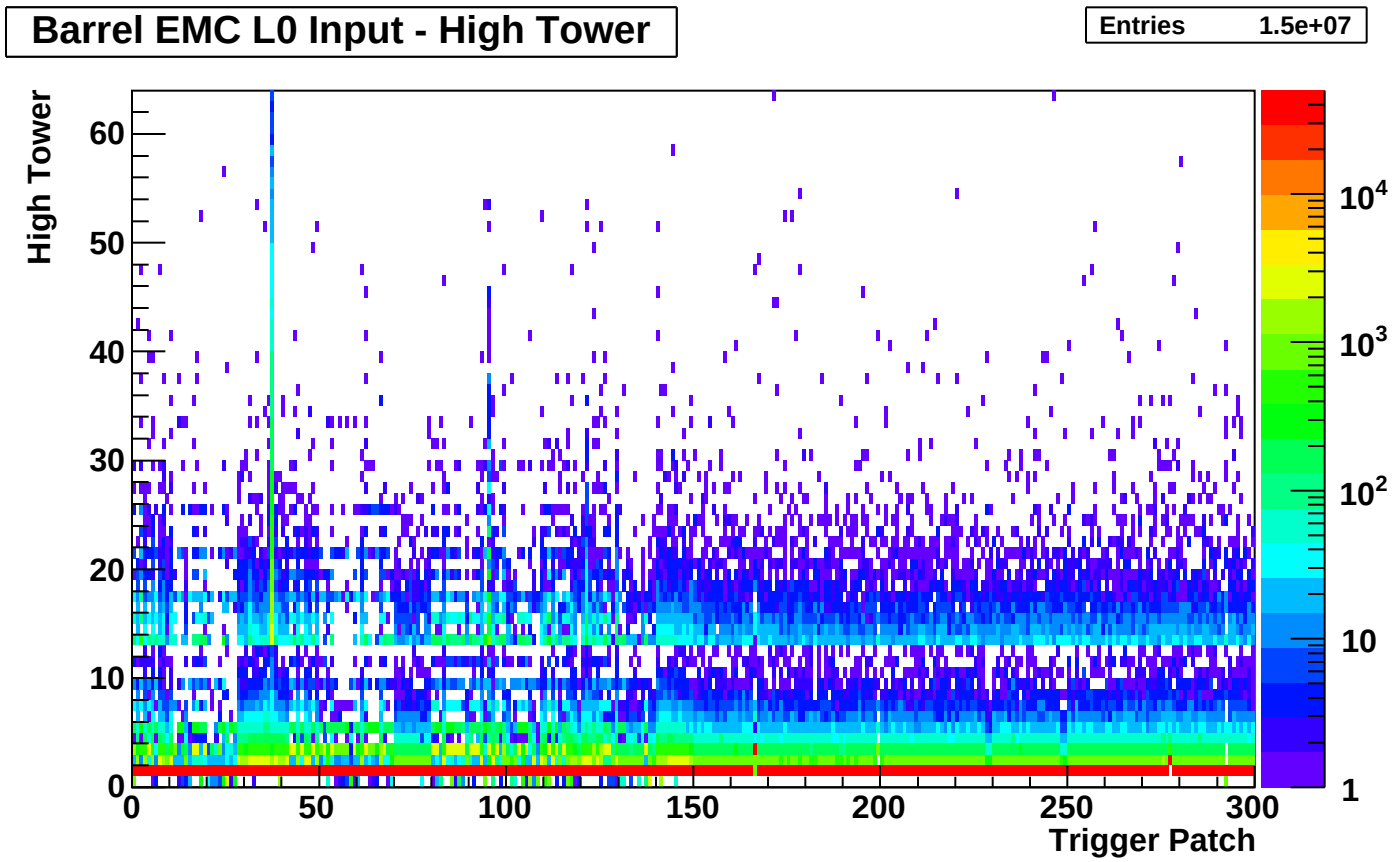
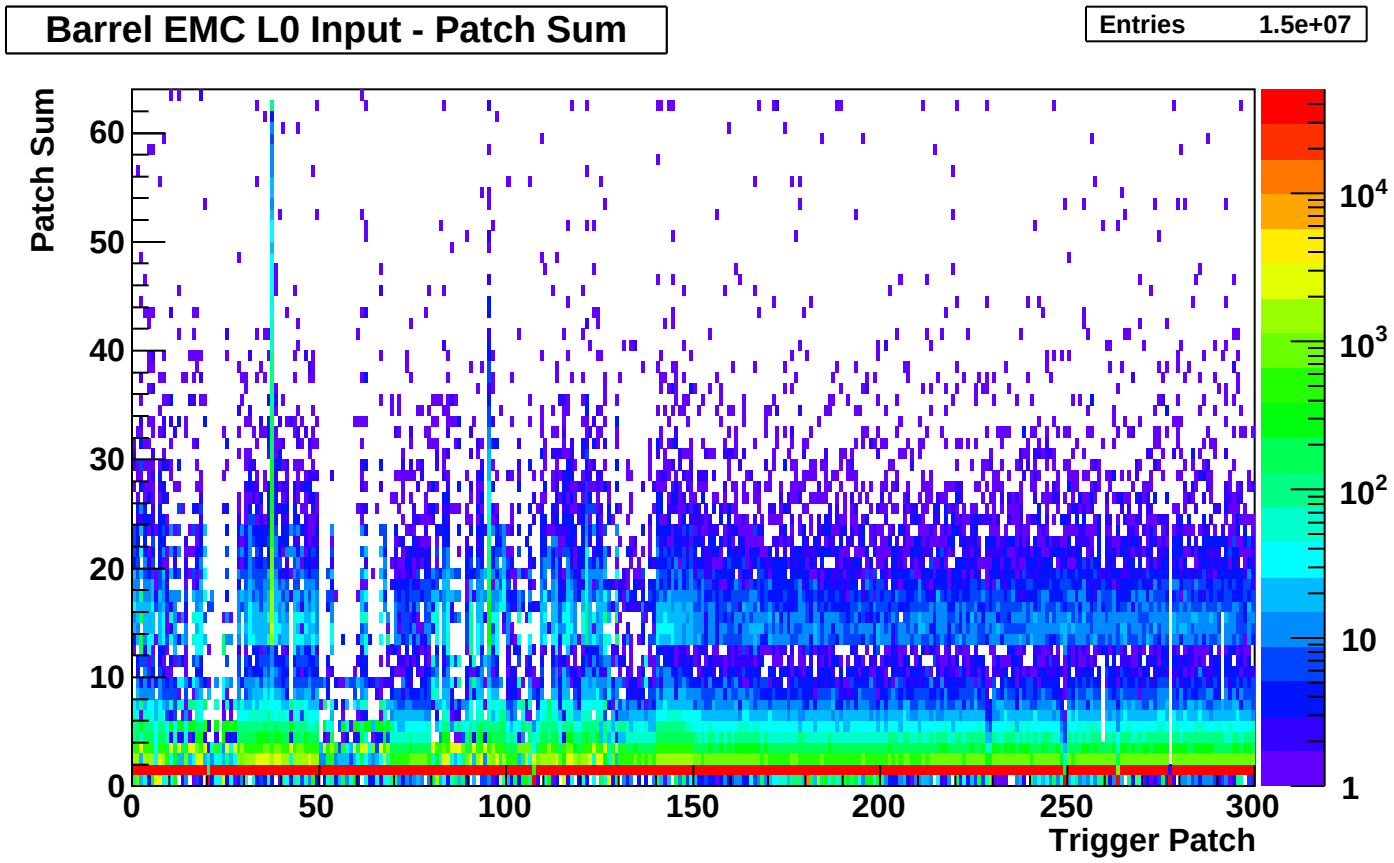
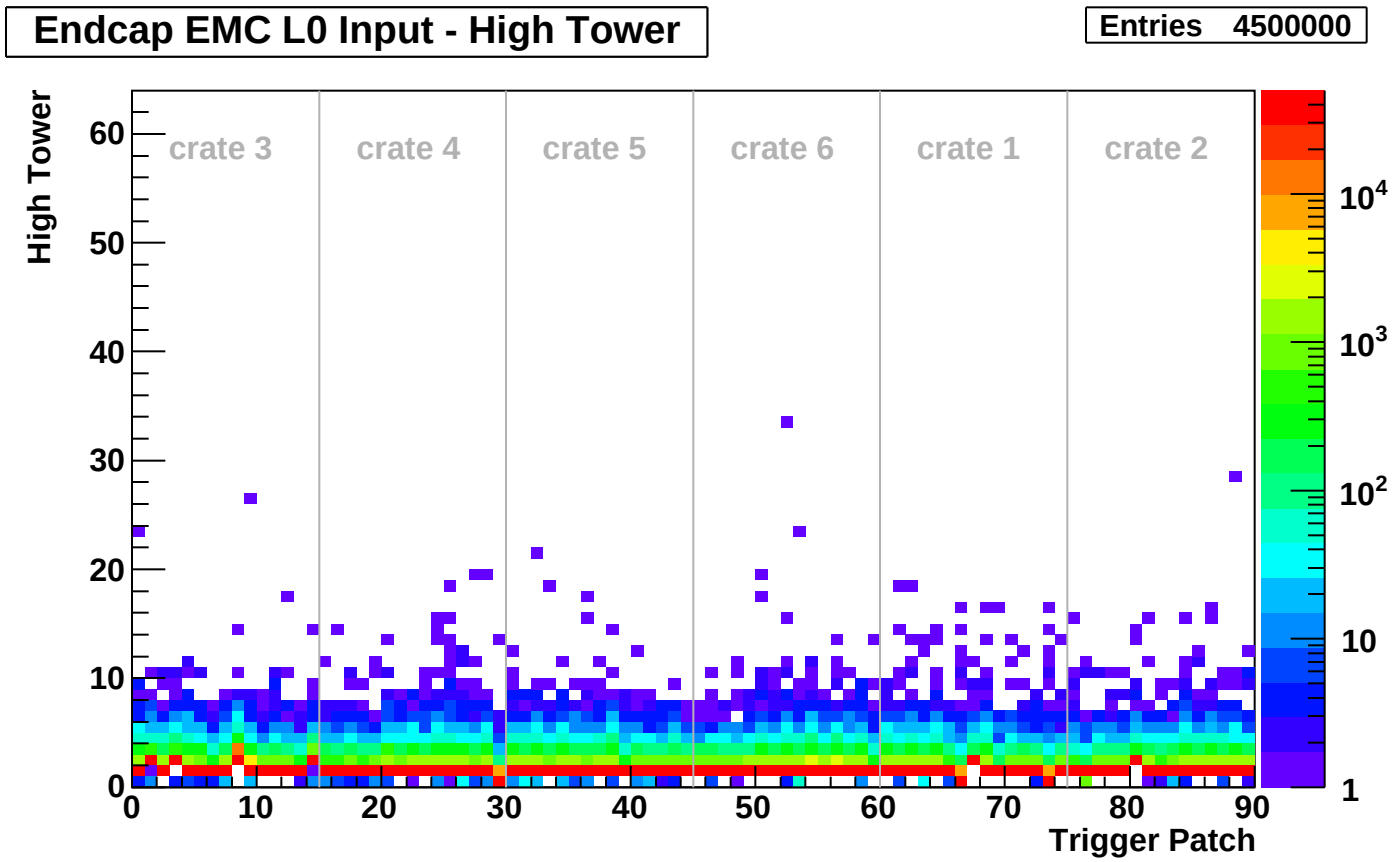
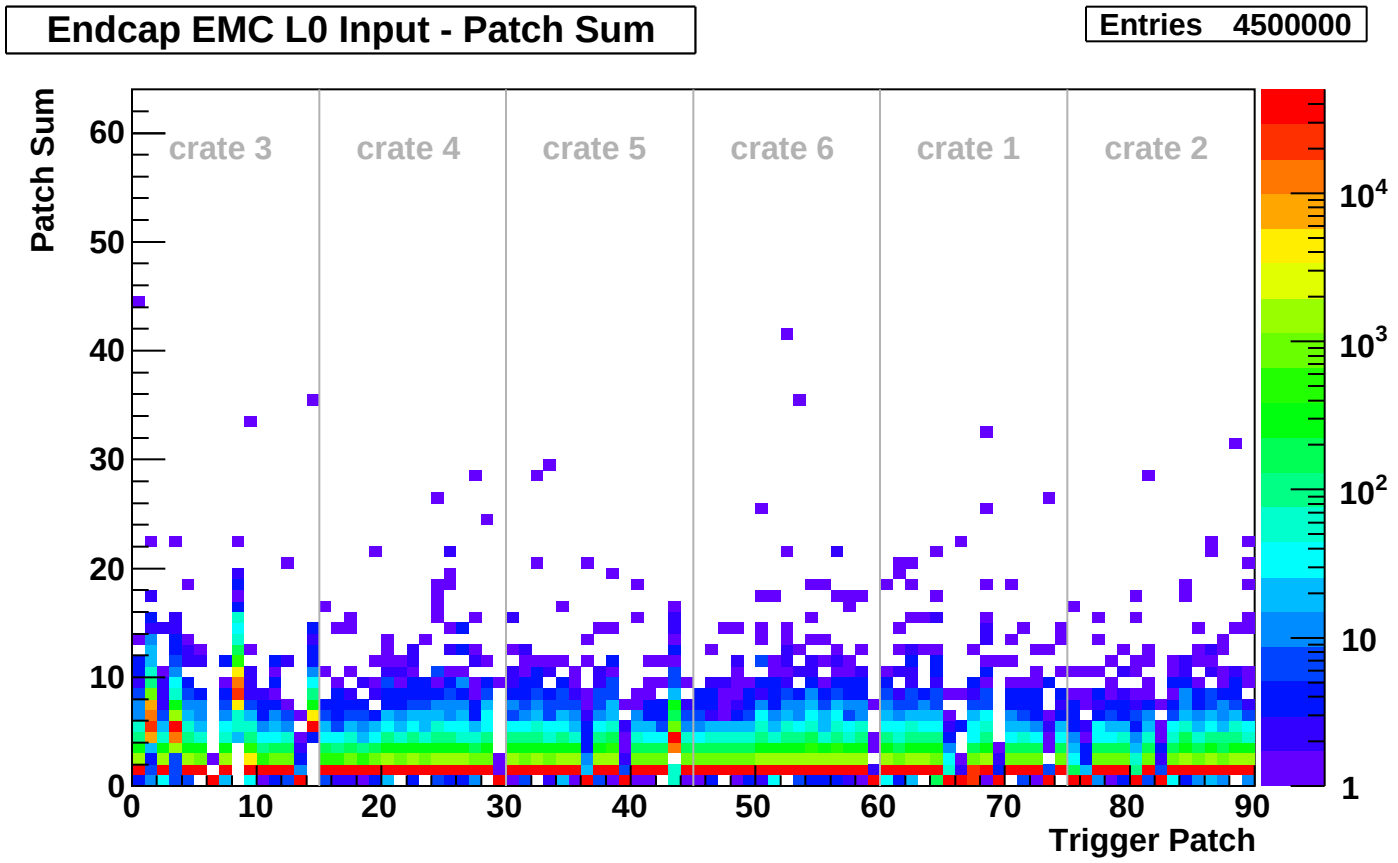
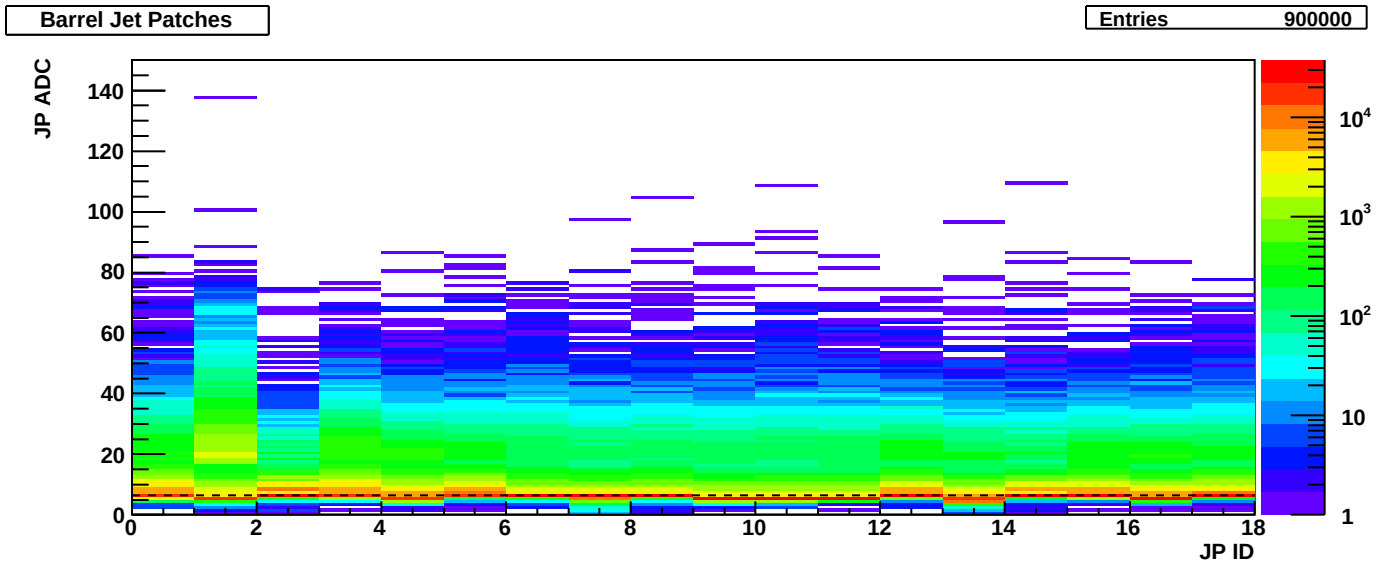
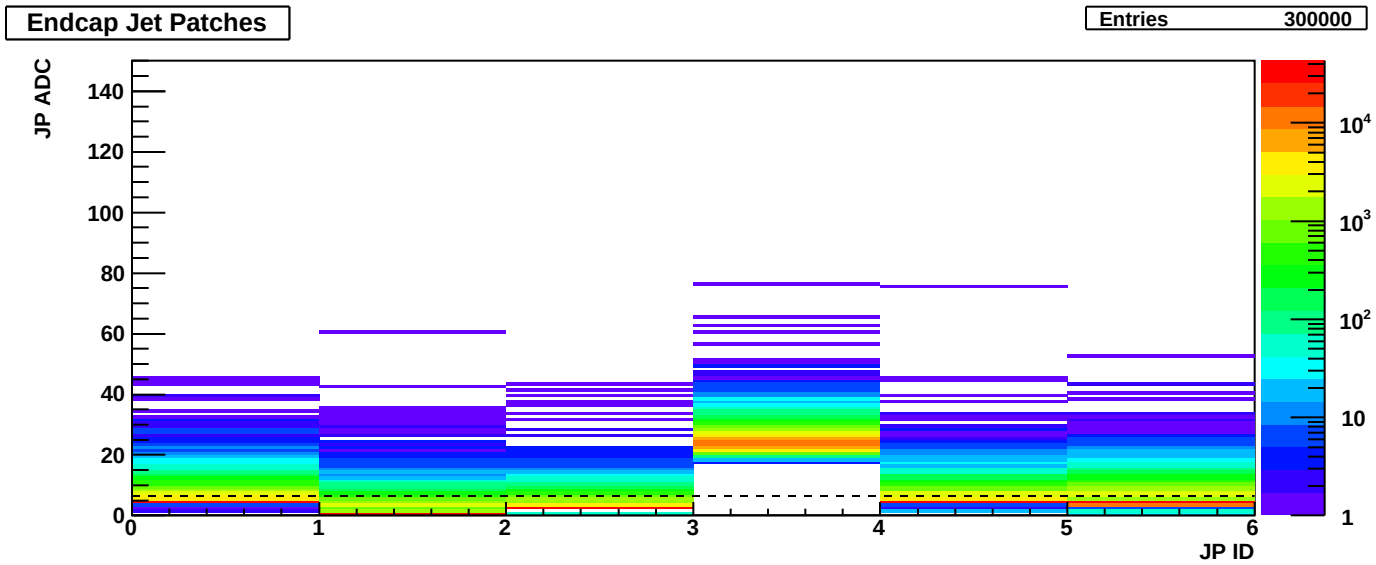

Barrel EMC L0 Input - High Tower
Entries 1.5e+07
High Tower
Trigger Patch
0
10
20
30
40
50
60
0
50
100
150
200
250
300
1
10
10^2
10^3
10^4

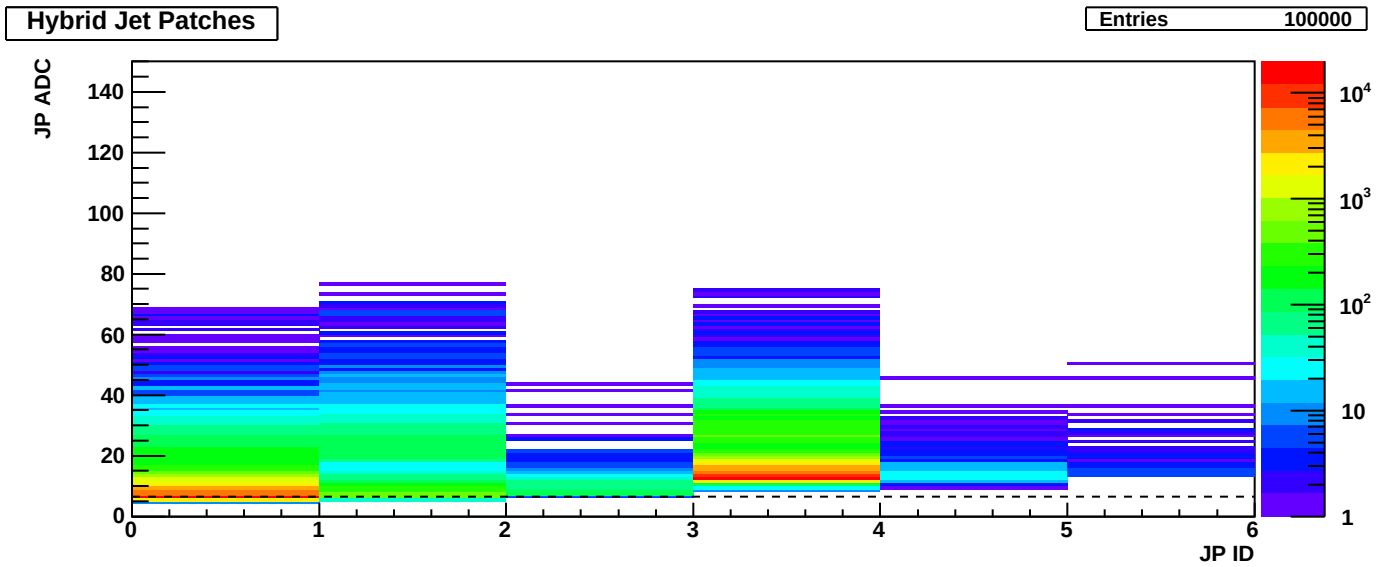

Barrel EMC L0 Input - Patch Sum
Entries 1.5e+07
Patch Sum
Trigger Patch
0
10
20
30
40
50
60
0
50
100
150
200
250
300
1
10
10^2
10^3
10^4

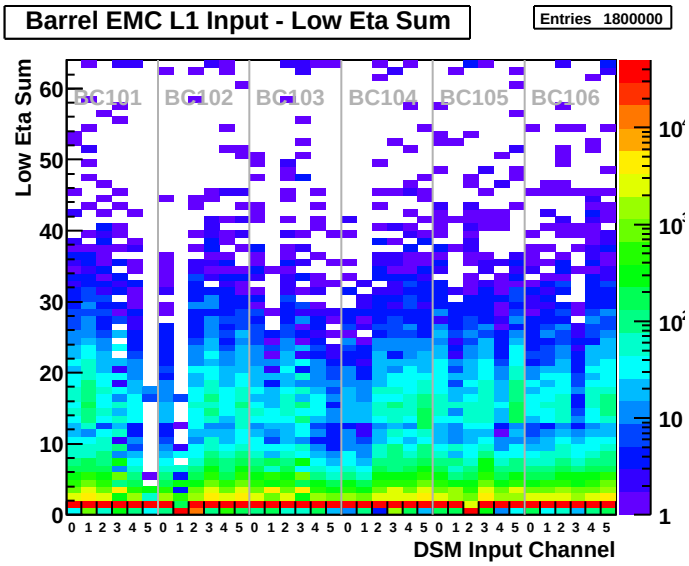

Endcap EMC L0 Input - High Tower
Entries 4500000
High Tower
crate 3
crate 4
crate 5
crate 6
crate 1
crate 2
Trigger Patch

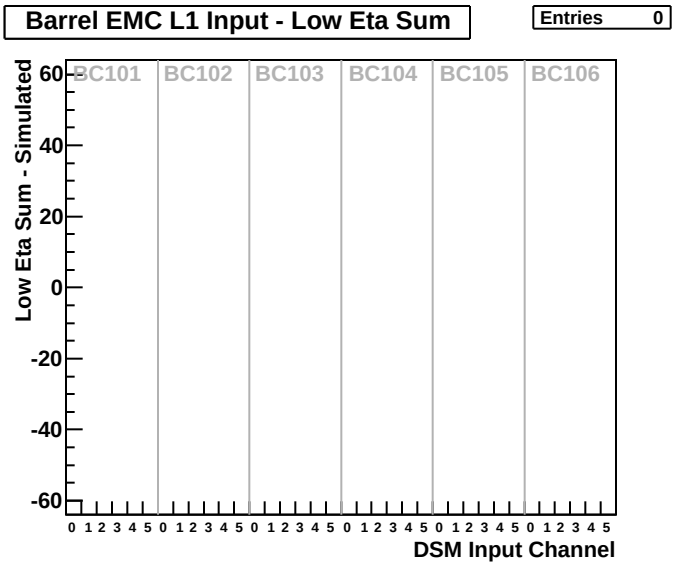

Endcap EMC L0 Input - Patch Sum
Entries 4500000
Patch Sum
crate 3
crate 4
crate 5
crate 6
crate 1
crate 2
Trigger Patch

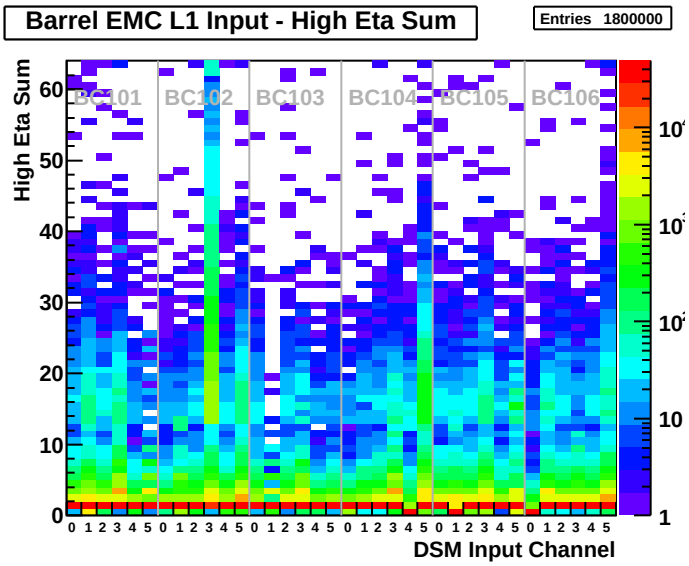

Barrel Jet Patches
Entries 900000
JP ADC
JP ID

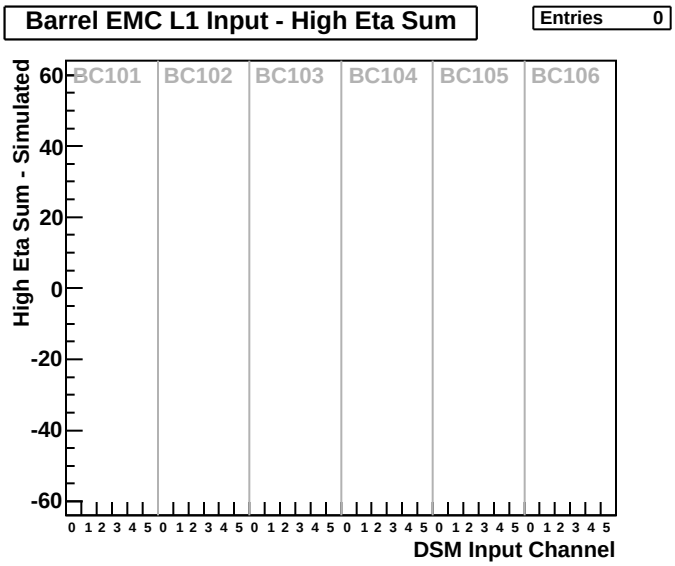

Endcap Jet Patches
Entries 300000
JP ADC
JP ID

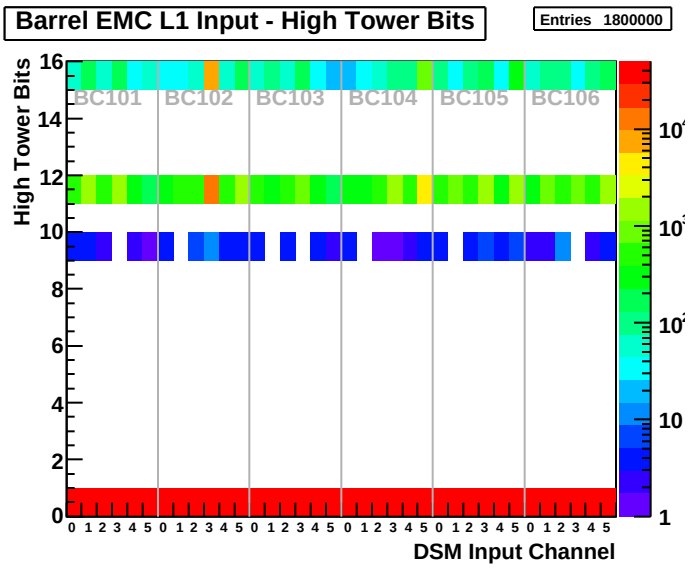

Hybrid Jet Patches
Entries 100000
JP ADC
JP ID

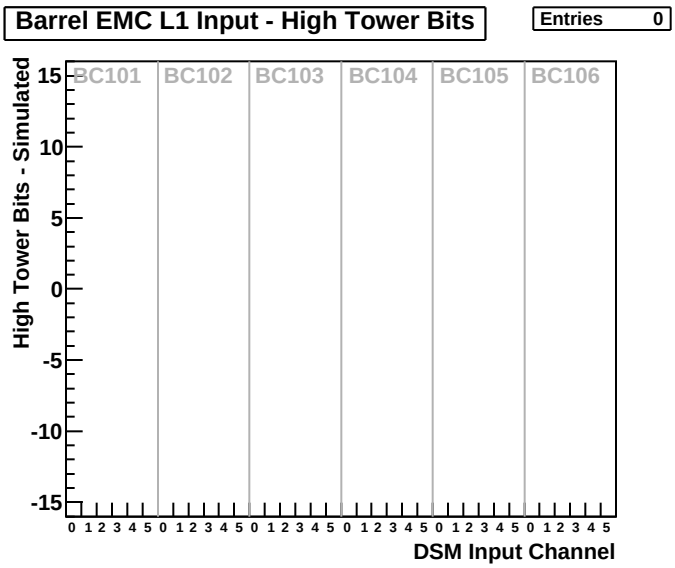

Barrel EMC L1 Input - Low Eta Sum
Entries 1800000
Low Eta Sum
BC101 BC102 BC103 BC104 BC105 BC106
DSM Input Channel

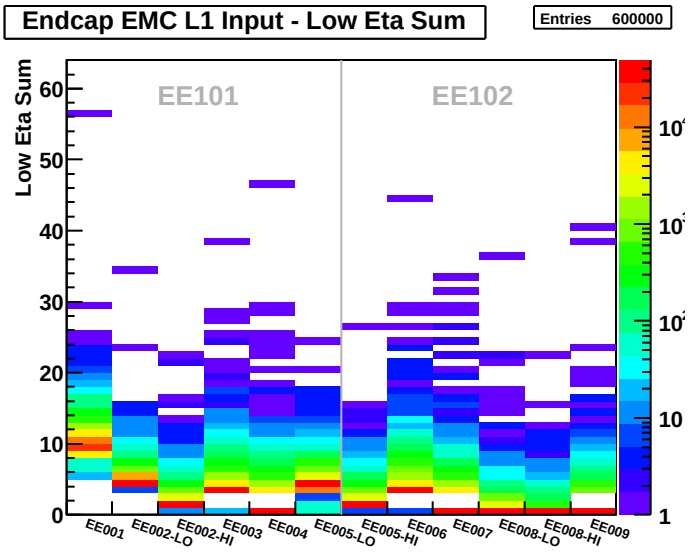

Barrel EMC L1 Input - Low Eta Sum
Entries 0
Low Eta Sum - Simulated
BC101 BC102 BC103 BC104 BC105 BC106
DSM Input Channel

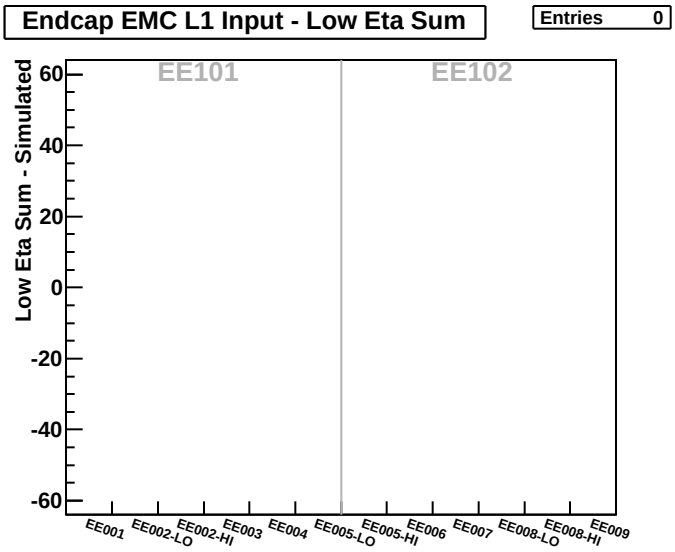

Barrel EMC L1 Input - High Eta Sum
Entries 1800000
High Eta Sum
BC101 BC102 BC103 BC104 BC105 BC106
DSM Input Channel

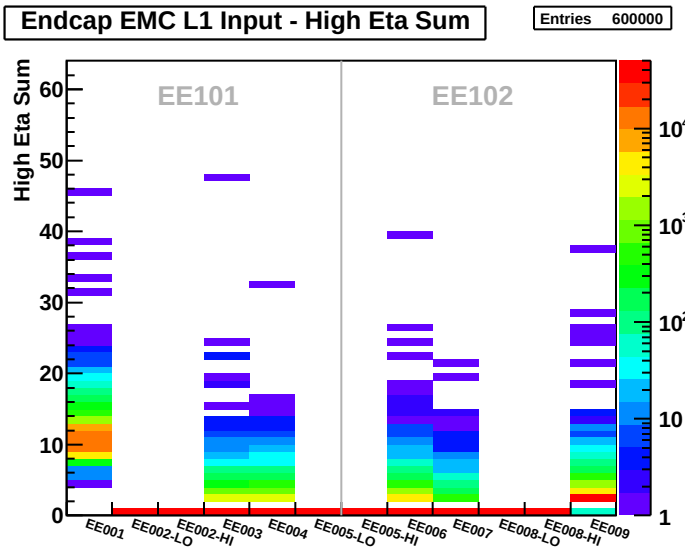

Barrel EMC L1 Input - High Eta Sum
Entries 0
High Eta Sum - Simulated
BC101 BC102 BC103 BC104 BC105 BC106
DSM Input Channel

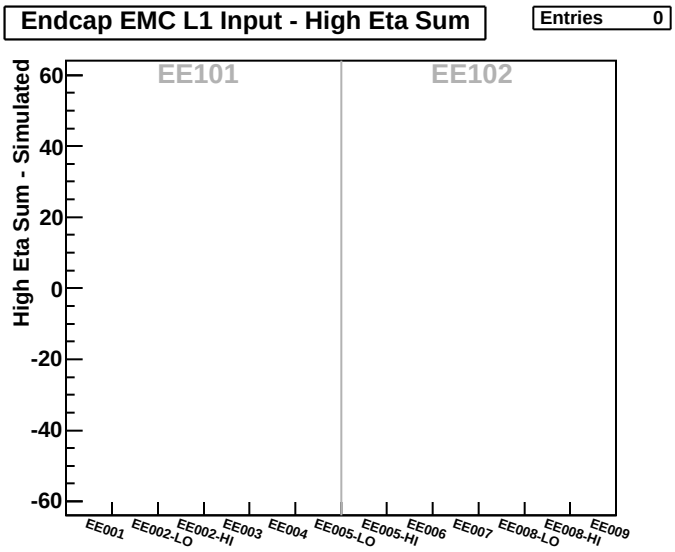

Barrel EMC L1 Input - High Tower Bits
Entries 1800000
High Tower Bits
BC101 BC102 BC103 BC104 BC105 BC106
DSM Input Channel

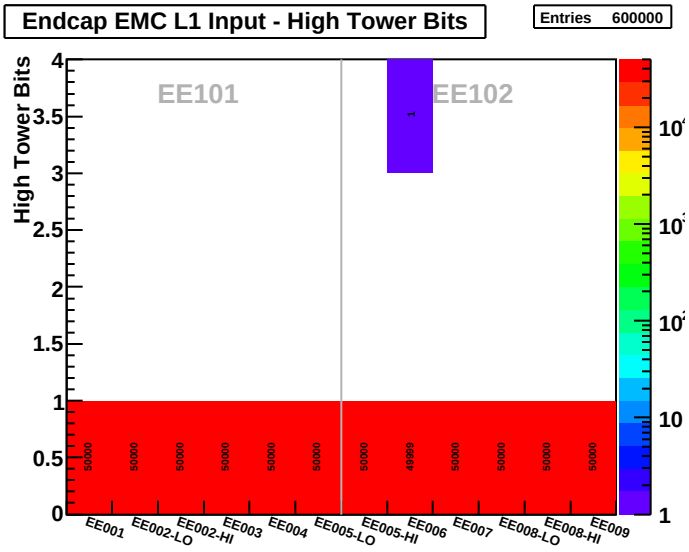

Barrel EMC L1 Input - High Tower Bits
Entries 0
High Tower Bits - Simulated
BC101 BC102 BC103 BC104 BC105 BC106
DSM Input Channel

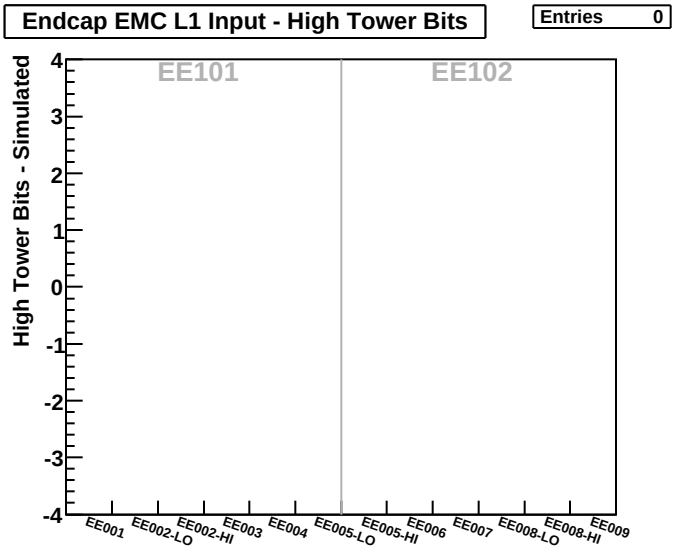

Endcap EMC L1 Input - Low Eta Sum
Entries 600000
Low Eta Sum
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

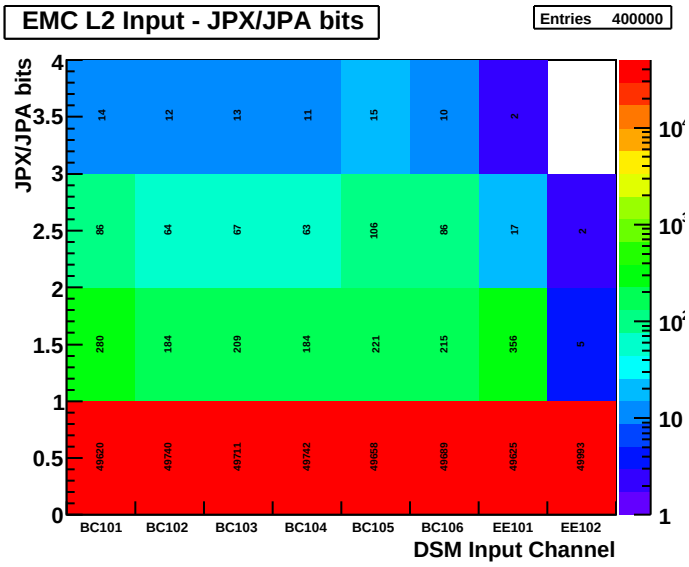

Endcap EMC L1 Input - Low Eta Sum
Entries 0
Low Eta Sum - Simulated
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

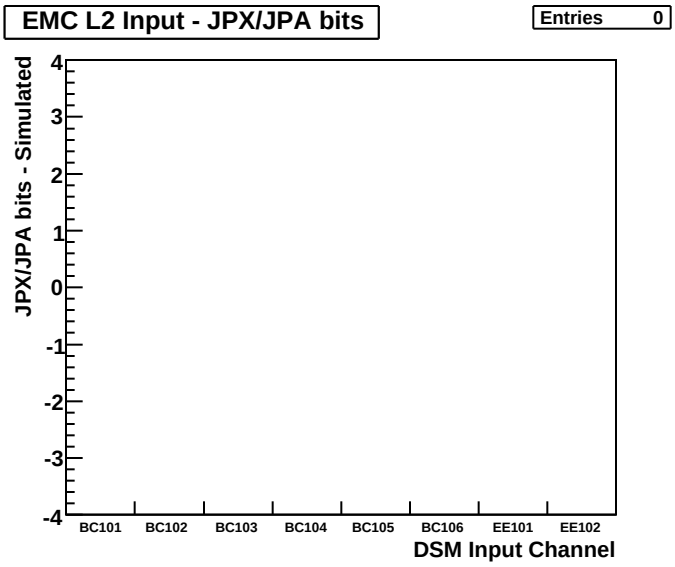

Endcap EMC L1 Input - High Eta Sum
Entries 600000
High Eta Sum
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

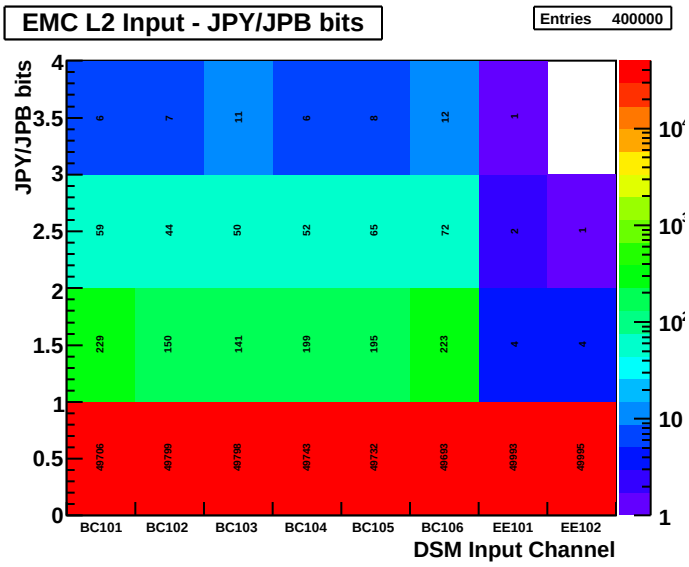

Endcap EMC L1 Input - High Eta Sum
Entries 0
High Eta Sum - Simulated
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

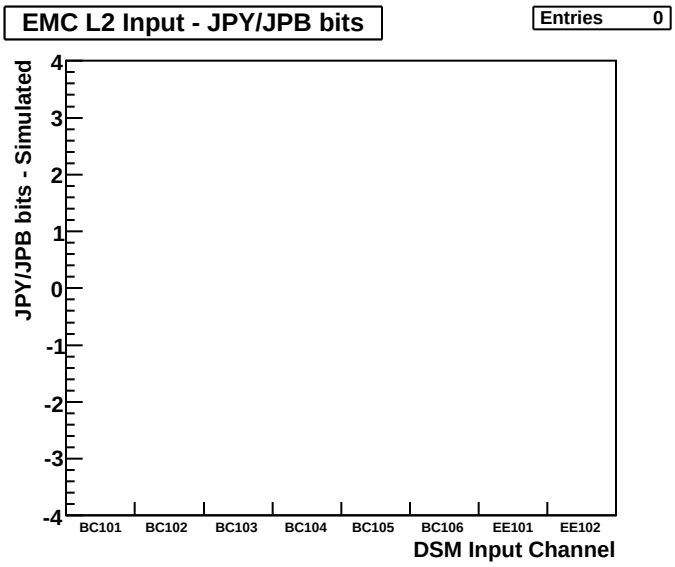

Endcap EMC L1 Input - High Tower Bits
Entries 600000
High Tower Bits
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

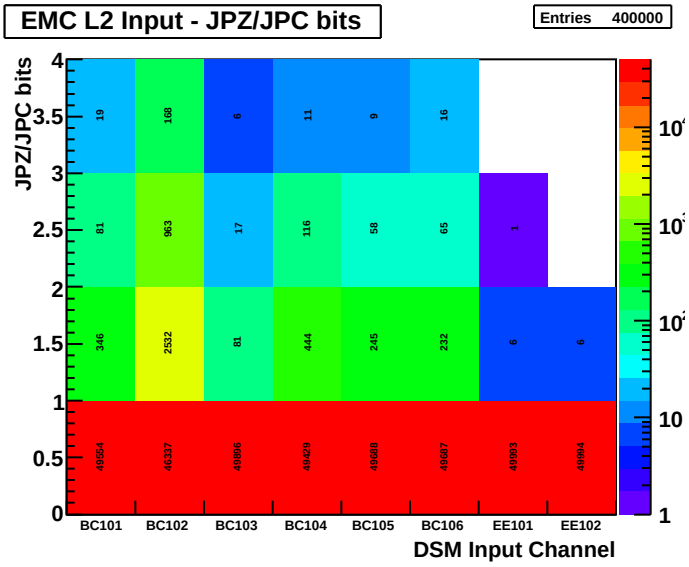

Endcap EMC L1 Input - High Tower Bits
Entries 0
High Tower Bits - Simulated
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

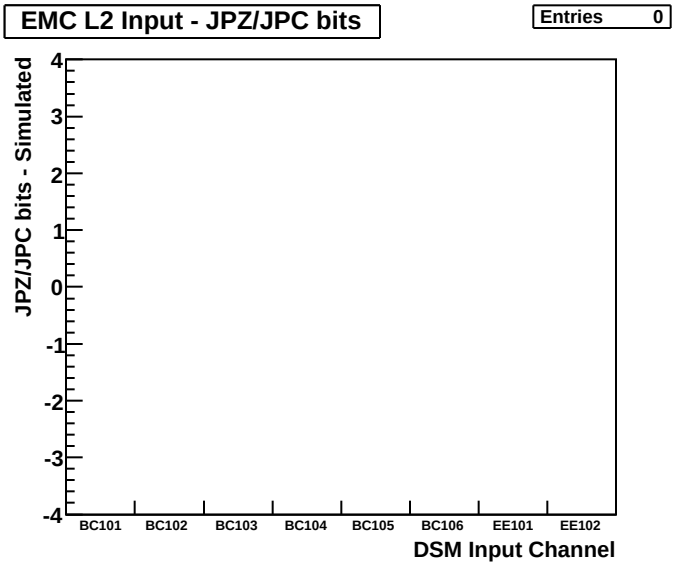

EMC L2 Input - JPX/JPA bits
Entries 400000
JPX/JPA bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102
14 12 13 11 15 10 2
86 64 67 63 106 86 17 2
280 184 209 184 221 215 356 5
49620 49740 49711 49742 49658 49689 49625 49993

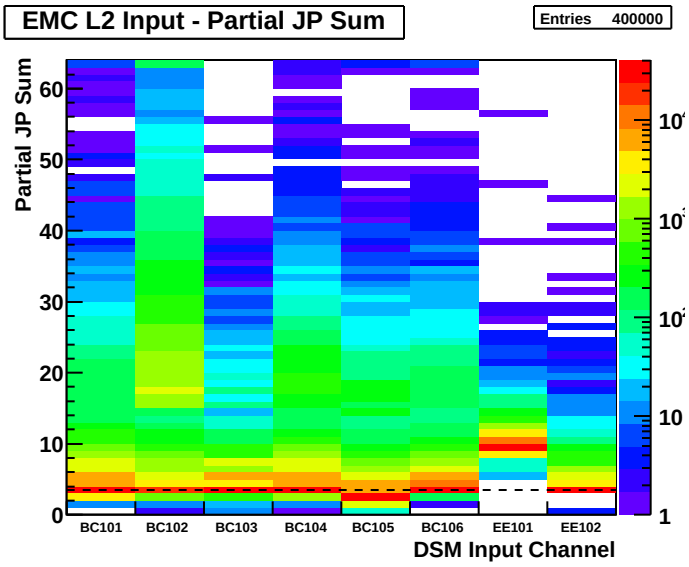

EMC L2 Input - JPX/JPA bits
Entries 0
JPX/JPA bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

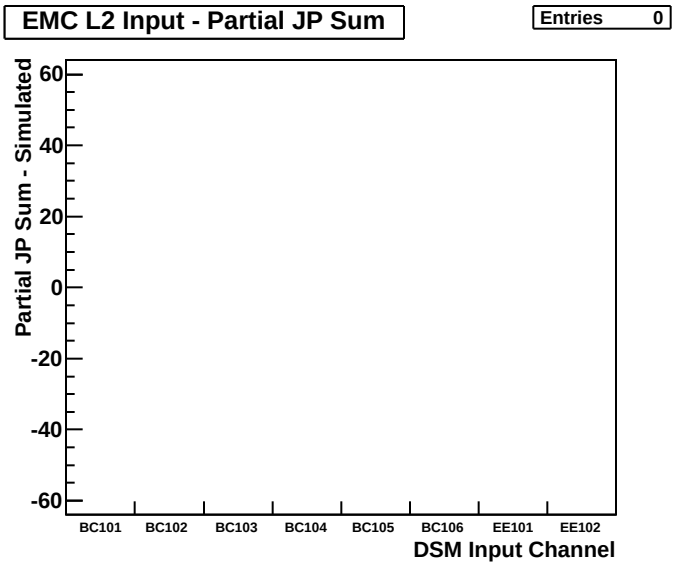

EMC L2 Input - JPY/JPB bits
Entries 400000
JPY/JPB bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102
6 7 11 6 8 12 1
59 44 50 52 65 72 2 1
229 150 141 199 195 223 4 4
49706 49799 49798 49743 49732 49693 49993 49995

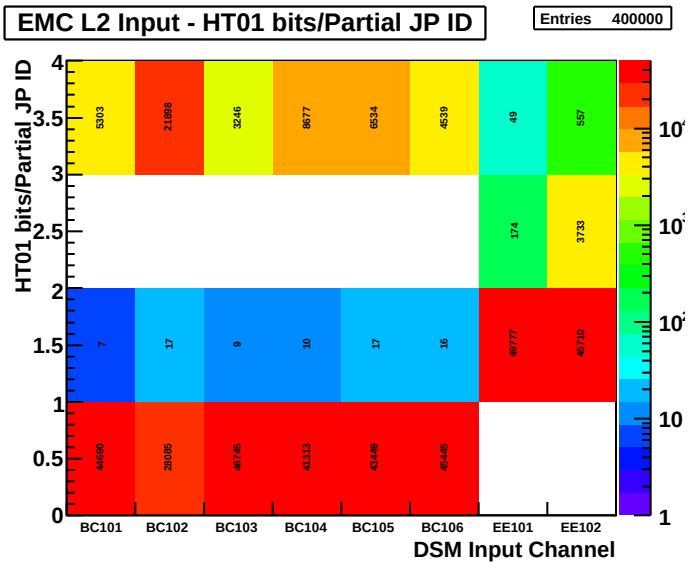

EMC L2 Input - JPY/JPB bits
Entries 0
JPY/JPB bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

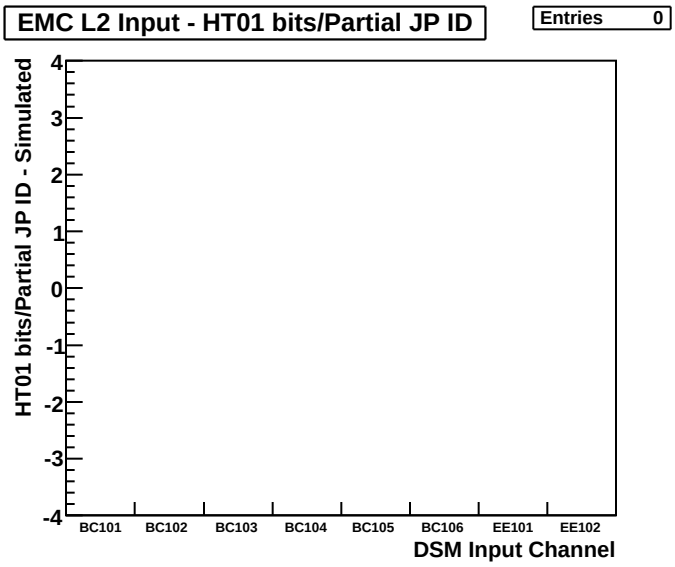

EMC L2 Input - JPZ/JPC bits
Entries 400000
JPZ/JPC bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102
19 168 6 11 9 16
81 963 17 116 58 65 1
346 2532 81 444 245 232 6 6
49554 46337 49886 49429 49688 49687 49993 49994

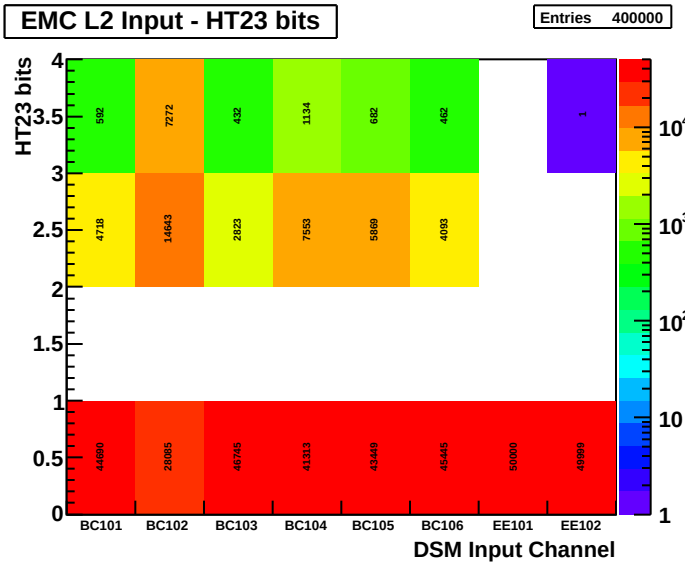

EMC L2 Input - JPZ/JPC bits
Entries 0
JPZ/JPC bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

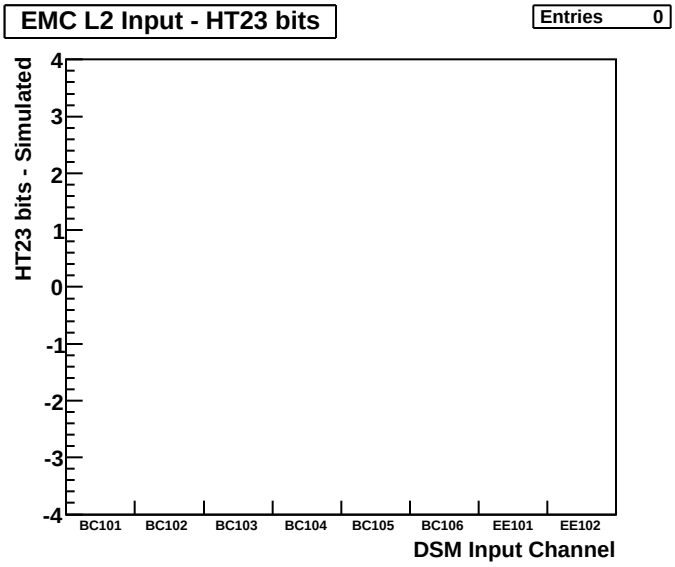

EMC L2 Input - Partial JP Sum
Entries 400000
Partial JP Sum
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

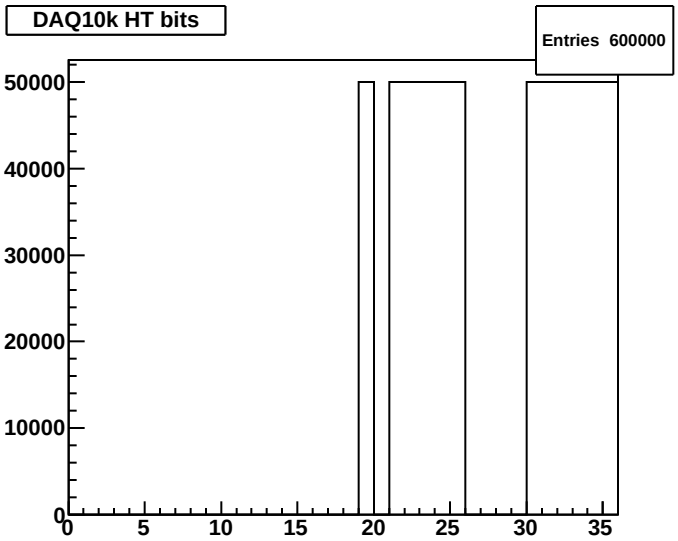

EMC L2 Input - Partial JP Sum
Entries 0
Partial JP Sum - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

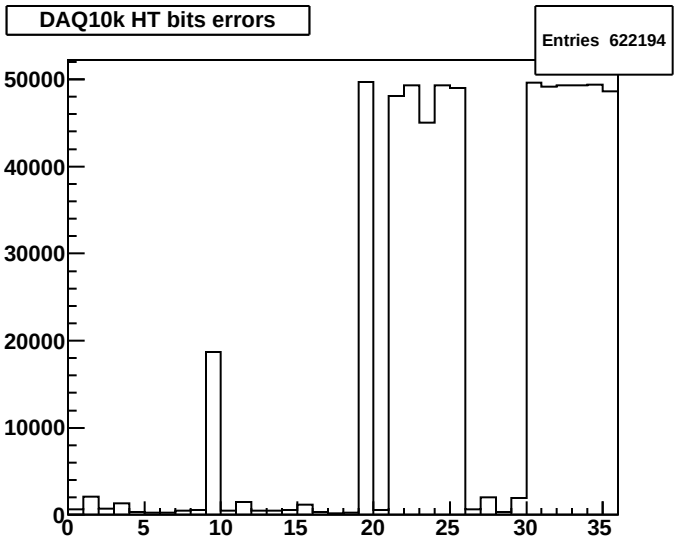

EMC L2 Input - HT01 bits/Partial JP ID
Entries 400000
HT01 bits/Partial JP ID
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

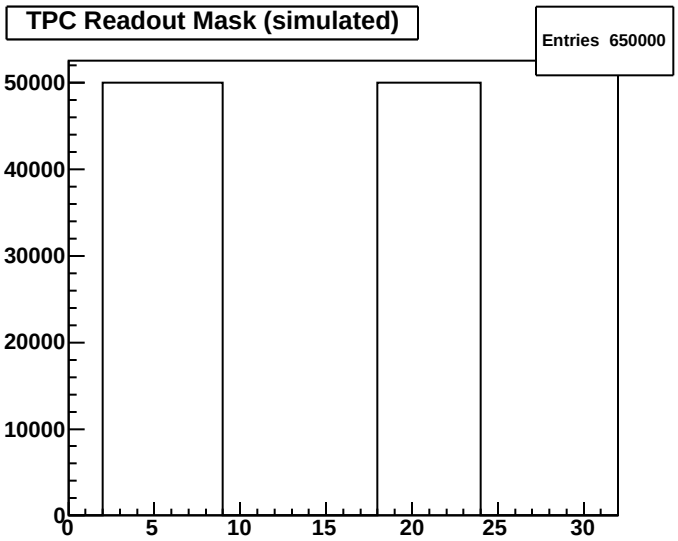

EMC L2 Input - HT01 bits/Partial JP ID
Entries 0
HT01 bits/Partial JP ID - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

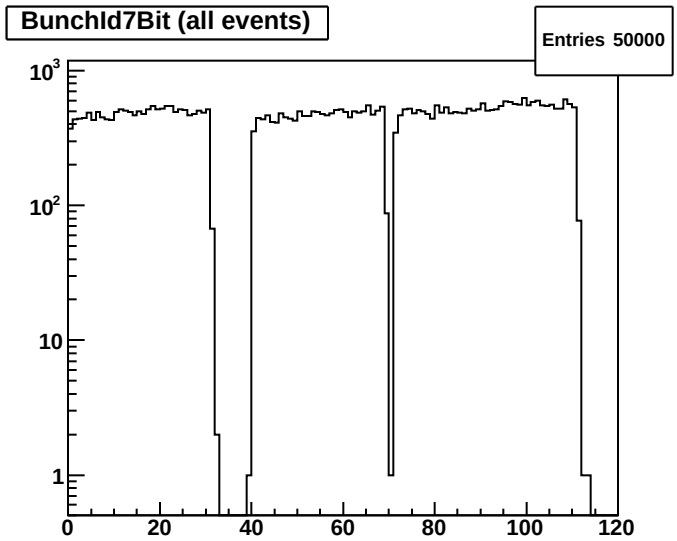

EMC L2 Input - HT23 bits
Entries 400000
HT23 bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

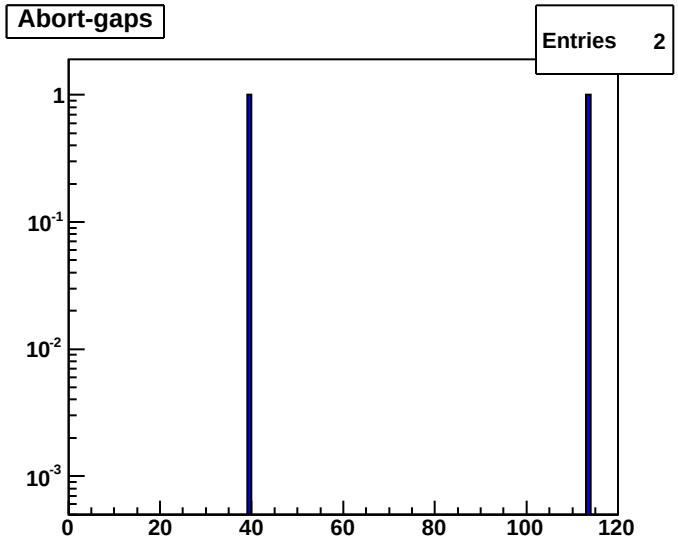

EMC L2 Input - HT23 bits
Entries 0
HT23 bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

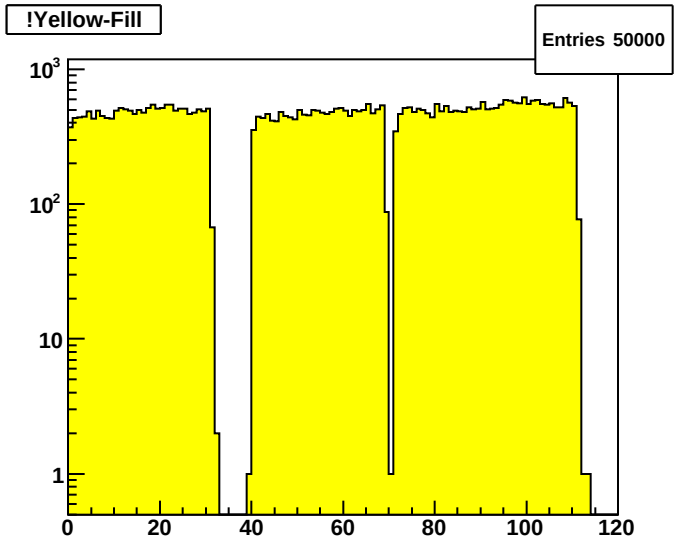

DAQ10k HT bits
Entries 600000
50000
40000
30000
20000
10000
0
0 5 10 15 20 25 30 35

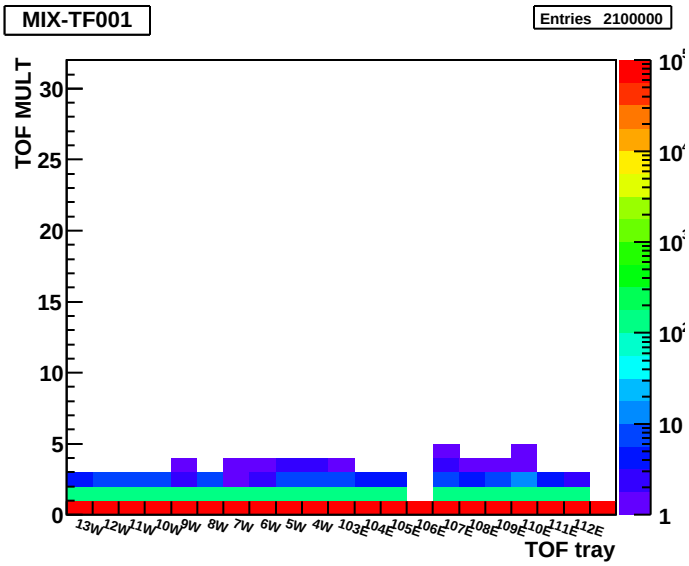

DAQ10k HT bits errors
Entries 622194
50000
40000
30000
20000
10000
0
0 5 10 15 20 25 30 35

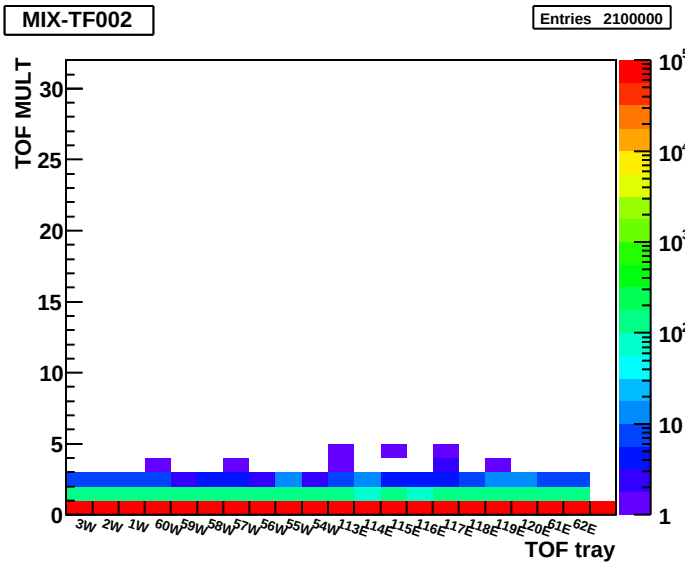

TPC Readout Mask (simulated)
Entries 650000
50000
40000
30000
20000
10000
0
0 5 10 15 20 25 30

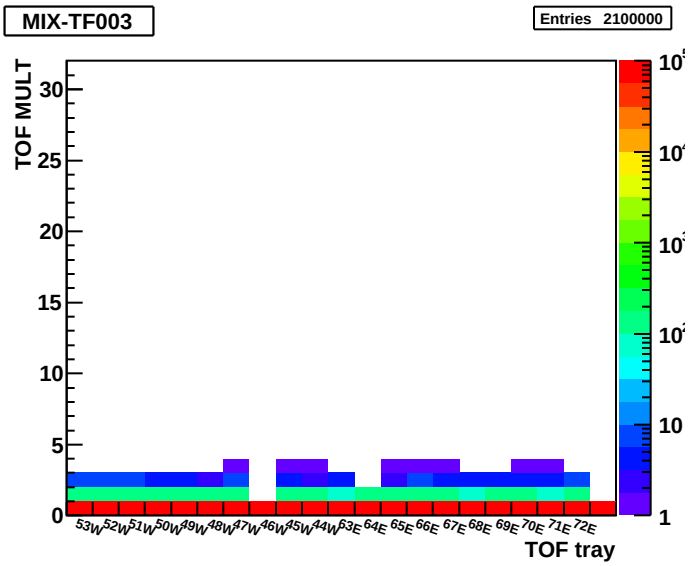

BunchId7Bit (all events)
Entries 50000
10^3
10^2
10
1
0 20 40 60 80 100 120

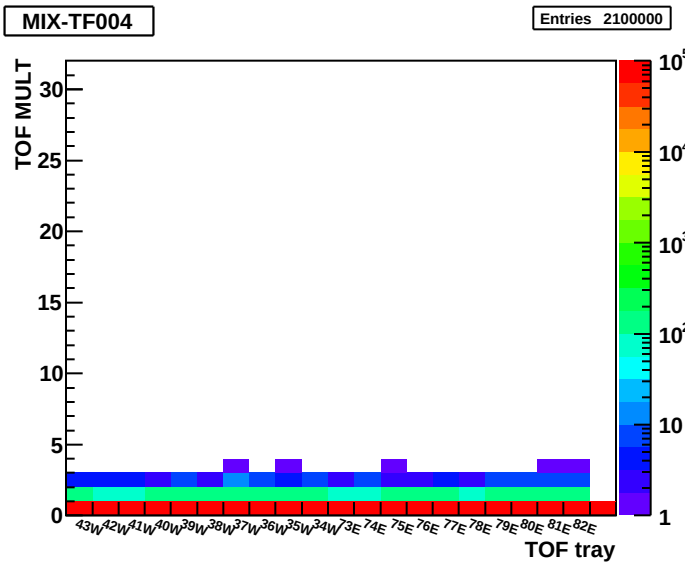

Abort-gaps
Entries 2
1
10^{-1}
10^{-2}
10^{-3}
0 20 40 60 80 100 120

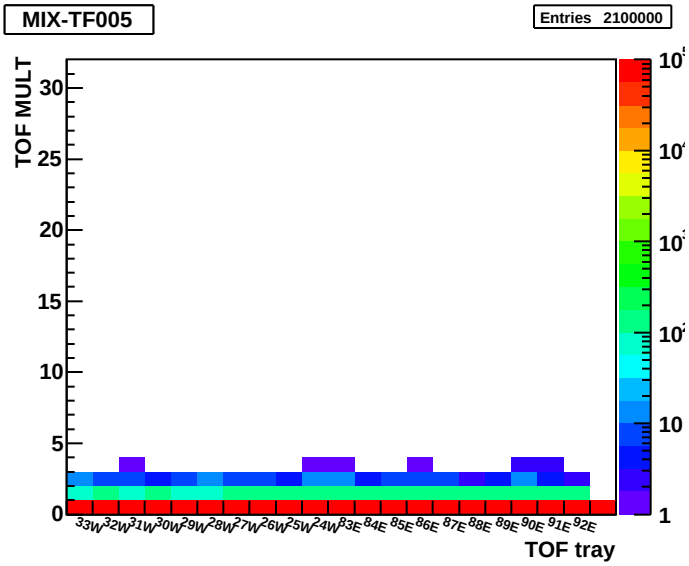

!Yellow-Fill
Entries 50000
10^3
10^2
10
1
0 20 40 60 80 100 120

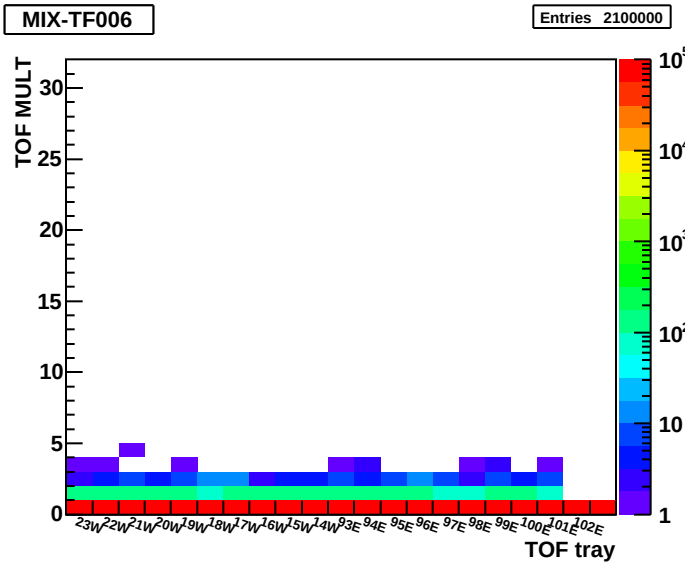

MIX-TF001
Entries 2100000
TOF MULT
TOF tray

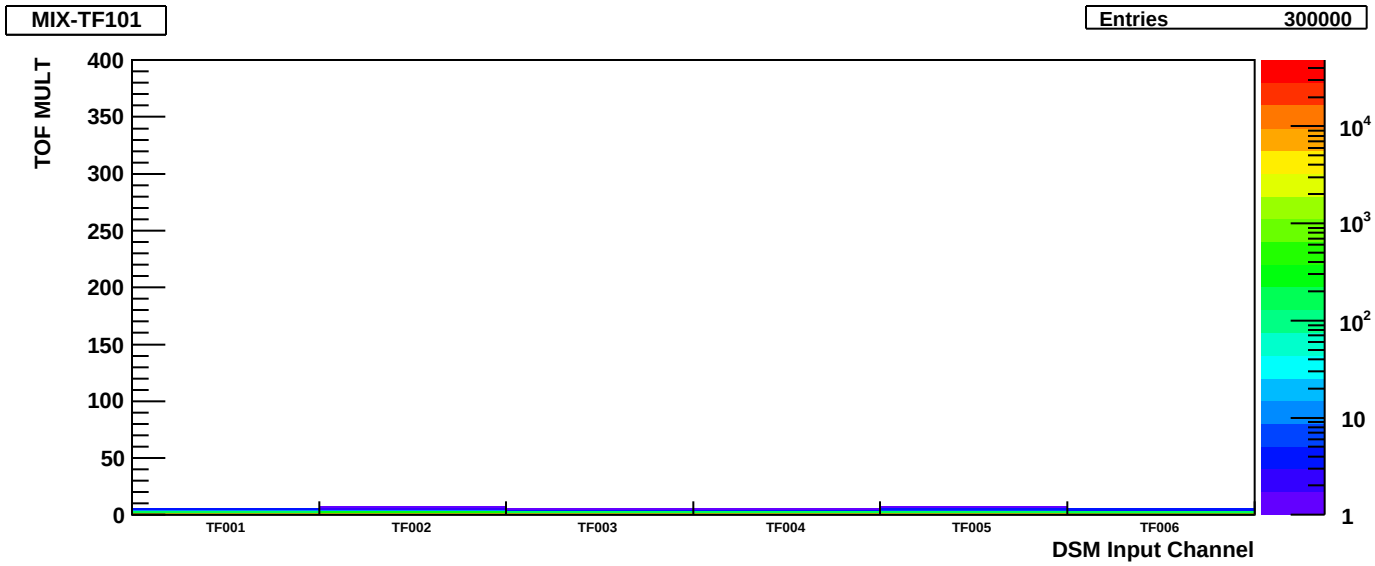

MIX-TF002
Entries 2100000
TOF MULT
TOF tray

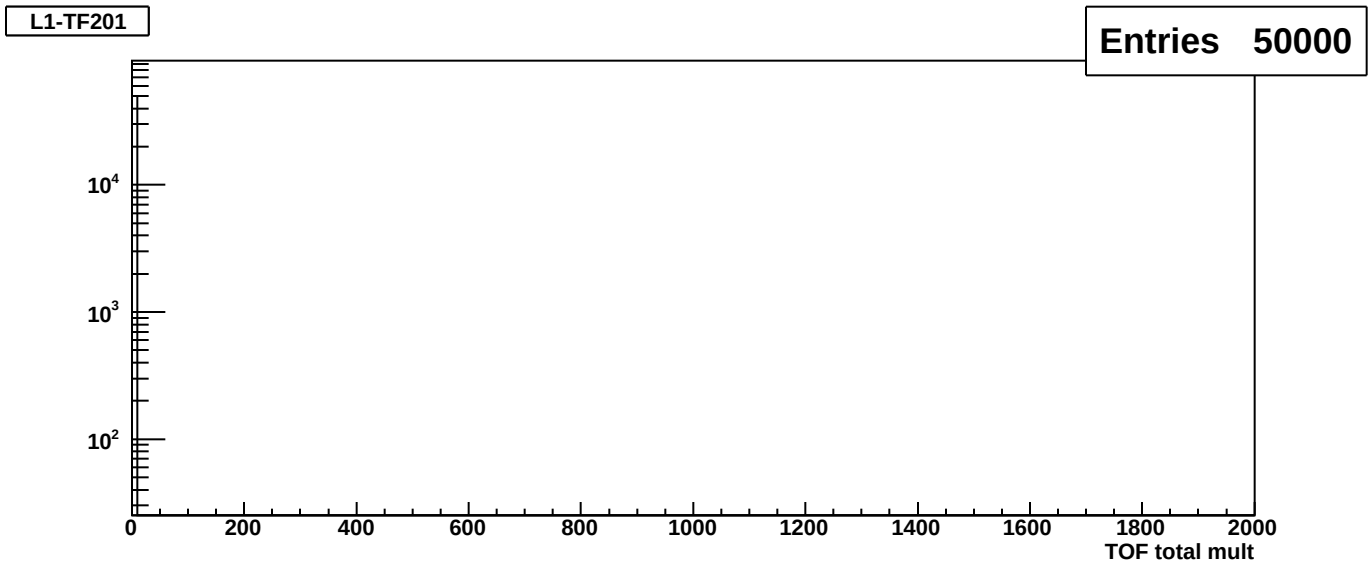

MIX-TF003
Entries 2100000
TOF MULT
TOF tray

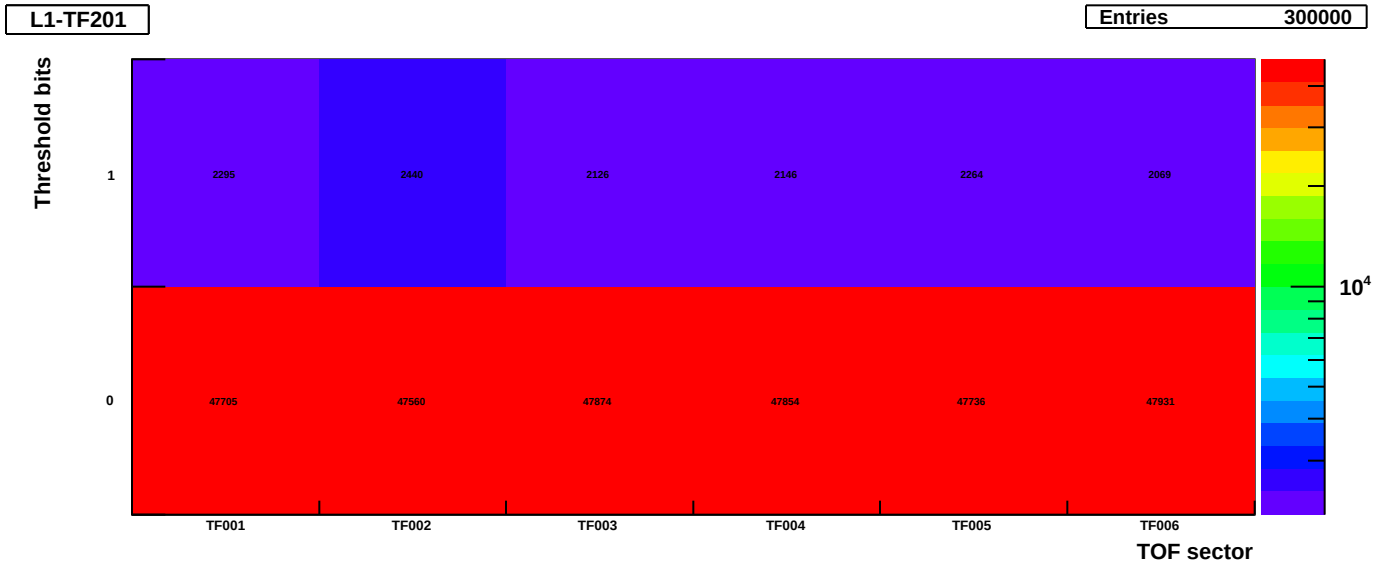

MIX-TF004
Entries 2100000
TOF MULT
TOF tray

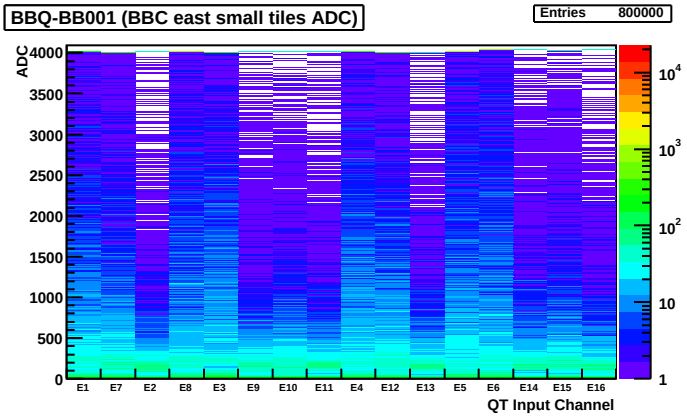

MIX-TF005
Entries 2100000
TOF MULT
TOF tray

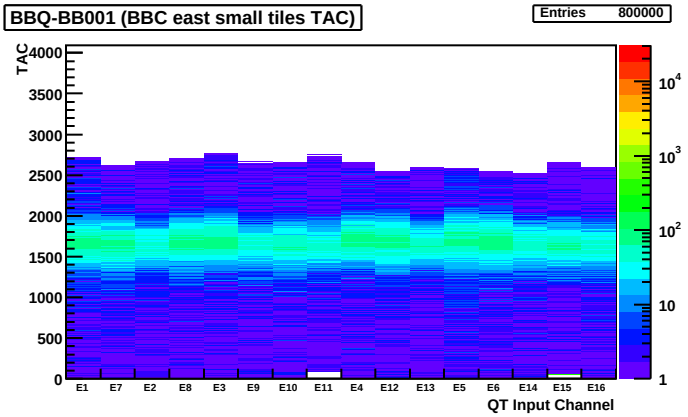

MIX-TF006
Entries 2100000
TOF MULT
TOF tray

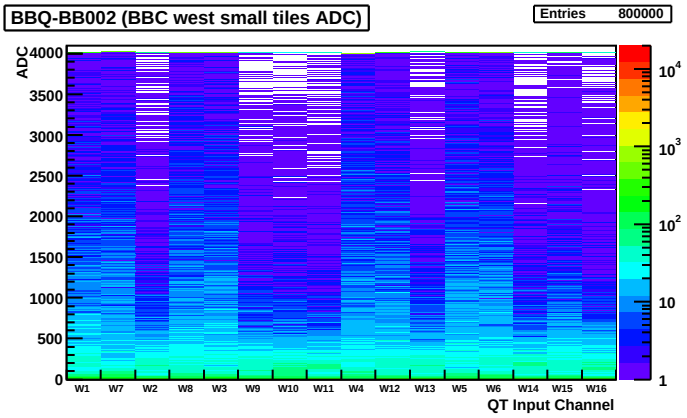

MIX-TF101
Entries 300000
TOF MULT
400
350
300
250
200
150
100
50
0
TF001
TF002
TF003
TF004
TF005
TF006
DSM Input Channel
10^4
10^3
10^2
10
1

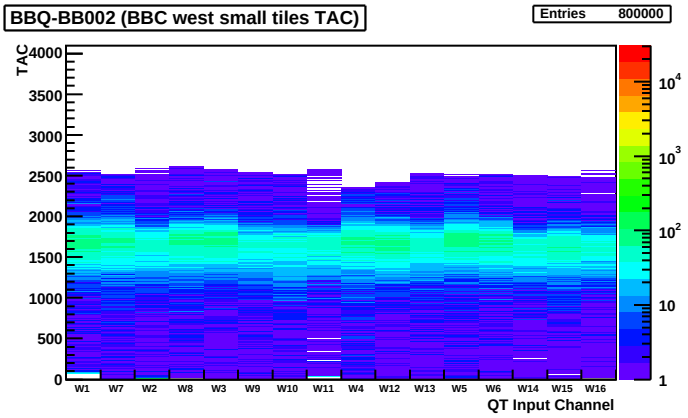

L1-TF201
Entries 50000
10^4
10^3
10^2
0
200
400
600
800
1000
1200
1400
1600
1800
2000
TOF total mult

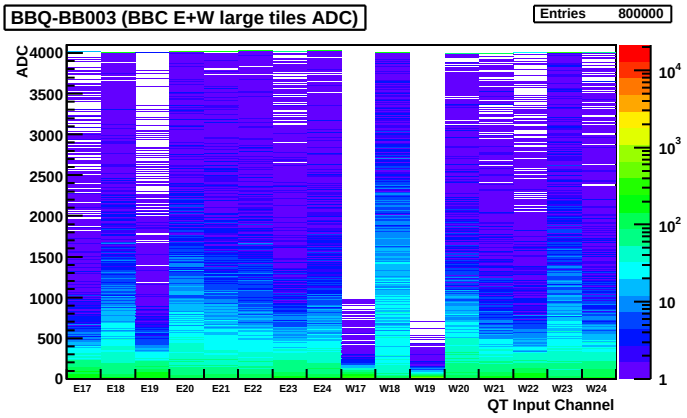

L1-TF201
Entries 300000
Threshold bits
1
0
2295
2440
2126
2146
2264
2069
47705
47560
47874
47854
47736
47931
TF001
TF002
TF003
TF004
TF005
TF006
TOF sector
10^4

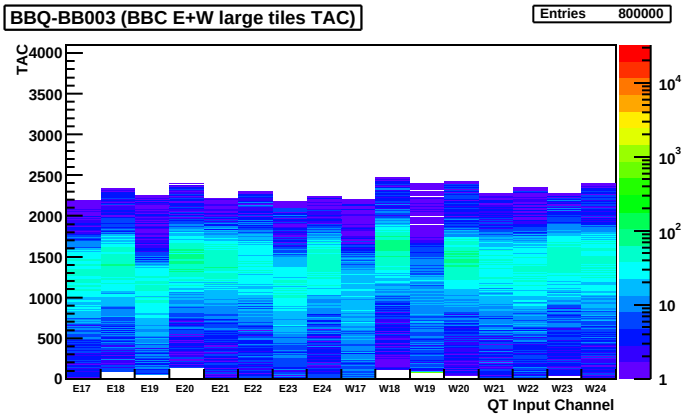

BBQ-BB001 (BBC east small tiles ADC)
Entries 800000
ADC
QT Input Channel

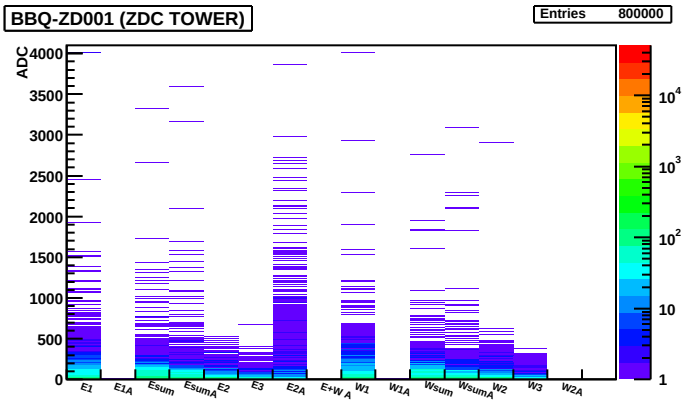

BBQ-BB001 (BBC east small tiles TAC)
Entries 800000
TAC
QT Input Channel

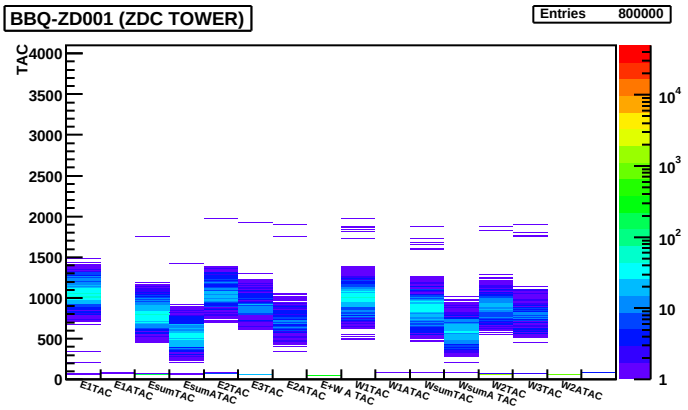

BBQ-BB002 (BBC west small tiles ADC)
Entries 800000
ADC
QT Input Channel

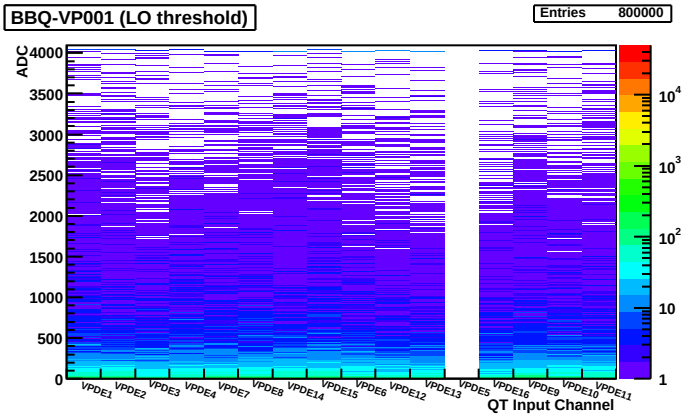

BBQ-BB002 (BBC west small tiles TAC)
Entries 800000
TAC
QT Input Channel

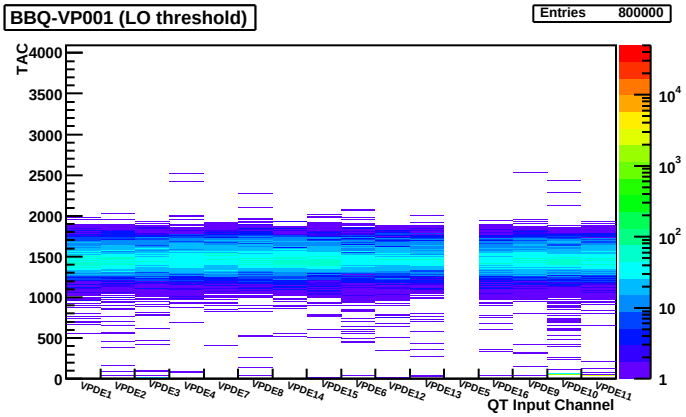

BBQ-BB003 (BBC E+W large tiles ADC)
Entries 800000
ADC
QT Input Channel

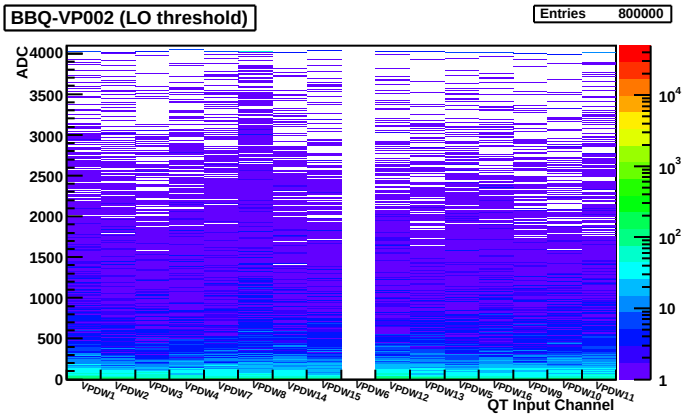

BBQ-BB003 (BBC E+W large tiles TAC)
Entries 800000
TAC
QT Input Channel

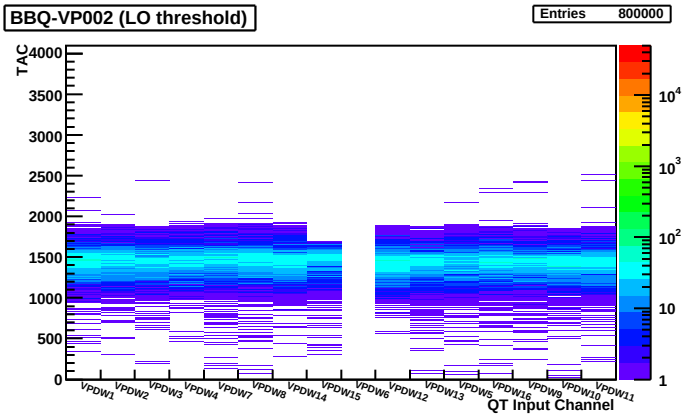

BBQ-ZD001 (ZDC TOWER)
Entries 800000
ADC

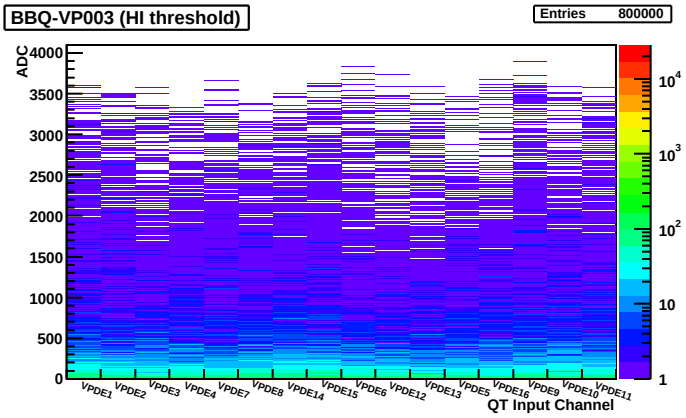

BBQ-ZD001 (ZDC TOWER)
Entries 800000
TAC

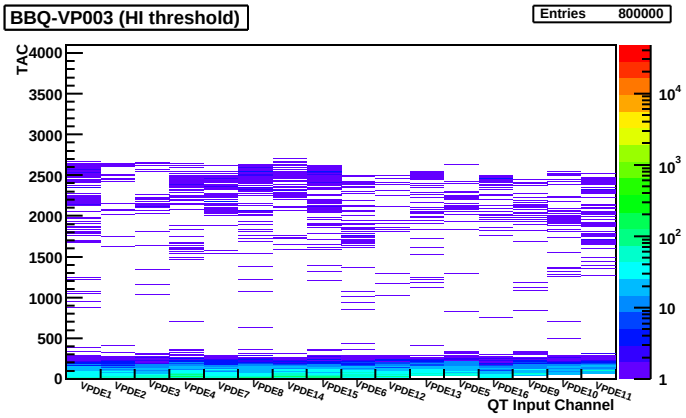

BBQ-VP001 (LO threshold)
Entries 800000
ADC
QT Input Channel

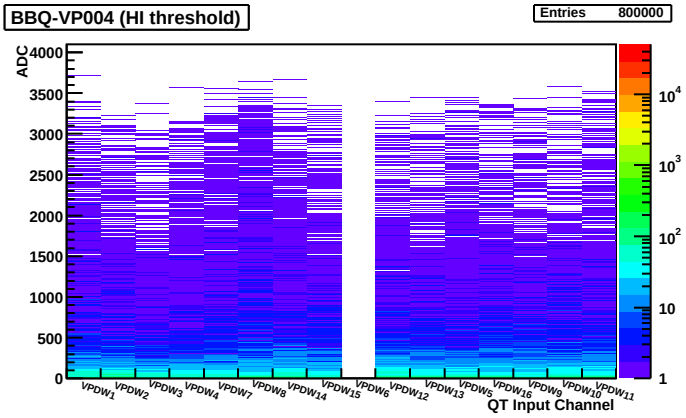

BBQ-VP001 (LO threshold)
Entries 800000
TAC
QT Input Channel

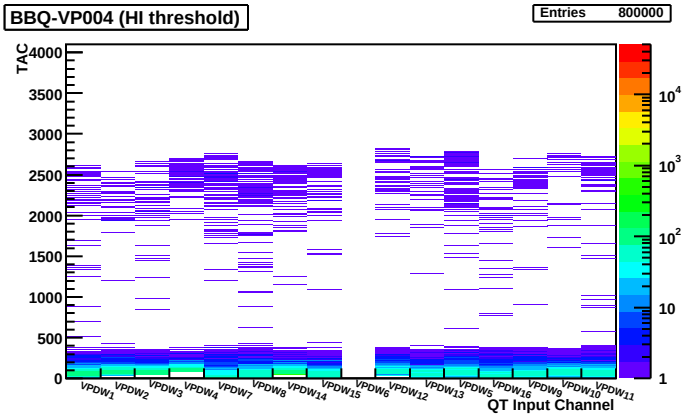

BBQ-VP002 (LO threshold)
Entries 800000
ADC
QT Input Channel

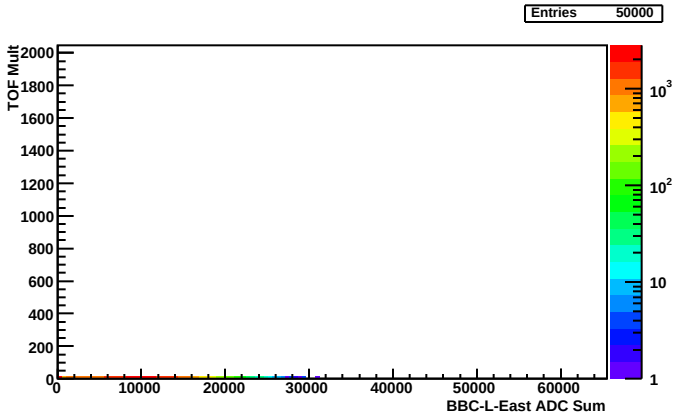

BBQ-VP002 (LO threshold)
Entries 800000
TAC
QT Input Channel

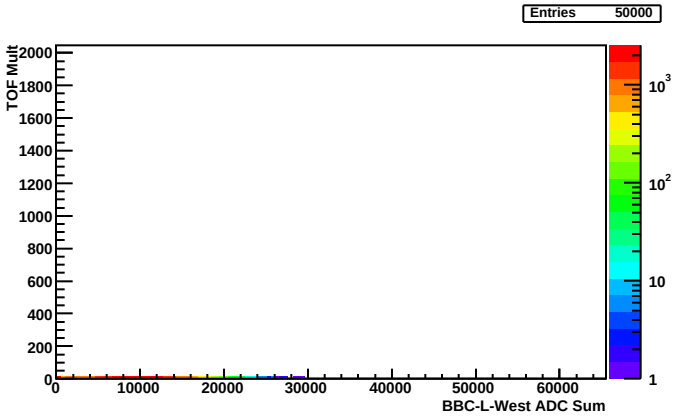

BBQ-VP003 (HI threshold)
Entries 800000
ADC
QT Input Channel

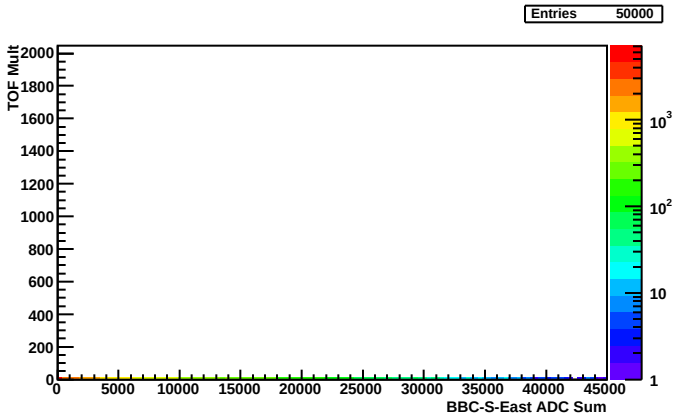

BBQ-VP003 (HI threshold)
Entries 800000
TAC
QT Input Channel

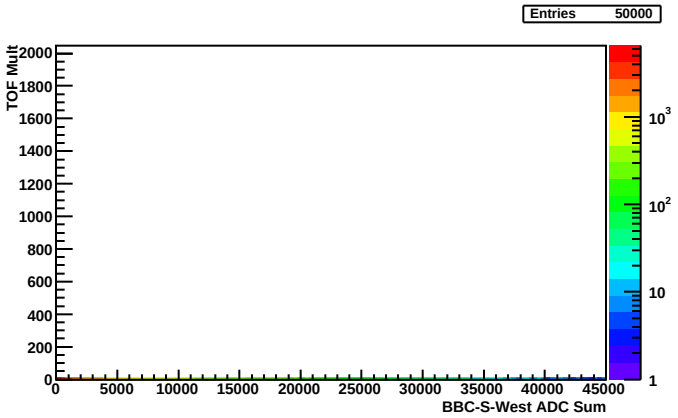

BBQ-VP004 (HI threshold)
Entries 800000
ADC
QT Input Channel

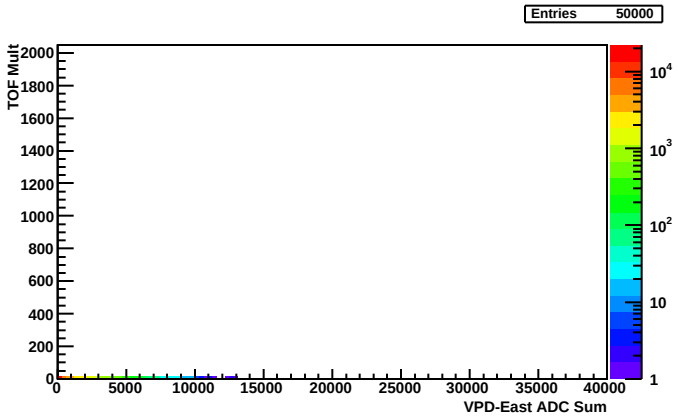

BBQ-VP004 (HI threshold)
Entries 800000
TAC
QT Input Channel

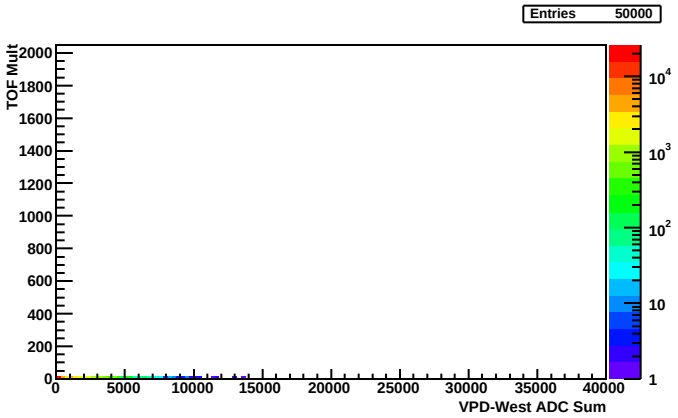

Entries 50000
TOF Mult
BBC-L-East ADC Sum

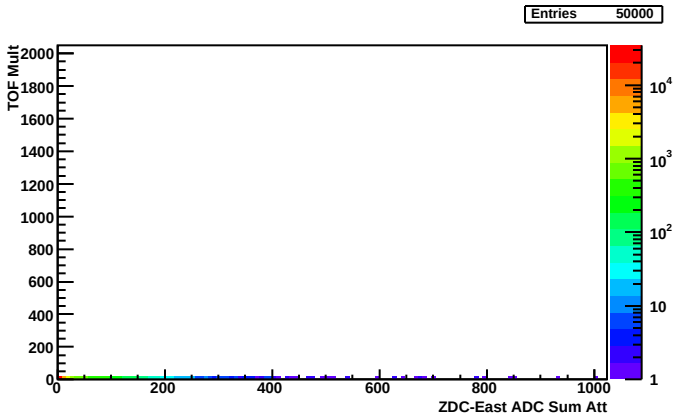

Entries 50000
TOF Mult
BBC-L-West ADC Sum

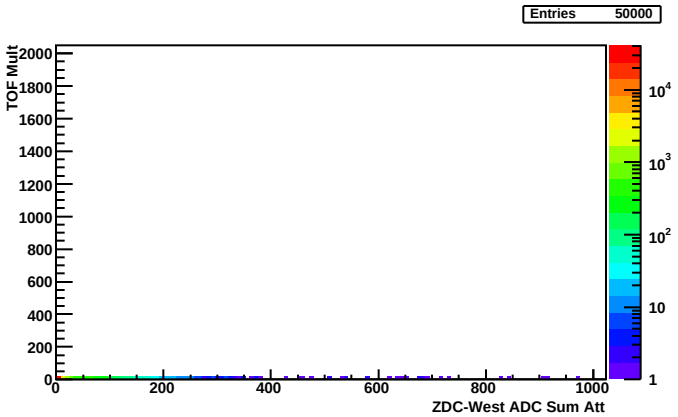

Entries 50000
TOF Mult
BBC-S-East ADC Sum

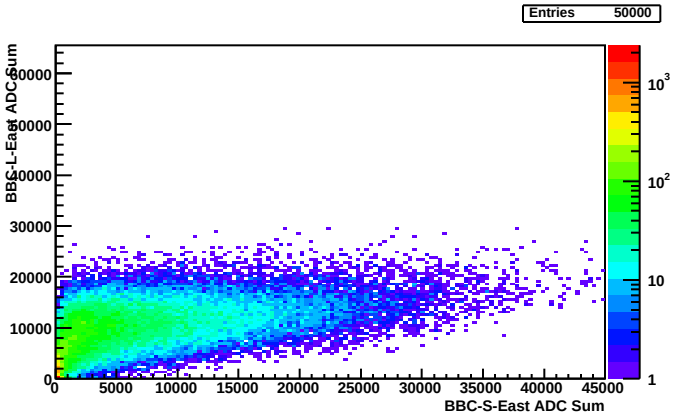

Entries 50000
TOF Mult
BBC-S-West ADC Sum

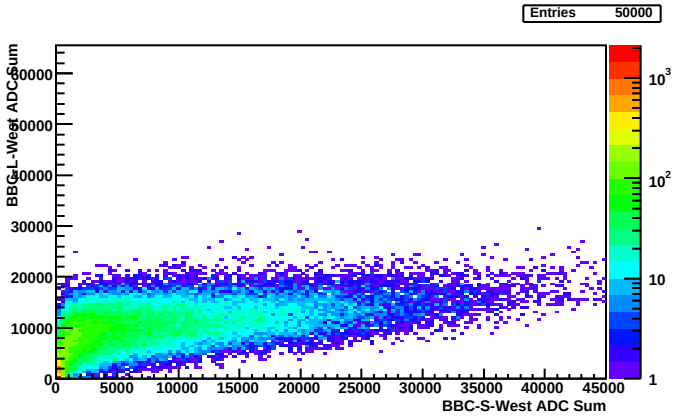

Entries 50000
TOF Mult
VPD-East ADC Sum

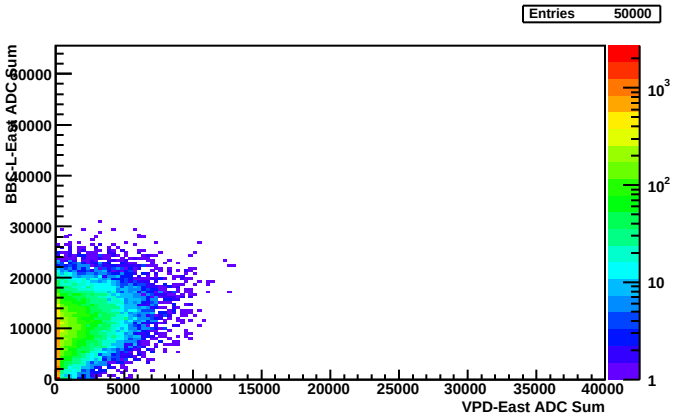

Entries 50000
TOF Mult
VPD-West ADC Sum

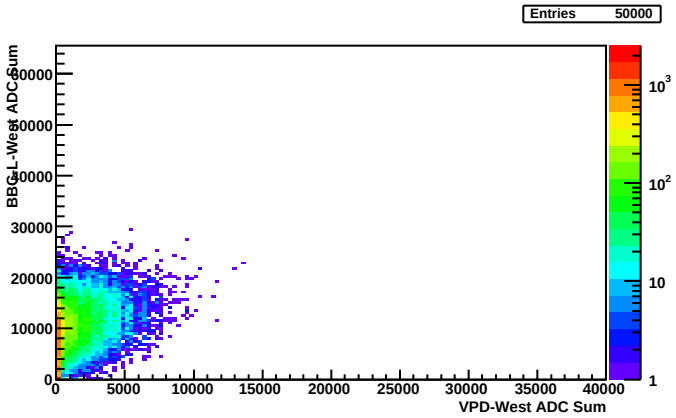

Entries 50000
TOF Mult
ZDC-East ADC Sum Att

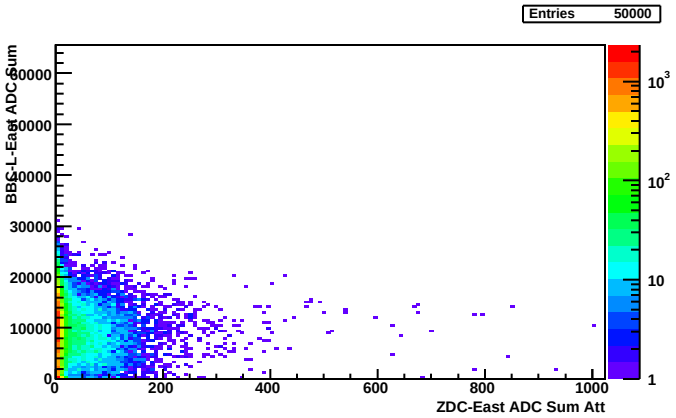

Entries 50000
TOF Mult
ZDC-West ADC Sum Att

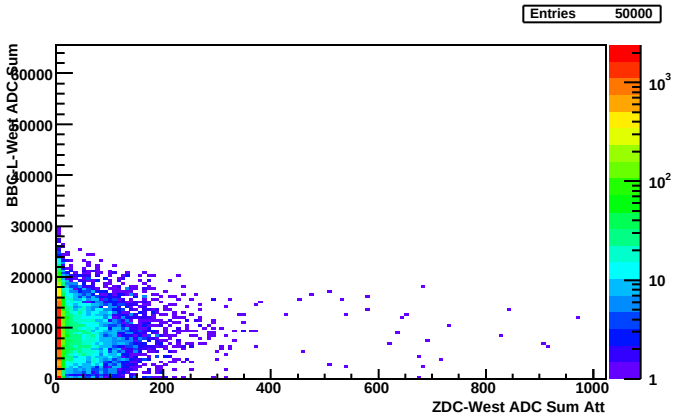

Entries 50000
BBC-L-East ADC Sum
BBC-S-East ADC Sum

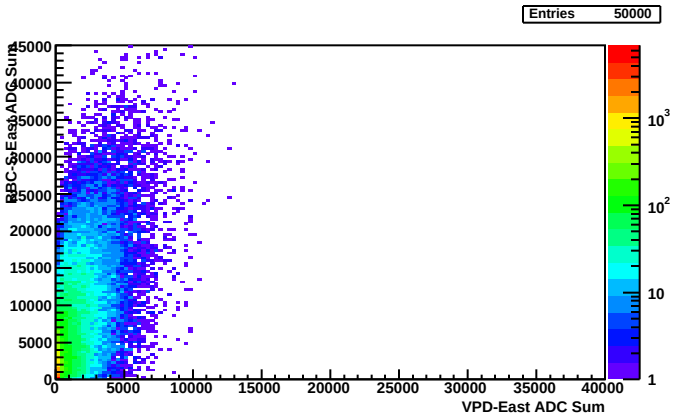

Entries 50000
BBC-L-West ADC Sum
BBC-S-West ADC Sum

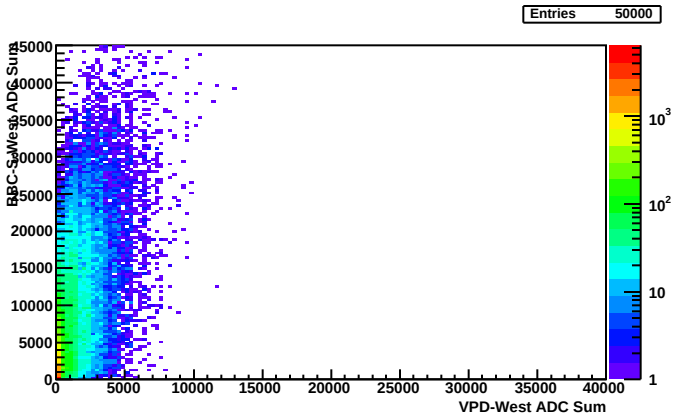

Entries 50000
BBC-L-East ADC Sum
VPD-East ADC Sum

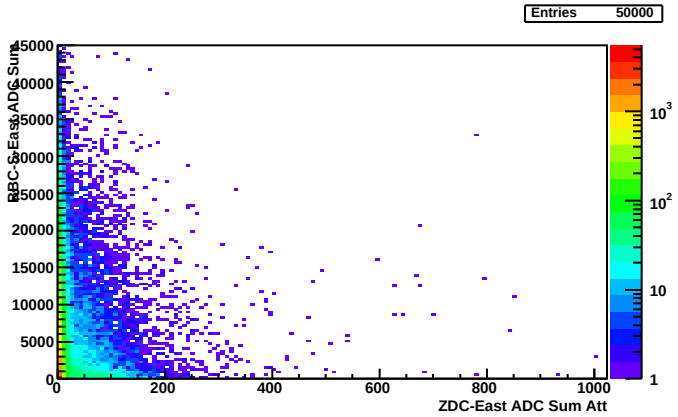

Entries 50000
BBC-L-West ADC Sum
VPD-West ADC Sum

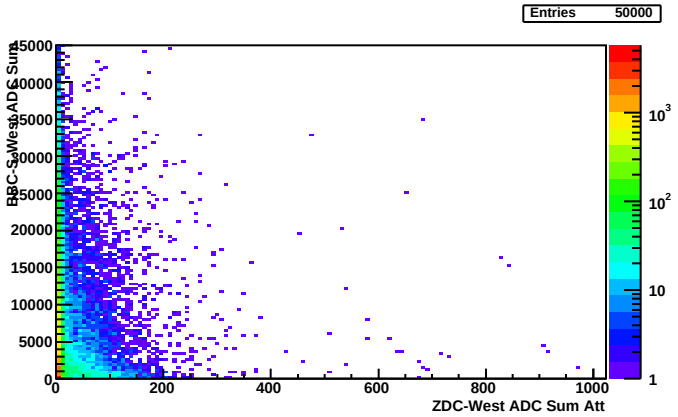

Entries 50000
BBC-L-East ADC Sum
ZDC-East ADC Sum Att

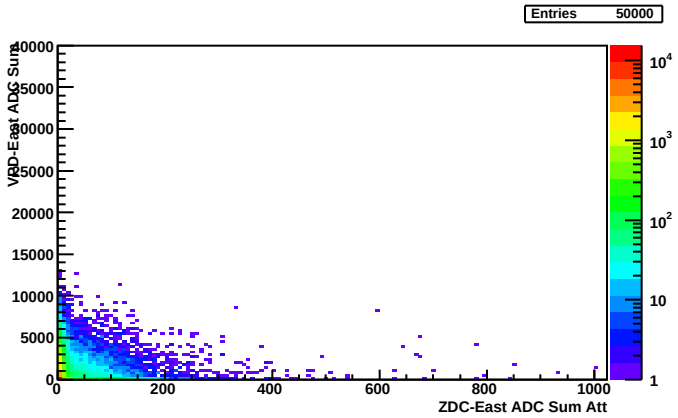

Entries 50000
BBC-L-West ADC Sum
ZDC-West ADC Sum Att

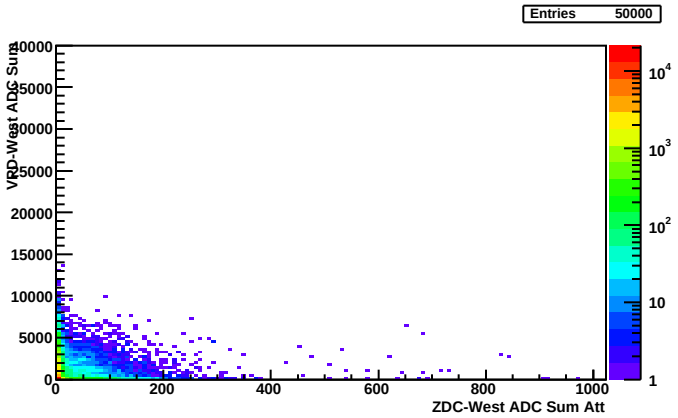

Entries 50000
BBC-S-East ADC Sum
VPD-East ADC Sum

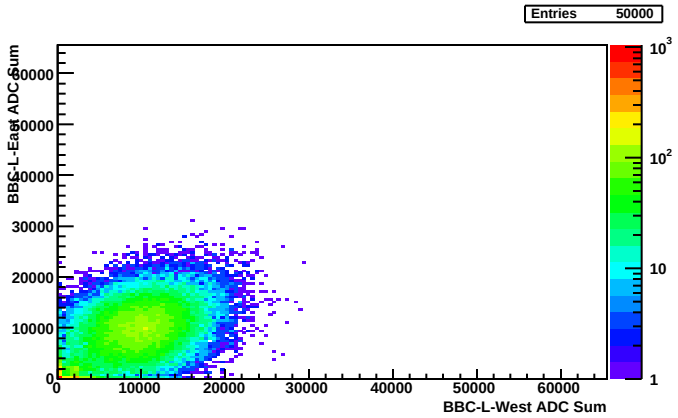

Entries 50000
BBC-S-West ADC Sum
VPD-West ADC Sum

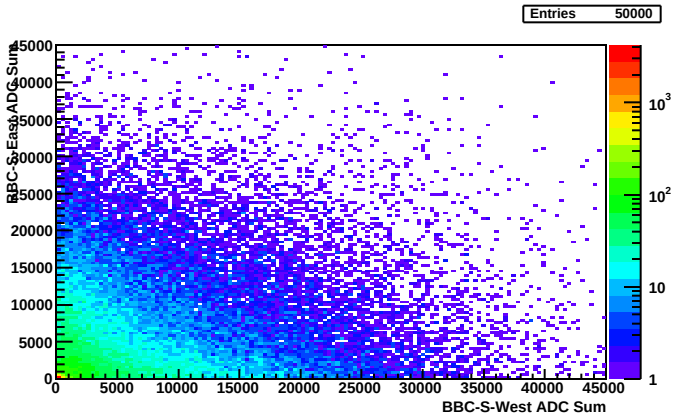

Entries 50000
BBC-S-East ADC Sum
ZDC-East ADC Sum Att

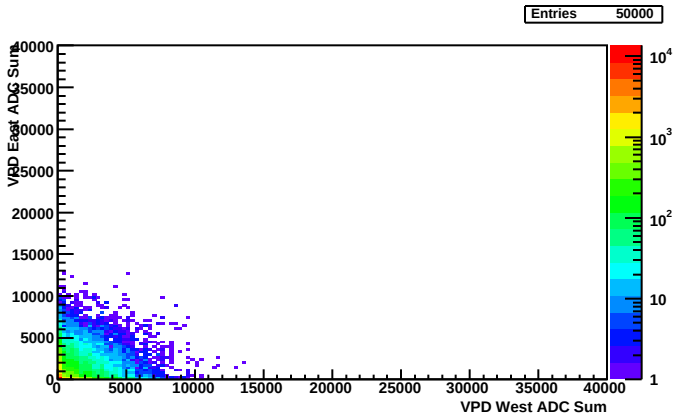

Entries 50000
BBC-S-West ADC Sum
ZDC-West ADC Sum Att

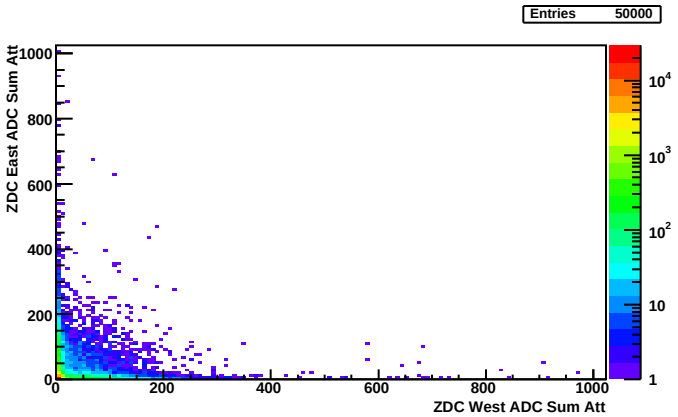

Entries 50000
VPD-East ADC Sum
ZDC-East ADC Sum Att

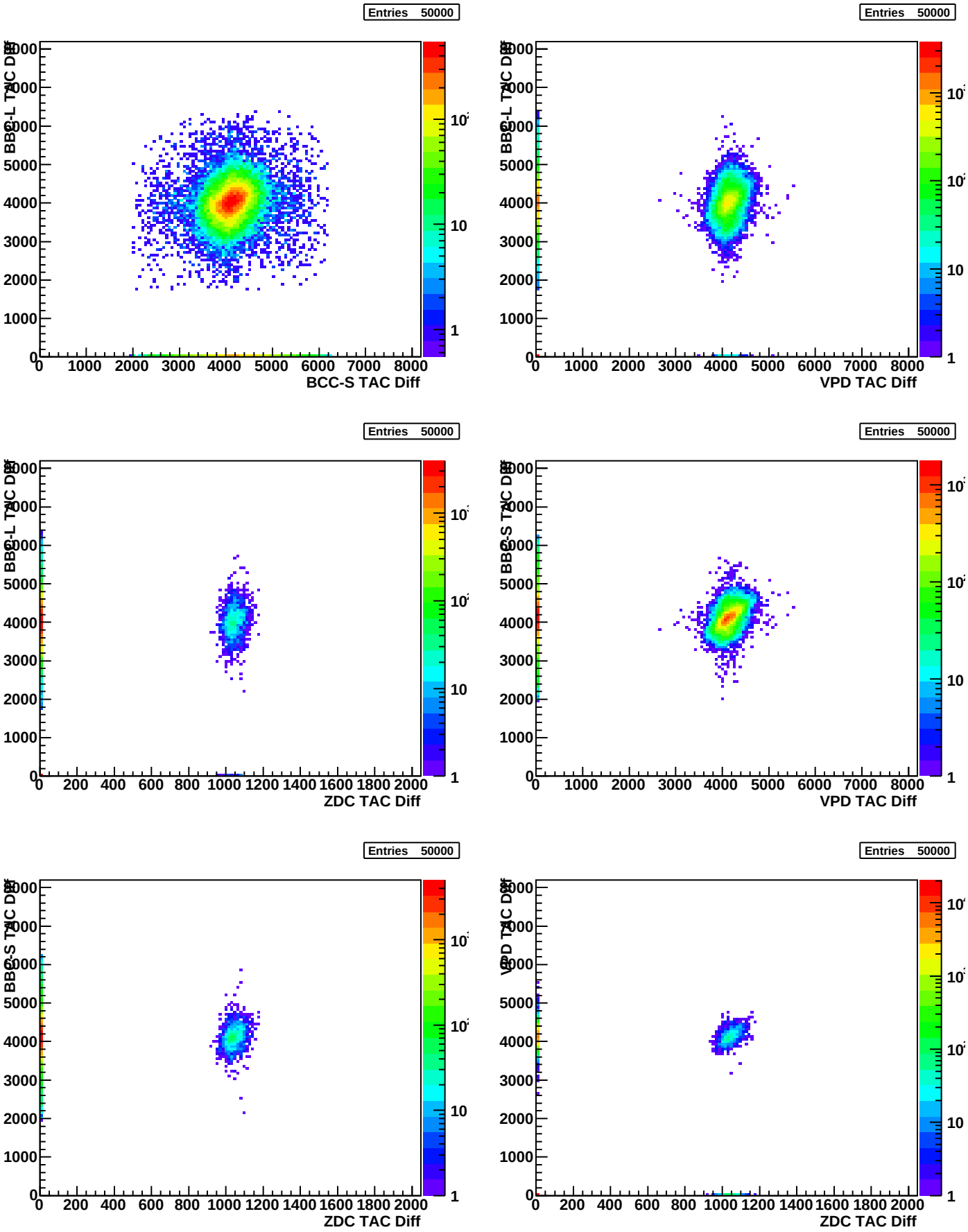

Entries 50000
VPD-West ADC Sum
ZDC-West ADC Sum Att

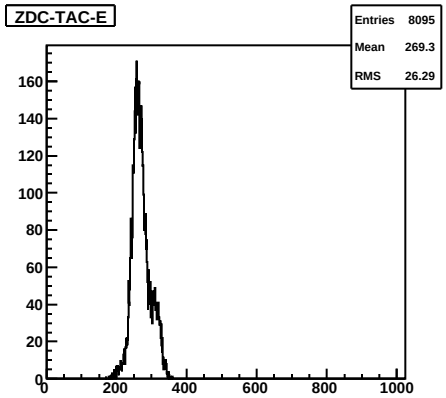

Entries 50000
BBC-L-East ADC Sum
BBC-L-West ADC Sum

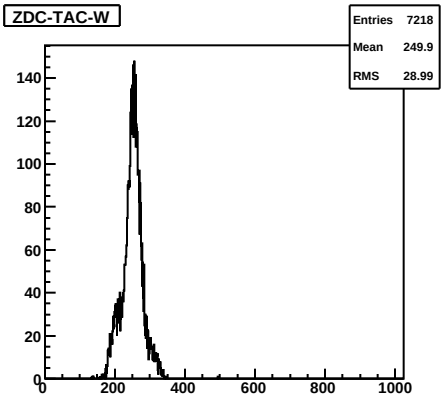

Entries 50000
BBC-S-East ADC Sum
BBC-S-West ADC Sum

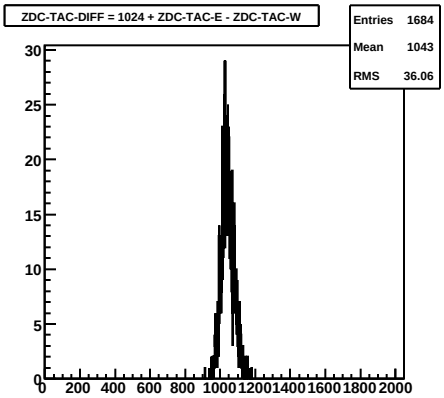

Entries 50000
VPD East ADC Sum
VPD West ADC Sum

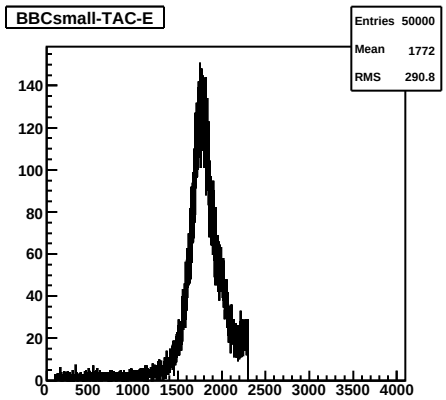

Entries 50000
ZDC East ADC Sum Att
ZDC West ADC Sum Att

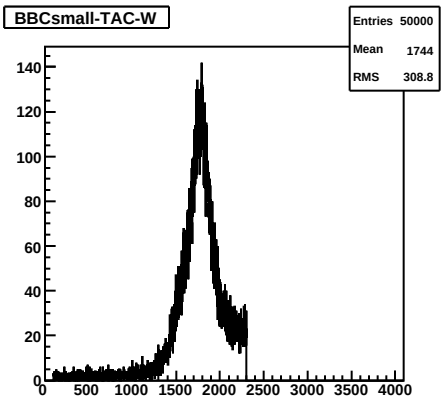

Entries 50000
BBC-L TAC Diff
BCC-S TAC Diff
Entries 50000
BBC-L TAC Diff
VPD TAC Diff
Entries 50000
BBC-L TAC Diff
ZDC TAC Diff
Entries 50000
BBC-S TAC Diff
VPD TAC Diff
Entries 50000
BBC-S TAC Diff
ZDC TAC Diff
Entries 50000
VPD TAC Diff
ZDC TAC Diff

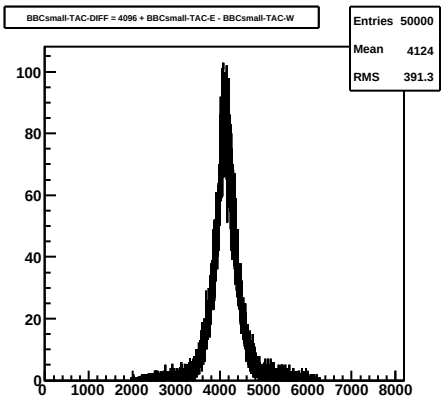

ZDC-TAC-E
Entries 8095
Mean 269.3
RMS 26.29

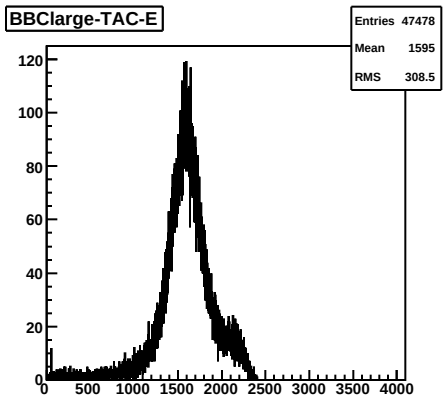

ZDC-TAC-W
Entries 7218
Mean 249.9
RMS 28.99

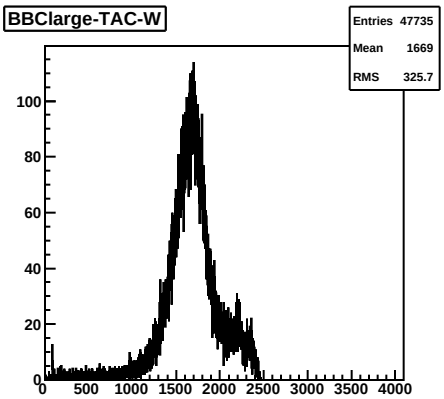

ZDC-TAC-DIFF = 1024 + ZDC-TAC-E - ZDC-TAC-W
Entries 1684
Mean 1043
RMS 36.06

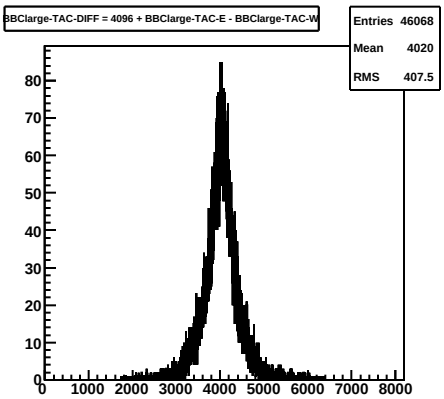

BBCsmall-TAC-E
Entries 50000
Mean 1772
RMS 290.8

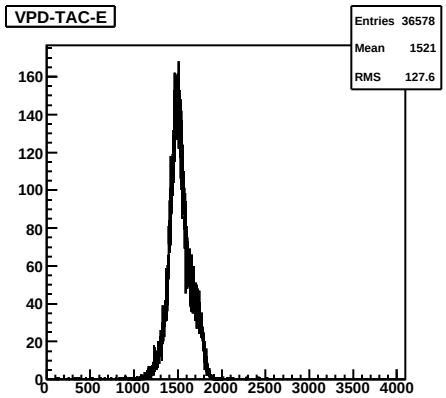

BBCsmall-TAC-W
Entries 50000
Mean 1744
RMS 308.8

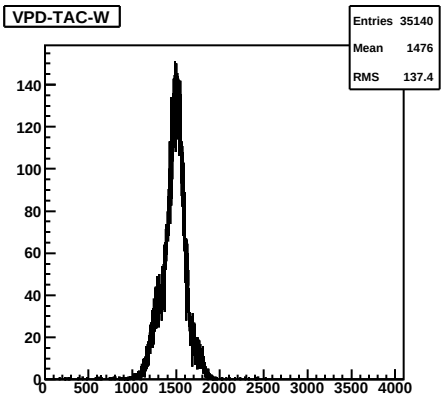

BBCsmall-TAC-DIFF = 4096 + BBCsmall-TAC-E - BBCsmall-TAC-W
Entries 50000
Mean 4124
RMS 391.3

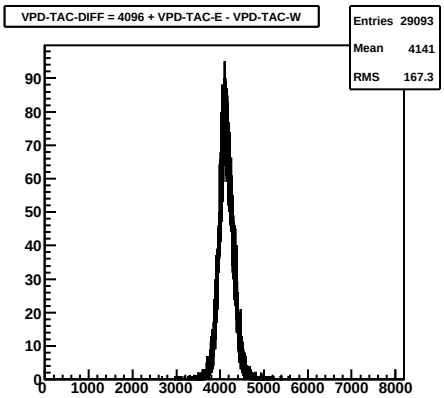

BBClarge-TAC-E
Entries 47478
Mean 1595
RMS 308.5

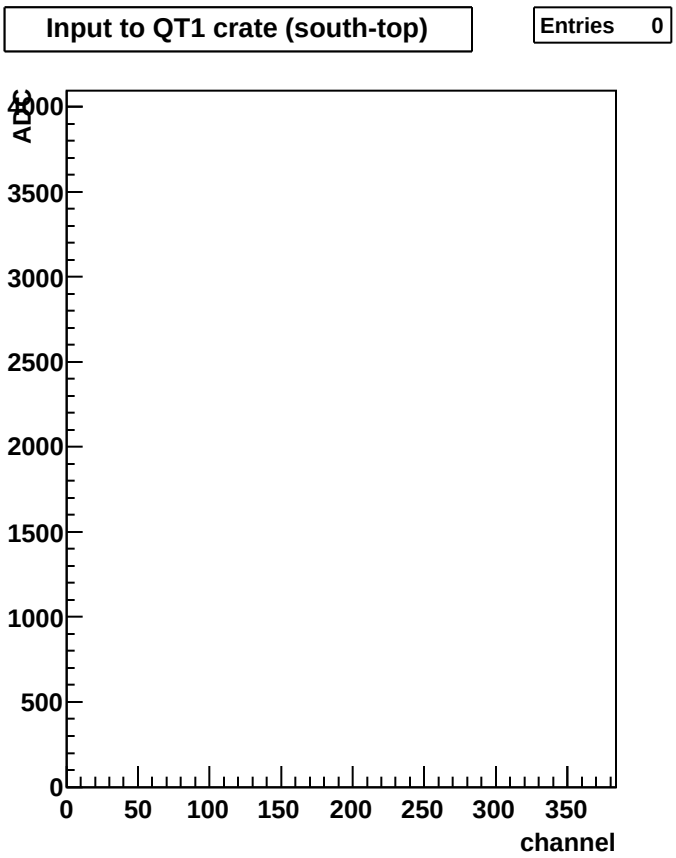

BBClarge-TAC-W
Entries 47735
Mean 1669
RMS 325.7

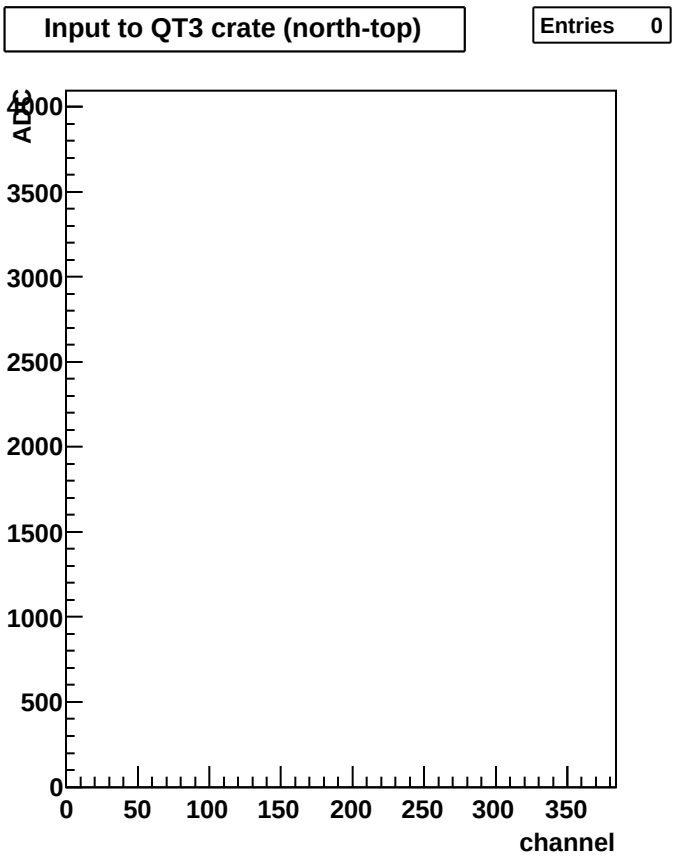

BBClarge-TAC-DIFF = 4096 + BBClarge-TAC-E - BBClarge-TAC-W
Entries 46068
Mean 4020
RMS 407.5

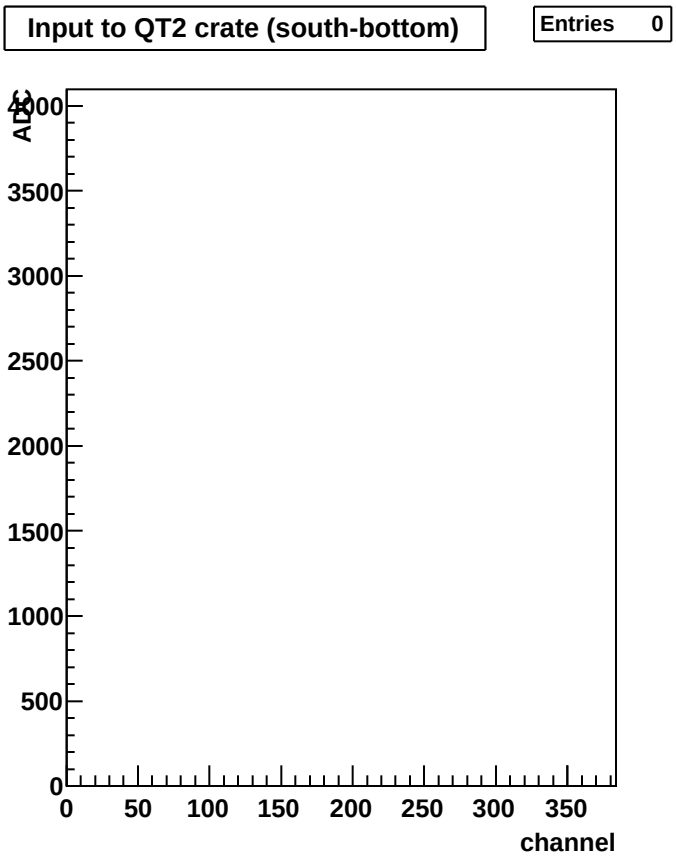

VPD-TAC-E
Entries 36578
Mean 1521
RMS 127.6

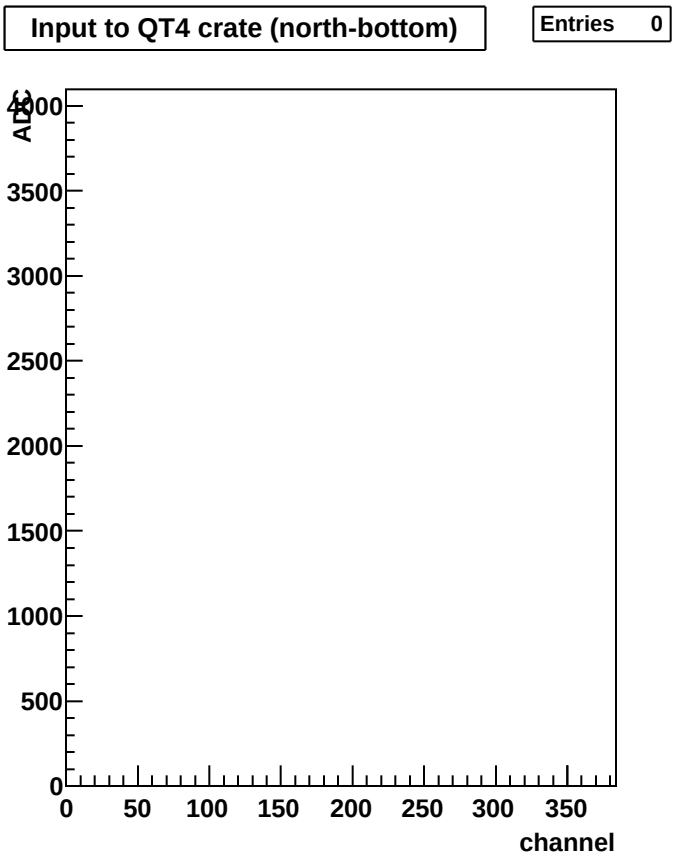

VPD-TAC-W
Entries 35140
Mean 1476
RMS 137.4

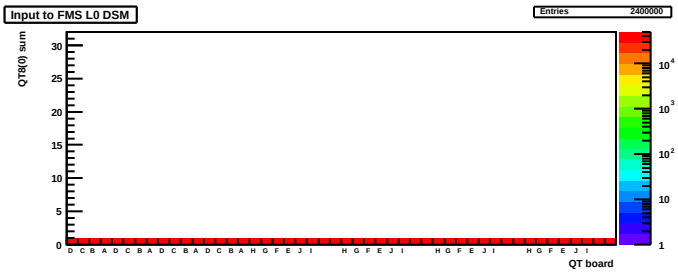

VPD-TAC-DIFF = 4096 + VPD-TAC-E - VPD-TAC-W
Entries 29093
Mean 4141
RMS 167.3

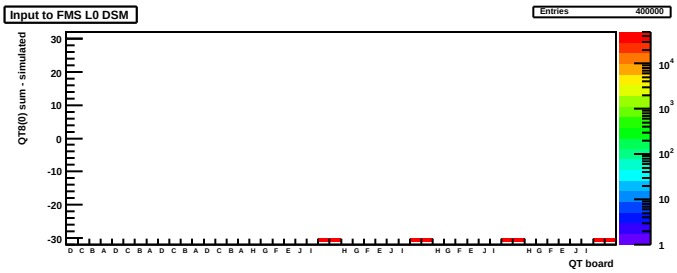

Input to QT1 crate (south-top)
Entries 0
ADC
4000
3500
3000
2500
2000
1500
1000
500
0
0 50 100 150 200 250 300 350
channel

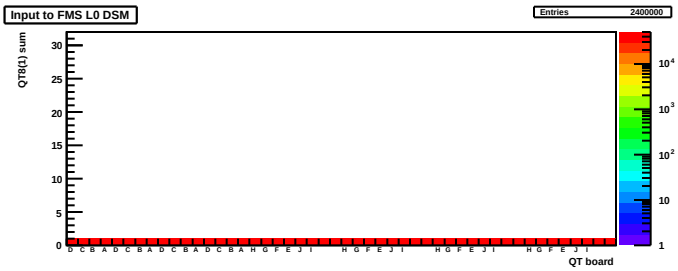

Input to QT3 crate (north-top)
Entries 0
ADC
4000
3500
3000
2500
2000
1500
1000
500
0
0 50 100 150 200 250 300 350
channel

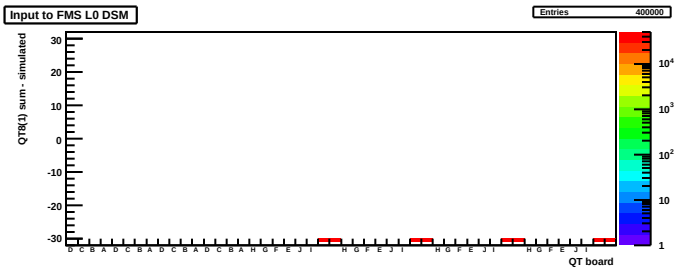

Input to QT2 crate (south-bottom)
Entries 0
ADC
4000
3500
3000
2500
2000
1500
1000
500
0
0 50 100 150 200 250 300 350
channel

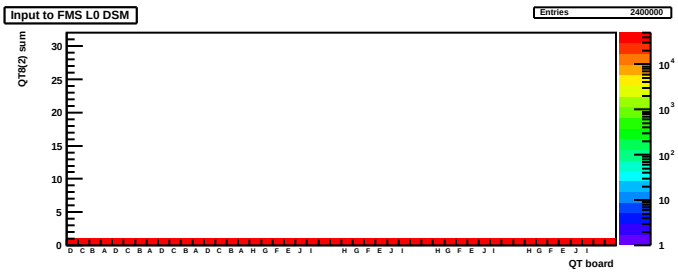

Input to QT4 crate (north-bottom)
Entries 0
ADC
4000
3500
3000
2500
2000
1500
1000
500
0
0 50 100 150 200 250 300 350
channel

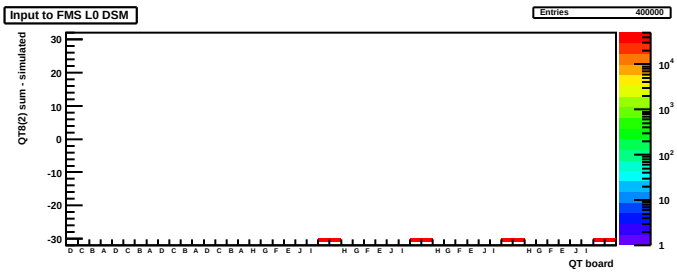

Input to FMS L0 DSM
Entries 2400000
QT8(0) sum
QT board

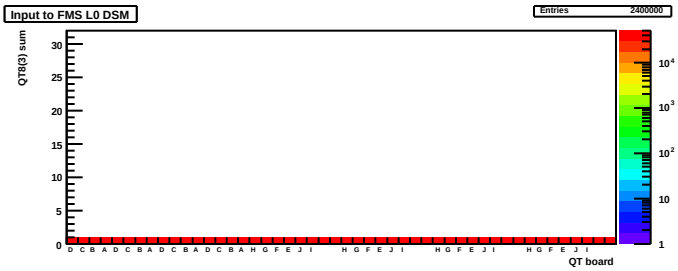

Input to FMS L0 DSM
Entries 400000
QT8(0) sum - simulated
QT board

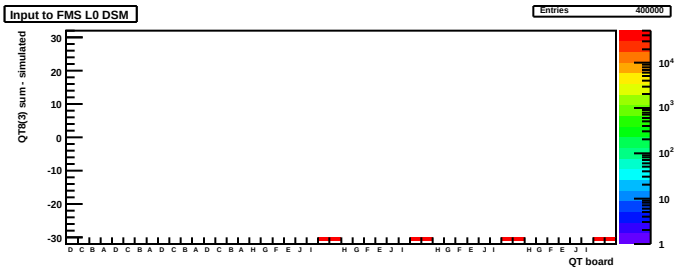

Input to FMS L0 DSM
Entries 2400000
QT8(1) sum
QT board

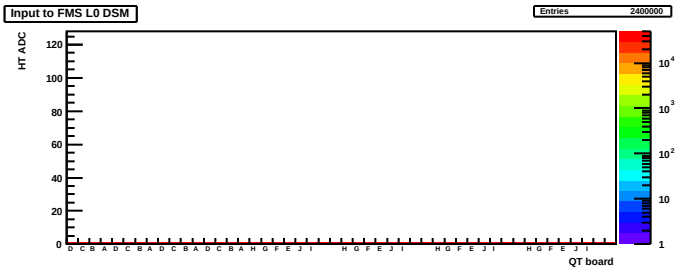

Input to FMS L0 DSM
Entries 400000
QT8(1) sum - simulated
QT board

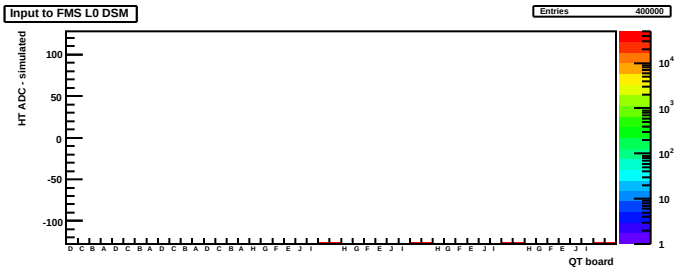

Input to FMS L0 DSM
Entries 2400000
QT8(2) sum
QT board

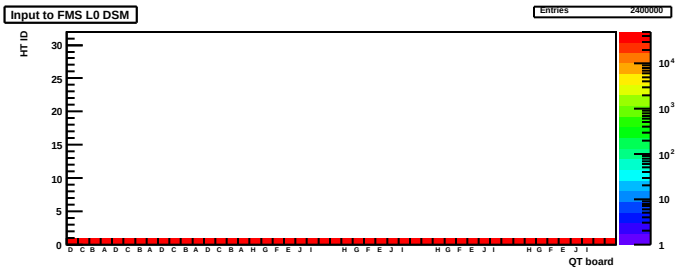

Input to FMS L0 DSM
Entries 400000
QT8(2) sum - simulated
QT board

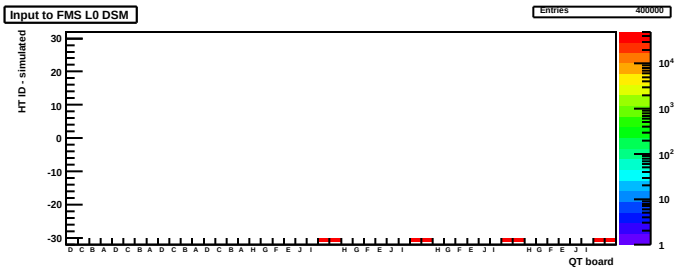

Input to FMS L0 DSM
Entries 2400000
QT8(3) sum
QT board

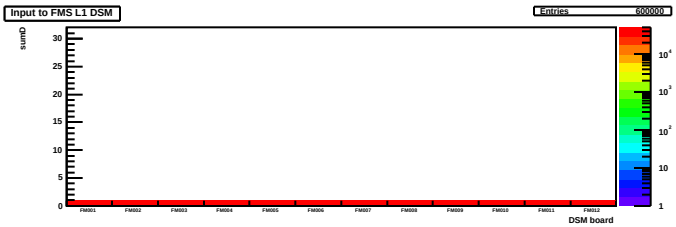

Input to FMS L0 DSM
Entries 400000
QT8(3) sum - simulated
QT board

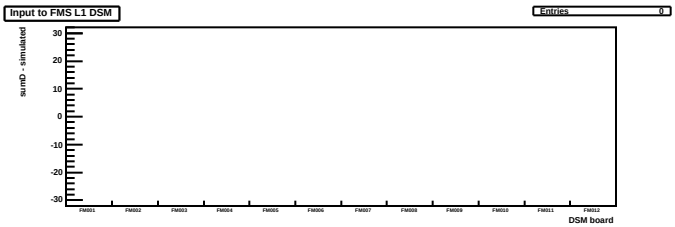

Input to FMS L0 DSM
Entries 2400000
HT ADC
QT board

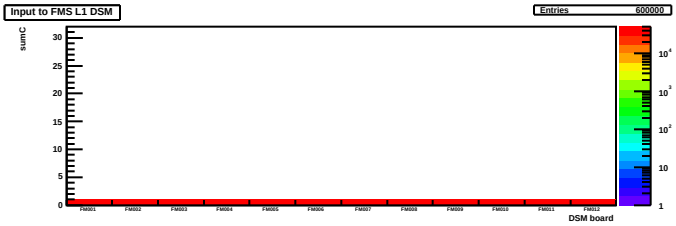

Input to FMS L0 DSM
Entries 400000
HT ADC - simulated
QT board

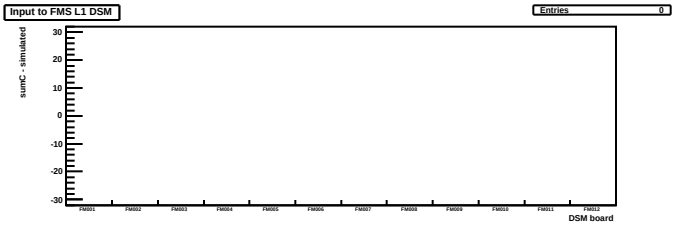

Input to FMS L0 DSM
Entries 2400000
HT ID
QT board

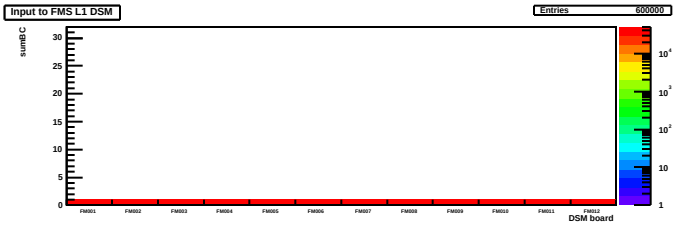

Input to FMS L0 DSM
Entries 400000
HT ID - simulated
QT board

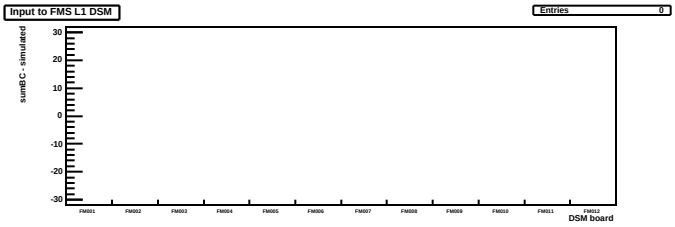

Input to FMS L1 DSM
Entries 600000
sumD
DSM board

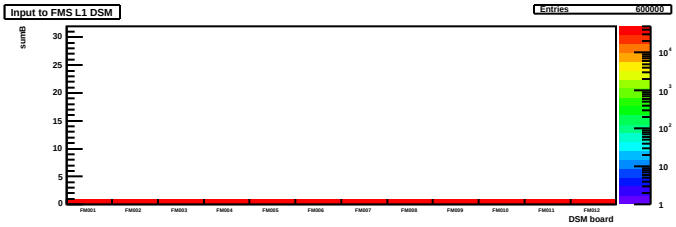

Input to FMS L1 DSM
Entries 0
sumD - simulated
DSM board

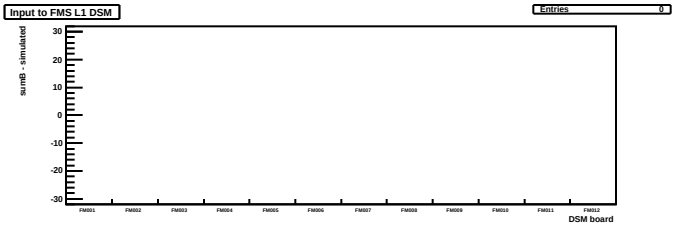

Input to FMS L1 DSM
Entries 600000
sumC
DSM board

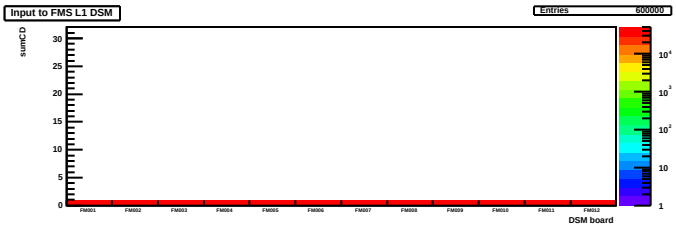

Input to FMS L1 DSM
Entries 0
sumC - simulated
DSM board

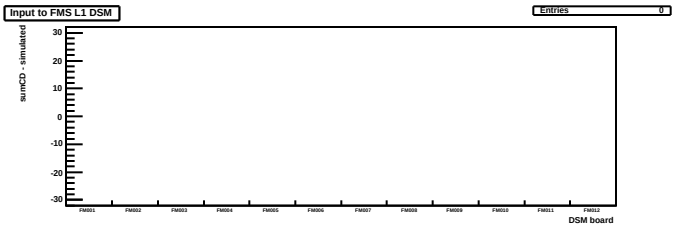

Input to FMS L1 DSM
Entries 600000
sumBC
DSM board

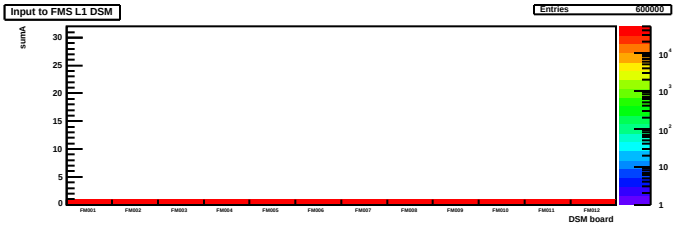

Input to FMS L1 DSM
Entries 0
sumBC - simulated
DSM board

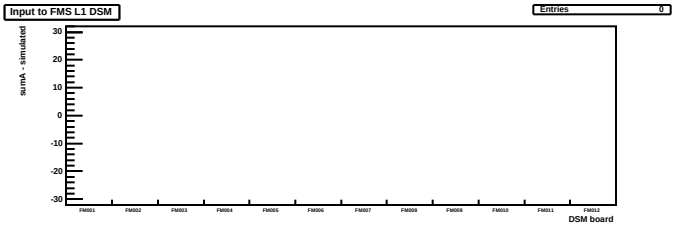

Input to FMS L1 DSM
Entries 600000
sumB
DSM board

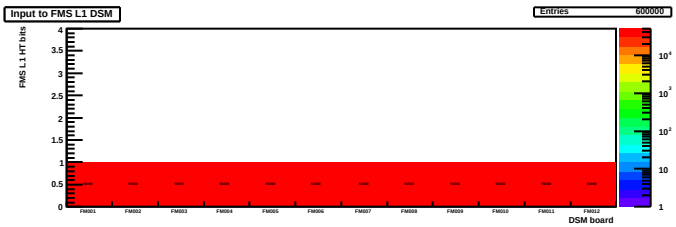

Input to FMS L1 DSM
Entries 0
sumB - simulated
DSM board

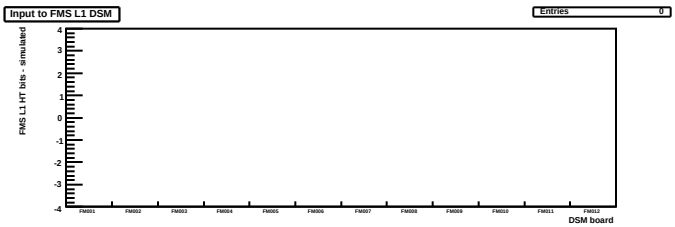

Input to FMS L1 DSM
Entries 600000
sumCD
DSM board

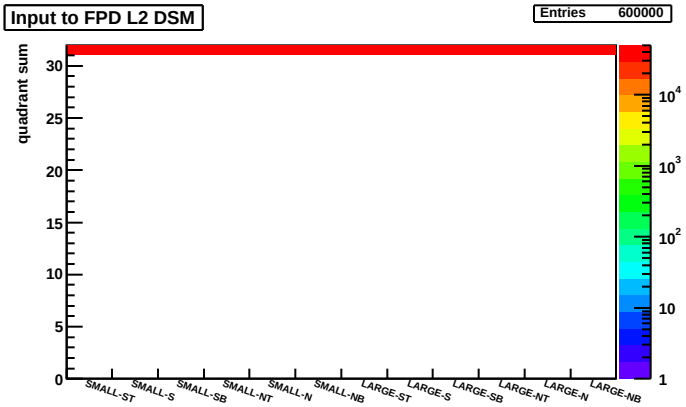

Input to FMS L1 DSM
Entries 0
sumCD - simulated
DSM board

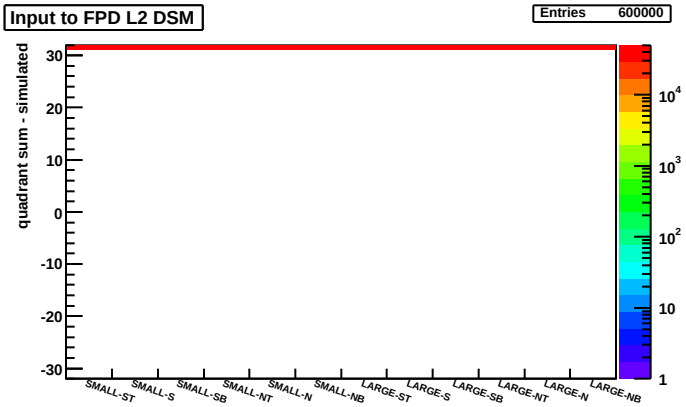

Input to FMS L1 DSM
Entries 600000
sumA
DSM board

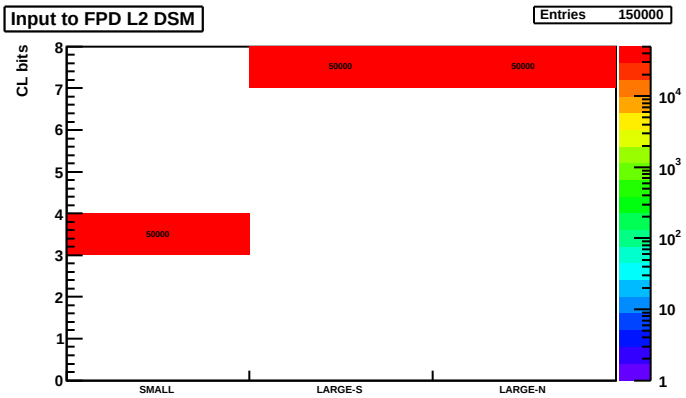

Input to FMS L1 DSM
Entries 0
sumA - simulated
DSM board

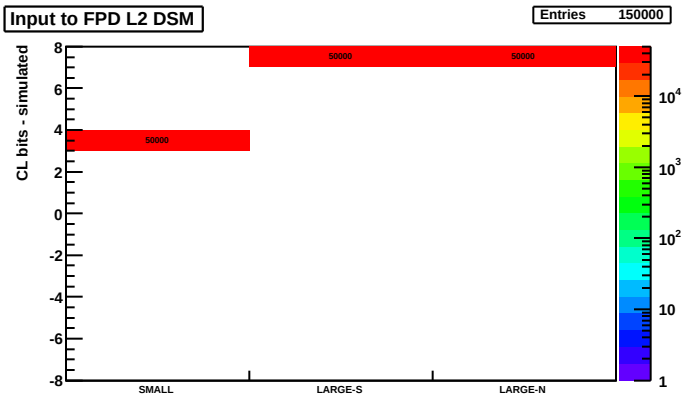

Input to FMS L1 DSM
Entries 600000
FMS L1 HT bits
DSM board

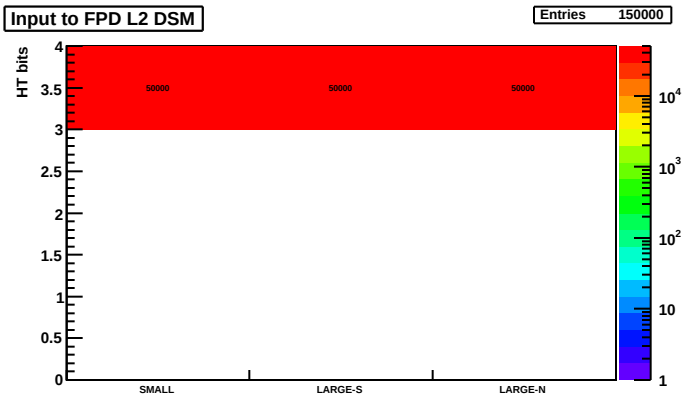

Input to FMS L1 DSM
Entries 0
FMS L1 HT bits - simulated
DSM board

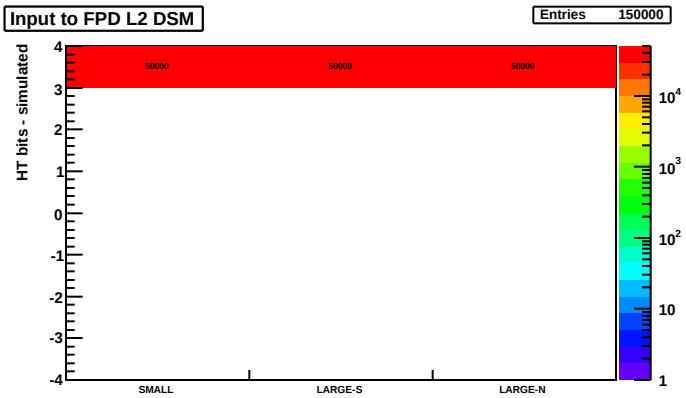

Input to FPD L2 DSM
Entries 600000
quadrant sum
SMALL-ST
SMALL-S
SMALL-SB
SMALL-NT
SMALL-N
SMALL-NB
LARGE-ST
LARGE-S
LARGE-SB
LARGE-NT
LARGE-N
LARGE-NB

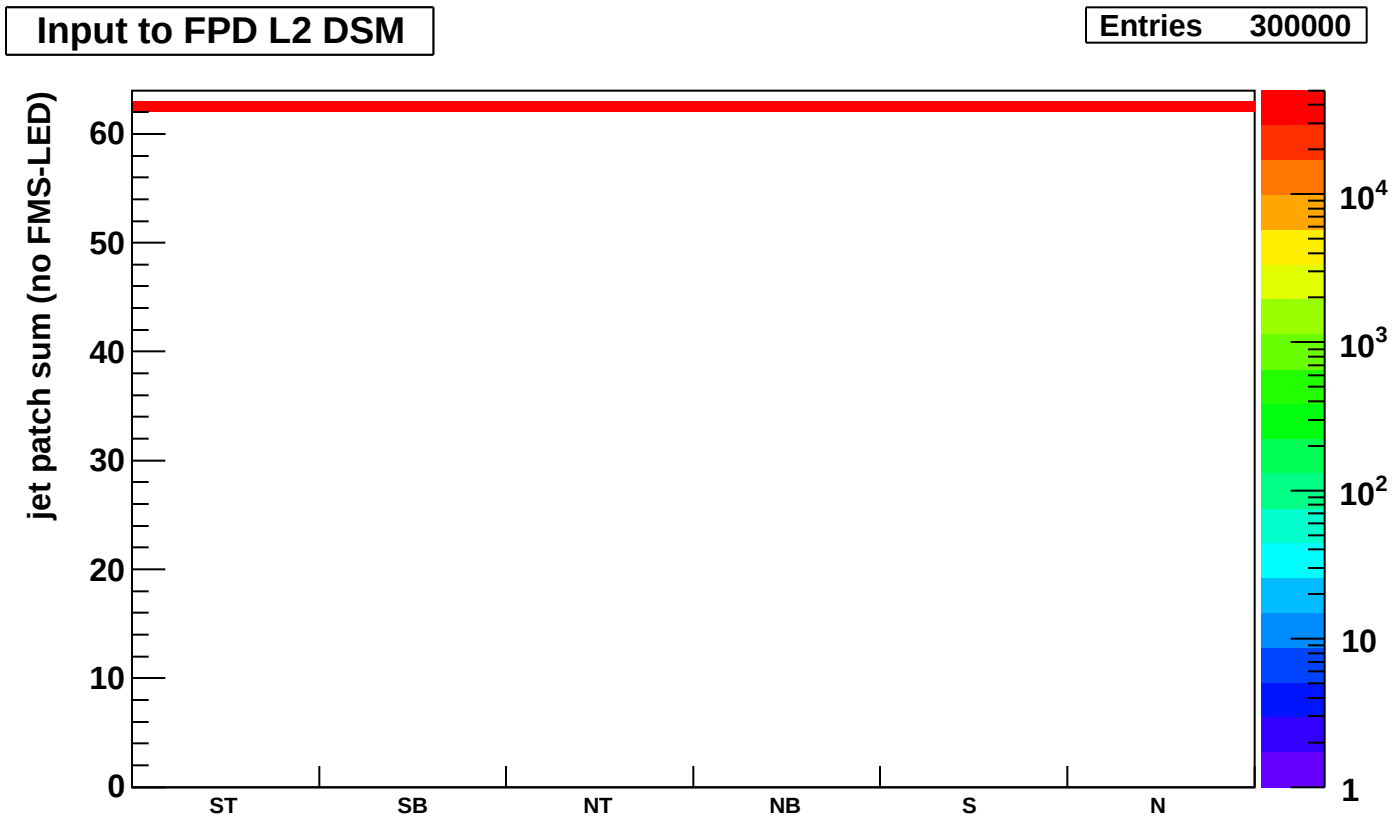

Input to FPD L2 DSM
Entries 600000
quadrant sum - simulated
SMALL-ST
SMALL-S
SMALL-SB
SMALL-NT
SMALL-N
SMALL-NB
LARGE-ST
LARGE-S
LARGE-SB
LARGE-NT
LARGE-N
LARGE-NB

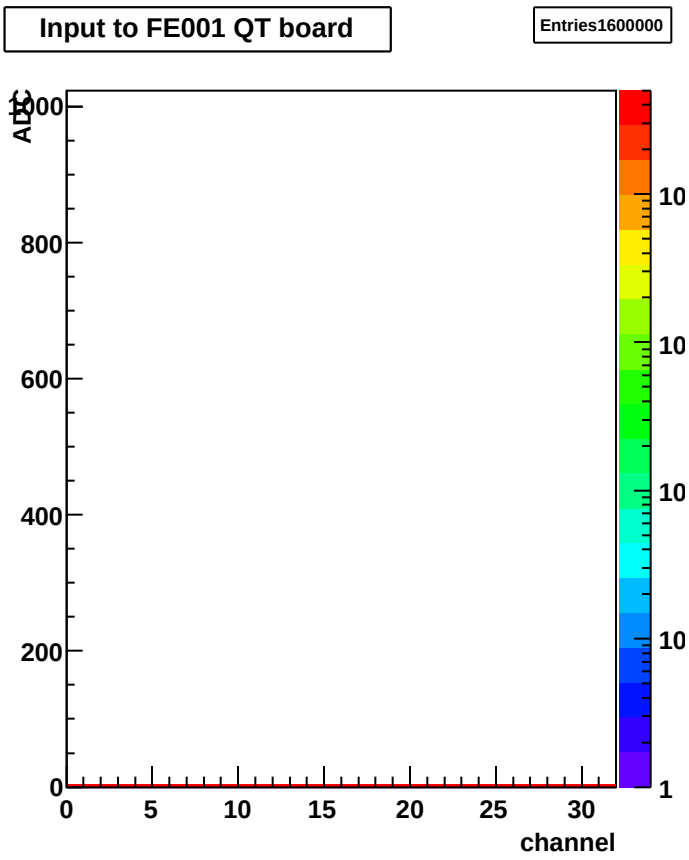

Input to FPD L2 DSM
Entries 150000
CL bits
50000
50000
50000
SMALL
LARGE-S
LARGE-N

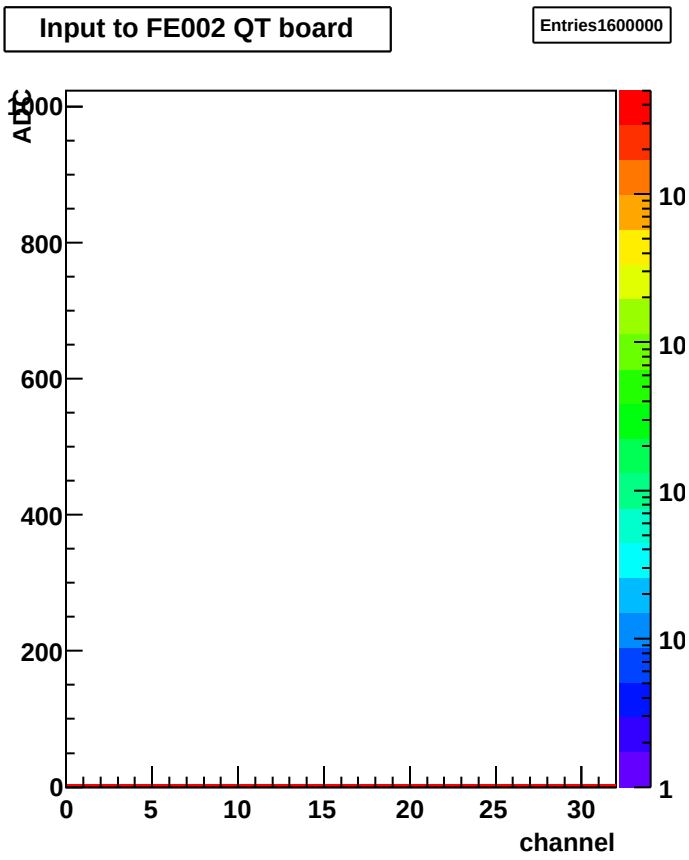

Input to FPD L2 DSM
Entries 150000
CL bits - simulated
50000
50000
50000
SMALL
LARGE-S
LARGE-N

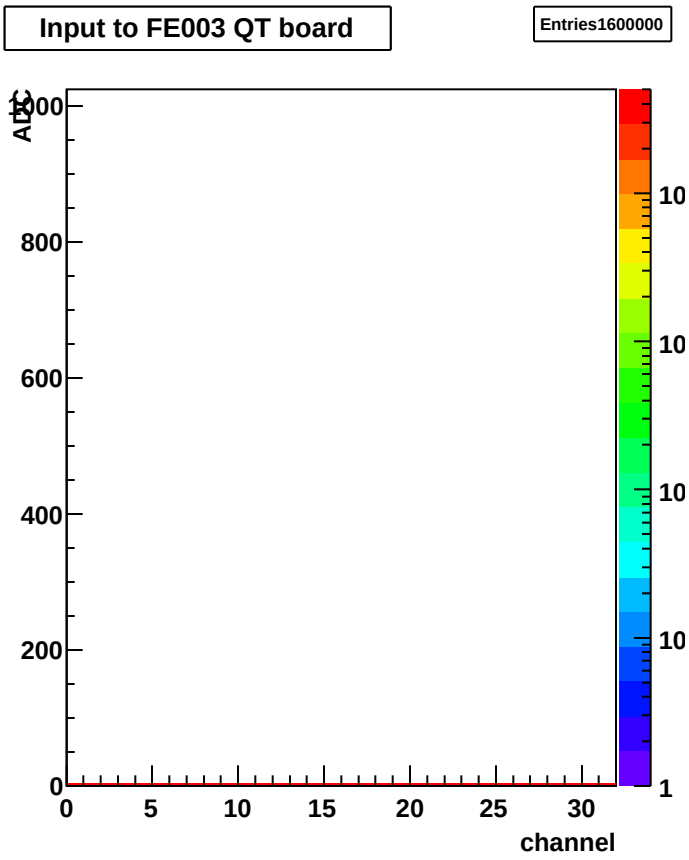

Input to FPD L2 DSM
Entries 150000
HT bits
50000
50000
50000
SMALL
LARGE-S
LARGE-N

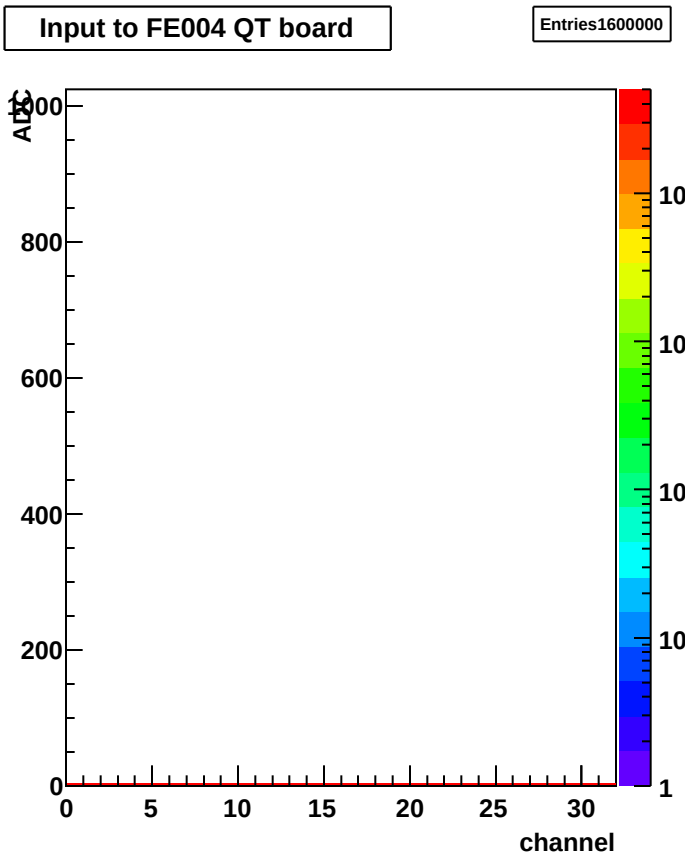

Input to FPD L2 DSM
Entries 150000
HT bits - simulated
50000
50000
50000
SMALL
LARGE-S
LARGE-N

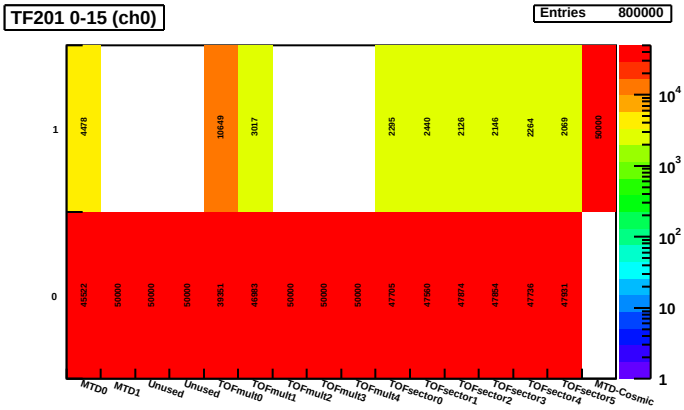

Input to FPD L2 DSM
Entries 300000
jet patch sum (no FMS-LED)
0
10
20
30
40
50
60
ST
SB
NT
NB
S
N
1
10
10^2
10^3
10^4

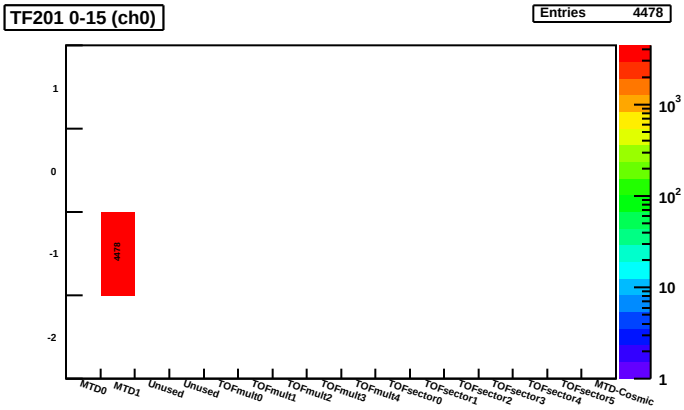

Input to FE001 QT board
Entries1600000
ADC
channel

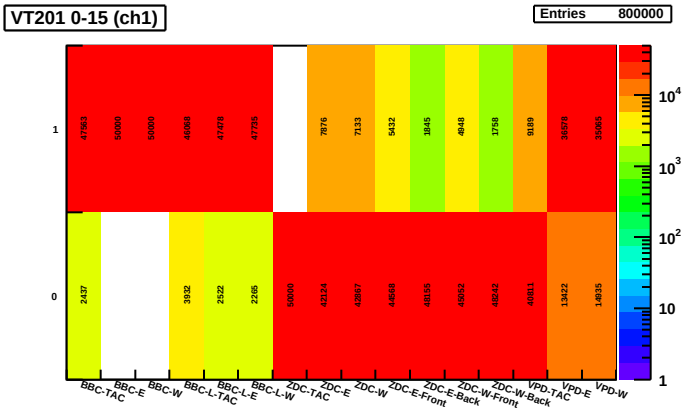

Input to FE002 QT board
Entries1600000
ADC
channel

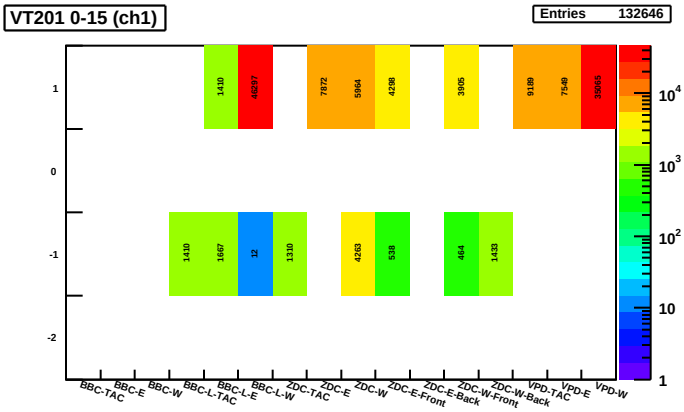

Input to FE003 QT board
Entries1600000
ADC
channel

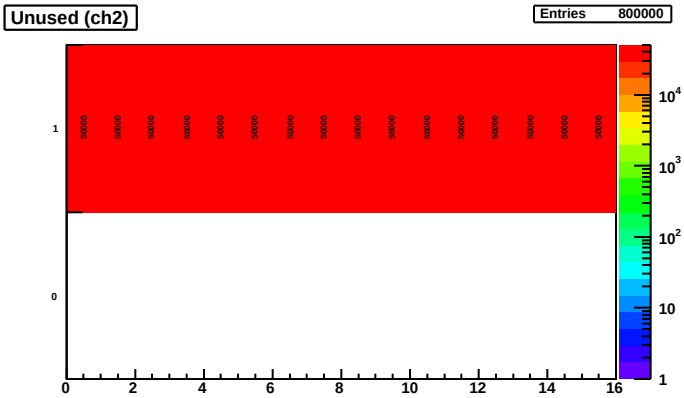

Input to FE004 QT board
Entries1600000
ADC
channel

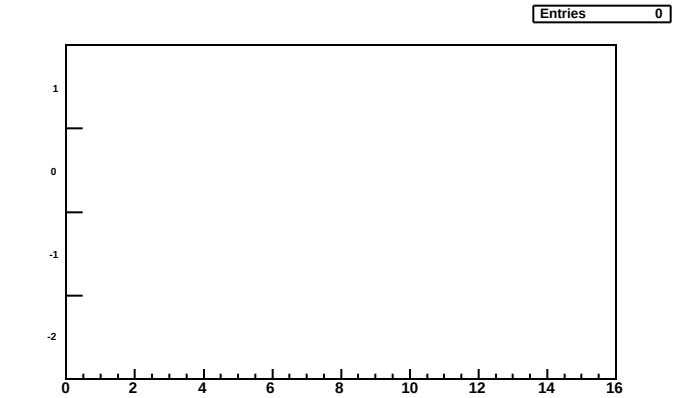

TF201 0-15 (ch0)
Entries 800000
MTD0 MTD1 Unused Unused TOFmult0 TOFmult1 TOFmult2 TOFmult3 TOFmult4 TOFsector0 TOFsector1 TOFsector2 TOFsector3 TOFsector4 TOFsector5 MTD-Cosmic

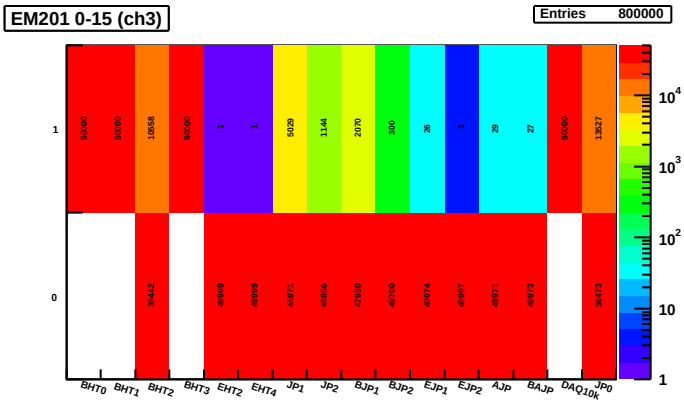

TF201 0-15 (ch0)
Entries 4478
MTD0 MTD1 Unused Unused TOFmult0 TOFmult1 TOFmult2 TOFmult3 TOFmult4 TOFsector0 TOFsector1 TOFsector2 TOFsector3 TOFsector4 TOFsector5 MTD-Cosmic

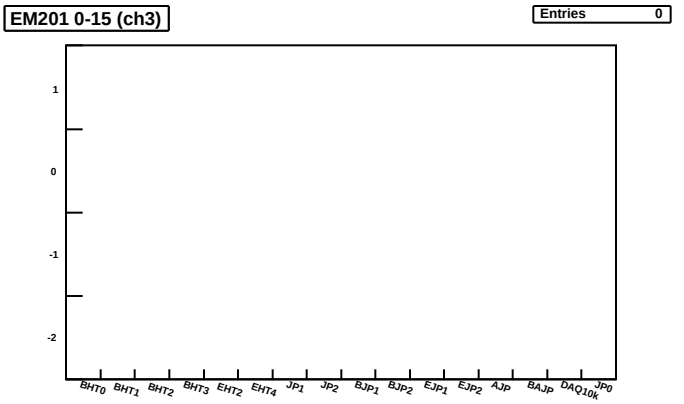

VT201 0-15 (ch1)
Entries 800000
BBC-TAC BBC-E BBC-W BBC-L-TAC BBC-L-E BBC-L-W ZDC-TAC ZDC-E ZDC-W ZDC-E-Front ZDC-E-Back ZDC-W-Front ZDC-W-Back VPD-TAC VPD-E VPD-W

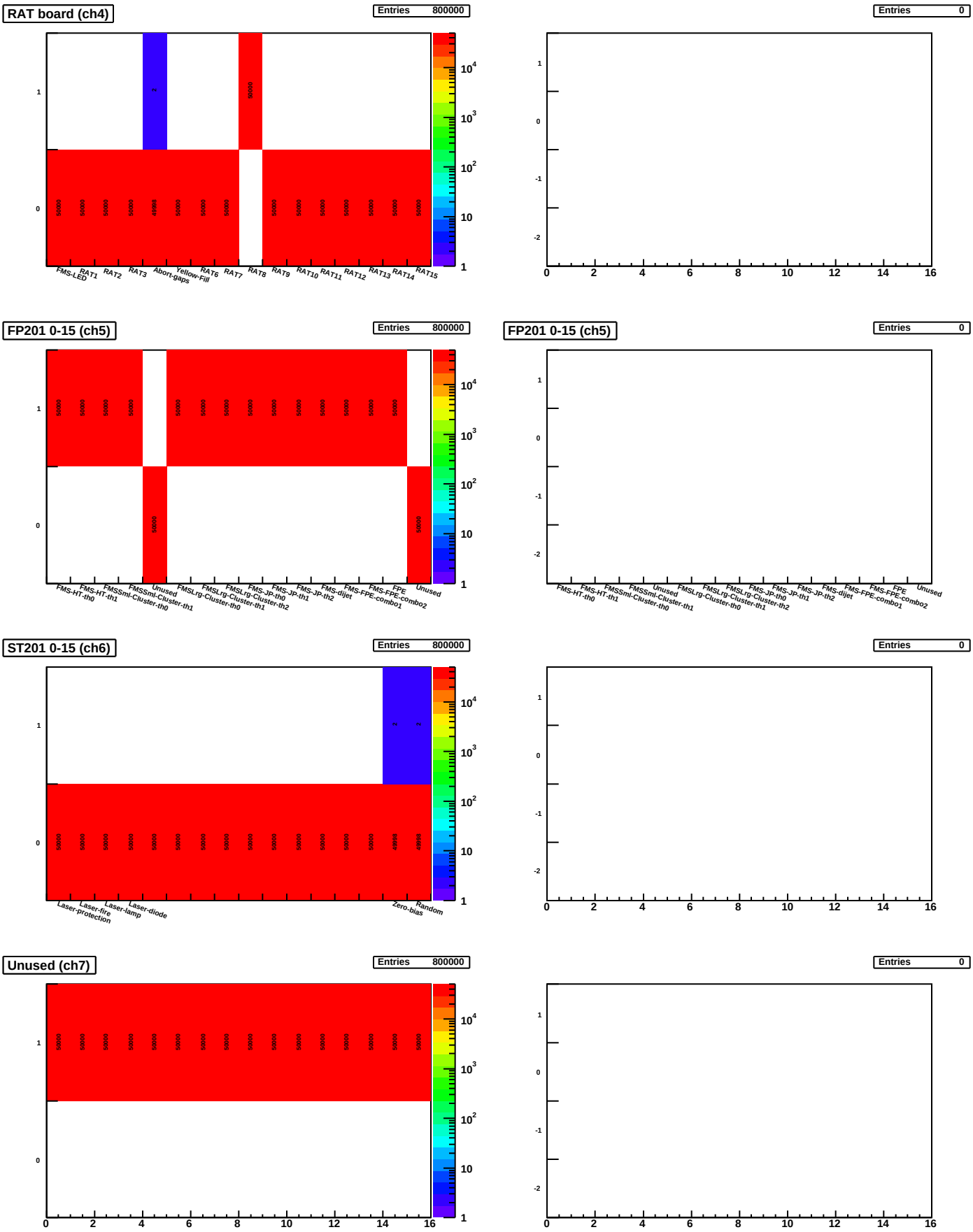

VT201 0-15 (ch1)
Entries 132646
BBC-TAC BBC-E BBC-W BBC-L-TAC BBC-L-E BBC-L-W ZDC-TAC ZDC-E ZDC-W ZDC-E-Front ZDC-E-Back ZDC-W-Front ZDC-W-Back VPD-TAC VPD-E VPD-W


Unused (ch2)
Entries 800000


Entries 0


EM201 0-15 (ch3)
Entries 800000
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)
Entries 800000
Entries 0
FMS-LED
RAT1
RAT2
RAT3
Abort-gaps
Yellow-Fill
RAT6
RAT7
RAT8
RAT9
RAT10
RAT11
RAT12
RAT13
RAT14
RAT15
FP201 0-15 (ch5)
Entries 800000
Entries 0
FMS-HT-th0
FMS-HT-th1
FMSSml-Cluster-th0
FMSSml-Cluster-th1
Unused
FMSLrg-Cluster-th0
FMSLrg-Cluster-th1
FMS-JP-th0
FMS-JP-th1
FMS-JP-th2
FMS-dijet
FMS-FPE-combo1
FPE
FMS-FPE-combo2
Unused
ST201 0-15 (ch6)
Entries 800000
Entries 0
Laser-protection
Laser-fire
Laser-lamp
Laser-diode
Zero-bias
Random
Unused (ch7)
Entries 800000
Entries 0