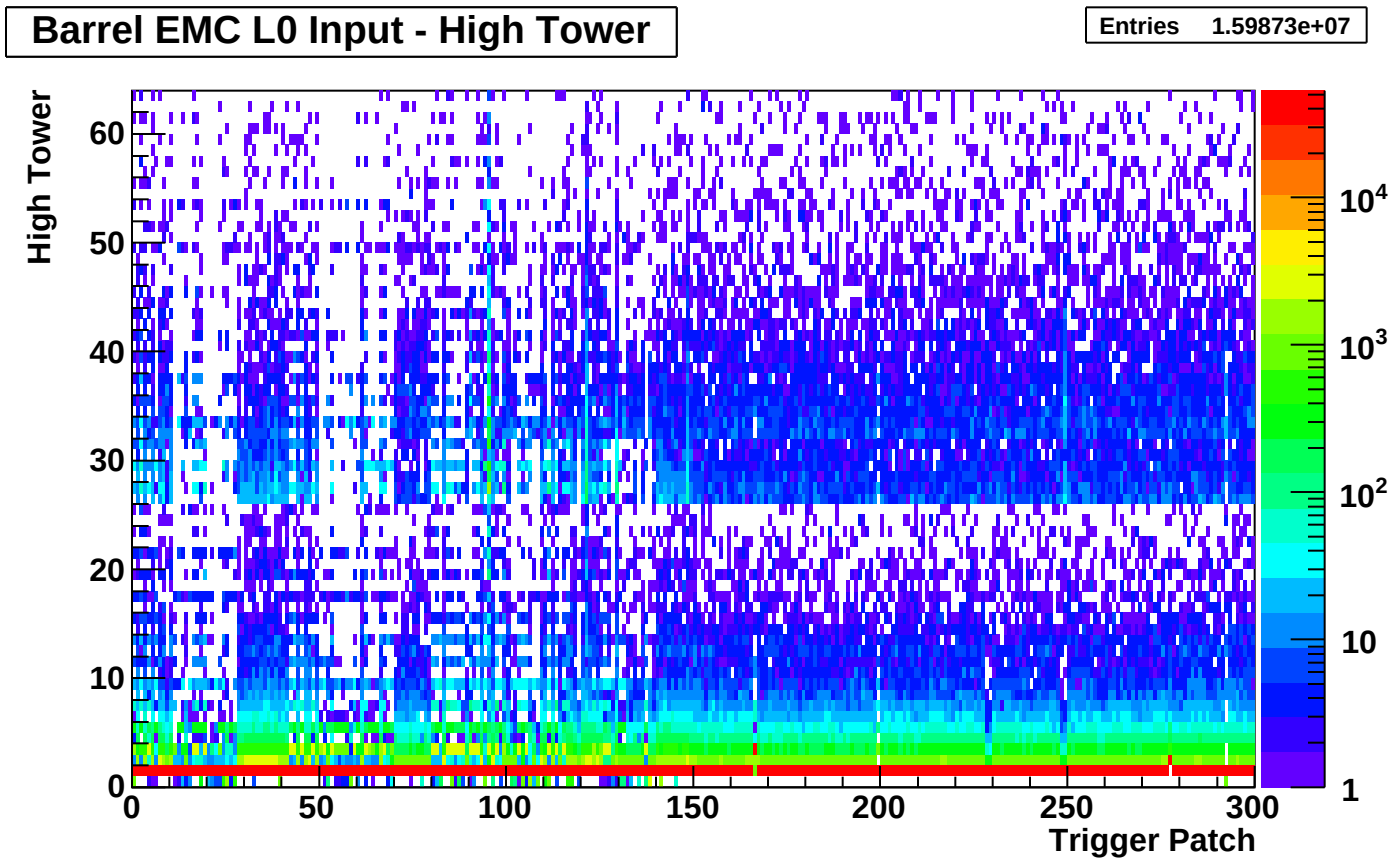
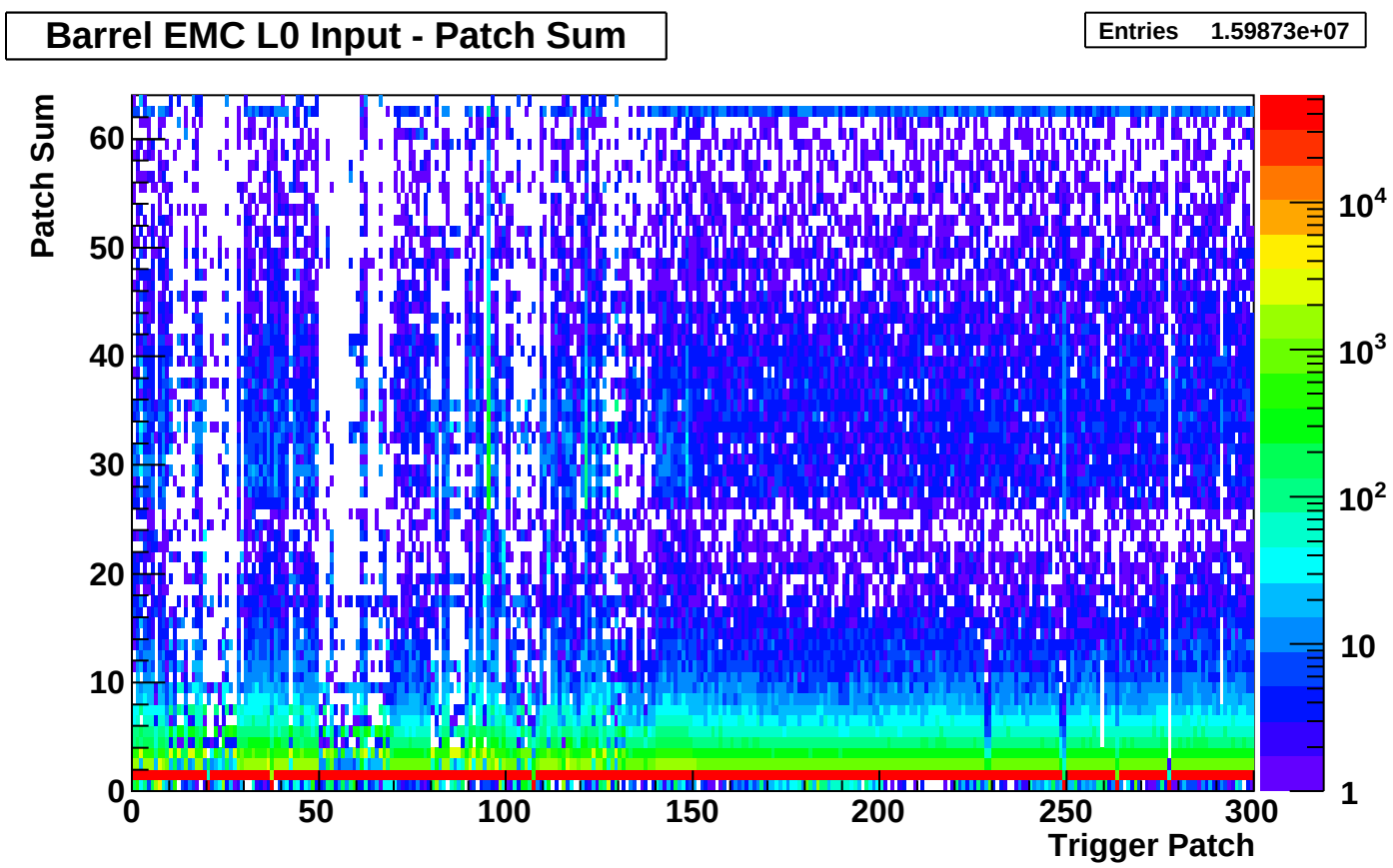
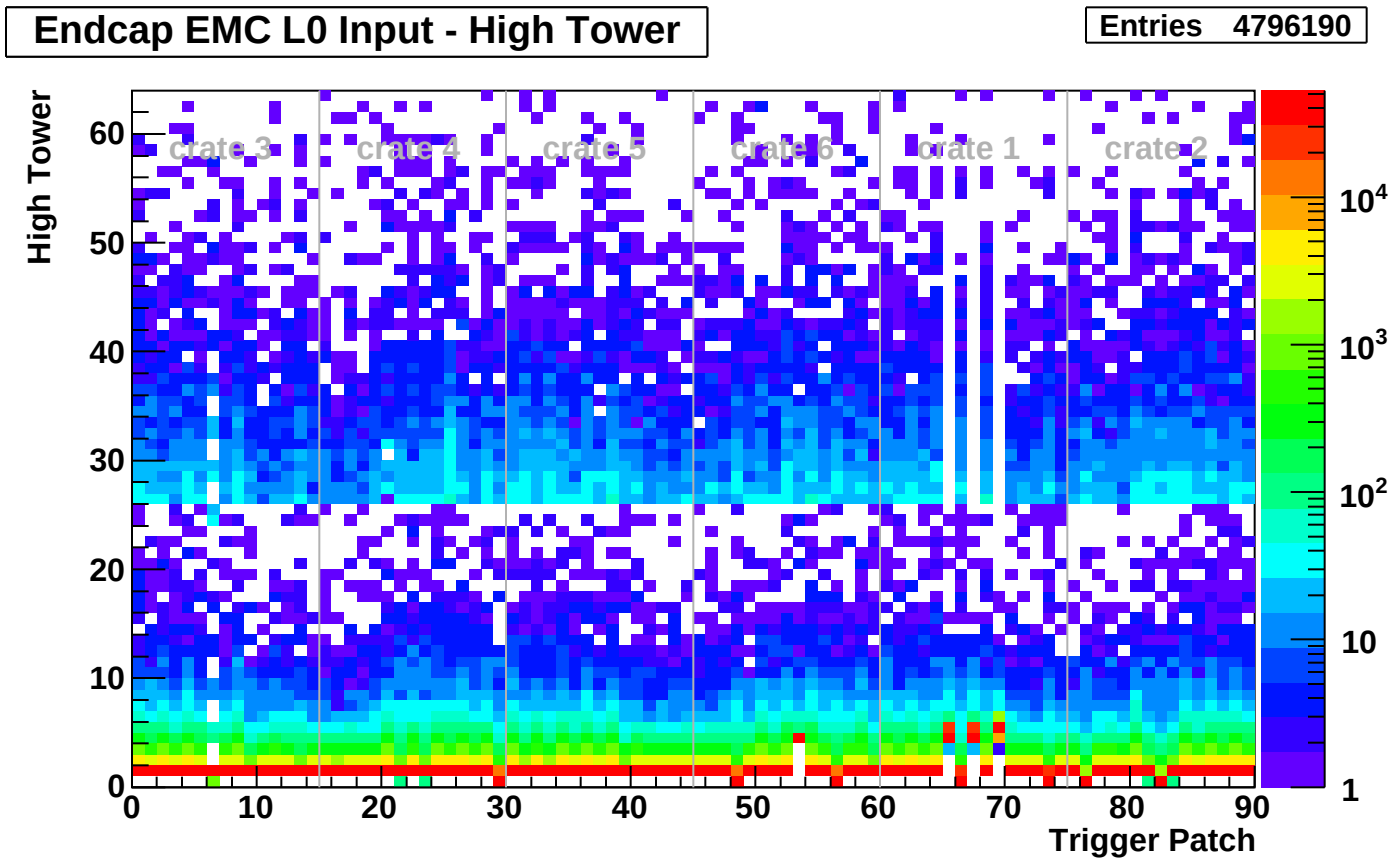
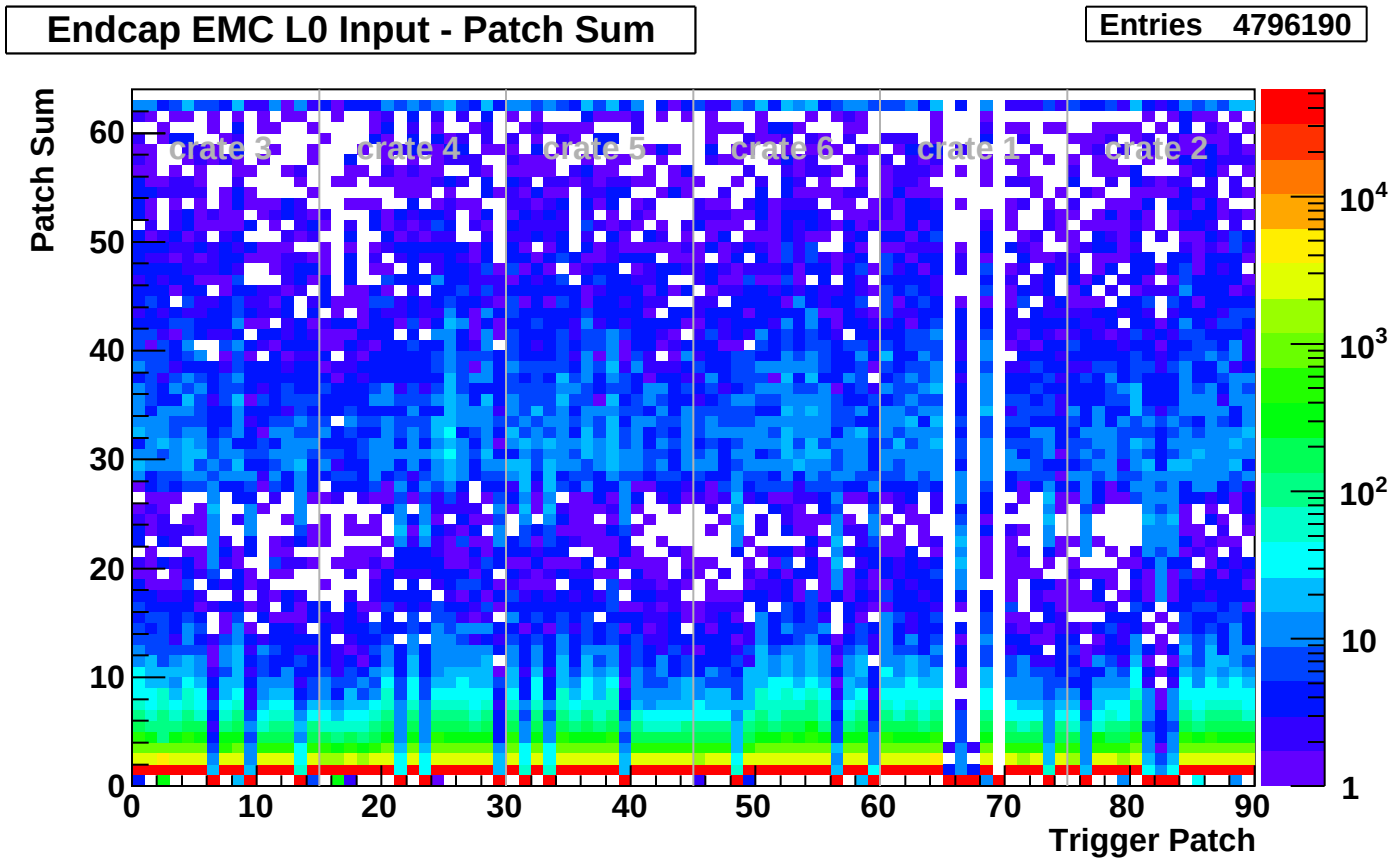
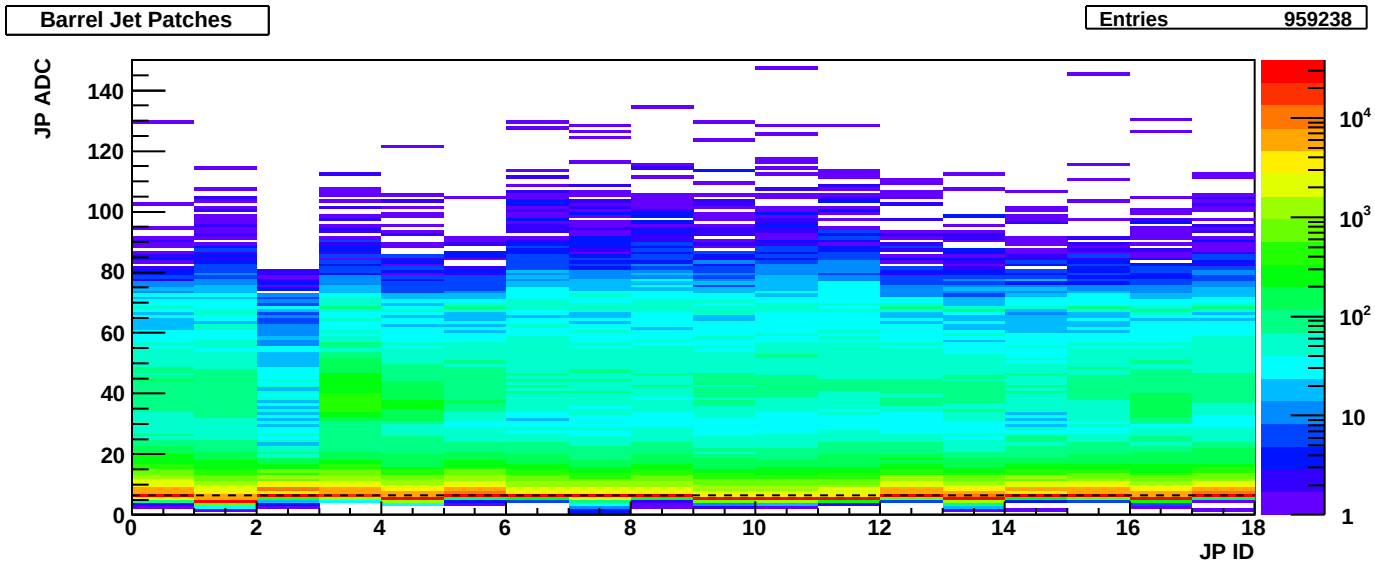
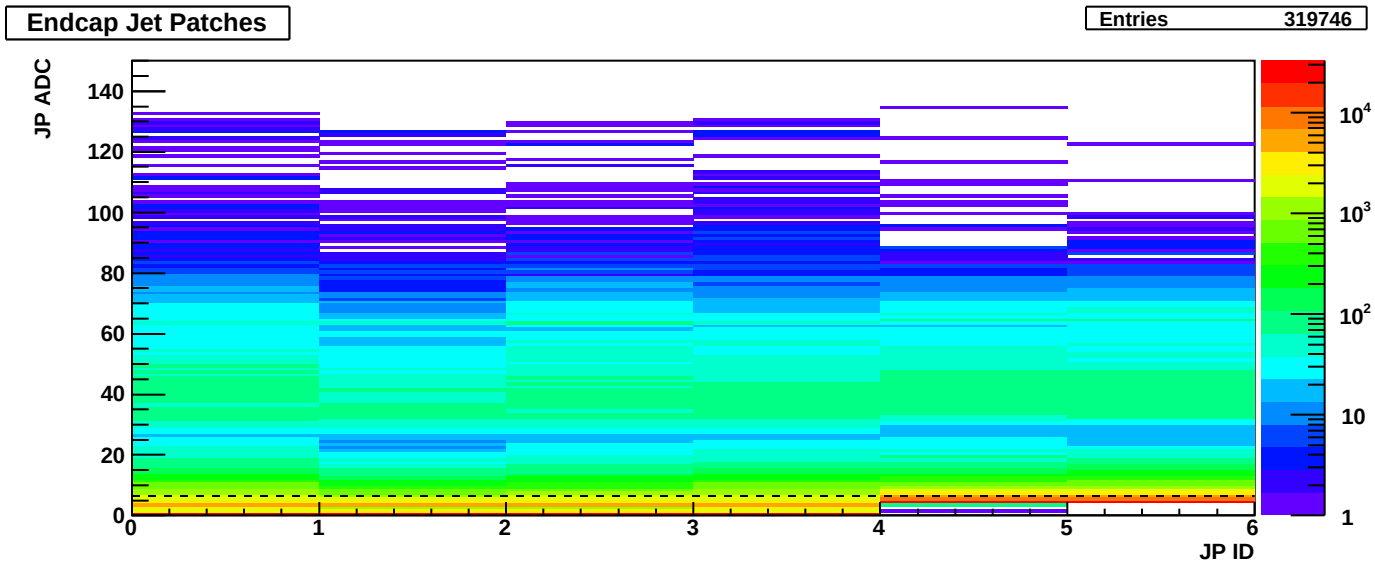

Barrel EMC L0 Input - High Tower
Entries 1.59873e+07
High Tower
Trigger Patch
0
10
20
30
40
50
60
0
50
100
150
200
250
300
1
10
$10^2$
$10^3$
$10^4$

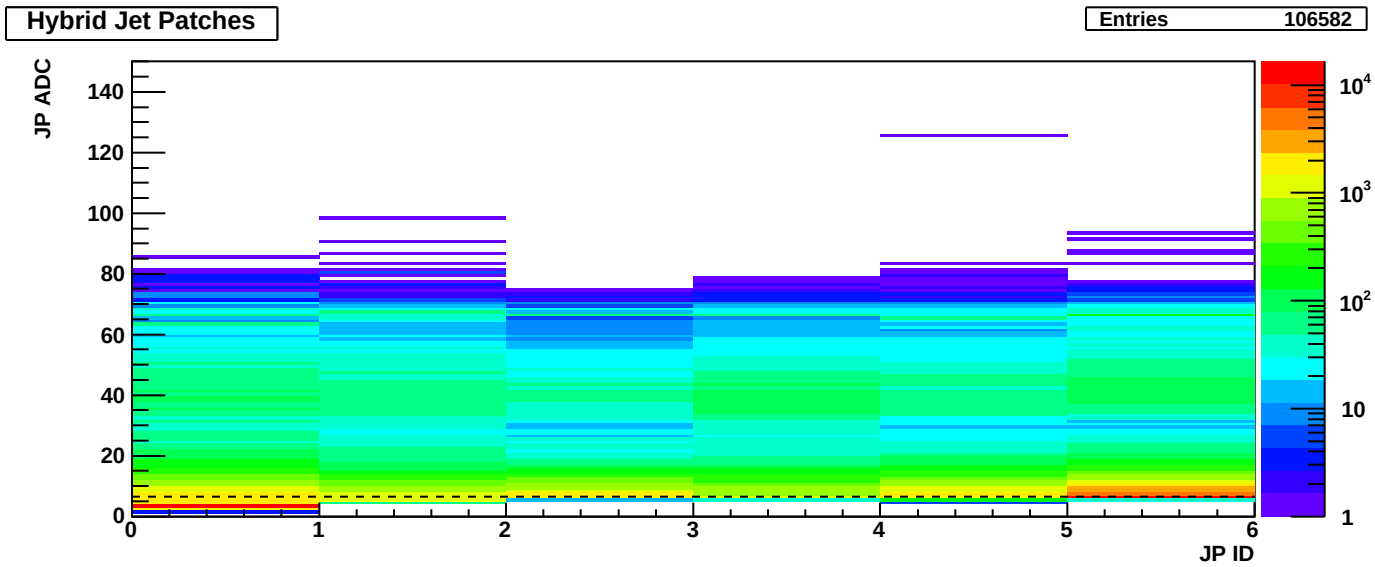

Barrel EMC L0 Input - Patch Sum
Entries 1.59873e+07
Patch Sum
Trigger Patch
0
10
20
30
40
50
60
0
50
100
150
200
250
300
1
10
$10^2$
$10^3$
$10^4$

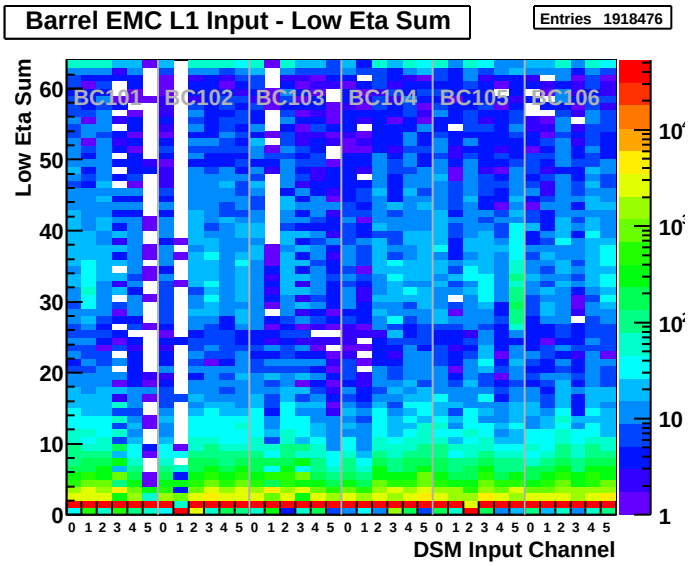

Endcap EMC L0 Input - High Tower
Entries 4796190
High Tower
Trigger Patch
crate 3
crate 4
crate 5
crate 6
crate 1
crate 2

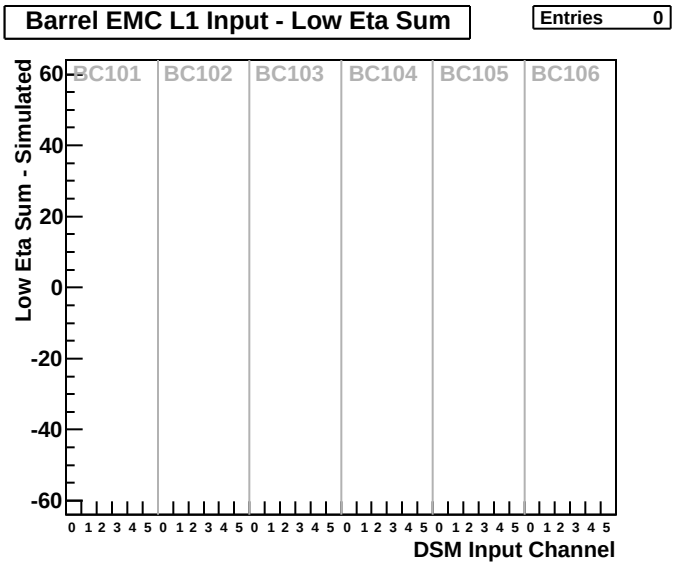

Endcap EMC L0 Input - Patch Sum
Entries 4796190
Patch Sum
Trigger Patch
crate 3
crate 4
crate 5
crate 6
crate 1
crate 2

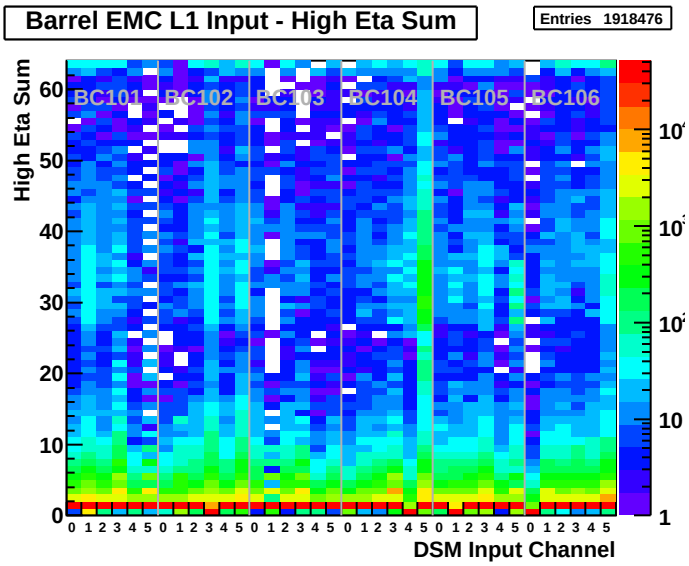

Barrel Jet Patches
Entries 959238
JP ADC
JP ID

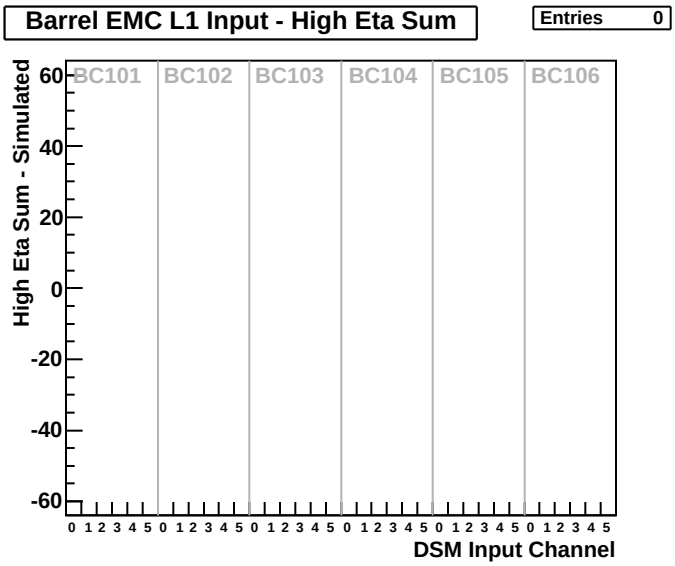

Endcap Jet Patches
Entries 319746
JP ADC
JP ID

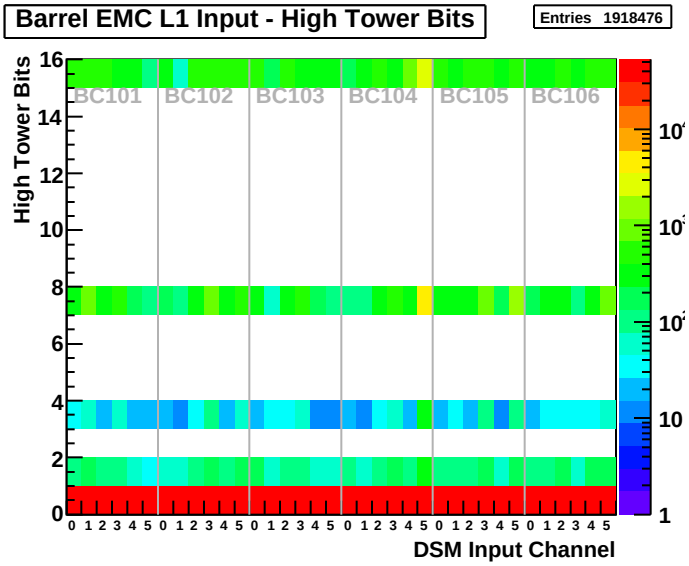

Hybrid Jet Patches
Entries 106582
JP ADC
JP ID

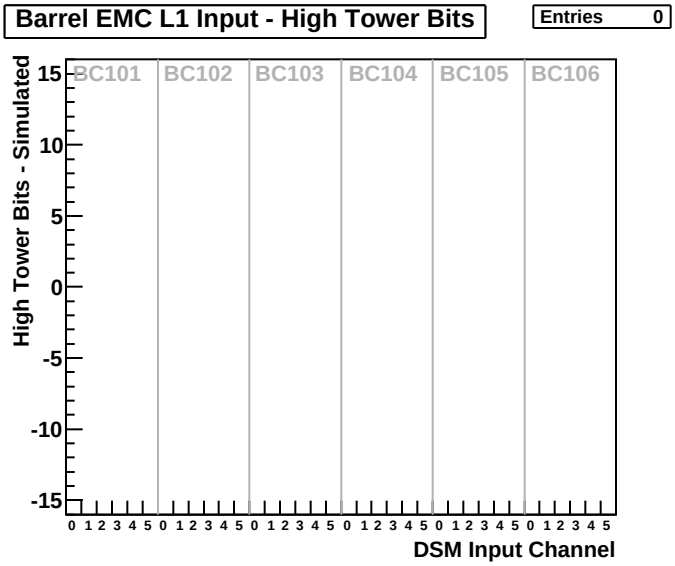

Barrel EMC L1 Input - Low Eta Sum
Entries 1918476
Low Eta Sum
BC101
BC102
BC103
BC104
BC105
BC106
DSM Input Channel

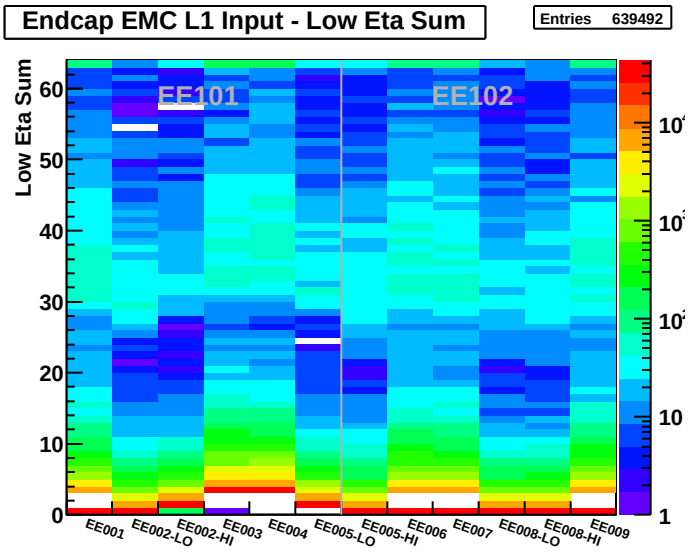

Barrel EMC L1 Input - Low Eta Sum
Entries 0
Low Eta Sum - Simulated
BC101
BC102
BC103
BC104
BC105
BC106
DSM Input Channel

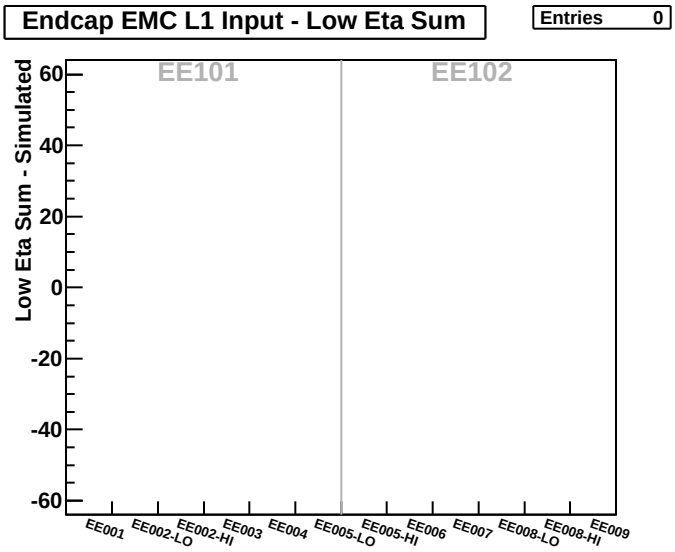

Barrel EMC L1 Input - High Eta Sum
Entries 1918476
High Eta Sum
BC101
BC102
BC103
BC104
BC105
BC106
DSM Input Channel

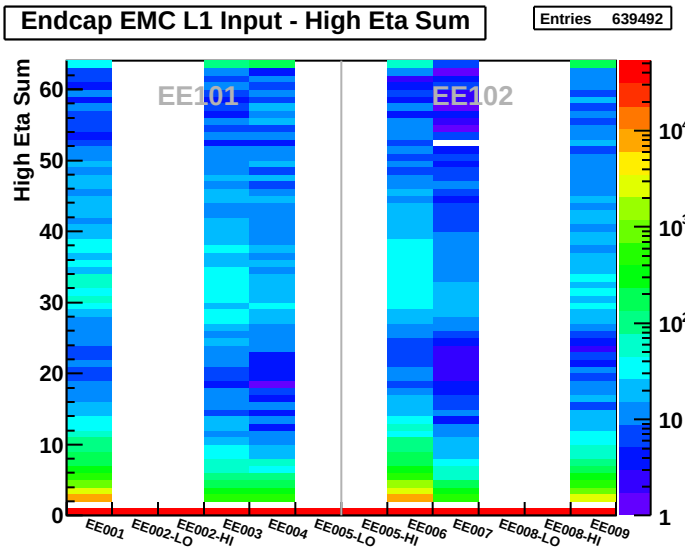

Barrel EMC L1 Input - High Eta Sum
Entries 0
High Eta Sum - Simulated
BC101
BC102
BC103
BC104
BC105
BC106
DSM Input Channel

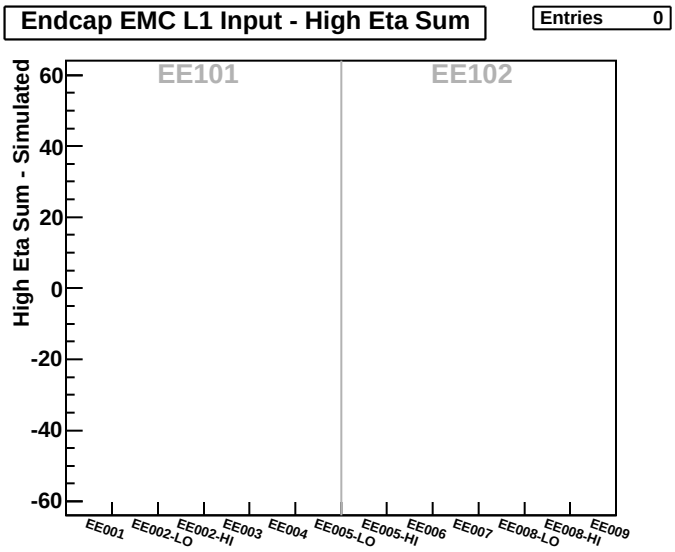

Barrel EMC L1 Input - High Tower Bits
Entries 1918476
High Tower Bits
BC101
BC102
BC103
BC104
BC105
BC106
DSM Input Channel

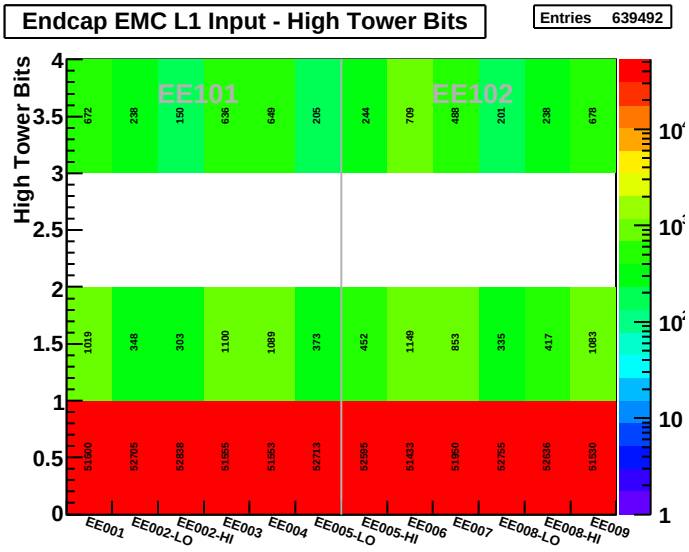

Barrel EMC L1 Input - High Tower Bits
Entries 0
High Tower Bits - Simulated
BC101
BC102
BC103
BC104
BC105
BC106
DSM Input Channel

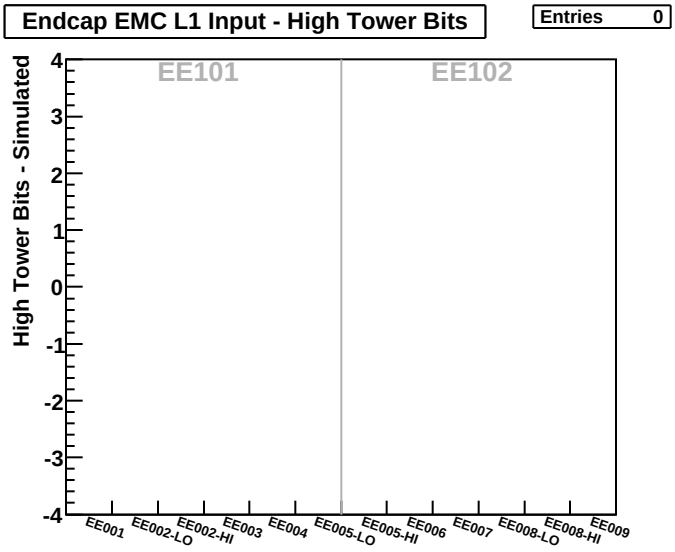

Endcap EMC L1 Input - Low Eta Sum
Entries 639492
Low Eta Sum
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

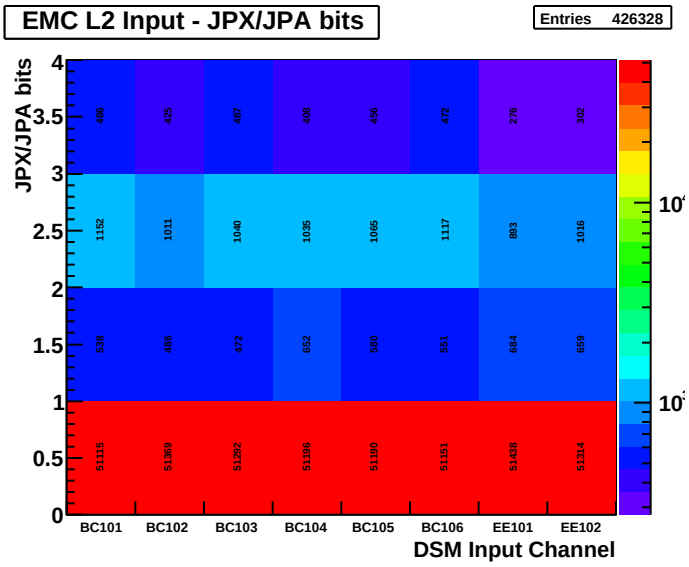

Endcap EMC L1 Input - Low Eta Sum
Entries 0
Low Eta Sum - Simulated
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

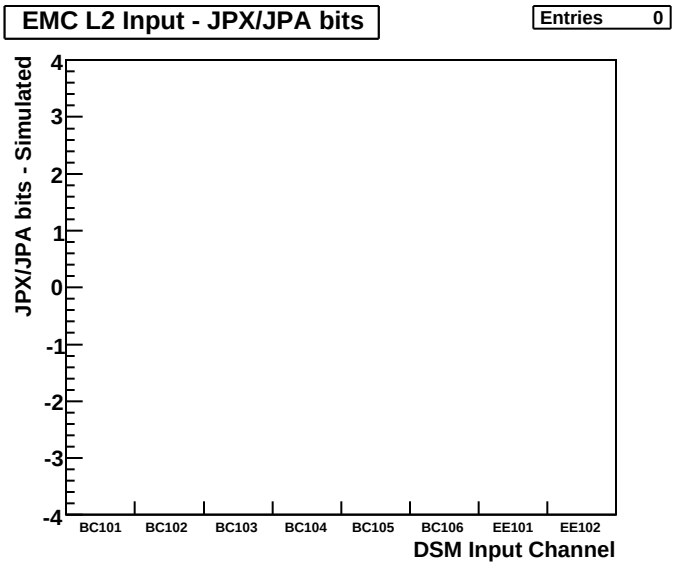

Endcap EMC L1 Input - High Eta Sum
Entries 639492
High Eta Sum
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

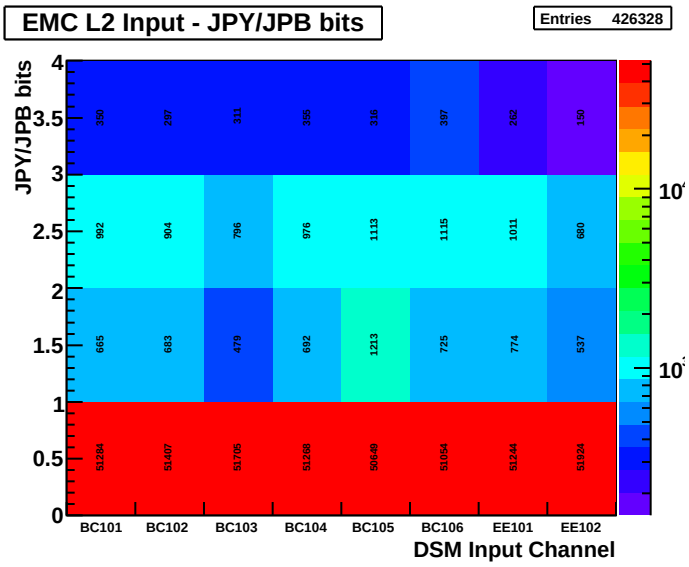

Endcap EMC L1 Input - High Eta Sum
Entries 0
High Eta Sum - Simulated
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

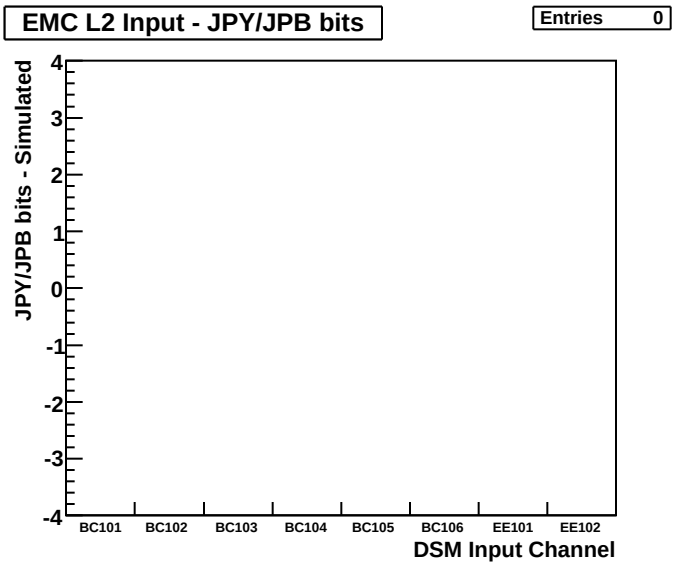

Endcap EMC L1 Input - High Tower Bits
Entries 639492
High Tower Bits
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

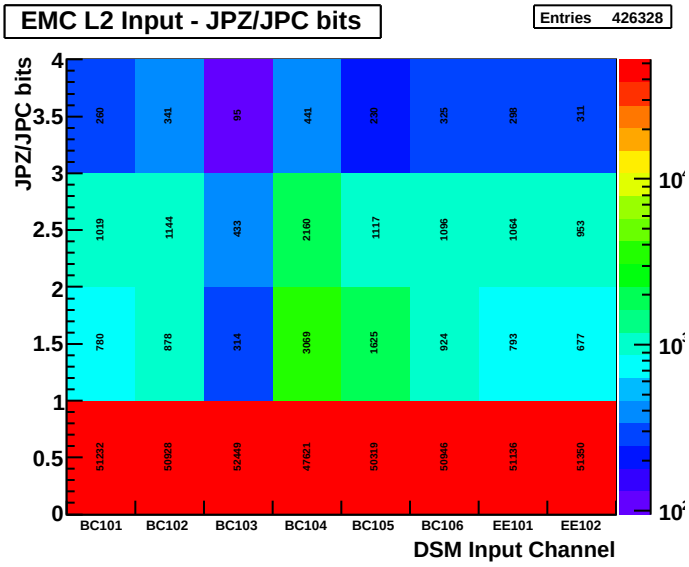

Endcap EMC L1 Input - High Tower Bits
Entries 0
High Tower Bits - Simulated
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

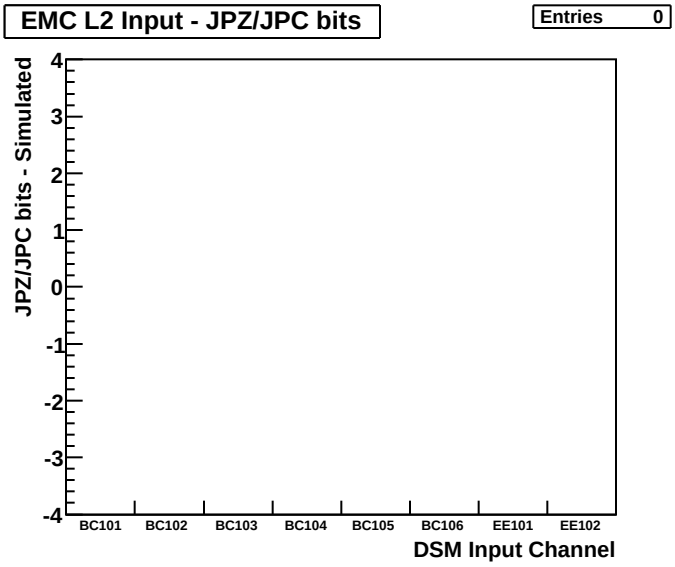

EMC L2 Input - JPX/JPA bits
Entries 426328
JPX/JPA bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102
486 425 487 408 456 472 276 302
1152 1011 1040 1035 1065 1117 883 1016
538 486 472 652 530 551 684 659
51115 51369 51292 51196 51190 51151 51438 51314

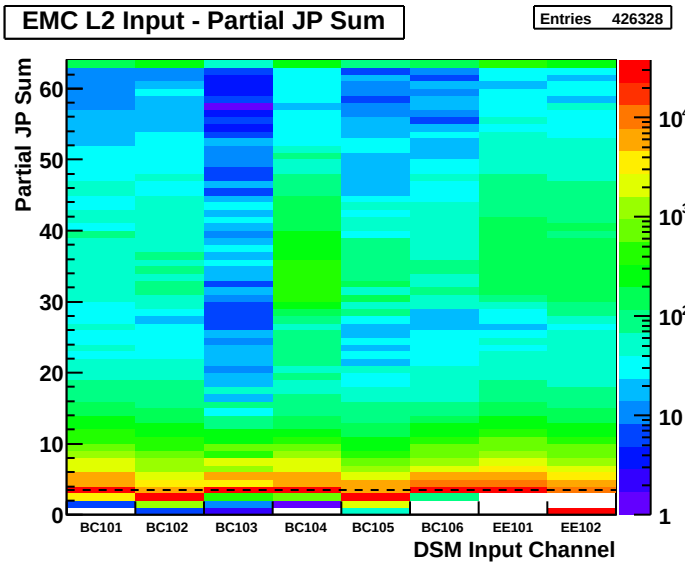

EMC L2 Input - JPX/JPA bits
Entries 0
JPX/JPA bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

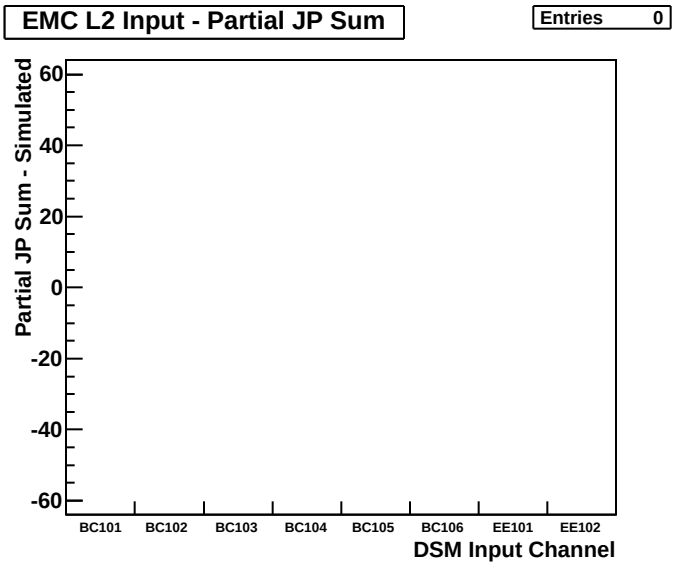

EMC L2 Input - JPY/JPB bits
Entries 426328
JPY/JPB bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102
350 297 311 355 316 397 262 150
992 904 796 976 1113 1115 1011 680
665 683 479 692 1213 725 774 537
51284 51407 51705 51268 50649 51054 51244 51924

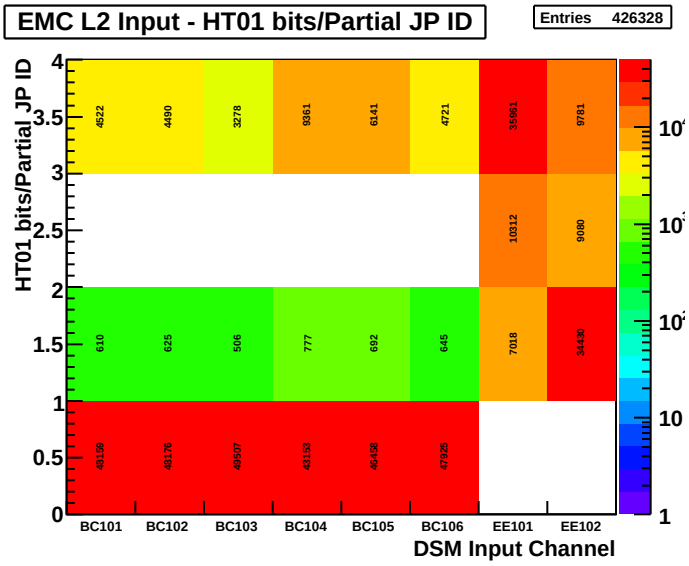

EMC L2 Input - JPY/JPB bits
Entries 0
JPY/JPB bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

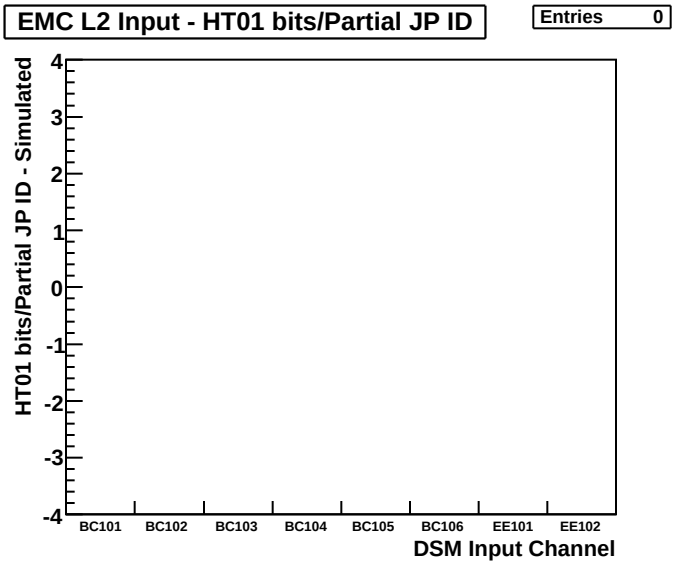

EMC L2 Input - JPZ/JPC bits
Entries 426328
JPZ/JPC bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102
280 341 95 441 230 325 258 311
1019 1144 433 2160 1117 1096 1064 953
780 878 314 3069 1625 924 793 677
51232 50828 52449 47621 50319 50946 51136 51350

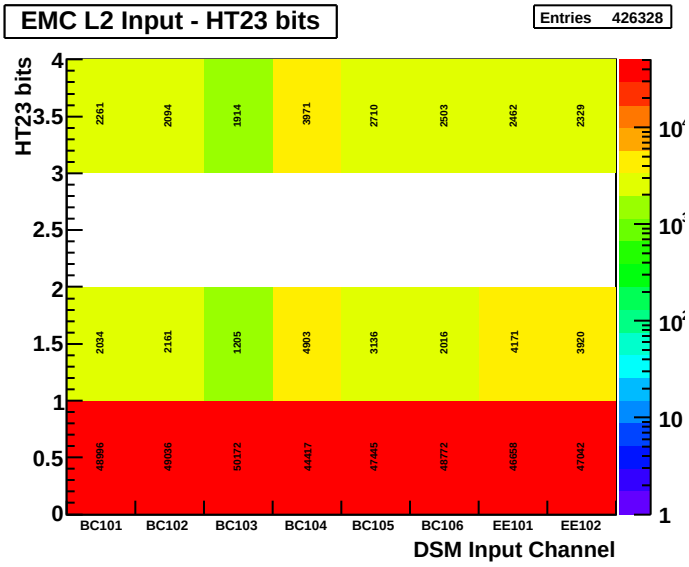

EMC L2 Input - JPZ/JPC bits
Entries 0
JPZ/JPC bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

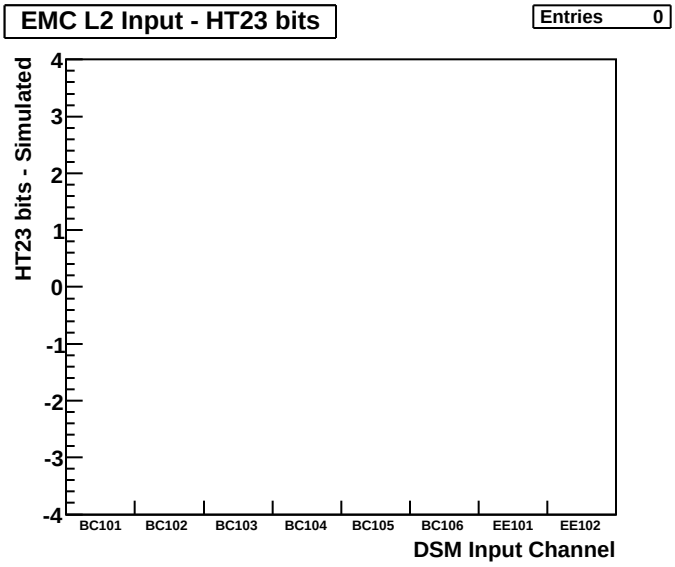

EMC L2 Input - Partial JP Sum
Entries 426328
Partial JP Sum
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

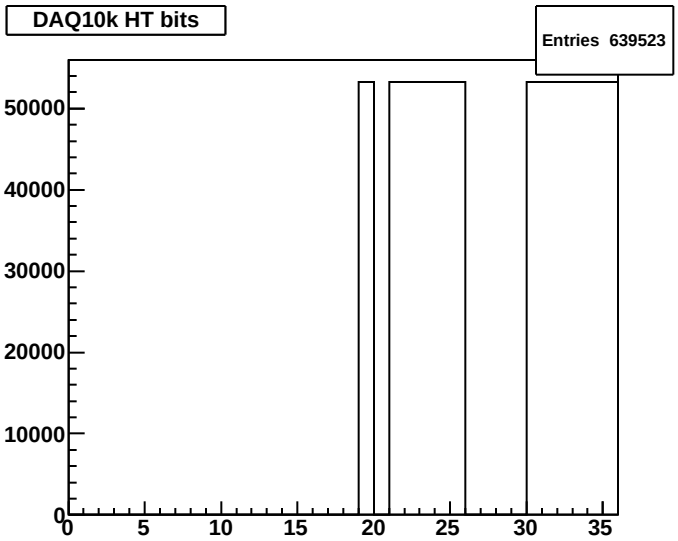

EMC L2 Input - Partial JP Sum
Entries 0
Partial JP Sum - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

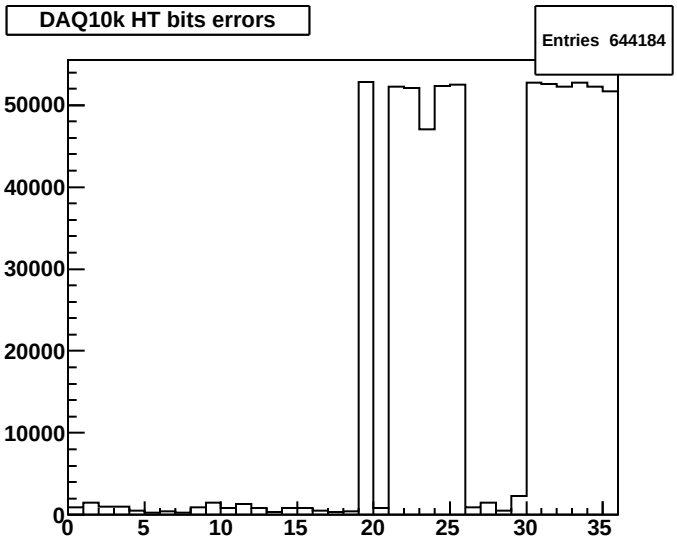

EMC L2 Input - HT01 bits/Partial JP ID
Entries 426328
HT01 bits/Partial JP ID
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

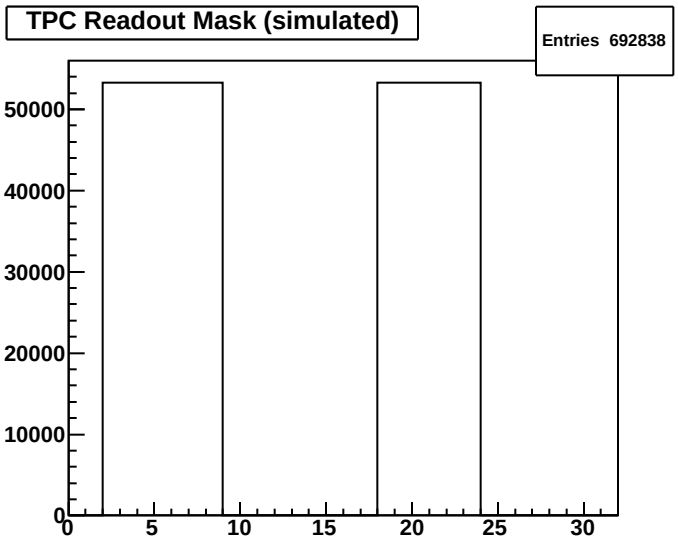

EMC L2 Input - HT01 bits/Partial JP ID
Entries 0
HT01 bits/Partial JP ID - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

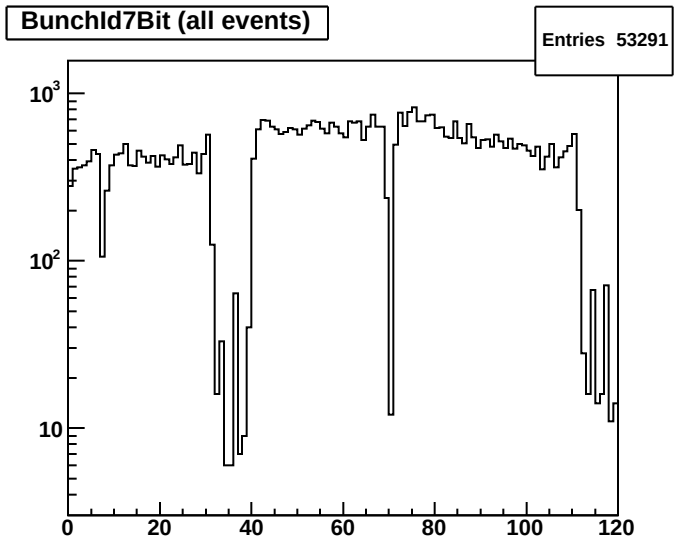

EMC L2 Input - HT23 bits
Entries 426328
HT23 bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

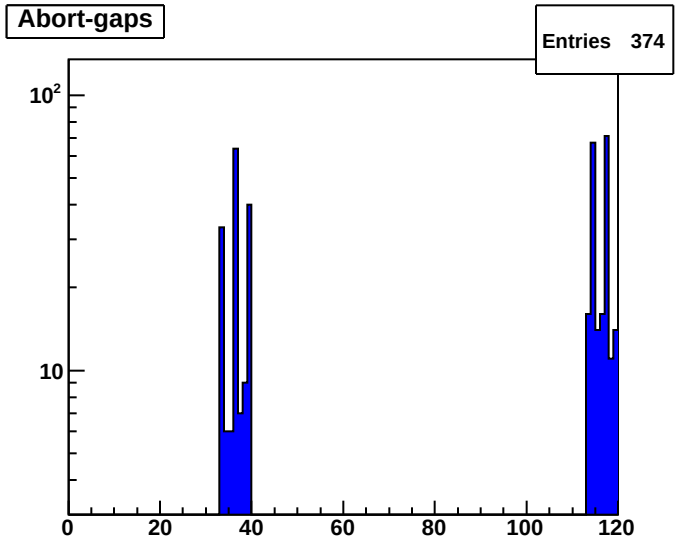

EMC L2 Input - HT23 bits
Entries 0
HT23 bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

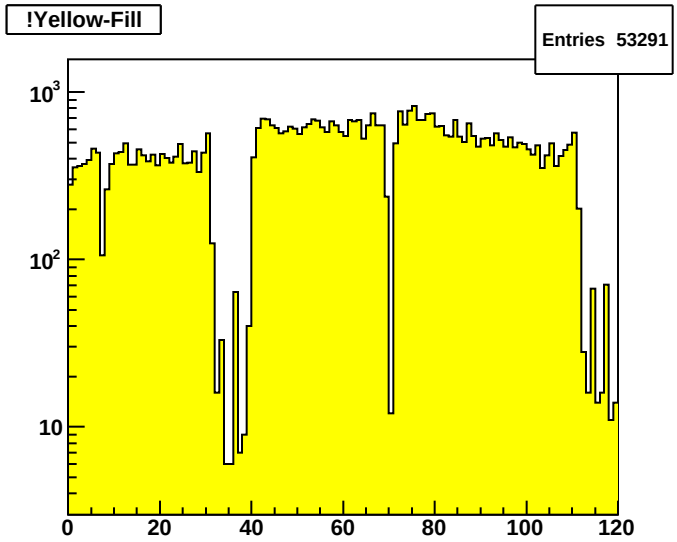

DAQ10k HT bits
Entries 639523
50000
40000
30000
20000
10000
0
0 5 10 15 20 25 30 35

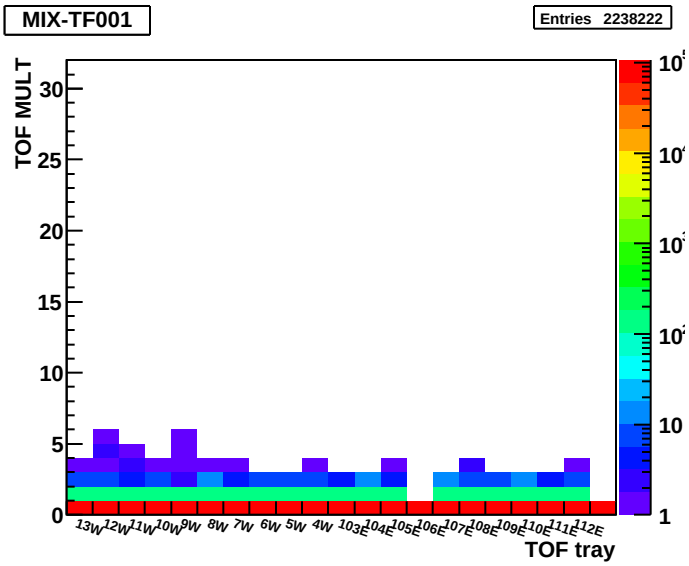

DAQ10k HT bits errors
Entries 644184
50000
40000
30000
20000
10000
0
0 5 10 15 20 25 30 35

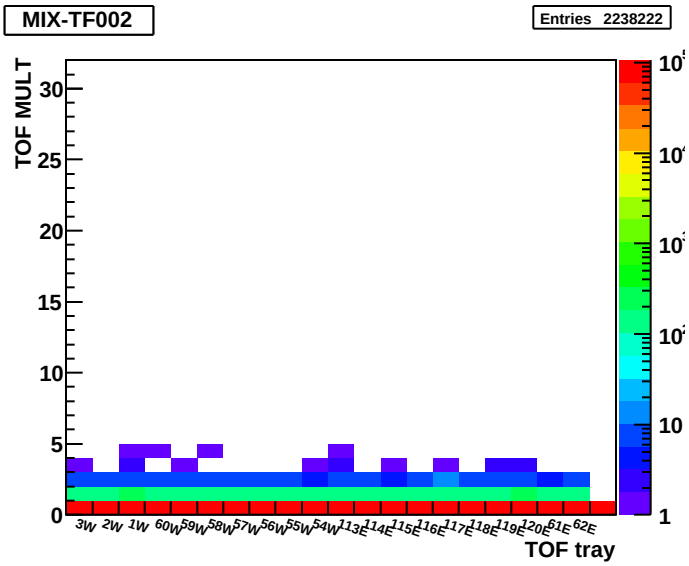

TPC Readout Mask (simulated)
Entries 692838
50000
40000
30000
20000
10000
0
0 5 10 15 20 25 30

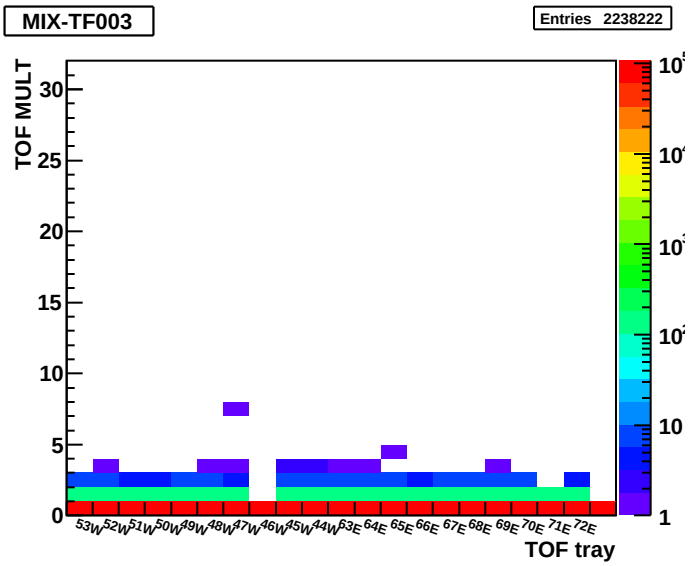

BunchId7Bit (all events)
Entries 53291
$10^3$
$10^2$
10
0 20 40 60 80 100 120

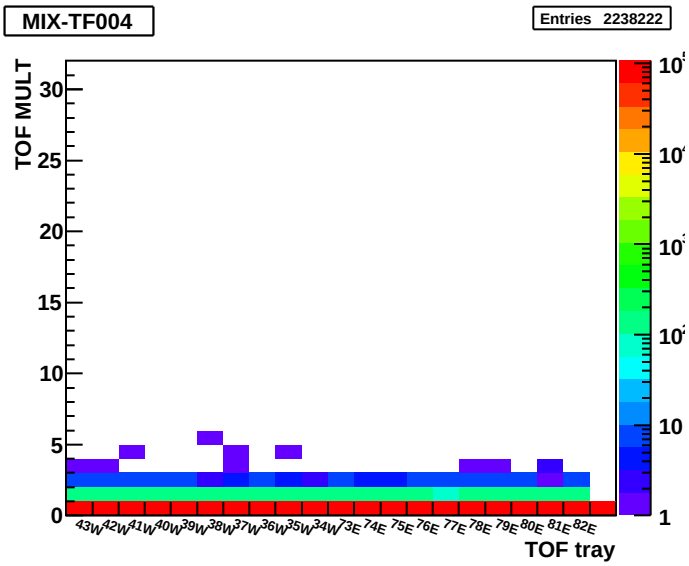

Abort-gaps
Entries 374
$10^2$
10
0 20 40 60 80 100 120

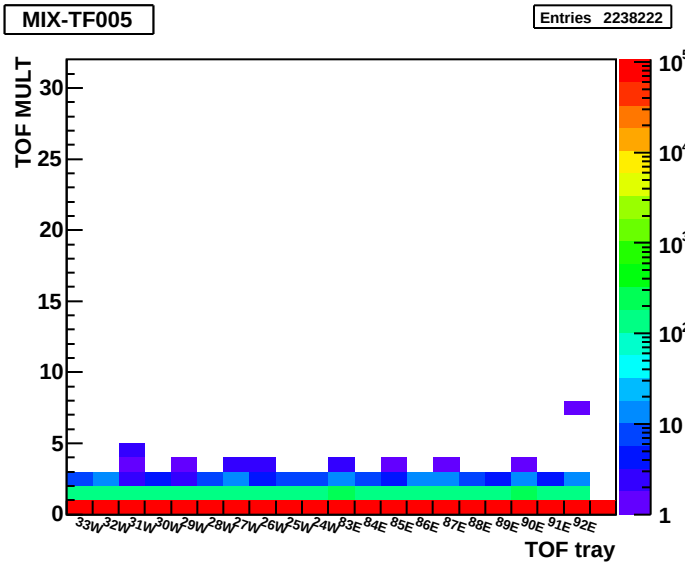

!Yellow-Fill
Entries 53291
$10^3$
$10^2$
10
0 20 40 60 80 100 120

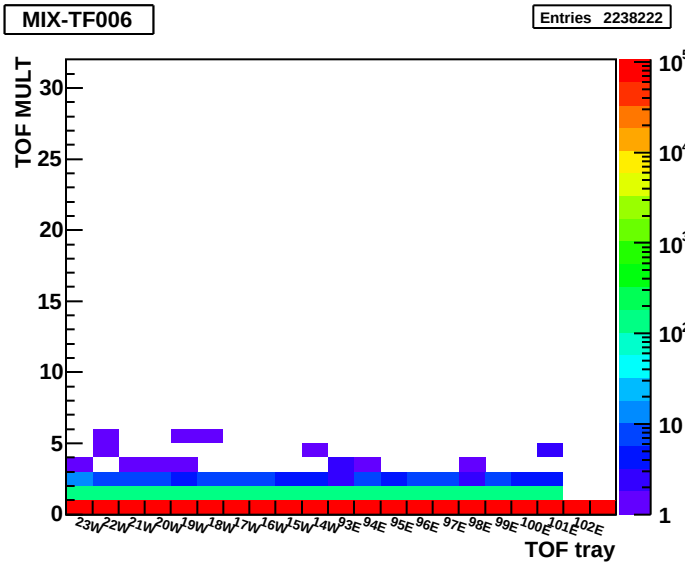

MIX-TF001
Entries 2238222
TOF MULT
TOF tray

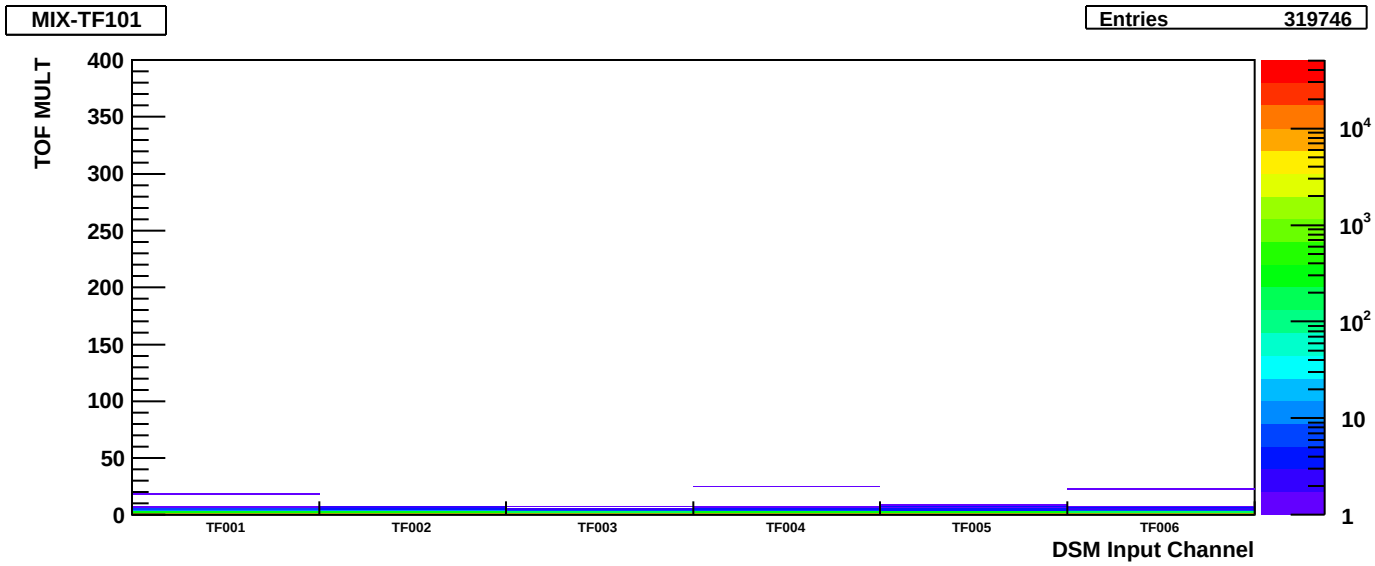

MIX-TF002
Entries 2238222
TOF MULT
TOF tray

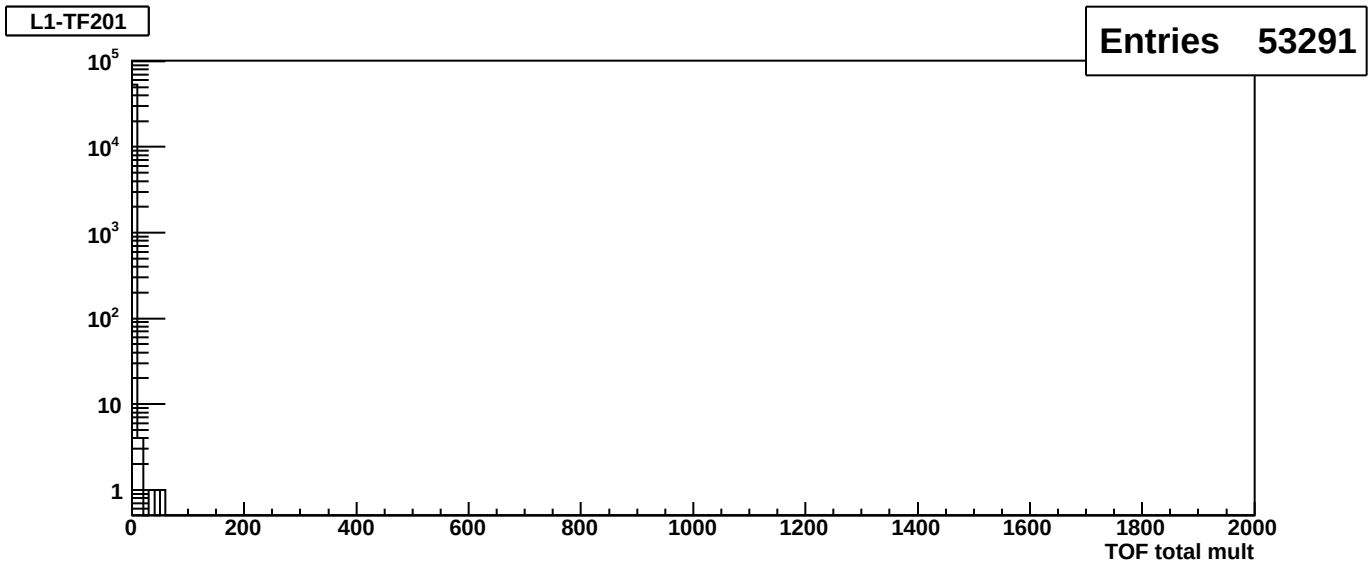

MIX-TF003
Entries 2238222
TOF MULT
TOF tray

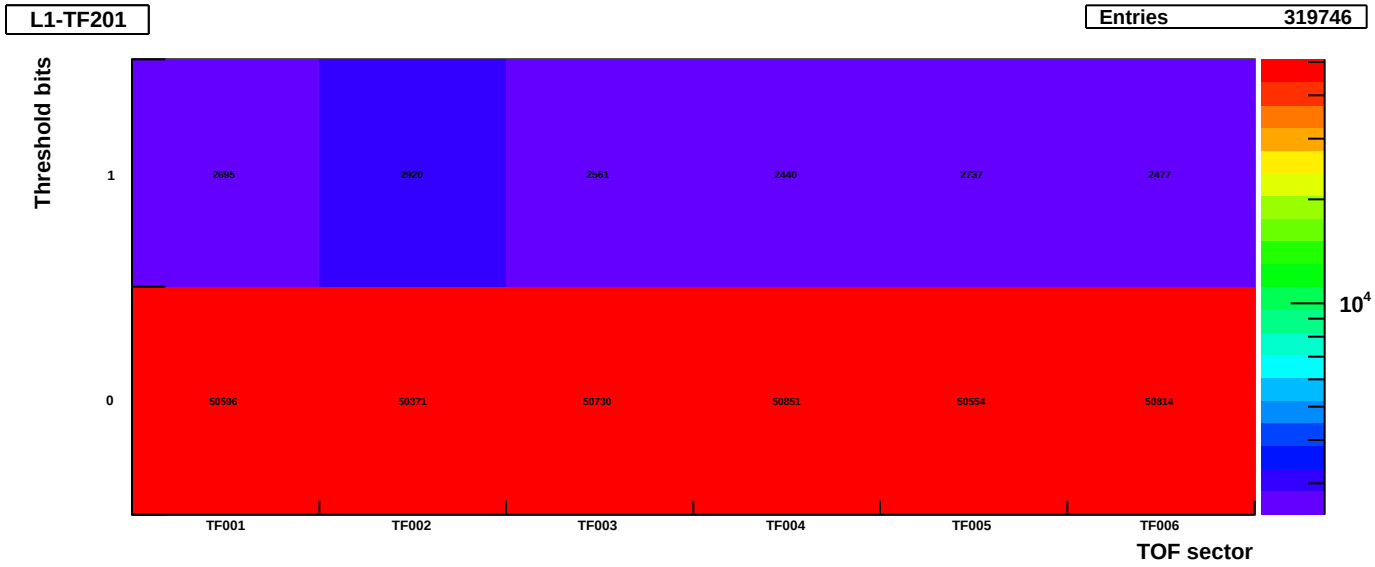

MIX-TF004
Entries 2238222
TOF MULT
TOF tray

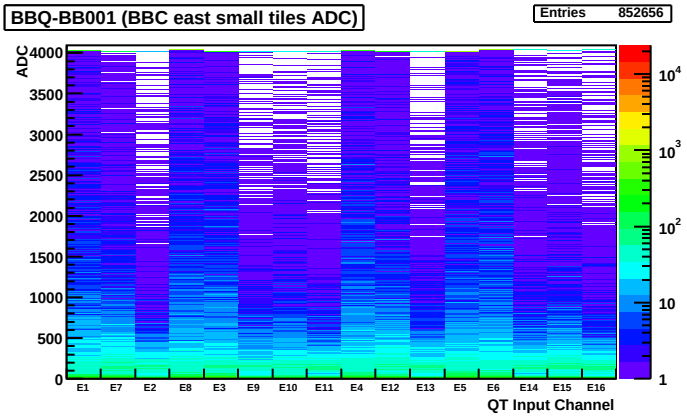

MIX-TF005
Entries 2238222
TOF MULT
TOF tray

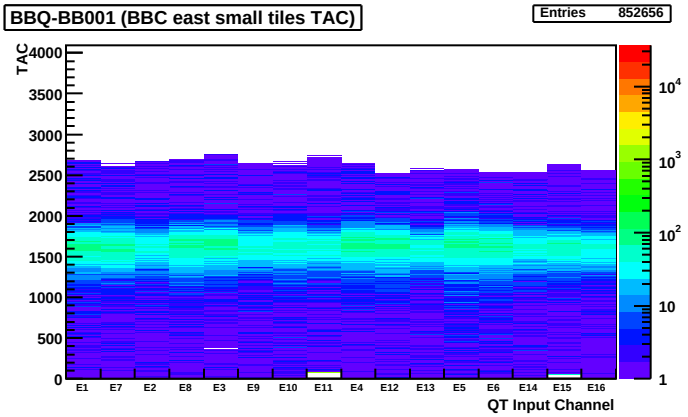

MIX-TF006
Entries 2238222
TOF MULT
TOF tray

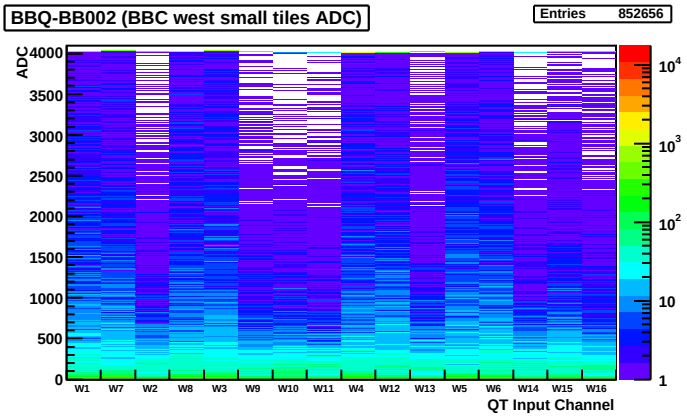

MIX-TF101
Entries 319746
TOF MULT
400
350
300
250
200
150
100
50
0
TF001
TF002
TF003
TF004
TF005
TF006
DSM Input Channel
$10^4$
$10^3$
$10^2$
10
1

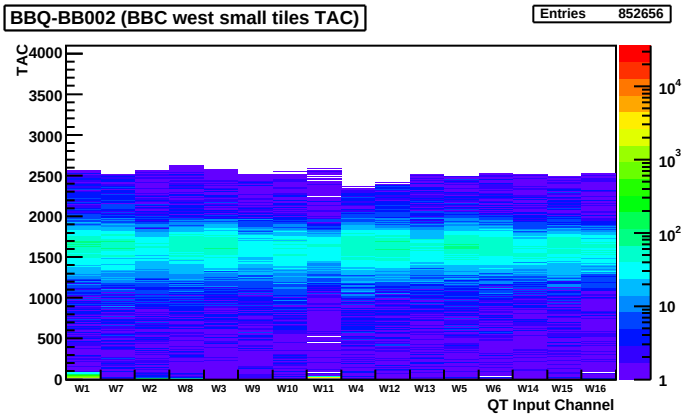

L1-TF201
Entries 53291
$10^5$
$10^4$
$10^3$
$10^2$
10
1
0
200
400
600
800
1000
1200
1400
1600
1800
2000
TOF total mult

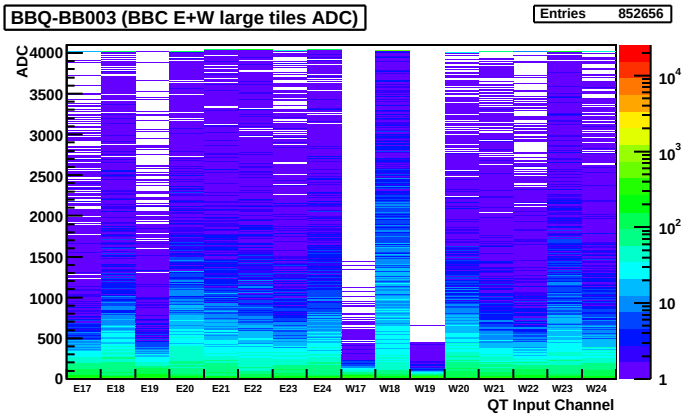

L1-TF201
Entries 319746
Threshold bits
1
0
2695
2920
2561
2440
2737
2477
50596
50371
50730
50851
50554
50814
TF001
TF002
TF003
TF004
TF005
TF006
TOF sector
$10^4$

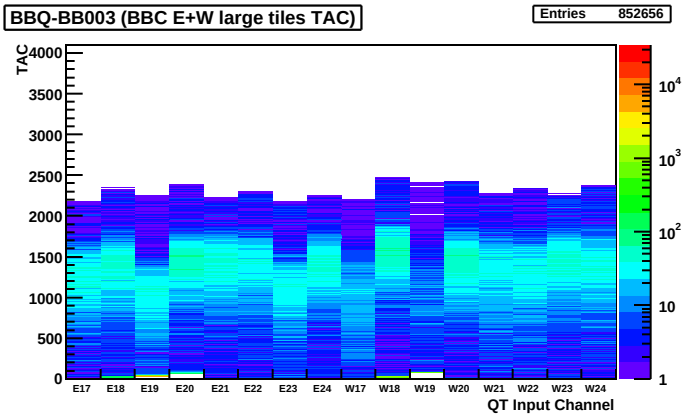

BBQ-BB001 (BBC east small tiles ADC)
Entries 852656
ADC
QT Input Channel

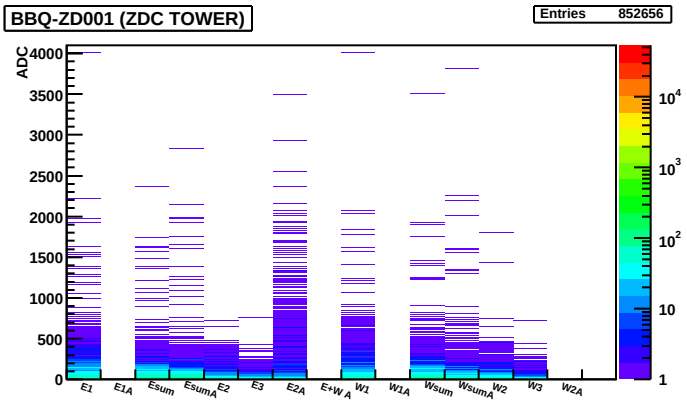

BBQ-BB001 (BBC east small tiles TAC)
Entries 852656
TAC
QT Input Channel

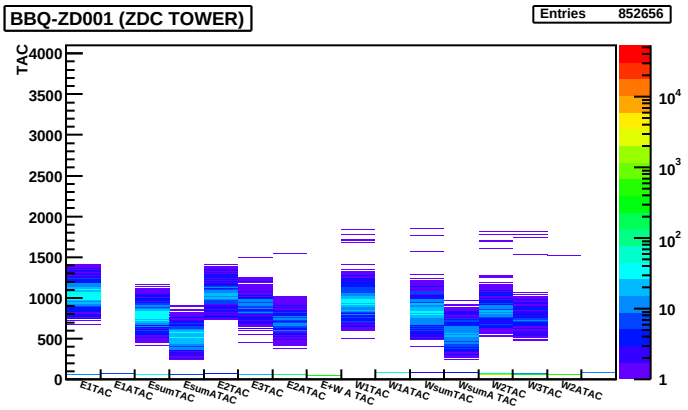

BBQ-BB002 (BBC west small tiles ADC)
Entries 852656
ADC
QT Input Channel

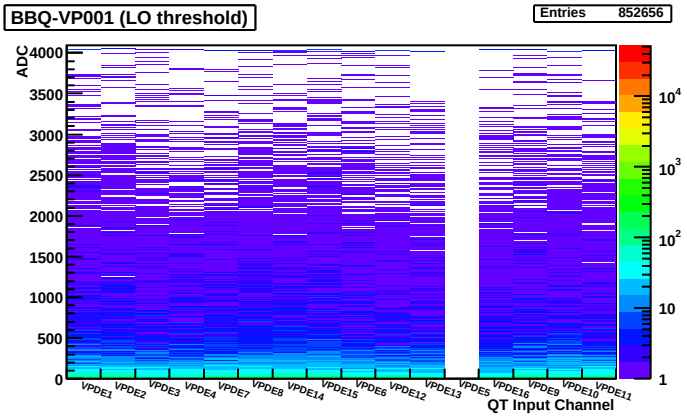

BBQ-BB002 (BBC west small tiles TAC)
Entries 852656
TAC
QT Input Channel

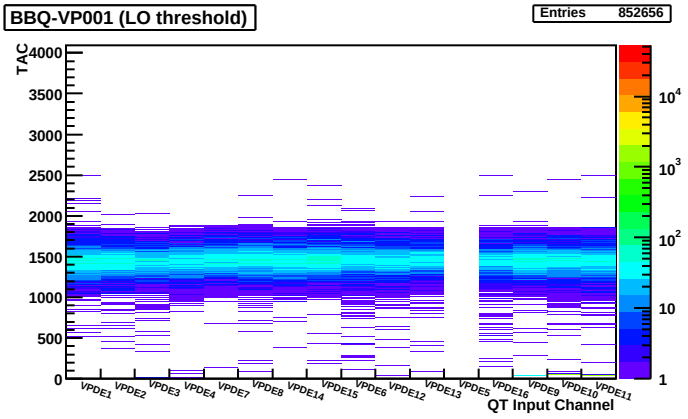

BBQ-BB003 (BBC E+W large tiles ADC)
Entries 852656
ADC
QT Input Channel

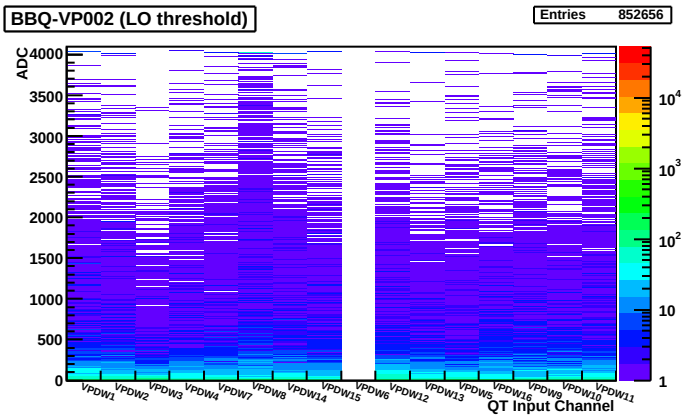

BBQ-BB003 (BBC E+W large tiles TAC)
Entries 852656
TAC
QT Input Channel

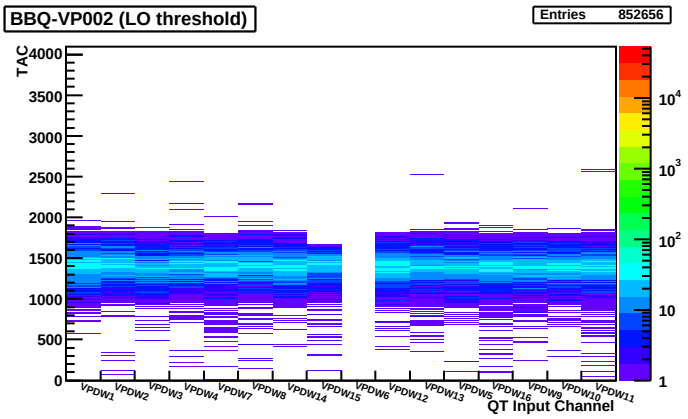

BBQ-ZD001 (ZDC TOWER)
Entries 852656
ADC

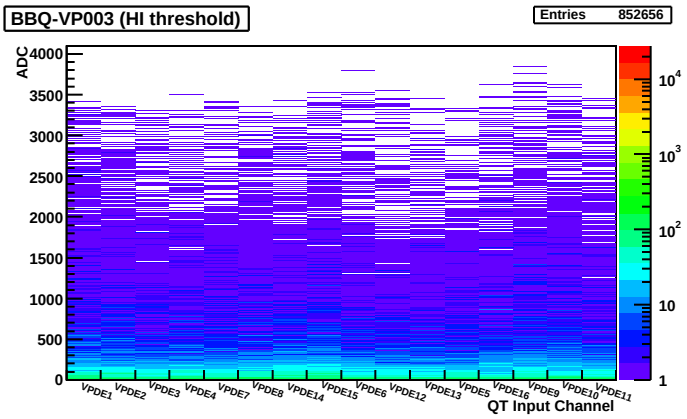

BBQ-ZD001 (ZDC TOWER)
Entries 852656
TAC

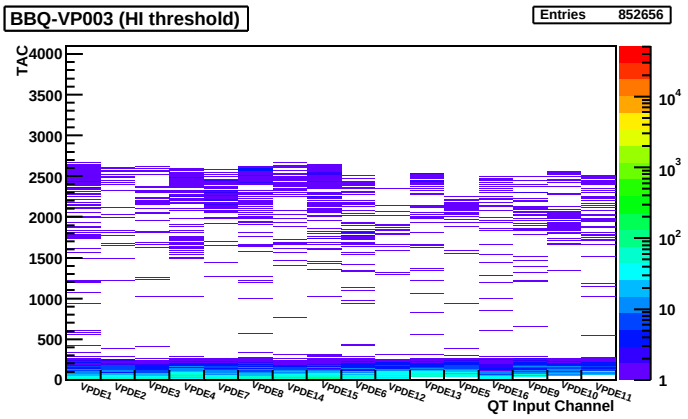

BBQ-VP001 (LO threshold)
Entries 852656
ADC
QT Input Channel

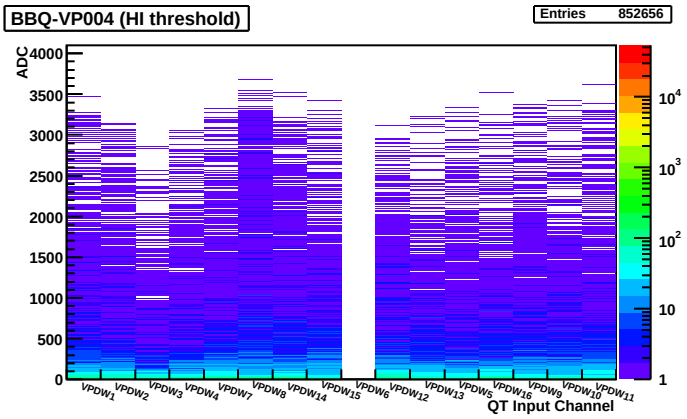

BBQ-VP001 (LO threshold)
Entries 852656
TAC
QT Input Channel

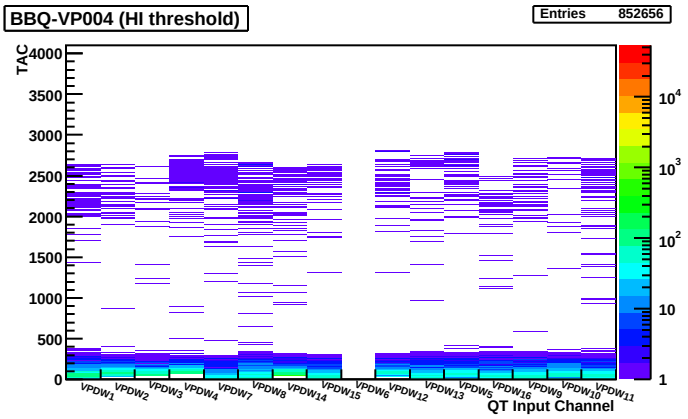

BBQ-VP002 (LO threshold)
Entries 852656
ADC
QT Input Channel

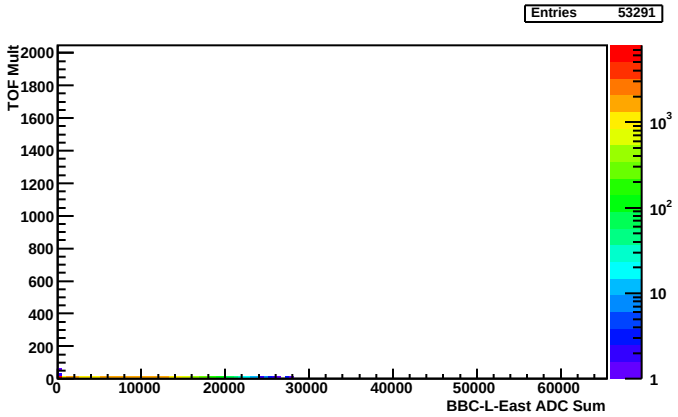

BBQ-VP002 (LO threshold)
Entries 852656
TAC
QT Input Channel

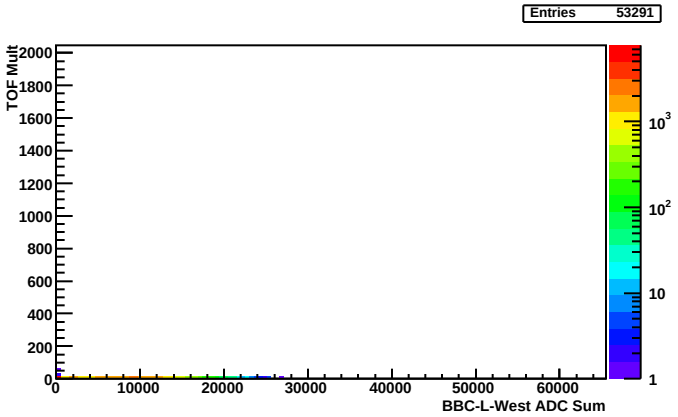

BBQ-VP003 (HI threshold)
Entries 852656
ADC
QT Input Channel

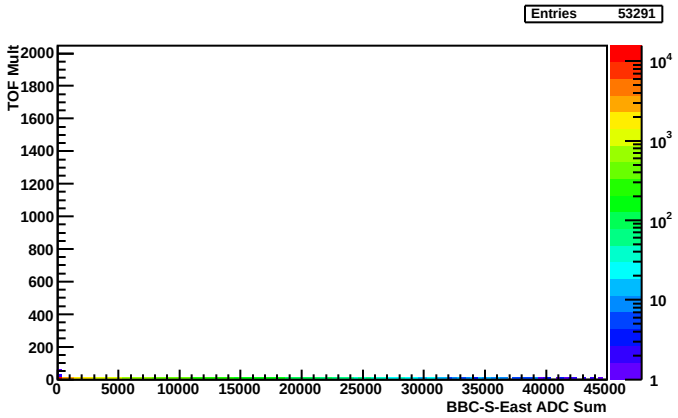

BBQ-VP003 (HI threshold)
Entries 852656
TAC
QT Input Channel

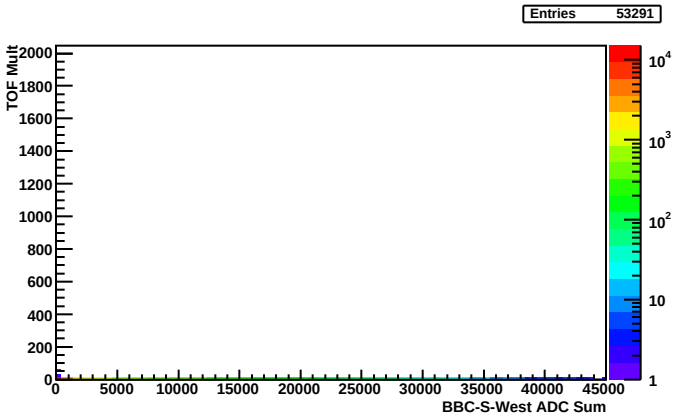

BBQ-VP004 (HI threshold)
Entries 852656
ADC
QT Input Channel

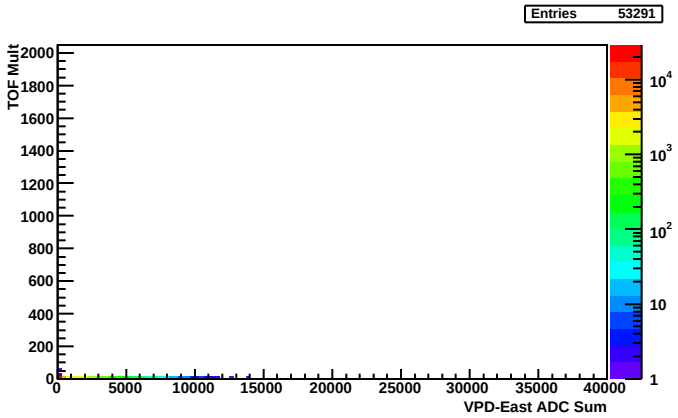

BBQ-VP004 (HI threshold)
Entries 852656
TAC
QT Input Channel

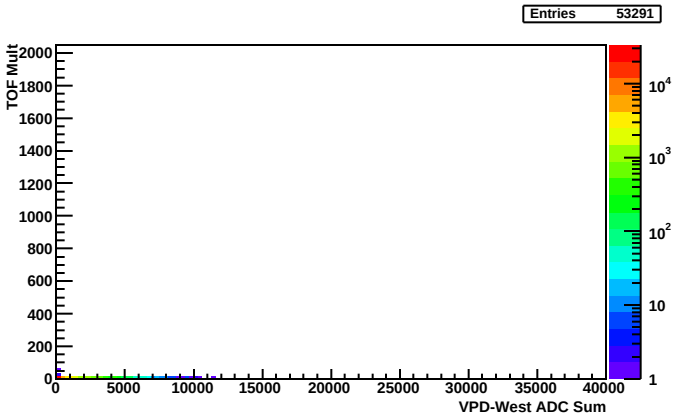

Entries 53291
TOF Mult
BBC-L-East ADC Sum

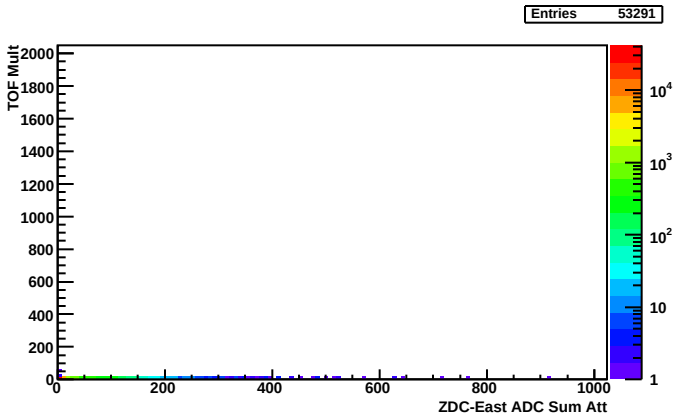

Entries 53291
TOF Mult
BBC-L-West ADC Sum

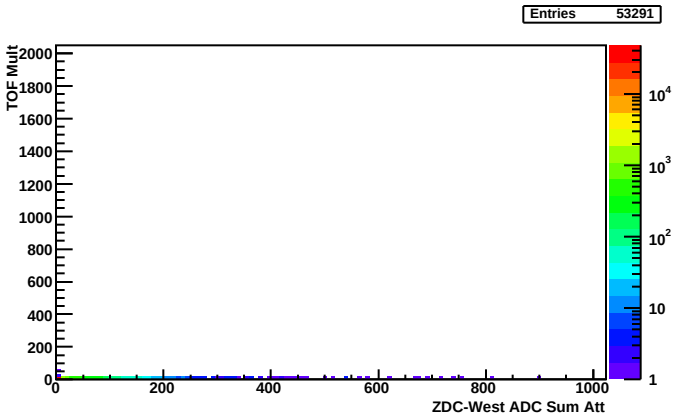

Entries 53291
TOF Mult
BBC-S-East ADC Sum

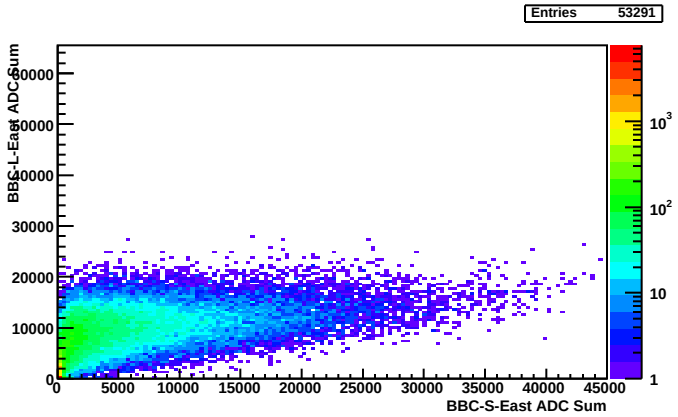

Entries 53291
TOF Mult
BBC-S-West ADC Sum

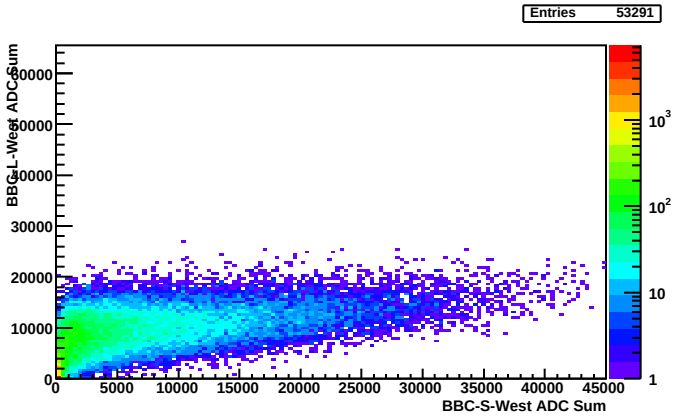

Entries 53291
TOF Mult
VPD-East ADC Sum

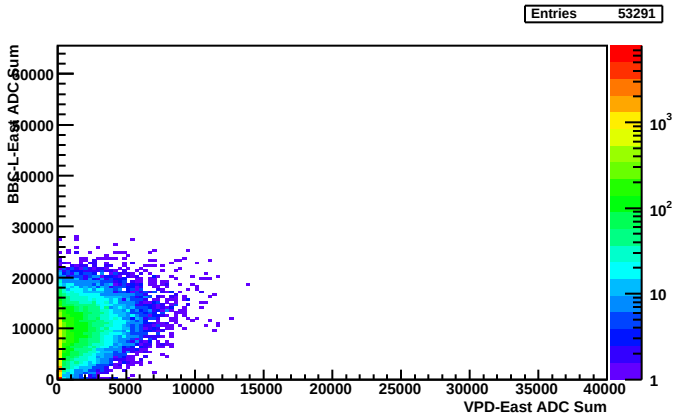

Entries 53291
TOF Mult
VPD-West ADC Sum

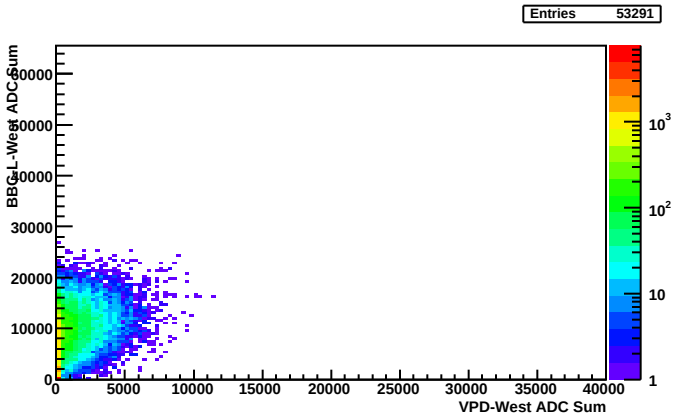

Entries 53291
TOF Mult
ZDC-East ADC Sum Att

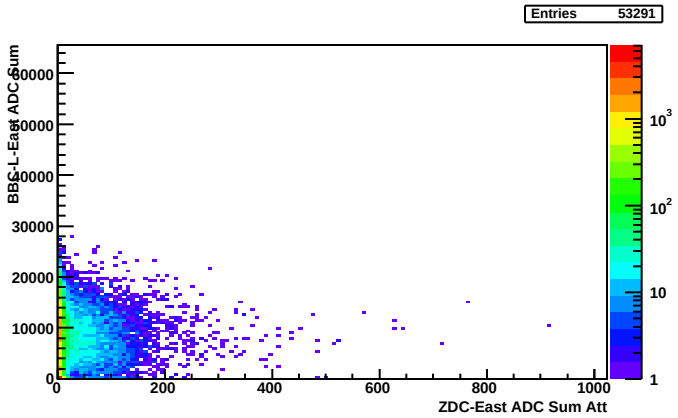

Entries 53291
TOF Mult
ZDC-West ADC Sum Att

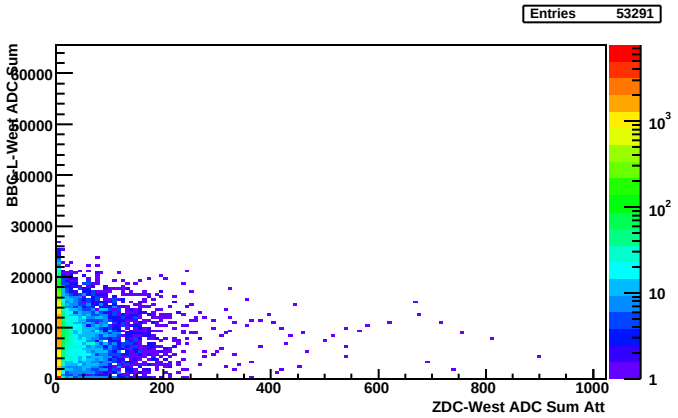

Entries 53291
BBC-L-East ADC Sum
BBC-S-East ADC Sum

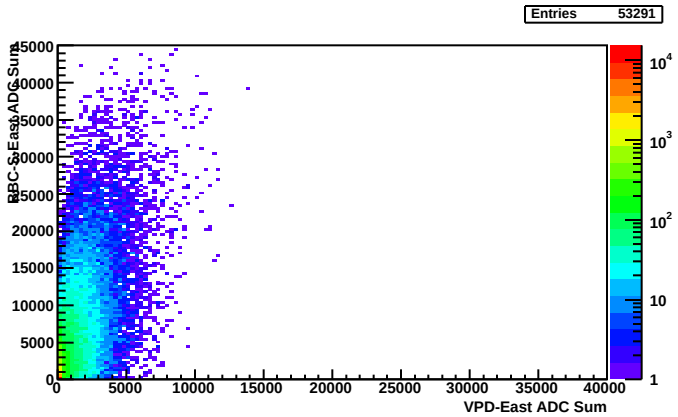

Entries 53291
BBC-L-West ADC Sum
BBC-S-West ADC Sum

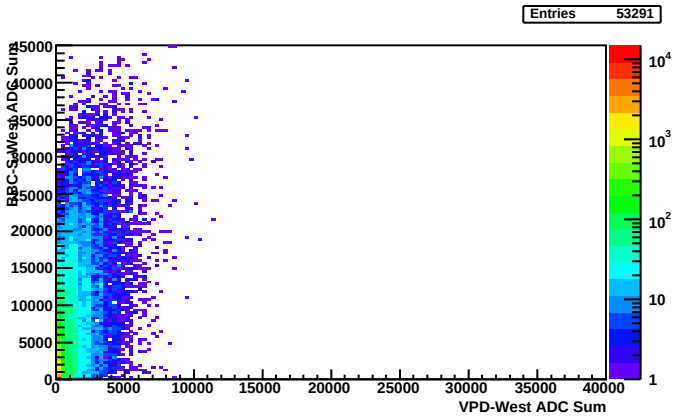

Entries 53291
BBC-L-East ADC Sum
VPD-East ADC Sum

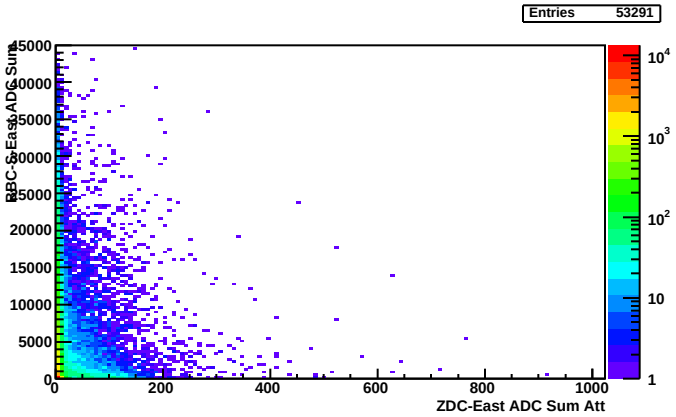

Entries 53291
BBC-L-West ADC Sum
VPD-West ADC Sum

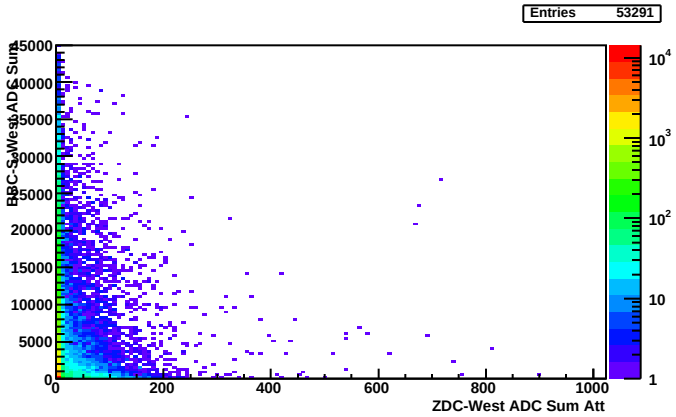

Entries 53291
BBC-L-East ADC Sum
ZDC-East ADC Sum Att

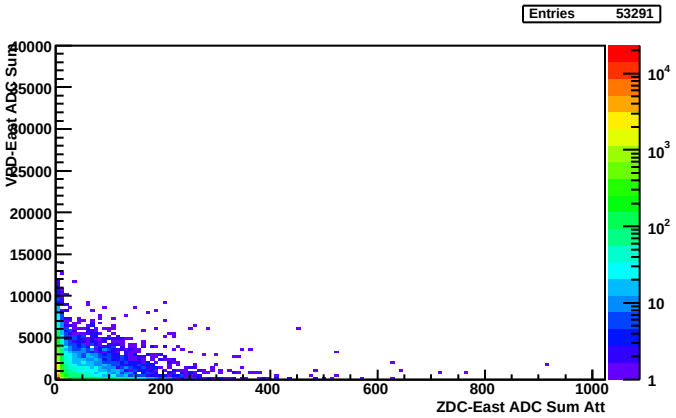

Entries 53291
BBC-L-West ADC Sum
ZDC-West ADC Sum Att

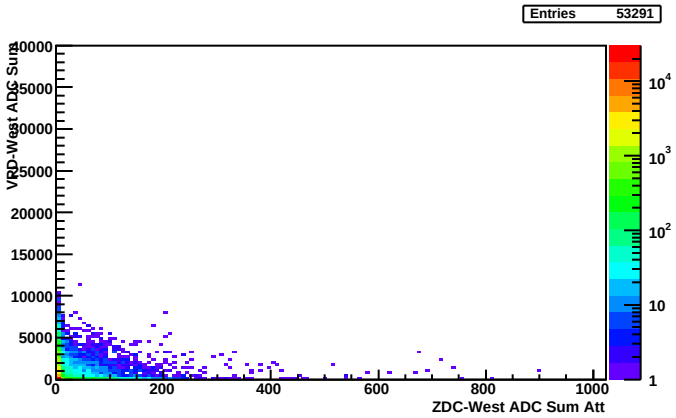

Entries 53291
BBC-S-East ADC Sum
VPD-East ADC Sum

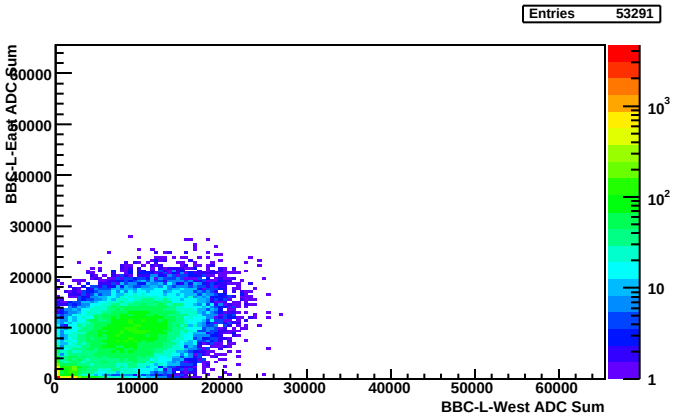

Entries 53291
BBC-S-West ADC Sum
VPD-West ADC Sum

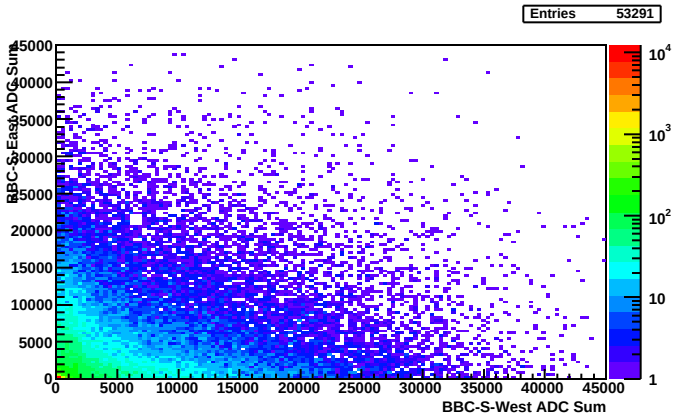

Entries 53291
BBC-S-East ADC Sum
ZDC-East ADC Sum Att

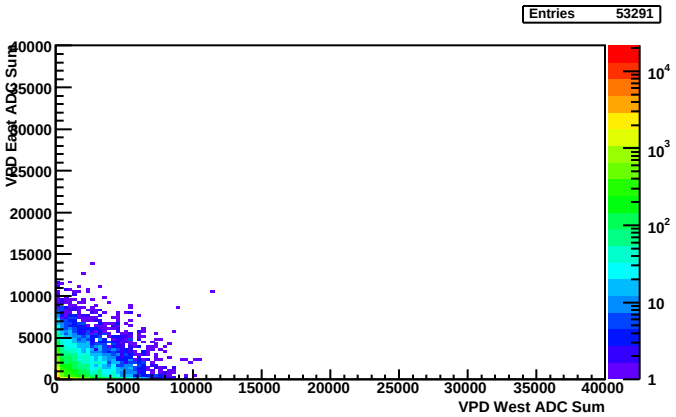

Entries 53291
BBC-S-West ADC Sum
ZDC-West ADC Sum Att

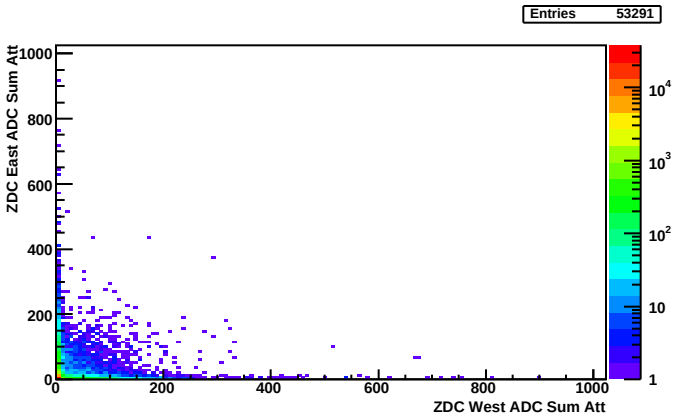

Entries 53291
VPD-East ADC Sum
ZDC-East ADC Sum Att

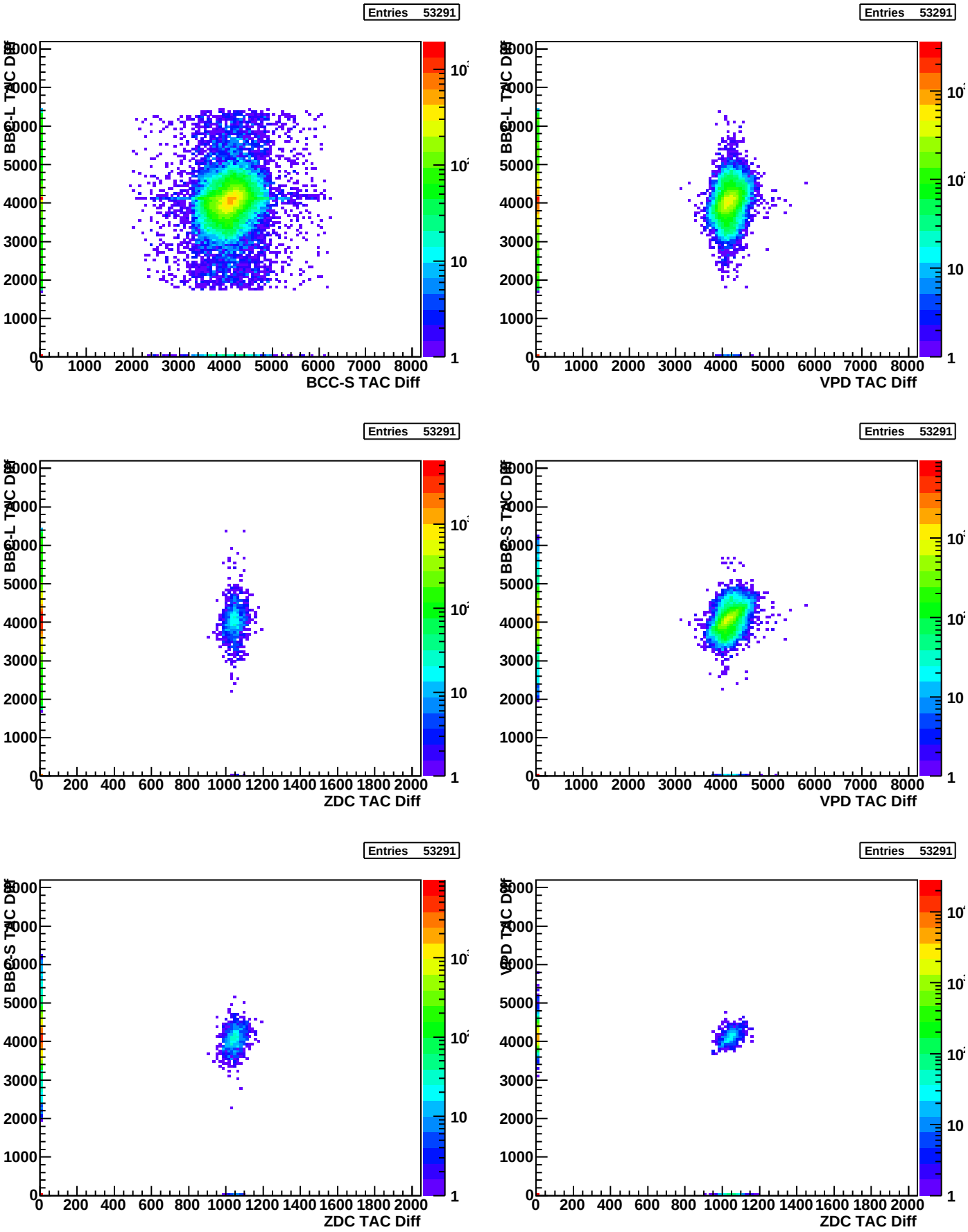

Entries 53291
VPD-West ADC Sum
ZDC-West ADC Sum Att

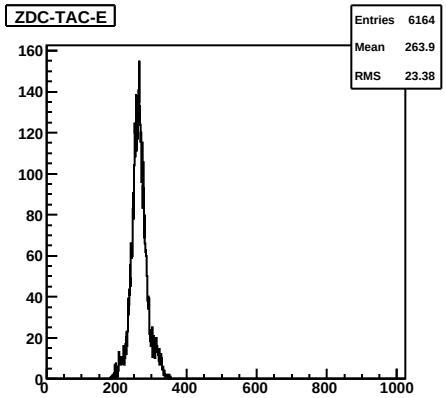

Entries 53291
BBC-L-East ADC Sum
BBC-L-West ADC Sum

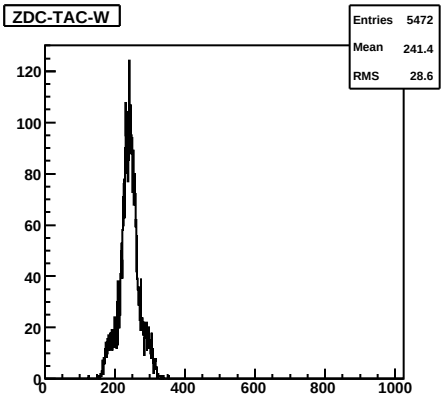

Entries 53291
BBC-S-East ADC Sum
BBC-S-West ADC Sum

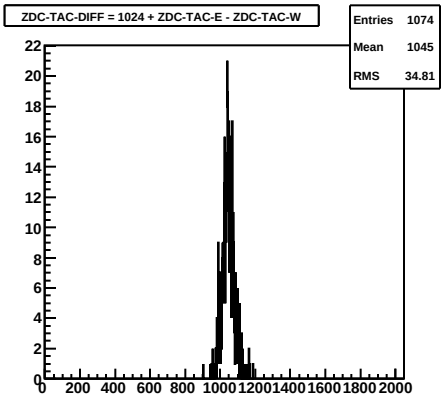

Entries 53291
VPD East ADC Sum
VPD West ADC Sum

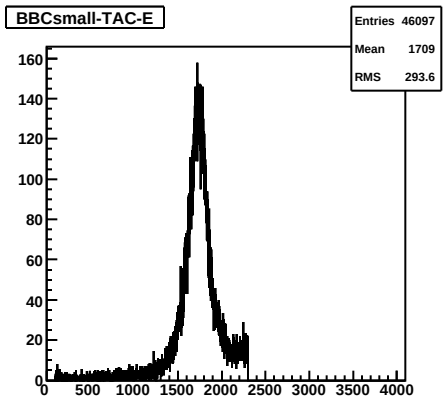

Entries 53291
ZDC East ADC Sum Att
ZDC West ADC Sum Att

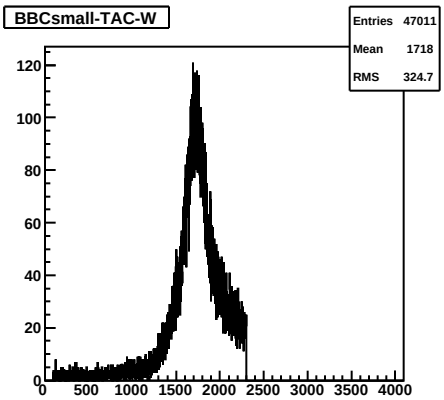

Entries 53291
BBC-L TAC Diff
BCC-S TAC Diff
Entries 53291
BBC-L TAC Diff
VPD TAC Diff
Entries 53291
BBC-L TAC Diff
ZDC TAC Diff
Entries 53291
BBC-S TAC Diff
VPD TAC Diff
Entries 53291
BBC-S TAC Diff
ZDC TAC Diff
Entries 53291
VPD TAC Diff
ZDC TAC Diff

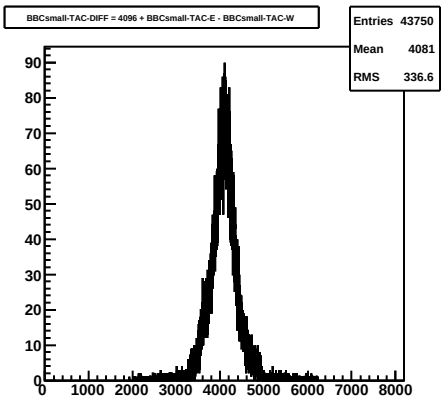

ZDC-TAC-E
Entries 6164
Mean 263.9
RMS 23.38

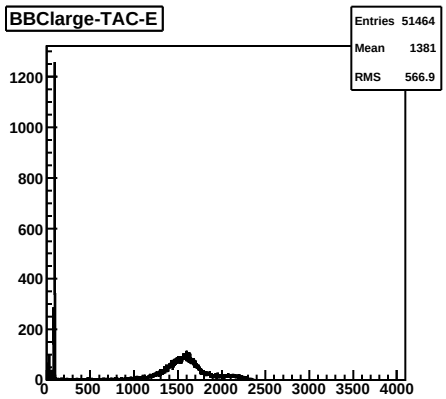

ZDC-TAC-W
Entries 5472
Mean 241.4
RMS 28.6

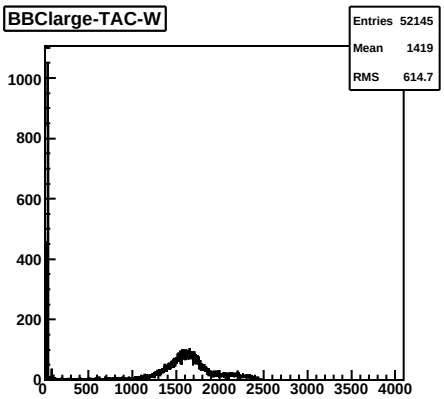

ZDC-TAC-DIFF = 1024 + ZDC-TAC-E - ZDC-TAC-W
Entries 1074
Mean 1045
RMS 34.81

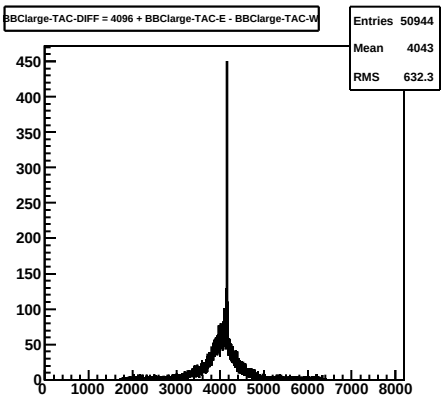

BBCsmall-TAC-E
Entries 46097
Mean 1709
RMS 293.6

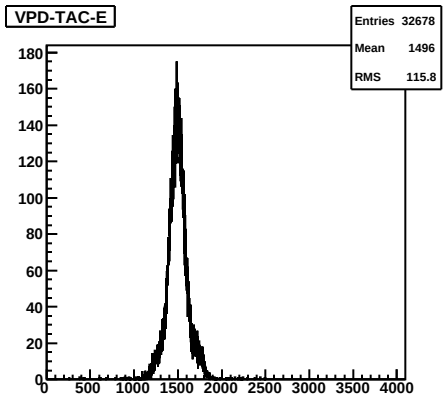

BBCsmall-TAC-W
Entries 47011
Mean 1718
RMS 324.7

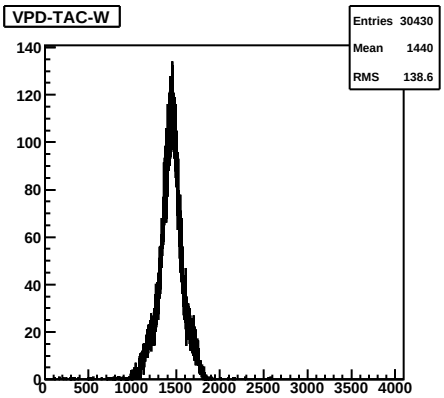

BBCsmall-TAC-DIFF = 4096 + BBCsmall-TAC-E - BBCsmall-TAC-W
Entries 43750
Mean 4081
RMS 336.6

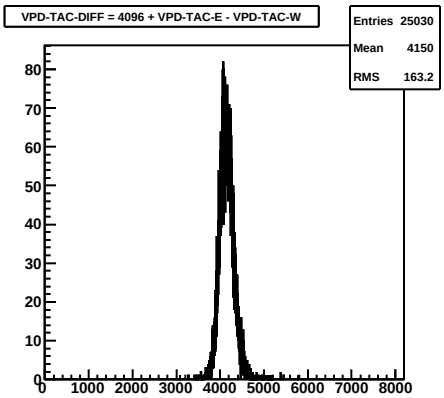

BBClarge-TAC-E
Entries 51464
Mean 1381
RMS 566.9

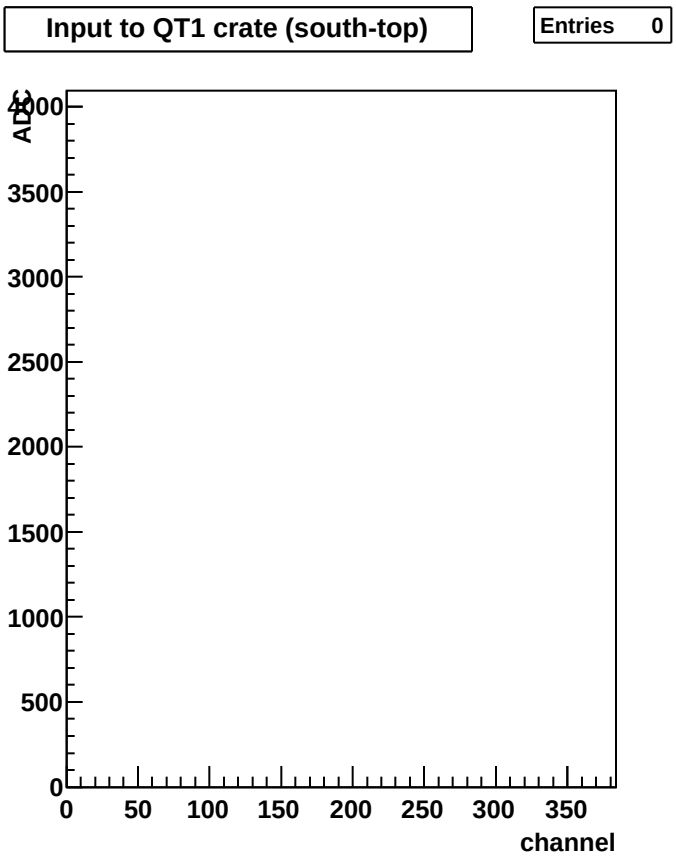

BBClarge-TAC-W
Entries 52145
Mean 1419
RMS 614.7

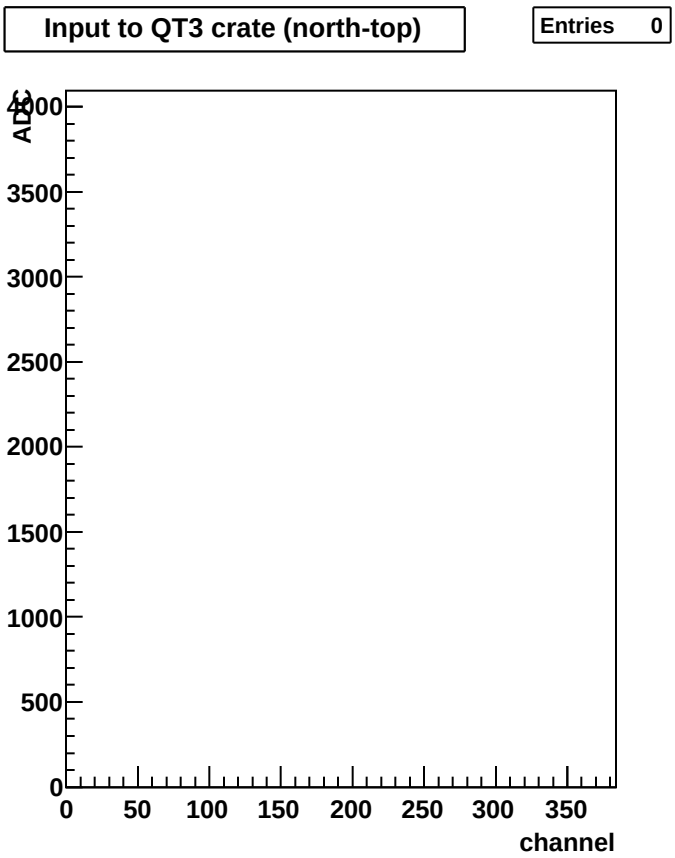

BBClarge-TAC-DIFF = 4096 + BBClarge-TAC-E - BBClarge-TAC-W
Entries 50944
Mean 4043
RMS 632.3

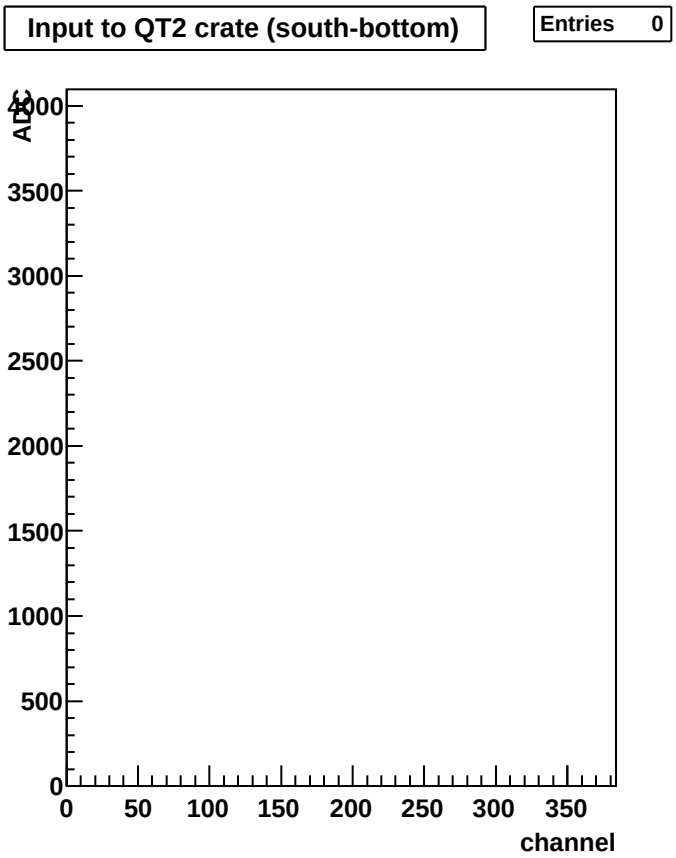

VPD-TAC-E
Entries 32678
Mean 1496
RMS 115.8

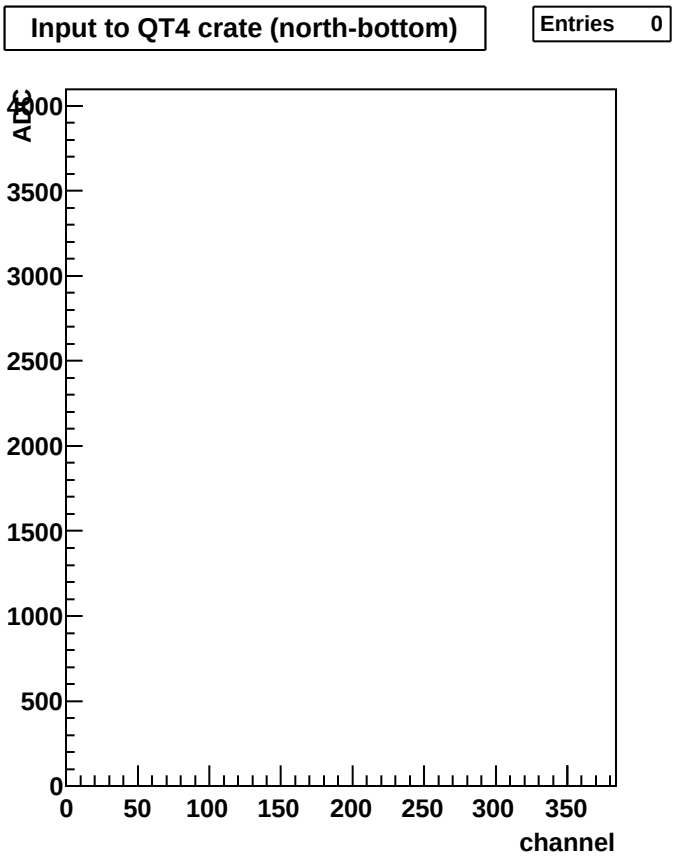

VPD-TAC-W
Entries 30430
Mean 1440
RMS 138.6

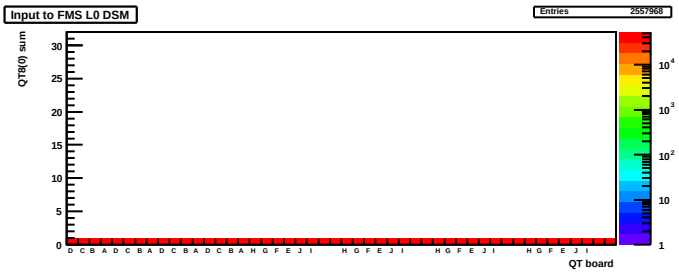

VPD-TAC-DIFF = 4096 + VPD-TAC-E - VPD-TAC-W
Entries 25030
Mean 4150
RMS 163.2

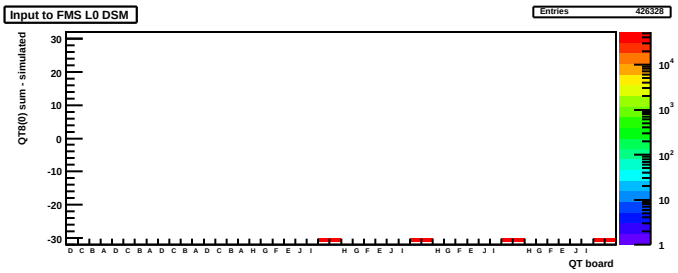

Input to QT1 crate (south-top)
Entries 0
ADC
4000
3500
3000
2500
2000
1500
1000
500
0
0 50 100 150 200 250 300 350
channel

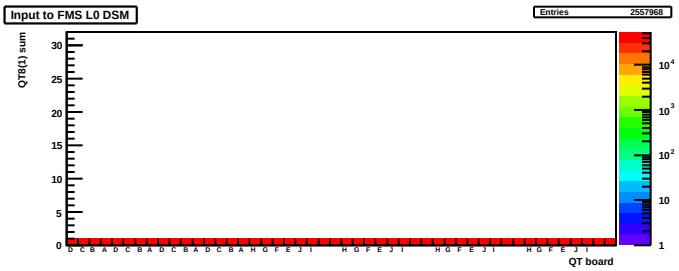

Input to QT3 crate (north-top)
Entries 0
ADC
4000
3500
3000
2500
2000
1500
1000
500
0
0 50 100 150 200 250 300 350
channel

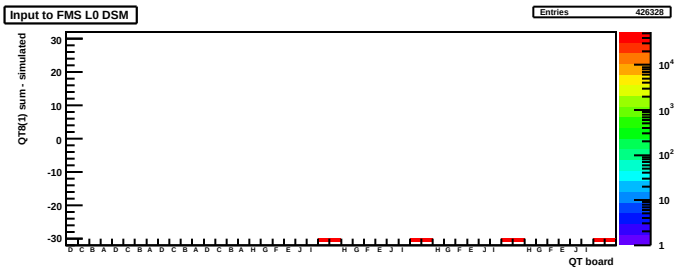

Input to QT2 crate (south-bottom)
Entries 0
ADC
4000
3500
3000
2500
2000
1500
1000
500
0
0 50 100 150 200 250 300 350
channel

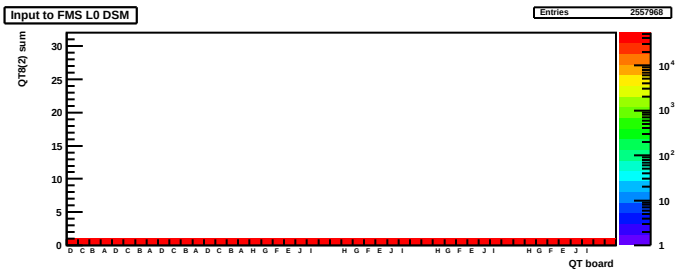

Input to QT4 crate (north-bottom)
Entries 0
ADC
4000
3500
3000
2500
2000
1500
1000
500
0
0 50 100 150 200 250 300 350
channel

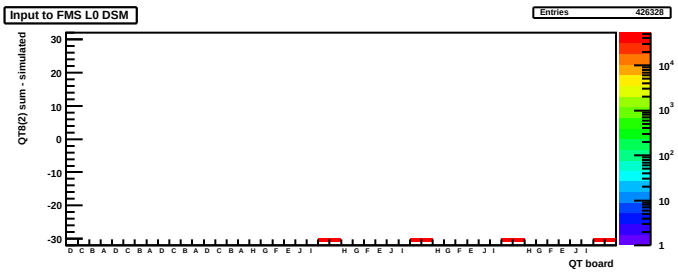

Input to FMS L0 DSM
Entries 2557968
QT8(0) sum
QT board

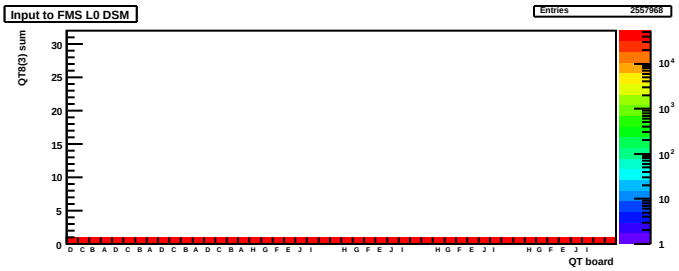

Input to FMS L0 DSM
Entries 426328
QT8(0) sum - simulated
QT board

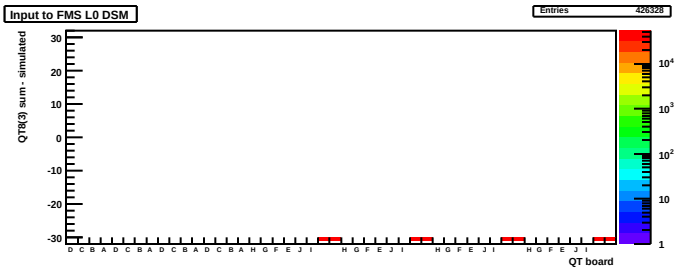

Input to FMS L0 DSM
Entries 2557968
QT8(1) sum
QT board

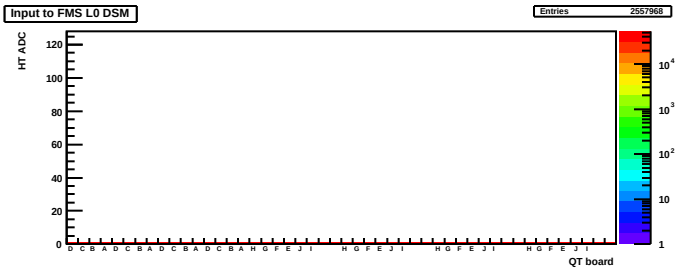

Input to FMS L0 DSM
Entries 426328
QT8(1) sum - simulated
QT board

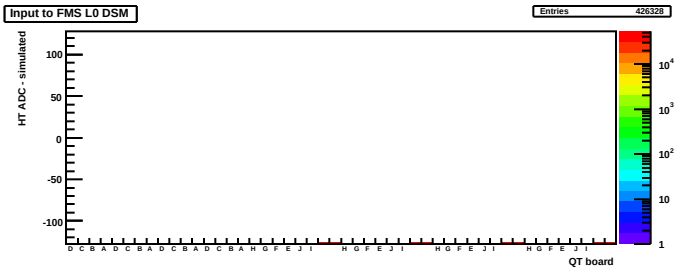

Input to FMS L0 DSM
Entries 2557968
QT8(2) sum
QT board

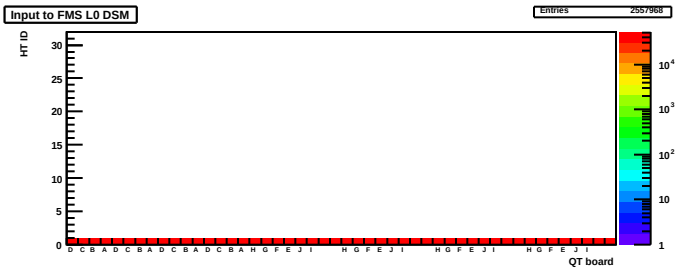

Input to FMS L0 DSM
Entries 426328
QT8(2) sum - simulated
QT board

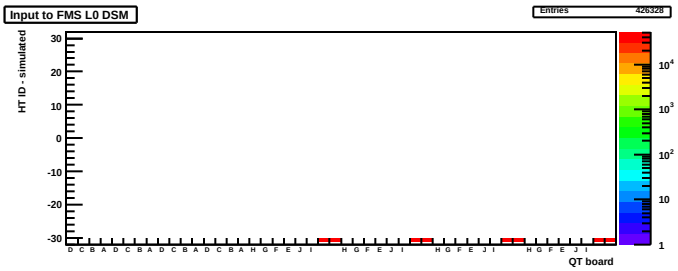

Input to FMS L0 DSM
Entries 2557968
QT8(3) sum
QT board

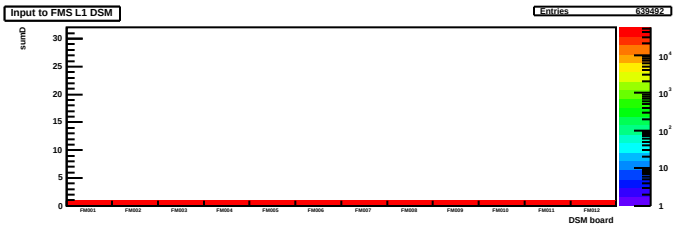

Input to FMS L0 DSM
Entries 426328
QT8(3) sum - simulated
QT board

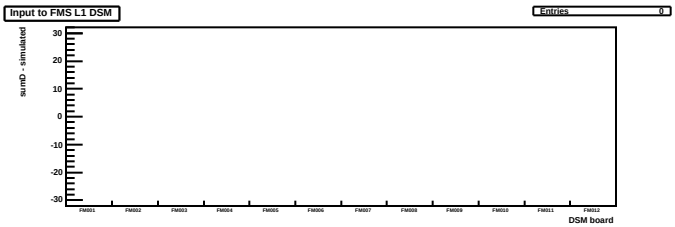

Input to FMS L0 DSM
Entries 2557968
HT ADC
QT board

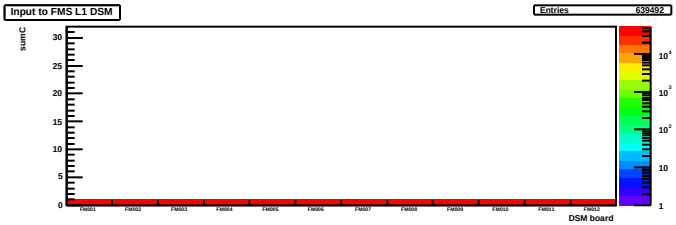

Input to FMS L0 DSM
Entries 426328
HT ADC - simulated
QT board

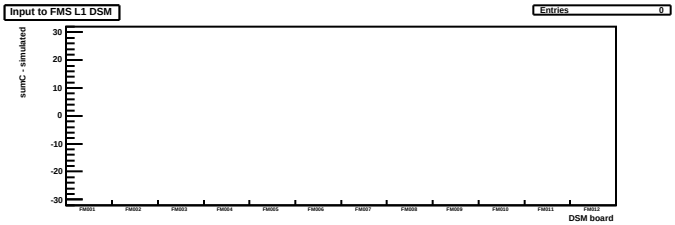

Input to FMS L0 DSM
Entries 2557968
HT ID
QT board

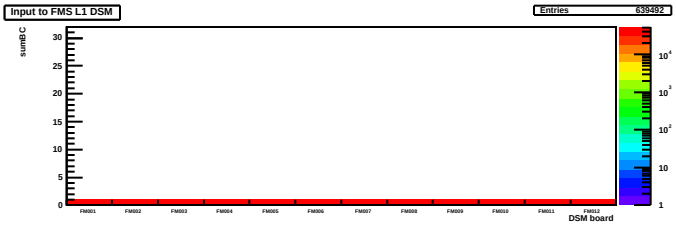

Input to FMS L0 DSM
Entries 426328
HT ID - simulated
QT board

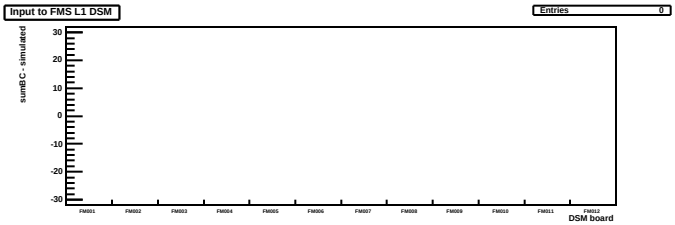

Input to FMS L1 DSM
Entries 639492
sumD
DSM board

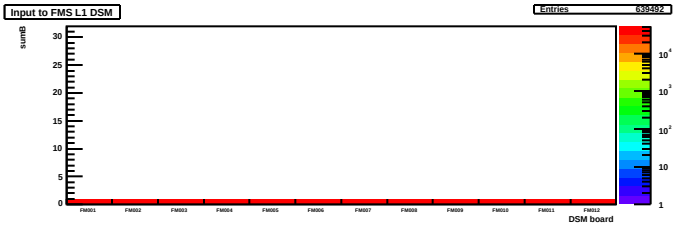

Input to FMS L1 DSM
Entries 0
sumD - simulated
DSM board

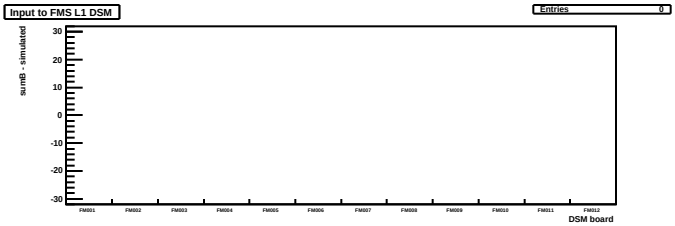

Input to FMS L1 DSM
Entries 639492
sumC
DSM board

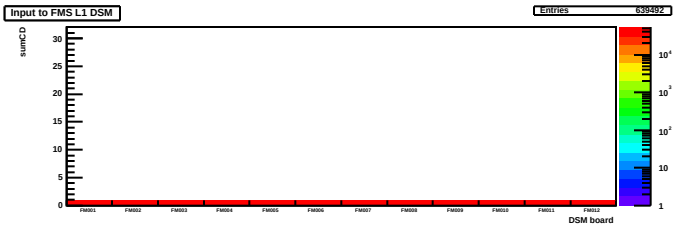

Input to FMS L1 DSM
Entries 0
sumC - simulated
DSM board

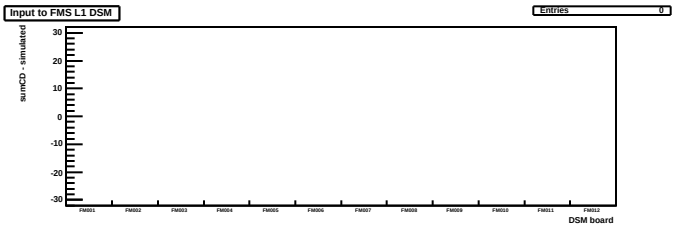

Input to FMS L1 DSM
Entries 639492
sumBC
DSM board

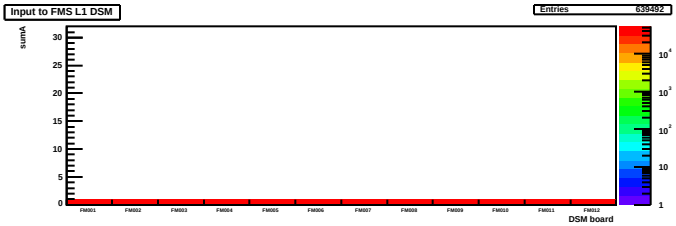

Input to FMS L1 DSM
Entries 0
sumBC - simulated
DSM board

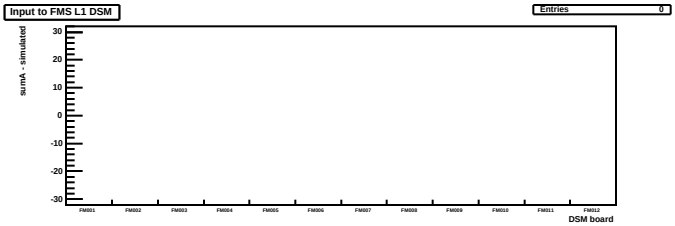

Input to FMS L1 DSM
Entries 639492
sumB
DSM board

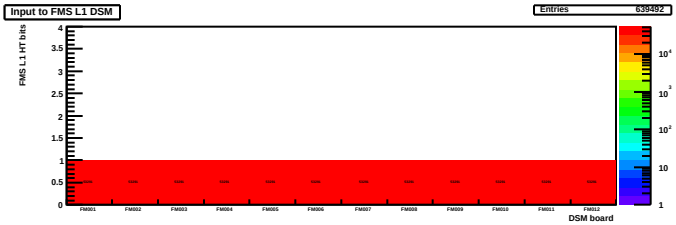

Input to FMS L1 DSM
Entries 0
sumB - simulated
DSM board

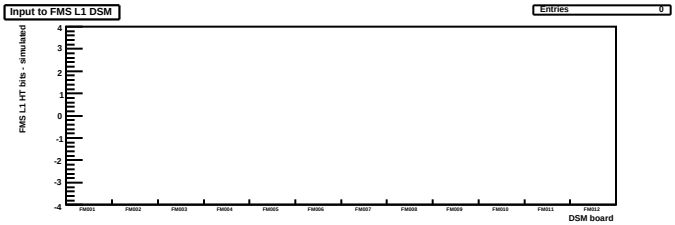

Input to FMS L1 DSM
Entries 639492
sumCD
DSM board

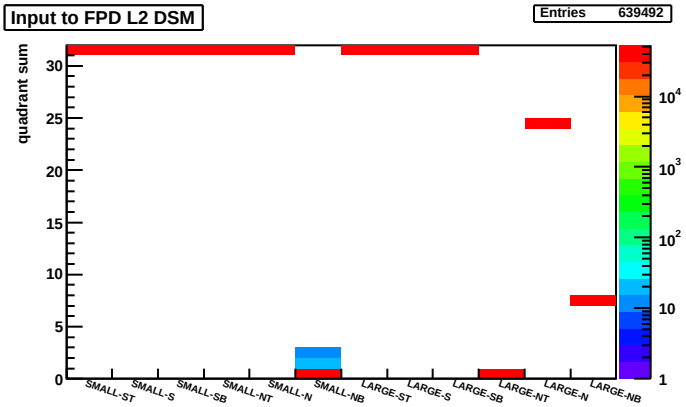

Input to FMS L1 DSM
Entries 0
sumCD - simulated
DSM board

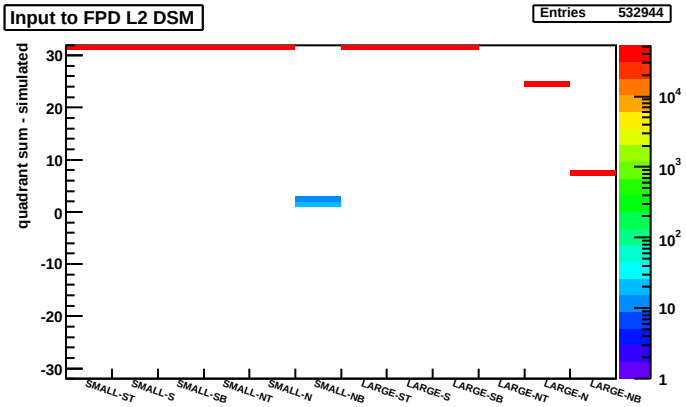

Input to FMS L1 DSM
Entries 639492
sumA
DSM board

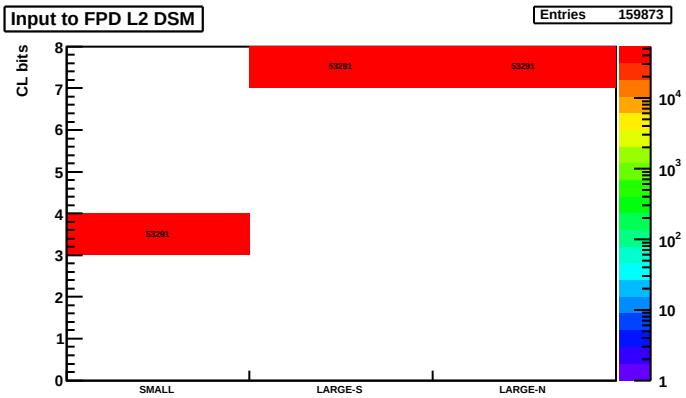

Input to FMS L1 DSM
Entries 0
sumA - simulated
DSM board

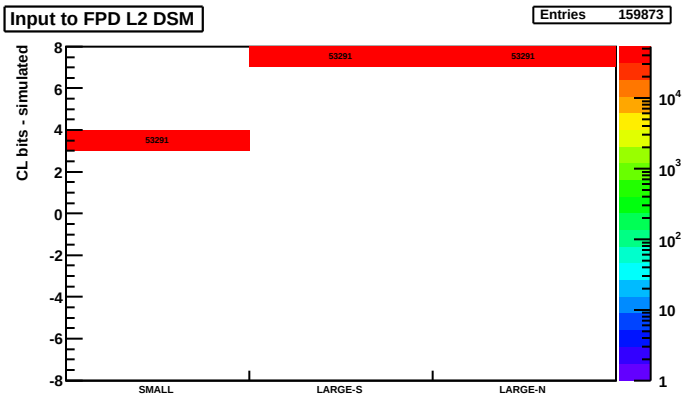

Input to FMS L1 DSM
Entries 639492
FMS L1 HT bits
DSM board

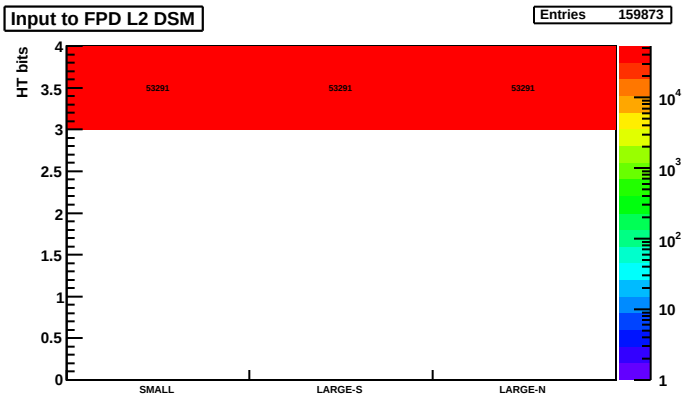

Input to FMS L1 DSM
Entries 0
FMS L1 HT bits - simulated
DSM board

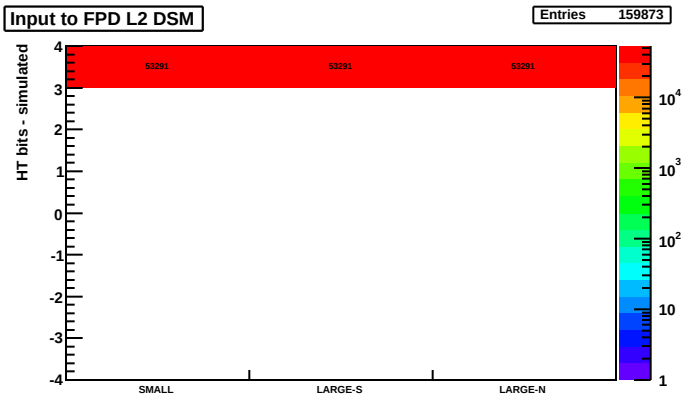

Input to FPD L2 DSM
Entries 639492
quadrant sum
SMALL-ST
SMALL-S
SMALL-SB
SMALL-NT
SMALL-N
SMALL-NB
LARGE-ST
LARGE-S
LARGE-SB
LARGE-NT
LARGE-N
LARGE-NB

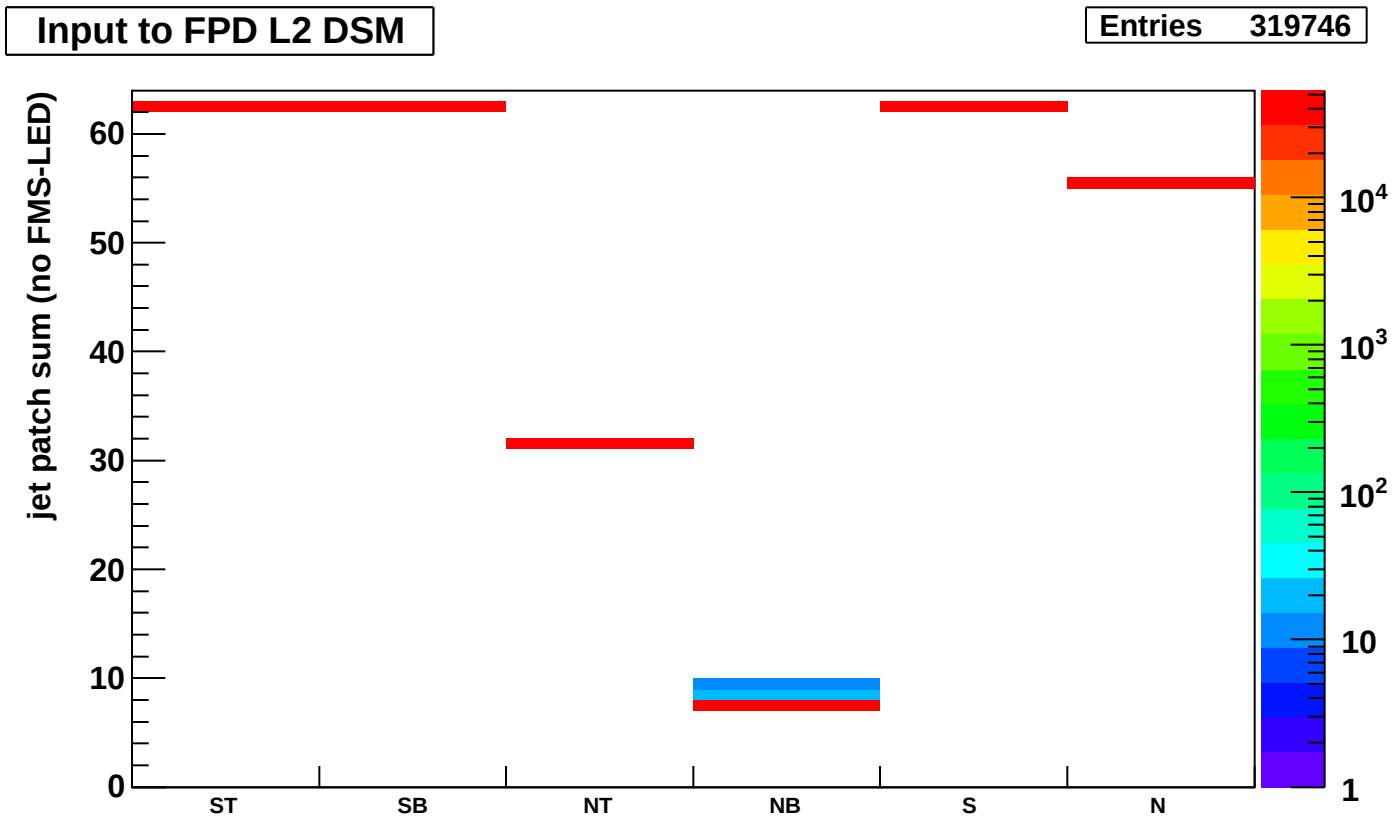

Input to FPD L2 DSM
Entries 532944
quadrant sum - simulated
SMALL-ST
SMALL-S
SMALL-SB
SMALL-NT
SMALL-N
SMALL-NB
LARGE-ST
LARGE-S
LARGE-SB
LARGE-NT
LARGE-N
LARGE-NB

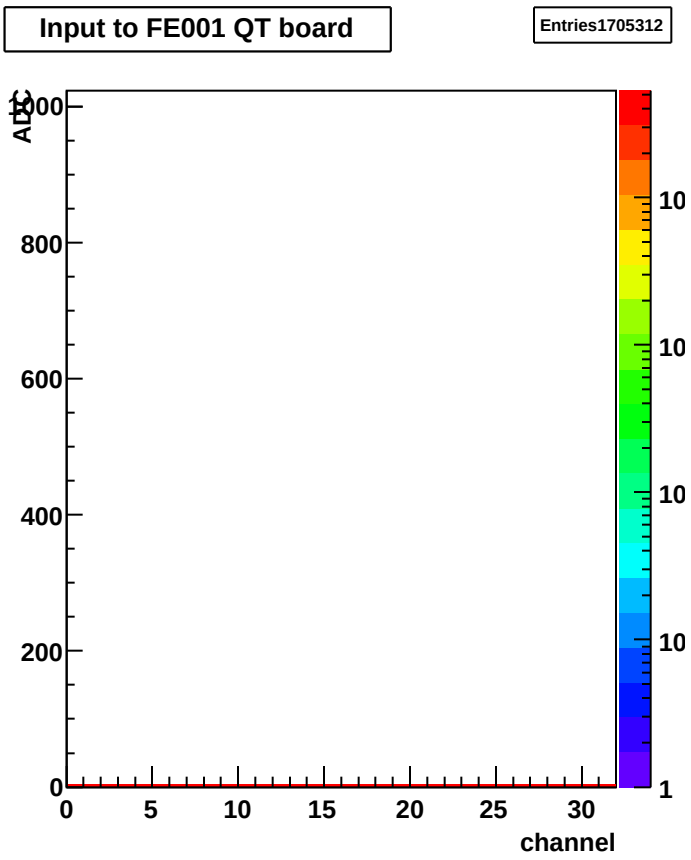

Input to FPD L2 DSM
Entries 159873
CL bits
53291
53291
53291
SMALL
LARGE-S
LARGE-N

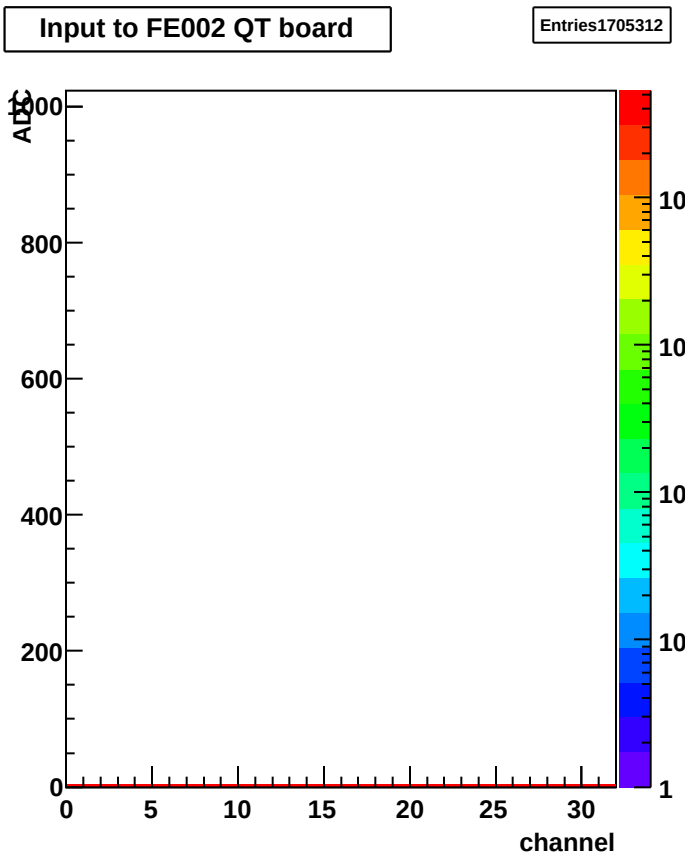

Input to FPD L2 DSM
Entries 159873
CL bits - simulated
53291
53291
53291
SMALL
LARGE-S
LARGE-N

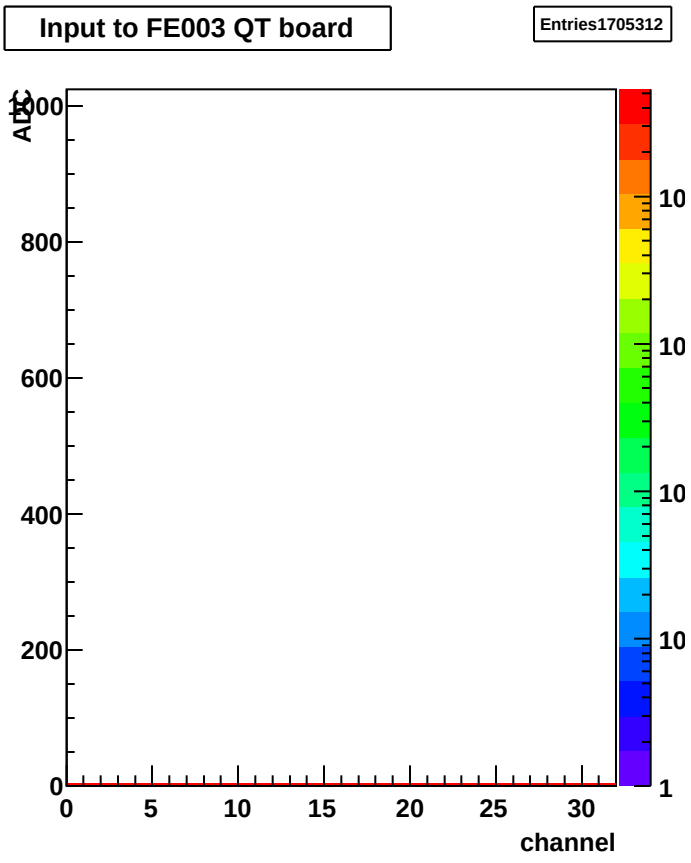

Input to FPD L2 DSM
Entries 159873
HT bits
53291
53291
53291
SMALL
LARGE-S
LARGE-N

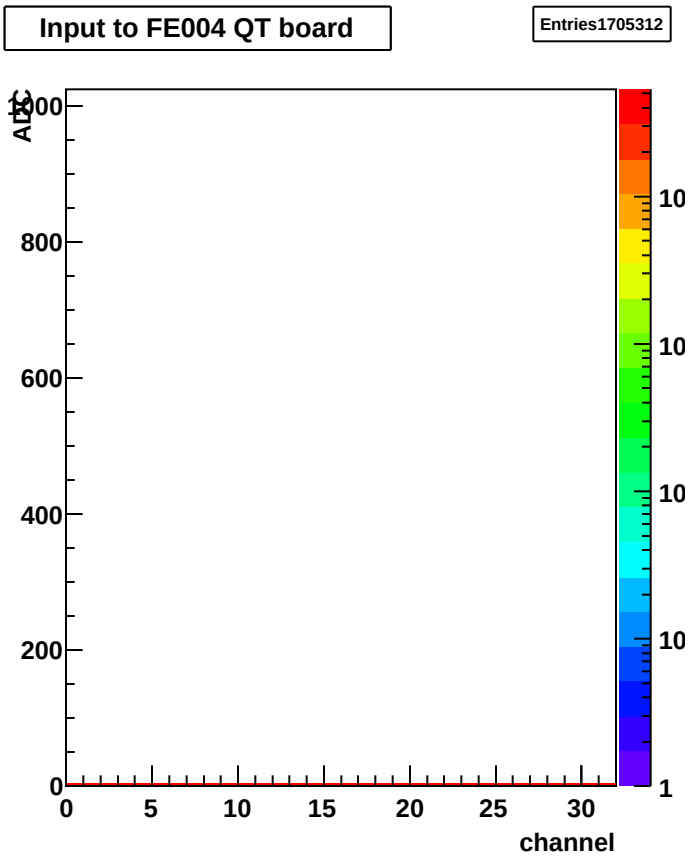

Input to FPD L2 DSM
Entries 159873
HT bits - simulated
53291
53291
53291
SMALL
LARGE-S
LARGE-N

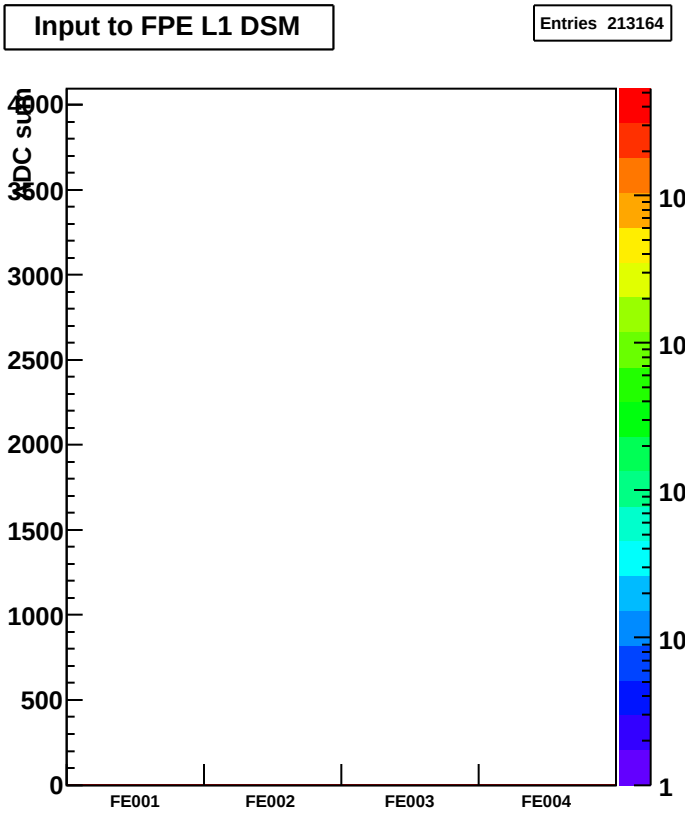

Input to FPD L2 DSM
Entries 319746
jet patch sum (no FMS-LED)
0
10
20
30
40
50
60
ST
SB
NT
NB
S
N
1
10
$10^2$
$10^3$
$10^4$

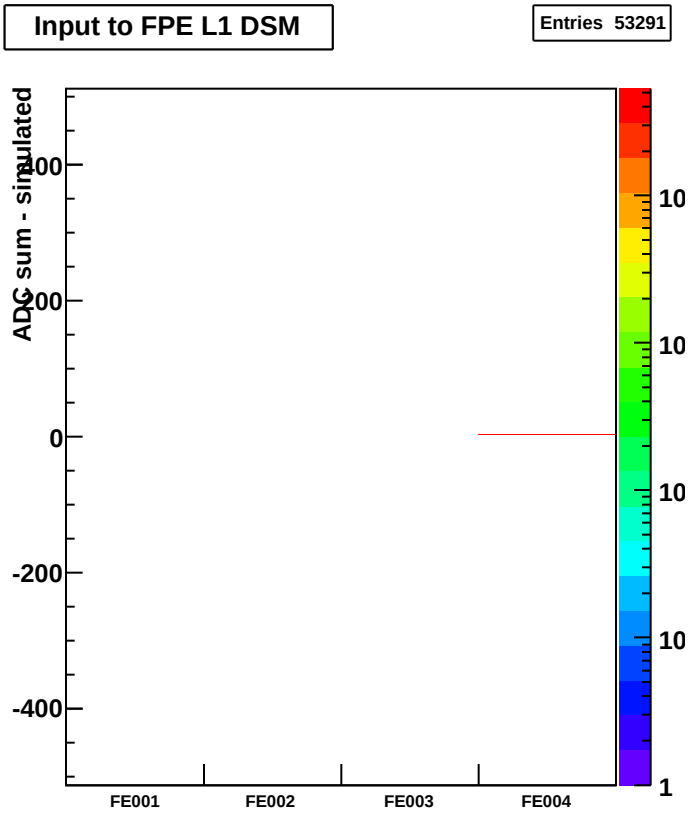

Input to FE001 QT board
Entries1705312
ADC
channel

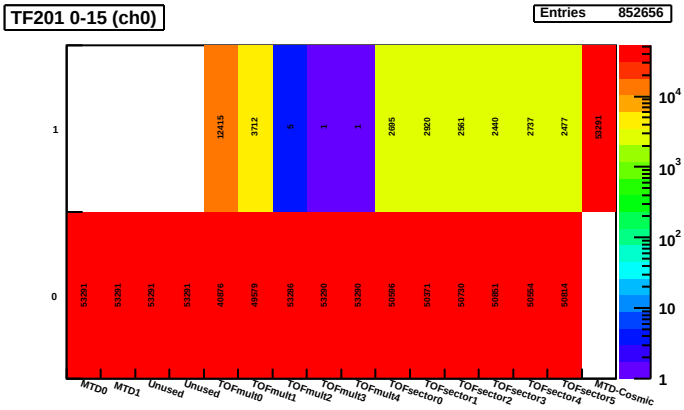

Input to FE002 QT board
Entries1705312
ADC
channel

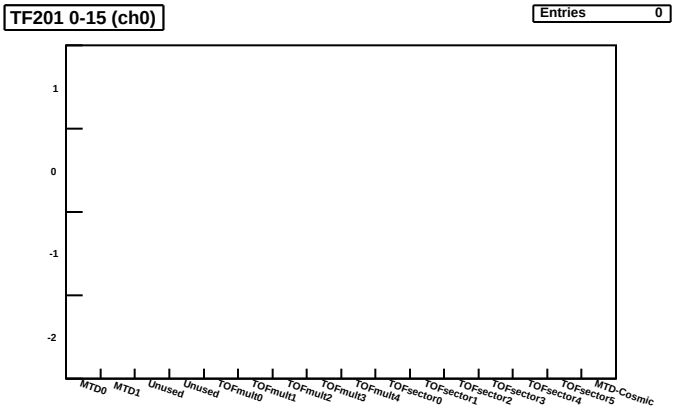

Input to FE003 QT board
Entries1705312
ADC
channel

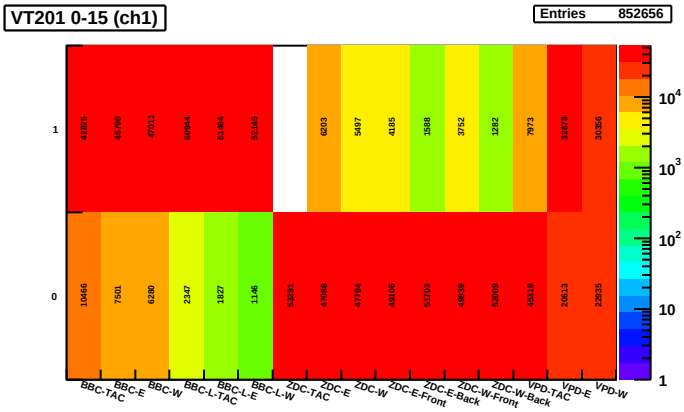

Input to FE004 QT board
Entries1705312
ADC
channel

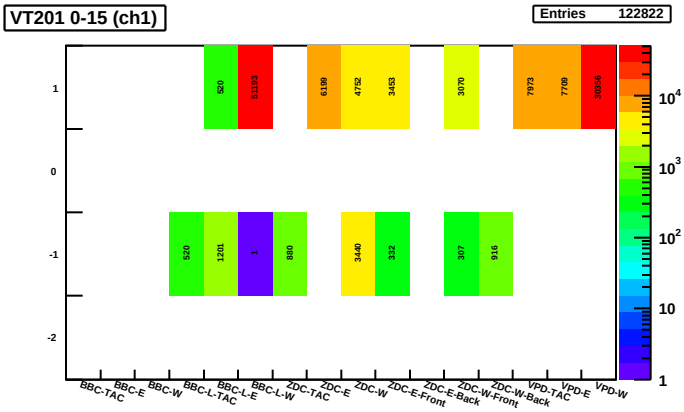

Input to FPE L1 DSM
Entries 213164
ADC sum
4000
3500
3000
2500
2000
1500
1000
500
0
FE001
FE002
FE003
FE004
10
10
10
10
1

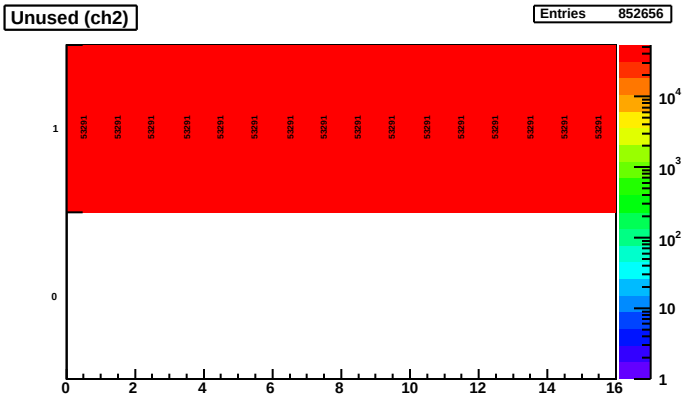

Input to FPE L1 DSM
Entries 53291
ADC sum - simulated
0
-200
-400
FE001
FE002
FE003
FE004
10
10
10
10
1

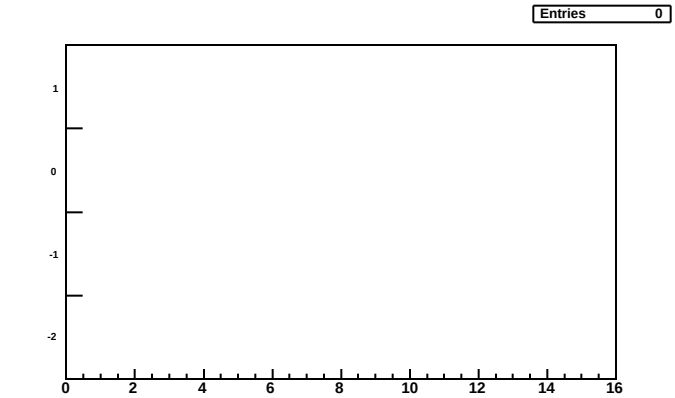

TF201 0-15 (ch0)
Entries 852656
MTD0 MTD1 Unused Unused TOFmult0 TOFmult1 TOFmult2 TOFmult3 TOFmult4 TOFsector0 TOFsector1 TOFsector2 TOFsector3 TOFsector4 TOFsector5 MTD-Cosmic

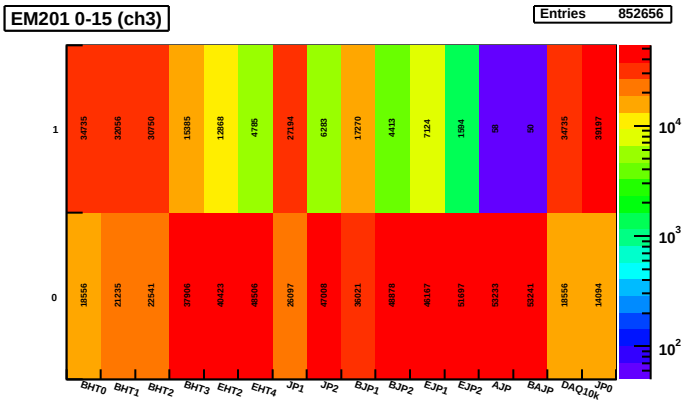

TF201 0-15 (ch0)
Entries 0
MTD0 MTD1 Unused Unused TOFmult0 TOFmult1 TOFmult2 TOFmult3 TOFmult4 TOFsector0 TOFsector1 TOFsector2 TOFsector3 TOFsector4 TOFsector5 MTD-Cosmic

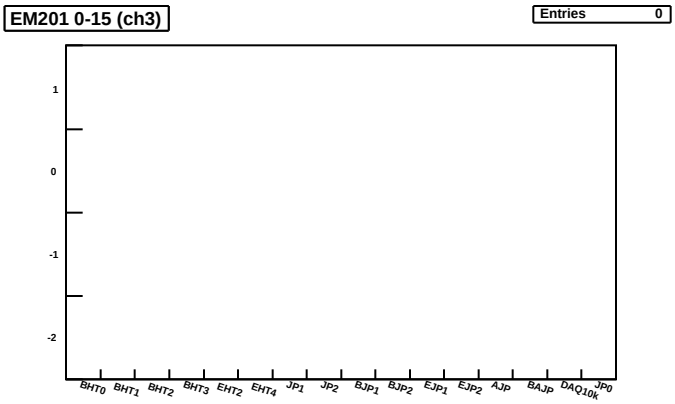

VT201 0-15 (ch1)
Entries 852656
BBC-TAC BBC-E BBC-W BBC-L-TAC BBC-L-E BBC-L-W ZDC-TAC ZDC-E ZDC-W ZDC-E-Front ZDC-E-Back ZDC-W-Front ZDC-W-Back VPD-TAC VPD-E VPD-W


VT201 0-15 (ch1)
Entries 122822
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 852656


Entries 0


EM201 0-15 (ch3)
Entries 852656
BHT0 BHT1 BHT2 BHT3 EHT2 EHT4 JP1 JP2 BJP1 BJP2 EJP1 EJP2 AJP BAJP DAQ10k JP0


EM201 0-15 (ch3)
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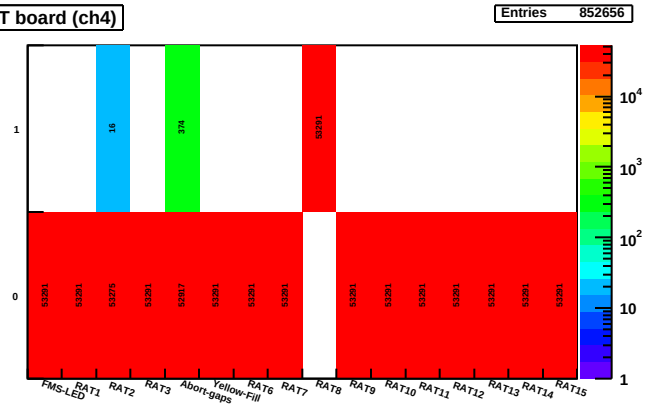
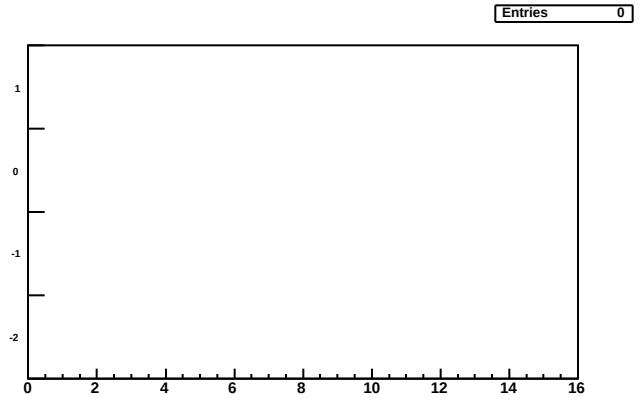
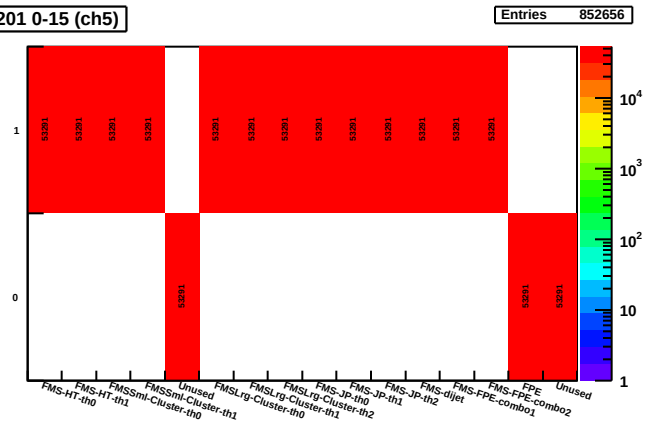
RAT board (ch4)




FP201 0-15 (ch5)

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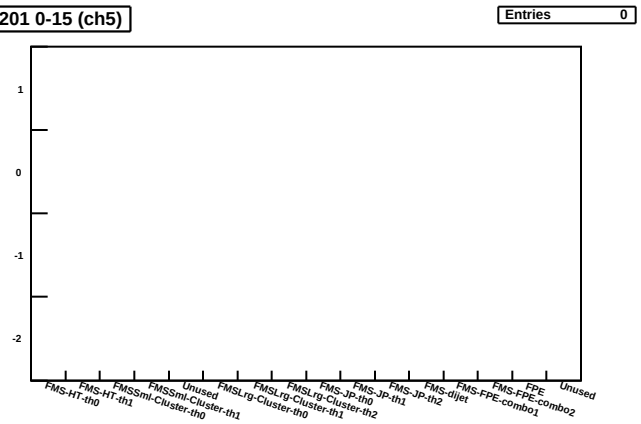
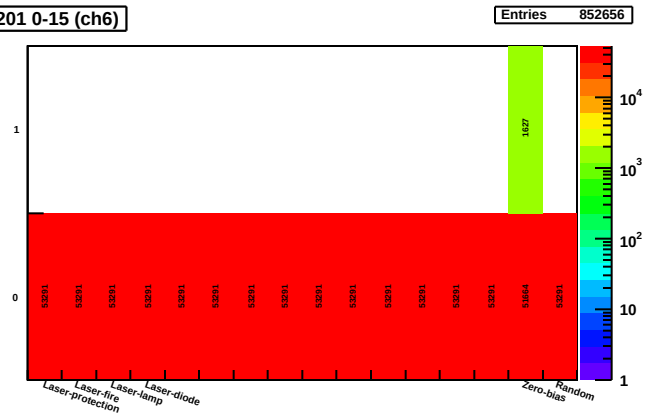
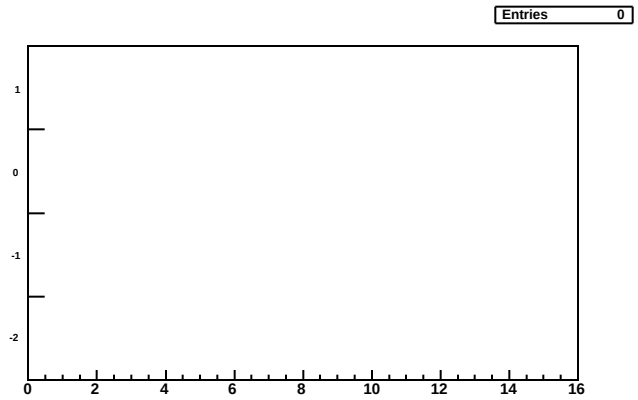
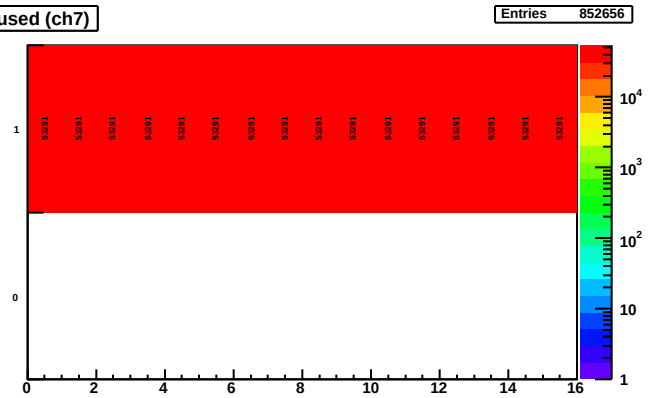
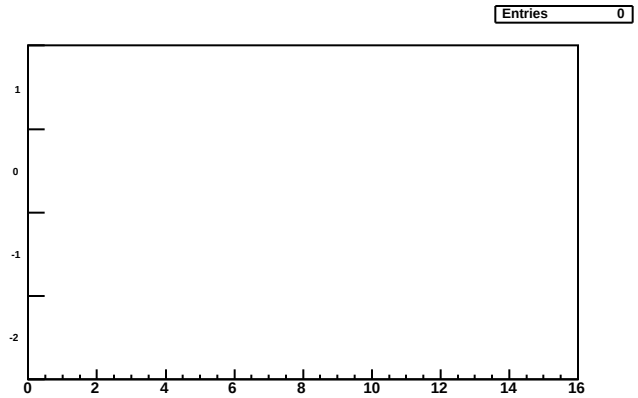



ST201 0-15 (ch6)




Unused (ch7)