

EEL clean room cosmic update

Anu implemented 85% divider to all 16 modules of the first four layers on the cosmic stand

- Monday: we tried to start cosmic data but could not proceed as DAQ was not stable for crate0 MPD4 connected to the 12 slot back-plane of the third module of the second layer
- Tried multiple reset of the crate and LV => Did not work
- Did systematic check on the MPD side: Swapped cable to another MPD, unplugged plugged cables, tested white cables etc but could not find any issue
- On the GEM side carefully checked HDMI cable and LV connections
 - HDMI connection was fine but LV cable was found to be loosely connected
- We then ran DAQ on pedestal run overnight until Tuesday and collected nearly 1M => No issues found in between

EEL clean room cosmic update

- Tuesday: We first took a pedestal run and then passed HV to start cosmic data
- Crate1MPD12 start giving readout errors for the event 35096
- We continue taking data without stopping coda

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ROCcrate1--sbsvme25
12  2  37  2  OFF ON OFF OFF LOW OFF OFF ON  0
13  N N N 37  OFF ON OFF OFF LOW OFF OFF ON  0
14  N N N 37  OFF ON OFF OFF LOW OFF OFF ON  0
15  N N N 37  OFF ON OFF OFF LOW OFF OFF ON  0
16  2  37  2  OFF ON OFF OFF LOW OFF OFF ON  0

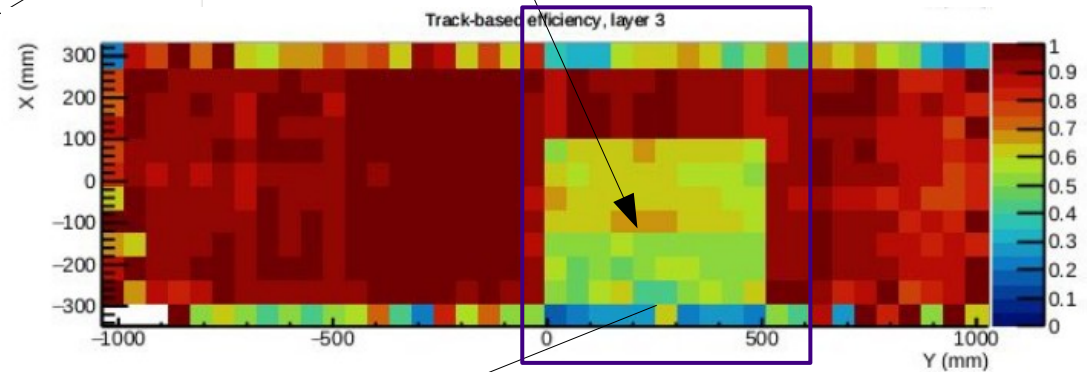
Output Buffer Status

Event Builder
OutFIFO Full Flags
Slot nWrds F E O E C T Blks Events Trigs Missed Incoming
-----
2  0 0 1 0 0 0 0 23 35096 70190 0 35095
3  0 0 1 0 0 0 0 23 35096 70190 0 35095
4  0 0 1 0 0 0 0 23 35096 70190 0 35095
5  0 0 1 0 0 0 0 23 35096 70190 0 35095
6  0 0 1 0 0 0 0 23 35096 70190 0 35095
7  0 0 1 0 0 0 0 23 35096 70190 0 35095
8  0 0 1 0 0 0 0 23 35096 70190 0 35095
10 0 0 1 0 0 0 0 23 35096 70190 0 35095
11 0 0 1 0 0 0 0 23 35096 70190 0 35095
12 1 0 0 1 0 0 0 23 35096 70190 0 35095
13 0 0 1 0 0 0 0 23 35096 70190 0 35095
14 0 0 1 0 0 0 0 23 35096 70190 0 35095
15 0 0 1 0 0 0 0 23 35096 70190 0 35095
16 0 0 1 0 0 0 0 23 35096 70190 0 35095

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FIFO Addr SDRAM
Slot WR OK RD OK Overrun Word Count -- OBUF -- Latched
Word APW PROC
F E Count Full Full
-----
2  0x1bf3020 1 0x1bf3020 1 no 0x 0 0 1 0 0x 0
3  0x1bf3020 1 0x1bf3020 1 no 0x 0 0 1 0 0x 0
4  0x1bf3020 1 0x1bf3020 1 no 0x 0 0 1 0 0x 0
5  0x1bf3020 1 0x1bf3020 1 no 0x 0 0 1 0 0x 0
6  0x acd7cc 1 0x acd7cc 1 no 0x 0 0 1 0 0x 0
7  0x acd7cc 1 0x acd7cc 1 no 0x 0 0 1 0 0x 0
8  0x 755ee4 1 0x 755ee4 1 no 0x 0 0 1 0 0x 0
10 0x1bf3020 1 0x1bf3020 1 no 0x 0 0 1 0 0x 0
11 0x1bf3020 1 0x1bf3020 1 no 0x 0 0 1 0 0x 0
12 0x1bf0dd3 1 0x1c4d4b6 1 YES 0x1fffff 1 0 0 0 0
13 0x1bf3020 1 0x1bf3020 1 no 0x 0 0 1 0 0x 0
14 0x acd7cc 1 0x acd7cc 1 no 0x 0 0 1 0 0x 0
15 0x acd7cc 1 0x acd7cc 1 no 0x 0 0 1 0 0x 0
16 0x 755ee4 1 0x 755ee4 1 no 0x 0 0 1 0 0x 0

** Trying a reset
daLogMsg: INFO: Resetting MPDs with ERRORS
resetMPDs: Number of calls = 0
* Success? Be sure to check the data!
daLogMsg: INFO: MPDs reset. CHECK THE DATA
  
```

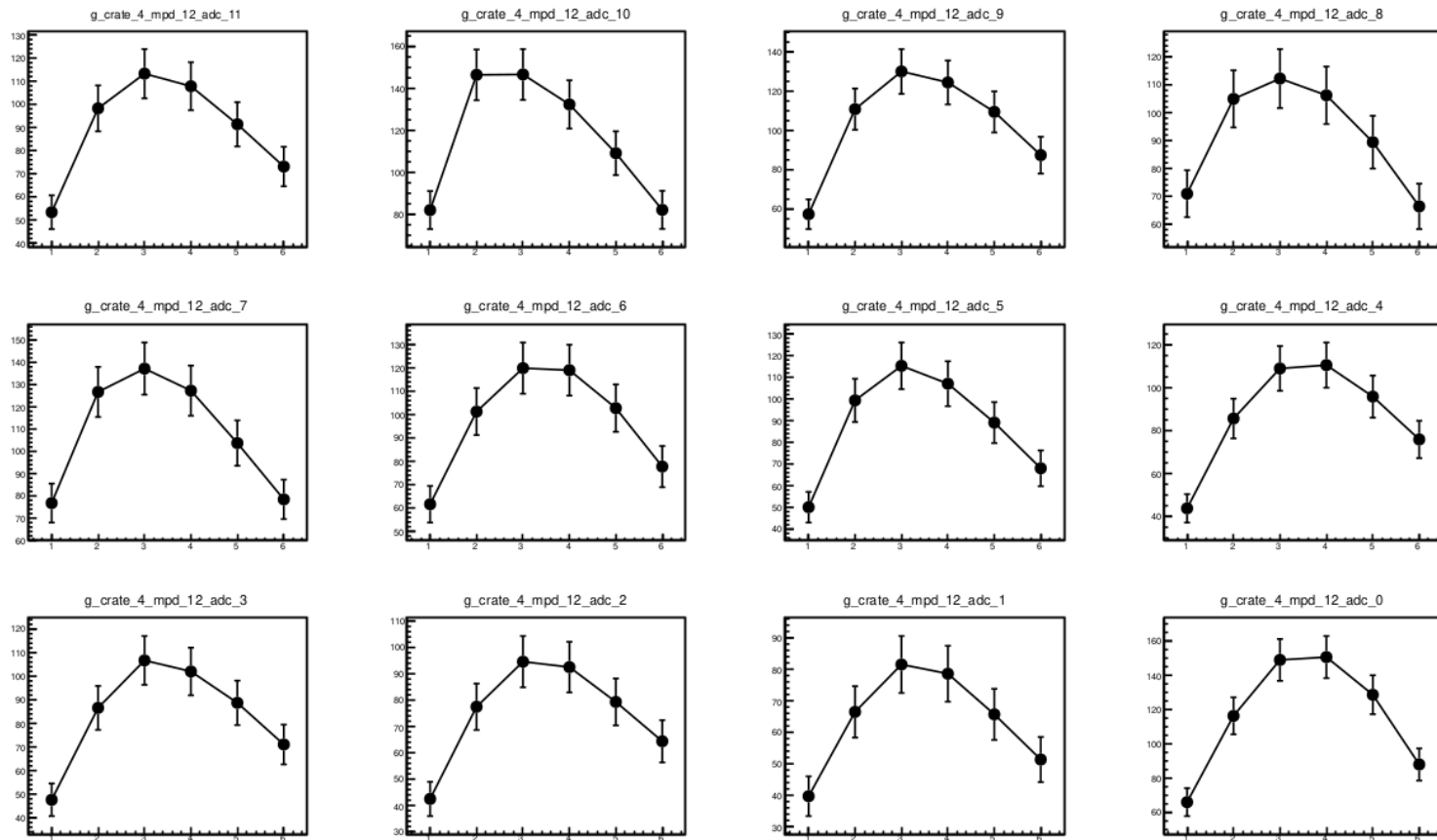
This is one of the two MPDs giving readout errors in the past



Crate1MPD12 is connected to the 12 slot back-plane of the 3rd module of 4th layer

Average ADC vs time sample

- Took the split with where readout error occur
- Plotted adc vs time sample for the crate1 MPD12



No serious issue

CODA status

The screenshot displays the CODA Run Control interface, titled "Run Control rcGui-58". The main window shows system information for "ROCcrate0--hallavme14pc" and "ROCcrate2--sbsvme30".

System Information (ROCcrate0--hallavme14pc):

Address	total	free	busy	size	incr	(KBytes)	Name
0xb7f94000	100	100	0	618512	1	(60207)	vmeIN
0x3813e000	0	0	0	2112	0	(0)	vmeOUT

Run Status:

- Run Number: 2806
- Run State: ended
- Start Time: 01/12/21 13:19:57
- End Time: 01/13/21 08:19:06
- Watch Component: PEBcleanroom
- Total Events: 815,261

ROCcrate2--sbsvme30 Output Buffer Status:

Slot	nWrds	F	E	O	E	C	T	Blks	Events	Trigs	Missed	Incoming
2	0	0	1	0	0	0	0	1	2	2	0	1
3	0	0	1	1	0	0	0	1	2	2	0	1
4	0	0	1	0	0	0	0	1	2	2	0	1
5	0	0	1	1	0	0	0	1	2	2	0	1
6	0	0	1	0	0	0	0	1	2	2	0	1
7	0	0	1	0	0	0	0	1	2	2	0	1
8	0	0	1	0	0	0	0	1	2	2	0	1

ROCcrate1--sbsvme25 Log:

```

* * Trying a reset
daLogMsg: INFO: Resetting MPDs with ERRORS
resetMPDs: Number of calls = 0
* Success? Be sure to check the data!
daLogMsg: INFO: MPDs reset. CHECK THE DATA
WARNING: *** Timeout while waiting for data in mpd 2 - check MPD/APV configuration
Slot 2 - OBUF block count: 0
Slot 3 - OBUF block count: 255

**** OUTPUT BUFFER FIFO is FULL in MPD 3 !!! RESET EVERYTHING !!!

callbackControl: Do not understand the command: session/control/preEnd
WARNING: *** Timeout while waiting for data in mpd 4 - check MPD/APV configuration
Slot 4 - OBUF block count: 0
Slot 5 - OBUF block count: 255

**** OUTPUT BUFFER FIFO is FULL in MPD 5 !!! RESET EVERYTHING !!!

6 0x14016d8 1 0x14016d8 1 no 0x 0 0 1 0 0x
7 0x14016d8 1 0x14016d8 1 no 0x 0 0 1 0 0x
8 0x106e0e9 1 0x10c892a 1 YES 0x1ffffff 1 0 0 0x
10 0x127be40 1 0x127be40 1 no 0x 0 0 1 0 0x
11 0x127be40 1 0x127be40 1 no 0x 0 0 1 0 0x
12 0x1682e5c 1 0x1682e5c 1 no 0x 0 0 1 0 0x
13 ffe 0x127be40 1 0x127be40 1 no 0x 0 0 1 0 0x
14 0x14016d8 1 0x14016d8 1 no 0x 0 0 1 0 0x
15 0x14016d8 1 0x14016d8 1 no 0x 0 0 1 0 0x
16 0x106fb88 1 0x106fb88 1 no 0x 0 0 1 0 0x

* * Trying a reset
daLogMsg: INFO: Resetting MPDs with ERRORS
resetMPDs: Number of calls = 0
* Success? Be sure to check the data!
daLogMsg: INFO: MPDs reset. CHECK THE DATA
Slot 4 - OBUF block count: 9

**** OUTPUT BUFFER FIFO is FULL in MPD 4 !!! RESET EVERYTHING !!!

Slot 8 - OBUF block count: 21

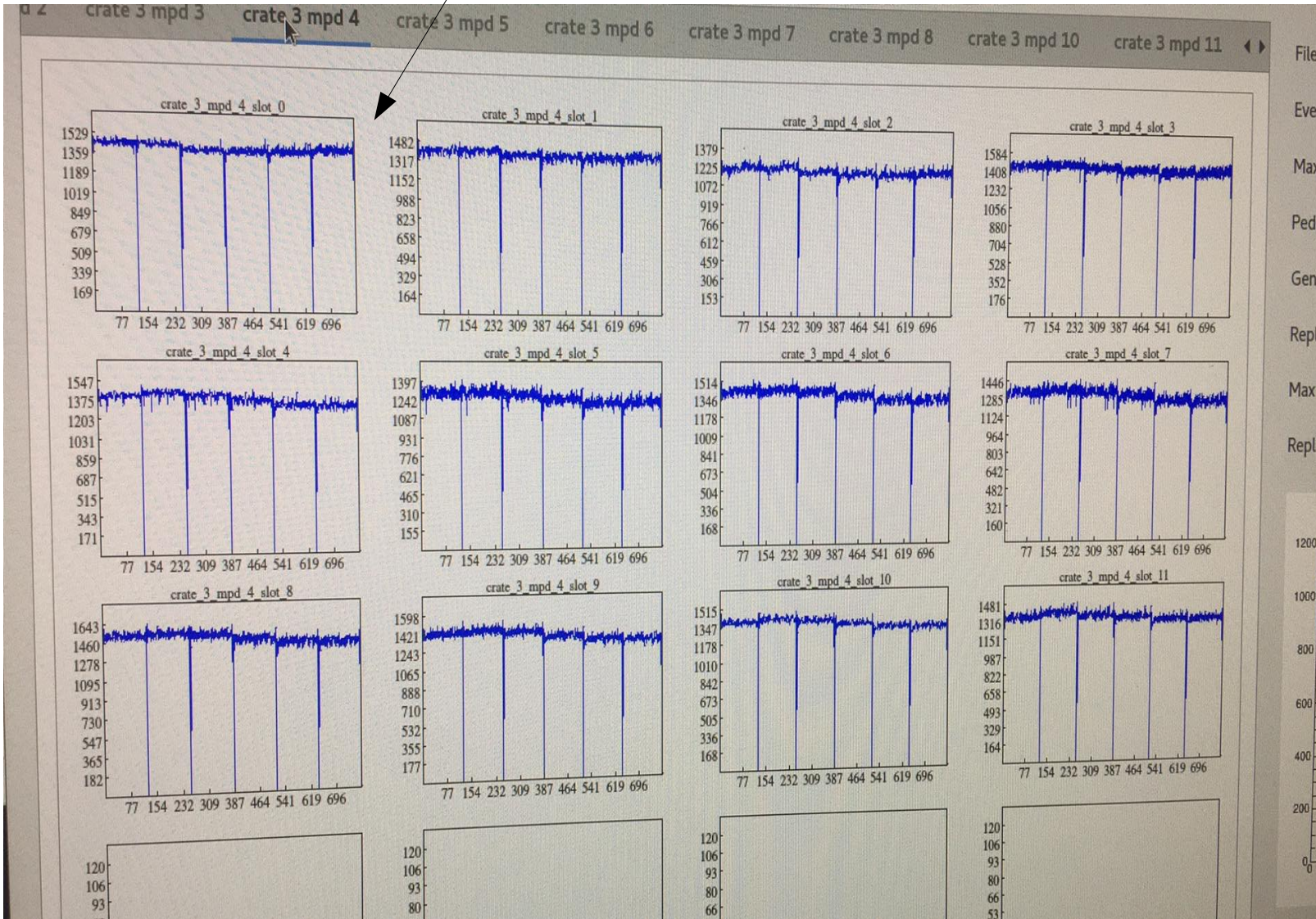
**** OUTPUT BUFFER FIFO is FULL in MPD 8 !!! RESET EVERYTHING !!!
    
```

- Trigger rate went down to zero around 800k events
- Restarted coda and checked => everything looks normal now

LV reset 1

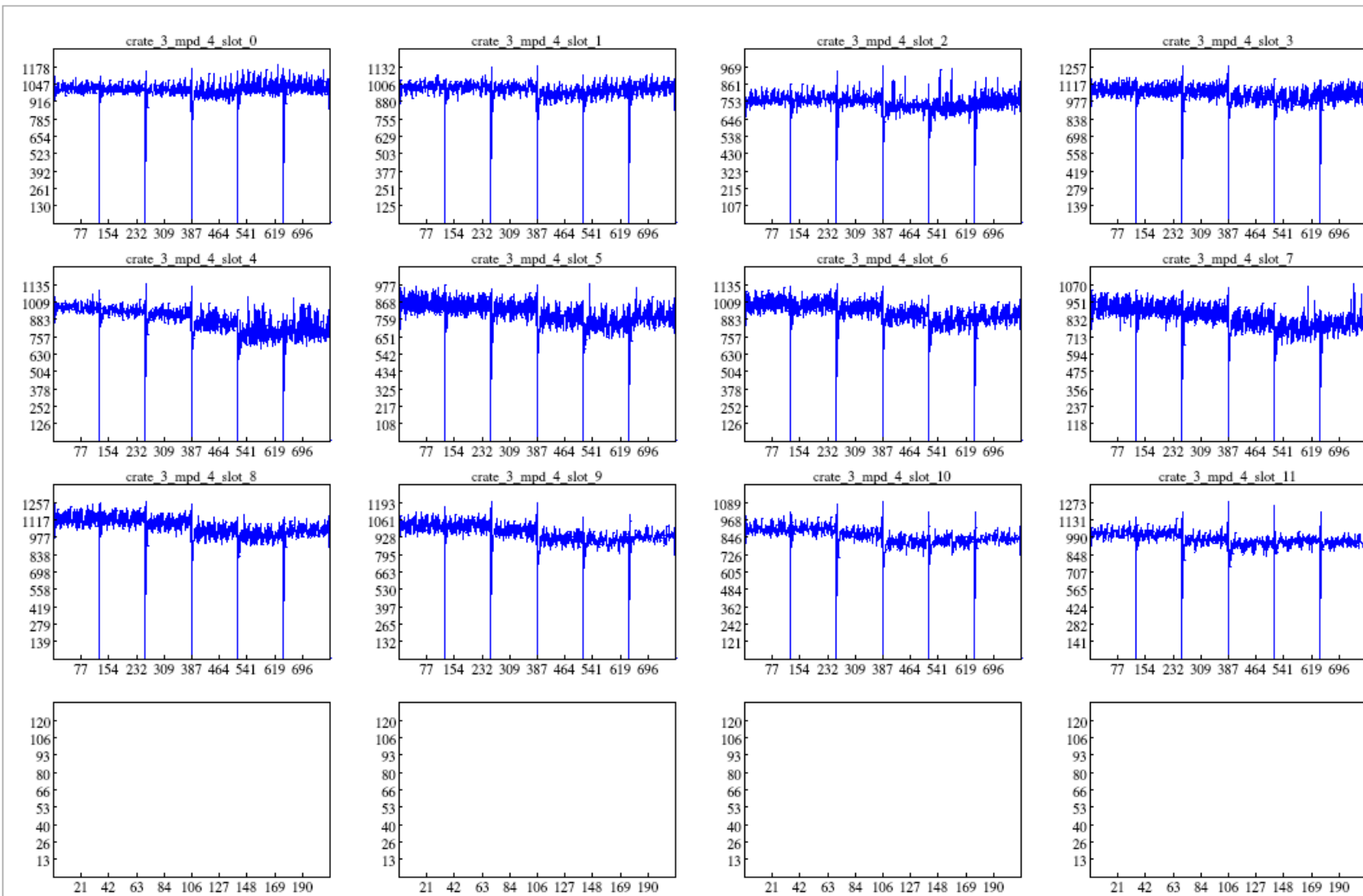
Nearly around 1400 channel in average

ADC



Channel no.

LV reset 2



If we reset LV we may need to take a new pedestal