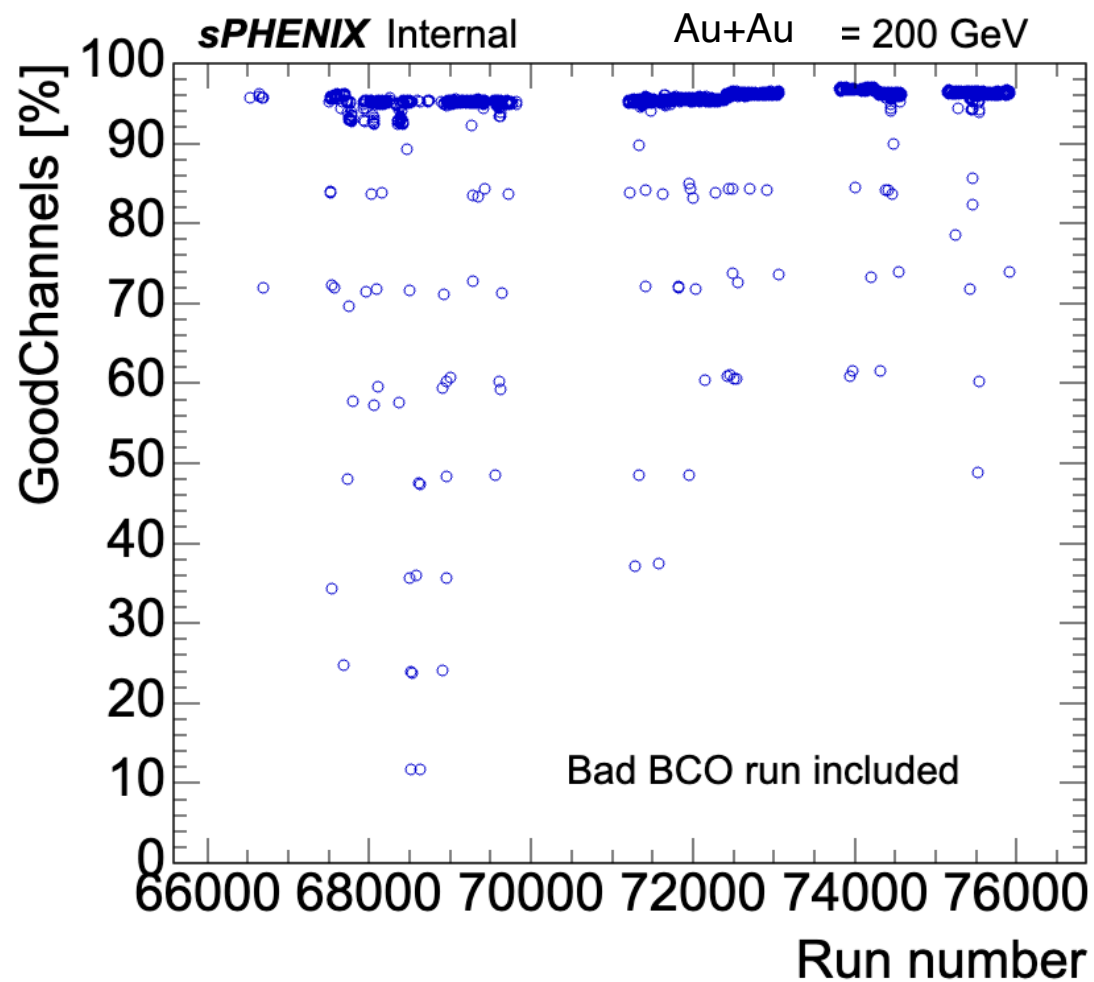


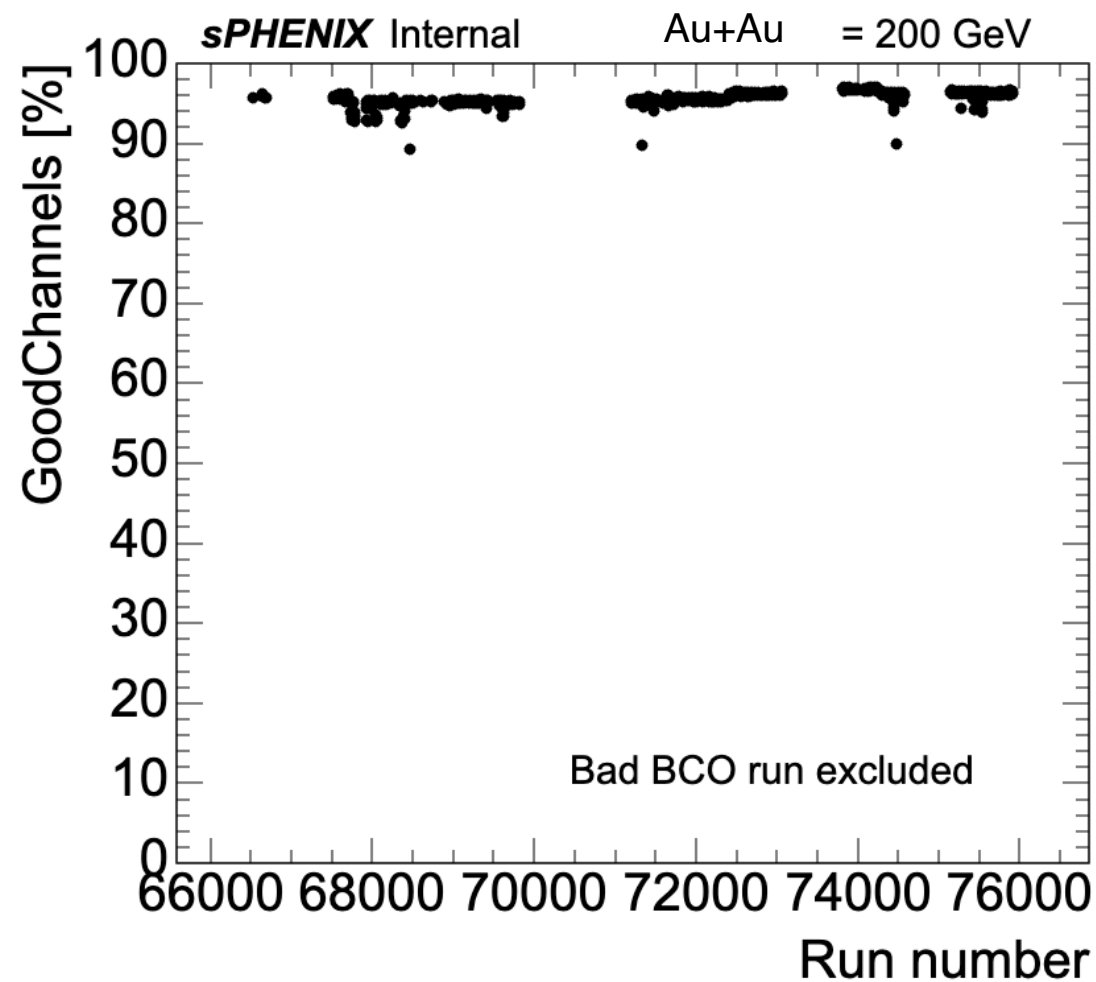
INTT auto-calibration update

Jaein Hwang (Korea Univ.)

Oct. 24 2025



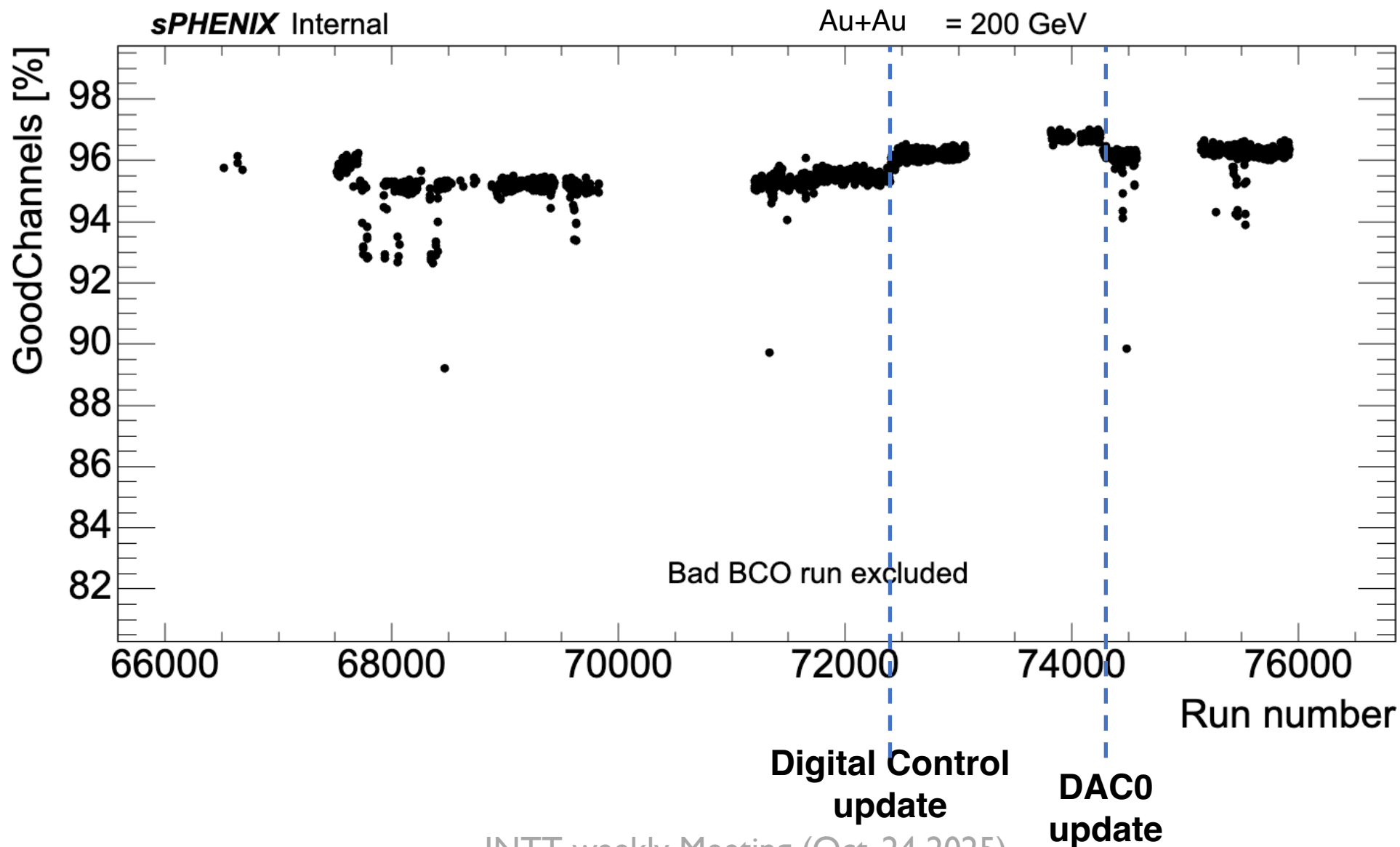
Total events : 17,725,154,159



Total events : 16,282,956,388

8% of total events removed by BCO QA

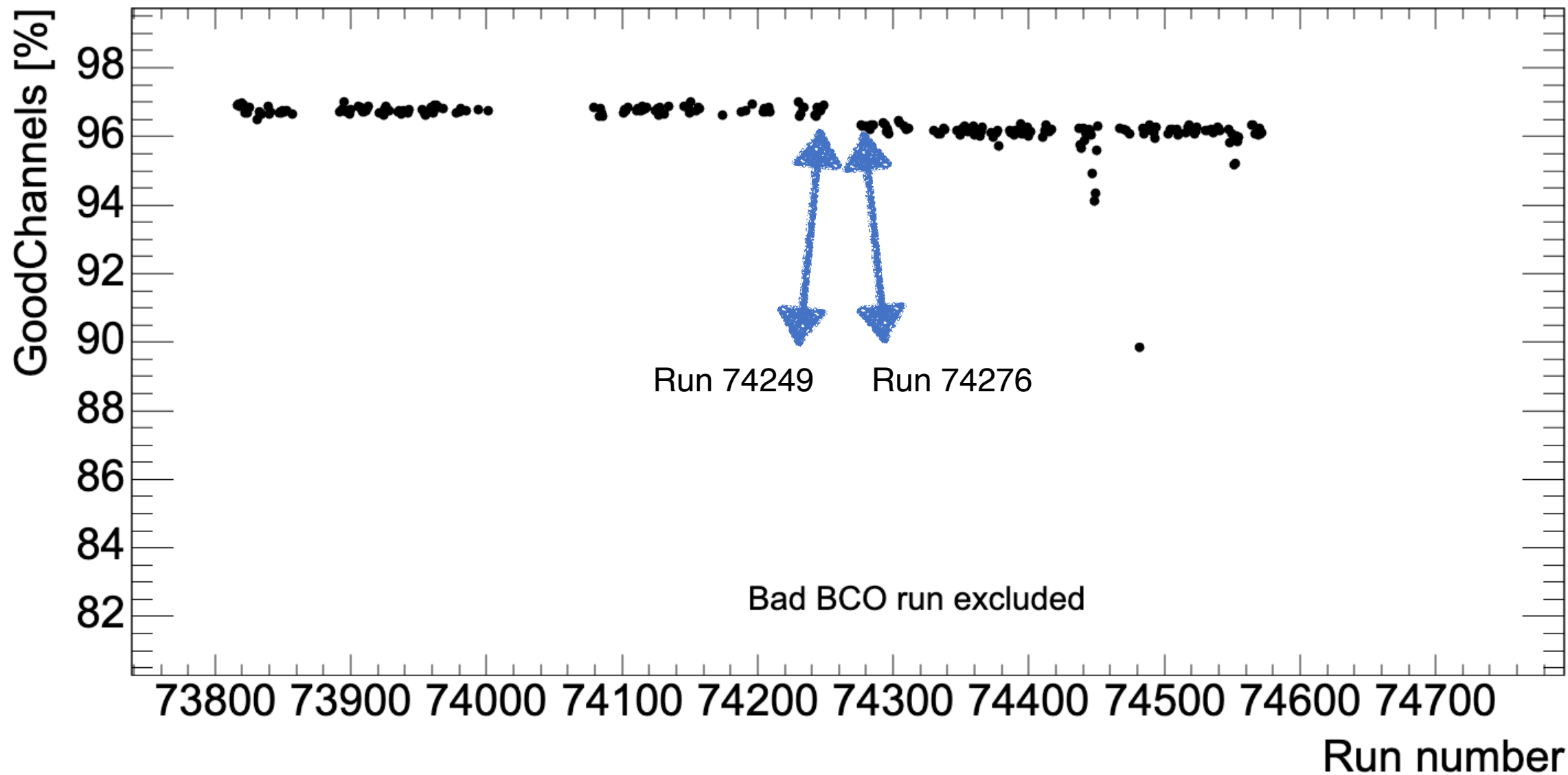
Good Channel Fraction Zoom in



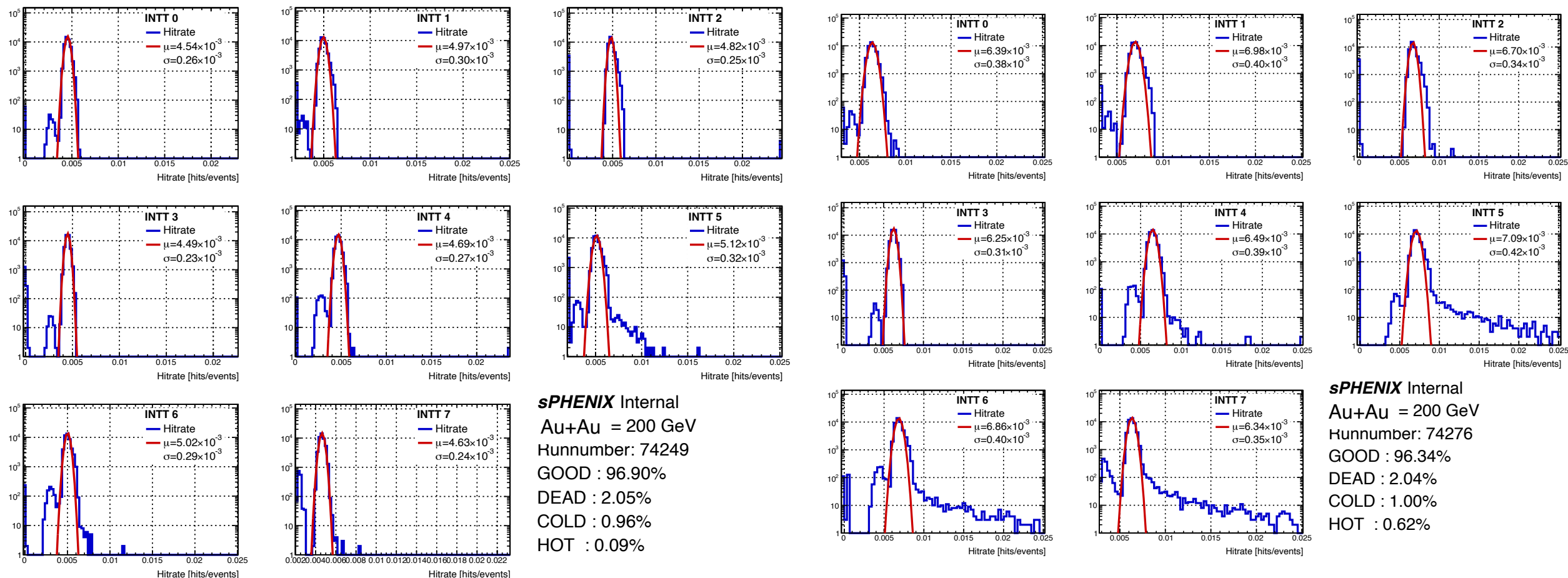
Good Channel Fraction Zoom in(2)

sPHENIX Internal

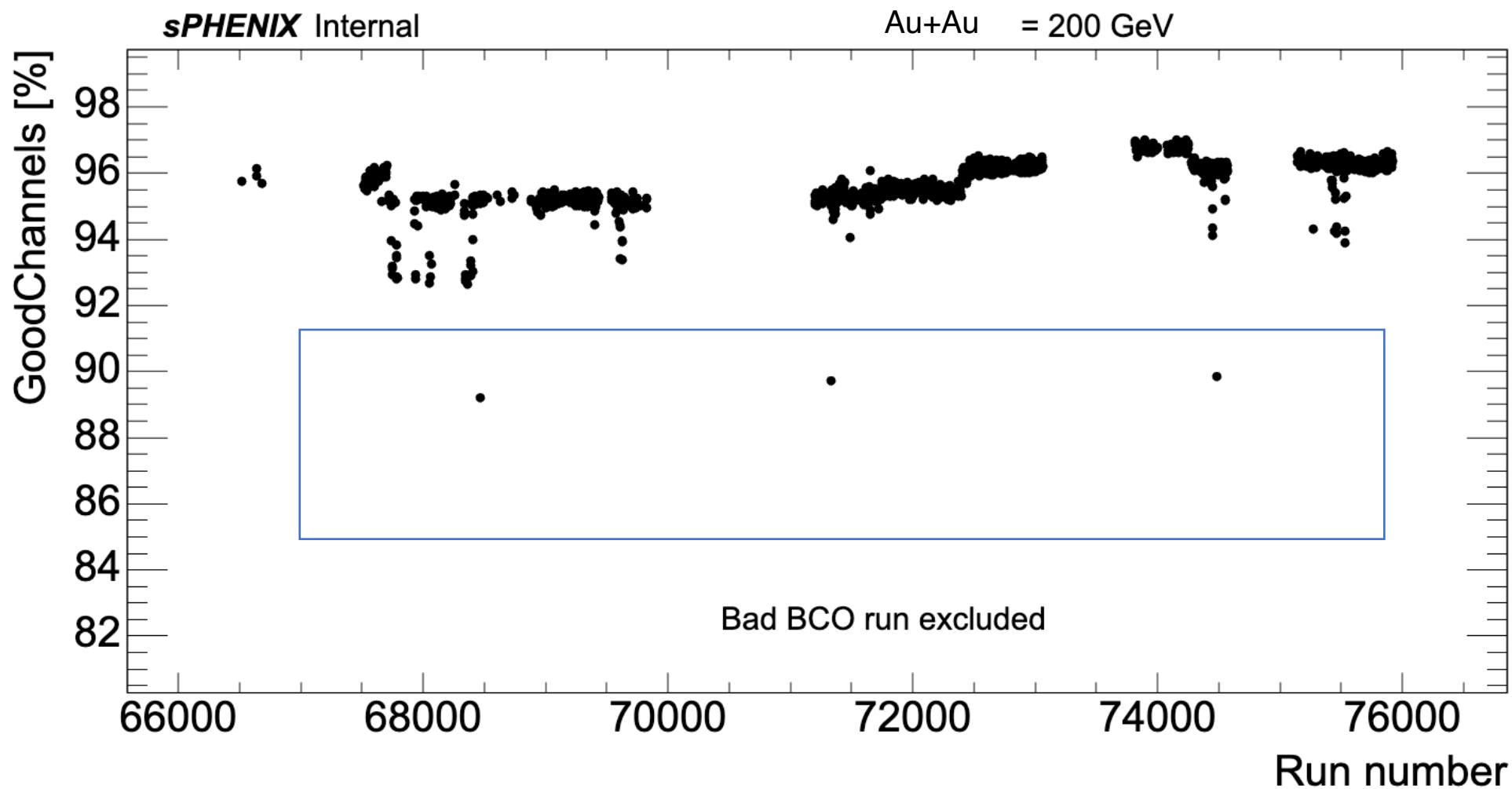
Au+Au = 200 GeV



Hit rate distribution



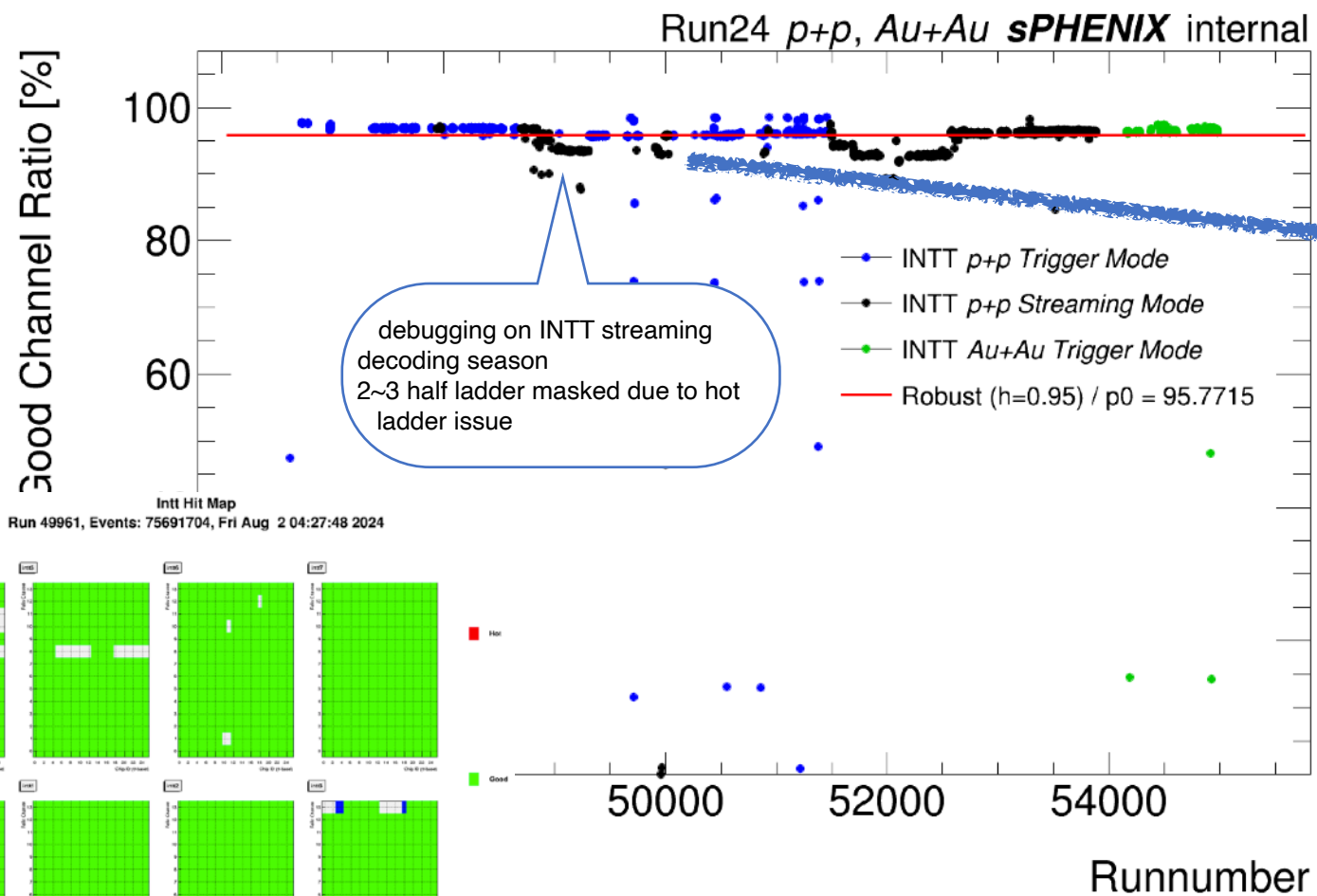
Good Channel Fraction Zoom in



BACKUP

Remarkable past record(1)

Good Channel Ratio (BCO_QA == GOOD && Runtime > 300s)



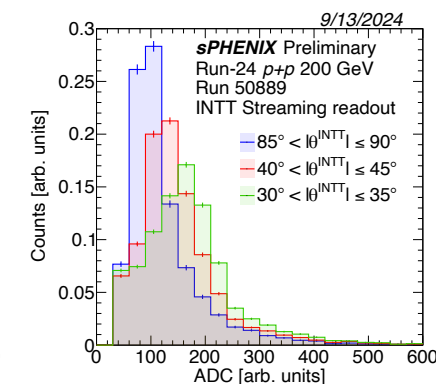
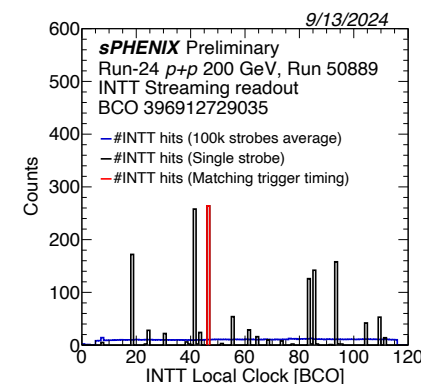
BLUE : Triggered mode

BLACK : Streaming mode

GREEN : AuAu Trigger mode

Linear / Robust ($h=0.95$) Fit

Run 50,889 / Golden run to clarify
INTT is ready for streaming readout



INTT Run QA Result

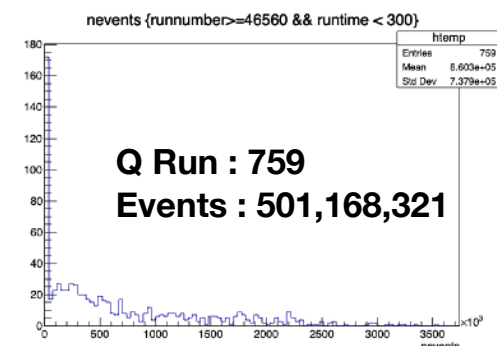
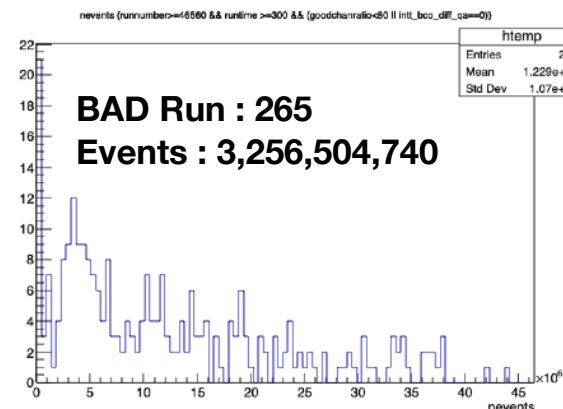
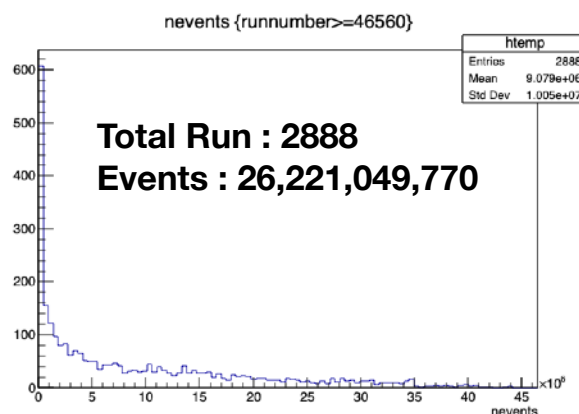
RC-DAQ events in daq database
is used for # of events estimation

From Jun 21(Run 46560) to
End of Run

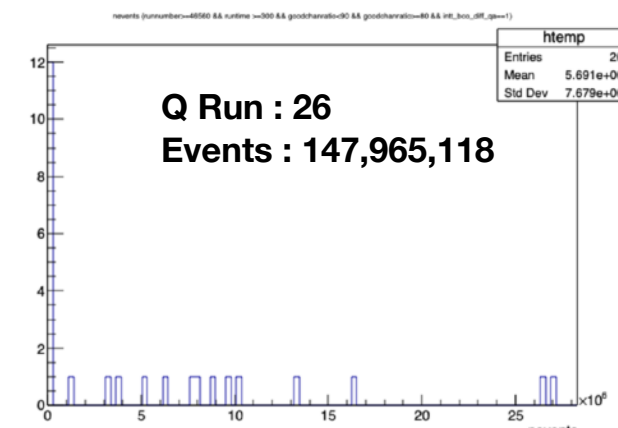
- Golden Run
BCO alignment = GOOD
Runtime ≥ 5 mins
GOOD Channel ratio > 90%

- Bad Run case 1
Runtime ≥ 5 mins
BCO alignment = BAD
- BAD Run case 2
Runtime ≥ 5 mins
Good Channel ratio < 80%

- Questionable case 1
Runtime < 5mins



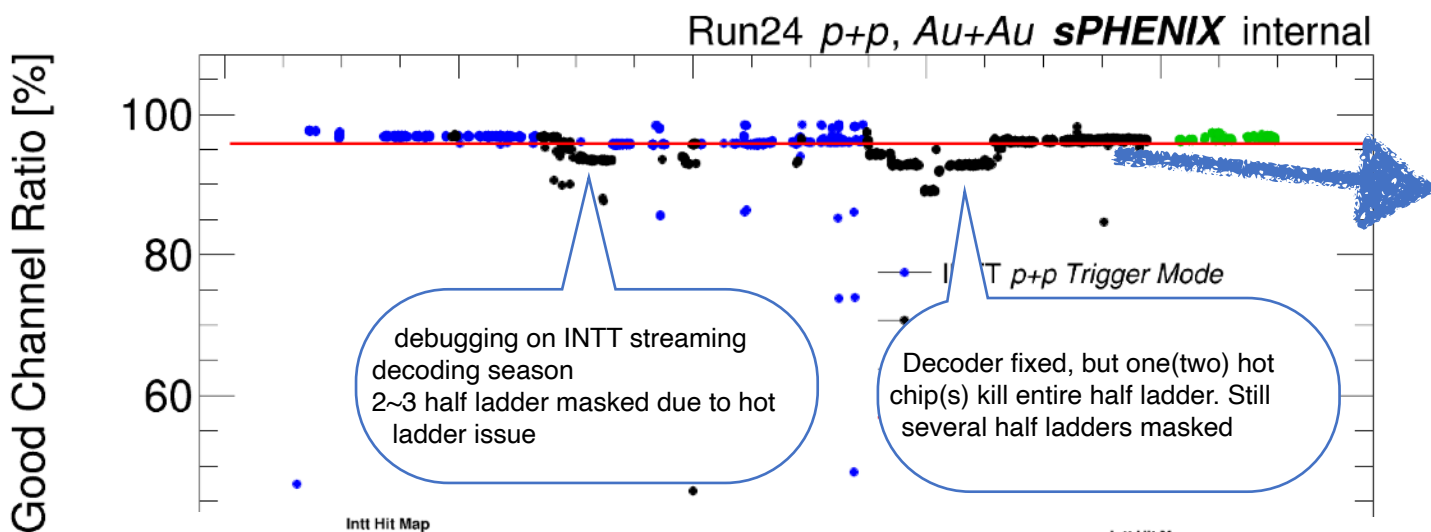
- Questionable case 2
Runtime ≥ 5 mins
80% < Good Channel ratio < 90%



Category	Fraction of Runs (%)	Fraction of Event (%)
GOOD	63.67%	85.09%
BAD	9.18%	12.42%
Questionable	27.15%	2.49%

Remarkable past record(2)

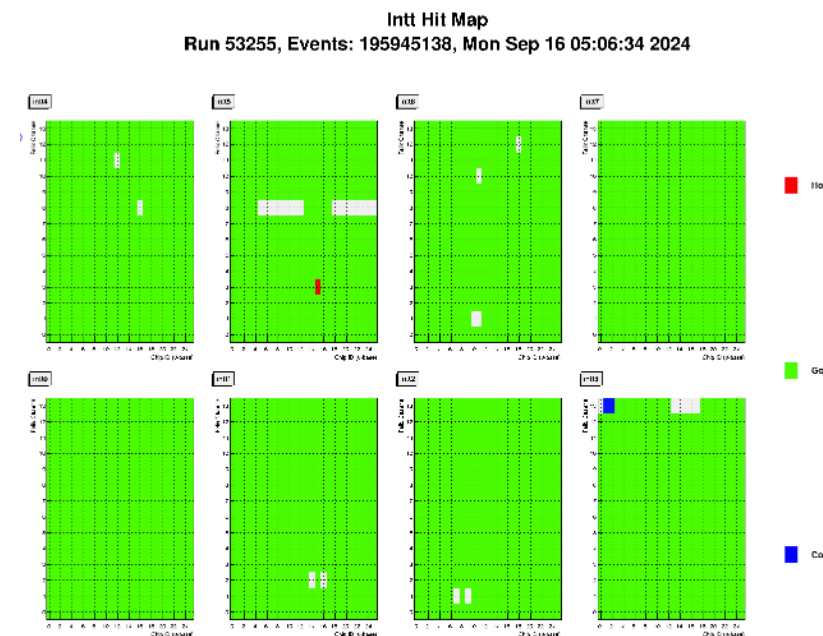
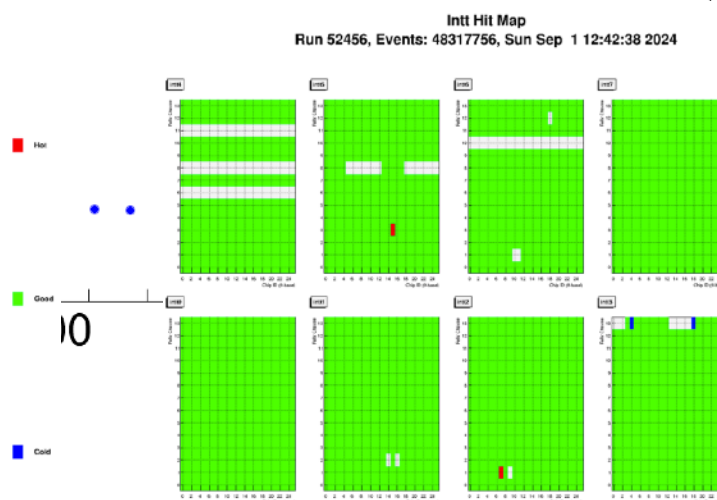
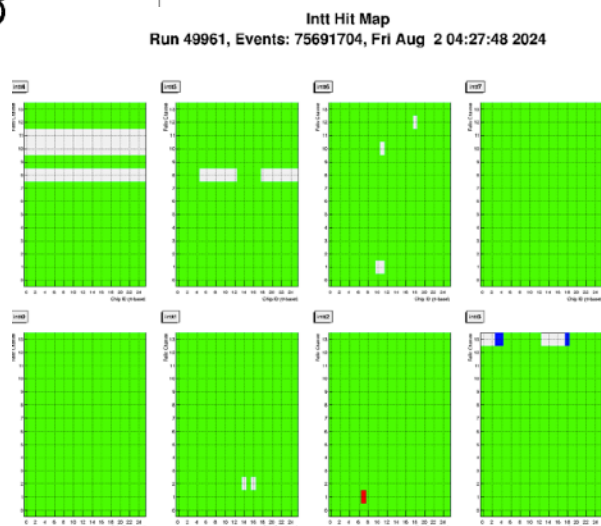
Good Channel Ratio (BCO_QA == GOOD && Runtime > 300s)



FELIX Update by Raul

-> Chip masking on FELIX side available

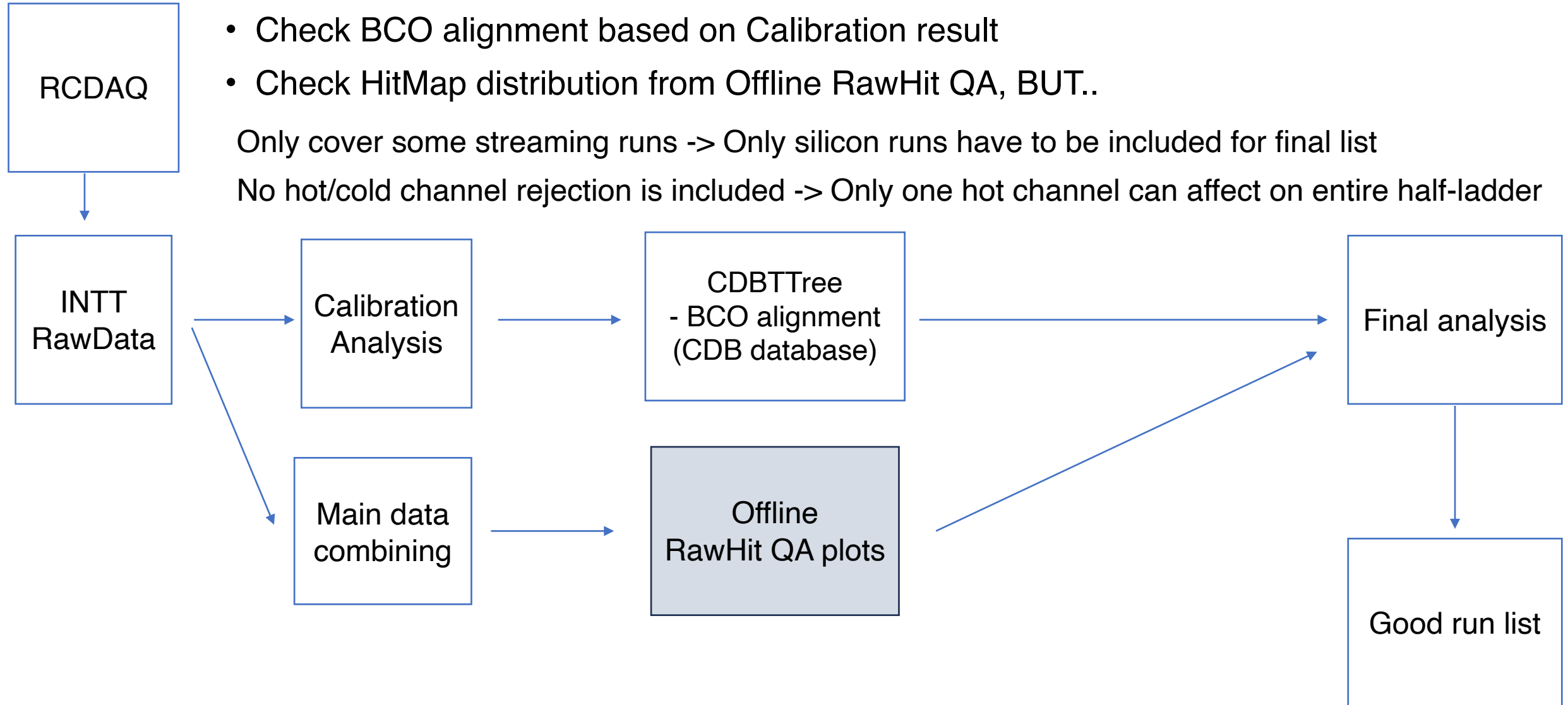
INTT back to operating with ~95% GOOD channel



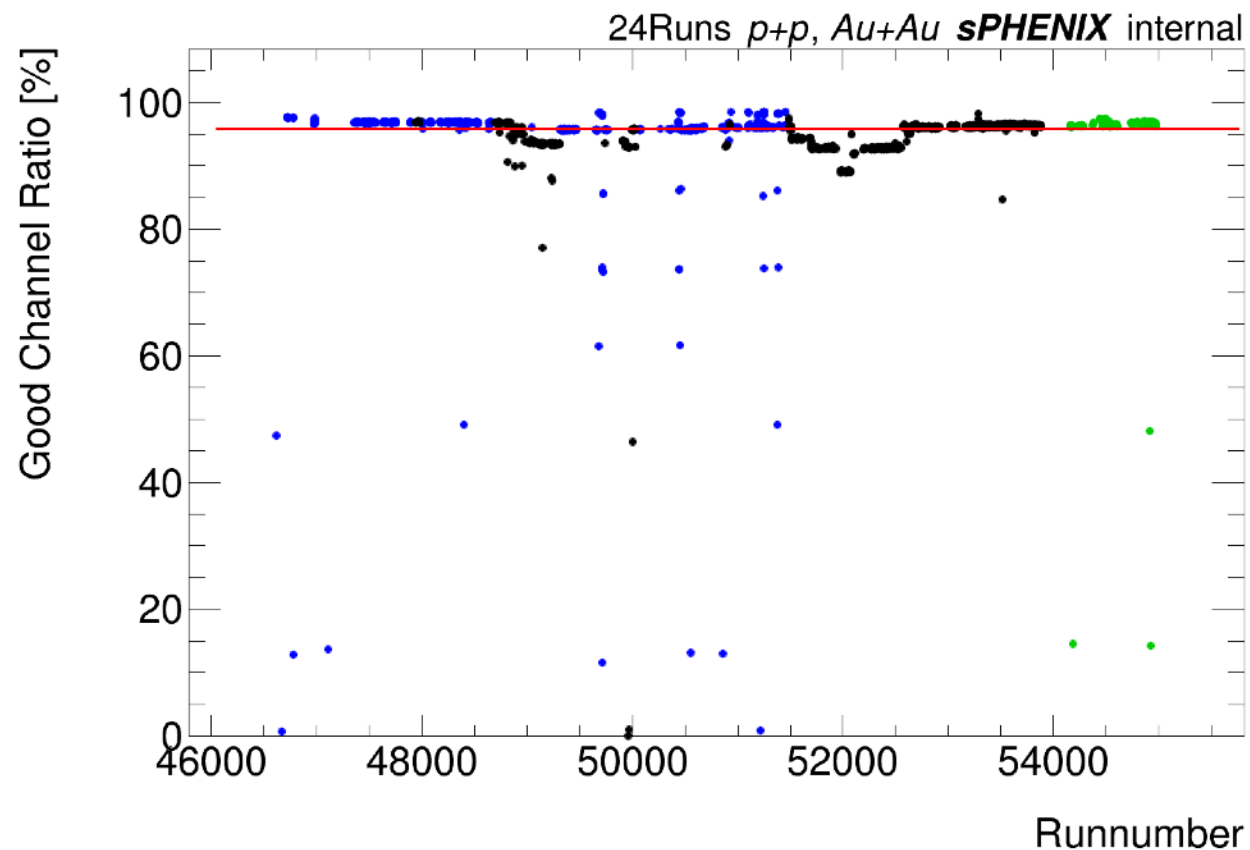
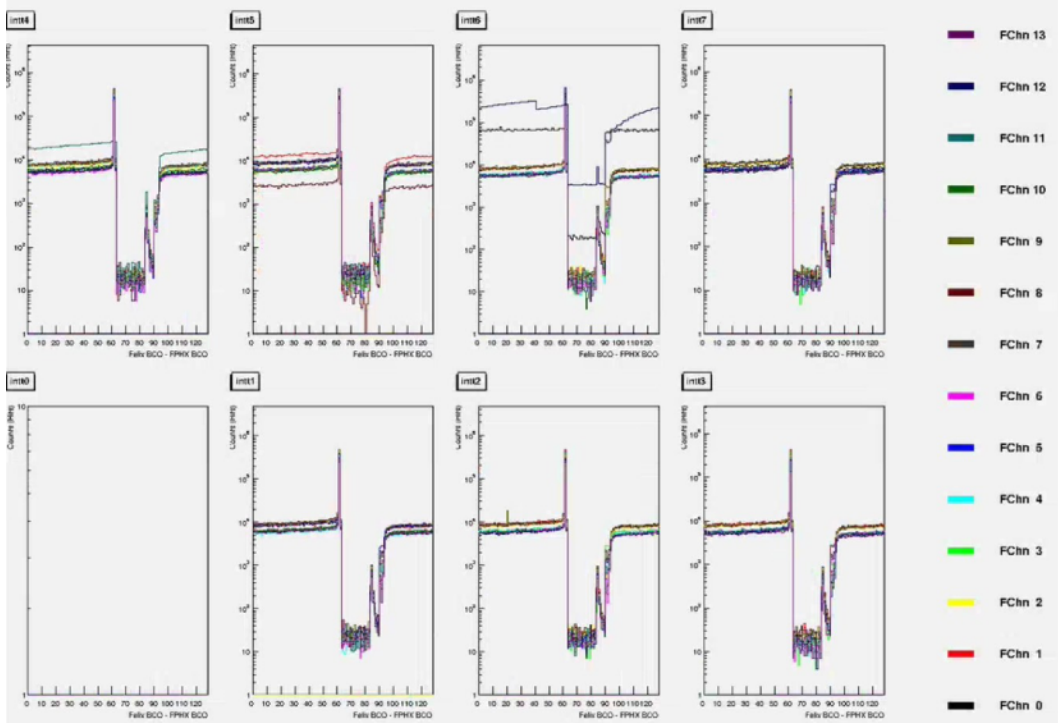
- Check BCO alignment based on Calibration result
- Check HitMap distribution from Offline RawHit QA, BUT..

Only cover some streaming runs -> Only silicon runs have to be included for final list

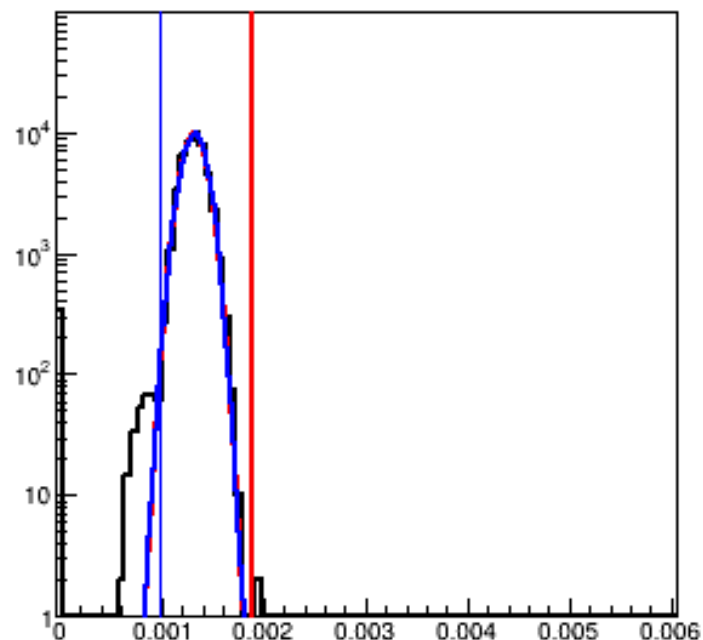
No hot/cold channel rejection is included -> Only one hot channel can affect on entire half-ladder



Felix Fphx Bco
Run 46563, Events: 21215234, Mon Jun 24 01:14:03 2024



intt6

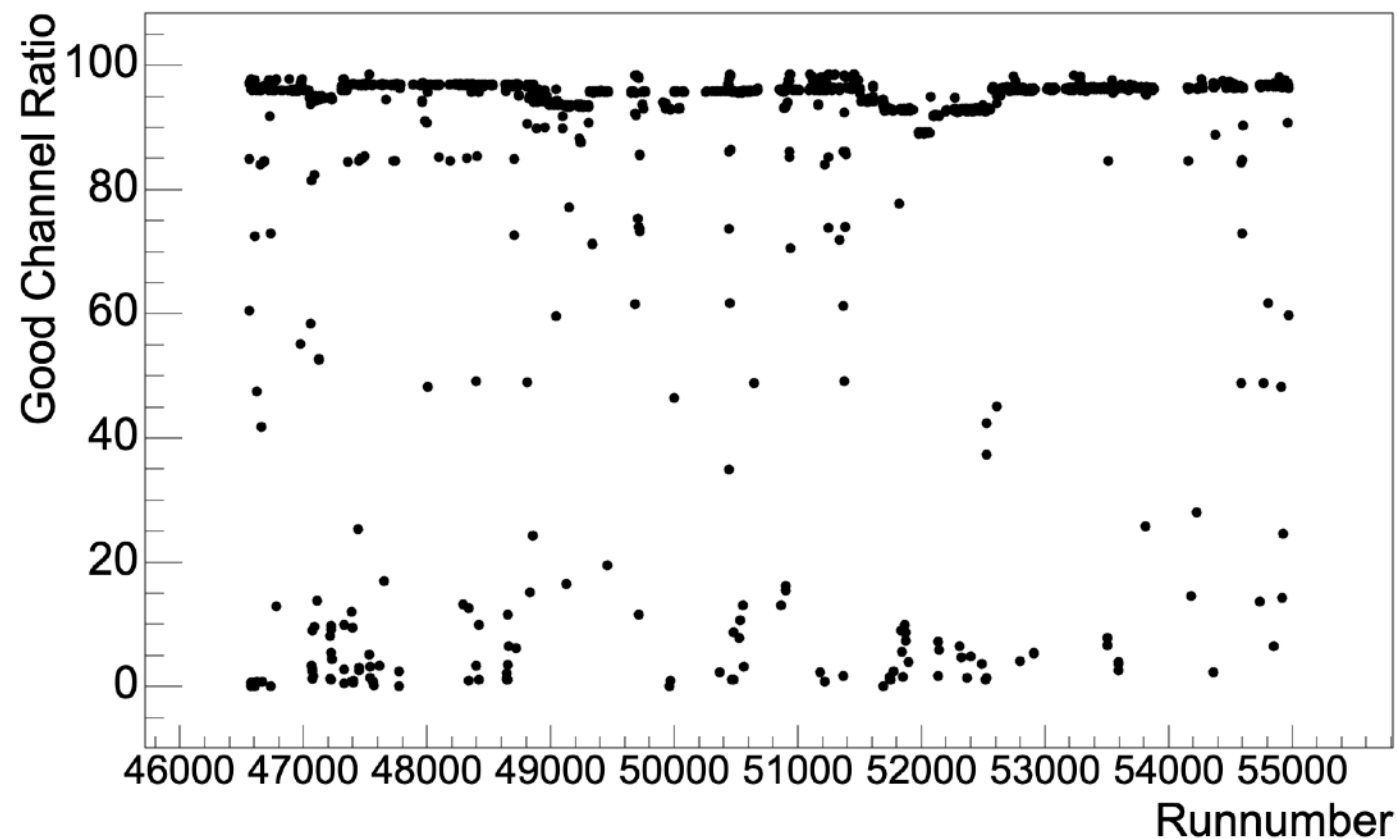


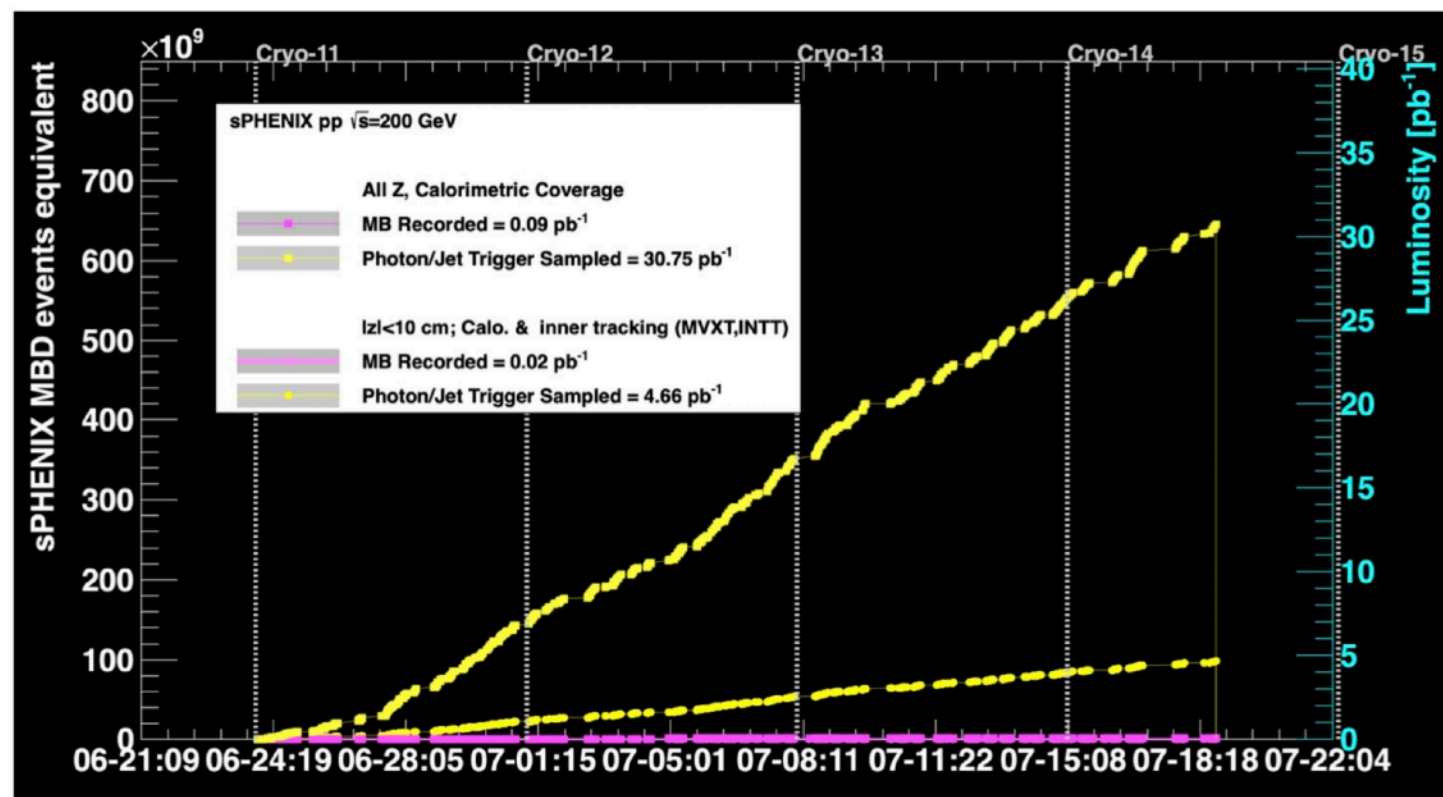
Dead/No hit Cold

Hot

$\text{mean}-3\text{sig} < \text{good} < \text{mean}+5\text{sig}$

Good Channel Ratio vs Runnumber (all_nocut)



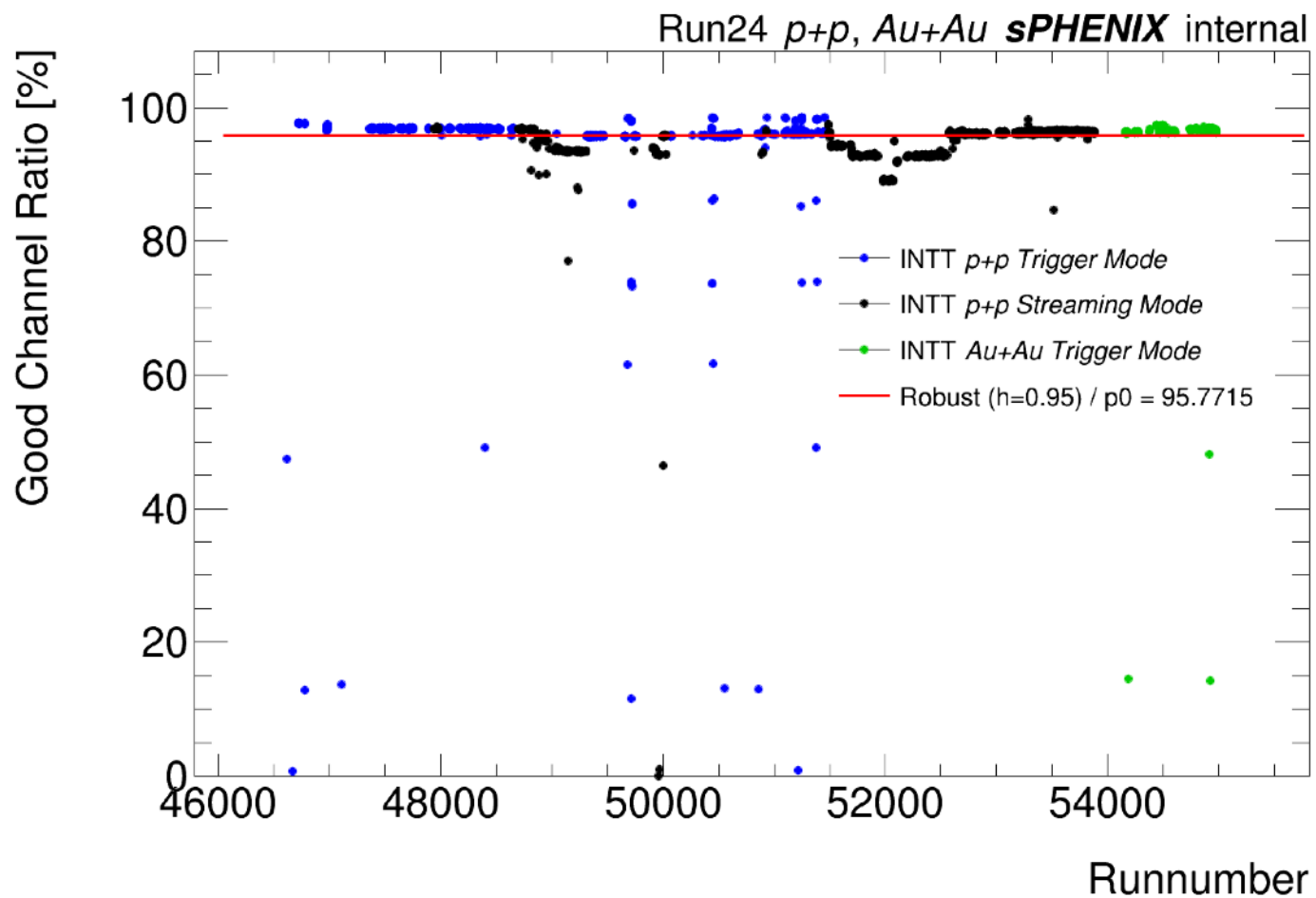


All our quality data is in the last three weeks.
 30.7 pb^{-1} over all z-vertices, 4.6 pb^{-1} within $|z| < 10 \text{ cm}$

My personal suggestion, only worth analyzing data after June 24, 2024.

Good Channel Ratio for Run24

Good Channel Ratio (BCO_QA == GOOD && Runtime > 300s)



BLUE : Trigger mode

BLACK : Streaming mode

GREEN : $AuAu$ Trigger mode

Linear / Robust ($h=0.95$) Fit

```
Minimizer is Linear / Robust (h=0.95)
Chi2           = 107060
Ndf            = 1890
p0             = 95.7715
```

95% of the INTT channels are GOOD for overall Run24 data

WHEN

- 1) FELIX is properly configured.
- 2) At least more than 5mins run to ensure stability and to accumulate the statistics

