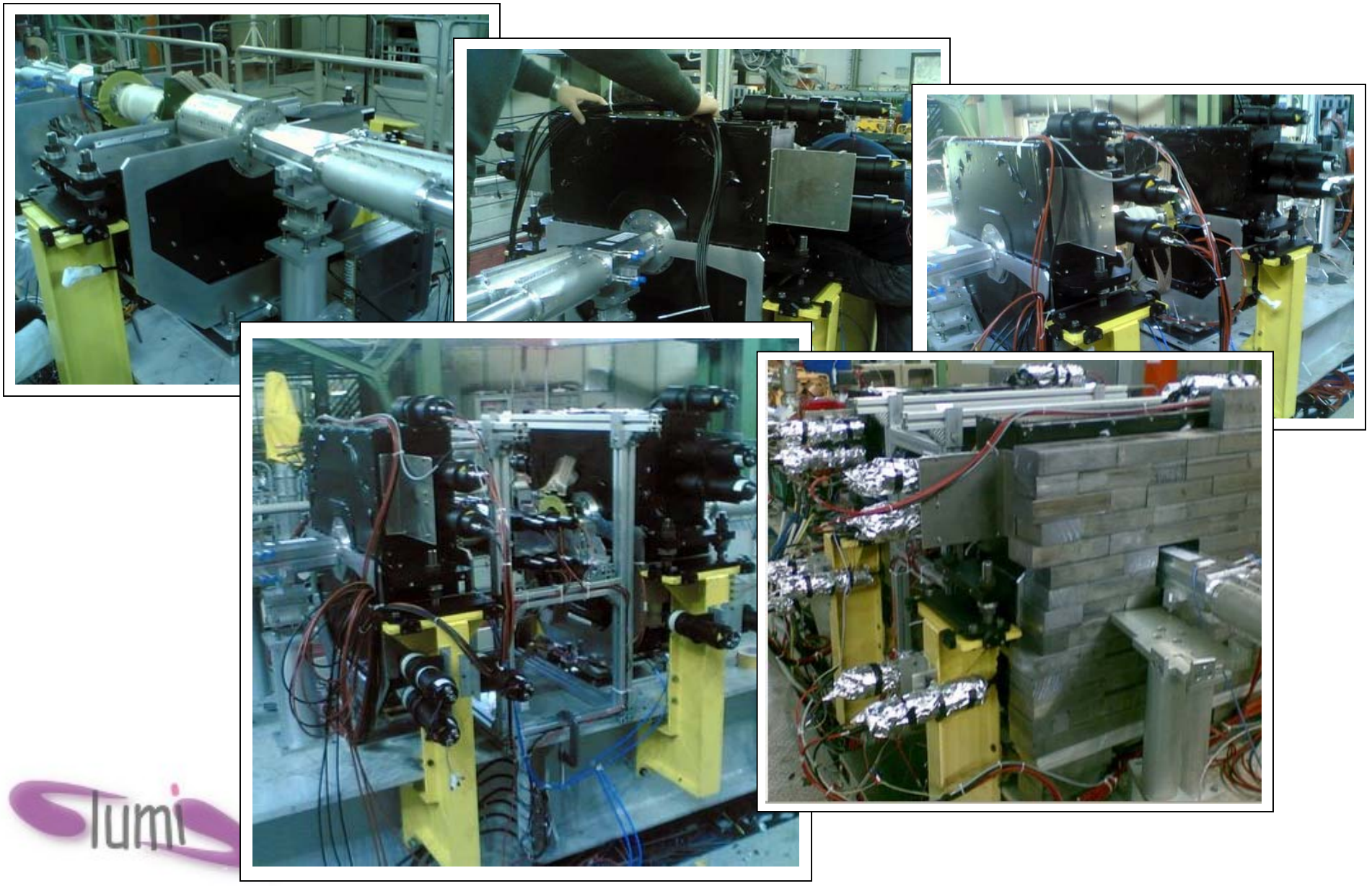
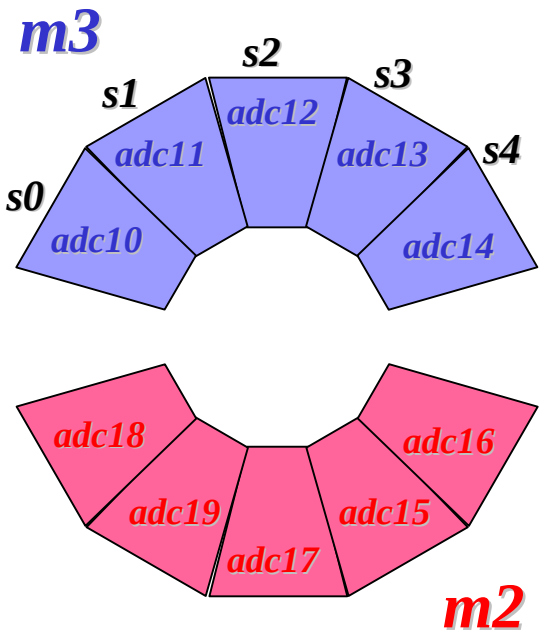
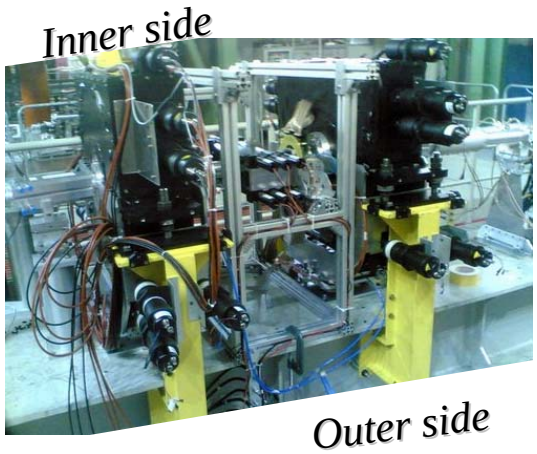
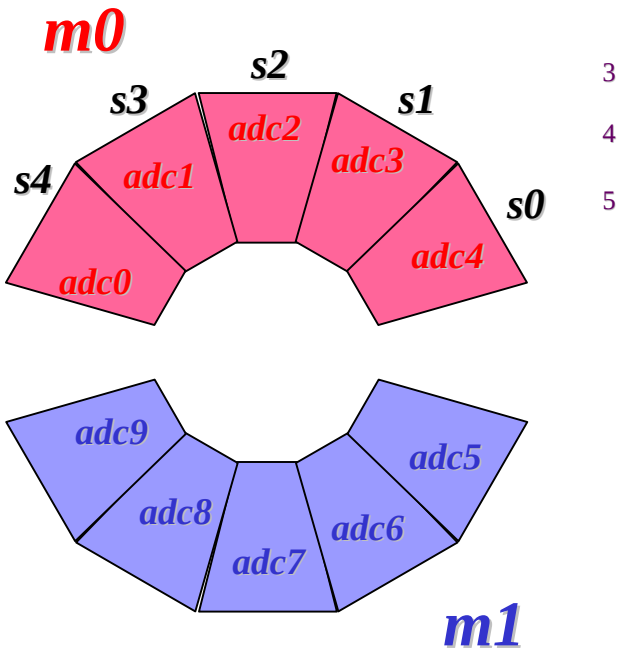
Calo LUMI – Feb. 2008

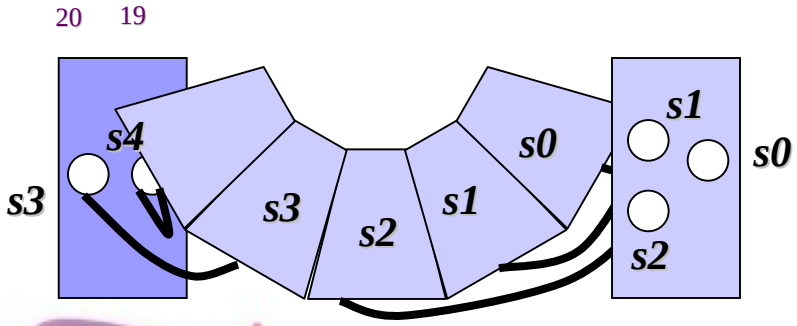


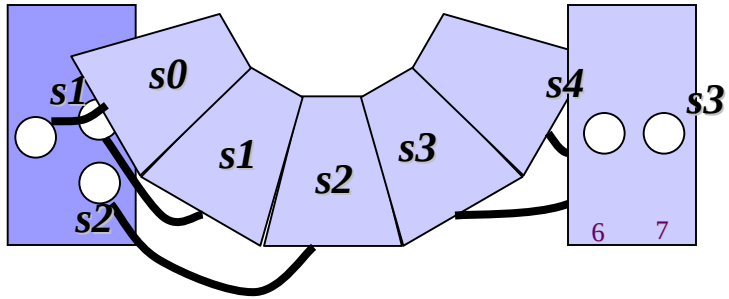
Maps!


m3
s0
s1
s2
s3
s4
adc10
adc11
adc12
adc13
adc14
adc18
adc19
adc17
adc15
adc16
m2

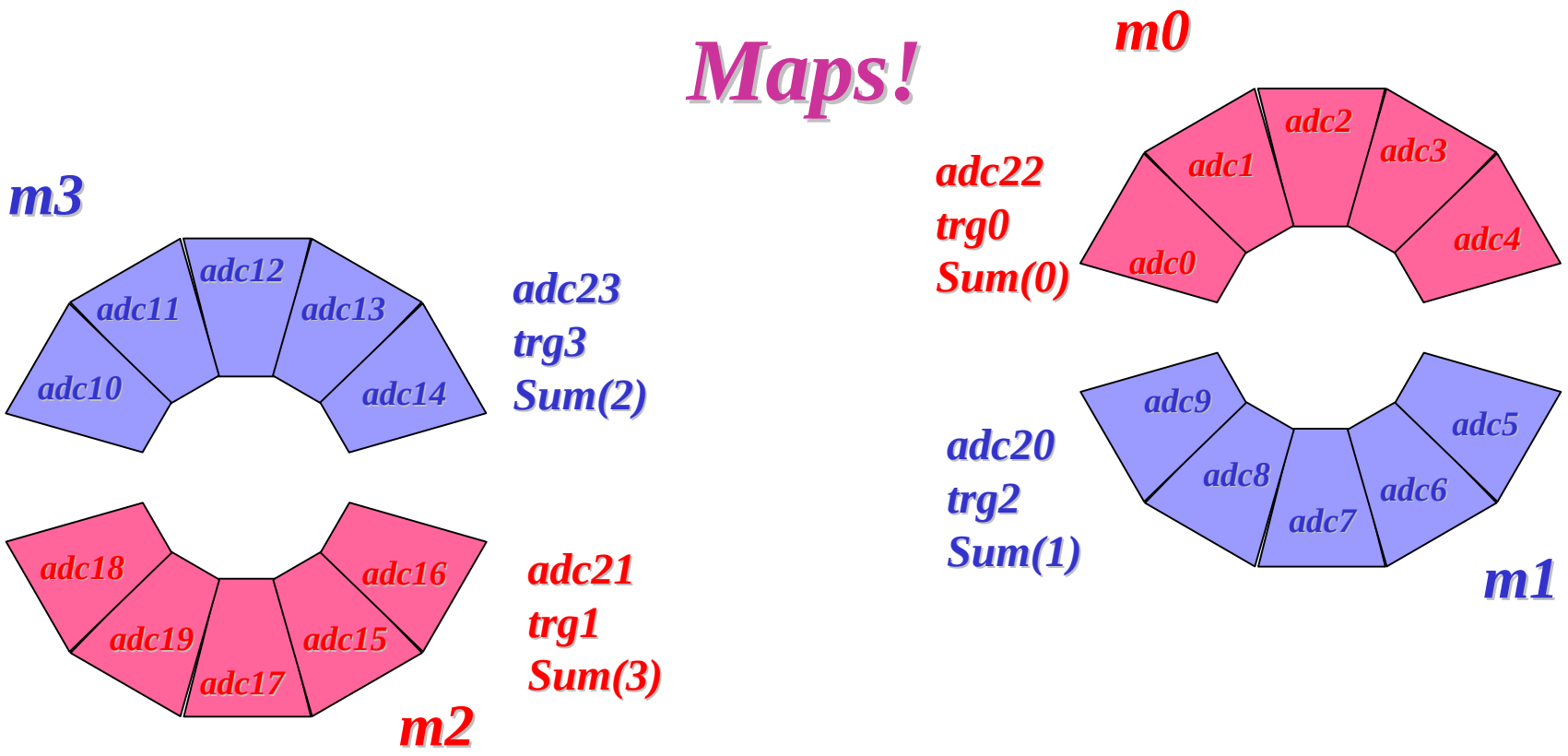

Inner side
Outer side


m0
s0
s1
s2
s3
s4
adc0
adc1
adc2
adc3
adc4
adc9
adc8
adc7
adc6
adc5
m1

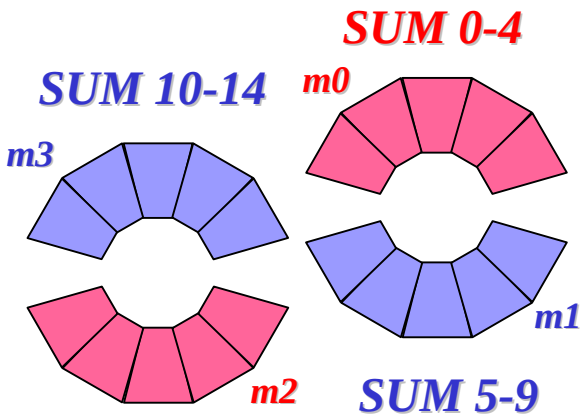

s0
s1
s2
s3
s4


s0
s1
s2
s3
s4

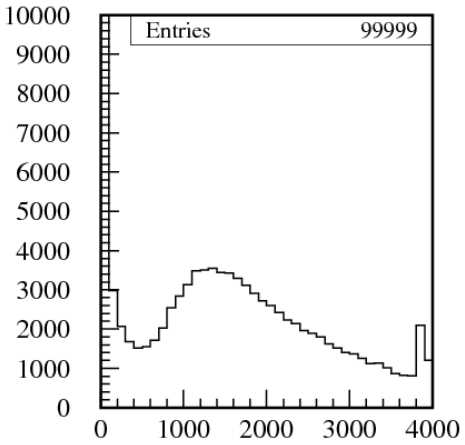
Maps!


m0
adc22
trg0
Sum(0)
adc0
adc1
adc2
adc3
adc4
adc20
trg2
Sum(1)
adc9
adc8
adc7
adc6
adc5
m1
m3
adc23
trg3
Sum(2)
adc10
adc11
adc12
adc13
adc14
adc21
trg1
Sum(3)
adc18
adc19
adc17
adc15
adc16
m2

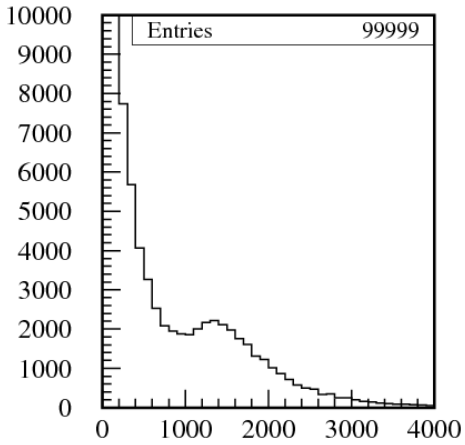
Module sums



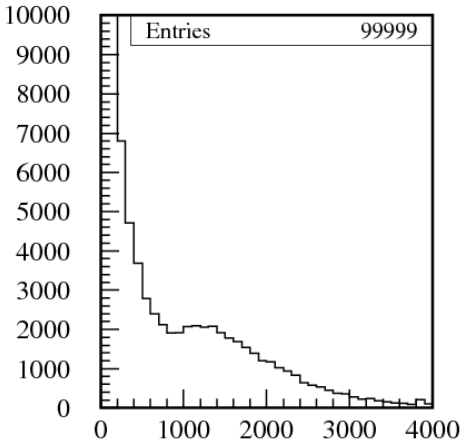
run 1084



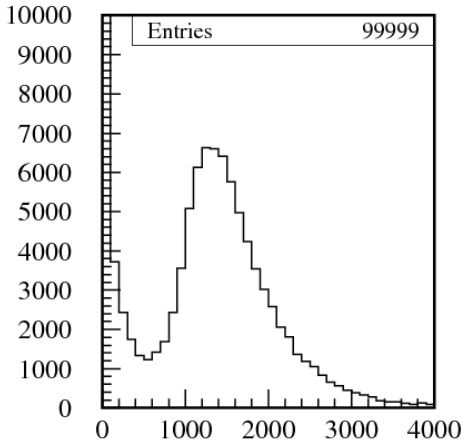
SUM 0-4



SUM 5-9

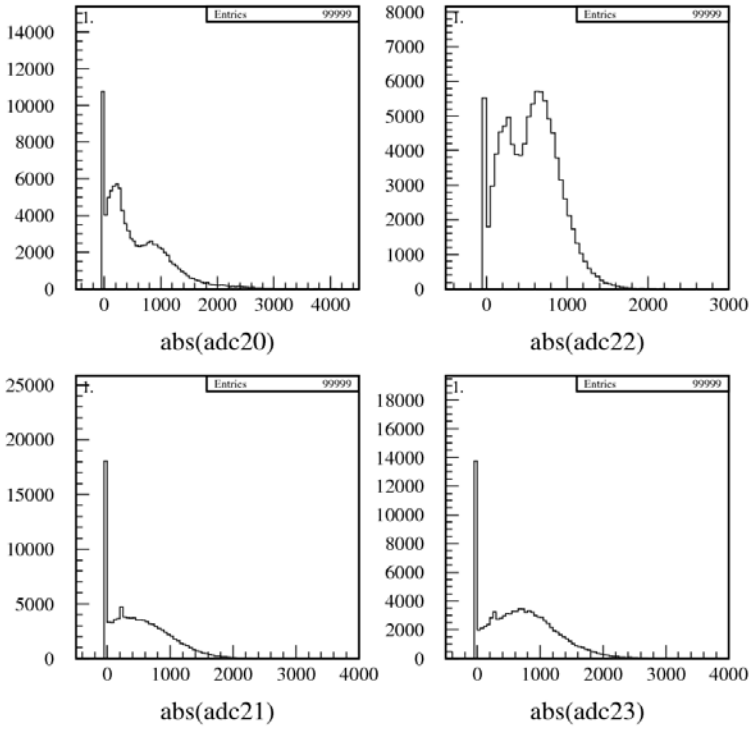


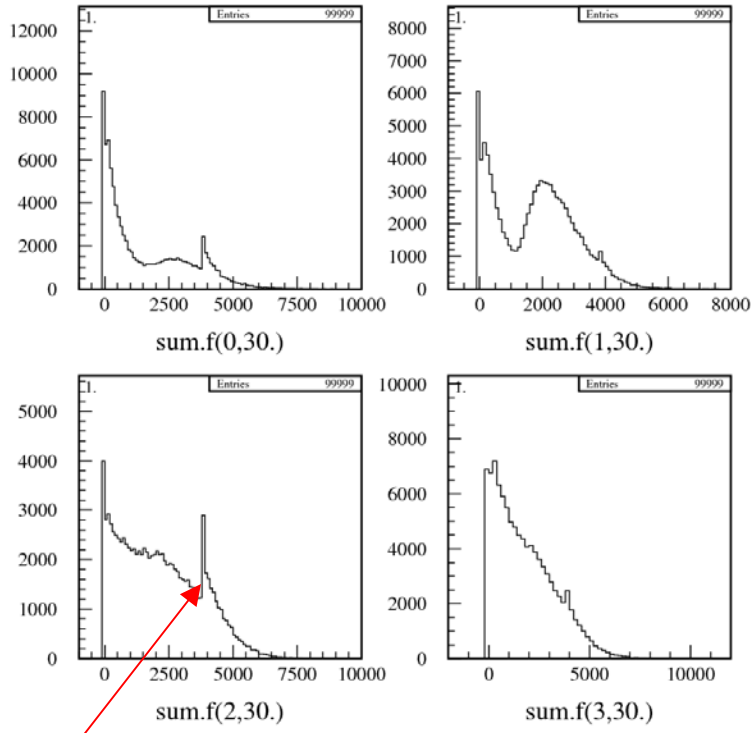
SUM 10-14



SUM 15-19

Module sums



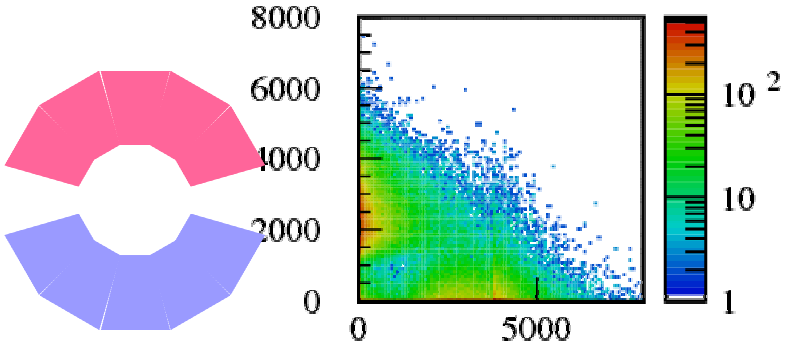


Analog sum of sectors

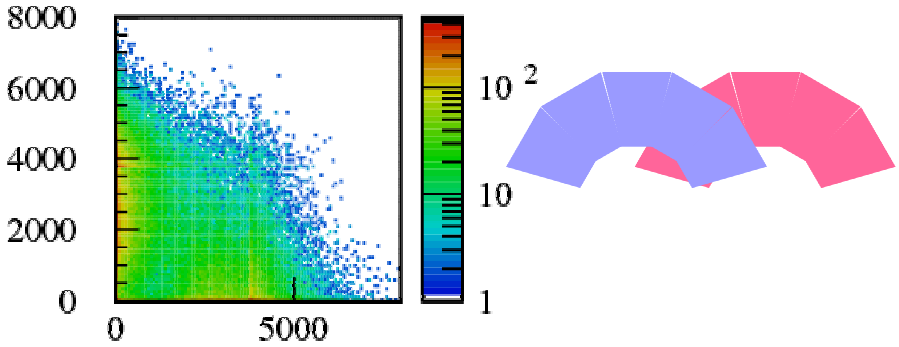
Sum of sectors (software)

Adc overflows… fixed

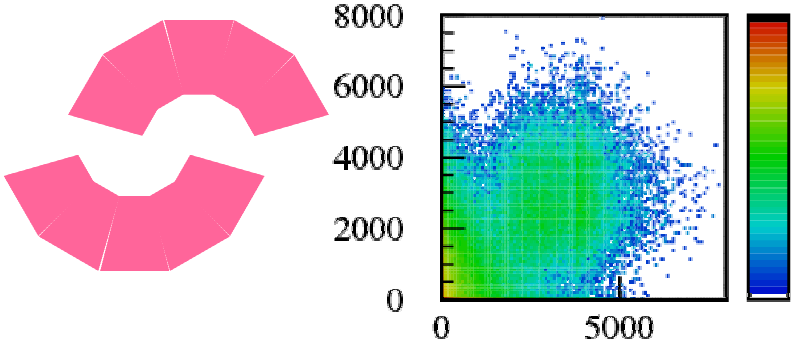
run 1101



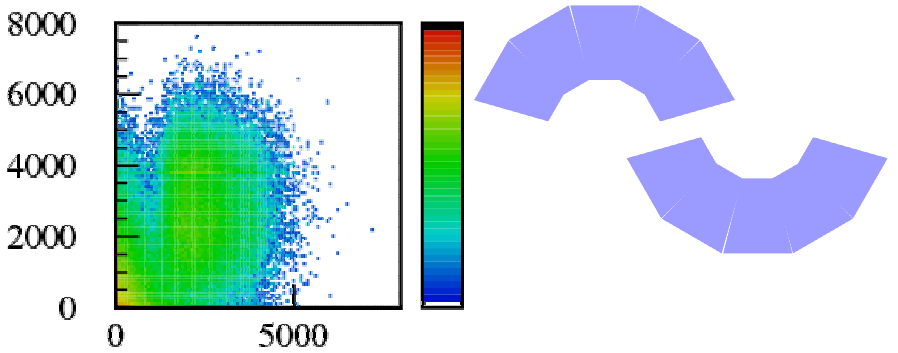
5-9 vs 0-4



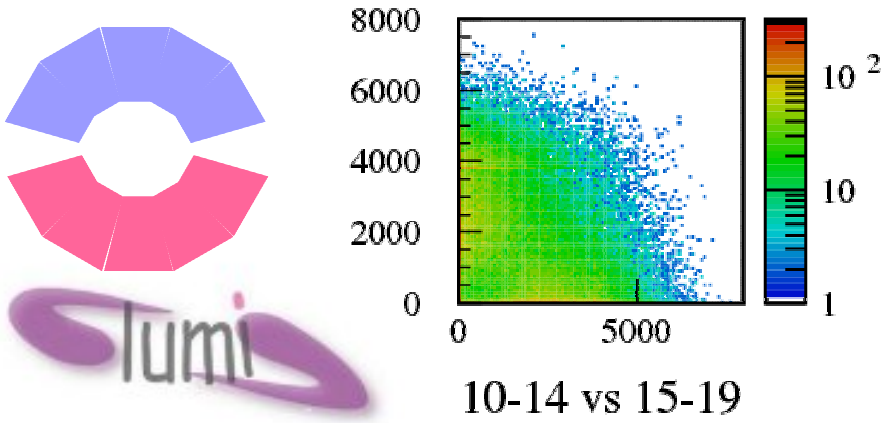
10-14 vs 0-4



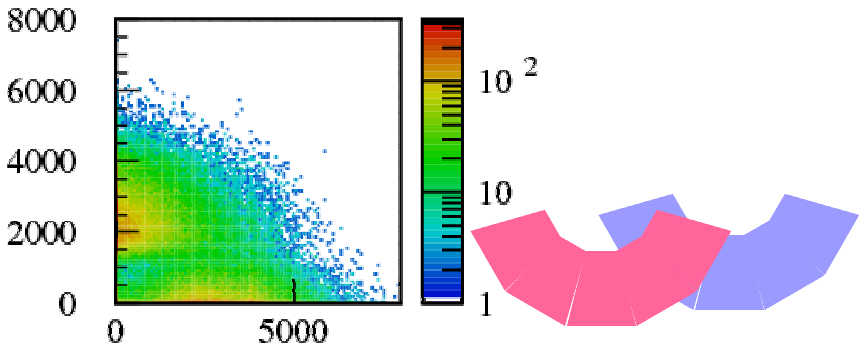
15-19 vs 0-4



10-14 vs 5-9

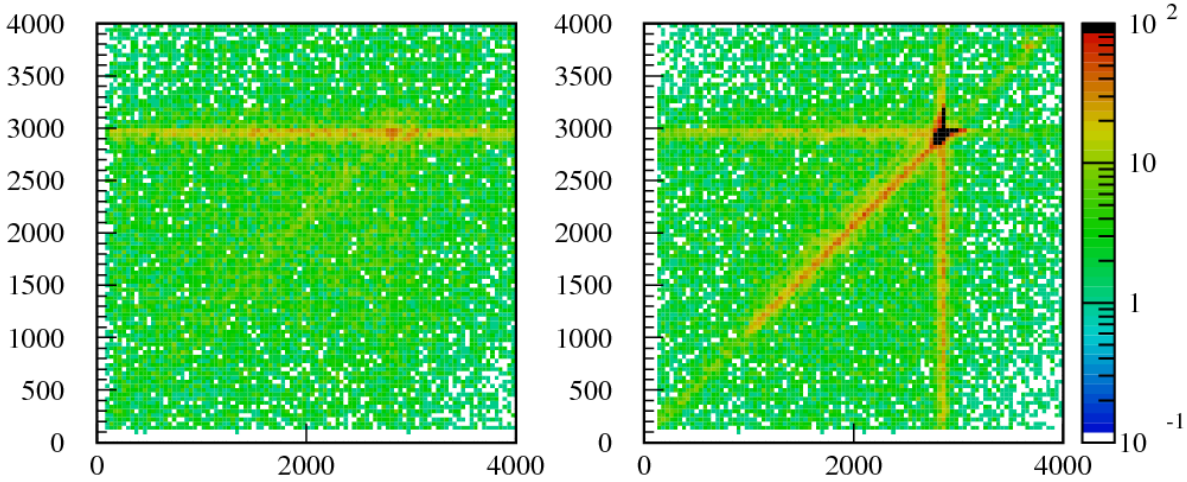


10-14 vs 15-19



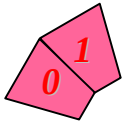
5-9 vs 15-19

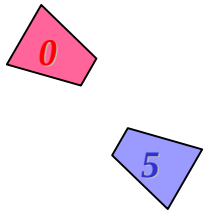
t correlations

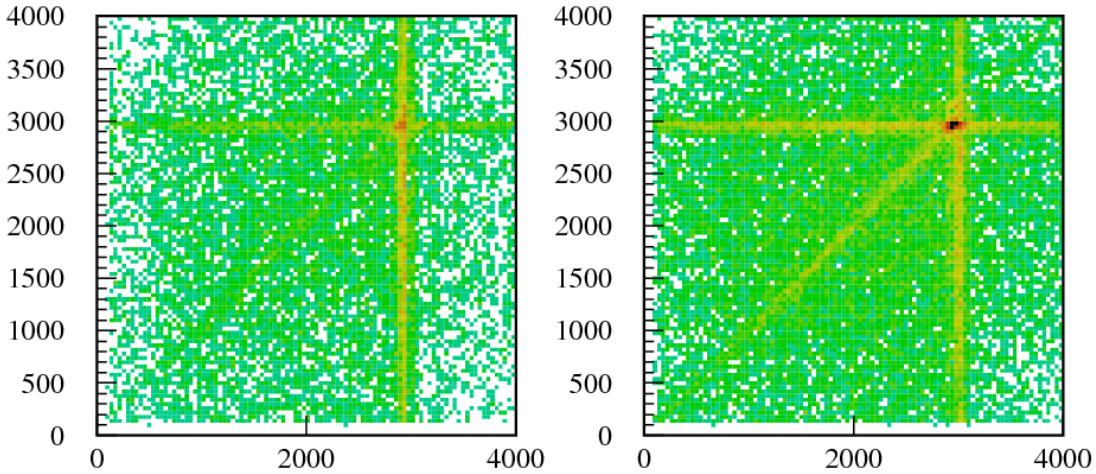


t0 vs t4

t0 vs t1

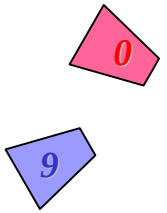




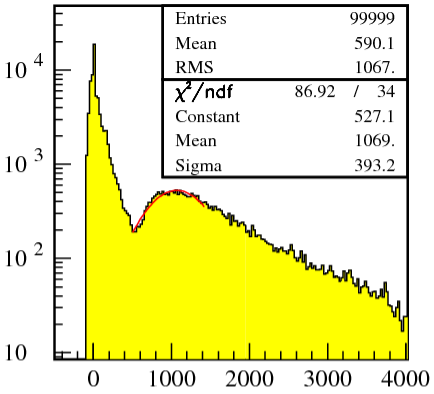


t0 vs t5

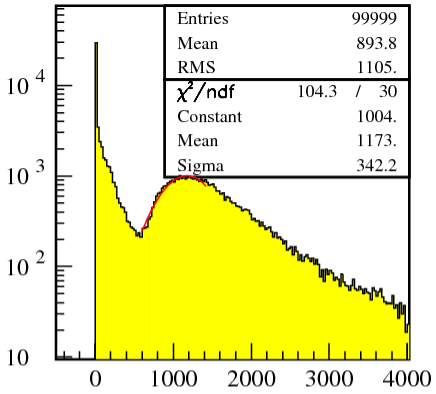
t0 vs t9



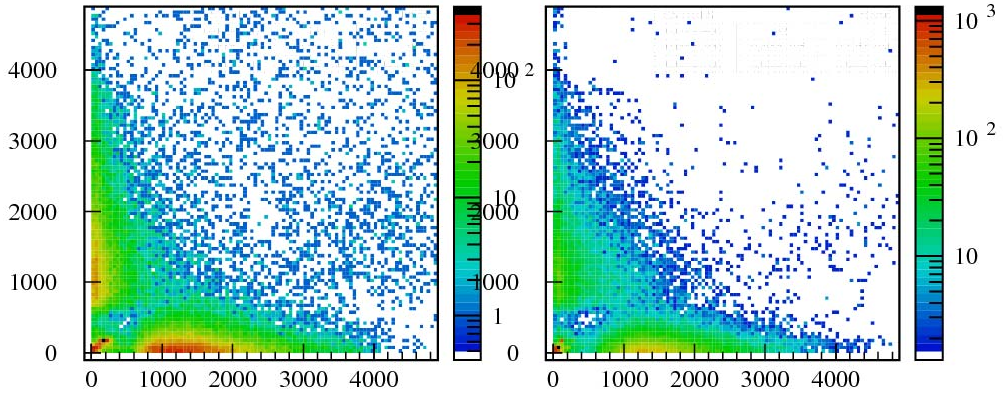
After trigger adjustments…



0=adc0+adc1+adc2+adc3+adc4

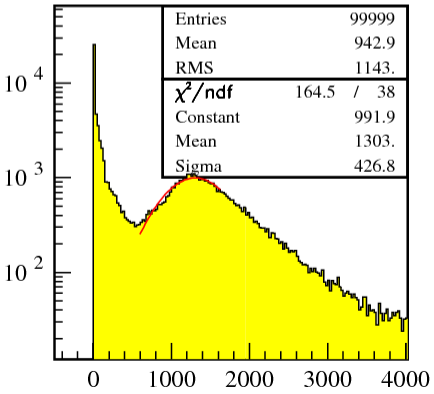


1=adc5+adc6+adc7+adc8+adc9

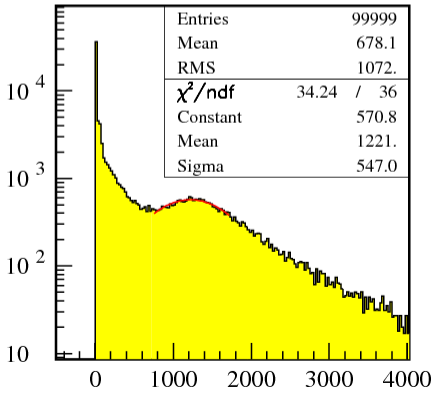


0 vs. 1

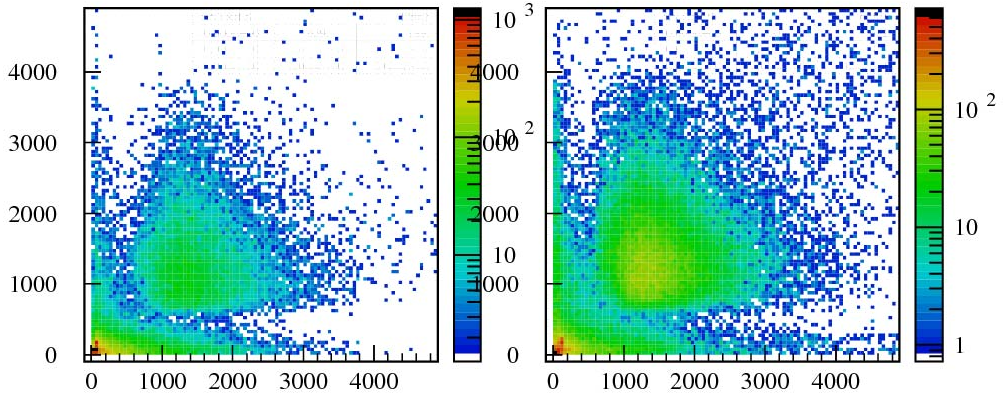
0 vs. 2



2=adc10+adc11+adc12+adc13+adc14



3=adc15+adc16+adc17+adc18+adc19



0 vs. 3

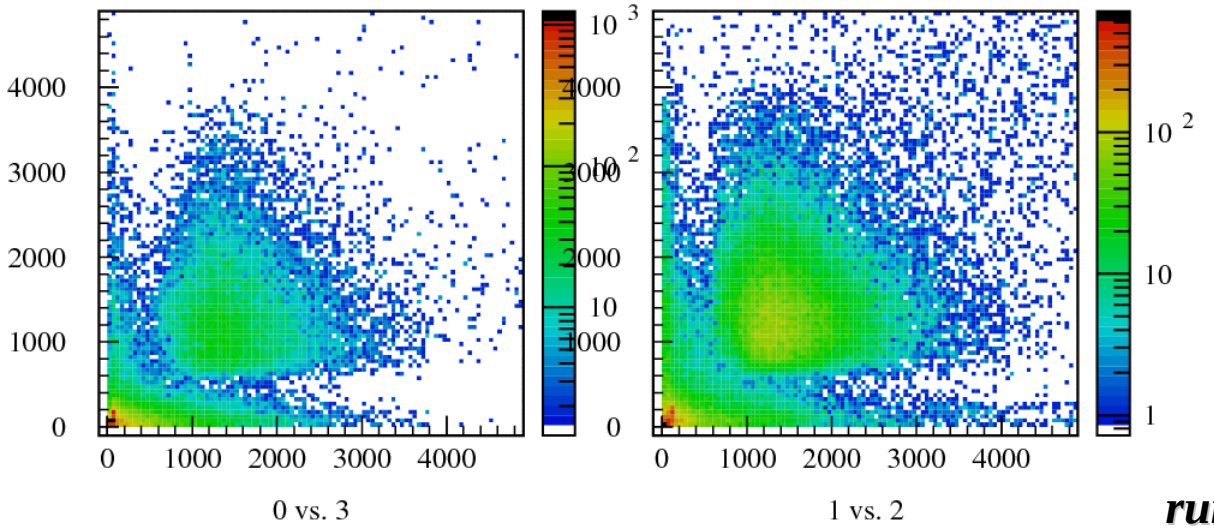
1 vs. 2

run 1166

<ped> subtracted, $3\sigma_{ped}$ cut

Sums

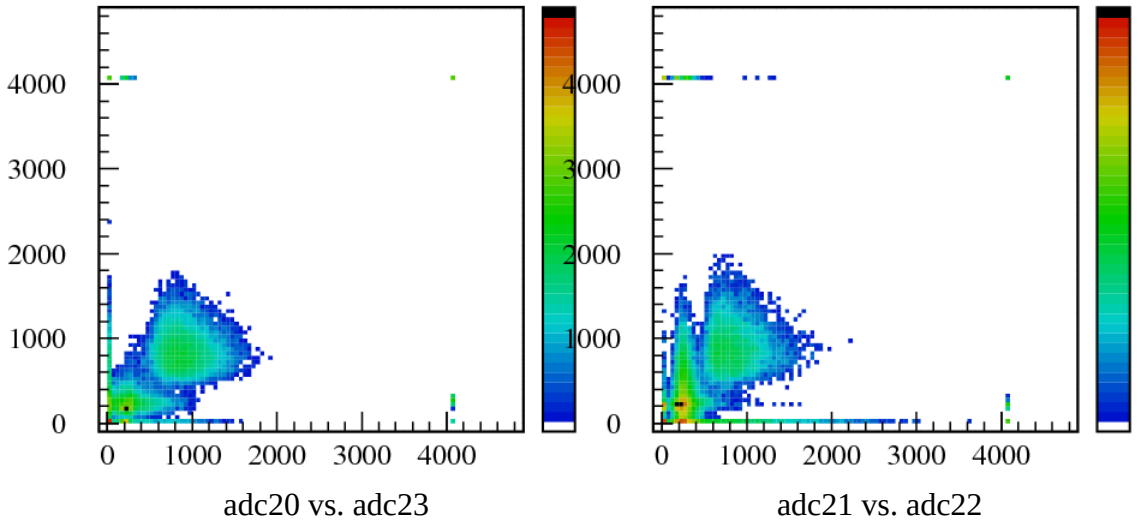
Software sums

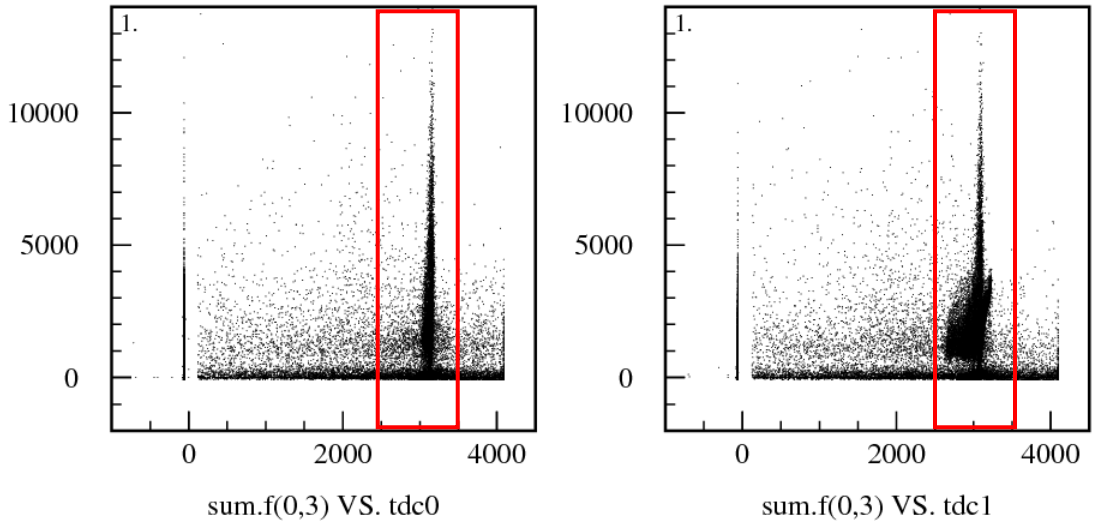


run 1166

Hardware sums

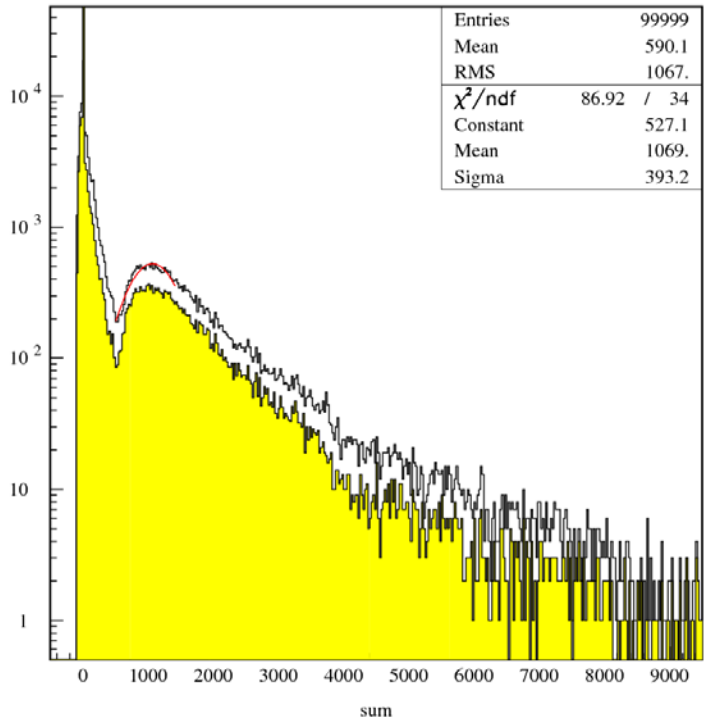
Factor 2 due to splitting of signals… OK

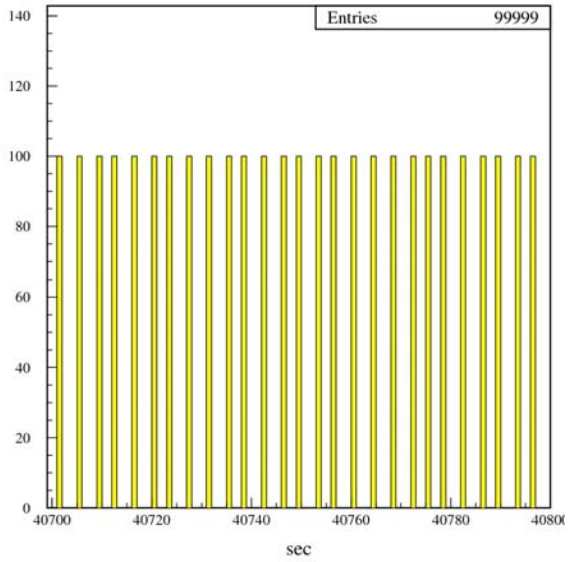




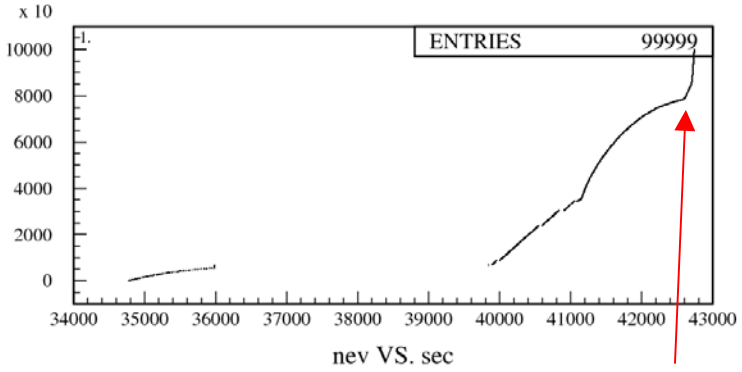
run 1166

Slightly improves cutting on TDC…





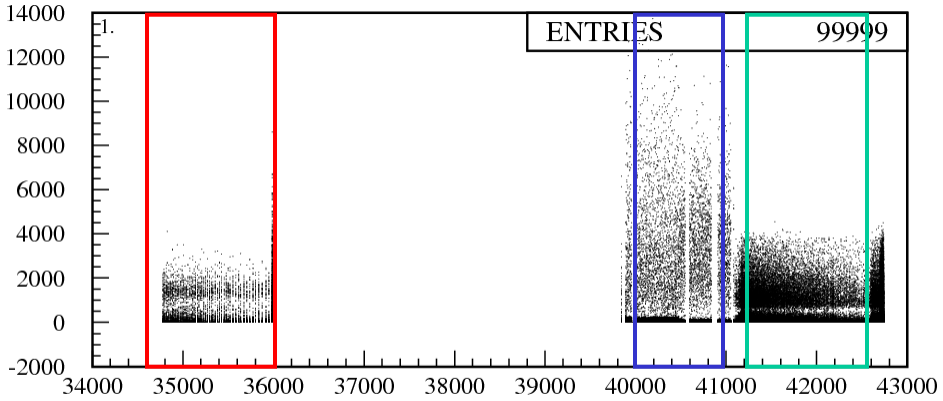
100 triggers in 3 or 4 seconds, i.e. ~30 Hz

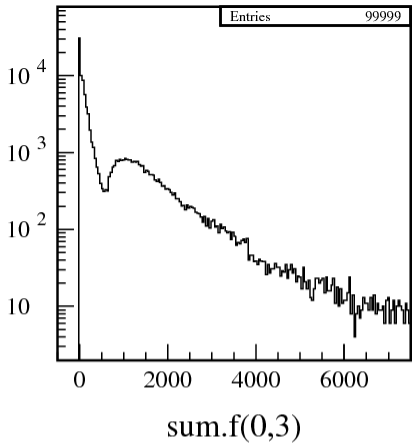


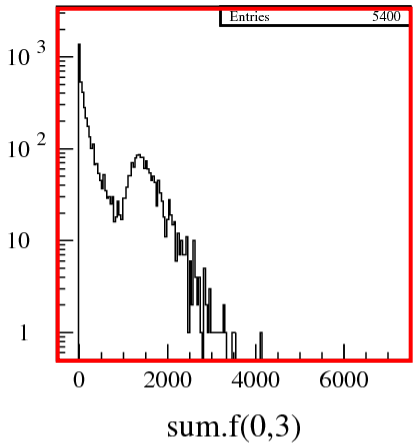
injection

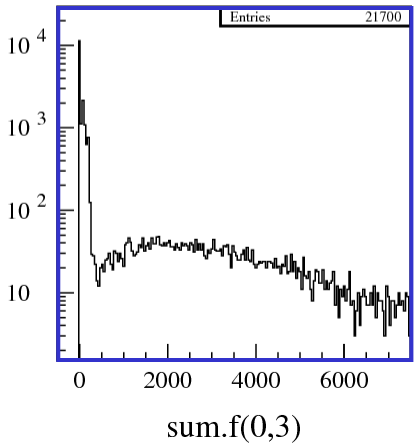
run 1166

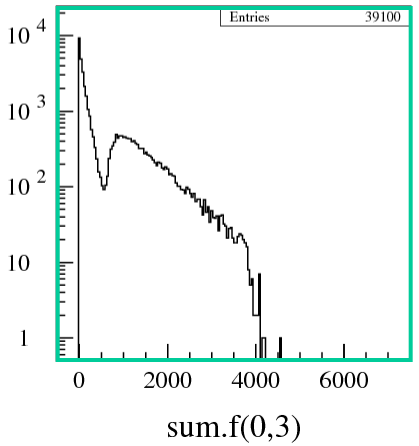
Very different conditions during the same run…



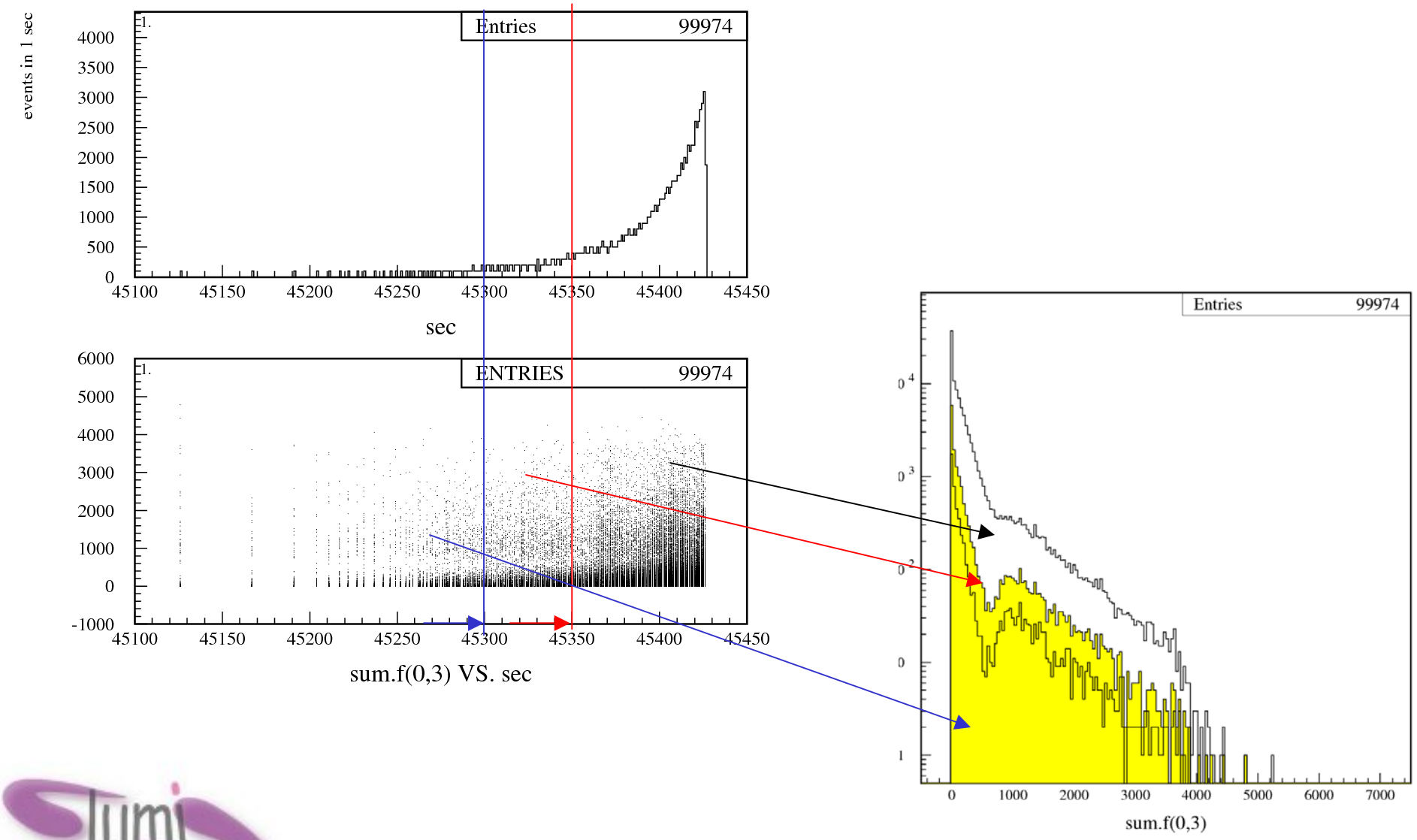






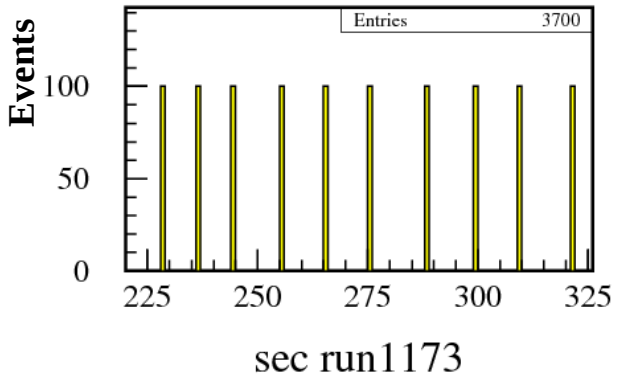


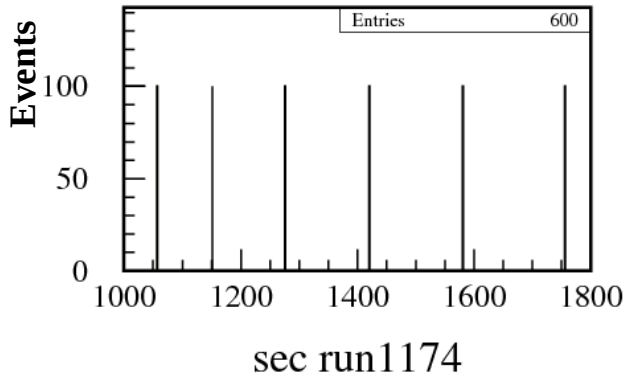
Injecting…


events in 1 sec
Entries 99974
sec
ENTRIES 99974
sum.f(0,3) VS. sec
Entries 99974
sum.f(0,3)

Rates vs. currents

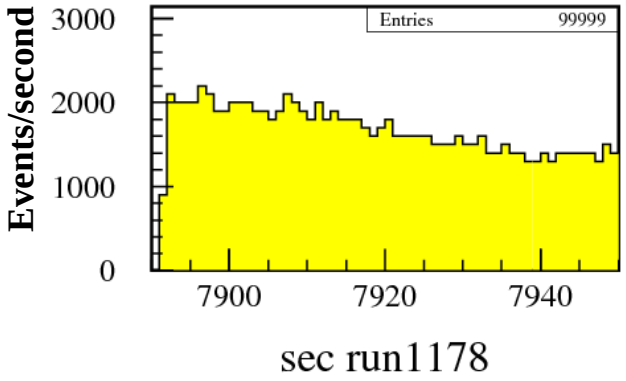
5+5 mA, coll.
~10 Hz

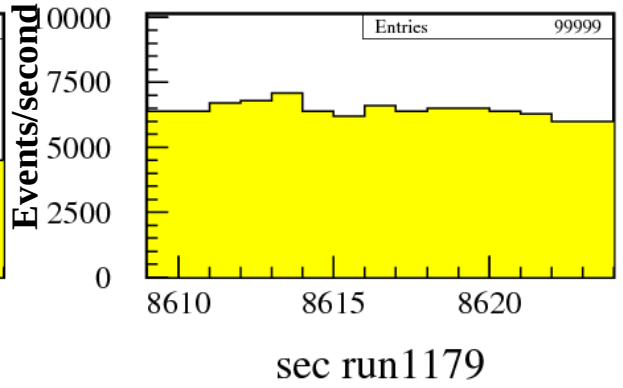




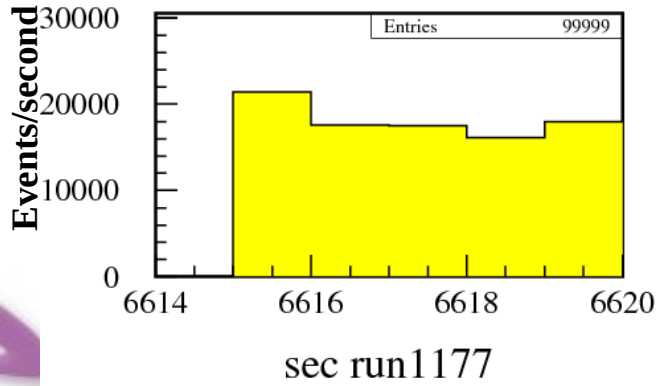
5+5 mA, no coll.
<1 Hz

30+34 mA, coll.
bunches 1/26/51/76



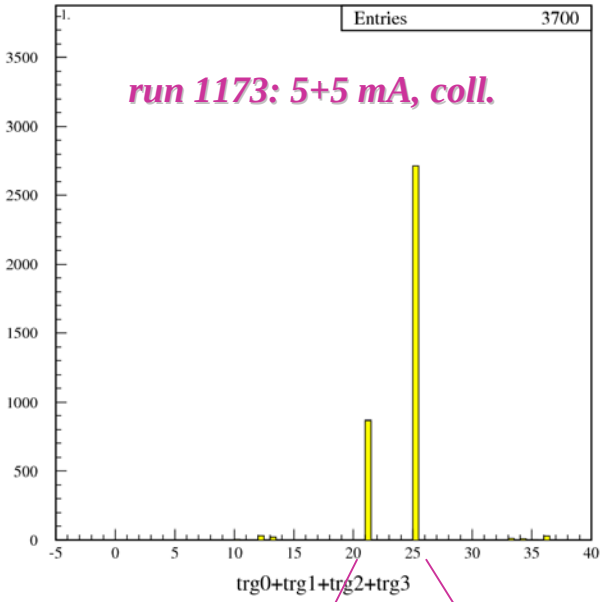


29+25 mA, coll.
bunches 1/2/3/4



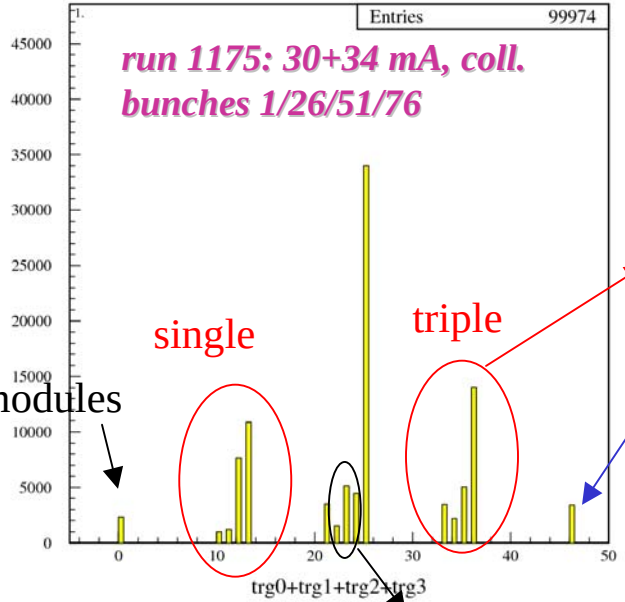
435+335 mA, no collisions

Trigger words



21=0.AND.1

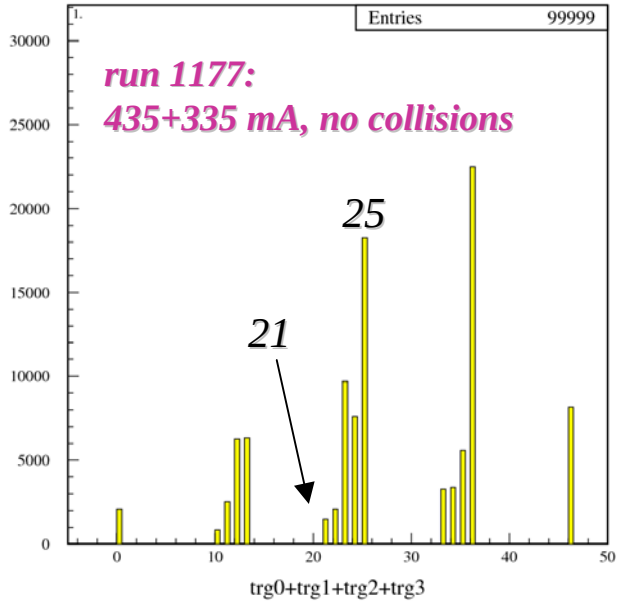
25=2.AND.3



0.AND.1 .AND. 2,3

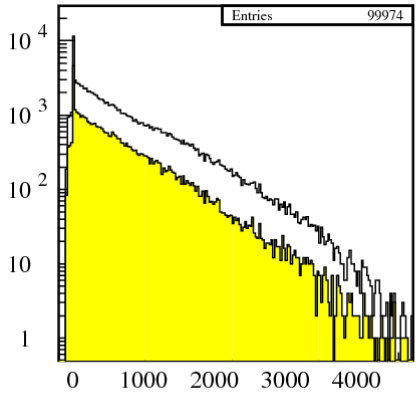
2.AND.3 .AND. 0,1

Wrong doubles: 0.AND.2, 0.AND.3, 1.AND.3

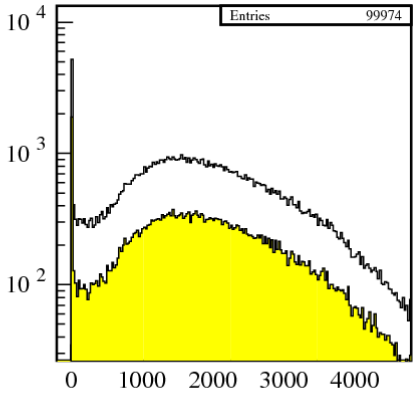


Cut on trigger word

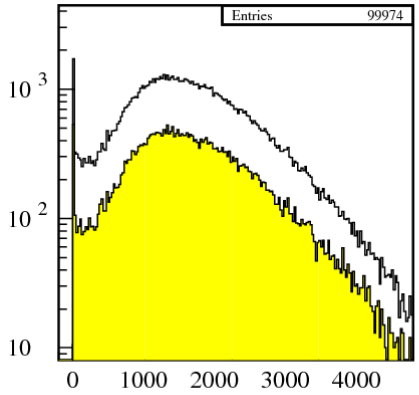
run 1175



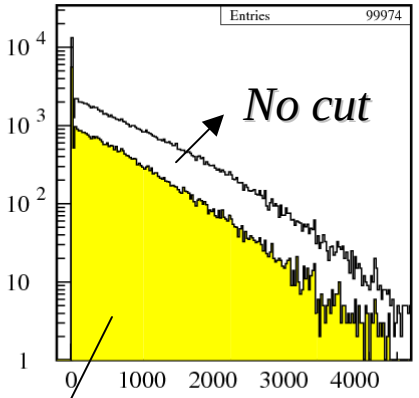
sum(0) no cut



sum(1) no cut

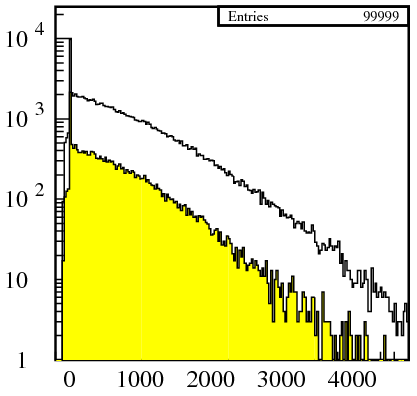


sum(2) no cut

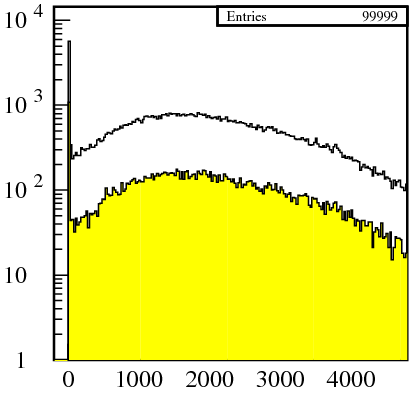


sum(3) no cut

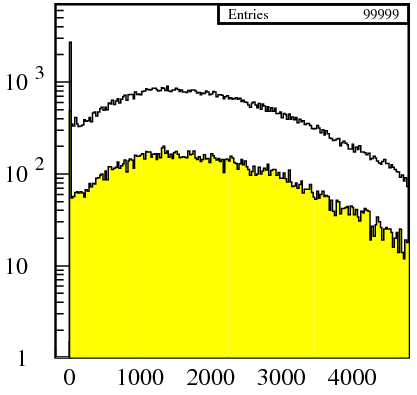
run 1177



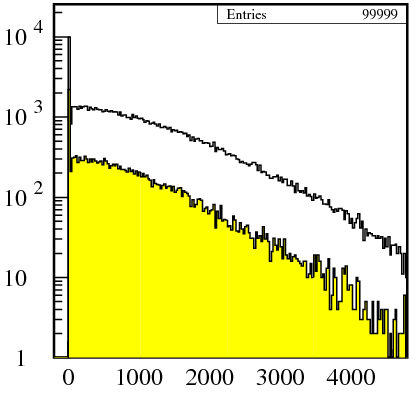
sum(0) no cut



sum(1) no cut



sum(2) no cut

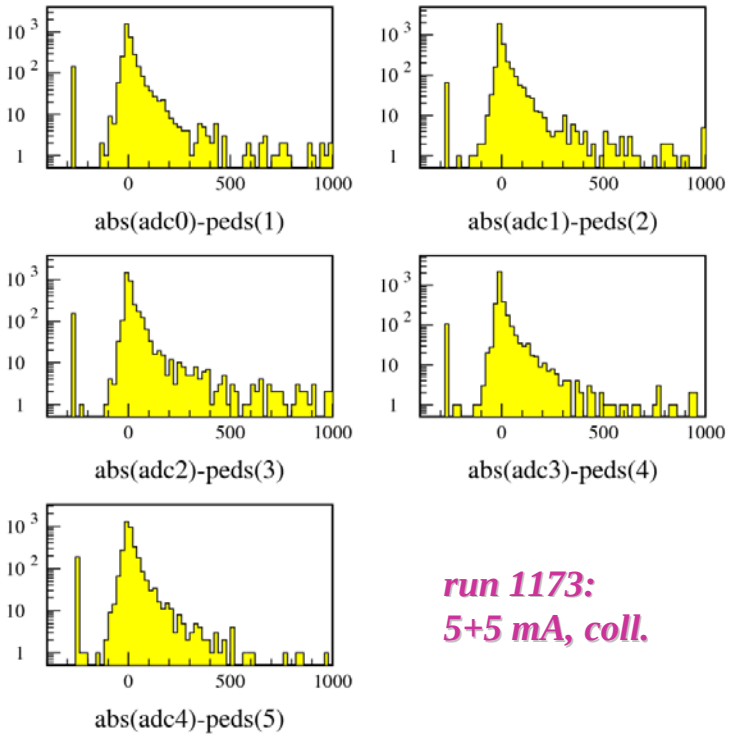


sum(3) no cut

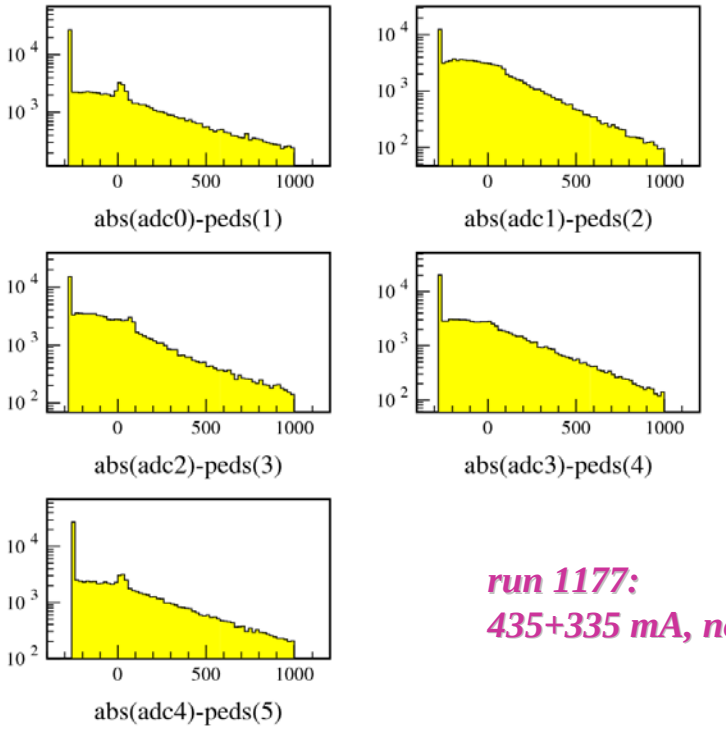
Cut trg0+trg1+trg2+trg3=21.or.25

No improvement…☹

Pedestals…



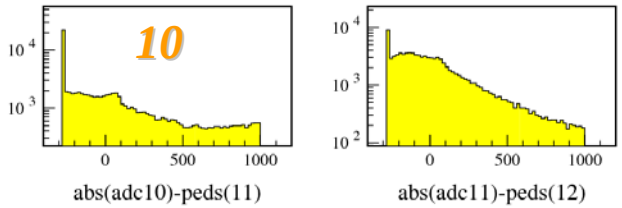
run 1173:
5+5 mA, coll.



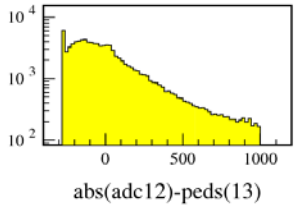
run 1177:
435+335 mA, no collisions

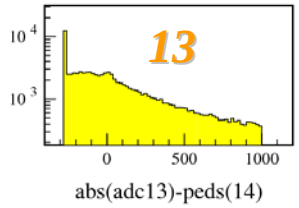
Something wrong…

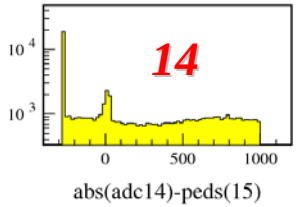
Pedestals…

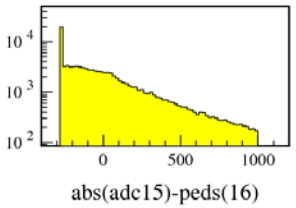

10
abs(adc10)-peds(11)

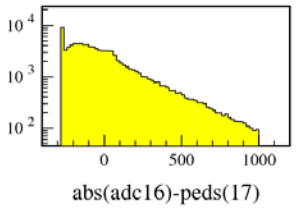
abs(adc11)-peds(12)

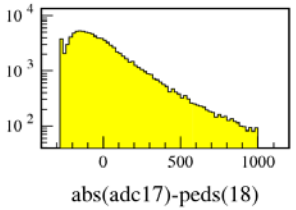

abs(adc12)-peds(13)

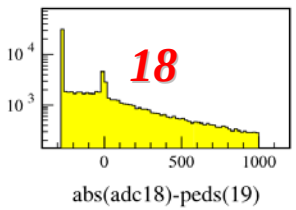

13
abs(adc13)-peds(14)

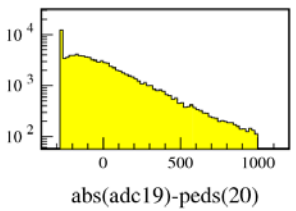

14
abs(adc14)-peds(15)

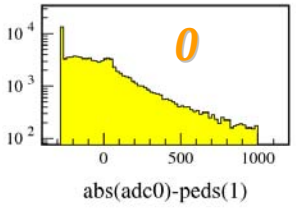

abs(adc15)-peds(16)

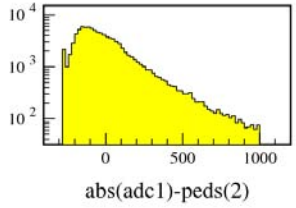

abs(adc16)-peds(17)

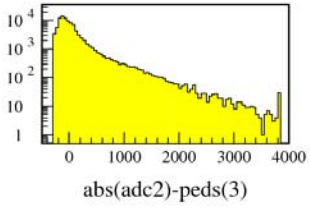

abs(adc17)-peds(18)

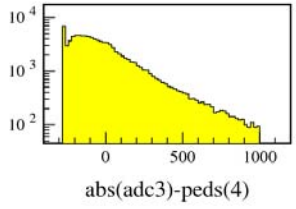

18
abs(adc18)-peds(19)

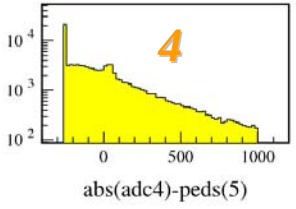

abs(adc19)-peds(20)

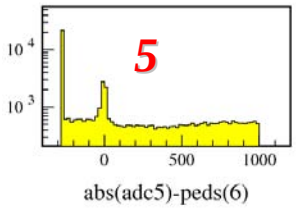

0
abs(adc0)-peds(1)

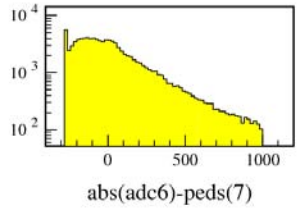

abs(adc1)-peds(2)

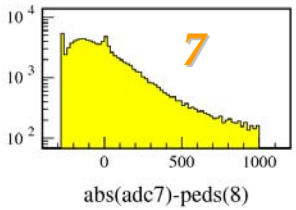

abs(adc2)-peds(3)

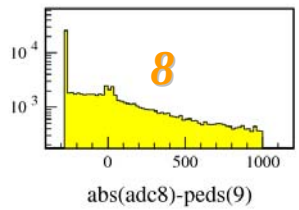

abs(adc3)-peds(4)

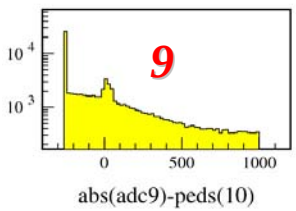

4
abs(adc4)-peds(5)


5
abs(adc5)-peds(6)


abs(adc6)-peds(7)


7
abs(adc7)-peds(8)


8
abs(adc8)-peds(9)


9
abs(adc9)-peds(10)

PMT positions