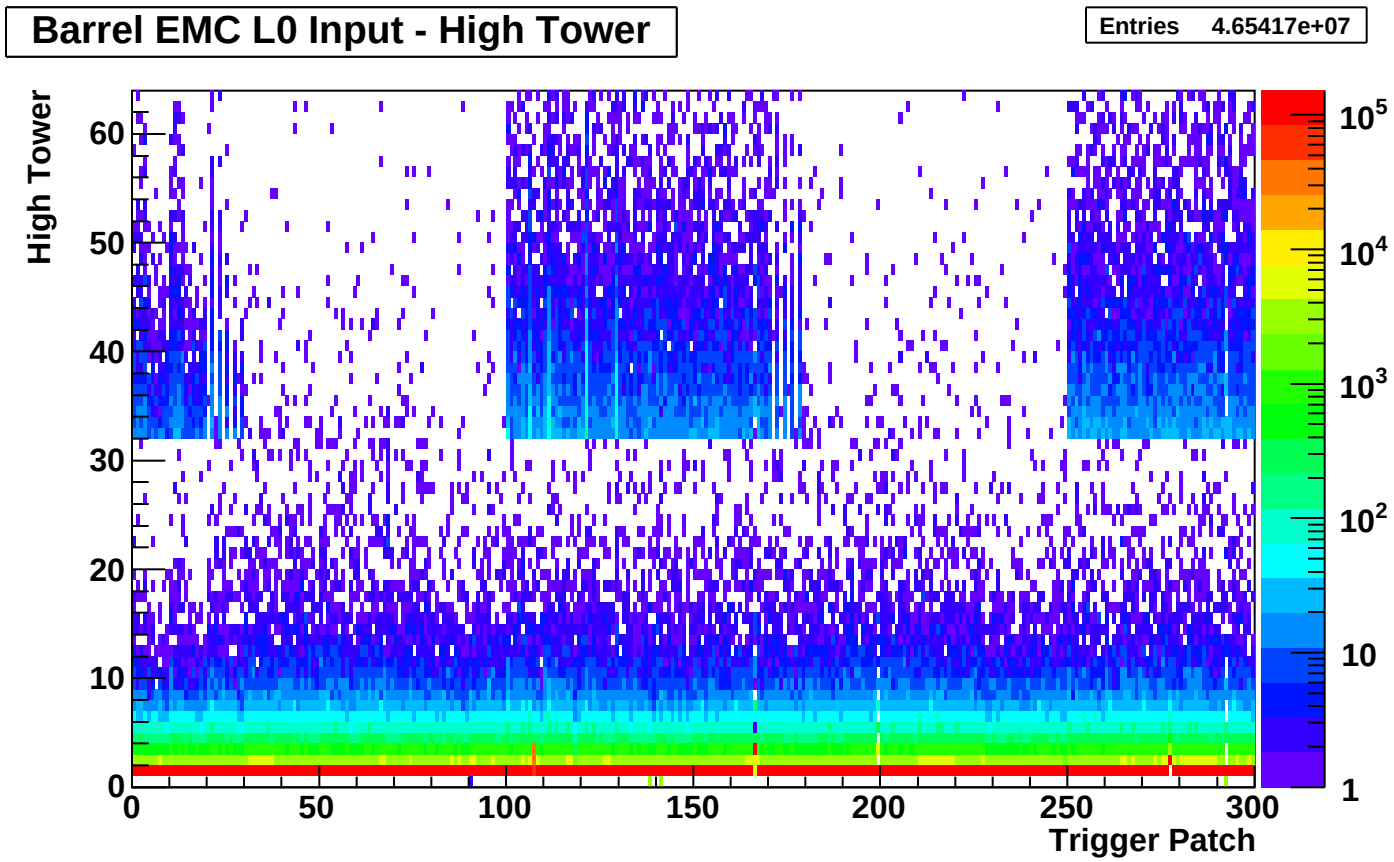
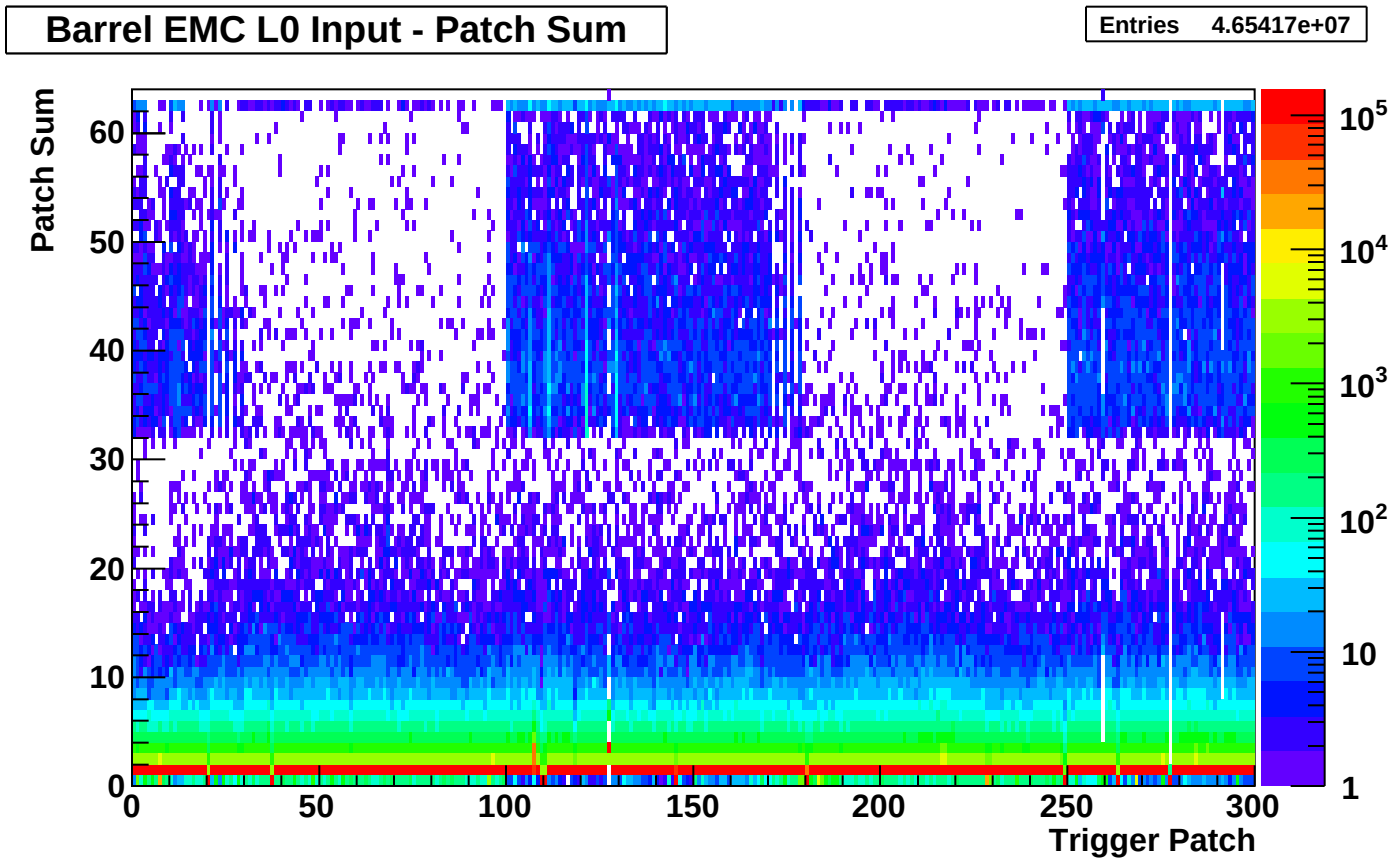
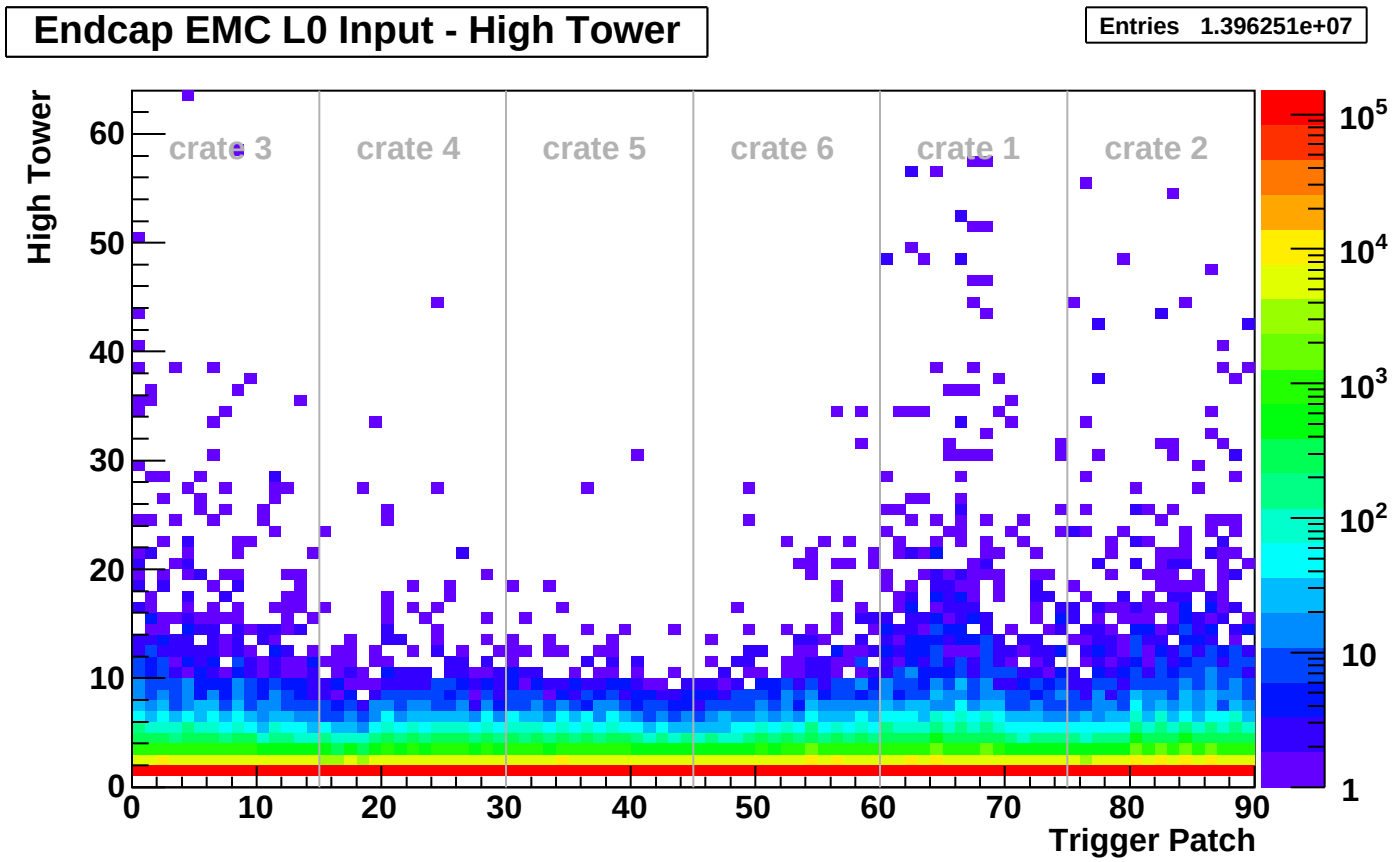
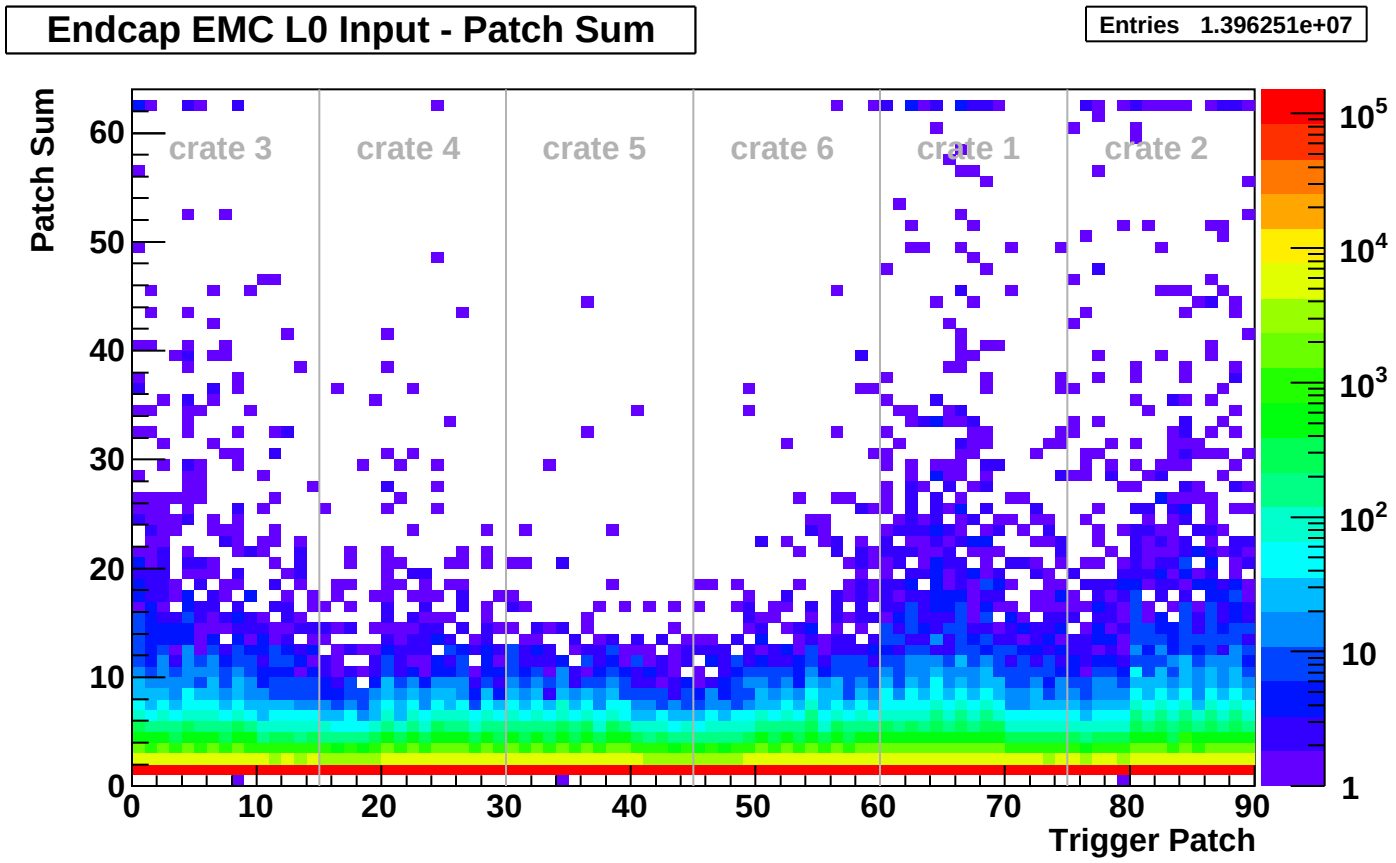
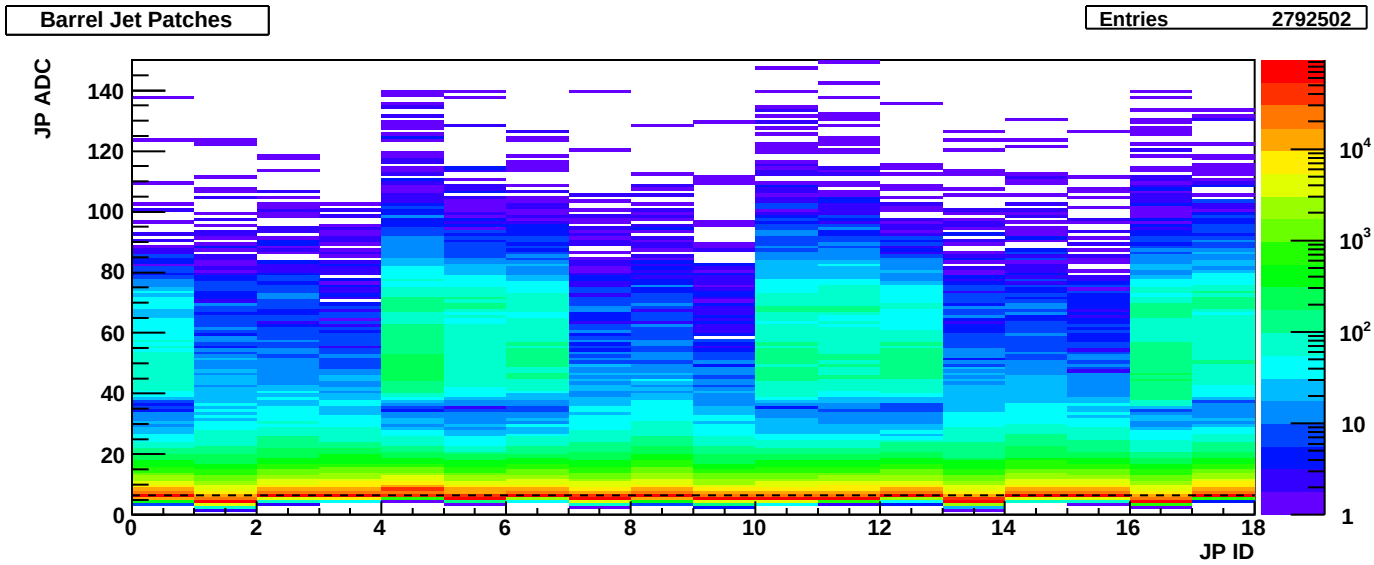
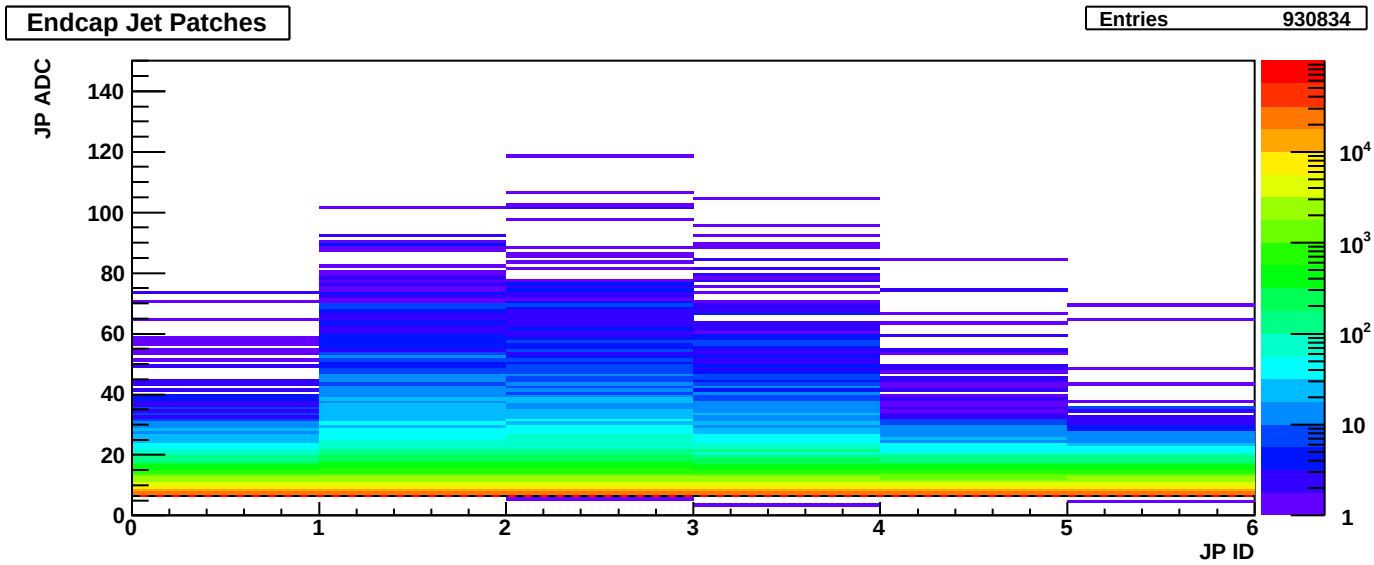

Barrel EMC L0 Input - High Tower
Entries 4.65417e+07
High Tower
Trigger Patch
0
10
20
30
40
50
60
0
50
100
150
200
250
300
1
10
10^2
10^3
10^4
10^5

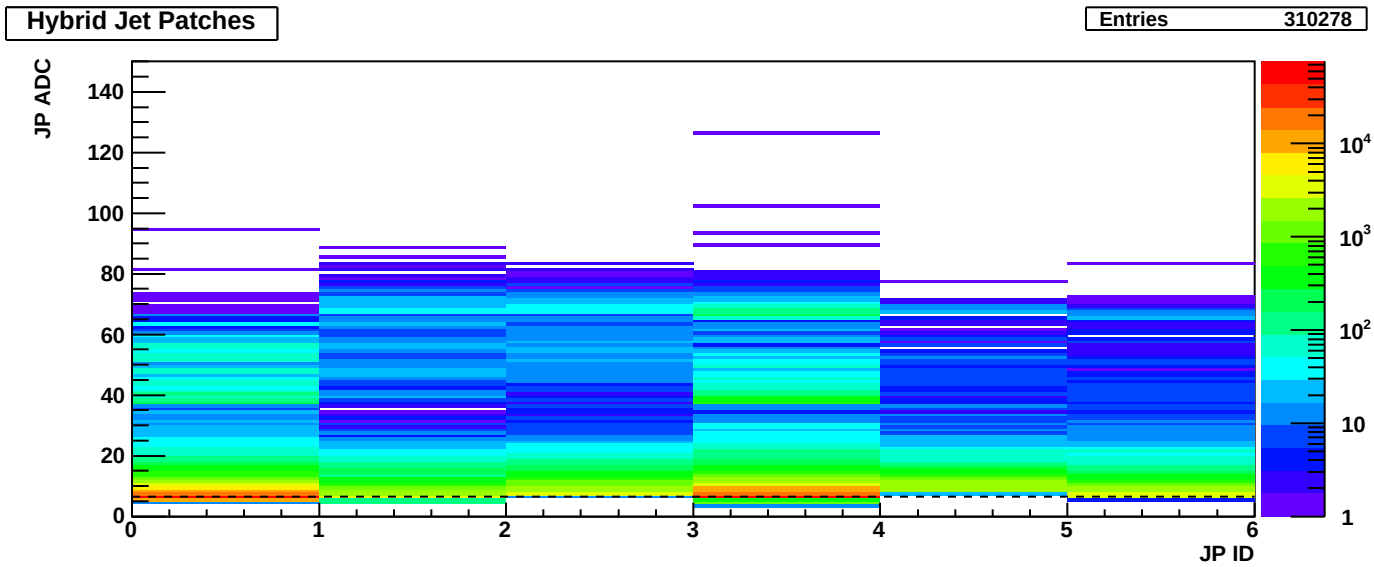

Barrel EMC L0 Input - Patch Sum
Entries 4.65417e+07
Patch Sum
Trigger Patch
0
10
20
30
40
50
60
0
50
100
150
200
250
300
1
10
10^2
10^3
10^4
10^5

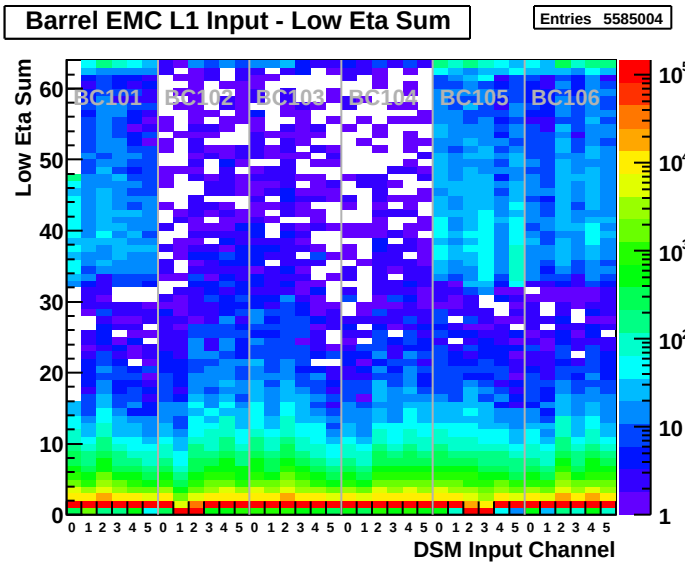

Endcap EMC L0 Input - High Tower
Entries 1.396251e+07
High Tower
Trigger Patch
crate 3
crate 4
crate 5
crate 6
crate 1
crate 2

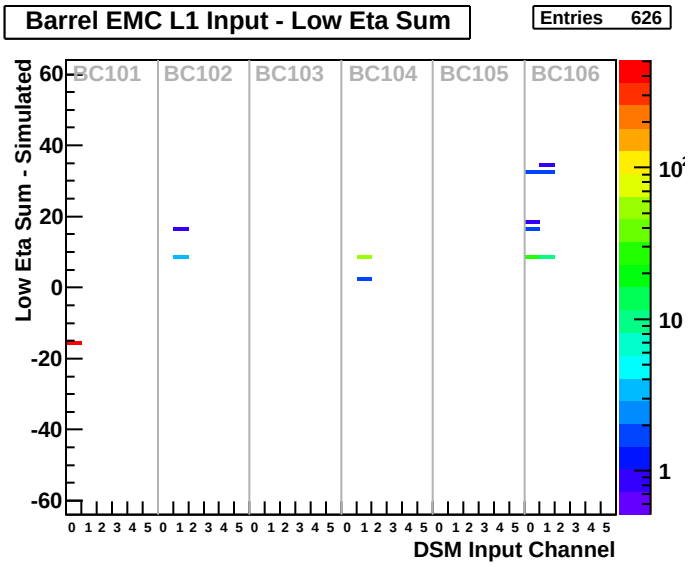

Endcap EMC L0 Input - Patch Sum
Entries 1.396251e+07
Patch Sum
Trigger Patch
crate 3
crate 4
crate 5
crate 6
crate 1
crate 2

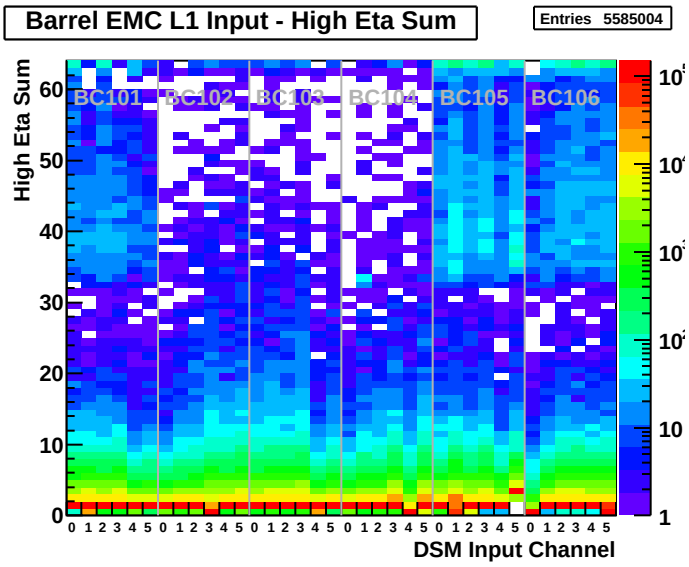

Barrel Jet Patches
Entries 2792502
JP ADC
JP ID

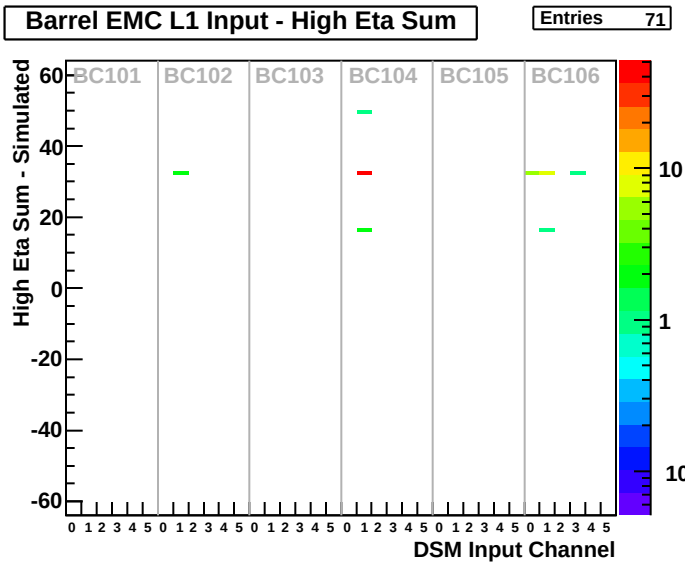

Endcap Jet Patches
Entries 930834
JP ADC
JP ID

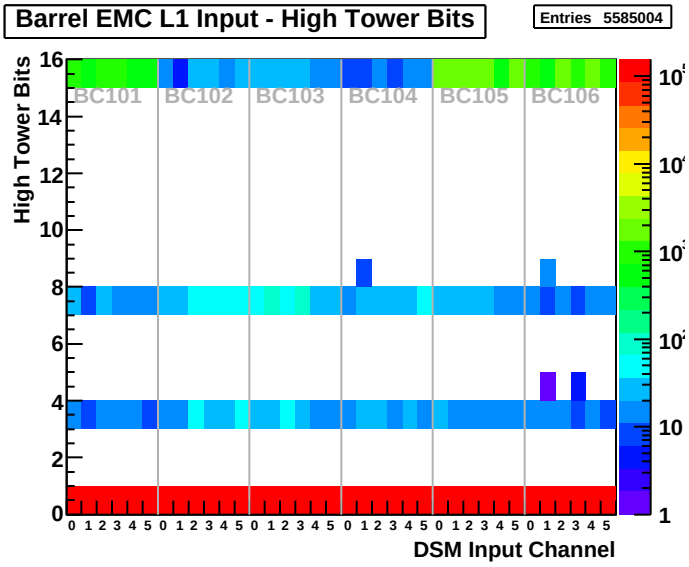

Hybrid Jet Patches
Entries 310278
JP ADC
JP ID

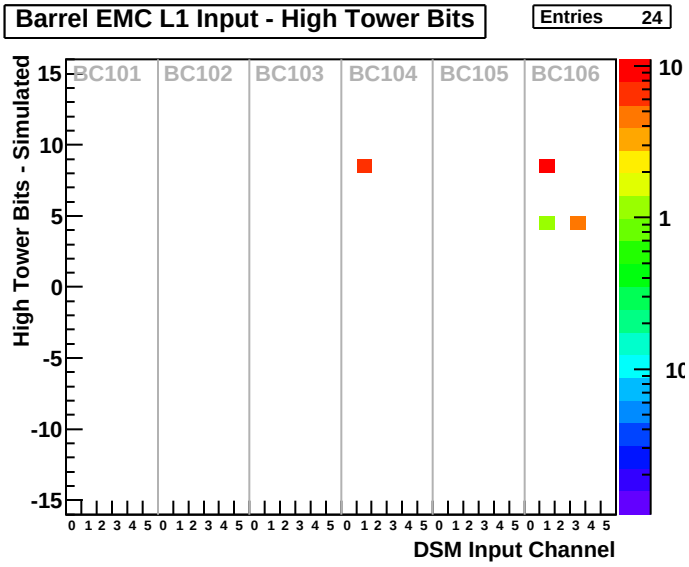

Barrel EMC L1 Input - Low Eta Sum
Entries 5585004
Low Eta Sum
BC101
BC102
BC103
BC104
BC105
BC106
DSM Input Channel

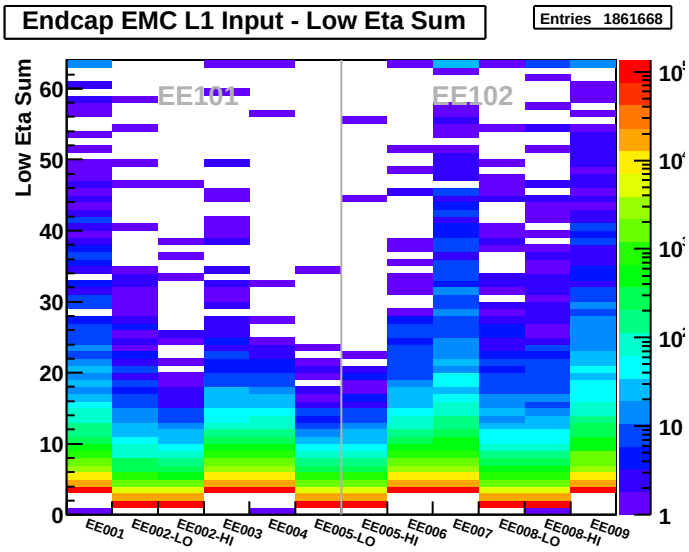

Barrel EMC L1 Input - Low Eta Sum
Entries 626
Low Eta Sum - Simulated
BC101
BC102
BC103
BC104
BC105
BC106
DSM Input Channel

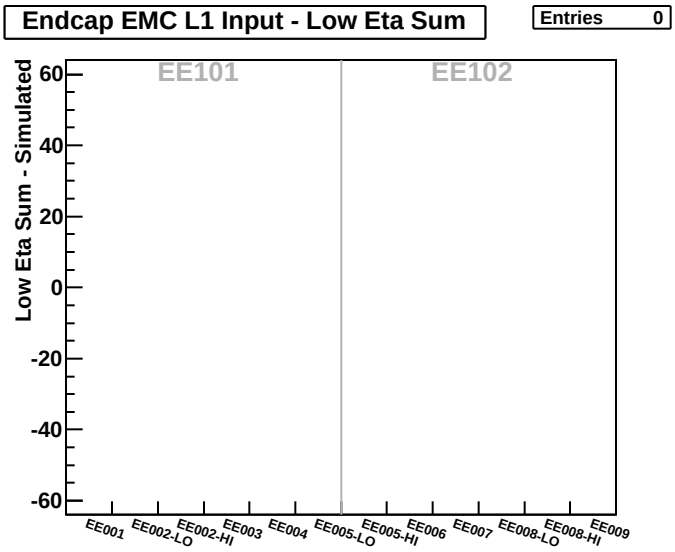

Barrel EMC L1 Input - High Eta Sum
Entries 5585004
High Eta Sum
BC101
BC102
BC103
BC104
BC105
BC106
DSM Input Channel

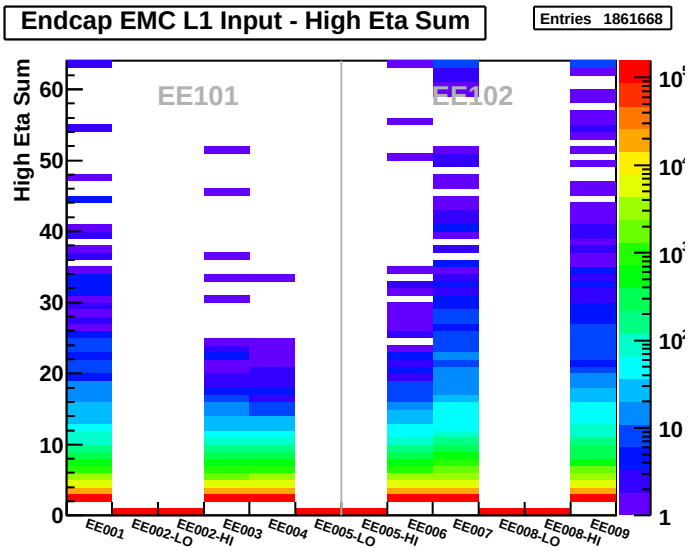

Barrel EMC L1 Input - High Eta Sum
Entries 71
High Eta Sum - Simulated
BC101
BC102
BC103
BC104
BC105
BC106
DSM Input Channel

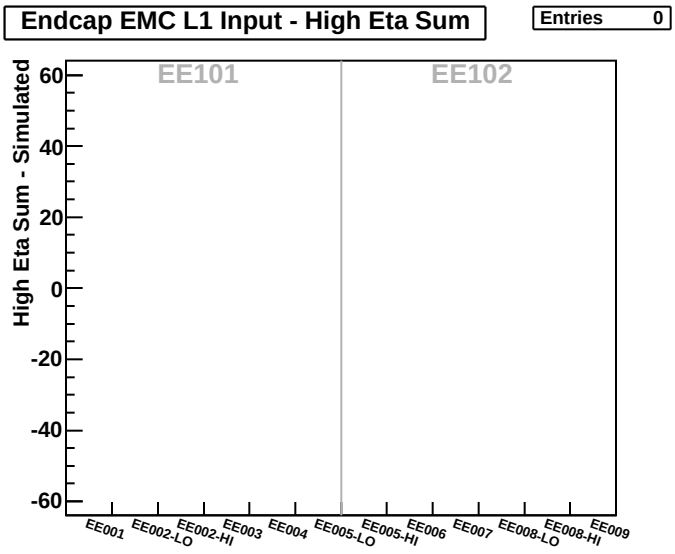

Barrel EMC L1 Input - High Tower Bits
Entries 5585004
High Tower Bits
BC101
BC102
BC103
BC104
BC105
BC106
DSM Input Channel

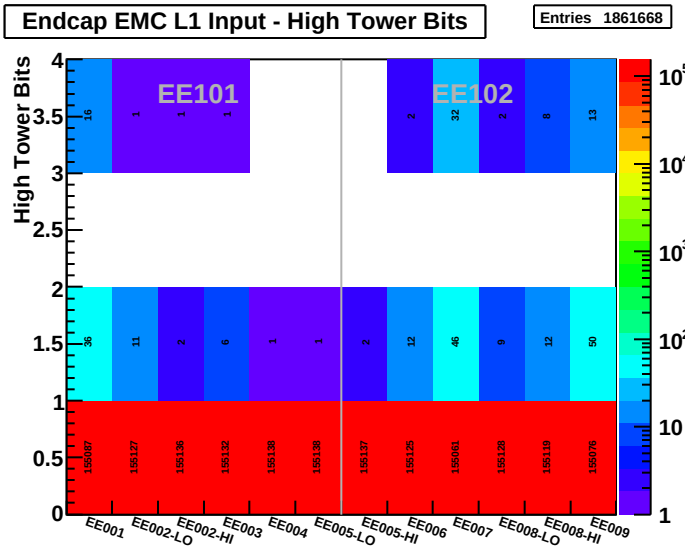

Barrel EMC L1 Input - High Tower Bits
Entries 24
High Tower Bits - Simulated
BC101
BC102
BC103
BC104
BC105
BC106
DSM Input Channel

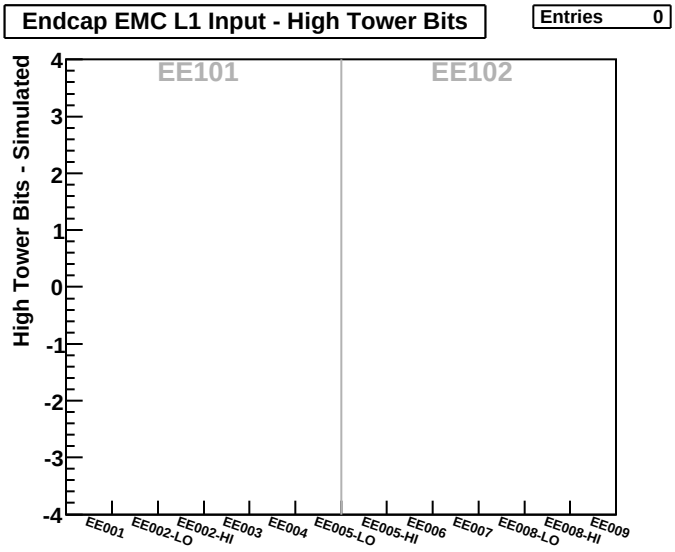

Endcap EMC L1 Input - Low Eta Sum
Entries 1861668
Low Eta Sum
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

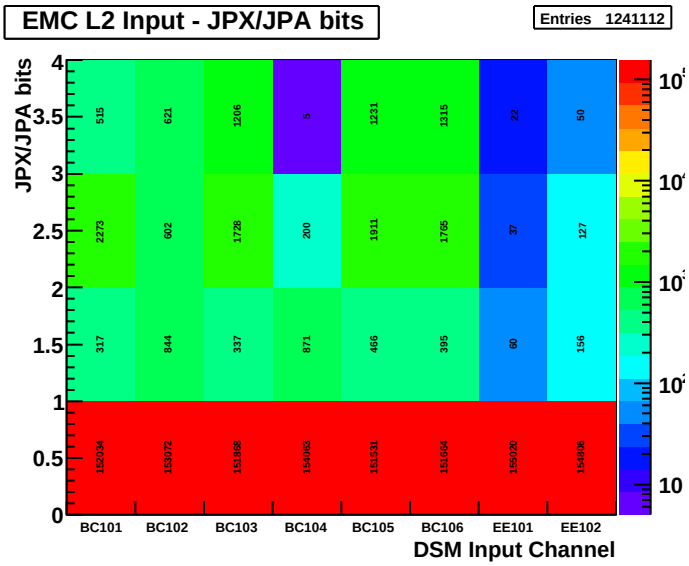

Endcap EMC L1 Input - Low Eta Sum
Entries 0
Low Eta Sum - Simulated
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

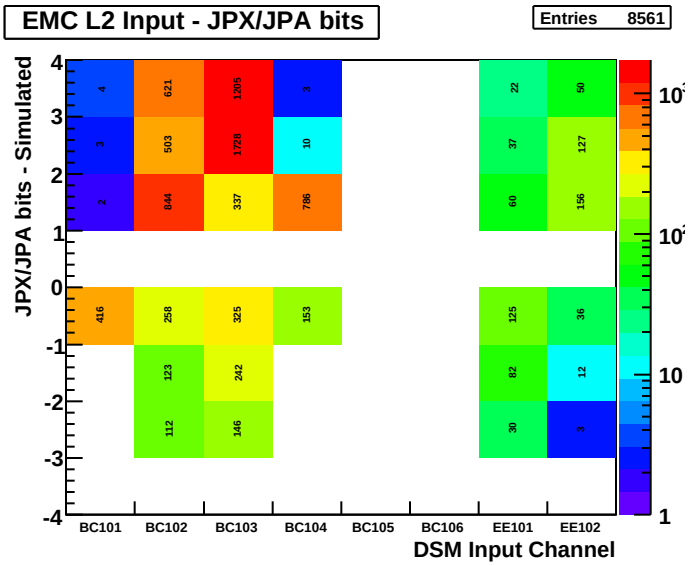

Endcap EMC L1 Input - High Eta Sum
Entries 1861668
High Eta Sum
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

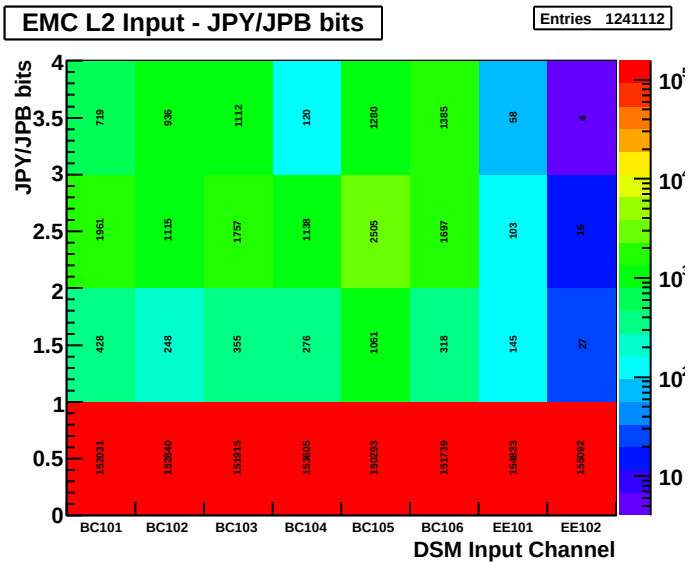

Endcap EMC L1 Input - High Eta Sum
Entries 0
High Eta Sum - Simulated
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

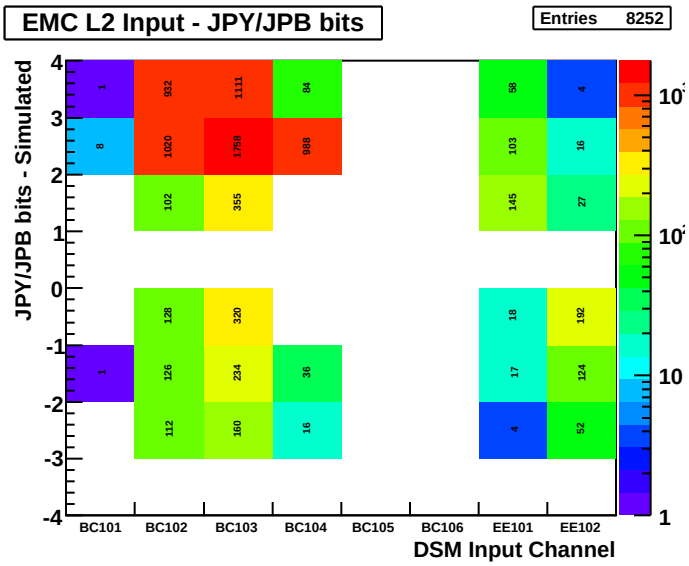

Endcap EMC L1 Input - High Tower Bits
Entries 1861668
High Tower Bits
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

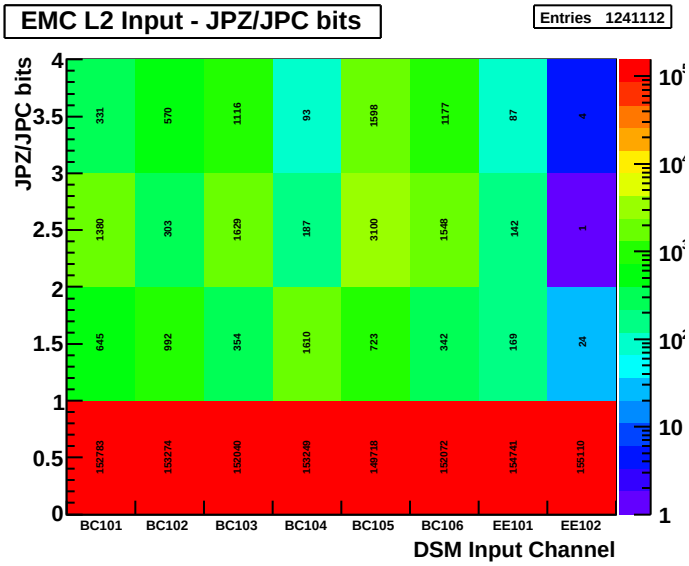

Endcap EMC L1 Input - High Tower Bits
Entries 0
High Tower Bits - Simulated
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

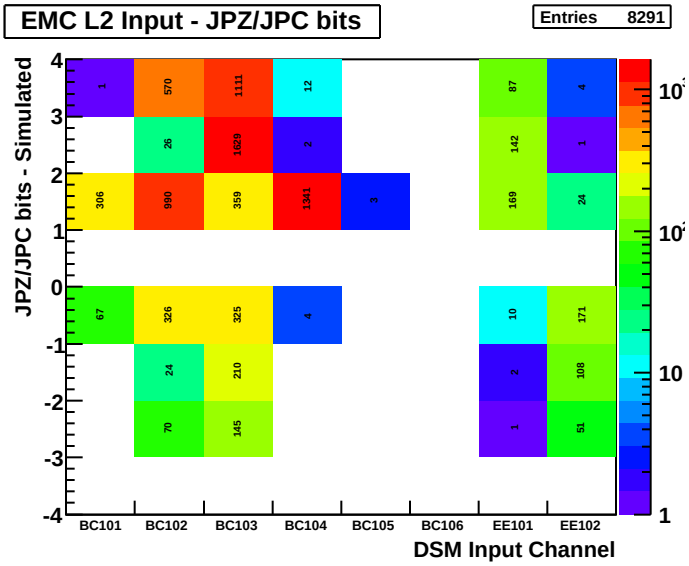

EMC L2 Input - JPX/JPA bits
Entries 1241112
JPX/JPA bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

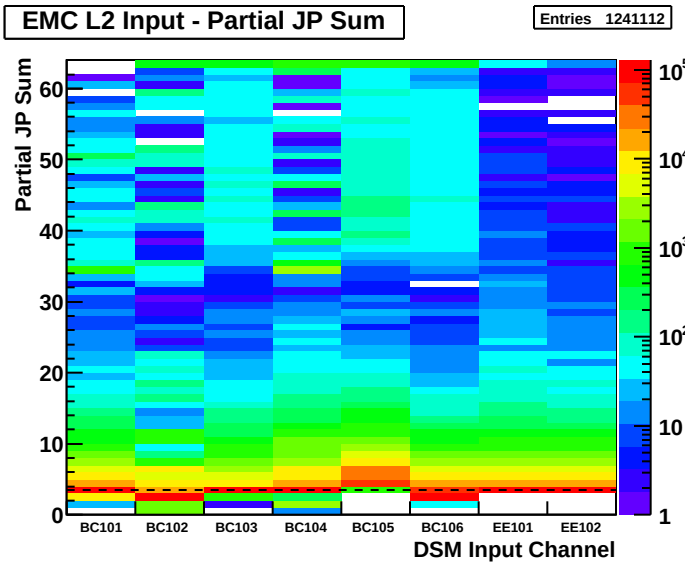

EMC L2 Input - JPX/JPA bits
Entries 8561
JPX/JPA bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

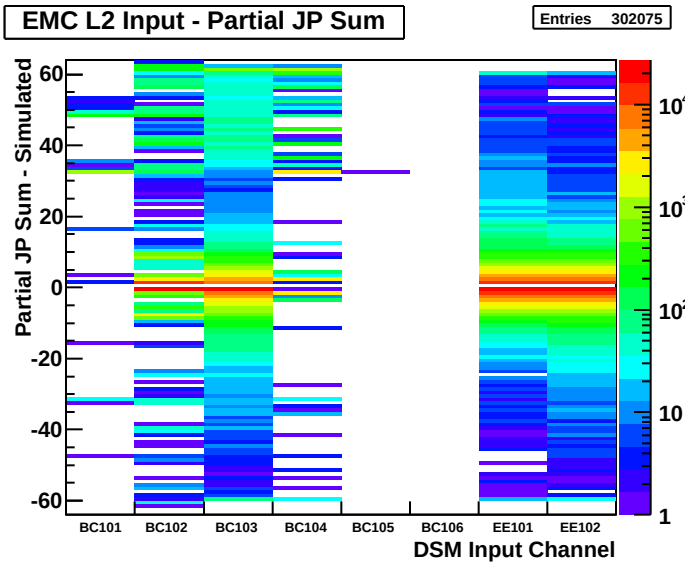

EMC L2 Input - JPY/JPB bits
Entries 1241112
JPY/JPB bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

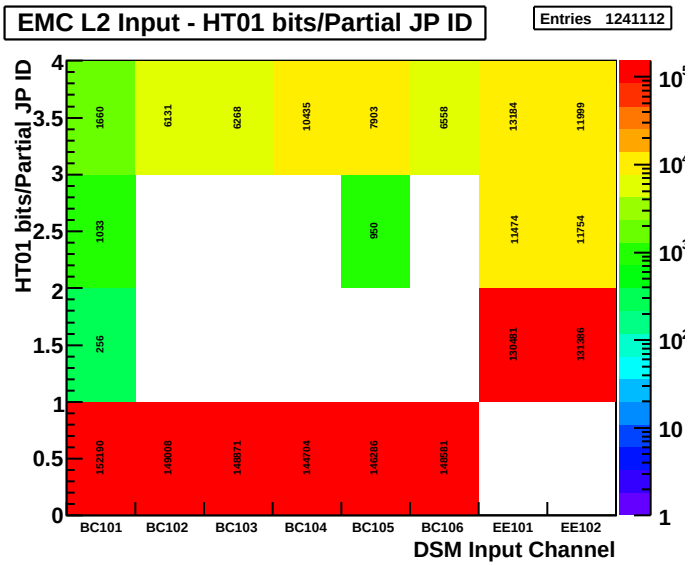

EMC L2 Input - JPY/JPB bits
Entries 8252
JPY/JPB bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

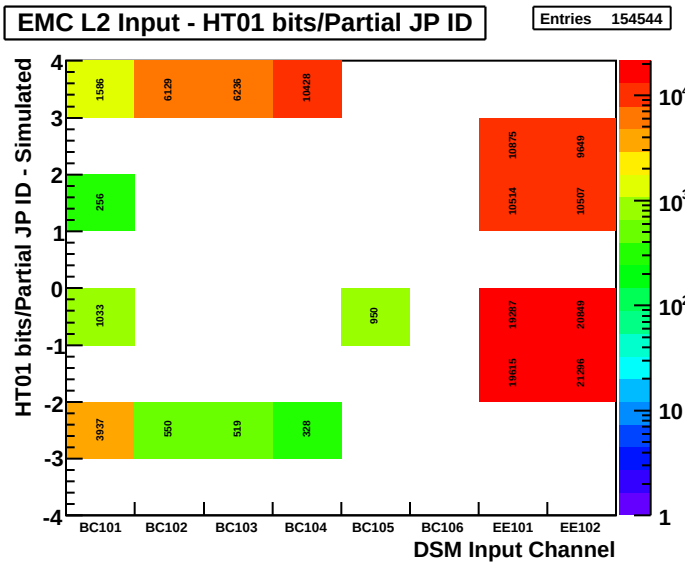

EMC L2 Input - JPZ/JPC bits
Entries 1241112
JPZ/JPC bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

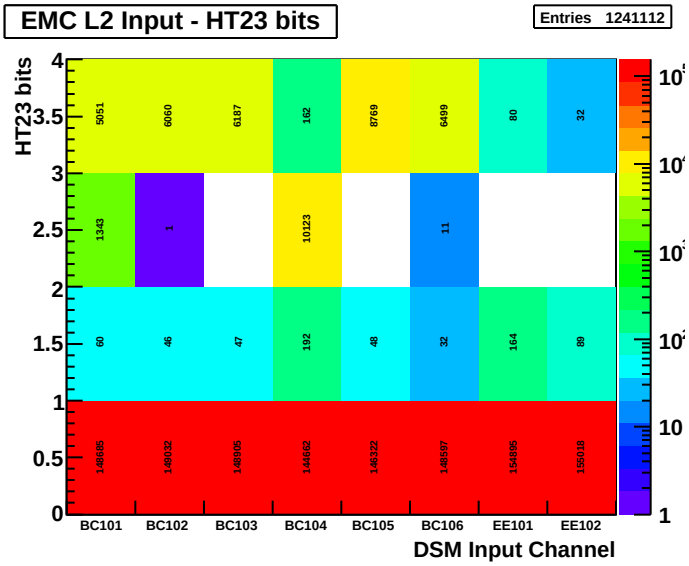

EMC L2 Input - JPZ/JPC bits
Entries 8291
JPZ/JPC bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

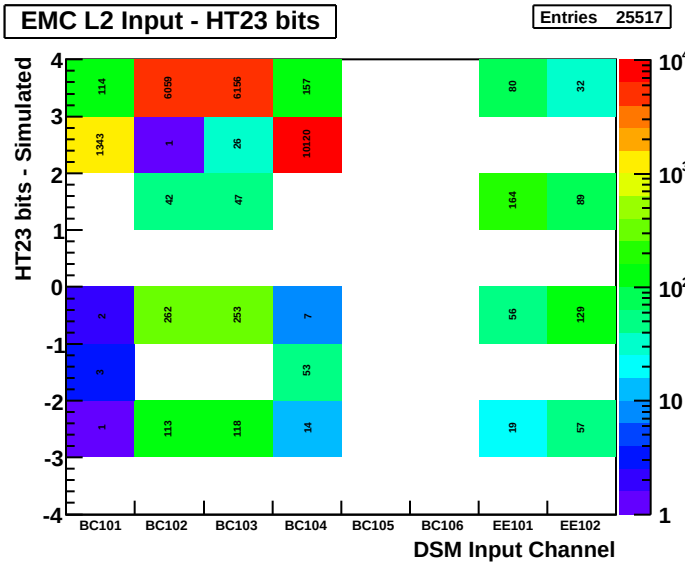

EMC L2 Input - Partial JP Sum
Entries 1241112
Partial JP Sum
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

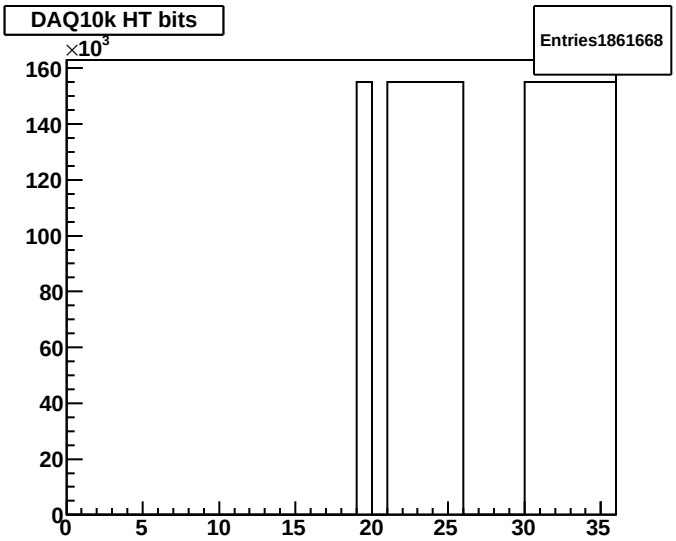

EMC L2 Input - Partial JP Sum
Entries 302075
Partial JP Sum - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

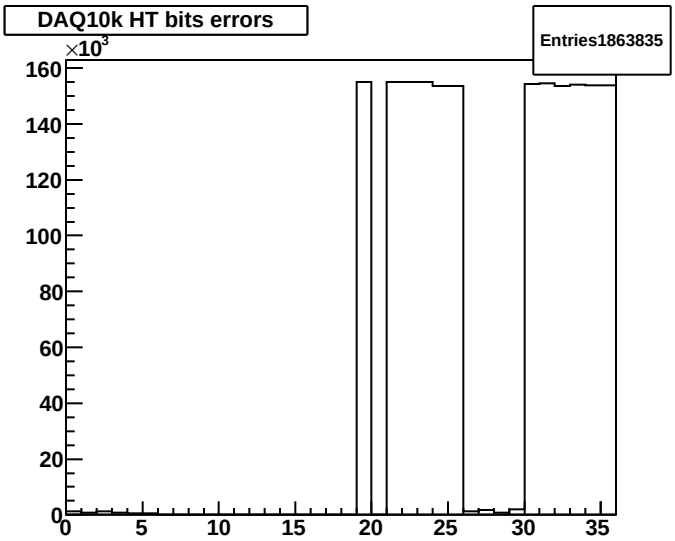

EMC L2 Input - HT01 bits/Partial JP ID
Entries 1241112
HT01 bits/Partial JP ID
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

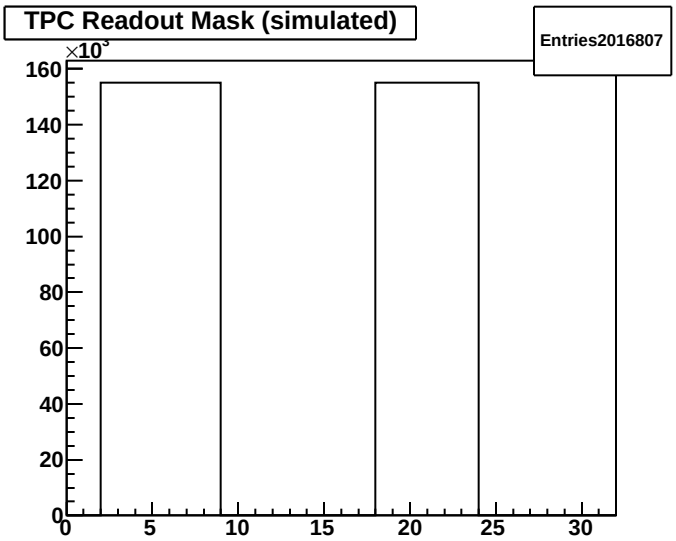

EMC L2 Input - HT01 bits/Partial JP ID
Entries 154544
HT01 bits/Partial JP ID - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

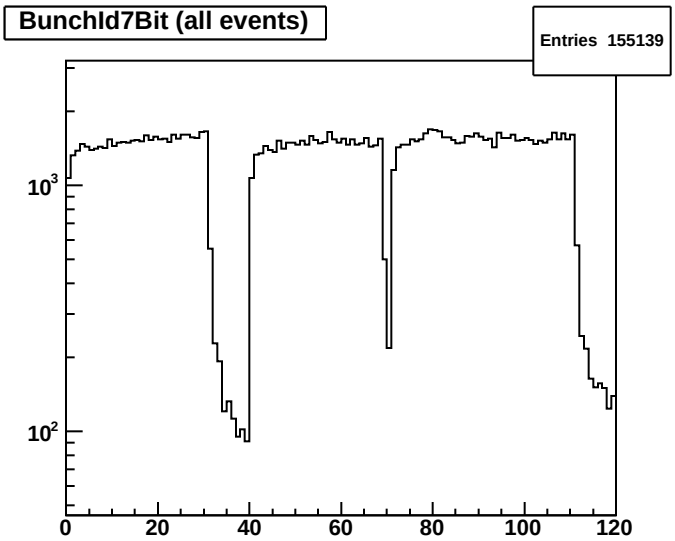

EMC L2 Input - HT23 bits
Entries 1241112
HT23 bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

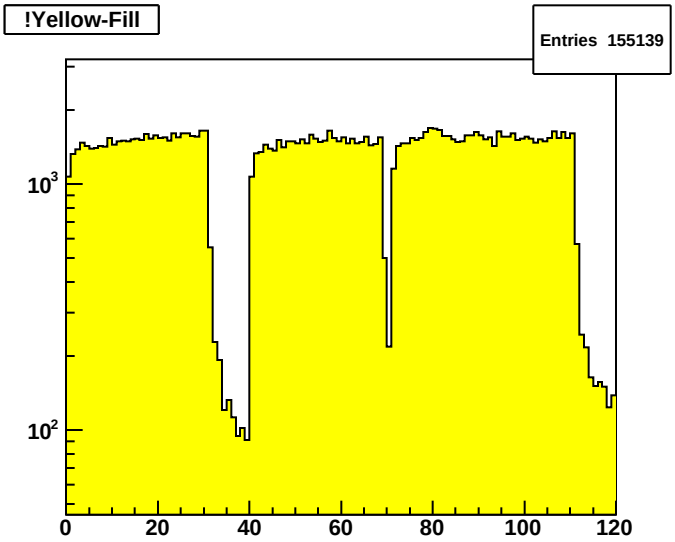

EMC L2 Input - HT23 bits
Entries 25517
HT23 bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

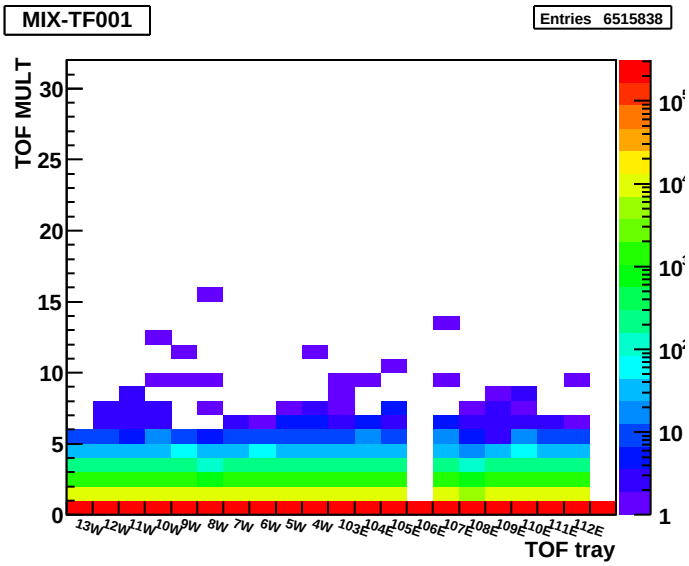

DAQ10k HT bits
Entries1861668
×10^3
160
140
120
100
80
60
40
20
0
0
5
10
15
20
25
30
35

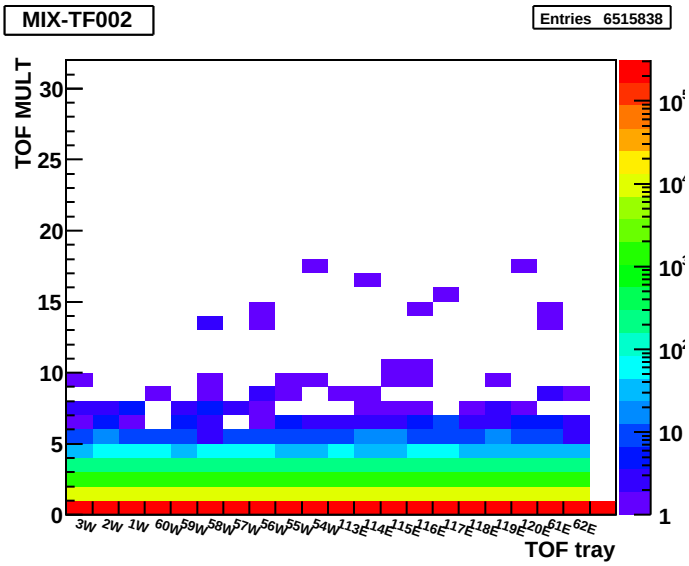

DAQ10k HT bits errors
Entries1863835
×10^3
160
140
120
100
80
60
40
20
0
0
5
10
15
20
25
30
35

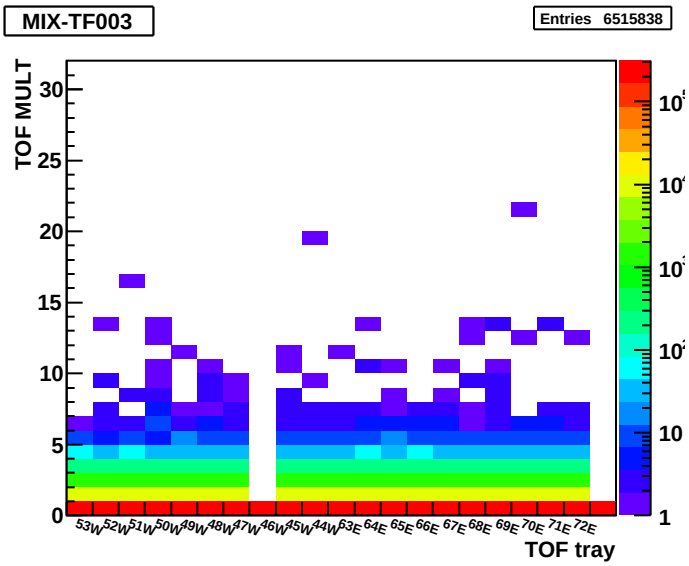

TPC Readout Mask (simulated)
Entries2016807
×10^3
160
140
120
100
80
60
40
20
0
0
5
10
15
20
25
30

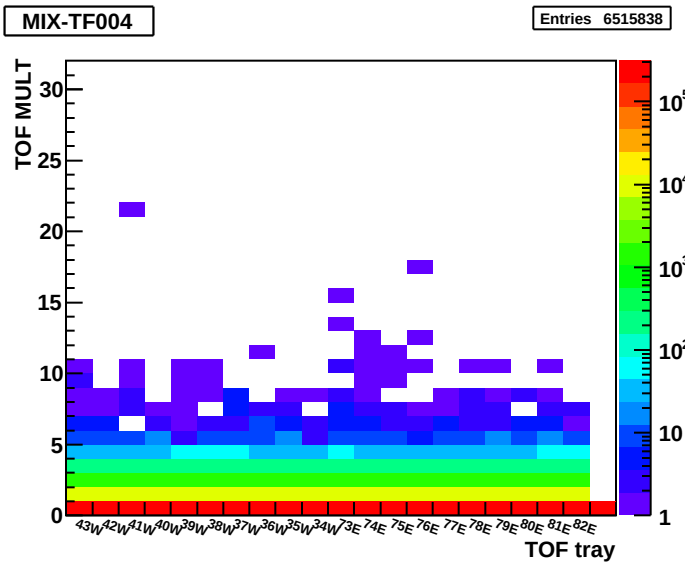

BunchId7Bit (all events)
Entries 155139
10^3
10^2
0
20
40
60
80
100
120

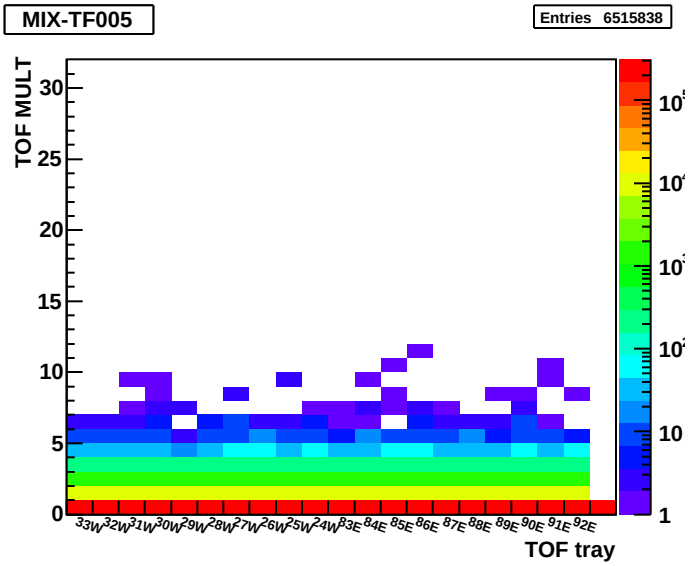

!Yellow-Fill
Entries 155139
10^3
10^2
0
20
40
60
80
100
120

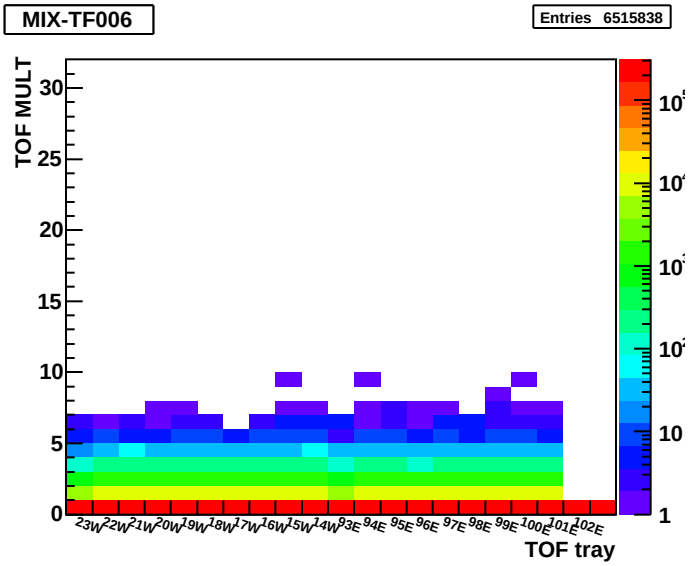

MIX-TF001
Entries 6515838
TOF MULT
TOF tray

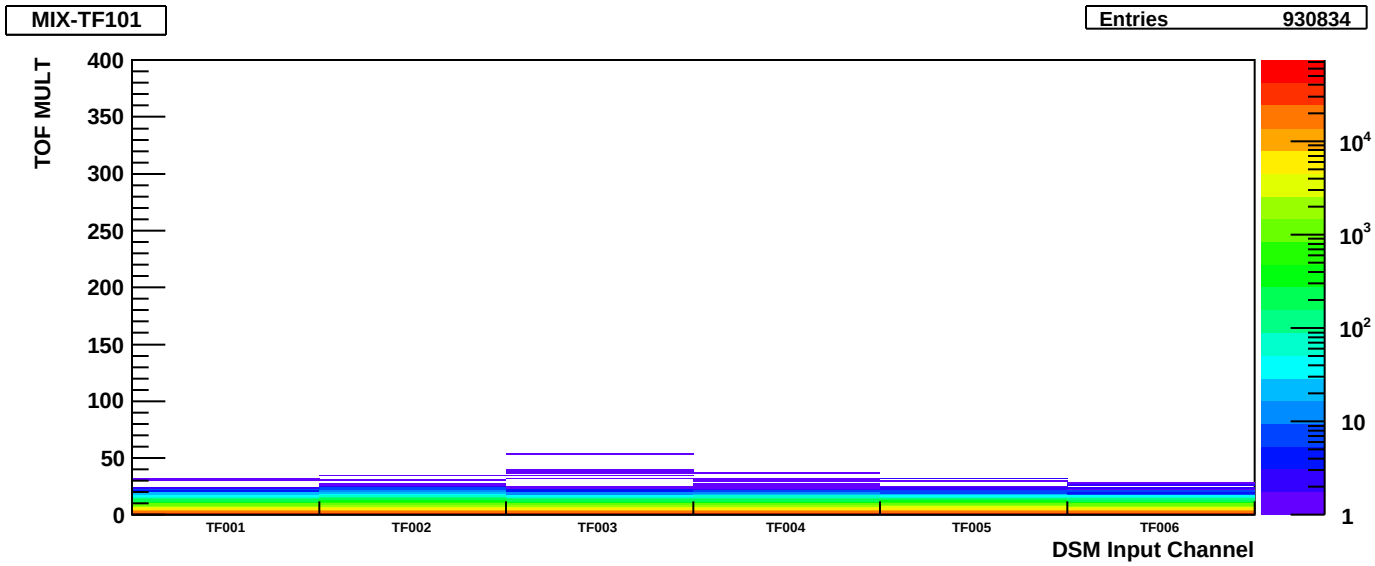

MIX-TF002
Entries 6515838
TOF MULT
TOF tray

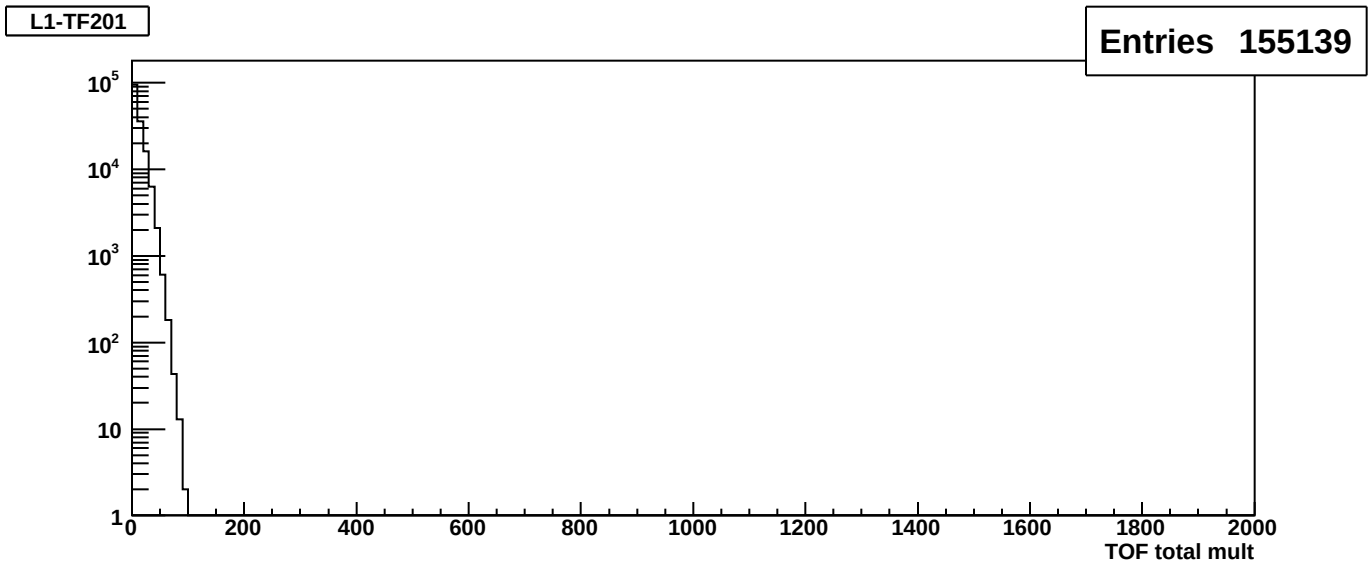

MIX-TF003
Entries 6515838
TOF MULT
TOF tray

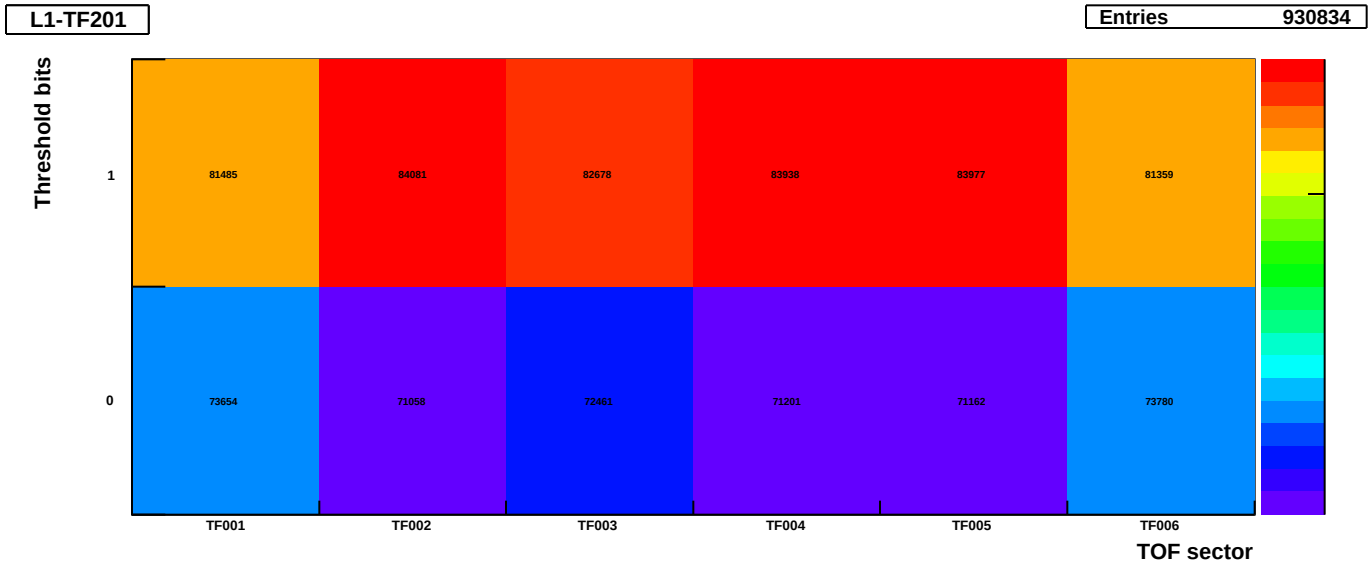

MIX-TF004
Entries 6515838
TOF MULT
TOF tray

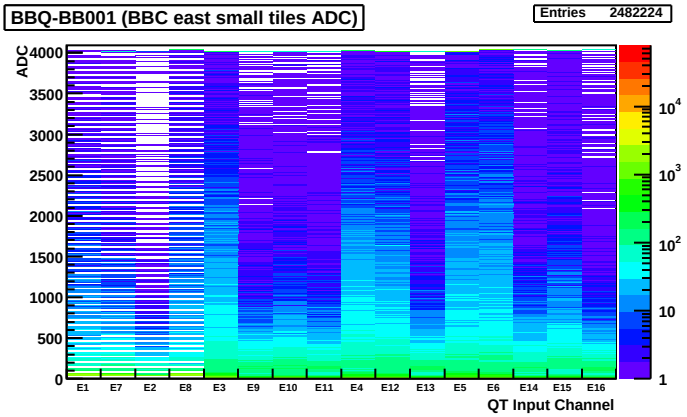

MIX-TF005
Entries 6515838
TOF MULT
TOF tray

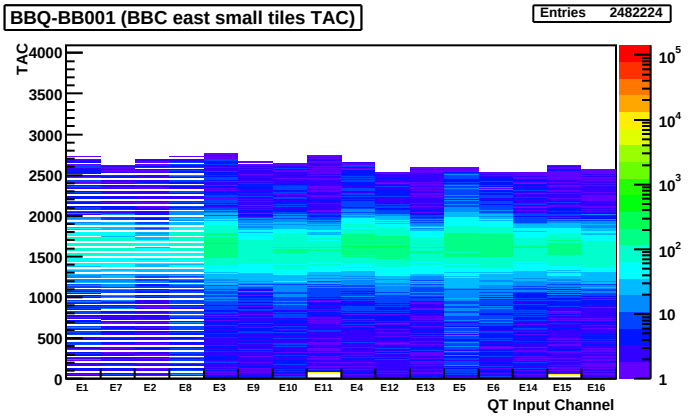

MIX-TF006
Entries 6515838
TOF MULT
TOF tray

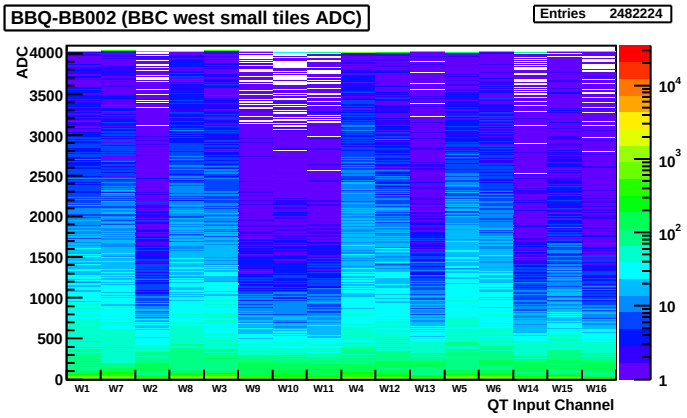

MIX-TF101
Entries 930834
TOF MULT
400
350
300
250
200
150
100
50
0
TF001
TF002
TF003
TF004
TF005
TF006
DSM Input Channel
10^4
10^3
10^2
10
1

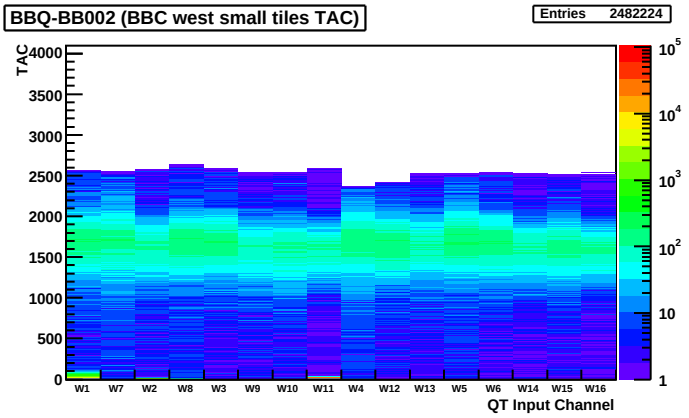

L1-TF201
Entries 155139
10^5
10^4
10^3
10^2
10
1
0
200
400
600
800
1000
1200
1400
1600
1800
2000
TOF total mult

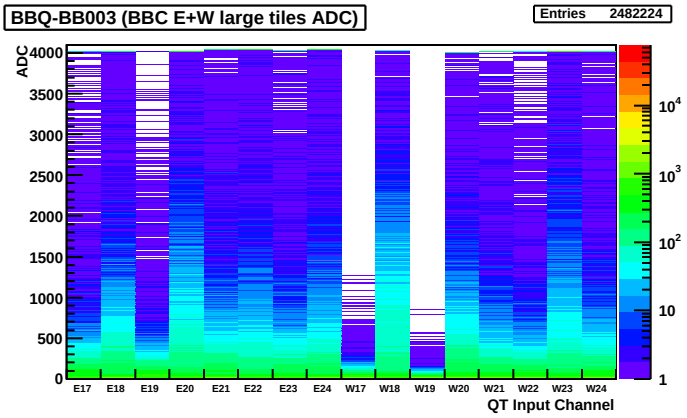

L1-TF201
Entries 930834
Threshold bits
1
0
81485
84081
82678
83938
83977
81359
73654
71058
72461
71201
71162
73780
TF001
TF002
TF003
TF004
TF005
TF006
TOF sector

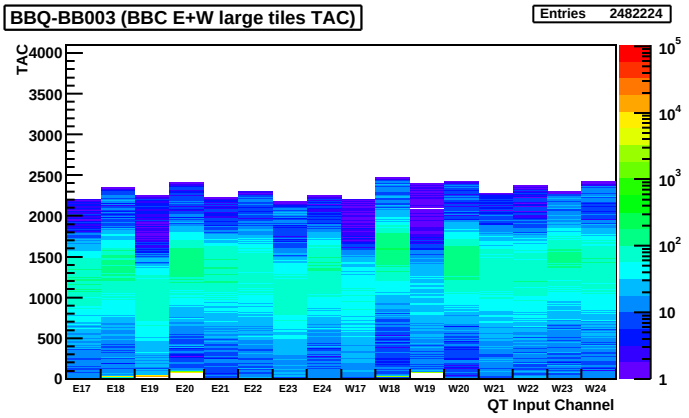

BBQ-BB001 (BBC east small tiles ADC)
Entries 2482224
ADC
QT Input Channel

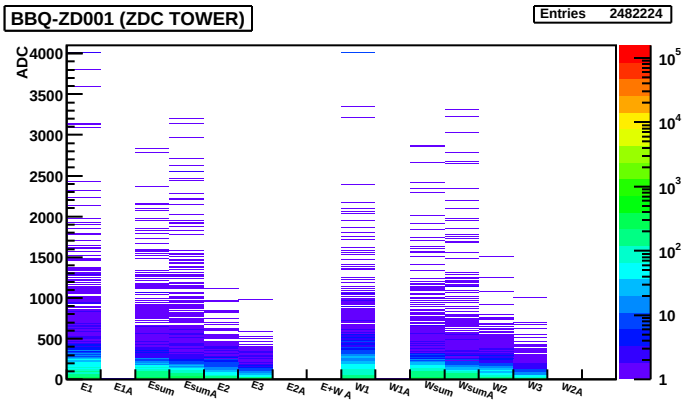

BBQ-BB001 (BBC east small tiles TAC)
Entries 2482224
TAC
QT Input Channel

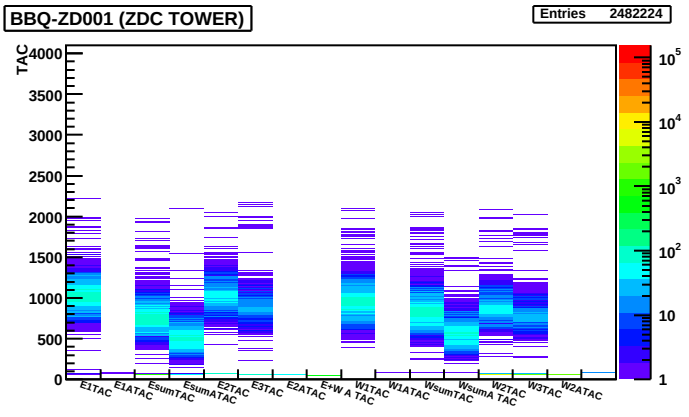

BBQ-BB002 (BBC west small tiles ADC)
Entries 2482224
ADC
QT Input Channel

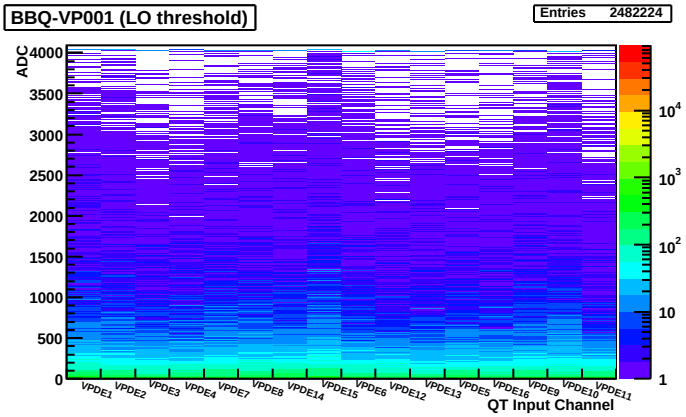

BBQ-BB002 (BBC west small tiles TAC)
Entries 2482224
TAC
QT Input Channel

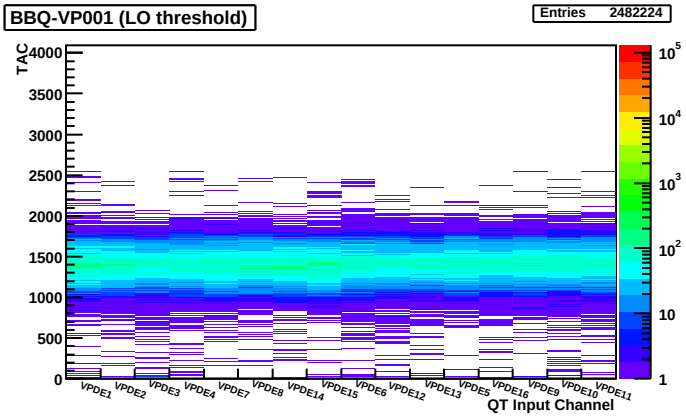

BBQ-BB003 (BBC E+W large tiles ADC)
Entries 2482224
ADC
QT Input Channel

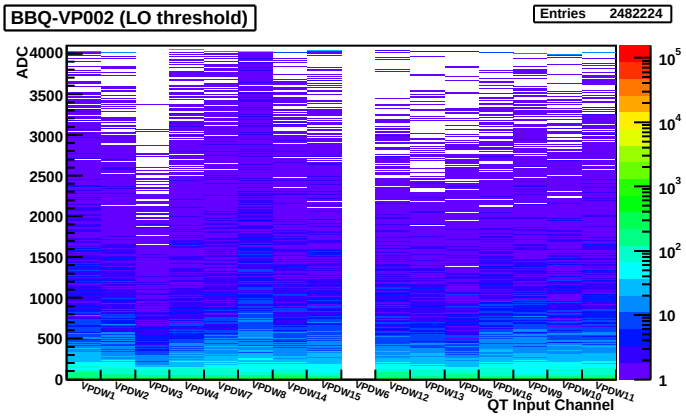

BBQ-BB003 (BBC E+W large tiles TAC)
Entries 2482224
TAC
QT Input Channel

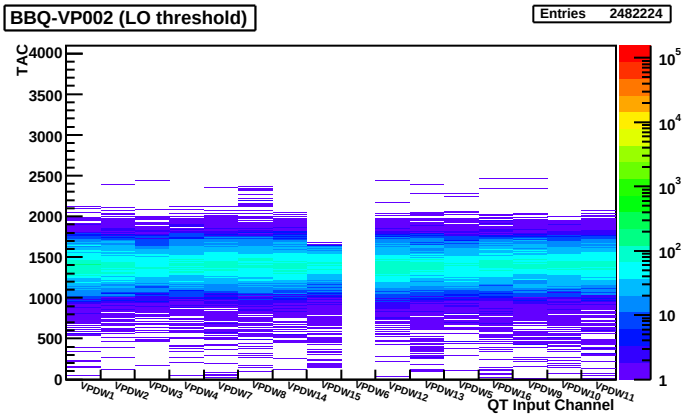

BBQ-ZD001 (ZDC TOWER)
Entries 2482224
ADC

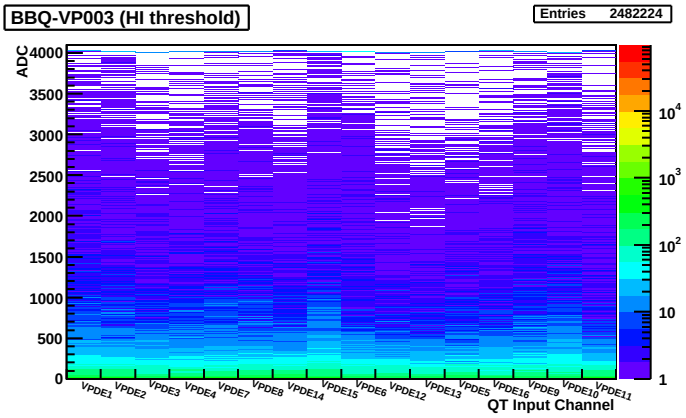

BBQ-ZD001 (ZDC TOWER)
Entries 2482224
TAC

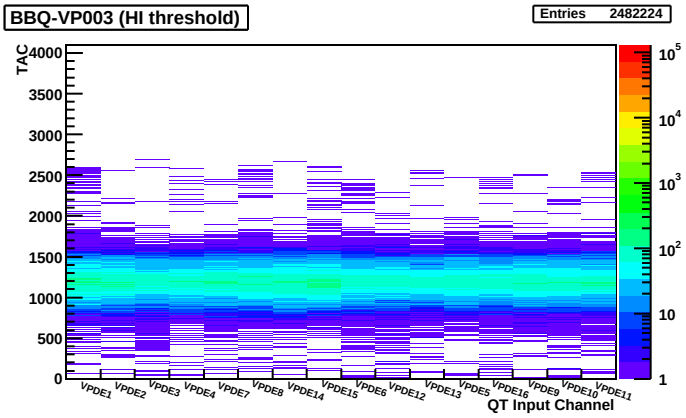

BBQ-VP001 (LO threshold)
Entries 2482224
ADC
QT Input Channel

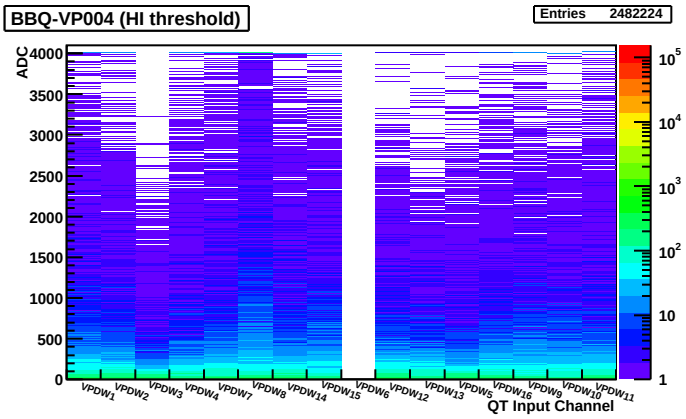

BBQ-VP001 (LO threshold)
Entries 2482224
TAC
QT Input Channel

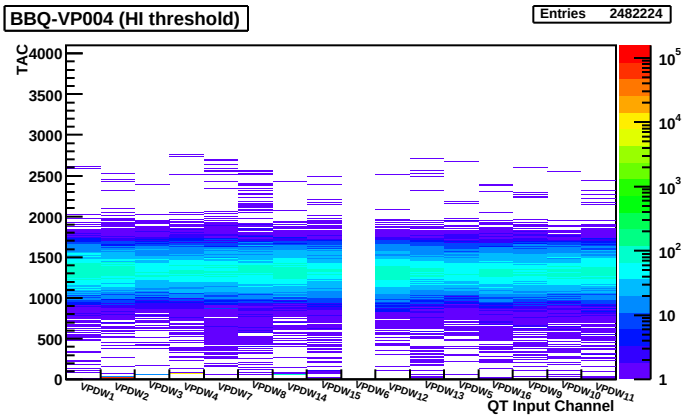

BBQ-VP002 (LO threshold)
Entries 2482224
ADC
QT Input Channel

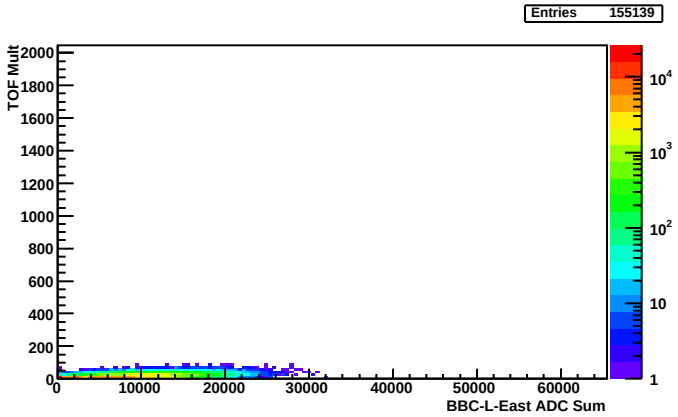

BBQ-VP002 (LO threshold)
Entries 2482224
TAC
QT Input Channel

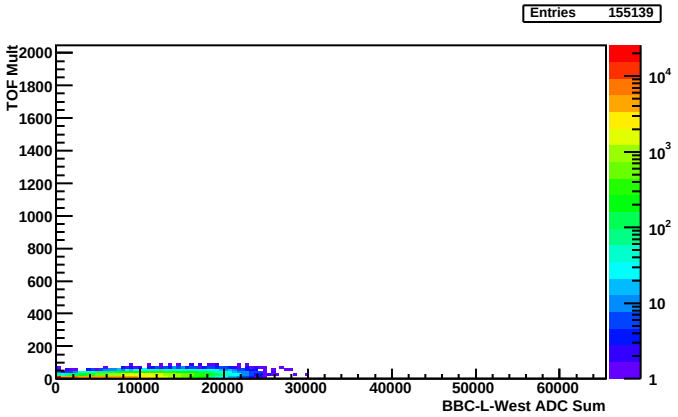

BBQ-VP003 (HI threshold)
Entries 2482224
ADC
QT Input Channel

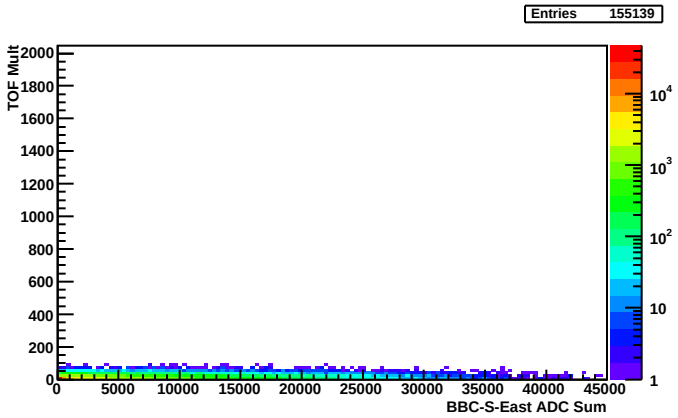

BBQ-VP003 (HI threshold)
Entries 2482224
TAC
QT Input Channel

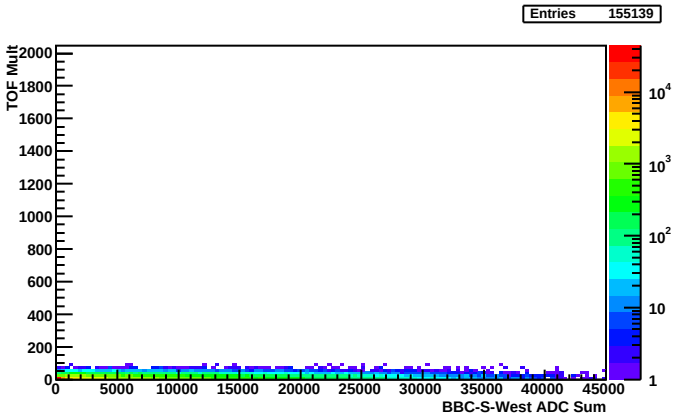

BBQ-VP004 (HI threshold)
Entries 2482224
ADC
QT Input Channel

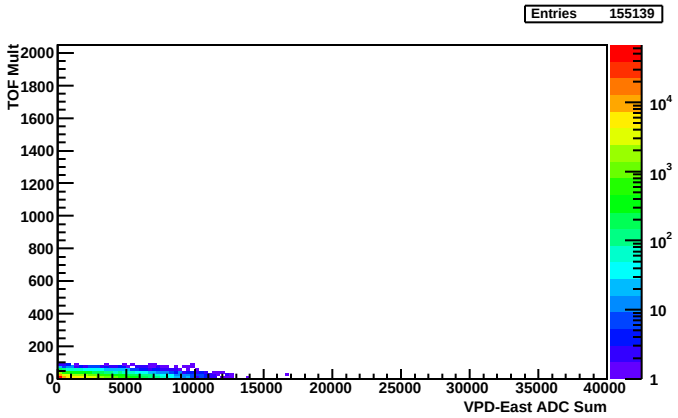

BBQ-VP004 (HI threshold)
Entries 2482224
TAC
QT Input Channel

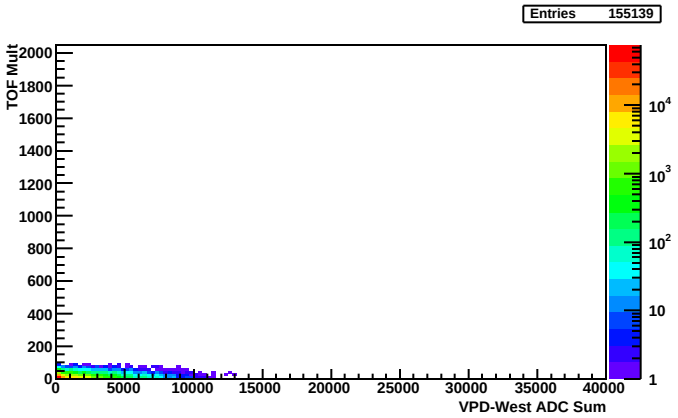

Entries 155139
TOF Mult
BBC-L-East ADC Sum

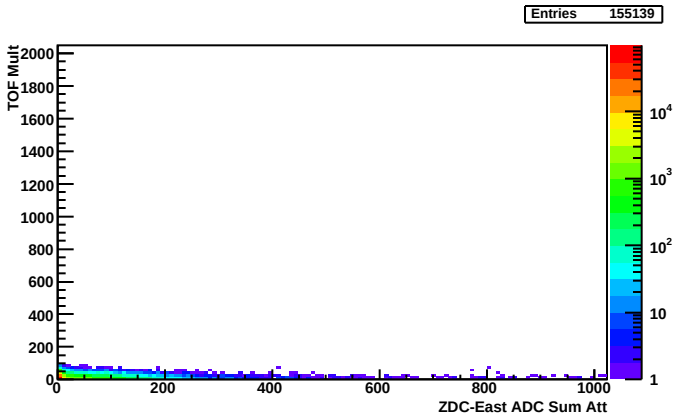

Entries 155139
TOF Mult
BBC-L-West ADC Sum

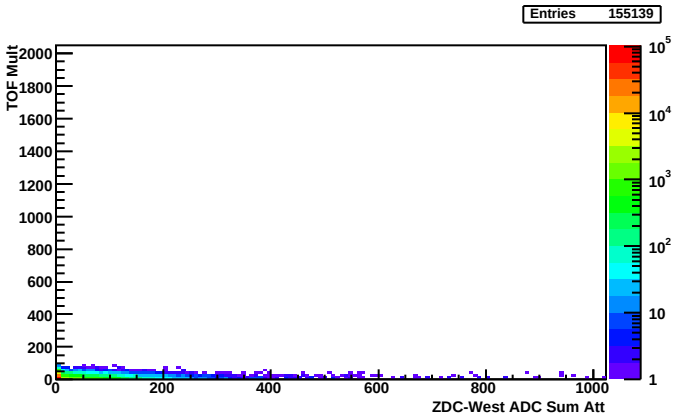

Entries 155139
TOF Mult
BBC-S-East ADC Sum

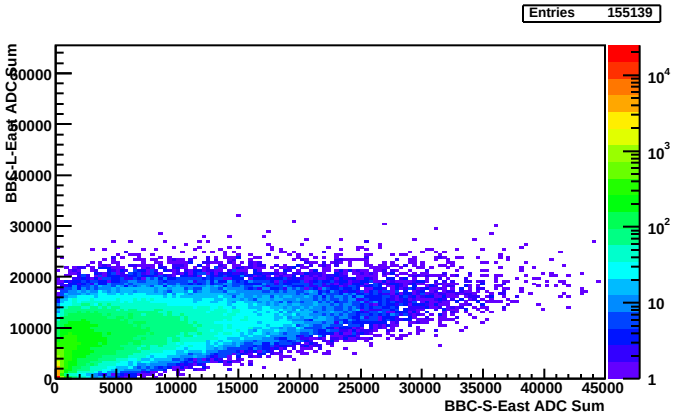

Entries 155139
TOF Mult
BBC-S-West ADC Sum

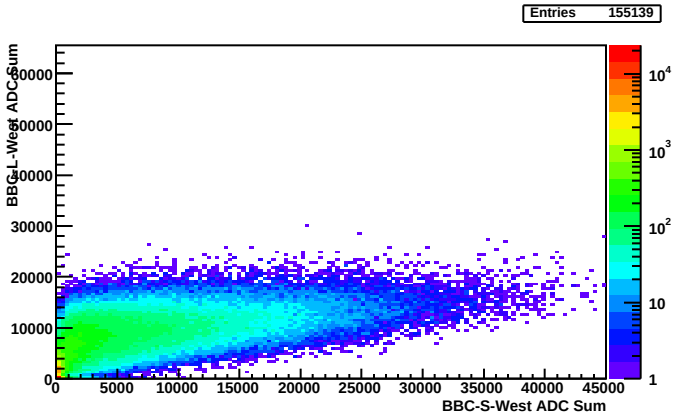

Entries 155139
TOF Mult
VPD-East ADC Sum

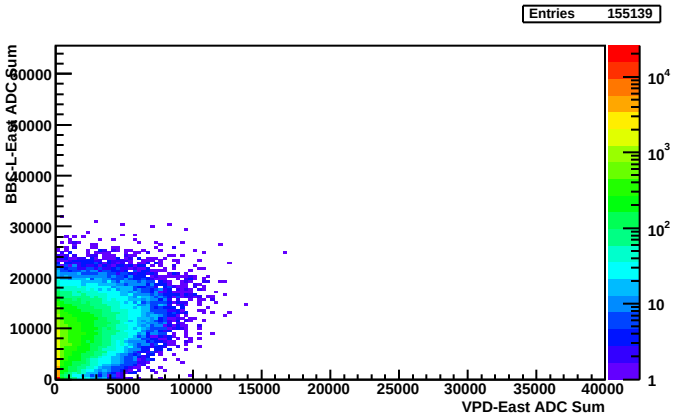

Entries 155139
TOF Mult
VPD-West ADC Sum

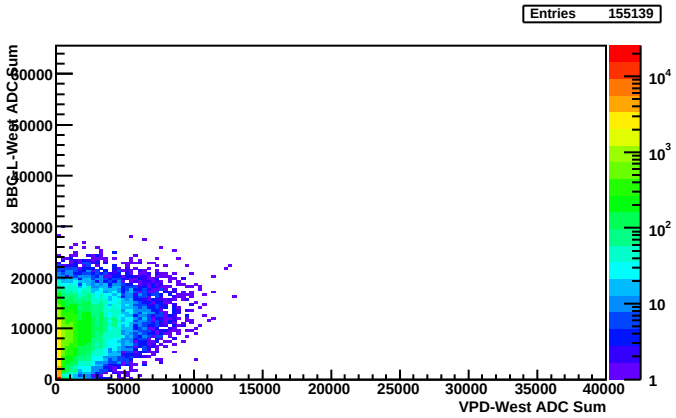

Entries 155139
TOF Mult
ZDC-East ADC Sum Att

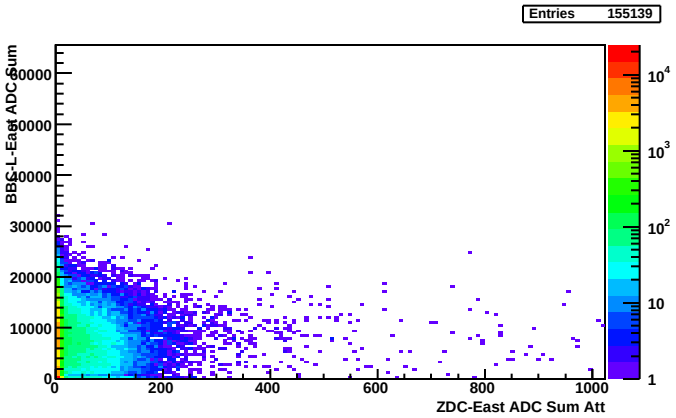

Entries 155139
TOF Mult
ZDC-West ADC Sum Att

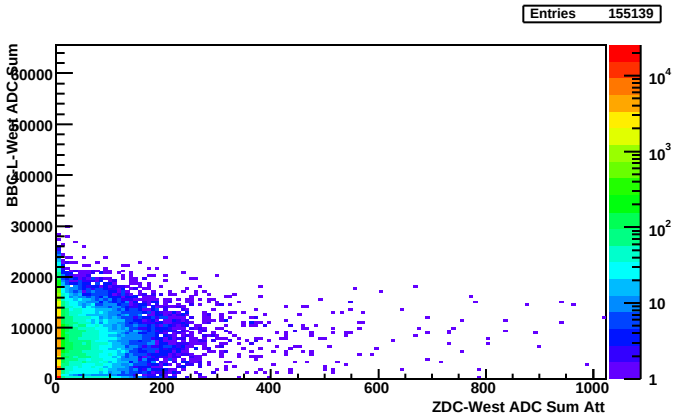

Entries 155139
BBC-L-East ADC Sum
BBC-S-East ADC Sum

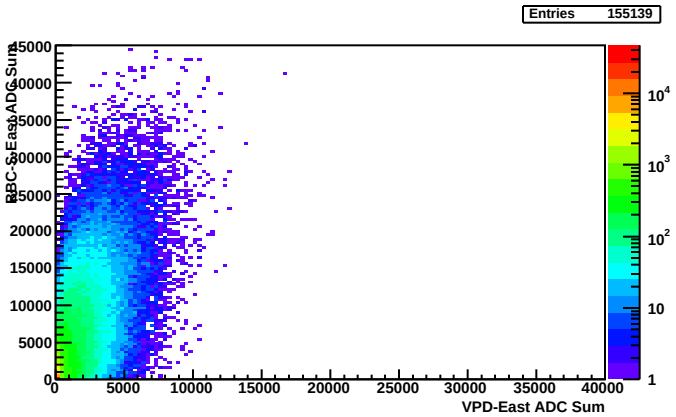

Entries 155139
BBC-L-West ADC Sum
BBC-S-West ADC Sum

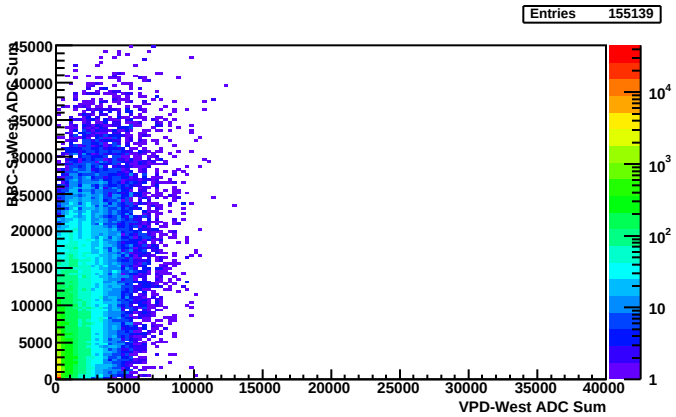

Entries 155139
BBC-L-East ADC Sum
VPD-East ADC Sum

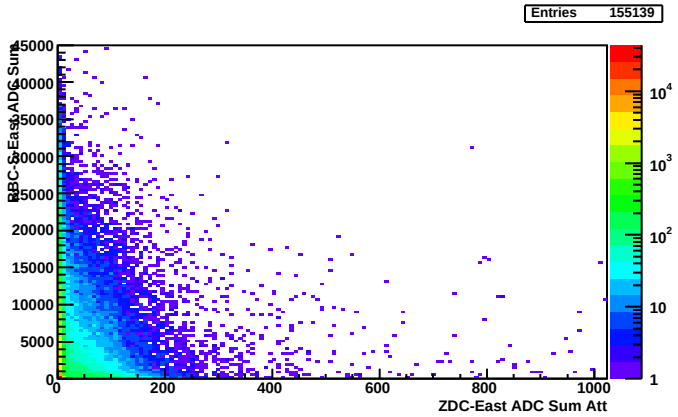

Entries 155139
BBC-L-West ADC Sum
VPD-West ADC Sum

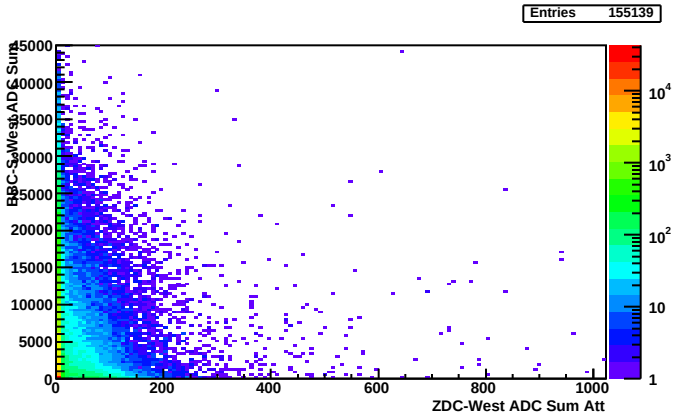

Entries 155139
BBC-L-East ADC Sum
ZDC-East ADC Sum Att

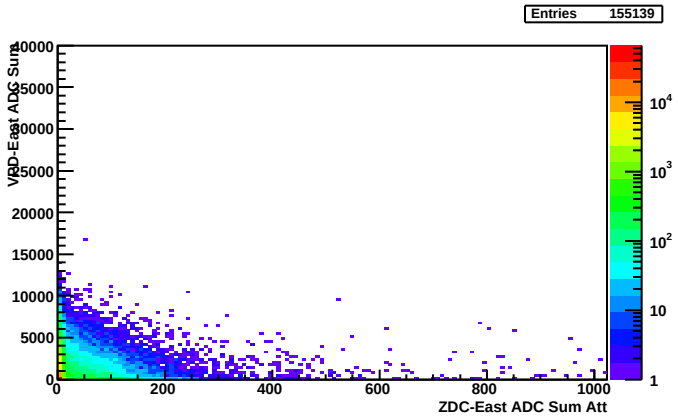

Entries 155139
BBC-L-West ADC Sum
ZDC-West ADC Sum Att

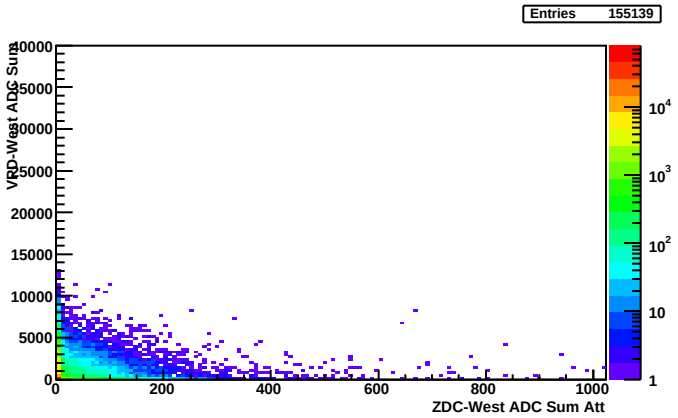

Entries 155139
BBC-S-East ADC Sum
VPD-East ADC Sum

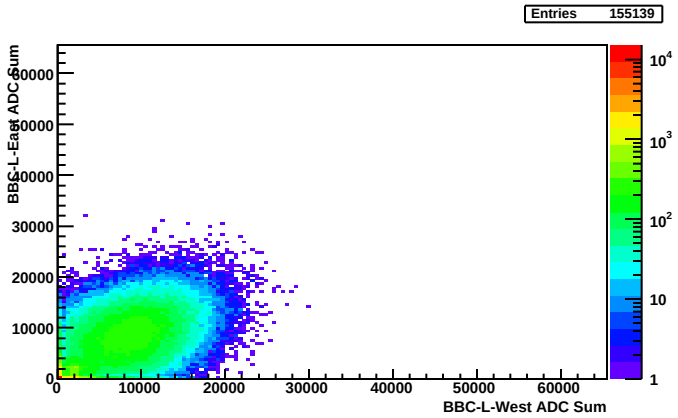

Entries 155139
BBC-S-West ADC Sum
VPD-West ADC Sum

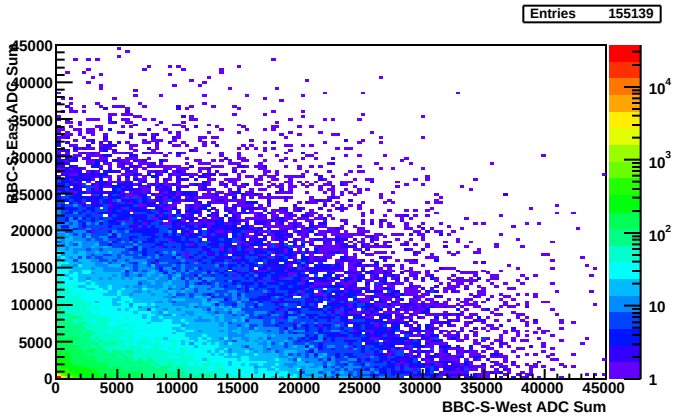

Entries 155139
BBC-S-East ADC Sum
ZDC-East ADC Sum Att

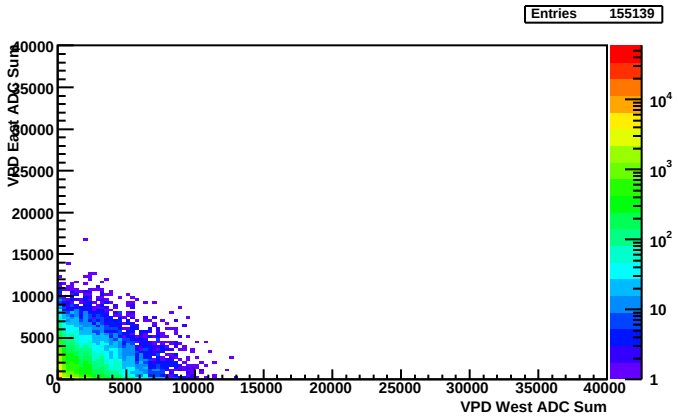

Entries 155139
BBC-S-West ADC Sum
ZDC-West ADC Sum Att

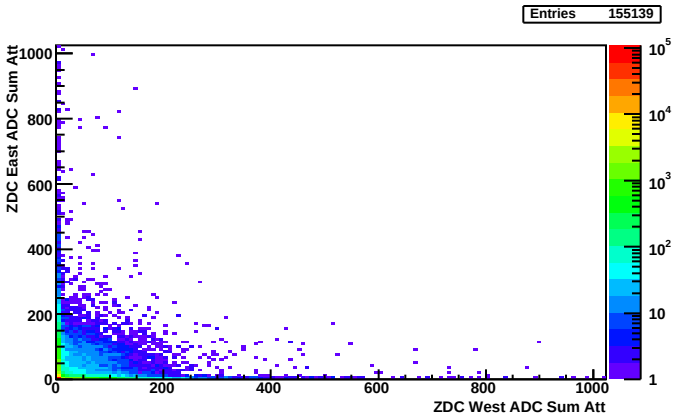

Entries 155139
VPD-East ADC Sum
ZDC-East ADC Sum Att

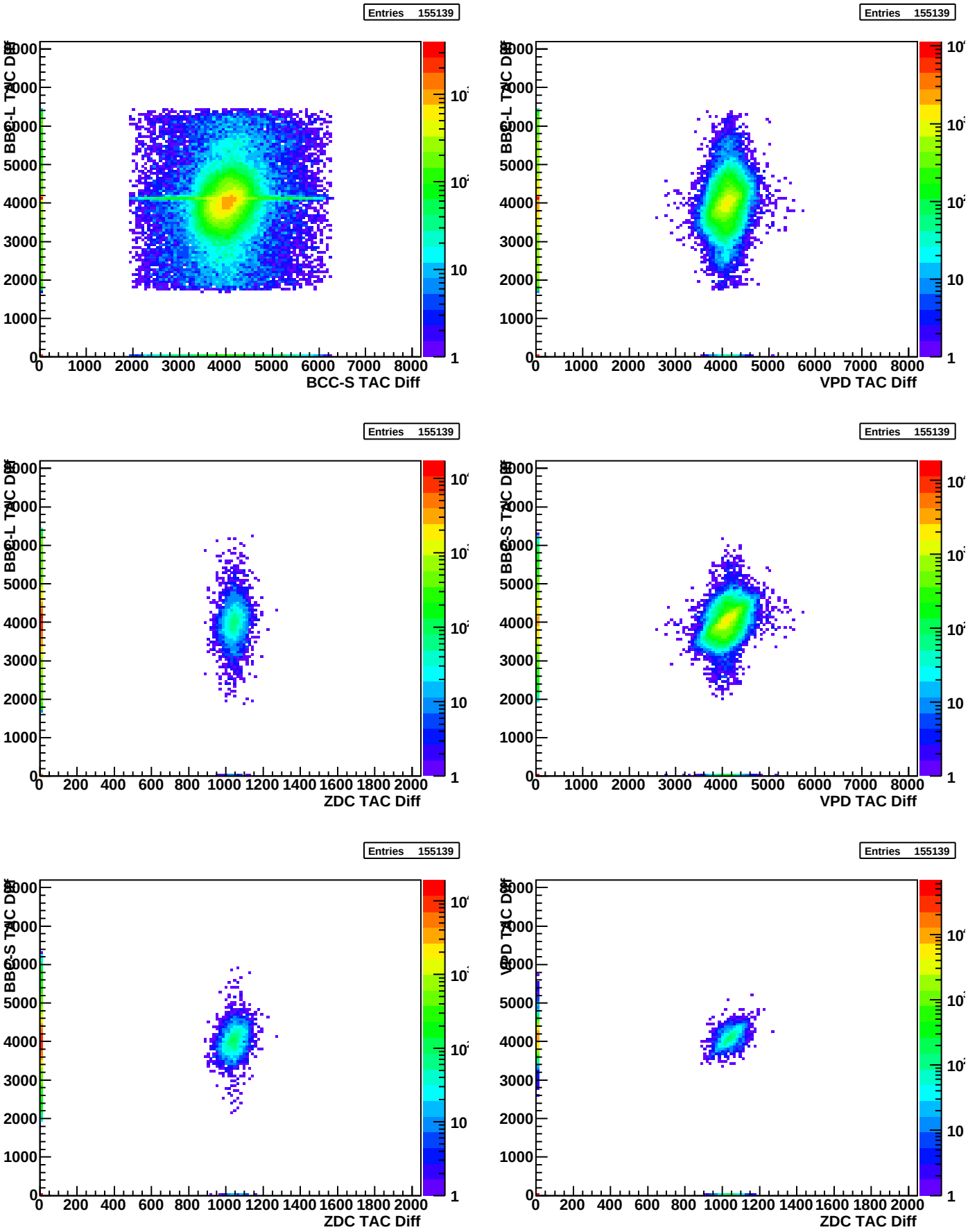

Entries 155139
VPD-West ADC Sum
ZDC-West ADC Sum Att

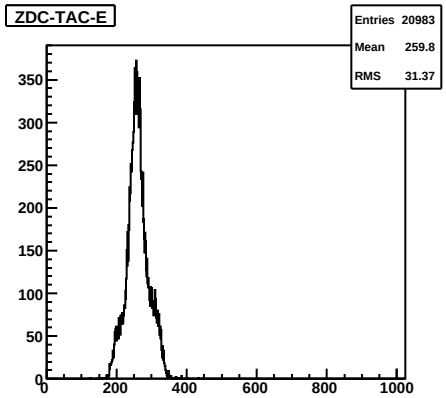

Entries 155139
BBC-L-East ADC Sum
BBC-L-West ADC Sum

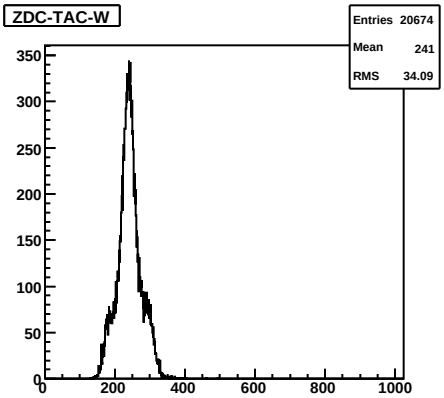

Entries 155139
BBC-S-East ADC Sum
BBC-S-West ADC Sum

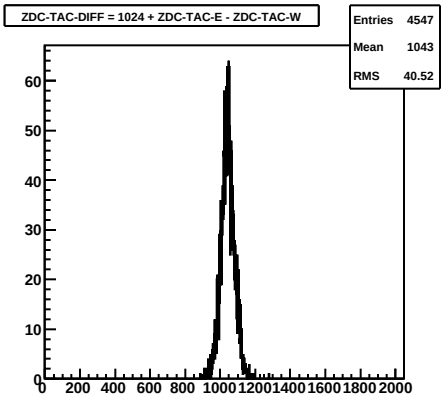

Entries 155139
VPD East ADC Sum
VPD West ADC Sum

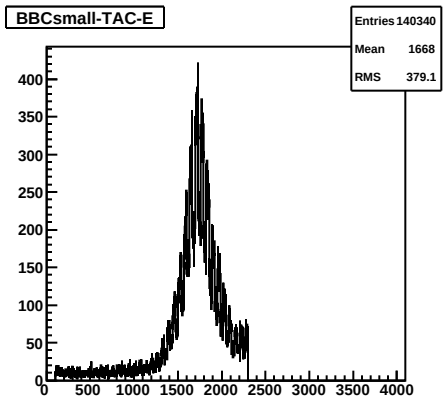

Entries 155139
ZDC East ADC Sum Att
ZDC West ADC Sum Att

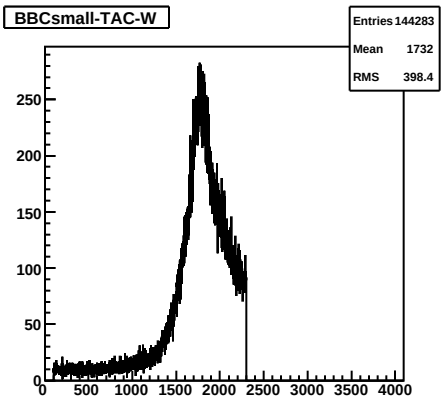

Entries 155139
BBC-L TAC Diff
BCC-S TAC Diff
Entries 155139
BBC-L TAC Diff
VPD TAC Diff
Entries 155139
BBC-L TAC Diff
ZDC TAC Diff
Entries 155139
BBC-S TAC Diff
VPD TAC Diff
Entries 155139
BBC-S TAC Diff
ZDC TAC Diff
Entries 155139
VPD TAC Diff
ZDC TAC Diff

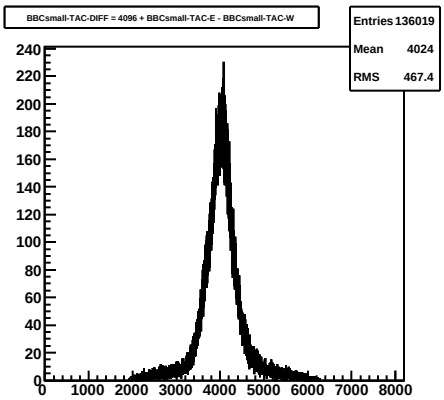

ZDC-TAC-E
Entries 20983
Mean 259.8
RMS 31.37

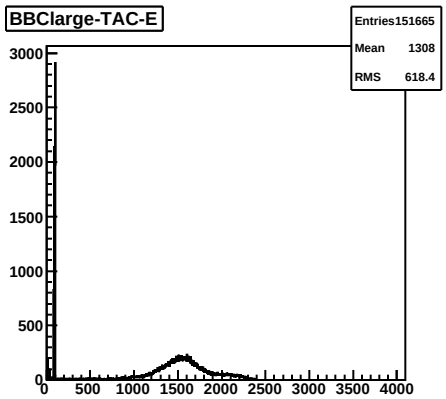

ZDC-TAC-W
Entries 20674
Mean 241
RMS 34.09

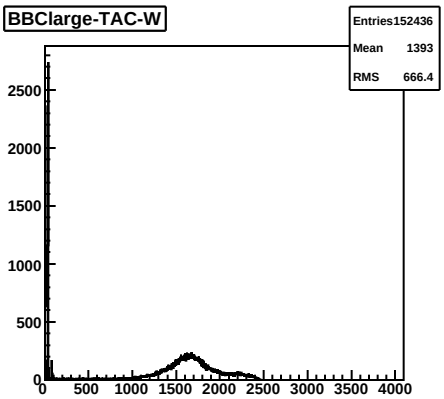

ZDC-TAC-DIFF = 1024 + ZDC-TAC-E - ZDC-TAC-W
Entries 4547
Mean 1043
RMS 40.52

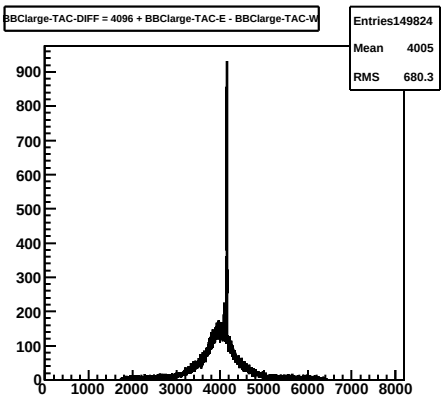

BBCsmall-TAC-E
Entries 140340
Mean 1668
RMS 379.1

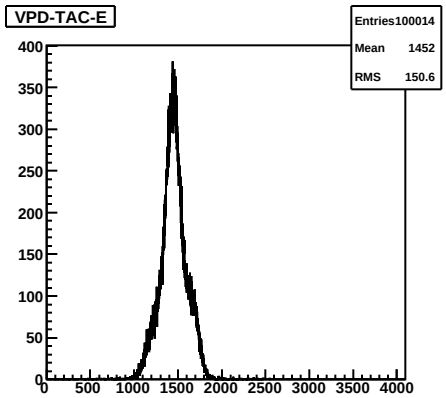

BBCsmall-TAC-W
Entries 144283
Mean 1732
RMS 398.4

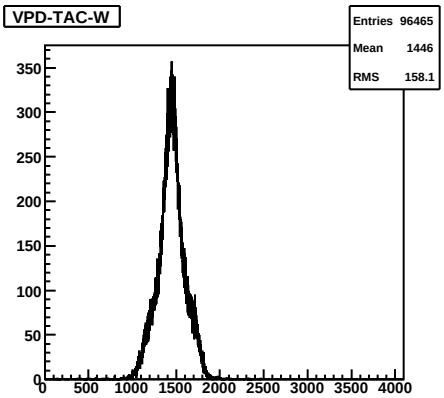

BBCsmall-TAC-DIFF = 4096 + BBCsmall-TAC-E - BBCsmall-TAC-W
Entries 136019
Mean 4024
RMS 467.4

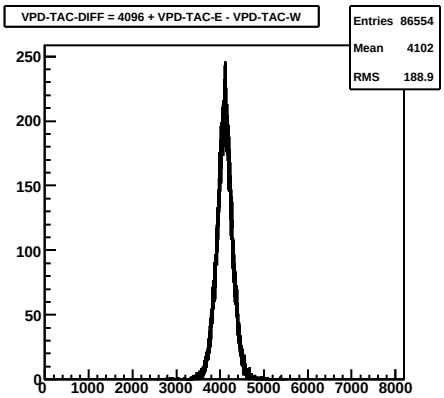

BBClarge-TAC-E
Entries 151665
Mean 1308
RMS 618.4

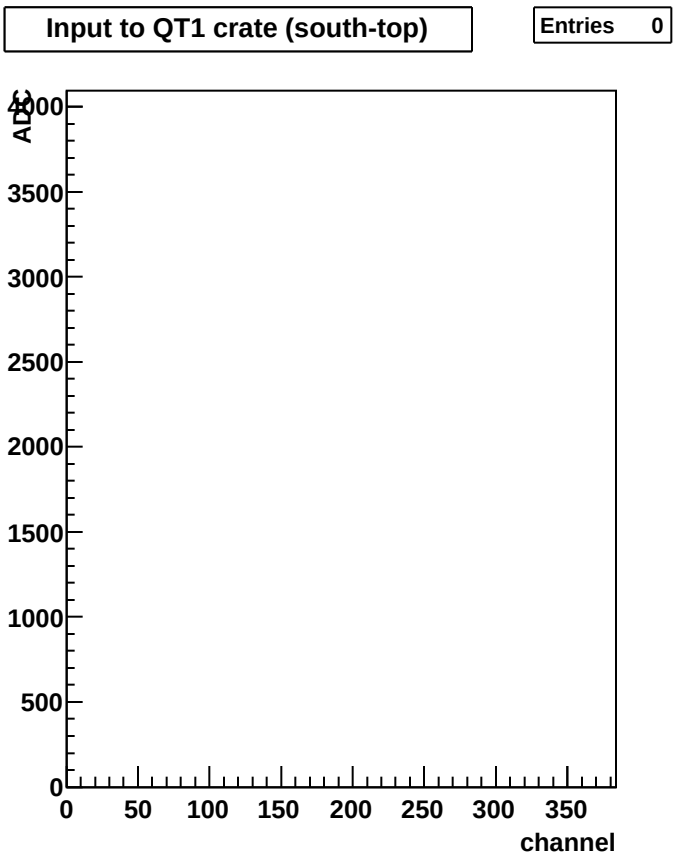

BBClarge-TAC-W
Entries 152436
Mean 1393
RMS 666.4

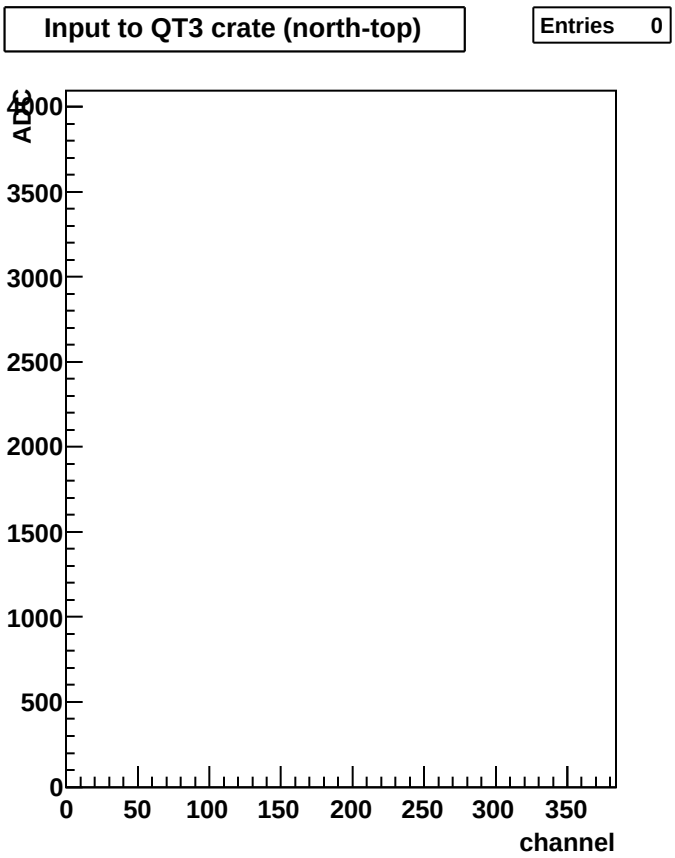

BBClarge-TAC-DIFF = 4096 + BBClarge-TAC-E - BBClarge-TAC-W
Entries 149824
Mean 4005
RMS 680.3

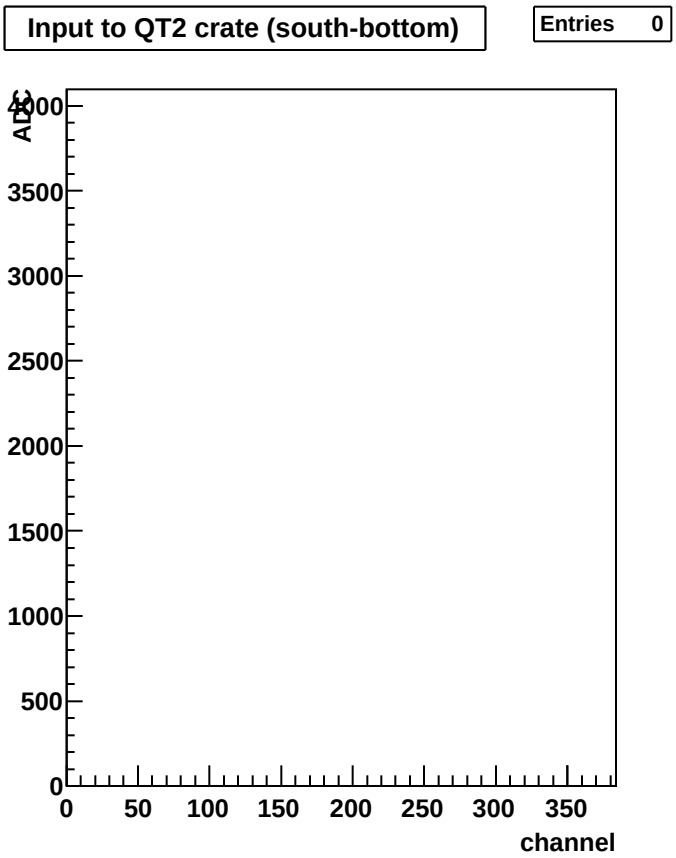

VPD-TAC-E
Entries 100014
Mean 1452
RMS 150.6

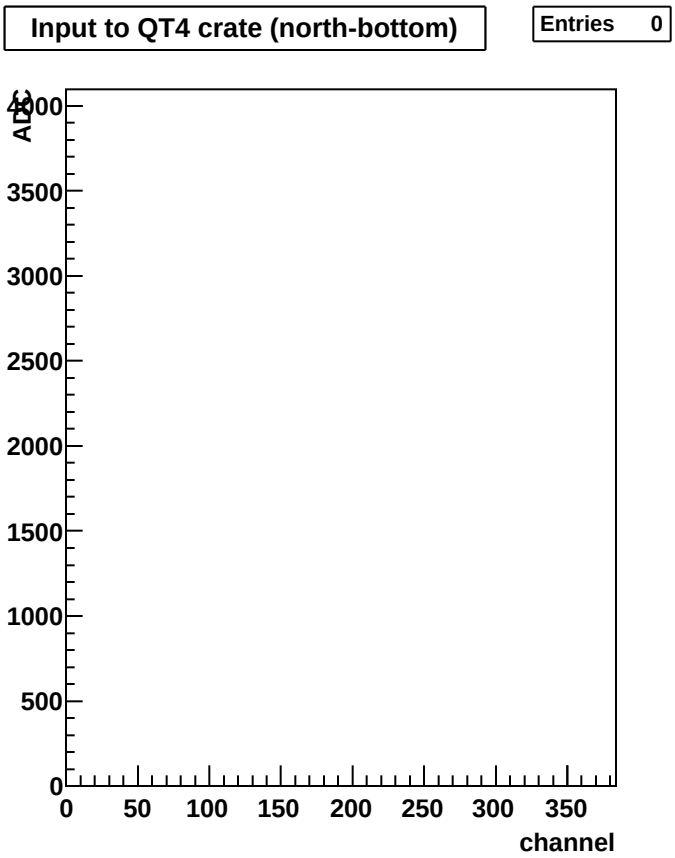

VPD-TAC-W
Entries 96465
Mean 1446
RMS 158.1

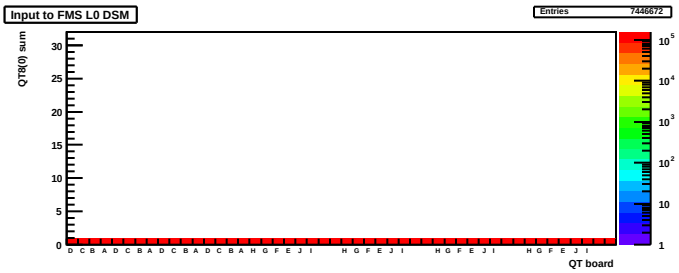

VPD-TAC-DIFF = 4096 + VPD-TAC-E - VPD-TAC-W
Entries 86554
Mean 4102
RMS 188.9

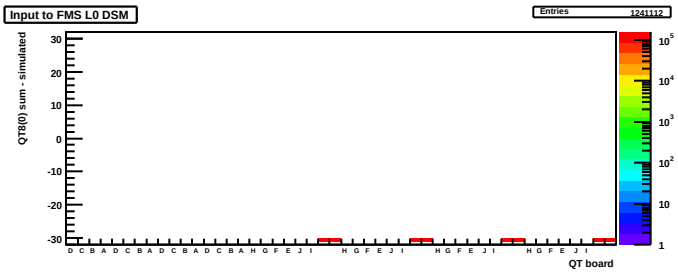

Input to QT1 crate (south-top)
Entries 0
ADC
4000
3500
3000
2500
2000
1500
1000
500
0
0 50 100 150 200 250 300 350
channel

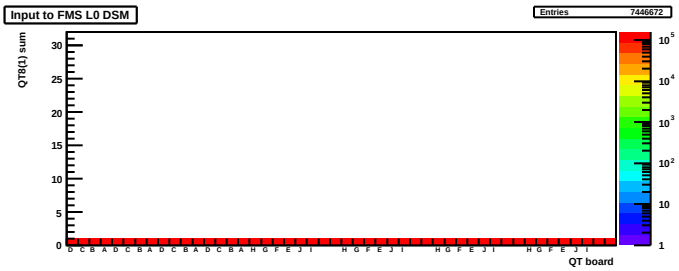

Input to QT3 crate (north-top)
Entries 0
ADC
4000
3500
3000
2500
2000
1500
1000
500
0
0 50 100 150 200 250 300 350
channel

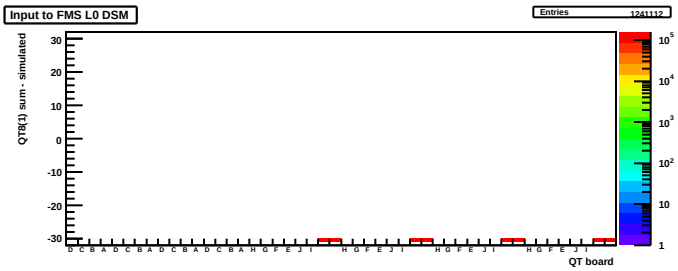

Input to QT2 crate (south-bottom)
Entries 0
ADC
4000
3500
3000
2500
2000
1500
1000
500
0
0 50 100 150 200 250 300 350
channel

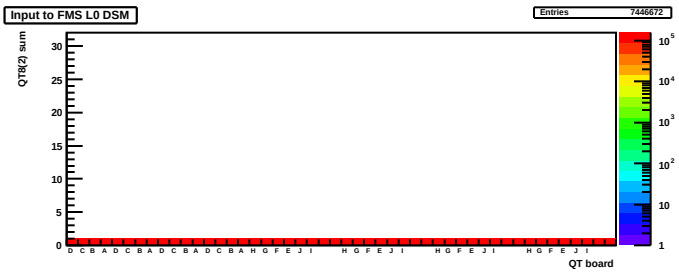

Input to QT4 crate (north-bottom)
Entries 0
ADC
4000
3500
3000
2500
2000
1500
1000
500
0
0 50 100 150 200 250 300 350
channel

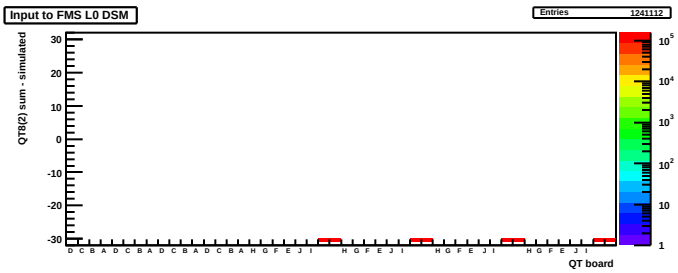

Input to FMS L0 DSM
Entries 7446672
QT8(0) sum
QT board

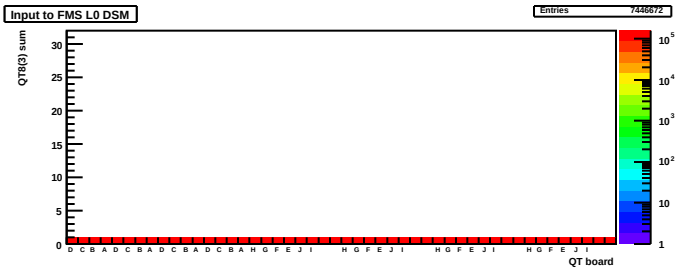

Input to FMS L0 DSM
Entries 1241112
QT8(0) sum - simulated
QT board

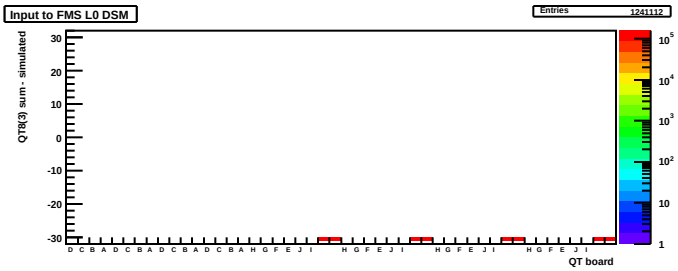

Input to FMS L0 DSM
Entries 7446672
QT8(1) sum
QT board

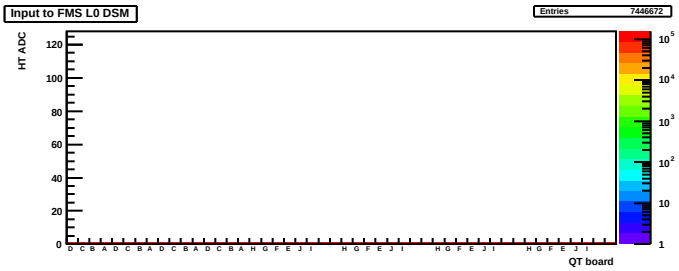

Input to FMS L0 DSM
Entries 1241112
QT8(1) sum - simulated
QT board

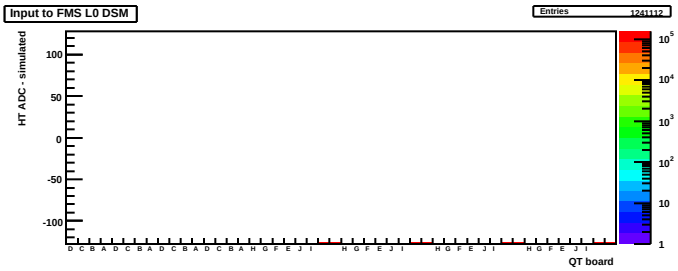

Input to FMS L0 DSM
Entries 7446672
QT8(2) sum
QT board

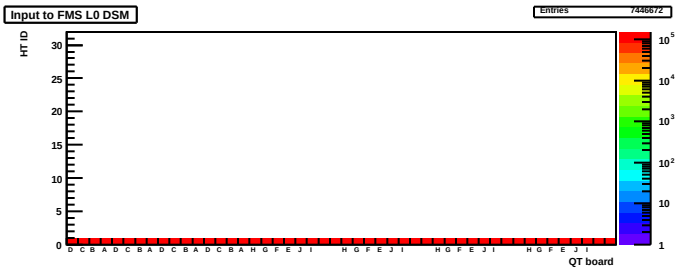

Input to FMS L0 DSM
Entries 1241112
QT8(2) sum - simulated
QT board

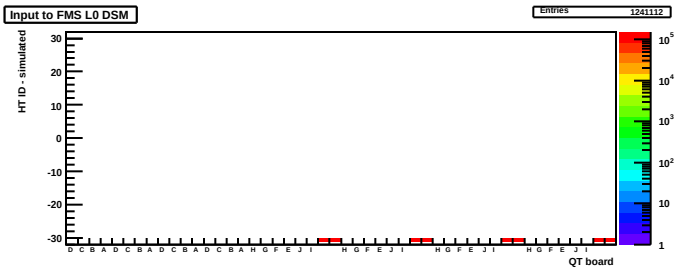

Input to FMS L0 DSM
Entries 7446672
QT8(3) sum
QT board

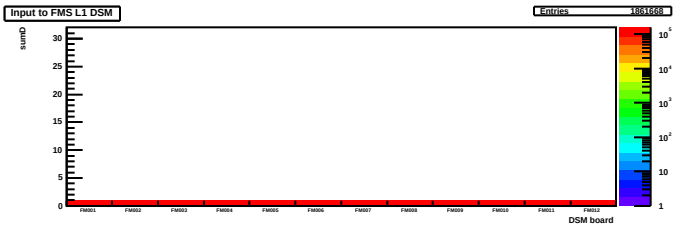

Input to FMS L0 DSM
Entries 1241112
QT8(3) sum - simulated
QT board

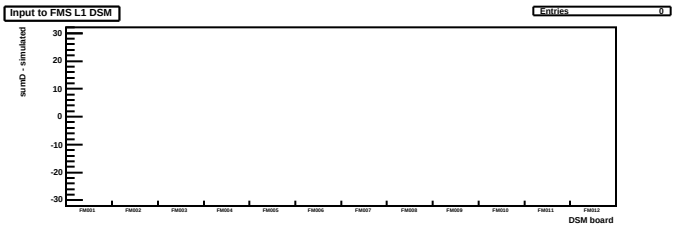

Input to FMS L0 DSM
Entries 7446672
HT ADC
QT board

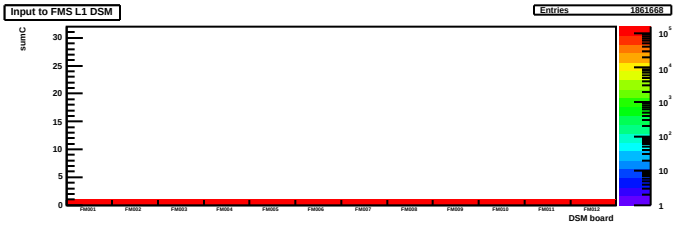

Input to FMS L0 DSM
Entries 1241112
HT ADC - simulated
QT board

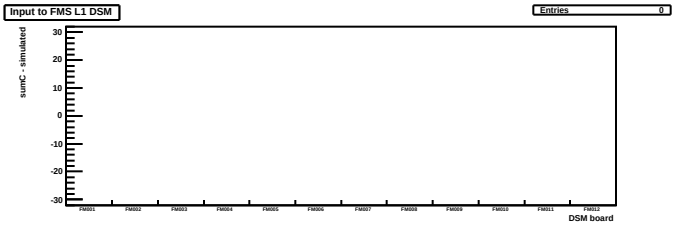

Input to FMS L0 DSM
Entries 7446672
HT ID
QT board

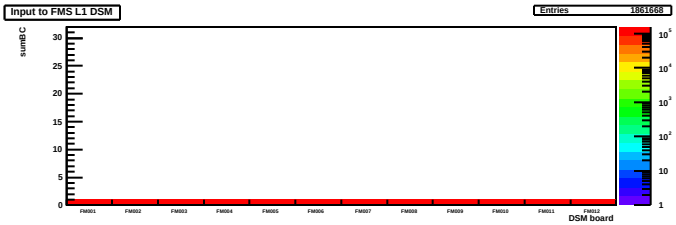

Input to FMS L0 DSM
Entries 1241112
HT ID - simulated
QT board

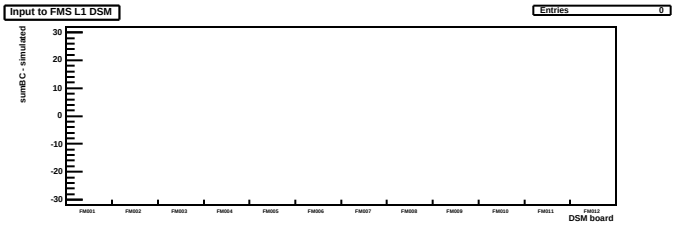

Input to FMS L1 DSM
Entries 1861668
sumD
DSM board

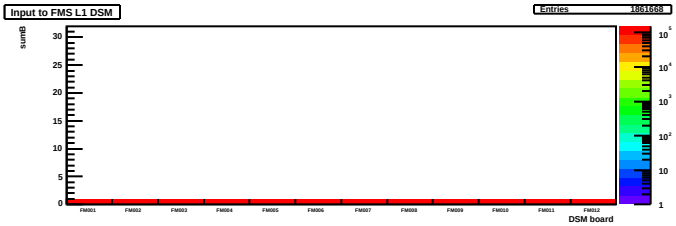

Input to FMS L1 DSM
Entries 0
sumD - simulated
DSM board

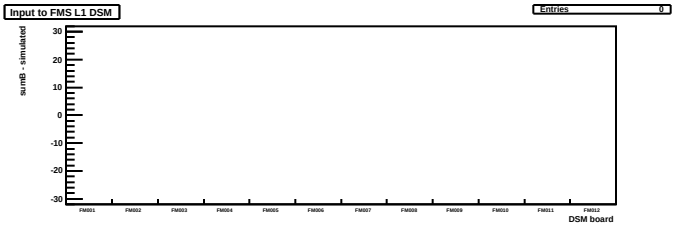

Input to FMS L1 DSM
Entries 1861668
sumC
DSM board

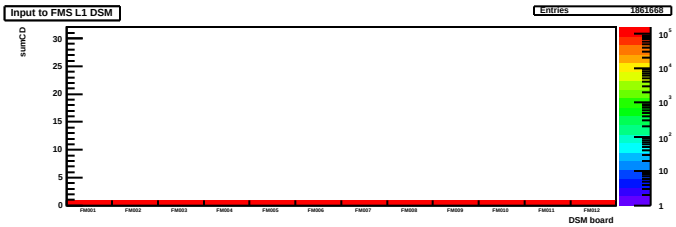

Input to FMS L1 DSM
Entries 0
sumC - simulated
DSM board

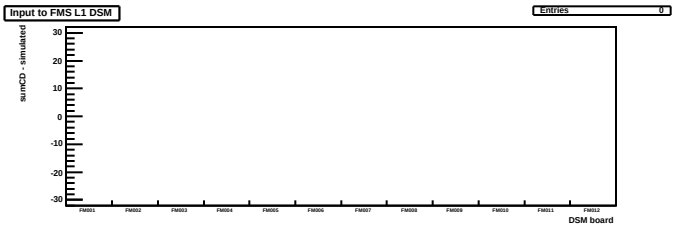

Input to FMS L1 DSM
Entries 1861668
sumBC
DSM board

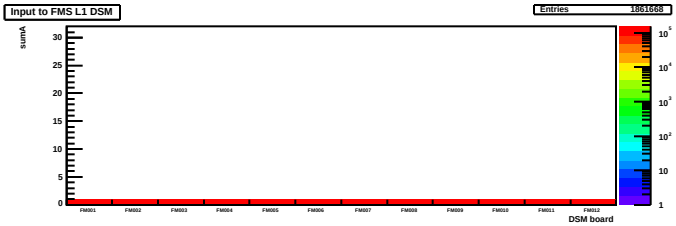

Input to FMS L1 DSM
Entries 0
sumBC - simulated
DSM board

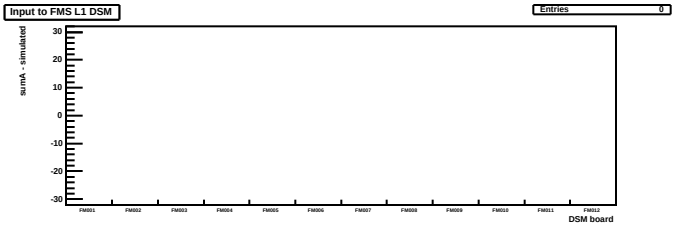

Input to FMS L1 DSM
Entries 1861668
sumB
DSM board

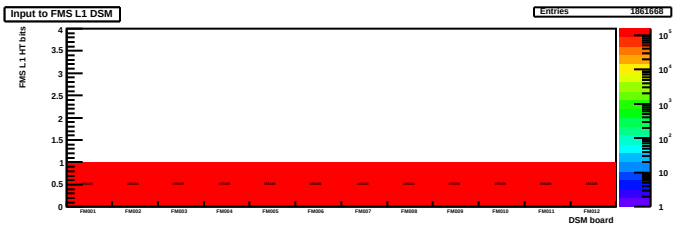

Input to FMS L1 DSM
Entries 0
sumB - simulated
DSM board

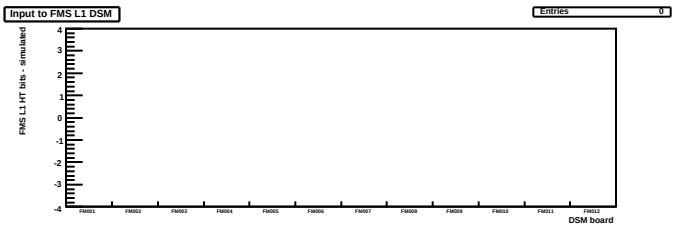

Input to FMS L1 DSM
Entries 1861668
sumCD
DSM board

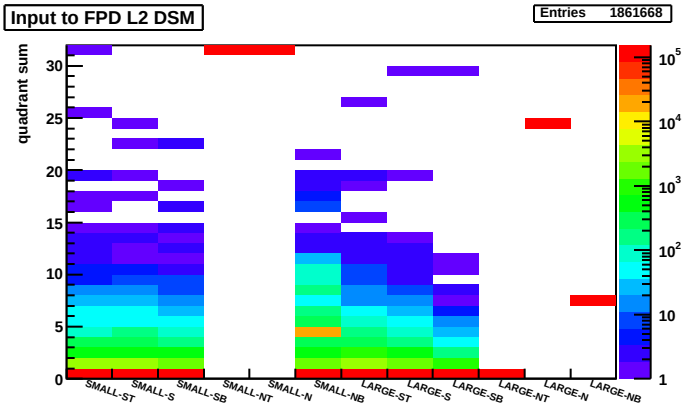

Input to FMS L1 DSM
Entries 0
sumCD - simulated
DSM board

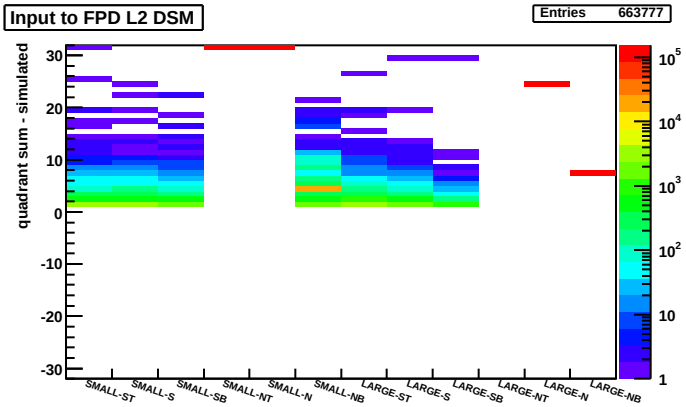

Input to FMS L1 DSM
Entries 1861668
sumA
DSM board

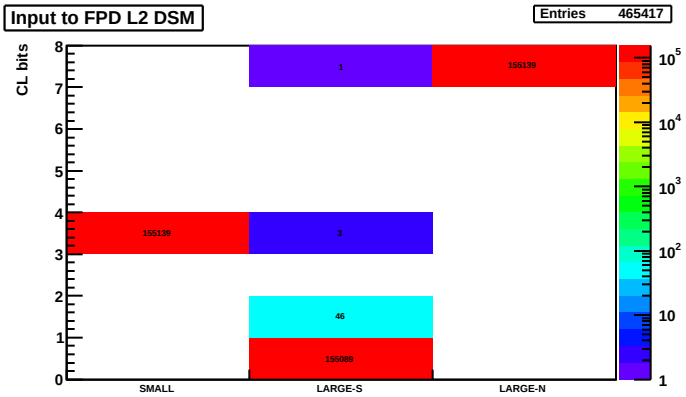

Input to FMS L1 DSM
Entries 0
sumA - simulated
DSM board

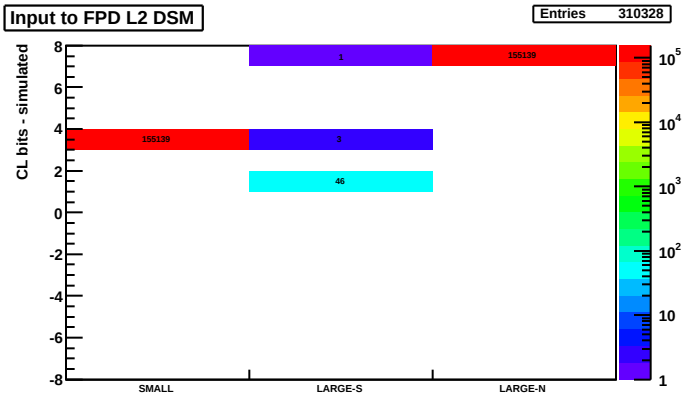

Input to FMS L1 DSM
Entries 1861668
FMS L1 HT bits
DSM board

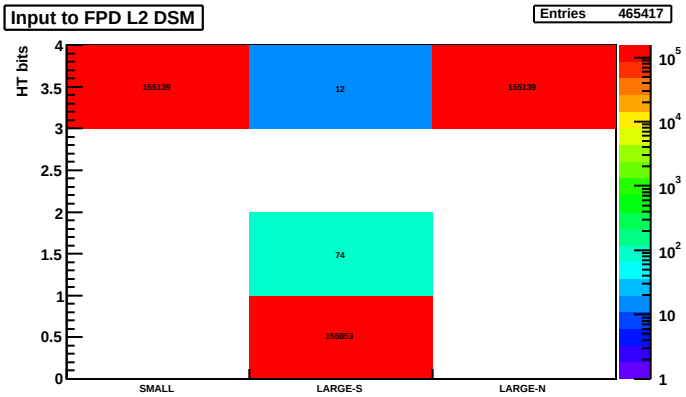

Input to FMS L1 DSM
Entries 0
FMS L1 HT bits - simulated
DSM board

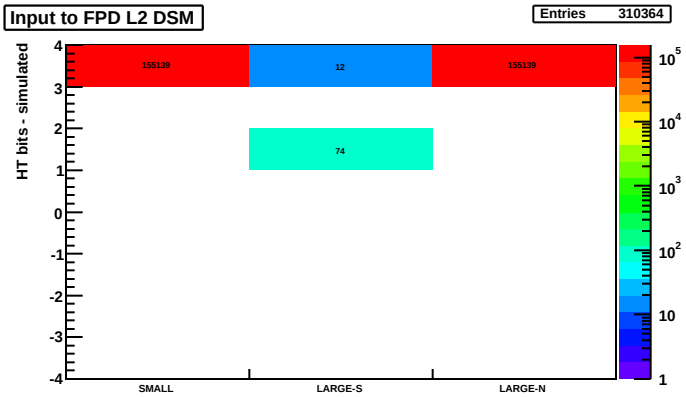

Input to FPD L2 DSM
Entries 1861668
quadrant sum
SMALL-ST
SMALL-S
SMALL-SB
SMALL-NT
SMALL-N
SMALL-NB
LARGE-ST
LARGE-S
LARGE-SB
LARGE-NT
LARGE-N
LARGE-NB

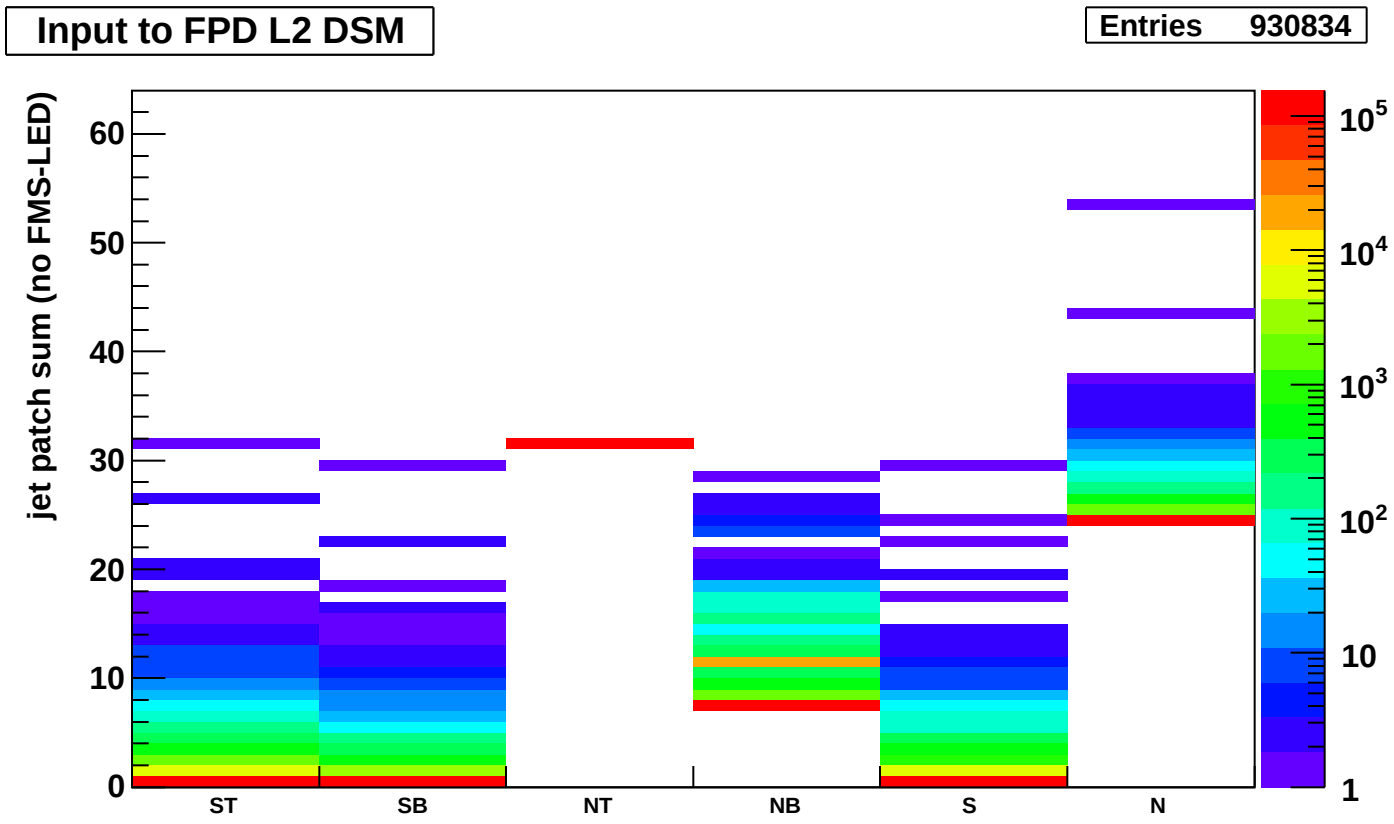

Input to FPD L2 DSM
Entries 663777
quadrant sum - simulated
SMALL-ST
SMALL-S
SMALL-SB
SMALL-NT
SMALL-N
SMALL-NB
LARGE-ST
LARGE-S
LARGE-SB
LARGE-NT
LARGE-N
LARGE-NB

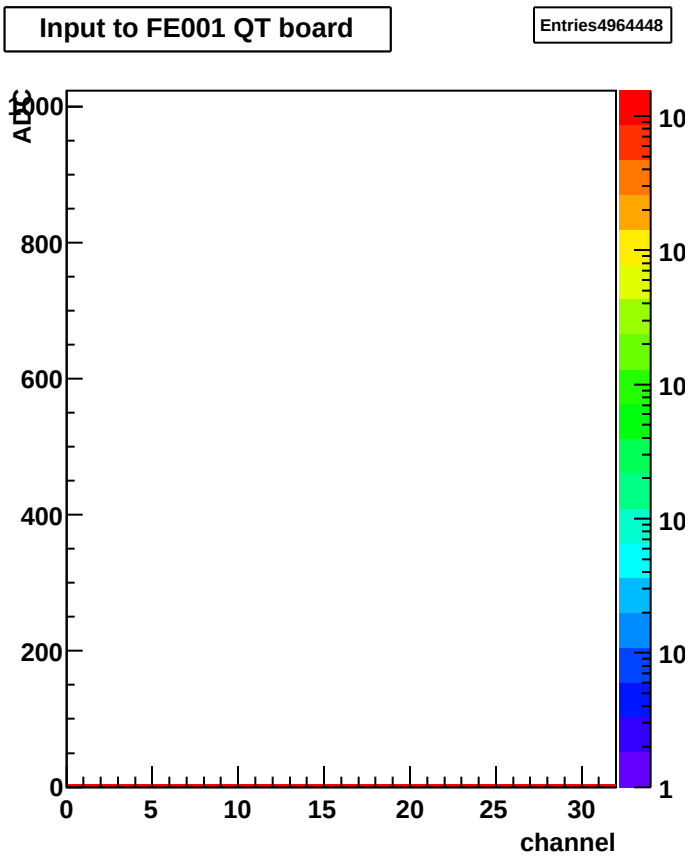

Input to FPD L2 DSM
Entries 465417
CL bits
1
155139
155139
3
46
155089
SMALL
LARGE-S
LARGE-N

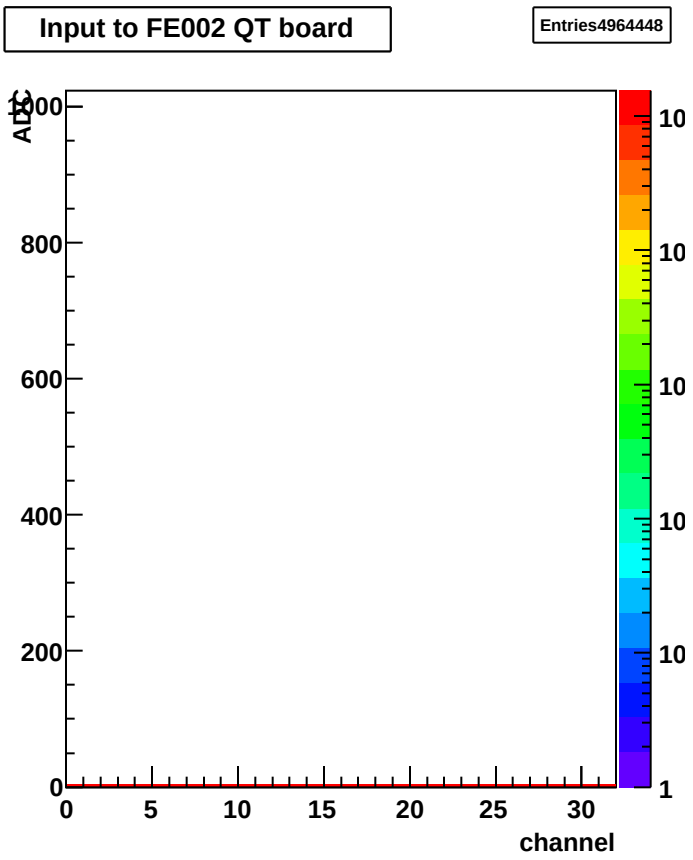

Input to FPD L2 DSM
Entries 310328
CL bits - simulated
1
155139
155139
3
46
SMALL
LARGE-S
LARGE-N

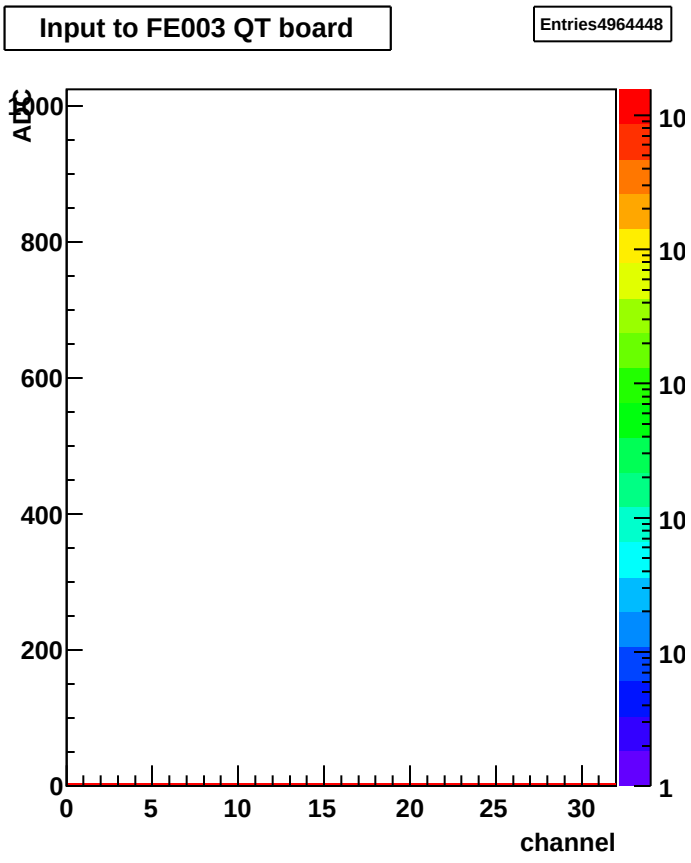

Input to FPD L2 DSM
Entries 465417
HT bits
155139
12
155139
74
155053
SMALL
LARGE-S
LARGE-N

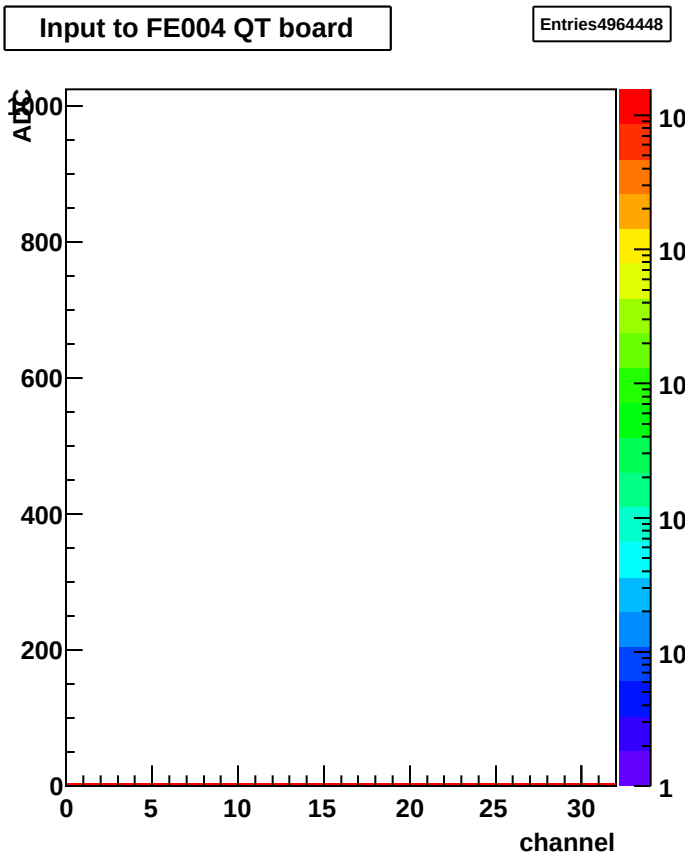

Input to FPD L2 DSM
Entries 310364
HT bits - simulated
155139
12
155139
74
SMALL
LARGE-S
LARGE-N

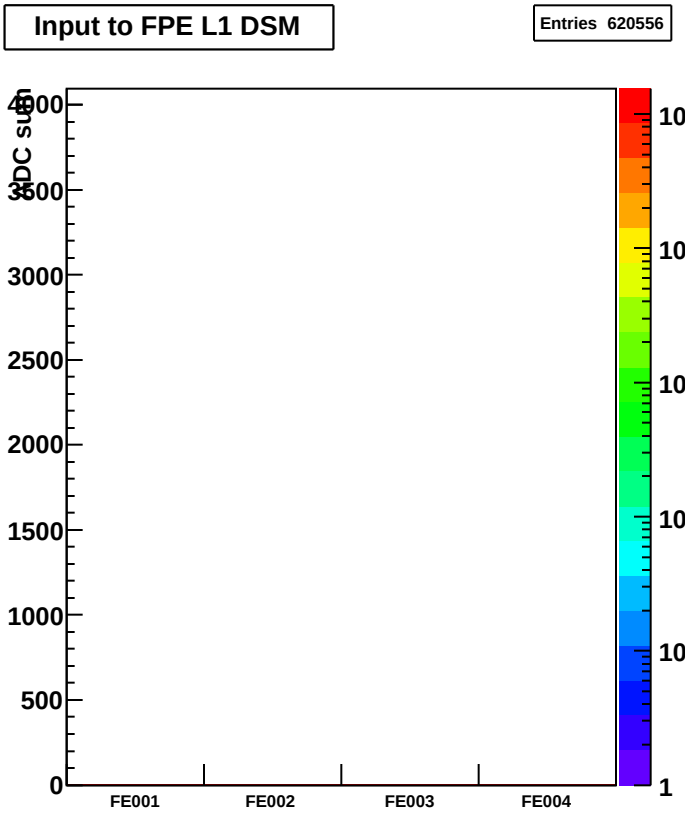

Input to FPD L2 DSM
Entries 930834
jet patch sum (no FMS-LED)
0
10
20
30
40
50
60
ST
SB
NT
NB
S
N
1
10
10^2
10^3
10^4
10^5

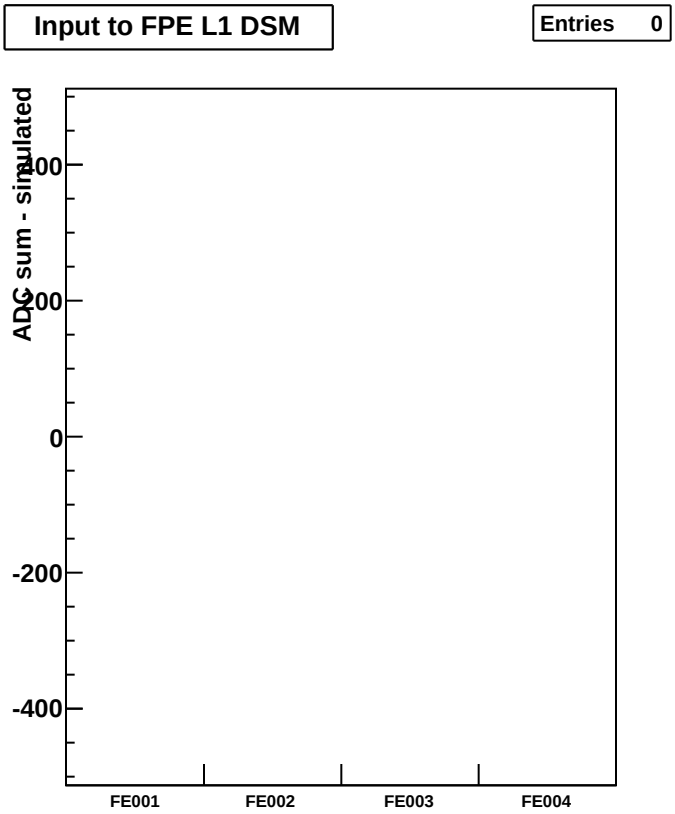

Input to FE001 QT board
Entries4964448
ADC
channel

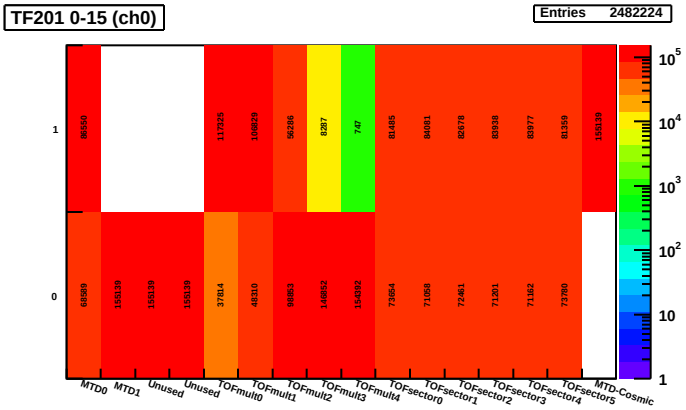

Input to FE002 QT board
Entries4964448
ADC
channel

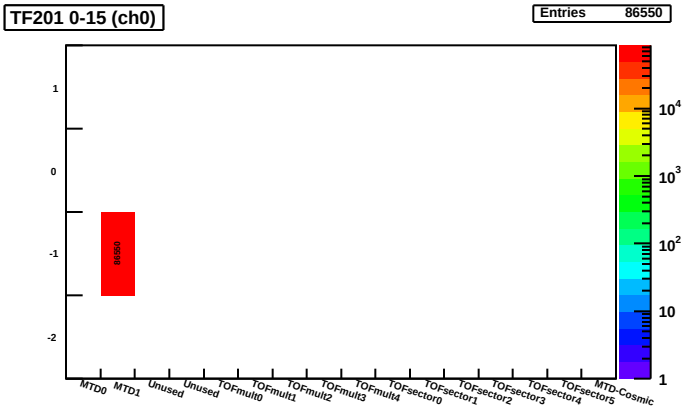

Input to FE003 QT board
Entries4964448
ADC
channel

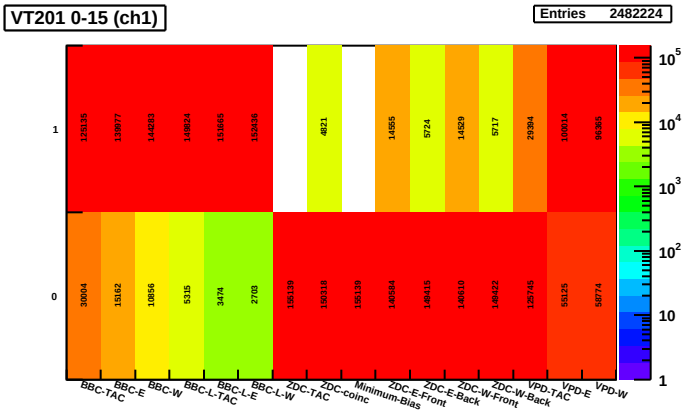

Input to FE004 QT board
Entries4964448
ADC
channel

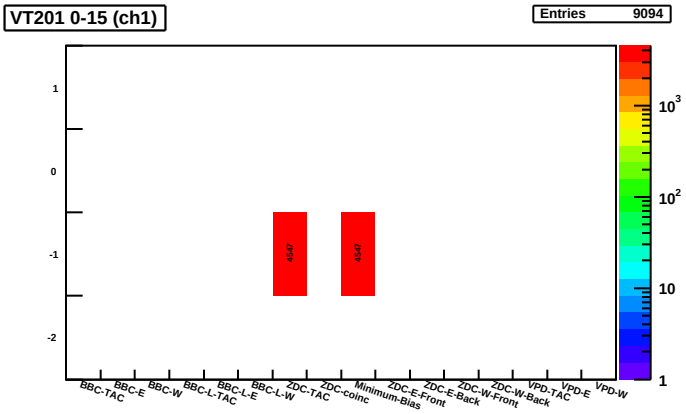

Input to FPE L1 DSM
Entries 620556
ADC sum
4000
3500
3000
2500
2000
1500
1000
500
0
FE001
FE002
FE003
FE004
10
10
10
10
10
1

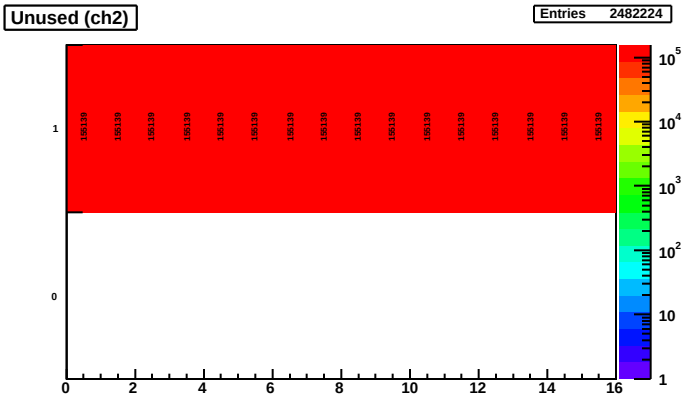

Input to FPE L1 DSM
Entries 0
ADC sum - simulated
0
-200
-400
FE001
FE002
FE003
FE004

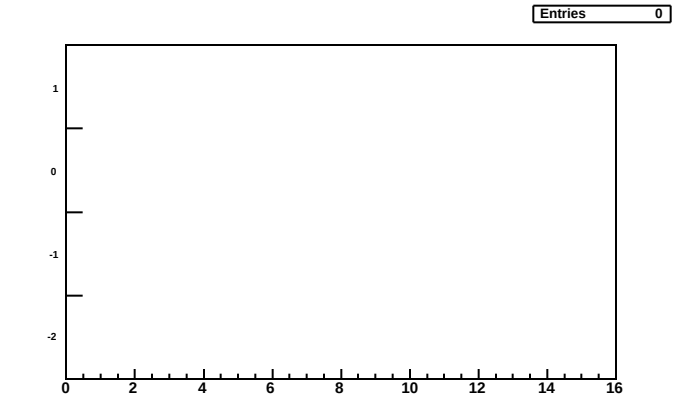

TF201 0-15 (ch0)
Entries 2482224
MTD0 MTD1 Unused Unused TOFmult0 TOFmult1 TOFmult2 TOFmult3 TOFmult4 TOFsector0 TOFsector1 TOFsector2 TOFsector3 TOFsector4 TOFsector5 MTD-Cosmic

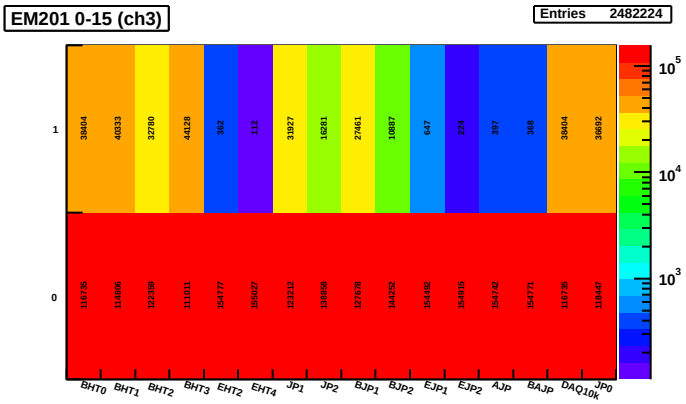

TF201 0-15 (ch0)
Entries 86550
MTD0 MTD1 Unused Unused TOFmult0 TOFmult1 TOFmult2 TOFmult3 TOFmult4 TOFsector0 TOFsector1 TOFsector2 TOFsector3 TOFsector4 TOFsector5 MTD-Cosmic

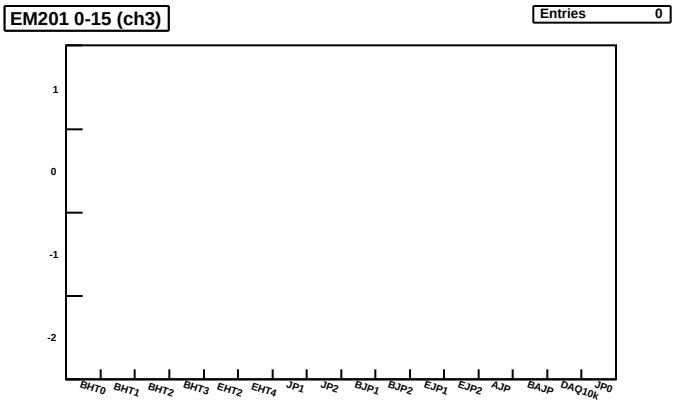

VT201 0-15 (ch1)
Entries 2482224
BBC-TAC BBC-E BBC-W BBC-L-TAC BBC-L-E BBC-L-W ZDC-TAC ZDC-coinc Minimum-Bias ZDC-E-Front ZDC-E-Back ZDC-W-Front ZDC-W-Back VPD-TAC VPD-E VPD-W


VT201 0-15 (ch1)
Entries 9094
BBC-TAC BBC-E BBC-W BBC-L-TAC BBC-L-E BBC-L-W ZDC-TAC ZDC-coinc Minimum-Bias ZDC-E-Front ZDC-E-Back ZDC-W-Front ZDC-W-Back VPD-TAC VPD-E VPD-W

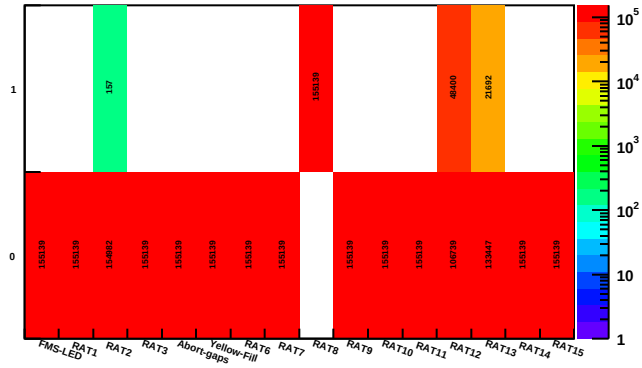

Unused (ch2)
Entries 2482224

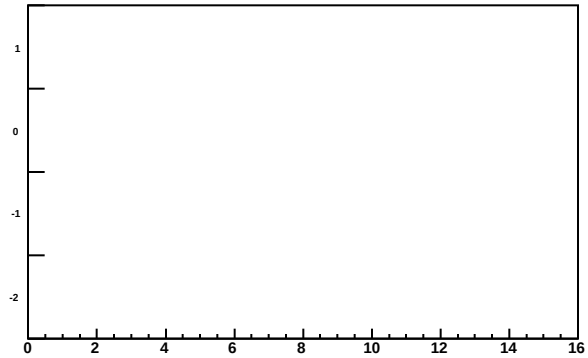

Entries 0


EM201 0-15 (ch3)
Entries 2482224
BHT0 BHT1 BHT2 BHT3 EHT2 EHT4 JP1 JP2 BJP1 BJP2 EJP1 EJP2 AJP BAJP DAQ10k JP0

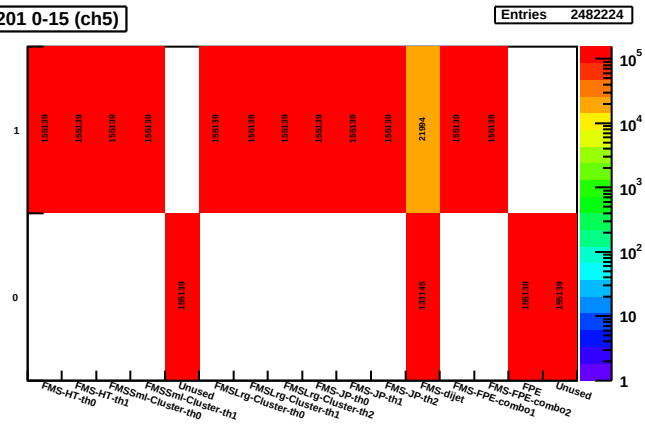

EM201 0-15 (ch3)
Entries 0
BHT0 BHT1 BHT2 BHT3 EHT2 EHT4 JP1 JP2 BJP1 BJP2 EJP1 EJP2 AJP BAJP DAQ10k JP0

RAT board (ch4)

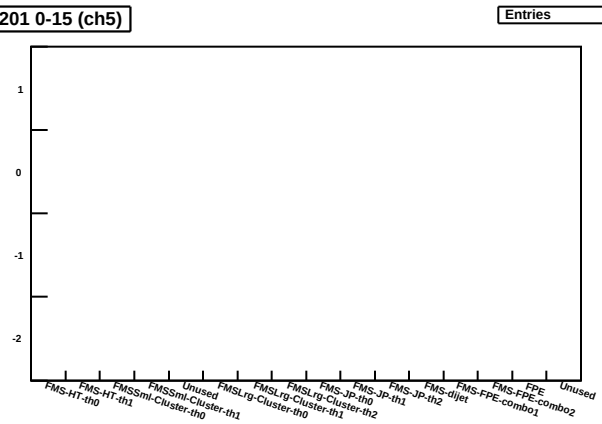




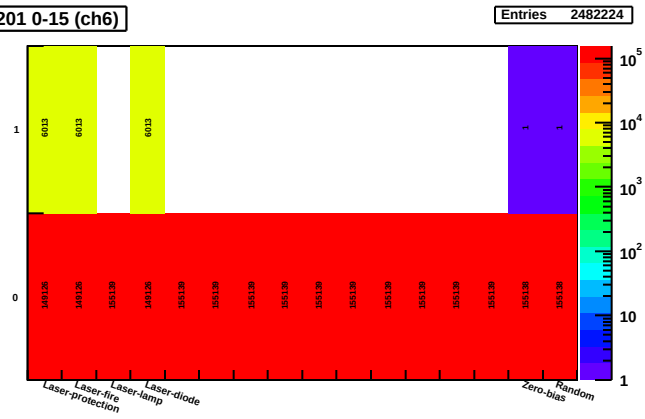
FP201 0-15 (ch5)

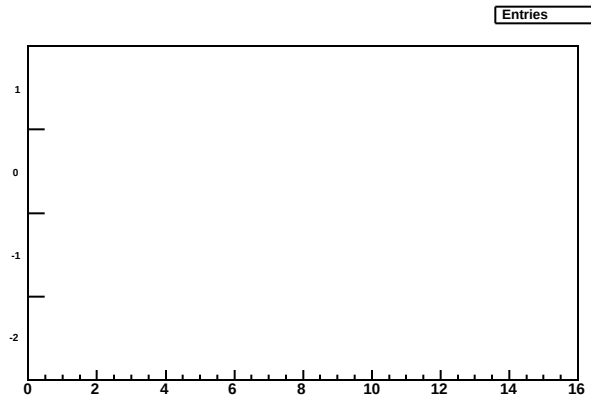
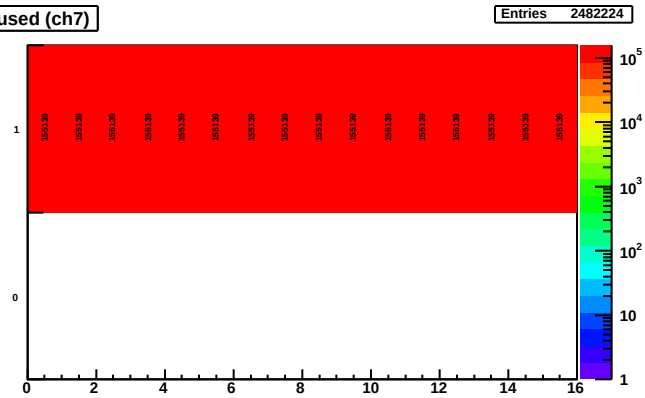
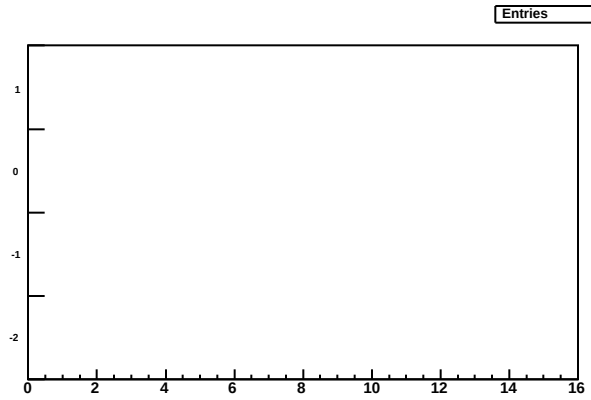


FP201 0-15 (ch5)



ST201 0-15 (ch6)





Unused (ch7)