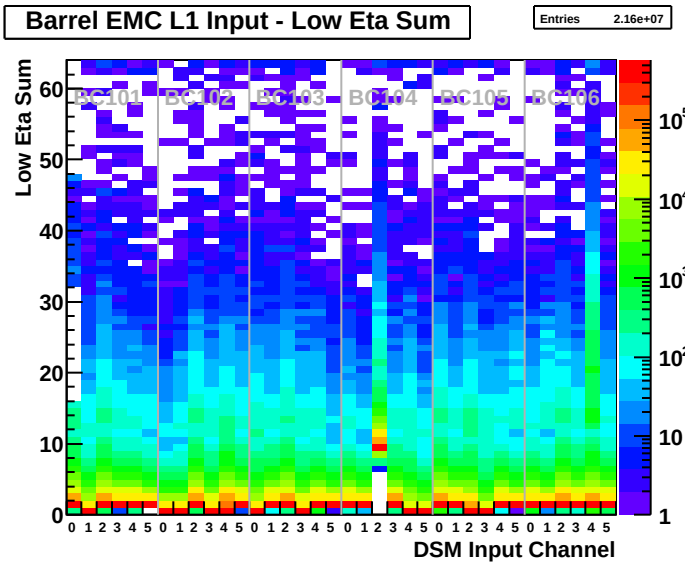
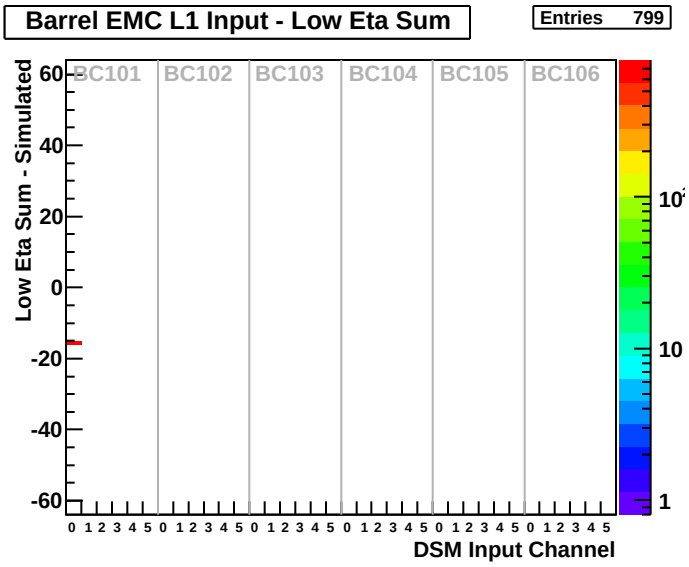
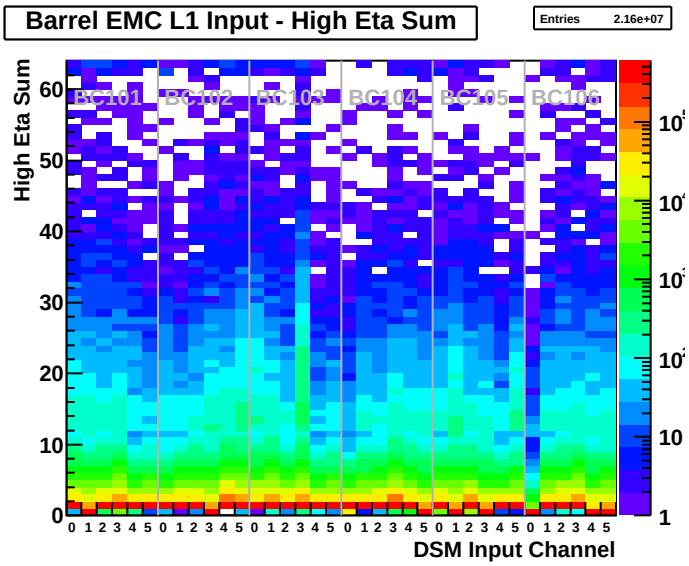
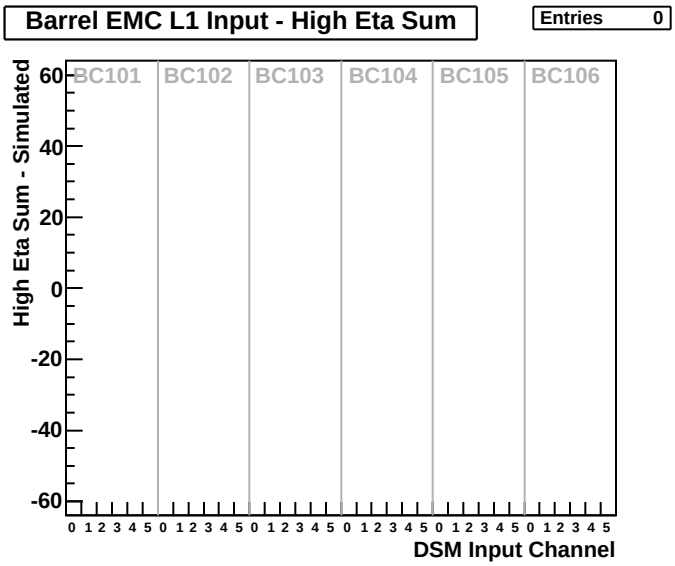
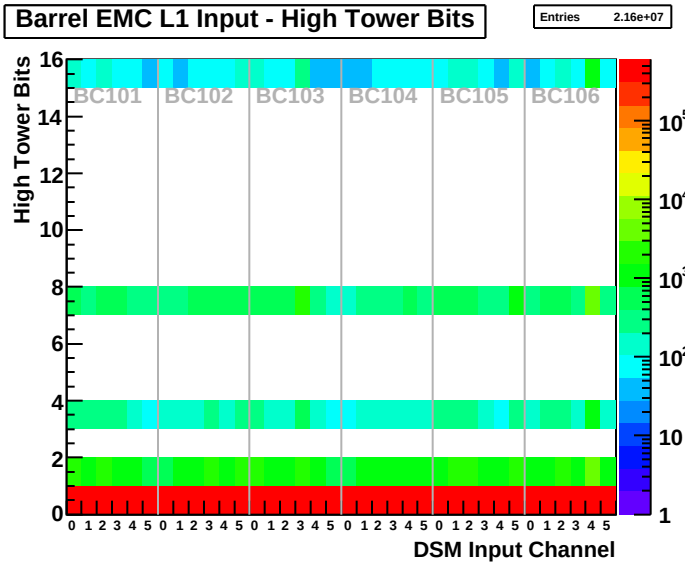
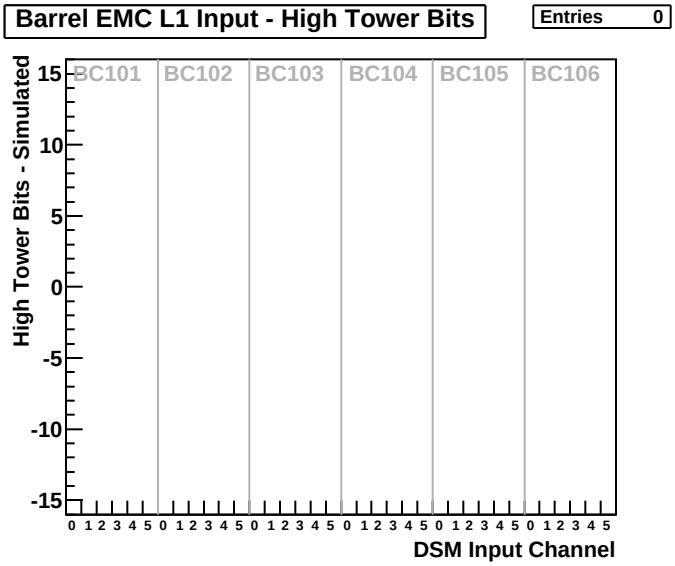

Barrel EMC L1 Input - Low Eta Sum
Entries 2.16e+07
Low Eta Sum
BC101 BC102 BC103 BC104 BC105 BC106
DSM Input Channel

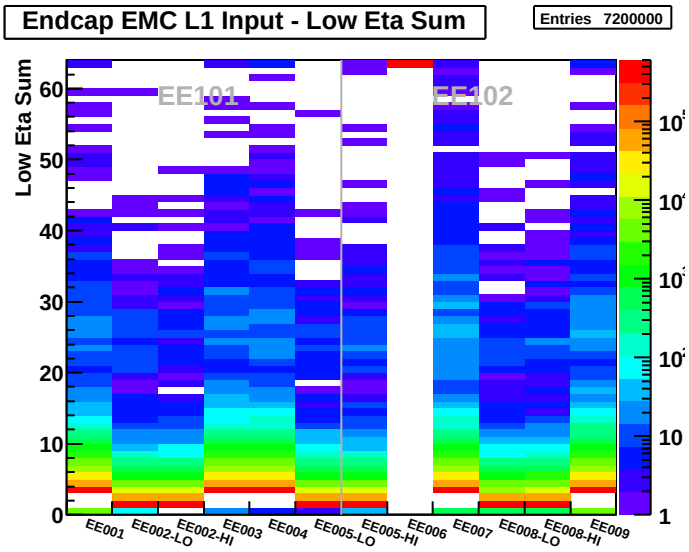

Barrel EMC L1 Input - Low Eta Sum
Entries 799
Low Eta Sum - Simulated
BC101 BC102 BC103 BC104 BC105 BC106
DSM Input Channel

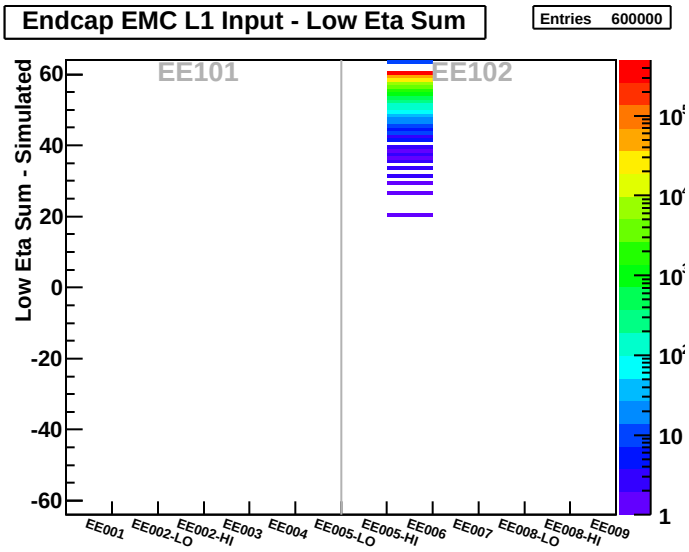

Barrel EMC L1 Input - High Eta Sum
Entries 2.16e+07
High Eta Sum
BC101 BC102 BC103 BC104 BC105 BC106
DSM Input Channel

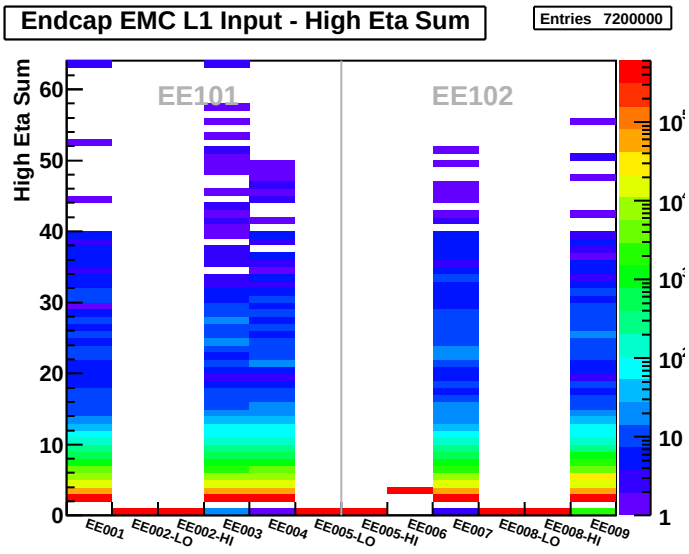

Barrel EMC L1 Input - High Eta Sum
Entries 0
High Eta Sum - Simulated
BC101 BC102 BC103 BC104 BC105 BC106
DSM Input Channel

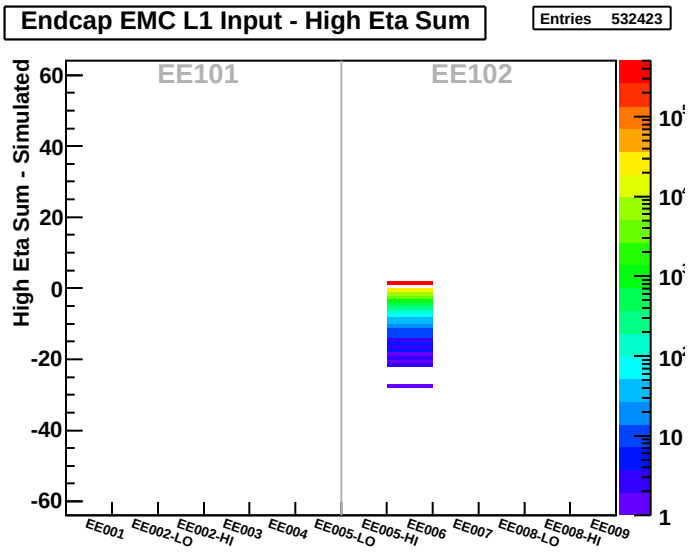

Barrel EMC L1 Input - High Tower Bits
Entries 2.16e+07
High Tower Bits
BC101 BC102 BC103 BC104 BC105 BC106
DSM Input Channel

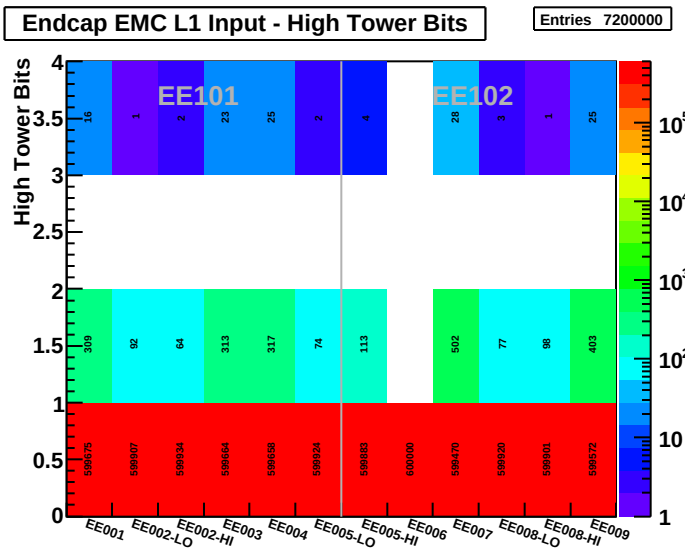

Barrel EMC L1 Input - High Tower Bits
Entries 0
High Tower Bits - Simulated
BC101 BC102 BC103 BC104 BC105 BC106
DSM Input Channel

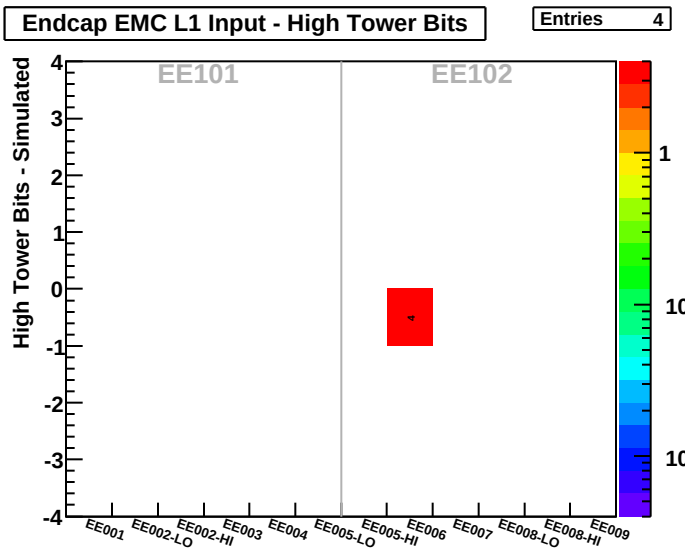

Endcap EMC L1 Input - Low Eta Sum
Entries 7200000
Low Eta Sum
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

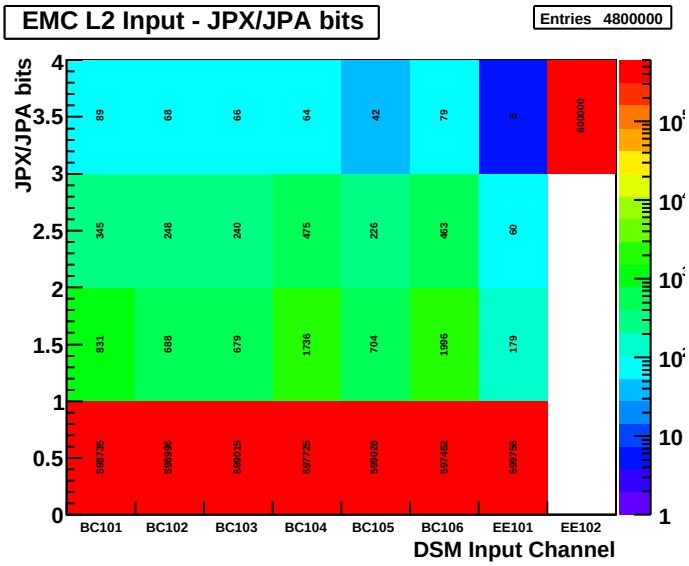

Endcap EMC L1 Input - Low Eta Sum
Entries 600000
Low Eta Sum - Simulated
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

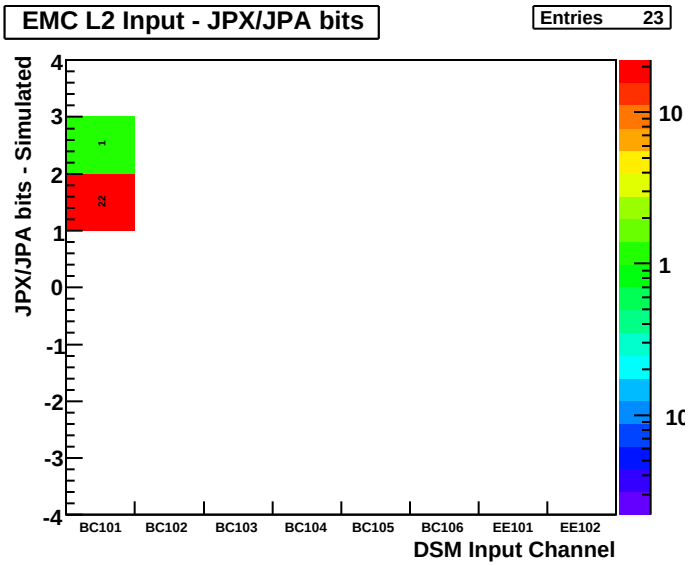

Endcap EMC L1 Input - High Eta Sum
Entries 7200000
High Eta Sum
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

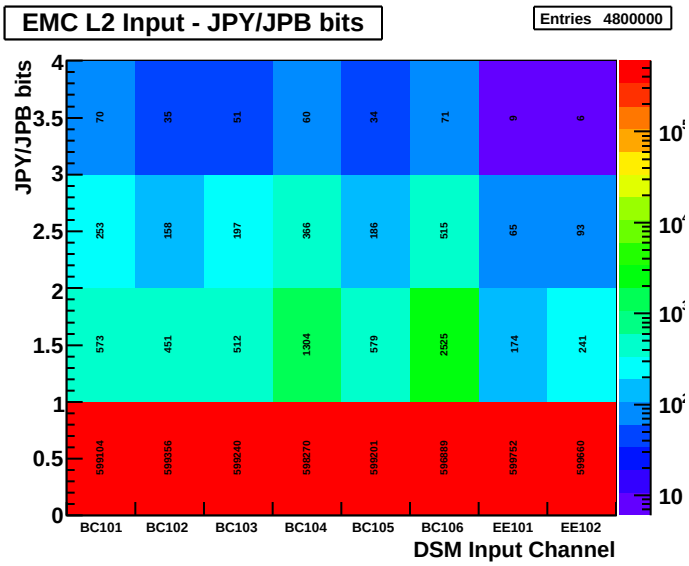

Endcap EMC L1 Input - High Eta Sum
Entries 532423
High Eta Sum - Simulated
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

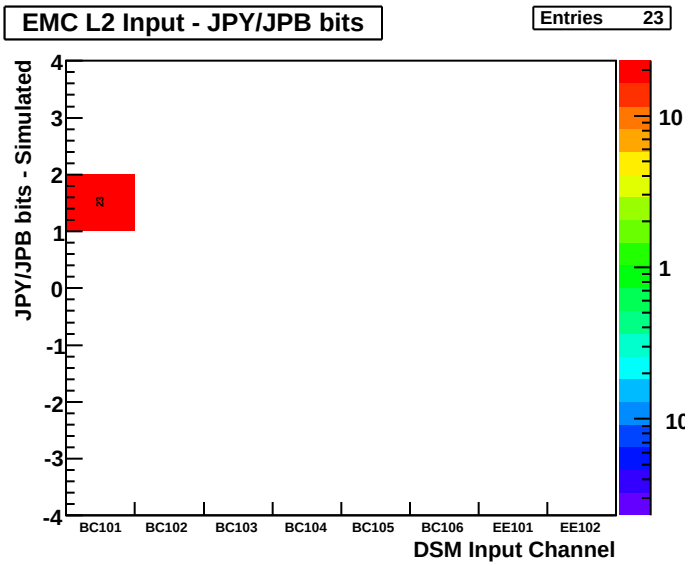

Endcap EMC L1 Input - High Tower Bits
Entries 7200000
High Tower Bits
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

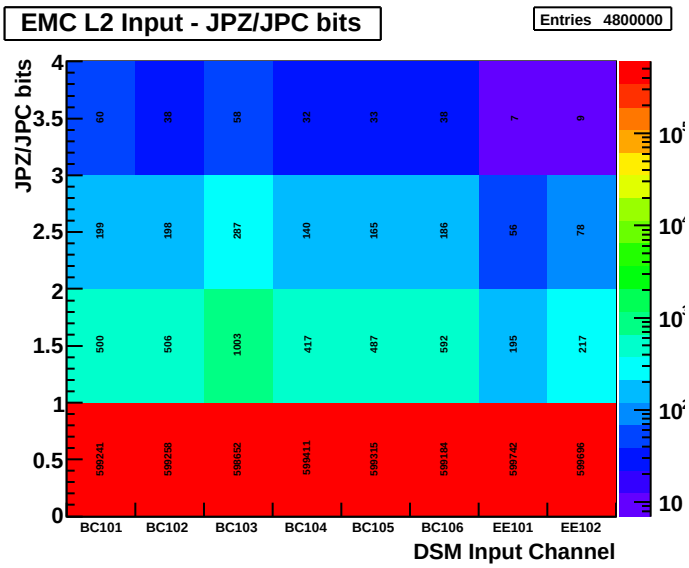

Endcap EMC L1 Input - High Tower Bits
Entries 4
High Tower Bits - Simulated
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

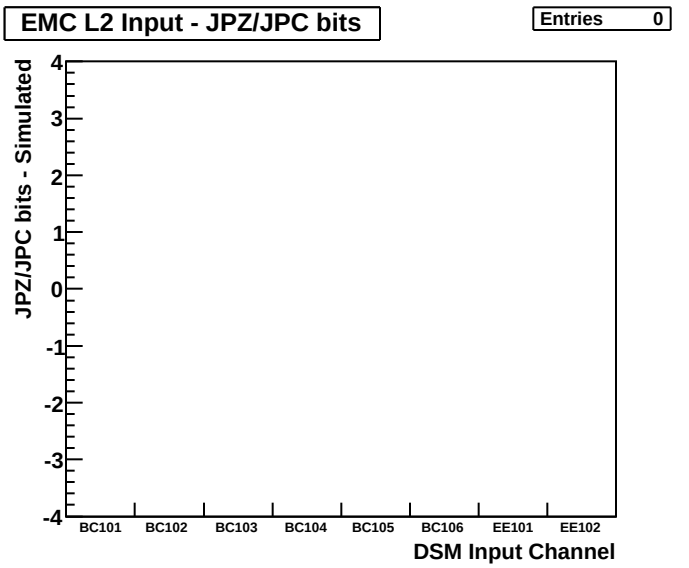

EMC L2 Input - JPX/JPA bits
Entries 4800000
JPX/JPA bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102
89 68 66 64 42 79 5 600000
345 248 240 475 226 463 60
831 688 679 1736 704 1996 179
598735 598996 599015 597725 599028 597462 599756

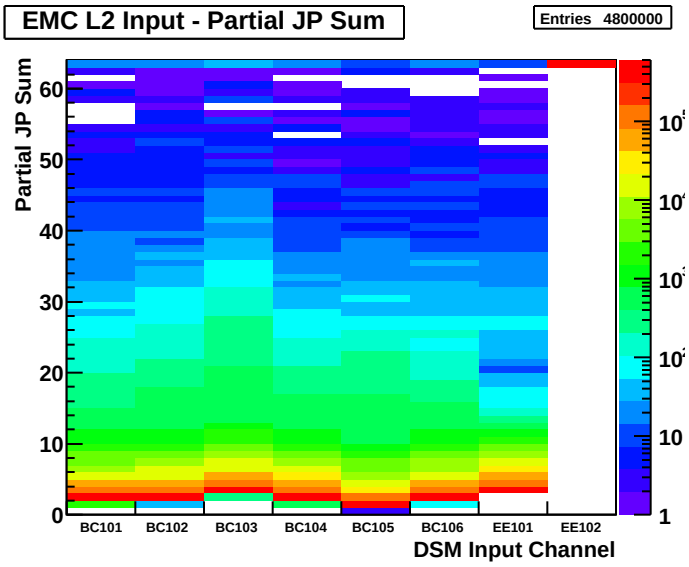

EMC L2 Input - JPX/JPA bits
Entries 23
JPX/JPA bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102
1
22

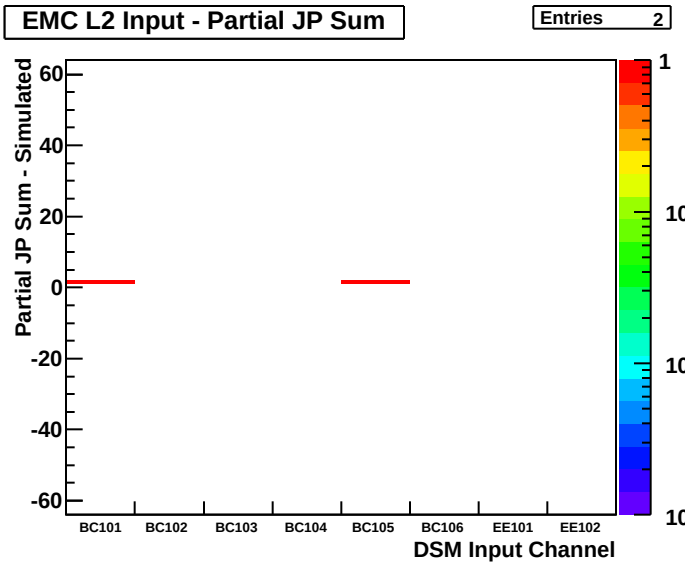

EMC L2 Input - JPY/JPB bits
Entries 4800000
JPY/JPB bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102
70 35 51 60 34 71 9 6
253 158 197 366 186 515 65 93
573 451 512 1304 579 2525 174 241
599104 599356 599240 598270 599201 598889 599752 599660

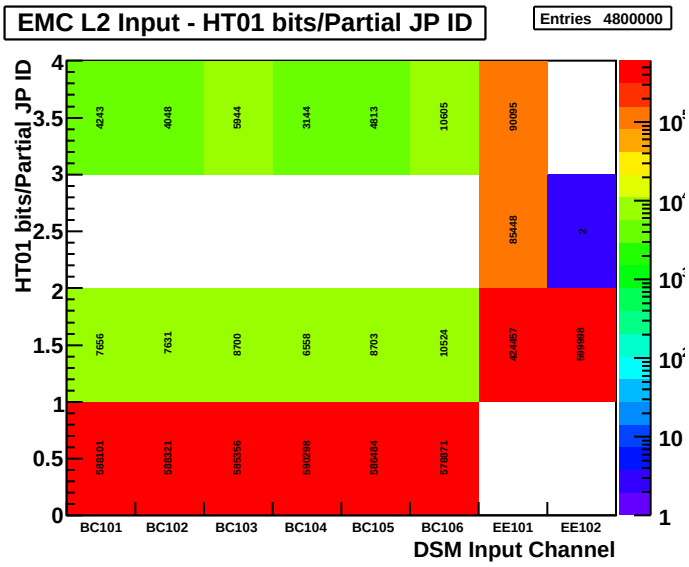

EMC L2 Input - JPY/JPB bits
Entries 23
JPY/JPB bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102
23

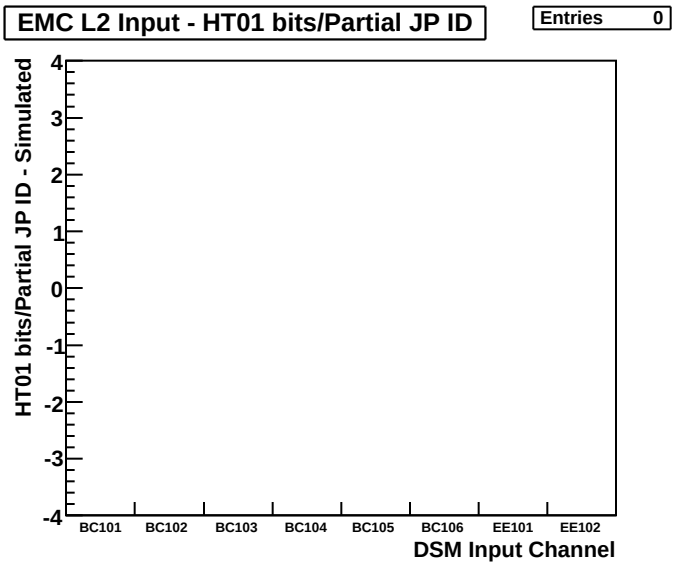

EMC L2 Input - JPZ/JPC bits
Entries 4800000
JPZ/JPC bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102
60 38 58 32 33 38 7 9
199 198 287 140 165 186 56 78
500 506 1003 417 487 592 195 217
599241 599239 598652 599411 599315 599184 599742 599696

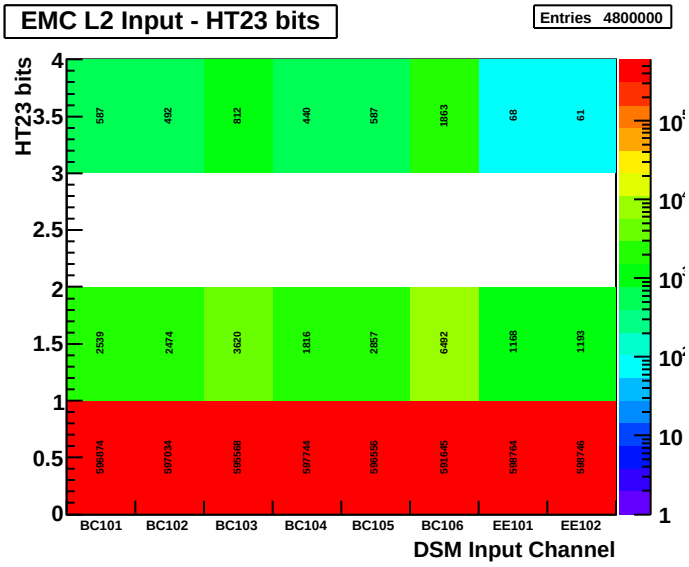

EMC L2 Input - JPZ/JPC bits
Entries 0
JPZ/JPC bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

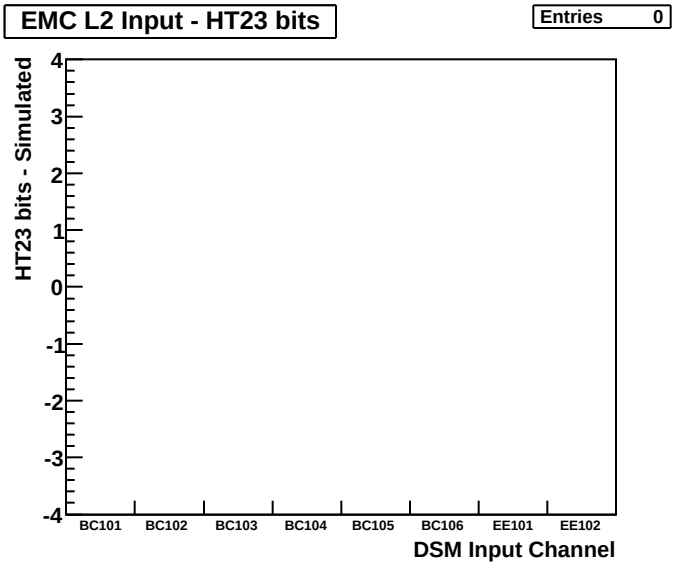

EMC L2 Input - Partial JP Sum
Entries 4800000
Partial JP Sum
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

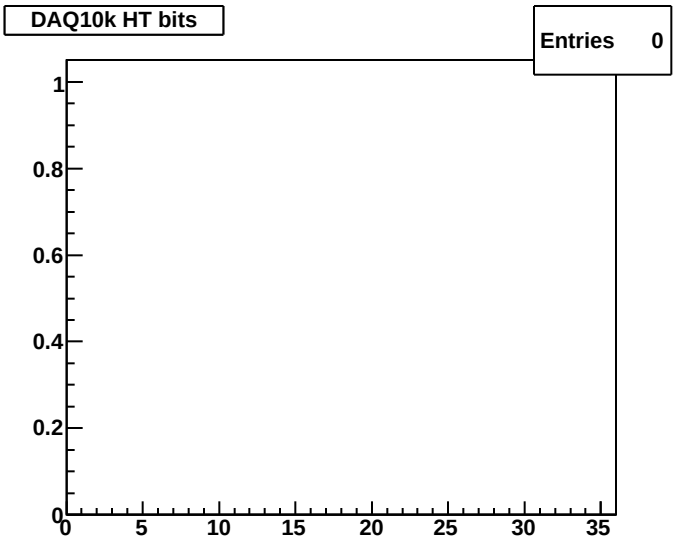

EMC L2 Input - Partial JP Sum
Entries 2
Partial JP Sum - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

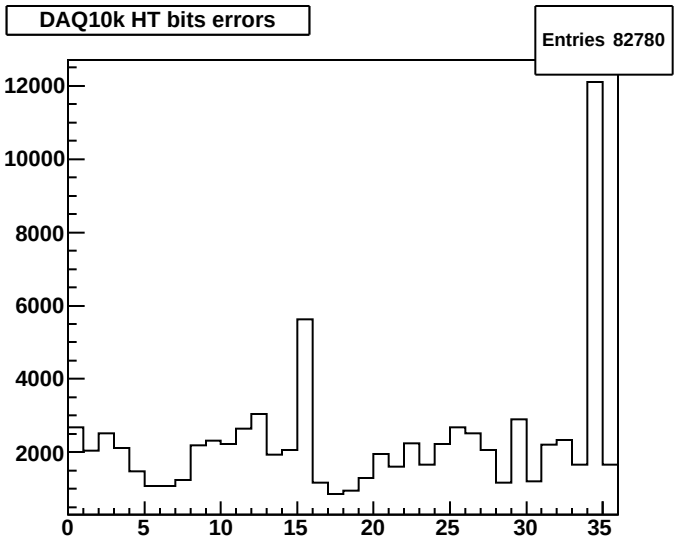

EMC L2 Input - HT01 bits/Partial JP ID
Entries 4800000
HT01 bits/Partial JP ID
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

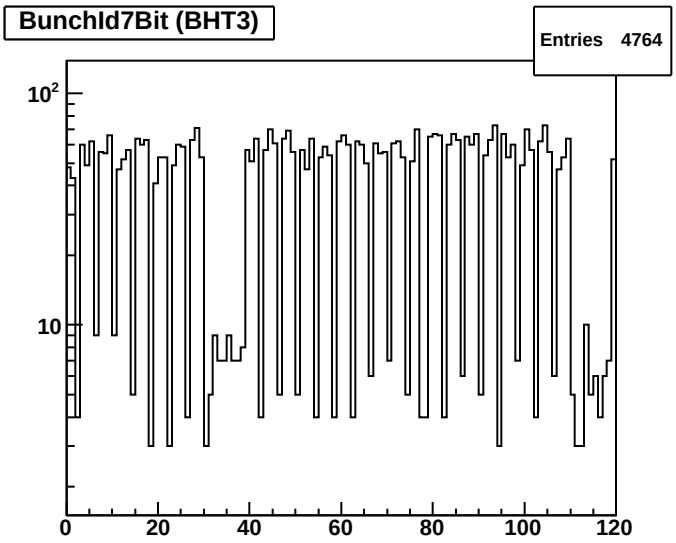

EMC L2 Input - HT01 bits/Partial JP ID
Entries 0
HT01 bits/Partial JP ID - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

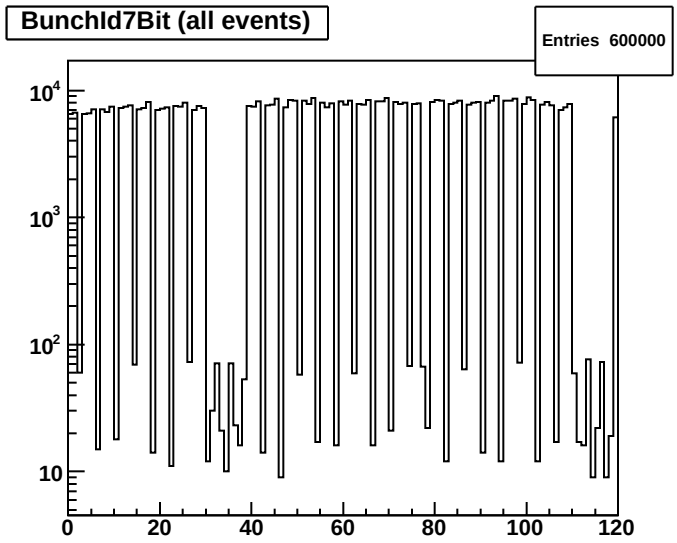

EMC L2 Input - HT23 bits
Entries 4800000
HT23 bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

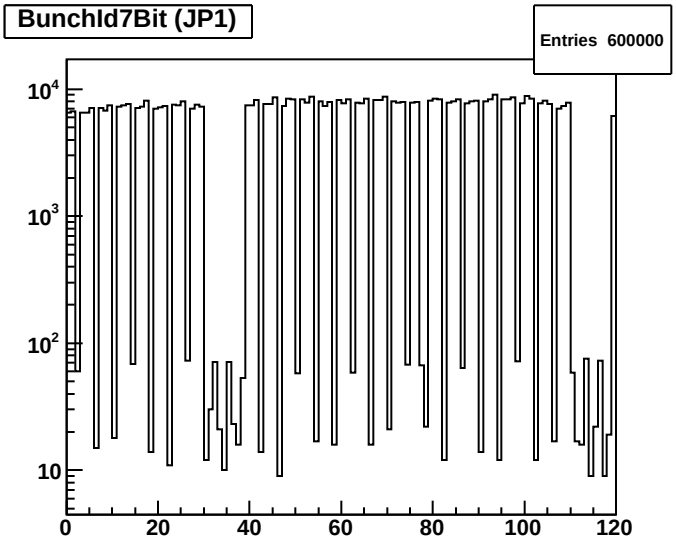

EMC L2 Input - HT23 bits
Entries 0
HT23 bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

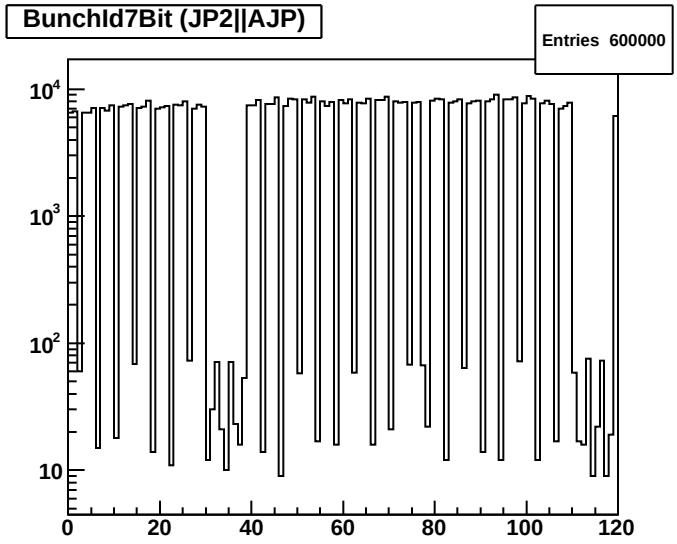

DAQ10k HT bits
Entries 0
1
0.8
0.6
0.4
0.2
0
0 5 10 15 20 25 30 35

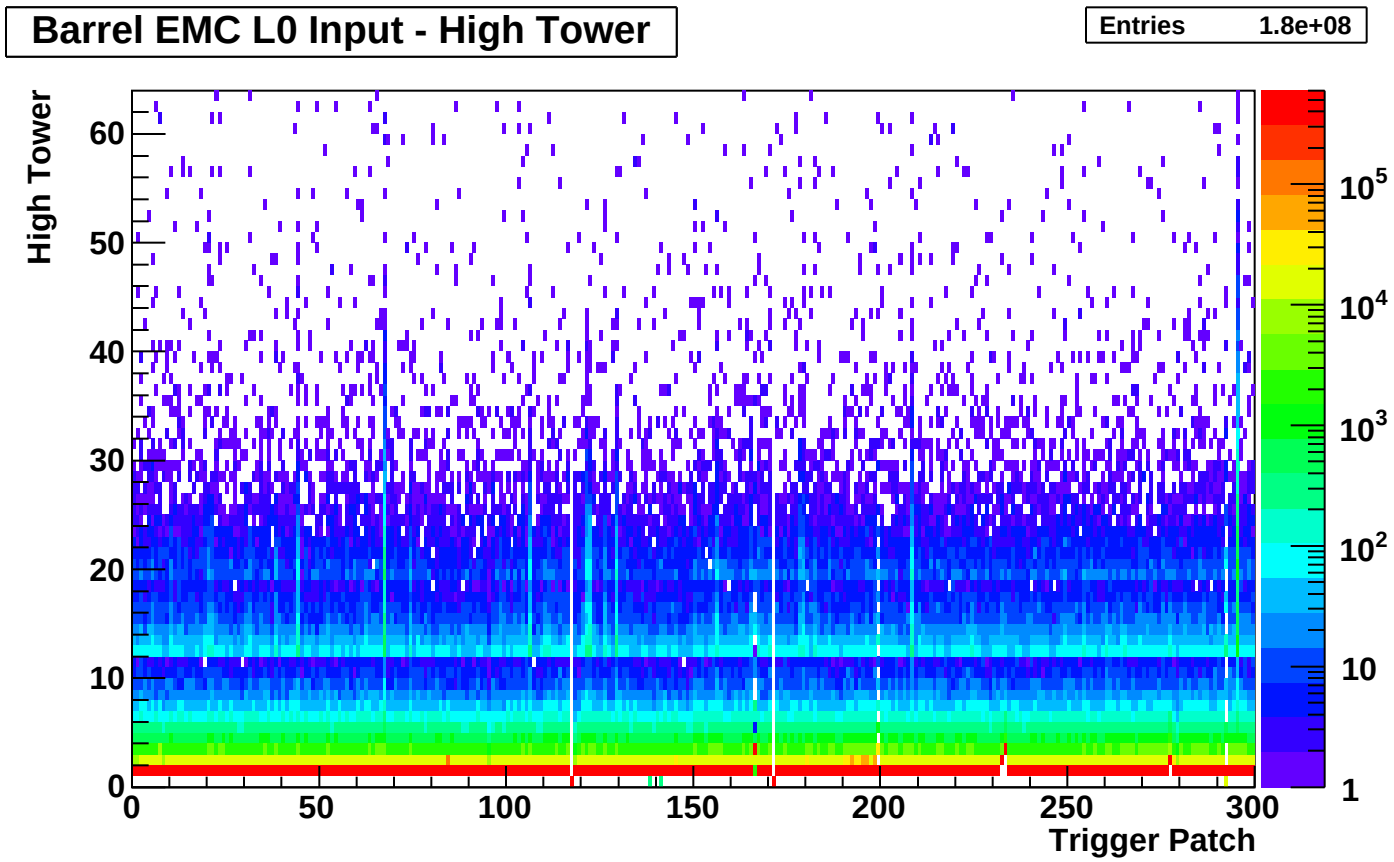

DAQ10k HT bits errors
Entries 82780
12000
10000
8000
6000
4000
2000
0 5 10 15 20 25 30 35

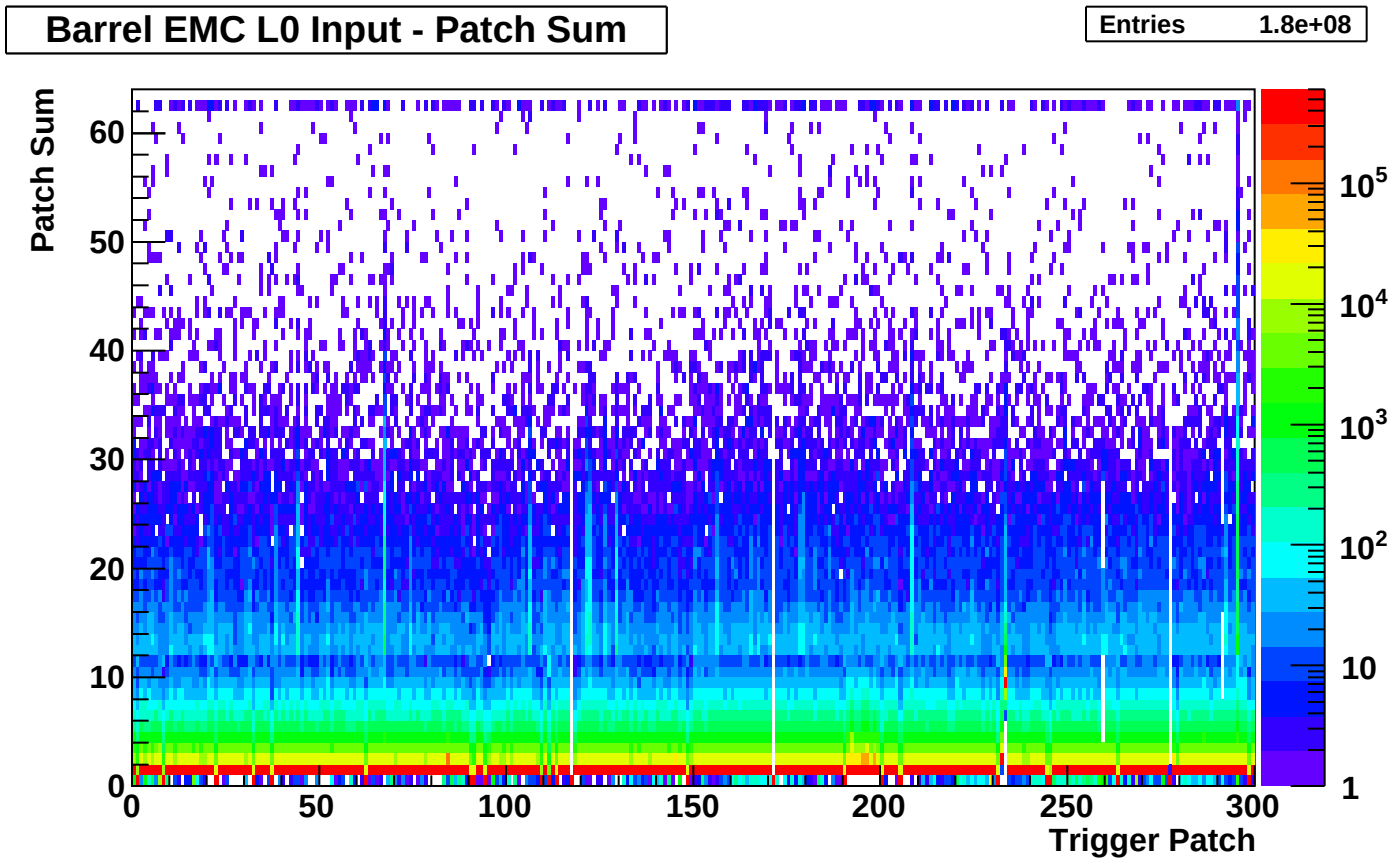

BunchId7Bit (BHT3)
Entries 4764
10^2
10
0 20 40 60 80 100 120

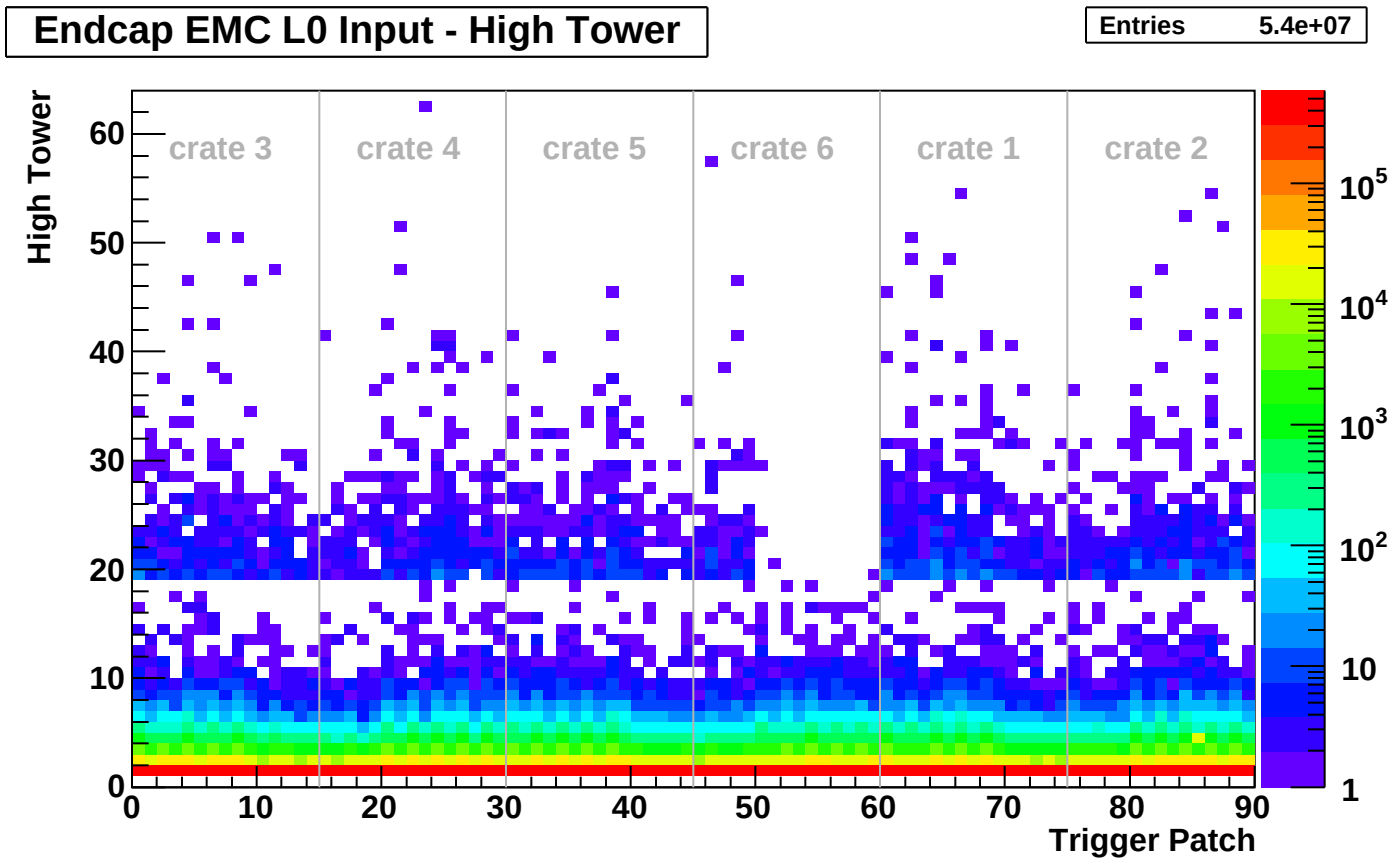

BunchId7Bit (all events)
Entries 600000
10^4
10^3
10^2
10
0 20 40 60 80 100 120

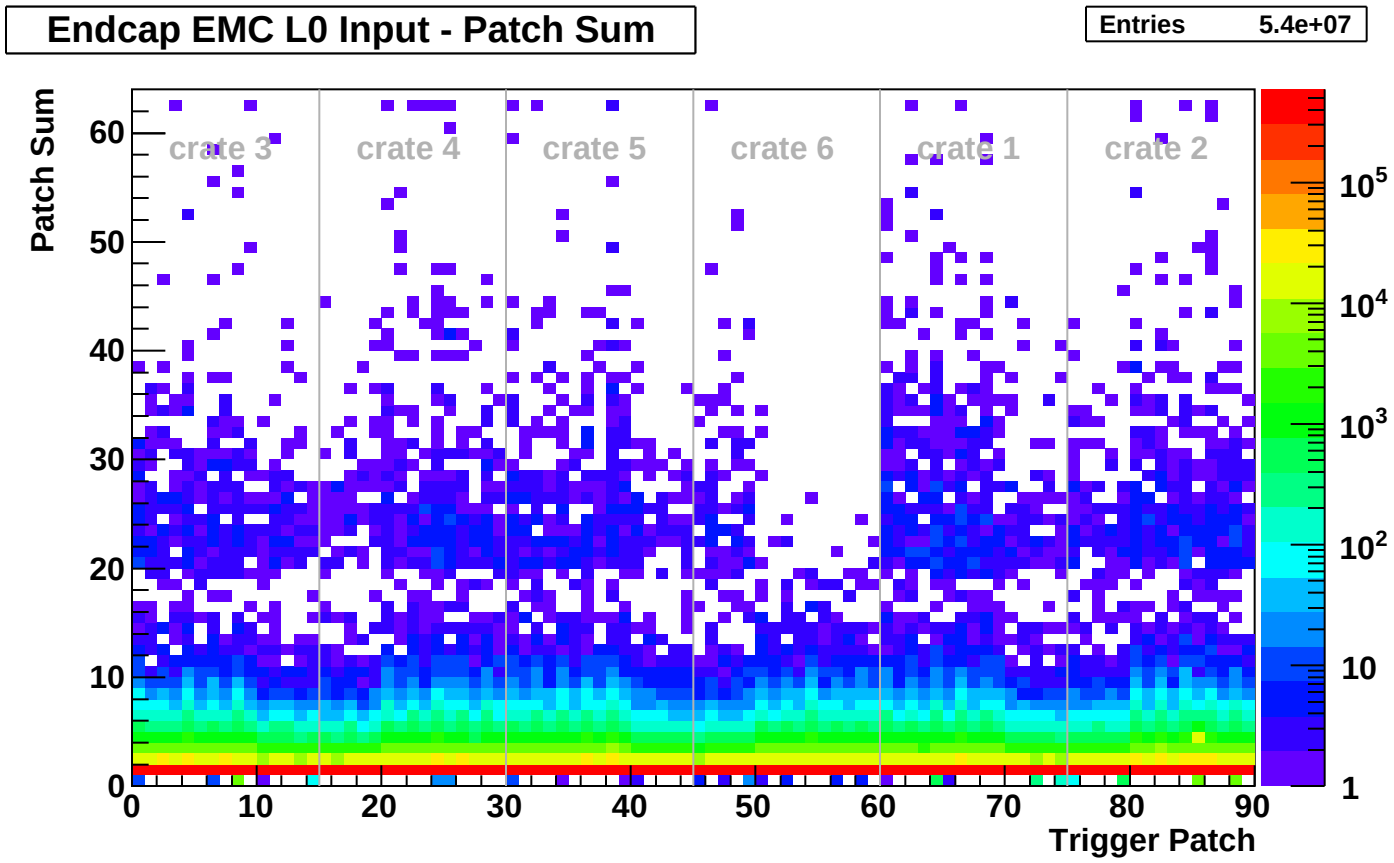

BunchId7Bit (JP1)
Entries 600000
10^4
10^3
10^2
10
0 20 40 60 80 100 120

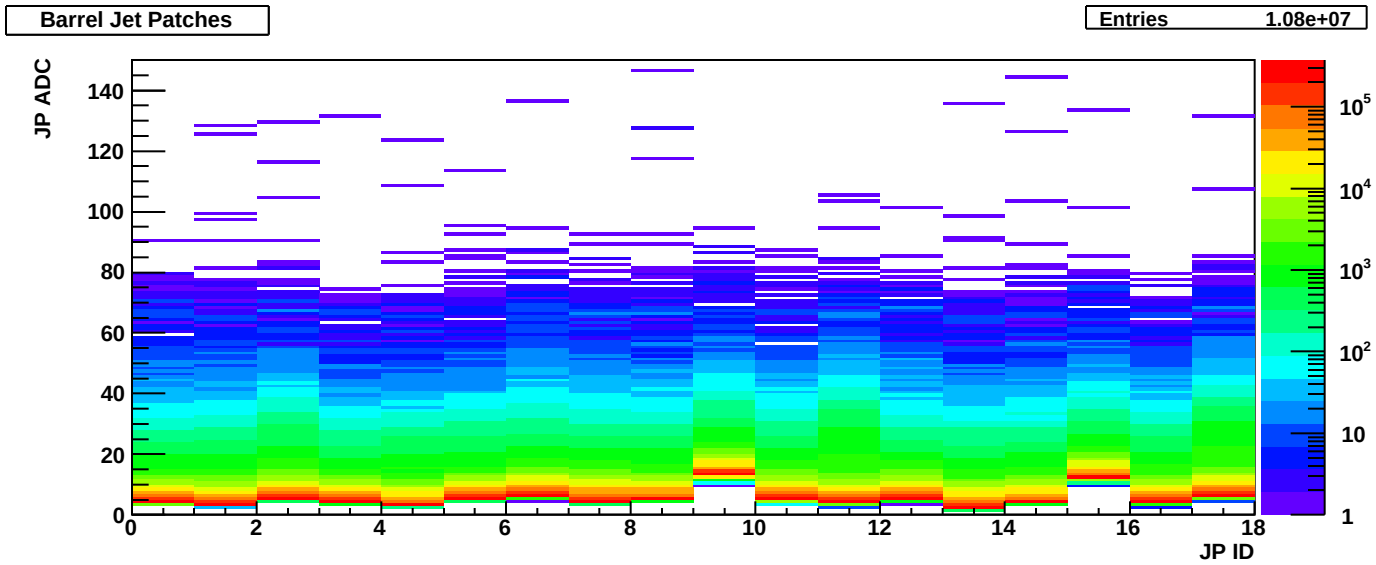

BunchId7Bit (JP2||AJP)
Entries 600000
10^4
10^3
10^2
10
0 20 40 60 80 100 120

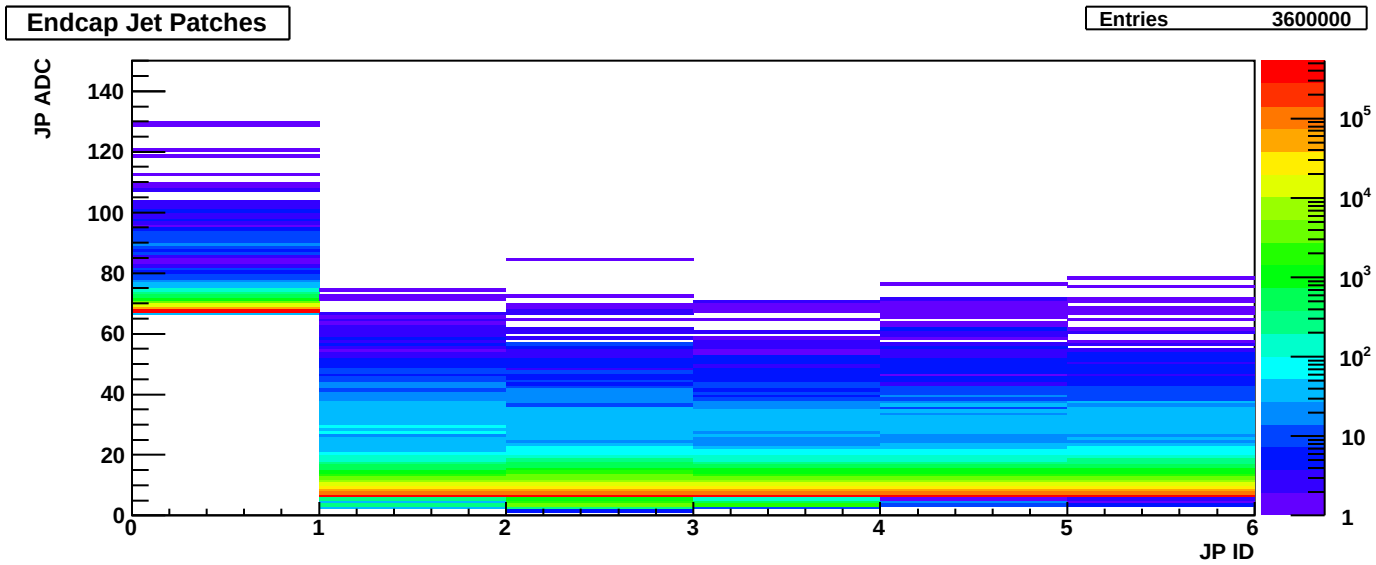

Barrel EMC L0 Input - High Tower
Entries 1.8e+08
High Tower
Trigger Patch
0
10
20
30
40
50
60
0
50
100
150
200
250
300
1
10
10^2
10^3
10^4
10^5

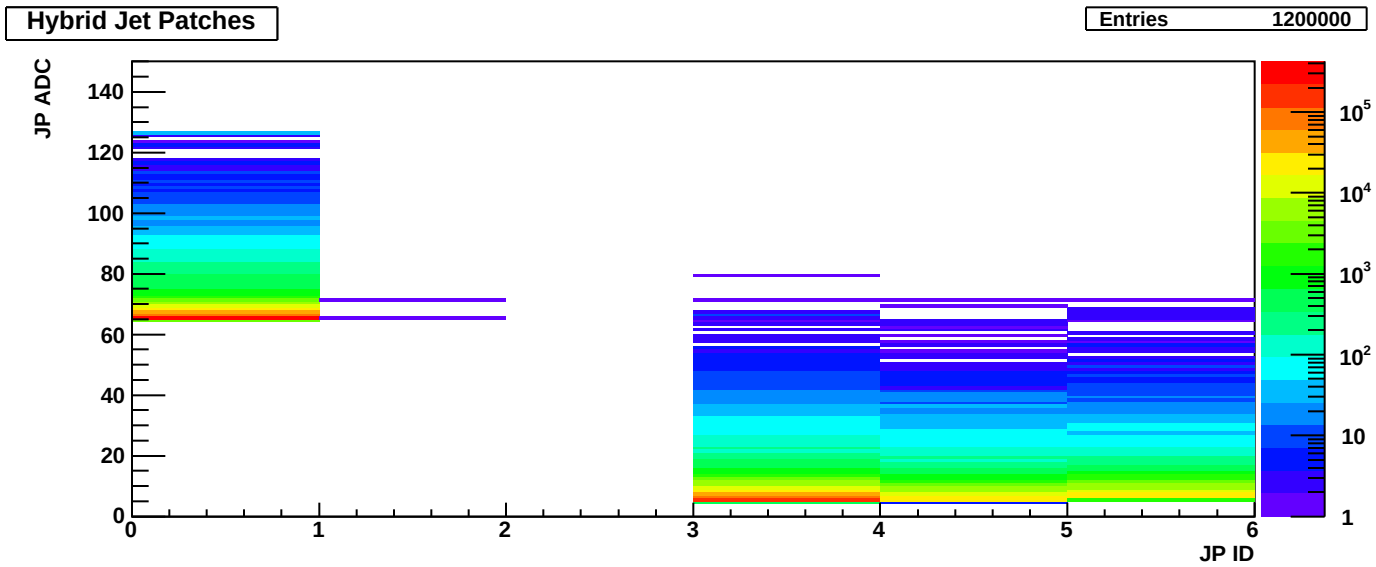

Barrel EMC L0 Input - Patch Sum
Entries 1.8e+08
Patch Sum
Trigger Patch
0
10
20
30
40
50
60
0
50
100
150
200
250
300
1
10
10^2
10^3
10^4
10^5

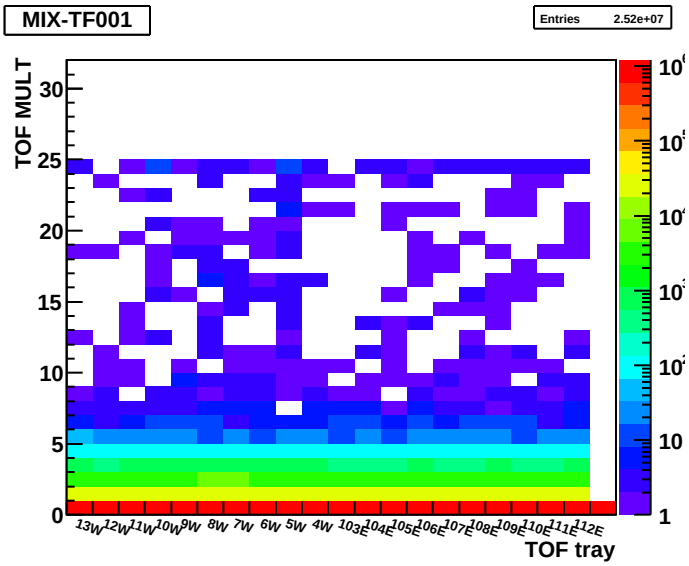

Endcap EMC L0 Input - High Tower
Entries 5.4e+07
High Tower
Trigger Patch
crate 3
crate 4
crate 5
crate 6
crate 1
crate 2

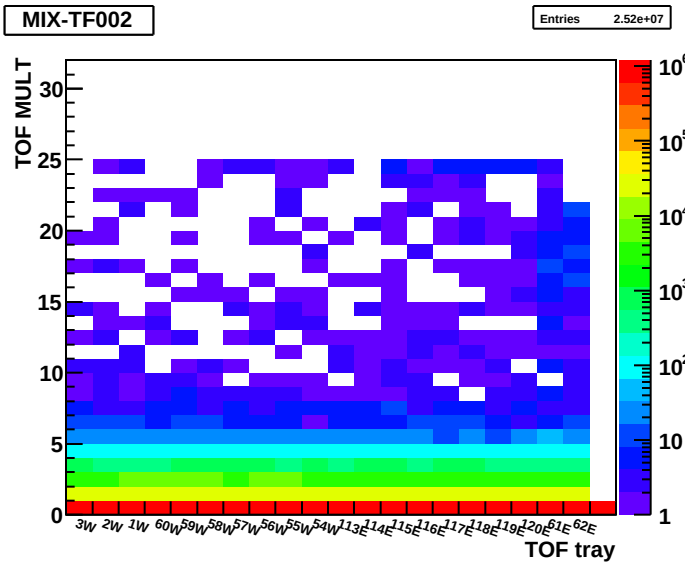

Endcap EMC L0 Input - Patch Sum
Entries 5.4e+07
Patch Sum
Trigger Patch
crate 3
crate 4
crate 5
crate 6
crate 1
crate 2

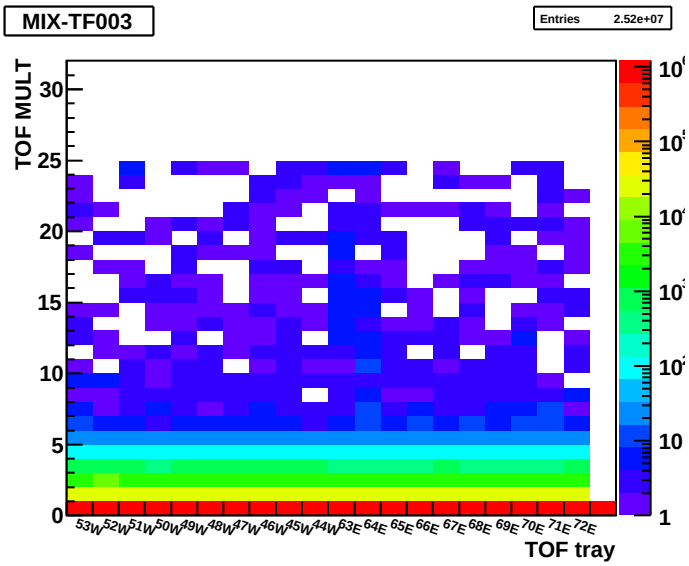

Barrel Jet Patches
Entries 1.08e+07
JP ADC
JP ID

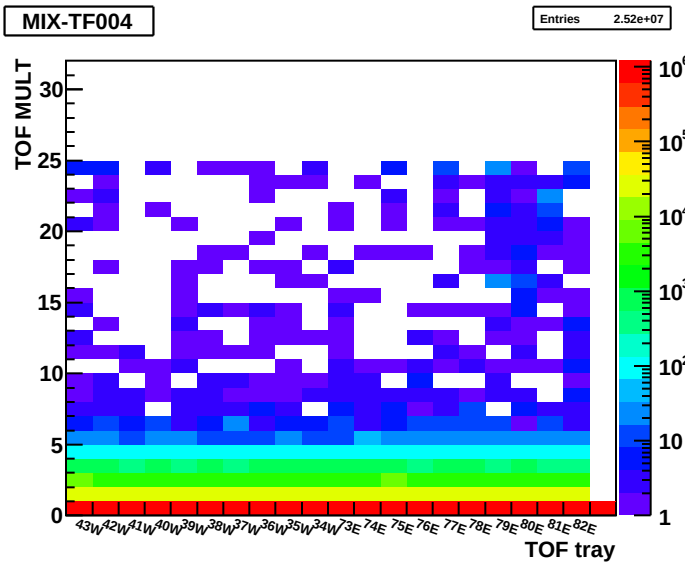

Endcap Jet Patches
Entries 3600000
JP ADC
JP ID

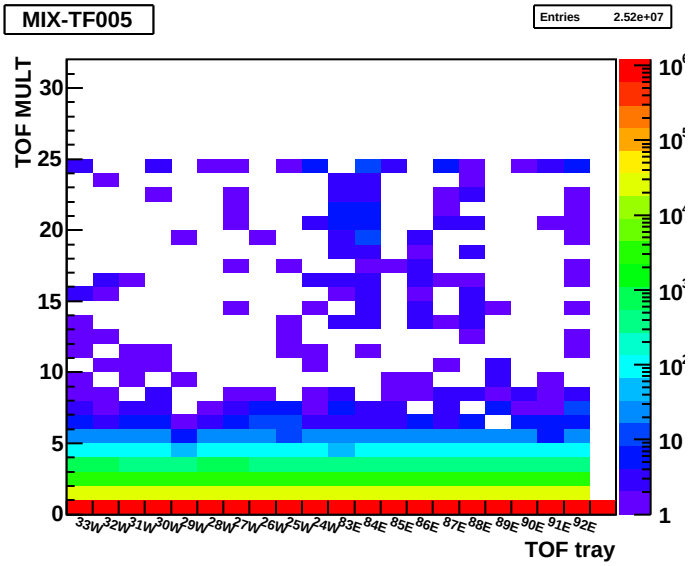

Hybrid Jet Patches
Entries 1200000
JP ADC
JP ID

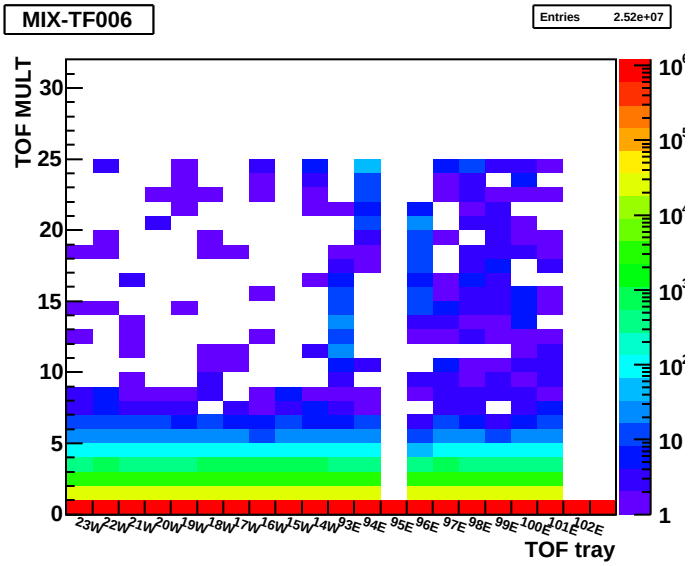

MIX-TF001
Entries 2.52e+07
TOF MULT
TOF tray

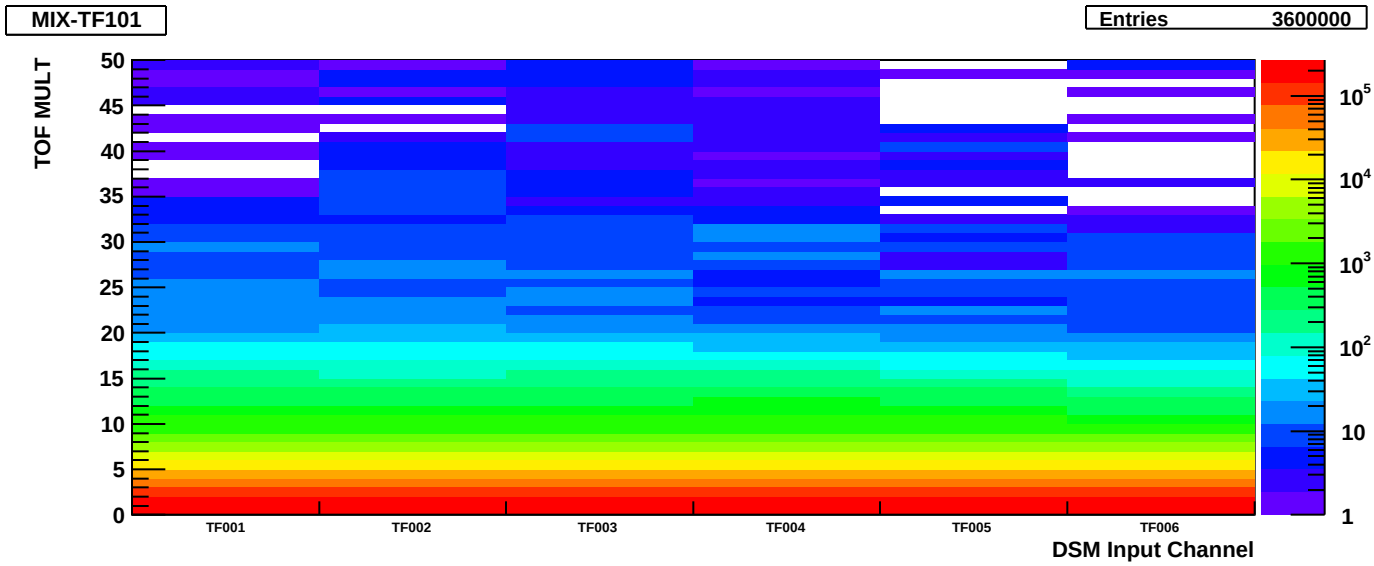

MIX-TF002
Entries 2.52e+07
TOF MULT
TOF tray

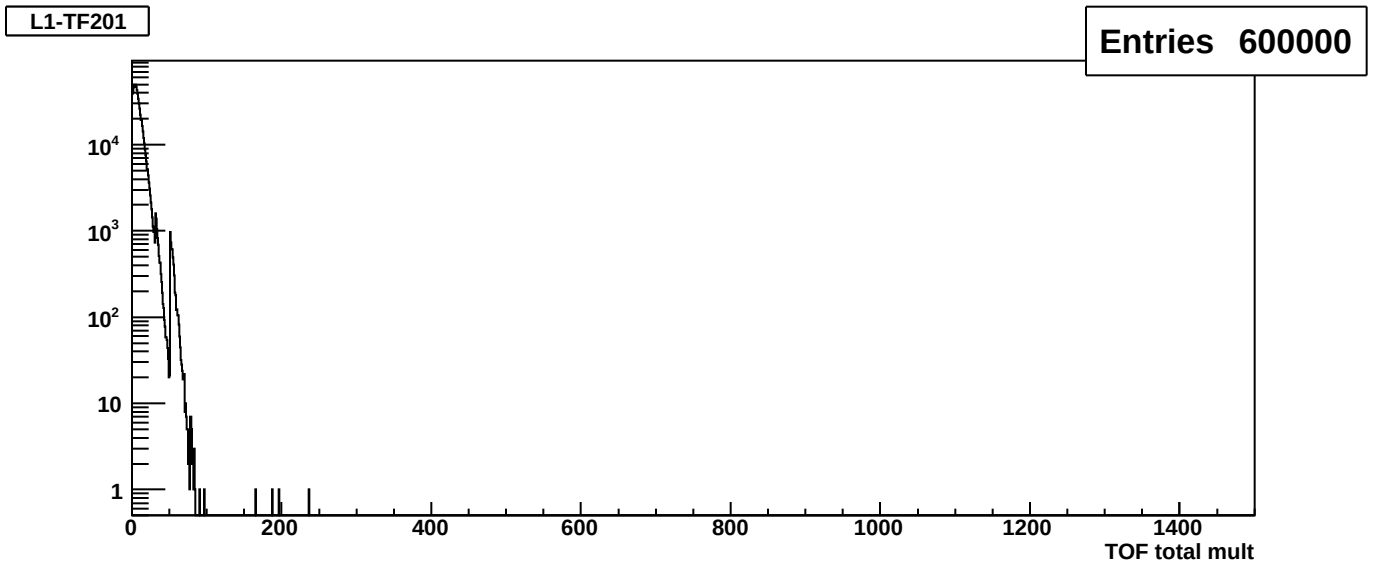

MIX-TF003
Entries 2.52e+07
TOF MULT
TOF tray

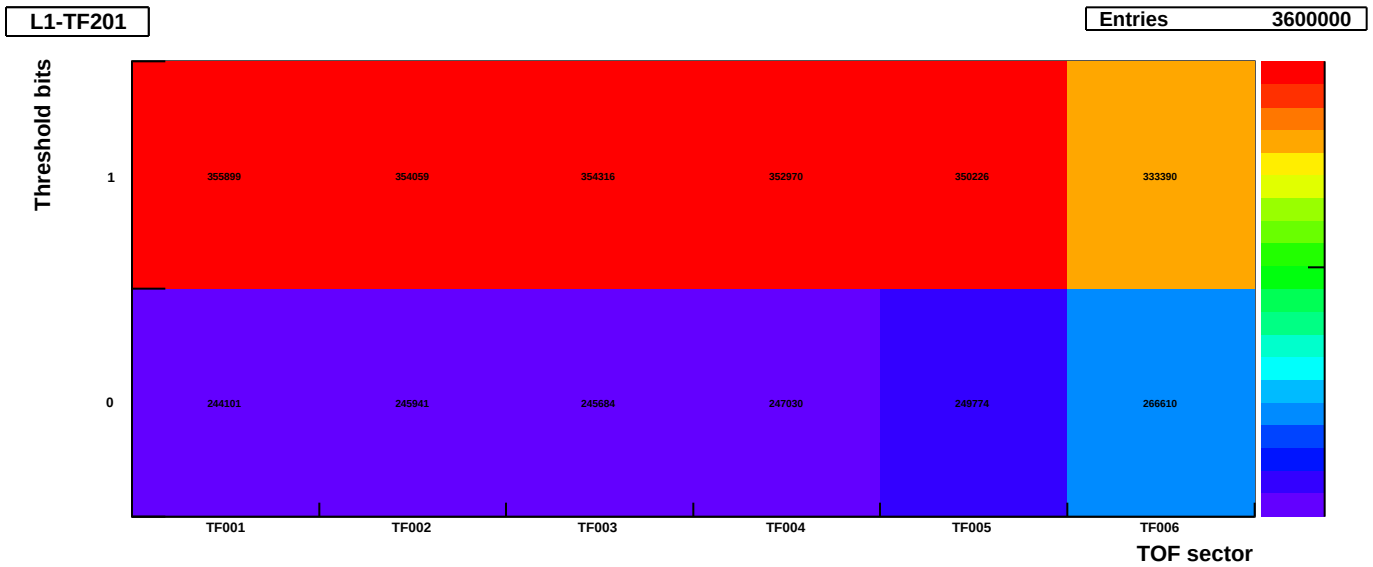

MIX-TF004
Entries 2.52e+07
TOF MULT
TOF tray

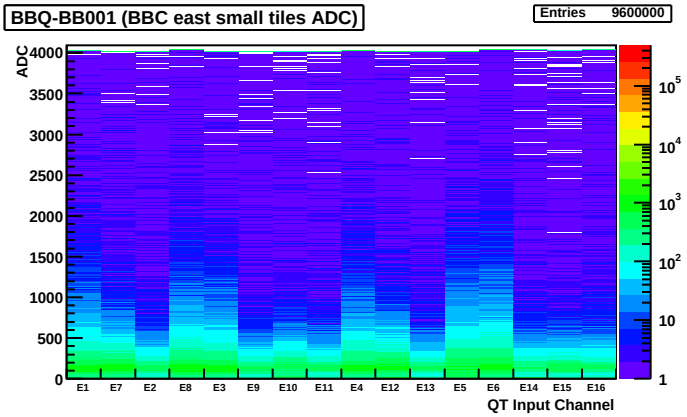

MIX-TF005
Entries 2.52e+07
TOF MULT
TOF tray

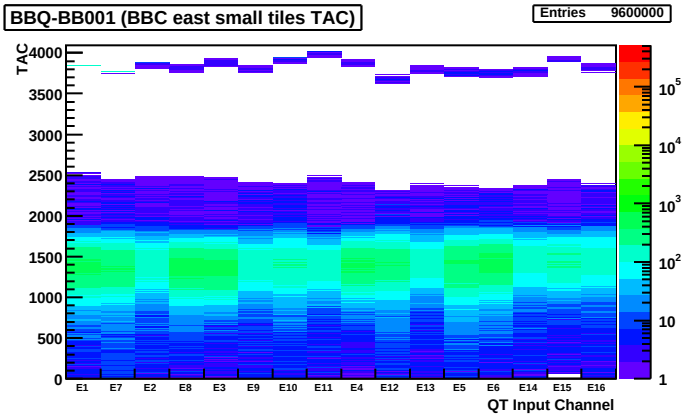

MIX-TF006
Entries 2.52e+07
TOF MULT
TOF tray

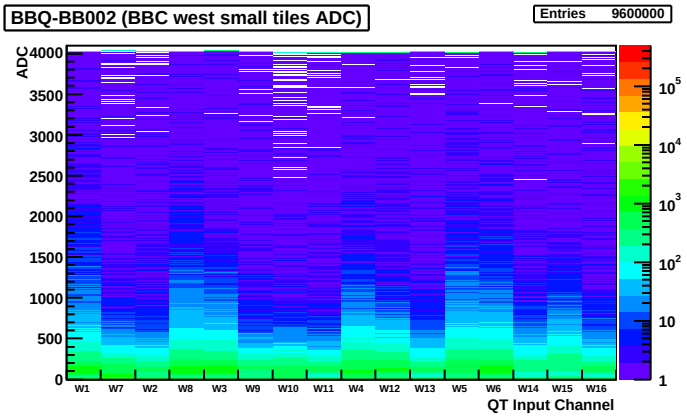

MIX-TF101
Entries 3600000
TOF MULT
50
45
40
35
30
25
20
15
10
5
0
TF001
TF002
TF003
TF004
TF005
TF006
DSM Input Channel
10^5
10^4
10^3
10^2
10
1

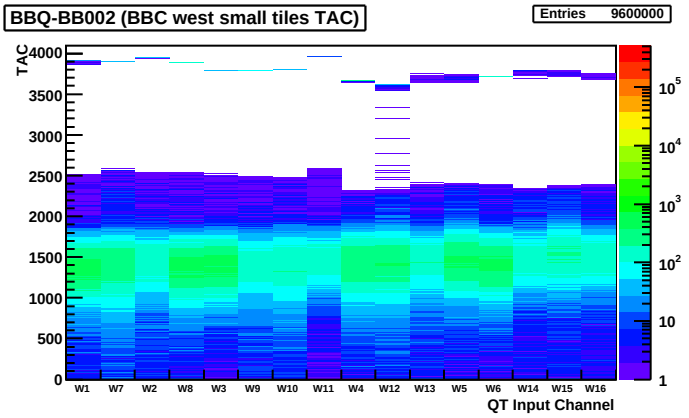

L1-TF201
Entries 600000
10^4
10^3
10^2
10
1
0
200
400
600
800
1000
1200
1400
TOF total mult

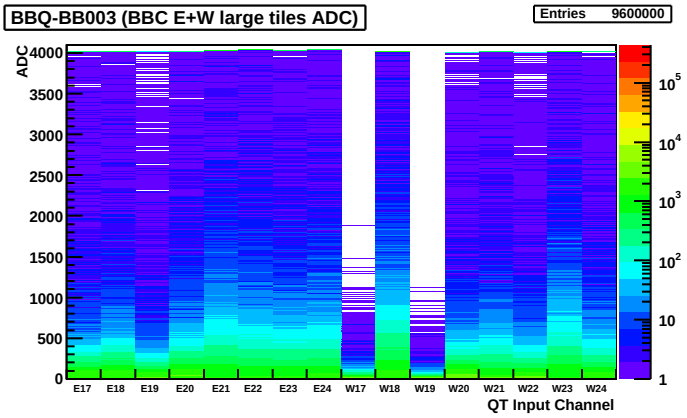

L1-TF201
Entries 3600000
Threshold bits
1
0
355899
354059
354316
352970
350226
333390
244101
245941
245684
247030
249774
266610
TF001
TF002
TF003
TF004
TF005
TF006
TOF sector

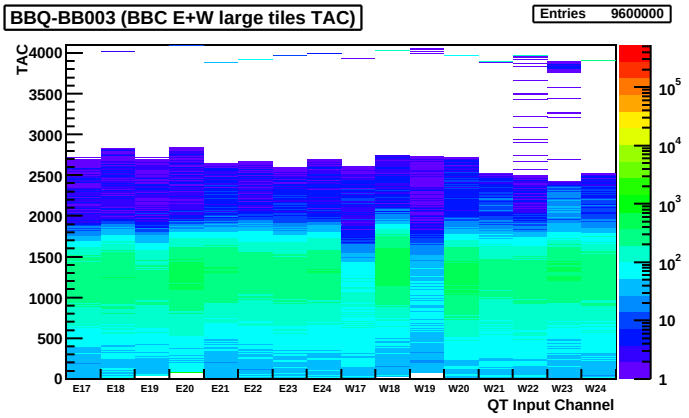

BBQ-BB001 (BBC east small tiles ADC)
Entries 9600000
ADC
QT Input Channel

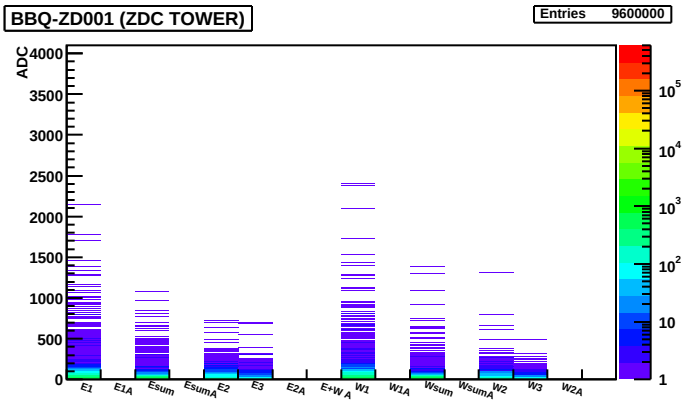

BBQ-BB001 (BBC east small tiles TAC)
Entries 9600000
TAC
QT Input Channel

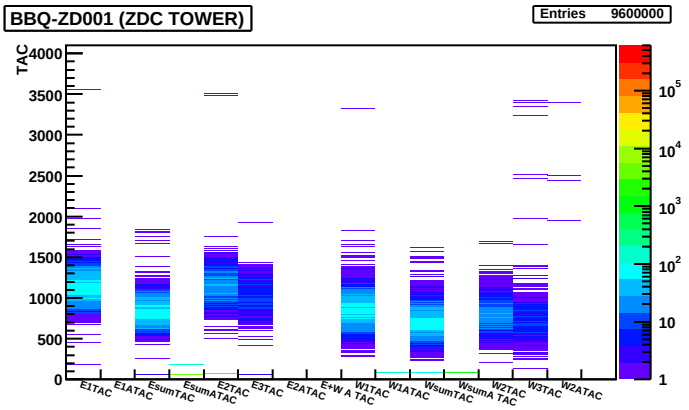

BBQ-BB002 (BBC west small tiles ADC)
Entries 9600000
ADC
QT Input Channel

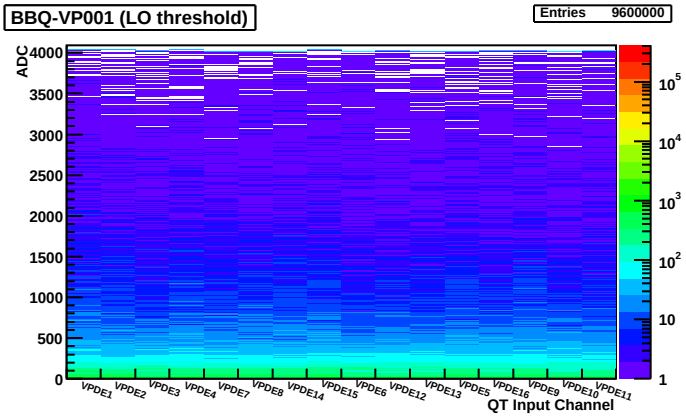

BBQ-BB002 (BBC west small tiles TAC)
Entries 9600000
TAC
QT Input Channel

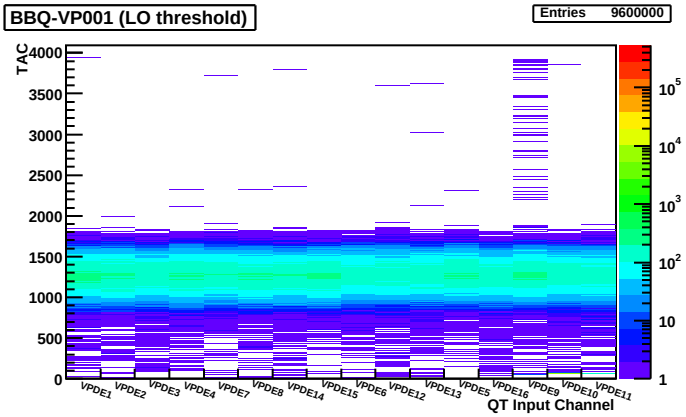

BBQ-BB003 (BBC E+W large tiles ADC)
Entries 9600000
ADC
QT Input Channel

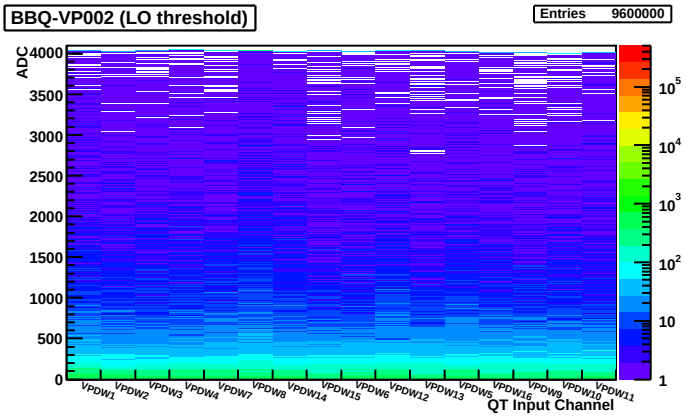

BBQ-BB003 (BBC E+W large tiles TAC)
Entries 9600000
TAC
QT Input Channel

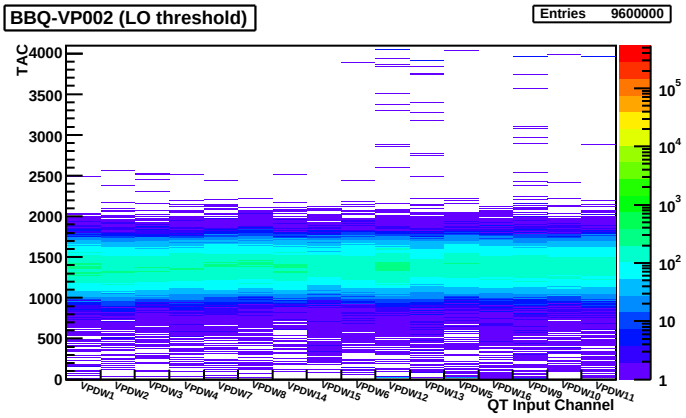

BBQ-ZD001 (ZDC TOWER)
Entries 9600000
ADC

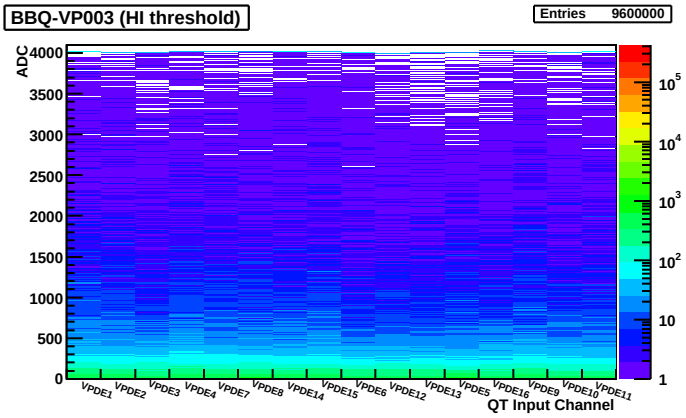

BBQ-ZD001 (ZDC TOWER)
Entries 9600000
TAC

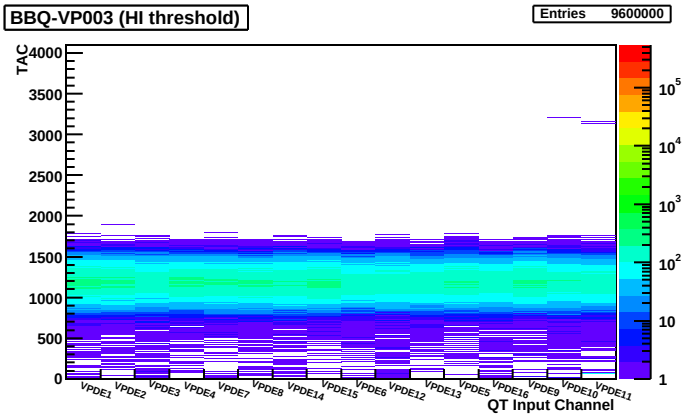

BBQ-VP001 (LO threshold)
Entries 9600000
ADC
QT Input Channel

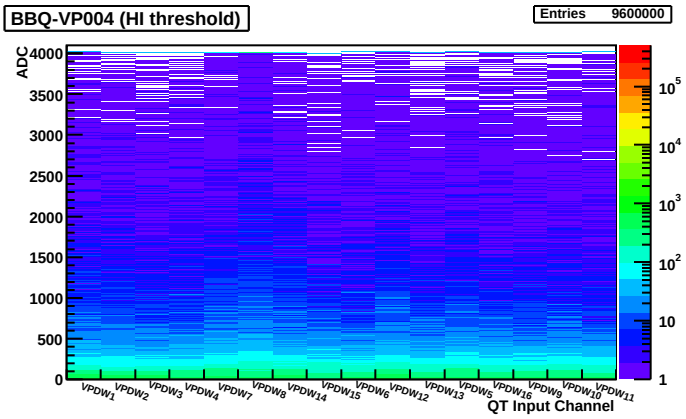

BBQ-VP001 (LO threshold)
Entries 9600000
TAC
QT Input Channel

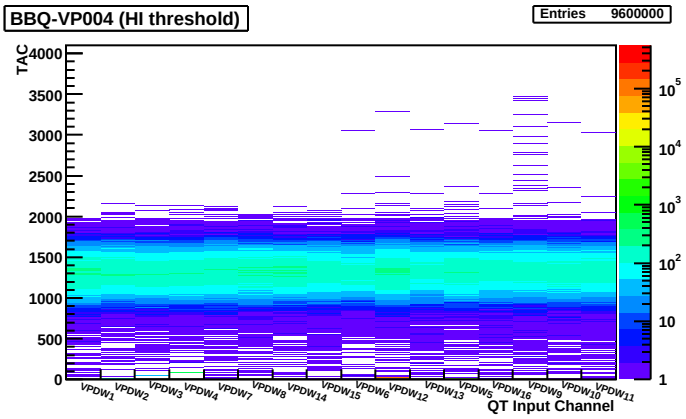

BBQ-VP002 (LO threshold)
Entries 9600000
ADC
QT Input Channel

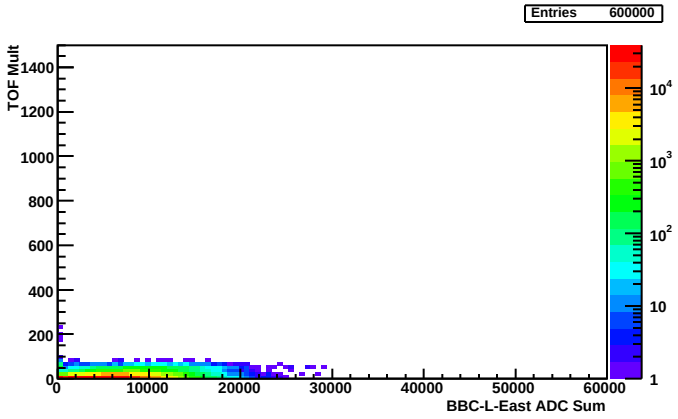

BBQ-VP002 (LO threshold)
Entries 9600000
TAC
QT Input Channel

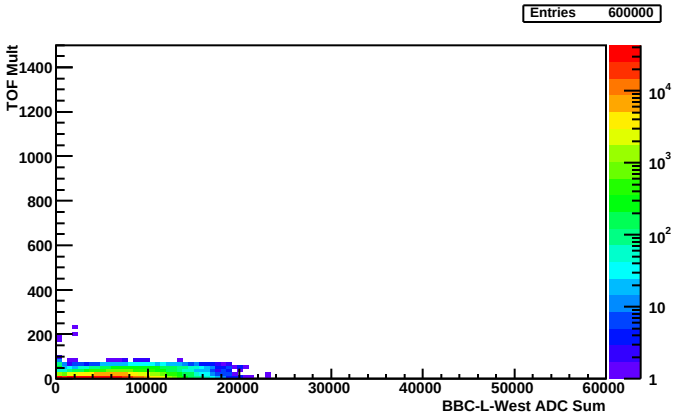

BBQ-VP003 (HI threshold)
Entries 9600000
ADC
QT Input Channel

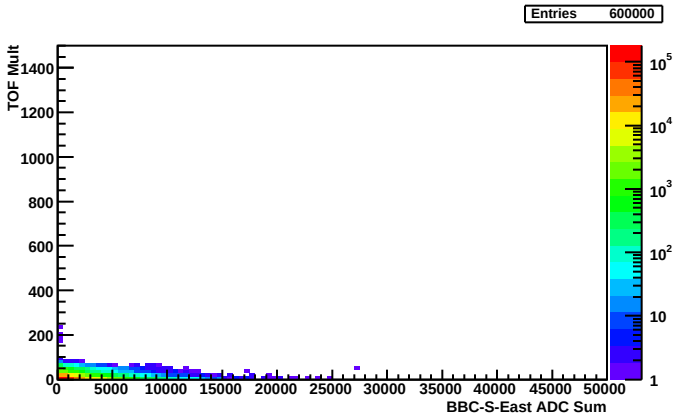

BBQ-VP003 (HI threshold)
Entries 9600000
TAC
QT Input Channel

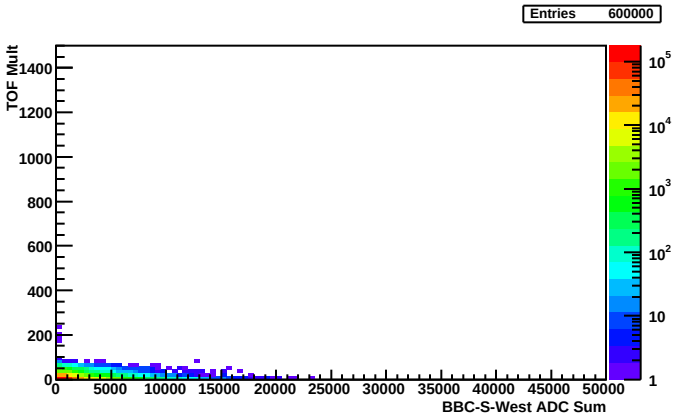

BBQ-VP004 (HI threshold)
Entries 9600000
ADC
QT Input Channel

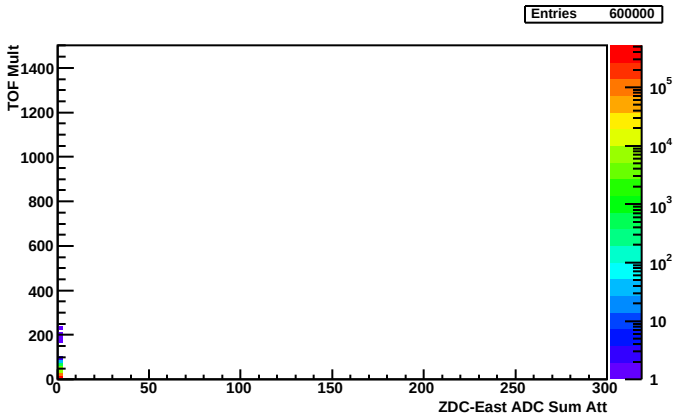

BBQ-VP004 (HI threshold)
Entries 9600000
TAC
QT Input Channel

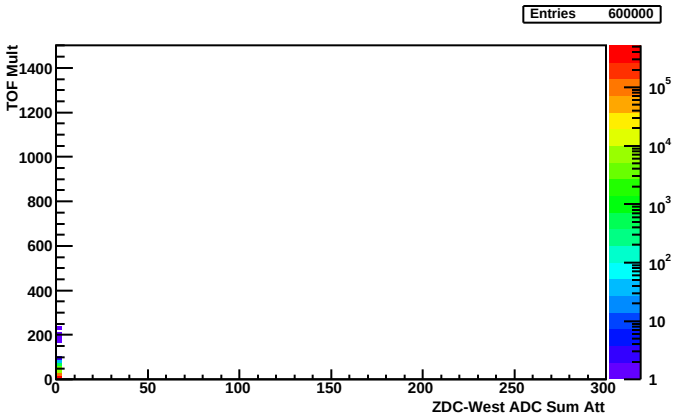

Entries 600000
TOF Mult
BBC-L-East ADC Sum

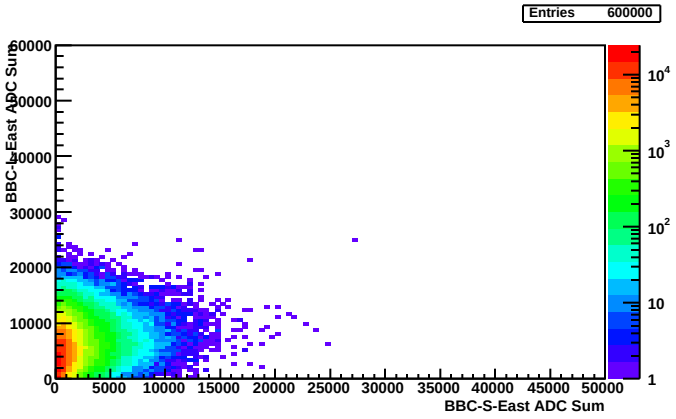

Entries 600000
TOF Mult
BBC-L-West ADC Sum

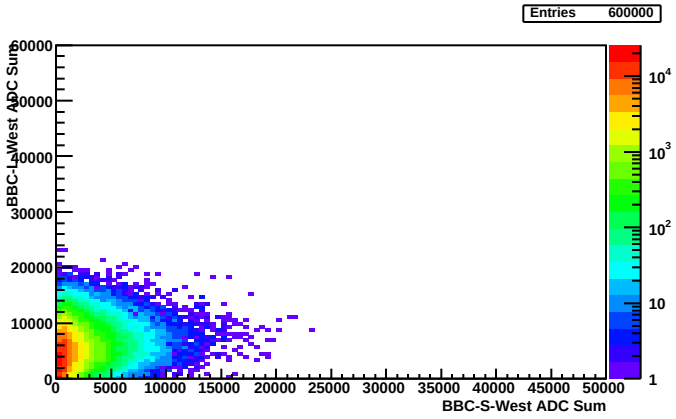

Entries 600000
TOF Mult
BBC-S-East ADC Sum

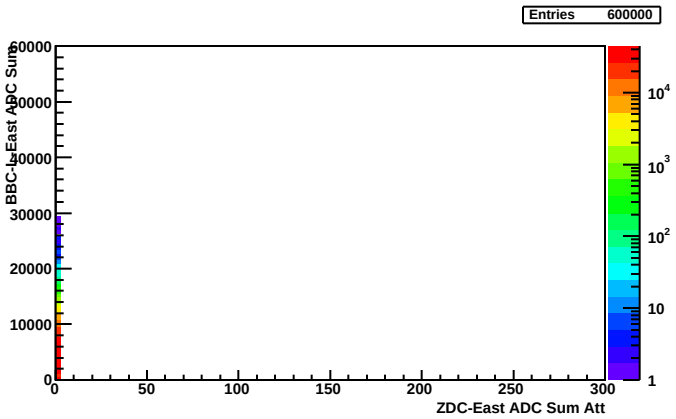

Entries 600000
TOF Mult
BBC-S-West ADC Sum

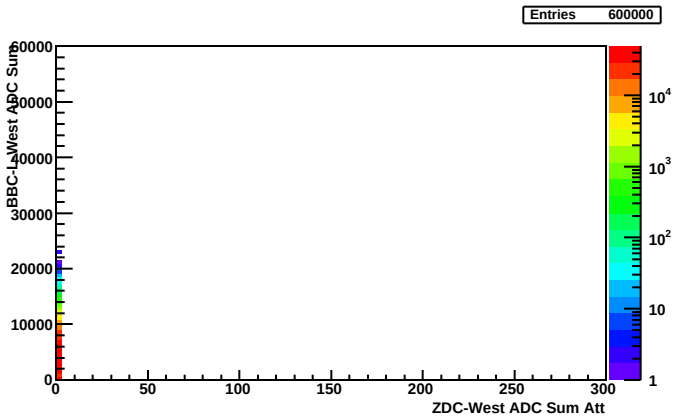

Entries 600000
TOF Mult
ZDC-East ADC Sum Att

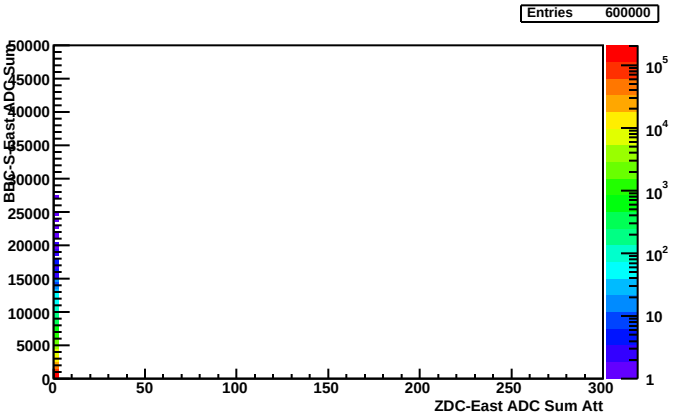

Entries 600000
TOF Mult
ZDC-West ADC Sum Att

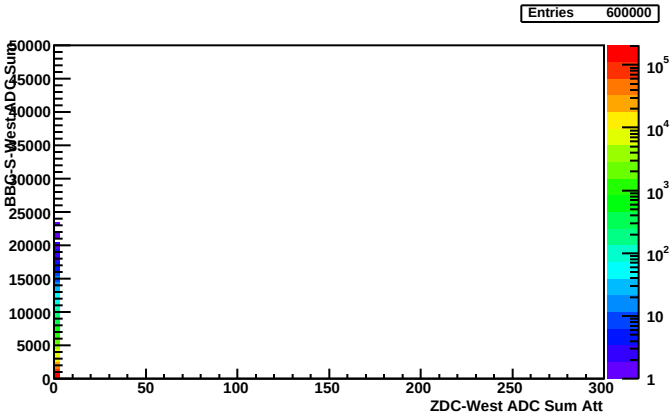

Entries 600000
BBC-L-East ADC Sum
BBC-S-East ADC Sum

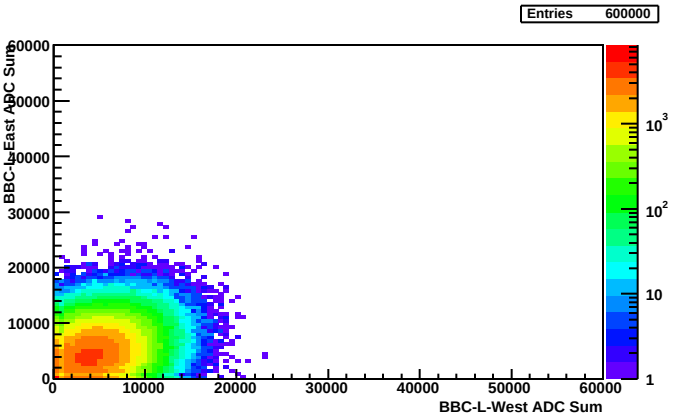

Entries 600000
BBC-L-West ADC Sum
BBC-S-West ADC Sum

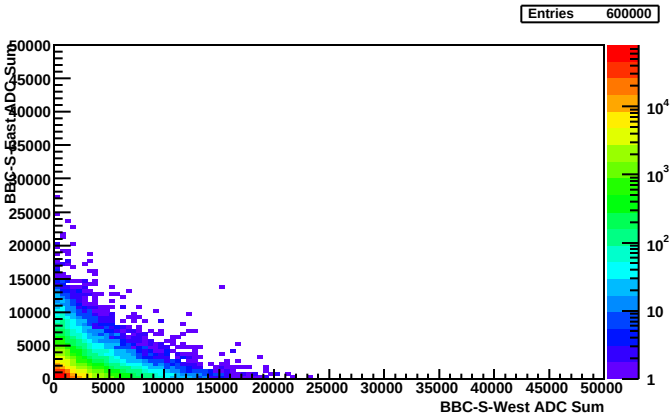

Entries 600000
BBC-L-East ADC Sum
ZDC-East ADC Sum Att

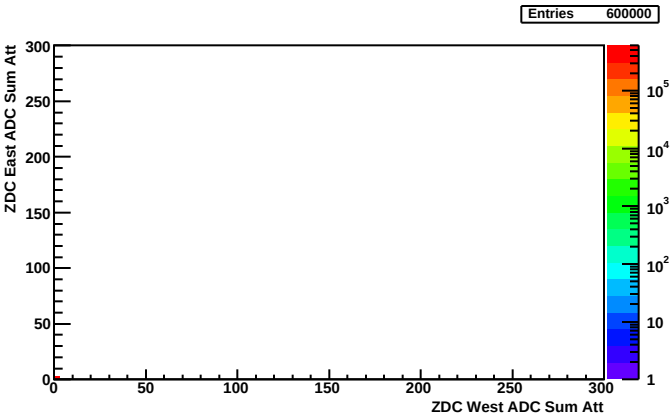

Entries 600000
BBC-L-West ADC Sum
ZDC-West ADC Sum Att

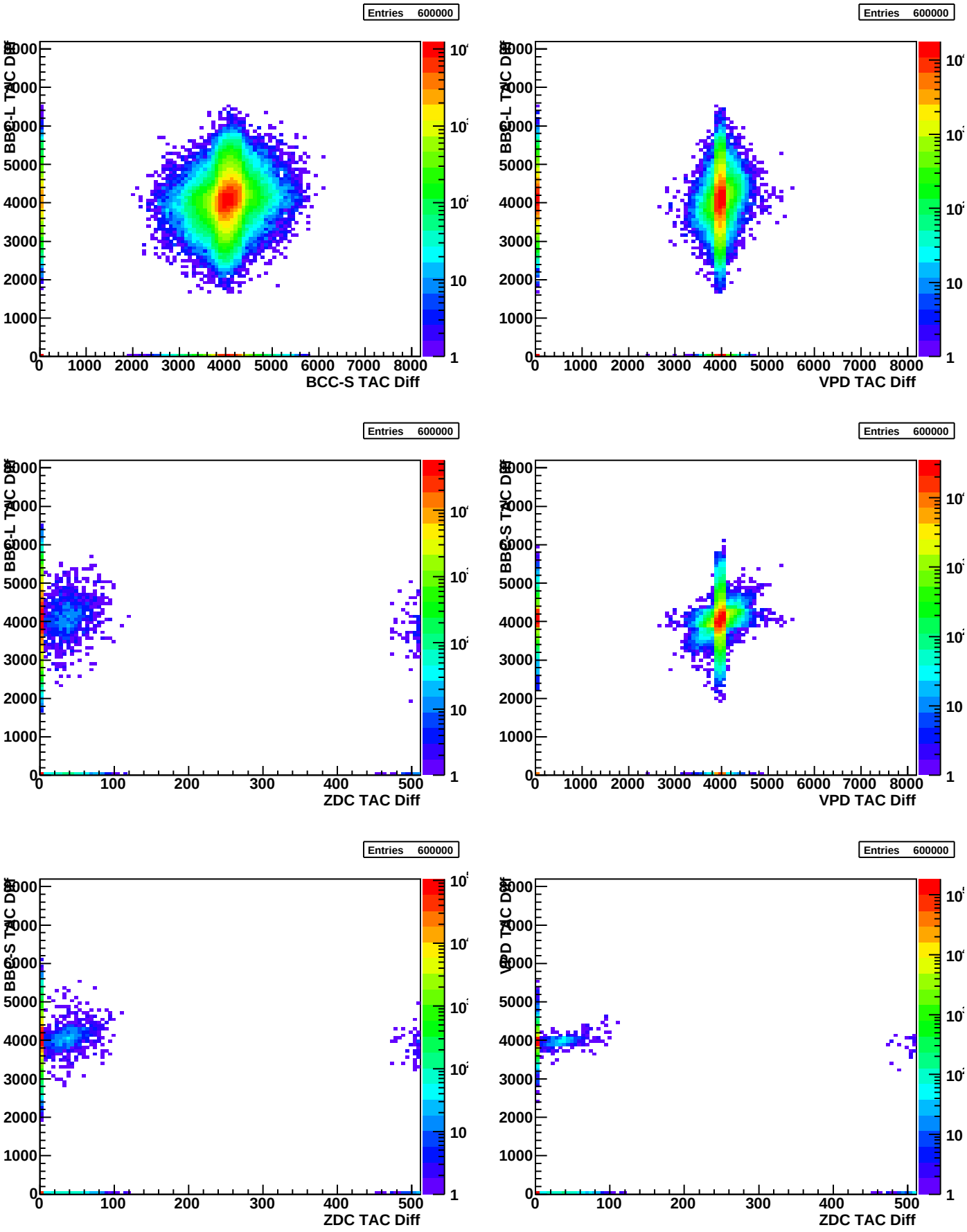

Entries 600000
BBC-S-East ADC Sum
ZDC-East ADC Sum Att

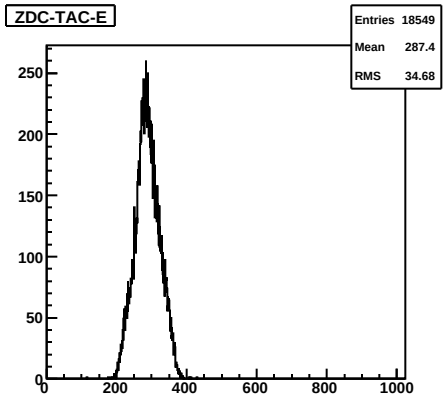

Entries 600000
BBC-S-West ADC Sum
ZDC-West ADC Sum Att

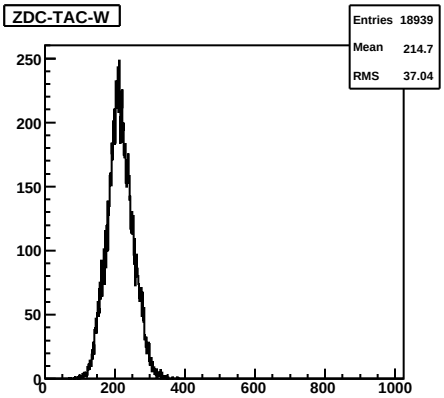

Entries 600000
BBC-L-East ADC Sum
BBC-L-West ADC Sum

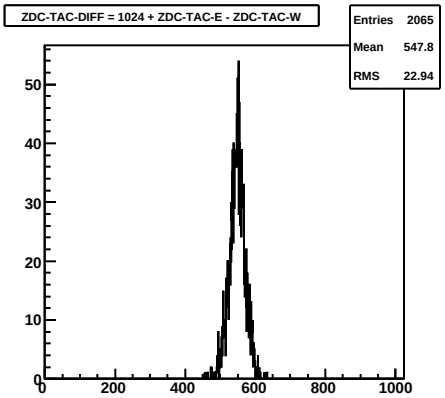

Entries 600000
BBC-S-East ADC Sum
BBC-S-West ADC Sum

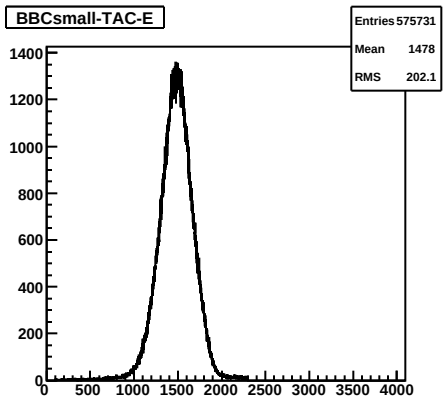

Entries 600000
ZDC East ADC Sum Att
ZDC West ADC Sum Att

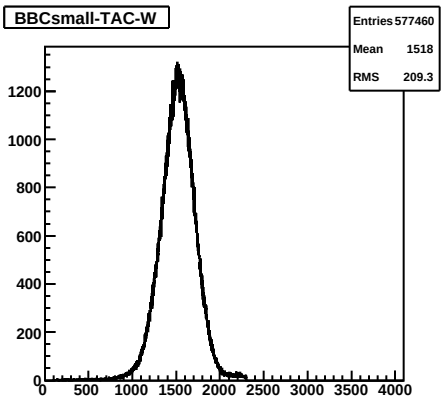

Entries 600000
BBC-L TAC Diff
BCC-S TAC Diff
Entries 600000
BBC-L TAC Diff
VPD TAC Diff
Entries 600000
BBC-L TAC Diff
ZDC TAC Diff
Entries 600000
BBC-S TAC Diff
VPD TAC Diff
Entries 600000
BBC-S TAC Diff
ZDC TAC Diff
Entries 600000
VPD TAC Diff
ZDC TAC Diff

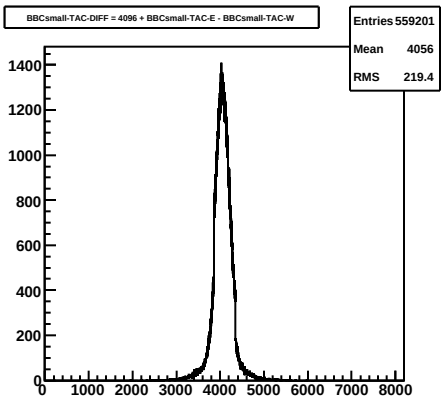

ZDC-TAC-E
Entries 18549
Mean 287.4
RMS 34.68

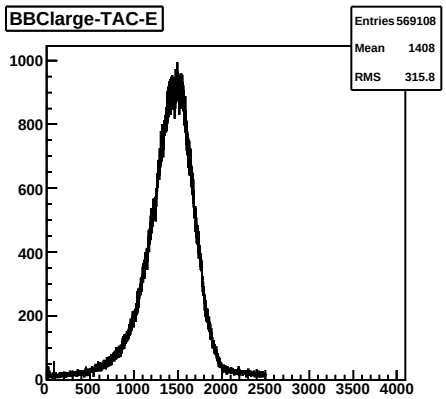

ZDC-TAC-W
Entries 18939
Mean 214.7
RMS 37.04

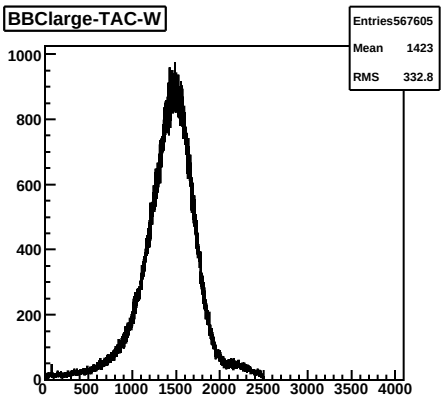

ZDC-TAC-DIFF = 1024 + ZDC-TAC-E - ZDC-TAC-W
Entries 2065
Mean 547.8
RMS 22.94

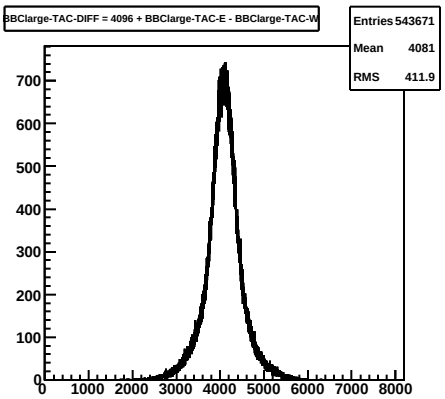

BBCsmall-TAC-E
Entries 575731
Mean 1478
RMS 202.1

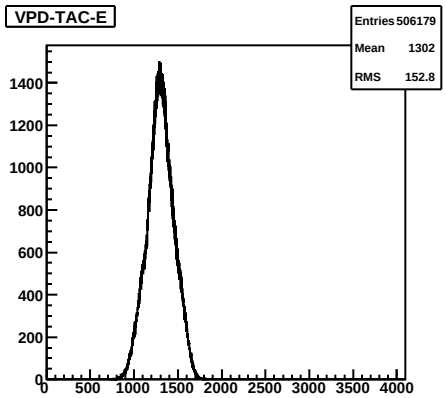

BBCsmall-TAC-W
Entries 577460
Mean 1518
RMS 209.3

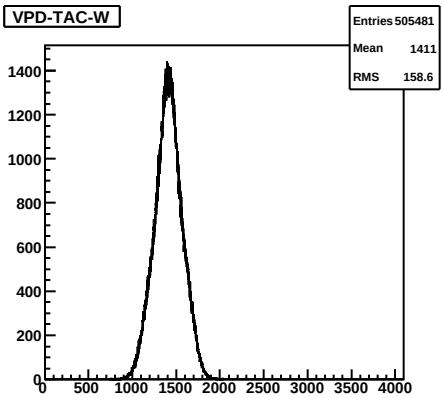

BBCsmall-TAC-DIFF = 4096 + BBCsmall-TAC-E - BBCsmall-TAC-W
Entries 559201
Mean 4056
RMS 219.4

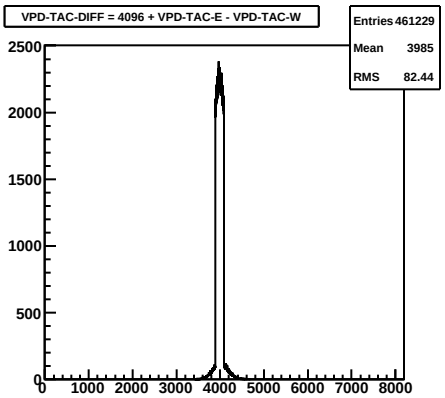

BBClarge-TAC-E
Entries 569108
Mean 1408
RMS 315.8

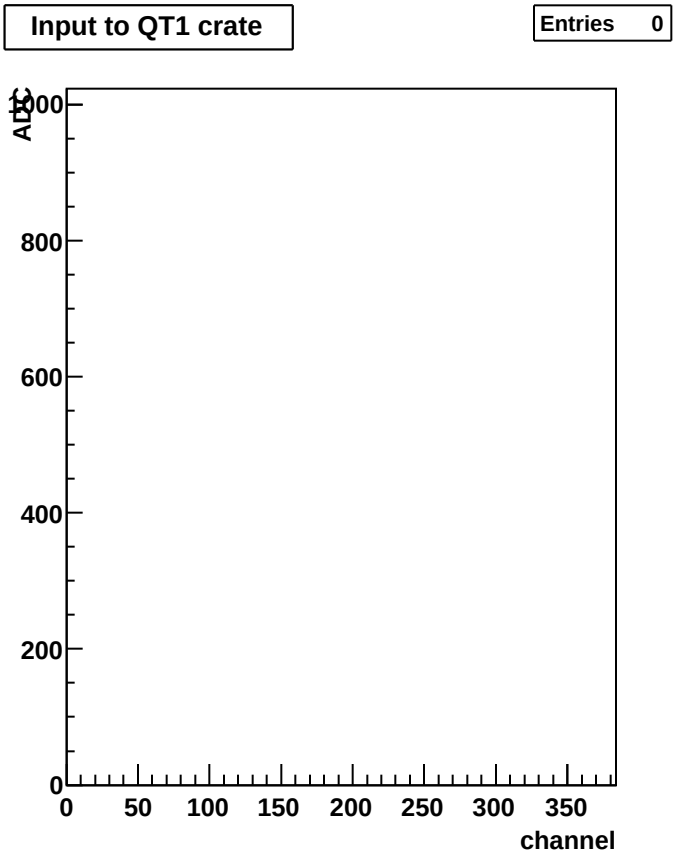

BBClarge-TAC-W
Entries 567605
Mean 1423
RMS 332.8

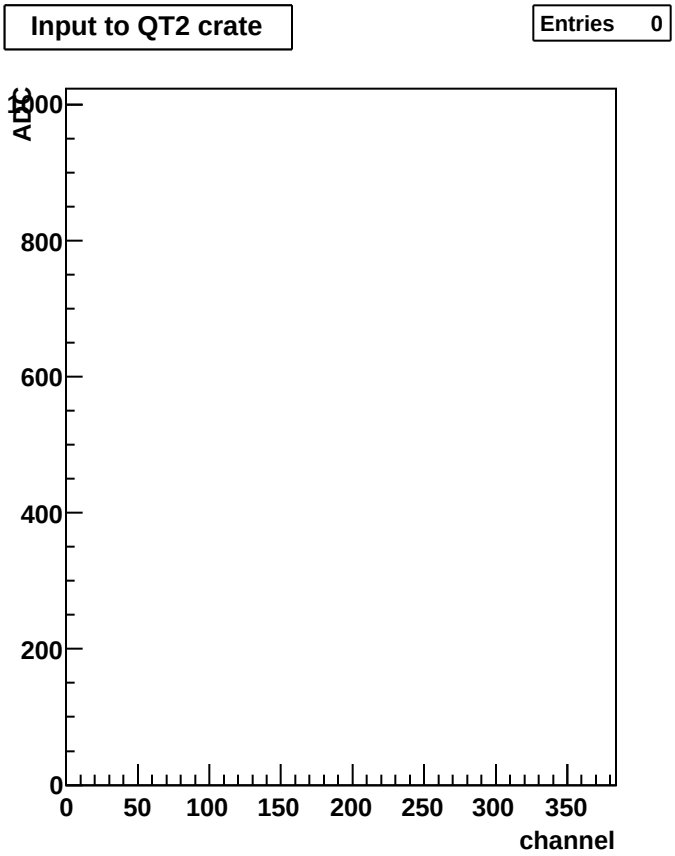

BBClarge-TAC-DIFF = 4096 + BBClarge-TAC-E - BBClarge-TAC-W
Entries 543671
Mean 4081
RMS 411.9

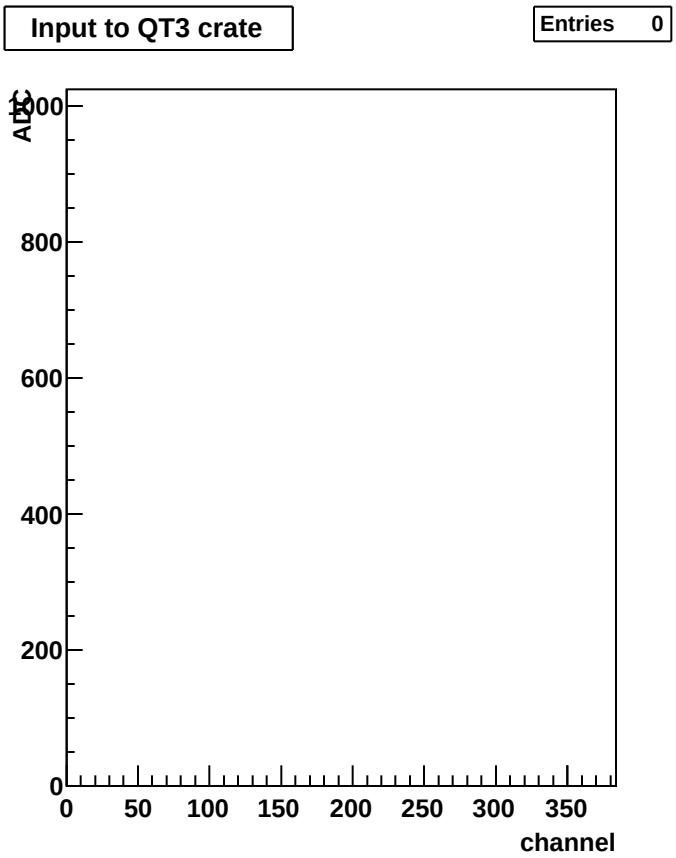

VPD-TAC-E
Entries 506179
Mean 1302
RMS 152.8

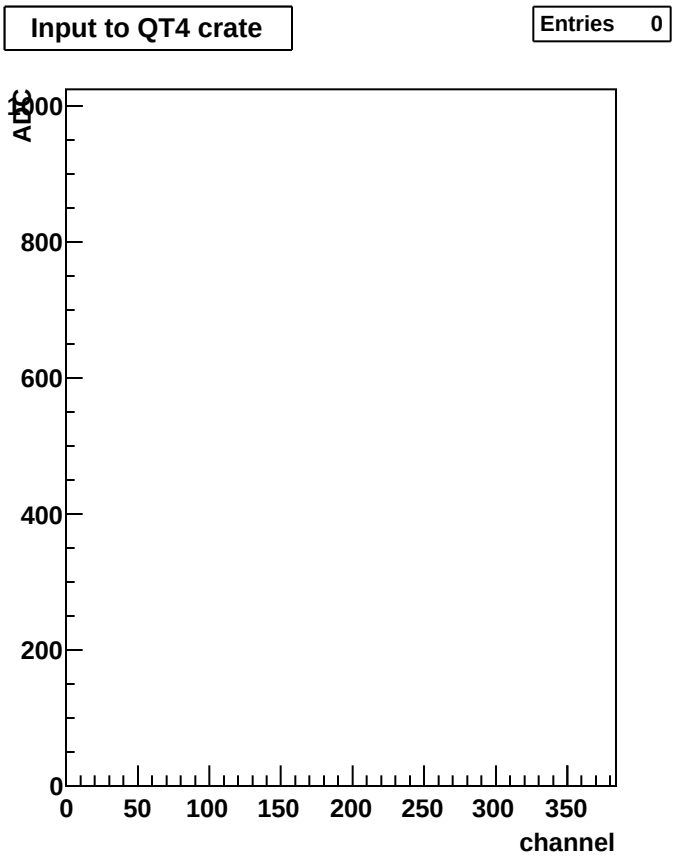

VPD-TAC-W
Entries 505481
Mean 1411
RMS 158.6

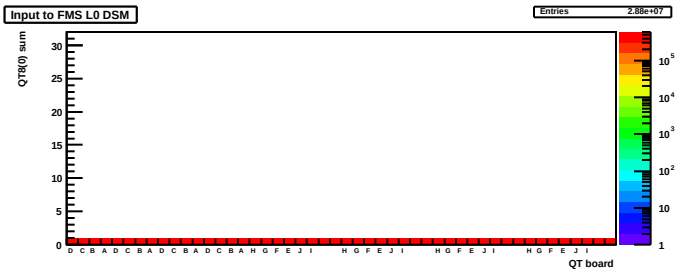

VPD-TAC-DIFF = 4096 + VPD-TAC-E - VPD-TAC-W
Entries 461229
Mean 3985
RMS 82.44

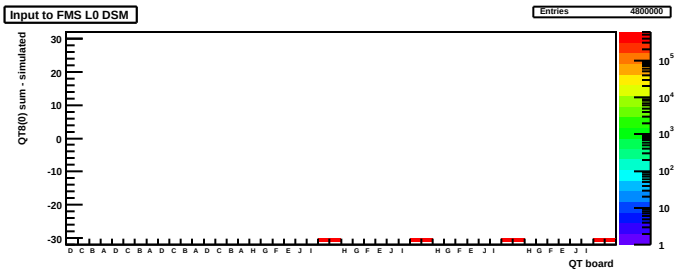

Input to QT1 crate
Entries 0
ADC
1000
800
600
400
200
0
0 50 100 150 200 250 300 350
channel

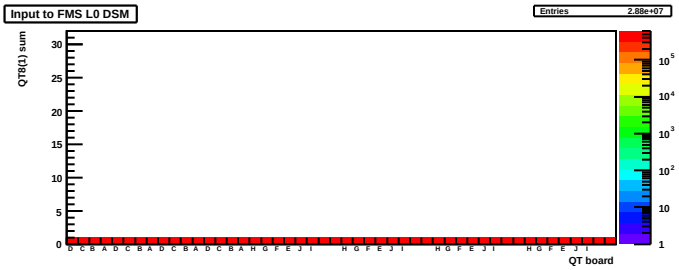

Input to QT2 crate
Entries 0
ADC
1000
800
600
400
200
0
0 50 100 150 200 250 300 350
channel

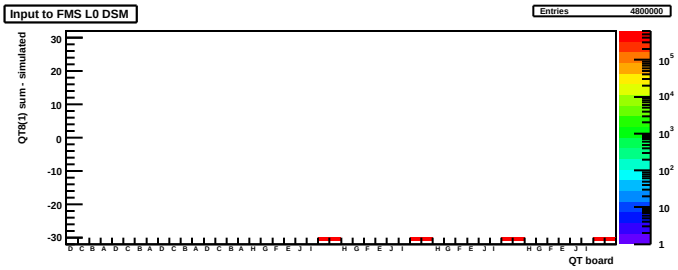

Input to QT3 crate
Entries 0
ADC
1000
800
600
400
200
0
0 50 100 150 200 250 300 350
channel

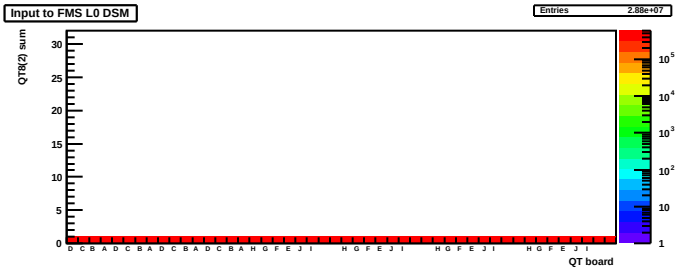

Input to QT4 crate
Entries 0
ADC
1000
800
600
400
200
0
0 50 100 150 200 250 300 350
channel

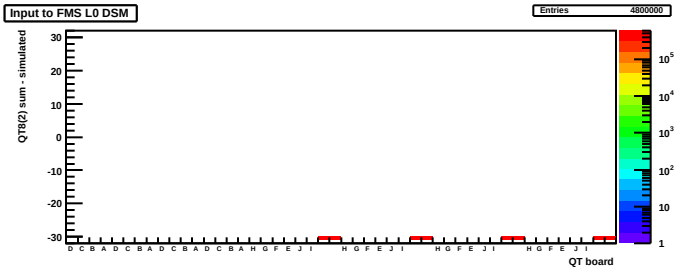

Input to FMS L0 DSM
Entries 2.88e+07
QT8(0) sum
QT board

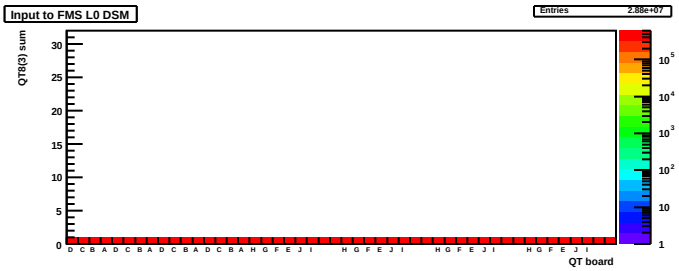

Input to FMS L0 DSM
Entries 4800000
QT8(0) sum - simulated
QT board

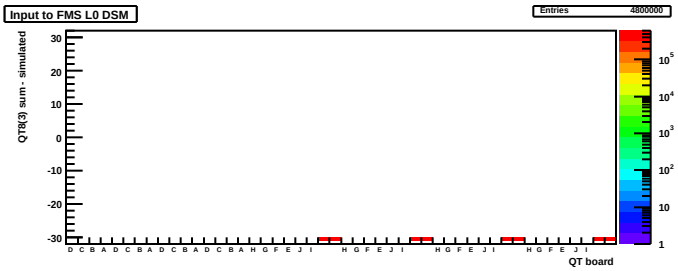

Input to FMS L0 DSM
Entries 2.88e+07
QT8(1) sum
QT board

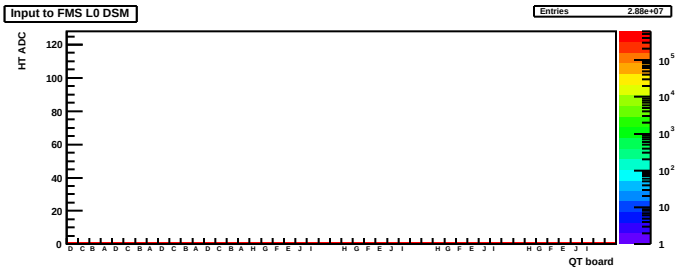

Input to FMS L0 DSM
Entries 4800000
QT8(1) sum - simulated
QT board

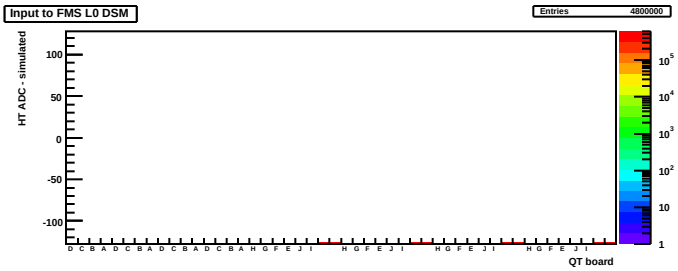

Input to FMS L0 DSM
Entries 2.88e+07
QT8(2) sum
QT board

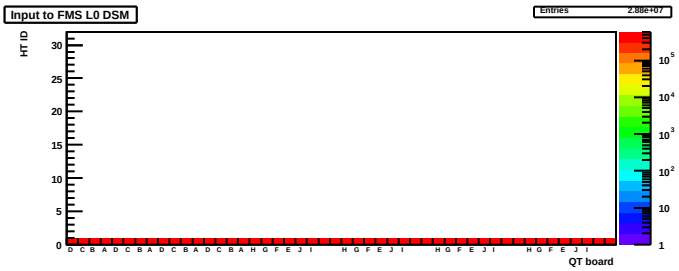

Input to FMS L0 DSM
Entries 4800000
QT8(2) sum - simulated
QT board

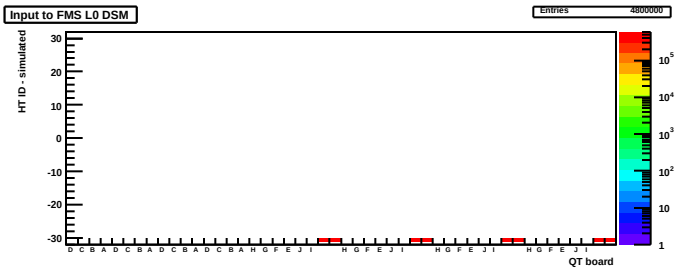

Input to FMS L0 DSM
Entries 2.88e+07
QT8(3) sum
QT board

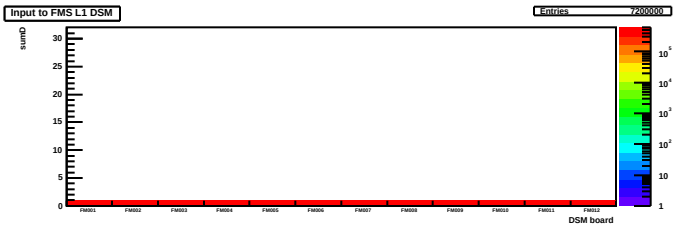

Input to FMS L0 DSM
Entries 4800000
QT8(3) sum - simulated
QT board

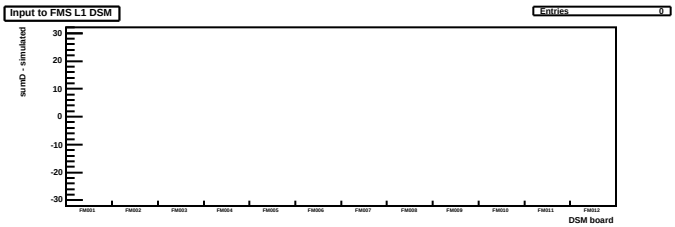

Input to FMS L0 DSM
Entries 2.88e+07
HT ADC
QT board

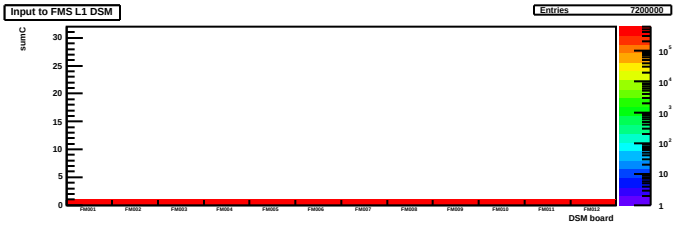

Input to FMS L0 DSM
Entries 4800000
HT ADC - simulated
QT board

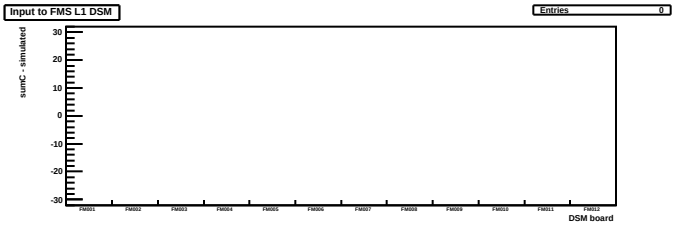

Input to FMS L0 DSM
Entries 2.88e+07
HT ID
QT board

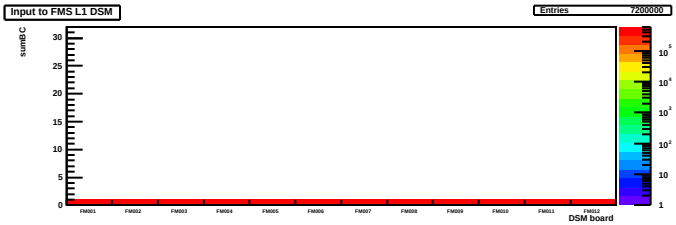

Input to FMS L0 DSM
Entries 4800000
HT ID - simulated
QT board

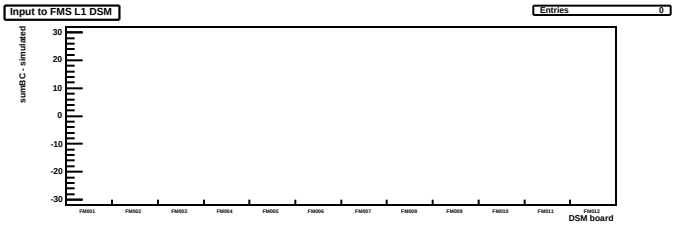

Input to FMS L1 DSM
Entries 7200000
sumD
DSM board

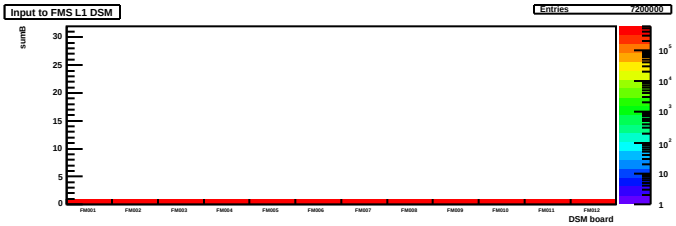

Input to FMS L1 DSM
Entries 0
sumD - simulated
DSM board

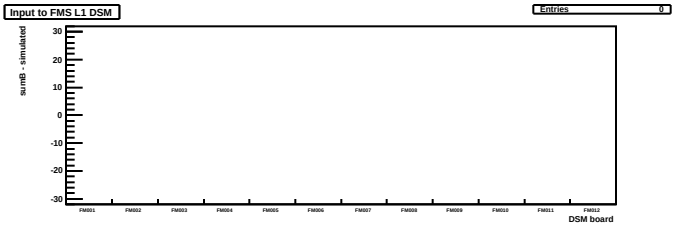

Input to FMS L1 DSM
Entries 7200000
sumC
DSM board

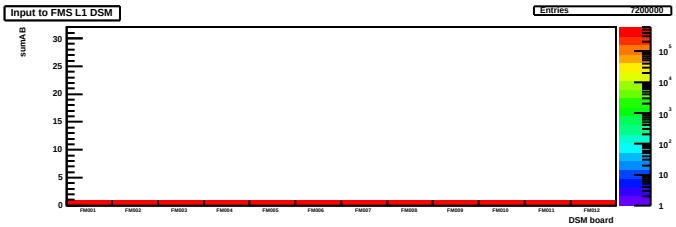

Input to FMS L1 DSM
Entries 0
sumC - simulated
DSM board

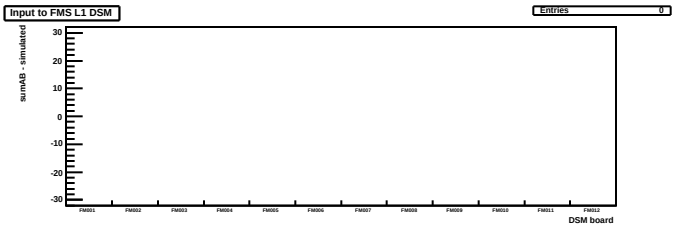

Input to FMS L1 DSM
Entries 7200000
sumBC
DSM board

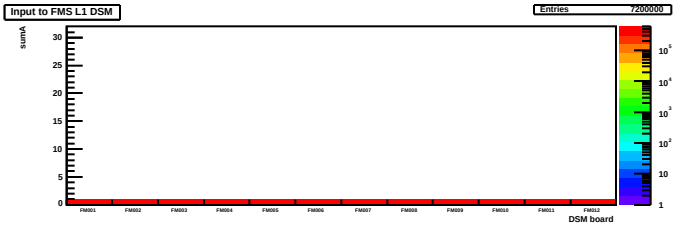

Input to FMS L1 DSM
Entries 0
sumBC - simulated
DSM board

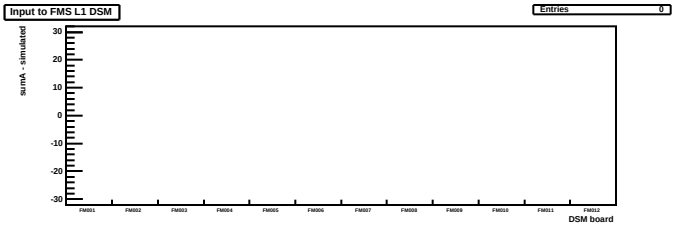

Input to FMS L1 DSM
Entries 7200000
sumB
DSM board

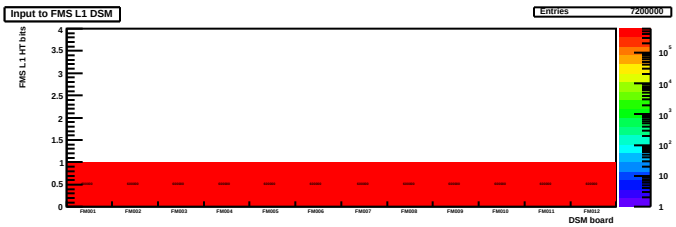

Input to FMS L1 DSM
Entries 0
sumB - simulated
DSM board

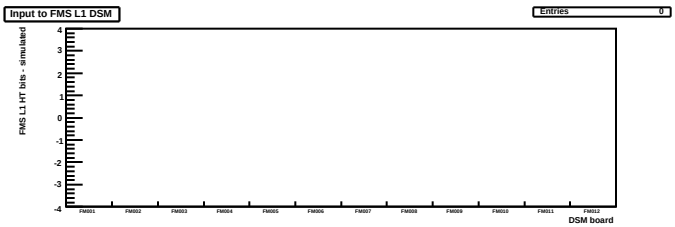

Input to FMS L1 DSM
Entries 7200000
sumAB
DSM board

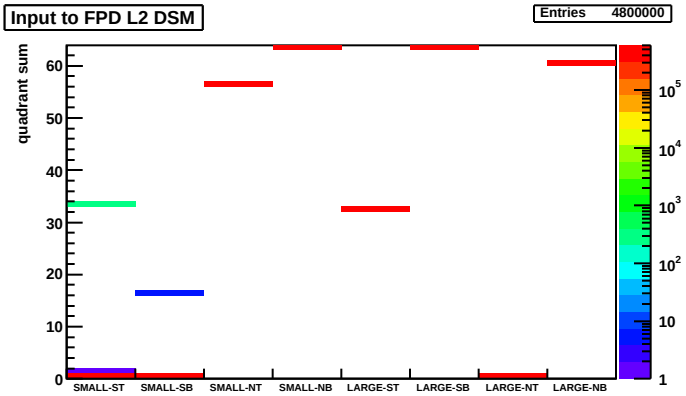

Input to FMS L1 DSM
Entries 0
sumAB - simulated
DSM board

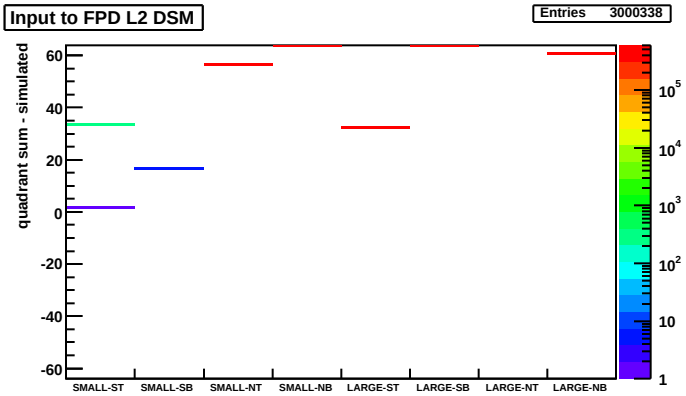

Input to FMS L1 DSM
Entries 7200000
sumA
DSM board

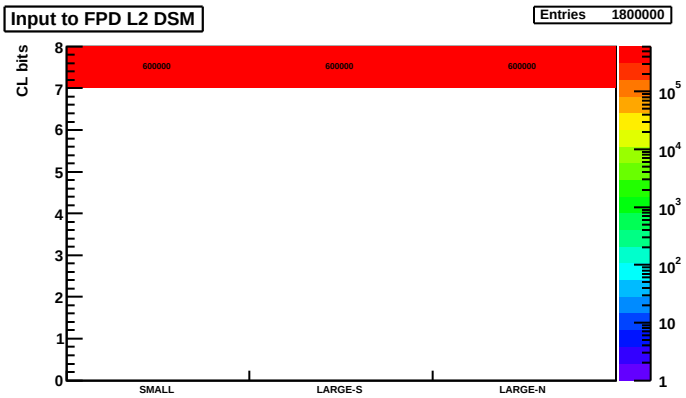

Input to FMS L1 DSM
Entries 0
sumA - simulated
DSM board

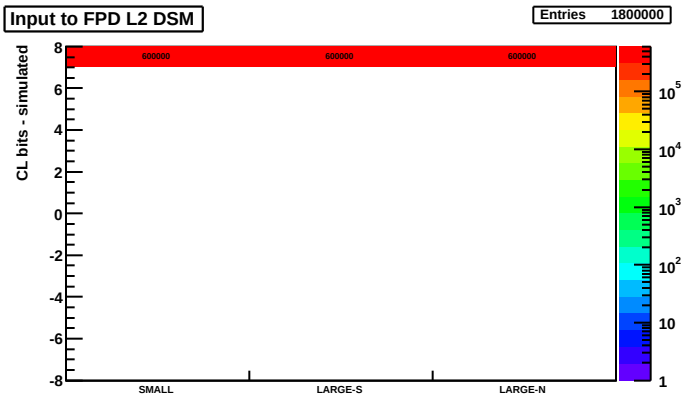

Input to FMS L1 DSM
Entries 7200000
FMS L1 HT bits
DSM board

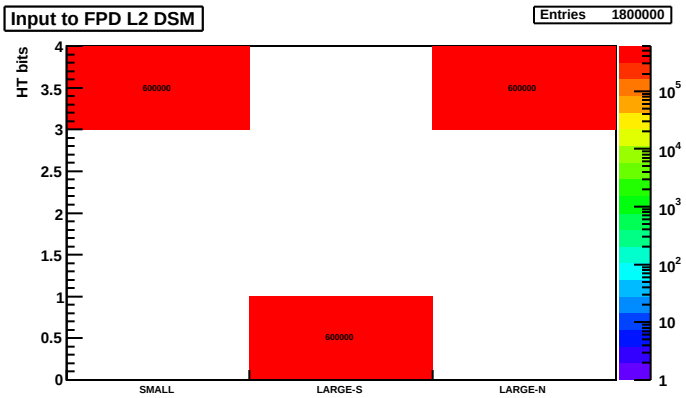

Input to FMS L1 DSM
Entries 0
FMS L1 HT bits - simulated
DSM board

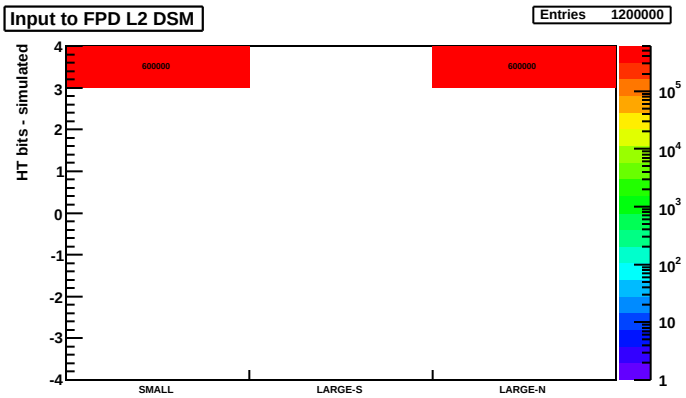

Input to FPD L2 DSM
Entries 4800000
quadrant sum
SMALL-ST
SMALL-SB
SMALL-NT
SMALL-NB
LARGE-ST
LARGE-SB
LARGE-NT
LARGE-NB

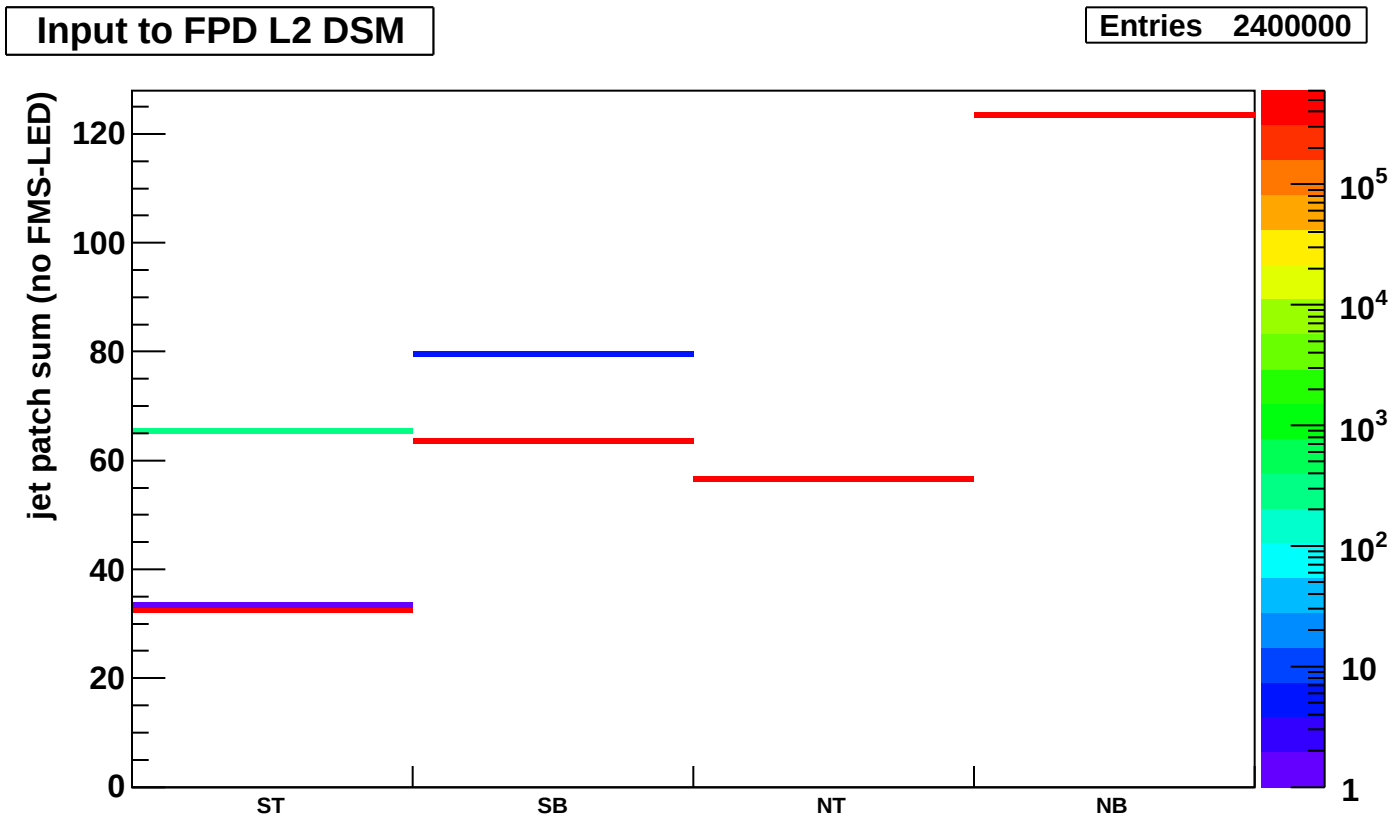

Input to FPD L2 DSM
Entries 3000338
quadrant sum - simulated
SMALL-ST
SMALL-SB
SMALL-NT
SMALL-NB
LARGE-ST
LARGE-SB
LARGE-NT
LARGE-NB

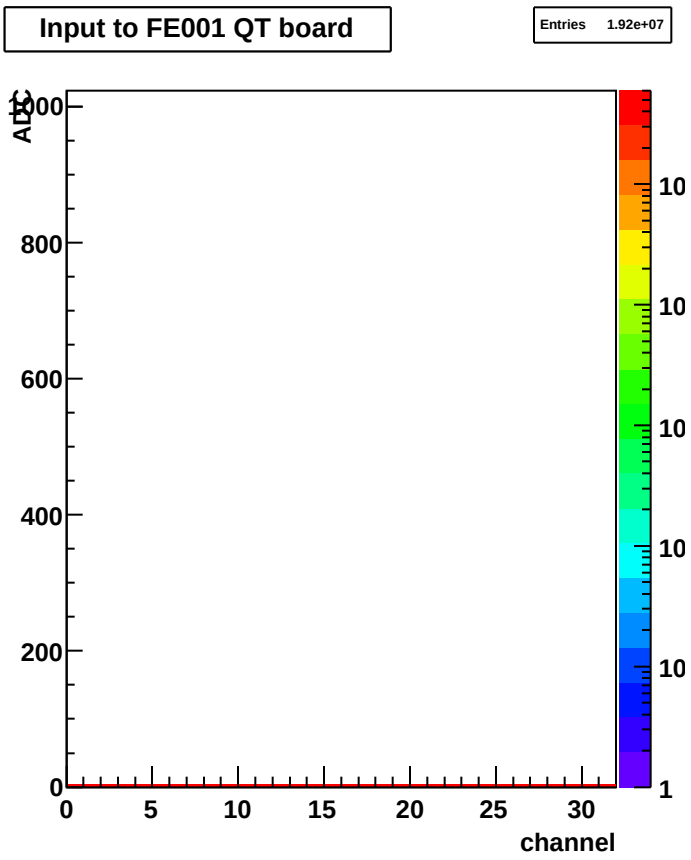

Input to FPD L2 DSM
Entries 1800000
CL bits
600000
600000
600000
SMALL
LARGE-S
LARGE-N

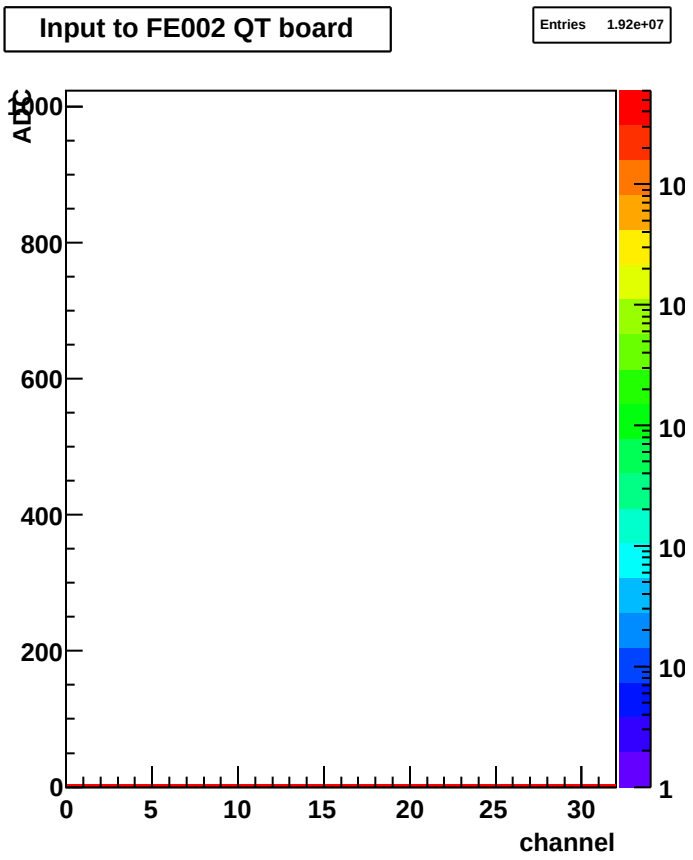

Input to FPD L2 DSM
Entries 1800000
CL bits - simulated
600000
600000
600000
SMALL
LARGE-S
LARGE-N

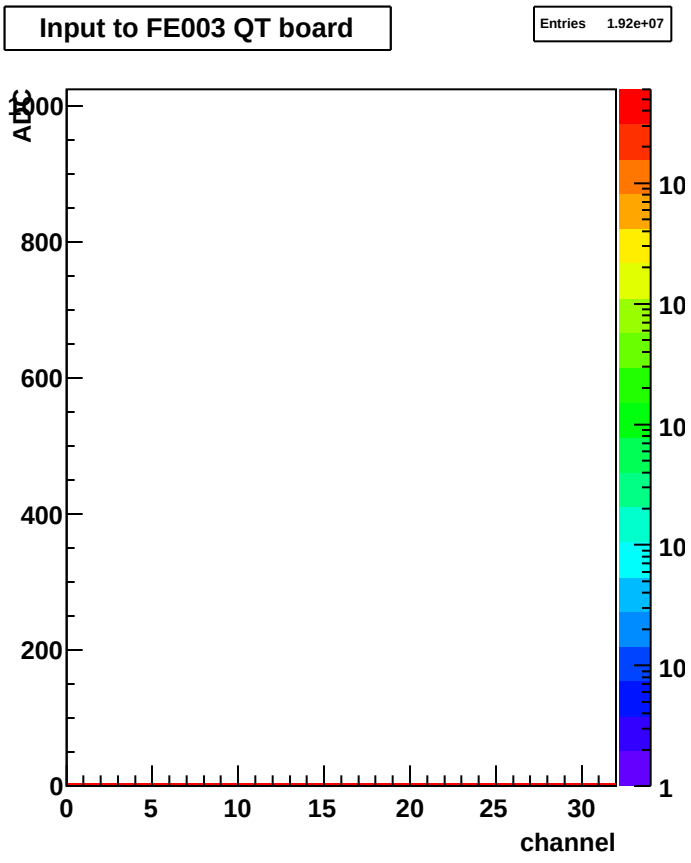

Input to FPD L2 DSM
Entries 1800000
HT bits
600000
600000
600000
SMALL
LARGE-S
LARGE-N

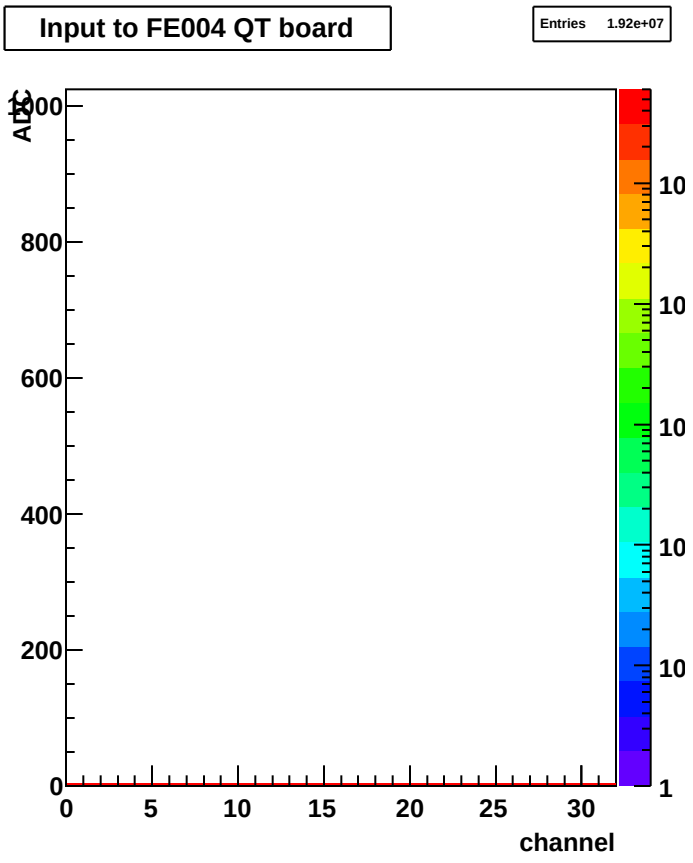

Input to FPD L2 DSM
Entries 1200000
HT bits - simulated
600000
600000
SMALL
LARGE-S
LARGE-N

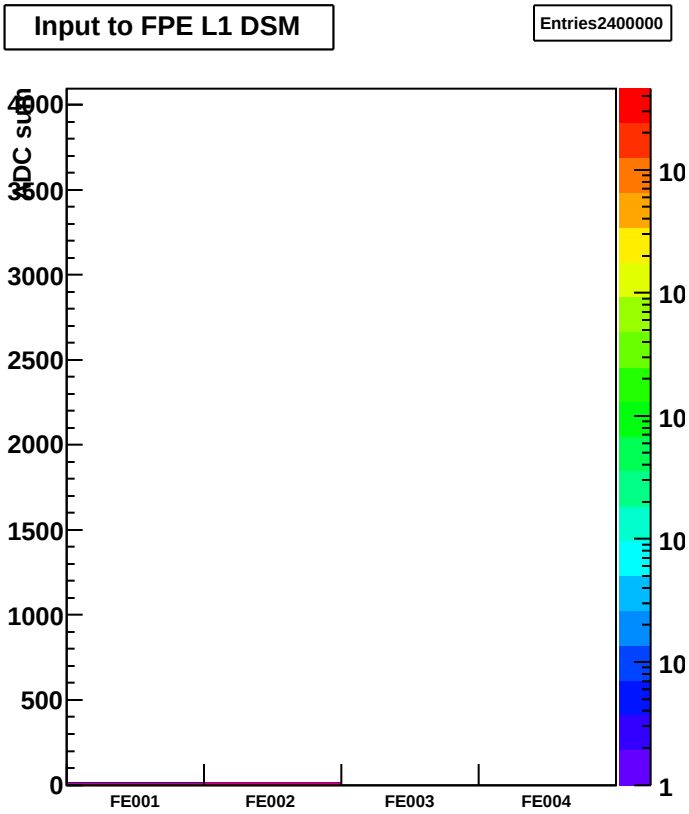

Input to FPD L2 DSM
Entries 2400000
jet patch sum (no FMS-LED)
0
20
40
60
80
100
120
ST
SB
NT
NB
1
10
10^2
10^3
10^4
10^5

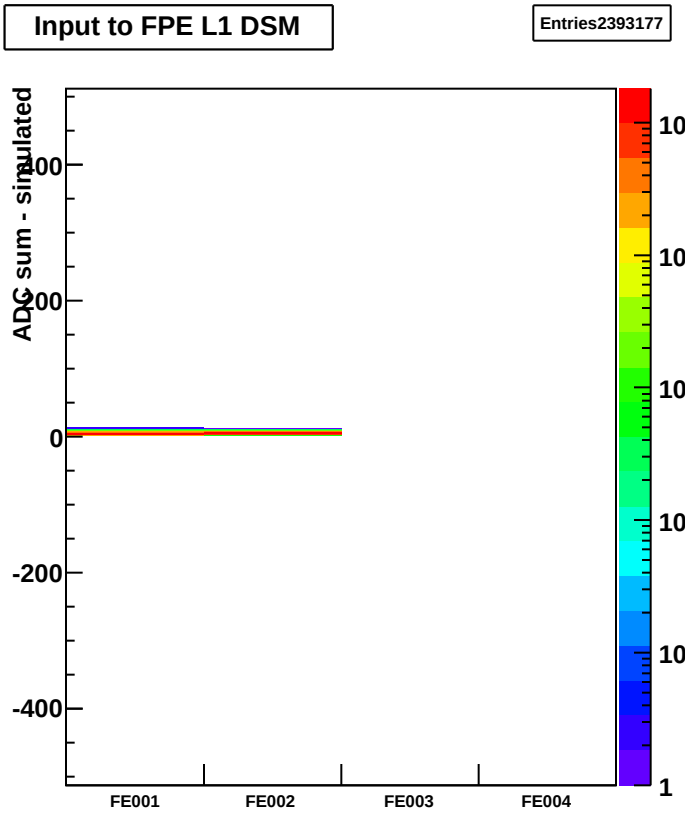

Input to FE001 QT board
Entries 1.92e+07
ADC
channel

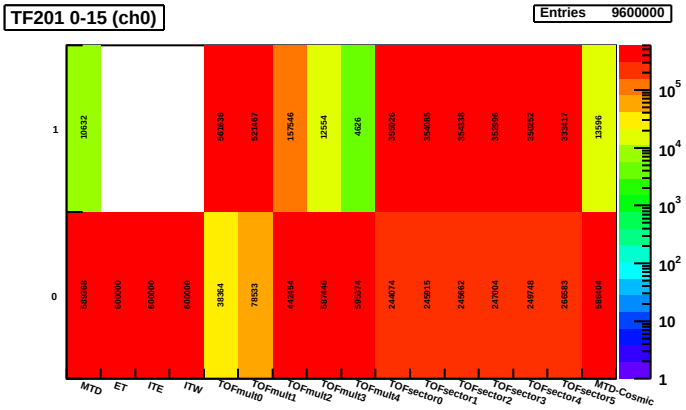

Input to FE002 QT board
Entries 1.92e+07
ADC
channel

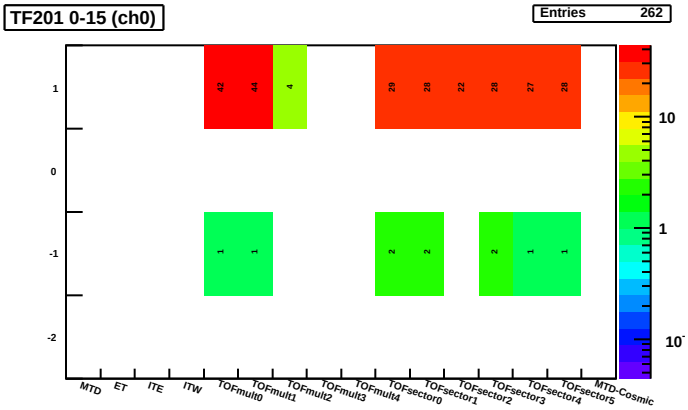

Input to FE003 QT board
Entries 1.92e+07
ADC
channel

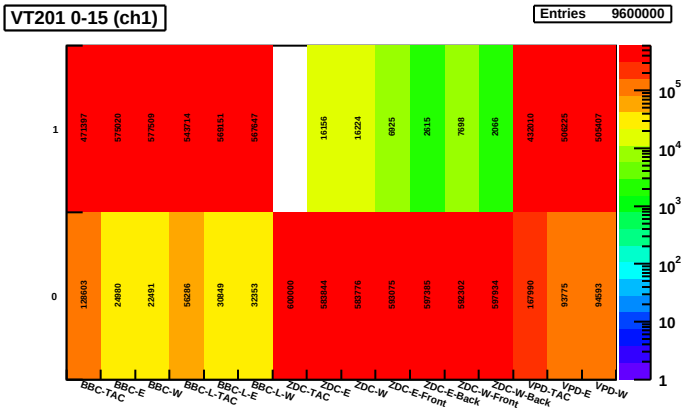

Input to FE004 QT board
Entries 1.92e+07
ADC
channel

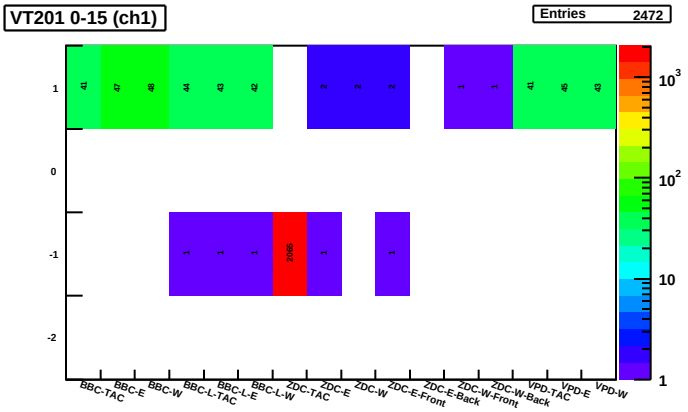

Input to FPE L1 DSM
Entries2400000
ADC sum
4000
3500
3000
2500
2000
1500
1000
500
0
FE001
FE002
FE003
FE004
10
10
10
10
10
1

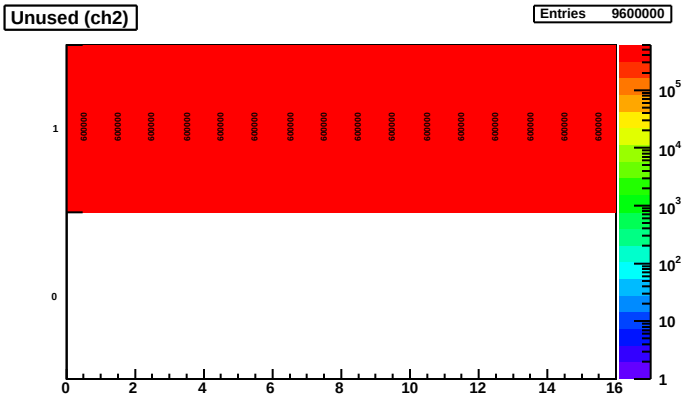

Input to FPE L1 DSM
Entries2393177
ADC sum - simulated
0
-200
-400
FE001
FE002
FE003
FE004
10
10
10
10
10
1

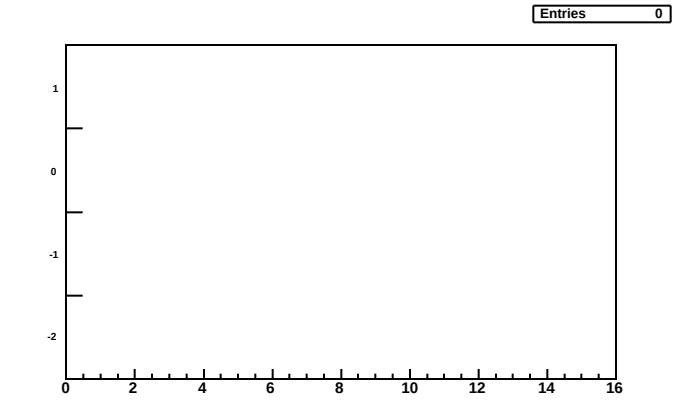

TF201 0-15 (ch0)
Entries 9600000
MTD ET ITE ITW TOFmult0 TOFmult1 TOFmult2 TOFmult3 TOFmult4 TOFsector0 TOFsector1 TOFsector2 TOFsector3 TOFsector4 TOFsector5 MTD-Cosmic

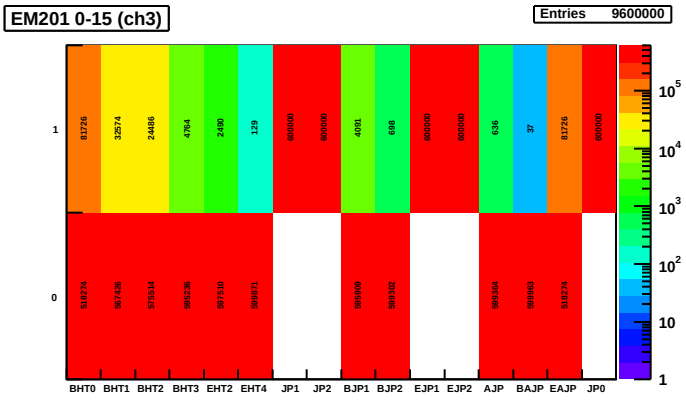

TF201 0-15 (ch0)
Entries 262
MTD ET ITE ITW TOFmult0 TOFmult1 TOFmult2 TOFmult3 TOFmult4 TOFsector0 TOFsector1 TOFsector2 TOFsector3 TOFsector4 TOFsector5 MTD-Cosmic

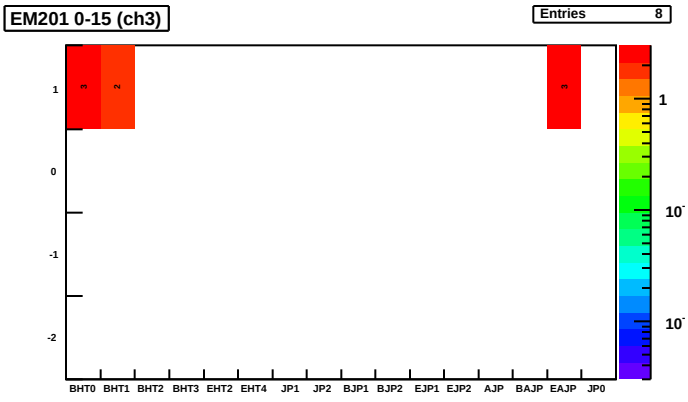

VT201 0-15 (ch1)
Entries 9600000
BBC-TAC BBC-E BBC-W BBC-L-TAC BBC-L-E BBC-L-W ZDC-TAC ZDC-E ZDC-W ZDC-E-Front ZDC-E-Back ZDC-W-Front ZDC-W-Back VPD-TAC VPD-E VPD-W


VT201 0-15 (ch1)
Entries 2472
BBC-TAC BBC-E BBC-W BBC-L-TAC BBC-L-E BBC-L-W ZDC-TAC ZDC-E ZDC-W ZDC-E-Front ZDC-E-Back ZDC-W-Front ZDC-W-Back VPD-TAC VPD-E VPD-W

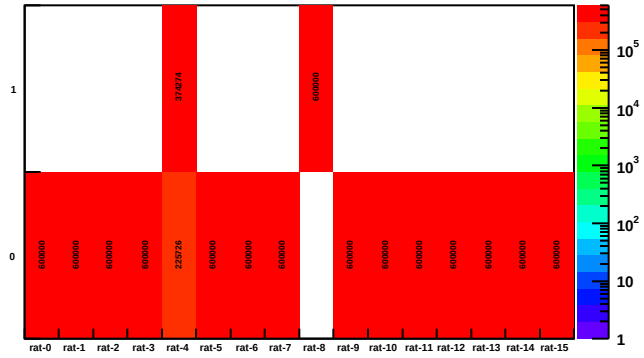

Unused (ch2)
Entries 9600000

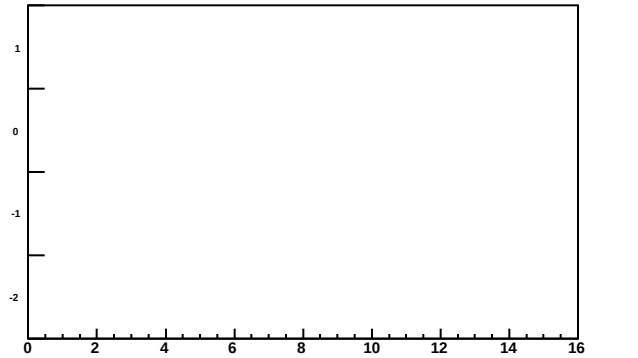

Entries 0


EM201 0-15 (ch3)
Entries 9600000
BHT0 BHT1 BHT2 BHT3 EHT2 EHT4 JP1 JP2 BJP1 BJP2 EJP1 EJP2 AJP BAJP EAJP JP0

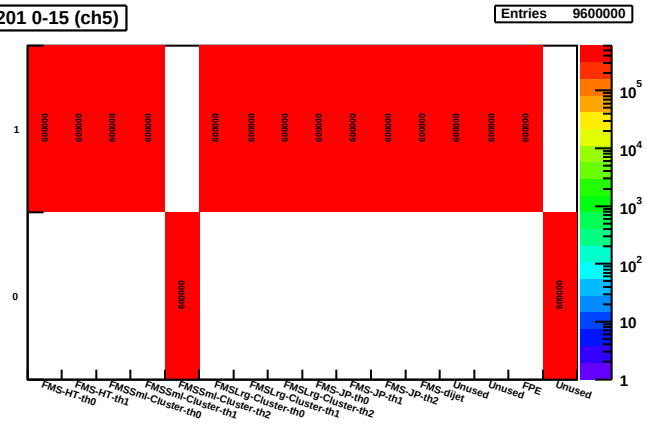

EM201 0-15 (ch3)
Entries 8
BHT0 BHT1 BHT2 BHT3 EHT2 EHT4 JP1 JP2 BJP1 BJP2 EJP1 EJP2 AJP BAJP EAJP JP0

RAT board (ch4)

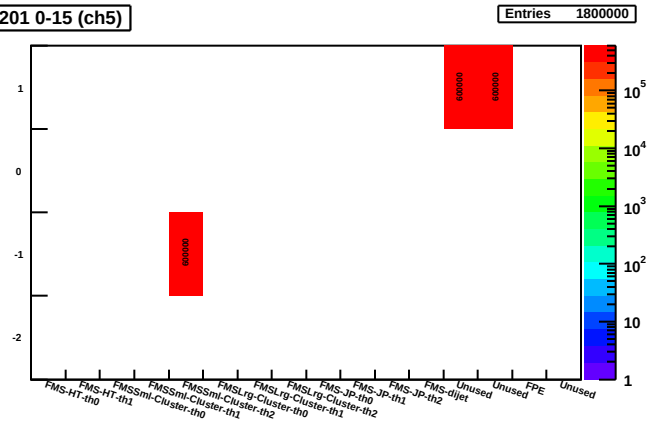




FP201 0-15 (ch5)



FP201 0-15 (ch5)



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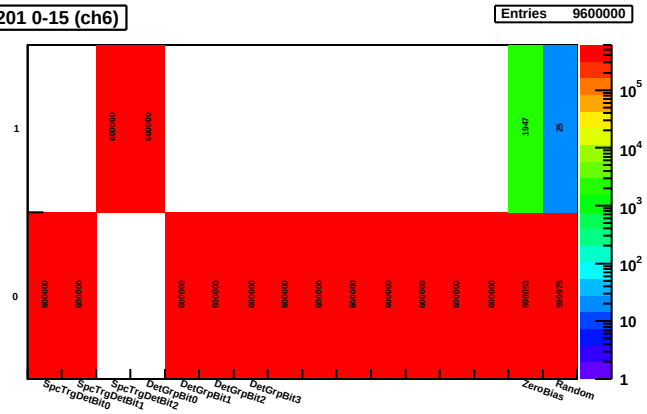

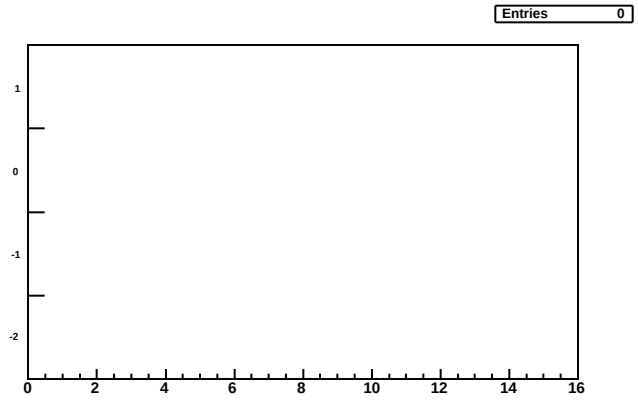
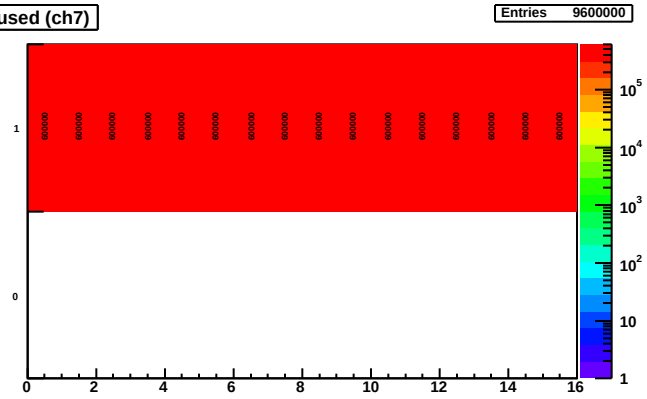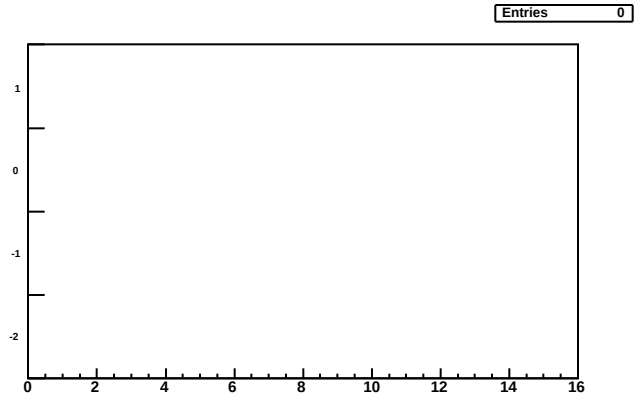
Unused (ch7)