

RYOTA SHISHIKURA

REPORT 1 IN TAIWAN WORK SHOP

Data QA for noise with Bean On/Off

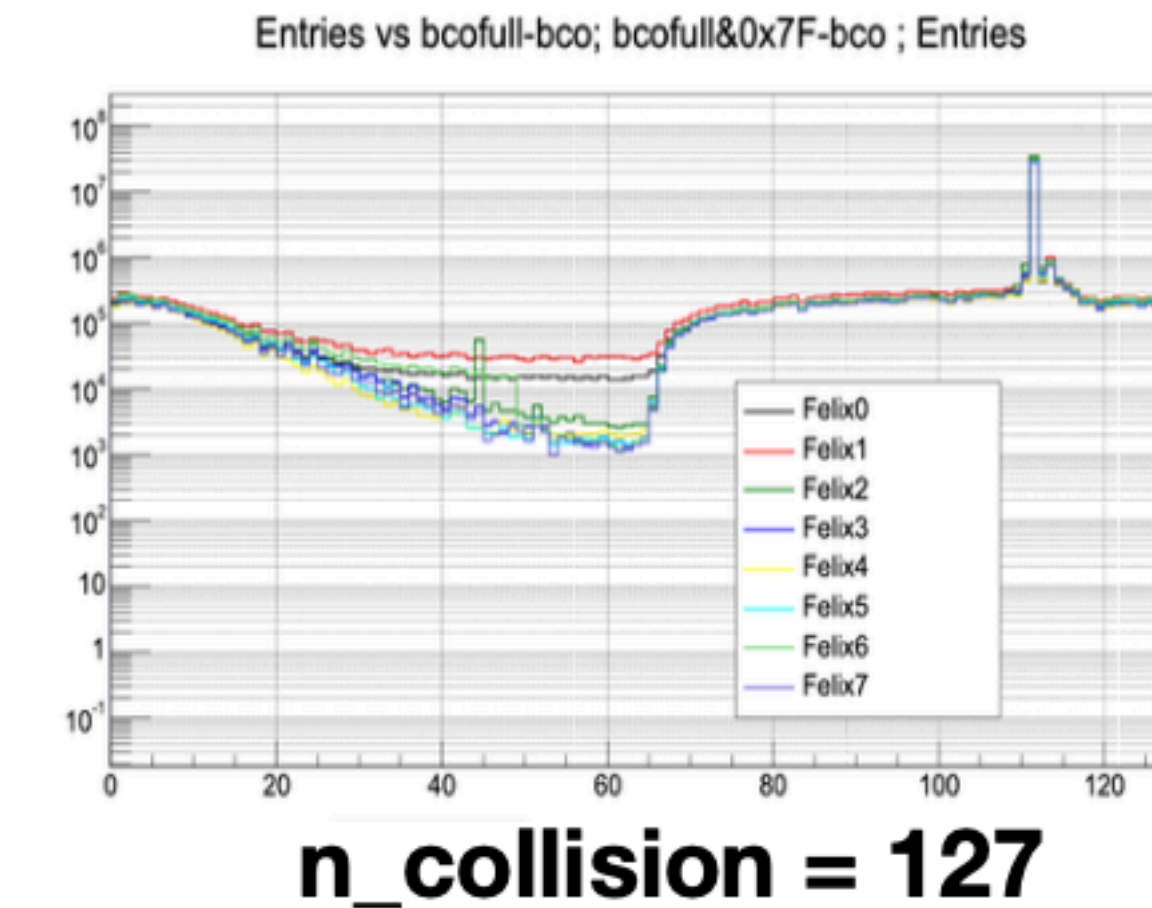
Ryota Shishikura
(Rikkyo University)

For estimating the ratio of Signal/Noise, investigating noise features

Goal in this workshop: Analyzing data, find new noise features and understand noise more

My To-Do List

- Comparing cosmic and signal data
 - ADC / Cluster size / channel distribution
- Investigating mystery of bcofull-bco plot
 - Understanding the sharp increase of background.
 - Checking Run by Run. ← **Now**
- Run Log update
 - ~~Summarizing the current state and write down about how to make. (Highest priority)~~
 - Checking day/time of data from time-stamp of data
 - Checking the state of Magnet from the log data given by Nukazuka-san



Date	Time	Status	Magnet	Beam	Beam Size	Beam Position	Beam Size Error	Beam Position Error	Beam Size Error	Beam Position Error
2023-08-28	08:00	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	08:05	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	08:10	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	08:15	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	08:20	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	08:25	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	08:30	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	08:35	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	08:40	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	08:45	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	08:50	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	08:55	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	09:00	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	09:05	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	09:10	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	09:15	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	09:20	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	09:25	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	09:30	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	09:35	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	09:40	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	09:45	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	09:50	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	09:55	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	10:00	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	10:05	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	10:10	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	10:15	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	10:20	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	10:25	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	10:30	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	10:35	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	10:40	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	10:45	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	10:50	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	10:55	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	11:00	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	11:05	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	11:10	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	11:15	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	11:20	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	11:25	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	11:30	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	11:35	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	11:40	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	11:45	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	11:50	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	11:55	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	12:00	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	12:05	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	12:10	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	12:15	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	12:20	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	12:25	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	12:30	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	12:35	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	12:40	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	12:45	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	12:50	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	12:55	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	13:00	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	13:05	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
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2023-08-28	13:25	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	13:30	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	13:35	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
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2023-08-28	13:55	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	14:00	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	14:05	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	14:10	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
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2023-08-28	14:25	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	14:30	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	14:35	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	14:40	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
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2023-08-28	14:55	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	15:00	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	15:05	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	15:10	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	15:15	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
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2023-08-28	15:30	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	15:35	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	15:40	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	15:45	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	15:50	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	15:55	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	16:00	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	16:05	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	16:10	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	16:15	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	16:20	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	16:25	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	16:30	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	16:35	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	16:40	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	16:45	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	16:50	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	16:55	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	17:00	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	17:05	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
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2023-08-28	17:15	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	17:20	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
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2023-08-28	17:30	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	17:35	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	17:40	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	17:45	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	17:50	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	17:55	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08-28	18:00	Beam	Off	On	1.0	0.0	0.1	0.1	0.1	0.1
2023-08										

CONTENTS

- ▶ 1. Run Log Upgrade
- ▶ 2. Mystery of Bcofull-Bco plot

1.RUN LOG UPGRADE

New Run Log was uploaded

► Location

INTT → Data → 2023 → Run Log/List

The screenshot shows a wiki page on the sPHENIX website. The page title is "INTT data at 1008 in 2023". The page content includes a brief explanation and a table of contents. The table of contents lists the following sections:

- 1 Run Log/List
- 2 Buffer Box
 - 2.1 Path
- 3 HPSS
 - 3.1 Path
 - 3.2 #files
 - 3.3 List of runs
- 4 SDCC storage
 - 4.1 Path
 - 4.1.1 evt files
 - 4.1.2 ROOT files (hit-base TTrees, event-base TTrees)
 - 4.1.3 Merged ROOT files over a run (event-base TTrees)
 - 4.1.4 DSTs or downstream files than the merged ROOT files
 - 4.2 #files

Below the table of contents, the "Run Log/List" section is expanded, showing a list of links:

- [Original Run Log](#): Don't change it.
- [new Run Log](#): Summarized/formatted run log by Ryota.
- [\[aaa Good run list\]](#): List of good runs proposed by analyzers. Not made yet.

A [Google form](#) is also mentioned to provide information of good runs. The "Buffer Box" and "Path" sections are also visible, with the "Path" section containing the link [/bbox/commissioning/INTT](#).

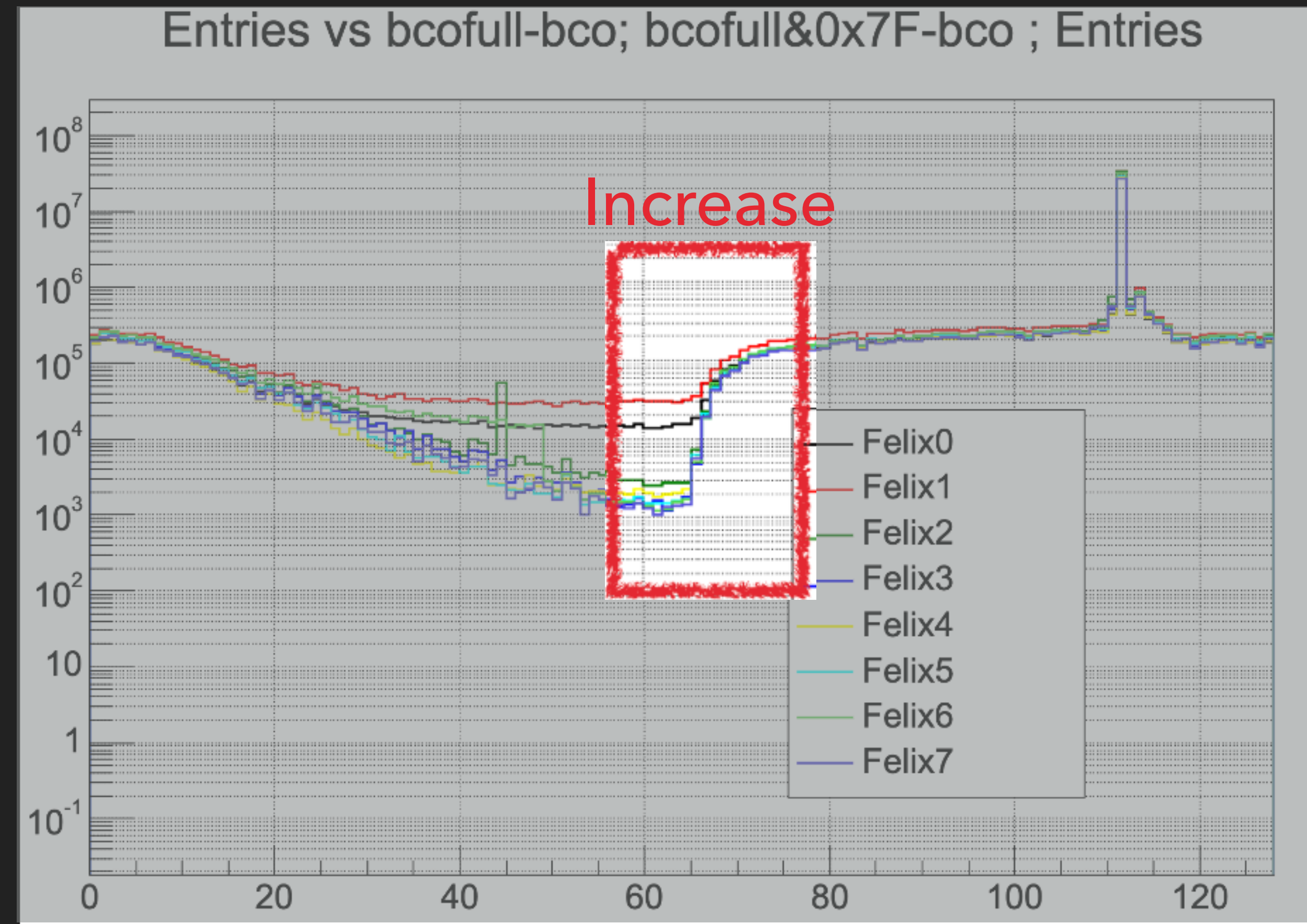
Next Step

- ▶ Adding information of Magnet
- ▶ Adding information of Date/Time
- ▶ Upgrade Run Log before 6/28

2. MYSTERY OF BCOFULL-BCO PLOT

Mystery

- ▶ The rapidly increase at some point
- I already checked many data and I could see this increase from all of the data



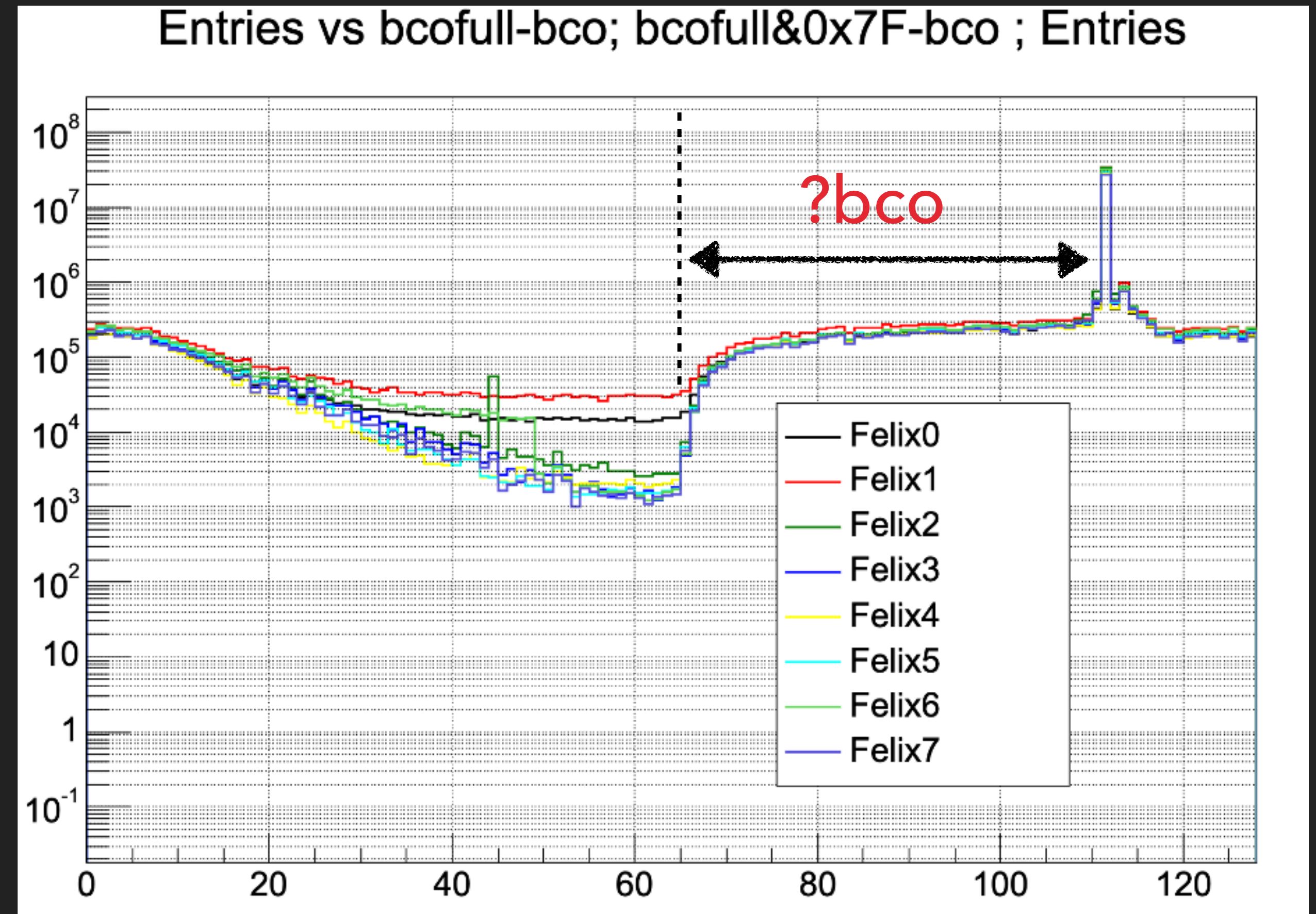
Mystery

- ▶ The sharp increase of background



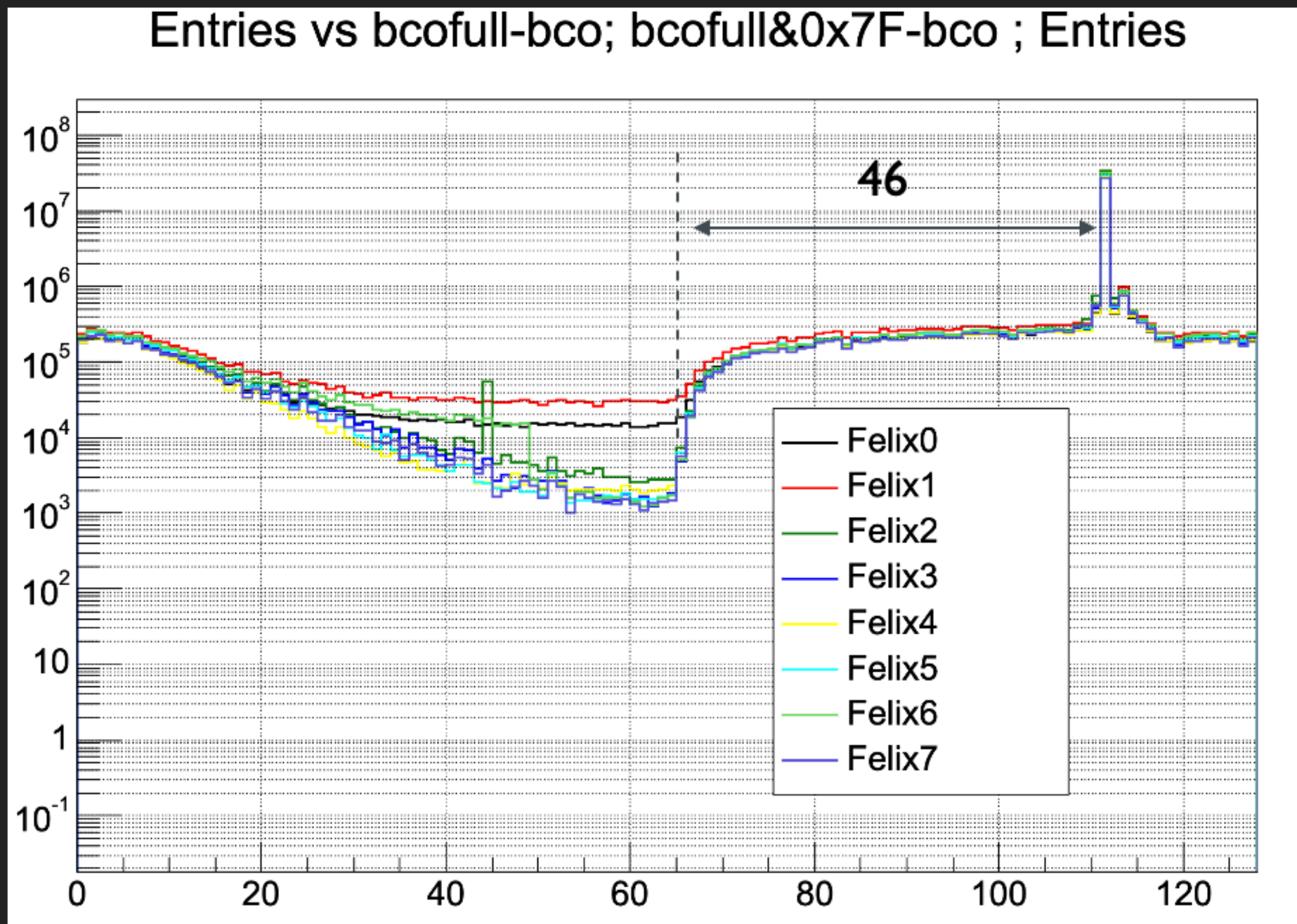
I Did

- ▶ Check the time between peak and sharp increase
- Run by Run

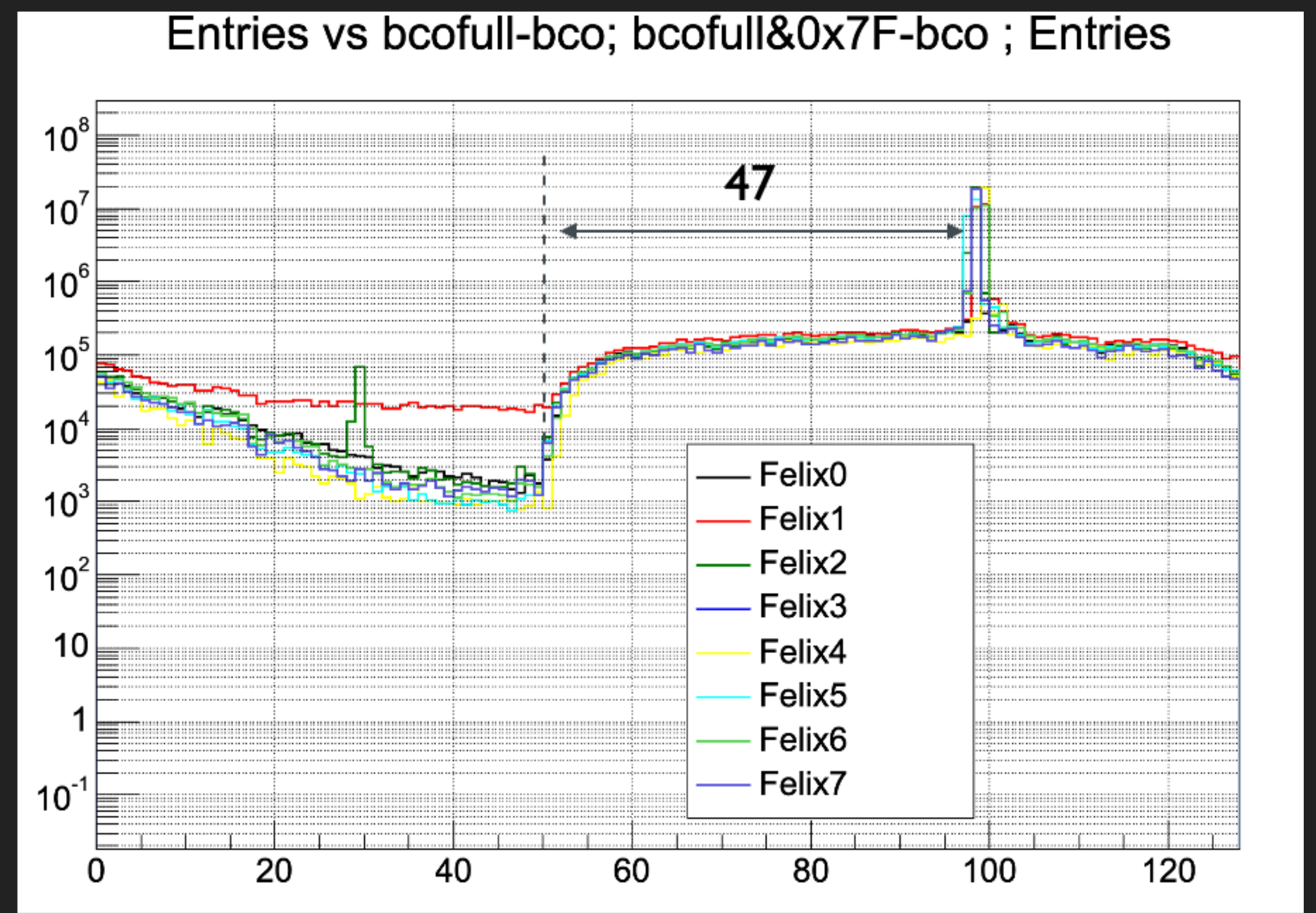


Modebits Dependence

Modebits = 79



Modebits = 95



Other setting

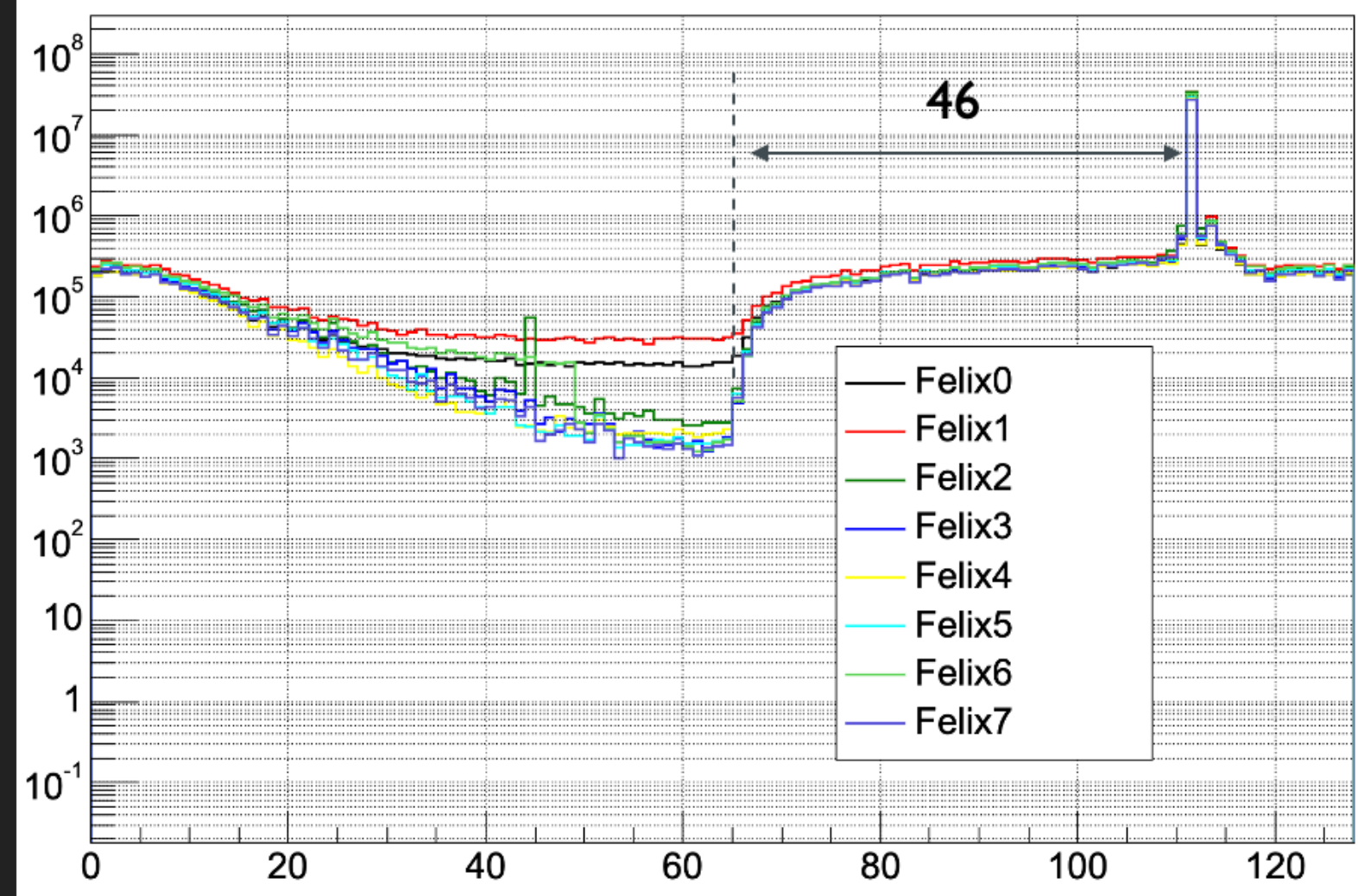
L1 Delay = 21, Open time = 35, n_collision = 127

2. MYSTERY OF BCOFULL-BCO PLOT

L1 Delay Dependence

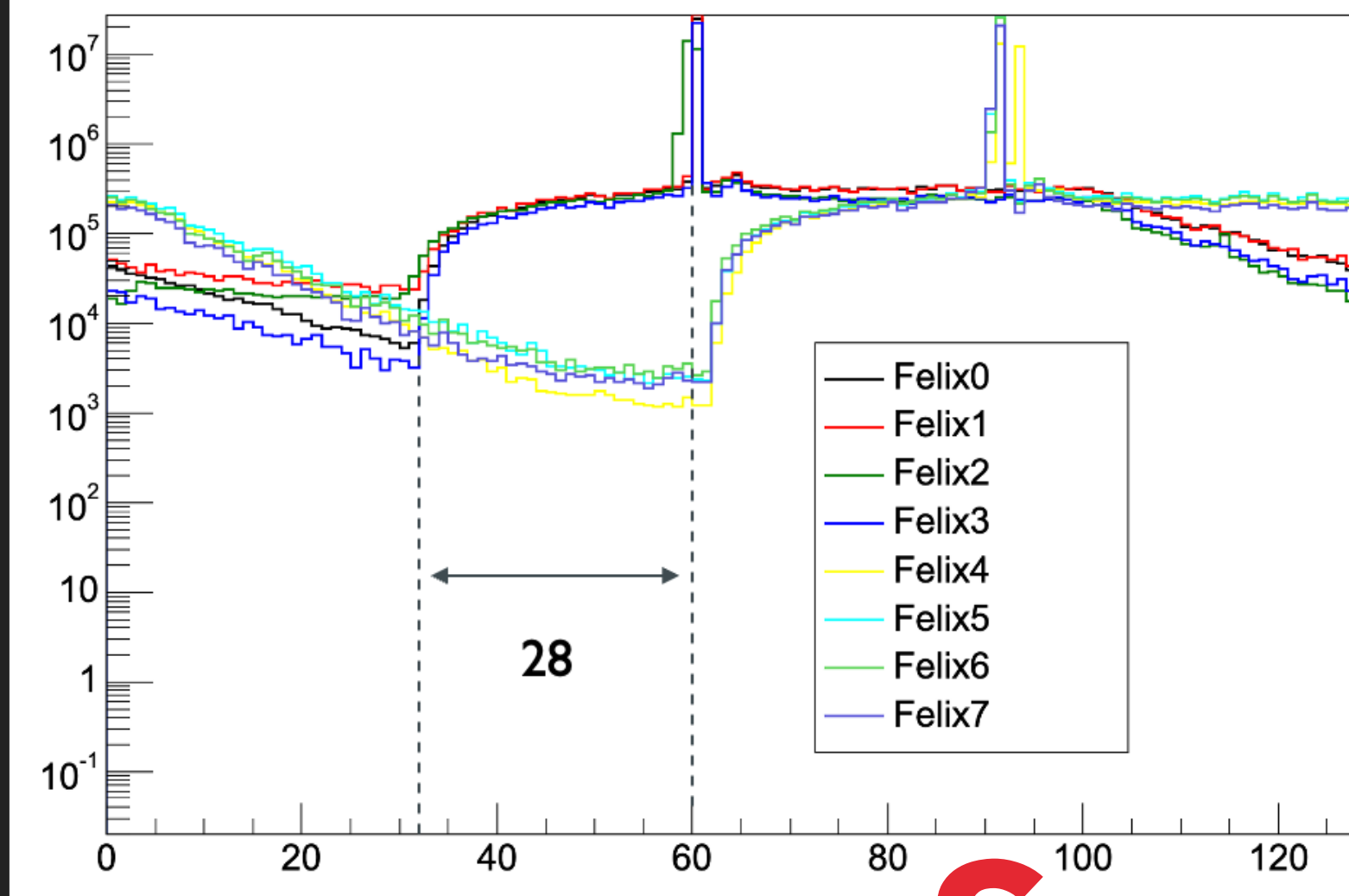
L1 Delay = 21

Entries vs bcofull-bco; bcofull&0x7F-bco ; Entries



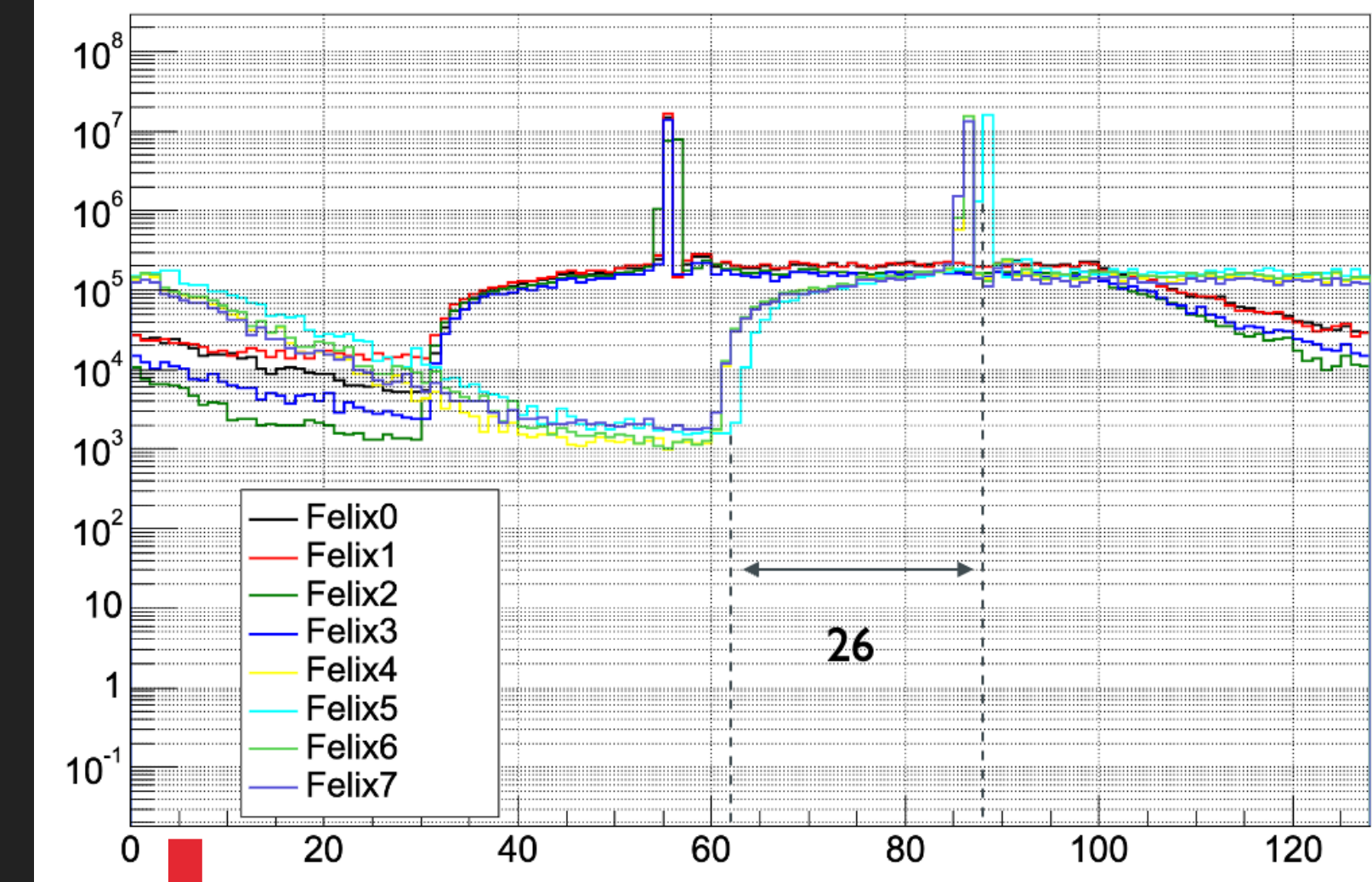
L1 Delay = 25

Entries vs bcofull-bco; bcofull&0x7F-bco ; Entries



L1 Delay = 0

Entries vs bcofull-bco; bcofull&0x7F-bco ; Entries



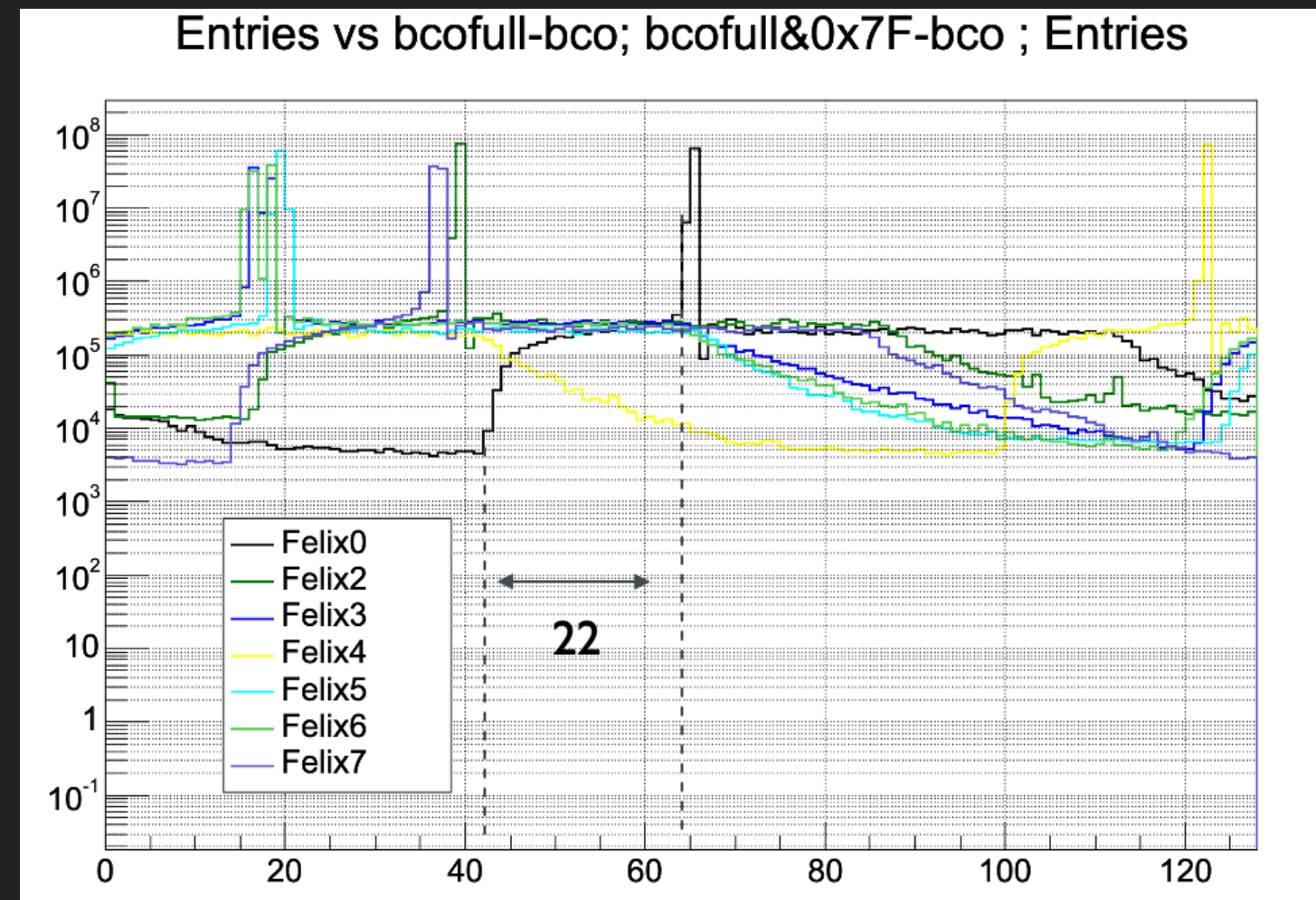
Same day

Other setting

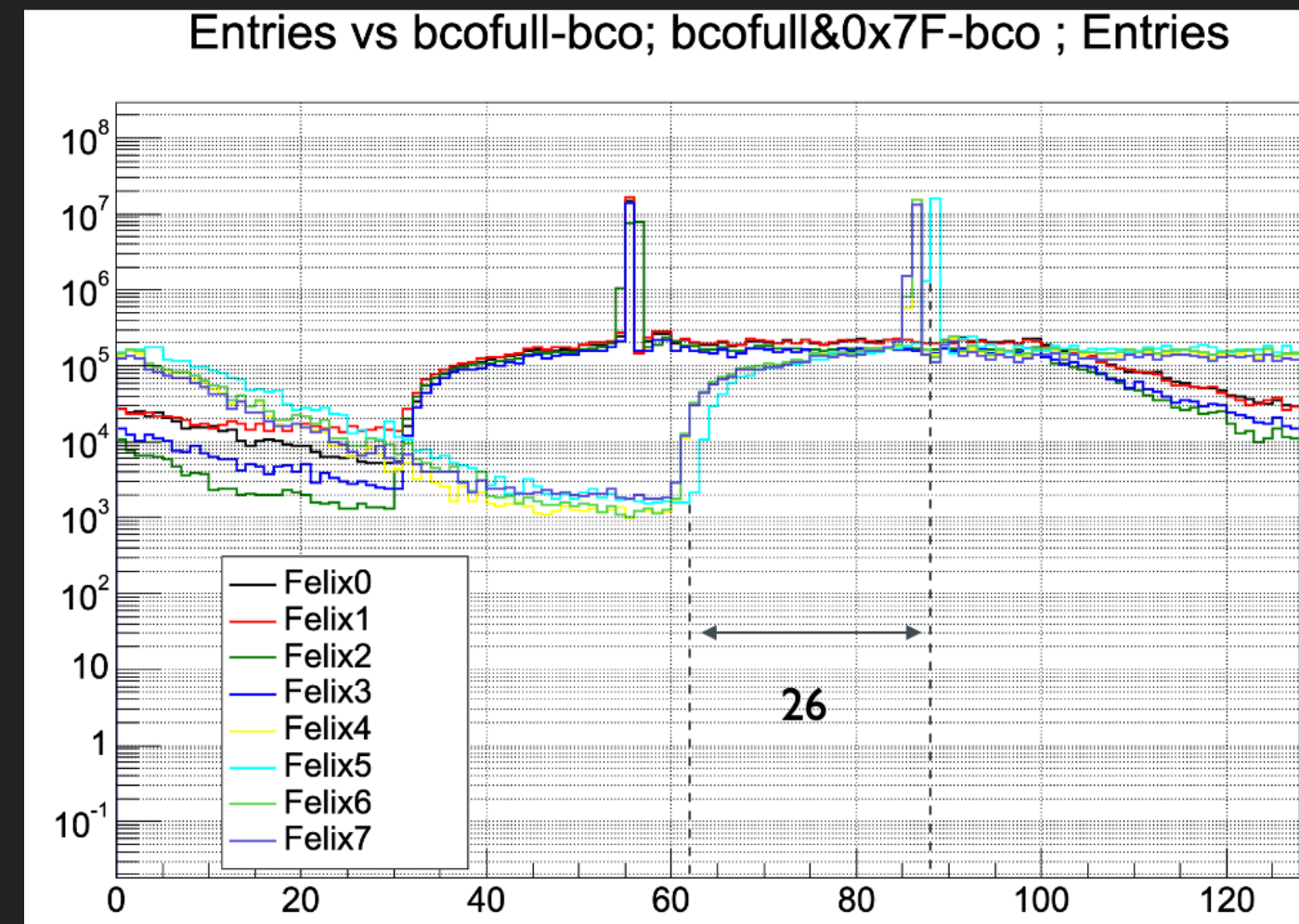
Open time = 35, n_collision = 127, Modebits = 79

2. MYSTERY OF BCOFULL-BCO PLOT

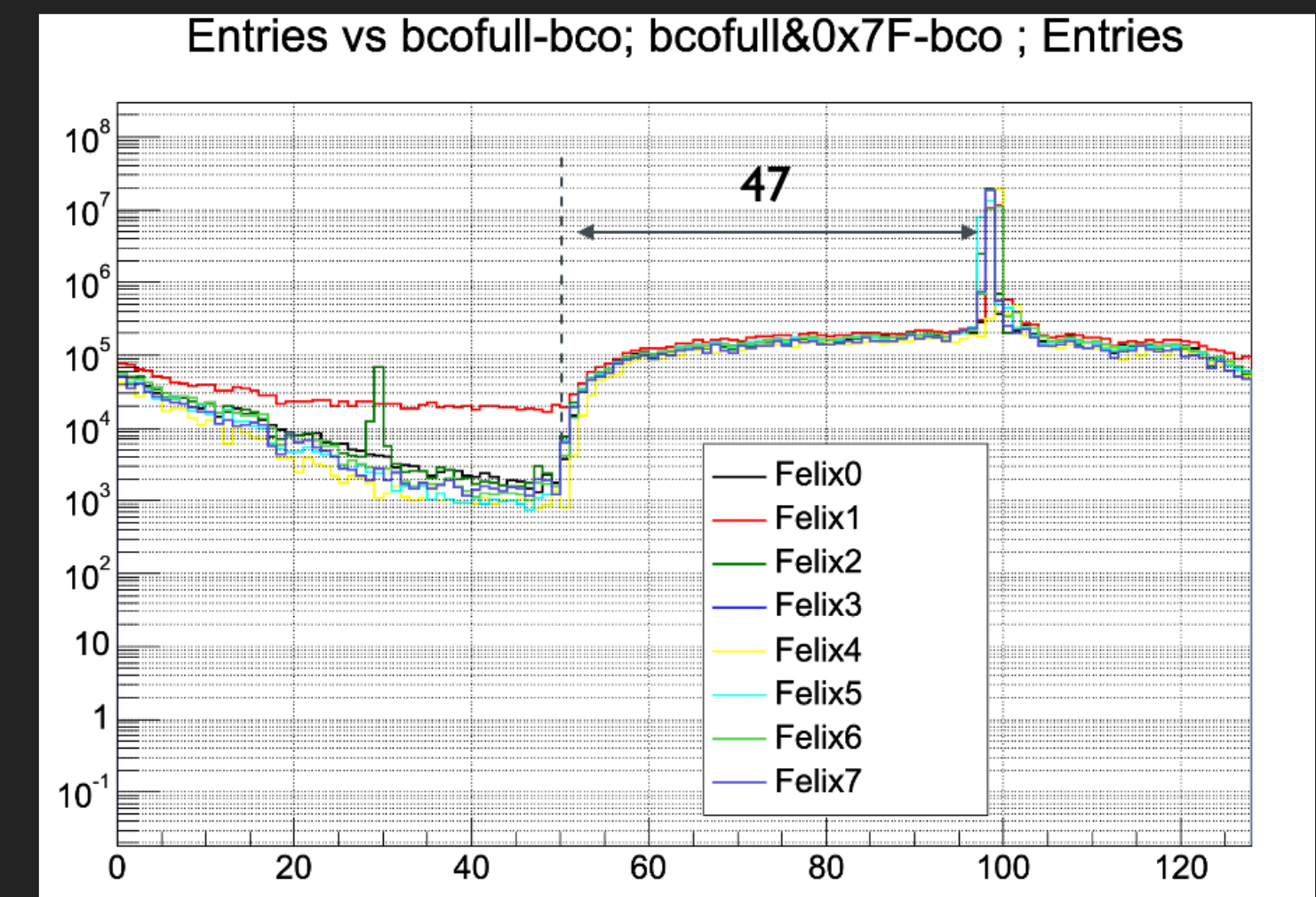
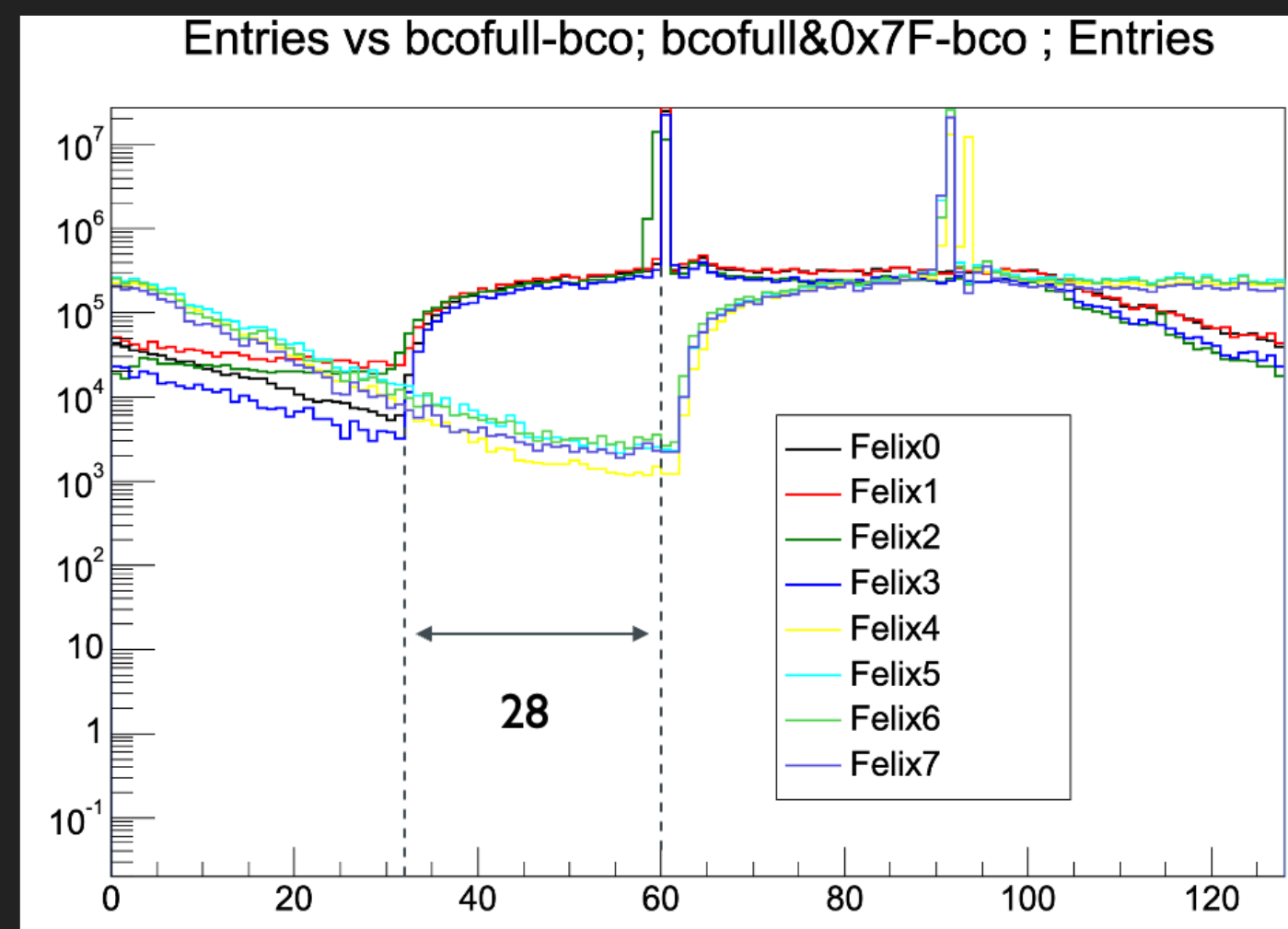
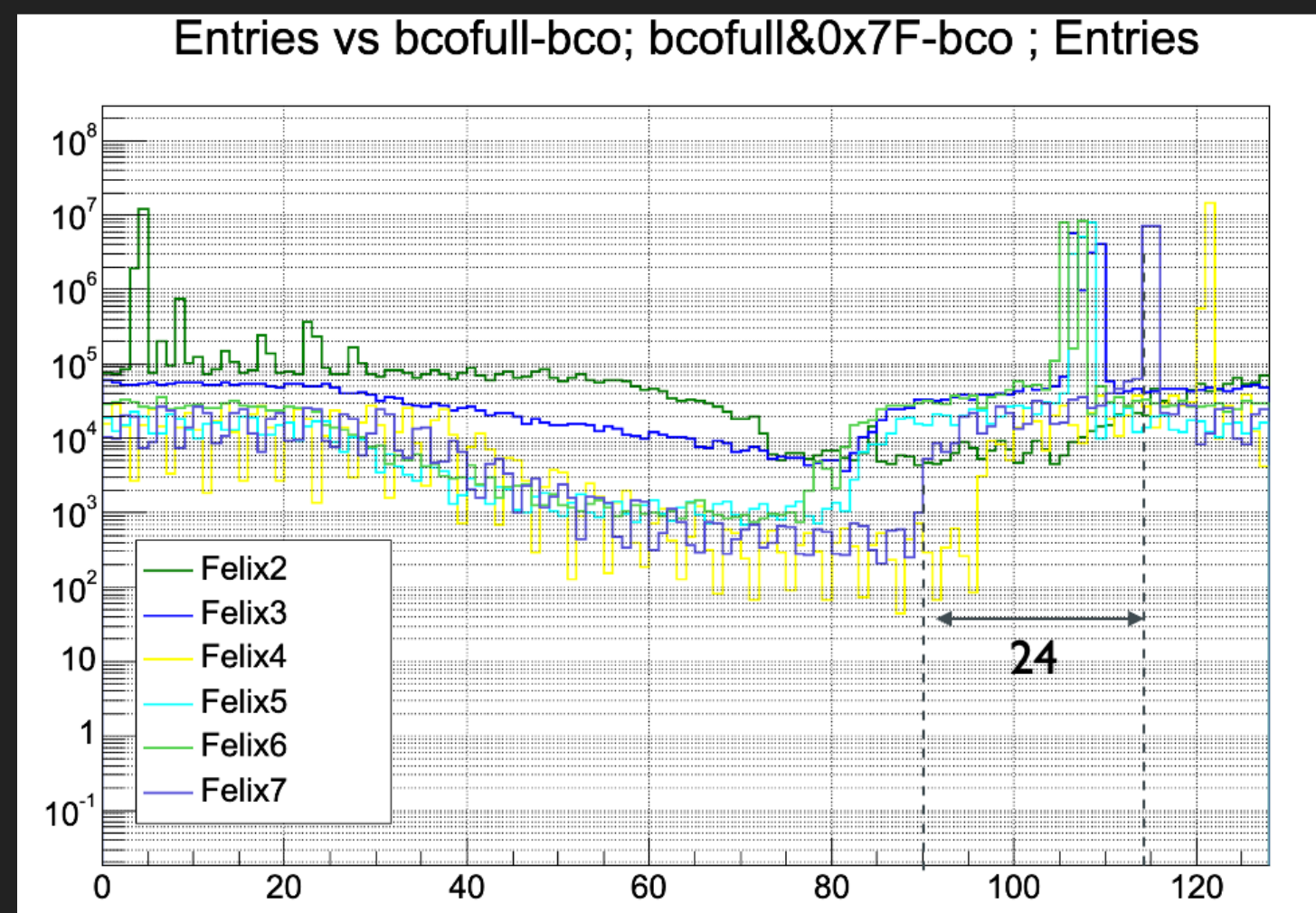
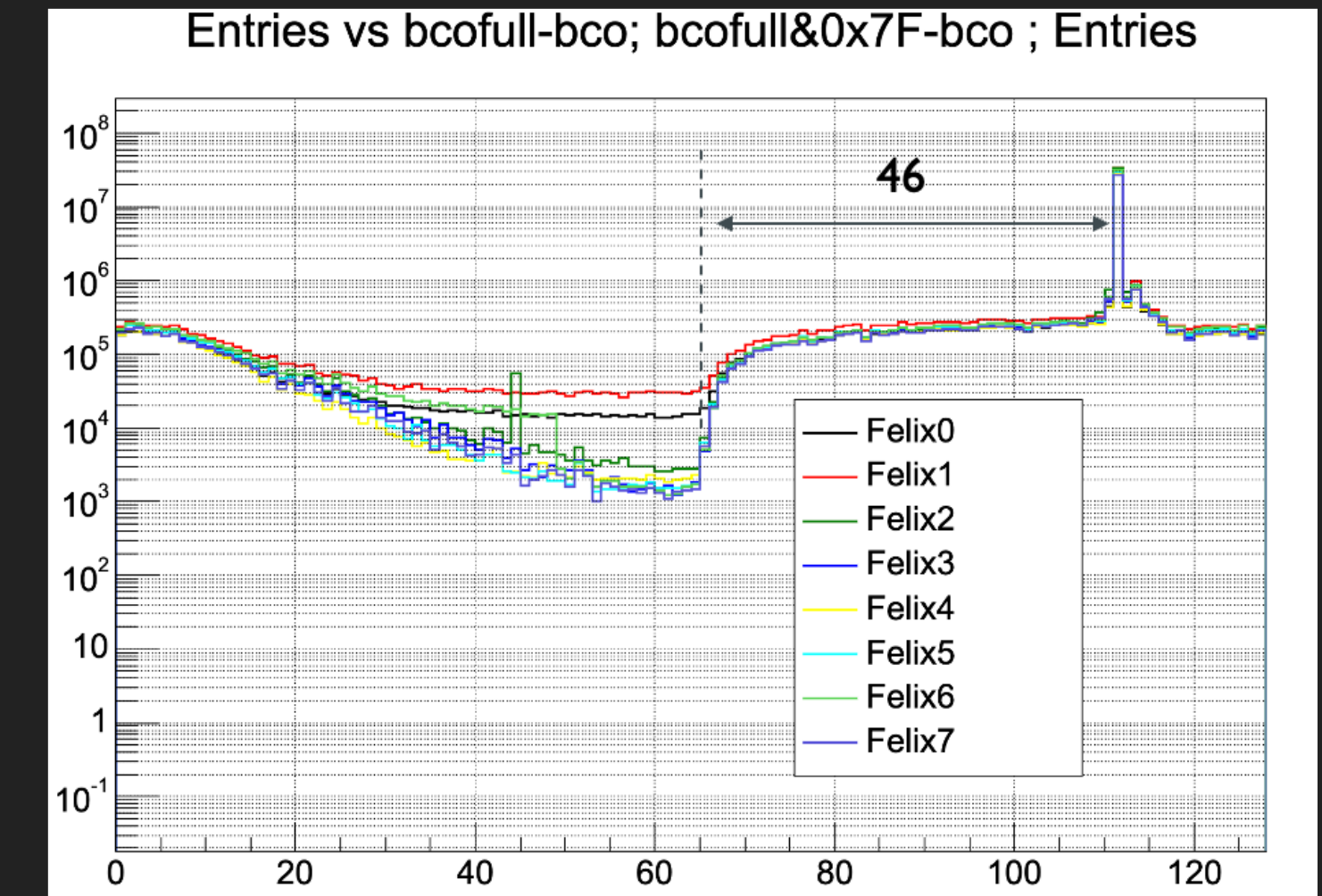
6/19,21



7/20



7/31



Summary

RUN LOG UPGRADE

- ▶ Run Log was uploaded to wiki

Location

INTT → Data → 2023 → Run Log/List

MYSTERY OF BCOFULL-BCO PLOT

- ▶ I checked Run by Run

I think It is not related to parameters now.

