

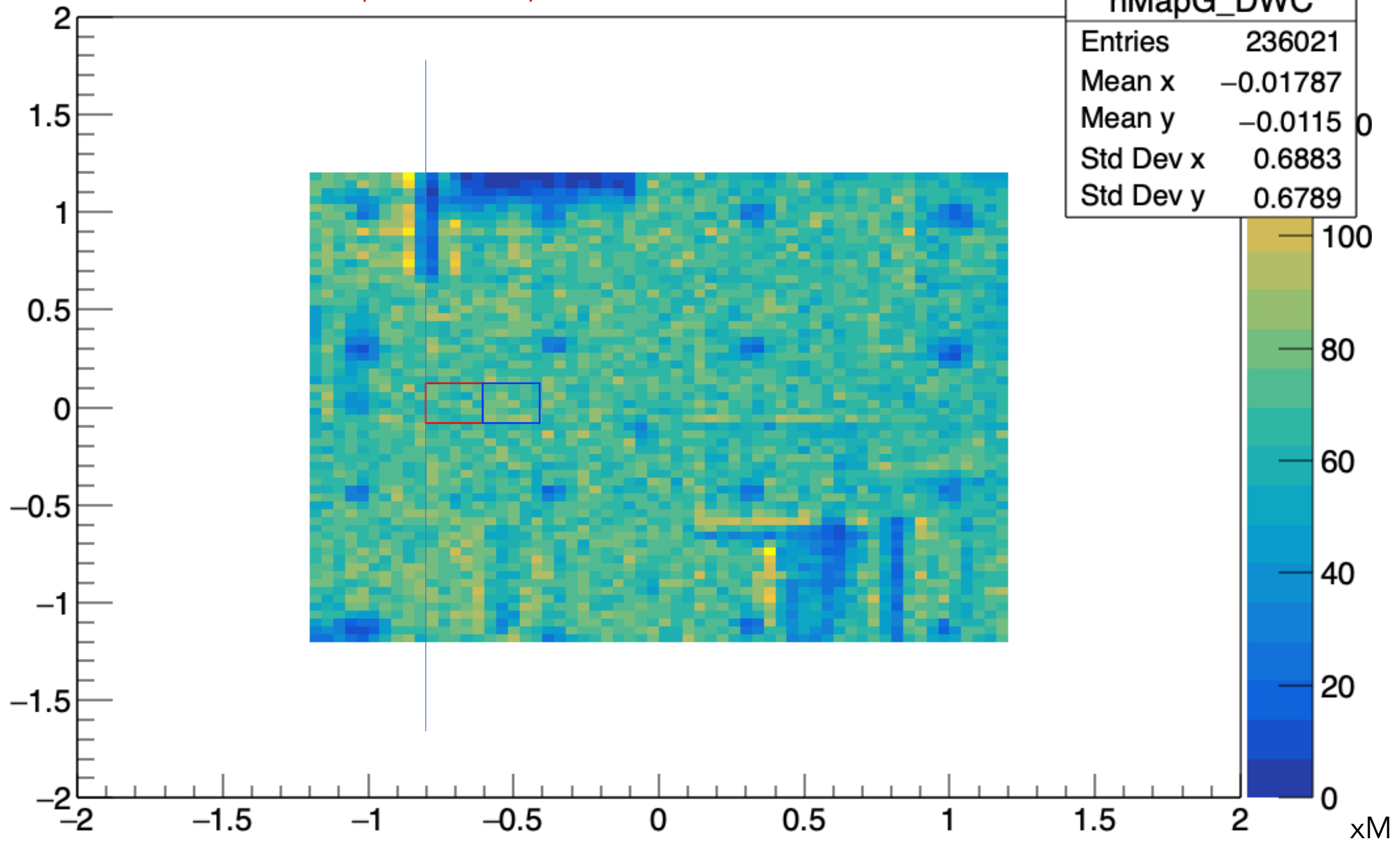
A second look at the test beam data or do we see what we expect ?

NB :

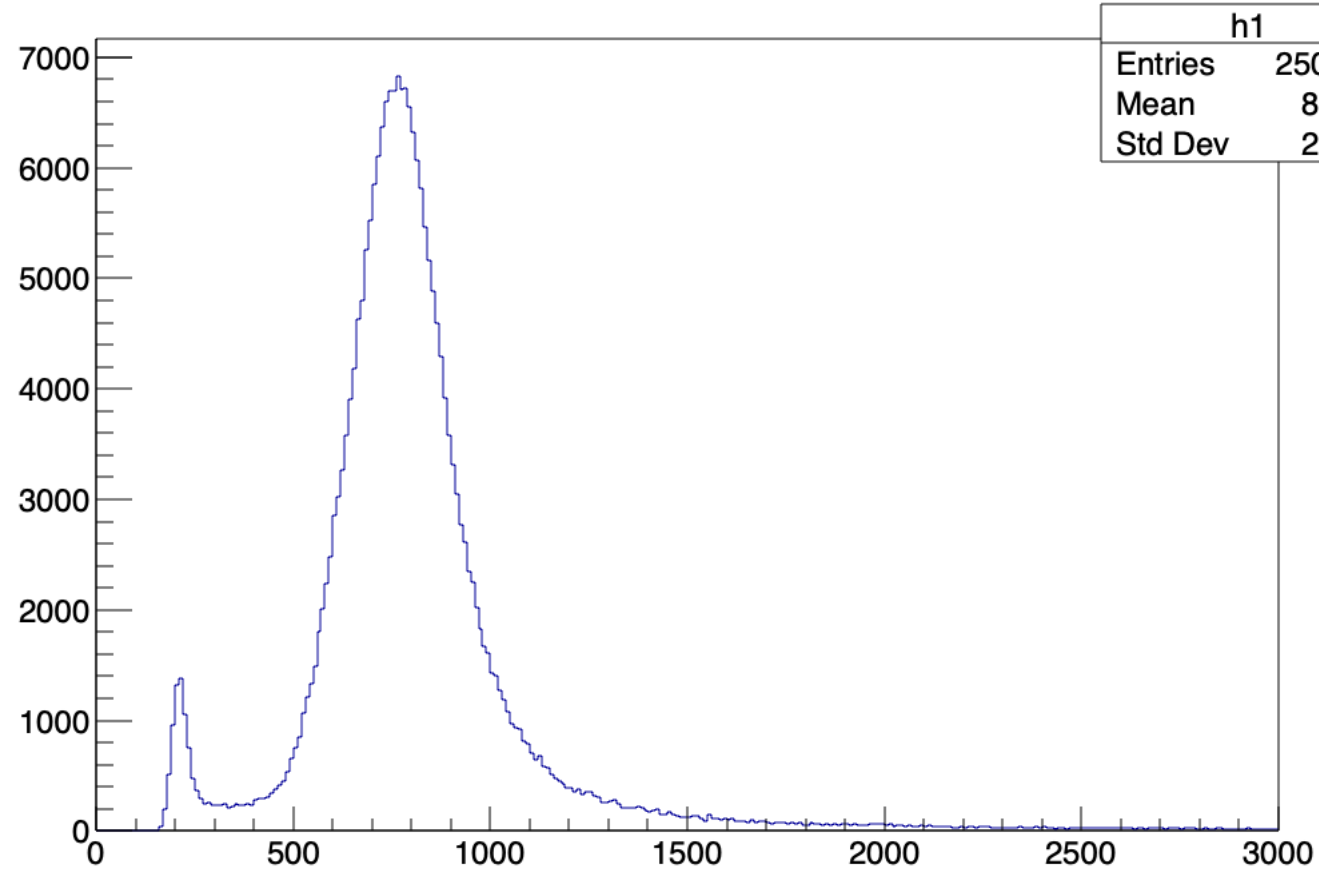
- not Dark noise corrected
- v3 processing
- eventType = 4 && muonType==20 (crosses all GRAINITA)

Muon 59 – 60, hitTot>500, Troll1 HL

yM

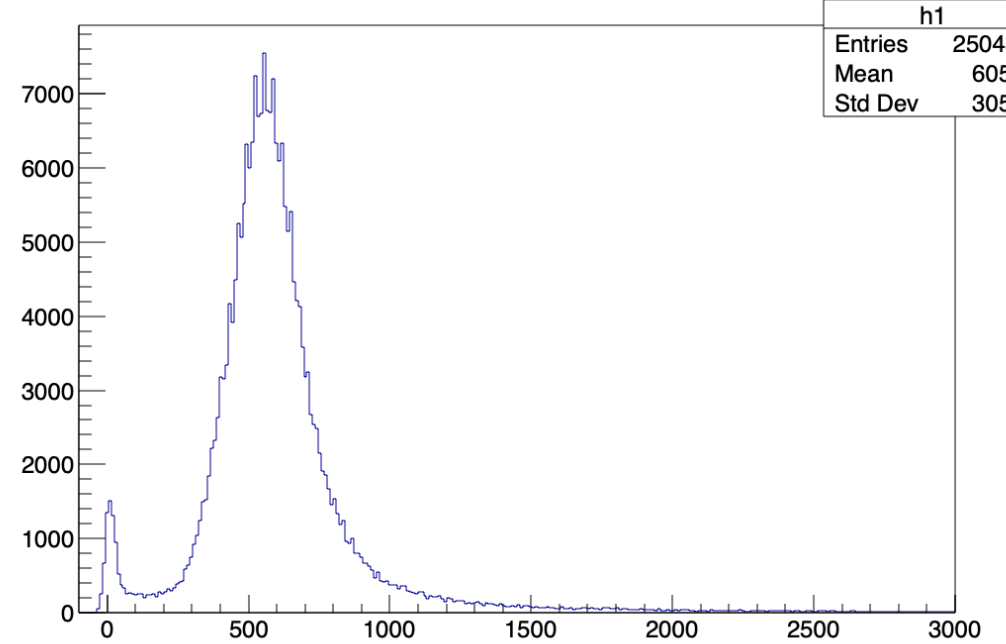


hitTot {muonType==20&&eventType==4}



h1	
Entries	250484
Mean	809.4
Std Dev	294.3

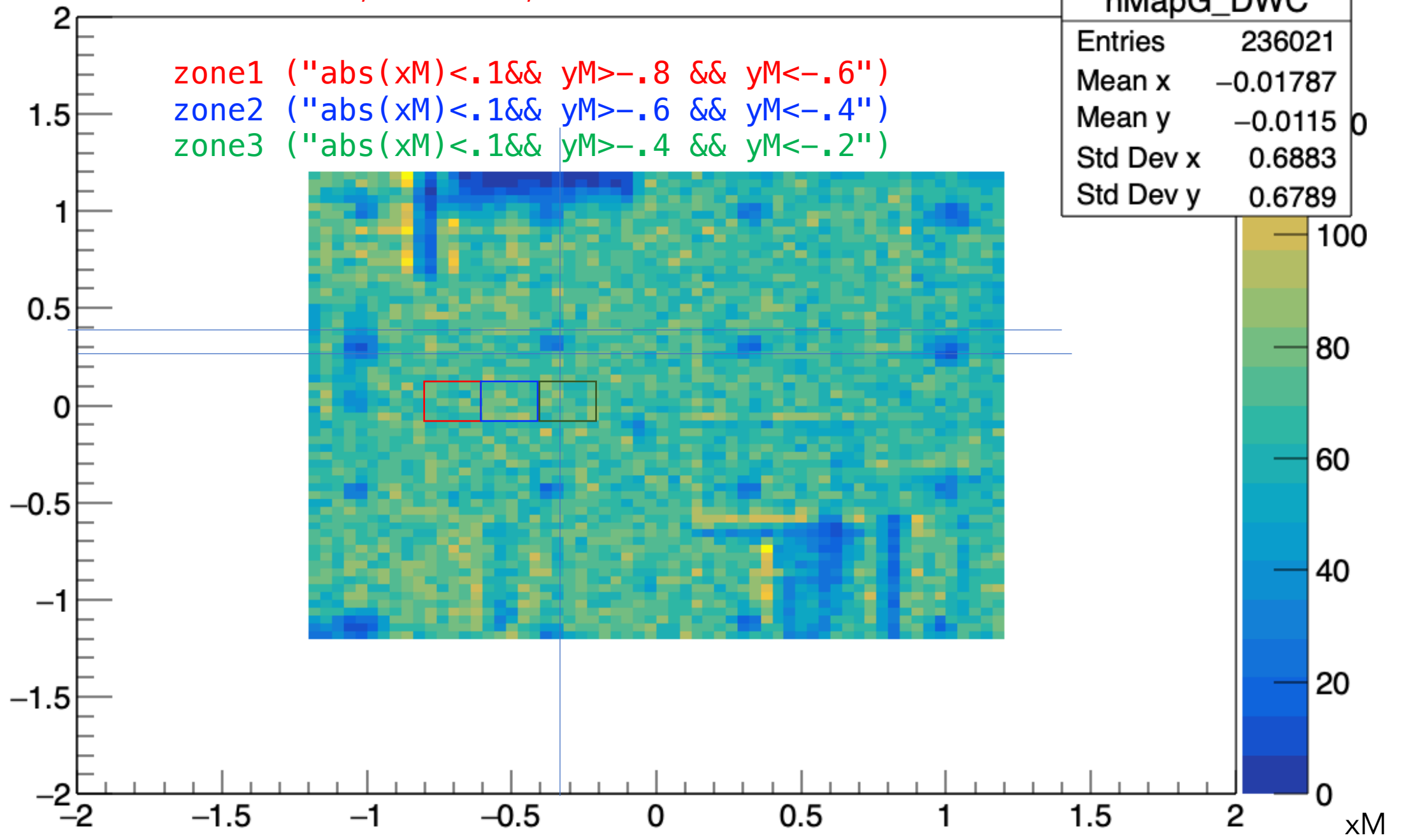
hitTotCor {muonType==20&&eventType==4}

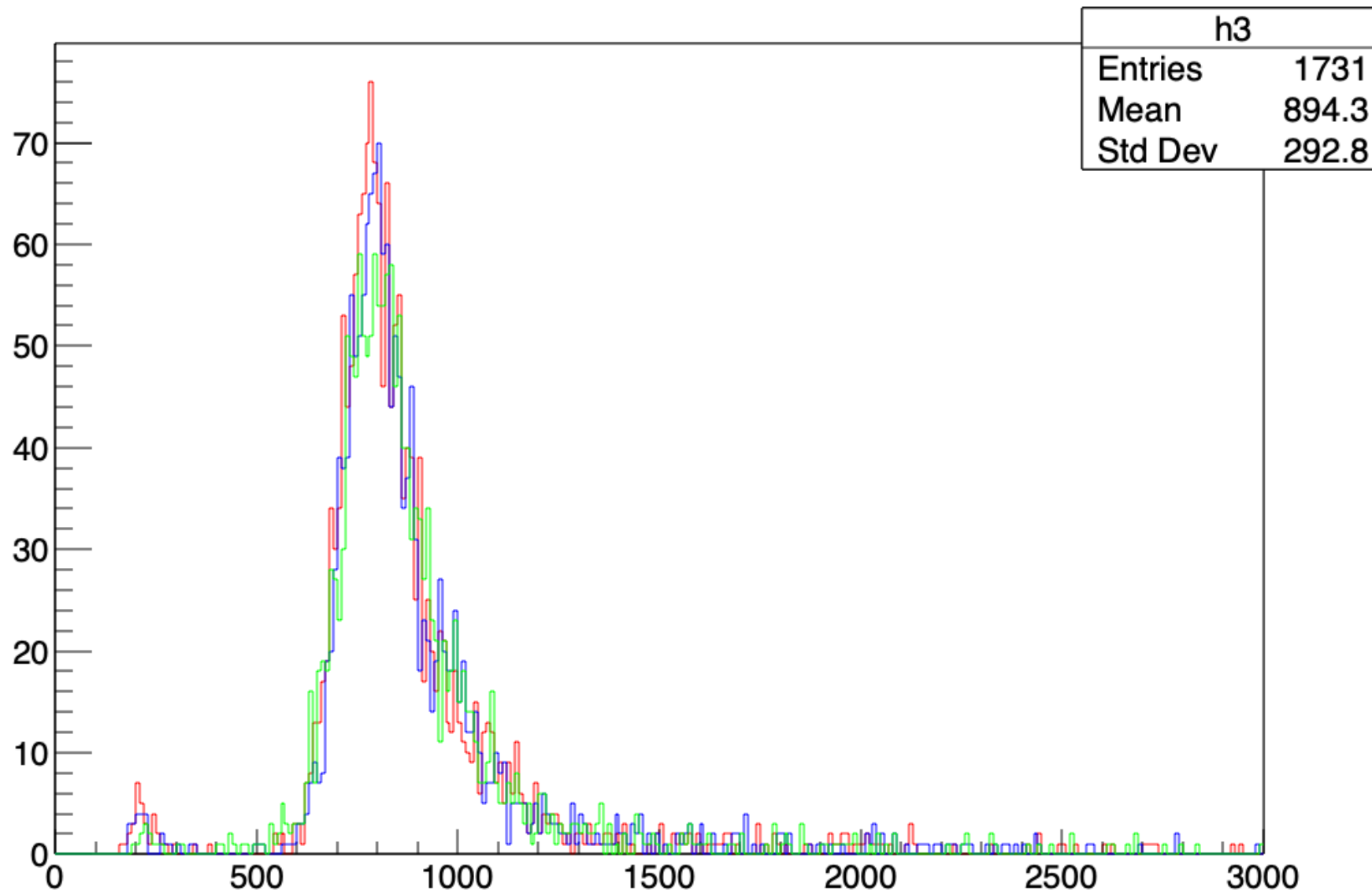


h1	
Entries	250484
Mean	605.7
Std Dev	305.8

Muon 59 - 60, hitTot>500, Troll1 HL

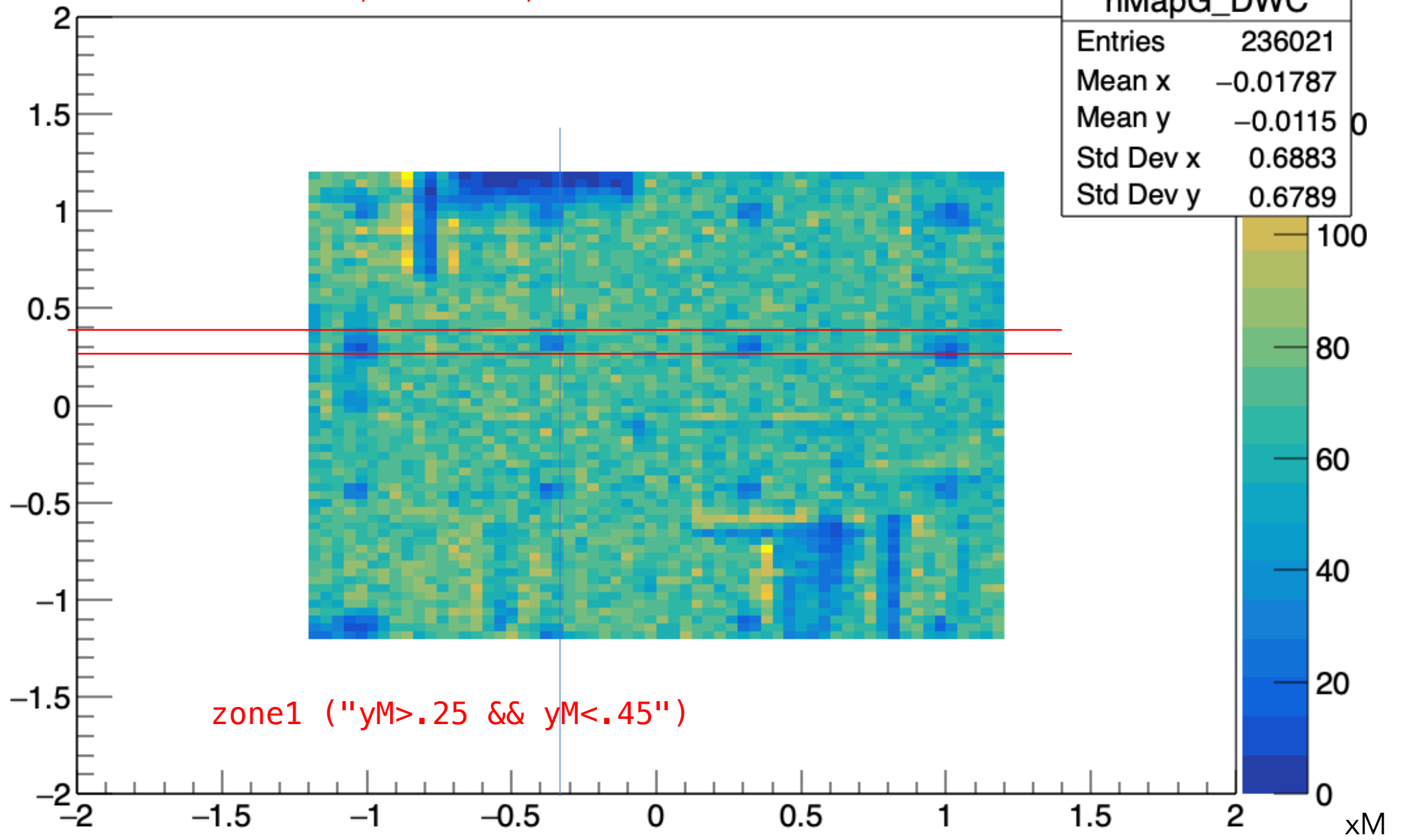
yM





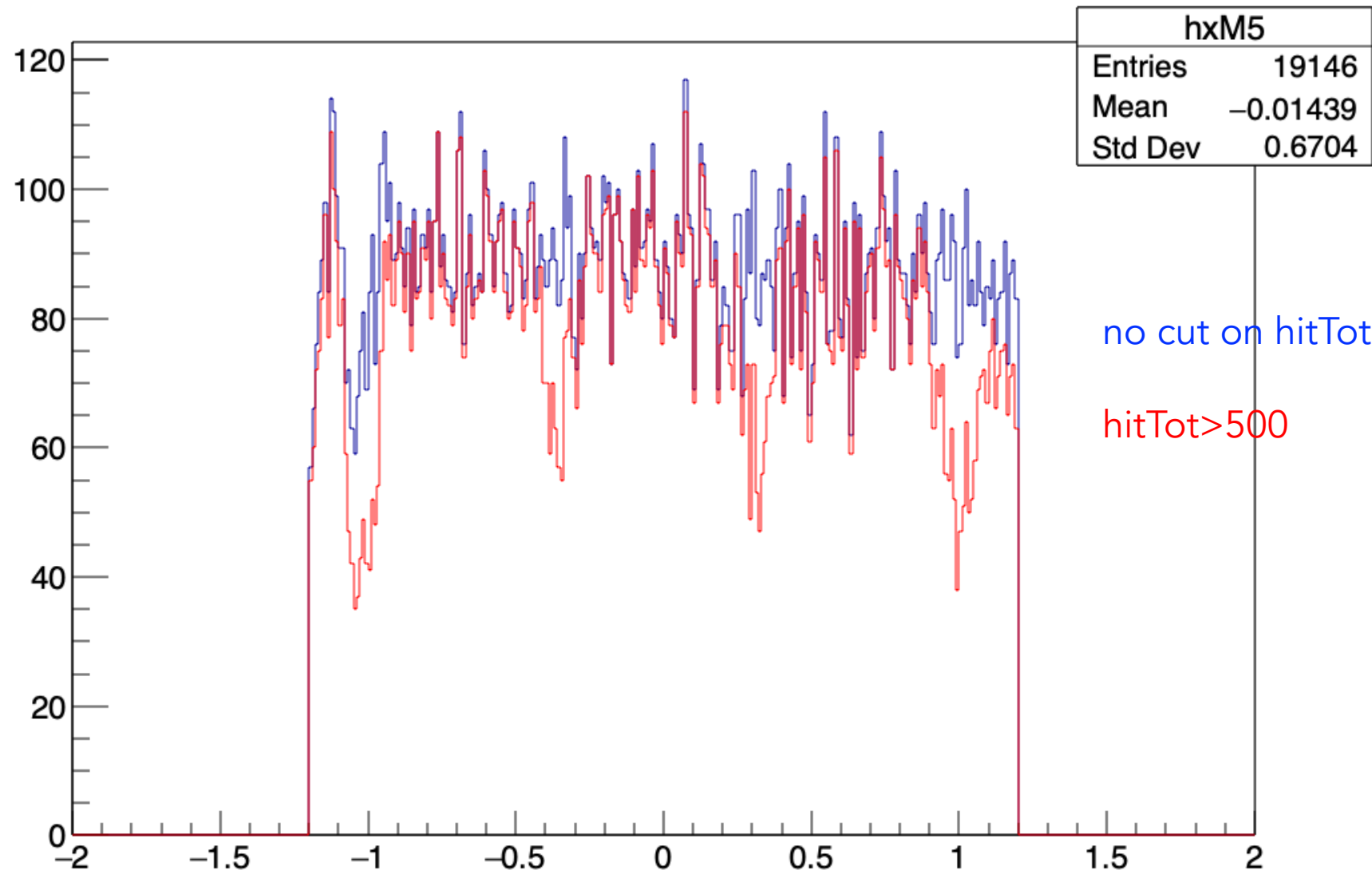
Muon 59 - 60, hitTot>500, Troll1 HL

yM



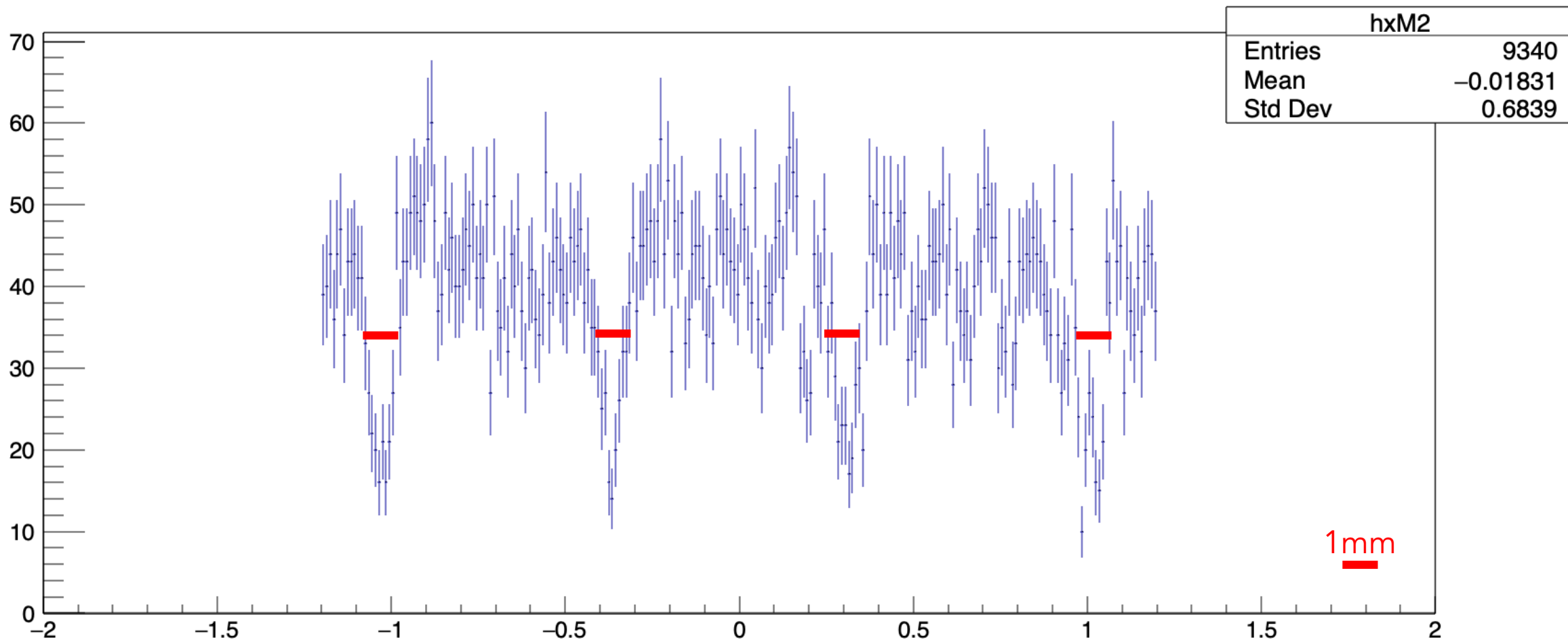
zone1 ("yM>.25 && yM<.45")

hxM



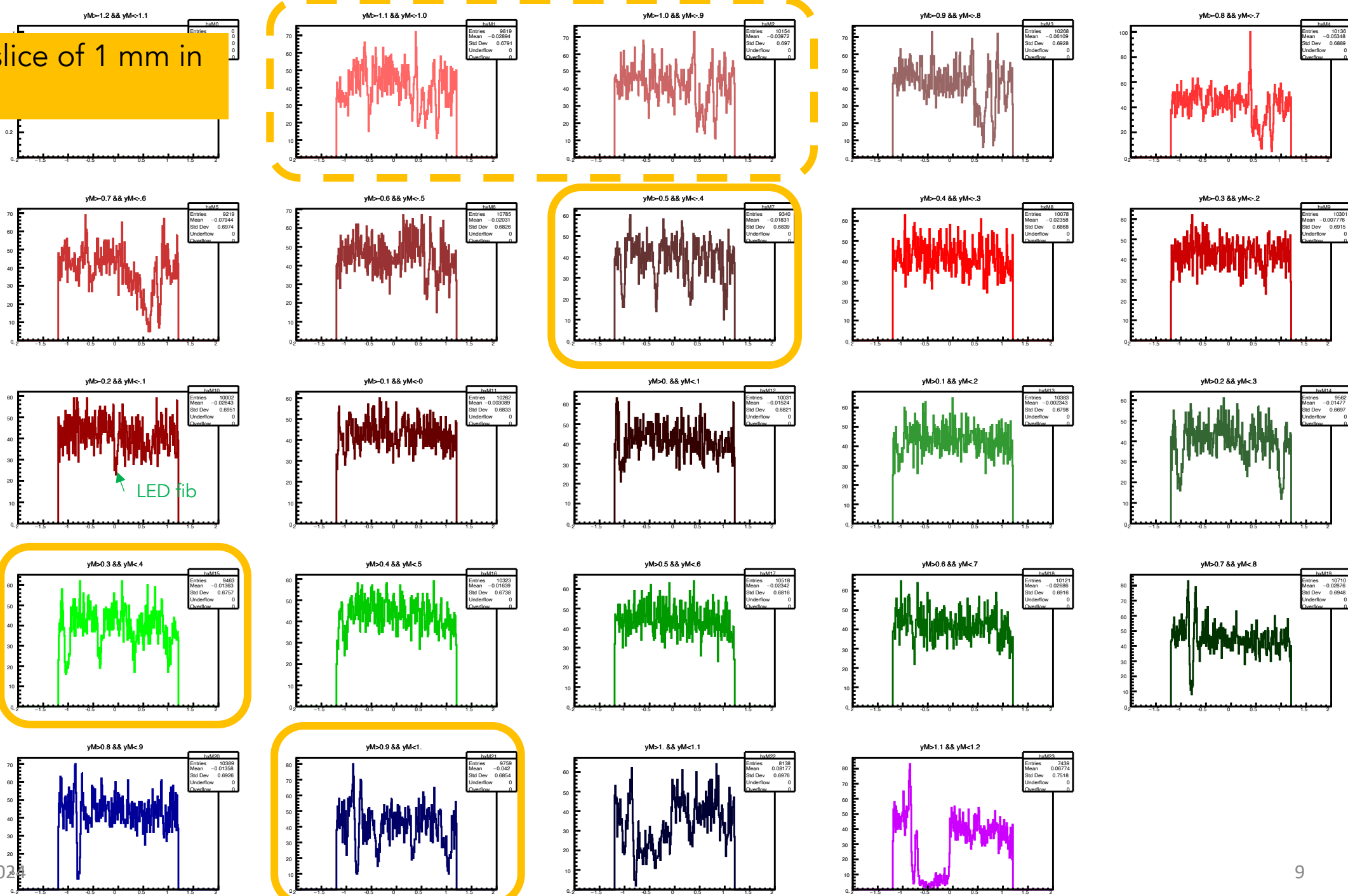
("yM>-.5 && yM<-.4") && hitTot>500

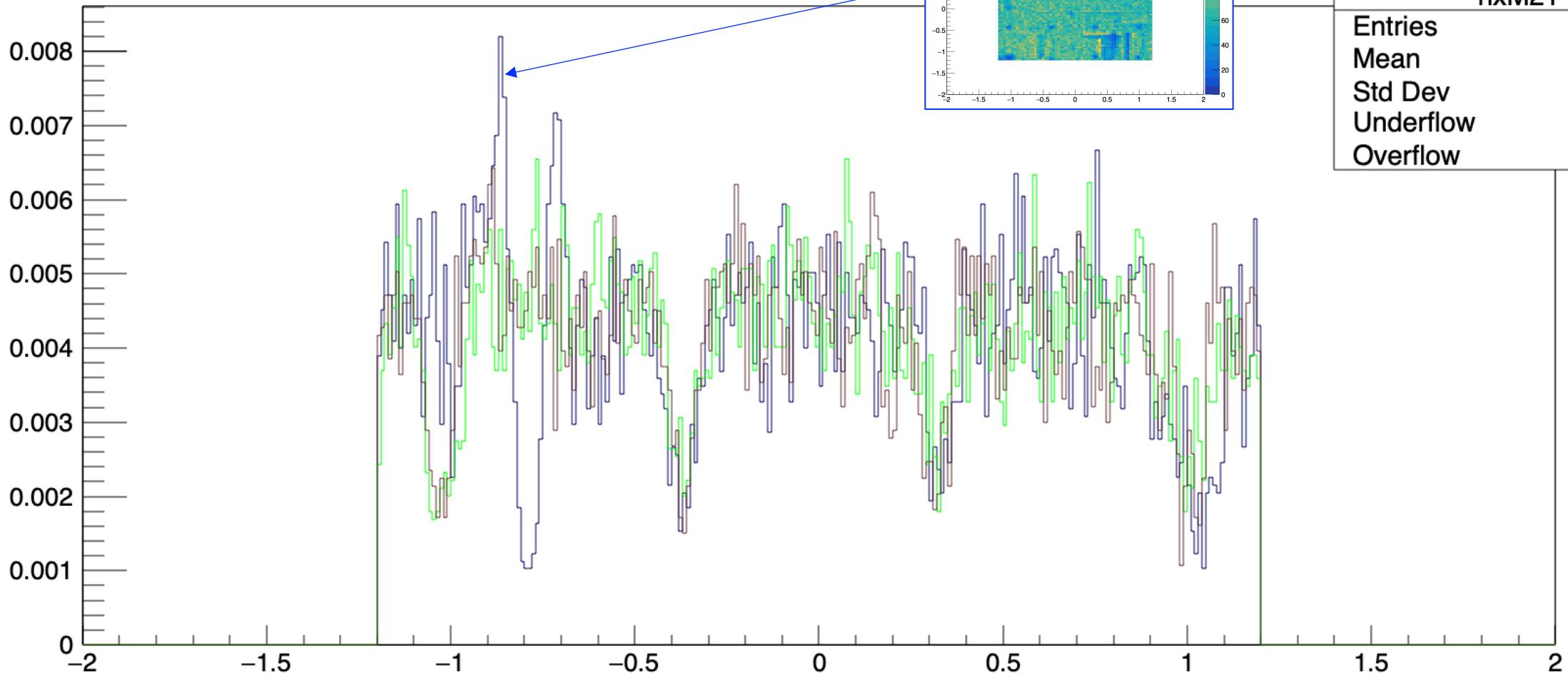
hxM



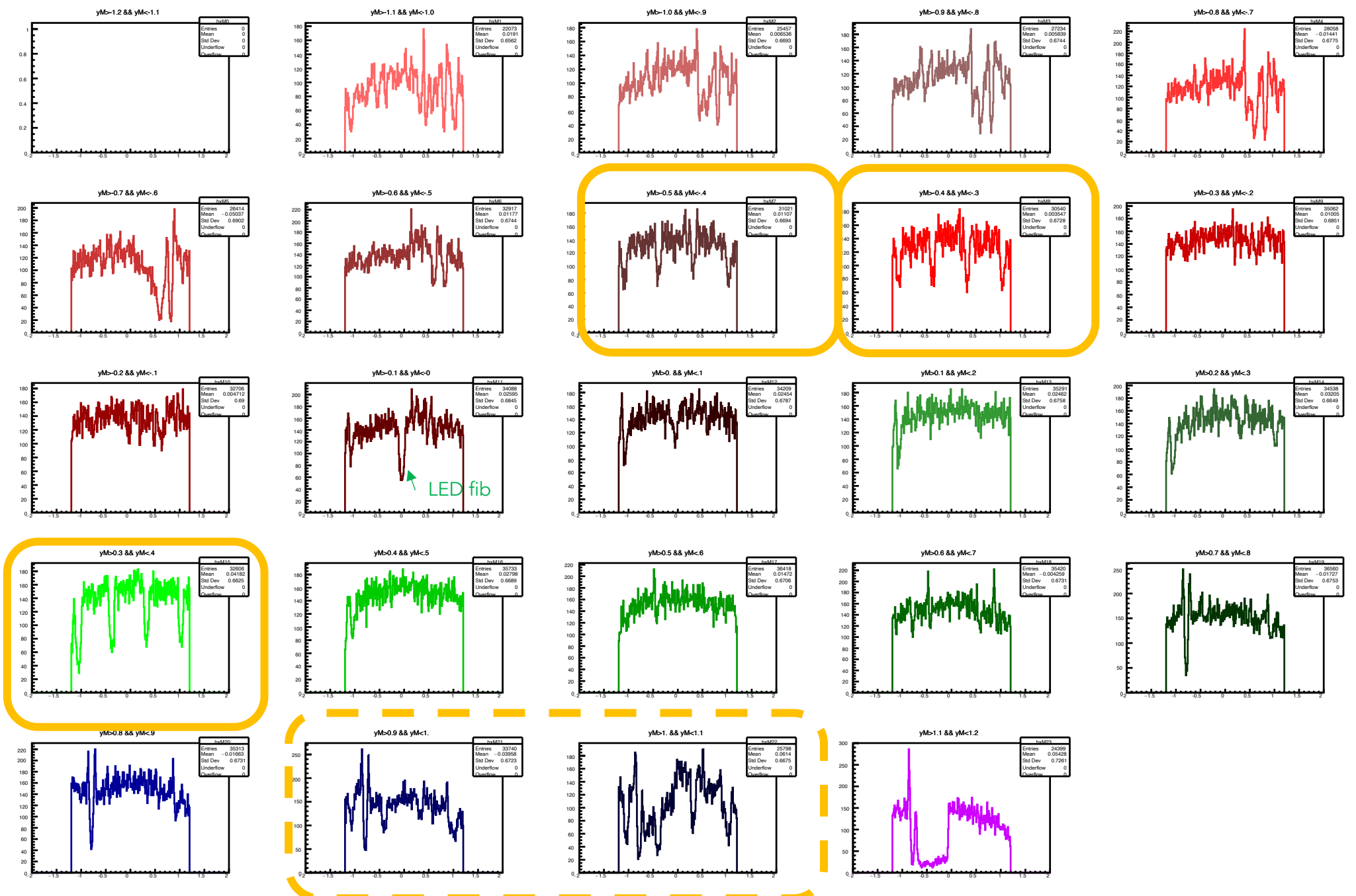
1 bin = 0.1 mm

Scan by slice of 1 mm in yM



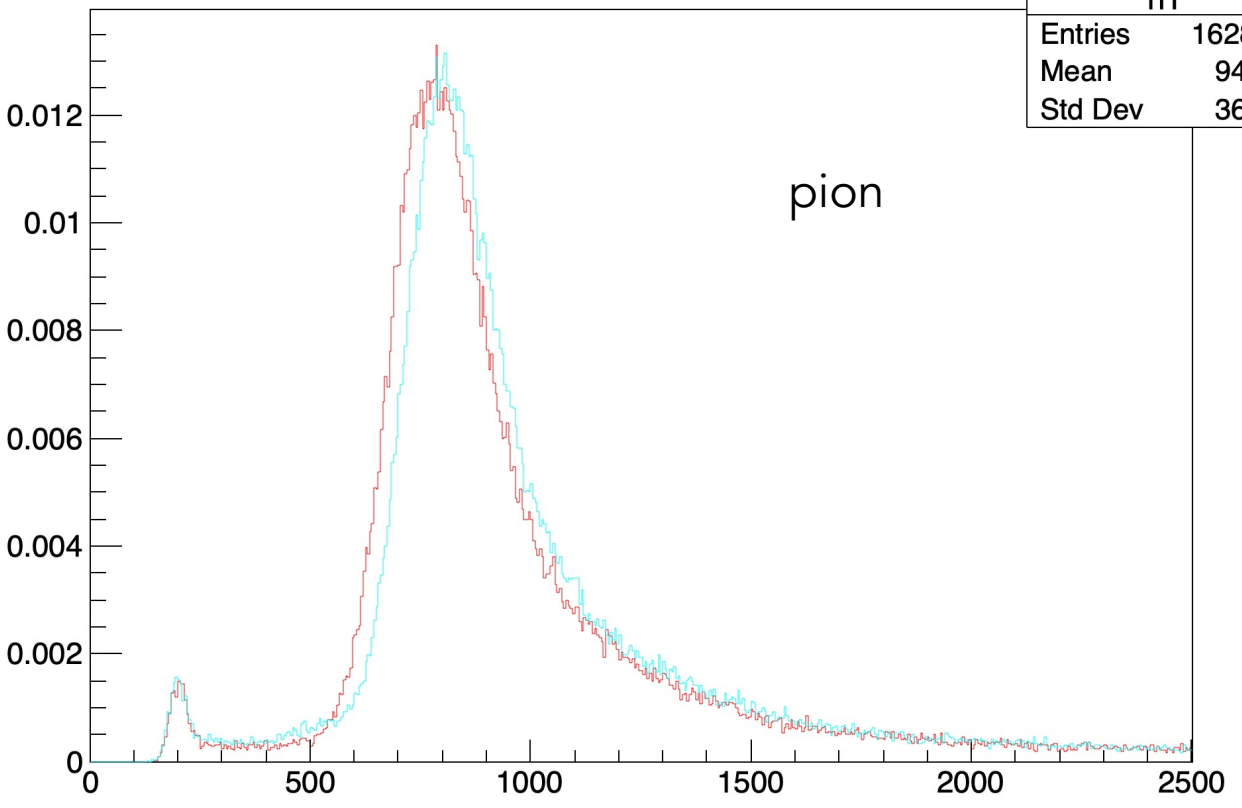


Change in y_M ?



Back-up slides

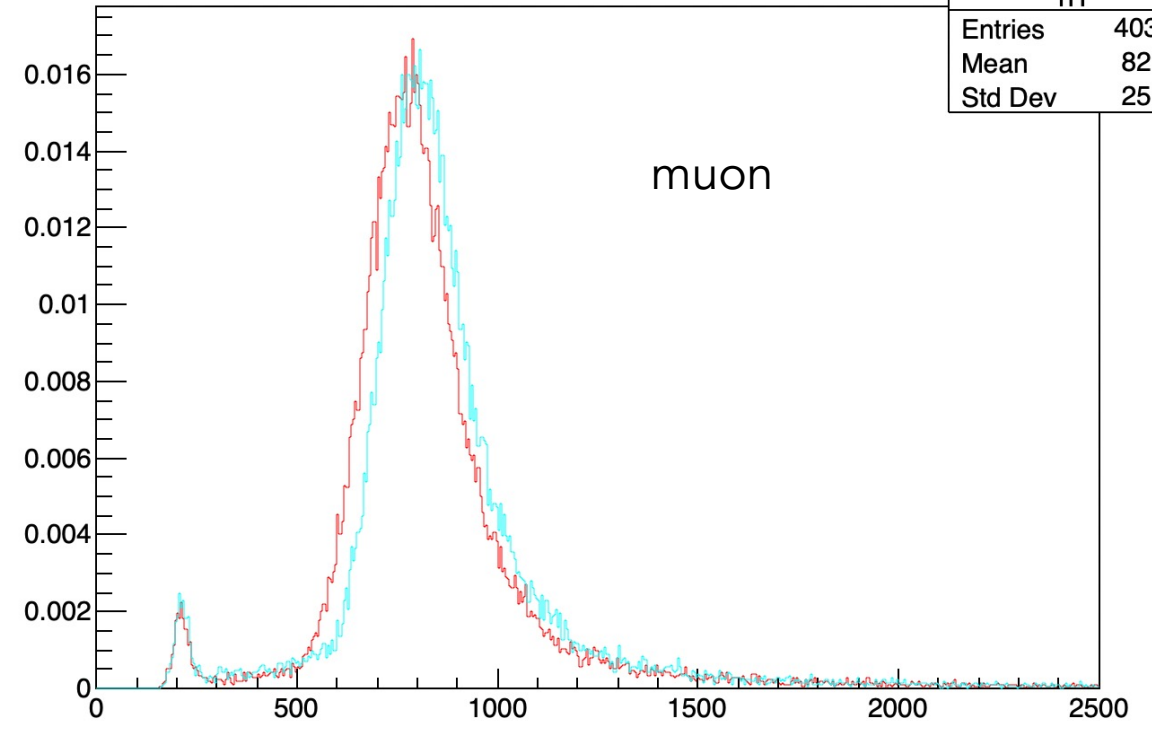
h1



h1	
Entries	162855
Mean	945.9
Std Dev	362.8

pion

h1



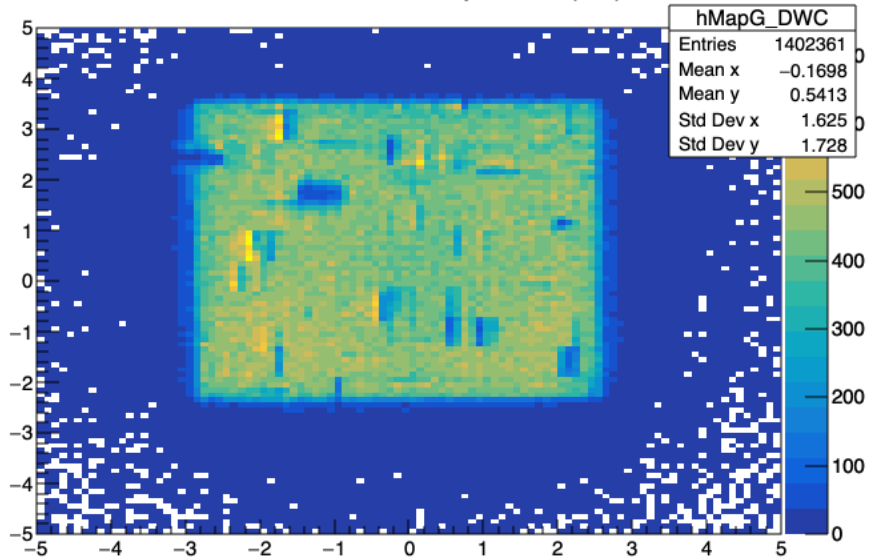
h1	
Entries	40393
Mean	829.1
Std Dev	251.8

muon

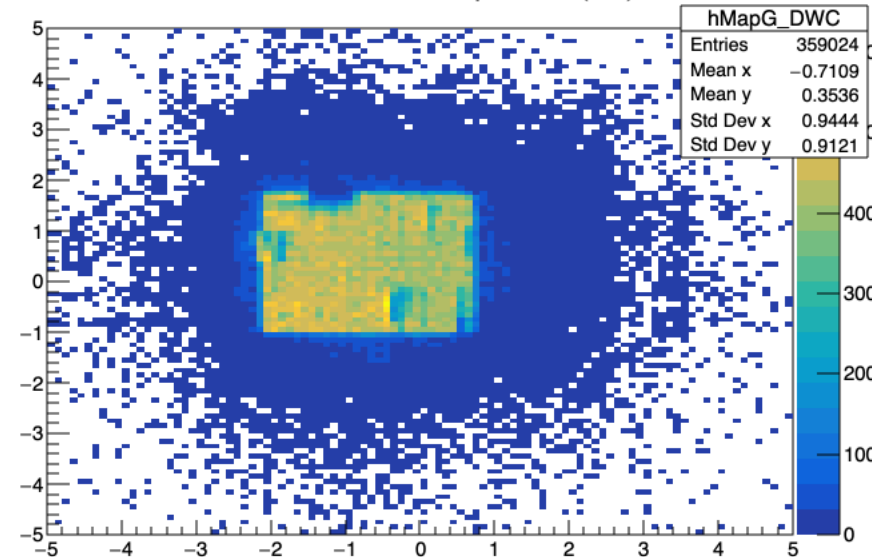
V1

Closer look at Muon (run 59 – 60) 5x5 trigger Troll1 – Heavy liquid

hitTot vs DWC1 track position (cm)

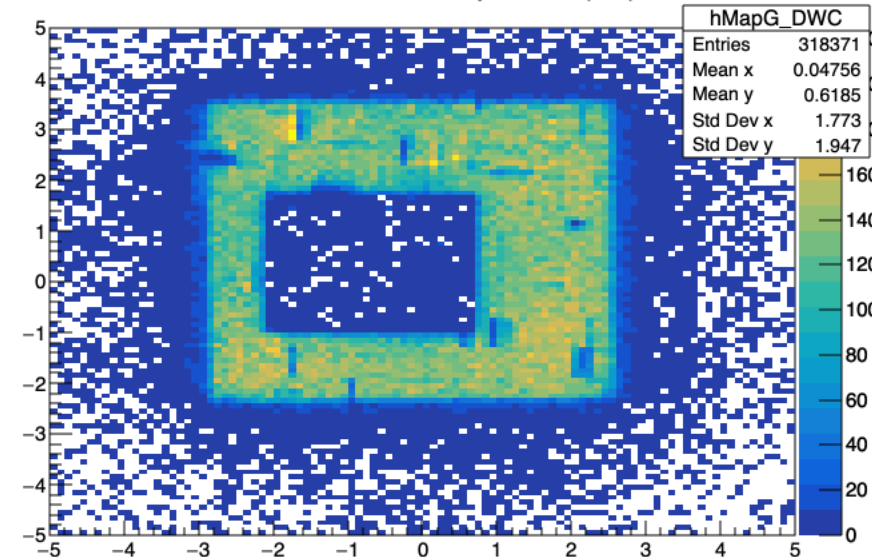


hitTot > 300
hitTot vs DWC1 track position (cm)



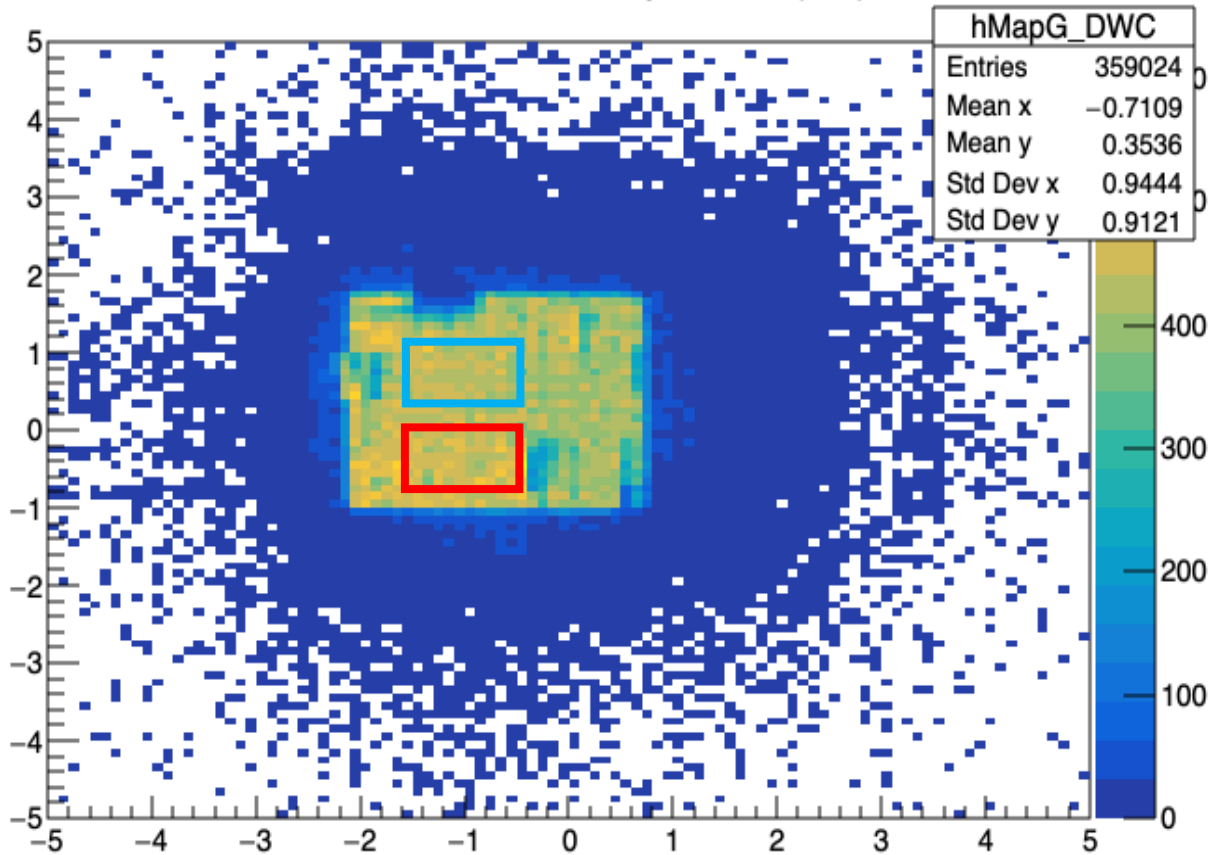
V1

hitTot vs DWC1 track position (cm)



hitTot < 200

hitTot vs DWC1 track position (cm)



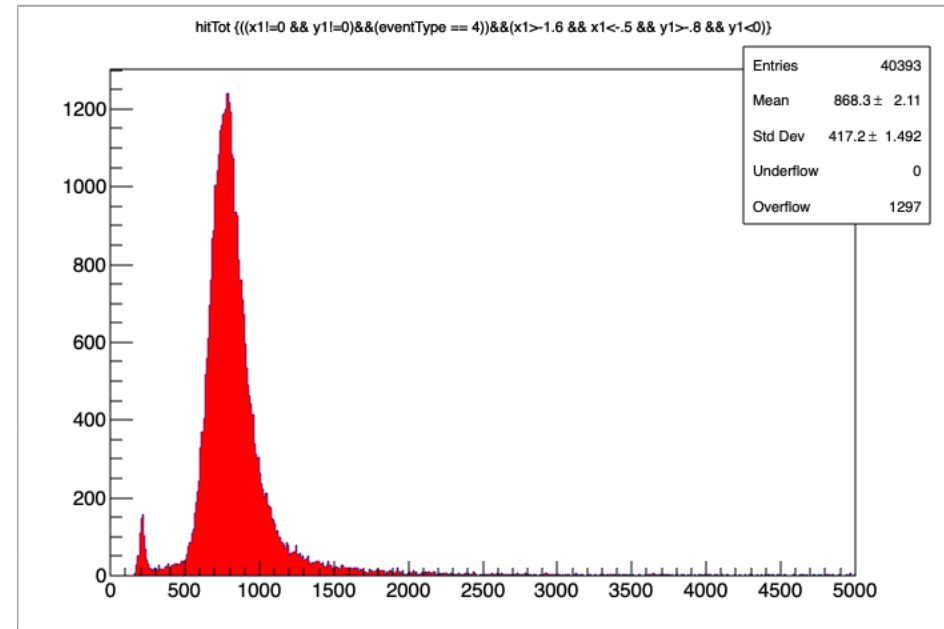
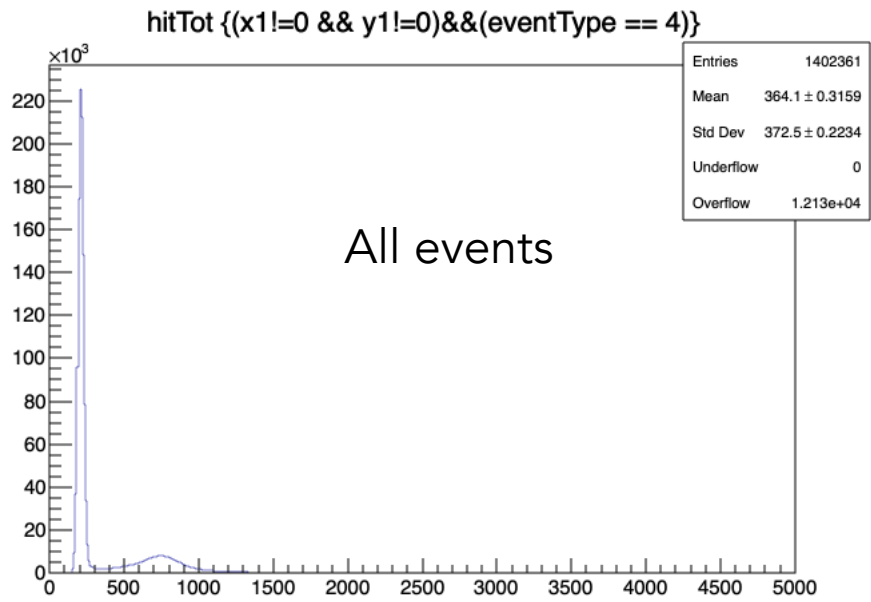
Use this ones only

Use this ones only

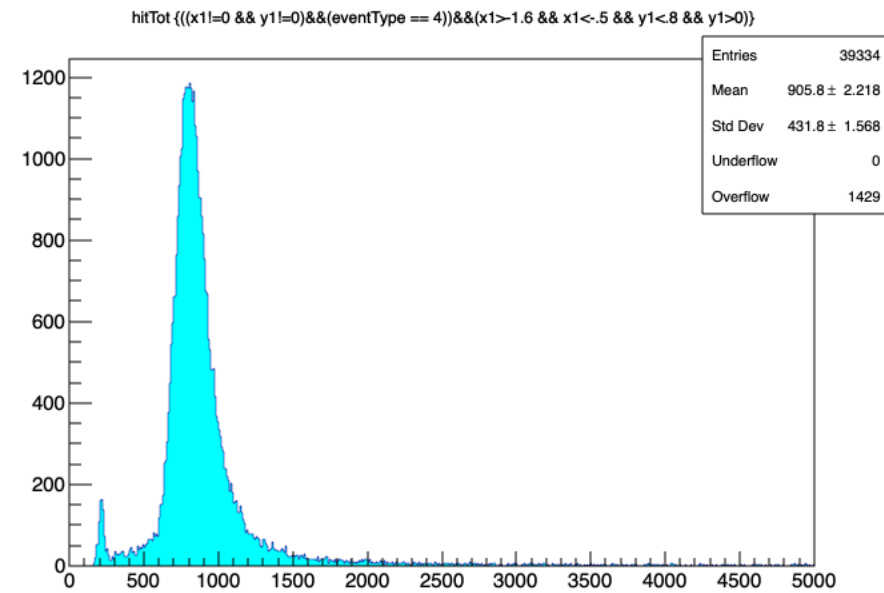
We expect in these cases to have a much smaller Dark noise.

V1



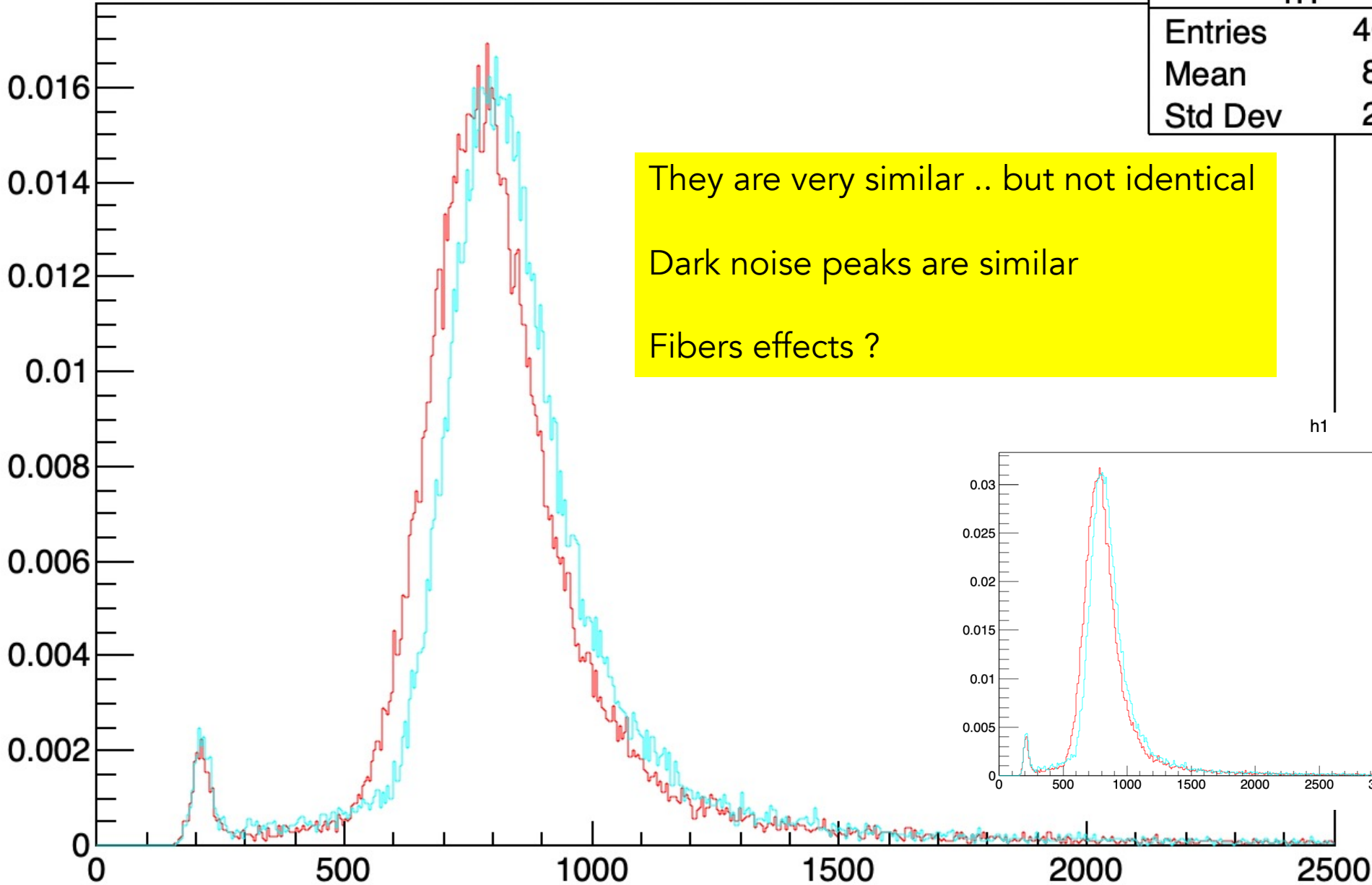


V1



h1

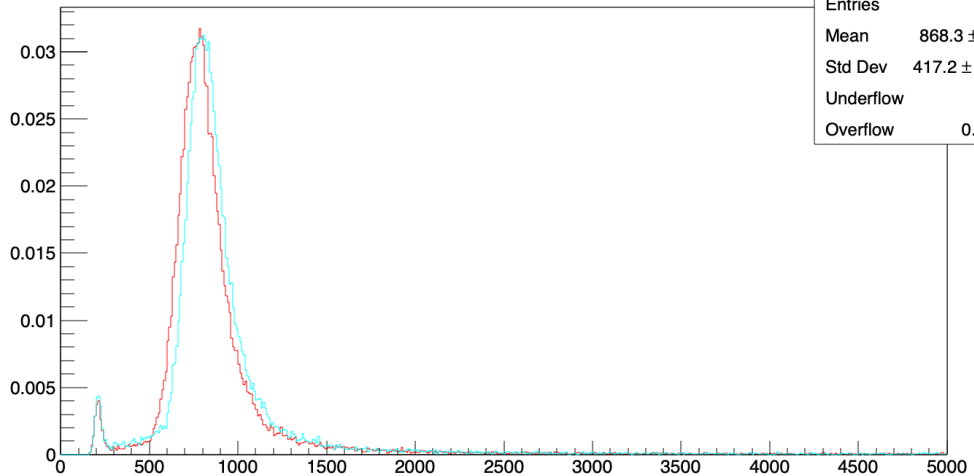
h1	
Entries	40393
Mean	829.1
Std Dev	251.8



They are very similar .. but not identical
Dark noise peaks are similar
Fibers effects ?

V1

h1

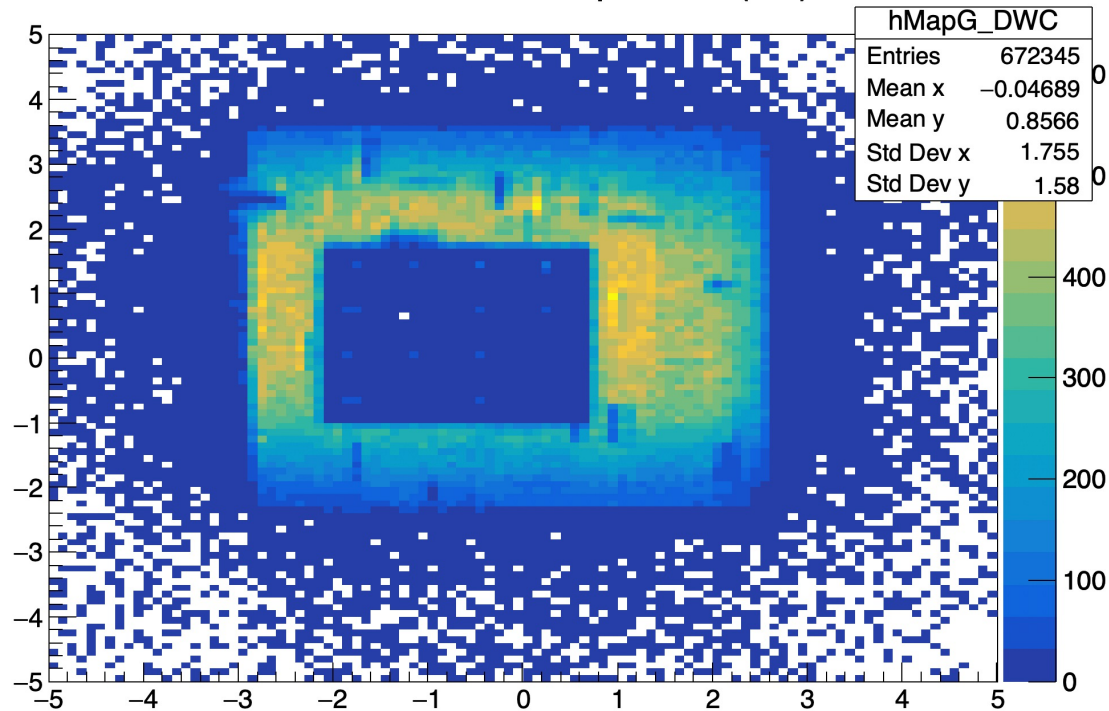


Entries	40393
Mean	868.3 ± 2.11
Std Dev	417.2 ± 1.492
Underflow	0
Overflow	0.03317

Let's do the same with pion beam !

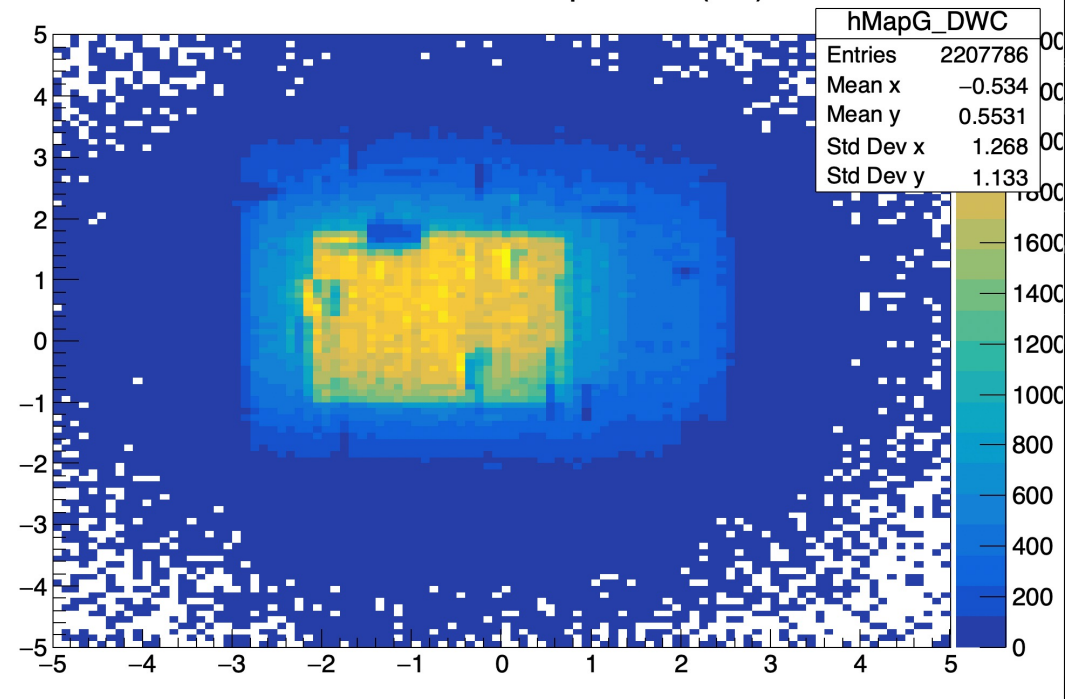
Closer look at Pion (run 57 – 58) 5x5 trigger Troll1 – Heavy liquid

hitTot vs DWC1 track position (cm)



hitTot<200

hitTot vs DWC1 track position (cm)

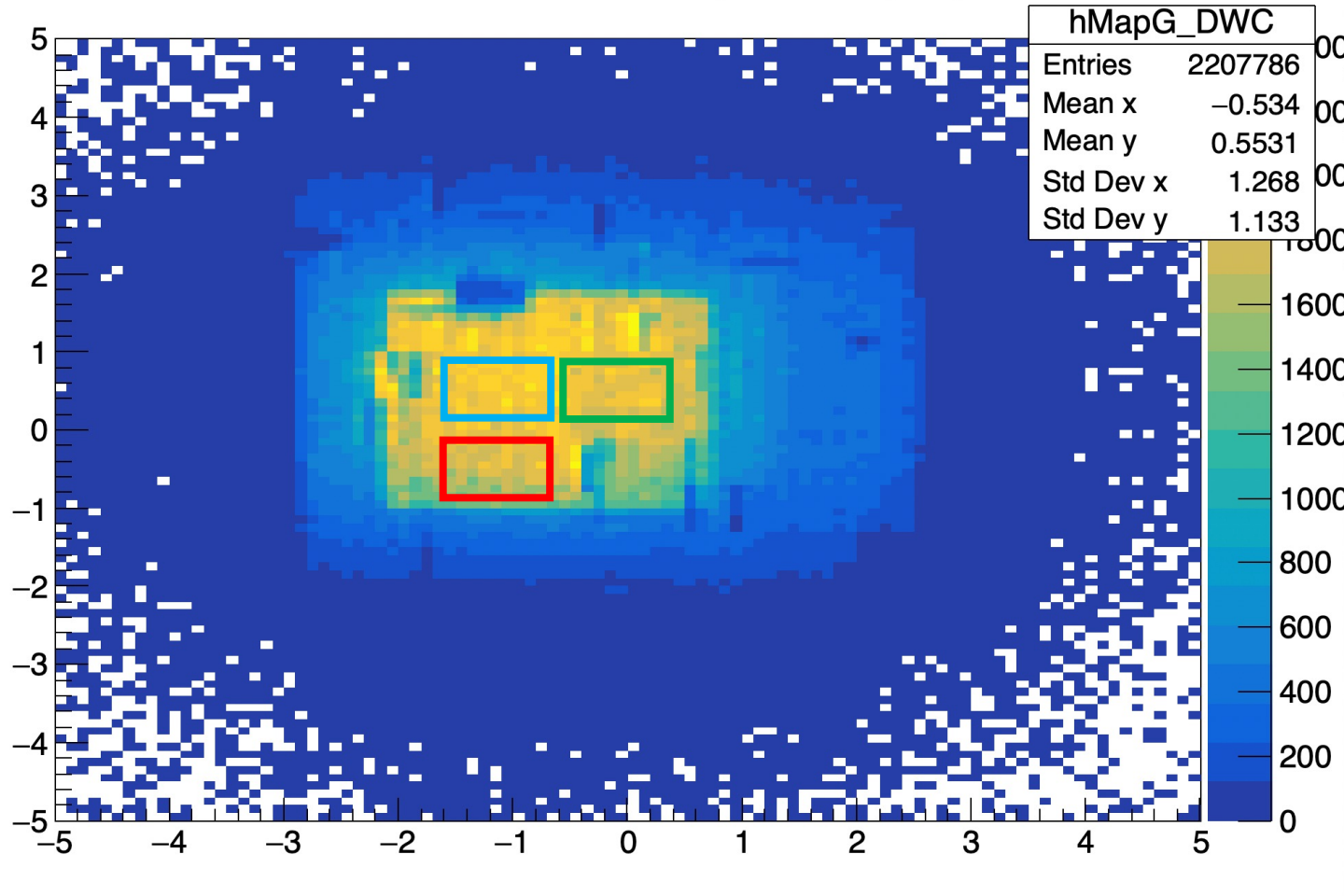


hitTot>300

V1

zone3("x1>-.5 && x1<.5 && y1<.8 && y1>0")

hitTot vs DWC1 track position (cm)



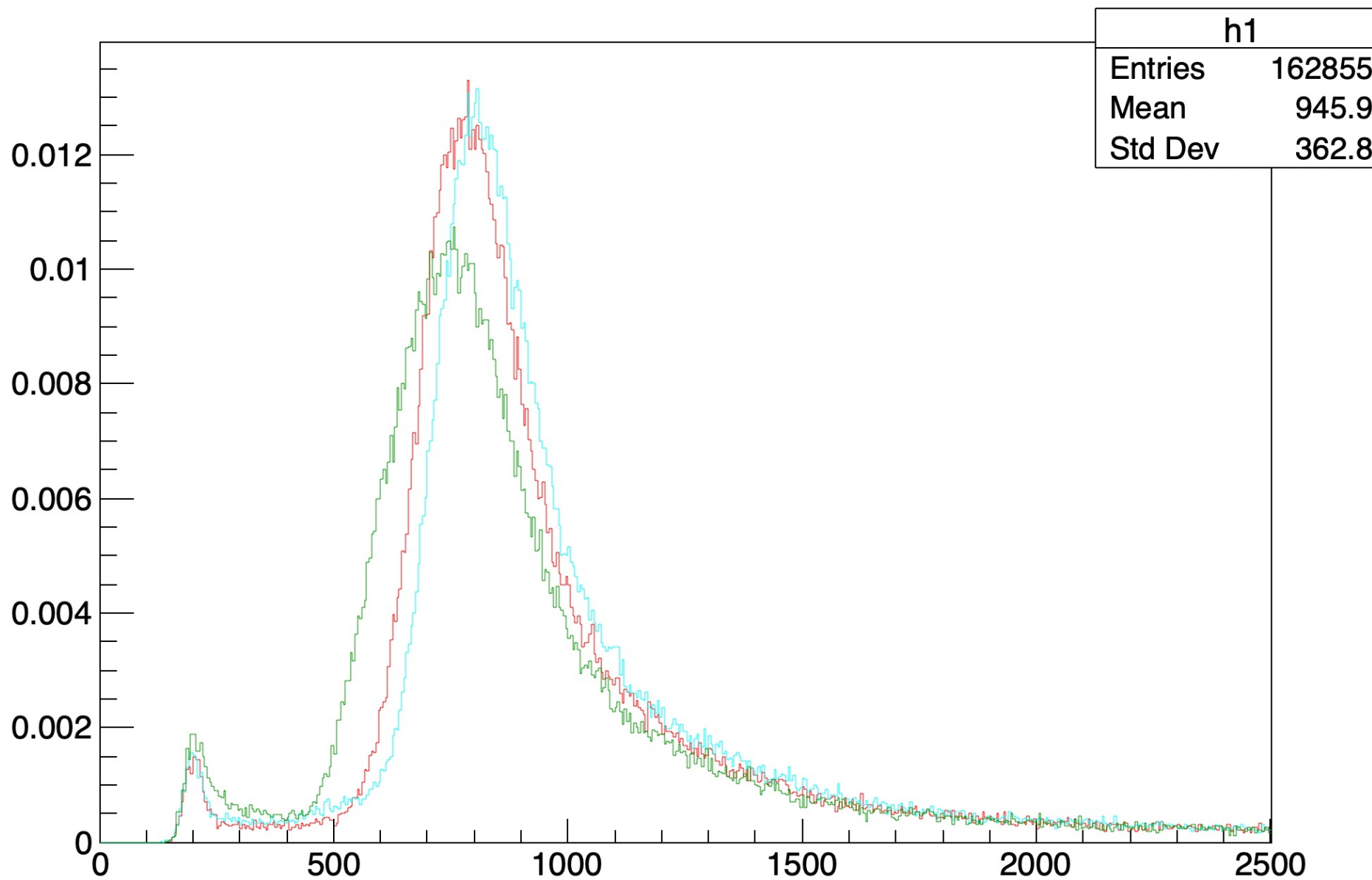
zone3

zone2

zone1

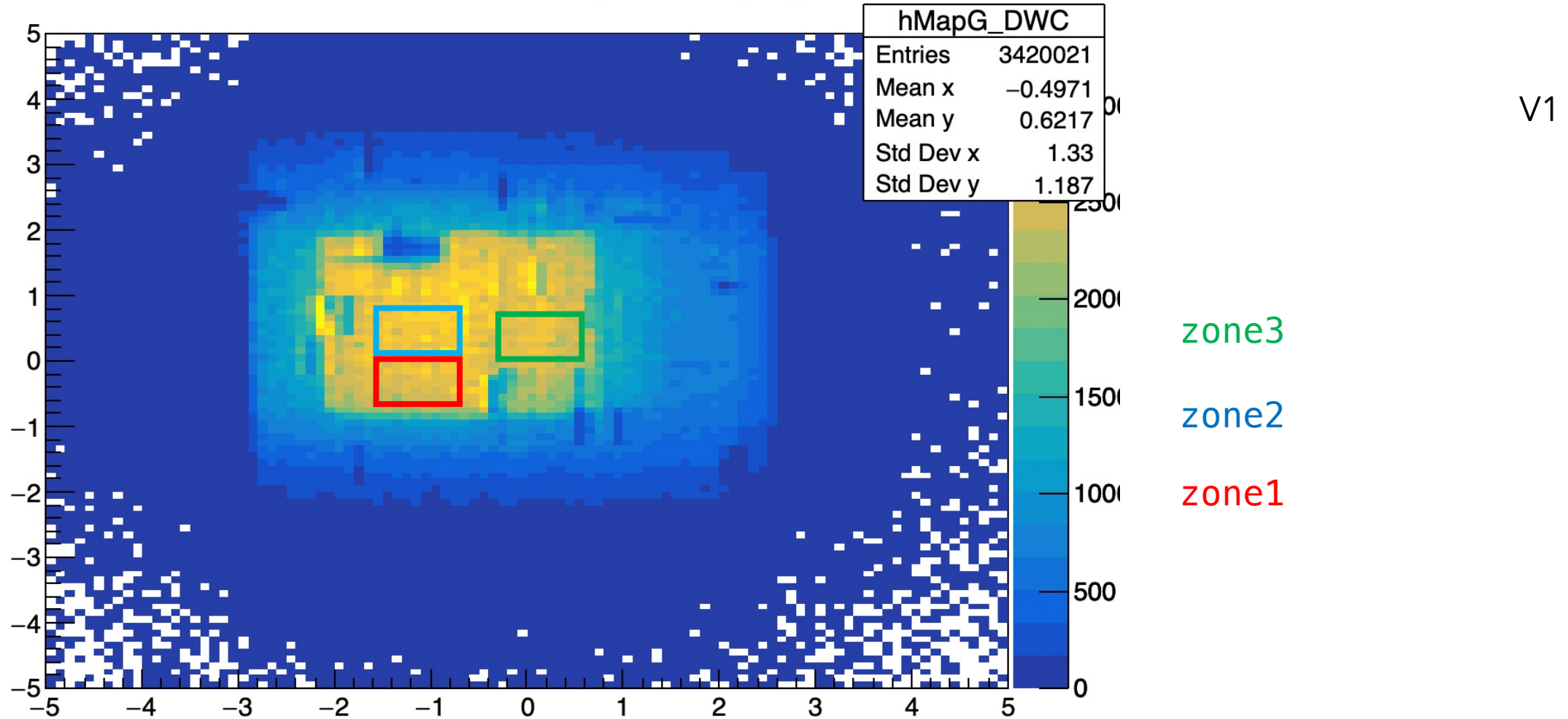
V1

h1



V1

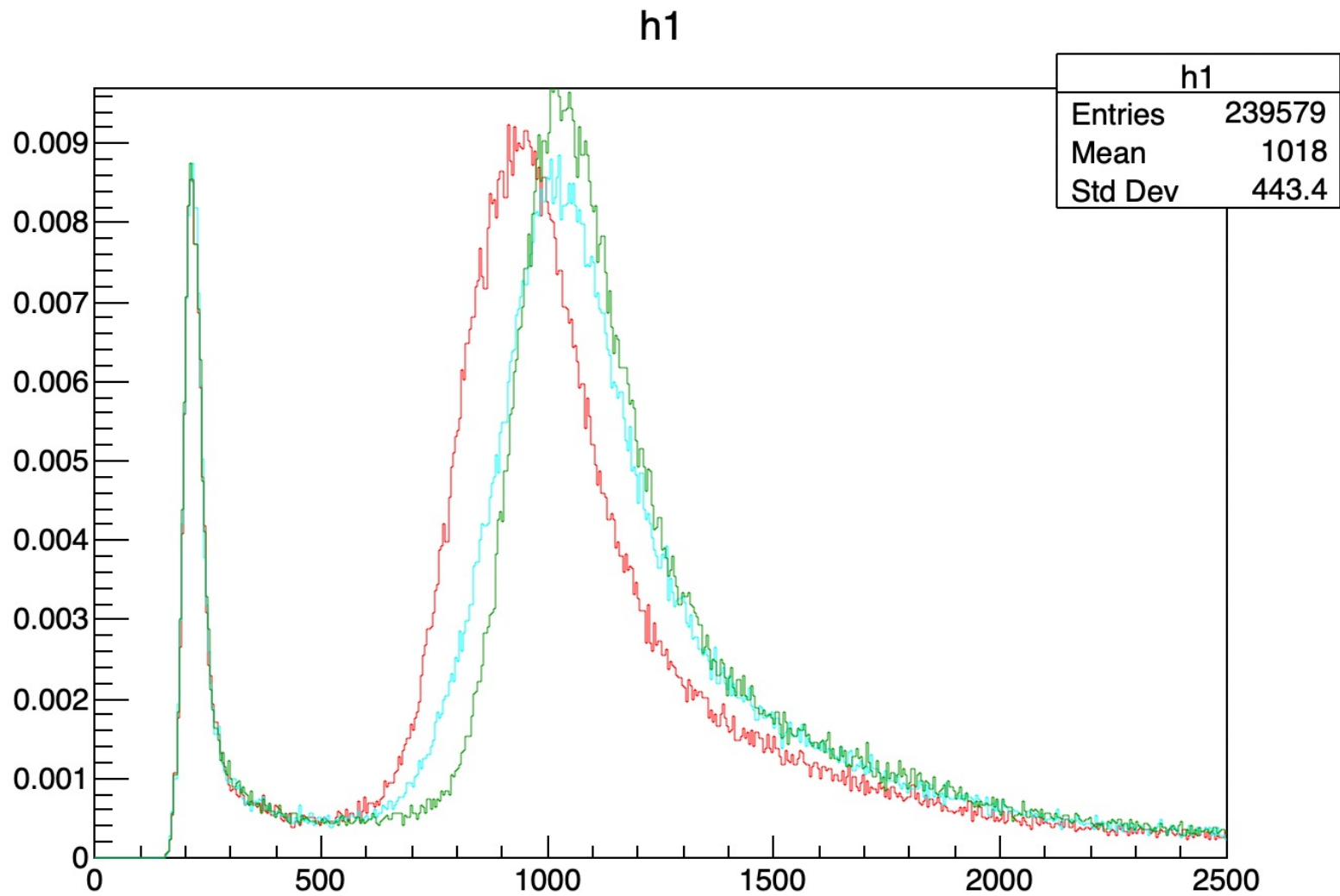
hitTot vs DWC1 track position (cm)



zone2("x1>-1.6 && x1<-.5 && y1<.8 && y1>0")

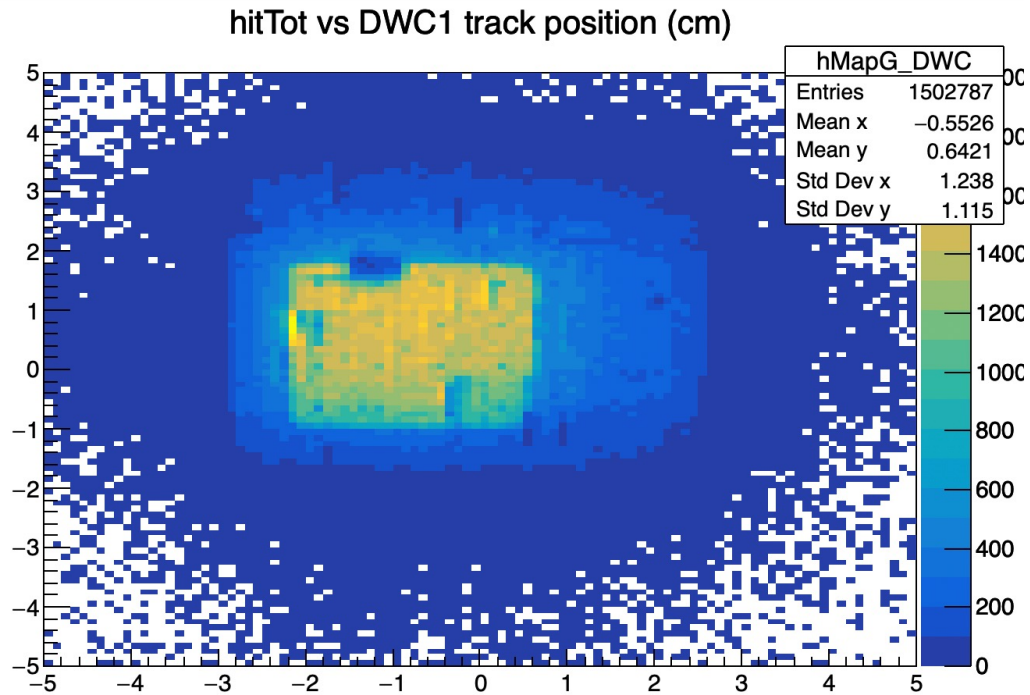
zone1("x1>-1.6 && x1<-.5 && y1>-.8 && y1<0")

Troll2 Heavy Liquid Pion runs 53 54 55



V1

Troll 1 Pion Water Run 50 51



same zones

zone3("x1>-.5 && x1<.5 && y1<.8 && y1>0")

zone2("x1>-1.6 && x1<-.5 && y1<.8 && y1>0")

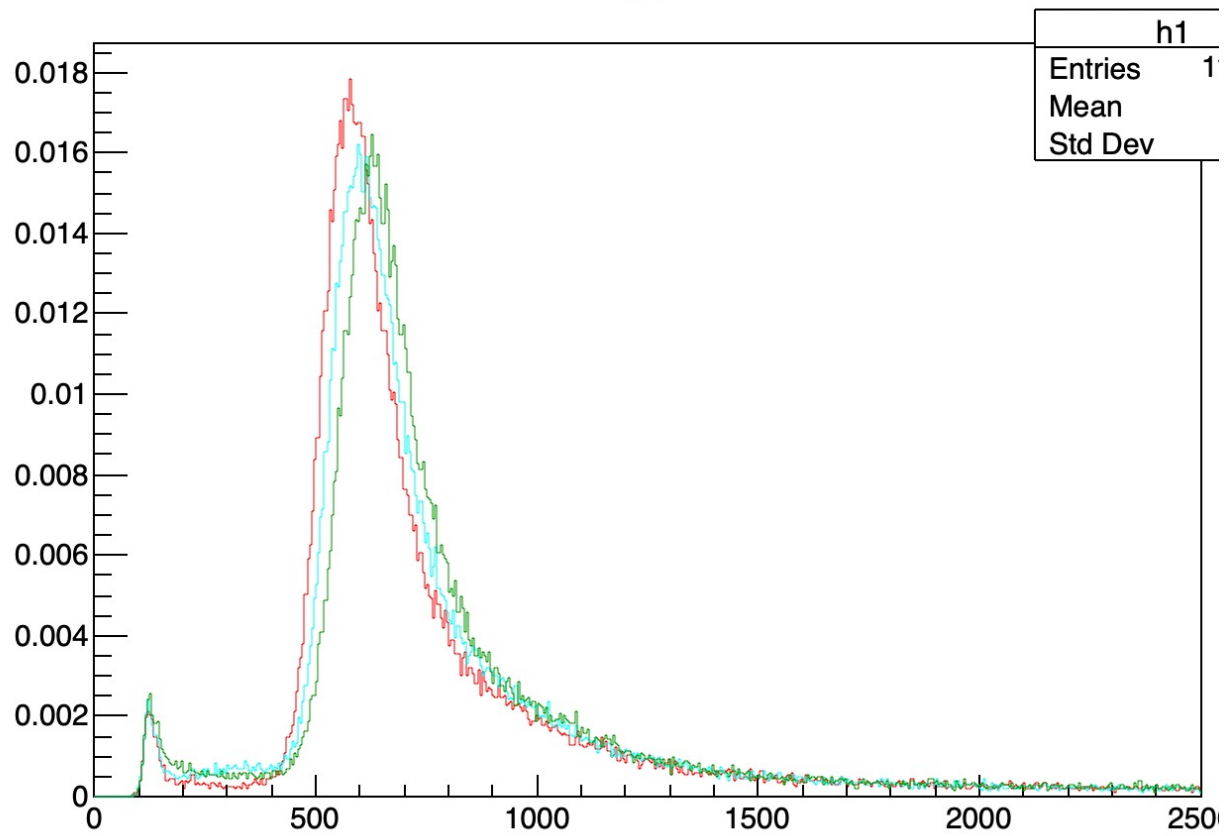
zone1("x1>-1.6 && x1<-.5 && y1>-.8 && y1<0")

V1

Pion – Troll1 – Water

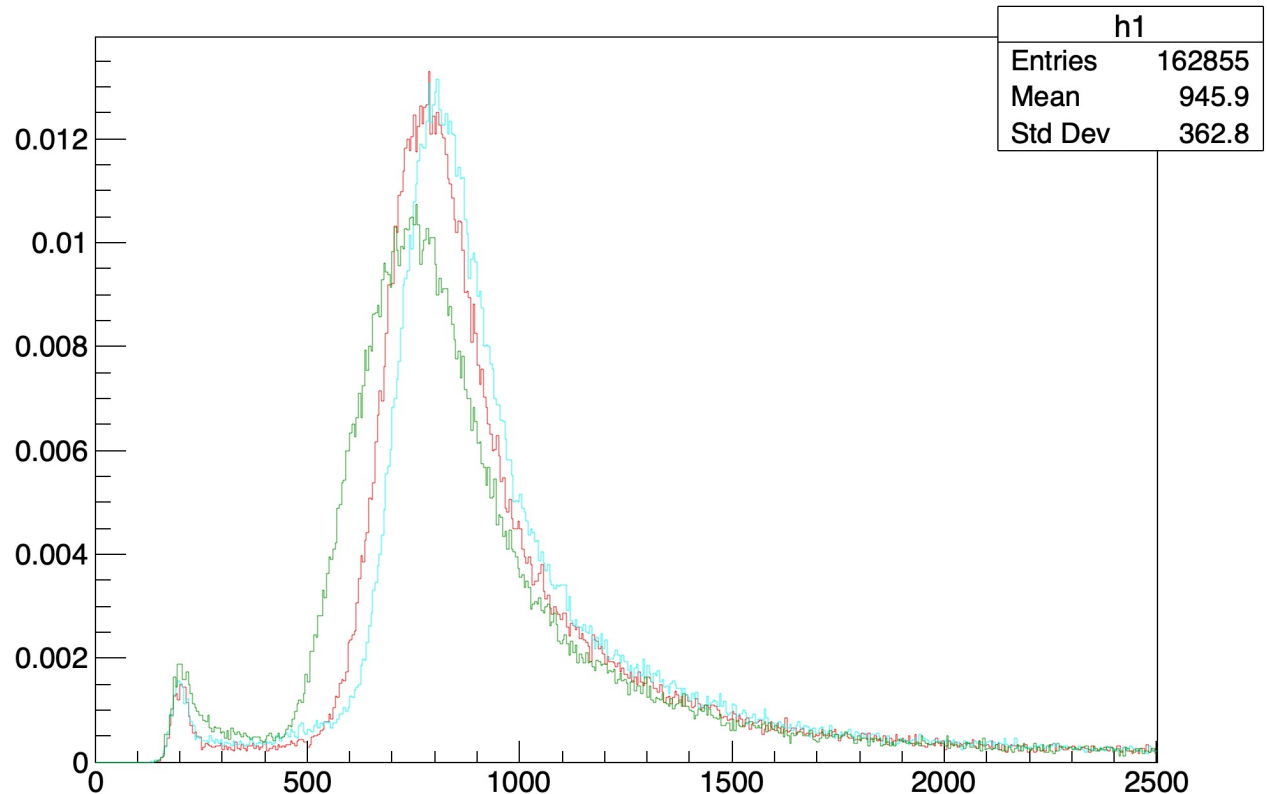
V1

h1



Pion – Troll1 – Heavy Liquid

h1



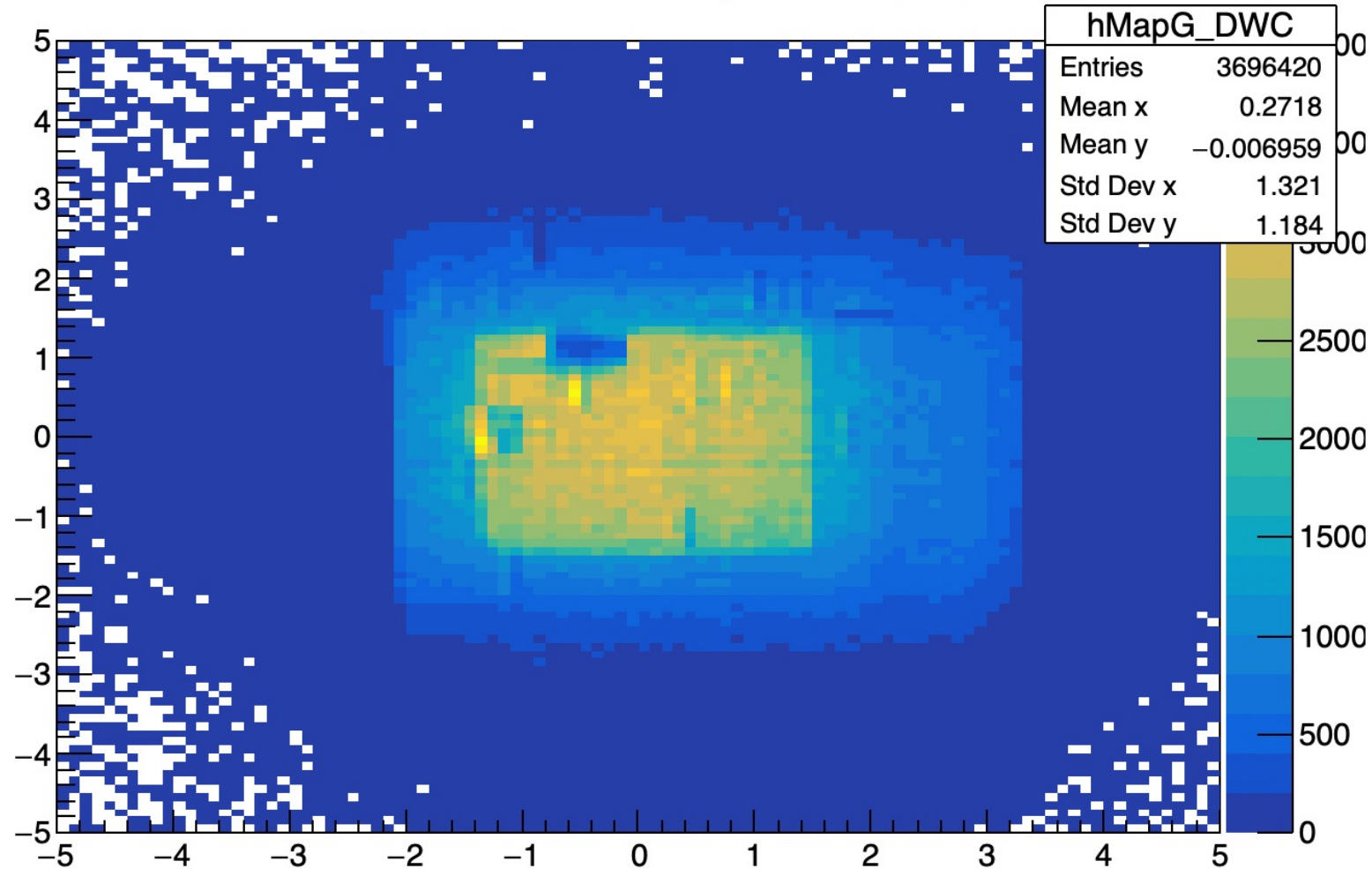
zone3("x1>-.5 && x1<.5 && y1<.8 && y1>0")

zone2("x1>-1.6 && x1<-.5 && y1<.8 && y1>0")

zone1("x1>-1.6 && x1<-.5 && y1>-.8 && y1<0")

V2 , hitTot>300

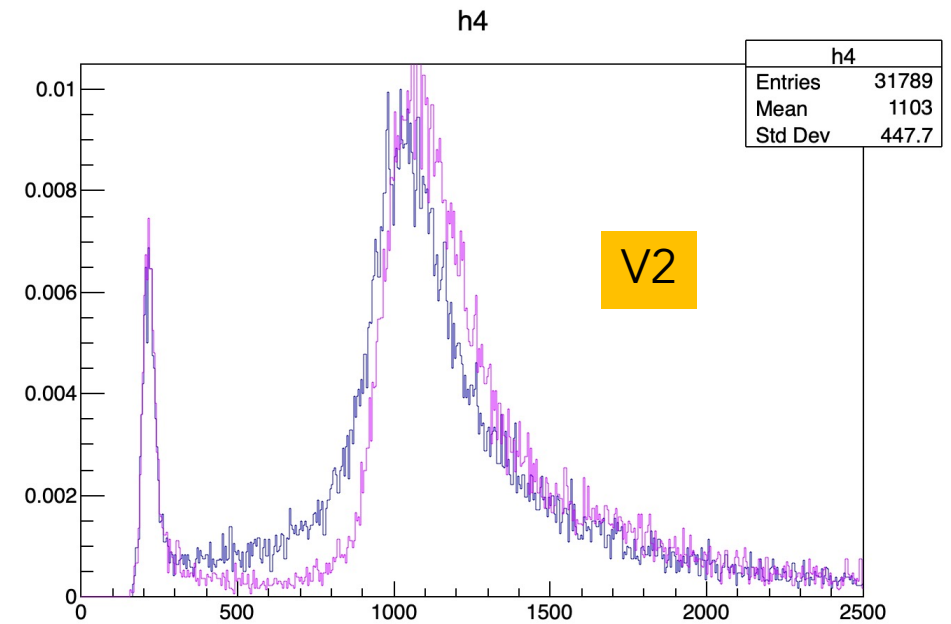
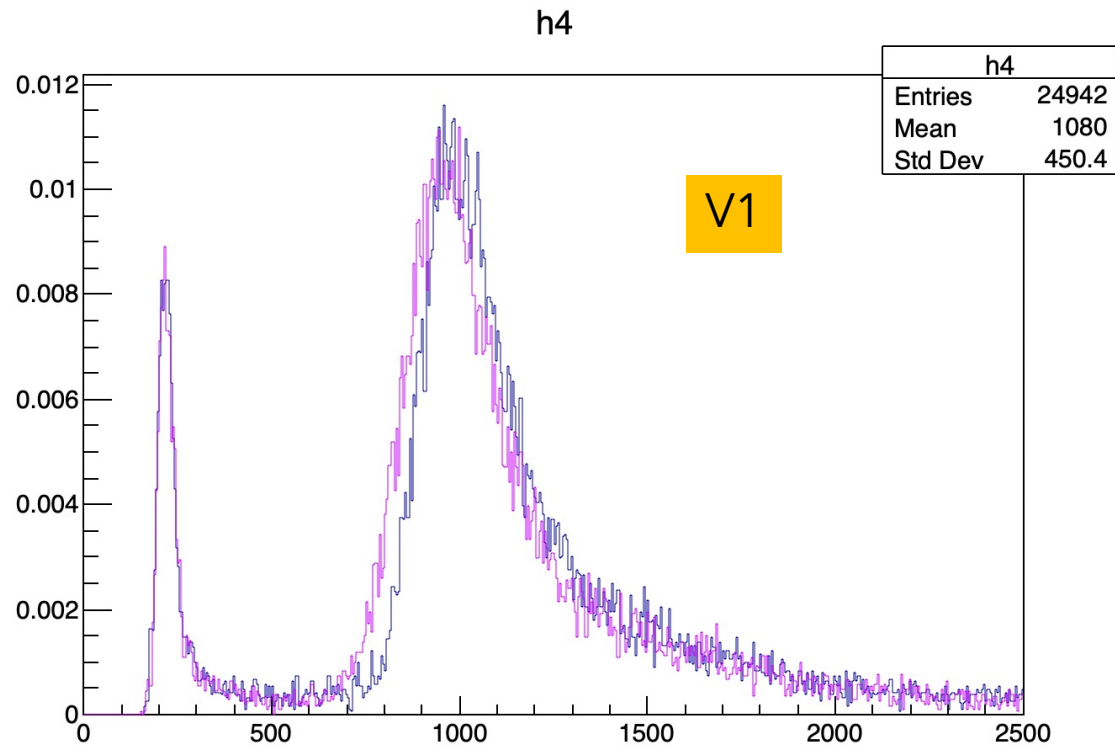
hitTot vs DWC1 track position (cm)



still true on smaller zones ...

$$-.5 < x1 < 0 \ \&\& \ y1 > -.2 \ \&\& \ y1 < 0$$

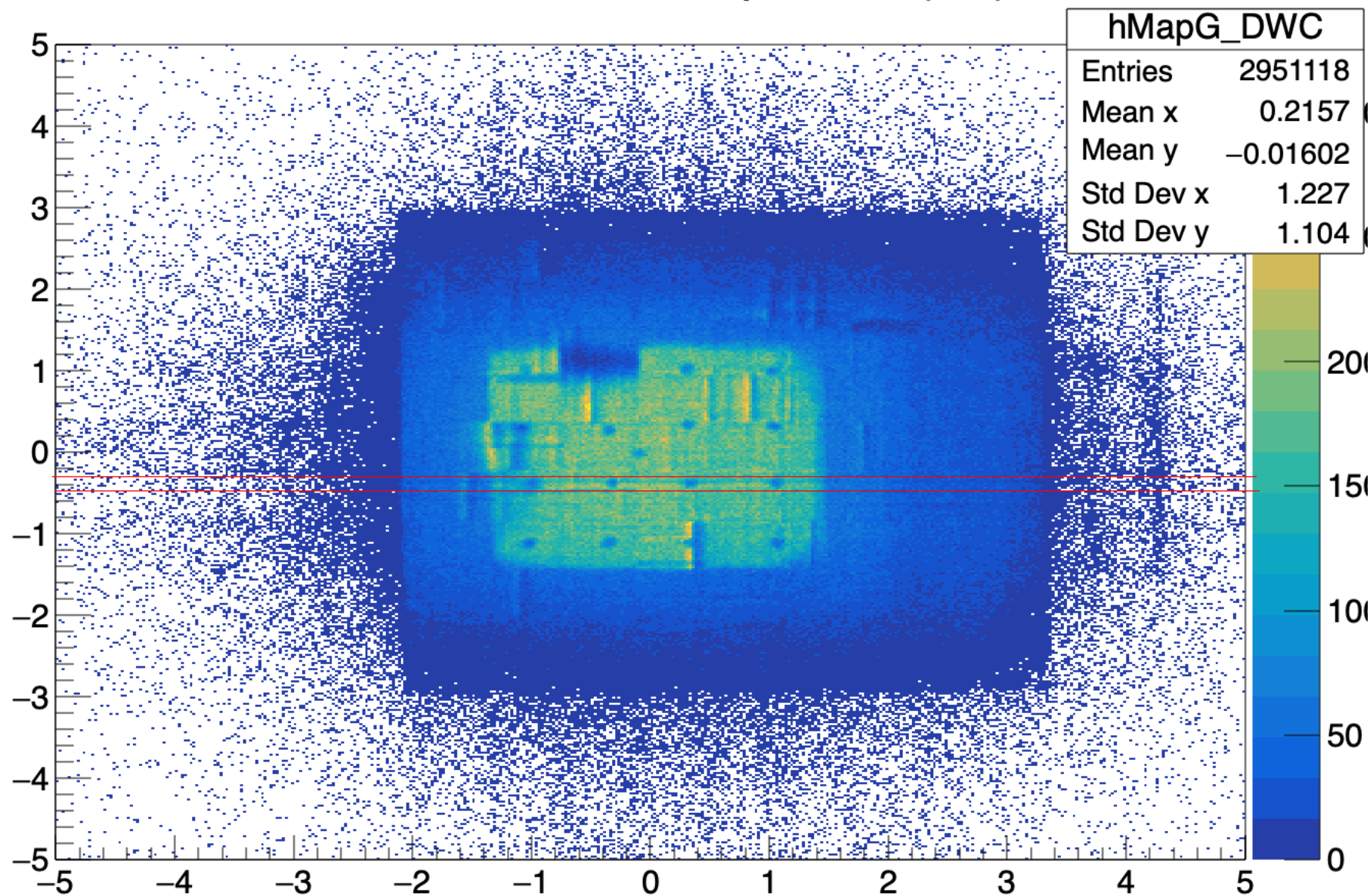
$$0 < x1 < .5 \ \&\& \ y1 > -.2 \ \&\& \ y1 < 0$$



Near a fiber or not ?

hitTot vs DWC1 track position (cm)

hitTot>600



Run#	Troll Type	Data type	Comment	Dark
11	Troll1 Water	LED + pedestal ?		118 – Event Type = 4 LED reste pedestal ?
24	Troll1 Water	LED-only		Event Type = 4 LED
25,30,31,32	Troll1 Water	Electron		~120 – 130
33,34	Troll1 Water	Muon		~130
35,36,37,38,39,40	Troll1 Water	Pion.	changes in position of GRAiNITA ... Beam changes	~130
41,42,43	Troll1 Water	Pion	With 3x3 in the trigger (Samedi soir S, MH)	~140
44,45	Troll1 Water	Pion	No 3x3 in trigger. Dimanche matin... (Giulia & co)	~130
47	Troll1 Water	Pedestal		~119
48	Troll1 Water	LED		118 .
50,51	Troll1 Water	Pion	Trigger 5x5	~130
52	Troll2 Heavy L	LED		203. SiBB pb from here
53,54,55	Troll2 Heavy L	Pion	Trigger 5x5	210
56	Troll1 Heavy L	LED+pedestal		Bizarre du beam ???
57,58	Troll1 Heavy L	Pion	Trigger 5x5	180 ?
59,60	Troll1 Heavy L	Muon		211
61	Troll1 Heavy L	LED	Degraded SiBB	204 eventType = 4 = LED
62	12/07/2024 Troll1 Heavy L	LED	Normal SiBB	125 eventType = 4 = LED 28