

INTT Timing Tune Run Plan (June 7, 2023)

RIKEN/RBRC
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Strategy

- We let shift crews to execute our scan programs rather than we isolate INTT from main data acquisition.
- We prepare a scripts to change our online parameters by one command between runs. This way shift takers can handle.
- We onsite crews focus on updating RunLog, processing data, transfer data for offsite crews to analyze data.
- Please stay tuned to what has been measured.

INTT Open Time Scan

Script: `/home/phnxrc/INTT/sphenix_inttpty/run_scripts/INTT_open_time_scan.sh`
To use : `./INTT_open_time_scan.sh [scan num]`

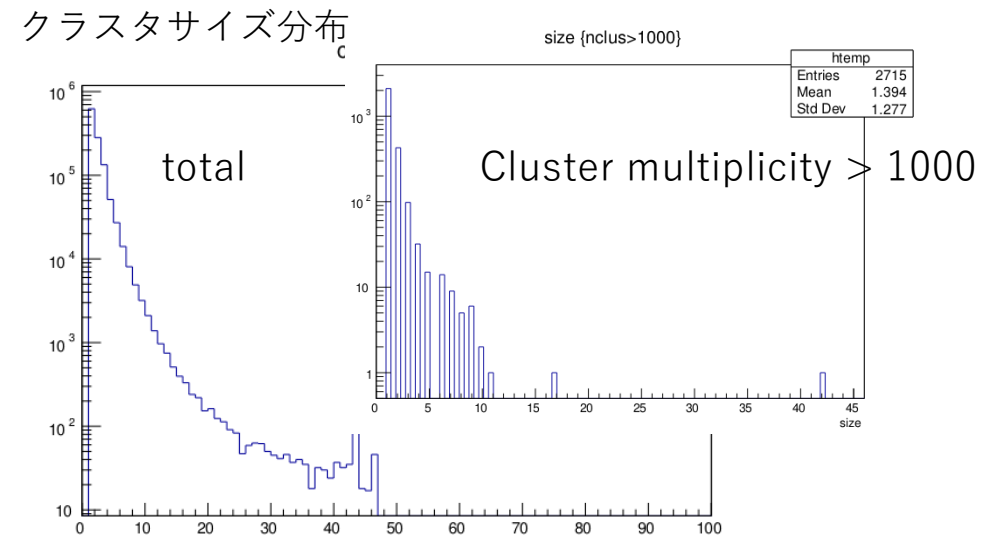
Scan num	1	2	3	4	5	6	7	8
Open Time	80	40	35	30	20	10	5	1
# of Events (M)	2	2	2	2	1	1	1	1

- 2Mevents/run for open time setting 80, 40, 35, 30
- 1Mevents/run for open time setting 20, 10, 5, 1
- Trigger rate : $\sim 1\text{kHz}$ (0.5hour to get 2MEvents)

To be done by shift crews

Indication of possible hit lost

- Takashi pointed out a possible hit lost in Run#8059 taken with open window of 35.
- The indication was the cluster size for the cluster multiplicity > 1000 requirement made cluster size smaller than total.

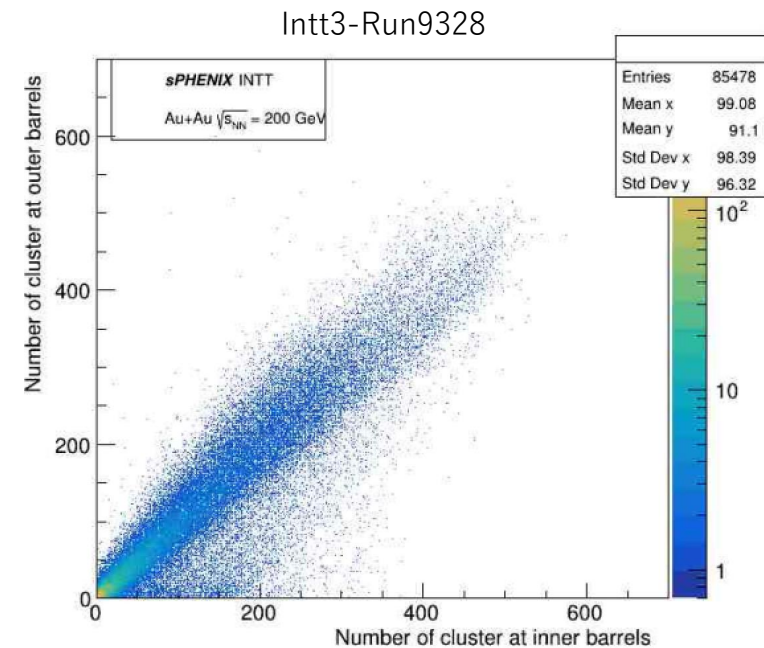


https://indico2.riken.jp/event/4499/contributions/21221/attachments/12029/17432/20230607_hachiya_クイックデータ解析.pdf

Open up n_collision window

- Given the suspect in intt-3 that we may be missing correlated hits under 78:0x35 & n_collision=4, we'll try following program.
- Run 1M events with 78:0x35 & n_collision=4 for 3 times without changing any conditions
- Run 2M event swith 78:0x35 & n_collision=6.

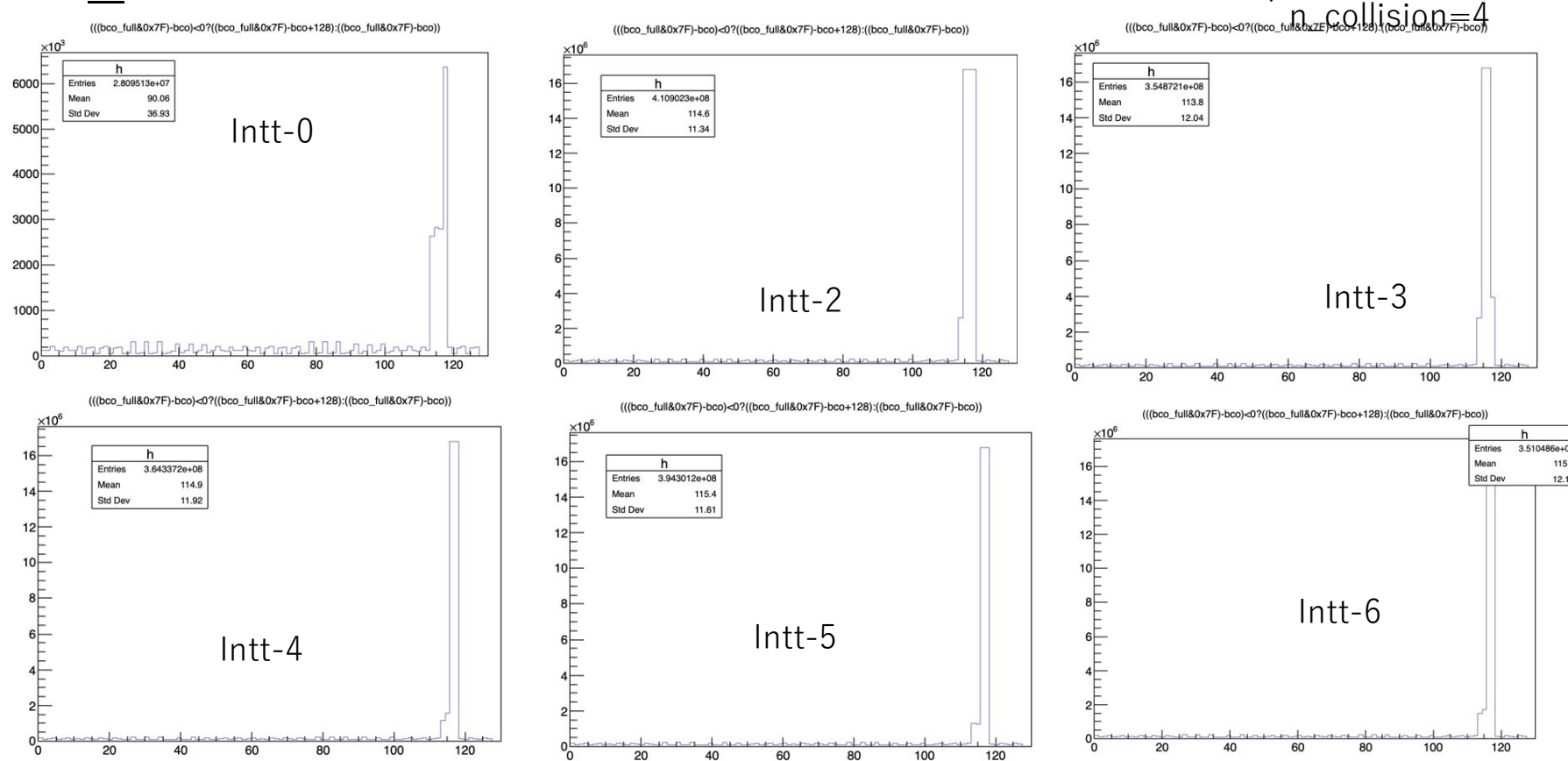
Analyze the data if intt-3 recovers missing events in outer layers.



https://indico2.riken.jp/event/4499/contributions/21220/attachments/12031/17440/20230606_INTTJPMT.pdf

To be done in day shift by Itaru on June 7th. Otherwise, let shift crew do.

bco_full – bco distribution on other felixs (Run#9328)



https://indico2.riken.jp/event/4499/contributions/21219/attachments/12028/17431/230606_BCO_Issues_maya_日本語ミーティング.pdf

Same tendency.

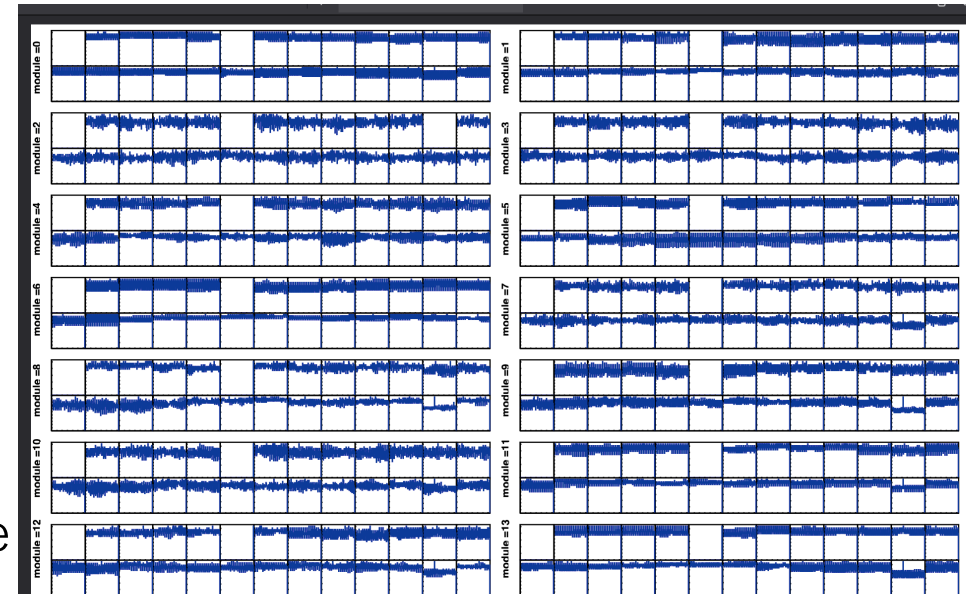
Different number of events between different felixs which should not be.

3

No indication of neither worse BCO spread nor shift for only intt-3 uniquely though in the same run 9328.
To be evaluated qualitatively (Maya)

Intt-1 Debugging

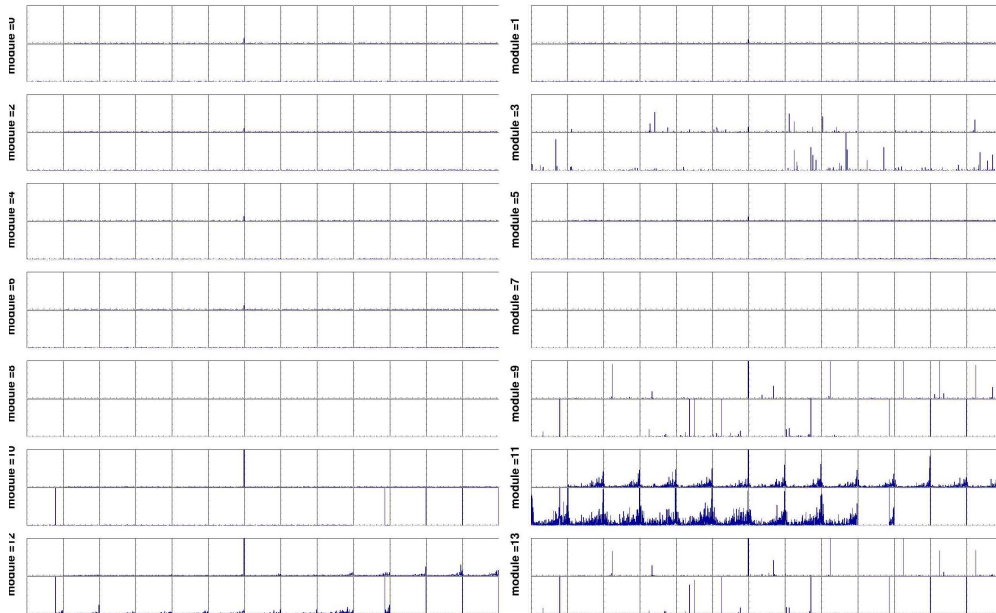
- Confirmed Intt-1 runs fine with higher threshold.
- We need to list the high noise channel and mask them.
- Series of short runs Run#9402~9431 are to be used to list up noisy channels.
- Noisy channels can be changed run-by-run though, the list are to be made to be aggressively. (no hesitation masking as many channels as needed, it is rather important to operate intt-1. We cannot learn anything from no data)
- Any automated way to pick up noisy channels from these clumsy data sets?



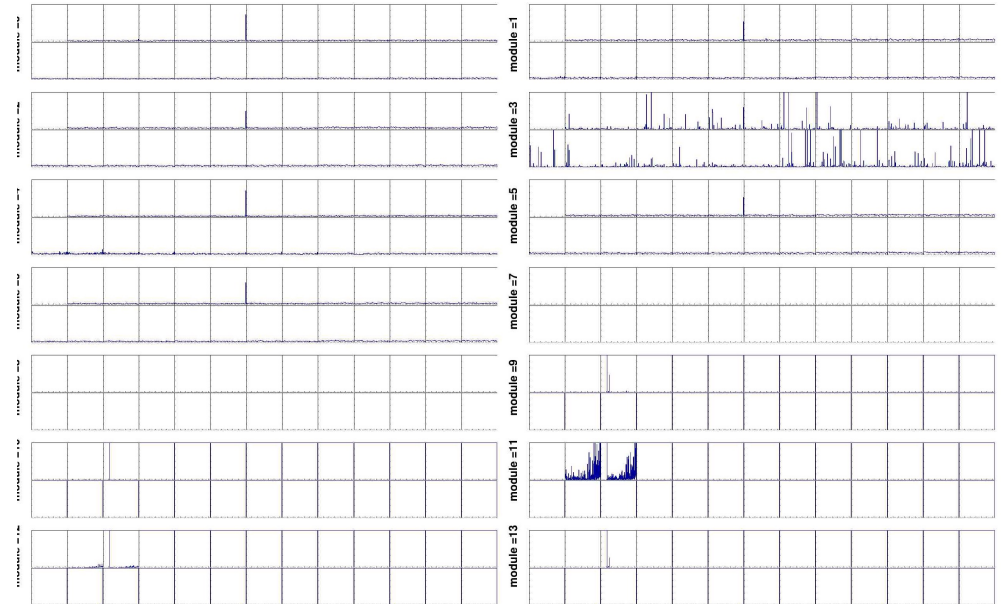
Run#9301 DAC0=68

intt-0 with DAC0=15

Run#9423



Run#9418



We have to list up noisy channel aggressively to make intt-0 working without crashing daq.
The noisy channel can appear here and there in different runs.

RunLog

Run23 Commissioning RunLog

ファイル編集表示挿入表示形式データツール拡張機能ヘルプ

274:274 | fx =if(D274="", "", A273+1)

	A	匿名クアッカ フラビー	E	F	G	H	I	J	K	L	
1		date	run #	ROC	Run Type calib/ped/ beam/cali bration	Duration [min.]	DAC0	Purpose	Purpose	L1 Delay	n_collisio
345	336		9330								
346	337		9331								
347	338		9332								
348	339	2023/6/5 19:48	9333	intt0-7 except 1 beam			148	DACscan8		25	
349	340	2023/6/5 21:08	9334	intt0-7 except 1 beam			168	DACscan9		25	
350	341	2023/6/5 22:48	9335	intt0-7 except 1 beam			188	DACscan10		25	
351	342	2023/6/6 12:00	9402	intt0-7 except 1 beam			15	Timed-In data taking with DAC0=15 for all felix servers		25	
352	343	2023/6/6 12:00	9415	intt0-7	beam		15	Timed-In data taking with DAC0=15 for all felix servers, good data taking for intt-1 fiber 0-7. fiber 8-13 were r		25	
353	344	2023/6/6 12:00	9417	intt0-7	beam	5	15	Timed-In data taking with DAC0=15 for all felix servers, good data taking for intt-1 fiber 0-7. fiber 8-13 were r		25	
354	345	2023/6/6 12:00	9418	intt0-7	beam		15	Timed-In data taking with DAC0=15 for all felix servers, Mask 10,11,12,13-of intt-1 ->bad		25	
355	346	2023/6/6 12:00	9419	intt0-7	beam		15	Timed-In data taking with DAC0=15 for all felix servers, Mask 7,8,9 of intt-1 ->good		25	
356	347	2023/6/6 12:00	9420	intt0-7	beam		15	Timed-In data taking with DAC0=15 for all felix servers, Mask 9 of intt-1 ->good		25	
357	348	2023/6/6 12:00	9421	intt0-7	beam		15	Timed-In data taking with DAC0=15 for all felix servers, Mask 8 of intt-1 ->bad		25	
358	349	2023/6/6 12:00	9422	intt0-7	beam		15	Timed-In data taking with DAC0=15 for all felix servers, Mask 7 of intt-1 ->bad		25	
359	350	2023/6/6 12:00	9423	intt0-7	beam		15	Timed-In data taking with DAC0=15 for all felix servers, Mask 7,8 of intt-1 ->bad		25	
360	351	2023/6/6 12:00	9424	intt0-7	beam		15	Timed-In data taking with DAC0=15 for all felix servers, Mask 7,8 of intt-1 ->bad		25	
361	352	2023/6/6 12:00	9428	intt0-7	beam		15	Timed-In data taking with DAC0=15 for all felix servers, Mask 7,8,9 of intt-1 ->bad		25	
362	353	2023/6/6 12:00	9429	intt0-7	beam		15	Timed-In data taking with DAC0=15 for all felix servers, Mask 7,8,9,10,11,12,13 of intt-1 ->bad		25	
363	354	2023/6/6 12:00	9430	intt0-7	beam		15	Timed-In data taking with DAC0=15 for all felix servers, Mask 0,1,2,3,4,5,6,7,8,9,10,11,12,13 of intt-1 ->good		25	
364											
365											
366											
367											
368											

Different mask settings.