

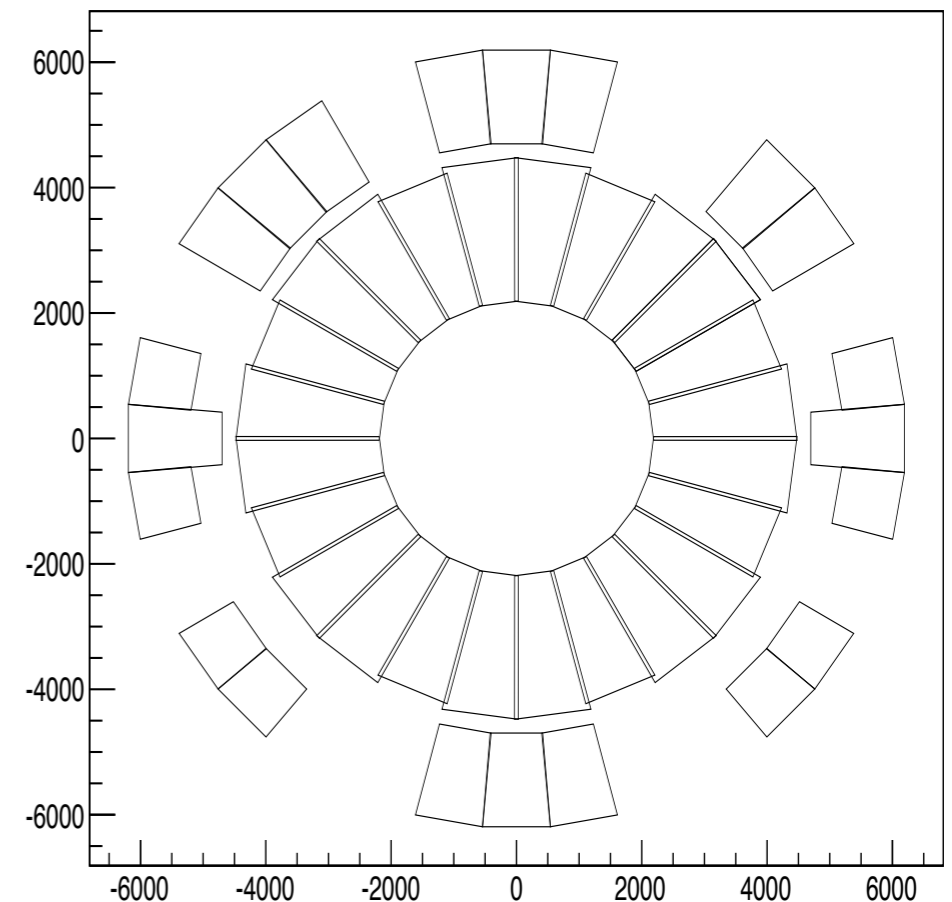
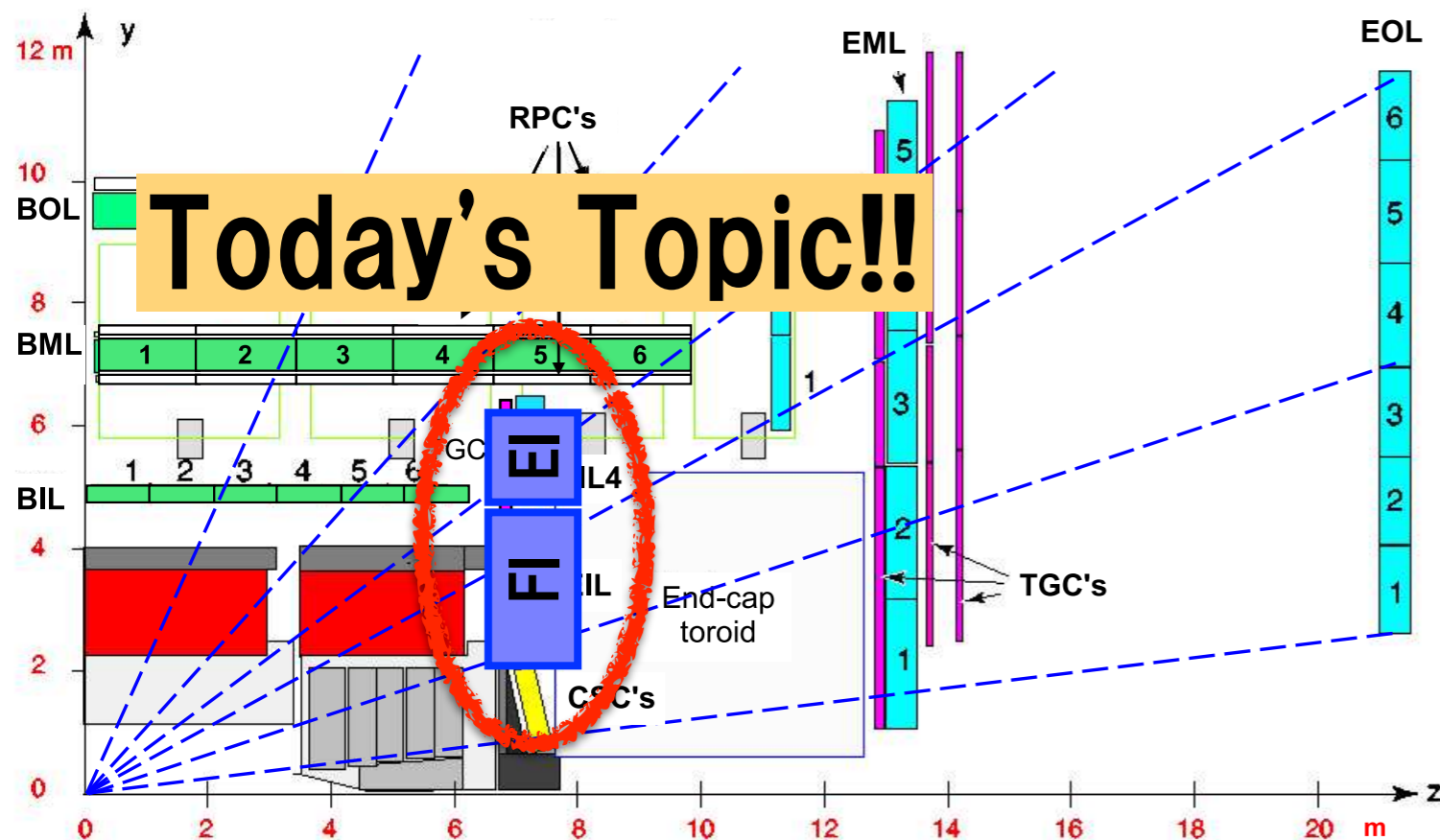
TGC BW & EI/FI Coincidence ~ TrigT1TGC ~

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Muon Signature Meeting

TGC BW & EI/FI Coincidence

- In Run-2, coincidence between BW and EI/FI will be required. We can require this coincidence using TrigT1TGC

EI/FI chamber's shape



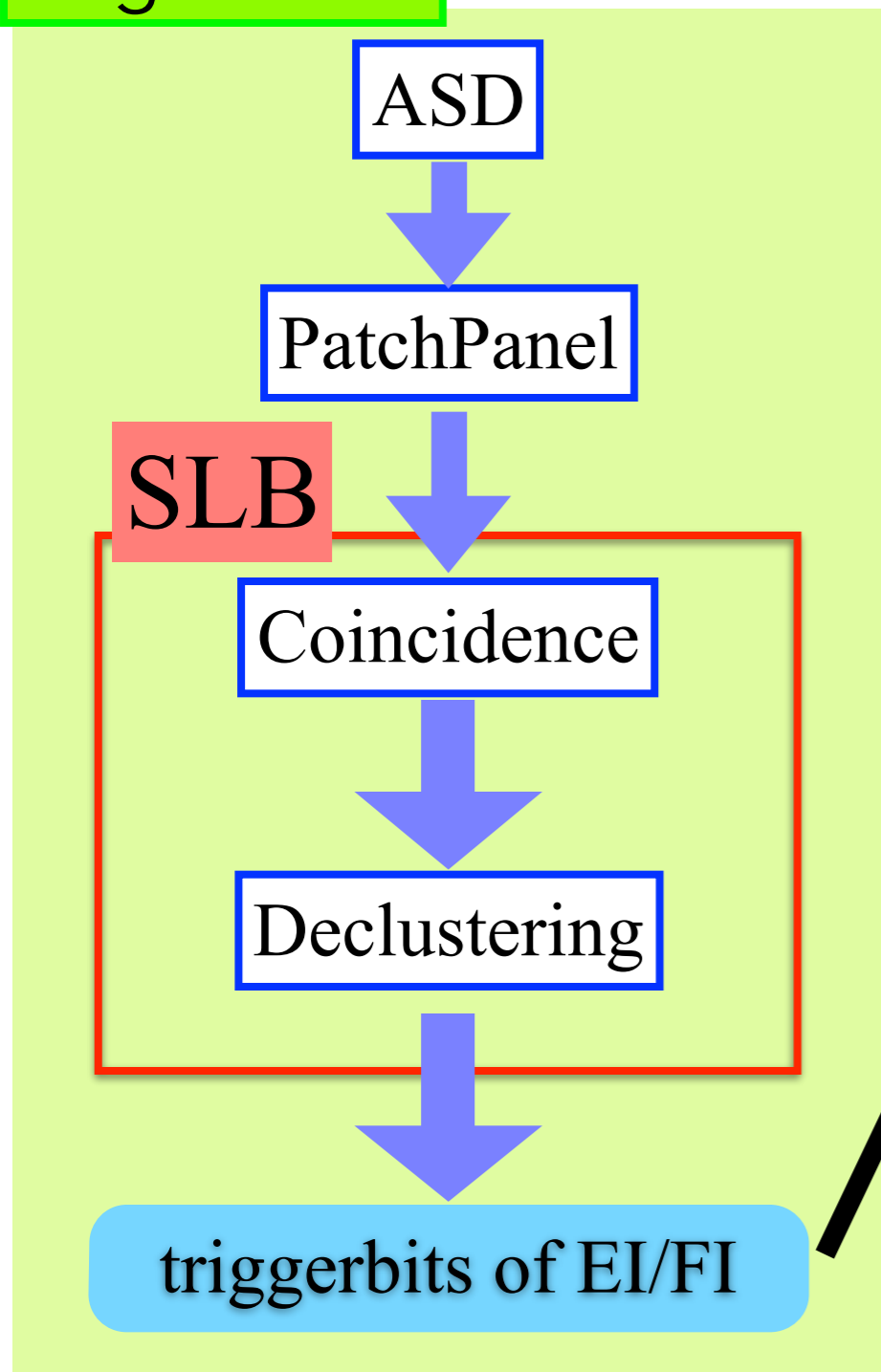
Official Method: TrigT1TGC

- Official method to require BW & EI/FI coincidence is TrigT1TGC. You can emulate trigger-rate with EI/FI & BW coincidence.
- The newest version to simulate BW & EI/FI coincidence :TrigT1TGC-00-02-85
<https://svnweb.cern.ch/trac/atlasoff/browser/Trigger/TrigT1/TrigT1TGC/tags/TrigT1TGC-00-02-85>
- The method we used to emulate trigger-rate for TDAQ-TDR is unofficial and simple method. (not TrigT1TGC)

<https://indico.cern.ch/event/275731/contribution/5/material/slides/1.pdf>

Coincidence with EI/FI in TrigT1TGC

TrigT1TGC



dbFile is determined from Monte-Carlo simulation for fired RoIs (SSC)

	EI		FI	
	Strip	Wire	Strip	Wire
dbFile	0 0 0 0	0 0 0 0	0 1 1 1	0 0 1 1
triggerbit	0 0 0 0	0 0 0 0	0 1 1 0	0 0 0 1
	FALSE FALSE		TRUE TRUE	

Hit FI

- TrigT1TGC emulate ASD, PP and SLB It outputs triggerbits after them
 - Then look dbFile and decide whether to reject or to accept
- $$\text{EI/FI Hit} = (\text{EIW} \wedge \text{EIS}) \vee (\text{FIW} \wedge \text{FIS})$$

Results

Results

- eta-phi distribution require EI/FI & TGC Coincidence

RunNumber: 216399, 216416, 216432 (bunch-spacing 25ns, 8TeV in 2012)

Selection

- TGC_coin_bunch = 2 // current bunch
- TGC_coin_type = 2 // SL trigger
- TGC_coin_isForward = 0 // Endcap trigger
- TGC_coin_pt \geq 5 // PT5 or PT6

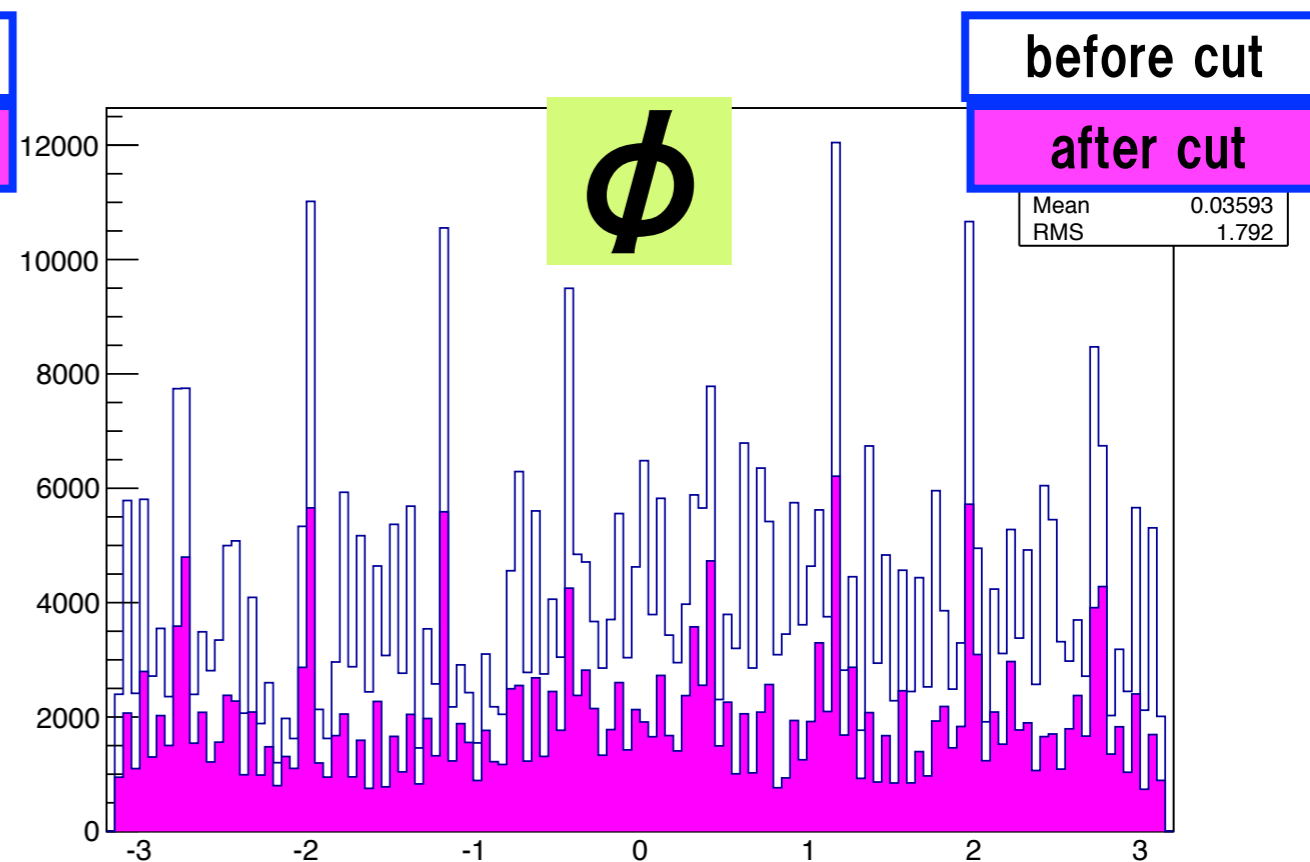
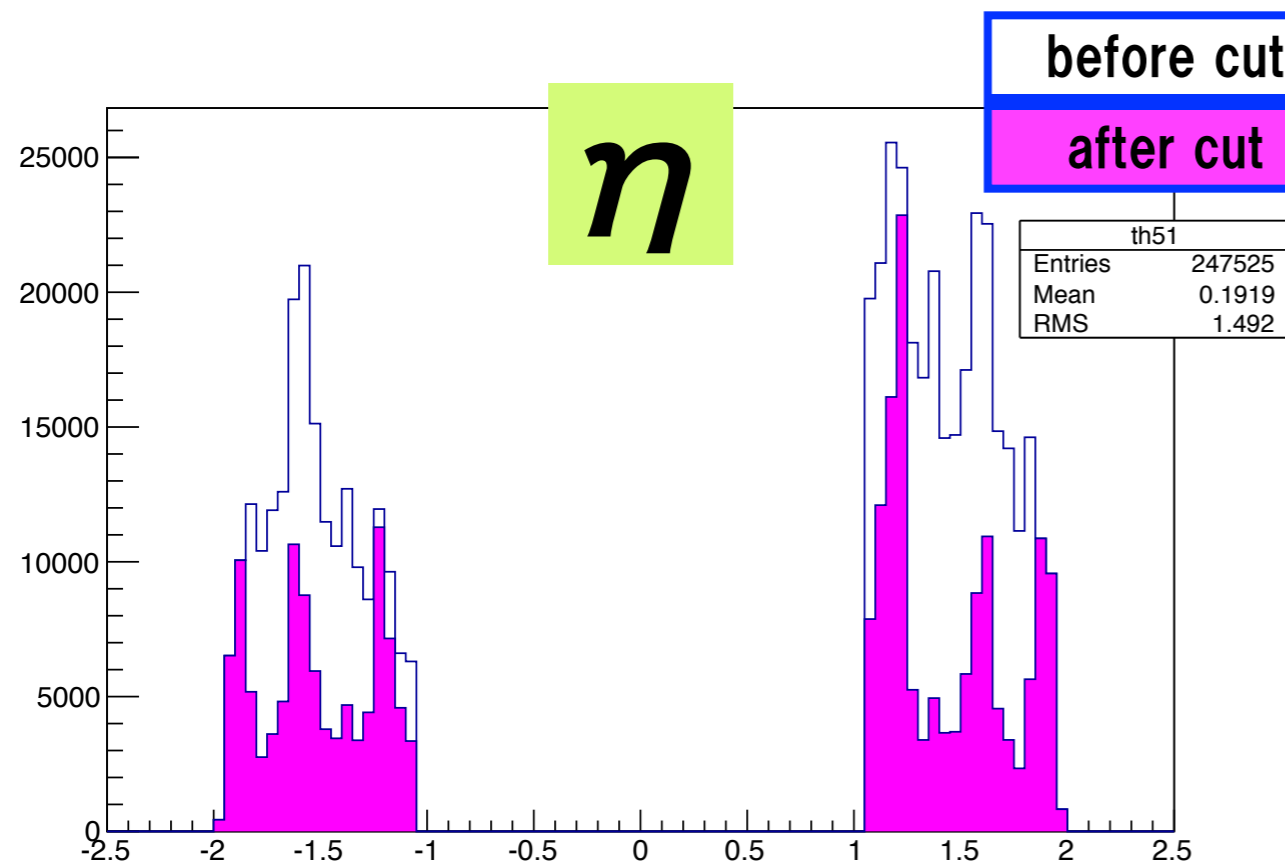
before

522318

after

247525

there is a bug



A little bug

- I'm fixing a bug

When there are 2 triggers (or more) which requires EI/FI & BW coincidence in a event

1. trigger A (should be accepted)

2. trigger B (**should be rejected**)

trigger B is also accepted, not only trigger A

- This bug will be corrected until ~ ~

蔵重さんから返信があって、bug と確定したらだいたいの日にちを記入

Conclusion

- You can require TGC & EI/FI Coincidence using TrigT1TGC
- There is a little bug in TrigT1TGC now. It will be corrected until ~~