

GL1 matching study

Jaein Hwang

2024/10/02



Motivation Review



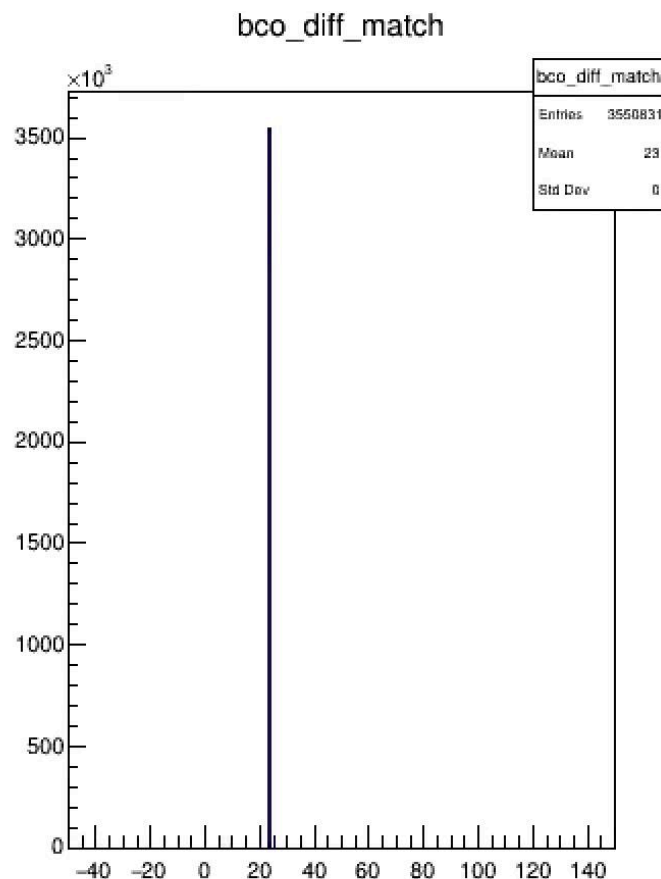
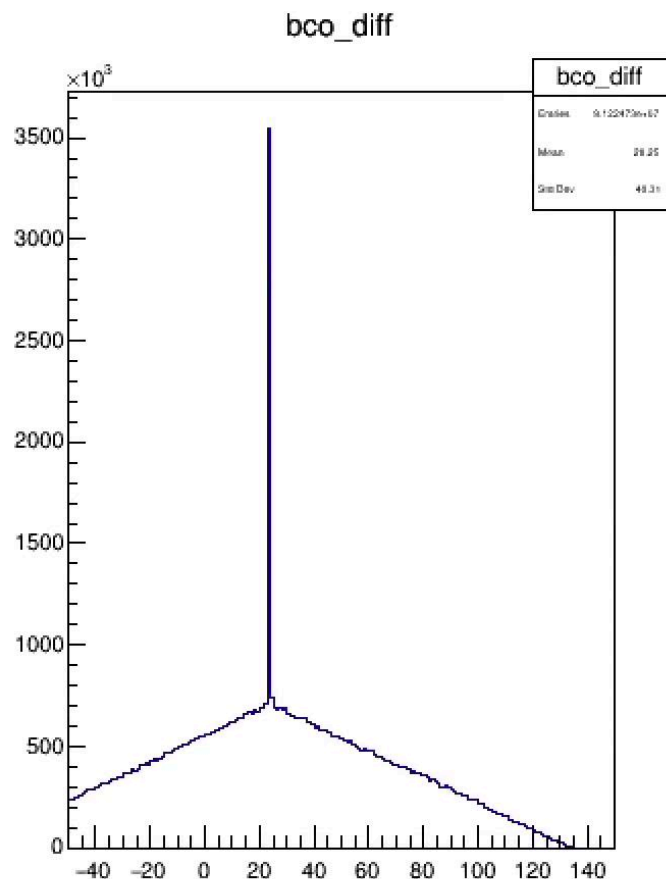
- GL1 finding(matching) study was made by Takashi and Genki
- Most recent study made by Genki
https://indico.bnl.gov/event/24711/contributions/96287/attachments/57049/97903/20240904_streaming_timing.pdf
- Try to reproduce the result and want to do cross-check

Motivation Review

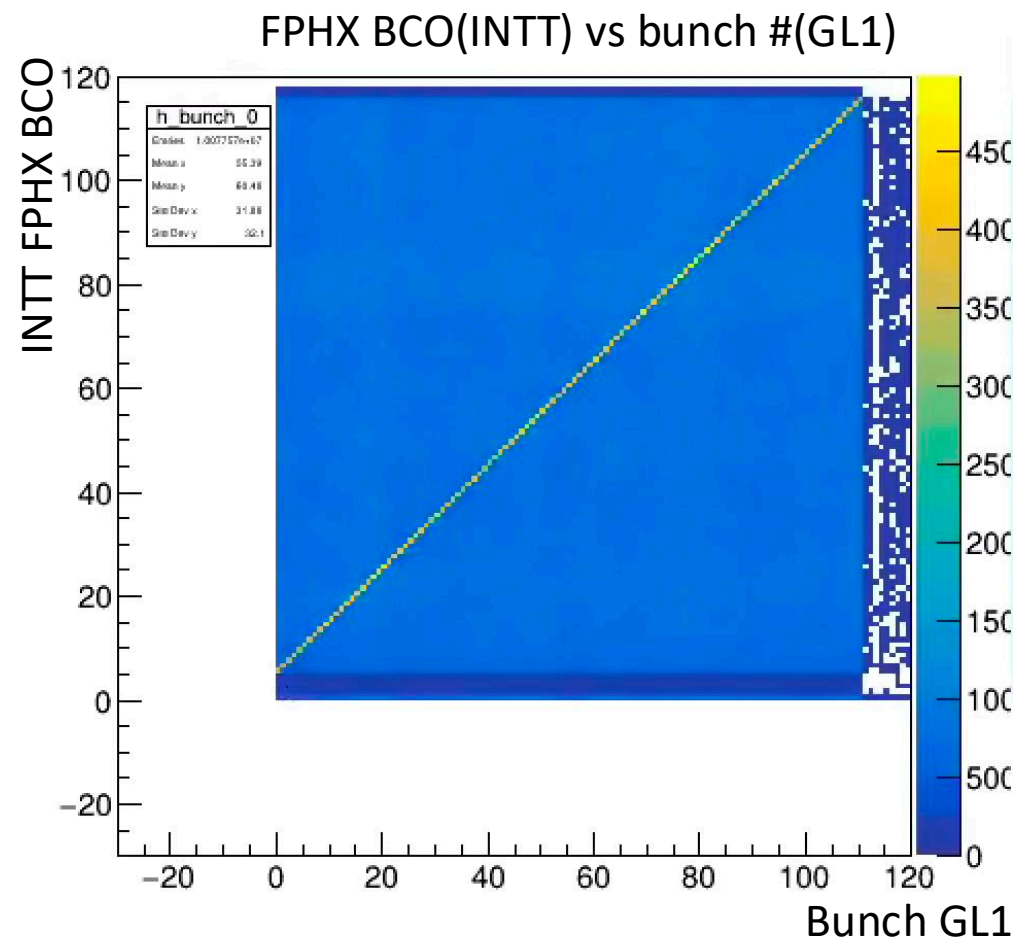


- GL1 finding(matching) study was made by Takashi and Genki
- Most recent study made by Genki
https://indico.bnl.gov/event/24711/contributions/96287/attachments/57049/97903/20240904_streaming_timing.pdf
- Try to reproduce the result and want to do cross-check

Some QA before GL1 matching ratio calculation



Hit from bco_diff match hit were used to count matched events



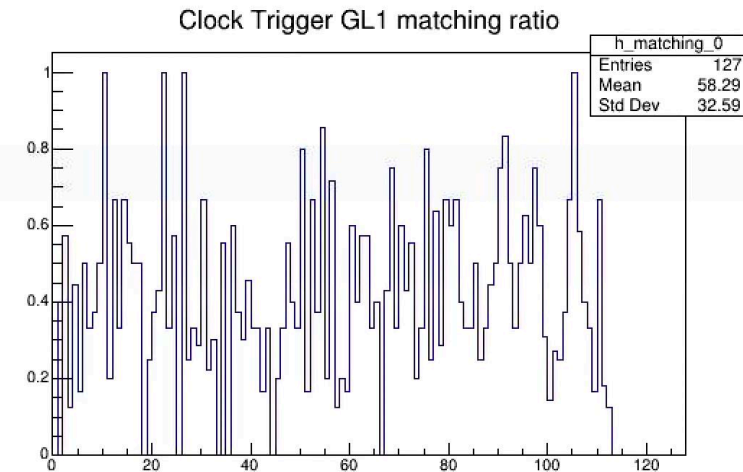
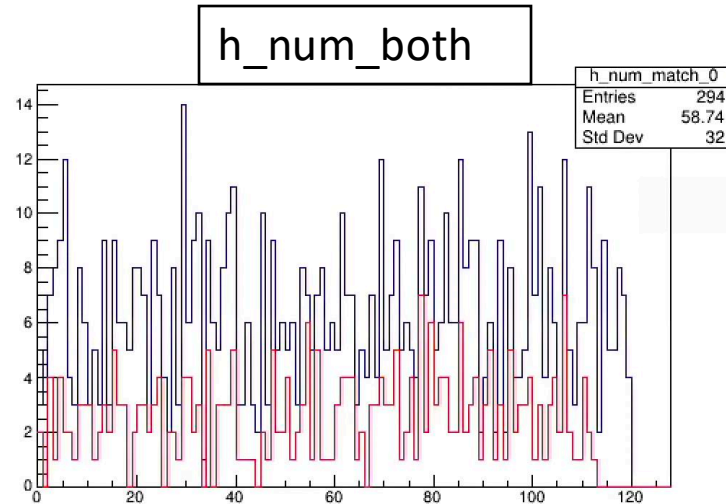
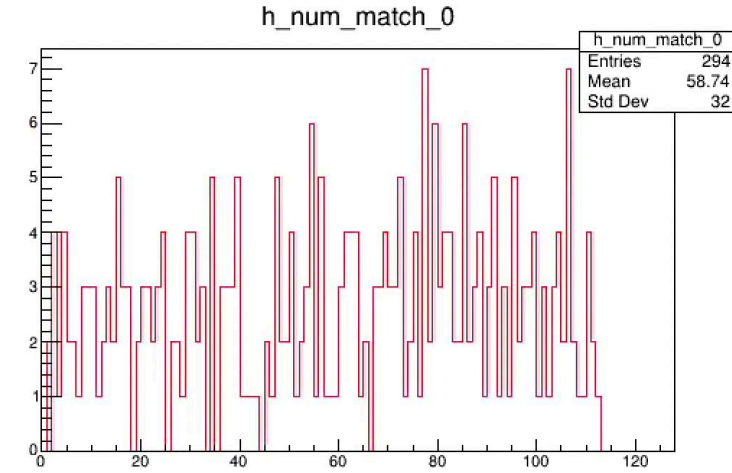
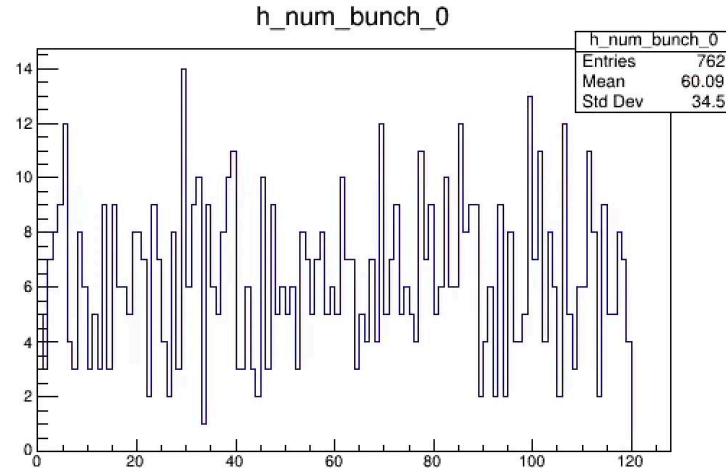
We can see clear correlation btw INTT and GL1

Result(Run 50889 / Clock trigger selected)



- Hot channel rejected.
- InttRawhit used(before TrkrHit)
- 50889 events used.

- # of GL1 triggered events : 762
- # of matched event : 294
- Ratio : $294/762 = 0.385..$
38.5%

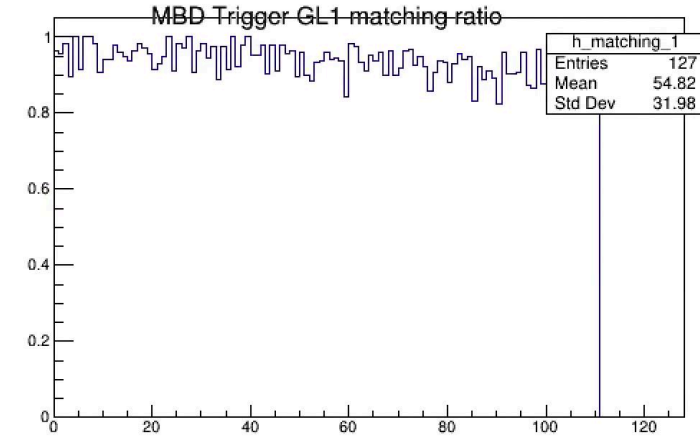
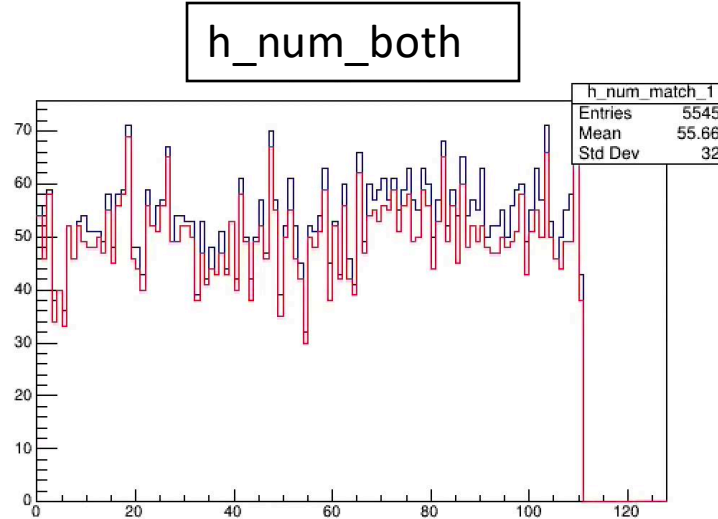
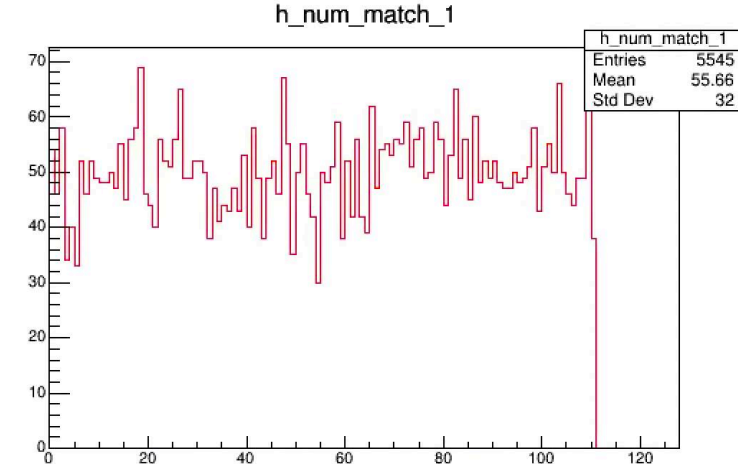
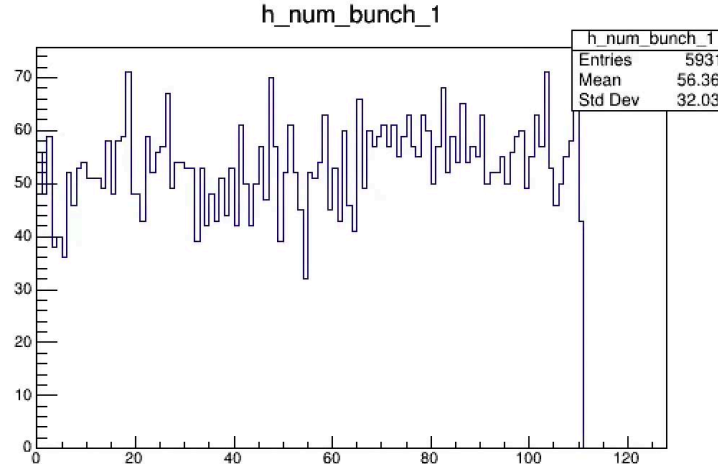


Result(Run 50889 / MBD N&S trigger selected)



- Hot channel rejected.
- InttRawhit used(before TrkrHit)
- 50889 events used.

- # of GL1 triggered events : 5931
- # of matched event : 5545
- Ratio : $5543/5931 \sim 0.935..$
93.5%



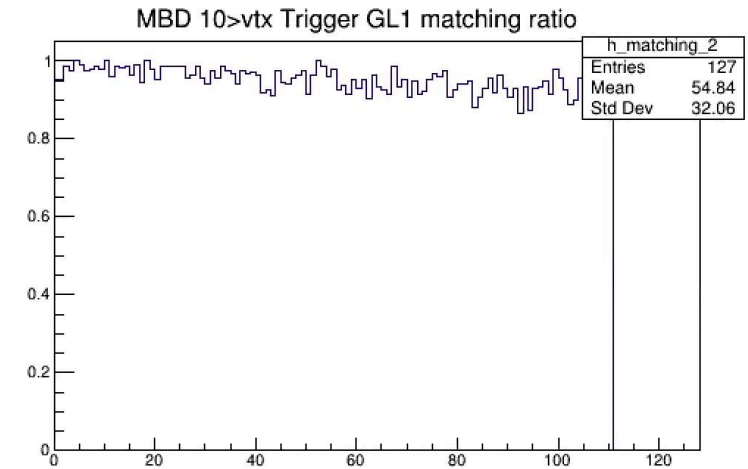
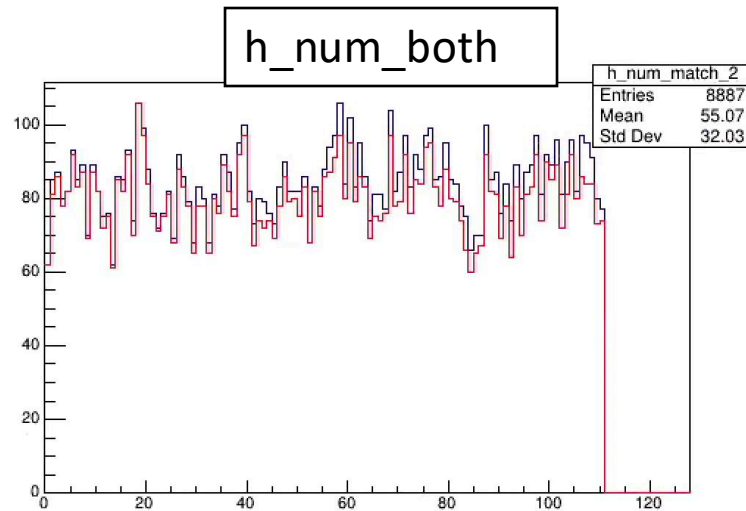
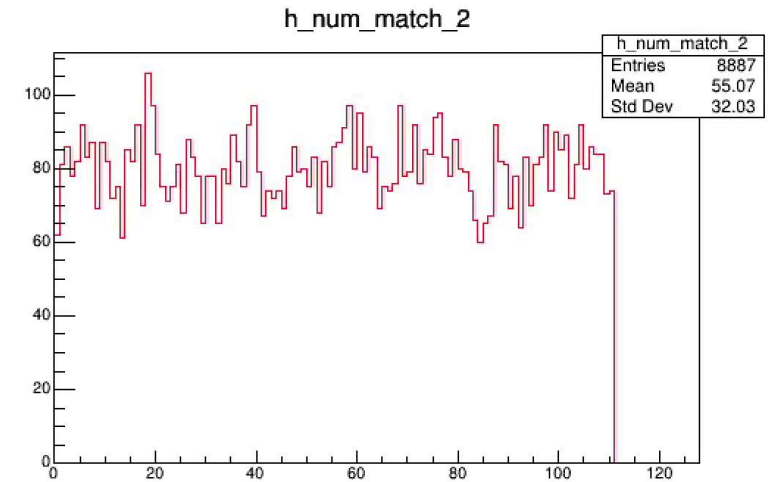
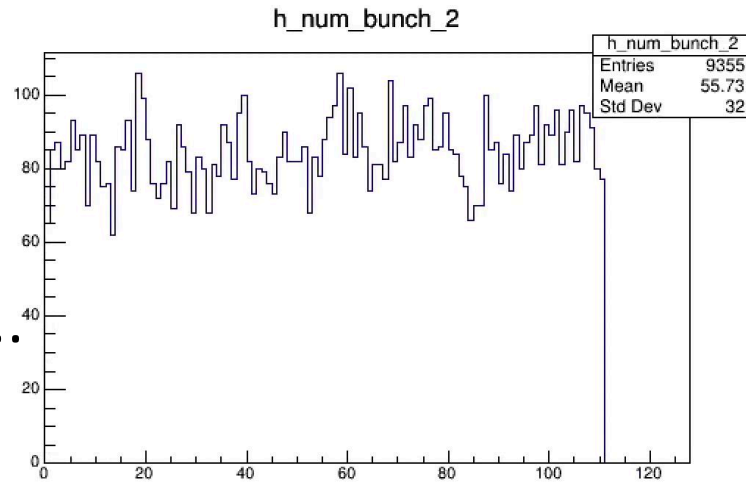
Result(Run 50889 / MBD N&S 10>vtx trigger selected)



- Hot channel rejected.
- InttRawhit used(before TrkrHit)
- 50889 events used.

- # of GL1 triggered events : 9355
- # of matched event : 8886

- Ratio : $8887/9355 \sim 0.9499..$
95.0%



Summary Table(Run 50889 / 50889 events InttRawHit used)



Trigger type	Total event	Matched event	Ratio(%)
Clock	762	294	38.5%
MBD N&S	5931	5543	93.5%
MBD N&S 10>vtx	9355	8887	95.0%

- **I was be able to see the matching ratio dependency on Trigger type**
- **Ratio is relatively higher than previous result**
- **What can cause that discrepancy?**