DAC Scan

RIKEN/RBRC
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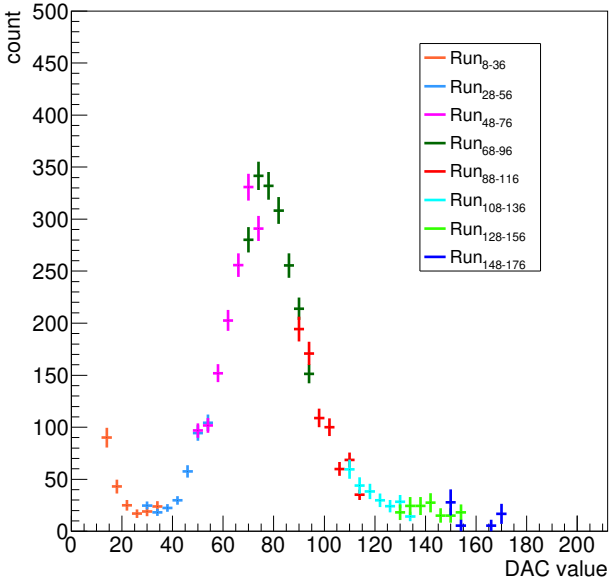
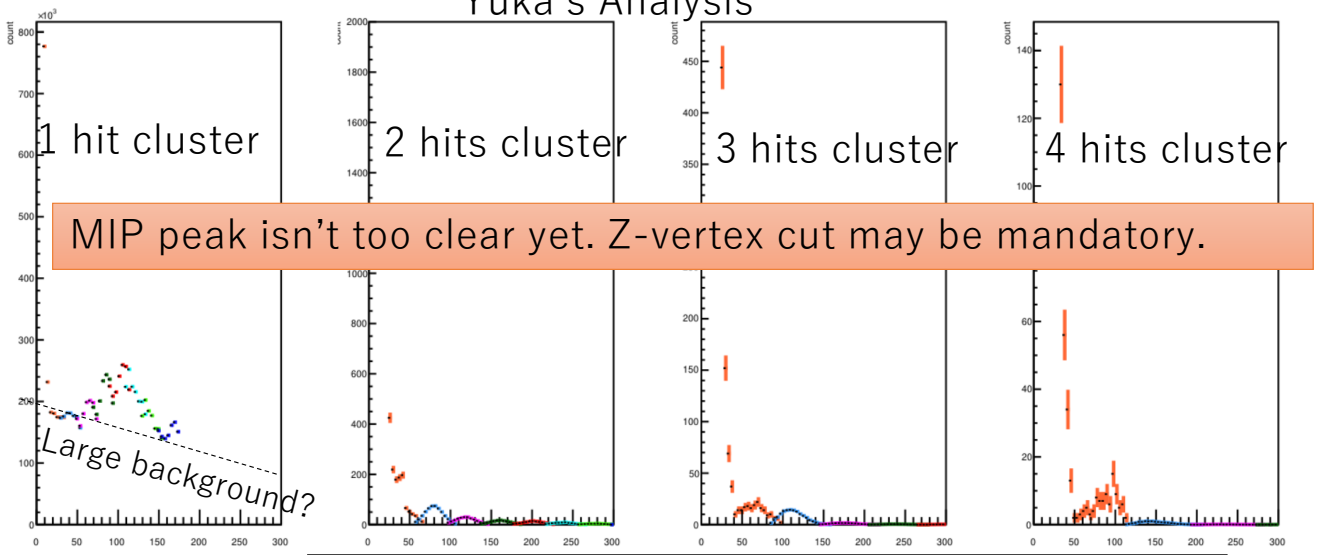
DAC Scan Status

- 1st attempt on June 4~5th Run#9301 ~ 9335.
- Condition: 6 servers timed in (except for intt0, 1), n_collision=4.



2021 Tohoku Beam test

Yuka's Analysis



MIP peak isn't too clear yet. Z-vertex cut may be mandatory.

https://indico2.riken.jp/event/4503/contributions/21289/attachments/12076/17540/20230705_sugiyama.pdf

DAC Scan

Extend to max range

Scan	1	2	3	4	5	6	7	8	9	10	11	12
DAC0	8	28	48	68	88	108	128	148	168	188	212	236
1	12	32	52	72	92	112	132	152	172	192	216	240
2	16	36	56	76	96	116	136	156	176	196	220	244
3	20	40	60	80	100	120	140	160	180	200	224	248
4	24	44	64	84	104	124	144	164	184	204	228	252
5	28	48	68	88	108	128	148	168	188	208	232	255
6	32	52	72	92	112	132	152	172	192	212	236	255
7	36	56	76	96	116	136	156	176	196	216	240	255

- BigPartition together with MBD (Must) no need to be a dedicated run
- Can be done with n_collision=127 (w/o waiting for asynchronous timing issue btwn intt servers.
- 12 settings
- > 1M events at ~400Hz
- ~ 12 hours total
- If the series of data are interrupted by the beam dump, repeat the same setting as the last run at the last store.

Instruction for a DAQ operator

- DAC setting is to be changed by a DAQ operator by running following script: **~/INTT/sphenix_inttpy/run_scripts/INTT_dac_scan.sh [scan number]**
- Example:

```
phnxrc@operator1$ bash INTT_dac_scan.sh 1
```

- The script changes DAC setting “scan 1” and loads parameters to FPHX (execute run.py)
- Make an entry in INTT e-log for scan number and corresponding run number.

```
cat
fphx_parameters_DAC_scan_01.txt
Vref        1
DAC0     8
DAC1     12
DAC2     16
DAC3     20
DAC4     24
DAC5     28
DAC6     32
DAC7     36
N1sel       6
N2sel       4
FB1sel      4
Leaksel     0
P3sel       0
P2sel       4
Gsel        2
BWsel       8
P1sel       5
Injsel      0
LVDS        63
```

To be checked the script still works, since the last use was a month ago. Jaein