

Analysis on cosmic ray data (Run 30776)

G.Y.Lim

3rd, April, 2019

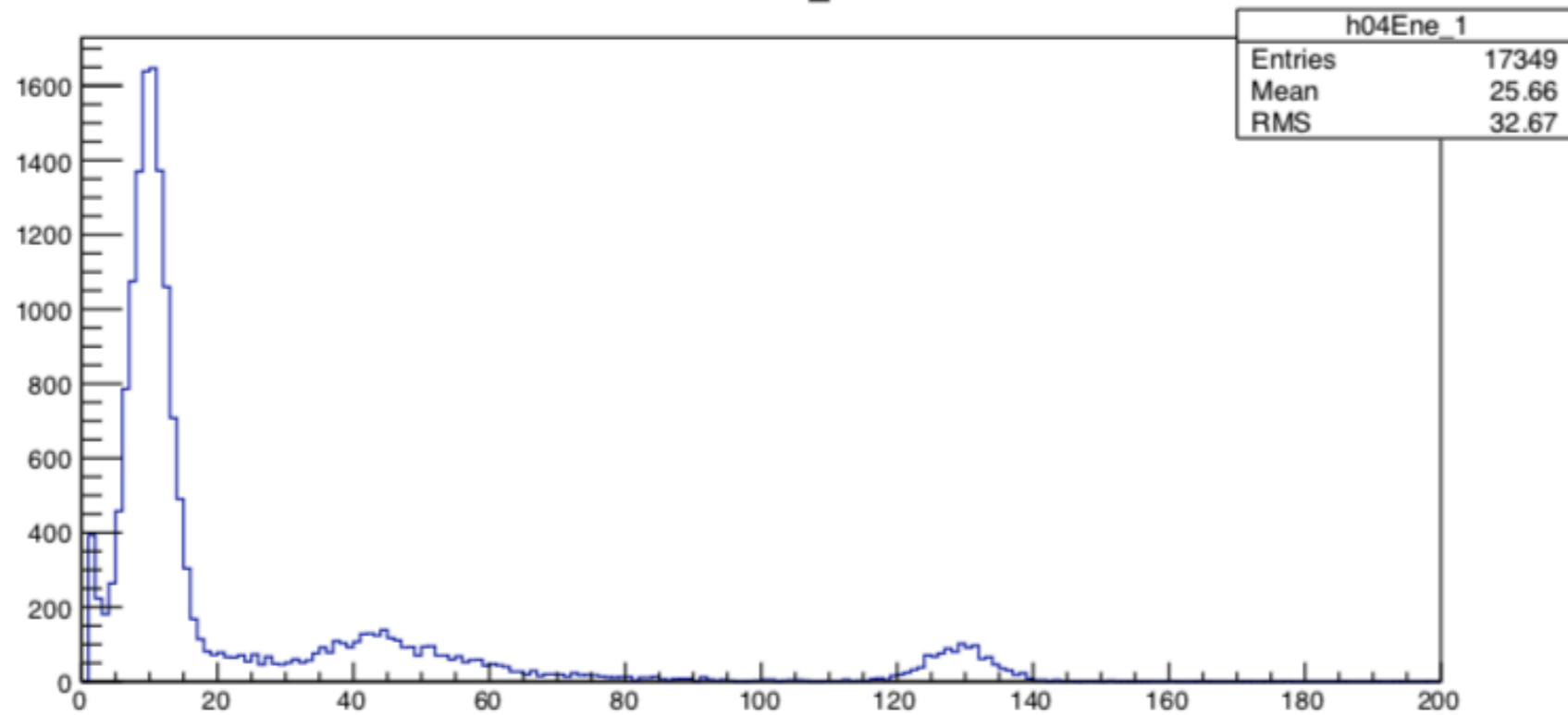
`/gpfs/fs03/had/koto/ps3/klea/work/gylim/DCV/Run81/myana`

Run Number	30776
Run Tag	koto-run69
Note	Cosmic_PS_CSI_PartOfVetos
Version	0
Insert Time	2019-03-01 02:24:23
Start Time	2019-03-01 01:30:52
Stop Time	2019-03-01 02:22:09
Data Taking Time	3077
Run Type	COSMIC
FADC Delay	322
ET Threshold	0
ET Threshold Offset	0
# of Spill From Accel.	0
# of Spill in data	466
TotalnL2Accepted	4046983

CC04 (DetectorBit==16) : 75552

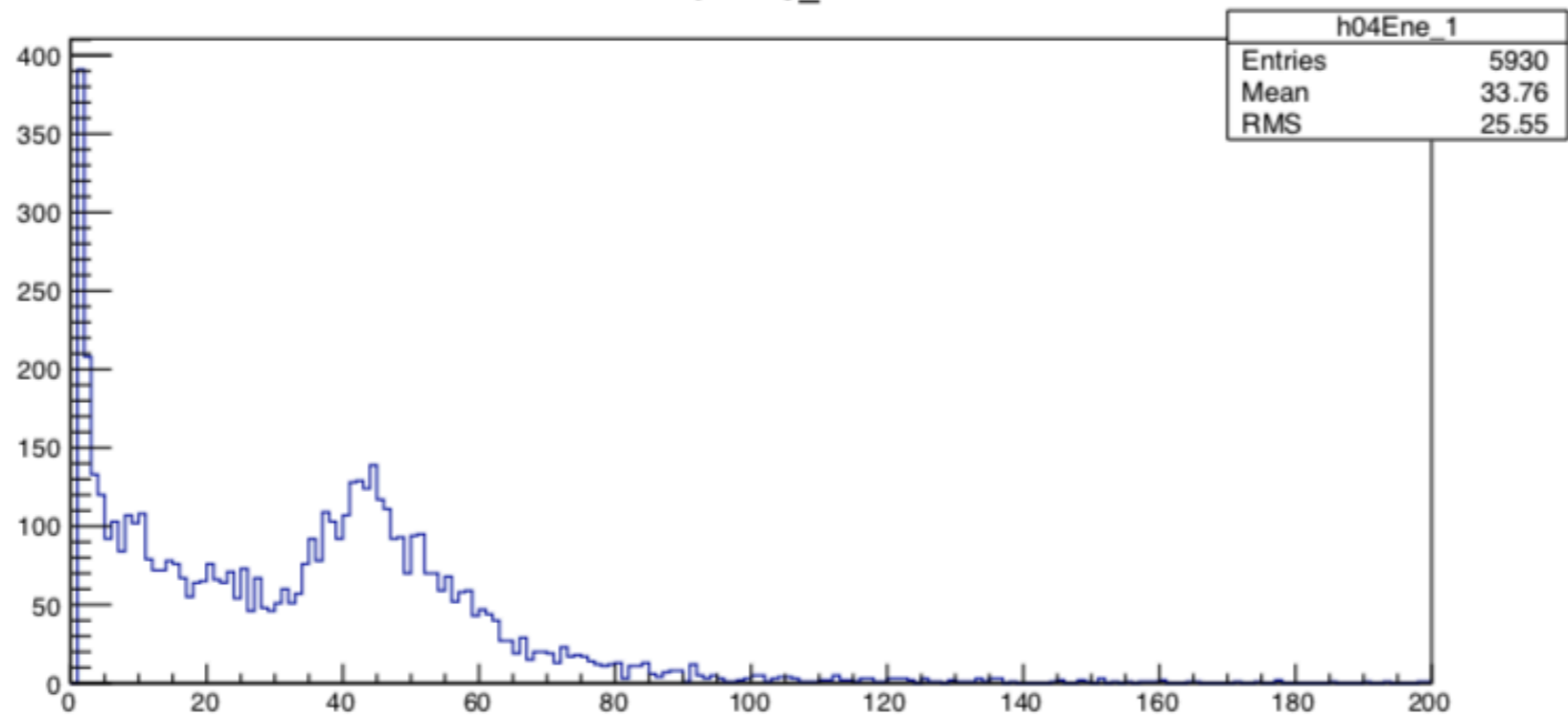
CC05 (DetectorBit==32) : 100564

h04Ene_1

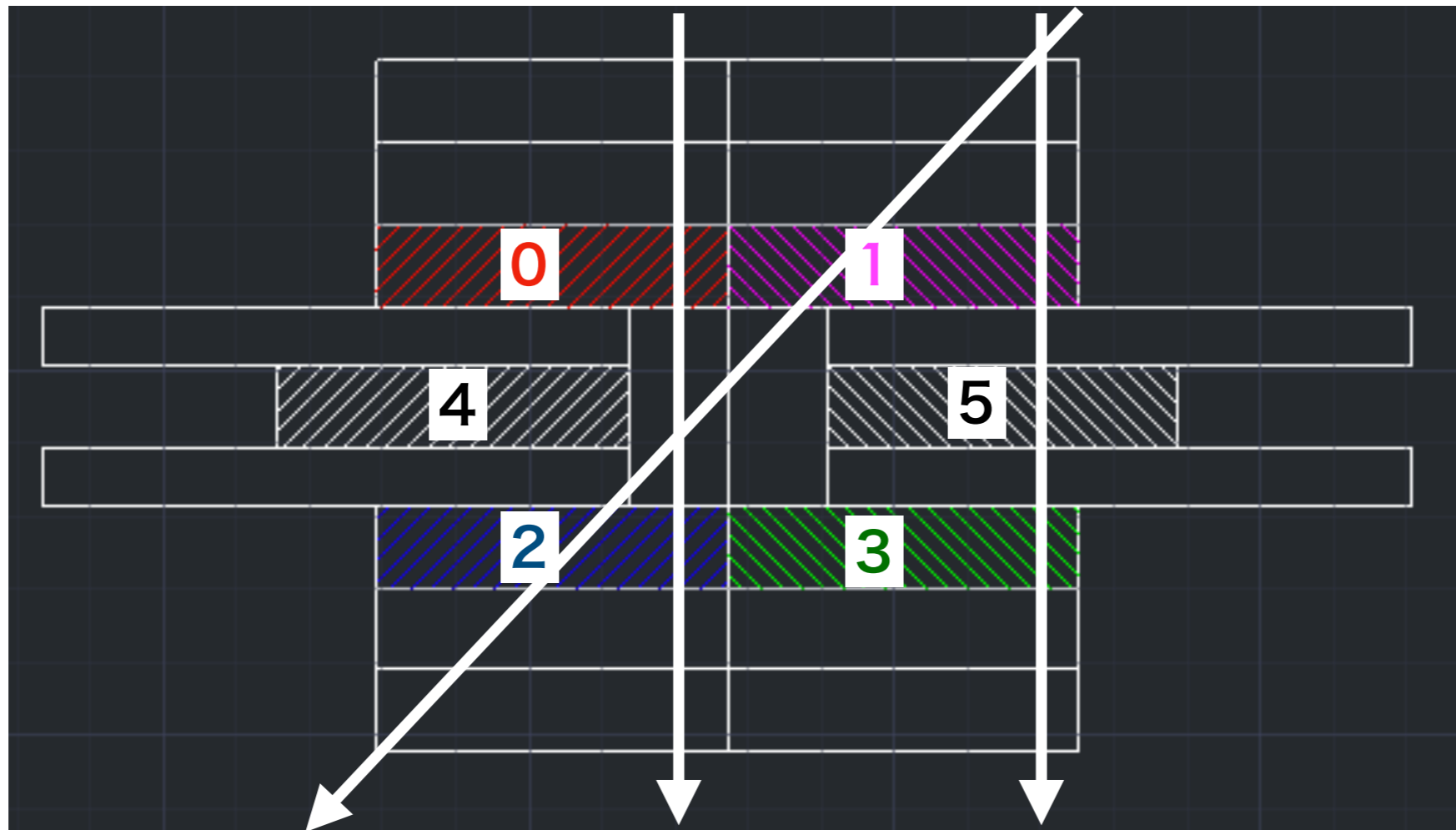


```
if (TRIGGERTAGIntegratedADC[1]>5000) continue;
```

h04Ene_1



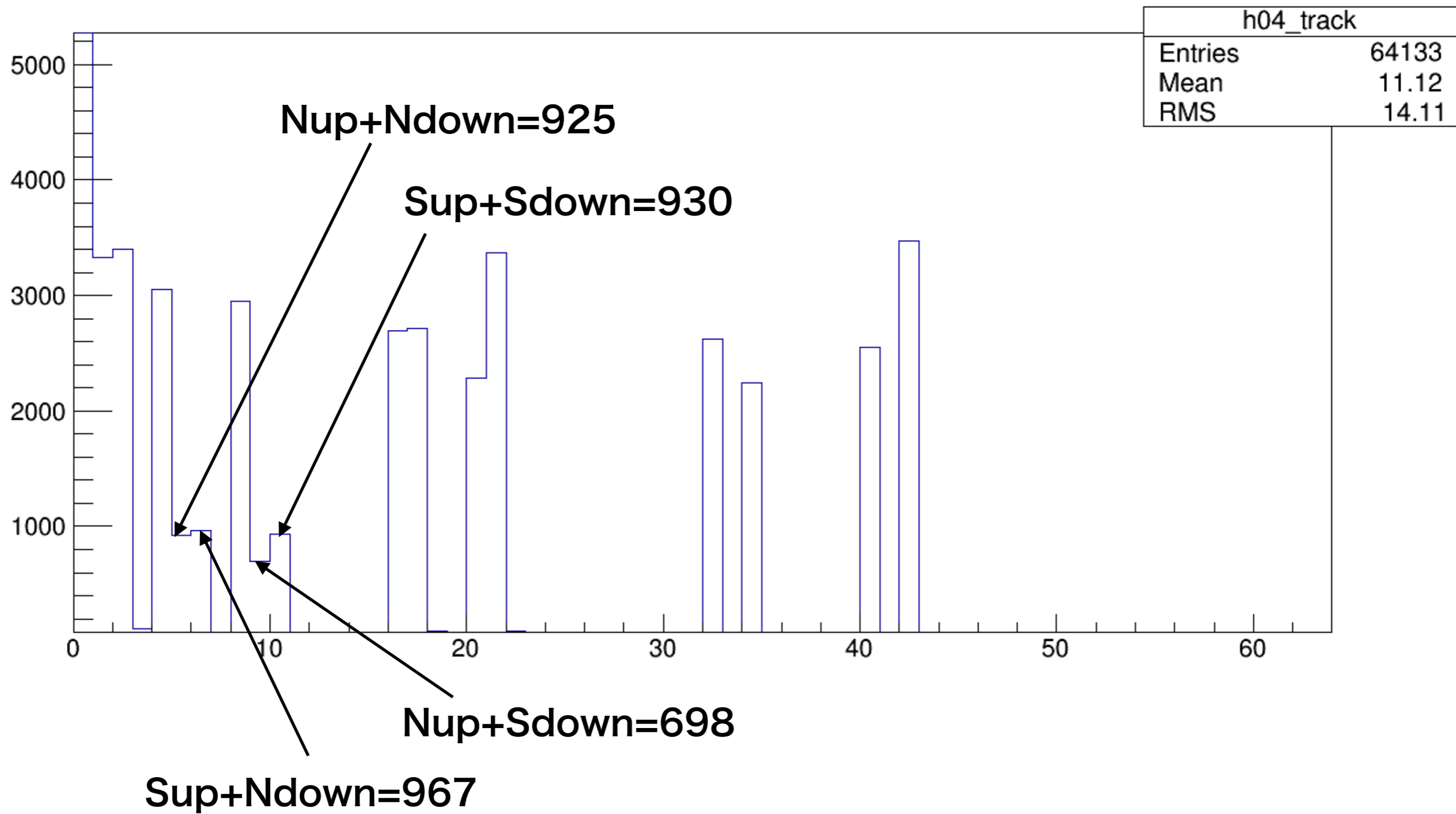
Combination of hit



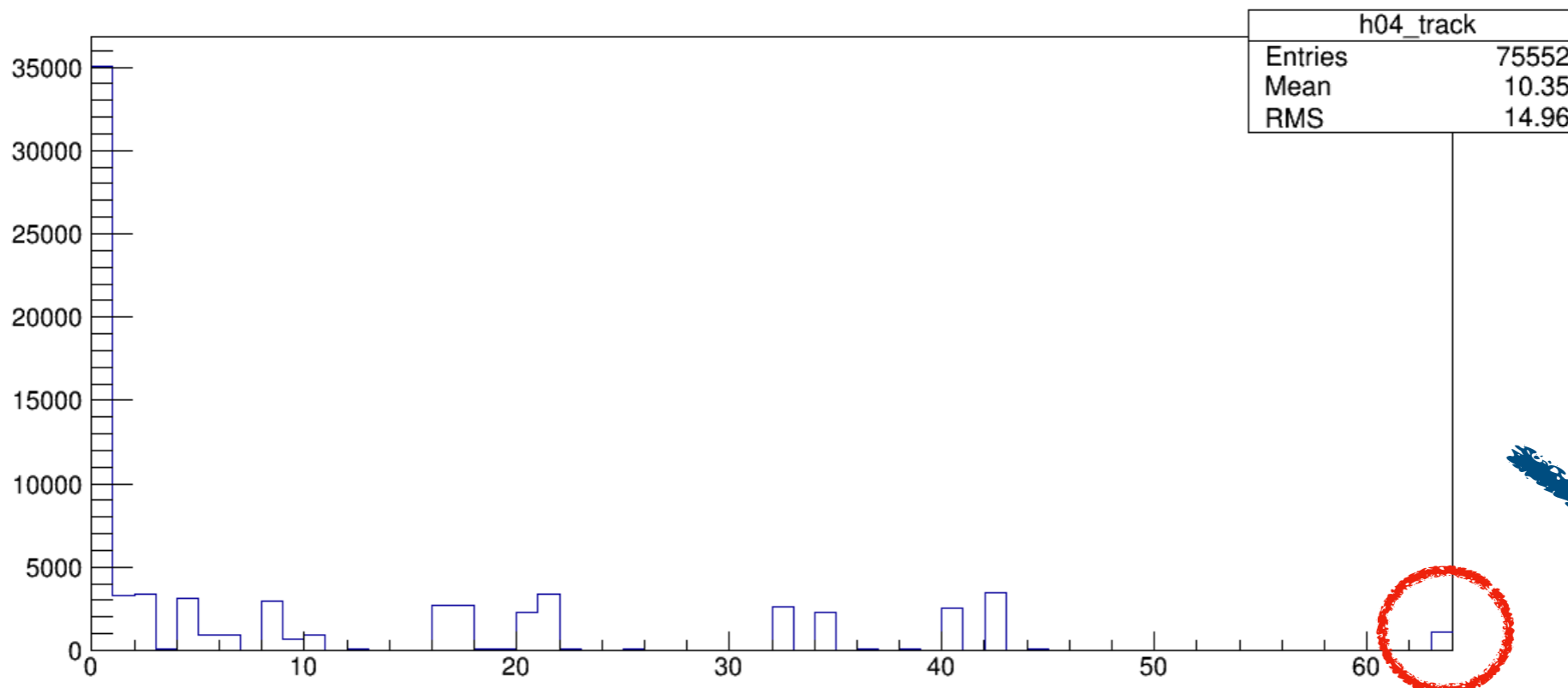
$$2^2+2^1=6$$

$$2^2+1=5$$

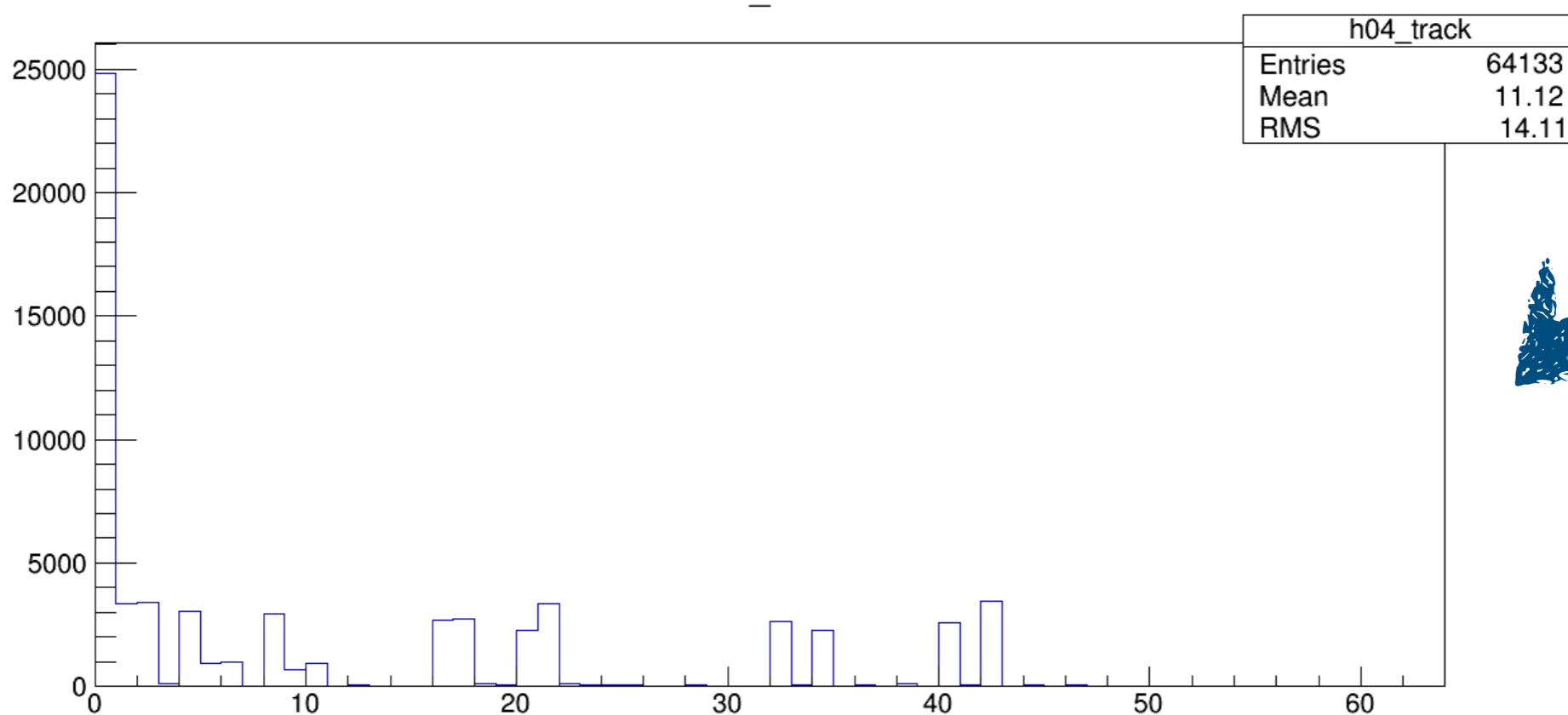
$$2^5+2^3+2^1=42$$



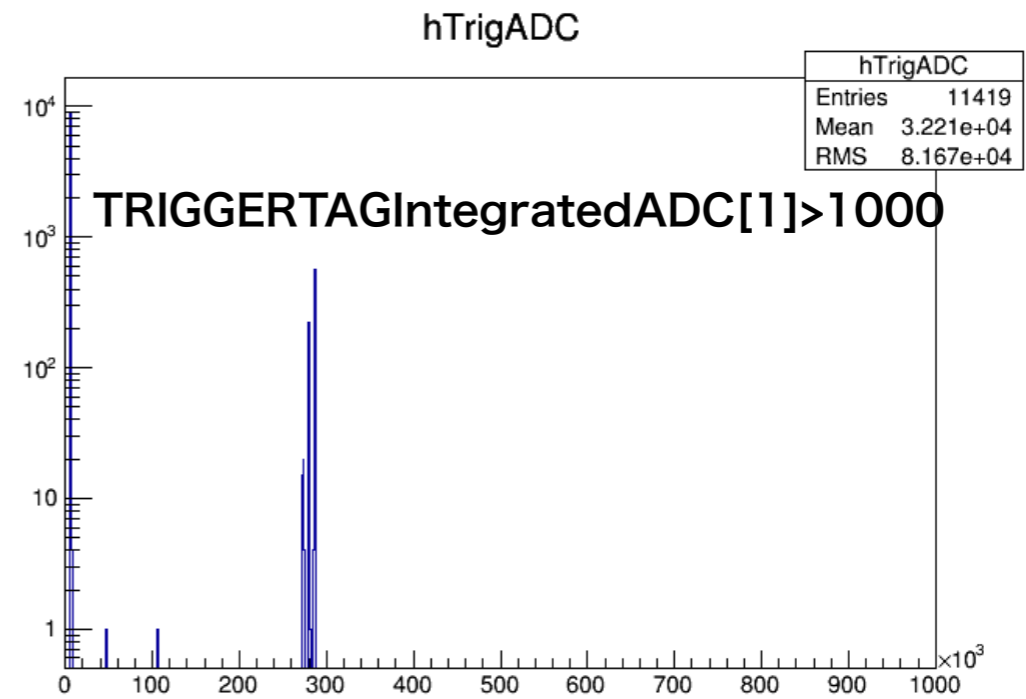
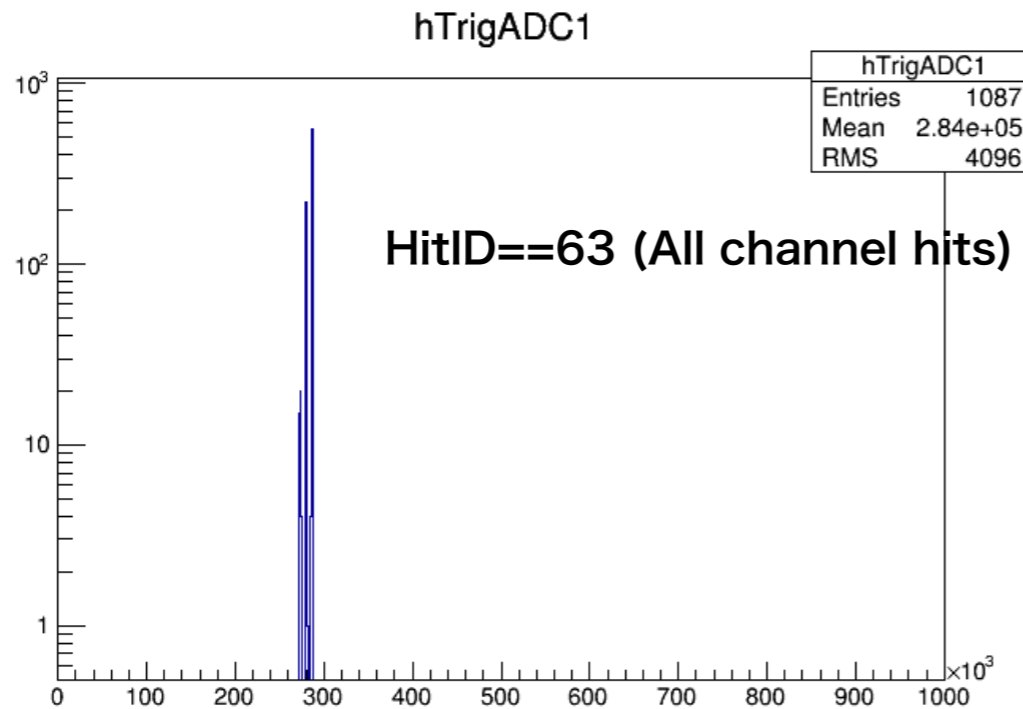
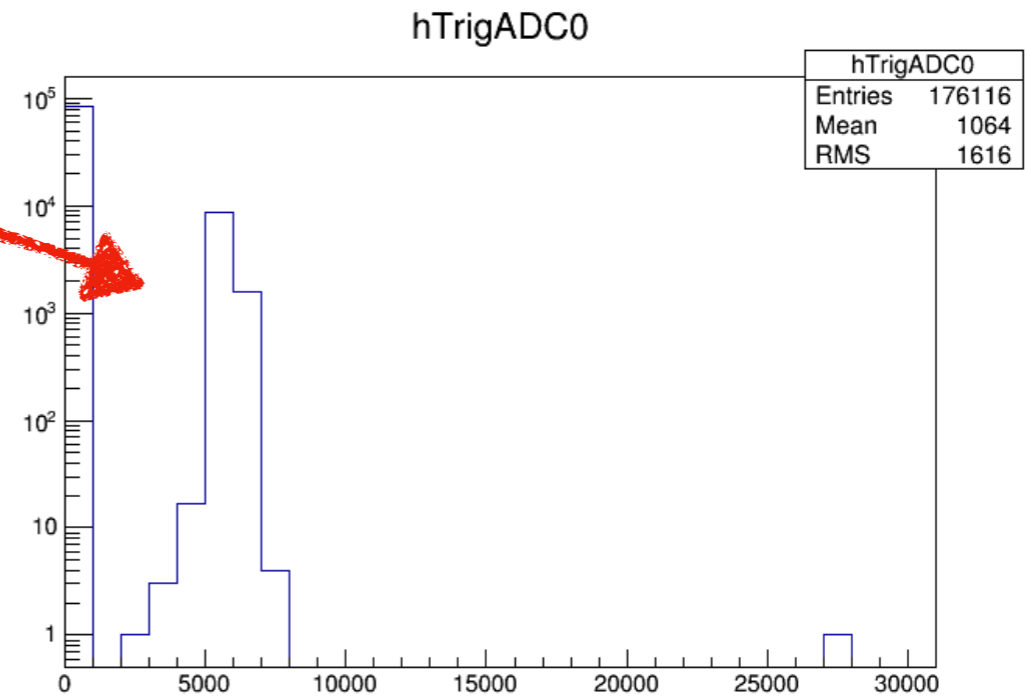
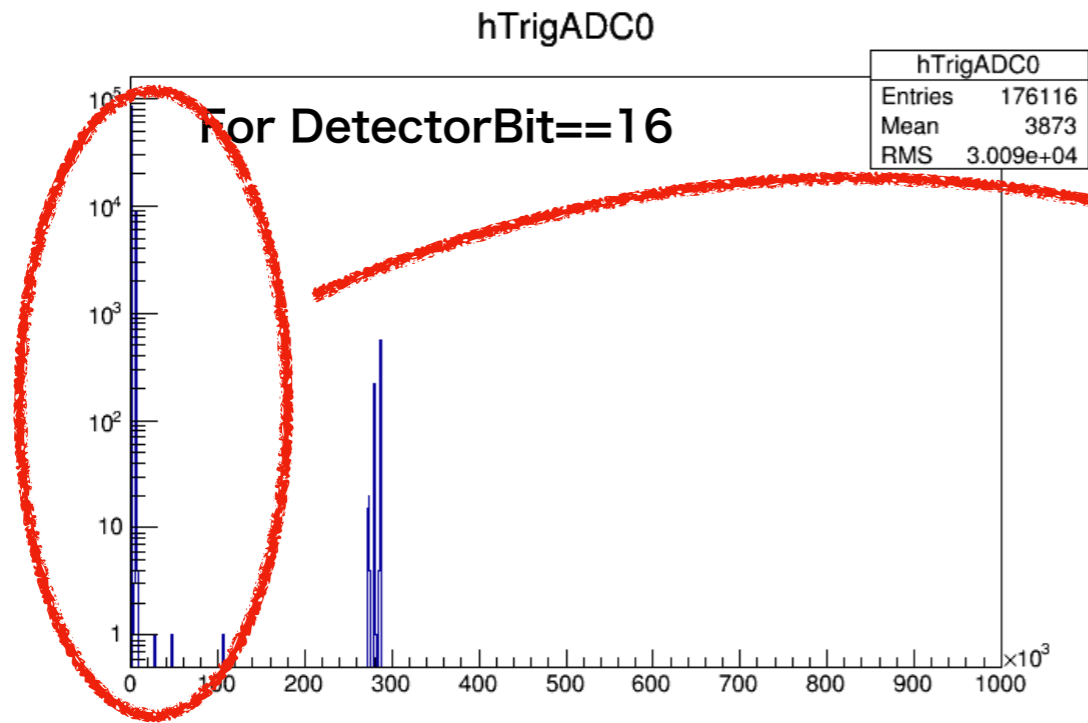
Track ID (Run30776)

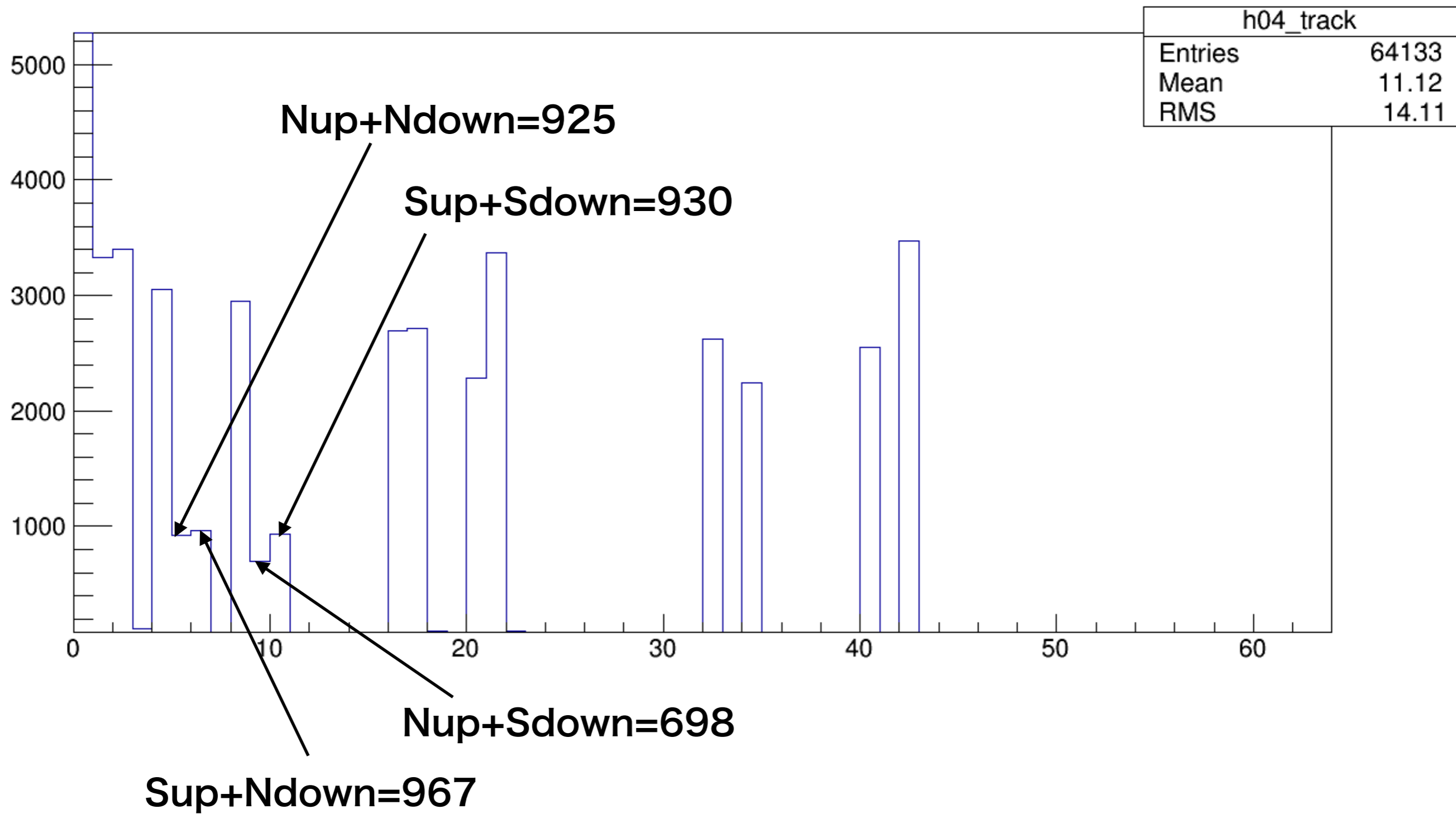


```
if(TRIGGERTAGIntegratedADC[1]>5000) continue;
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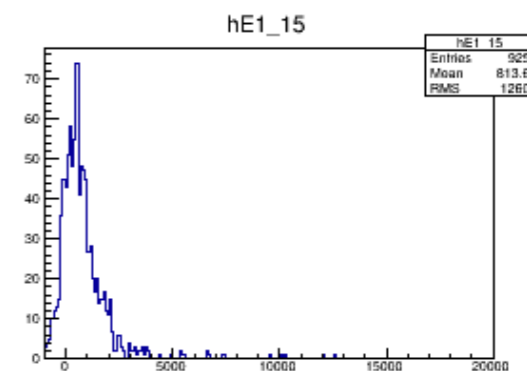
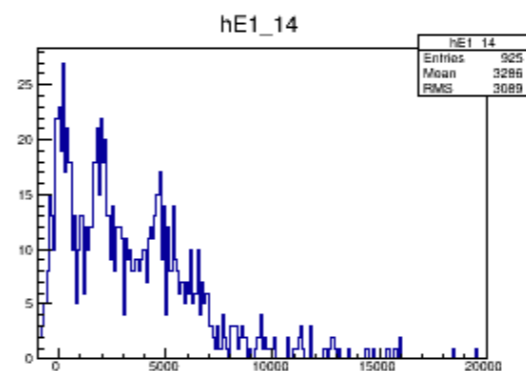
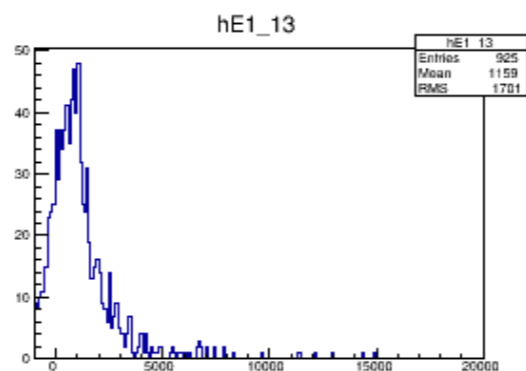
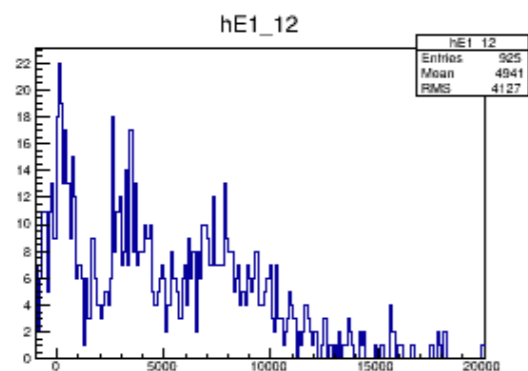
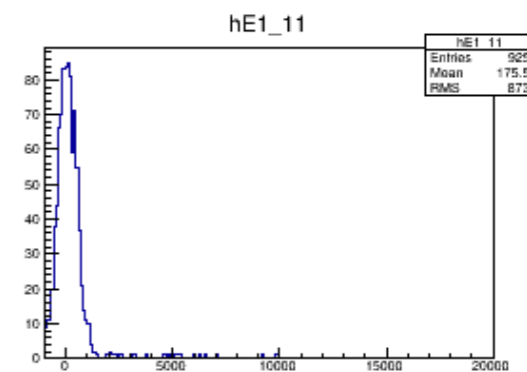
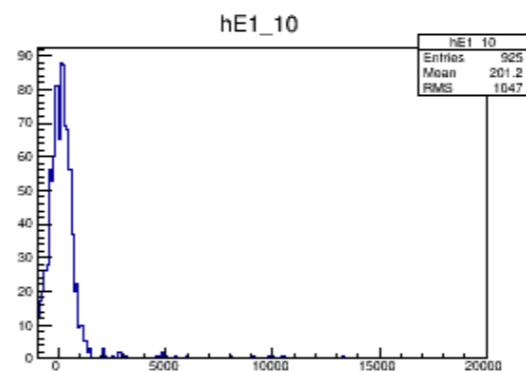
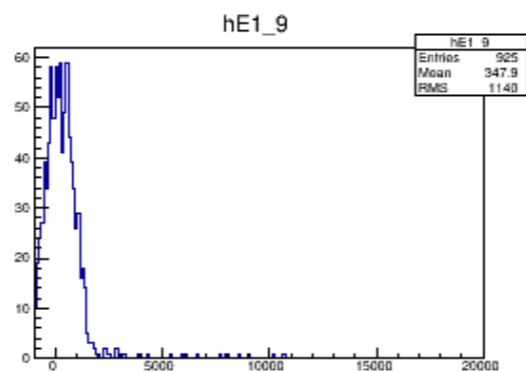
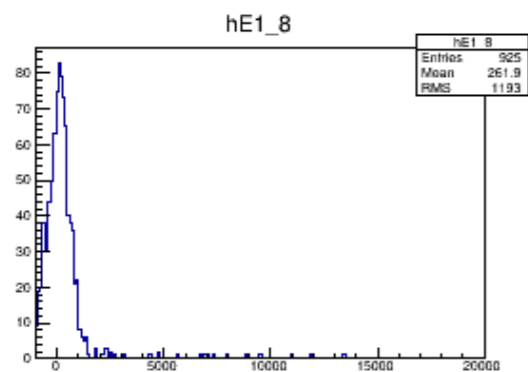
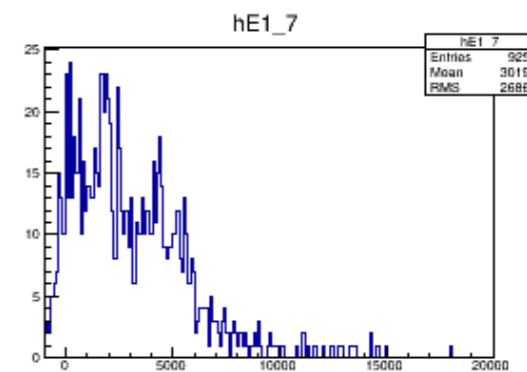
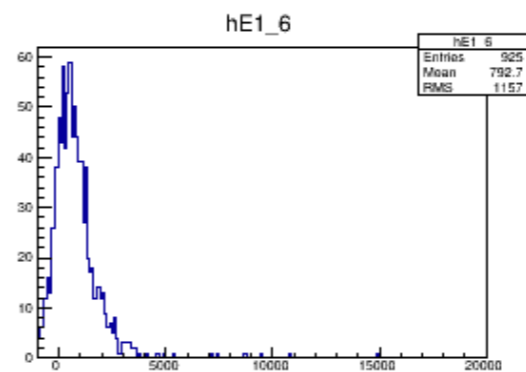
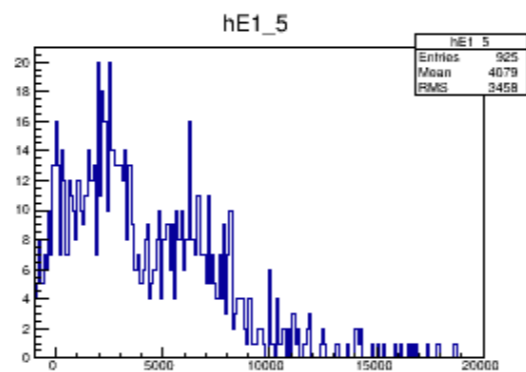
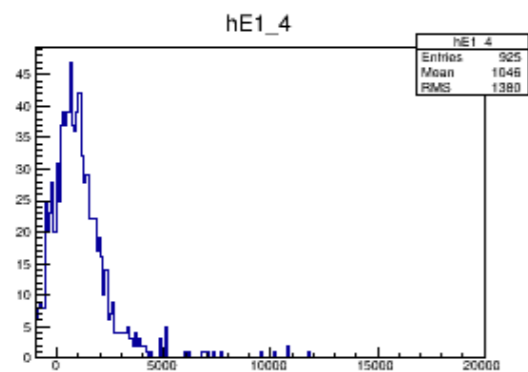
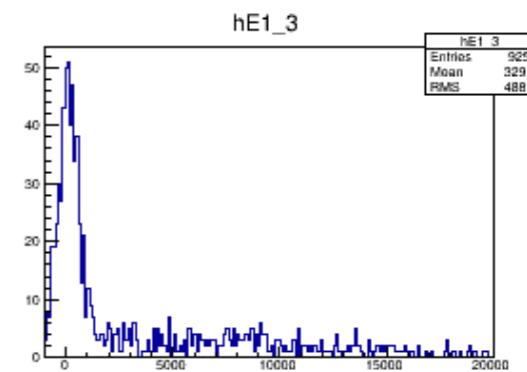
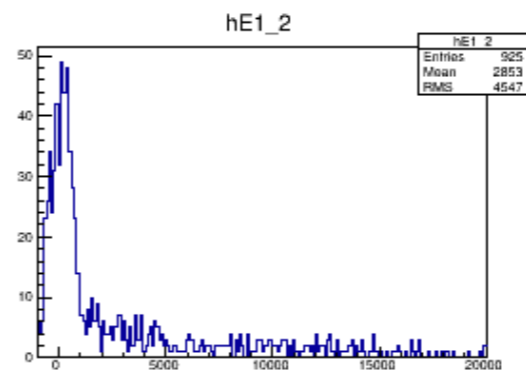
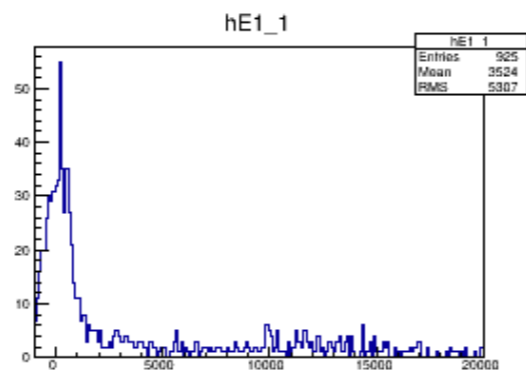
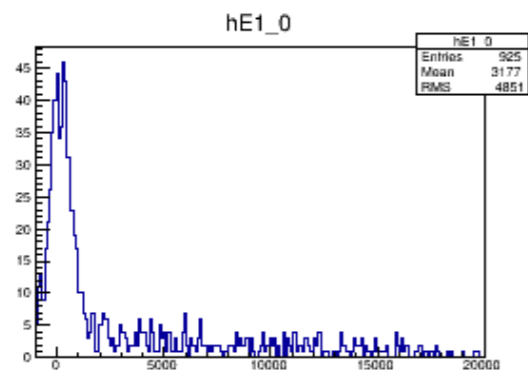


TRIGGERTAGIntegratedADC[1]

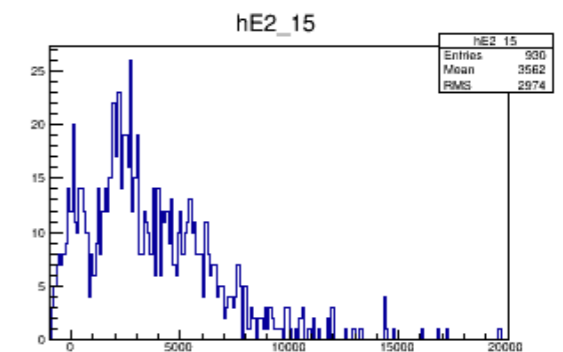
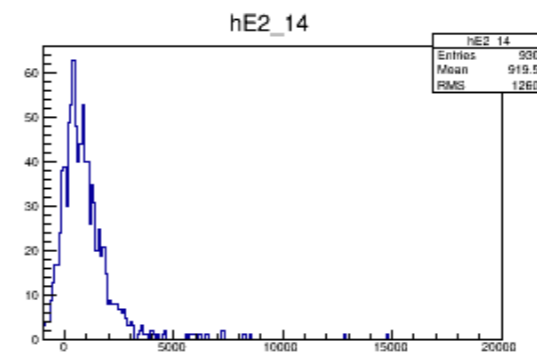
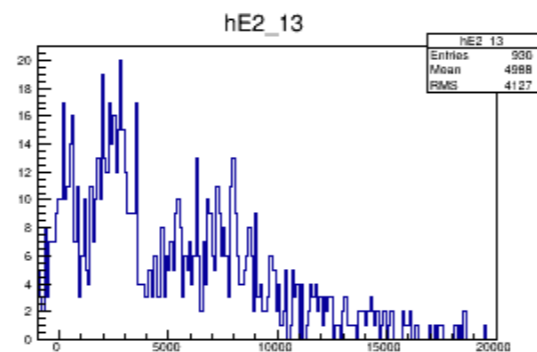
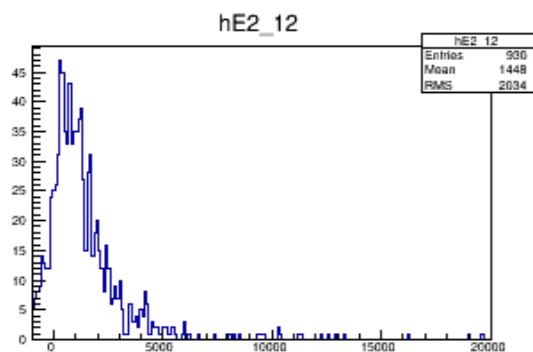
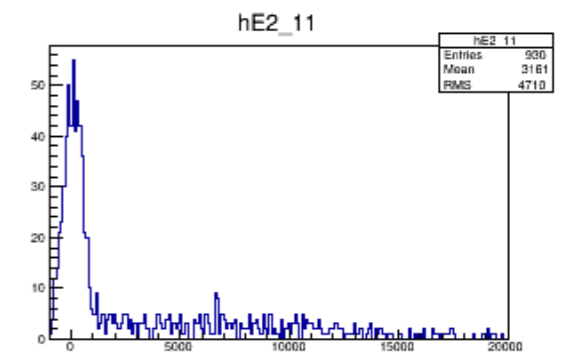
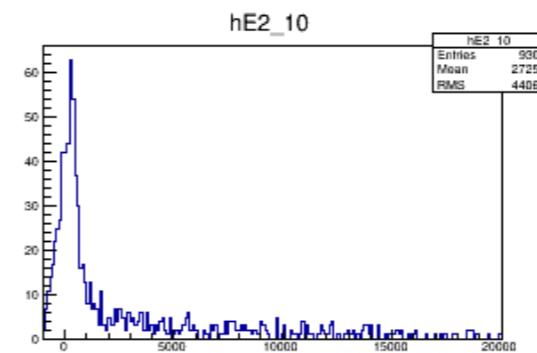
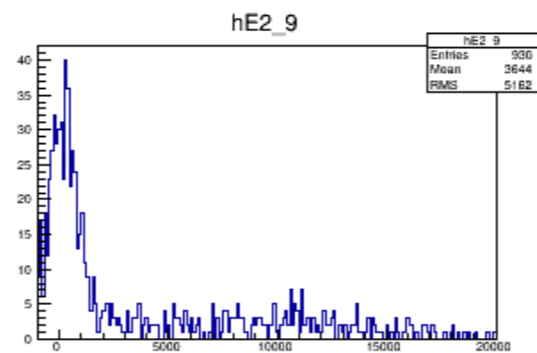
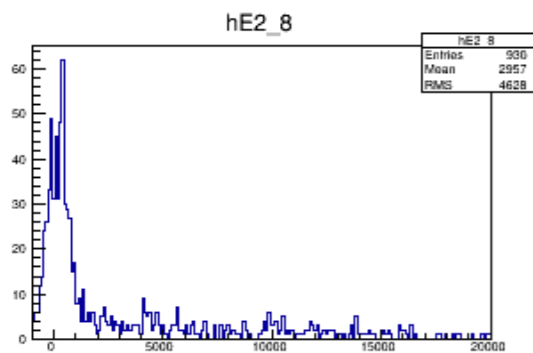
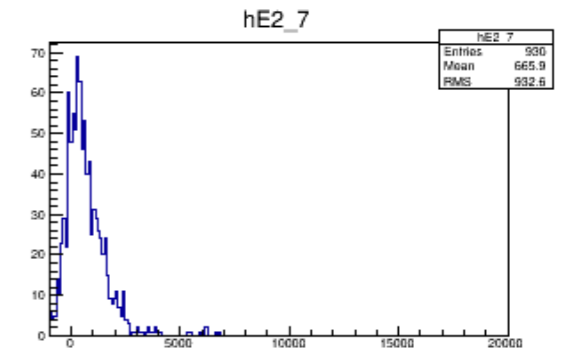
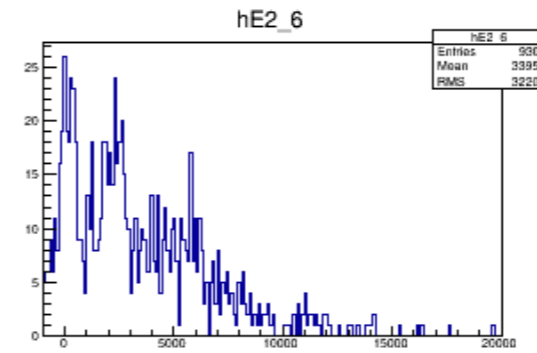
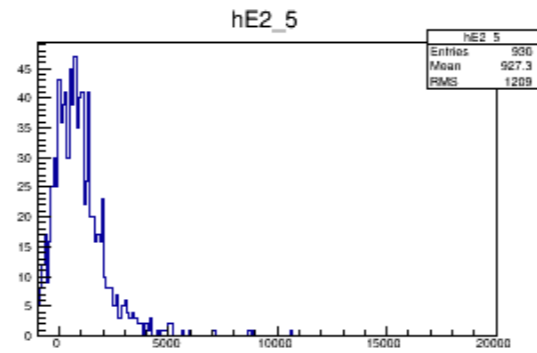
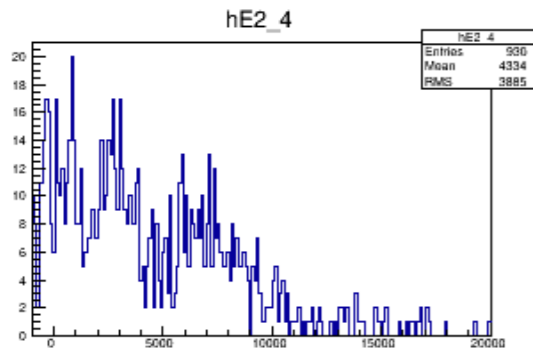
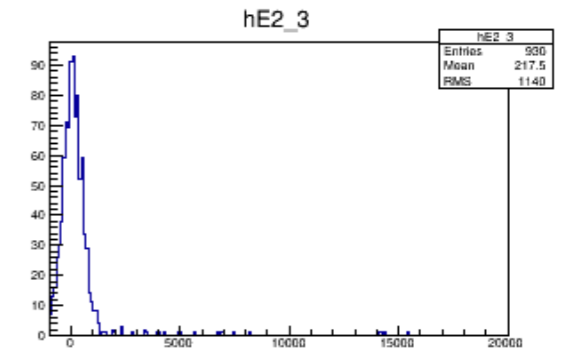
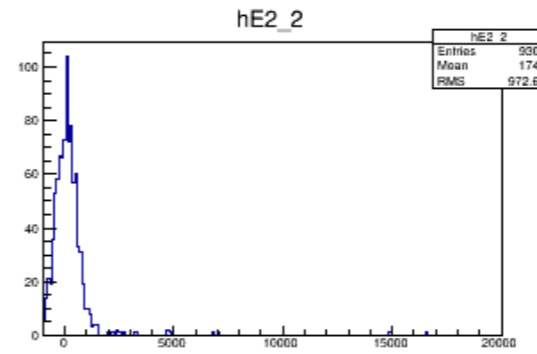
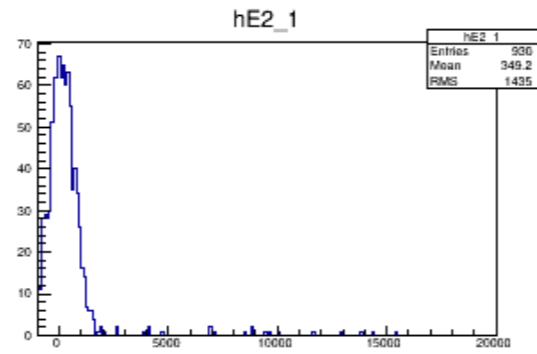
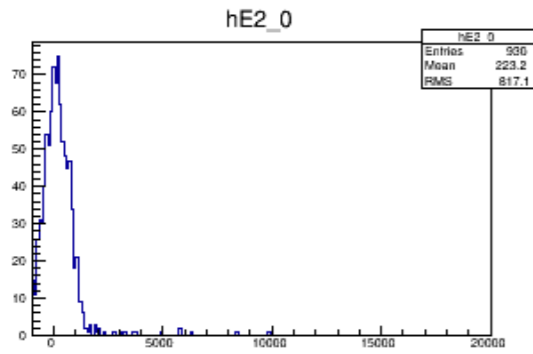




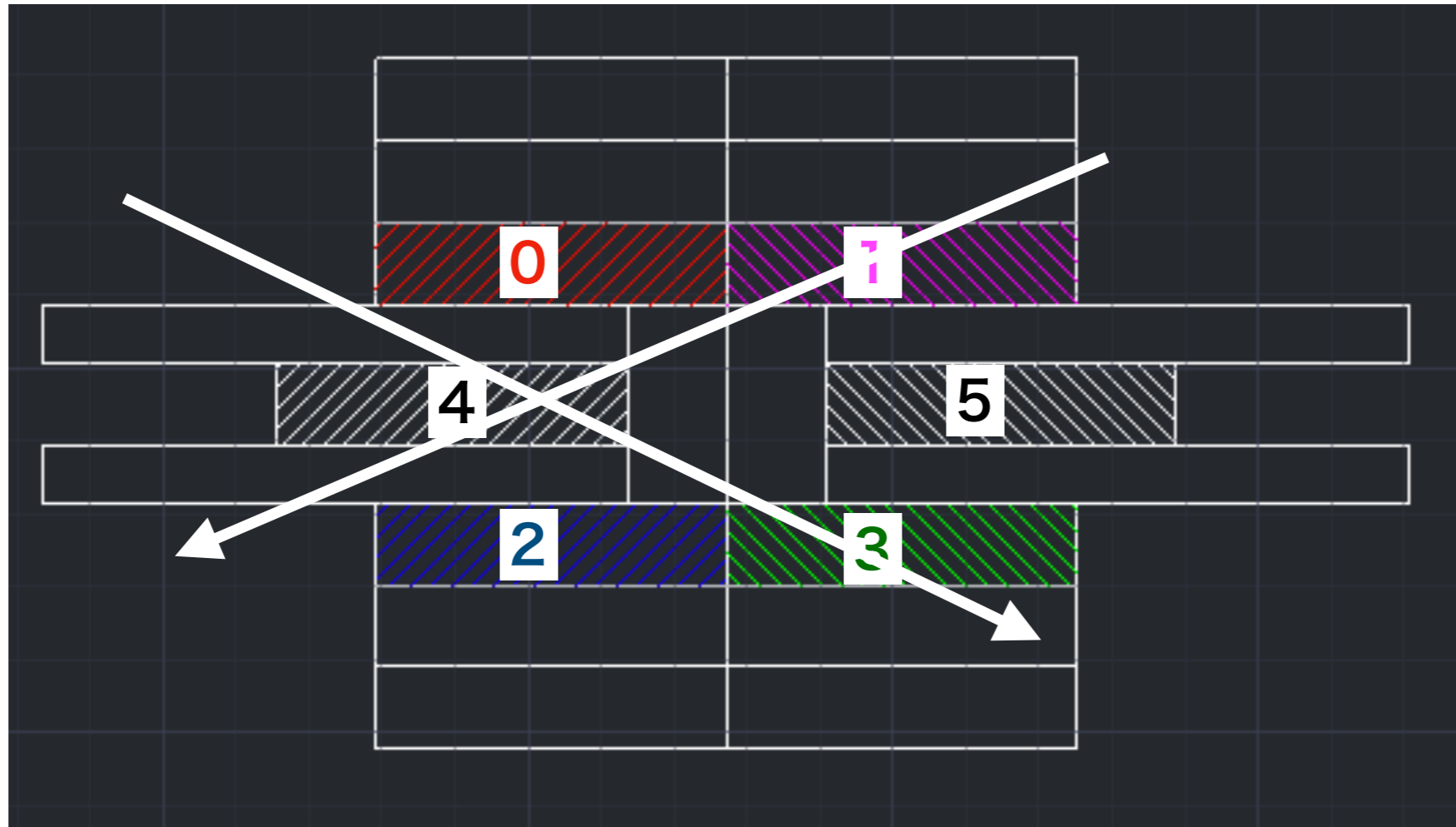
TrackID==5



TrackID==10

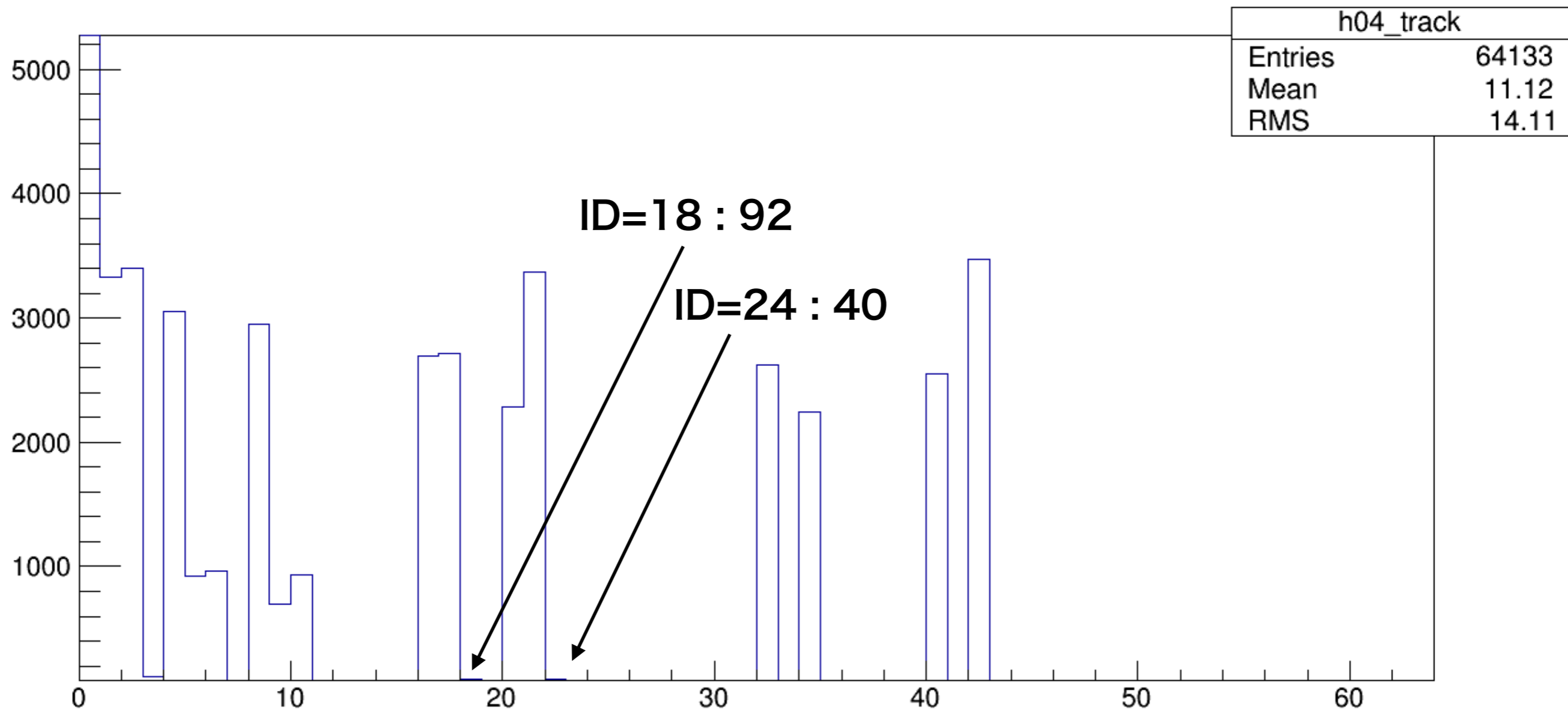


Combination of hit

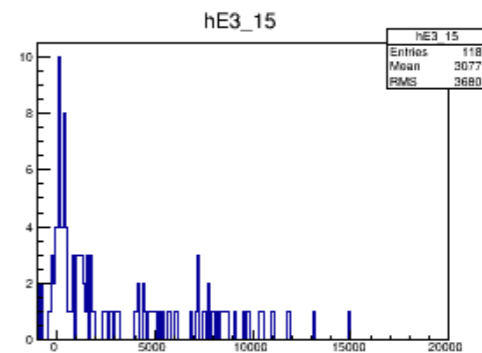
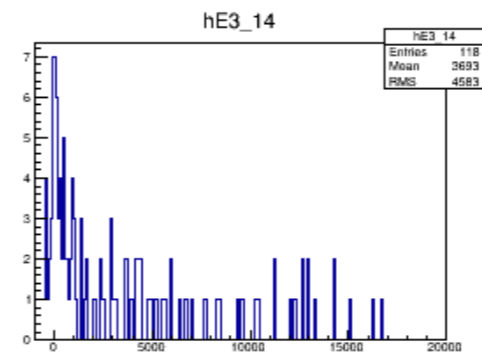
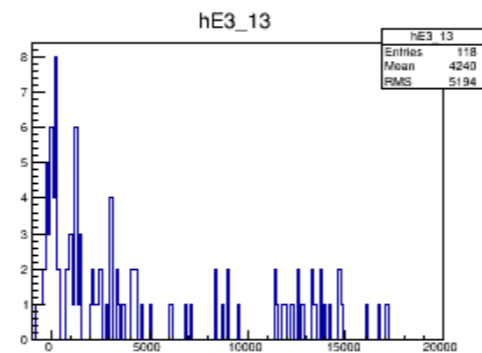
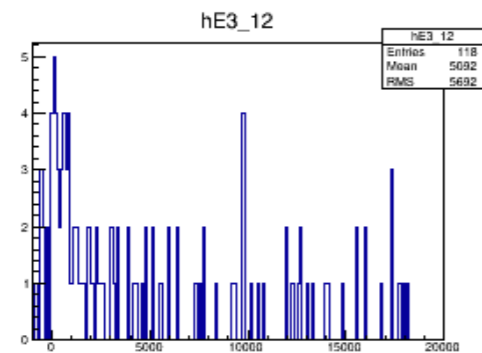
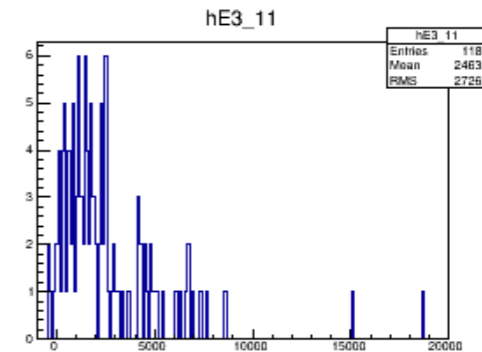
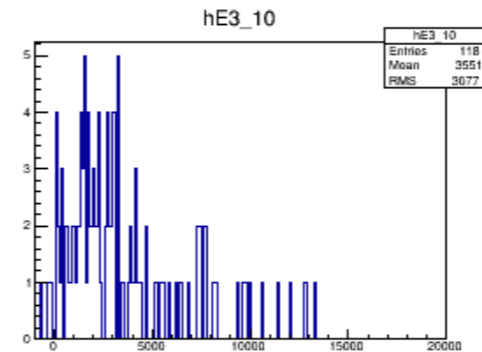
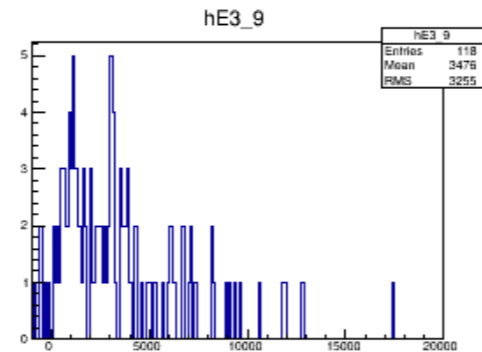
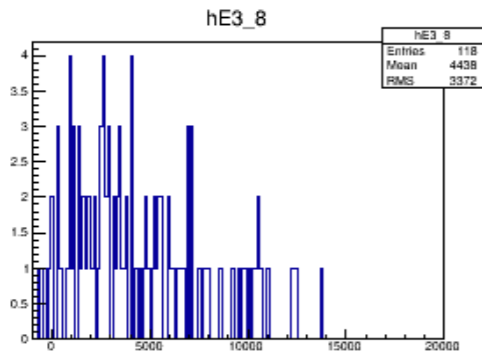
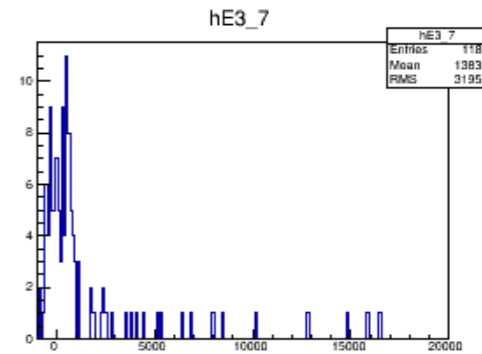
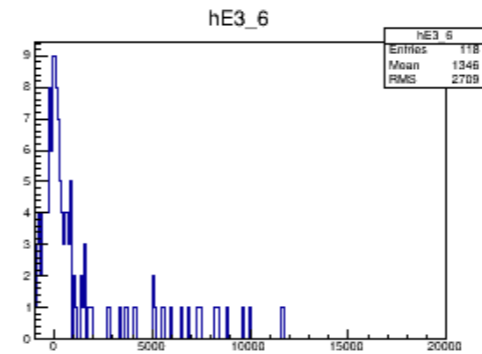
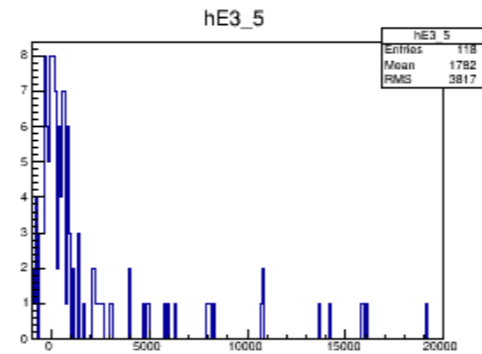
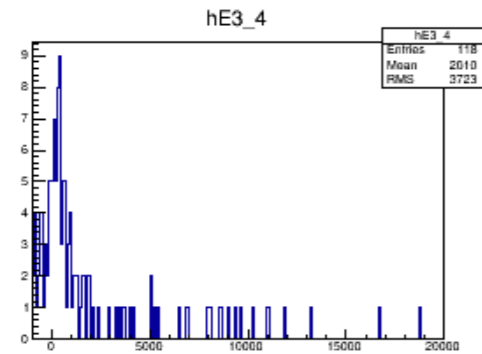
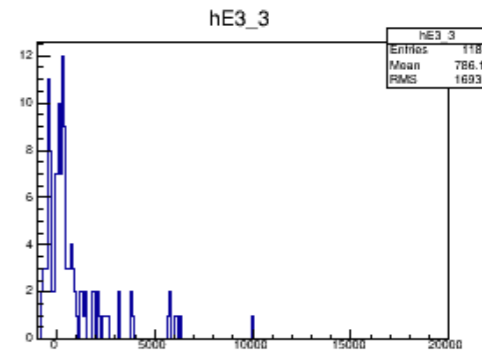
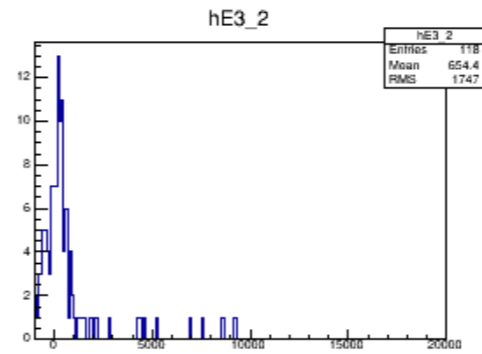
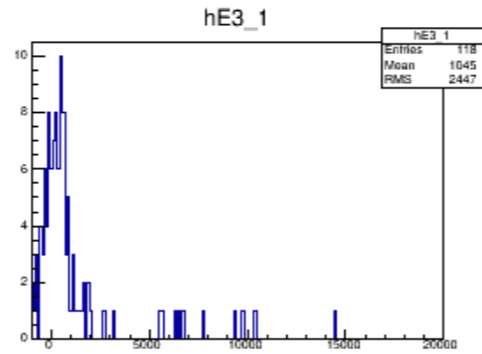
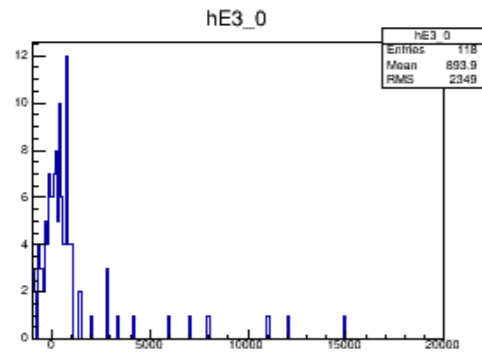


$$2^4 + 2^1 = 18$$

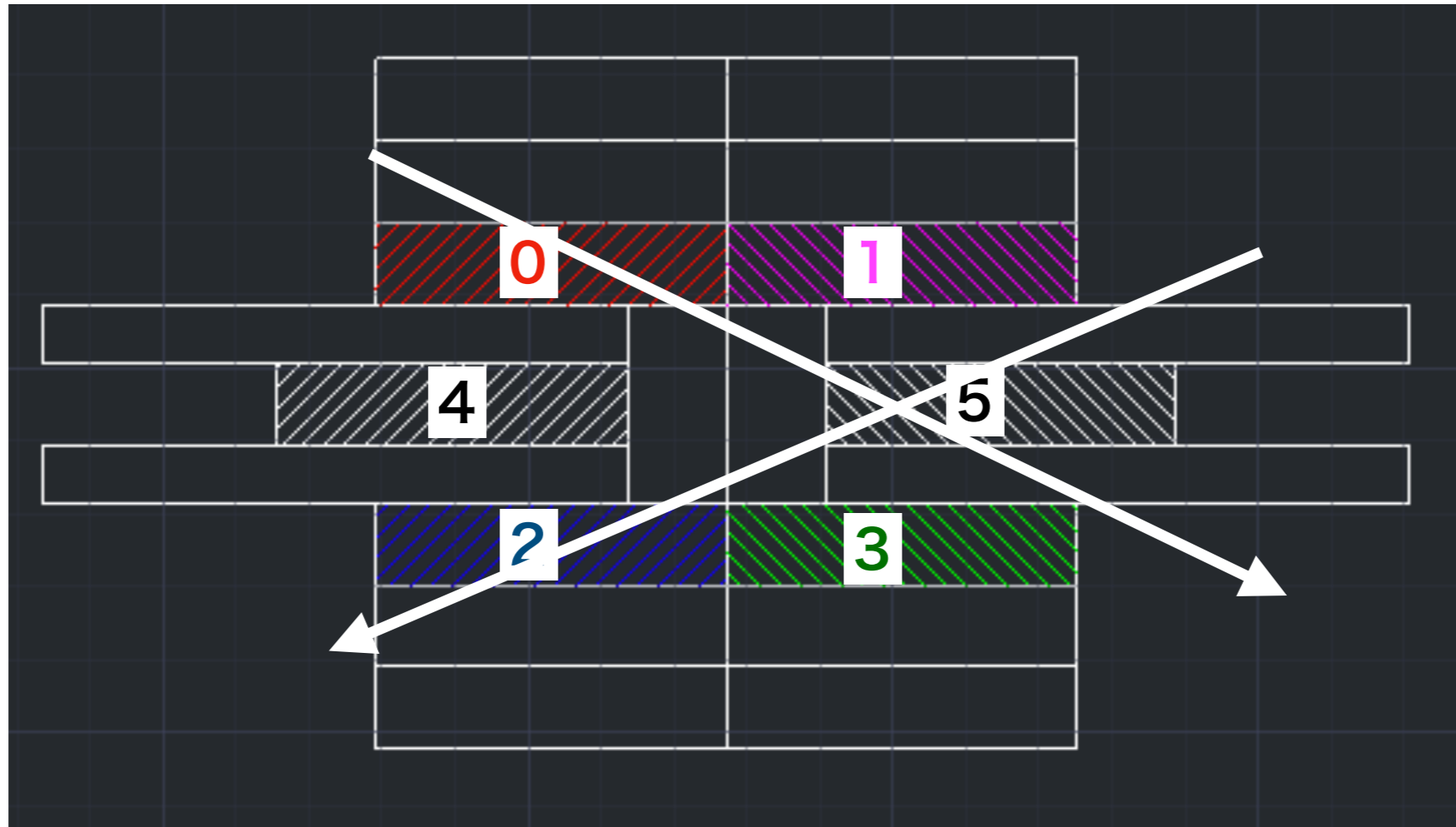
$$2^4 + 2^3 = 24$$



TrackID== 18 || 24

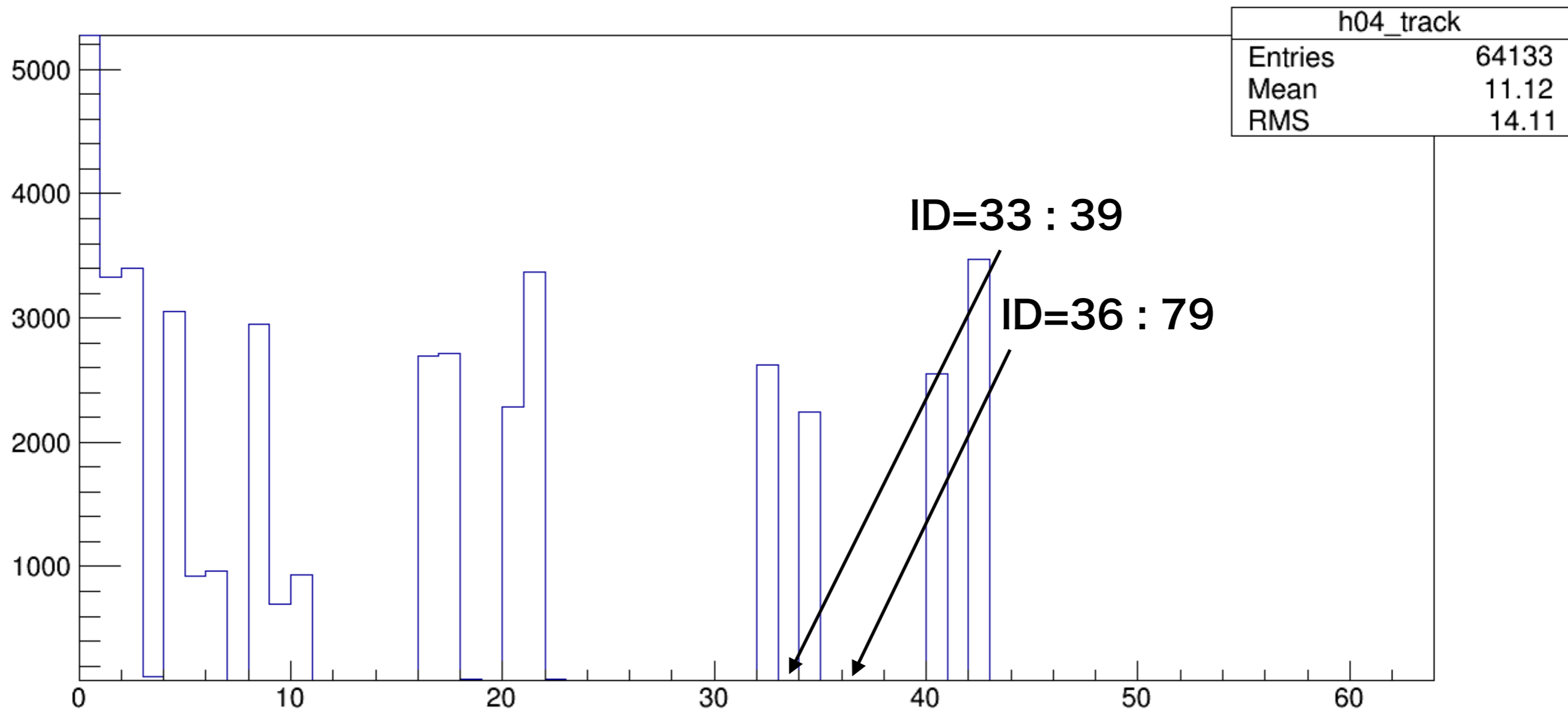


Combination of hit

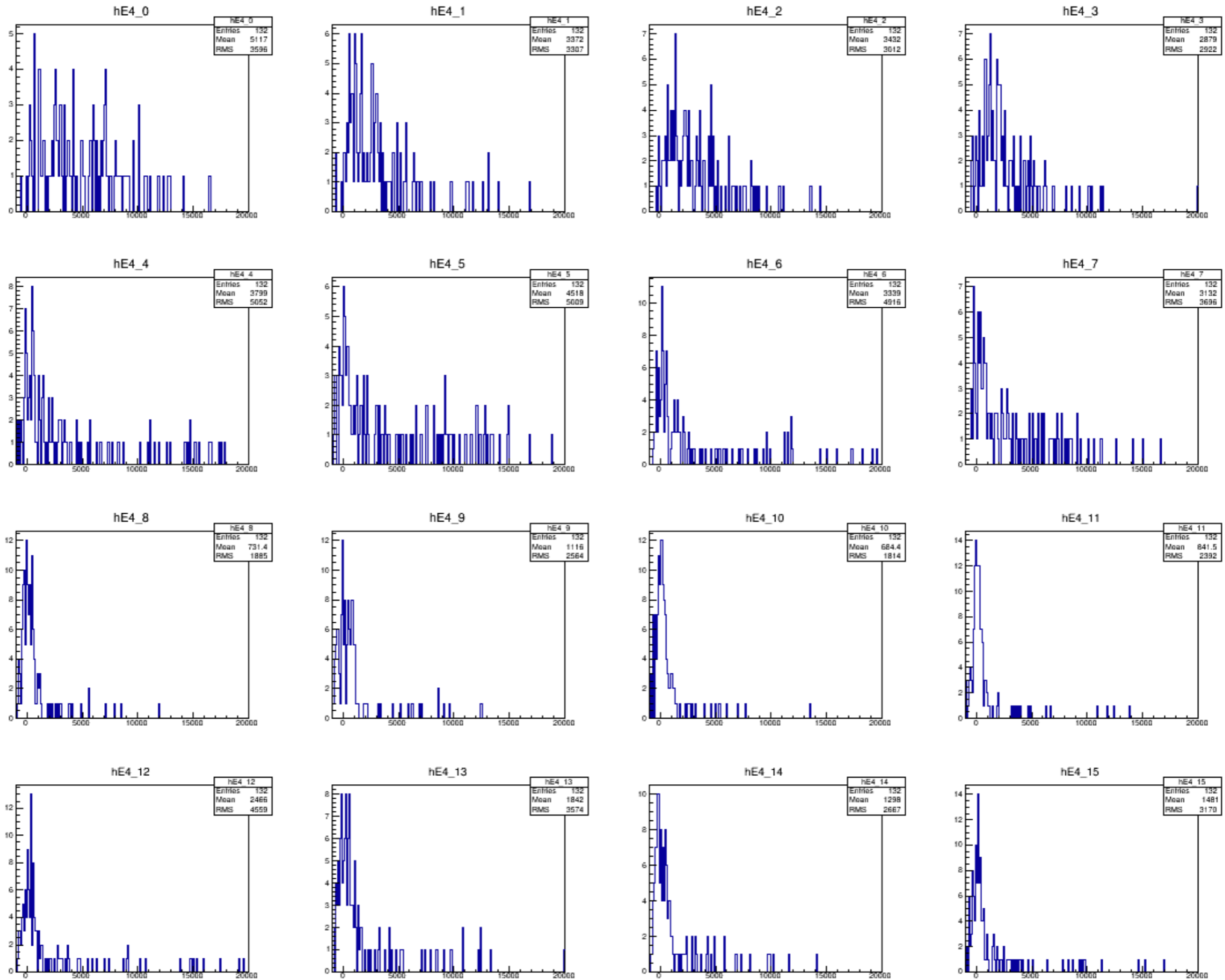


$$2^5 + 2^2 = 36$$

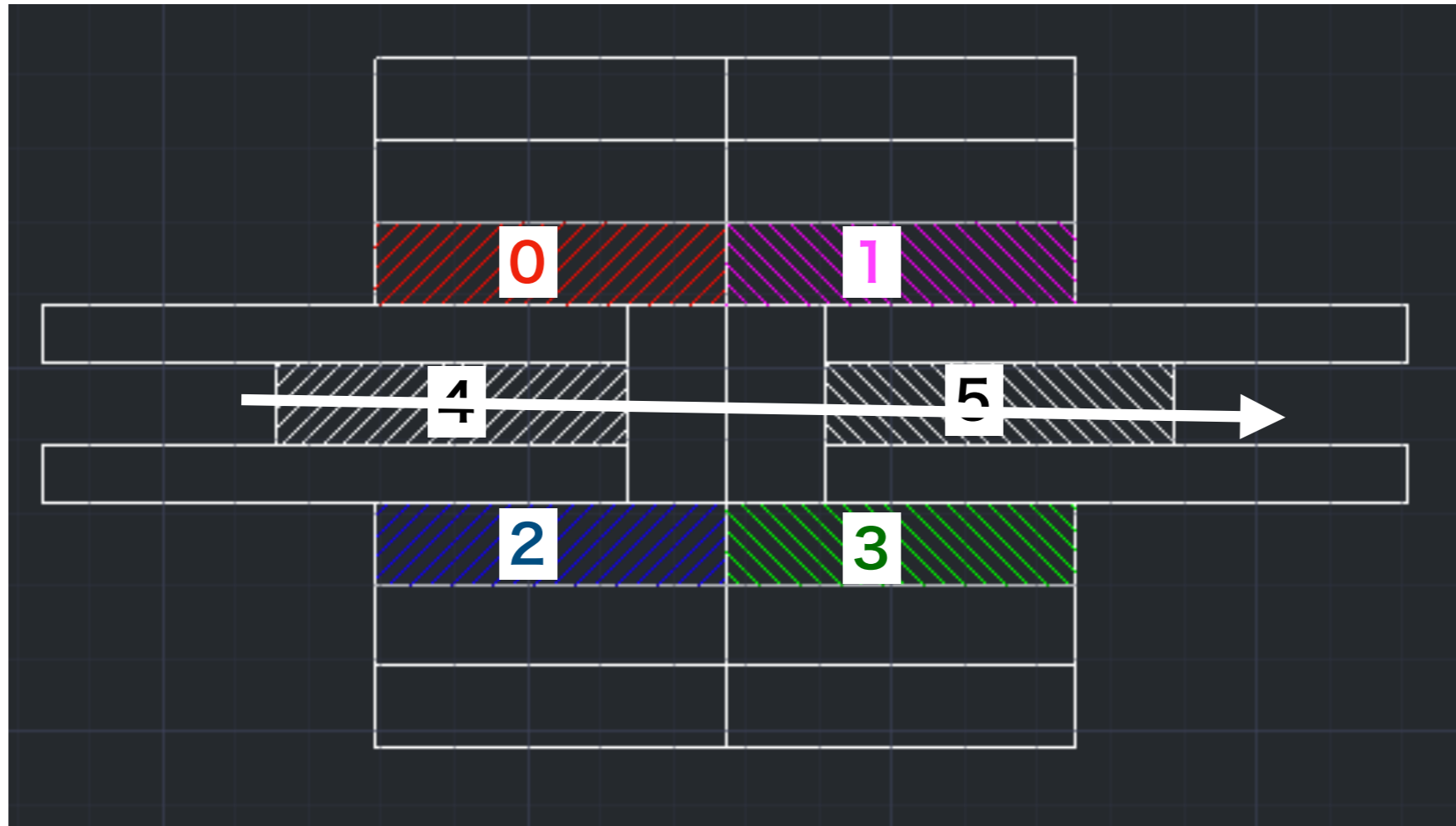
$$2^5 + 1 = 33$$



TrackID== 33 || 36

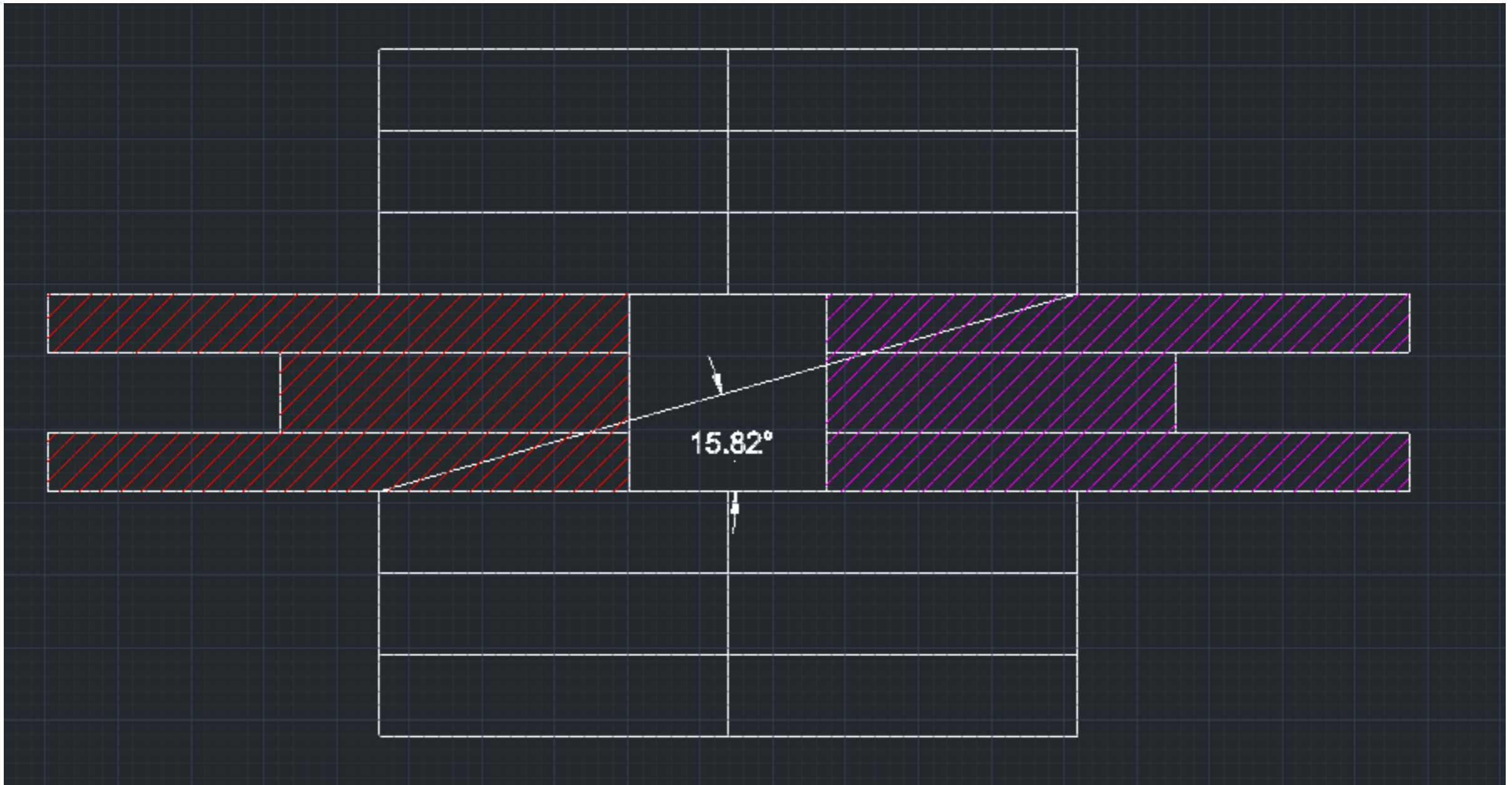


Combination of hit



$$2^5 + 2^4 = 48 : 6$$

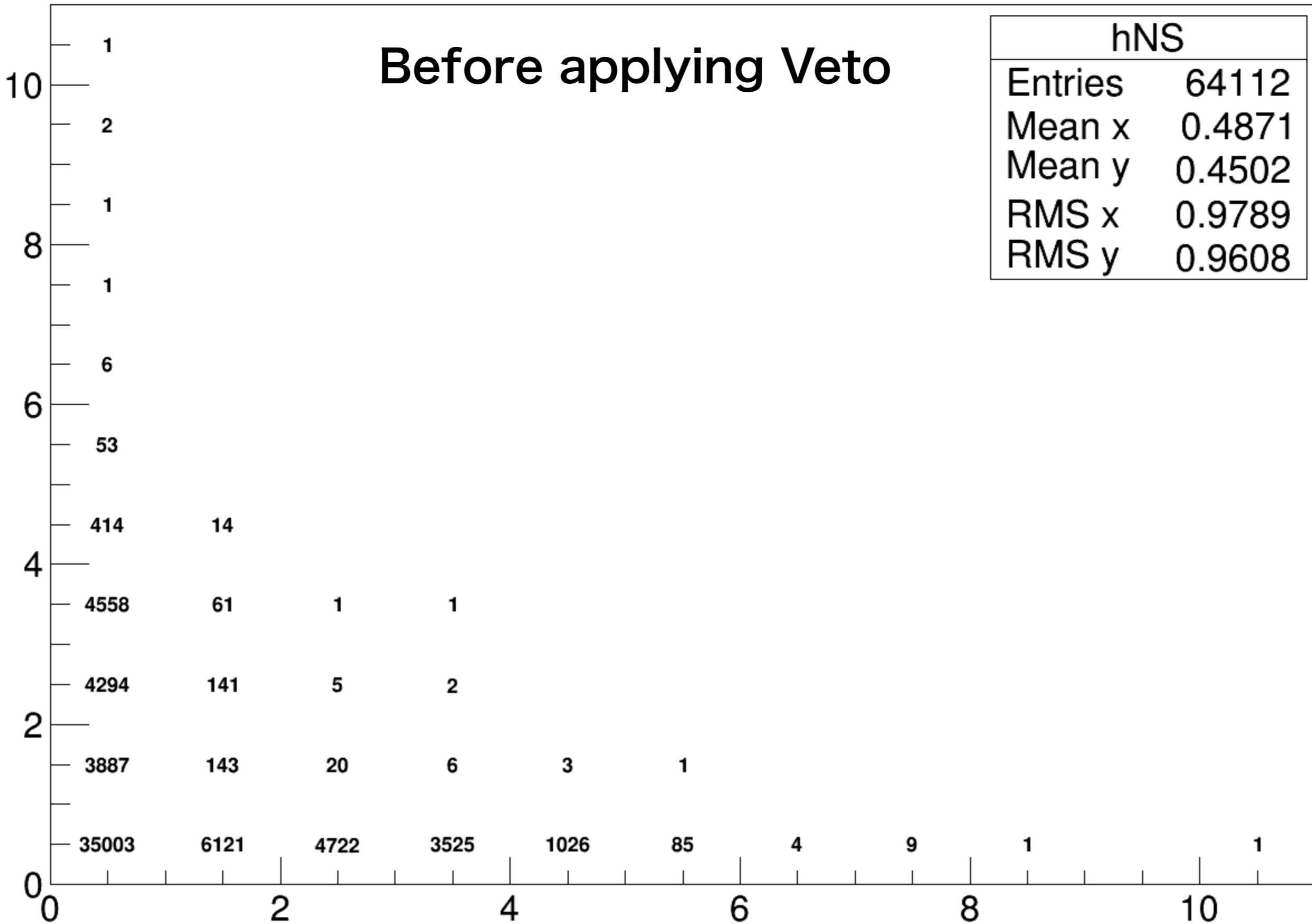
Horizontal line



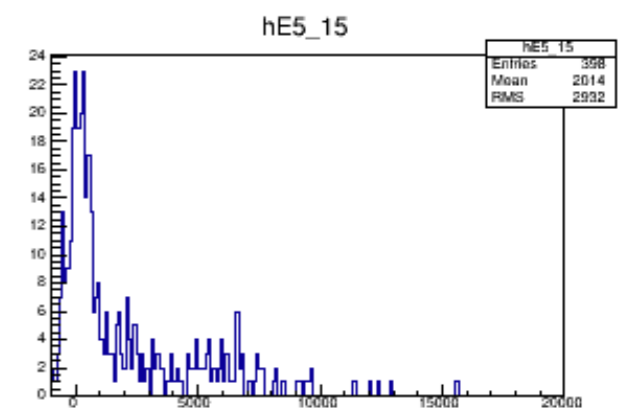
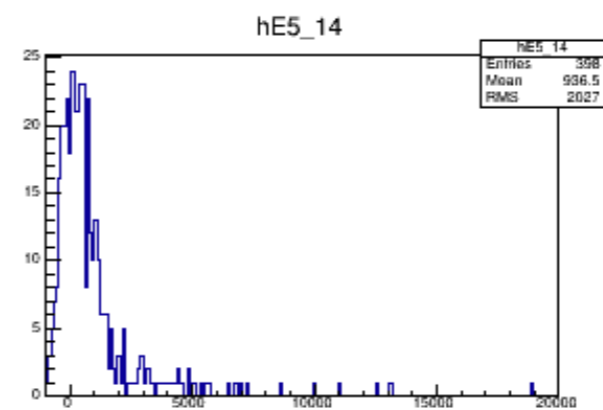
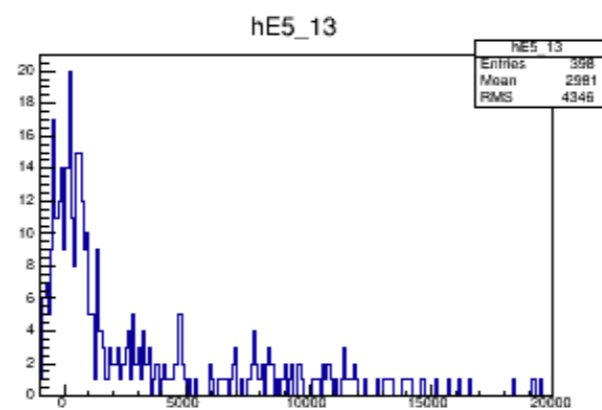
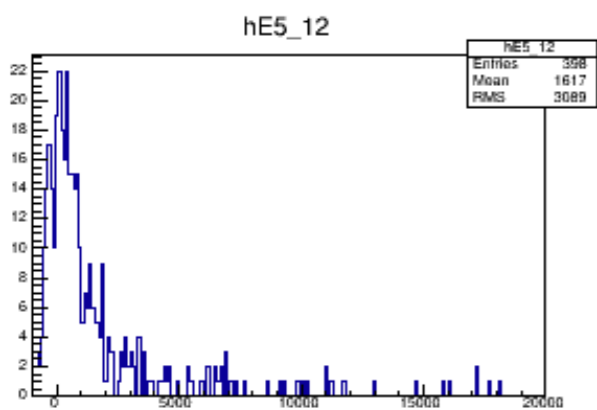
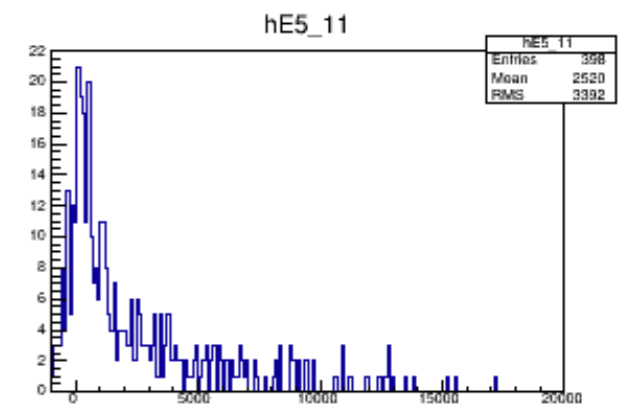
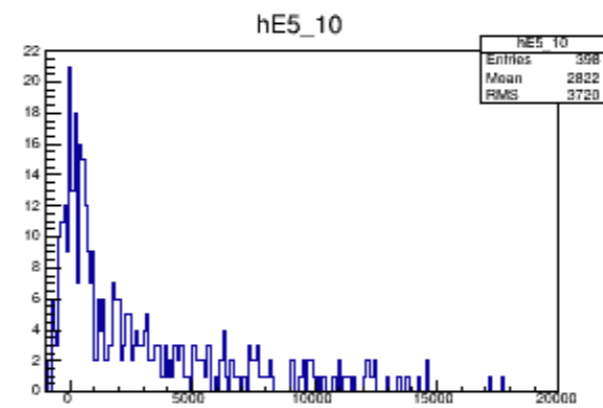
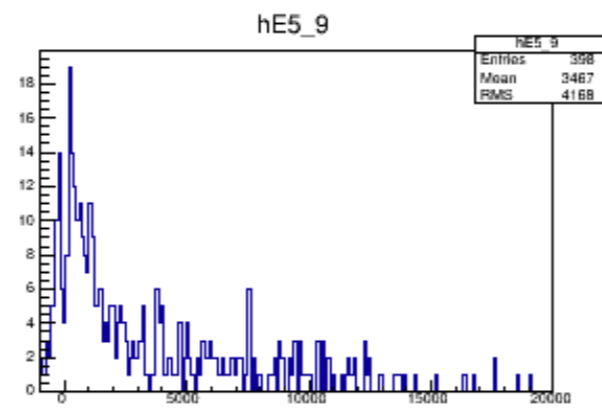
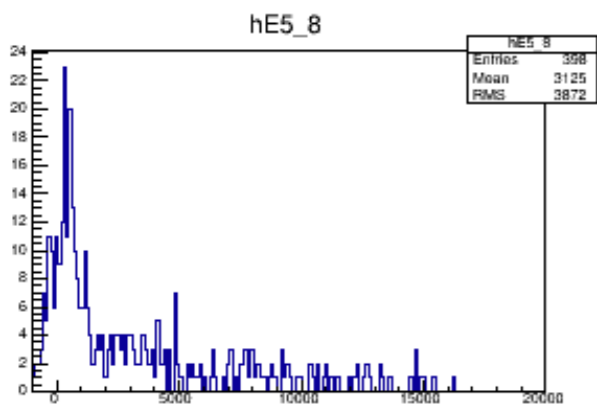
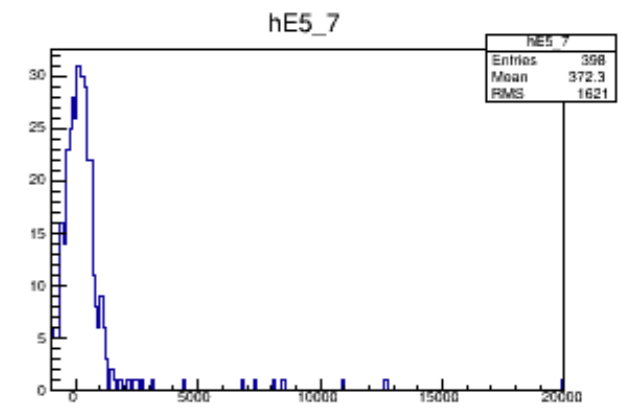
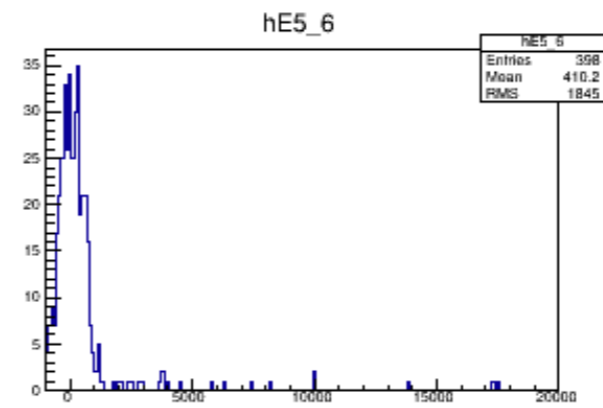
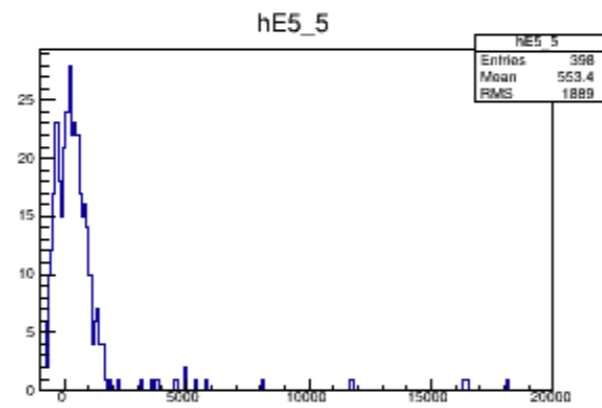
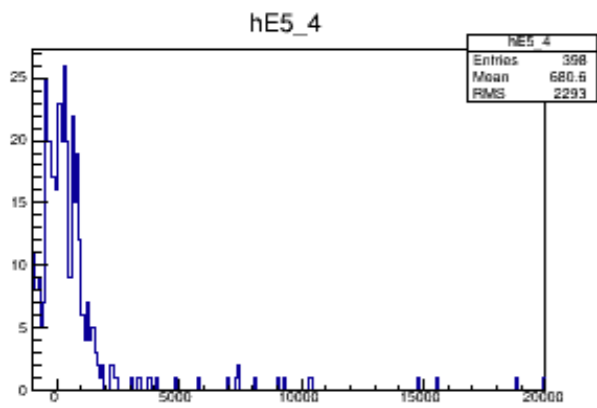
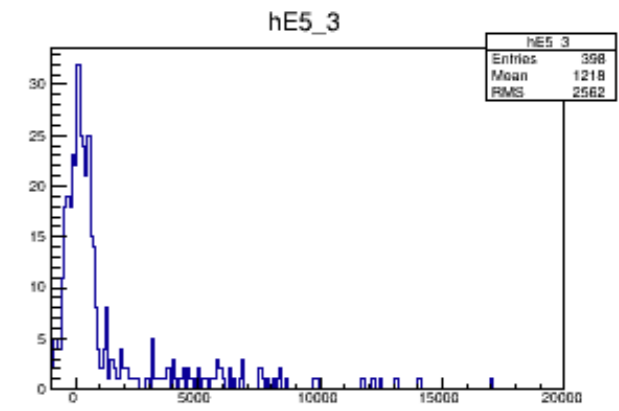
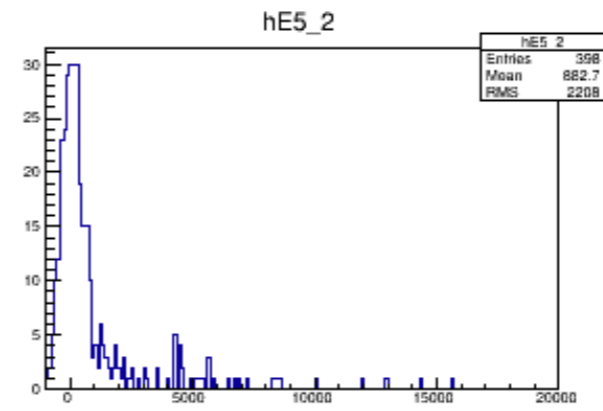
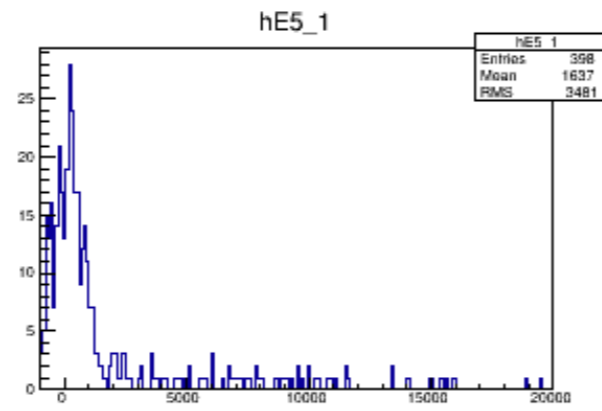
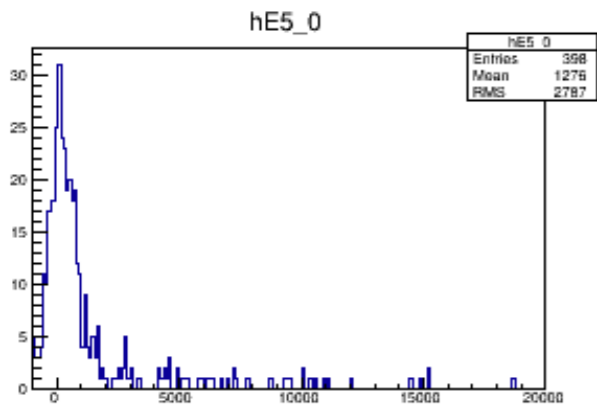
Nhit_South

Before applying Veto

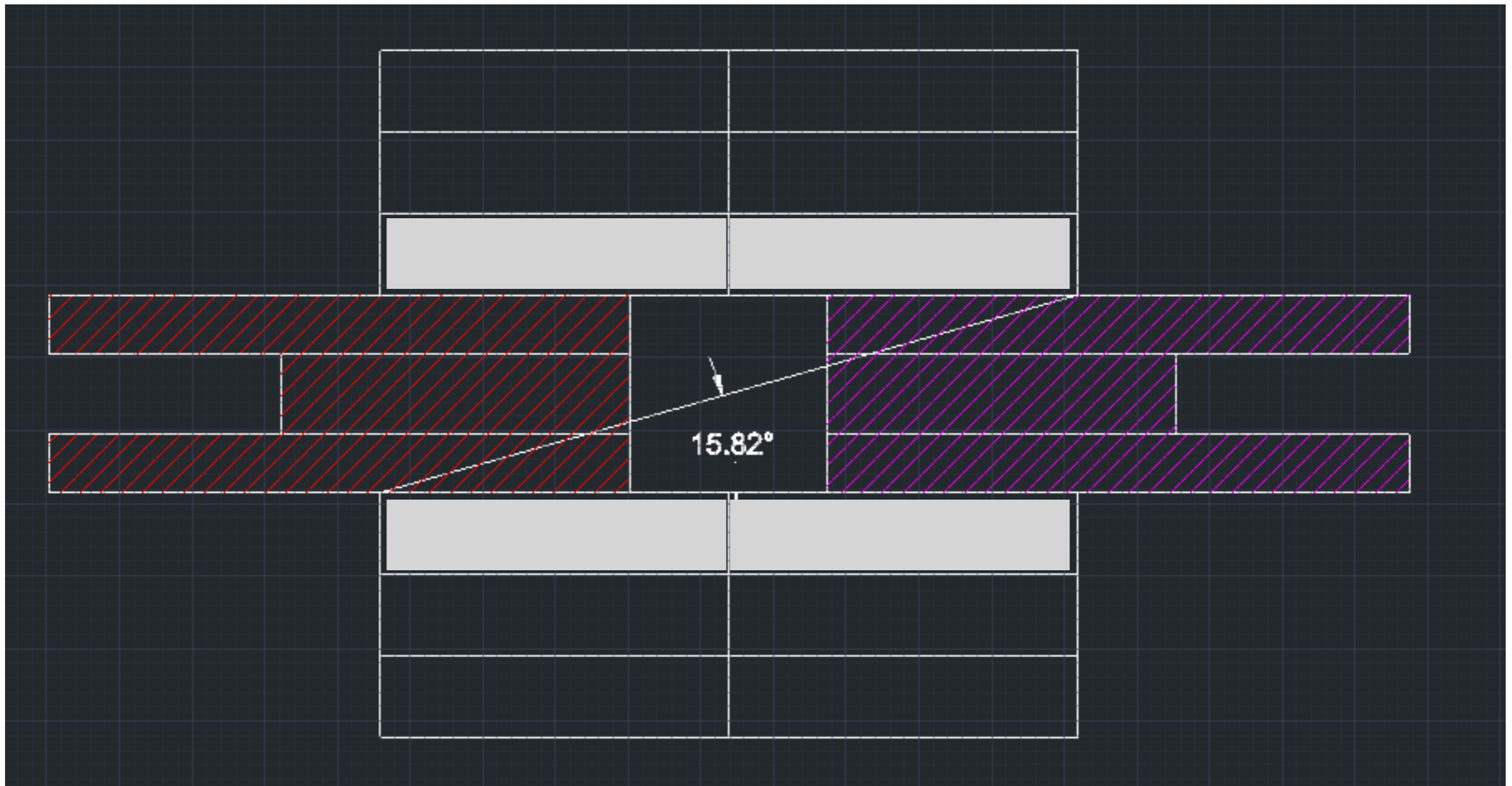
hNS	
Entries	64112
Mean x	0.4871
Mean y	0.4502
RMS x	0.9789
RMS y	0.9608



Nhit_North

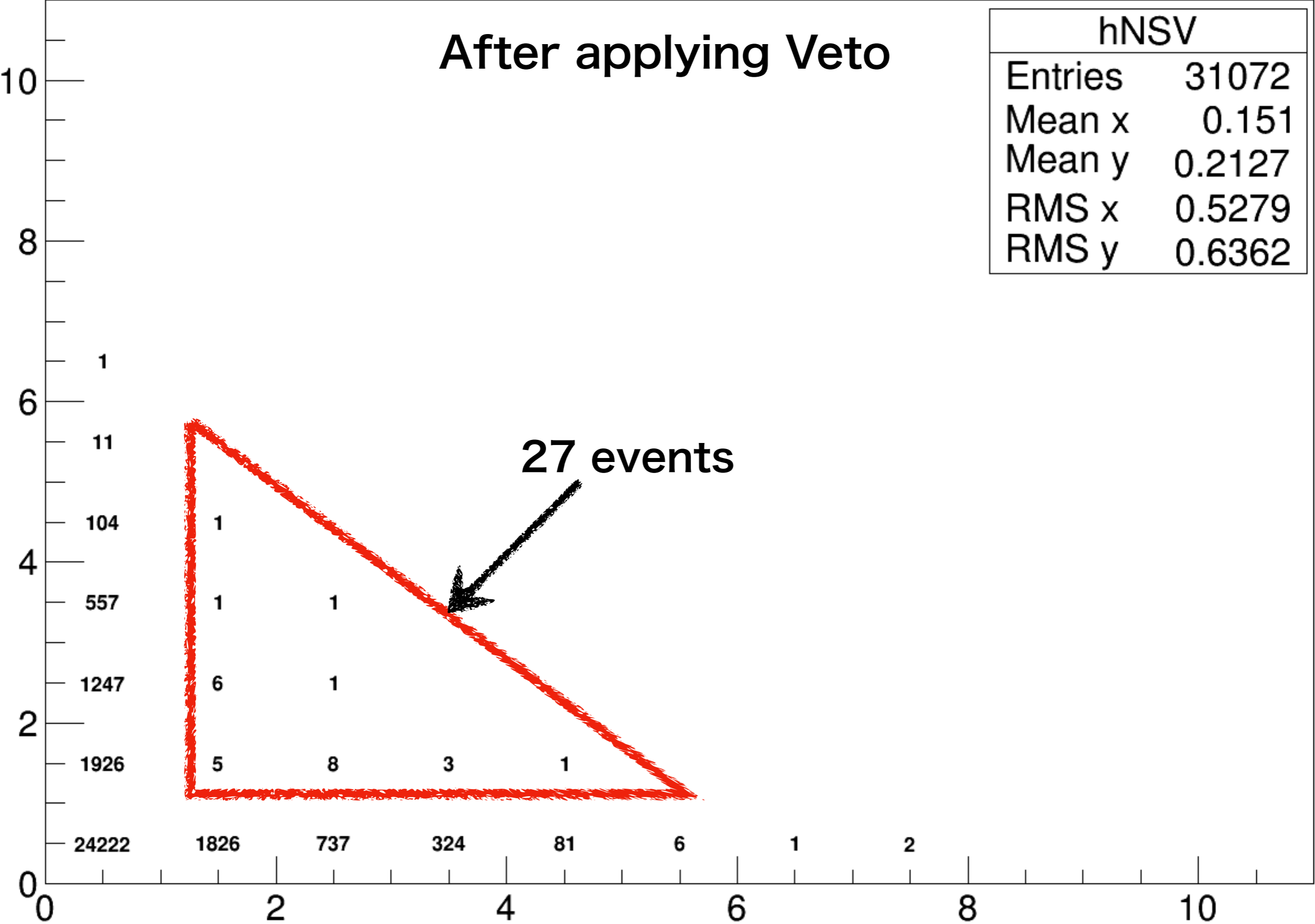


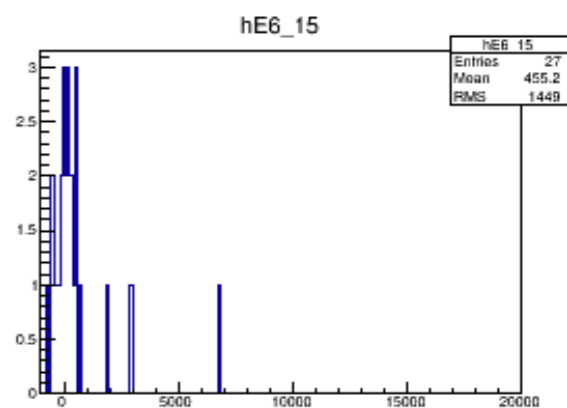
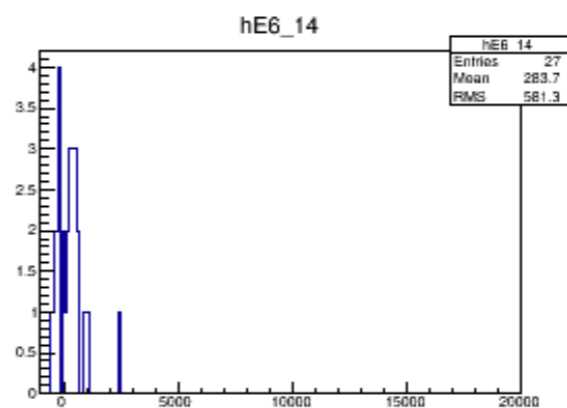
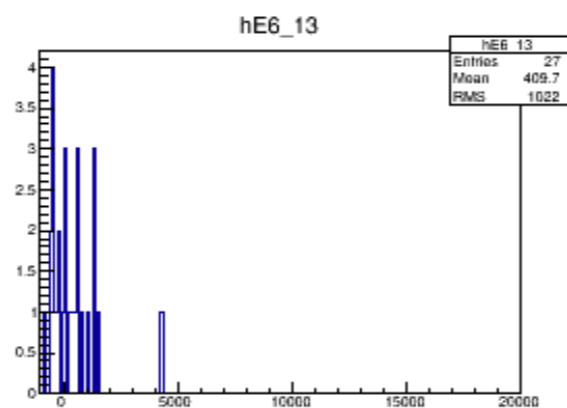
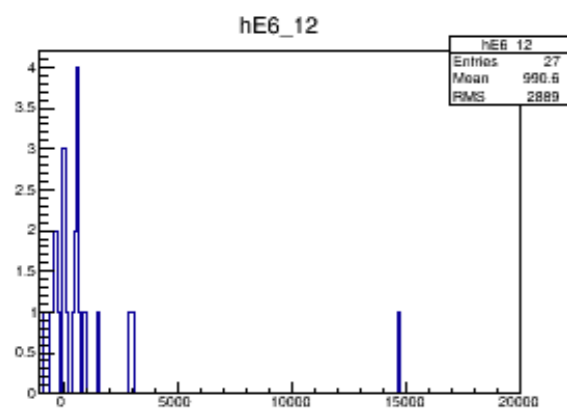
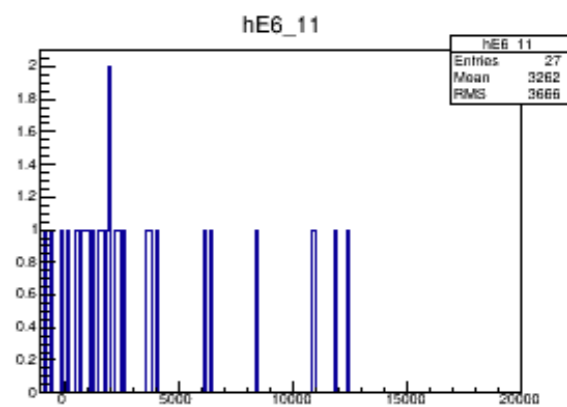
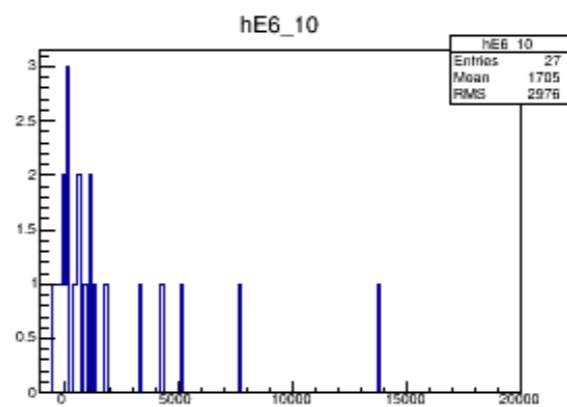
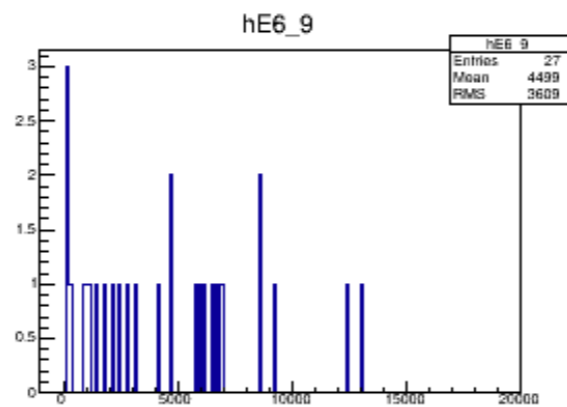
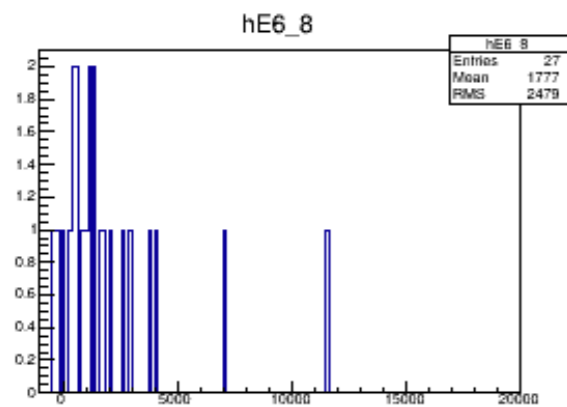
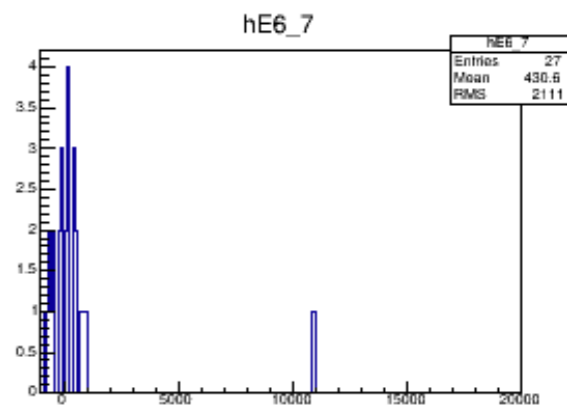
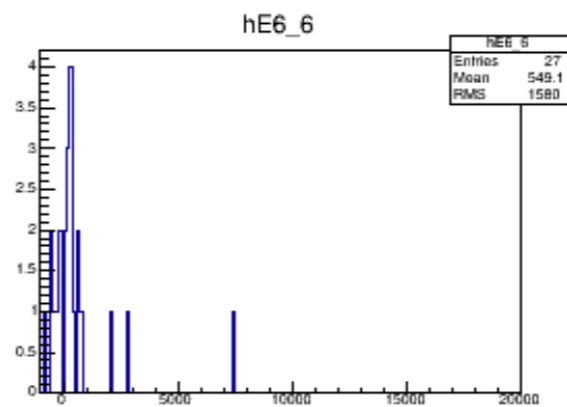
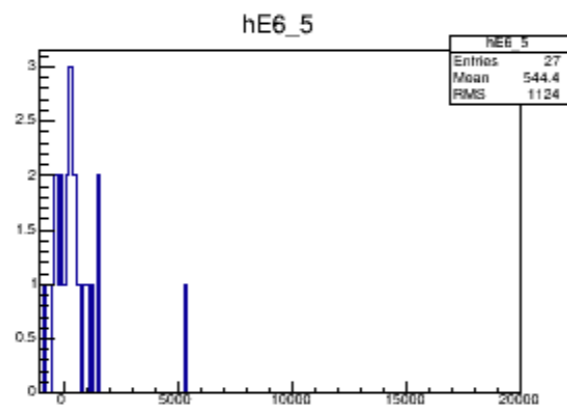
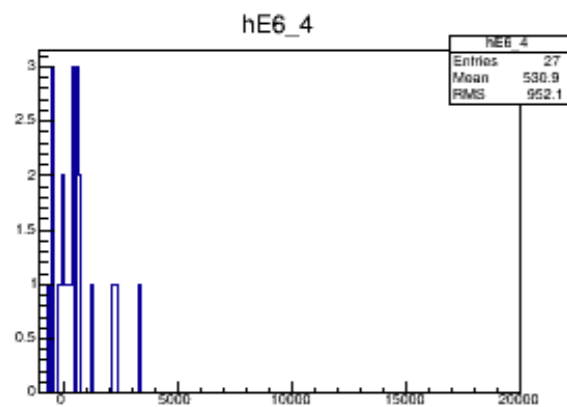
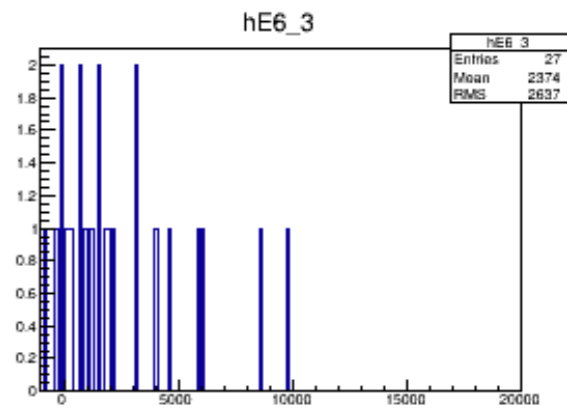
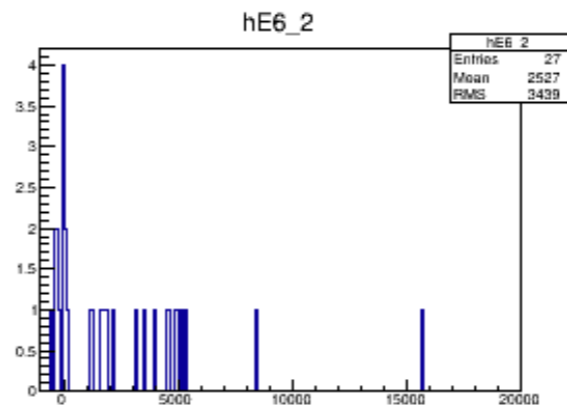
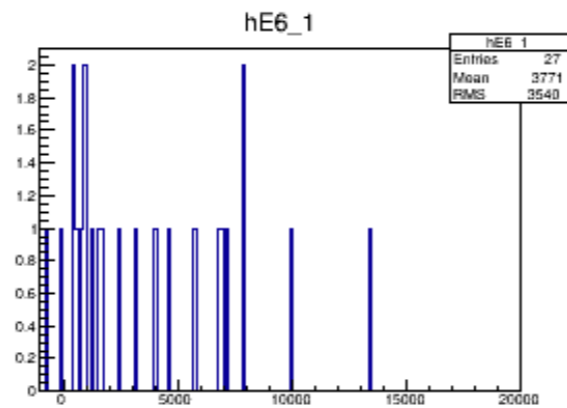
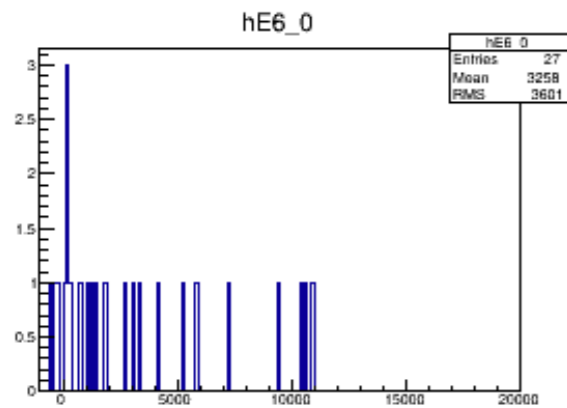
Horizontal line



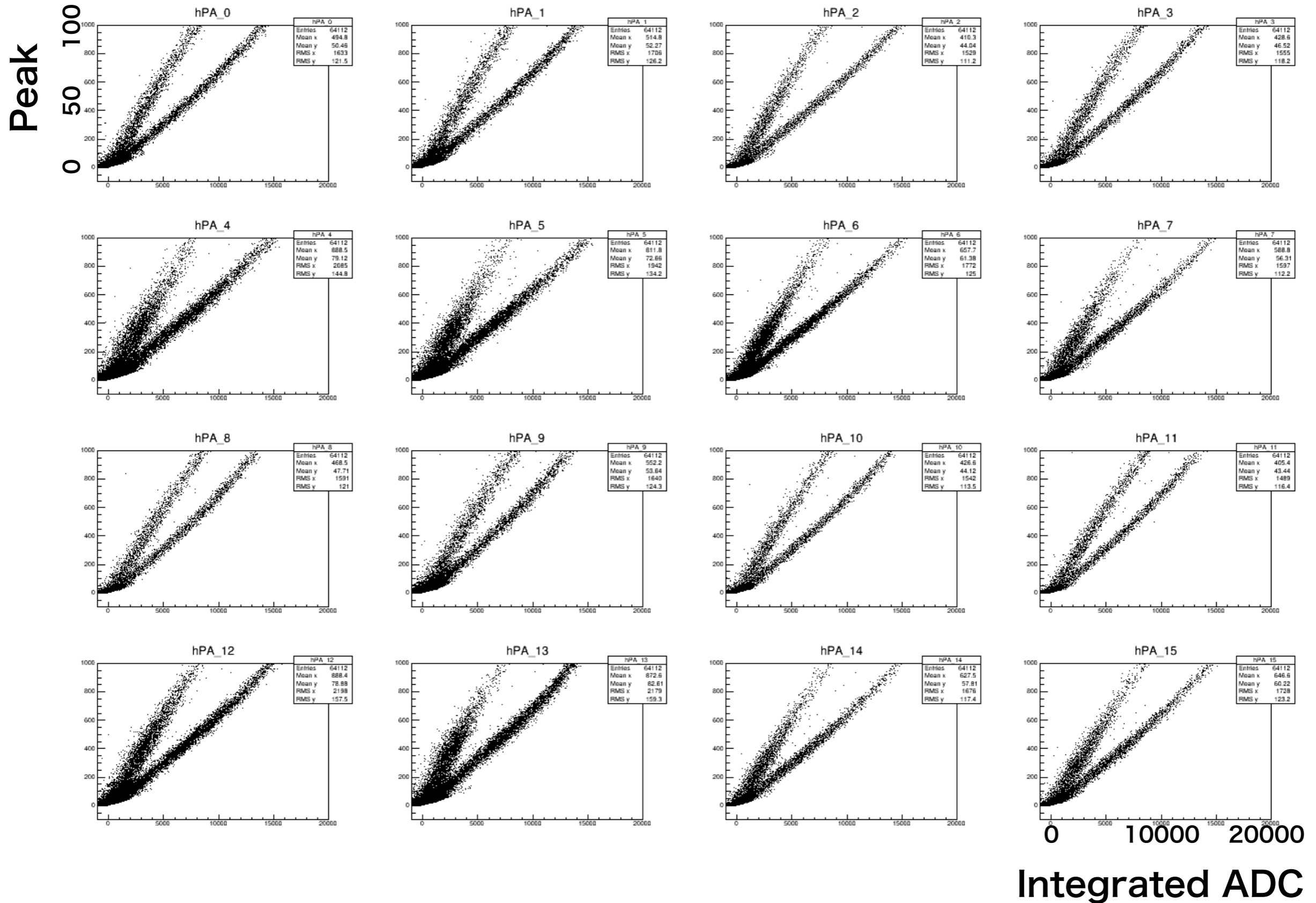
After applying Veto

hNSV	
Entries	31072
Mean x	0.151
Mean y	0.2127
RMS x	0.5279
RMS y	0.6362

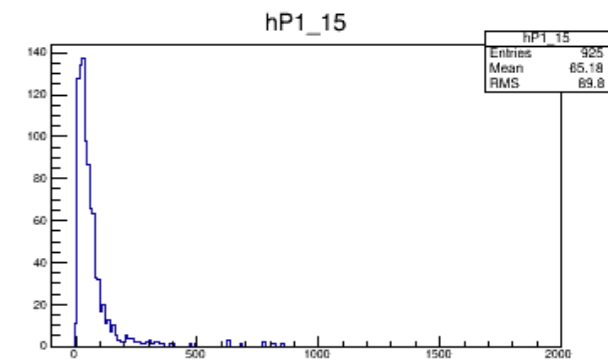
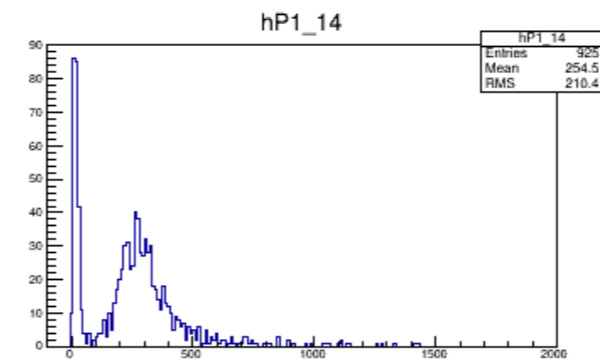
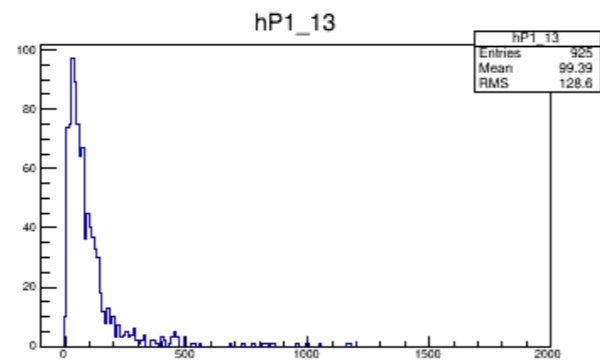
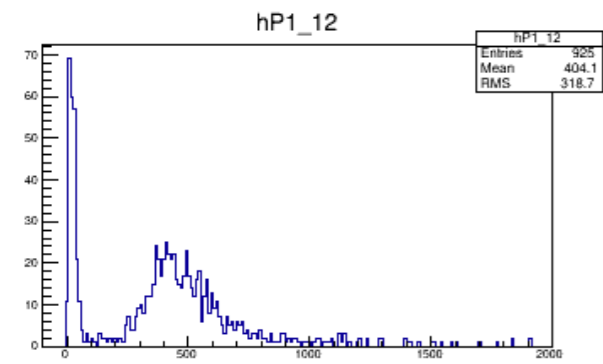
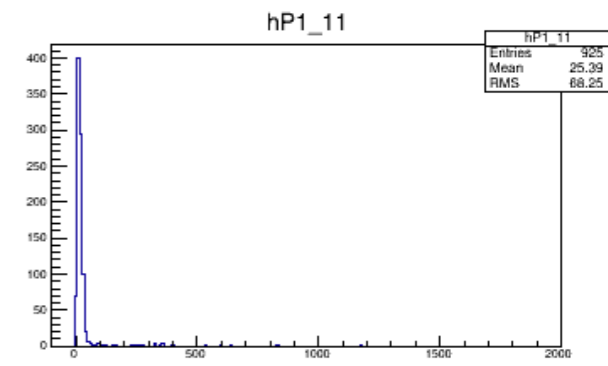
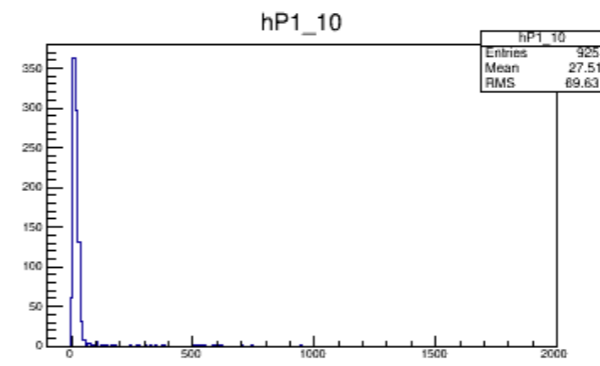
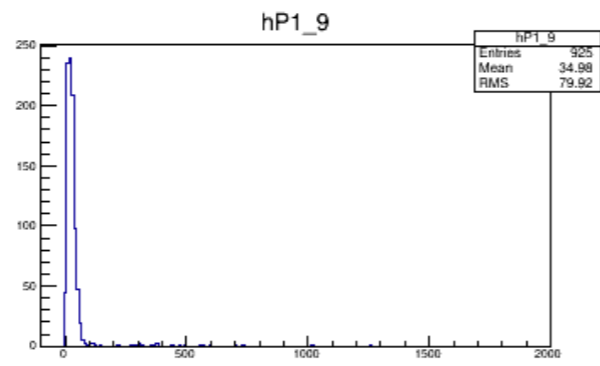
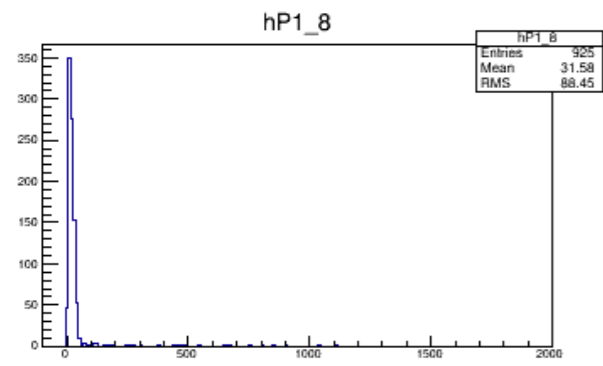
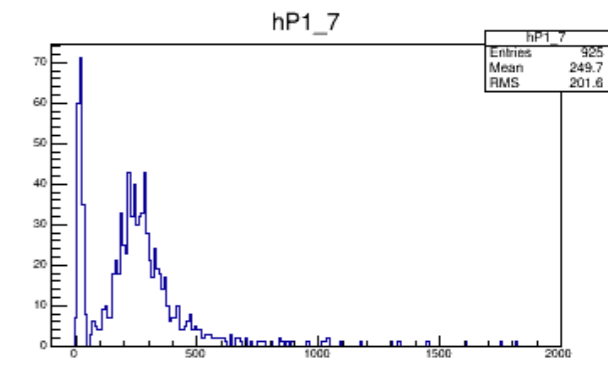
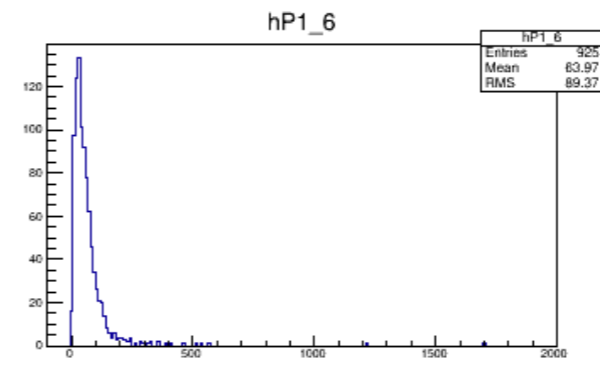
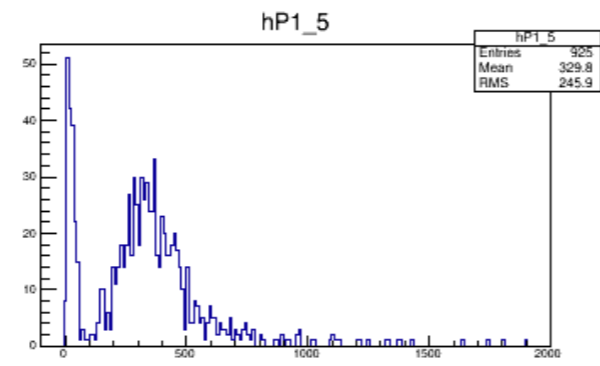
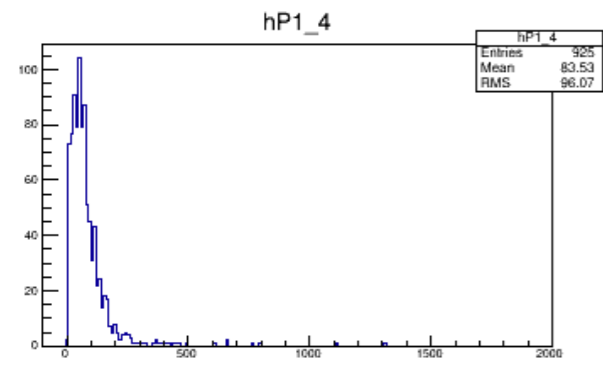
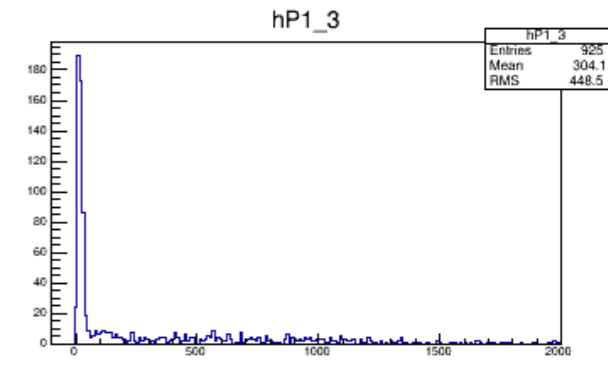
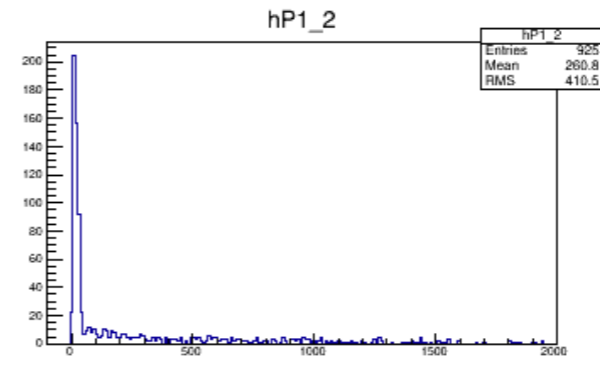
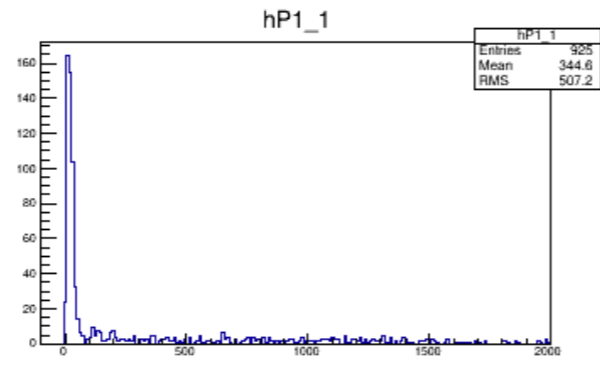
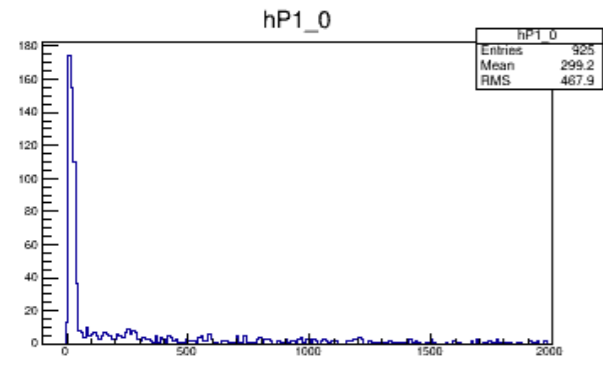




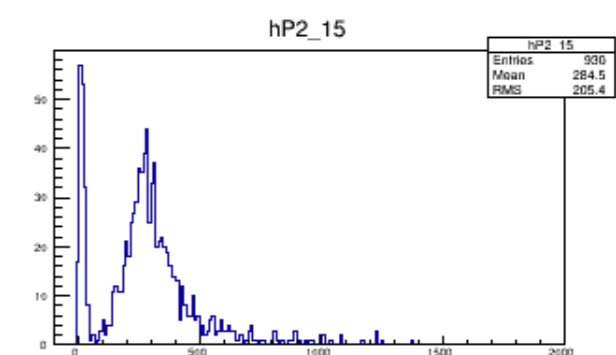
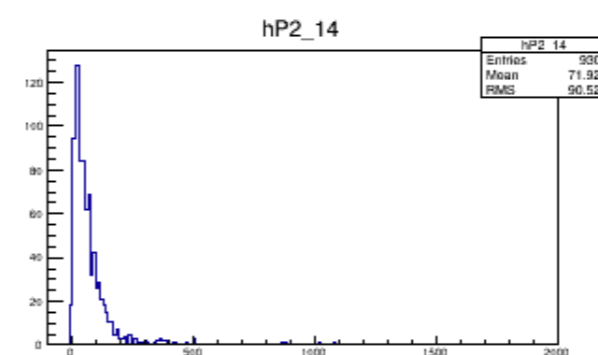
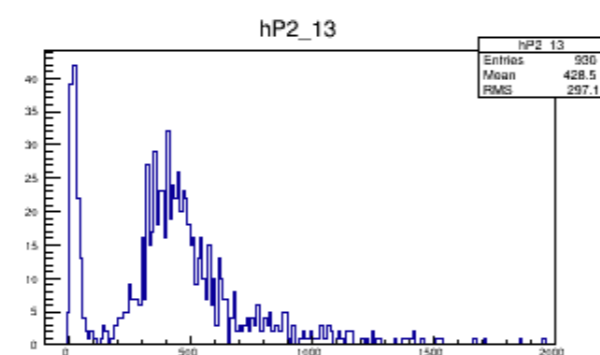
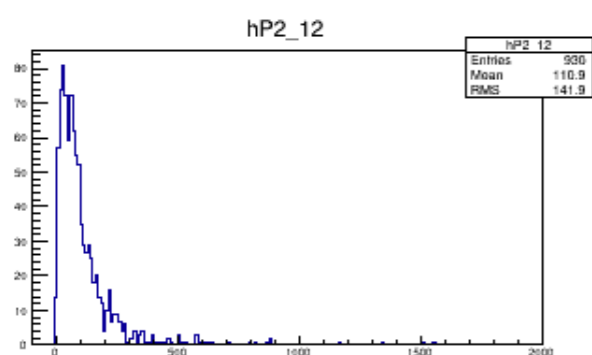
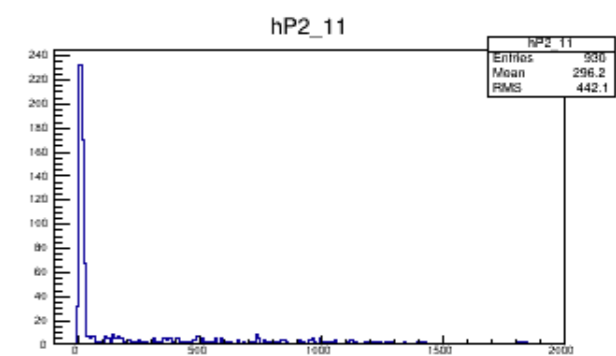
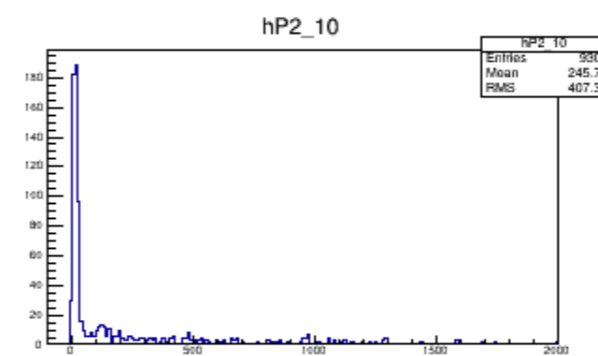
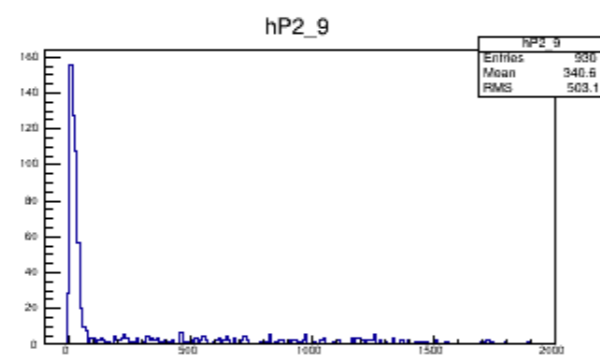
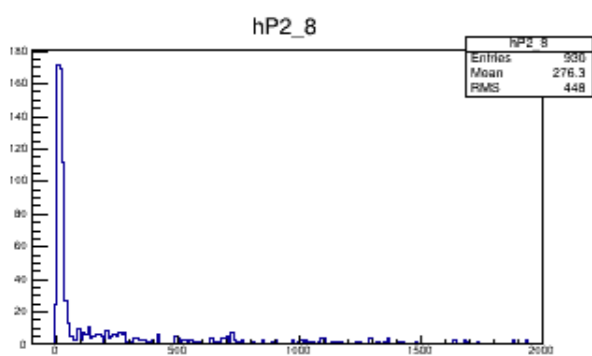
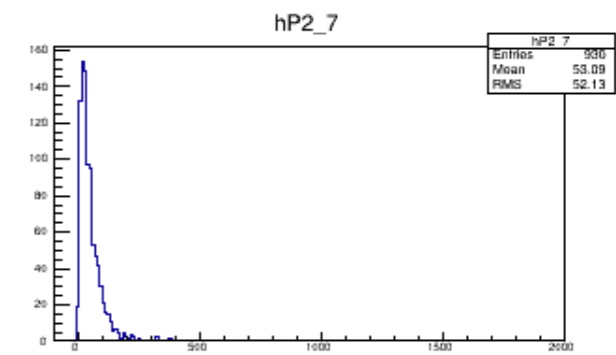
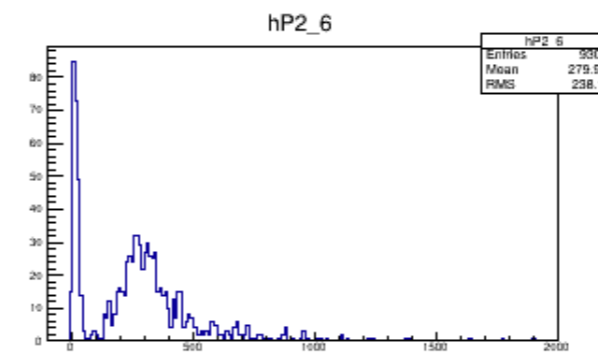
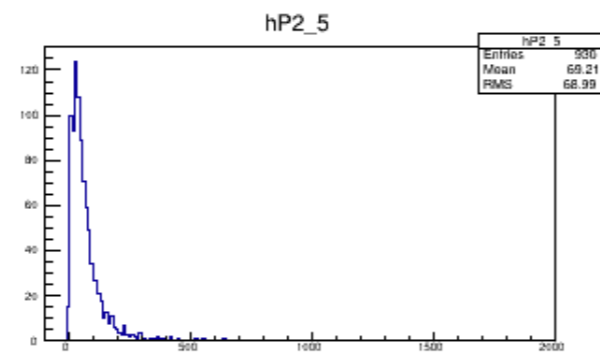
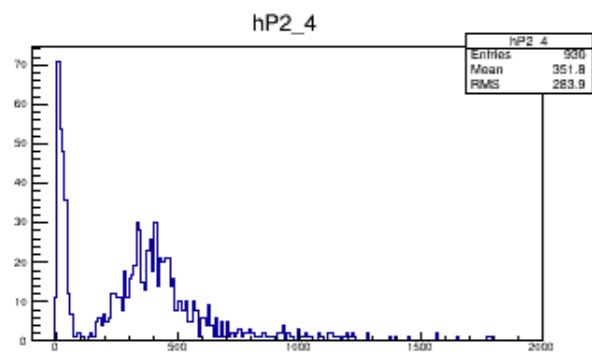
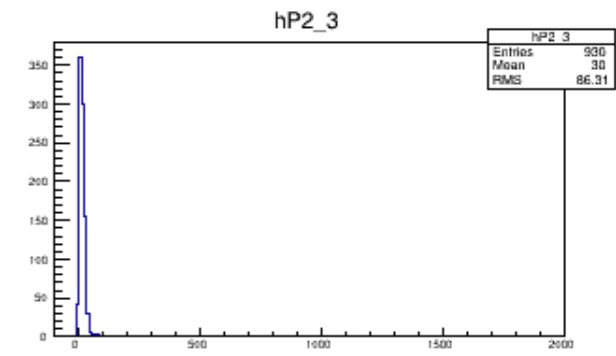
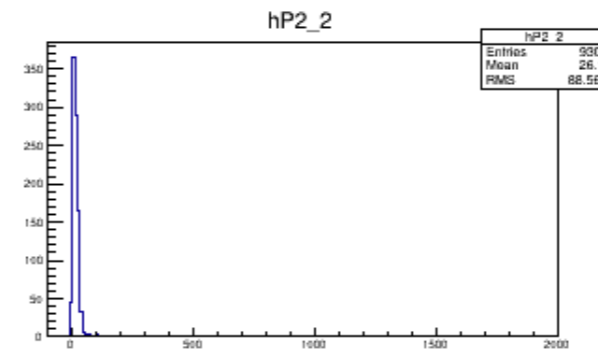
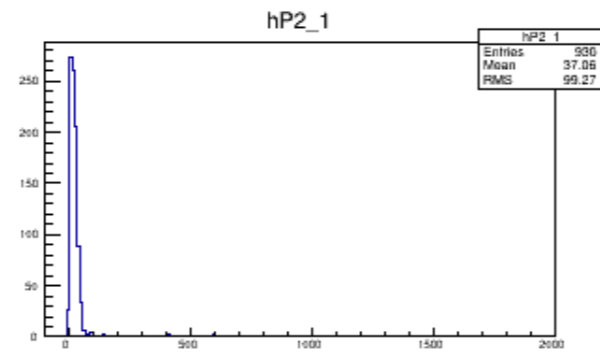
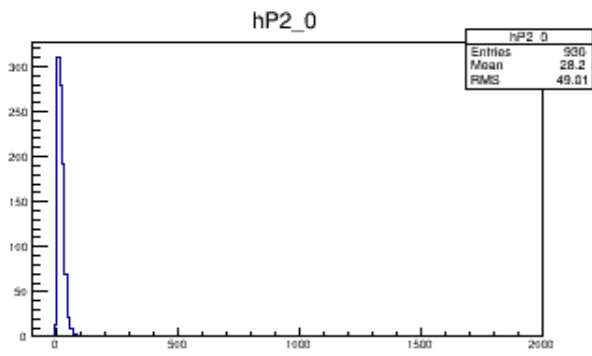
Peak V.S. Integrated ADC



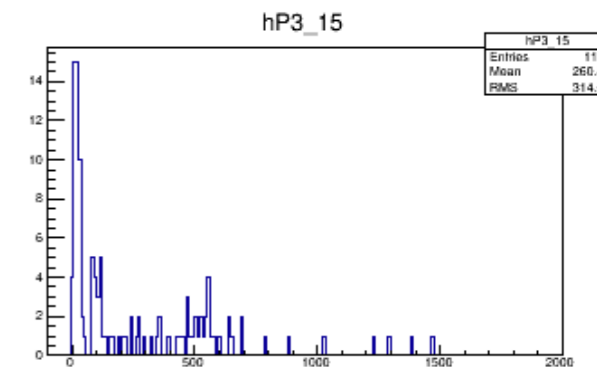
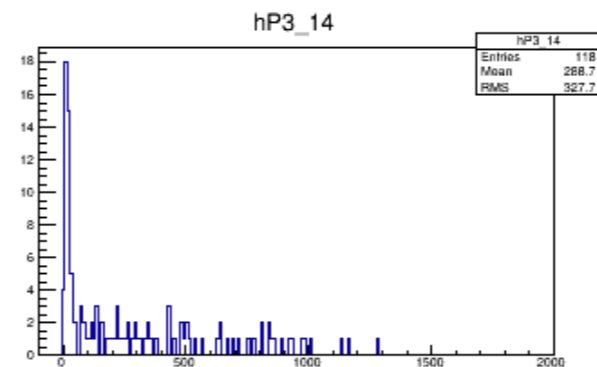
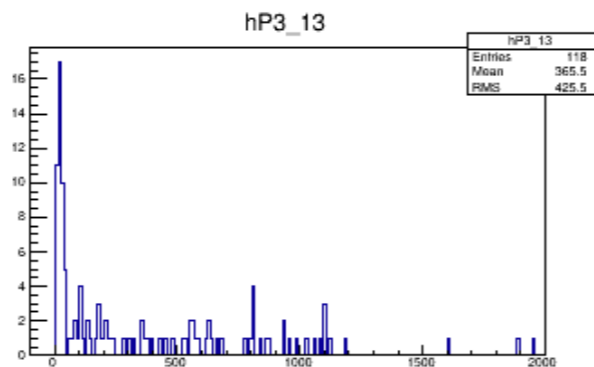
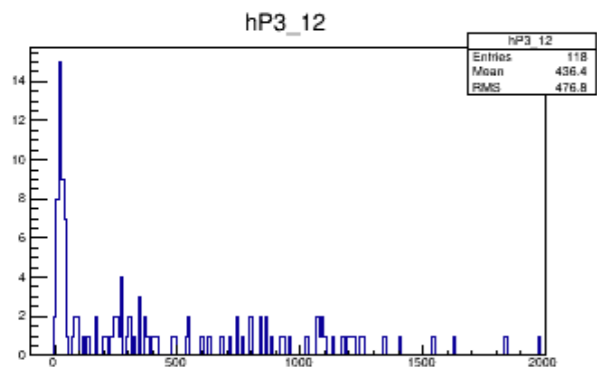
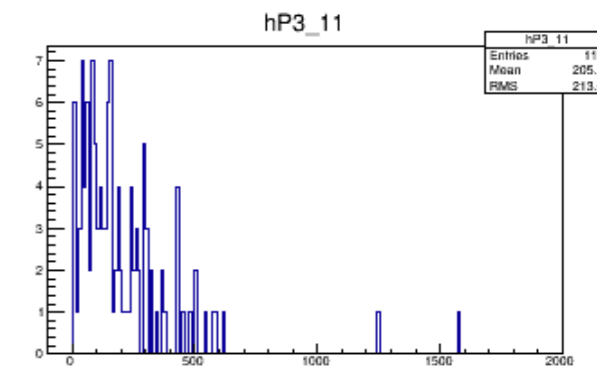
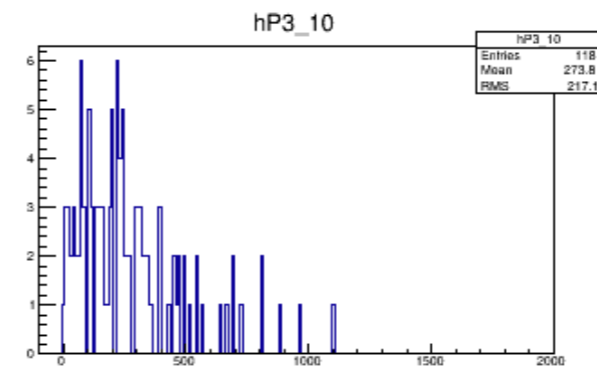
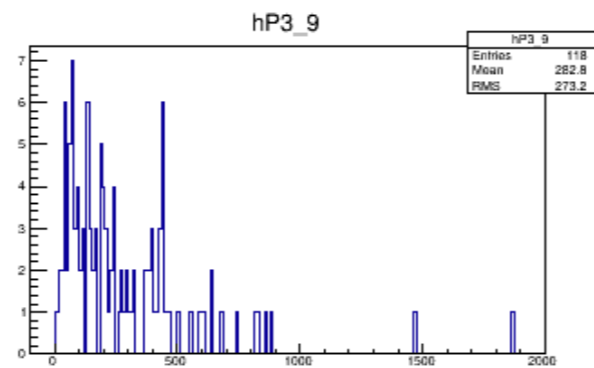
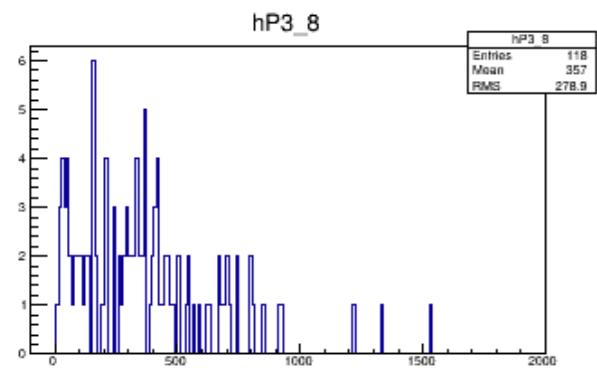
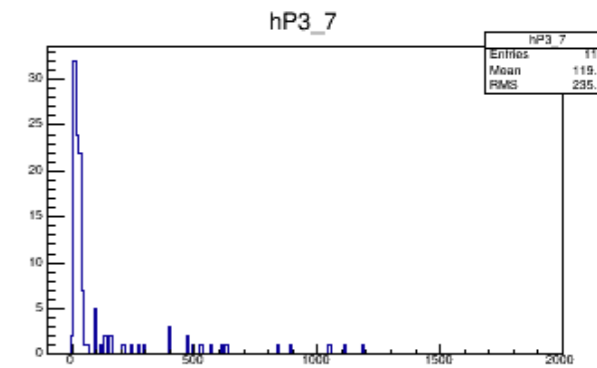
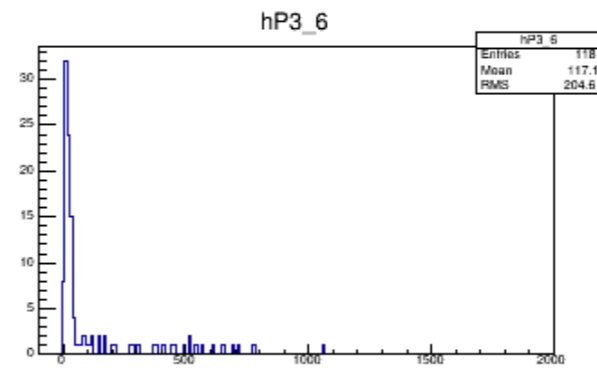
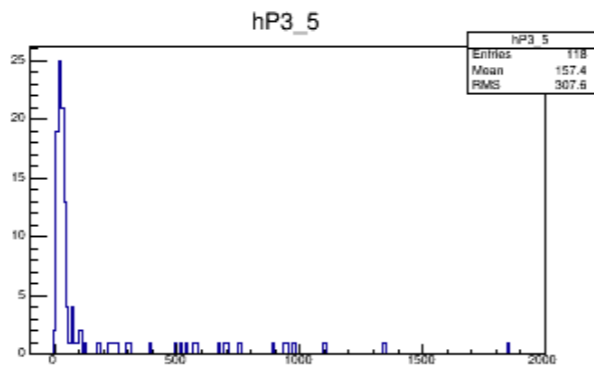
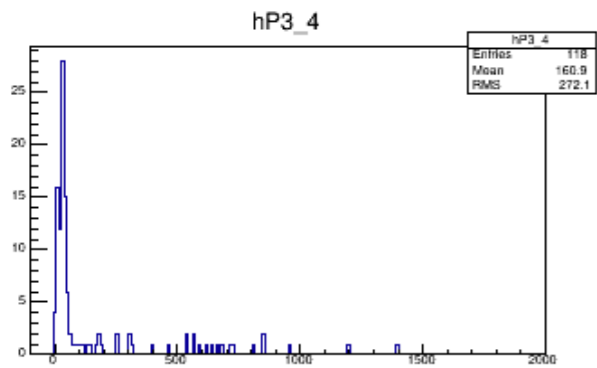
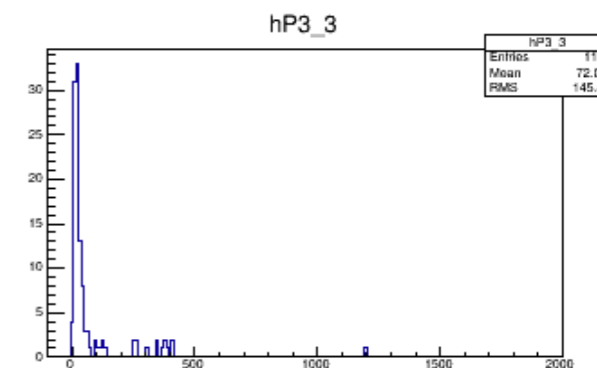
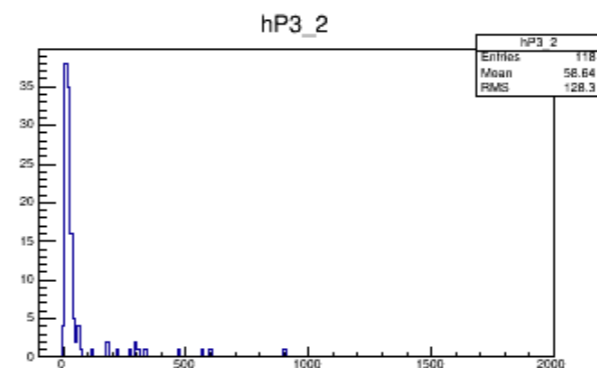
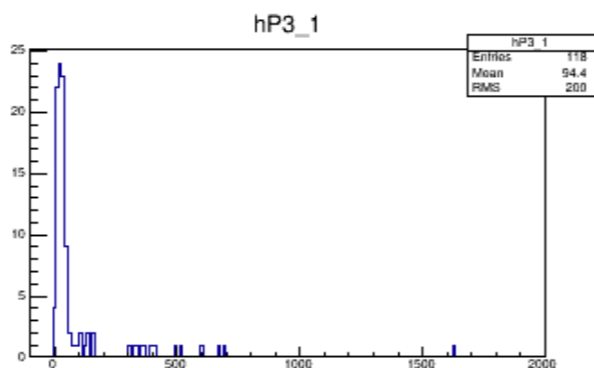
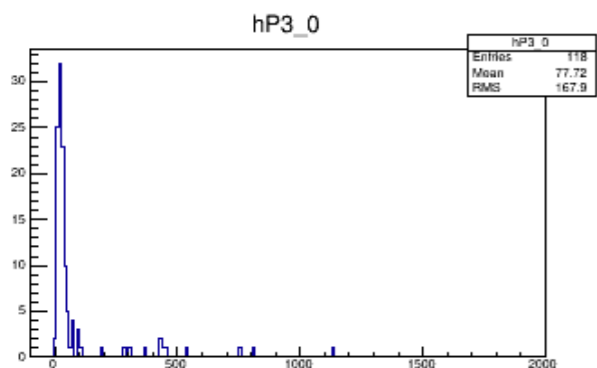
Peak for ID==5



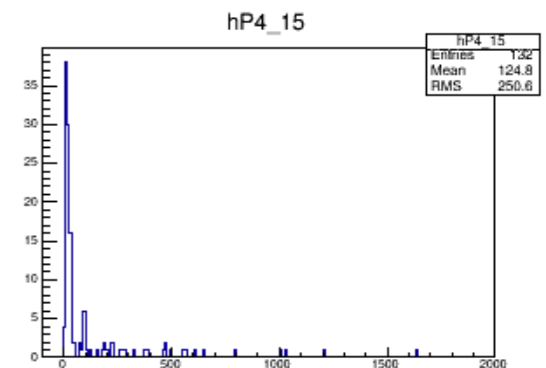
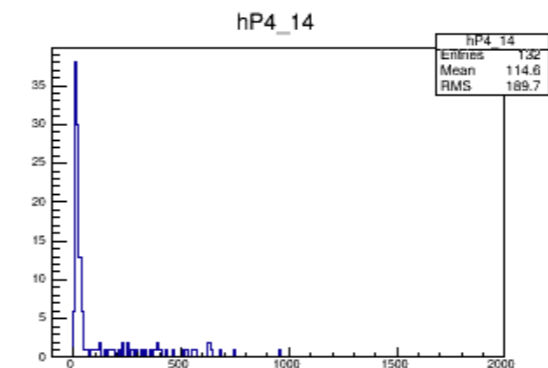
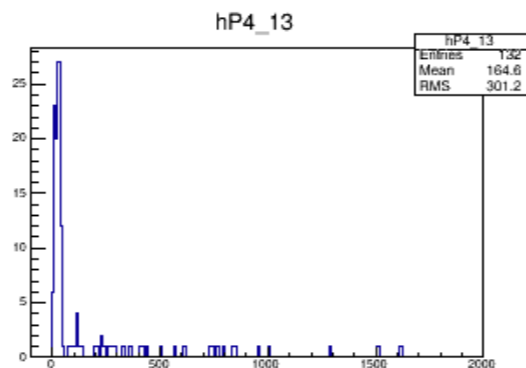
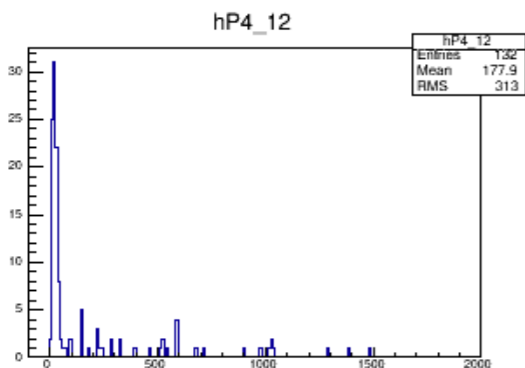
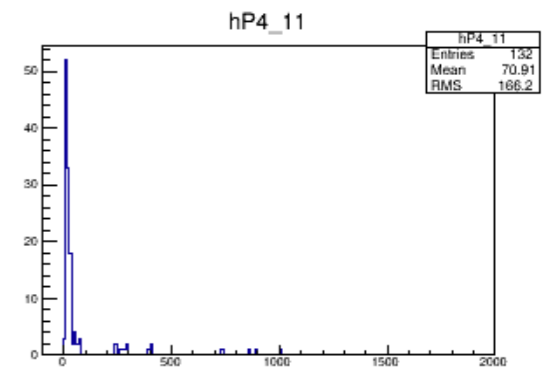
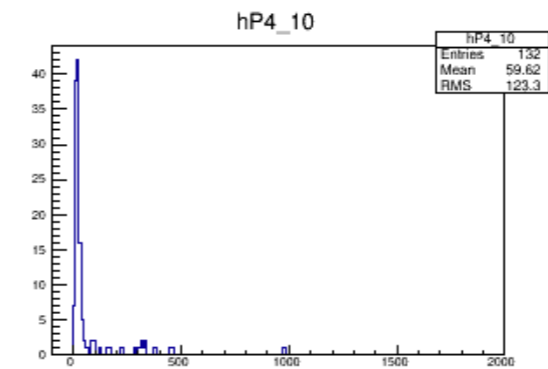
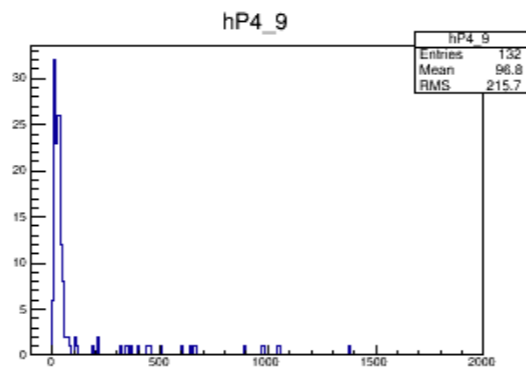
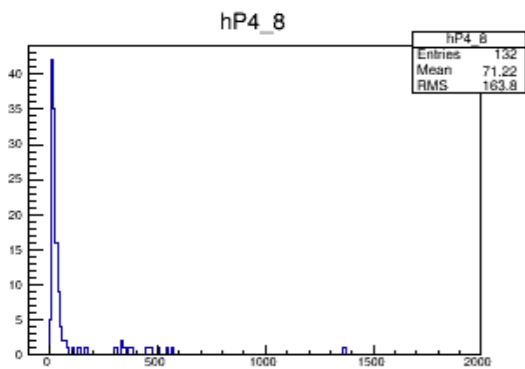
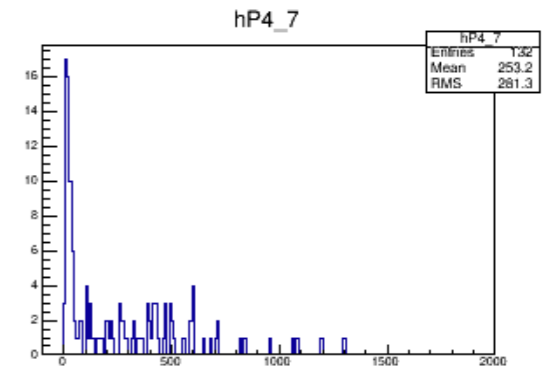
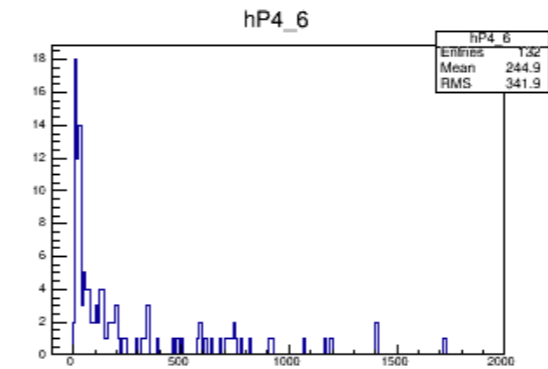
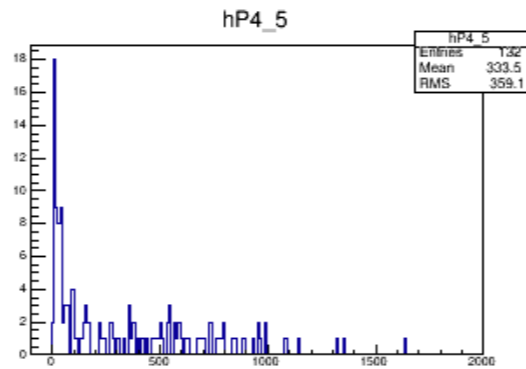
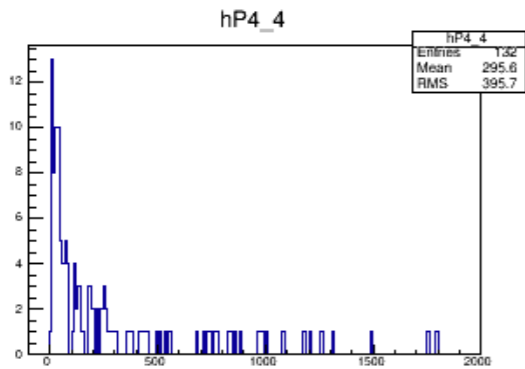
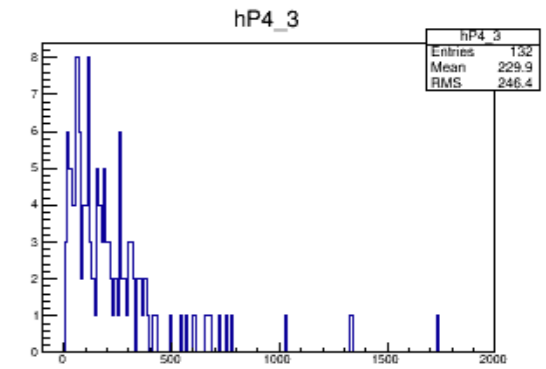
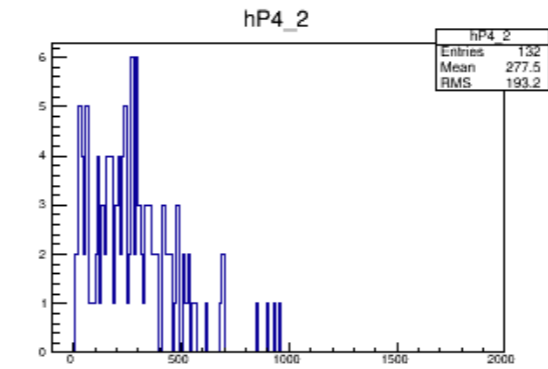
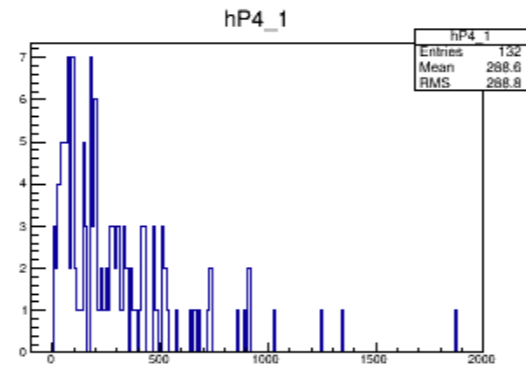
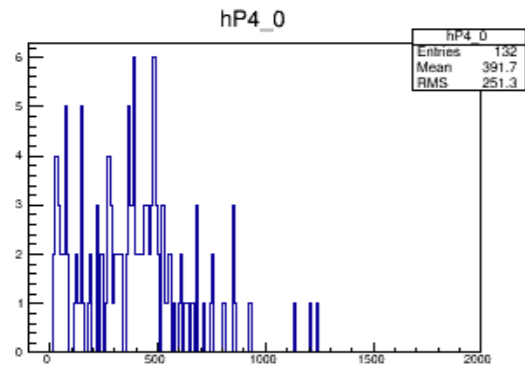
Peak for ID===10



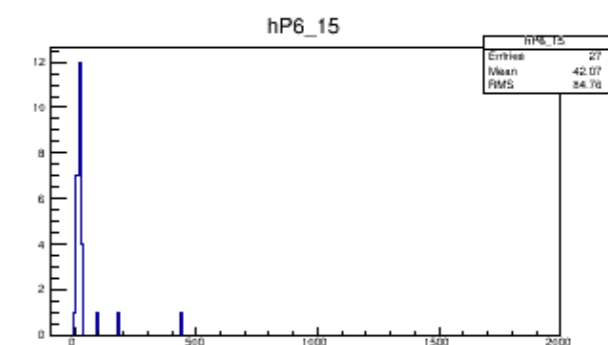
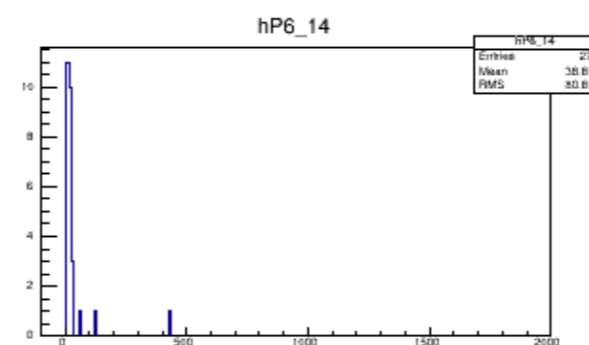
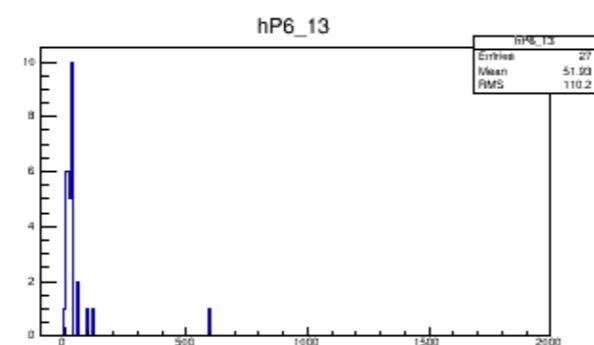
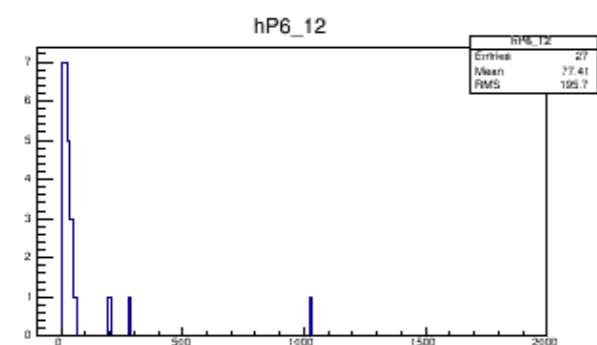
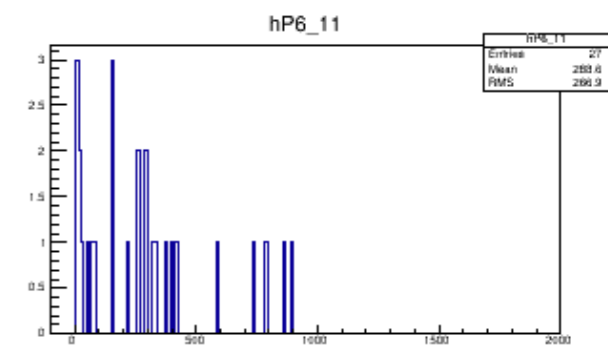
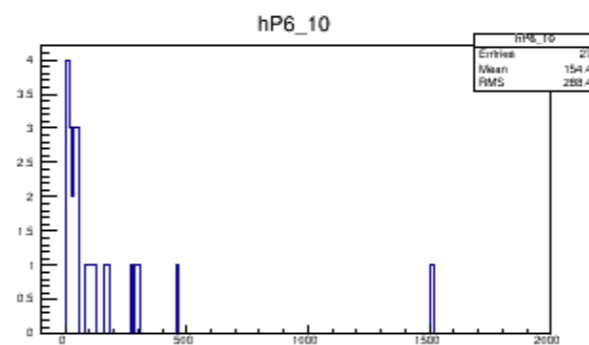
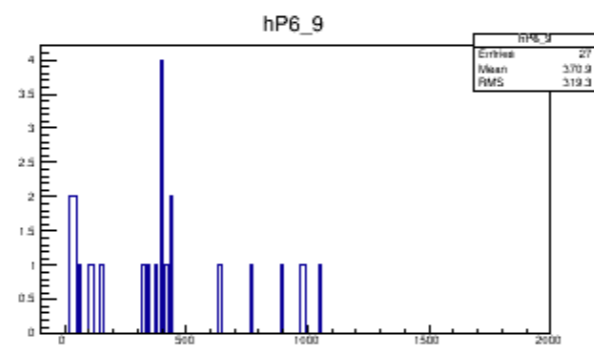
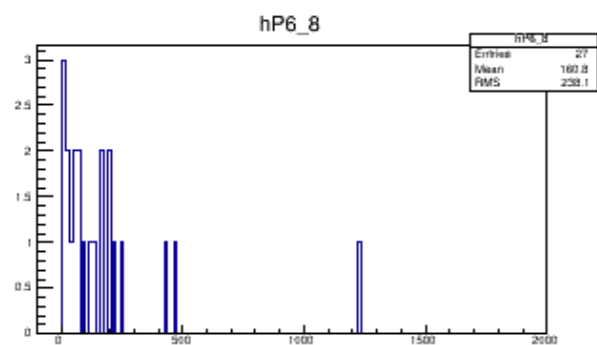
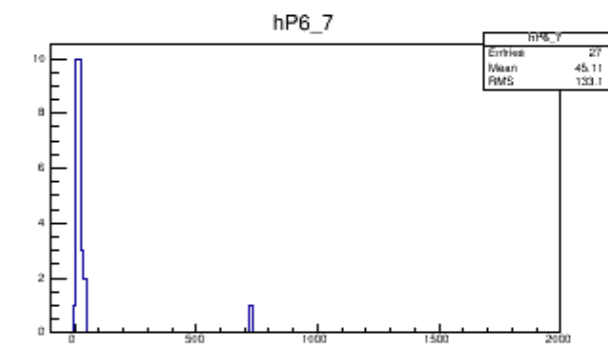
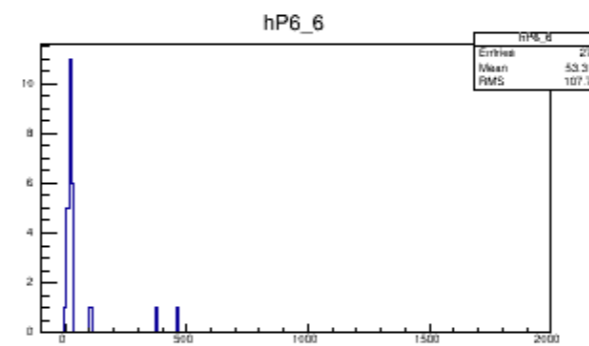
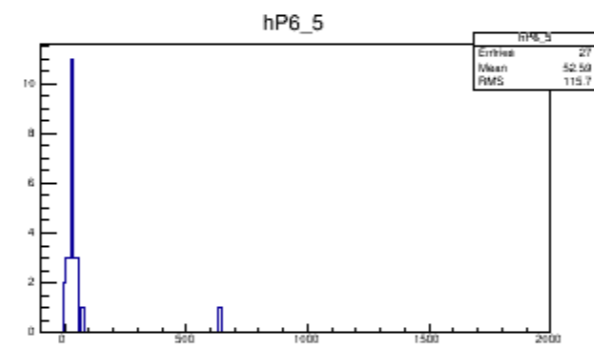
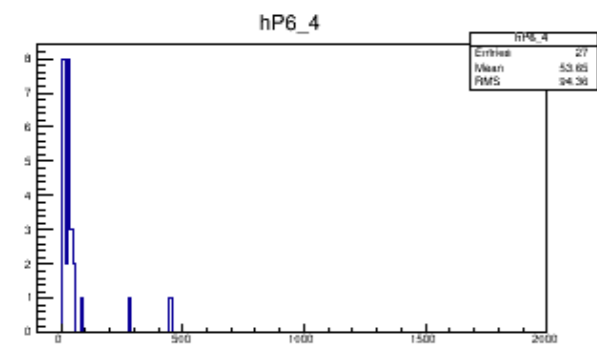
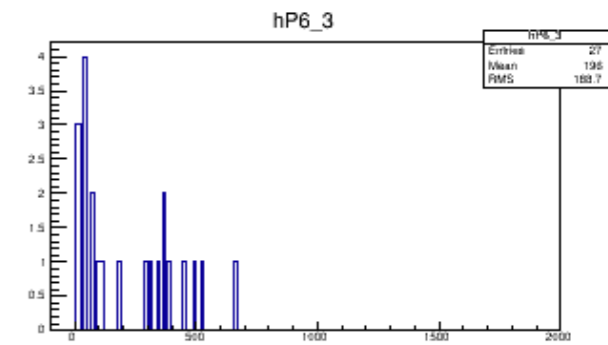
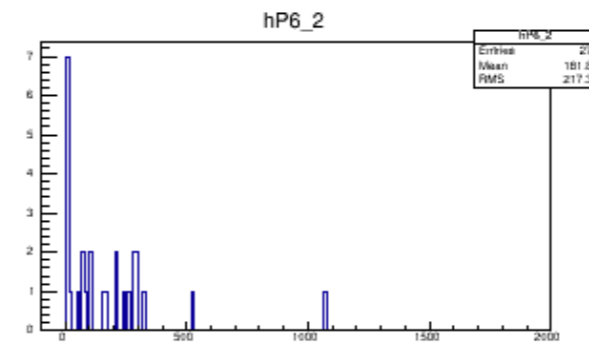
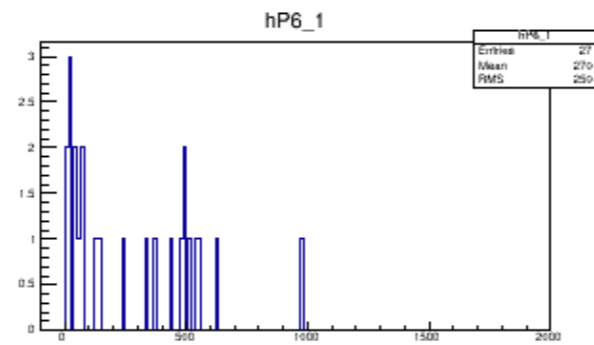
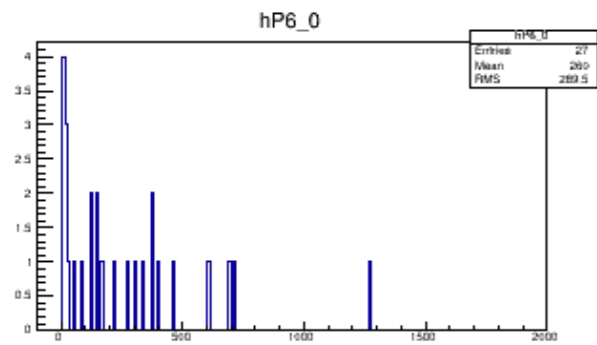
Peak for ID===18 || 24



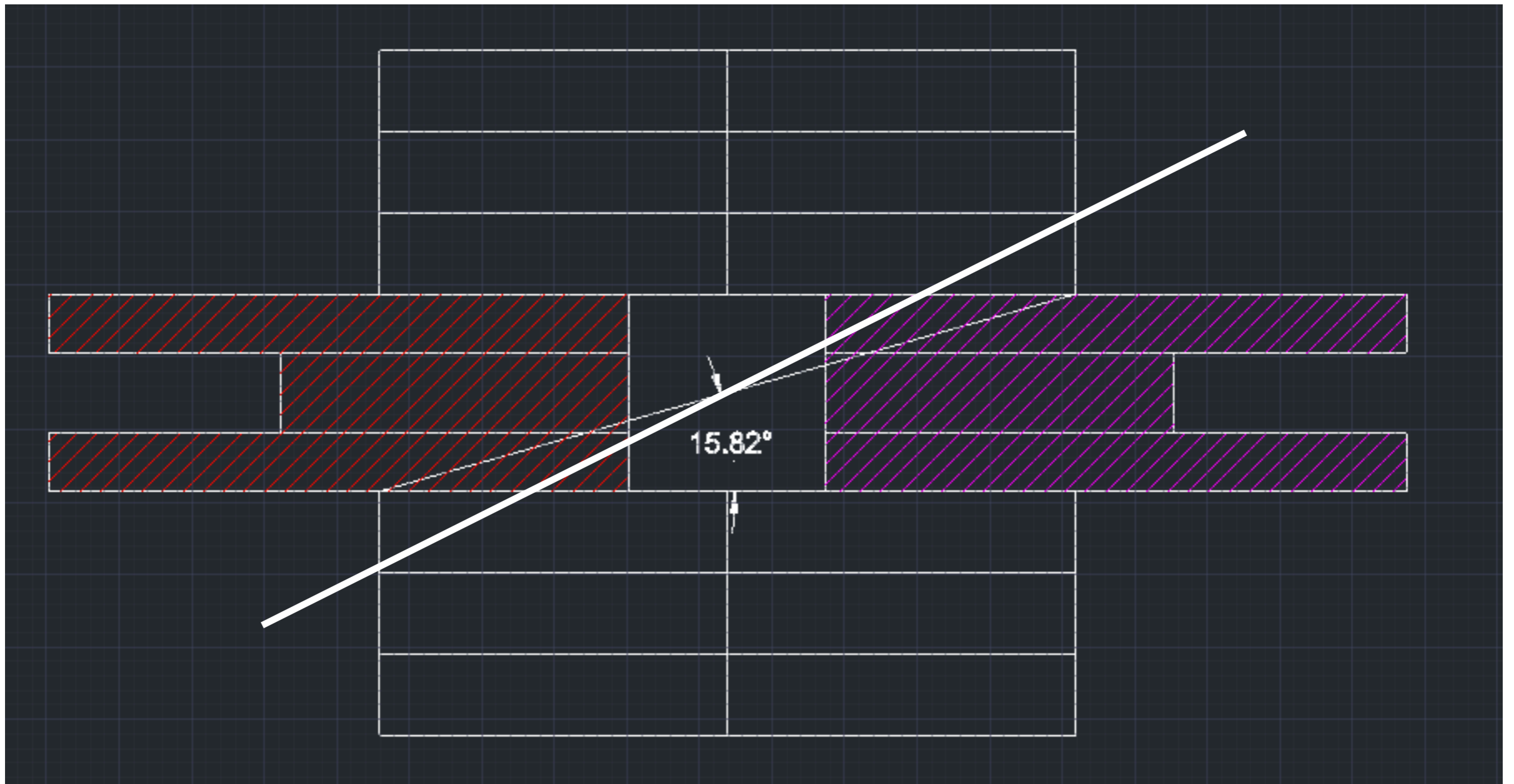
Peak for ID===33 || 36

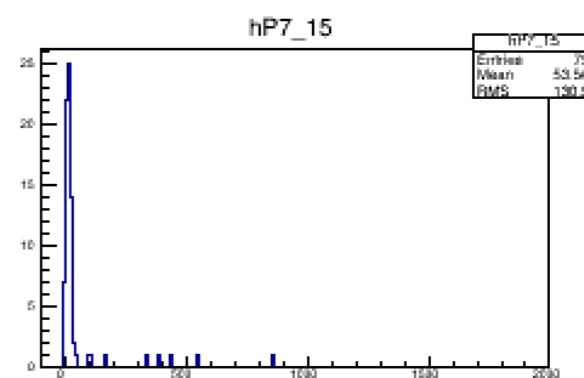
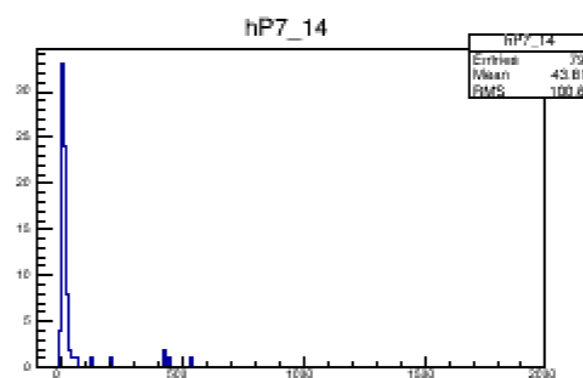
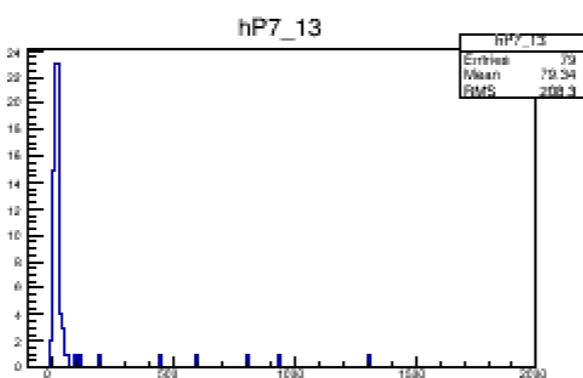
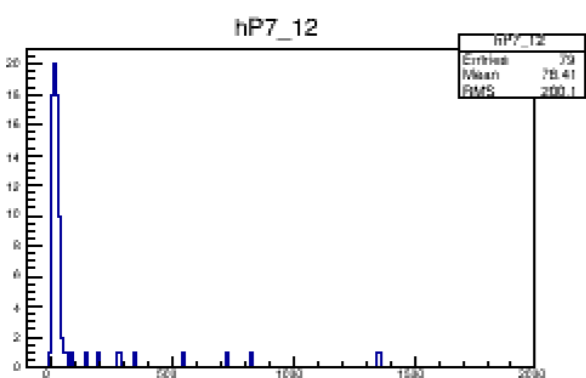
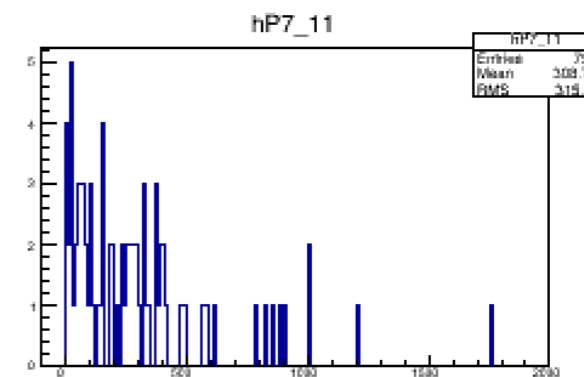
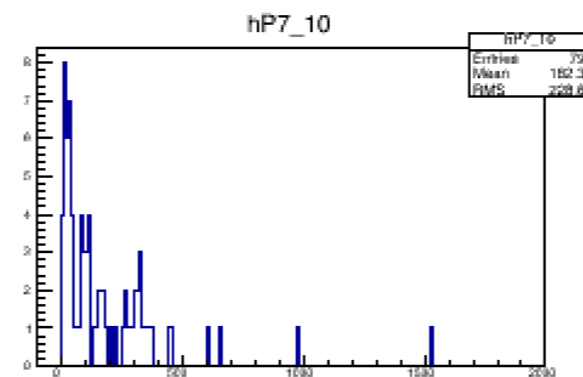
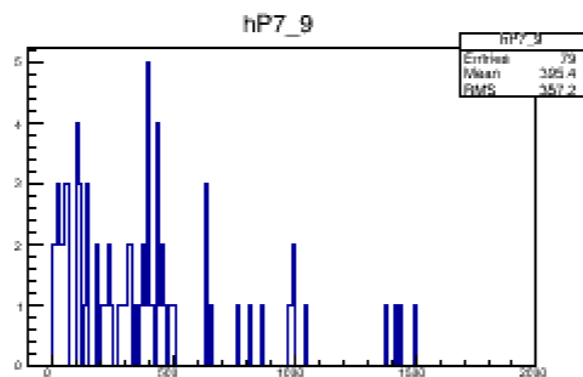
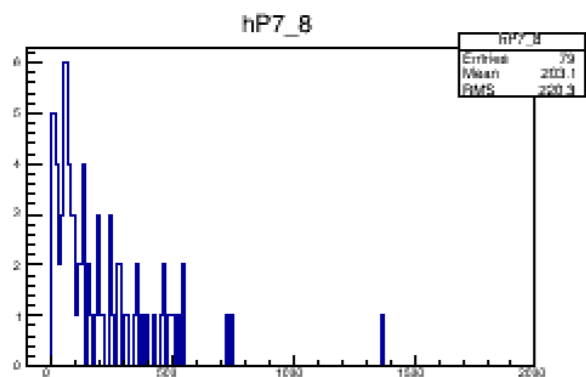
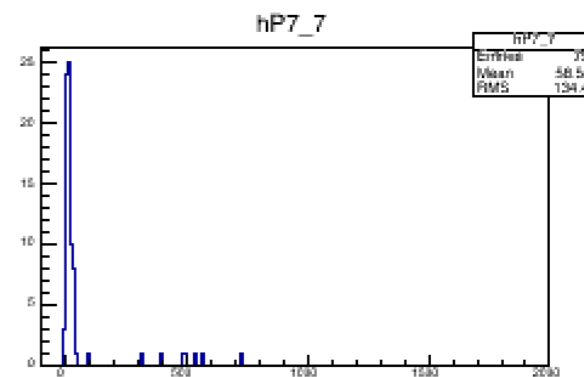
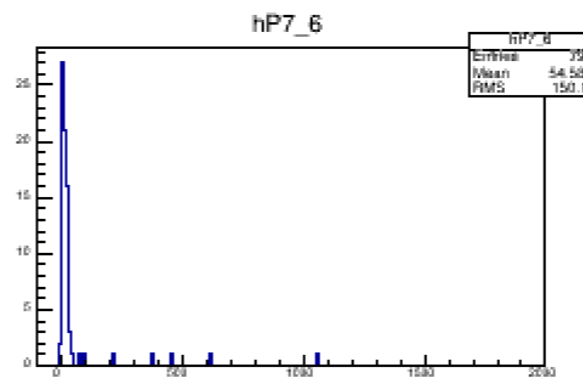
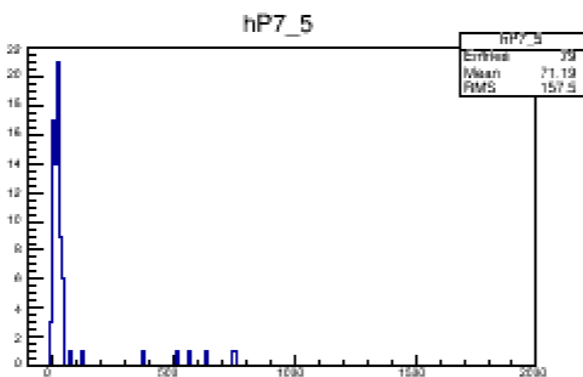
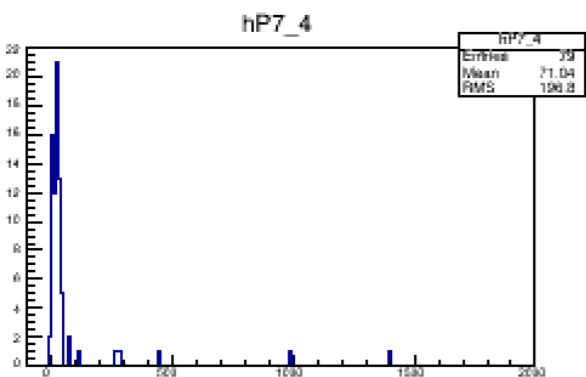
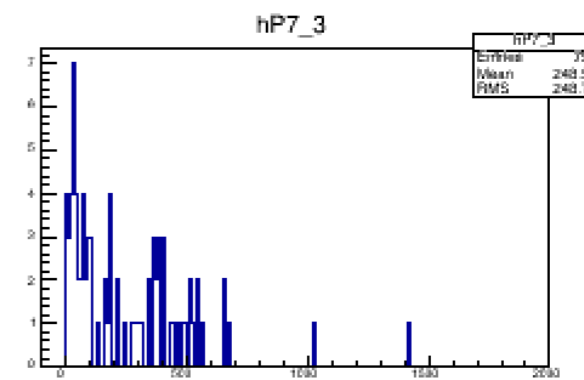
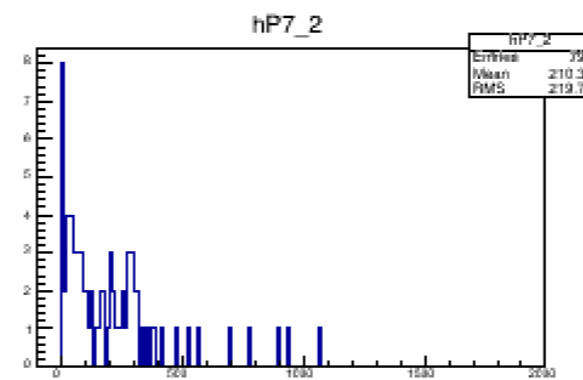
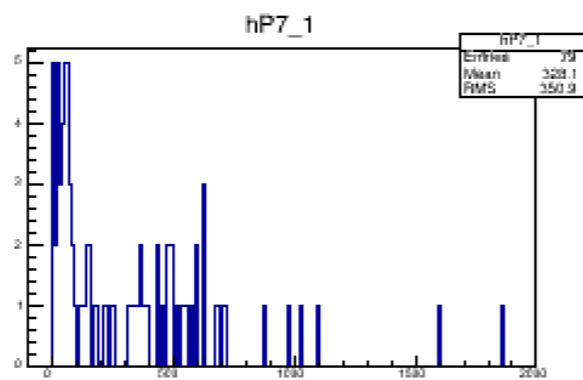
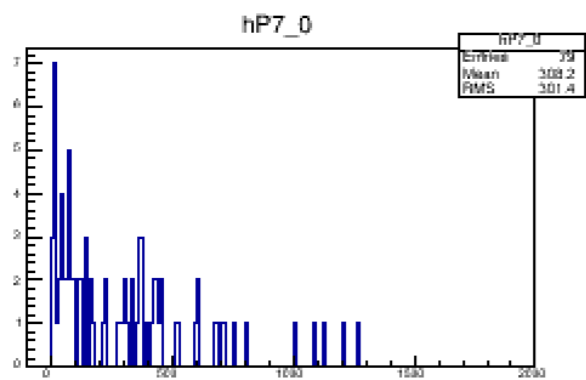


Peak for horizontal



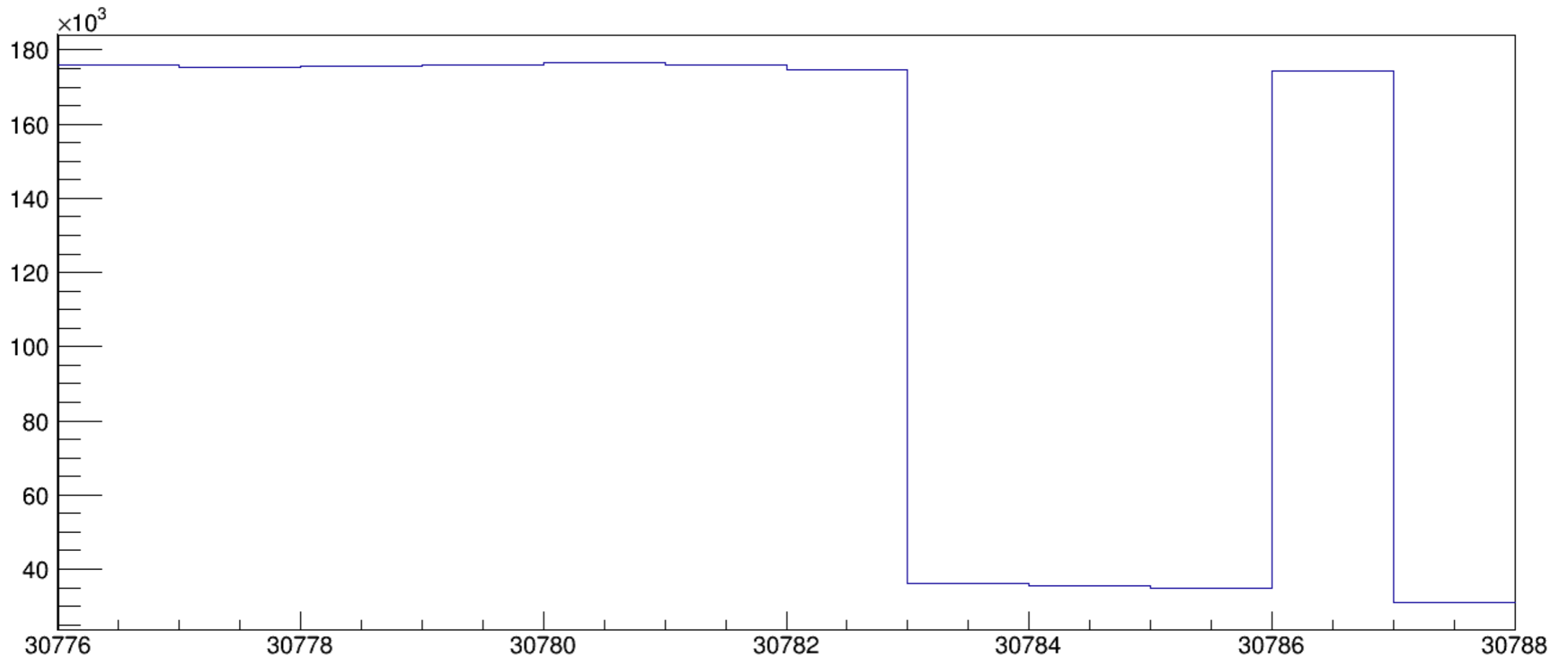
Horizontal line





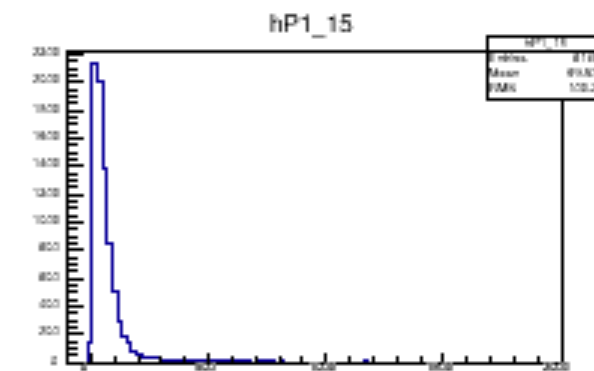
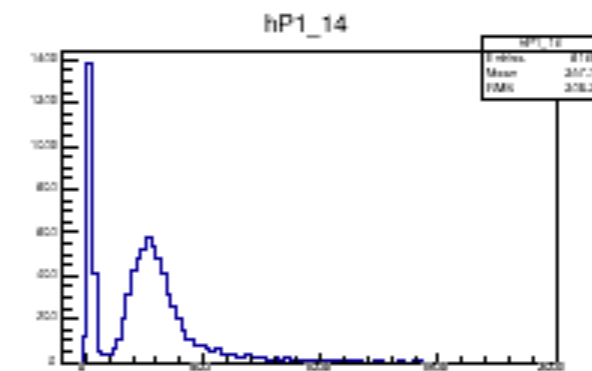
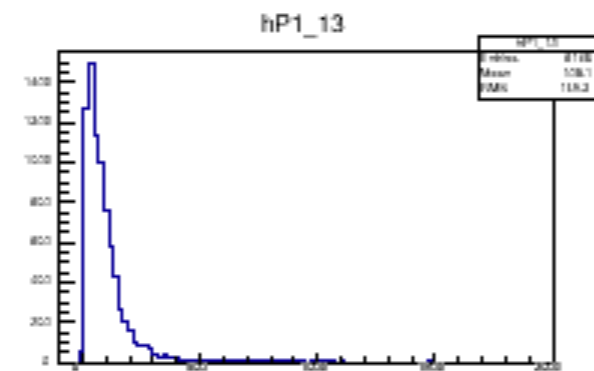
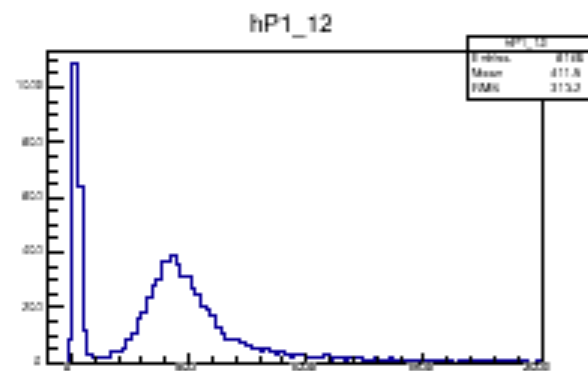
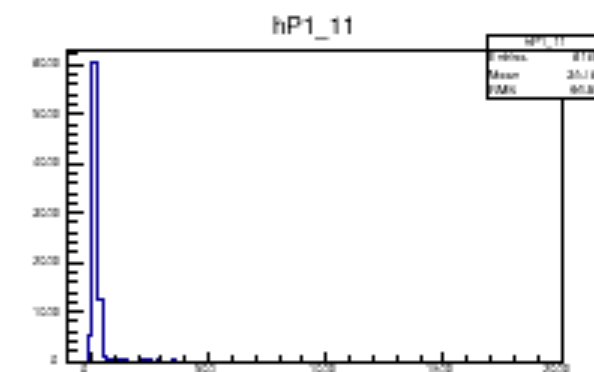
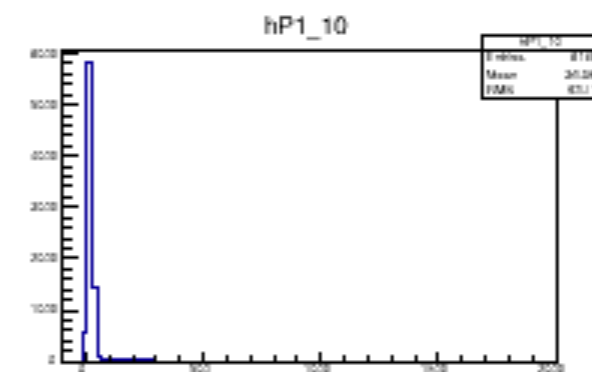
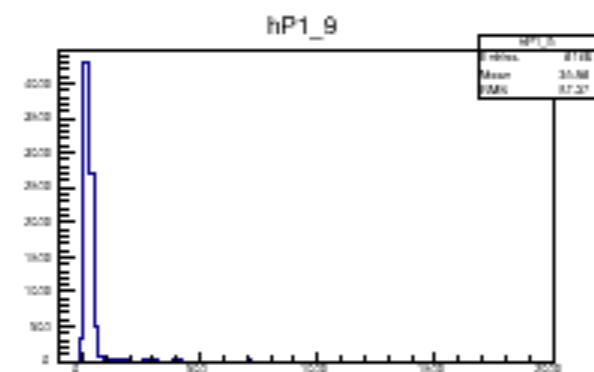
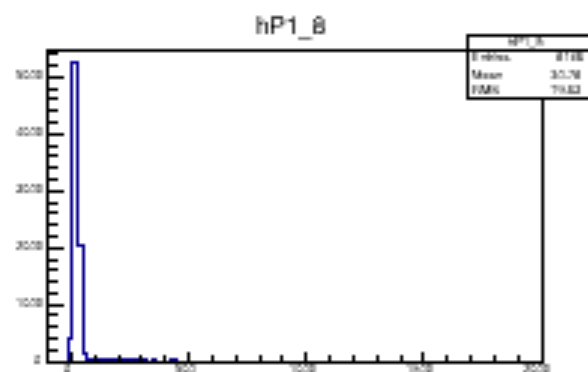
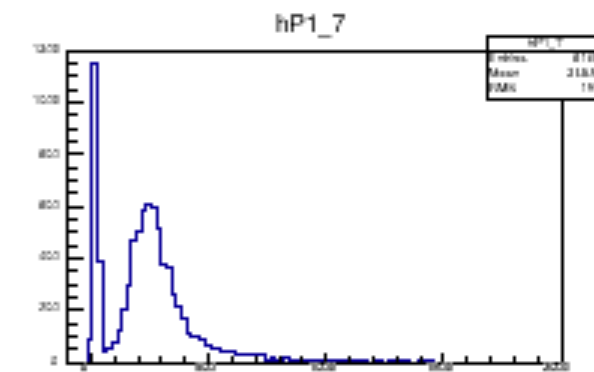
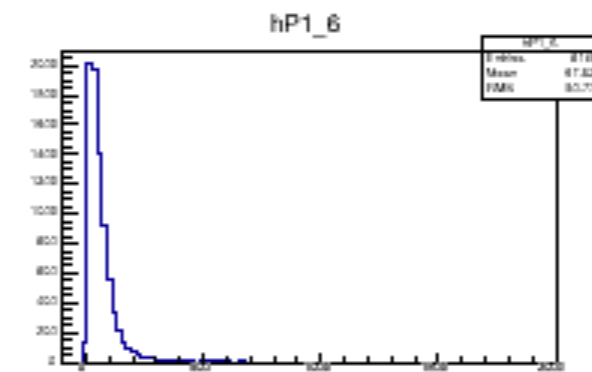
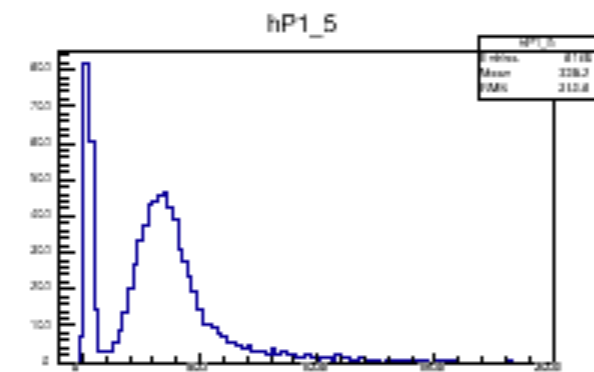
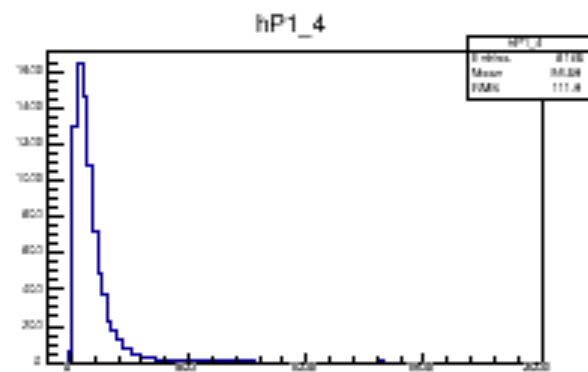
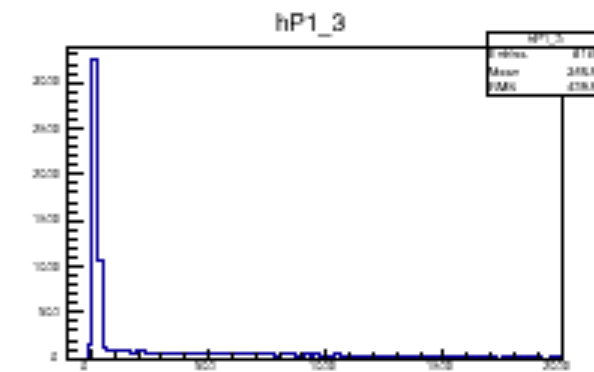
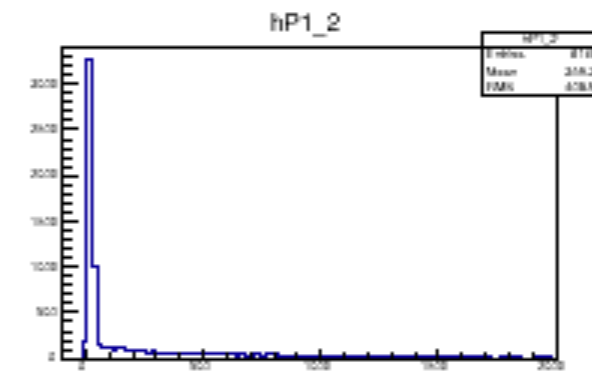
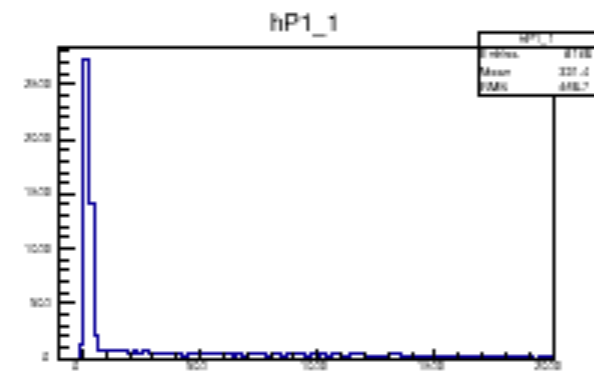
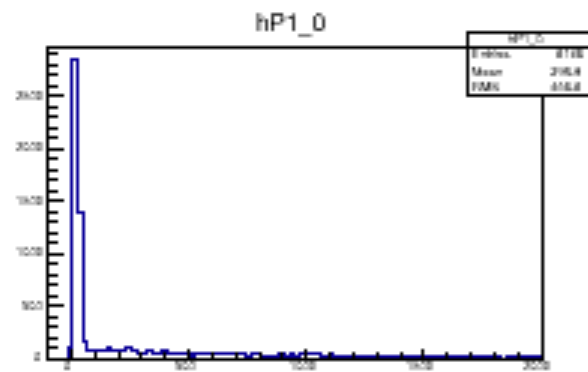
79 events/run

With Larger sample

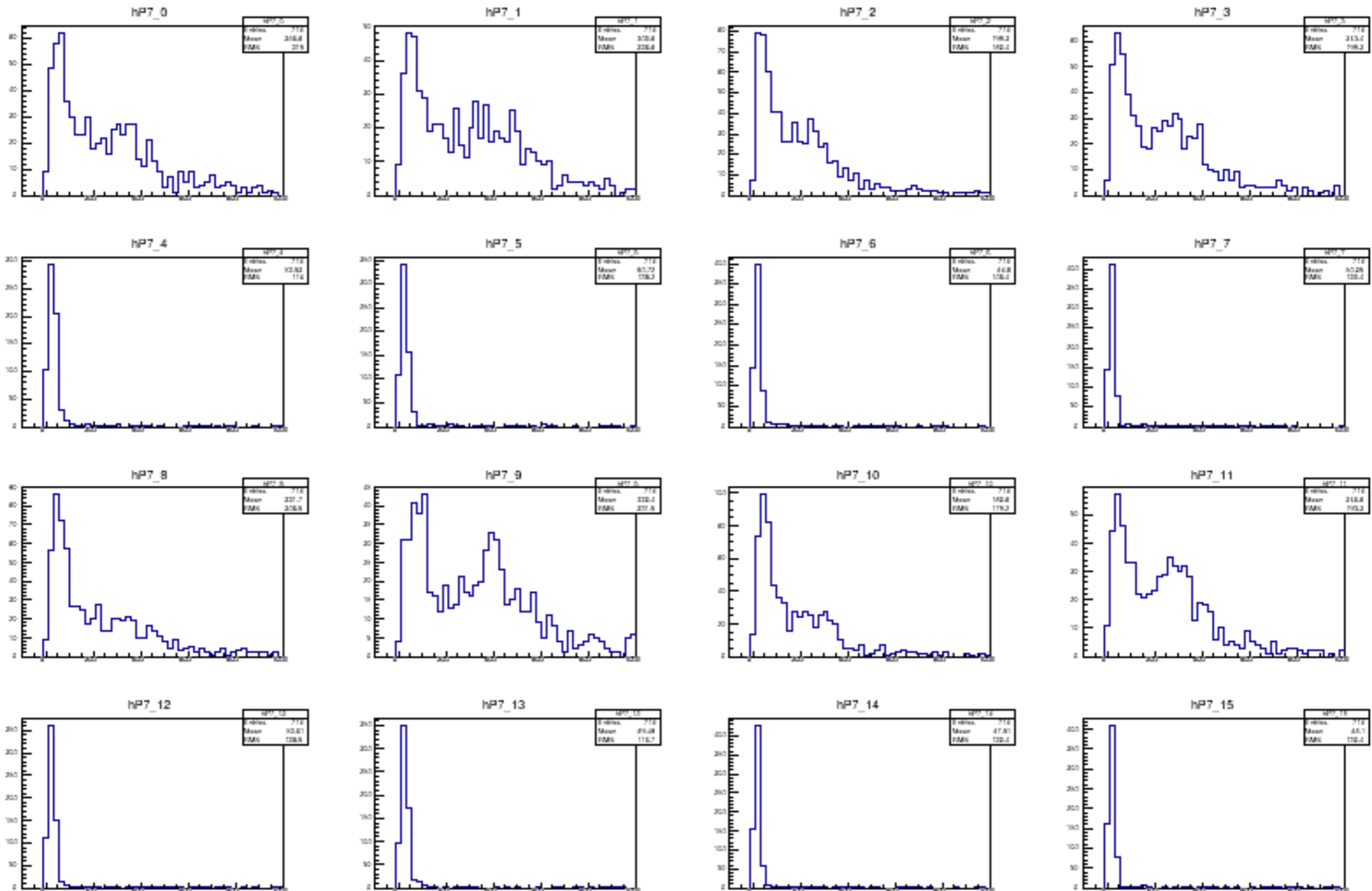


effectively 9 Runs (30776~30787)

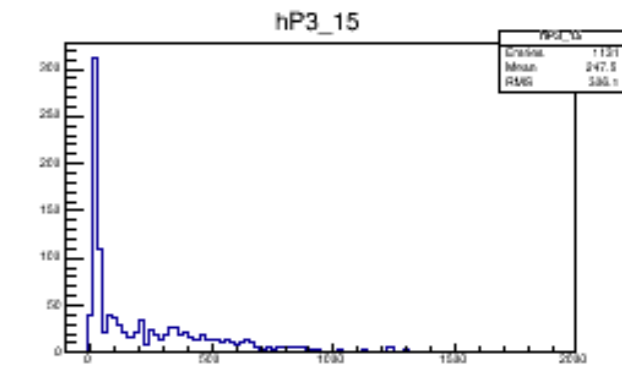
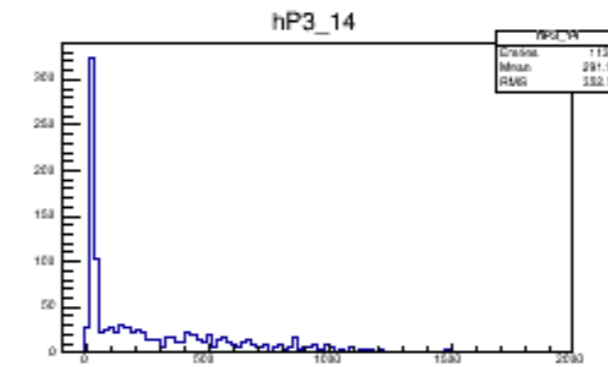
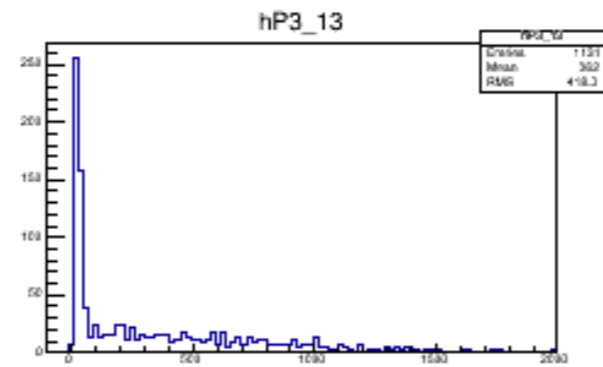
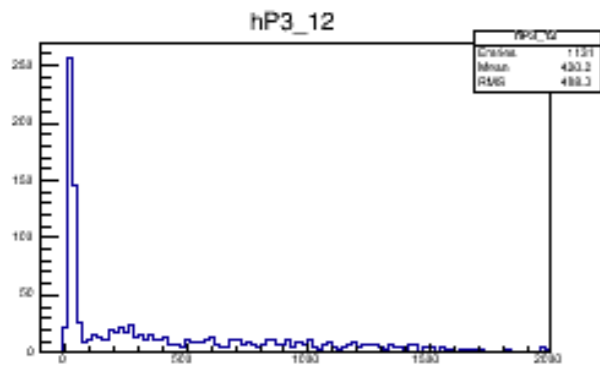
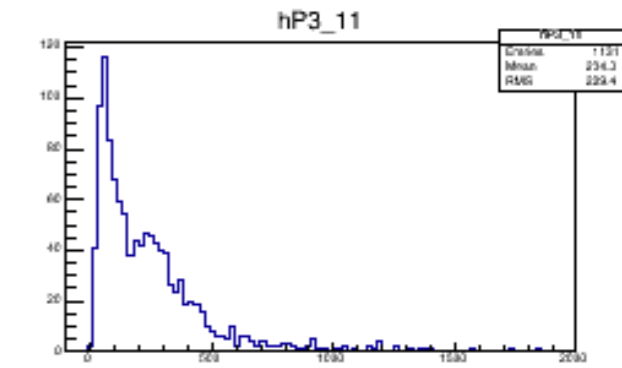
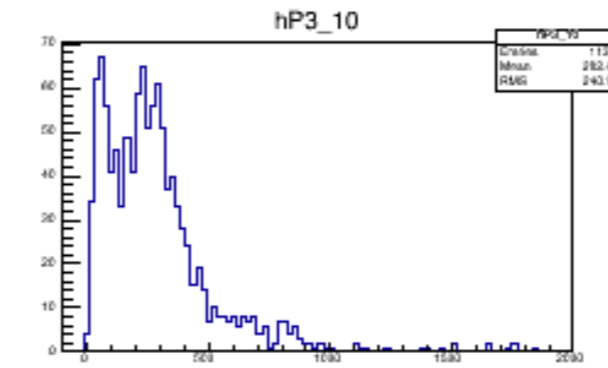
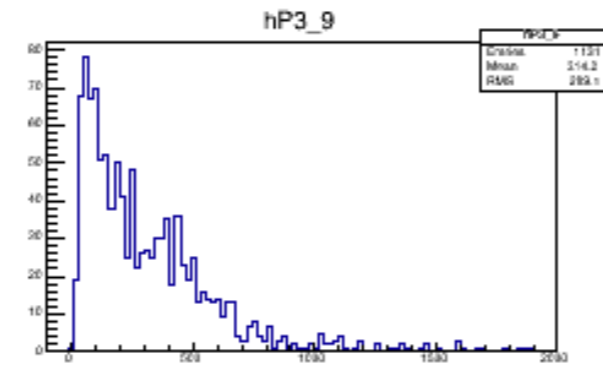
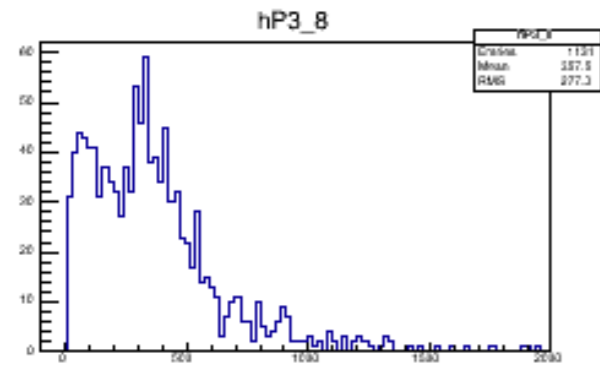
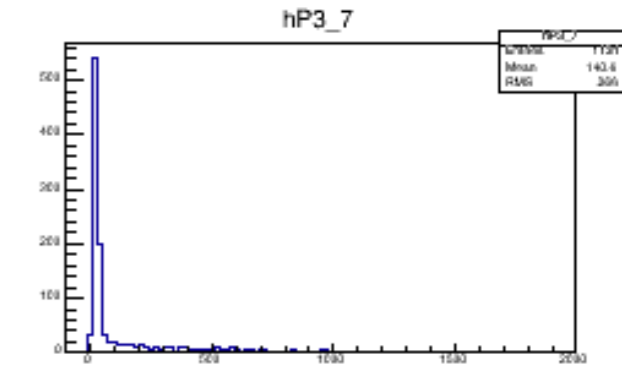
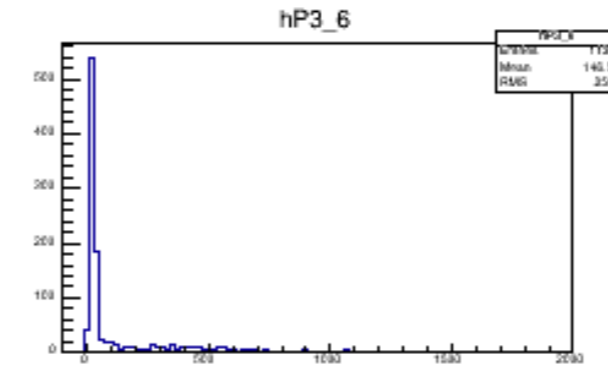
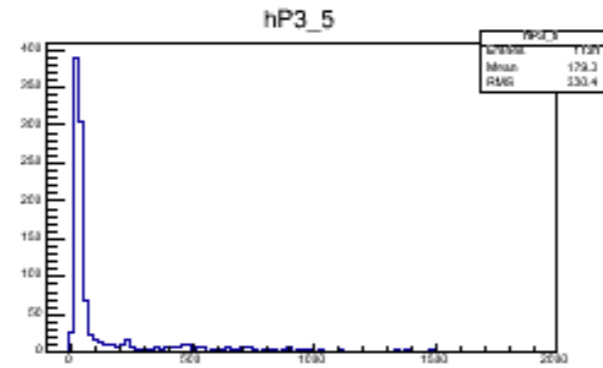
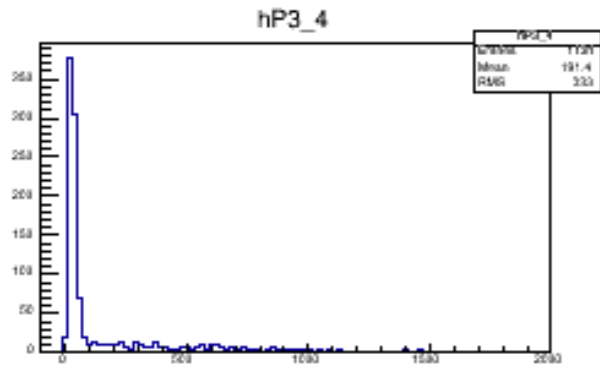
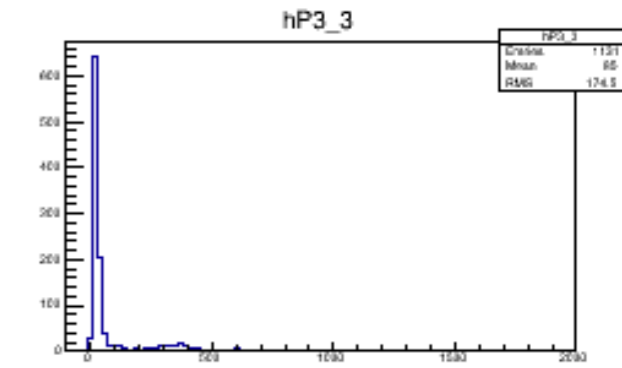
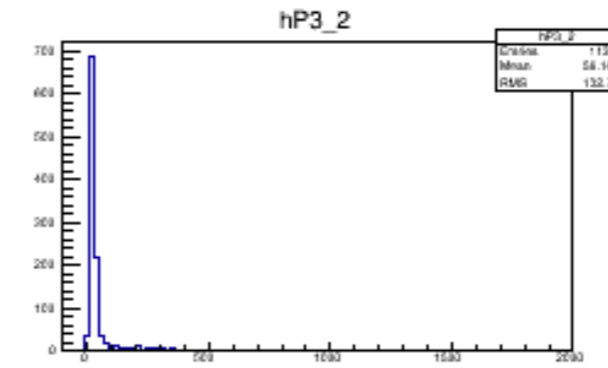
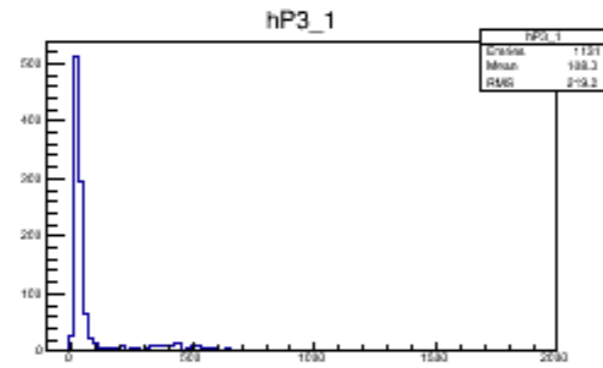
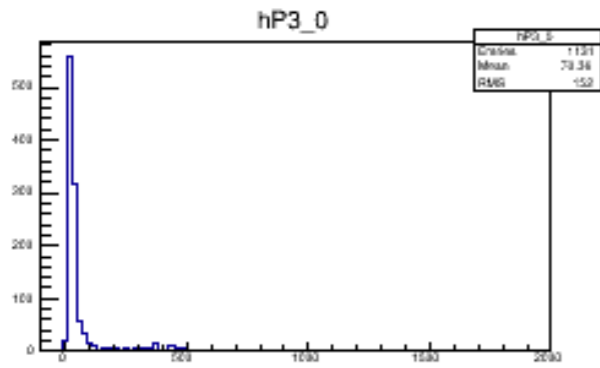
Peak for ID==5



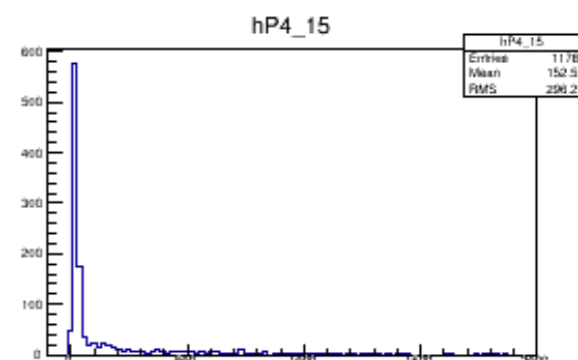
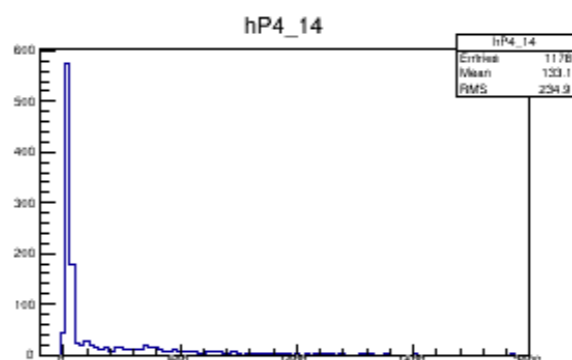
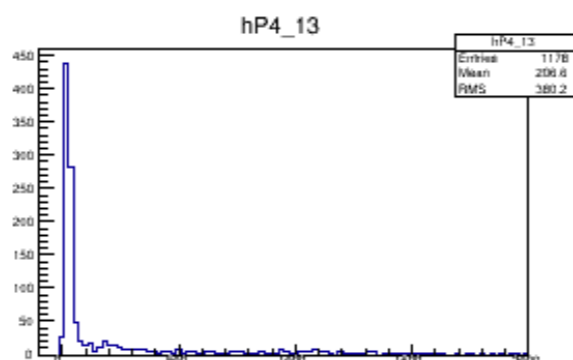
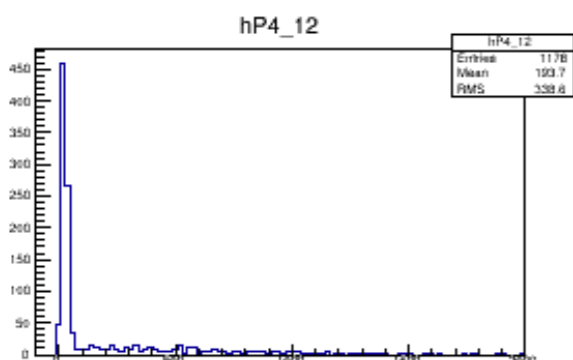
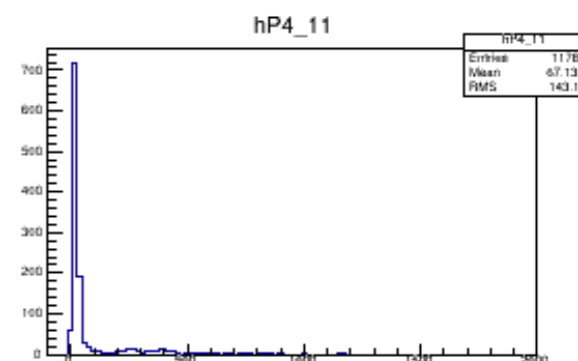
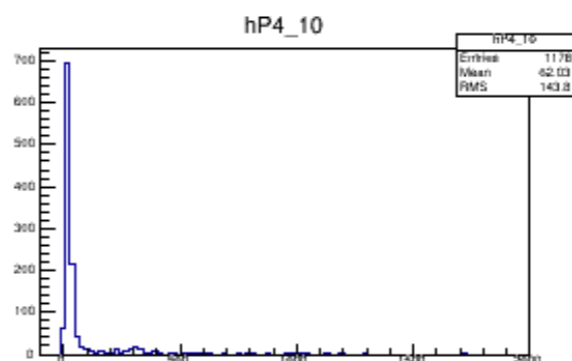
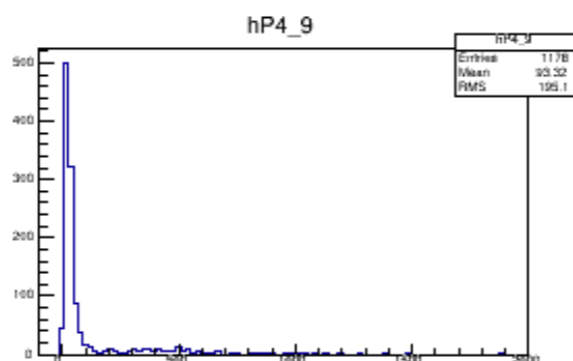
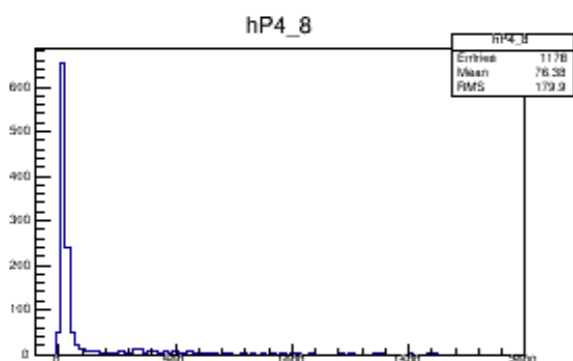
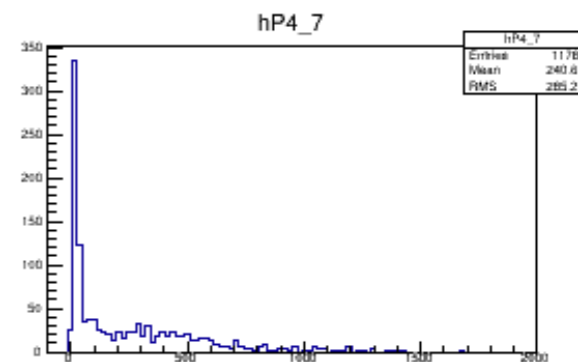
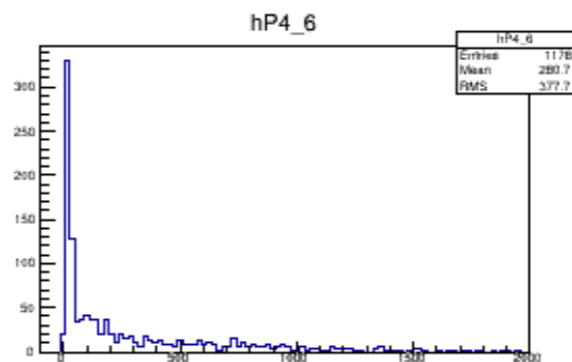
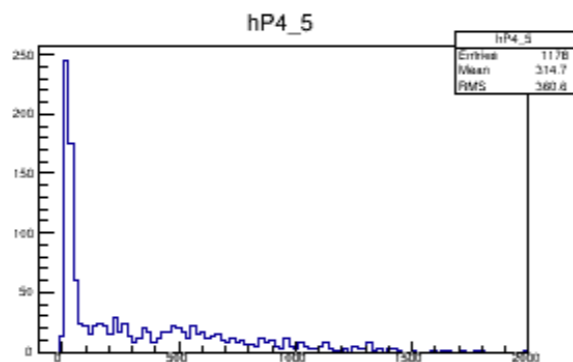
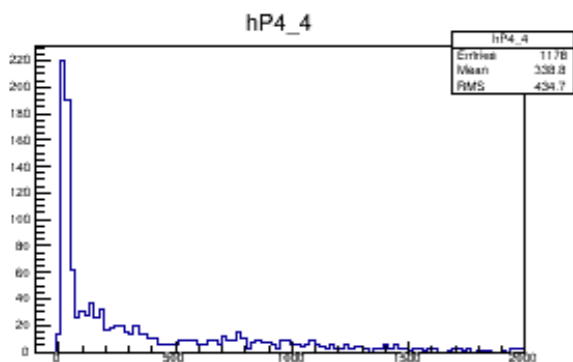
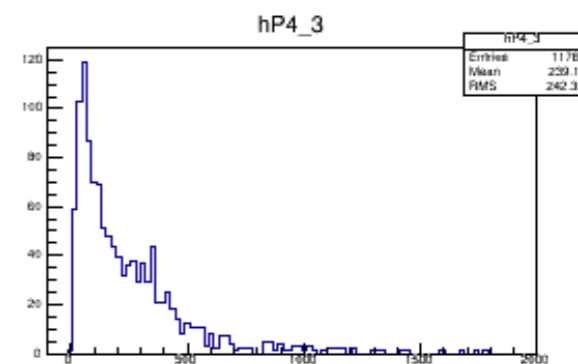
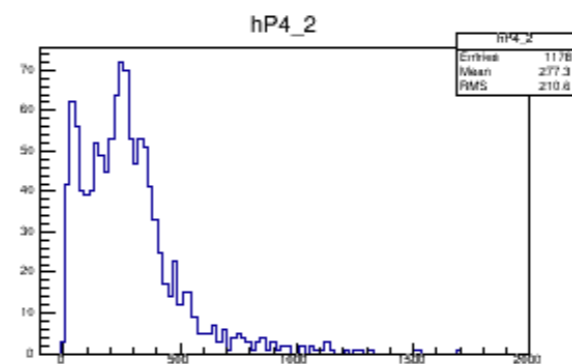
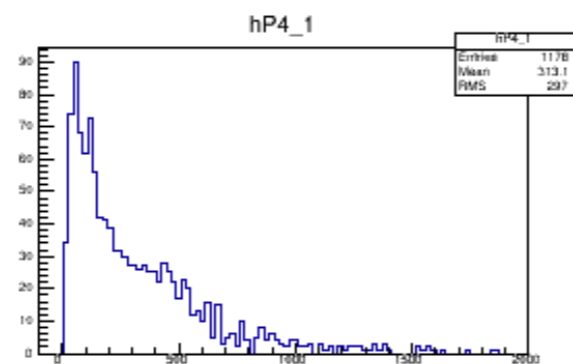
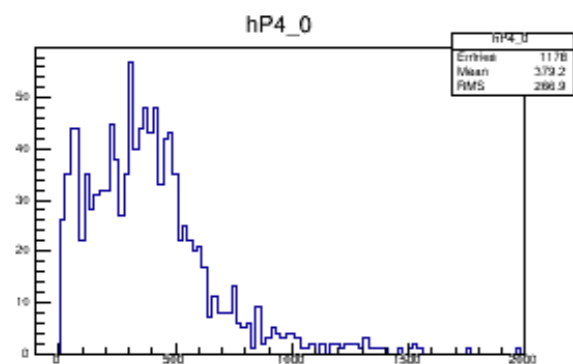
Peak for horizontal



Peak for ID===18 || 24



Peak for ID==33 || 36



Other lines for vertical modules

