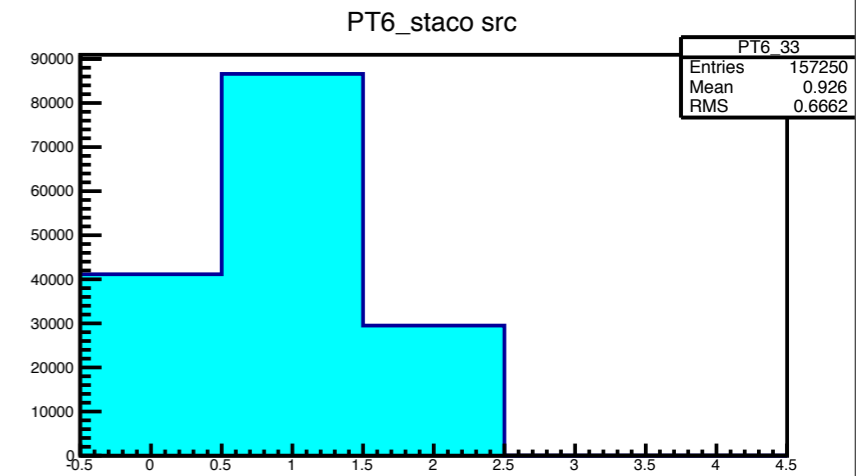
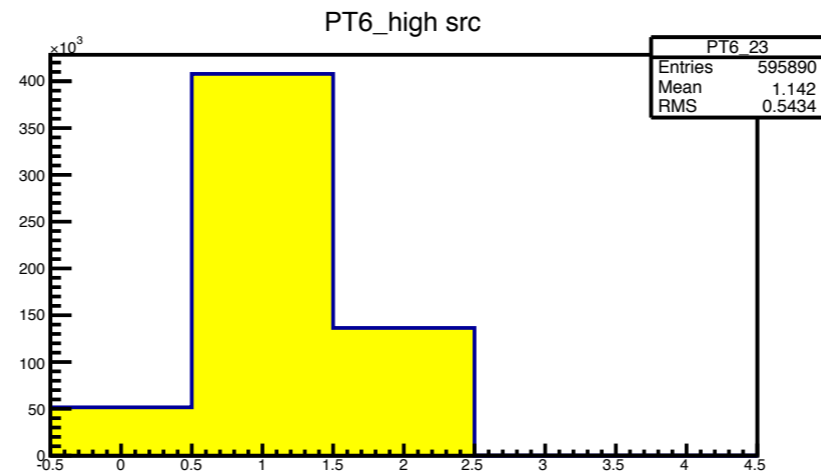
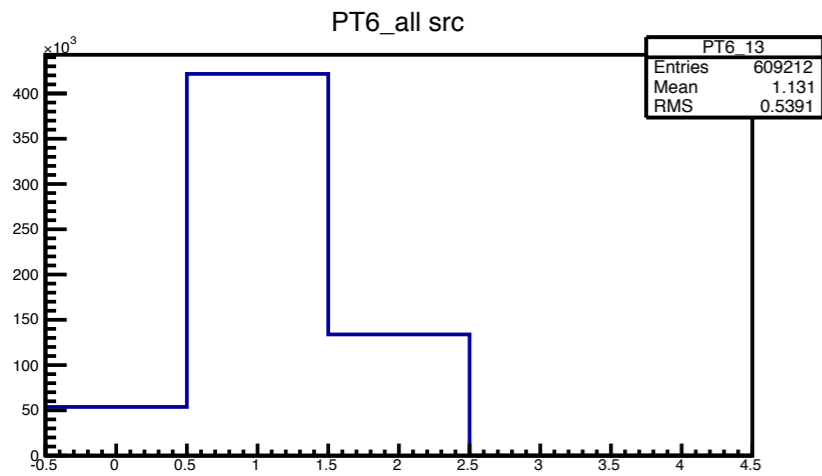
Step 3: PT5



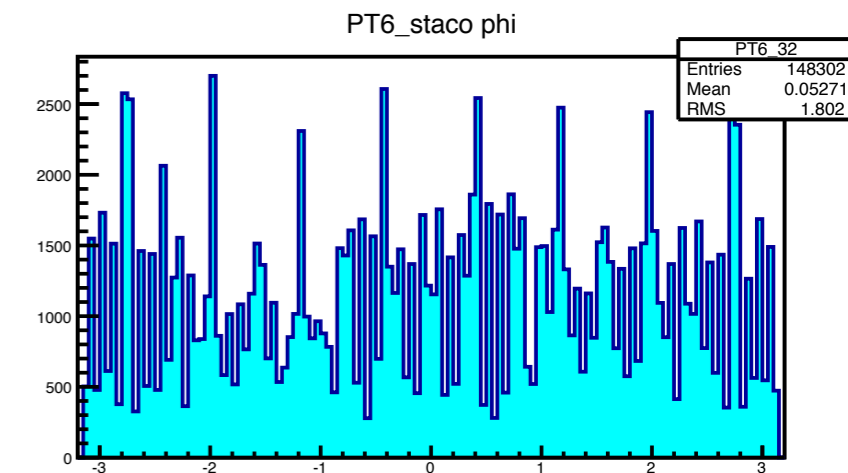
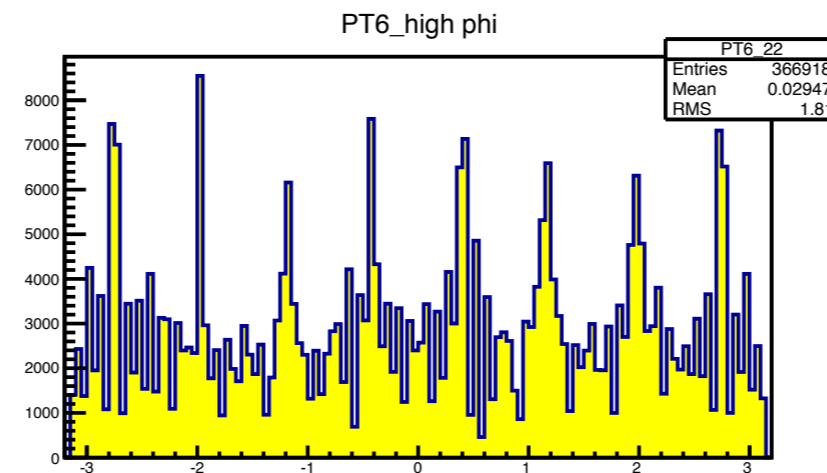
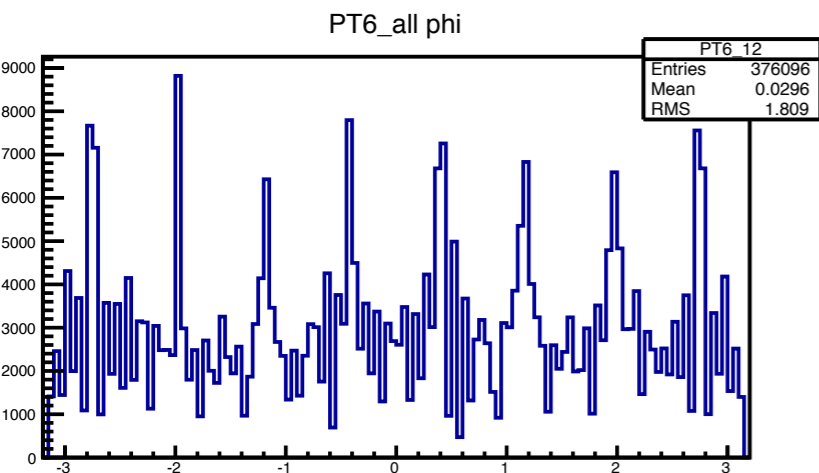
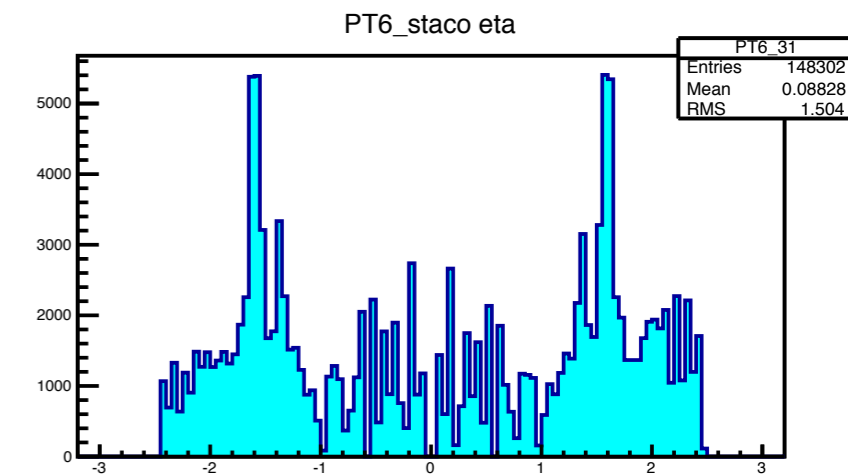
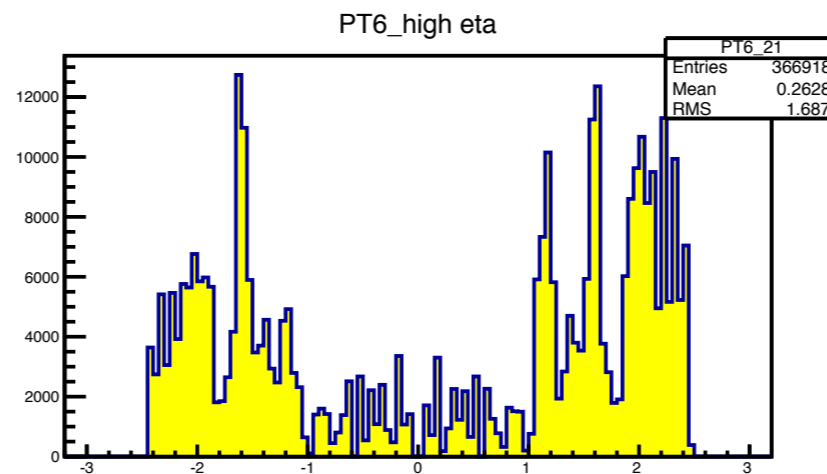
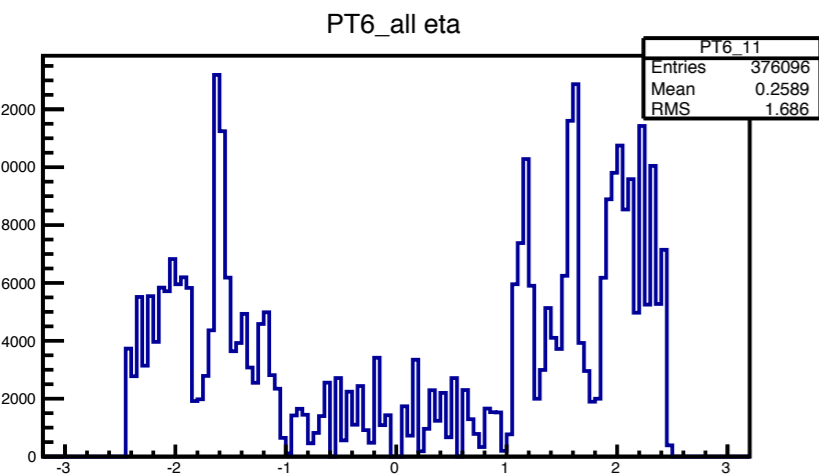
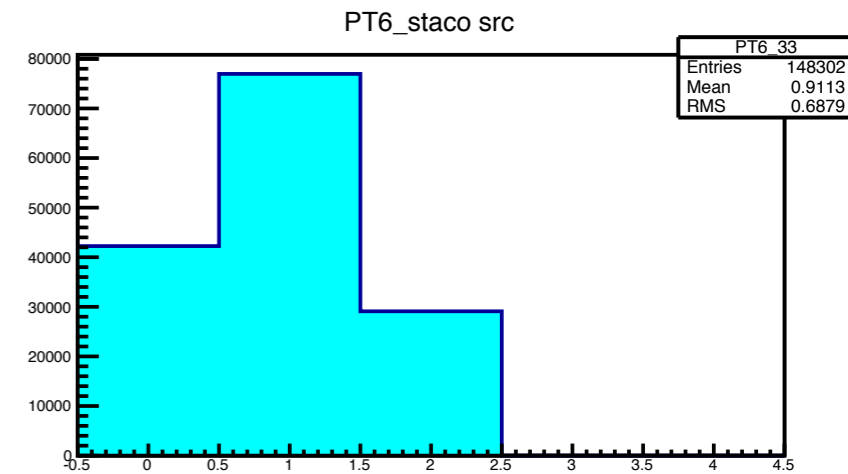
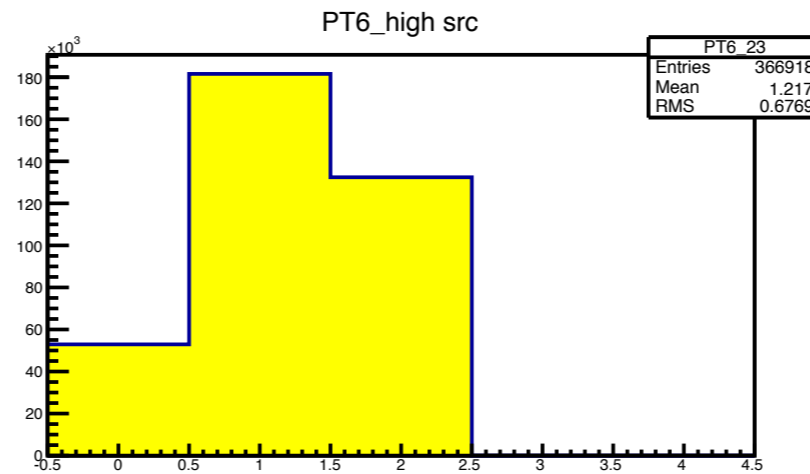
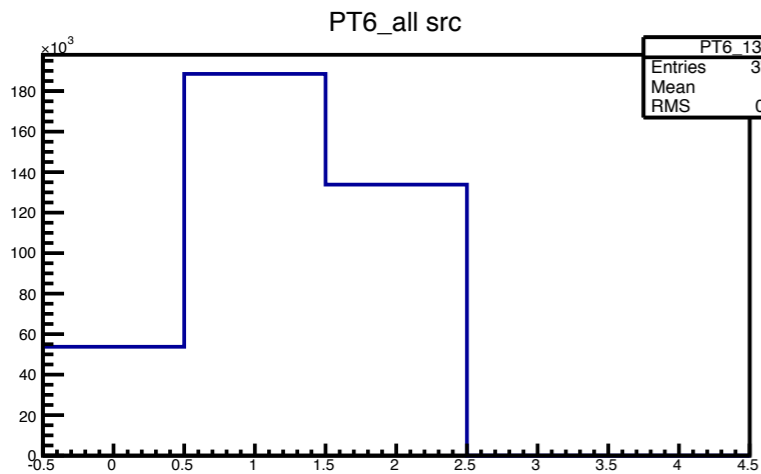
Step 4: PT5



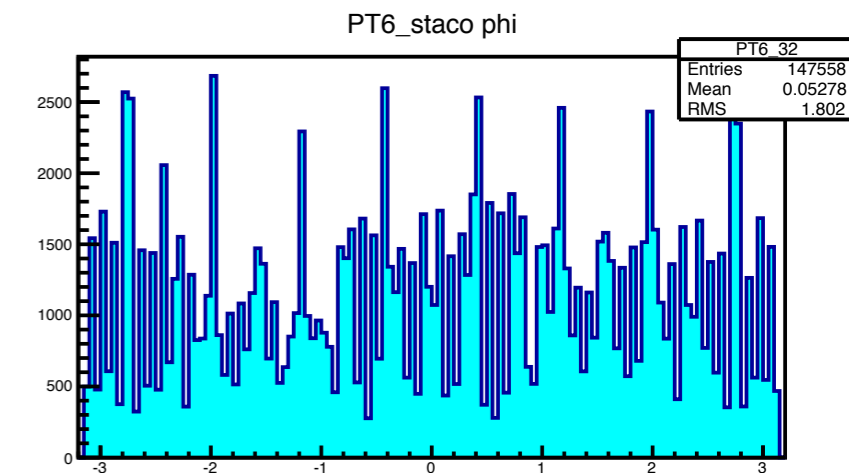
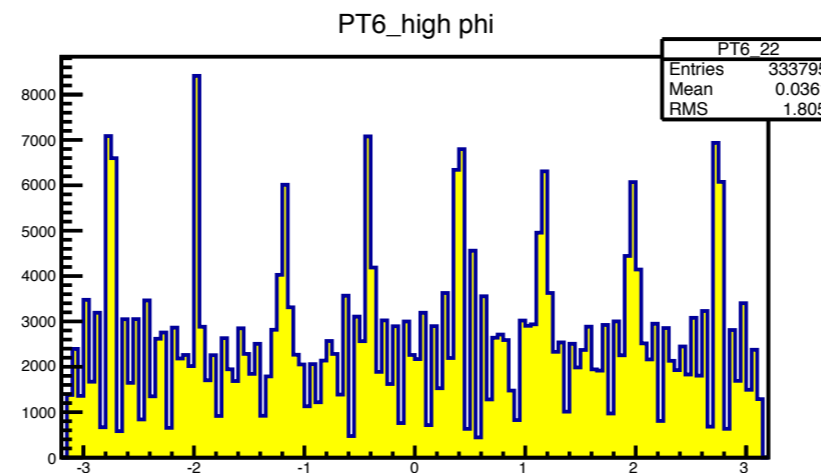
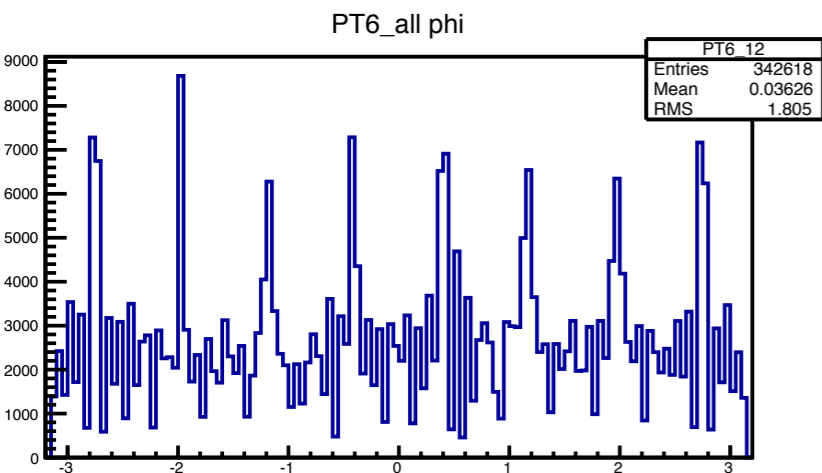
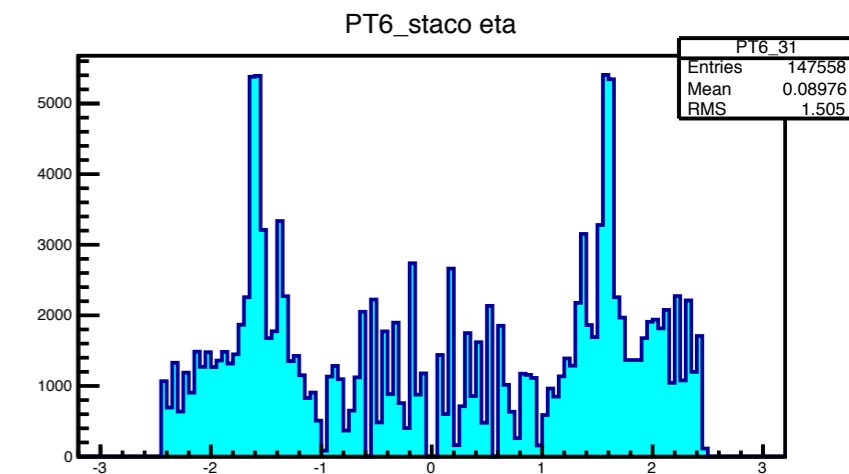
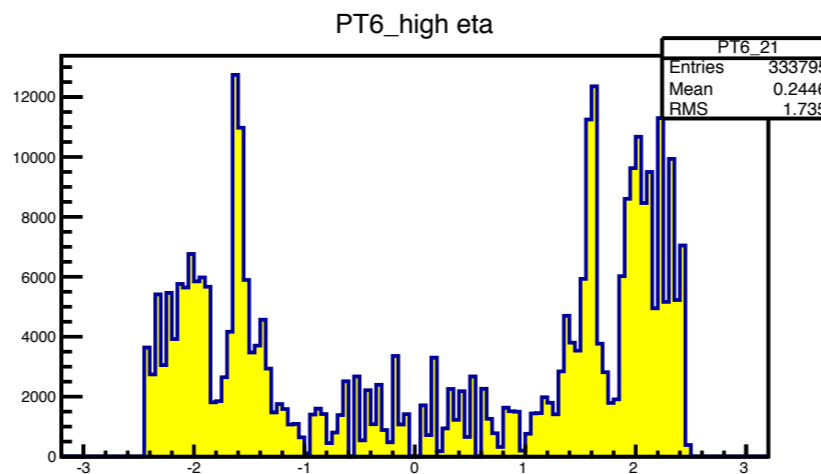
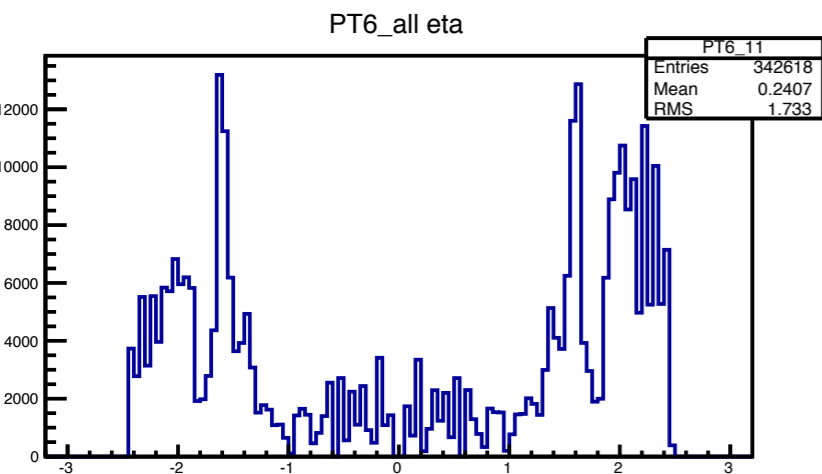
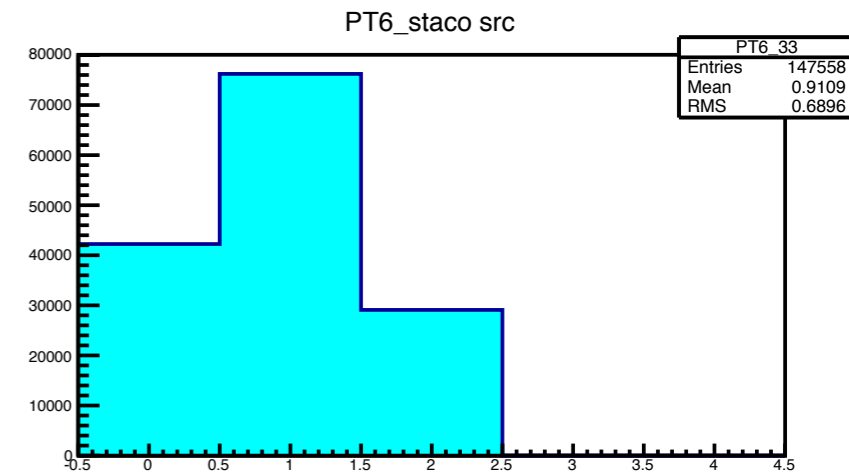
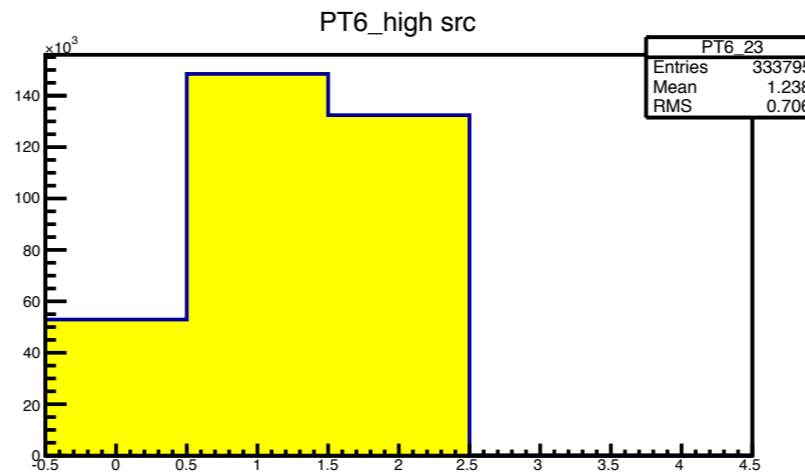
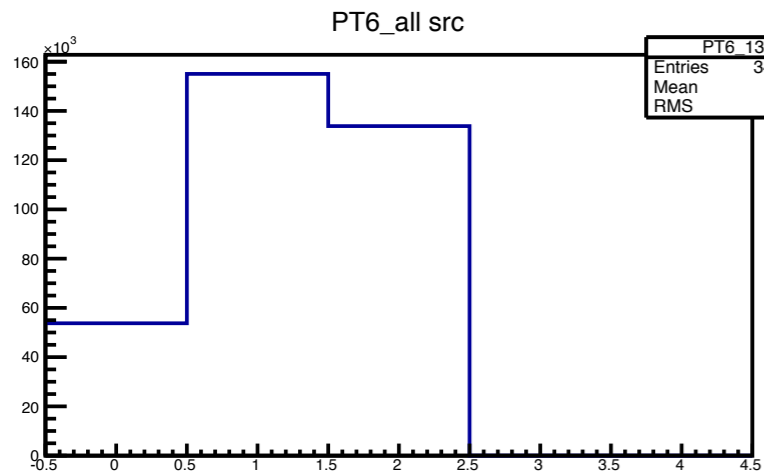
Step 1: PT6



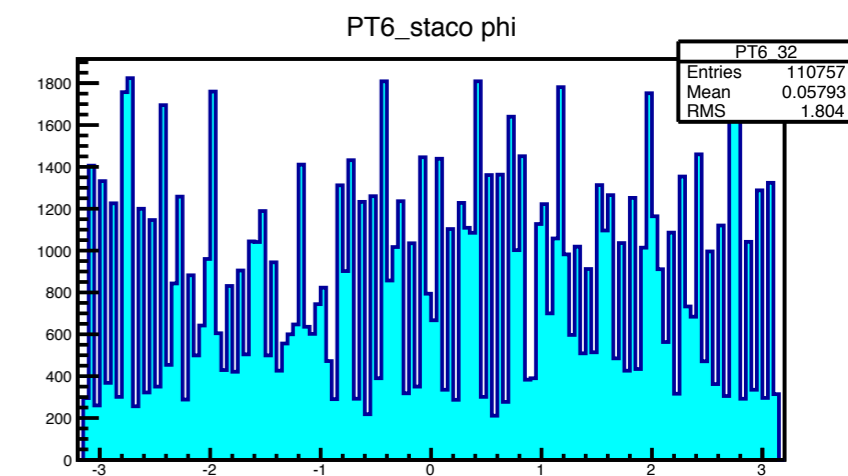
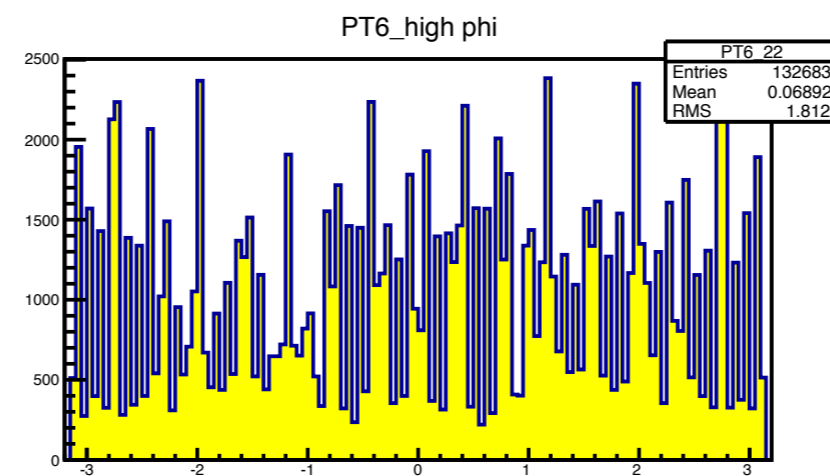
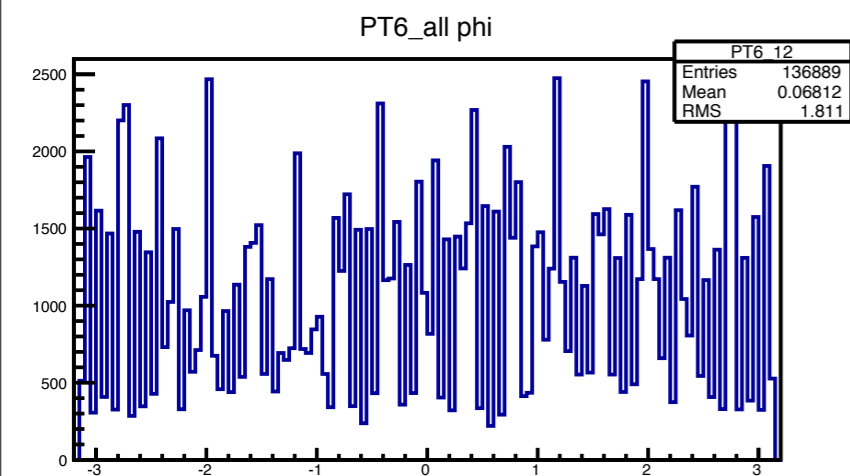
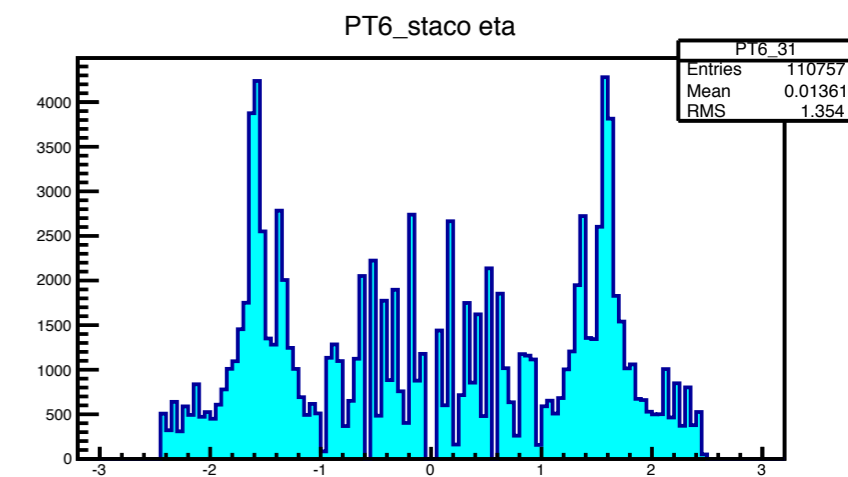
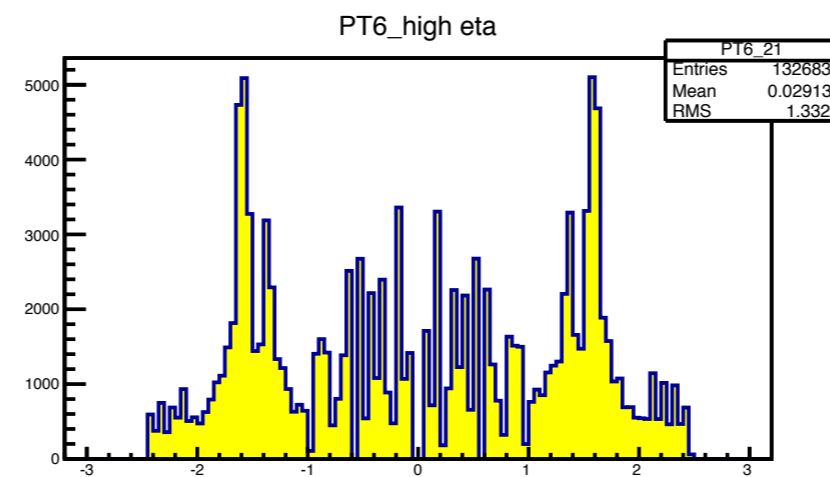
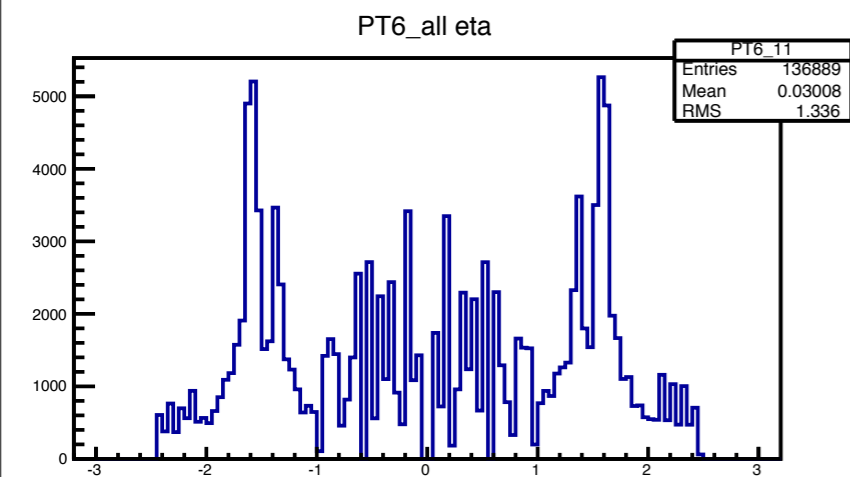
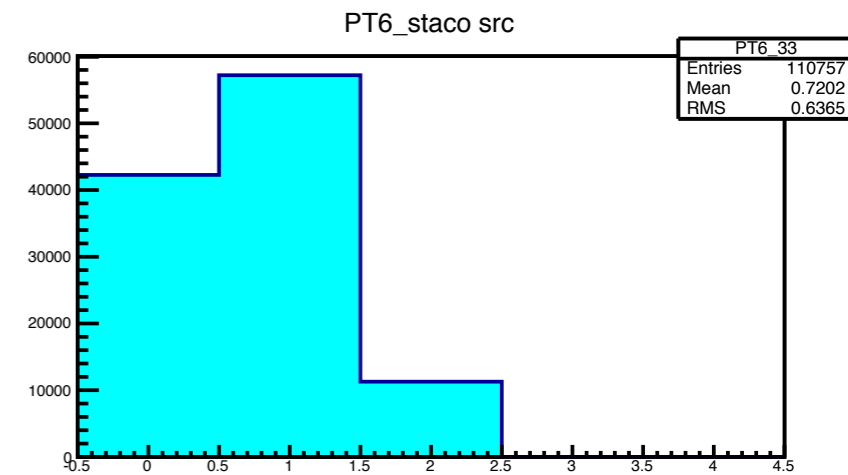
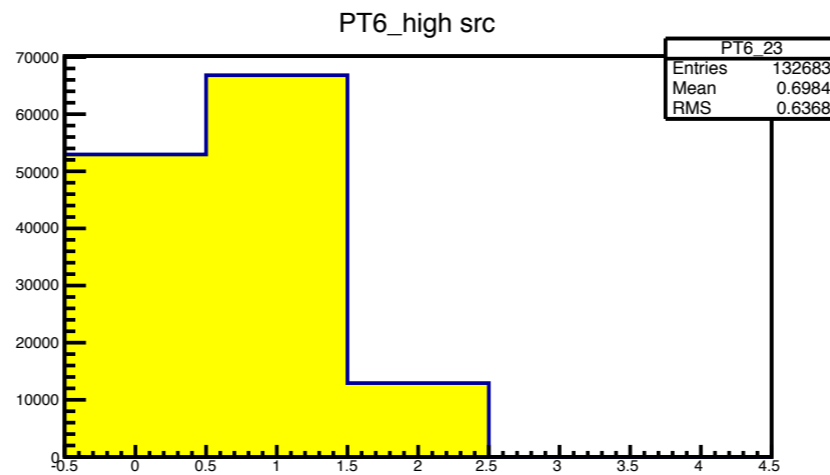
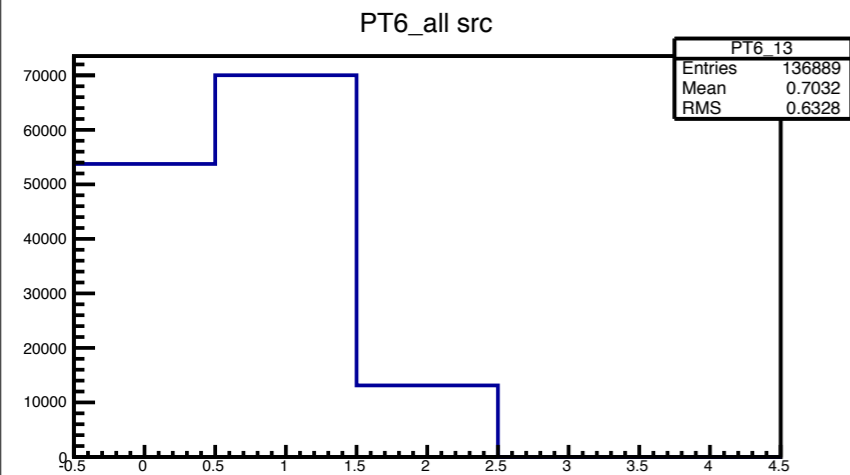
Step 2: PT6



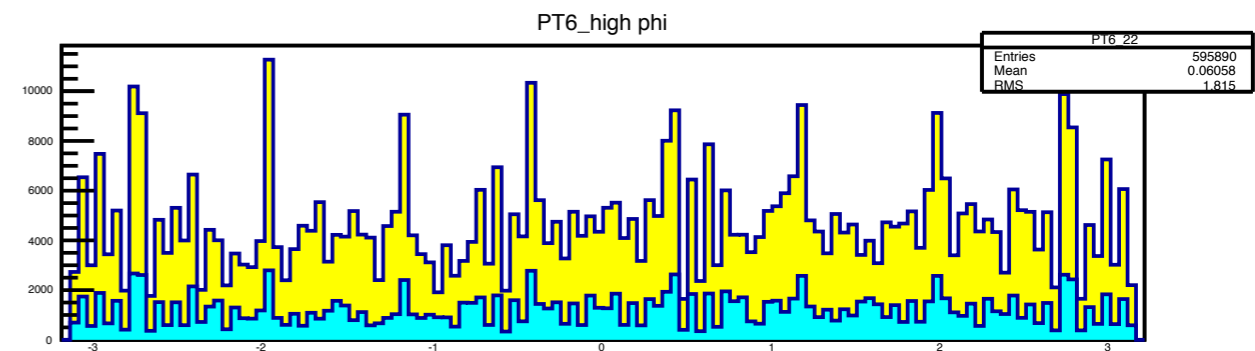
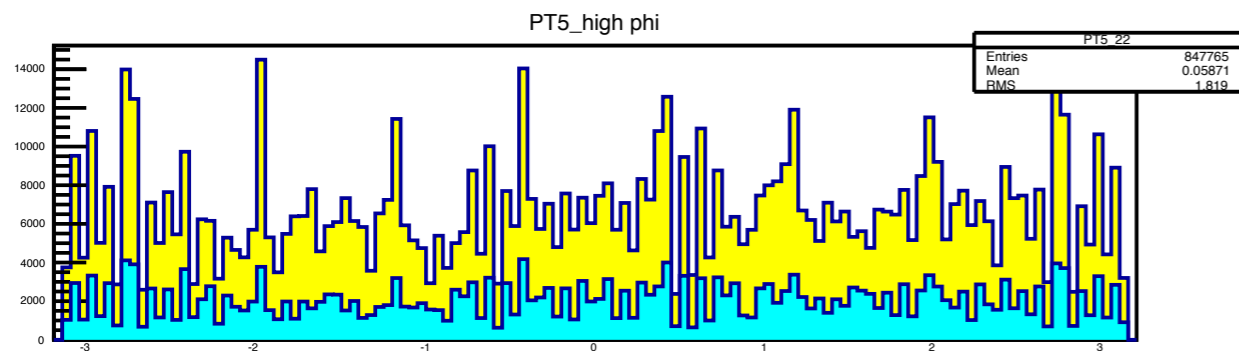
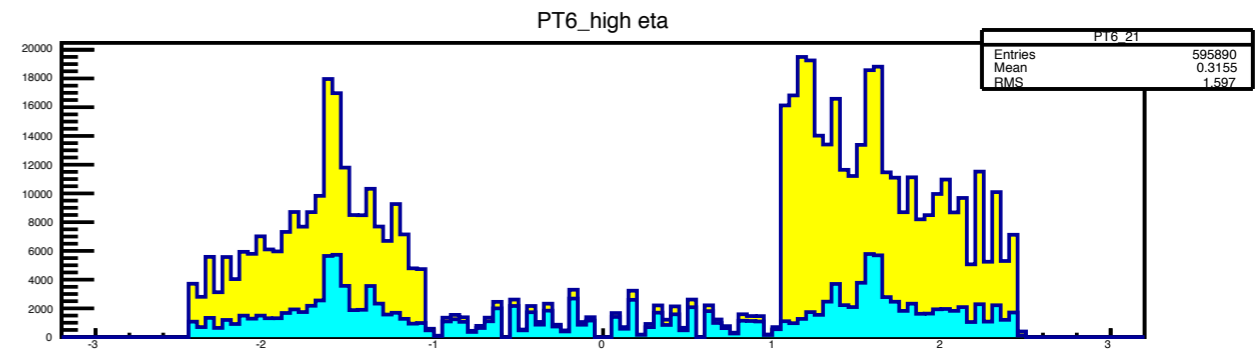
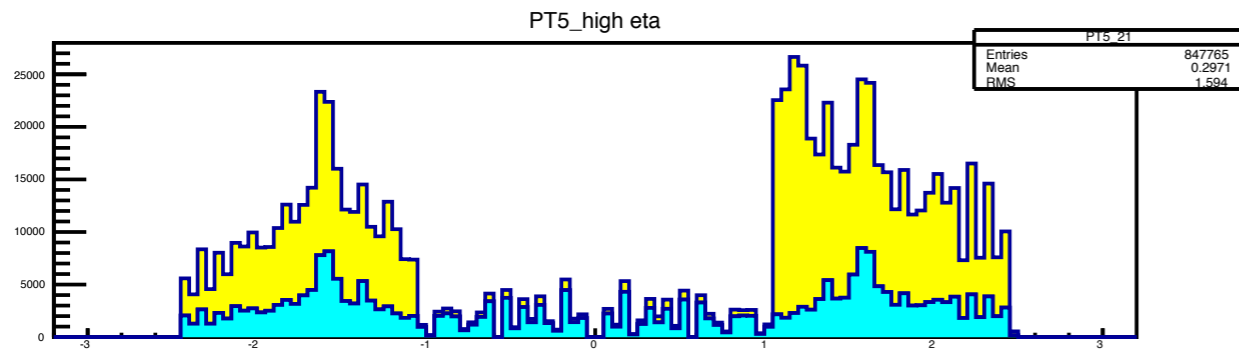
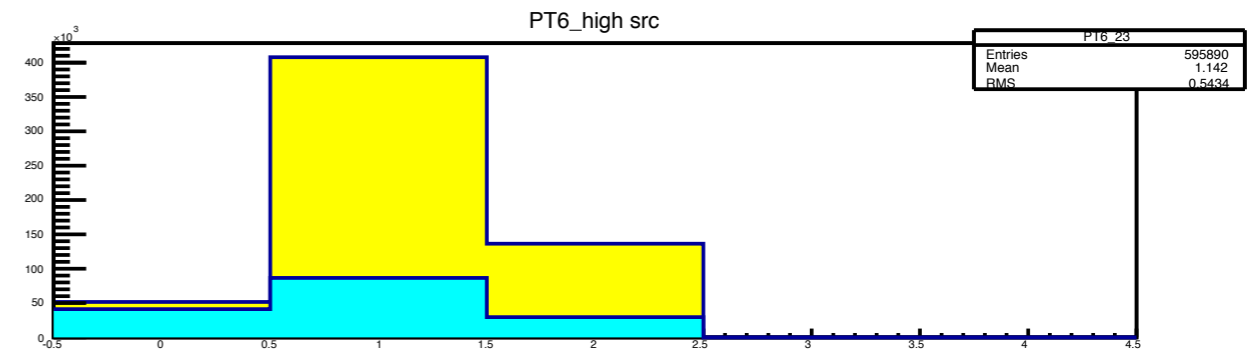
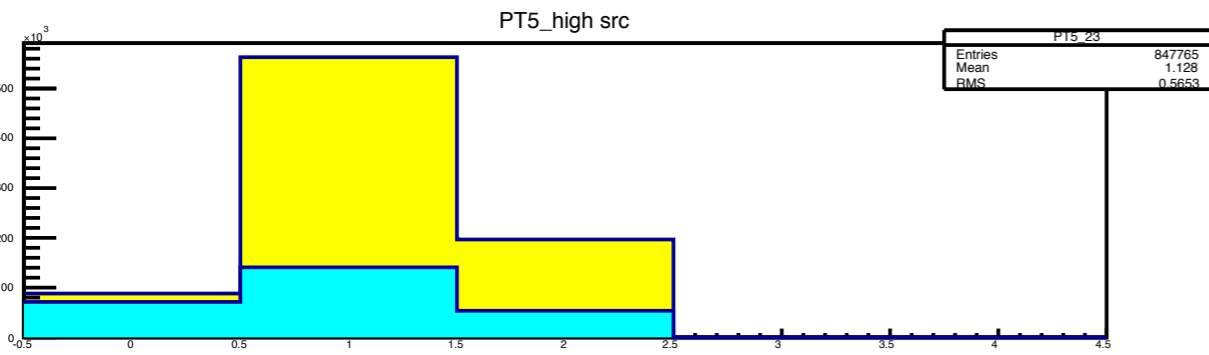
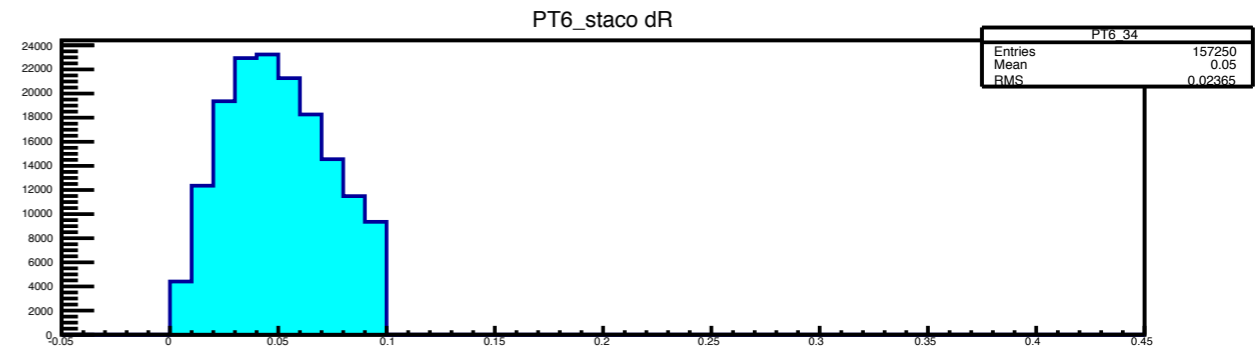
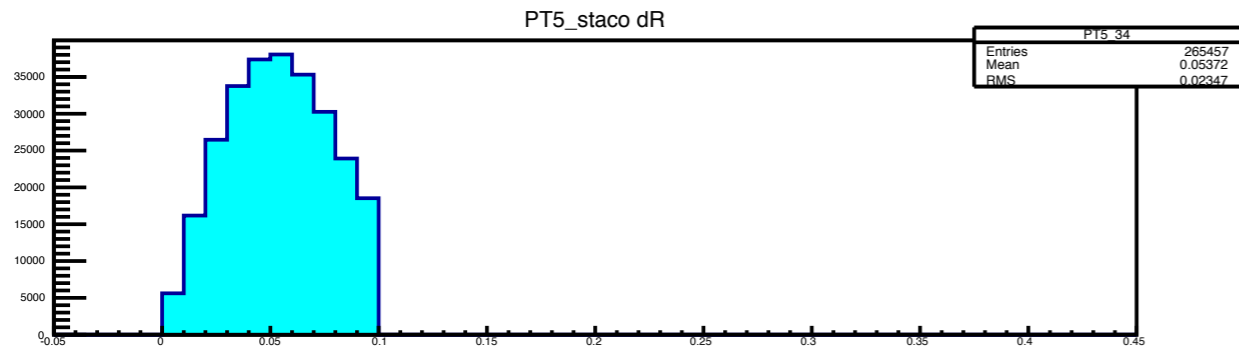
Step 3: PT6



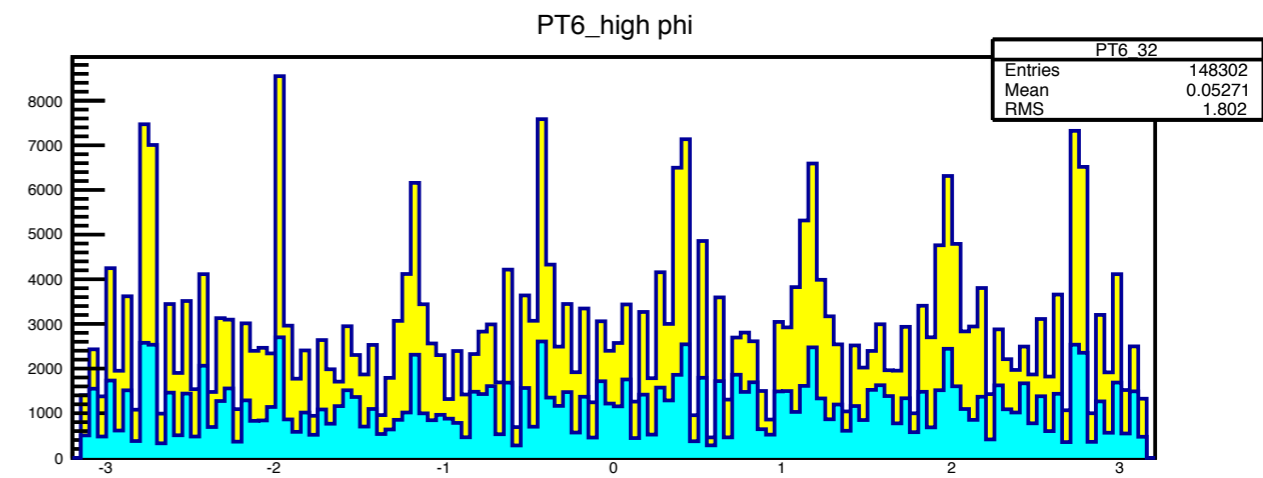
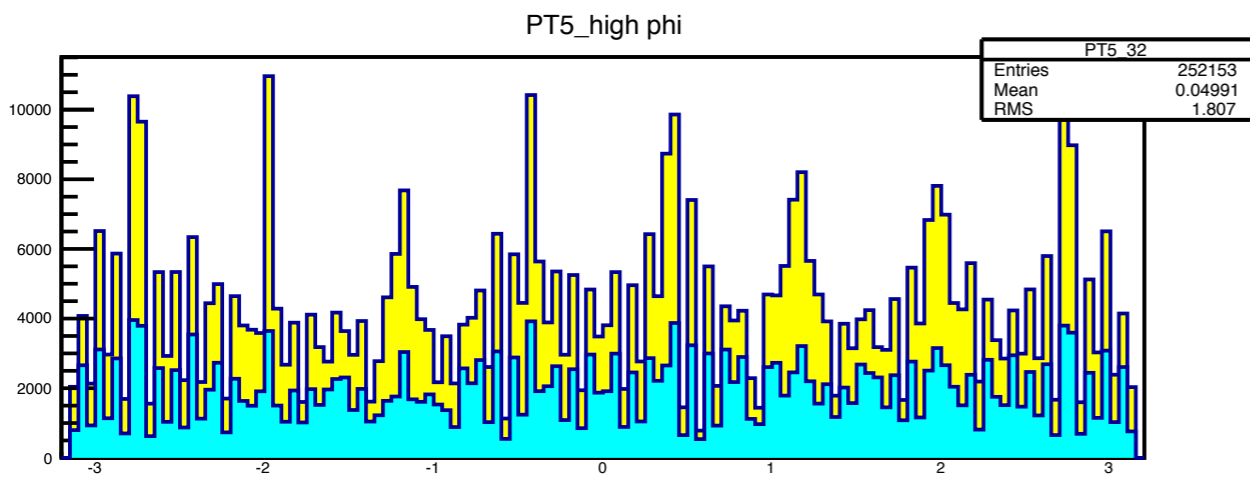
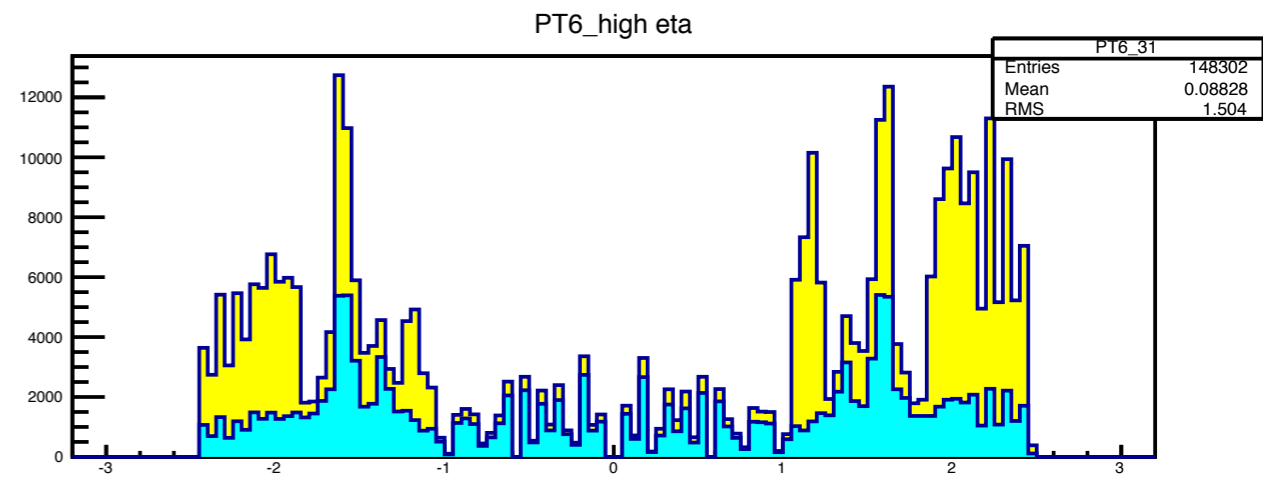
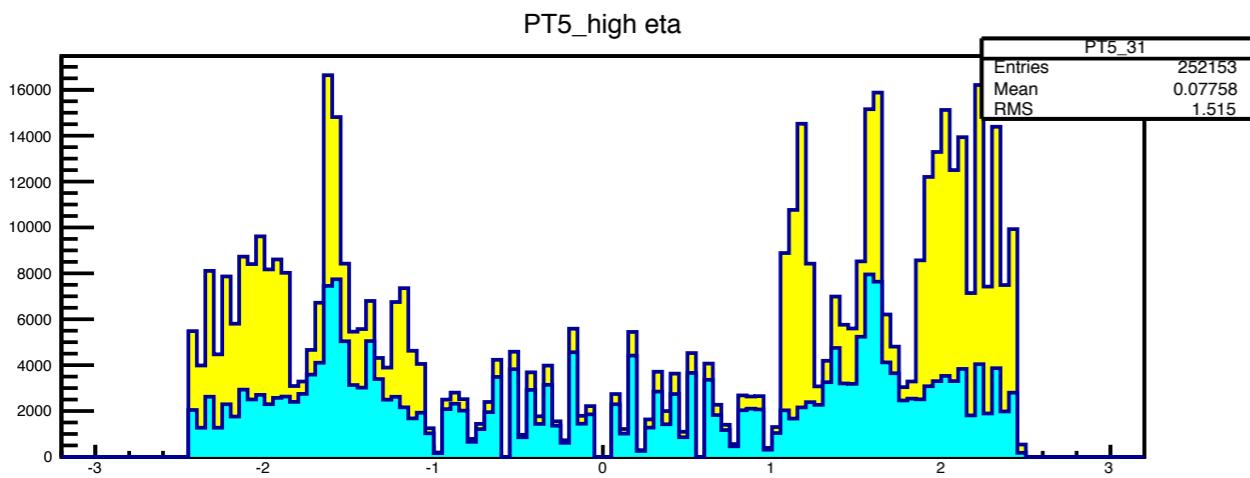
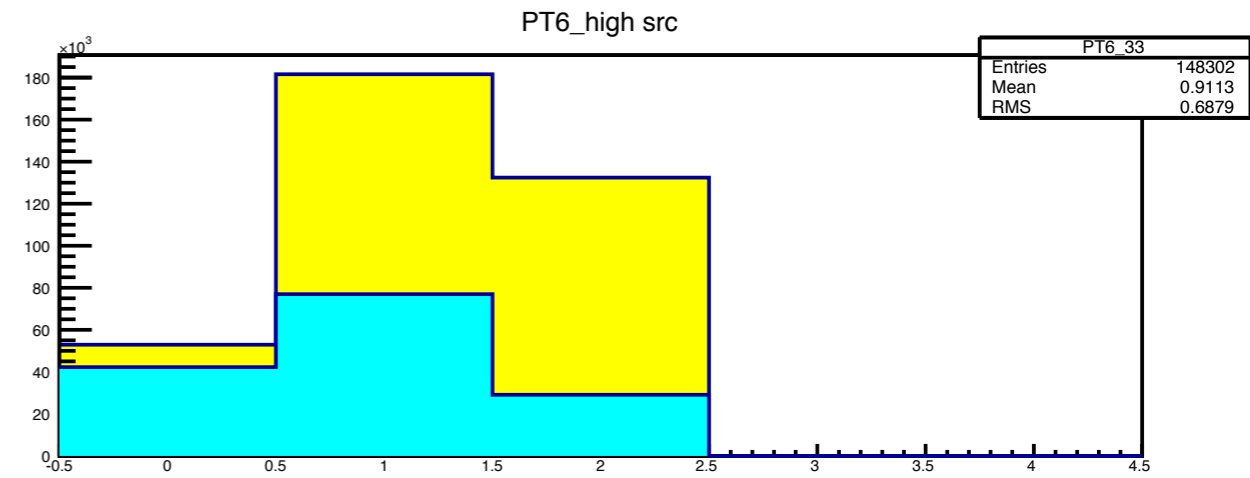
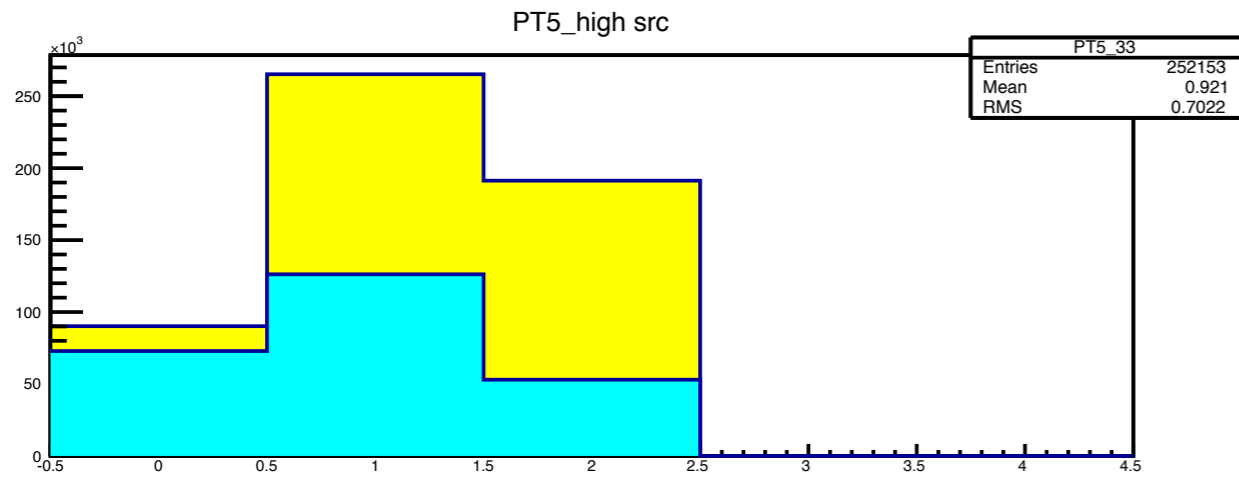
Step 4: PT6



Step 1: 比較

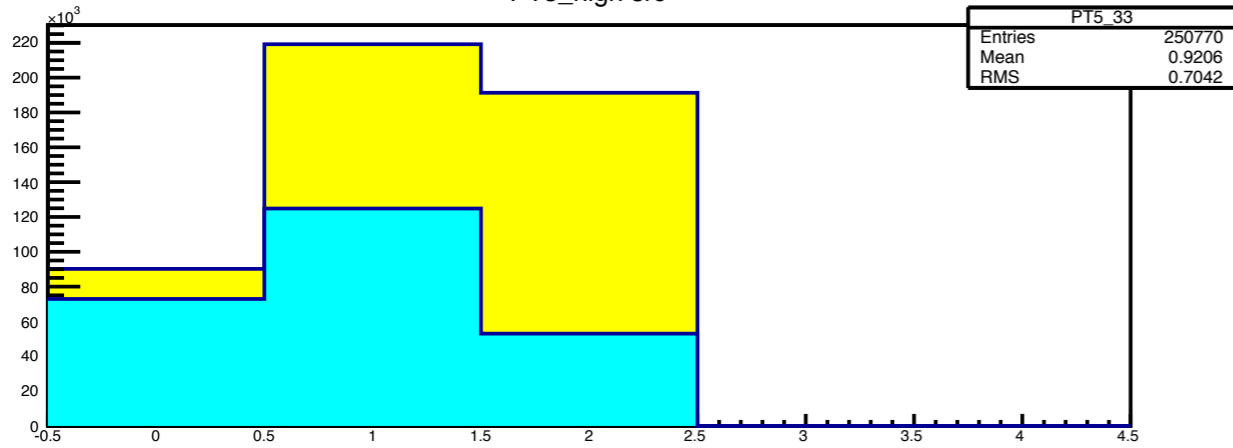


Step 2: 比較

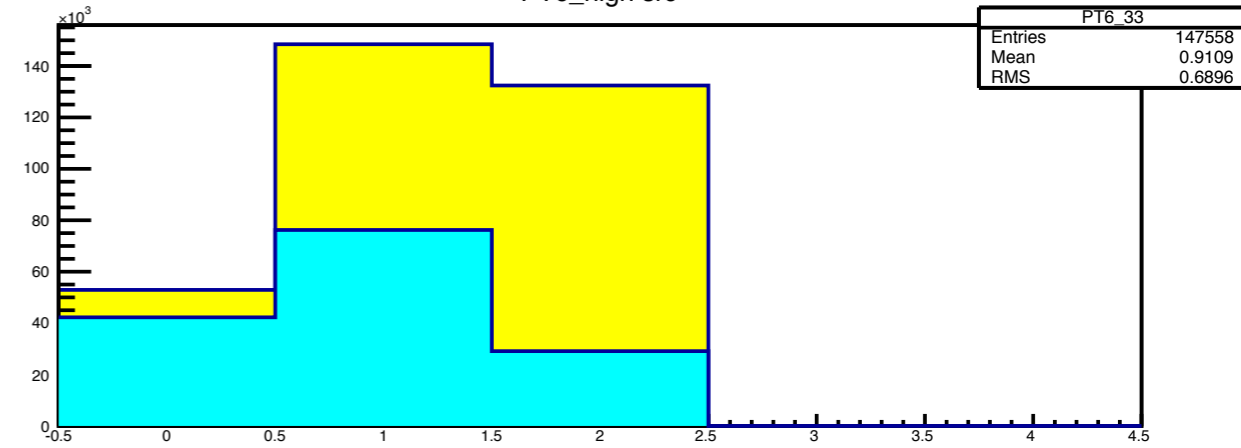


Step 3: 比較

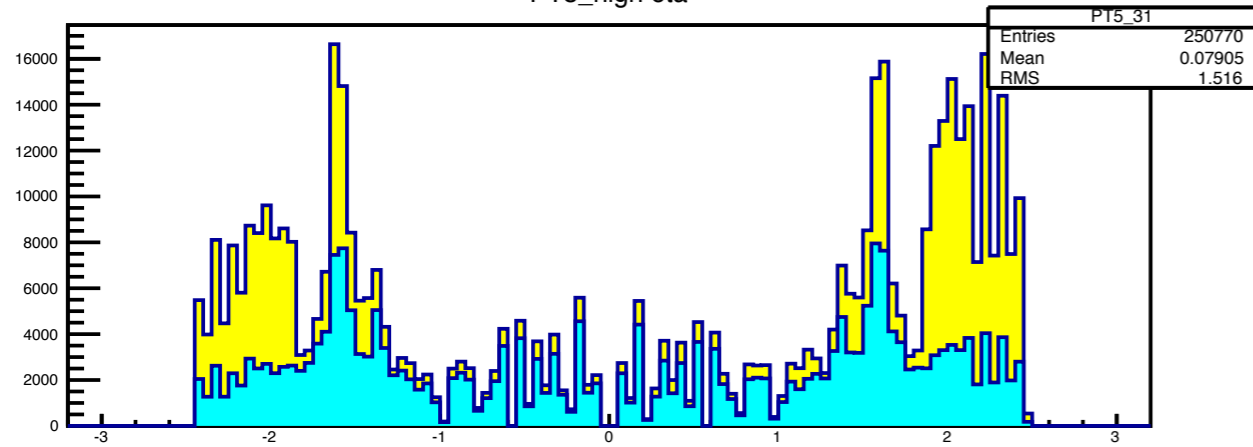
PT5_high src



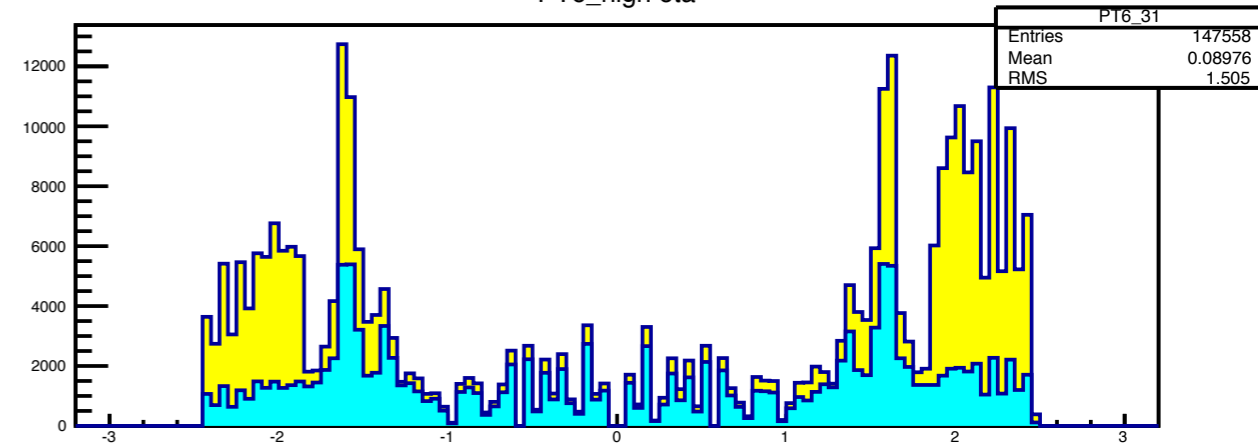
PT6_high src



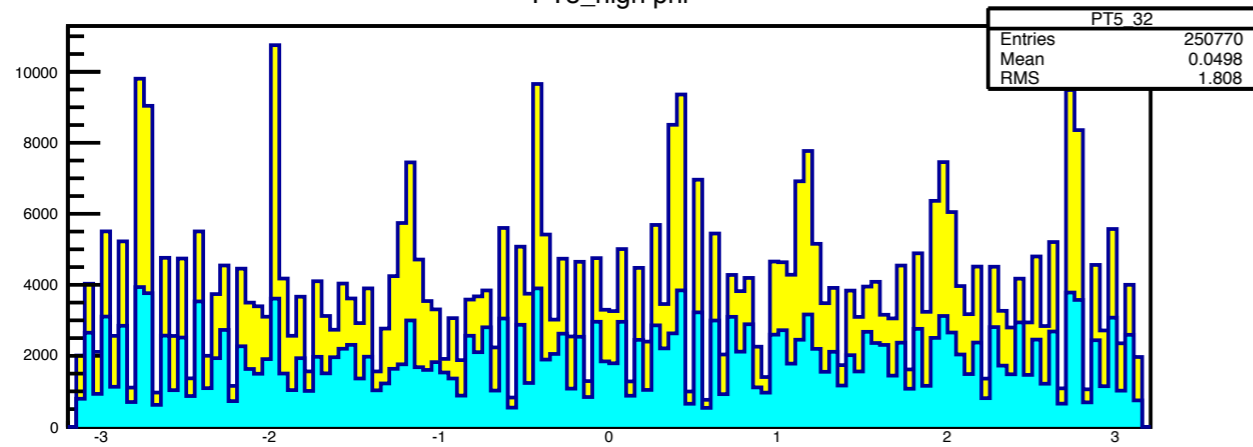
PT5_high eta



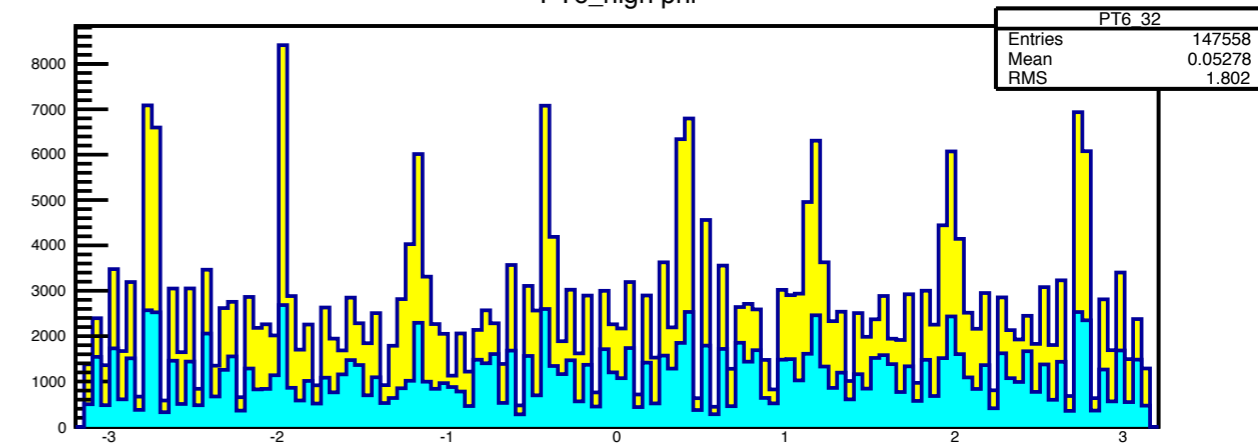
PT6_high eta



PT5_high phi



PT6_high phi



Step 4: 比較

