

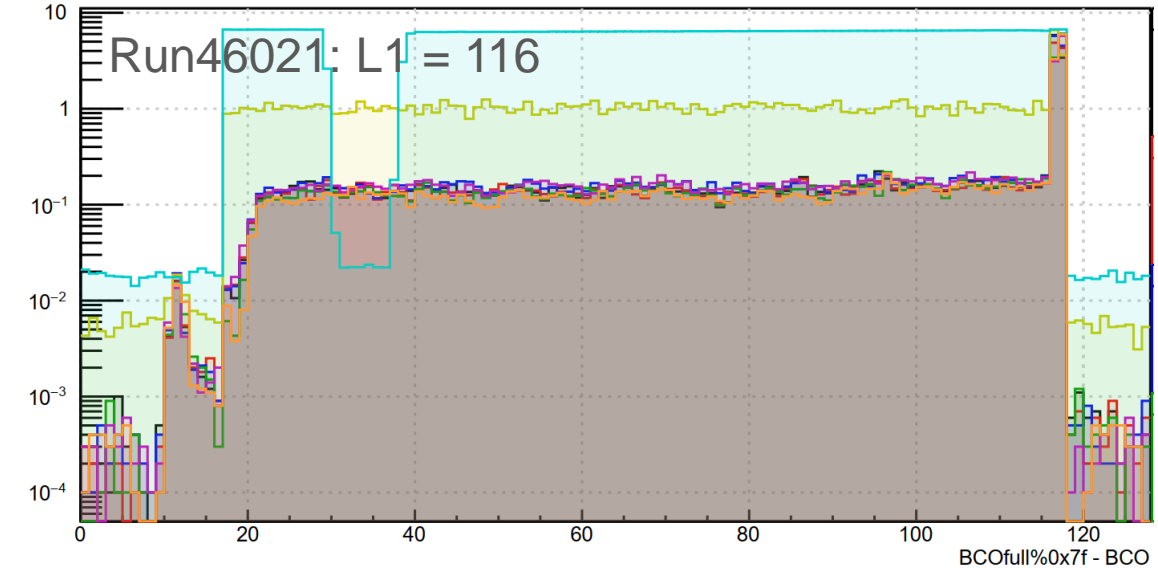
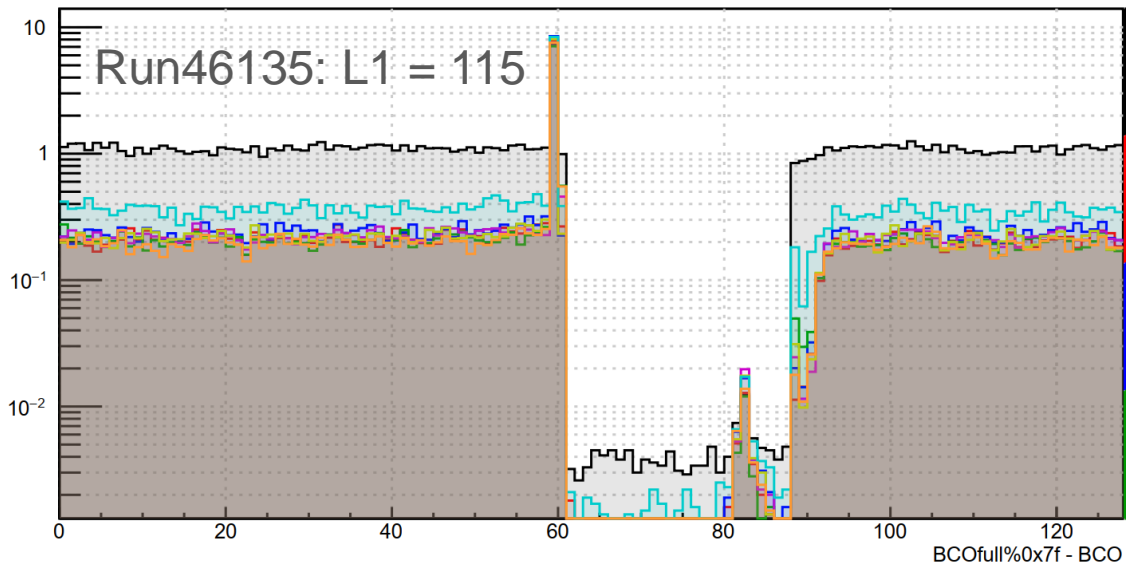
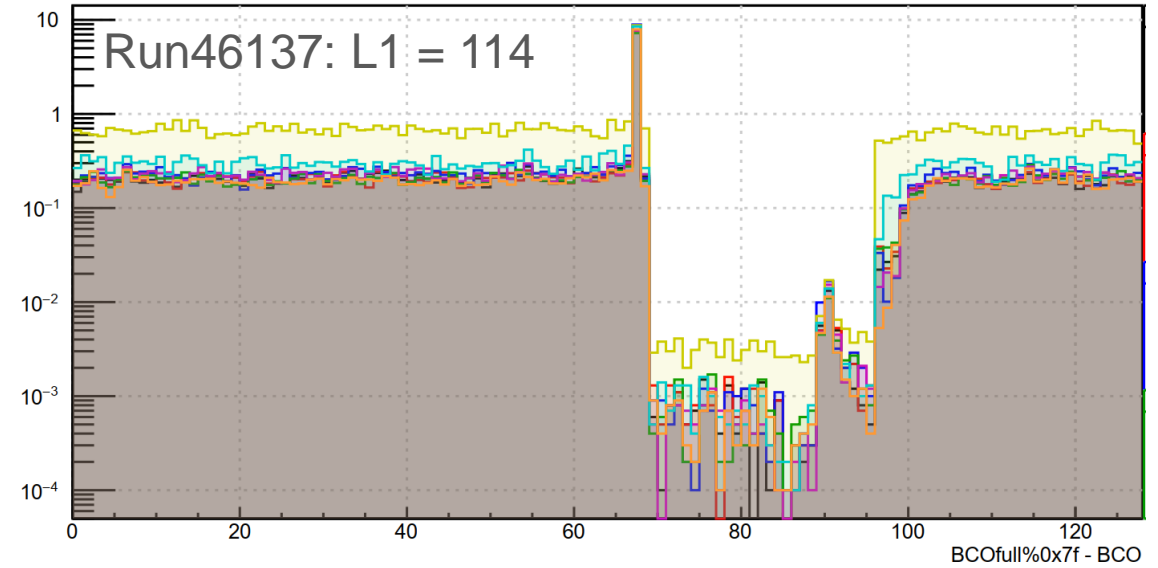
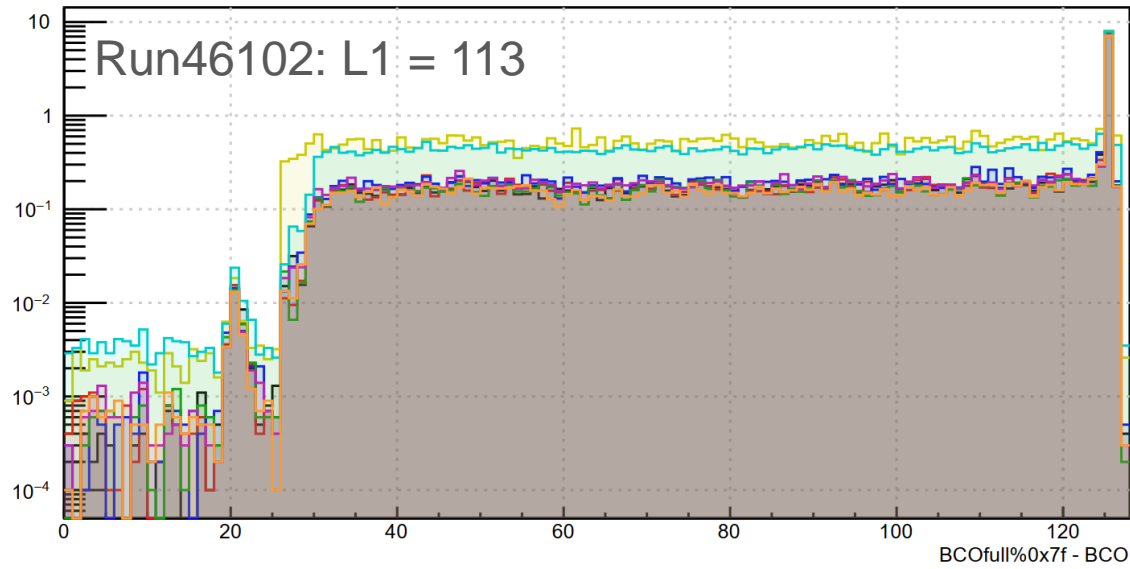
Streaming readout test and operation tips

Akitomo Enokizono

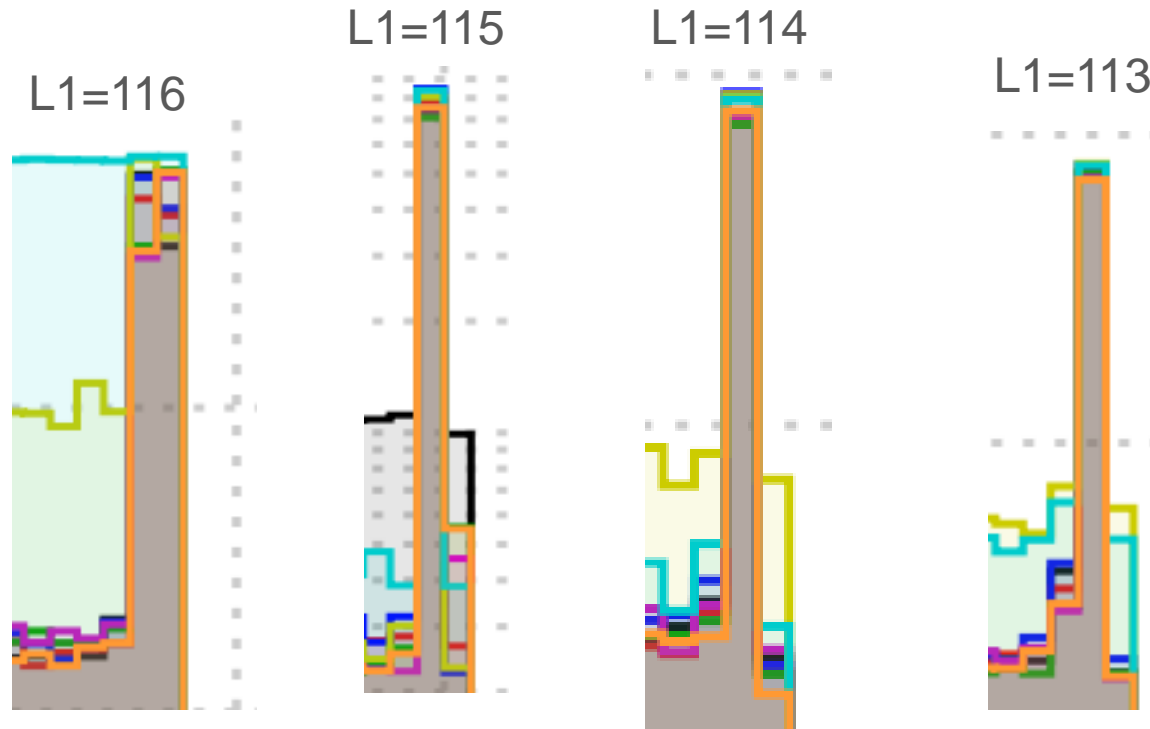
L1 delay after GL1 timing change

BCO full difference

BCO full difference



L1 delay after GL1 timing change



- After the GL1 timing changed, the L1=114 (i.e also L1=120) is still good timing for single BCO peak.

Streaming commissioning test

- Data taking with streaming readout has no problem for one entire store (~6 hours)
 - No problem other than the issue of the decoding rate drop.
- Analyze the official DST data to check if the INTT streaming readout is in good condition.
 - Put INTT back to streaming readout mode after Takashi's analysis.
- Need to check if the intermittent dropout of decoding rate is due to missing packet or corrupted data.

INTT Streaming runs

- 47966 10M events, but test run by Joey. Maybe useful
- 47972 32M events. intt5 dropped early
- 47973 7M events. intt4 dropped
- 47975 12M. no issue. Stopped for polarization mes.
- 47976 32M events. intt4 dropped
- 47977 9M event. no issue
- 47978 20M event intt 1, 4, 5 dropped
- 47979 24M events, intt 7 dropped
- 47982 Back to Trigger mode from this run

Start up scripts

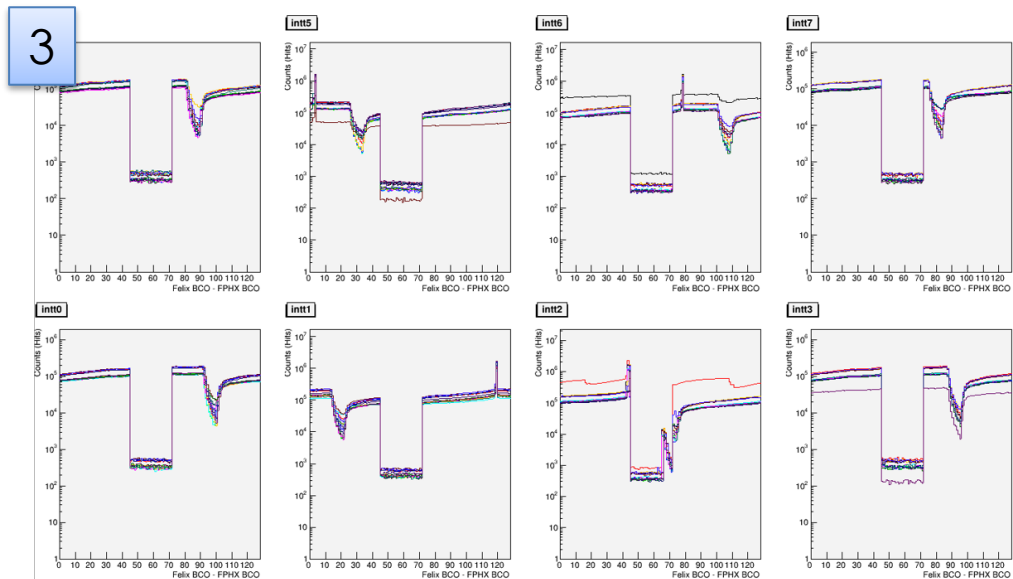
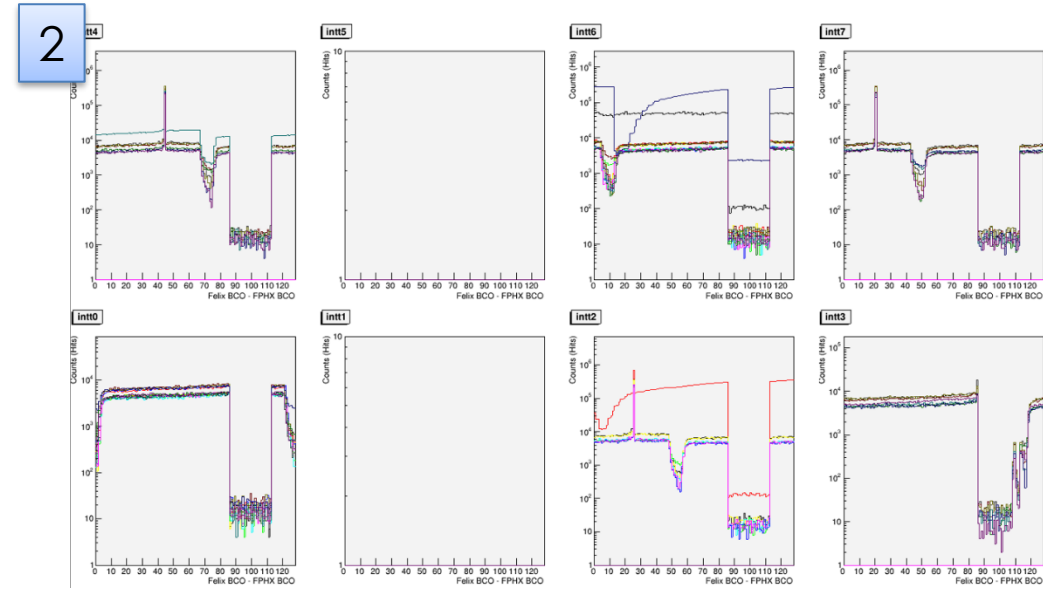
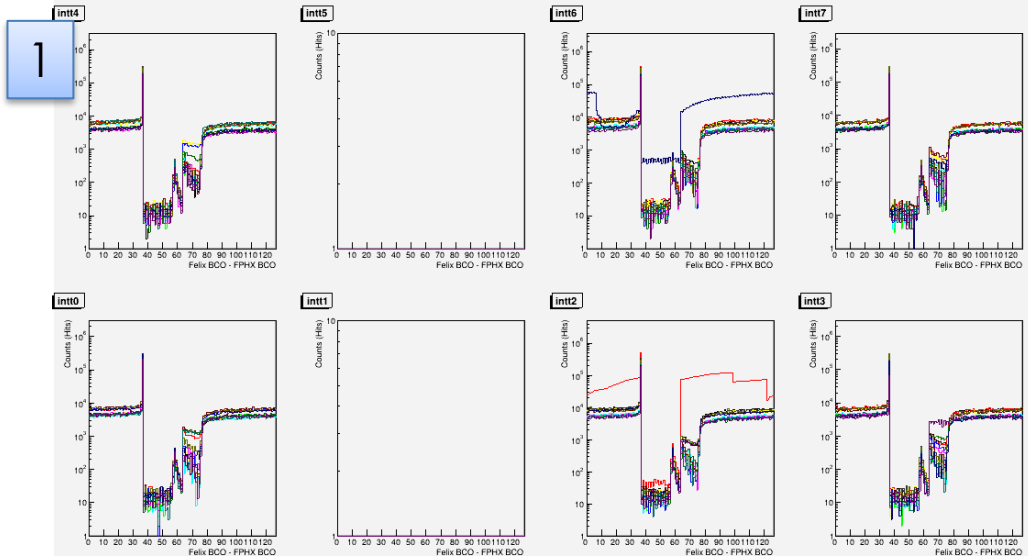
- Now “ALL LV ON” button do in order of
 - Set Level 1 delay
 - `/home/phnxrc/operations/INTT/intt_gtm_l1delay.sh`
 - GTM-Felix clock sync
 - `/home/phnxrc/INTT/sphenix_inttpty/reset_intt_clocks.sh`
 - Clock alignment between Felix servers
 - `/home/phnxrc/INTT/sphenix_inttpty/reset_fidalign.sh`
`(/home/phnxrc/operations/INTT/intt_reset_clks.scheduler is loaded)`
 - LV on
 - Detector configuration
 - `/home/phnxrc/INTT/rcdaq/setup_intt_detector.sh`
- In BP GUI, when select INTT (by “Select subsystems” or “Add Trackers”), the standard modebits file is load
 - `/home/phnxrc/operations/INTT/intt.scheduler`
- When “Begin” run in RunControl GUI, the detector configuration is performed
 - `/home/phnxrc/INTT/rcdaq/setup_intt_detector.sh`

Switch between streaming and trigger mode

- Switching between trigger mode and streaming readout is done by `/home/phnxrc/operations/INTT/change_readoutmode.sh [1 (trigger) or other (streaming)]`
 - `intt.scheduler` and `run.py` are symbolic links
 - Don't run this script when GTM is running

```
# The first argument: 1 for trigger mode, and other for streaming mode
if [ "$1" == "1" ]; then
    echo "Setting up trigger readout mode...";
    echo "Making intt.scheduler symbolic link to intt_triggermode.scheduler";
    cd /home/phnxrc/operations/INTT
    ln -sfn intt_triggermode.scheduler intt.scheduler
    echo "Making run.py symbolic link to intt_streamingmode.scheduler";
    cd /home/phnxrc/INTT/sphenix_inttpty/
    ln -sfn run_triggermode.py run.py
    echo "Setting GTM register 0x8 to 0";
    gl1_gtm_client gtm_set_register $vGTM 0x8 0
else
    echo "Setting up streaming readout mode...";
    echo "Making intt.scheduler symbolic link to intt_streamingmode.scheduler";
    cd /home/phnxrc/operations/INTT
    ln -sfn intt_streamingmode.scheduler intt.scheduler
    echo "Making run.py symbolic link to intt_streamingmode.scheduler";
    cd /home/phnxrc/INTT/sphenix_inttpty/
    ln -sfn run_streamingmode.py run.py
    echo "Setting GTM register 0x8 to 1";
    gl1_gtm_client gtm_set_register $vGTM 0x8 1
fi
```

How to fix typical problems



1. Synchronized but some of intt missing
→ Need detector config
(Stop/start run)
2. Not synchronized, some of intt missing or no peak.
→ Need proper scheduler set
(Stop, re-include intt, start run)
3. Not synchronized
→ Need GTM sync
(Stop, HV/LV recycle, start run)