ECL TRG DQM

Choi Won Ji

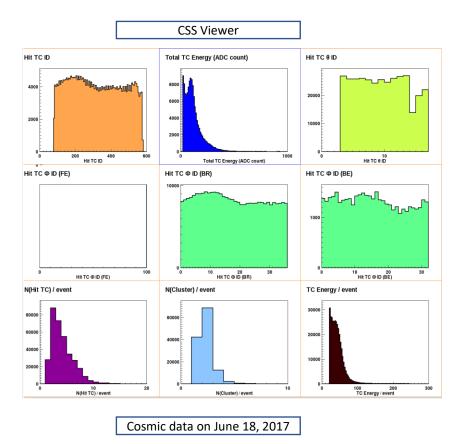
Contents

- System
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System

- Unpacker \rightarrow ECL Trigger DQM \rightarrow Make plot
- Supporting plots
 - Total TC Energy, TC Energy for event
 - Hit TC ID, Hit TC θ,Φ ID
 - N(Hit TC) for event
 - N(Cluster) for event

ECL TRG DQM element

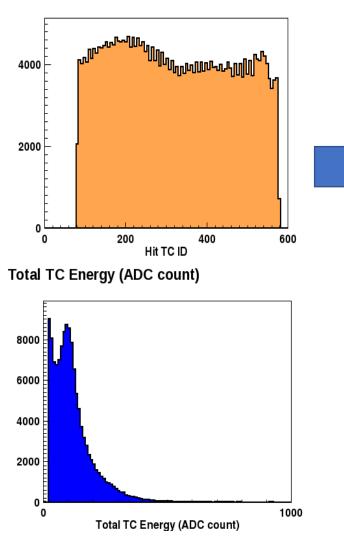


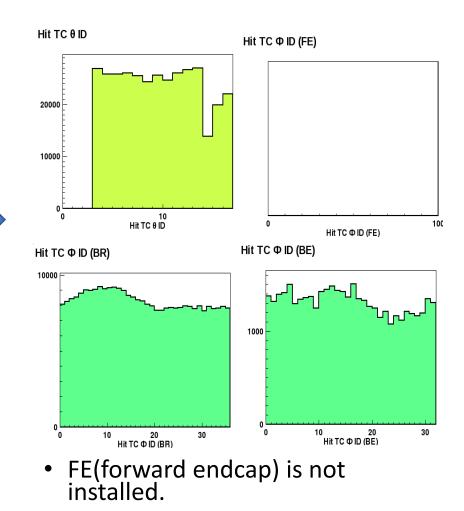
[2017-07-21 11:41:37]	[INFO]	Accepted new connection for data
[2017-07-21 11:41:37]	[INFO]	new hist: DAQ/h_TCld
[2017-07-21 11:41:37]	[INFO]	new hist: DAQ/h_TCthetald
[2017-07-21 11:41:37]	[INFO]	new hist: DAQ/h_TCphild_BR
[2017-07-21 11:41:37]	[INFO]	new hist: DAQ/h_TCphild_BWD
[2017-07-21 11:41:37]		new hist: DAQ/h_TotalEnergy
[2017-07-21 11:41:37]		new hist: DAQ/h_TCEnergy
[2017-07-21 11:41:37]	[INFO]	new hist: DAQ/h_n_TChit_event
[2017-07-21 11:41:37]	[INFO]	new hist: DAQ/h_Cluster
[2017-07-21 11:41:37]	[INFO]	DAQ/h_TCId
[2017-07-21 11:41:37]	[INFO]	DAQ/h_TCthetald
[2017-07-21 11:41:37]	[INFO]	DAQ/h_TCphild_BR
[2017-07-21 11:41:37]	[INFO]	DAQ/h_TCphild_BWD
[2017-07-21 11:41:37]	[INFO]	DAQ/h_TotalEnergy
[2017-07-21 11:41:37]	[INFO]	DAQ/h_TCEnergy
[2017-07-21 11:41:37]	[INFO]	DAQ/h_n_TChit_event
[2017-07-21 11:41:37]	[INFO]	DAQ/h_Cluster

DQM Viewer log

Plots

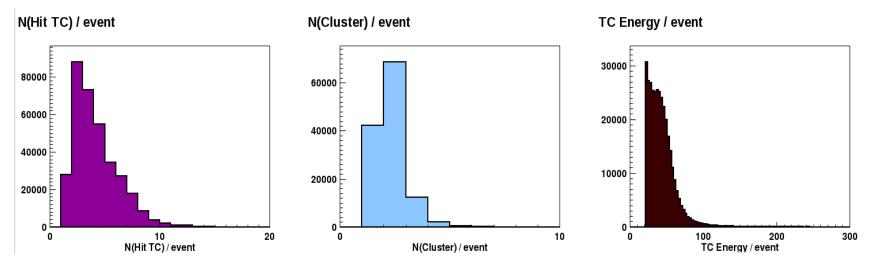
Hit TC ID





• Due to different number of phi ID, there need to be divided.

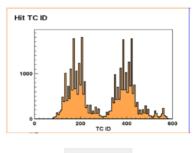
Plots - supplement



- Three plots have been prepared.
- Timing deference plot will be added.

ECL TRG DQM Manual

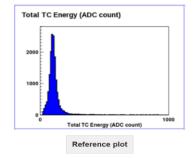
1. Hit TC ID



Reference plot

- Underlying Physics: The TC hit ID is shown. Bin 0 ~ 80 show Forward endcap, Bin 81 ~ 512 show barrel, Bin 513 ~ 576 show backward endcap.
- Key features of the distribution: Two peaks are present. The location of TC which make a first peak is on the top and location of TC which make a second peak is on the bottom.
- You should check that the shape of histogram is similar to the reference. Forward endcap(Bin0 ~80) is not installed yet. So there must be nothing.
- If something is wrong: If the peak is only at a partuculary point, check ECL noise. If ECL noise is set nomally, please send mail to ECL Trigger Group(trg-ecl@belle2.org).
- Only two plots (Hit TC ID & Total TC Energy) are available.
- It will be supplied.

2. Total TC Energy



- · Underlying Physics: The Total TC Energy is shown.
- · Key features of the distribution: There is a peak around 100 ADC count.
- You should check that the shape of histogram is similar to the reference.
- If something is wrong: If there is a stack around 0, It might caused by ECL noise. If ECL noise is set nomally, please send mail to ECL Trigger Group(trg-ecl@belle2.org).

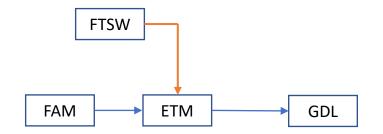
Summary and plan

- Summary
 - First version of ECL TRG DQM is ready.
 - Hit TC ID & Total Energy plots have been used on global cosmic run.
 - Manual for shifter is available and submitted.
- Plan
 - Timing deference plot will be added.
 - More plots will be used on global cosmic run.
 - Manual will be supplemented.

BACK UP

Timing Deference

- T1 : Time measured in FAM
- T2 : Time from FTSW to ETM
- Timing Deference : T1-T2



TC MAP

	e	•	•	\neg
	3	2	1	↓ ♦
1	3	2	L	Φ
	4	5	1 1	
3	8	7		
4	9	10	<u>6</u> 3	
2 3 4 5	13	12	11 5	
6	14	15	11 5	
7	18	17	16 7	
8	19	20		
9	23	22	21 9	
10	24	25	21 3	
11	28	27	26 11	
12	29	30		
13	33	32	31 13	
14	34	35		
15	38	37	36 15	
16	39	40		
17	43	42	41 17	
18	44	45		
19	48	47	46 19	
20	49 53	50 52		
21	53	52 55	⁵¹ 21	
22 23	58	57		
23 24	59	60	56 23	
24	63	62		
26	64	65	⁶¹ 25	
	68	67		
27 28	69	70	⁶⁶ 27	
29	73	72		
30	74	75	71 29	
31	78	77	76 31	
32	79	80	70 31	
	F	E	-1	~ ⁻)
			· z(=)

– TC 0 ID

← TC ∲ ID

	4	5	6	7	8	9	10	11	12	13	14	15
1	81	82	83	84	85	86	87	88	89	90	91	92
2	93	94	95	96	97	98	99	100	101	102	103	104
3	105	106	107	108	109	110	111	112	113	114	115	116
4	117	118	119	120	121	122	123	124	125	126	127	128
5	129	130	131	132	133	134	135	136	137	138	139	140
6	141	142	143	144	145	146	147	148	149	150	151	152
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36	501	502	503	504	505	506	507	508	509	510	511	512

BE

551

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28 29

541 548

560