TRG DQM for CR shifter
2023/2/9
T.Koga

New TRG DQM for CR shifter

-DQM group plan to update DQM for CR shifter
 -simple interface for easy understanding
  -https://indico.belle2.org/event/8390/contributions/50931/attachments/20239/29955/dqm_tb_13_1_2023.pdf

-TRG would like to show following information for CR shifter
  -two main plots:
  -①trigger efficiency
  -②trigger timing (event t0)

  -variables from DQM histogram and indicator with error threshold:
  -1.   mean of L1 timing difference between GDL and FE
  -2-4.   mean of ECLTRG,CDCTRG,TOPTRG event timing with hadronic event
  -5-8.   peak position of ECLTRG,CDCTRG,TOPTRG,KLMTRG latency on GRL
  -9-12. mean of hadron/Bhabha, hadronb2/Bhabha, mumu/Bhabha, gg/Bhabha
  -13.   a flag which shows if there is zero entry bin in ECLTRG Hit TC ID
  -14.   a flag which shows if there is zero entry bin in CDCTRG wire ID
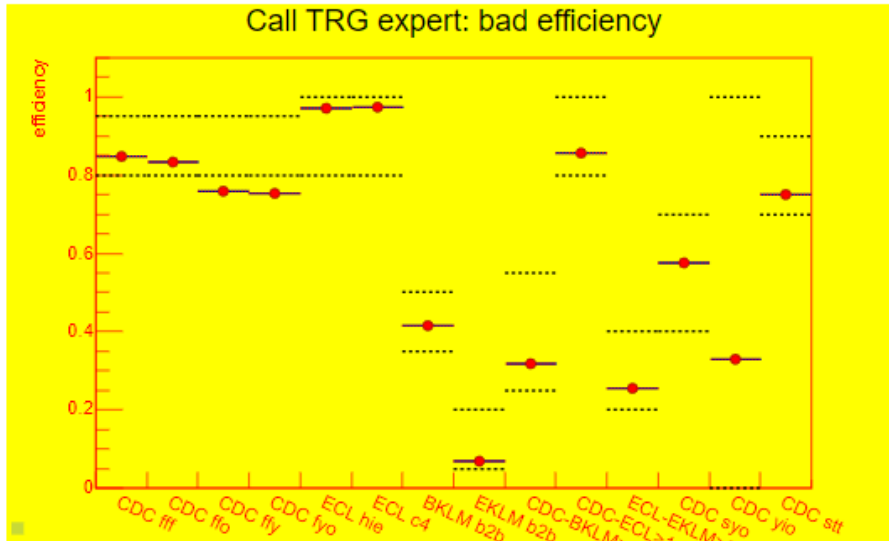 +   KLMTRG, TOPTRG related plots (not decided yet), maybe more
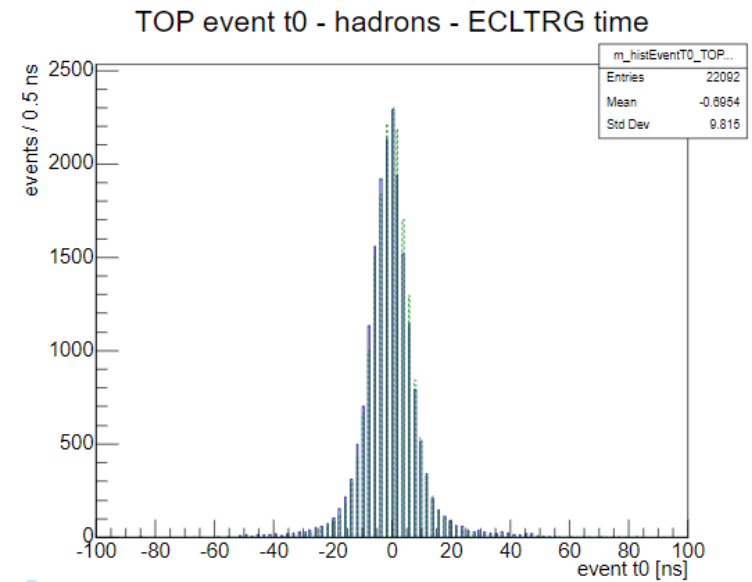
TRG main plot

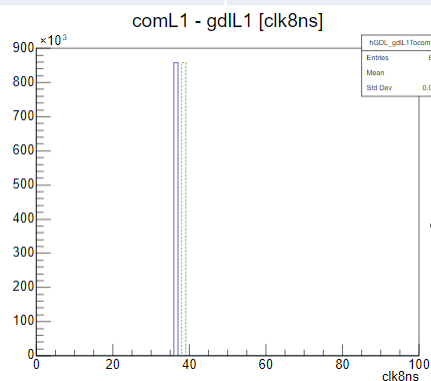-Main plot:
 -①trigger efficiency
 -②eventT0

①

②

Call TRG expert: bad efficiency

TOP event t0 - hadrons - ECLTRG time

variables with error indicator

-Variables with error threshold

number	variable	value from histogram	error threshold
1	comL1-GDLL1	mean	[36,38] clk
2-4	eventT0	mean	[-5,5] ns
5-8	Subtrigger Latency	peak	subtrigger dependent
9-12	#skim ratio	#entry ratio in each bin	skim dependent
13	ECLTRG deadch	#entry in each bin	all bins have #entry > 0
14	CDCTRG deadch	#entry in each bin	~90% bins have #entry > 0

1.

2-4.

5-8.

can we read peak from histo?
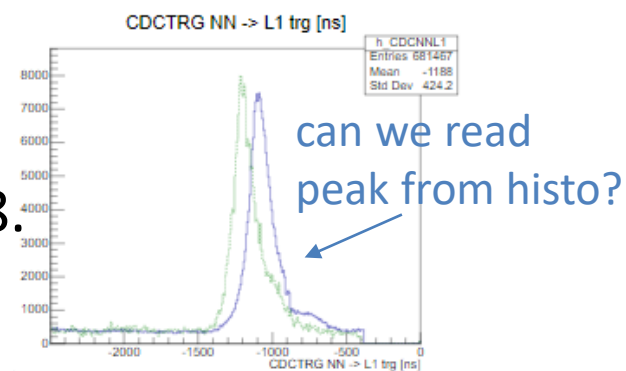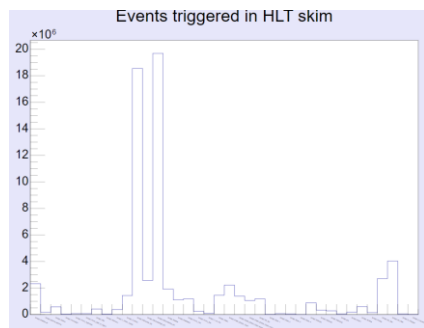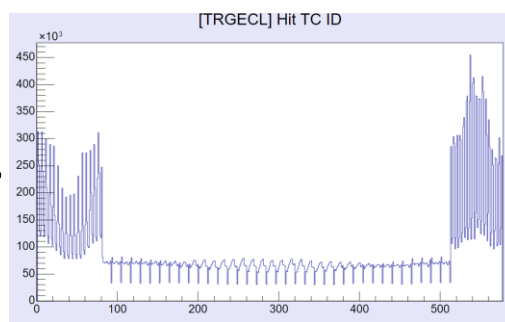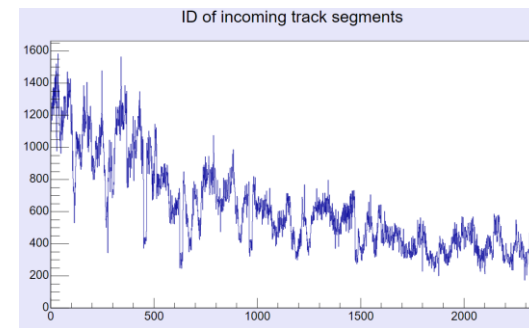
9-12.

13.

14.
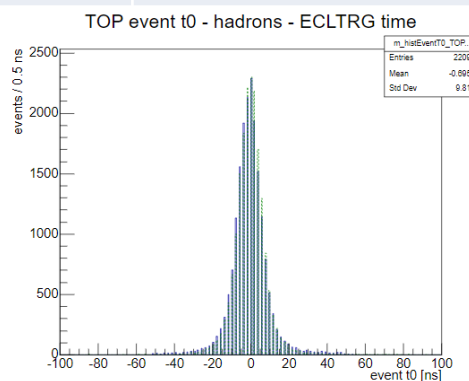
4

Summary

-TRG would like to show following information for CR shifter
  -two main plots:
    -①trigger efficiency
    -②trigger timing (event t0)

  -variables from DQM histogram and indicator with error threshold:
    -1.   mean of L1 timing difference between GDL and FE
    -2-4.   mean of ECLTRG,CDCTRG,TOPTRG event timing with hadronic event
    -5-8.   peak position of ECLTRG,CDCTRG,TOPTRG,KLMTRG latency on GRL
    -9-12. mean of hadron/Bhabha, hadronb2/Bhabha, mumu/Bhabha, gg/Bhabha
    -13.   a flag which shows if there is zero entry bin in ECLTRG Hit TC ID
    -14.   a flag which shows if there is zero entry bin in CDCTRG wire ID
    +   KLMTRG, TOPTRG related plots (not decided yet), maybe more

-We will prepare any needed technical information in detail
  -what information is needed ?

backup

New DQM for CR shifter

-DQM group plan to update DQM for CR shifter

-simple interface for easy understanding

-https://indico.belle2.org/event/8390/contributions/50931/attachments/20239/29955/dqm_tb_13_1_2023.pdf

- include 2/3 main plots
- with "details" open detector dedicated page
- allow flexible size of histograms
- include run dependency plots from MiraBelle?
  (alt. make MiraBelle summary page and display it at
  all times on another display)
- display numbers
  (inc. default values, easy to change by exp. shifter)
- display alarms from not-shown histograms
- require active participation from the shifters

-We prepare our 1st proposal for TRG

  -2 or 3 main plots

  -variables from DQM histogram and indicator with error threshold