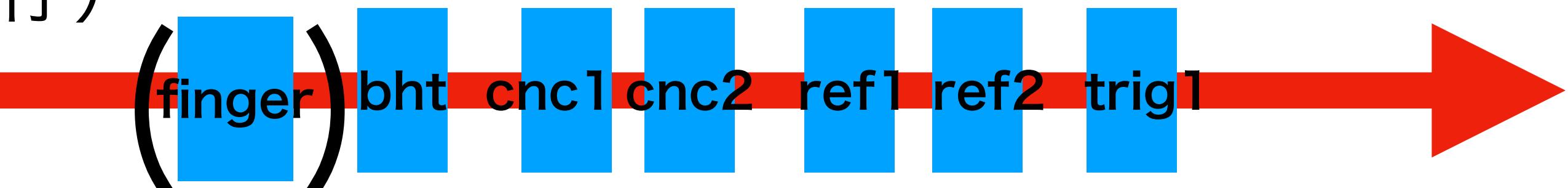


K1.8BR meeting 11/1

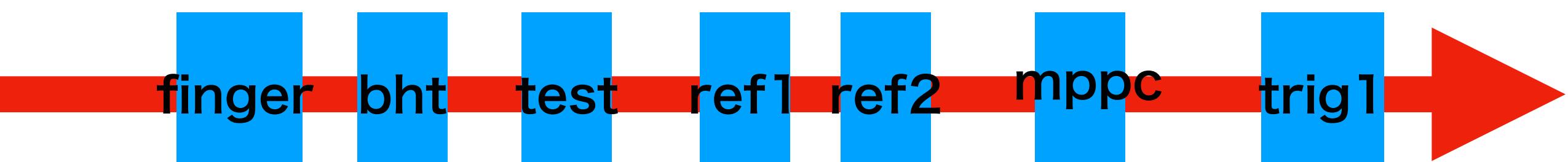
木村佑斗

10/19-20ビームテスト概要

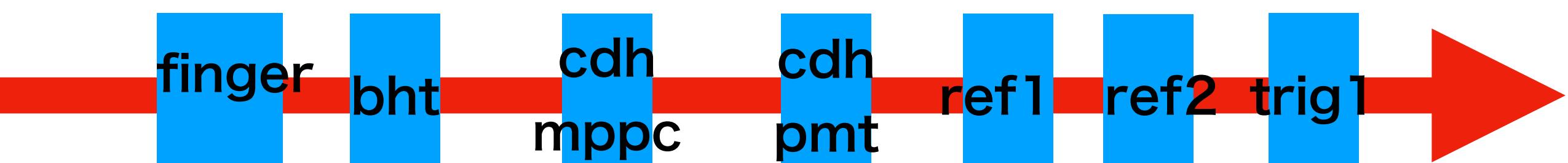
1. CNC(2.6m) 時間分解能 (位置依存)



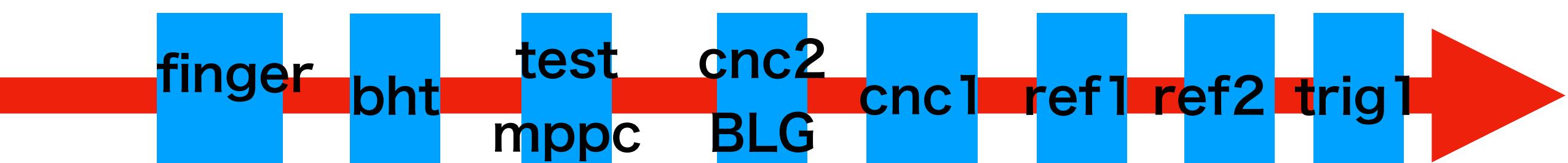
2.CNC(1.5m)(called “test”) 時間分解能 (ライトガイドの長さ依存)



3. CDH(0.8m) 時間分解能 (PMT vs MPPC)



4. test 時間分解能 (MPPC ver.) & CNC (Black LG) (反射波?)



1. CNC(2.6m)時間分解能 (位置依存)

ペデスター

ch0,1,2 : trig1,2L,2R

ch3,4,5,11 : ref1L,1R,2L,2R

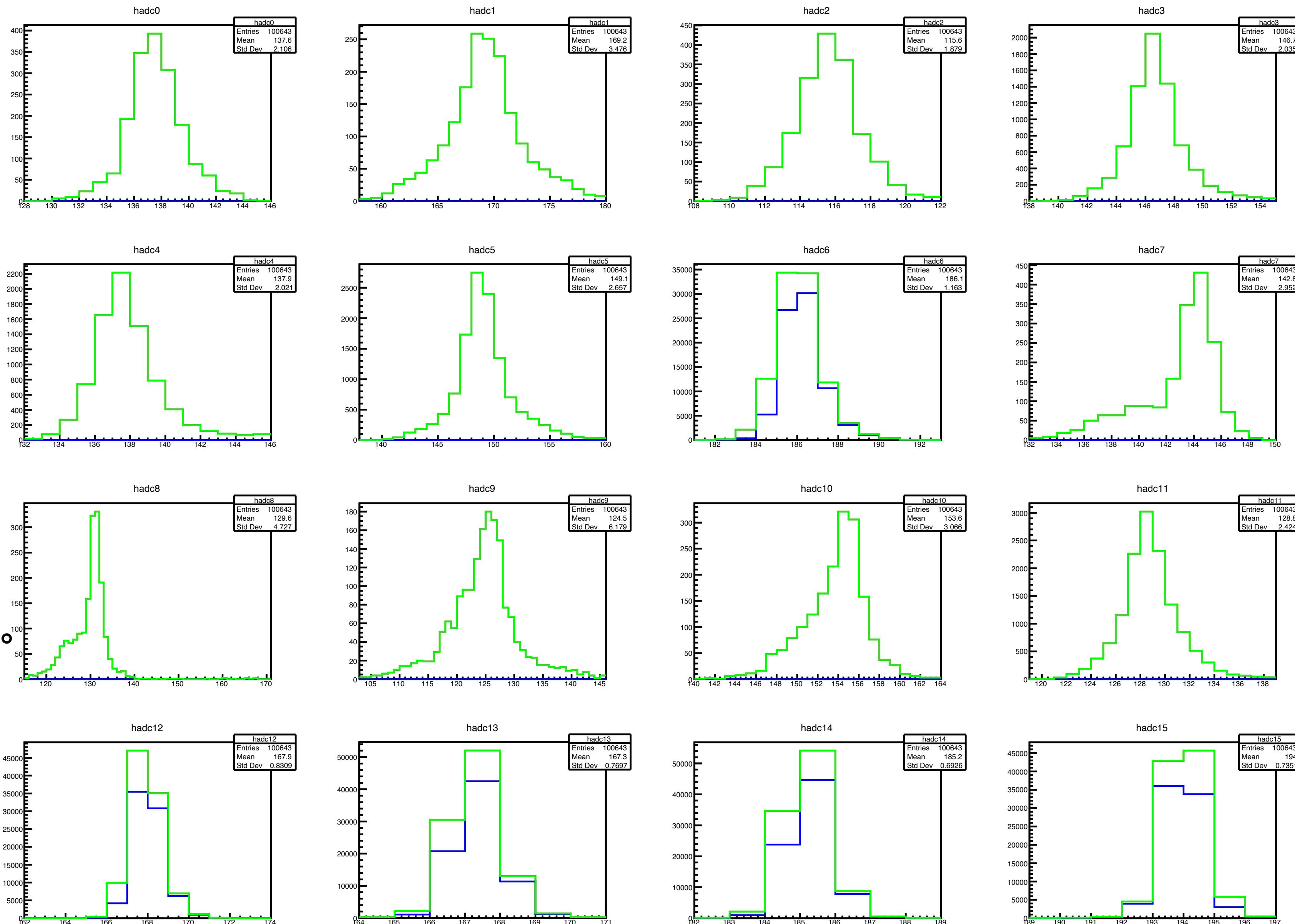
ch7,8,9,10 : cnc1L,1R,2L,2R

ch6,12,13,14 : no signal

ch15 : clock

真のペデスターは2~5ch分だとわかる。

信号を入れると生じる"何か"がある。



run00034
position=0cm

(finger 無)

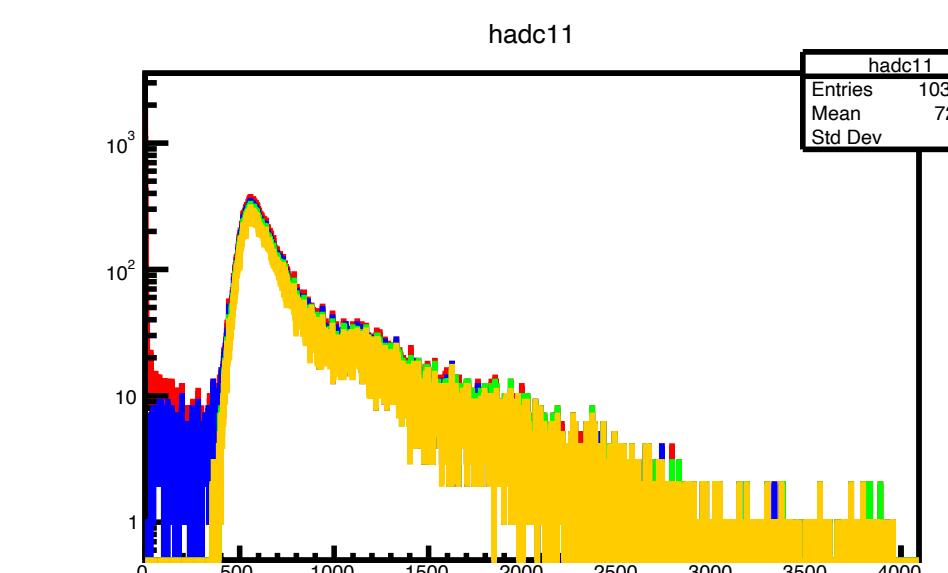
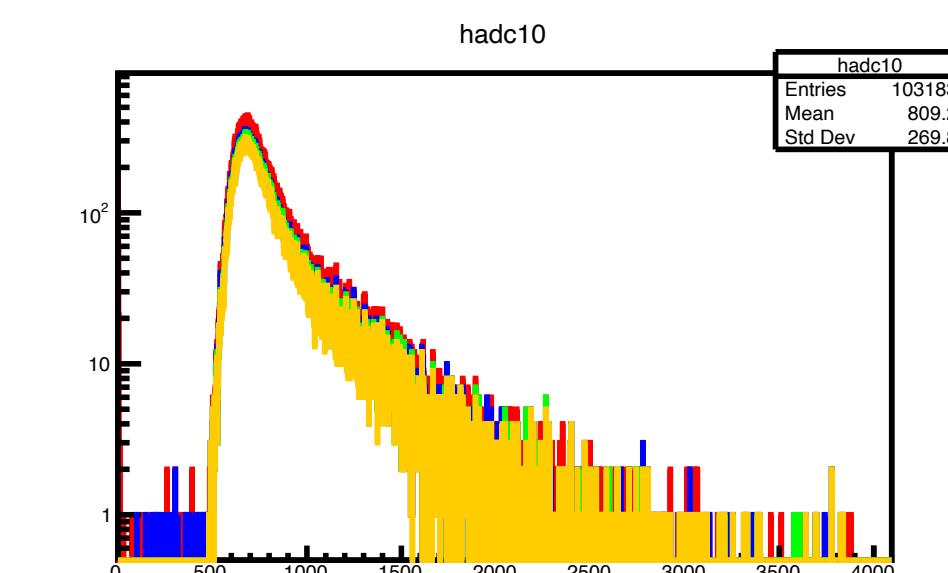
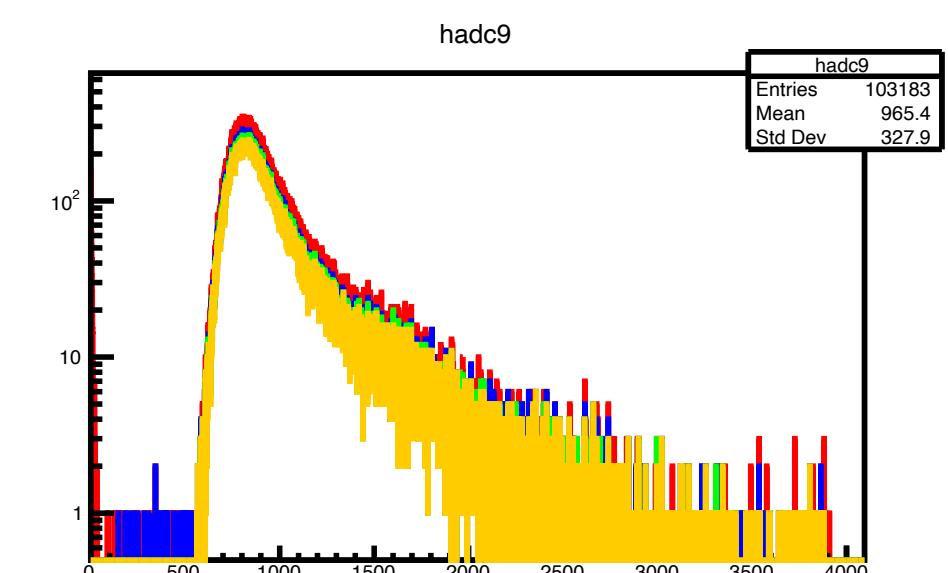
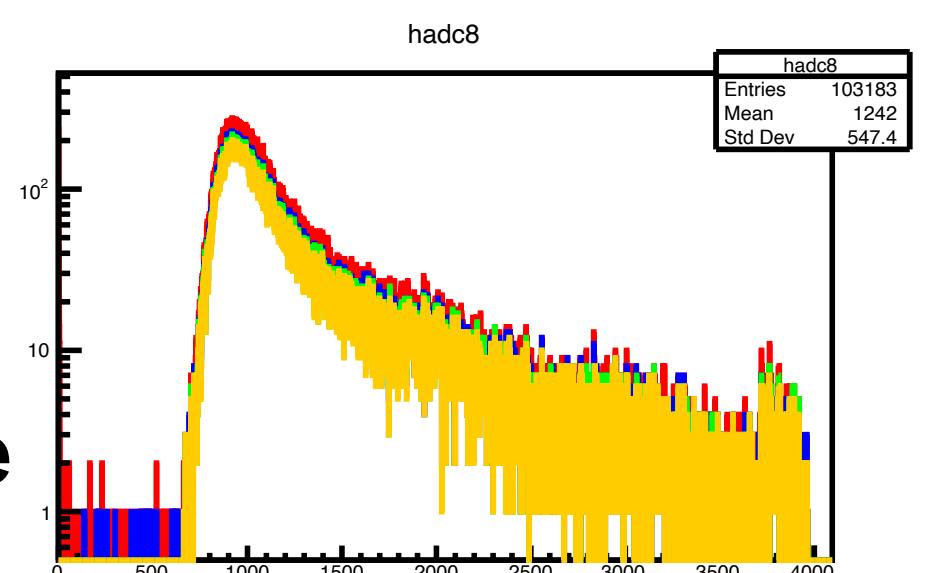
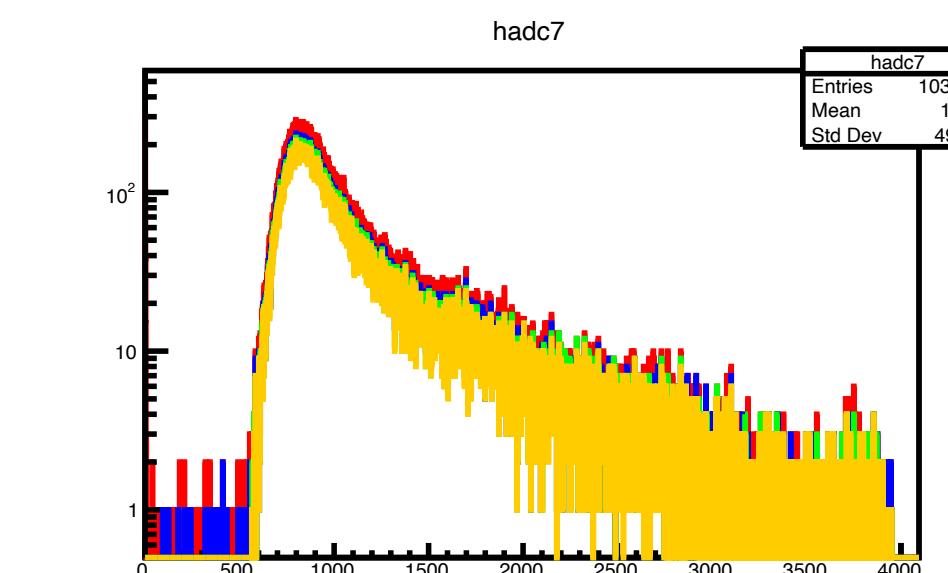
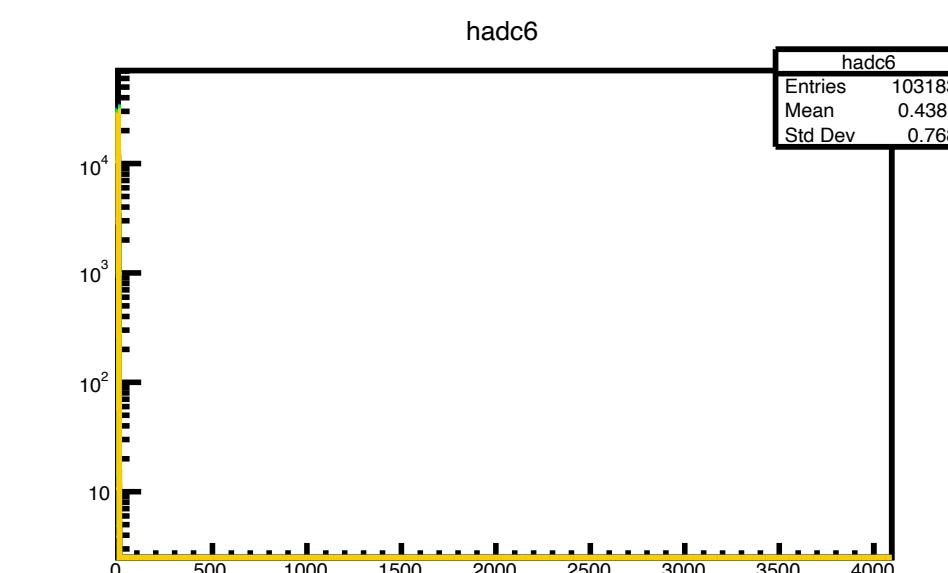
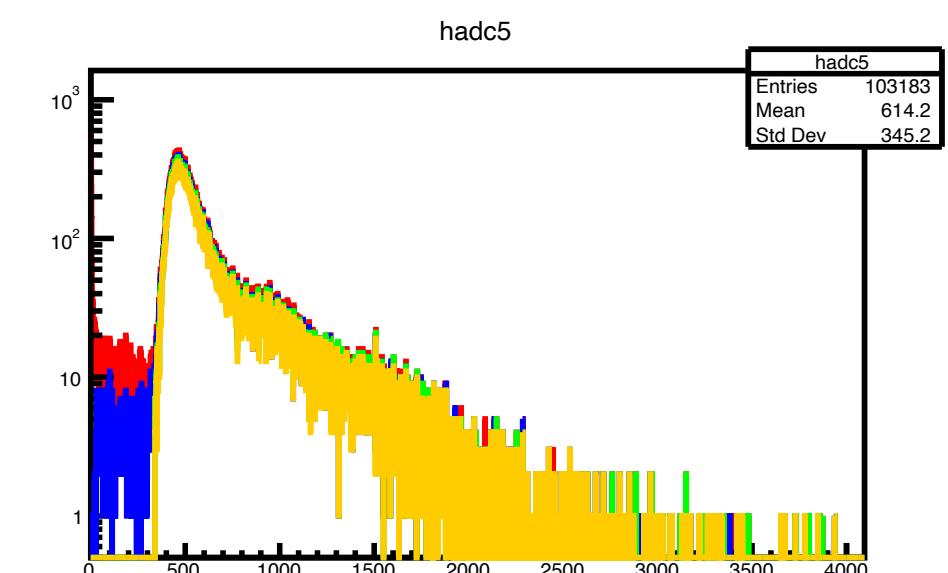
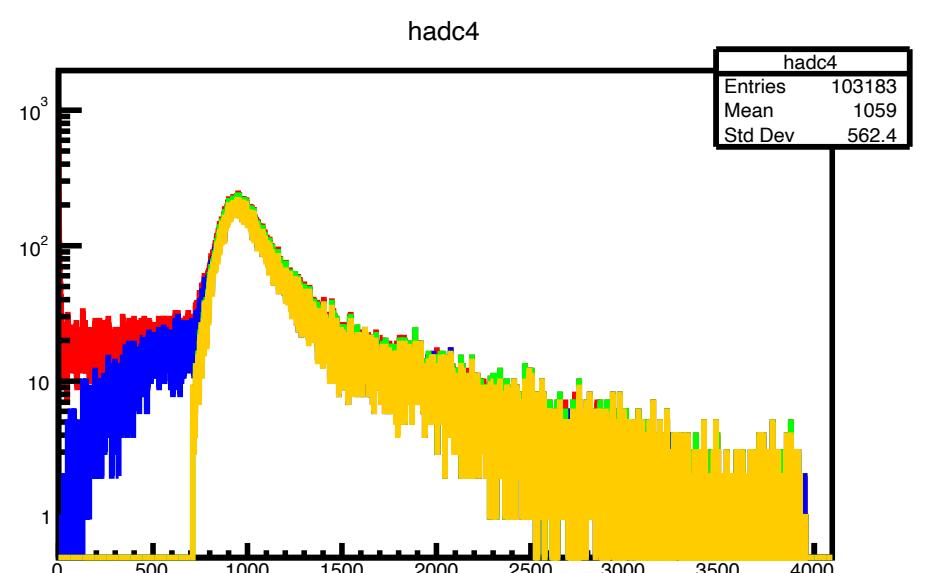
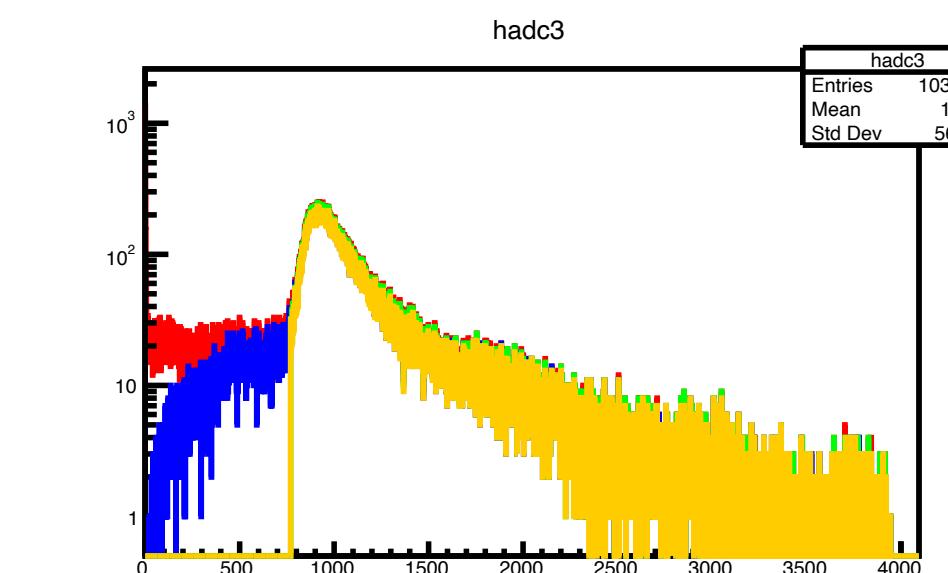
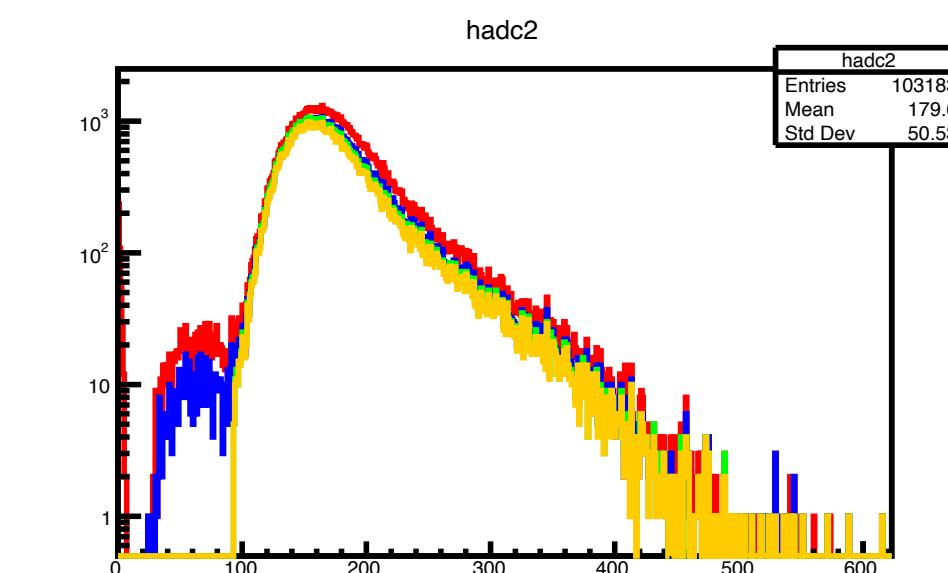
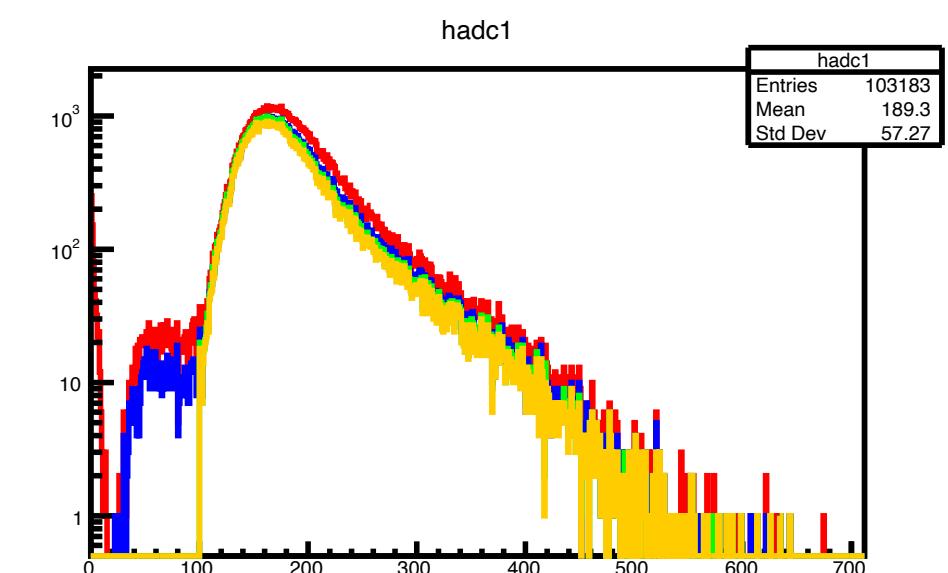
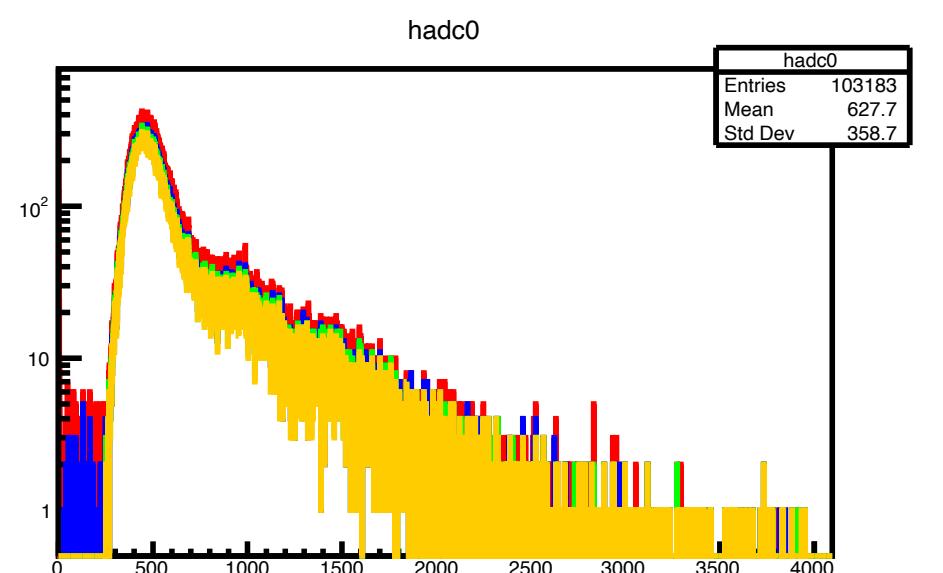
ADC

赤 : 生

青 : tdc cut

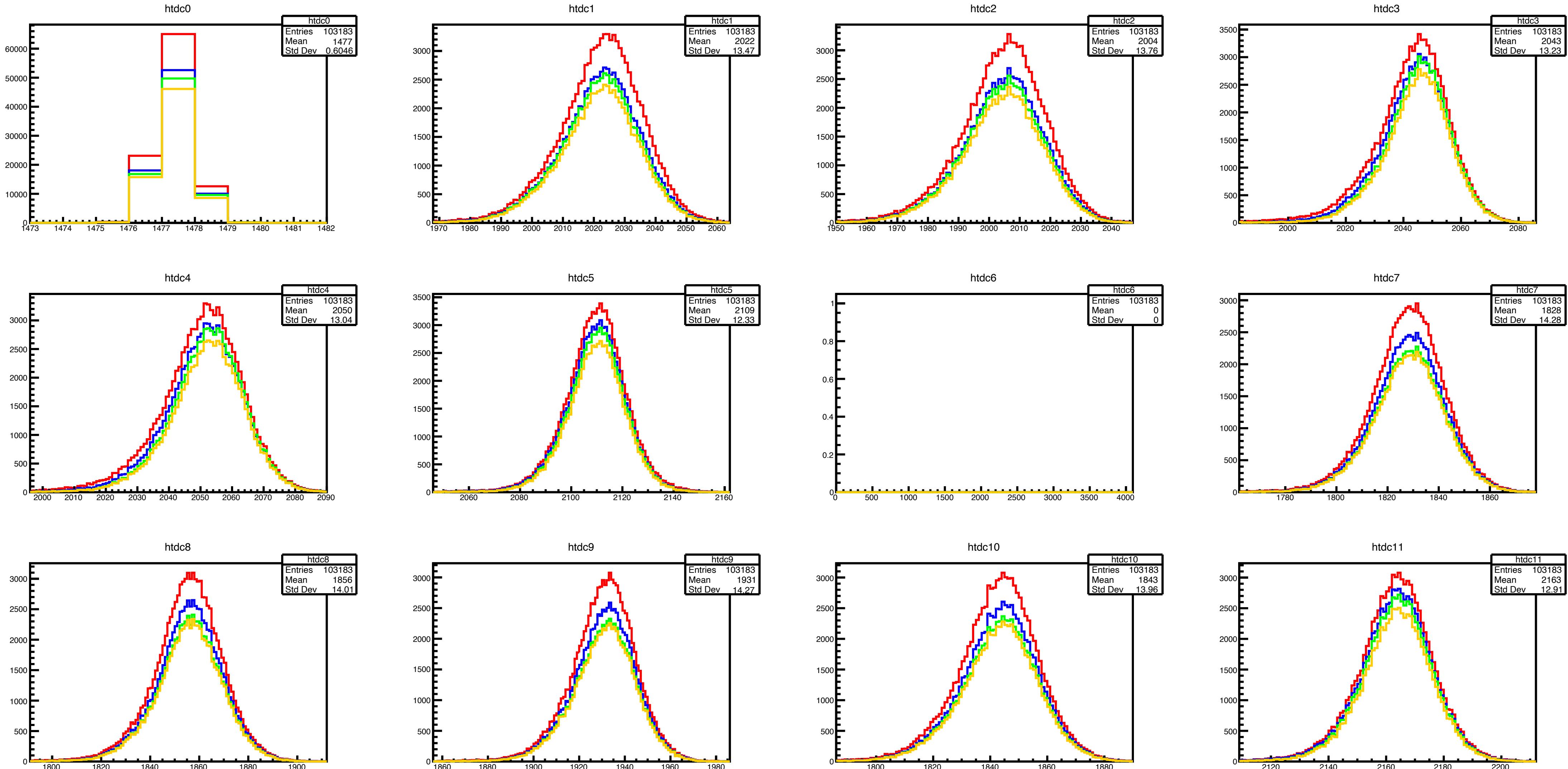
緑 : adc cut

黄 : tdc cut && adc cut



tdc cut : $\text{tdc} \neq -1$ (all ch)
adc cut : $\text{adc} > \text{low noise}$
(all ch)

TDC



$$efficiency(x) = \frac{adc\ cut\ & \ tdc\ cut\ (for\ x)}{adc\ cut\ & \ tdc\ cut\ (except\ for\ x)}$$

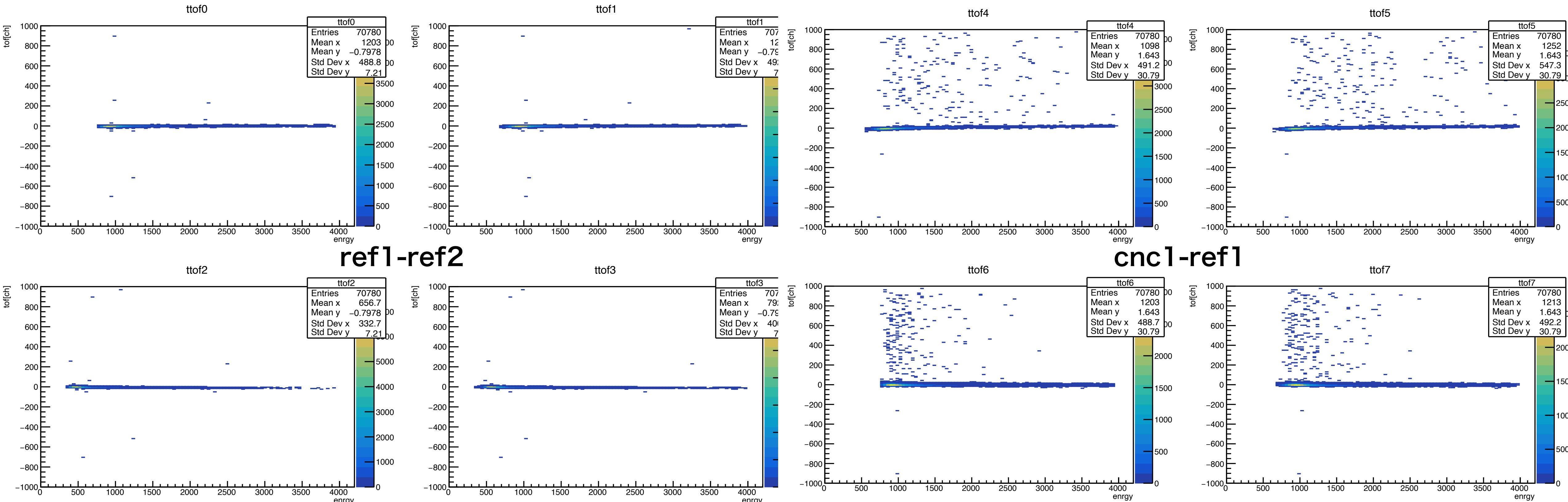
run00034

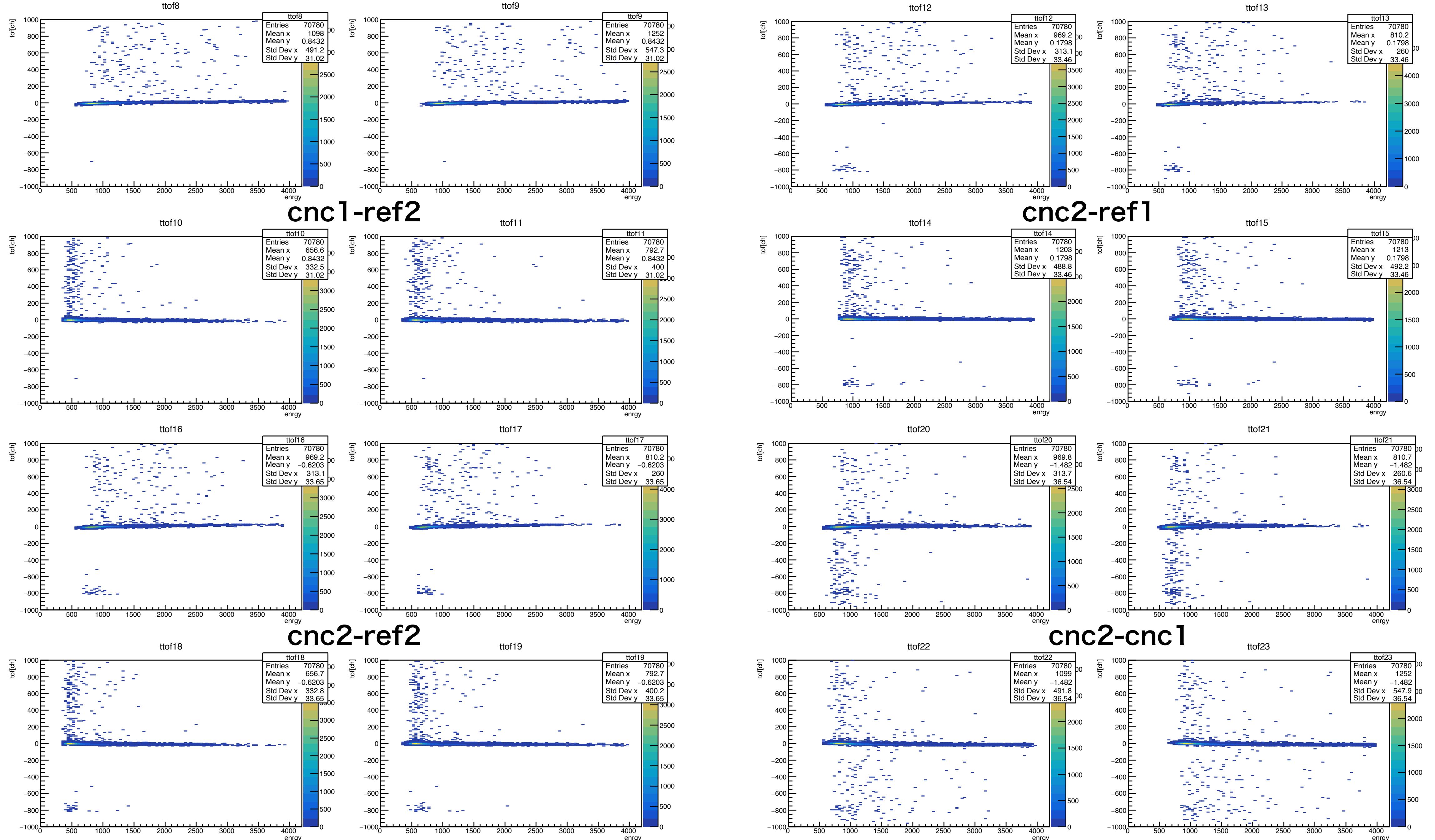
ch	trig1	trig2L	trig2R	ref1L	ref1R	ref2L	ref2R	cnc1L	cnc1R	cnc2L	cnc2R
efficiency	0.998	0.997	0.999	0.976	0.995	0.998	0.998	0.996	0.996	0.992	0.999

run00034
adc cut && tdc cut

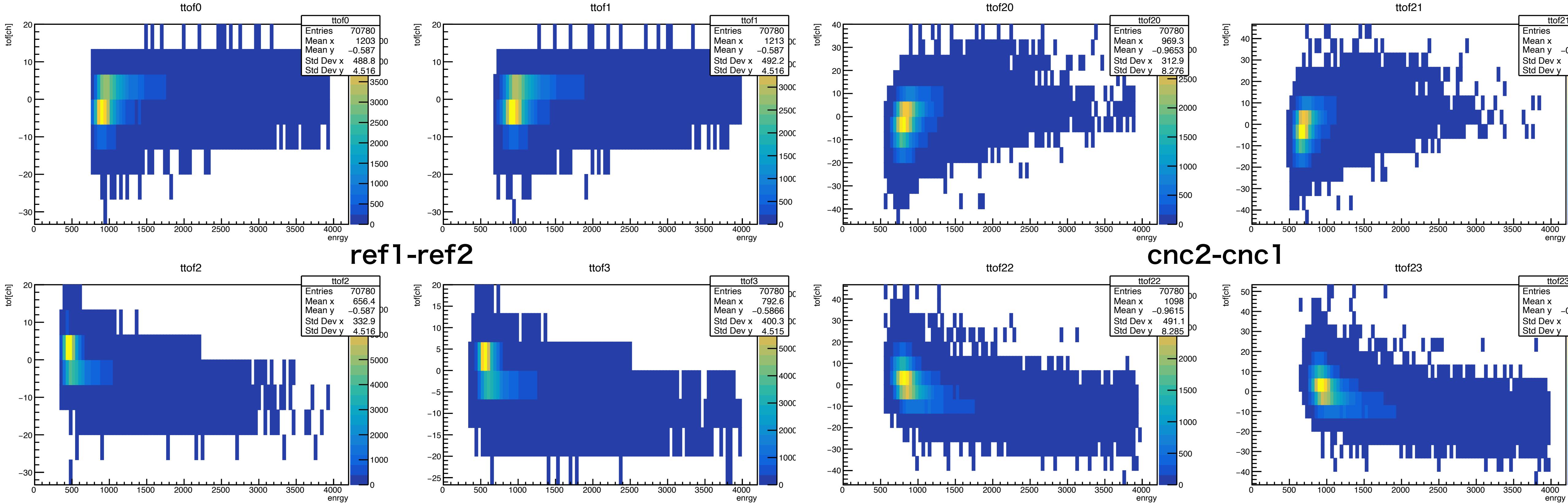
$$\text{tof}(x,y) = (\text{tdc}(xL) + \text{tdc}(xR) - \text{tdc}(yL) - \text{tdc}(yR)) / 2$$

Not “slew” yet





forcous ver.



run00048

position = 0cm

(finger 有)

ADC

赤：生

青：tdc cut

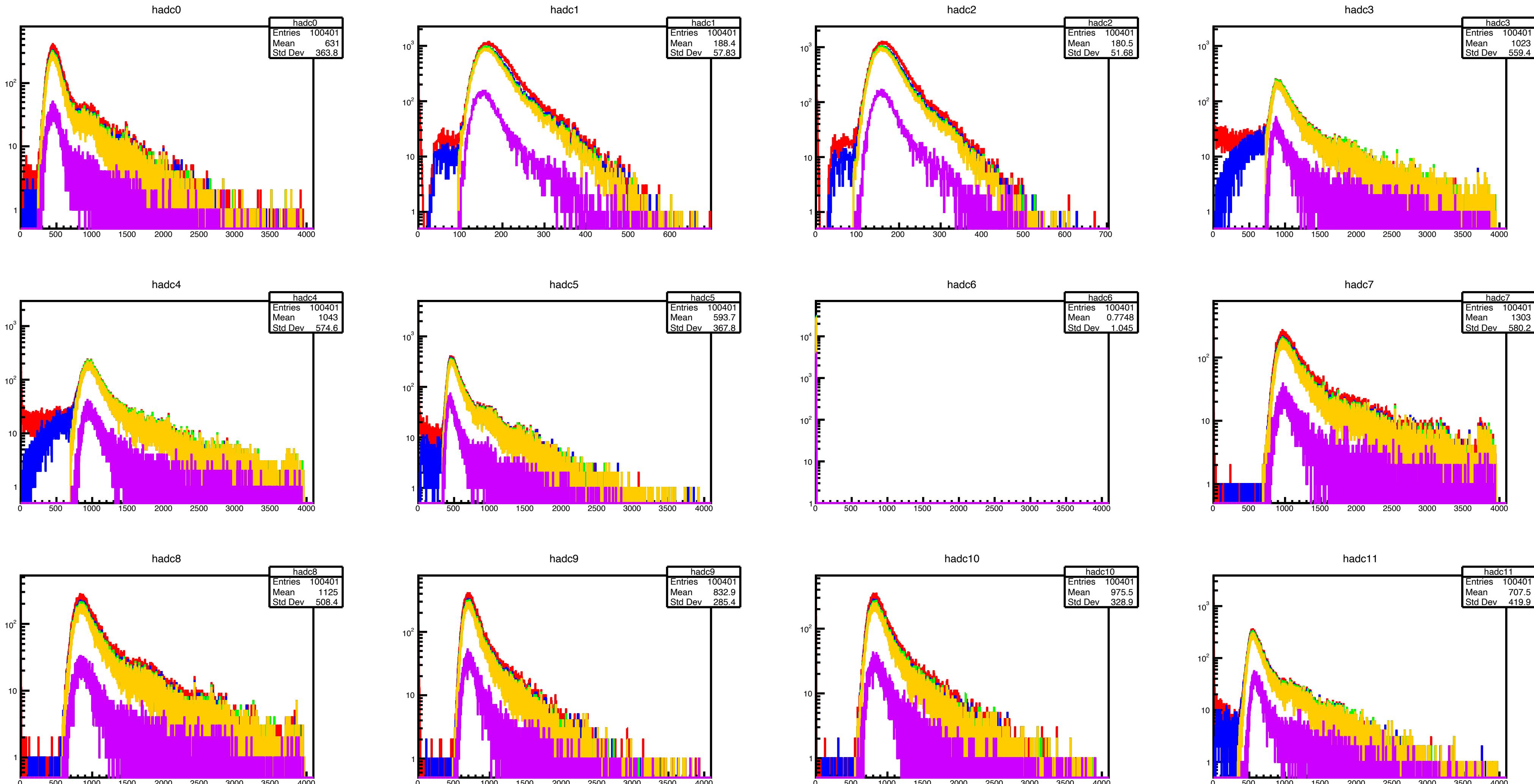
緑：adc cut

黃：tdc cut && adc cut

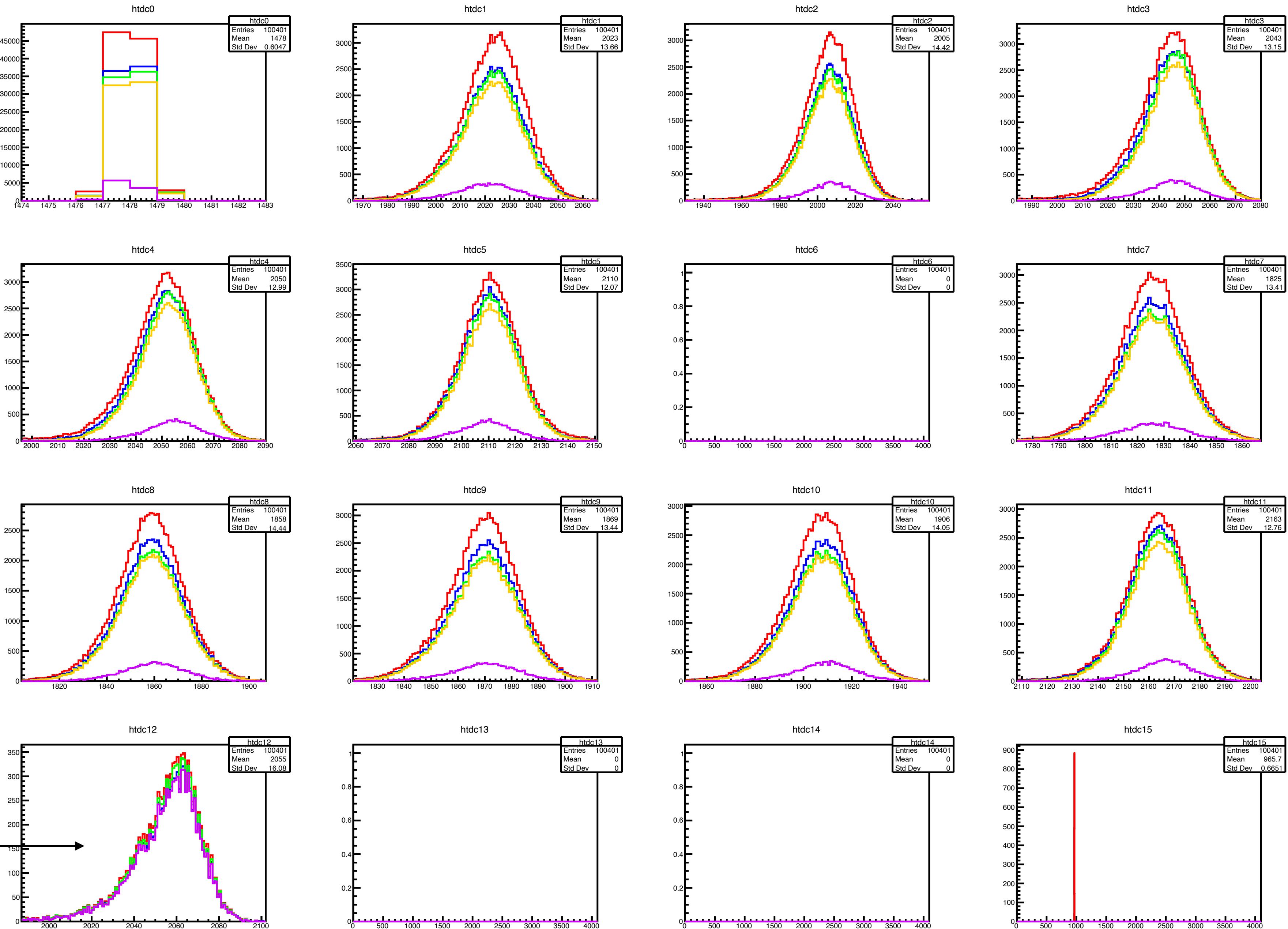
紫：tdc cut &&

adc cut &&

finger tdc != -1



TDC



finger tdc



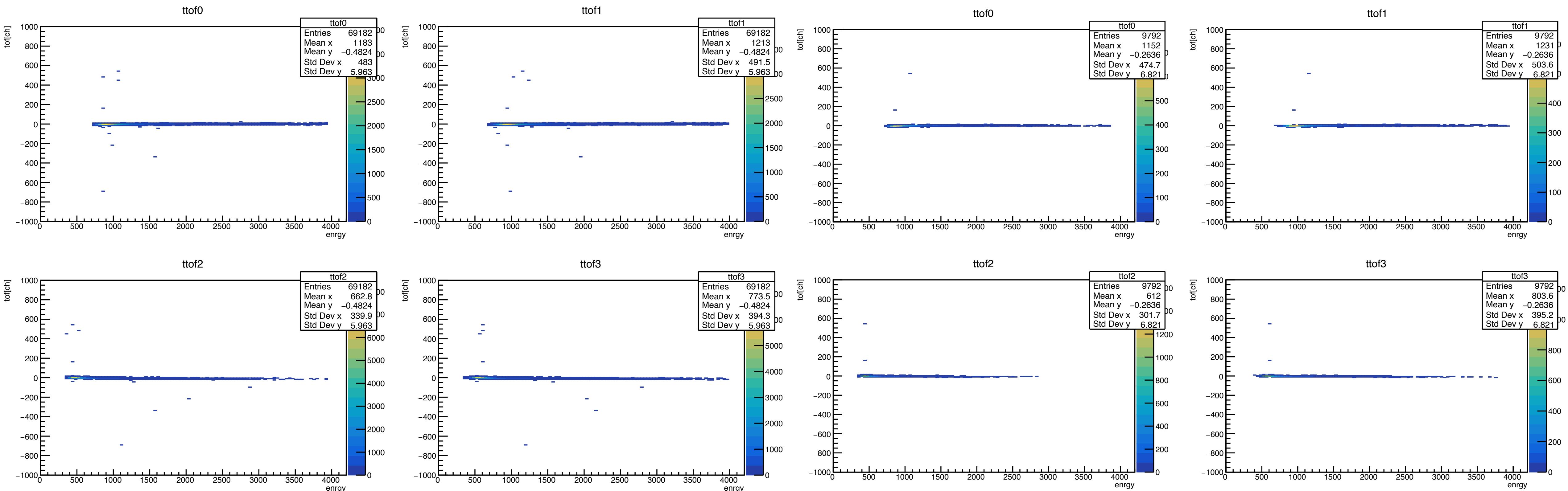
$$efficiency(x) = \frac{adc\ cut\ & \ tdc\ cut\ (for\ x)}{adc\ cut\ & \ tdc\ cut\ (except\ for\ x)\ & \ finger\ cut}$$

ch	trig1	trig2L	trig2R	ref1L	ref1R	ref2L	ref2R	cnc1L	cnc1R	cnc2L	cnc2R
efficiency	0.9994	0.9996	1.0000	0.9928	0.9999	0.9985	0.9999	0.9973	0.9942	0.9973	0.9943

ref1-ref2

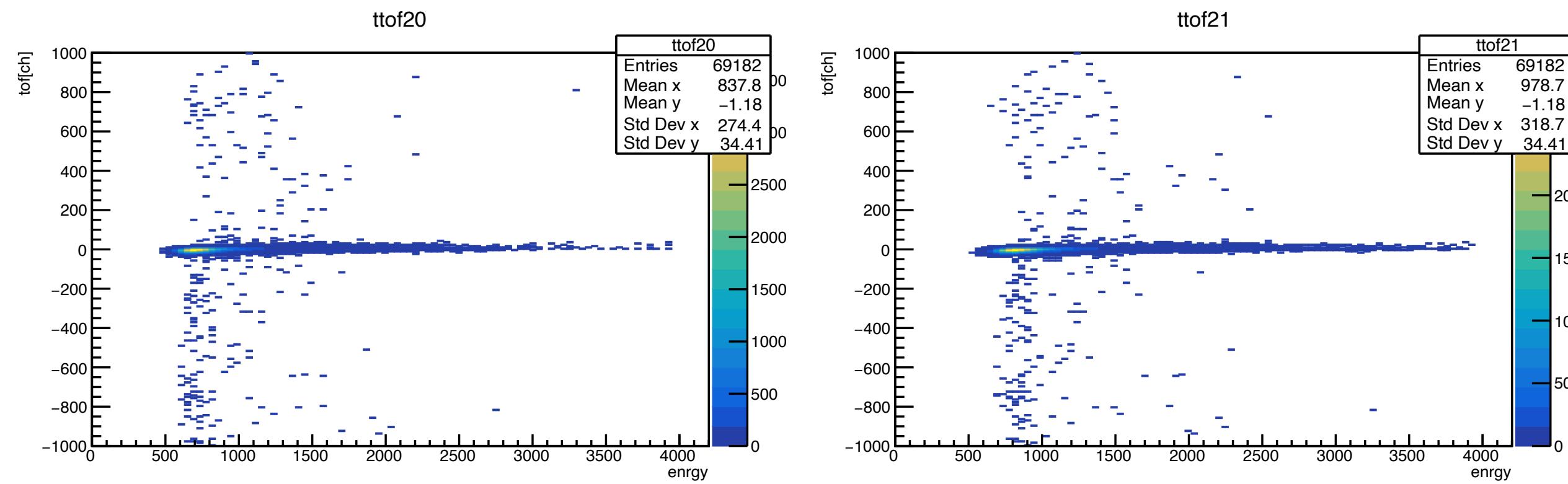
No “finger cut”

“finger cut”

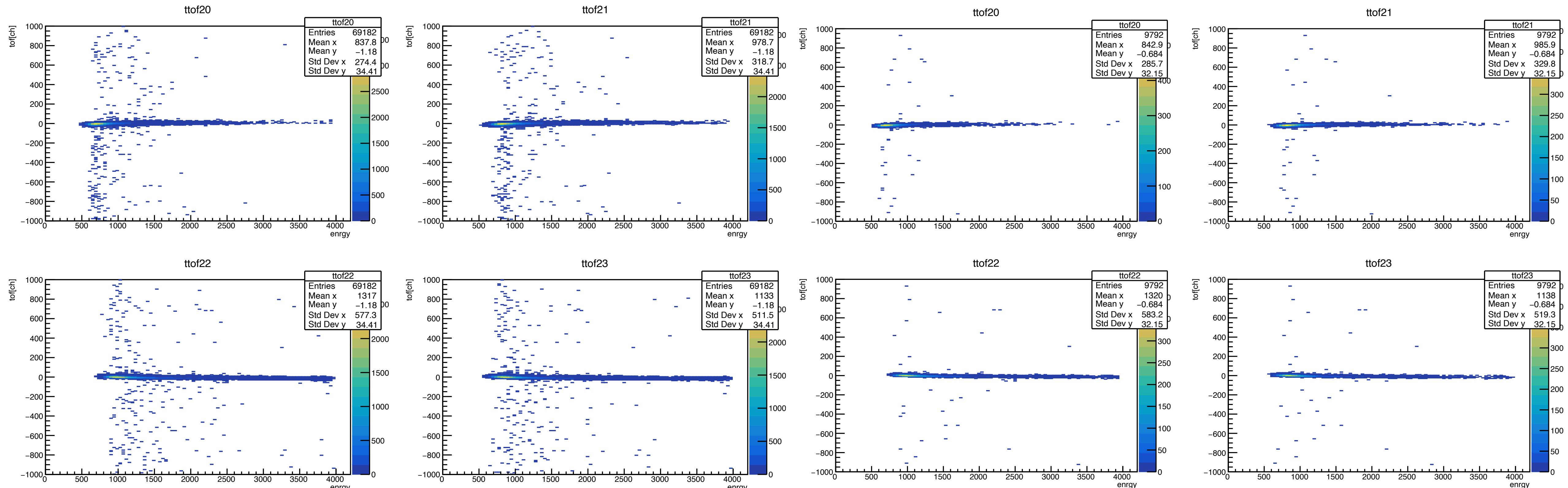


cnc2-cnc1

No “finger cut”

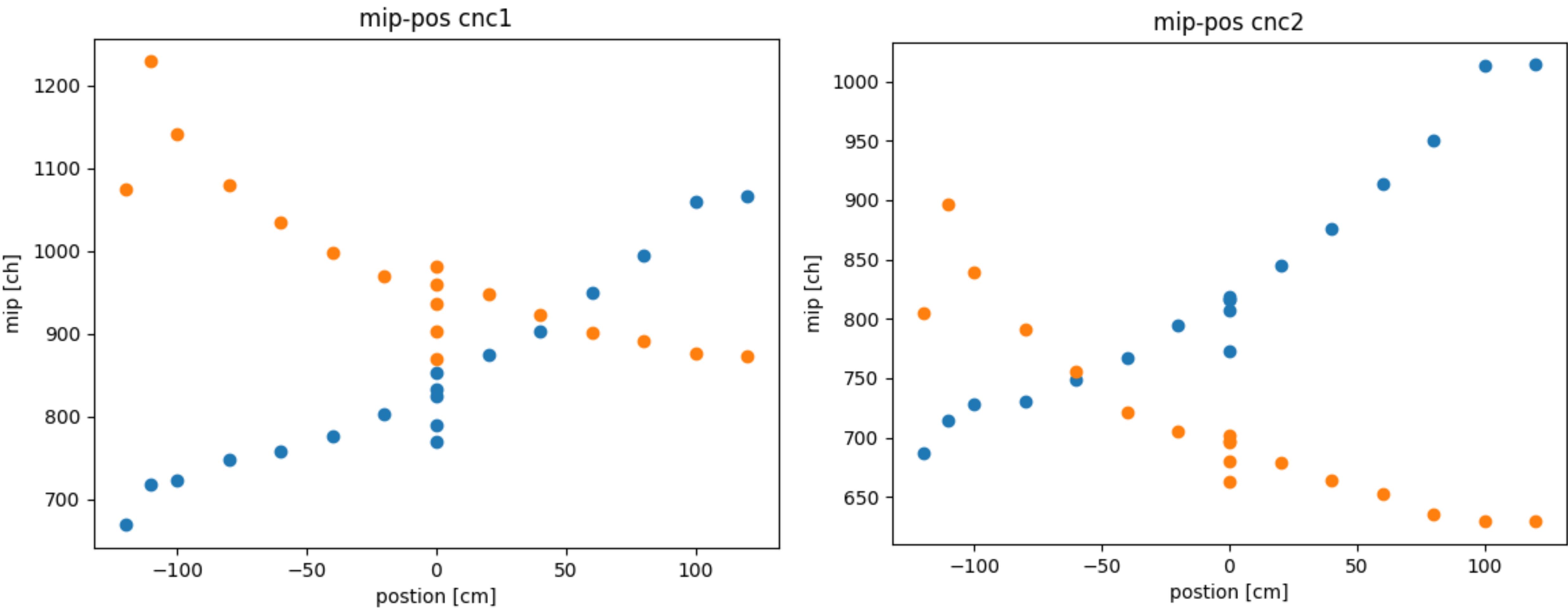


“finger cut”



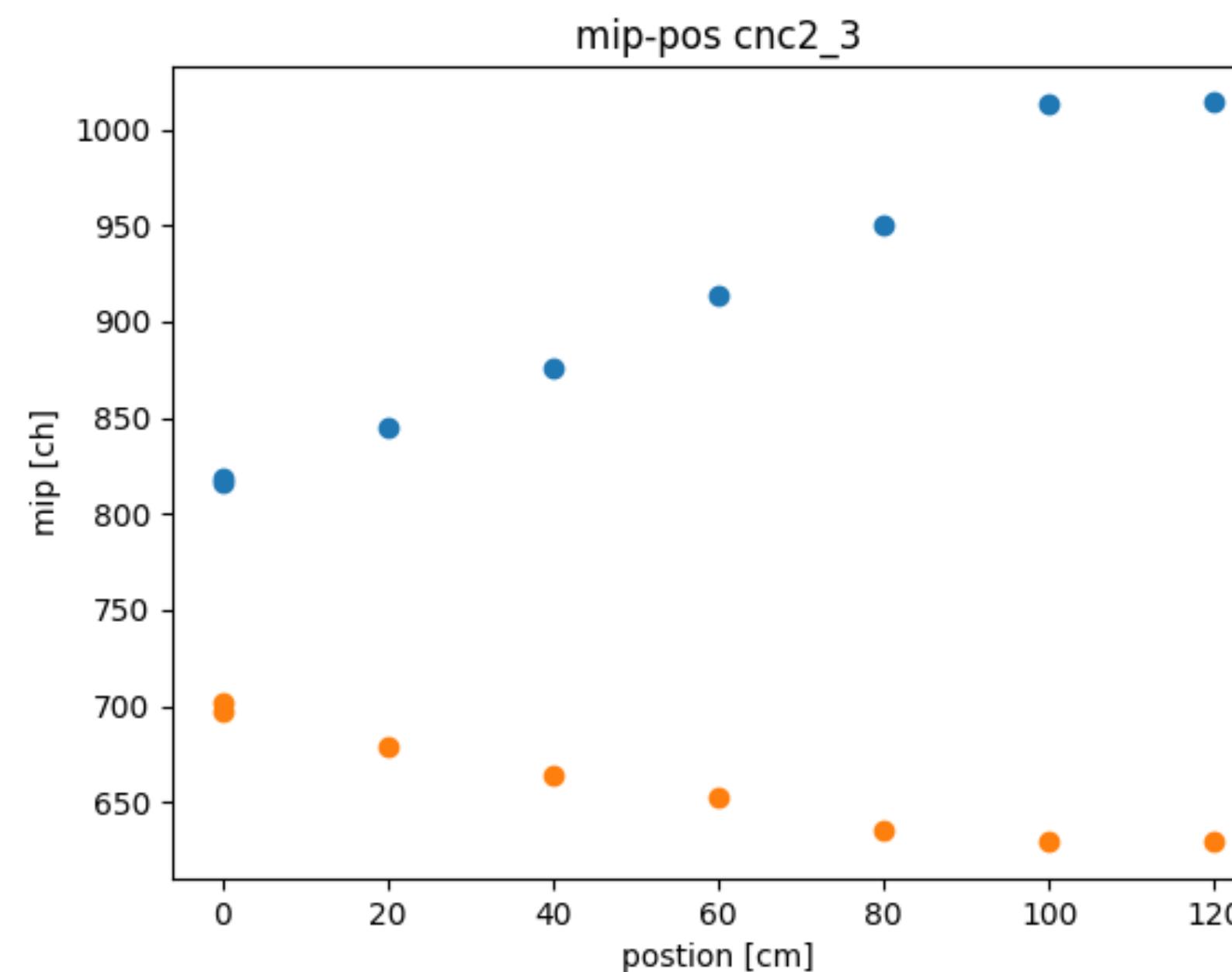
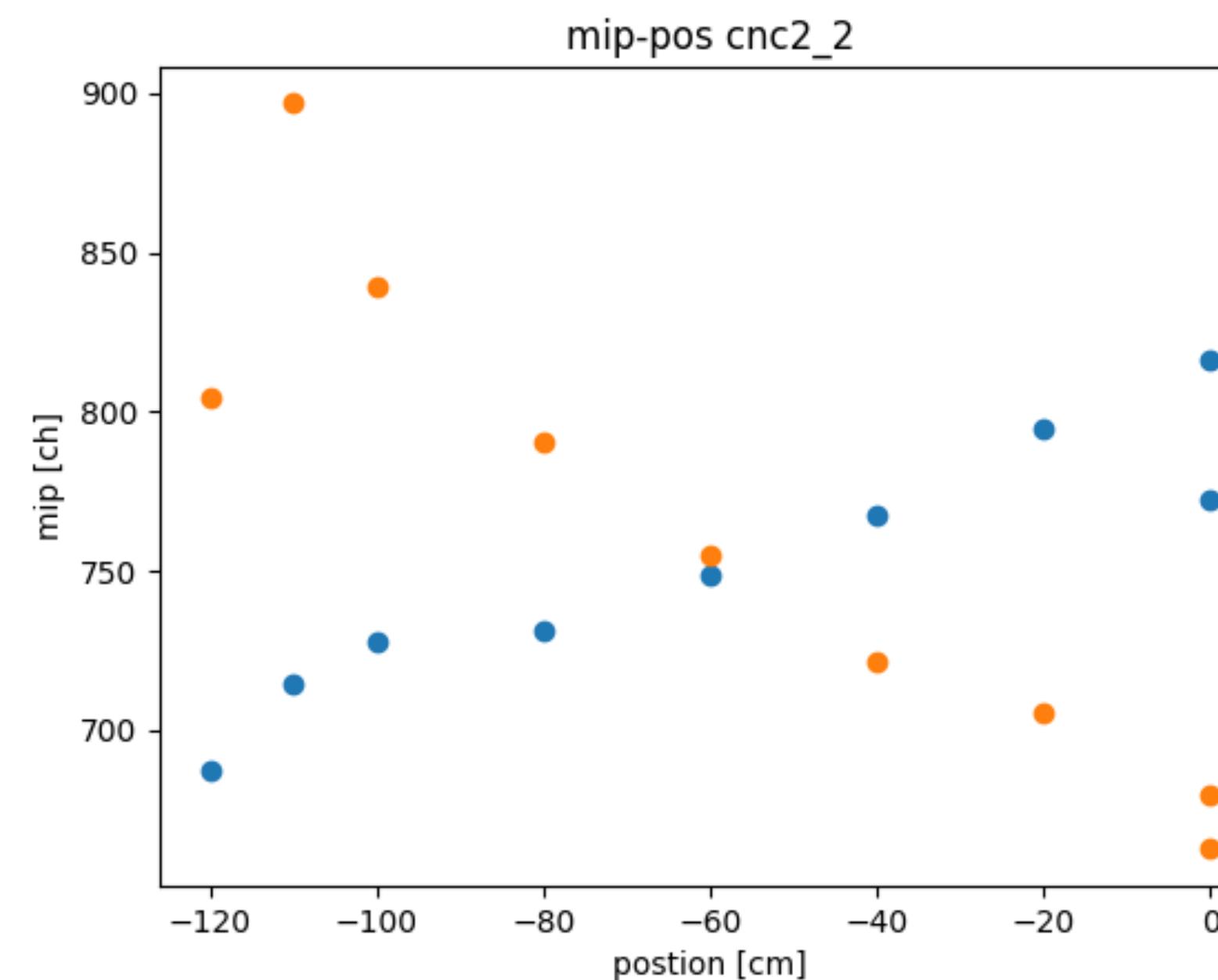
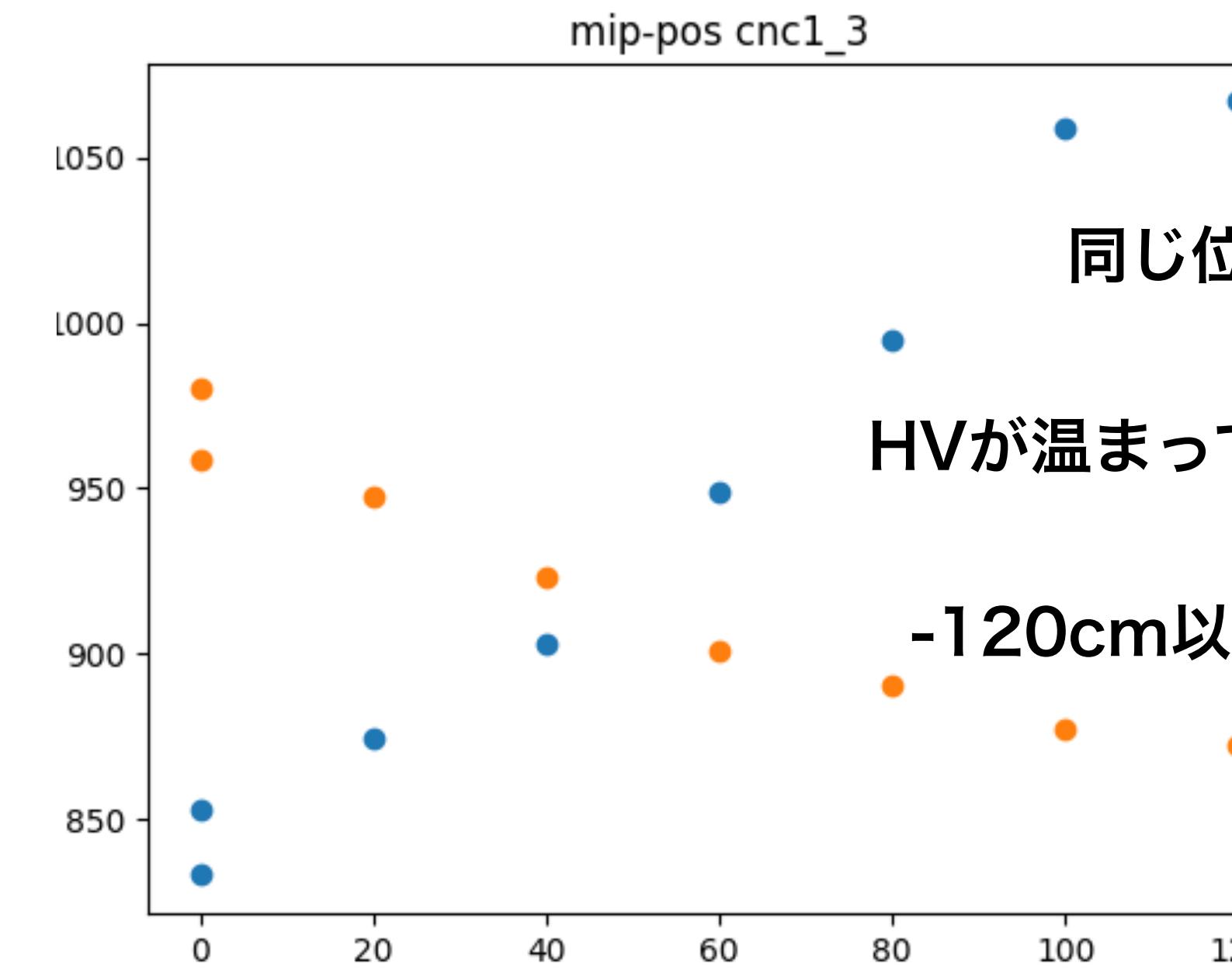
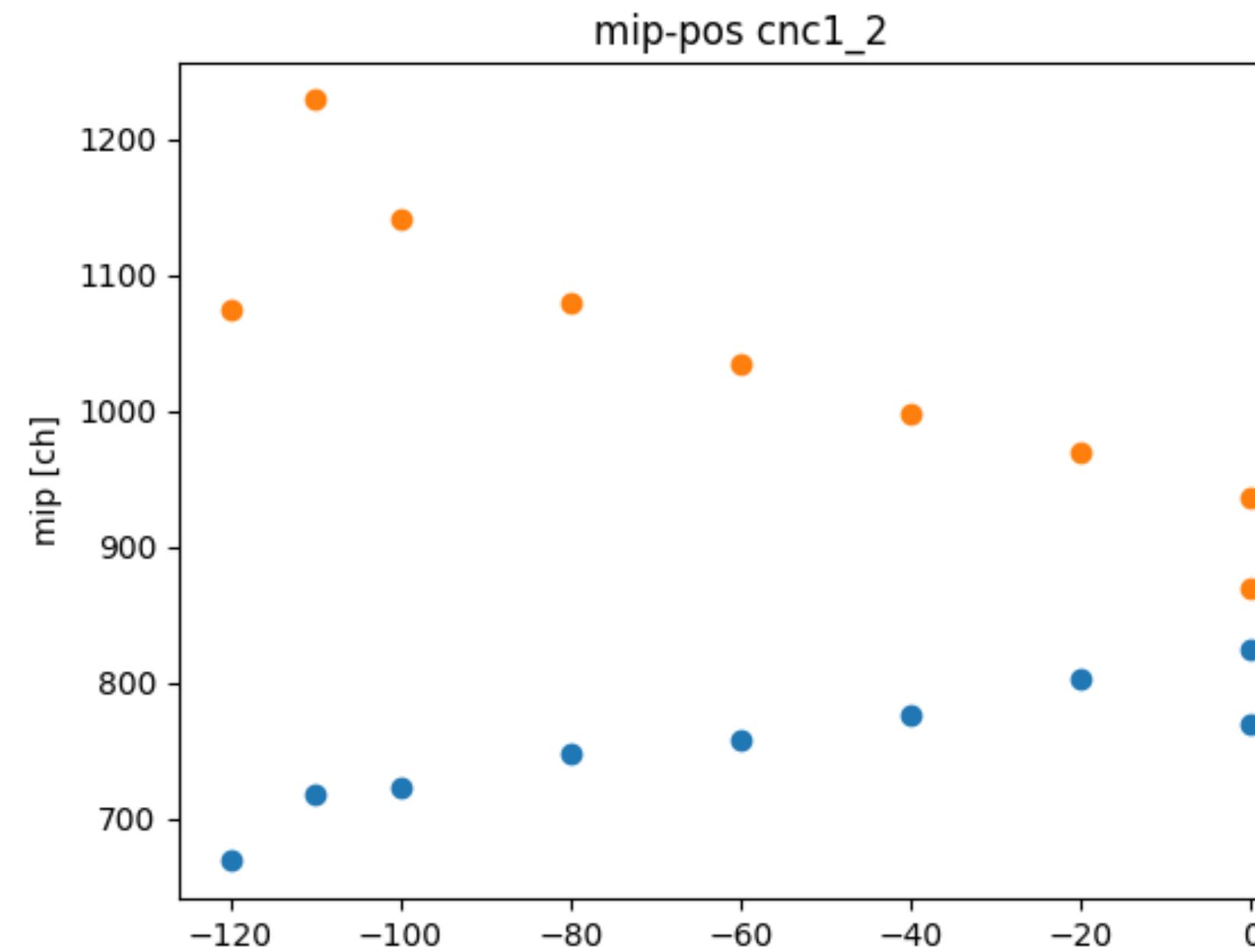
finger hitを要求することでtofのノイズをさらに減らせる。

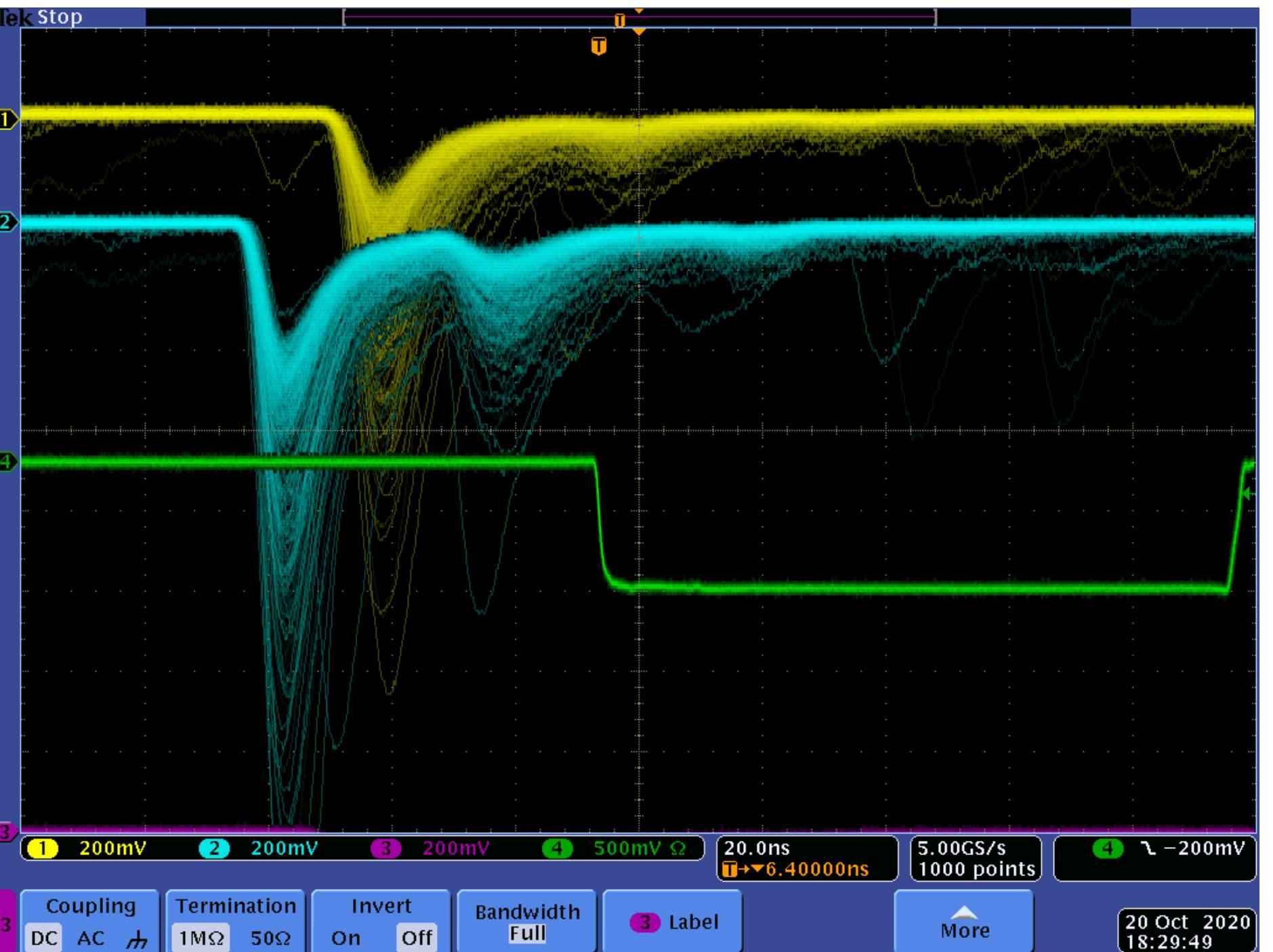
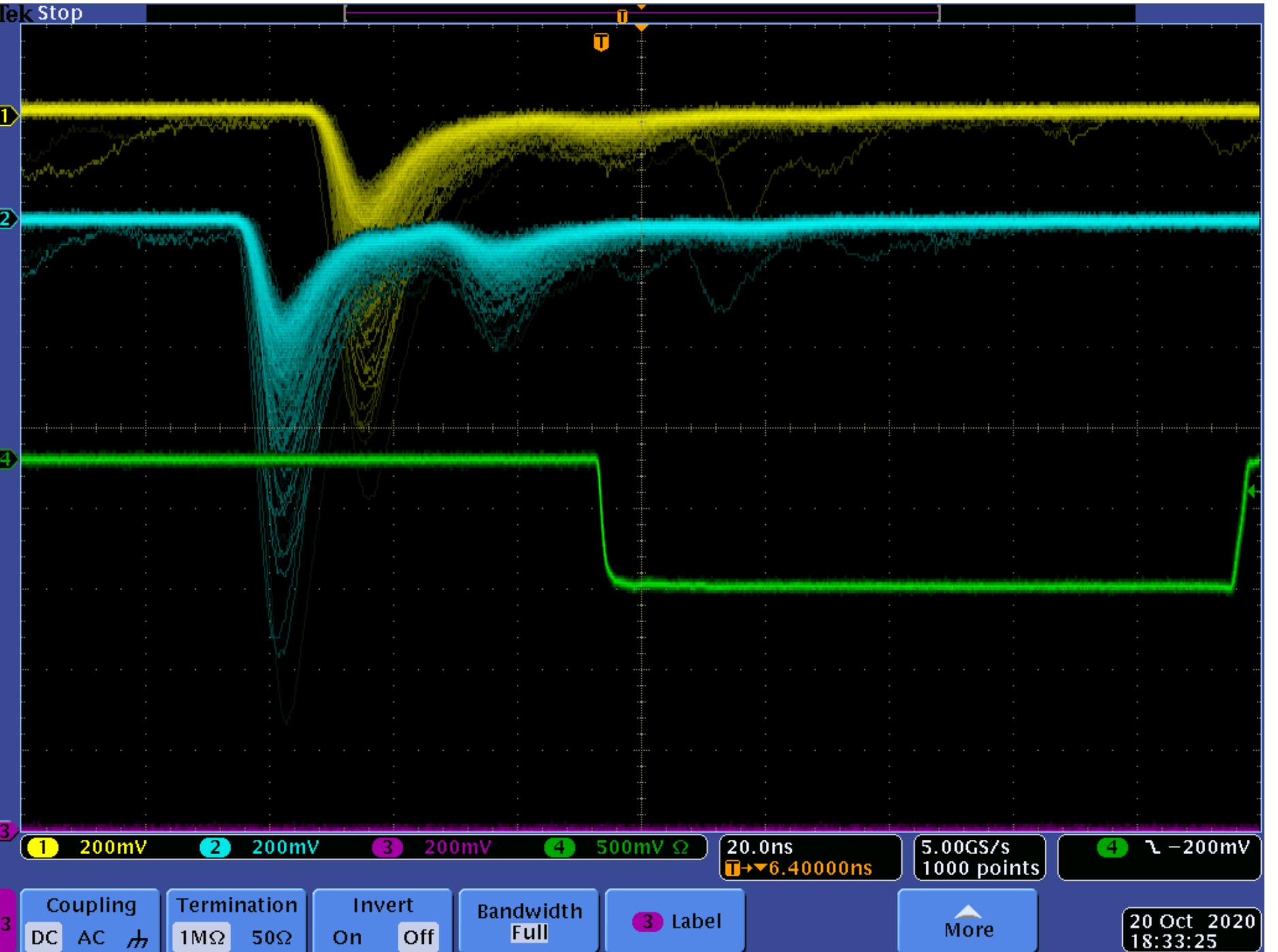
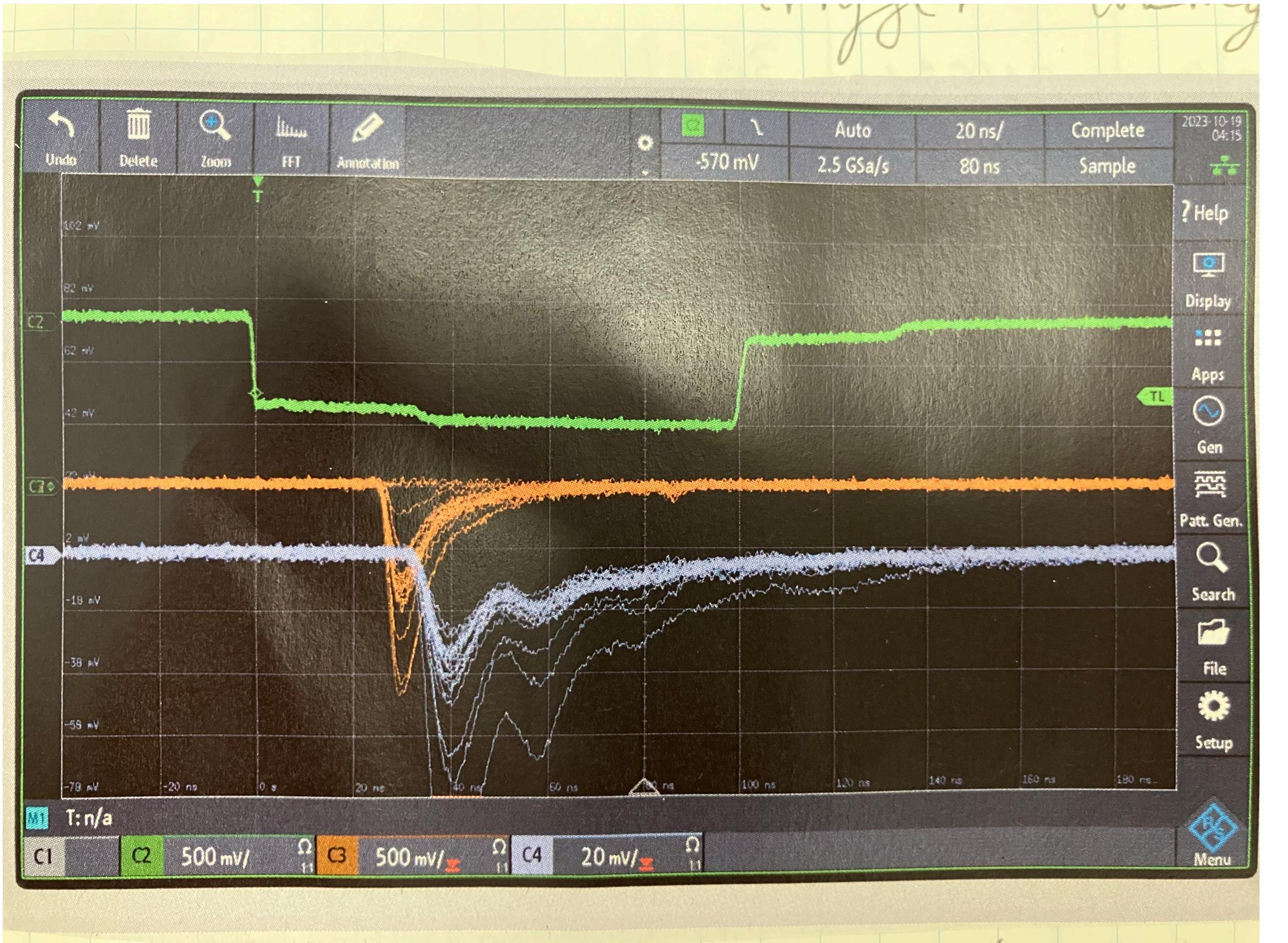
mip (gain) と位置の関係



(Pos) (cnc1L mip,sigma) (cnc1R mip,sigma)…

-120 668.8 83.8 1074 103 687.2 73.4 804.8 71.3 (run00024)
-110 717.8 90.5 1229 112 714.3 77.2 896.9 82.9 (run00025)
-100 722.8 90.6 1141 119 727.6 86.6 839 81.7 (run00027)
-80 747.3 99.1 1080 99 731.0 83.9 790.6 83.2 (run00029)
-60 757.8 97.2 1035 111 748.8 81.4 755.2 75.8 (run00030)
-40 777.0 98.0 997.2 102.3 767.5 79.0 721.7 70.1 (run00031)
-20 802.4 100.3 970.1 99.4 794.8 86.7 705.2 78.1 (run00032)
0 789.9 94.2 902.8 96.7 806.9 87.0 696.0 73.7 (run00022) (original)
0 769.4 89.6 869.7 88.8 772.7 81.5 662.7 65.3 (run00023) (forward-backward swap)
0 825.2 101.7 935.6 88.8 816.0 98.0 680.0 70.9 (run0034) (return)
0 833.1 102.9 959.0 106.6 816.1 92.6 696.7 72.9 (run00035) (left-right swap)
0 853.0 112.2 980.6 102.5 818.5 78.8 701.3 73.1 (run00048) (return)
20 874.2 112.3 947.4 100.9 844.9 91.1 679.0 83.2 (run00046)
40 903.2 108 922.9 99.0 876.0 104.0 663.8 69.7 (run00044)
60 949.0 120.7 900.9 104.1 913.5 96.7 652.3 68.0 (run00042)
80 994.9 114.8 890.6 89.9 950.0 87.1 635.2 65.8 (run00040)
100 1059 115 876.9 95.4 1013 98.6 629.2 61.8 (run00039)
120 1067 130 872.6 98.3 1014 115 629.3 71.0 (run00038)





今後の予定

1. ペデスター、tdc offsetなど、解析に必要な値は揃ったので、まずは先ほどの
ようなカット条件でslewing correctionをして時間分解能を出す。(~今週)
2. gain-pos関係の考察をする。(~今週)
3. Light Guideの長さ依存性の解析に取りかかる。(~今週)
4. 12月にあるsnp schoolでの発表内容も考えなければならない。(このテスト実験
の内容から。 (全部は厳しそう。))