

7/18

Digital-Control-analysis

Rikkyo university M1 TOMOKI HARADA

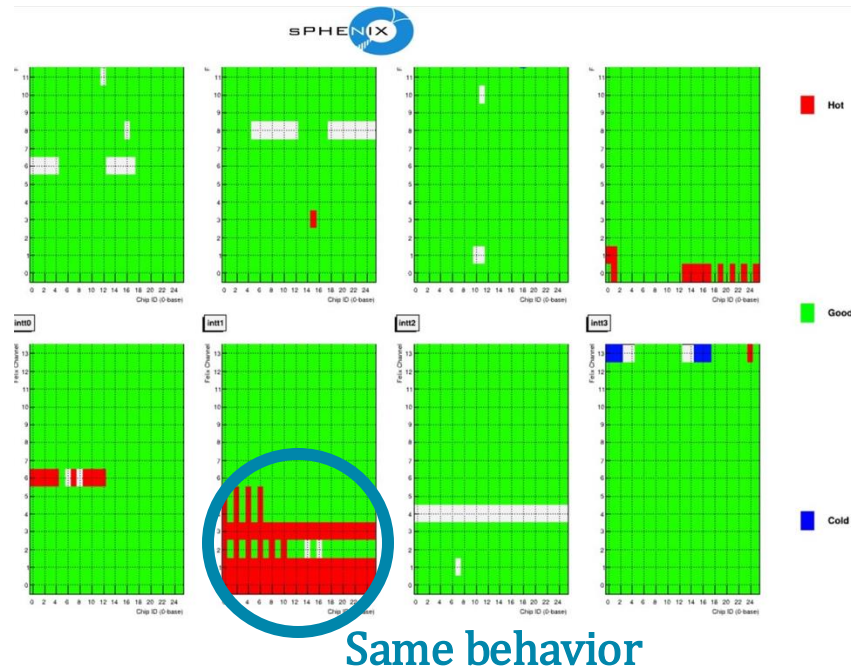
Run number

run#69268, 69269

10min, physics×2



- We took the Digital-control test data twice as Physics.
- The settings for these two runs are exactly same.
- I changed digital-control parameter of some chips in intt1 as reference to see whether digital-control were reflected or not. These chips became to be HOT-CHIPS, sorry 🙇



run#68016

(previous data of Digital-Control test on June 20)

#Just for reference

1	0	*	0
1	1	*	0
1	2	1	0
1	2	3	0
1	2	5	0
1	2	7	0
1	2	9	0
1	2	11	0

1	3	*	4
1	3	*	6

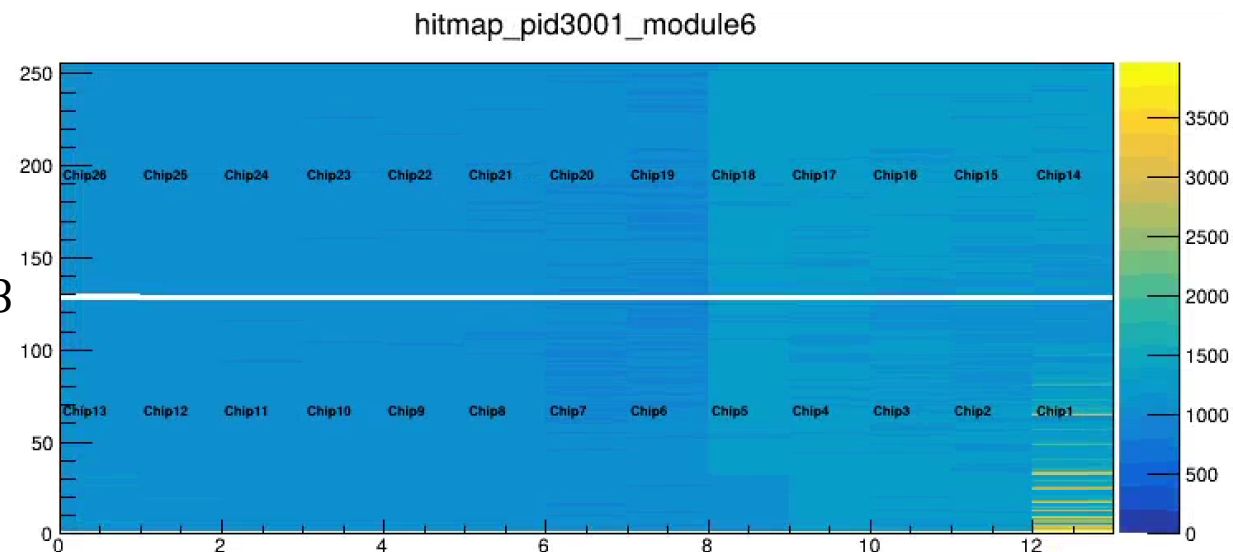
1	4	1	4
1	4	1	6
1	4	3	4
1	4	3	6
1	4	5	4
1	4	5	6
1	4	7	4
1	4	7	6

1	5	1	12
1	5	1	14
1	5	3	12
1	5	3	14
1	5	5	12
1	5	5	14
1	5	7	12
1	5	7	14

Viewing half-entry-chips Run69268, 69269

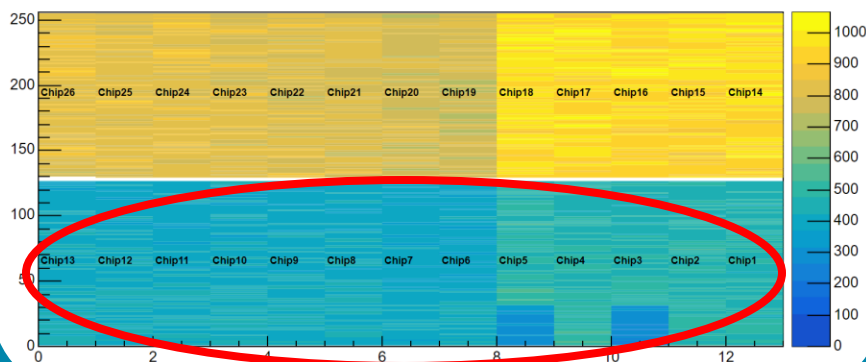
Felix Server	0
pid	3001
module	6
chip id	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13

RUN69268

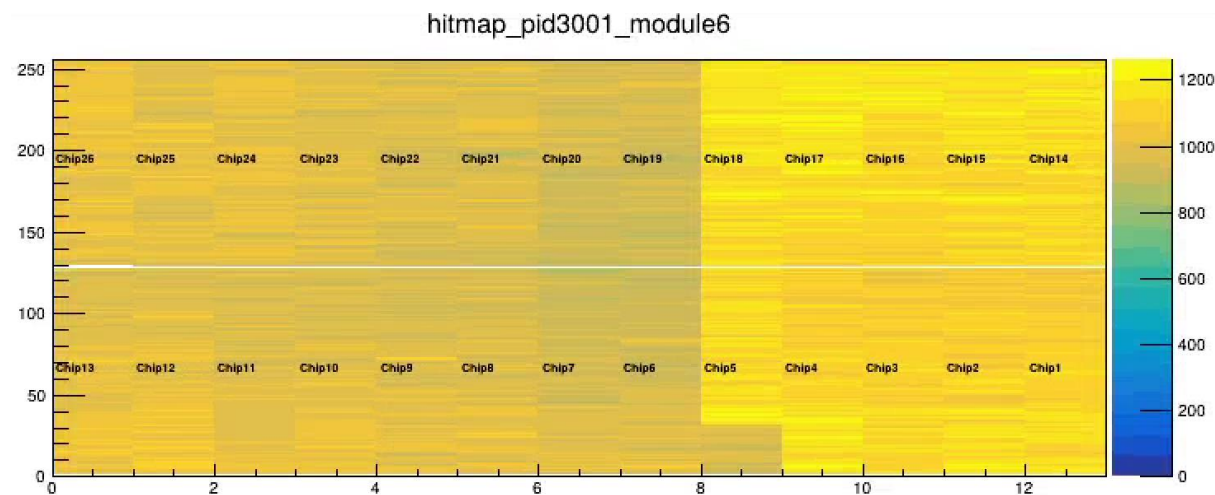


Half-entry-chips on HITMAP
(default data)

hitmap_pid3001_module6

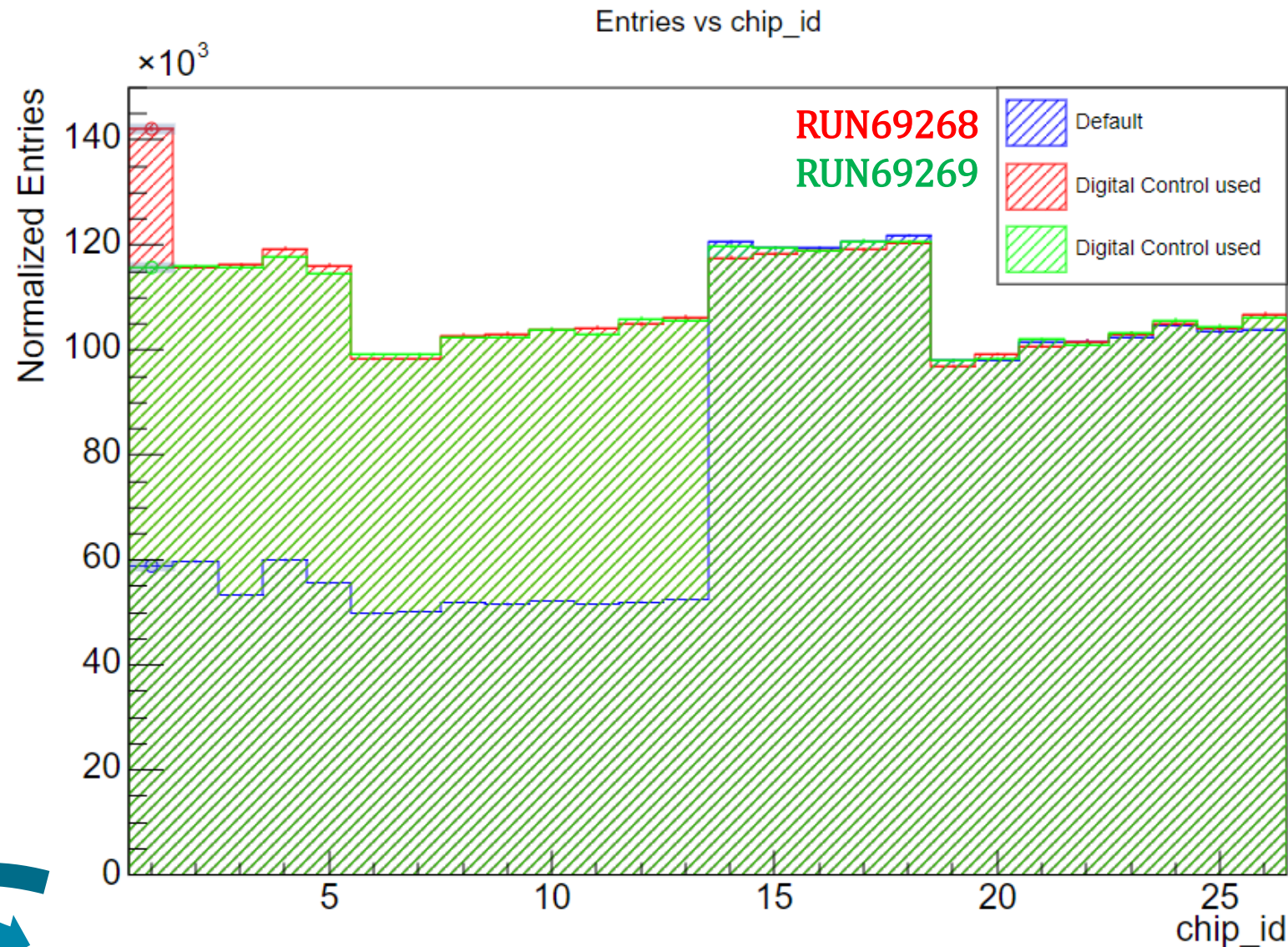


RUN69269



Viewing half-entry-chips Run69268, 69269

Felix Server	0
pid	3001
module	6
chip id	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13

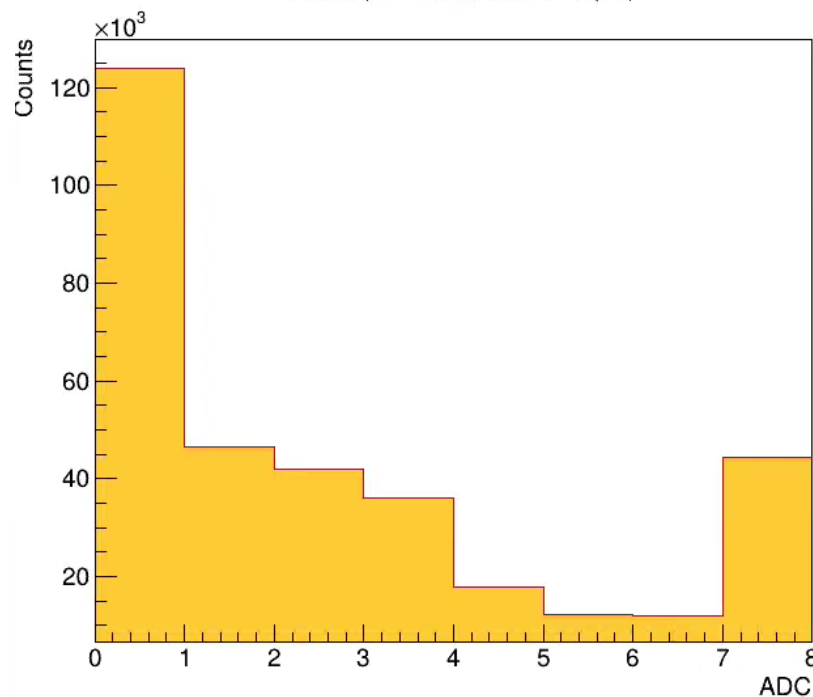
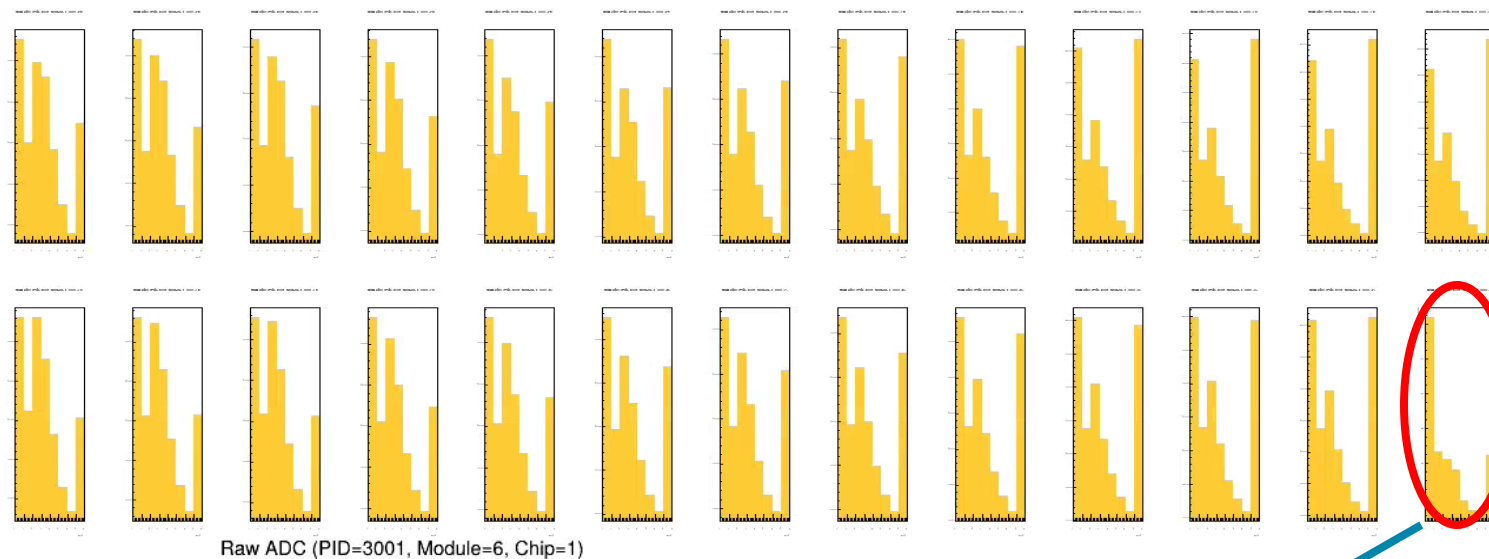


Check the adc distribution



Viewing half-entry-chips Run69268, 69269

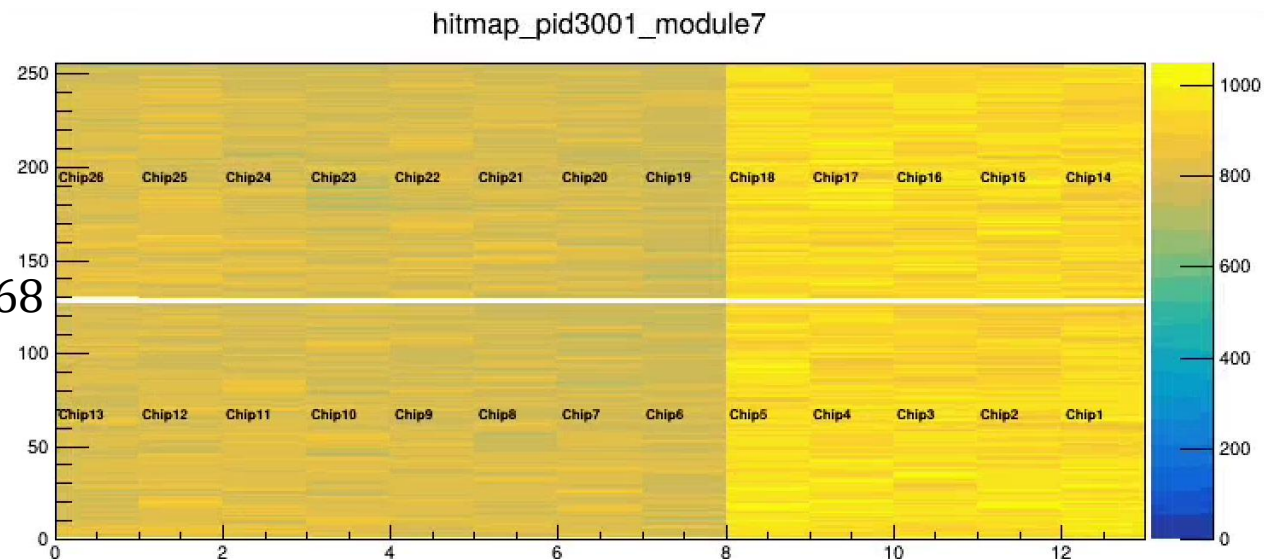
Felix Server	0
pid	3001
module	6
chip id	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13



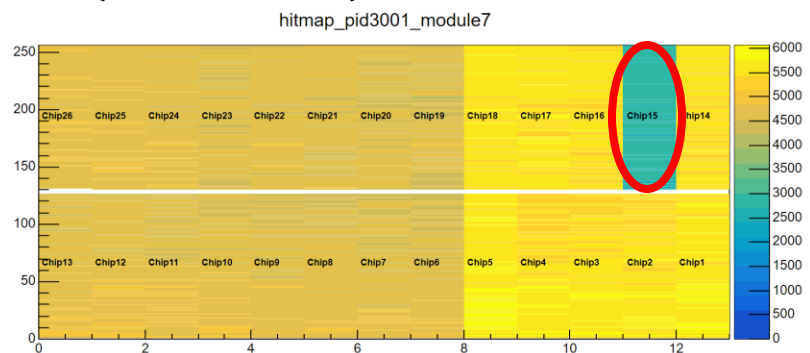
Viewing half-entry-chips Run69268, 69269

Felix Server	0
pid	3001
module	7
chip id	15

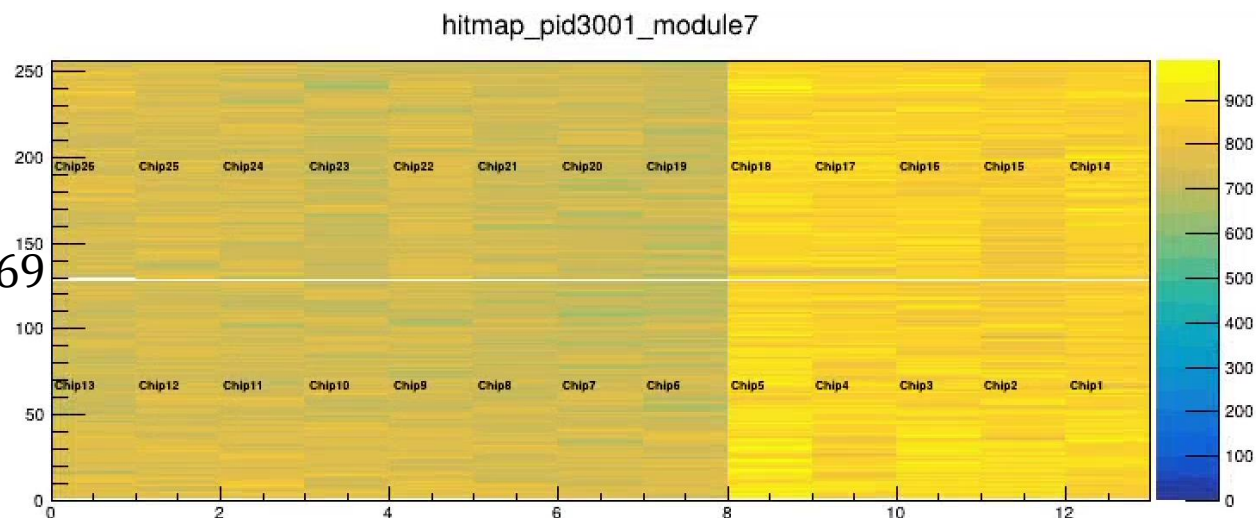
RUN69268



Half-entry-chips on HITMAP (default data)



RUN69269



Viewing half-entry-chips Run69268, 69269

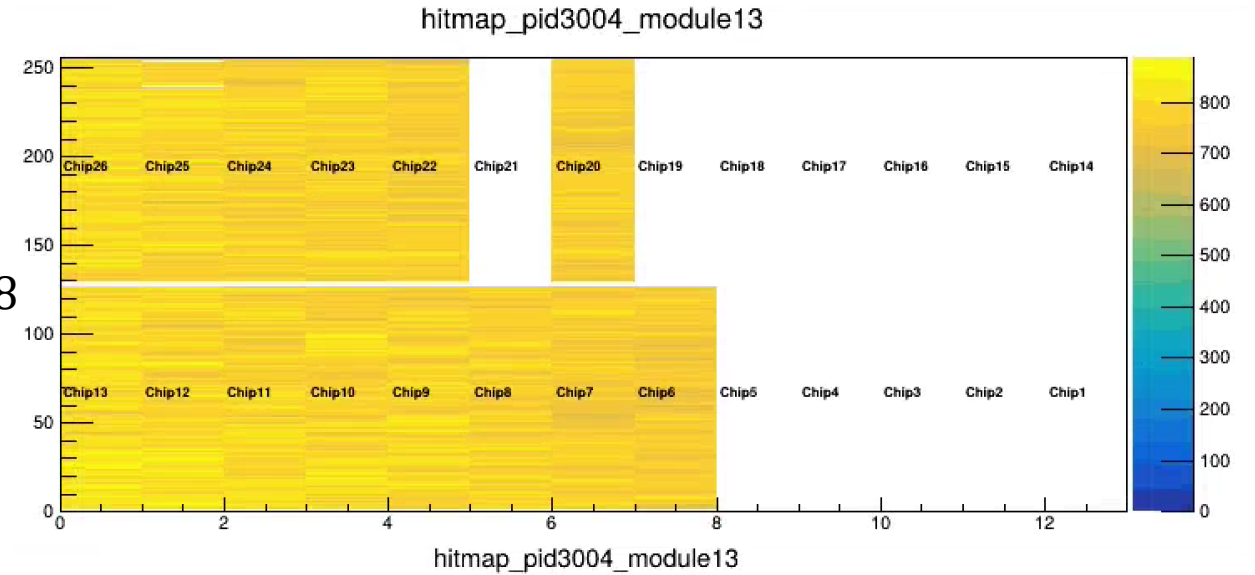
Felix Server	0
pid	3001
module	7
chip id	15



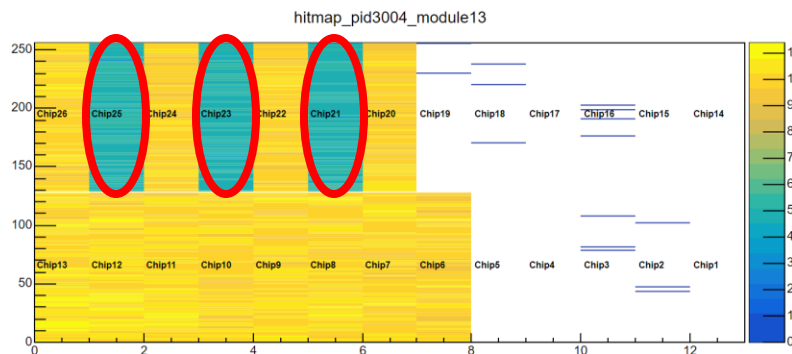
Viewing half-entry-chips Run69268, 69269

Felix Server	3
pid	3004
module	13
chip id	21, 23, 25

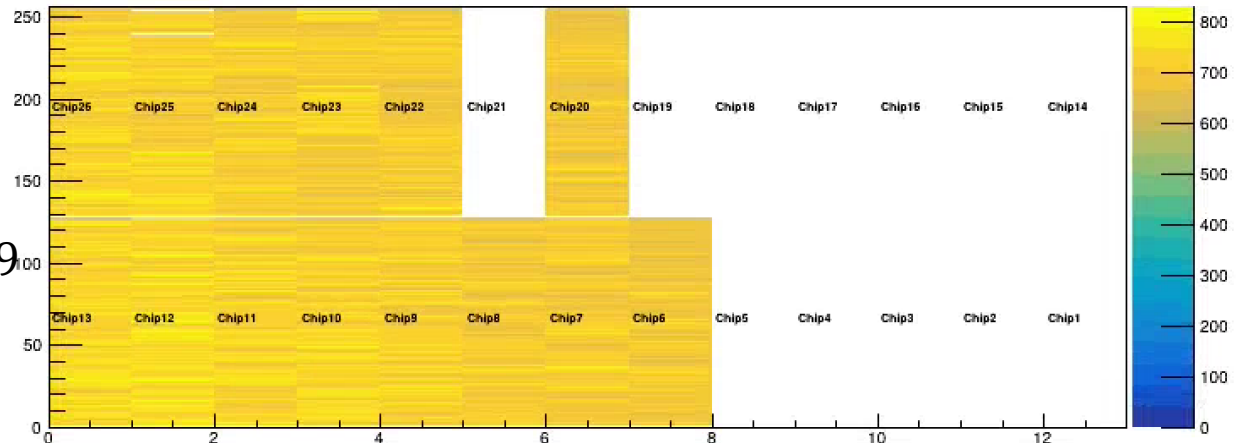
RUN69268



Half-entry-chips on HITMAP
(default data)

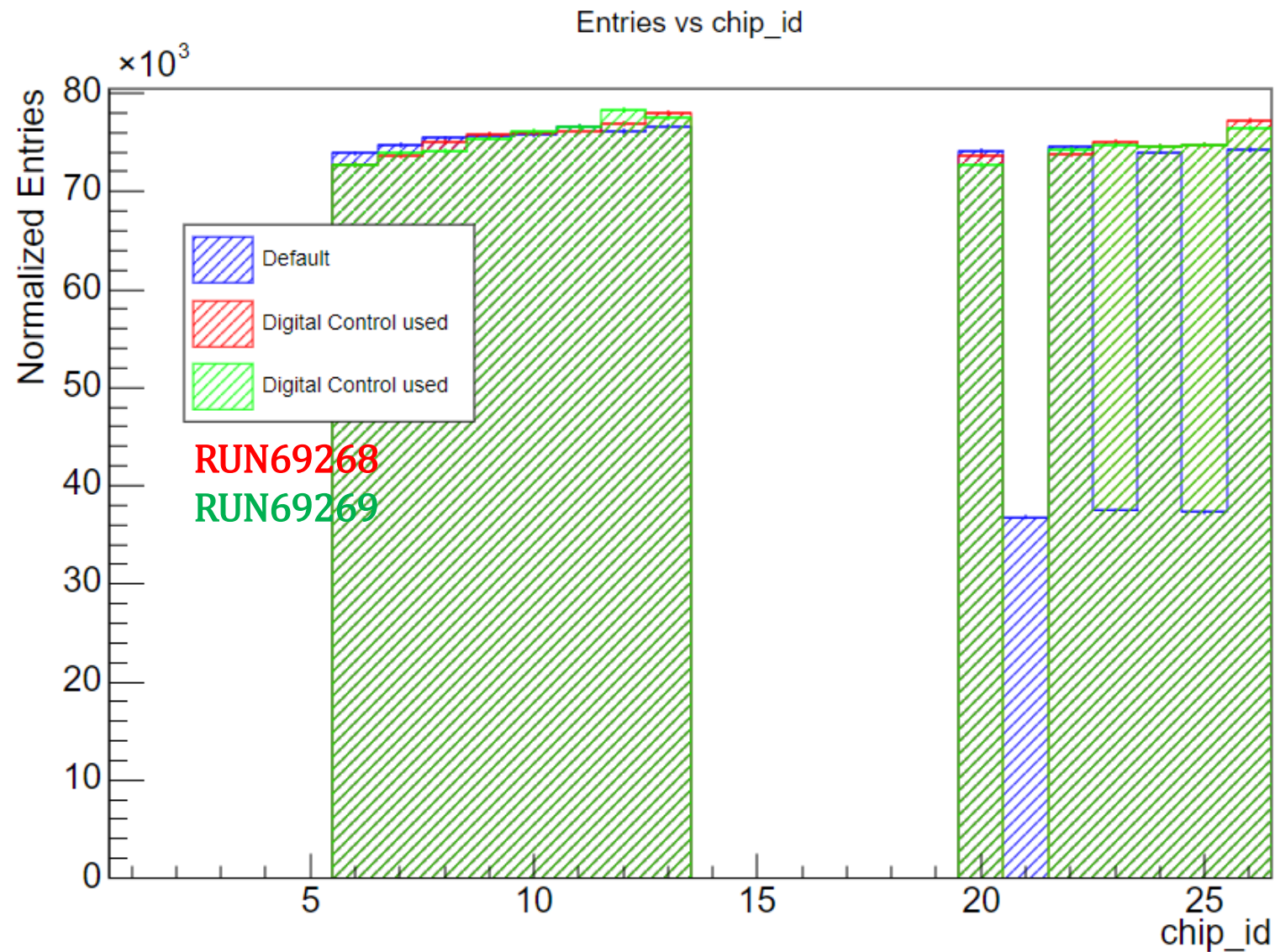


RUN69269



Viewing half-entry-chips Run69268, 69269

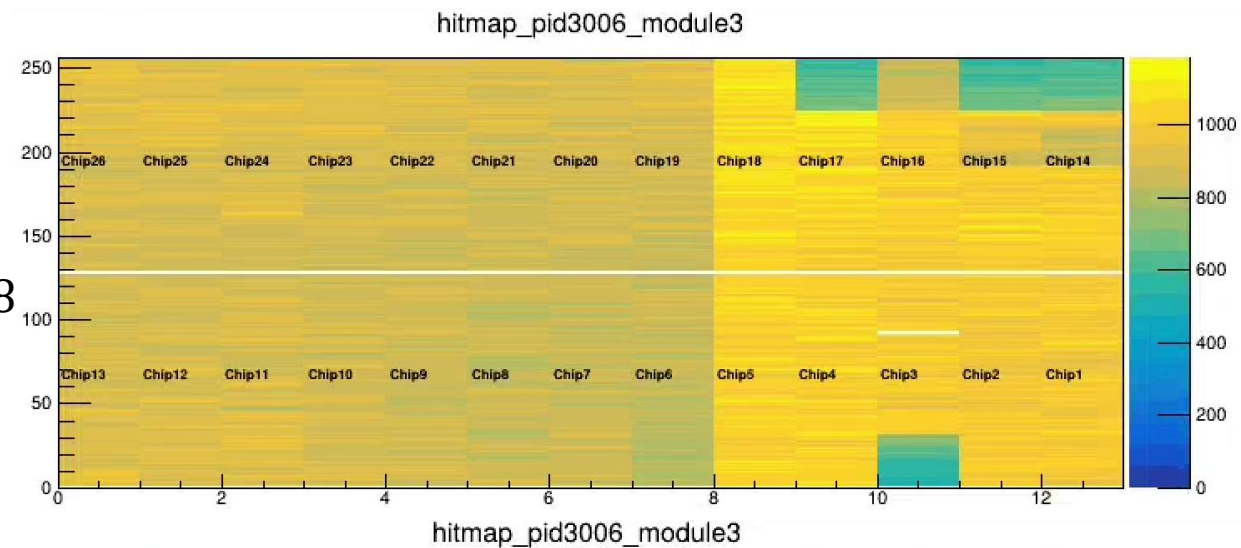
Felix Server	3
pid	3004
module	13
chip id	21, 23, 25



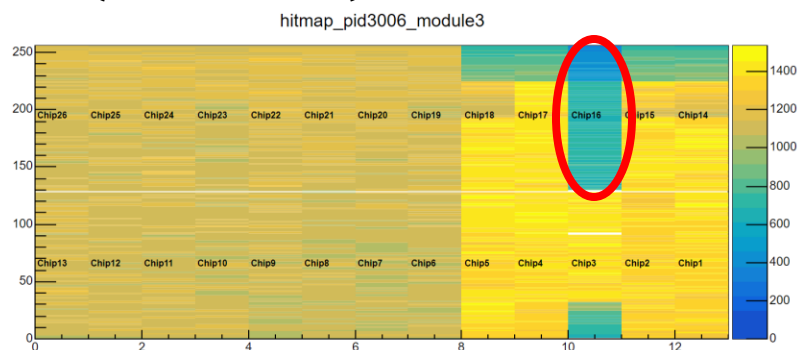
Viewing half-entry-chips Run69268, 69269

Felix Server	5
pid	3006
module	3
chip id	16

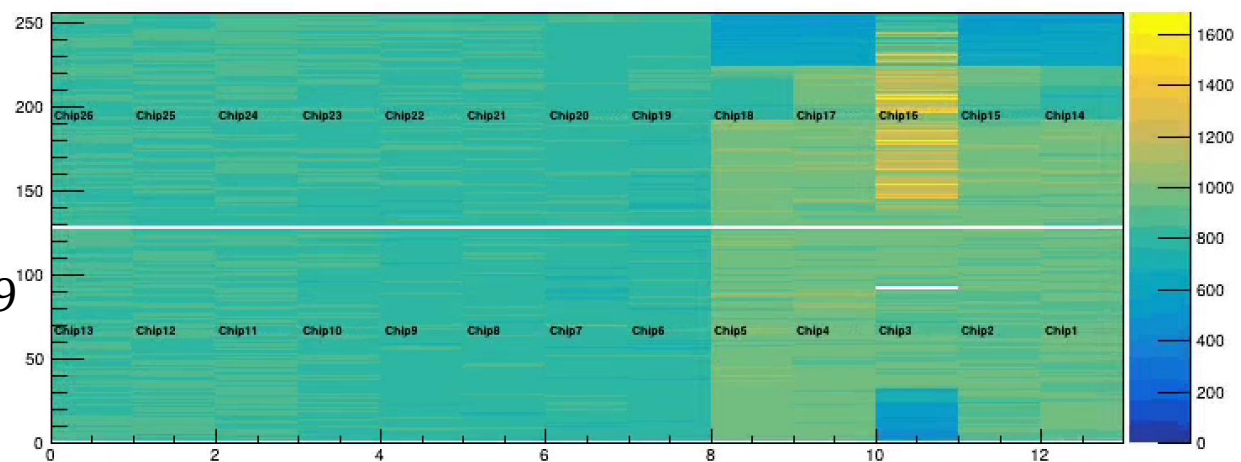
RUN69268



Half-entry-chips on HITMAP
(default data)

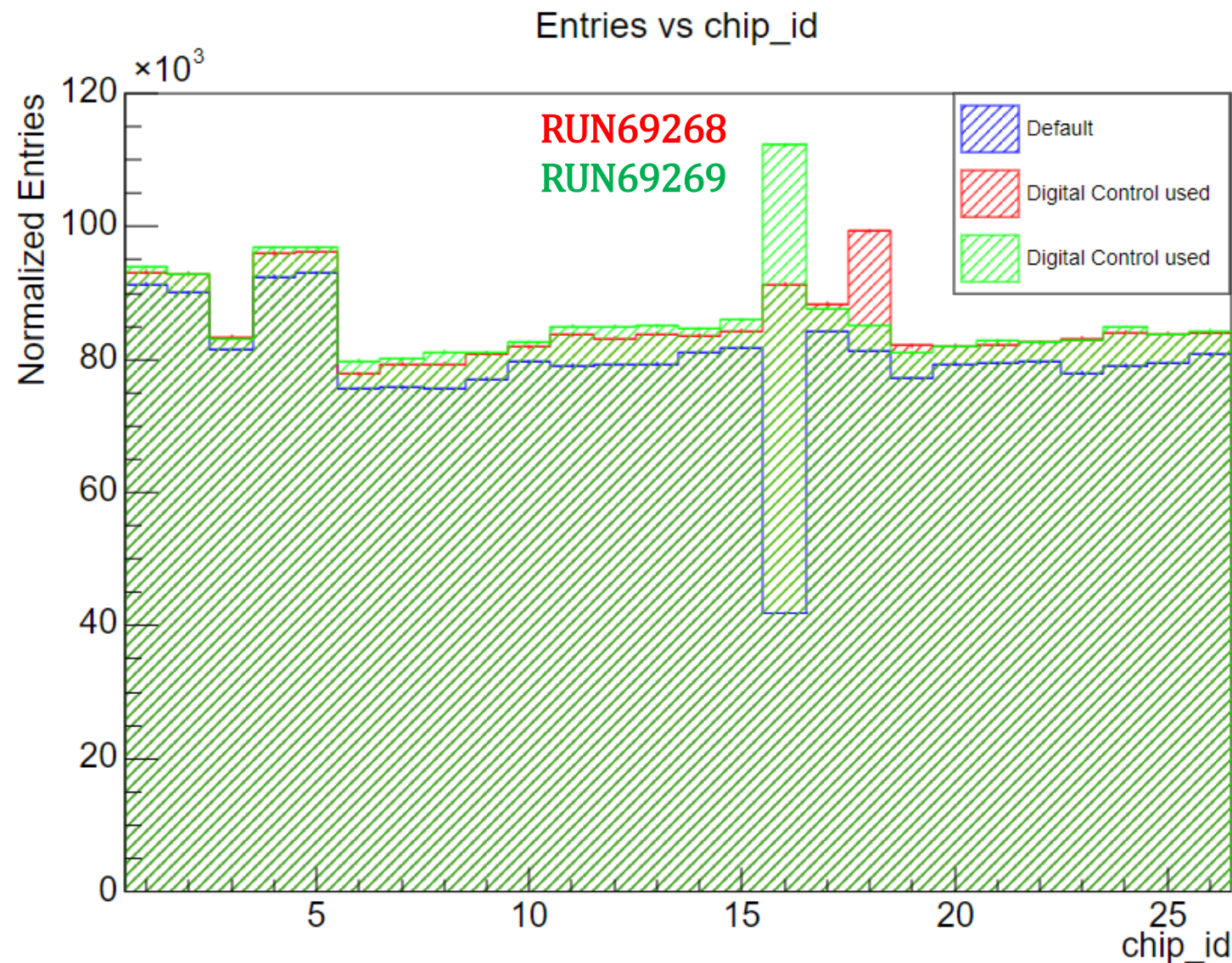


RUN69269



Viewing half-entry-chips Run69268, 69269

Felix Server	5
pid	3006
module	3
chip id	16

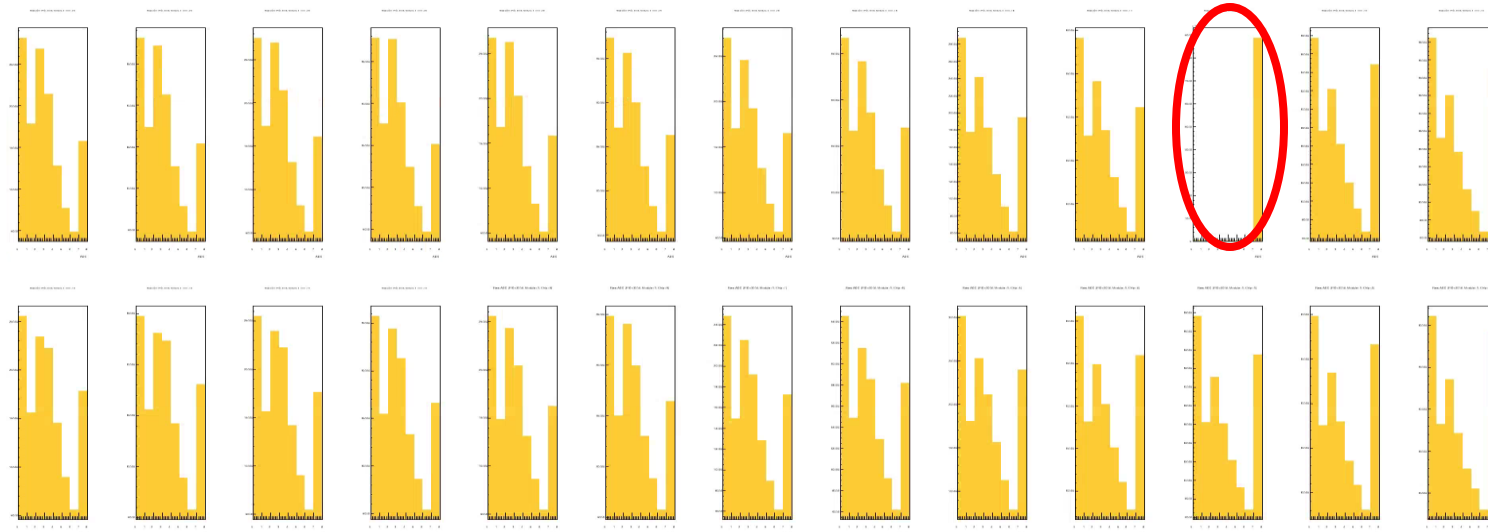


Check the adc distribution



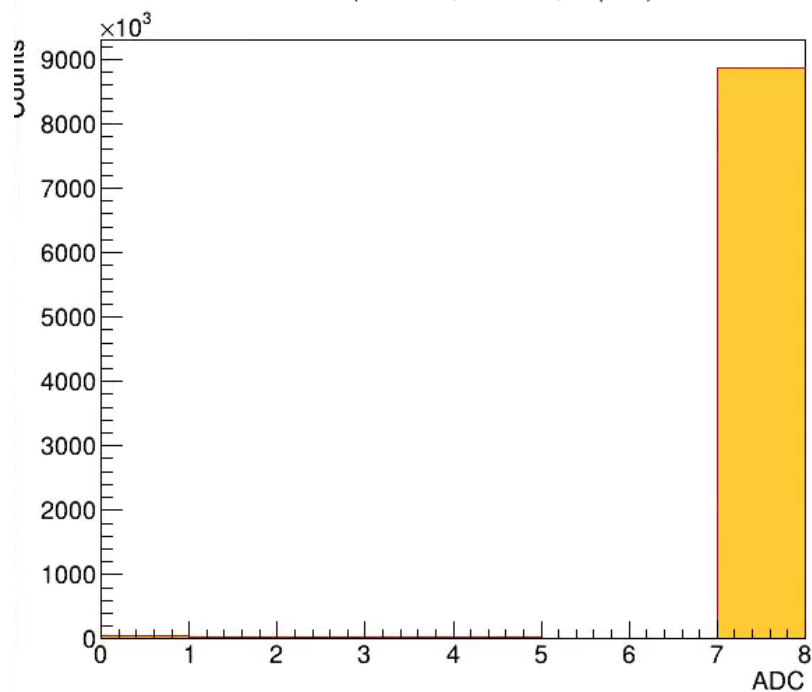
Viewing half-entry-chips Run69268, 69269

Felix Server	5
pid	3006
module	3
chip id	16

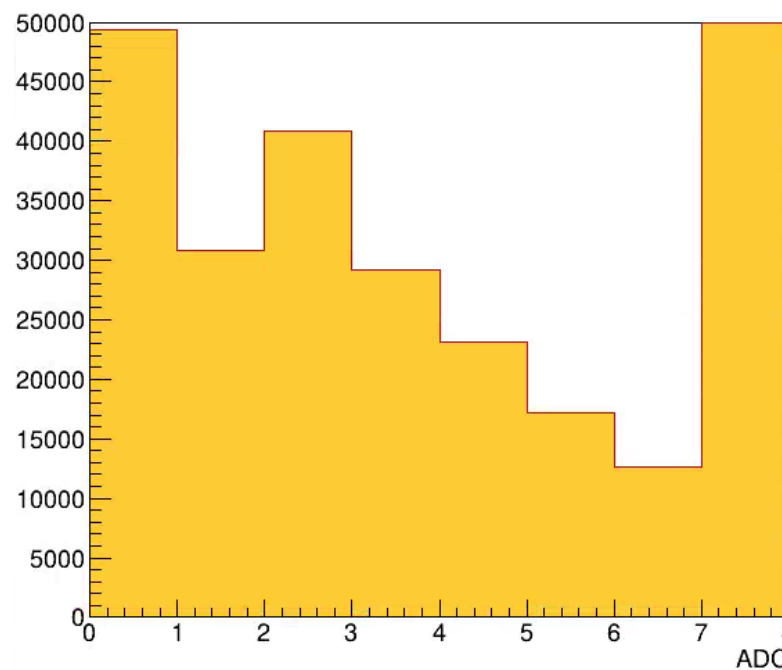


Raw ADC (PID=3006, Module=3, Chip=16)

Raw ADC (PID=3006, Module=3, Chip=16)



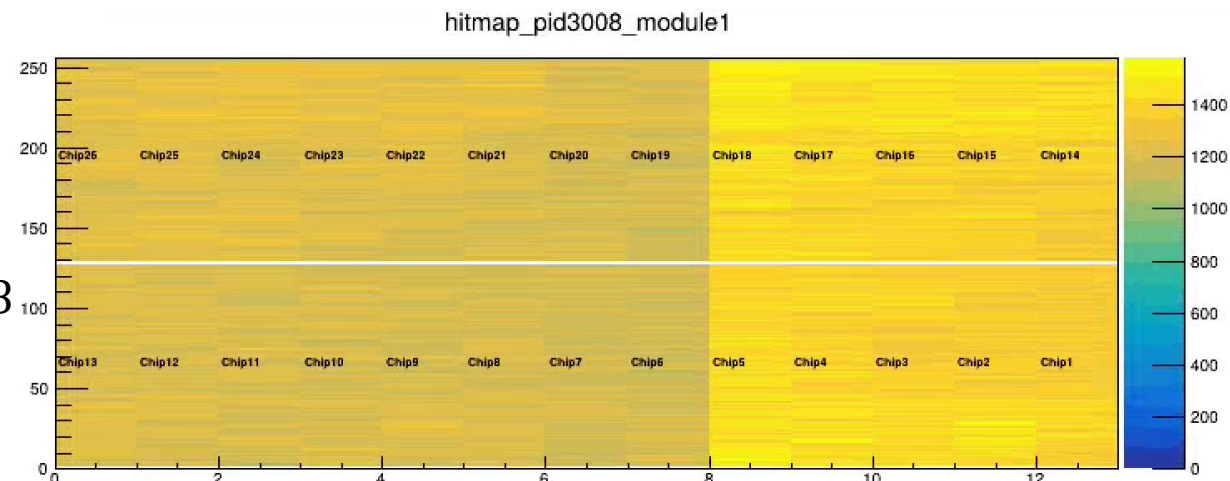
zoom



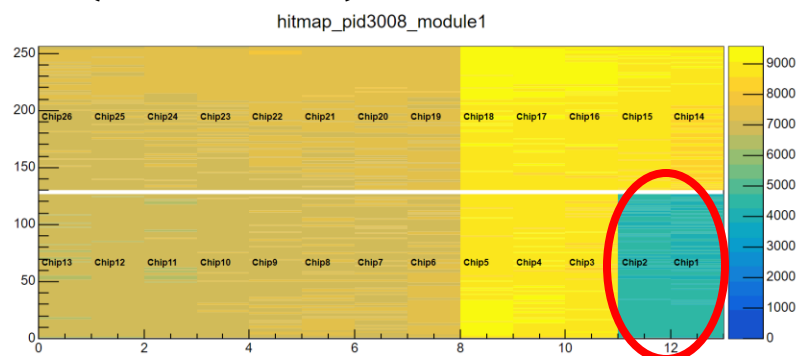
Viewing half-entry-chips Run69268, 69269

Felix Server	7
pid	3008
module	1
chip id	1, 2

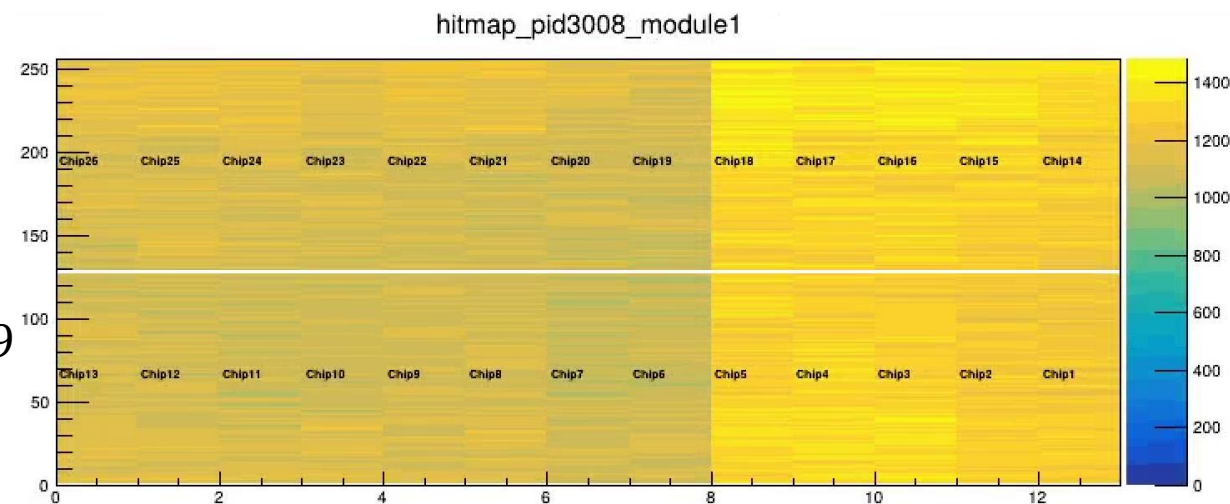
RUN69268



Half-entry-chips on HITMAP
(default data)

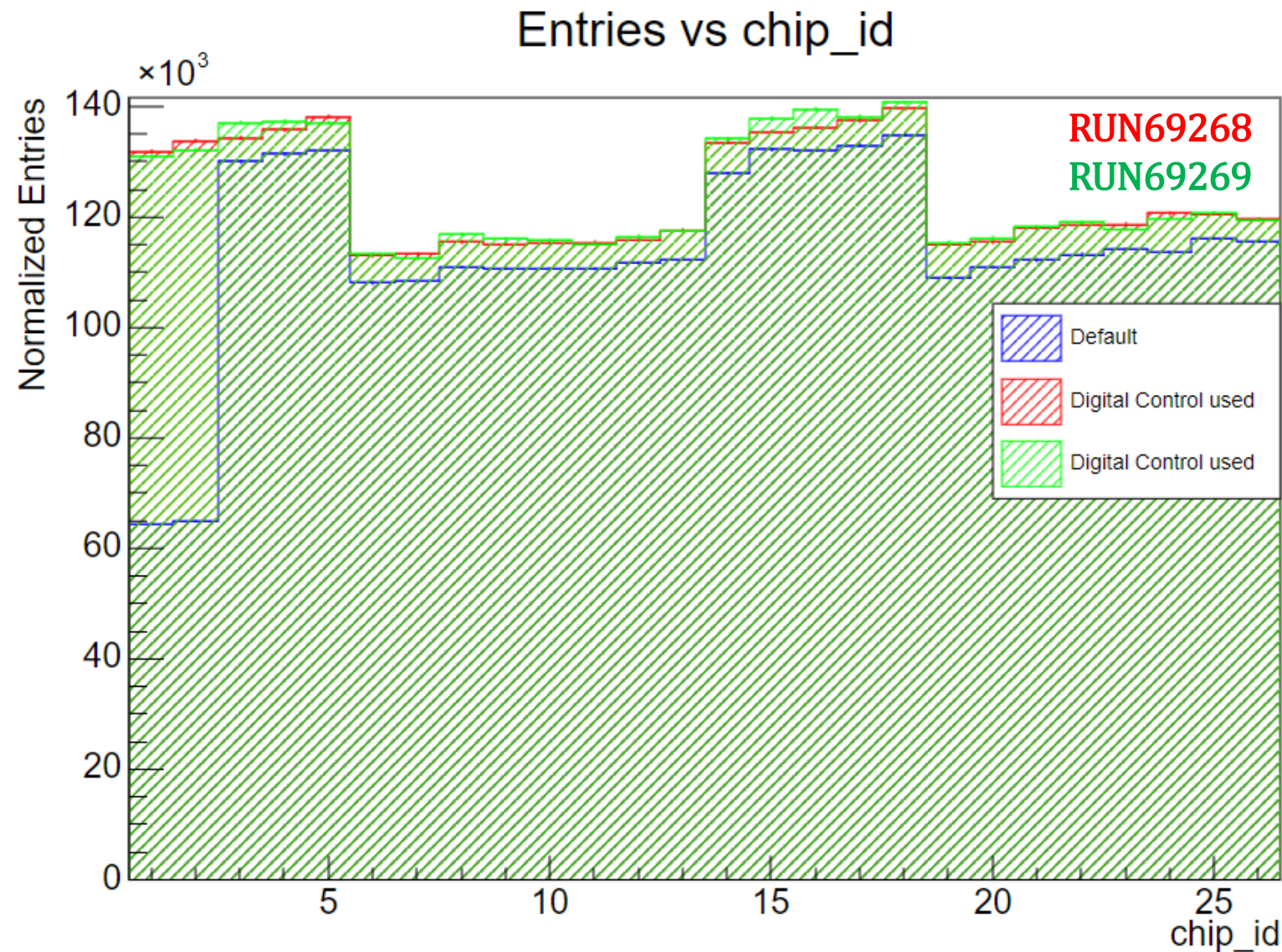


RUN69269



Viewing half-entry-chips Run69268, 69269

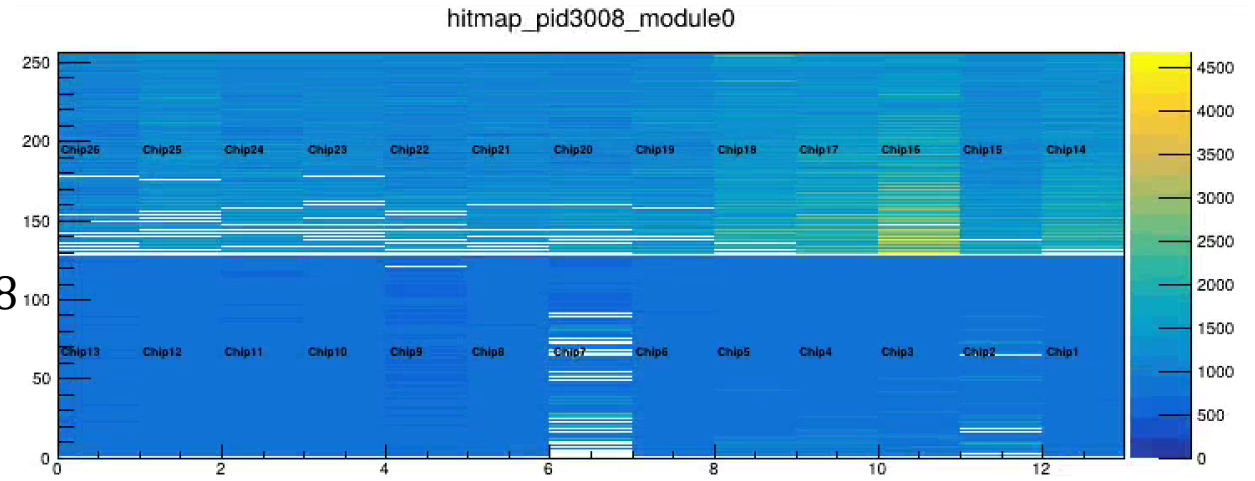
Felix Server	7
pid	3008
module	1
chip id	1, 2



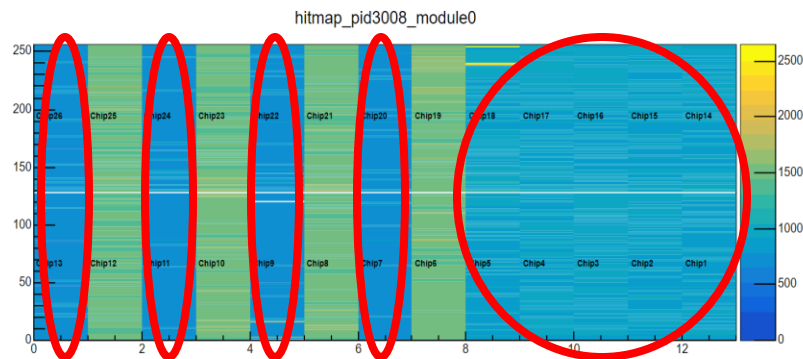
Viewing half-entry-chips Run69268, 69269

Felix Server	7
pid	3008
module	0
chip id	1, 2, 3, 4, 5, 7, 9, 11, 13, 14, 15, 16, 17, 18, 20, 22, 24, 26

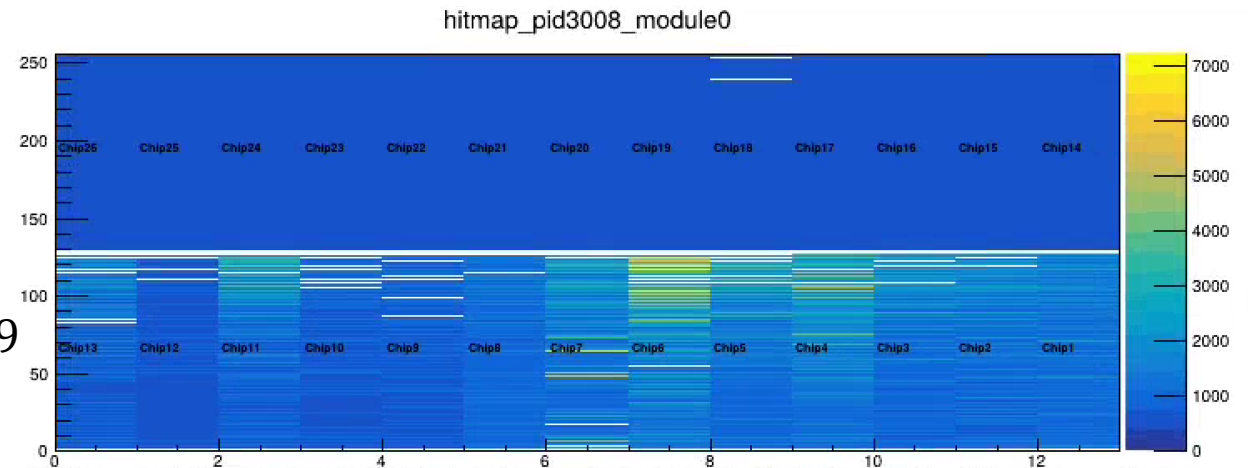
RUN69268



Half-entry-chips on HITMAP
(default data)



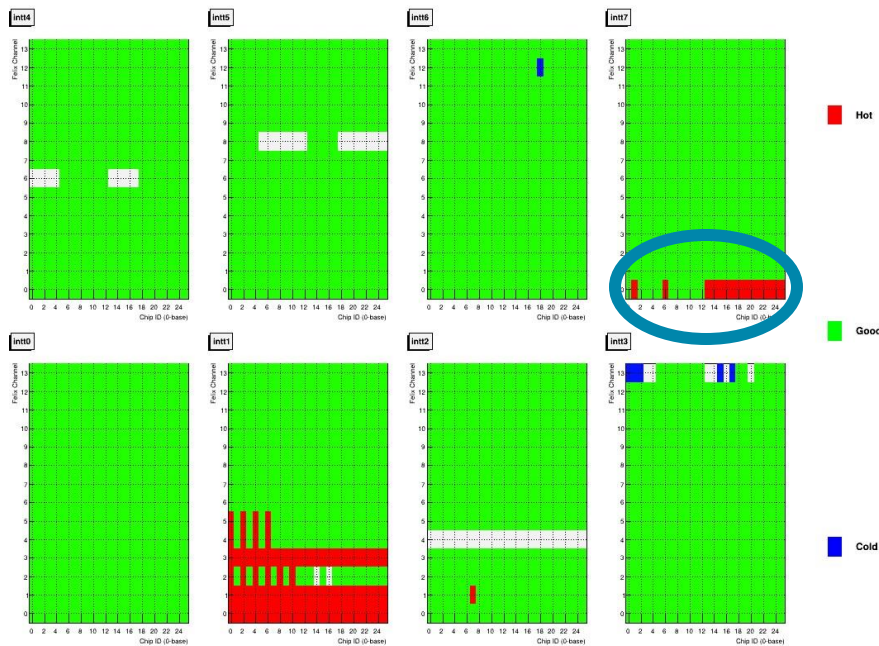
RUN69269



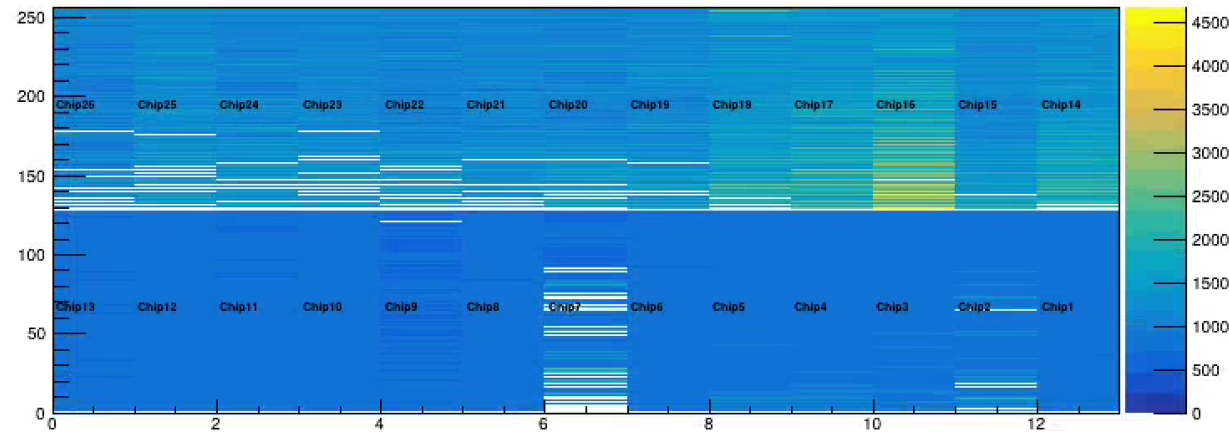
About hot-chips of INTT7

Intt Hit Map

Run 69268, Events: 10605279, Fri Jul 11 16:05:10 2025



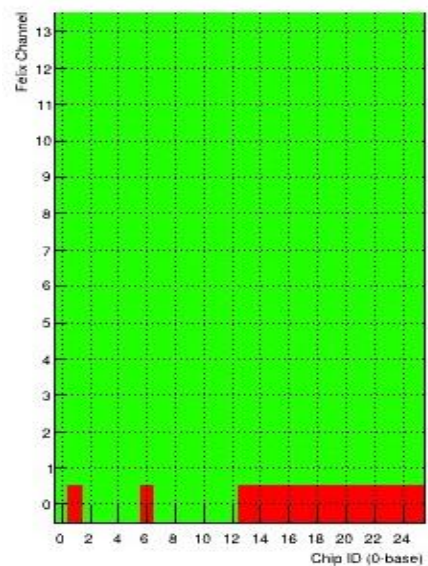
hitmap_pid3008_module0



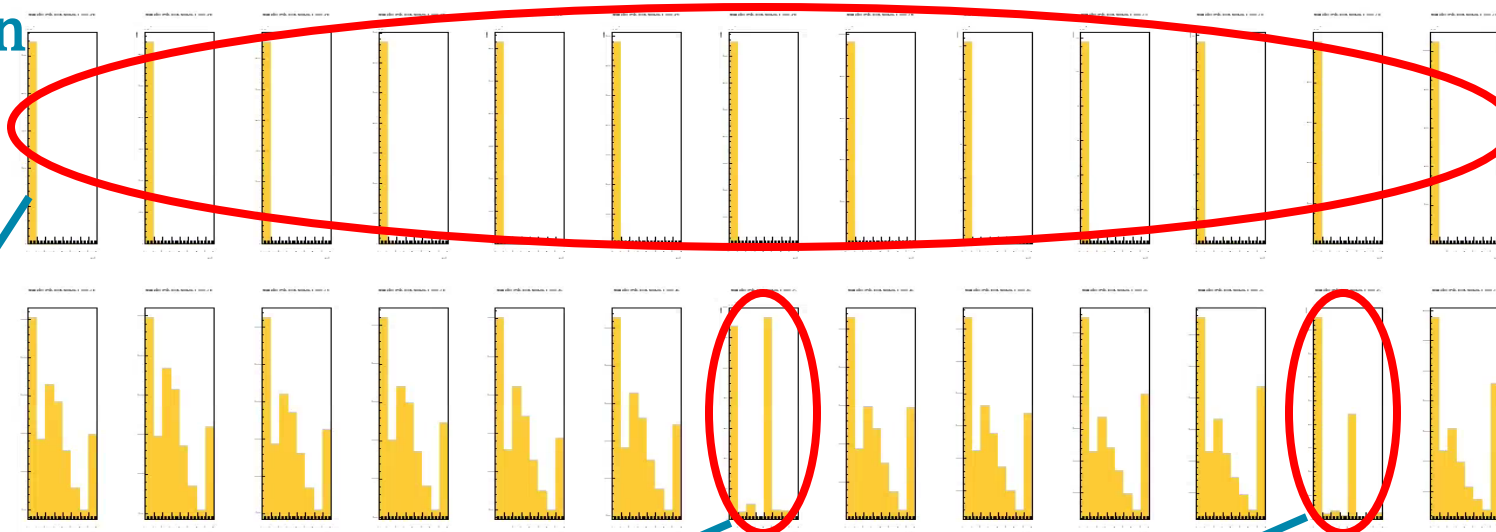
Felix Server	7
pid	3008
module	0
chip id	1, 2, 3, 4, 5, 7, 9, 11, 13, 14, 15, 16, 17, 18, 20, 22, 24, 26

About hot-chips of INTT7

intt7

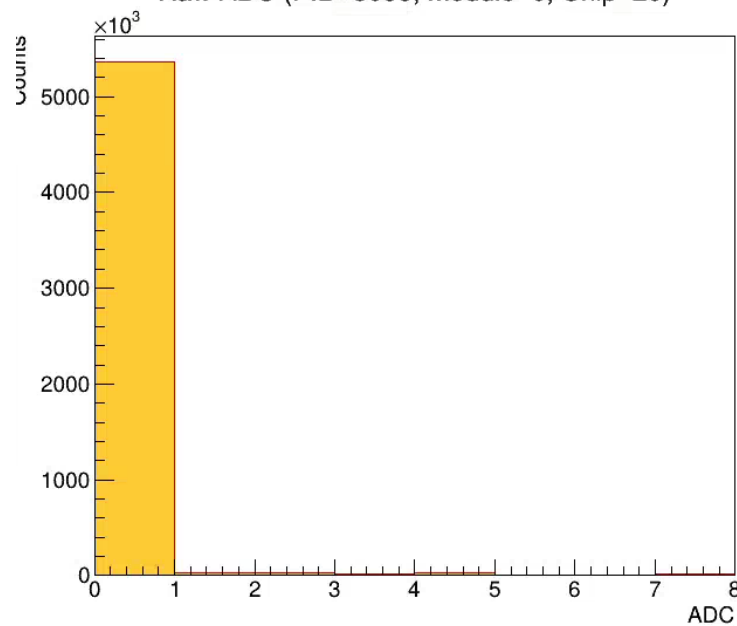


ADC distribution

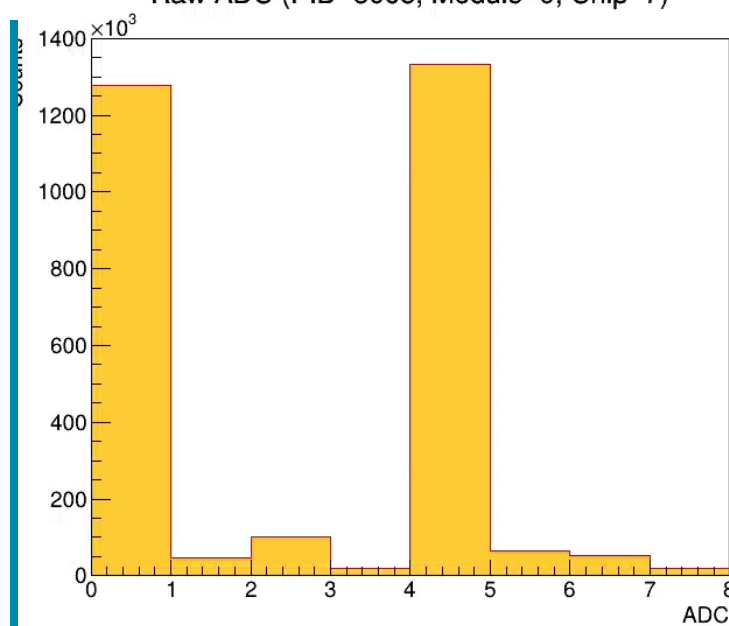


Hot chips

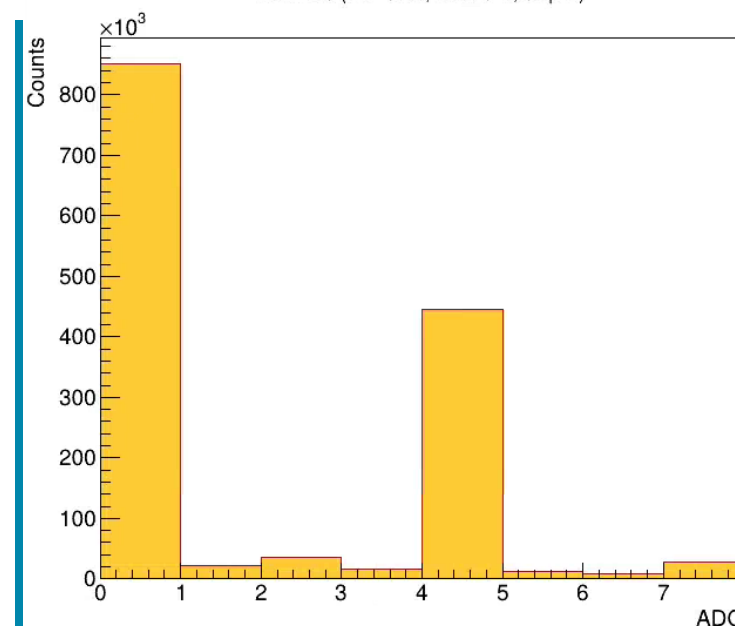
Raw ADC (PID=3008, Module=0, Chip=26)



Raw ADC (PID=3008, Module=0, Chip=7)

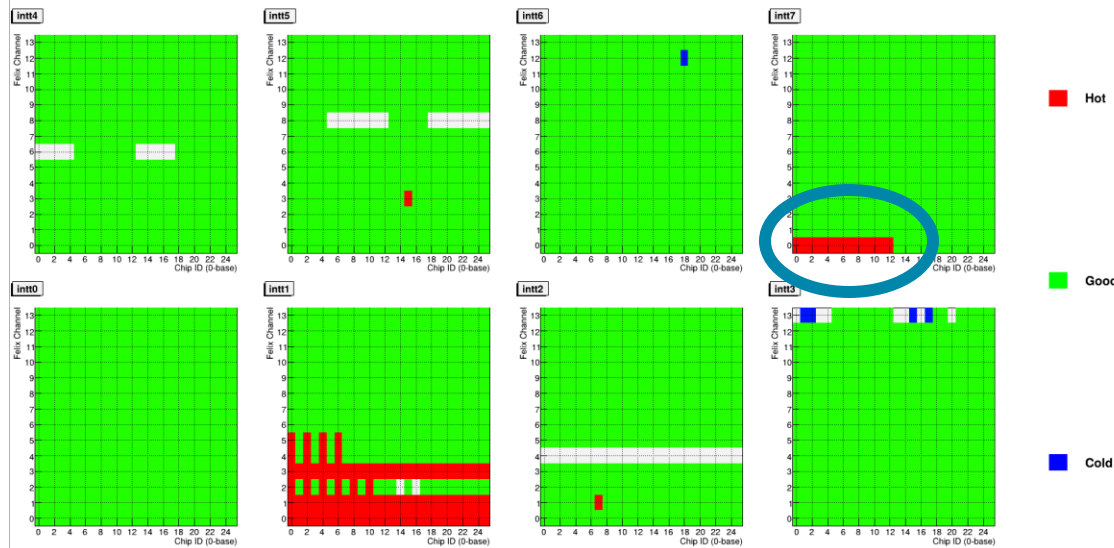


Raw ADC (PID=3008, Module=0, Chip=2)

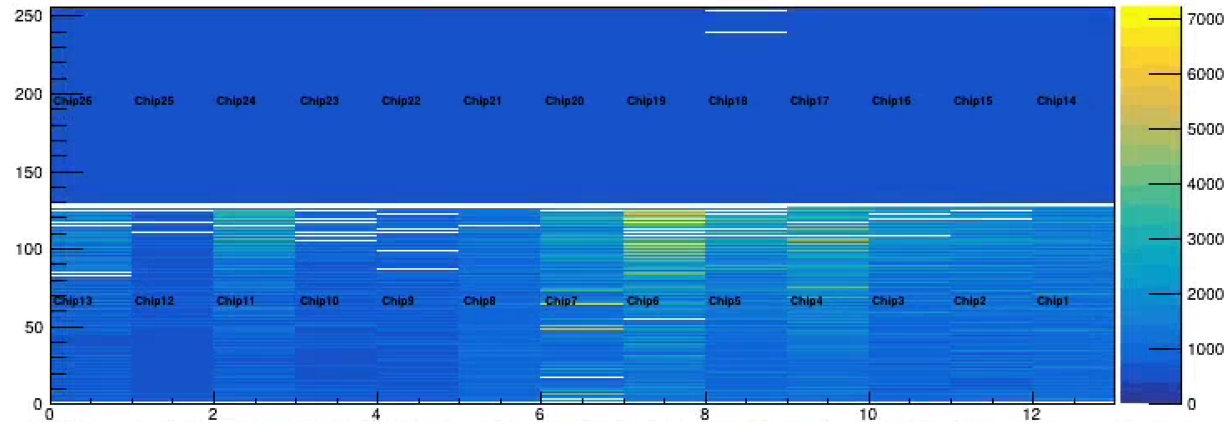


About hot-chips of INTT7

Intt Hit Map
Run 69269, Events: 2719179, Fri Jul 11 16:12:36 2025



hitmap_pid3008_module0

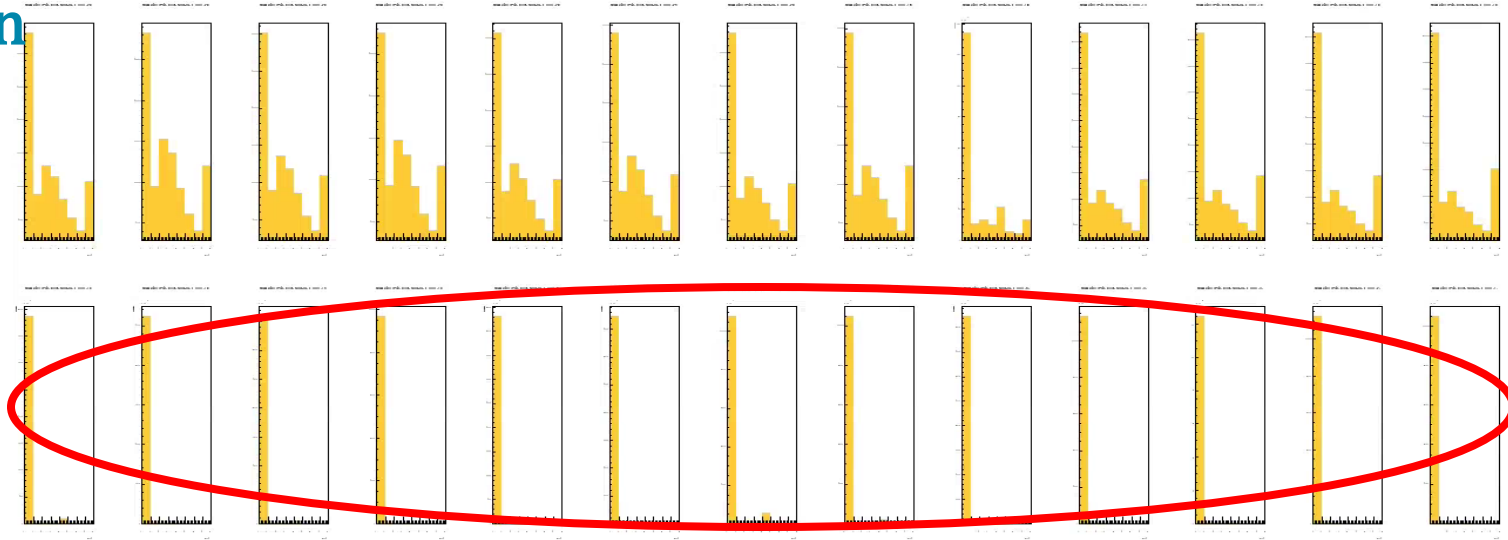
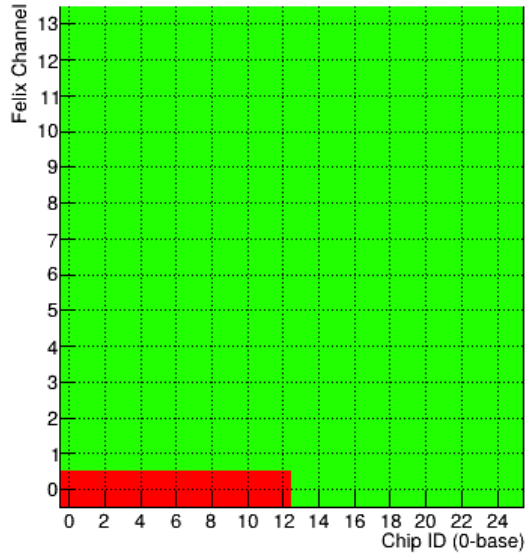


Felix Server	7
pid	3008
module	0
chip id	1, 2, 3, 4, 5, 7, 9, 11, 13, 14, 15, 16, 17, 18, 20, 22, 24, 26

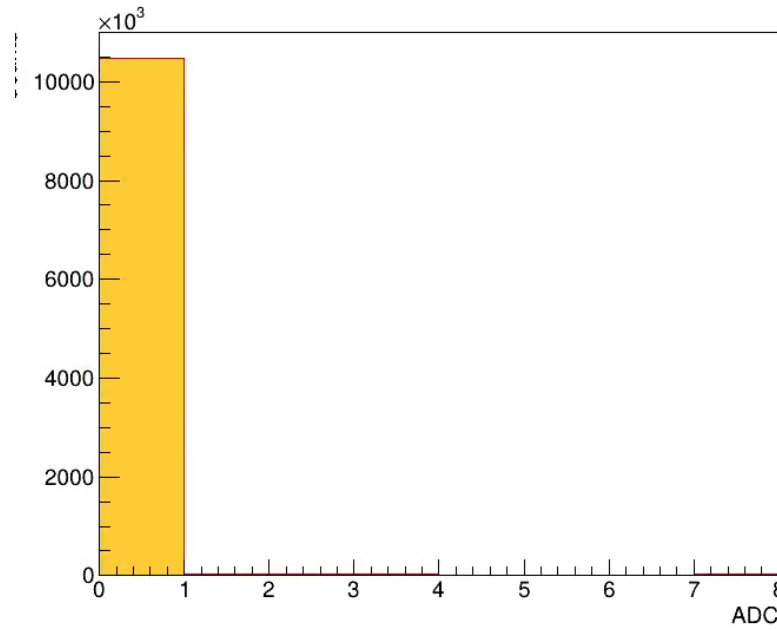
About hot-chips of INTT7

intt7

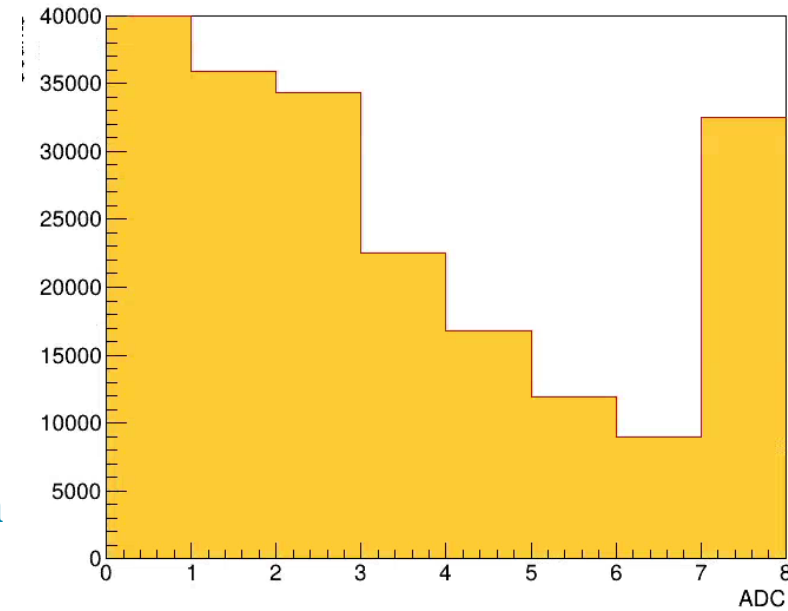
ADC distribution



Raw ADC (PID=3008, Module=0, Chip=1)



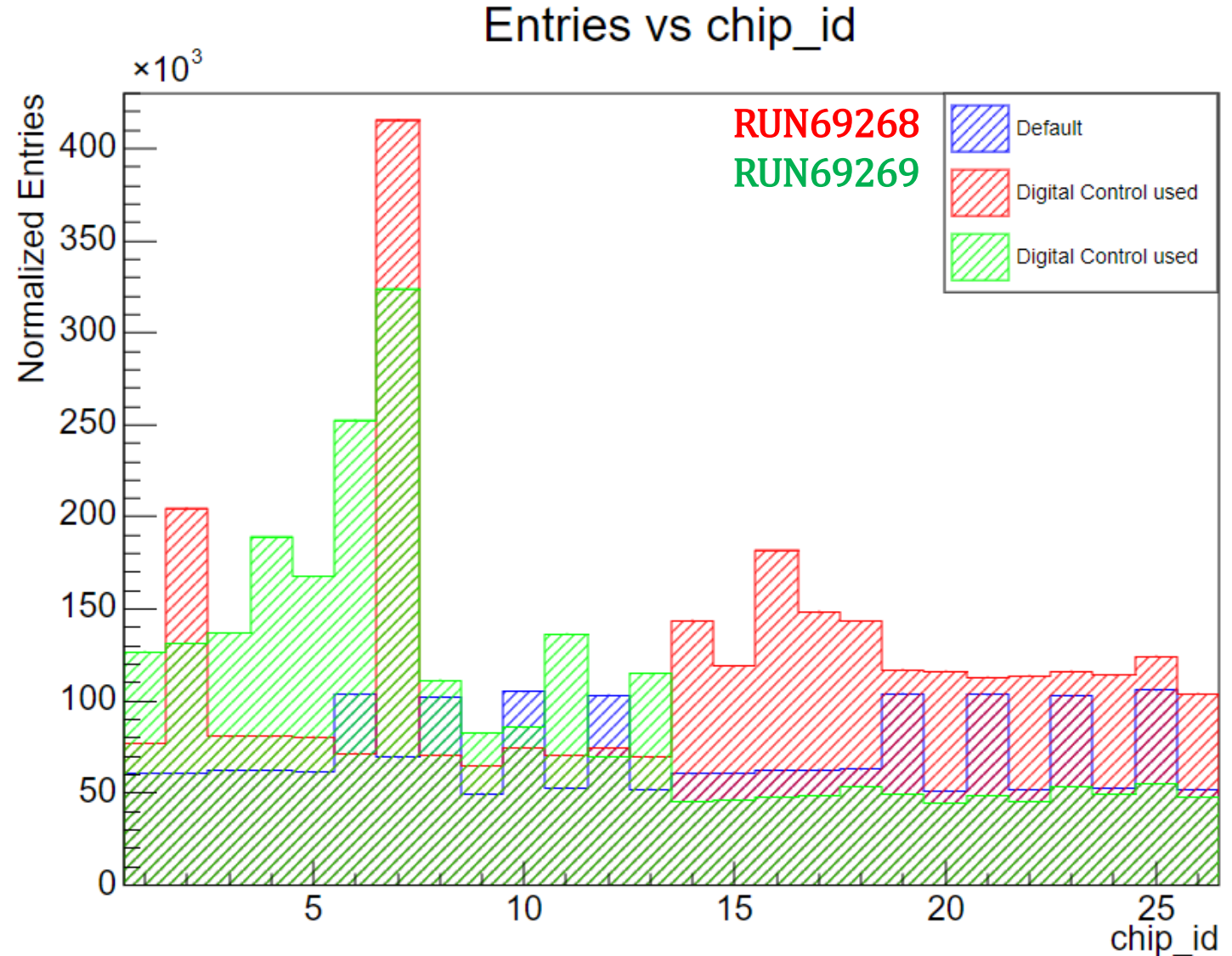
Raw ADC (PID=3008, Module=0, Chip=1)



Viewing half-entry-chips Run69268, 69269

Felix Server	7
pid	3008
module	0
chip id	1, 2, 3, 4, 5, 7, 9, 11, 13, 14, 15, 16, 17, 18, 20, 22, 24, 26

• after adc0_cut, some chips shows that recovery of entries.
But, we can see a strange behavior.

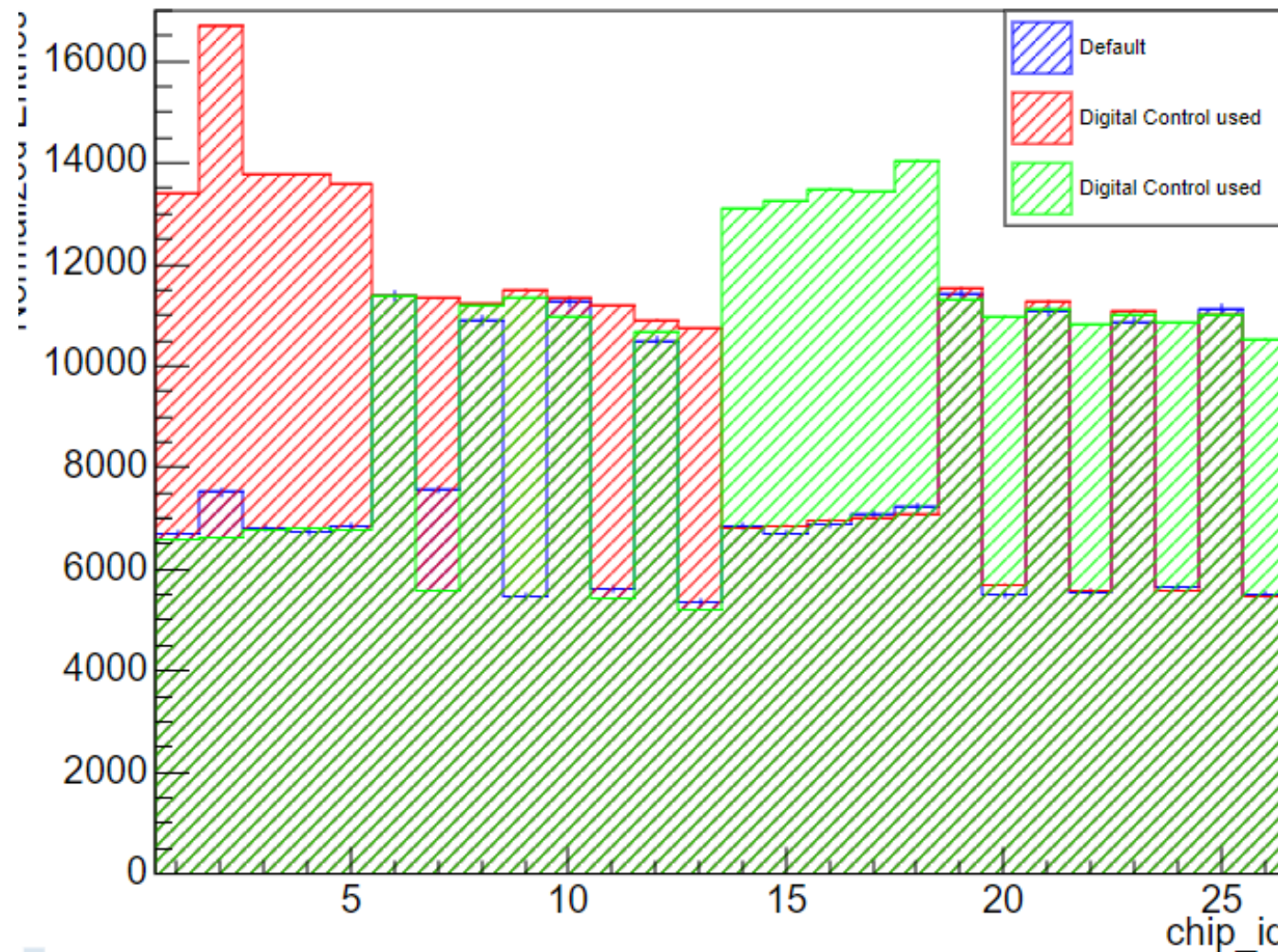


Felix Server	7
pid	3008
module	0
chip id	1, 2, 3, 4, 5, 7, 9, 11, 13, 14, 15, 16, 17, 18, 20, 22, 24, 26

- half-ladder here has a lot of half-entry-chips.
- When we cloned the data with digital-control in half, it's working. (you can see it right figure)
- I know that noise doesn't clone well, so it may be accidental. I need a few more runs.

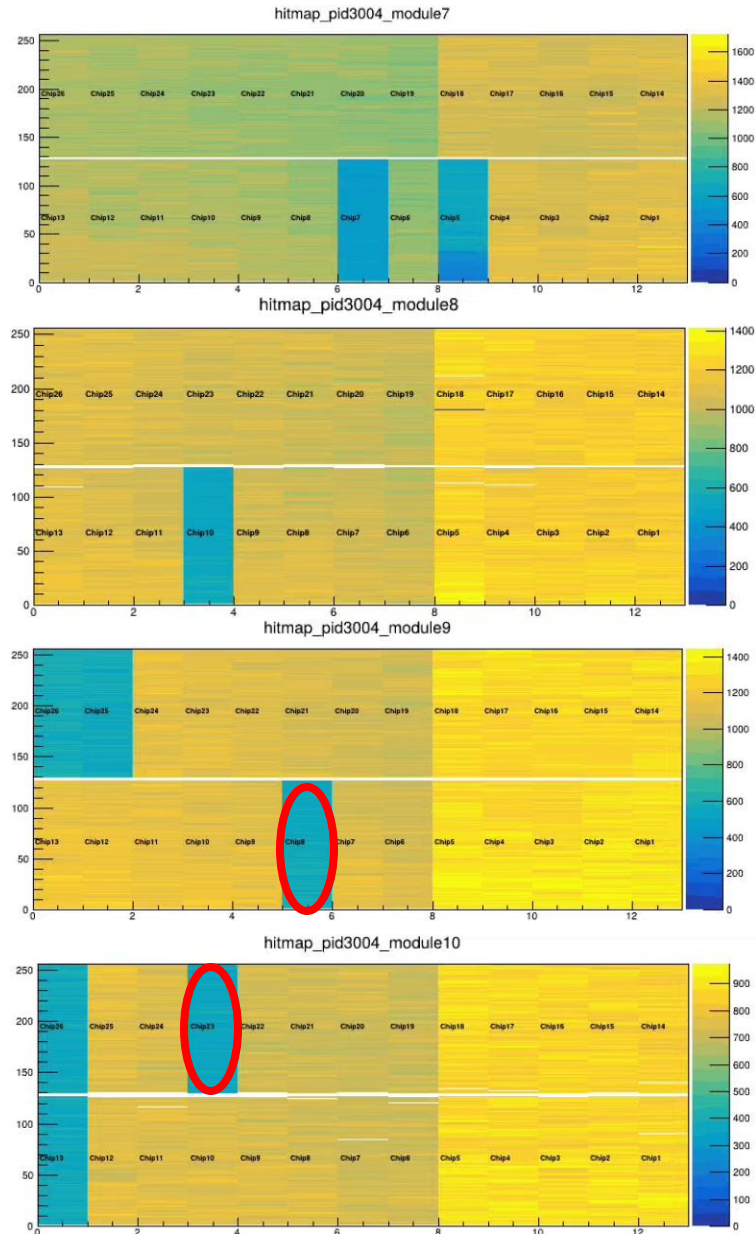
data took on June 20

Entries vs chip_id

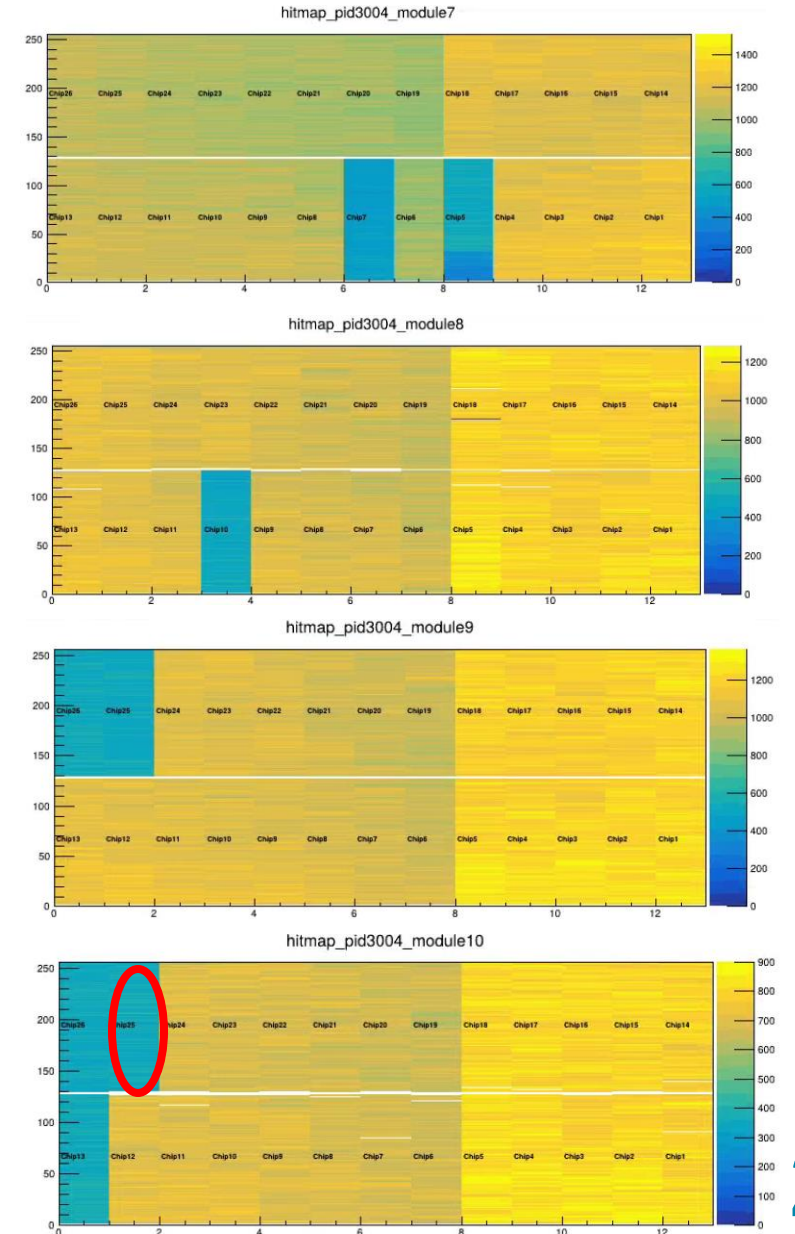


New half-entry-chips

RUN69268



RUN69269



- New half-entry-chips were recently identified.
- Even data not using digital-control can be viewed. And, also it is unstable half-entry with no reproducibility.
- It viewed in INTT4 && module 7~12.

Half-entry-chips chart(36 half-entry-chips)

Felix Server	0	0	3	5	7	7
pid	3001	3001	3004	3006	3008	3008
module	6	7	13	3	0	1
chip id	1, 2, 3, 4, 5, 6, 8, 10, 11, 12, 13	15	21, 23, 25	16	1, 2, 3, 4, 5, 7, 9, 11, 13, 14, 15, 16, 17, 18, 20, 22, 24, 26	1, 2

Hot

- 19chips / 37chips are perfectly recovered with digital-control
(Seems to be less, but problematic only the half-ladder at intt7&module0)
- When we used digital-control, Hot chips are appeared in intt7.
- There are unstable half-entry-chips in intt3 these days from RUN68***.

プロットを張り付けるだけの雑なスライドになってしまいましたが、
代理発表ありがとうございます。次週新しいデータが取れたら、それと
ともにまた発表します。
とりあえずシフト頑張ります。