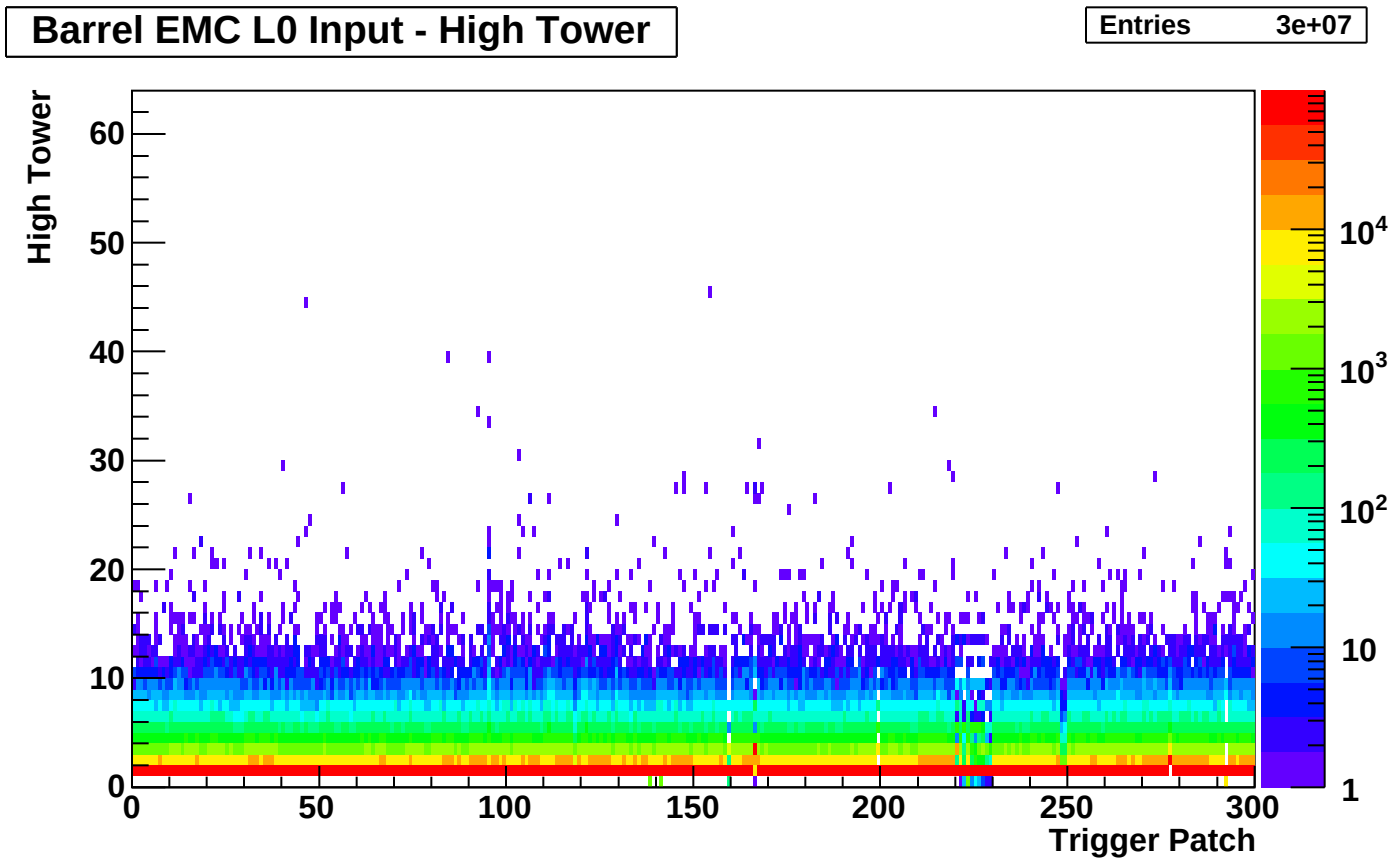
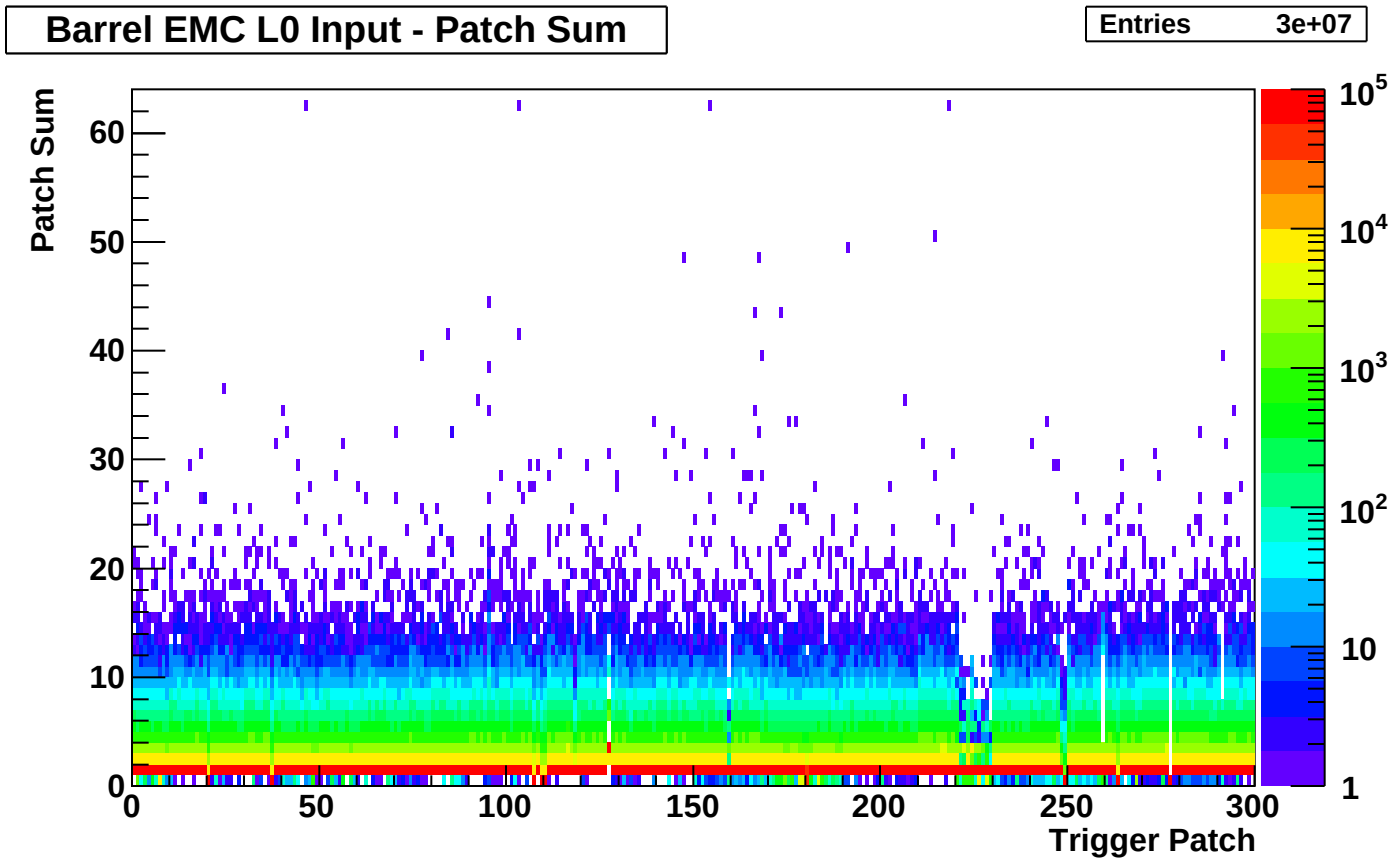
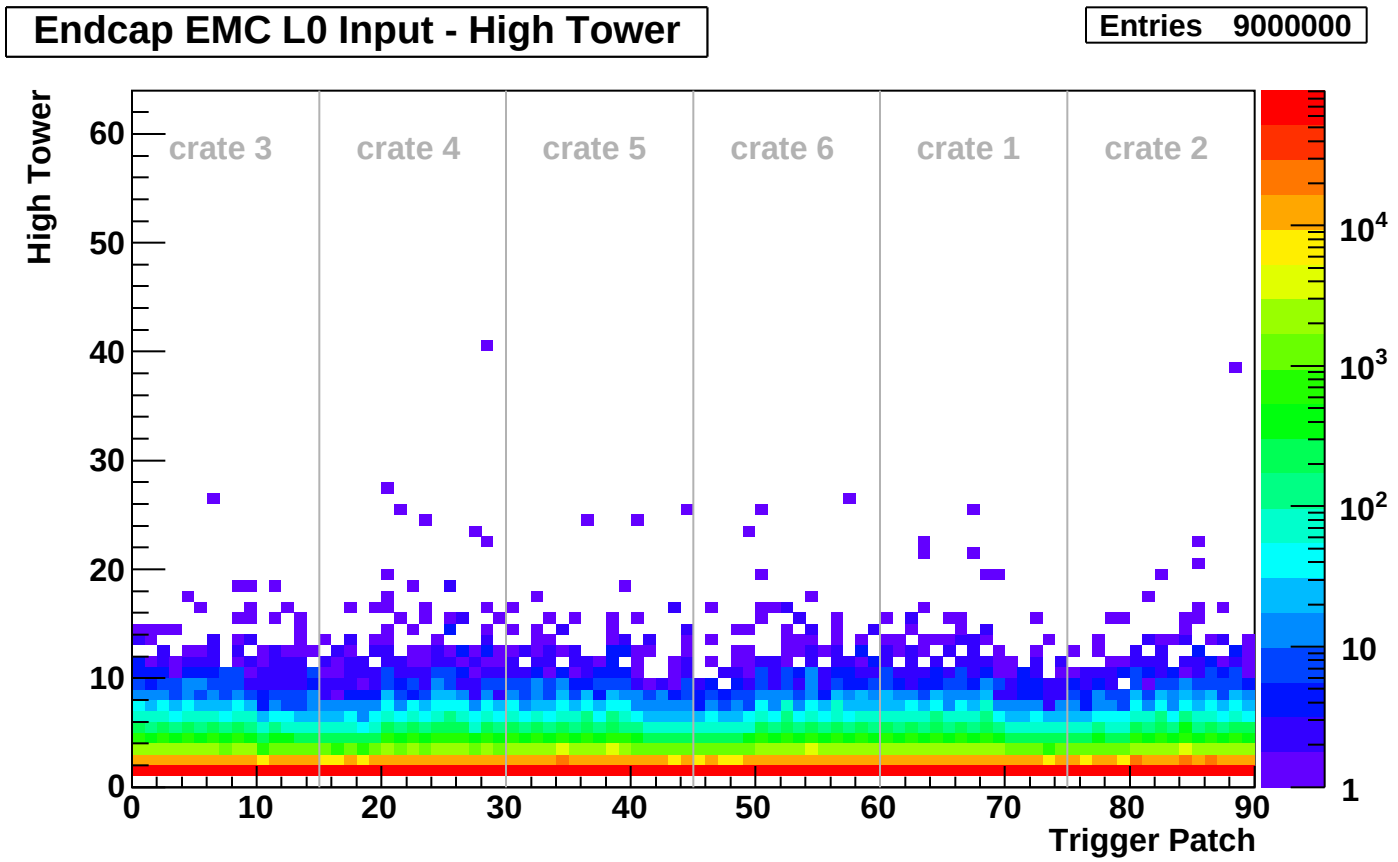
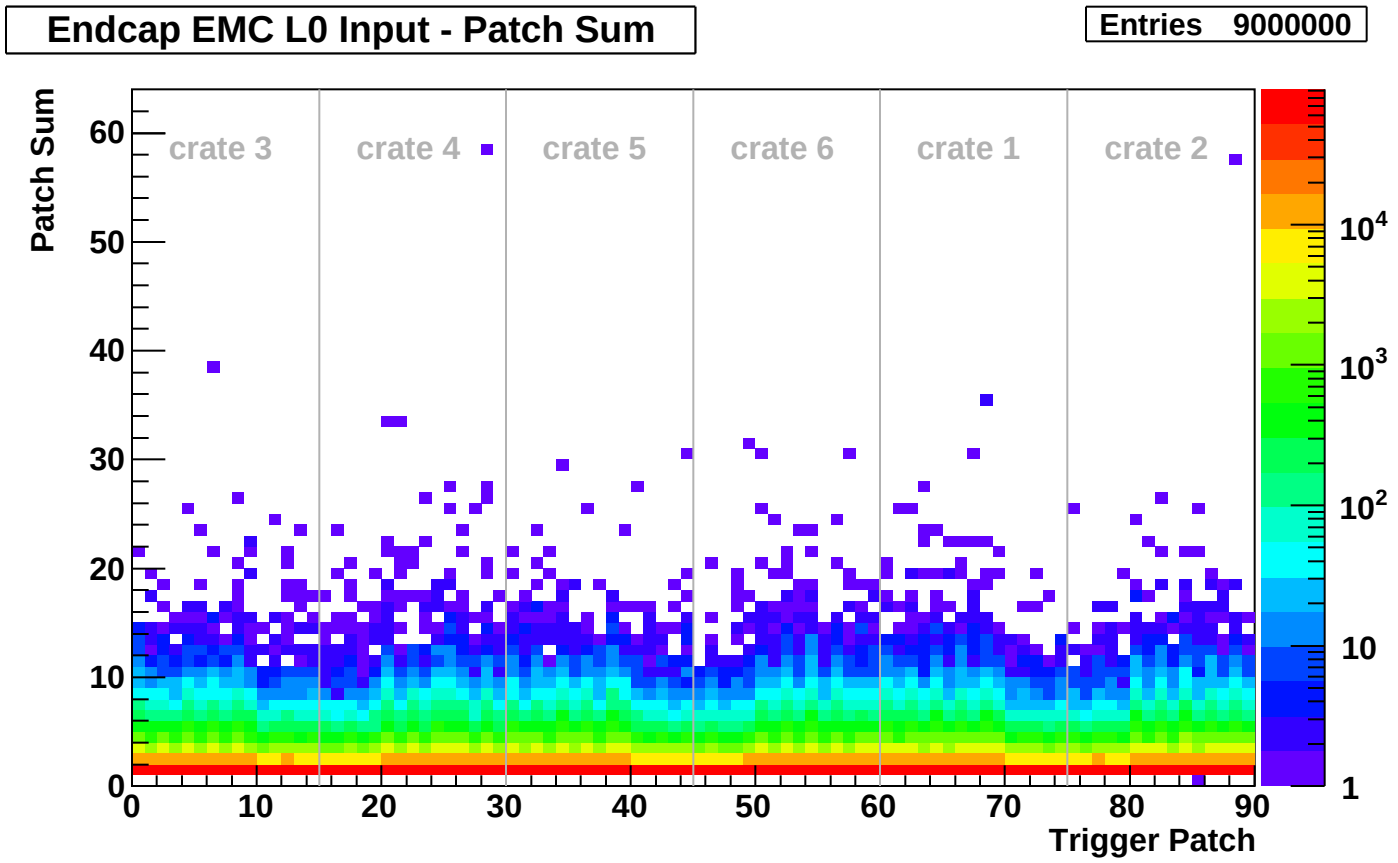
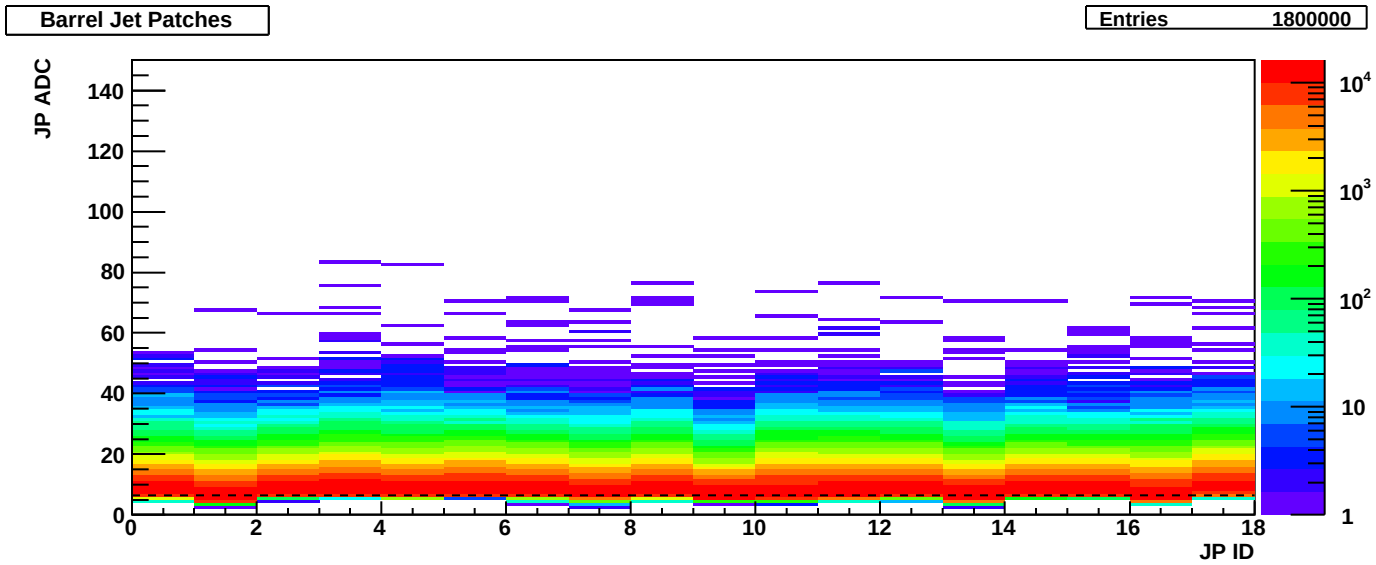
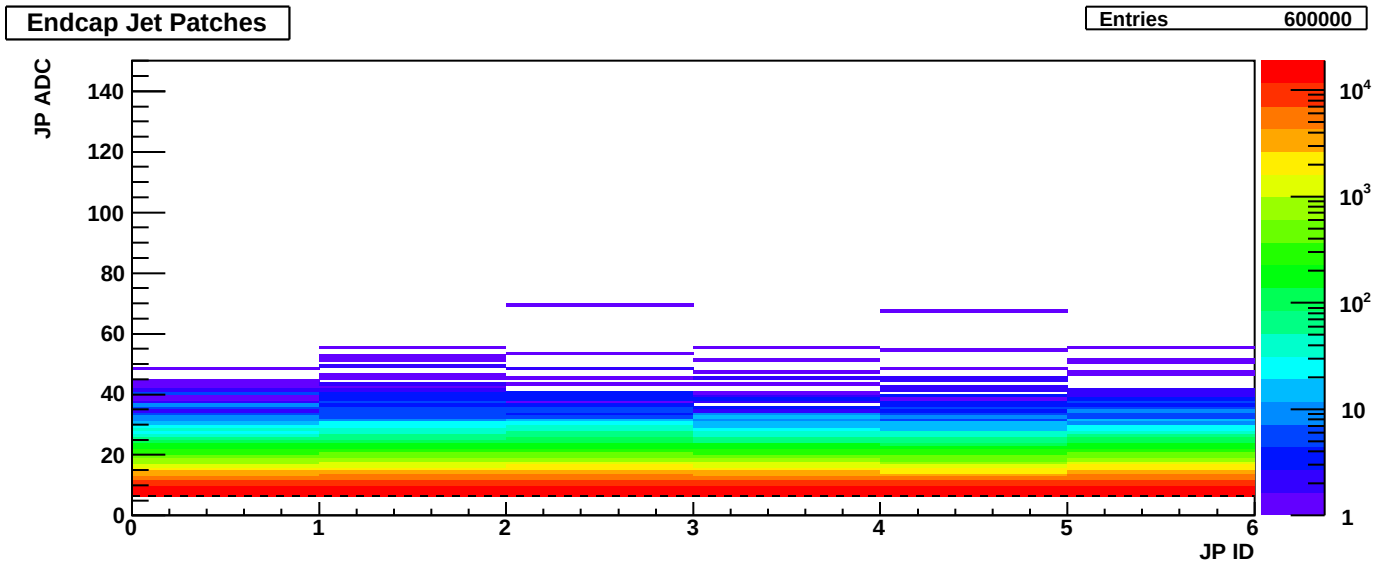

Barrel EMC L0 Input - High Tower
Entries 3e+07
High Tower
Trigger Patch
0
10
20
30
40
50
60
0
50
100
150
200
250
300
1
10
10^2
10^3
10^4

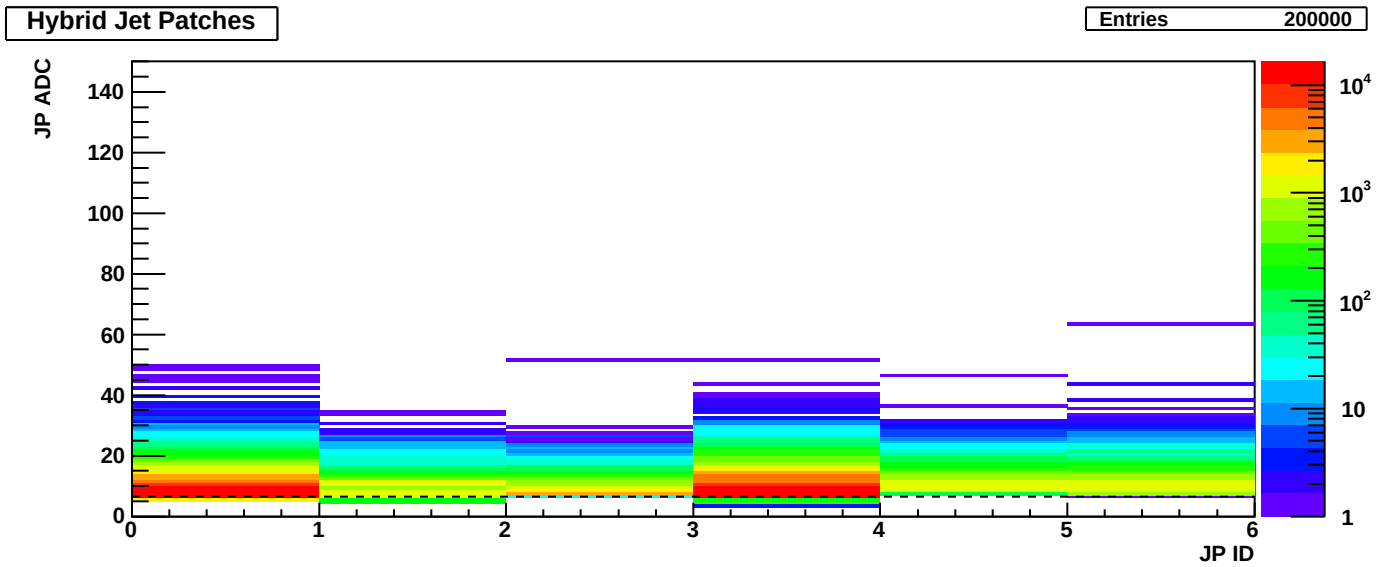

Barrel EMC L0 Input - Patch Sum
Entries 3e+07
Patch Sum
Trigger Patch
0
10
20
30
40
50
60
0
50
100
150
200
250
300
1
10
10^2
10^3
10^4
10^5

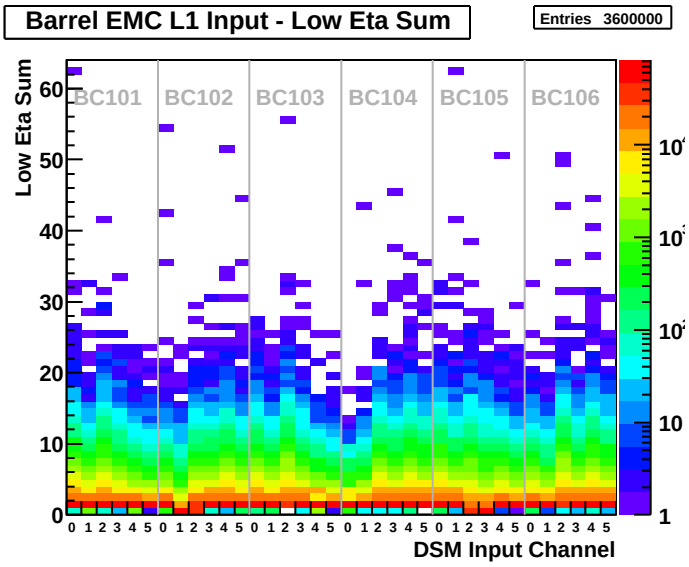

Endcap EMC L0 Input - High Tower
Entries 9000000
High Tower
crate 3
crate 4
crate 5
crate 6
crate 1
crate 2
Trigger Patch

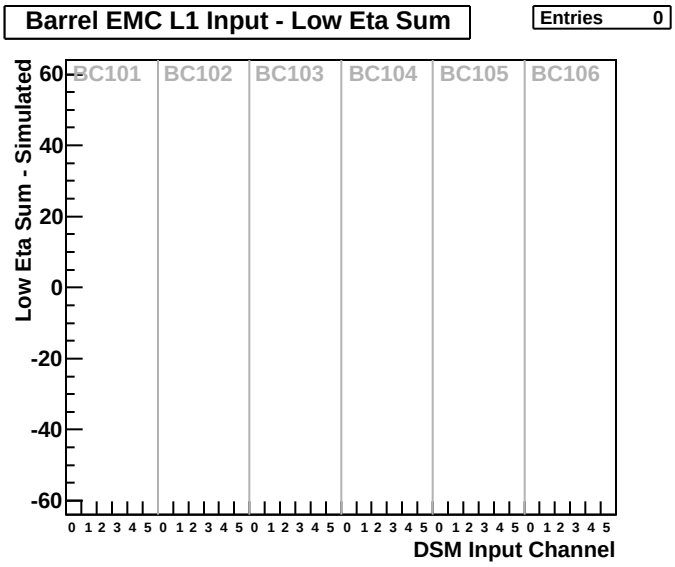

Endcap EMC L0 Input - Patch Sum
Entries 9000000
Patch Sum
crate 3
crate 4
crate 5
crate 6
crate 1
crate 2
Trigger Patch

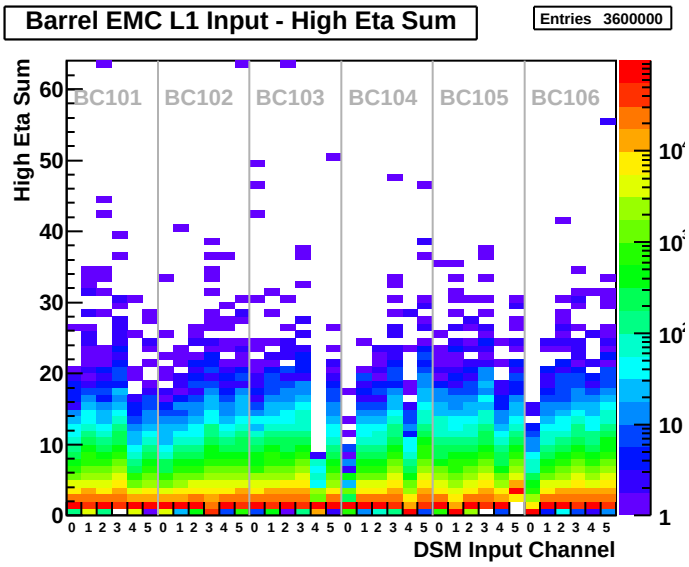

Barrel Jet Patches
Entries 1800000
JP ADC
JP ID

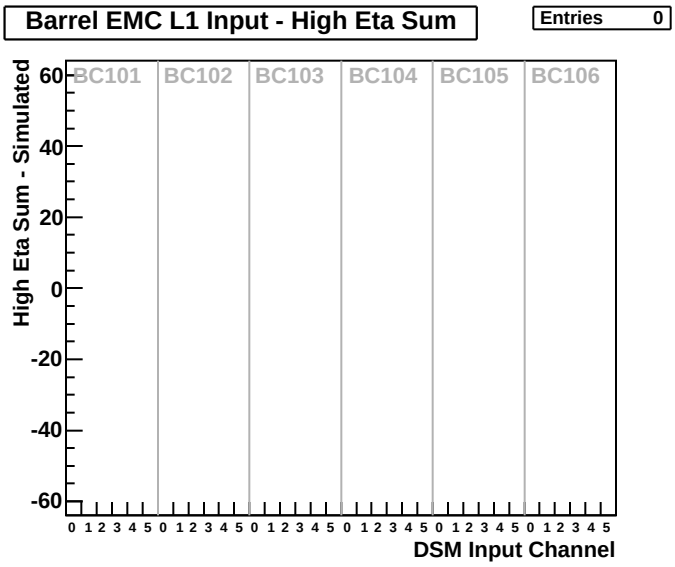

Endcap Jet Patches
Entries 600000
JP ADC
JP ID

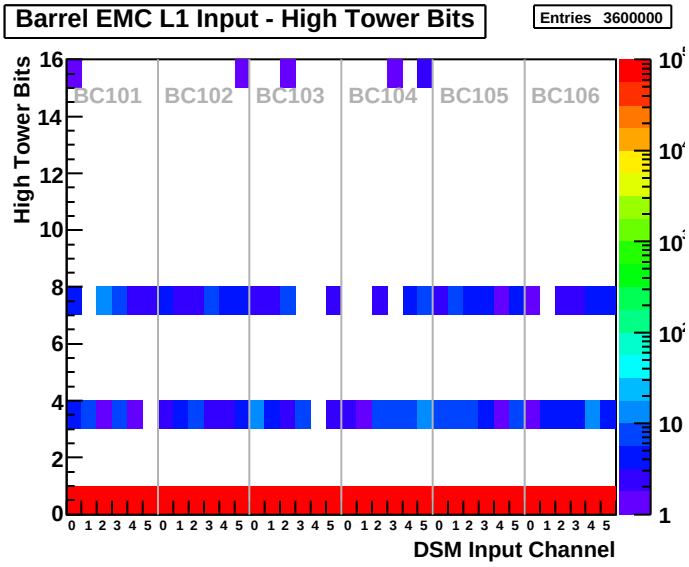

Hybrid Jet Patches
Entries 200000
JP ADC
JP ID

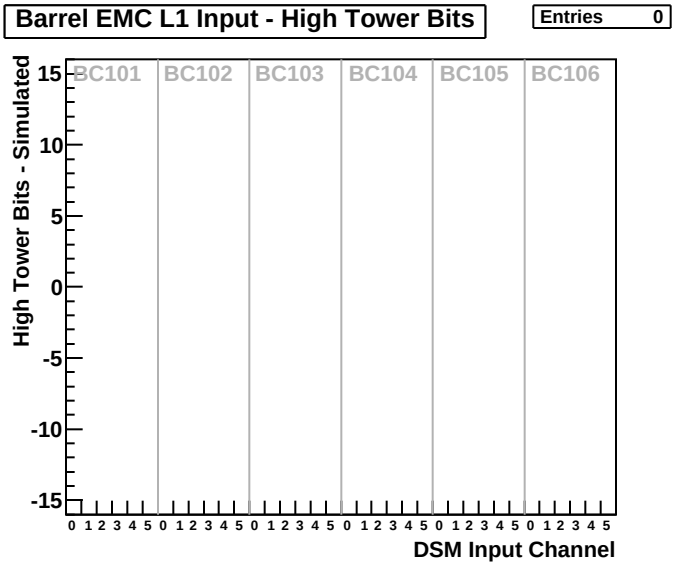

Barrel EMC L1 Input - Low Eta Sum
Entries 3600000
Low Eta Sum
BC101
BC102
BC103
BC104
BC105
BC106
DSM Input Channel

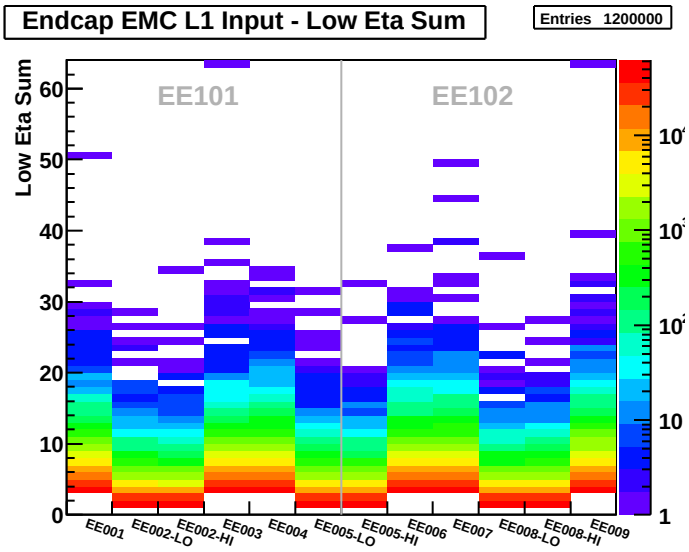

Barrel EMC L1 Input - Low Eta Sum
Entries 0
Low Eta Sum - Simulated
BC101
BC102
BC103
BC104
BC105
BC106
DSM Input Channel

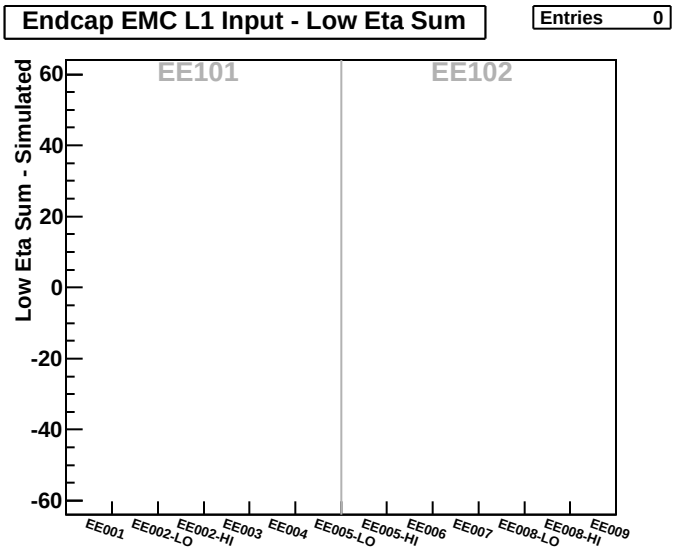

Barrel EMC L1 Input - High Eta Sum
Entries 3600000
High Eta Sum
BC101
BC102
BC103
BC104
BC105
BC106
DSM Input Channel

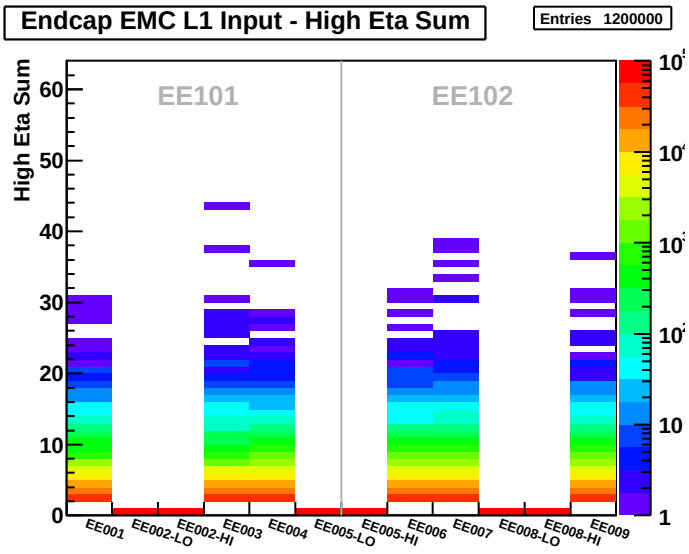

Barrel EMC L1 Input - High Eta Sum
Entries 0
High Eta Sum - Simulated
BC101
BC102
BC103
BC104
BC105
BC106
DSM Input Channel

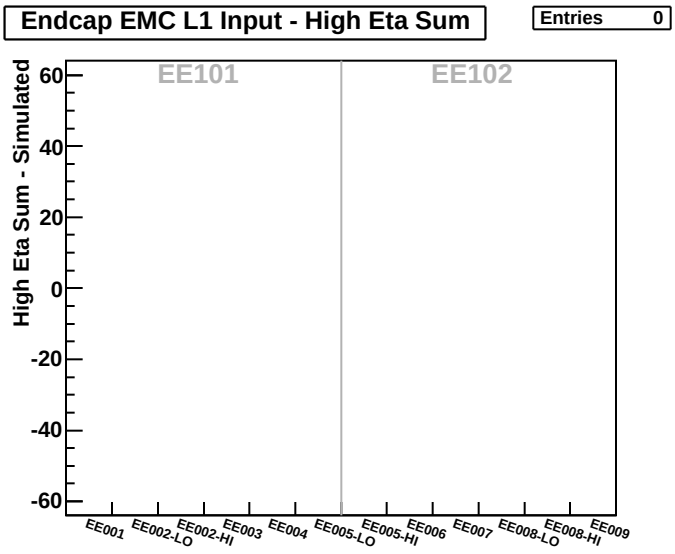

Barrel EMC L1 Input - High Tower Bits
Entries 3600000
High Tower Bits
BC101
BC102
BC103
BC104
BC105
BC106
DSM Input Channel

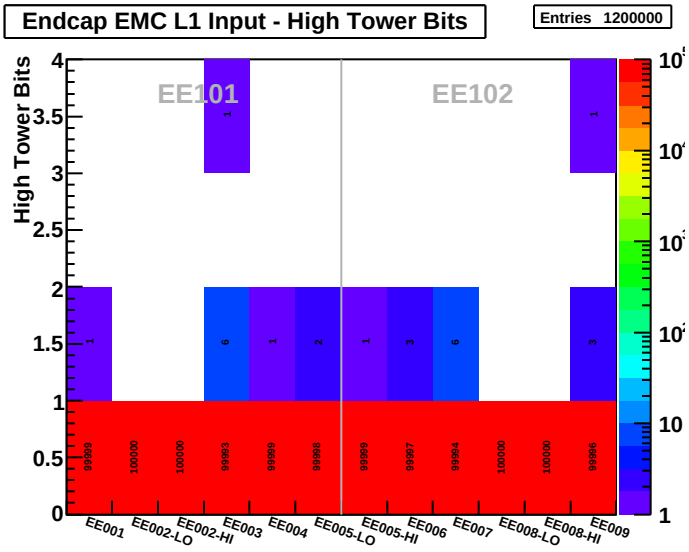

Barrel EMC L1 Input - High Tower Bits
Entries 0
High Tower Bits - Simulated
BC101
BC102
BC103
BC104
BC105
BC106
DSM Input Channel

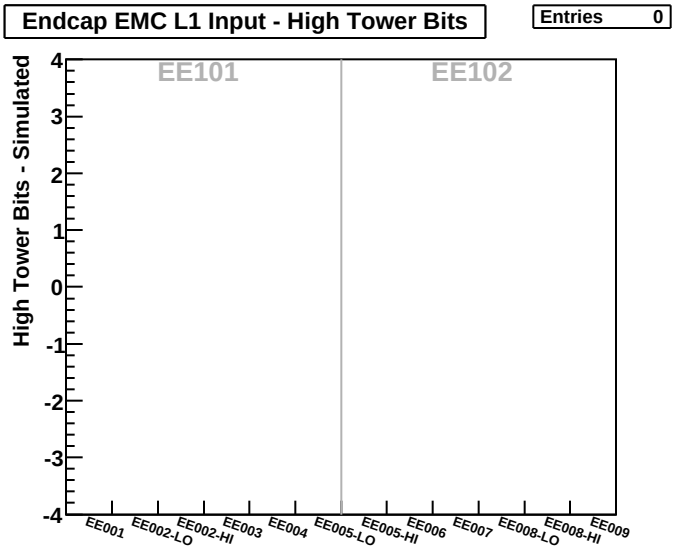

Endcap EMC L1 Input - Low Eta Sum
Entries 1200000
Low Eta Sum
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

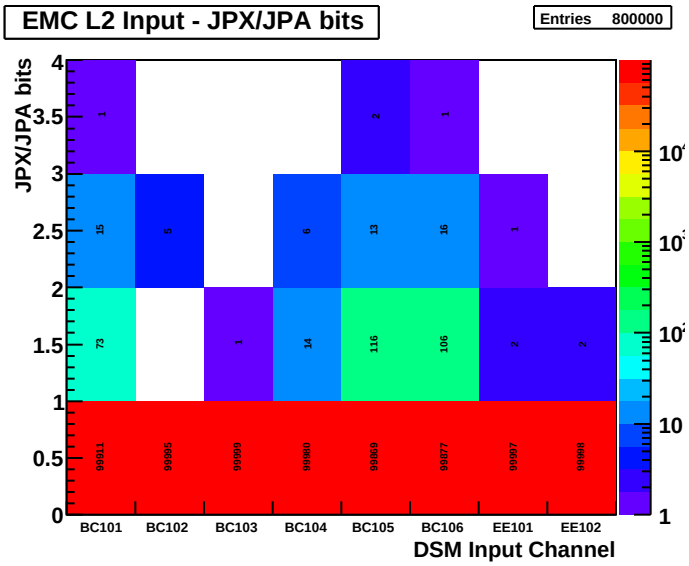

Endcap EMC L1 Input - Low Eta Sum
Entries 0
Low Eta Sum - Simulated
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

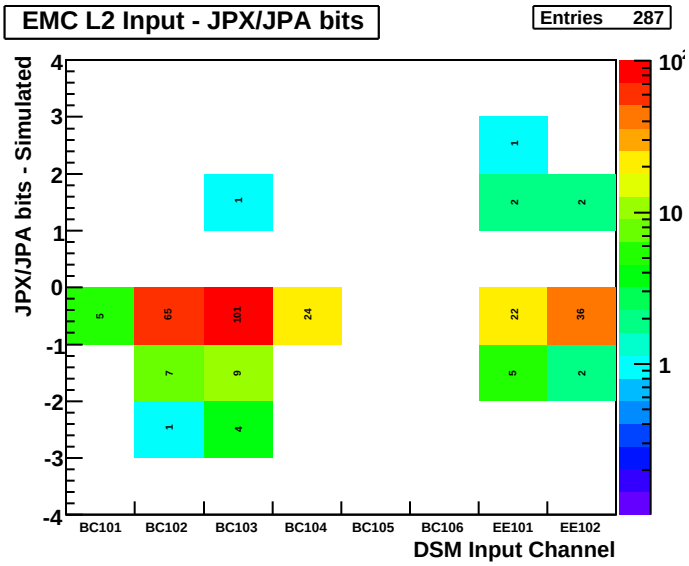

Endcap EMC L1 Input - High Eta Sum
Entries 1200000
High Eta Sum
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

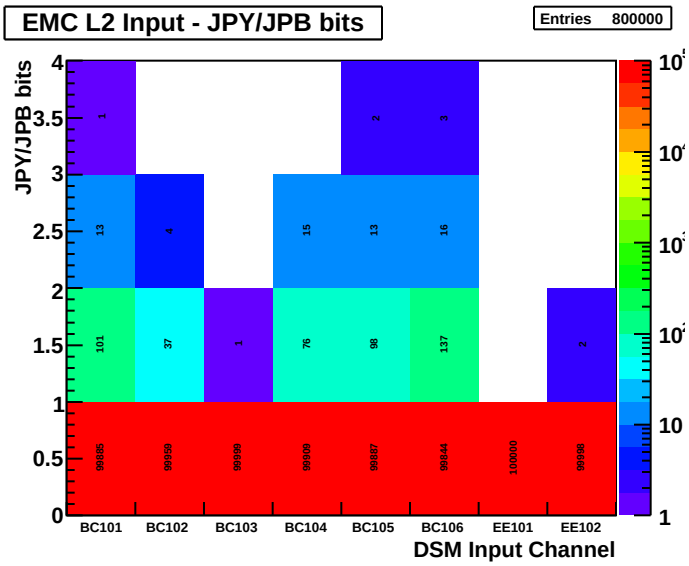

Endcap EMC L1 Input - High Eta Sum
Entries 0
High Eta Sum - Simulated
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

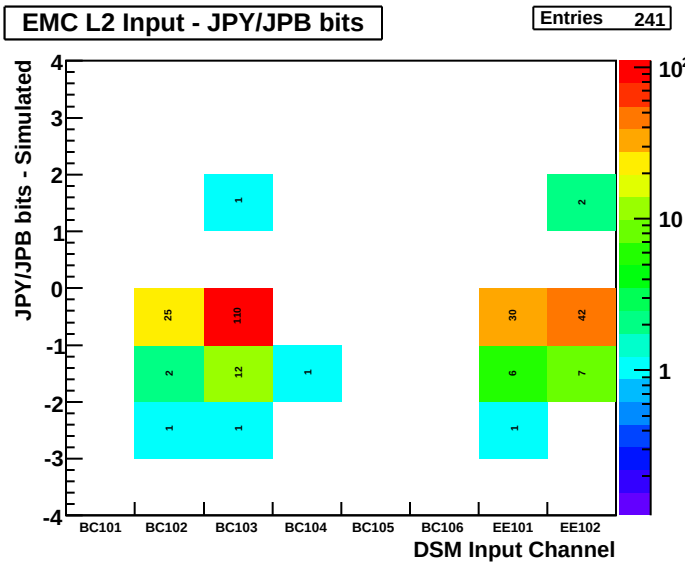

Endcap EMC L1 Input - High Tower Bits
Entries 1200000
High Tower Bits
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

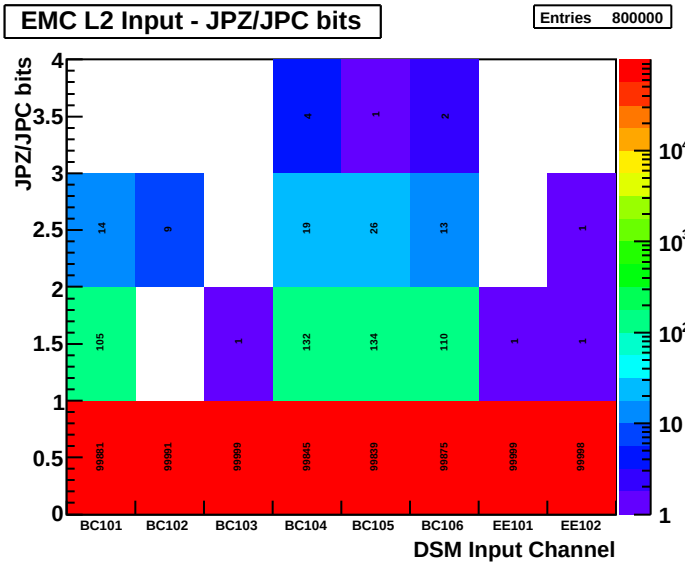

Endcap EMC L1 Input - High Tower Bits
Entries 0
High Tower Bits - Simulated
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

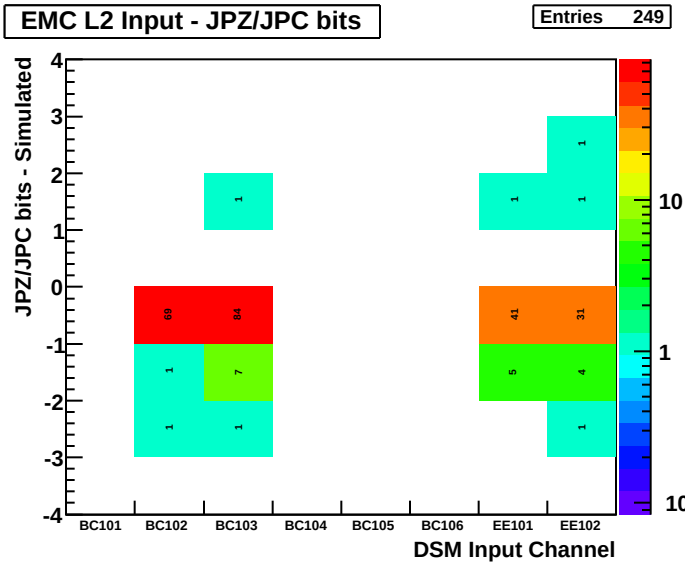

EMC L2 Input - JPX/JPA bits
Entries 800000
JPX/JPA bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

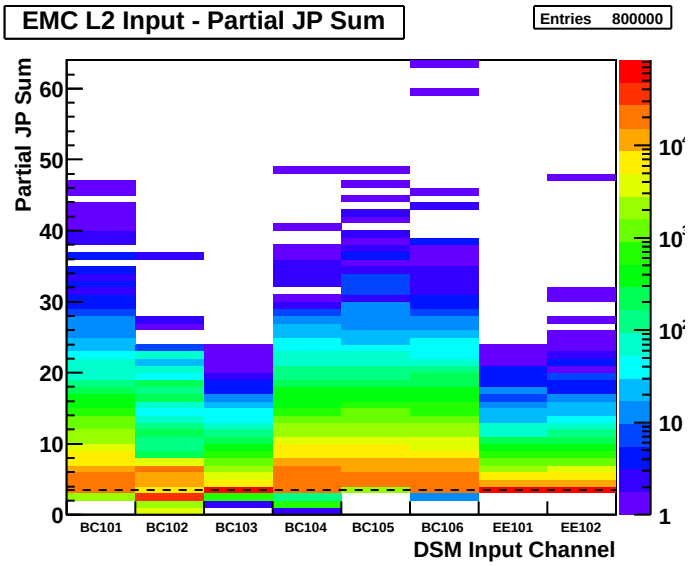

EMC L2 Input - JPX/JPA bits
Entries 287
JPX/JPA bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

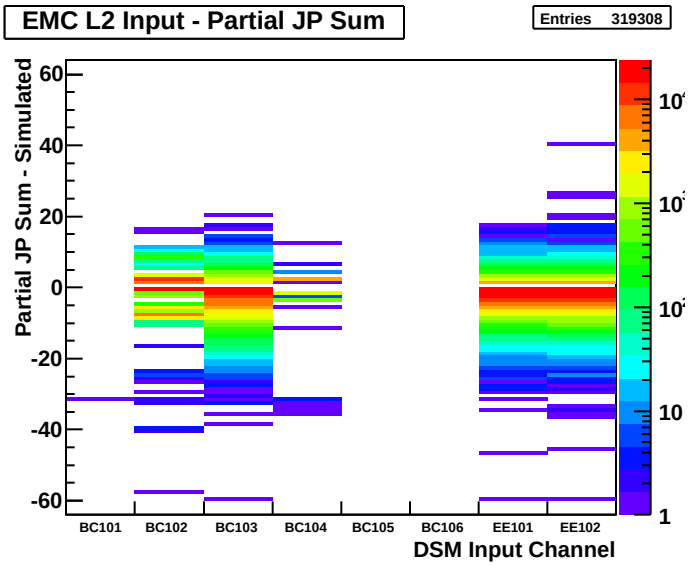

EMC L2 Input - JPY/JPB bits
Entries 800000
JPY/JPB bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

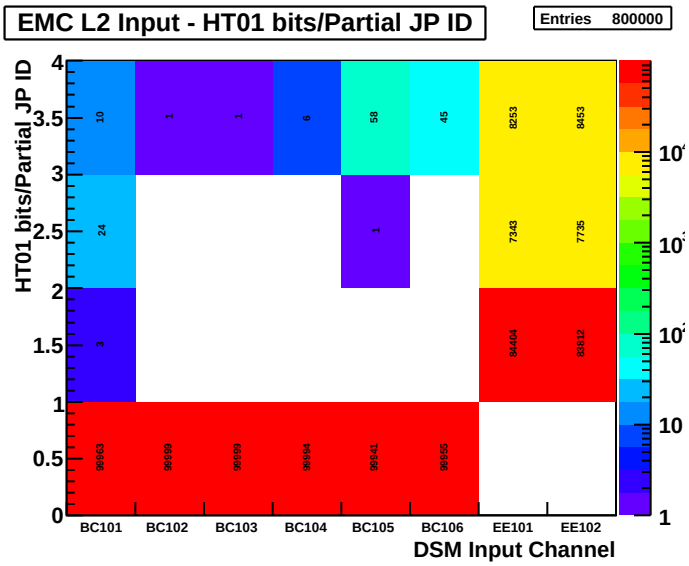

EMC L2 Input - JPY/JPB bits
Entries 241
JPY/JPB bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

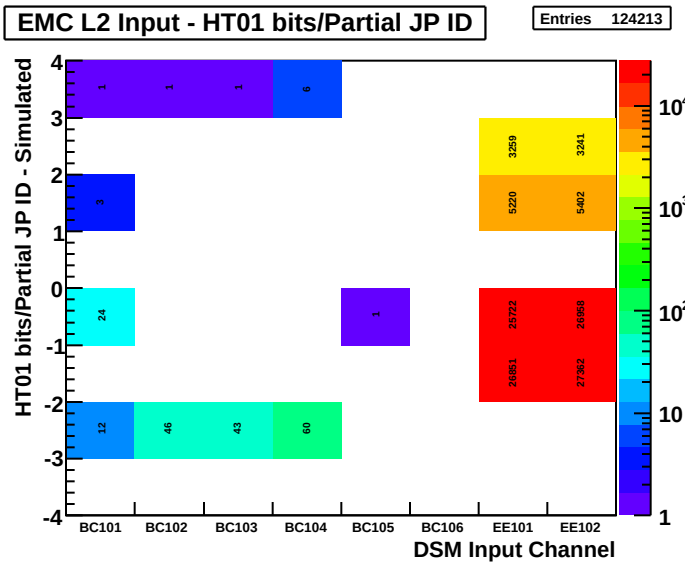

EMC L2 Input - JPZ/JPC bits
Entries 800000
JPZ/JPC bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

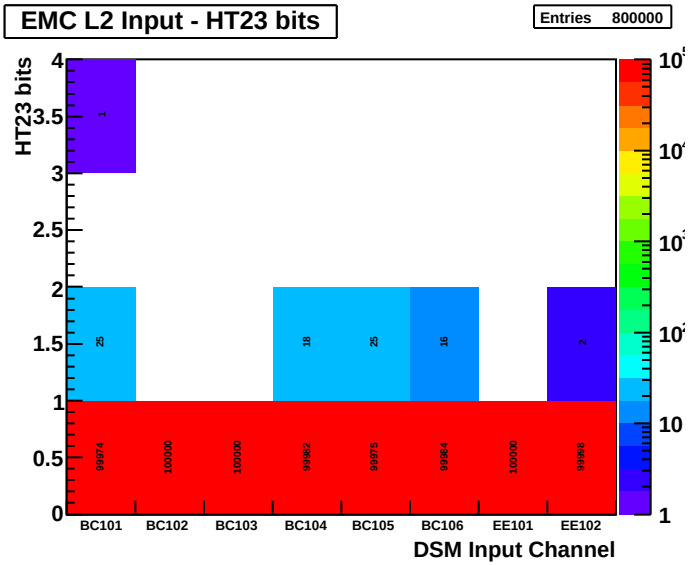

EMC L2 Input - JPZ/JPC bits
Entries 249
JPZ/JPC bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

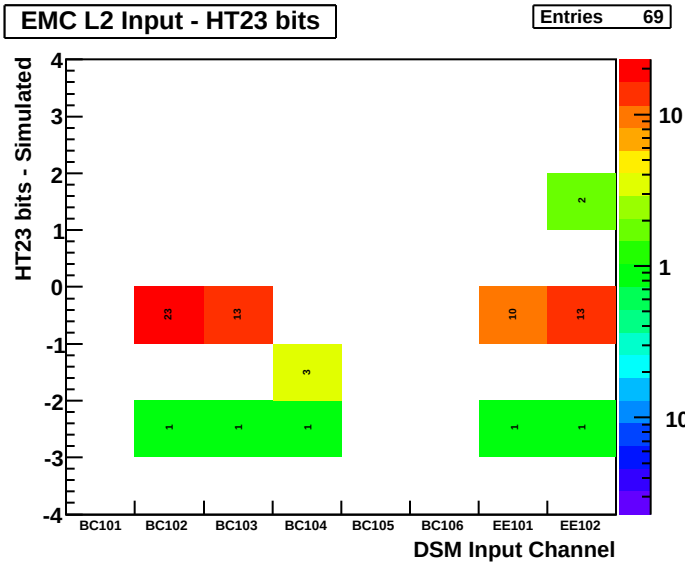

EMC L2 Input - Partial JP Sum
Entries 800000
Partial JP Sum
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

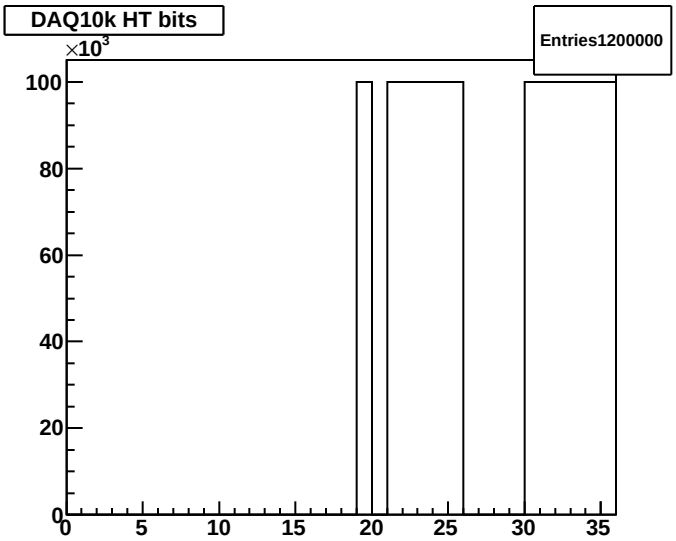

EMC L2 Input - Partial JP Sum
Entries 319308
Partial JP Sum - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

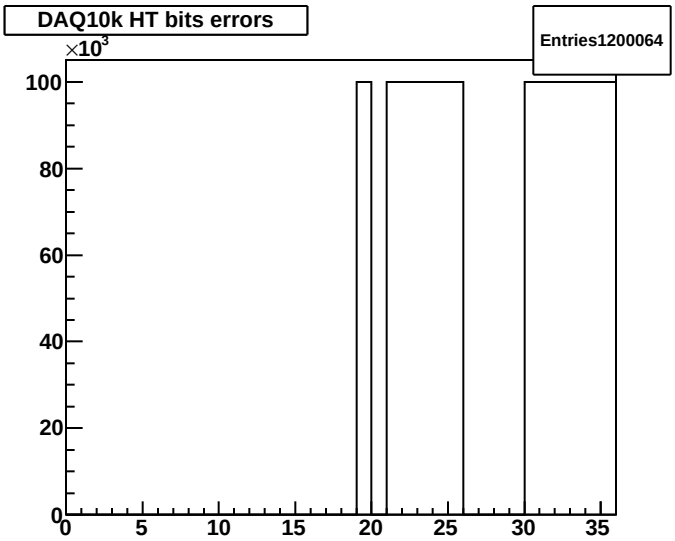

EMC L2 Input - HT01 bits/Partial JP ID
Entries 800000
HT01 bits/Partial JP ID
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

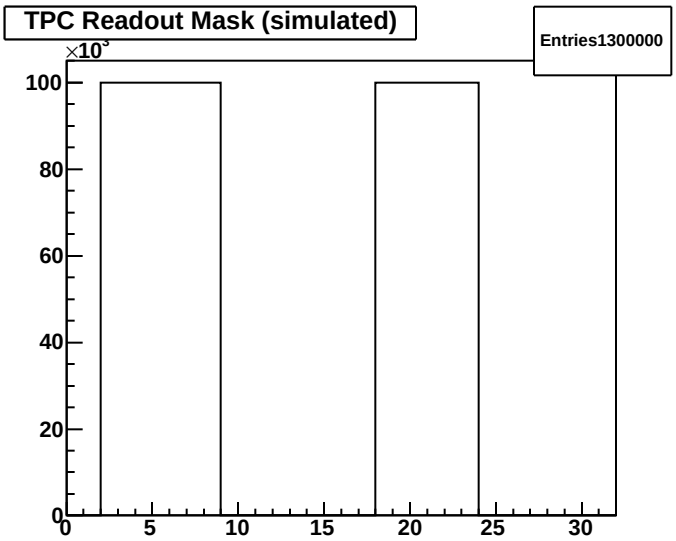

EMC L2 Input - HT01 bits/Partial JP ID
Entries 124213
HT01 bits/Partial JP ID - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

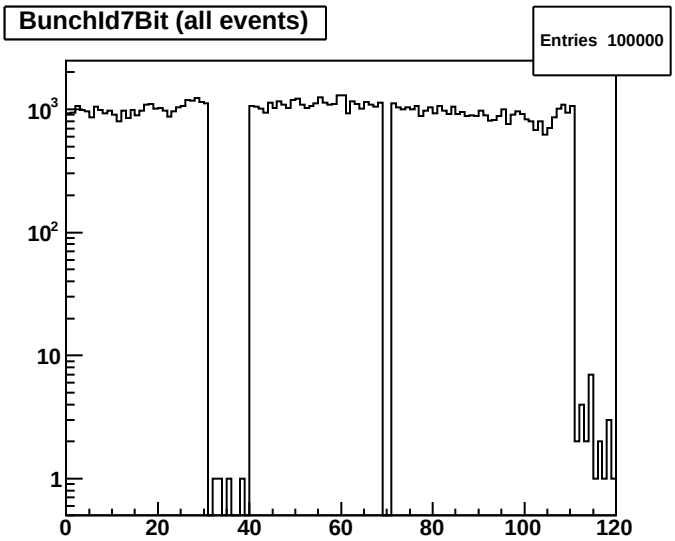

EMC L2 Input - HT23 bits
Entries 800000
HT23 bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

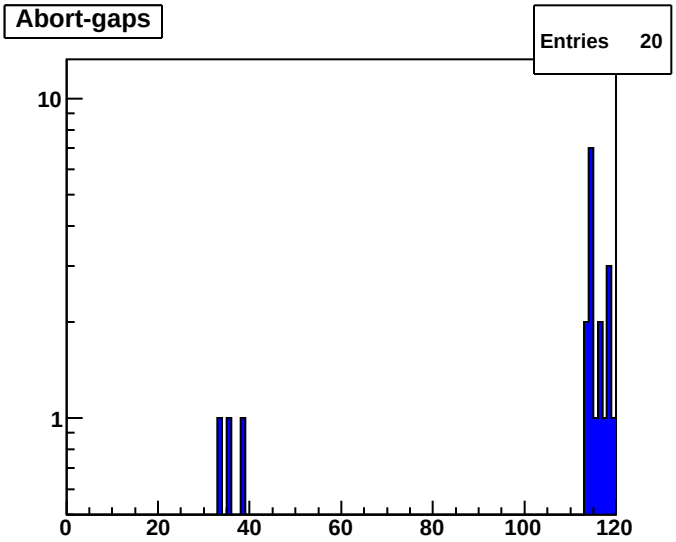

EMC L2 Input - HT23 bits
Entries 69
HT23 bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

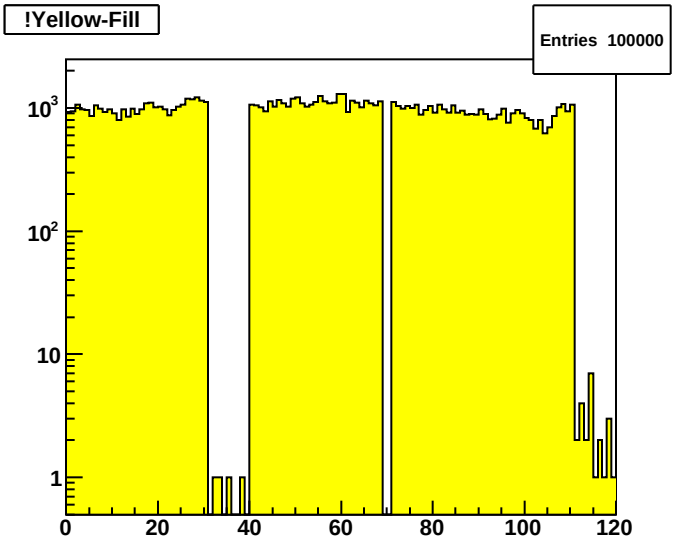

DAQ10k HT bits
Entries1200000
×10^3
100
80
60
40
20
0
0 5 10 15 20 25 30 35

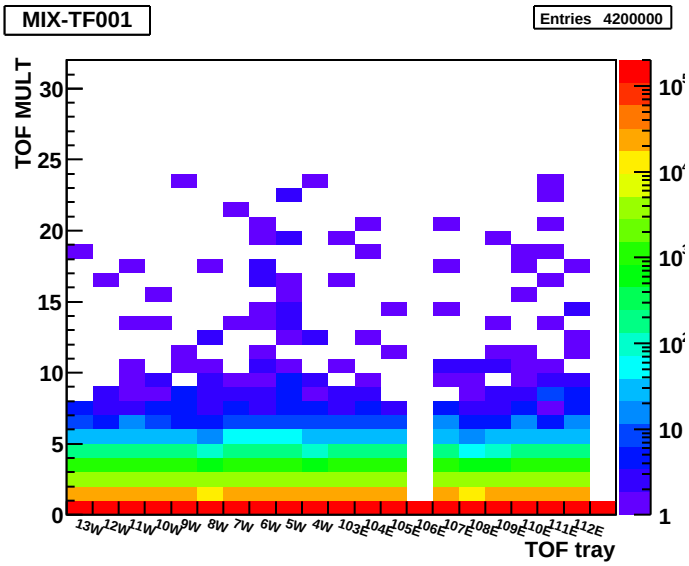

DAQ10k HT bits errors
Entries1200064
×10^3
100
80
60
40
20
0
0 5 10 15 20 25 30 35

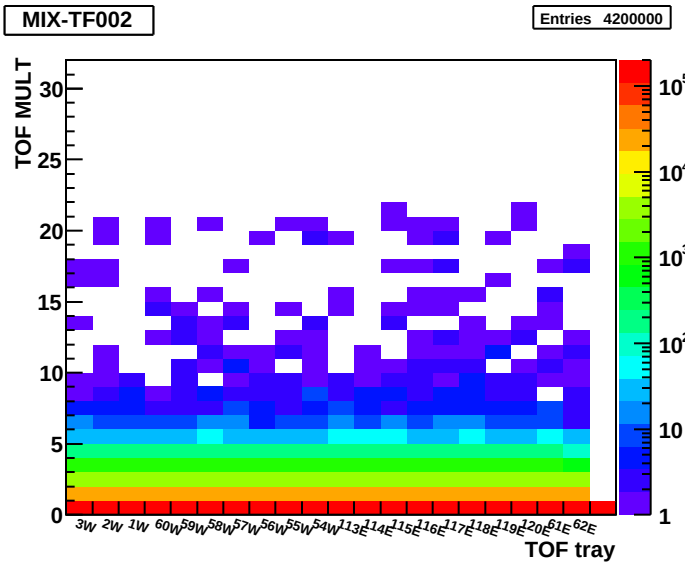

TPC Readout Mask (simulated)
Entries1300000
×10^3
100
80
60
40
20
0
0 5 10 15 20 25 30

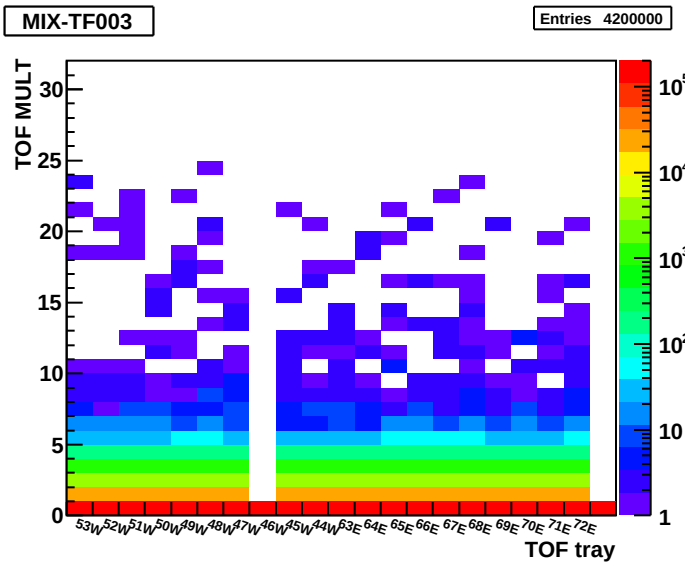

BunchId7Bit (all events)
Entries 100000
10^3
10^2
10
1
0 20 40 60 80 100 120

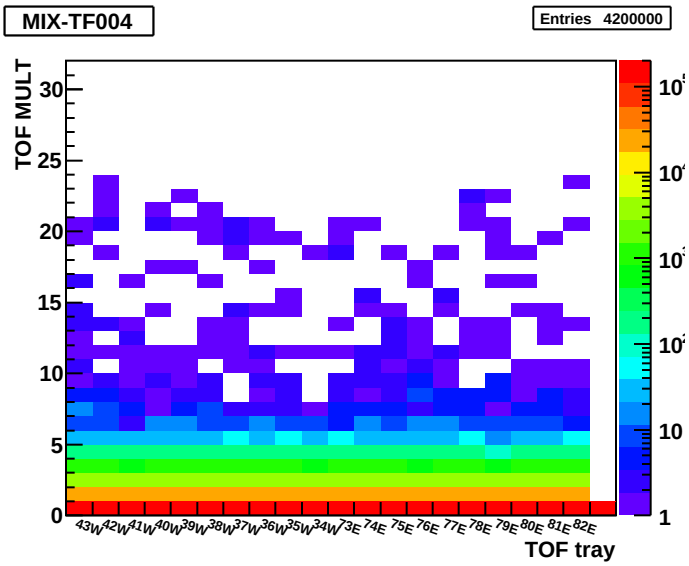

Abort-gaps
Entries 20
10
1
0 20 40 60 80 100 120

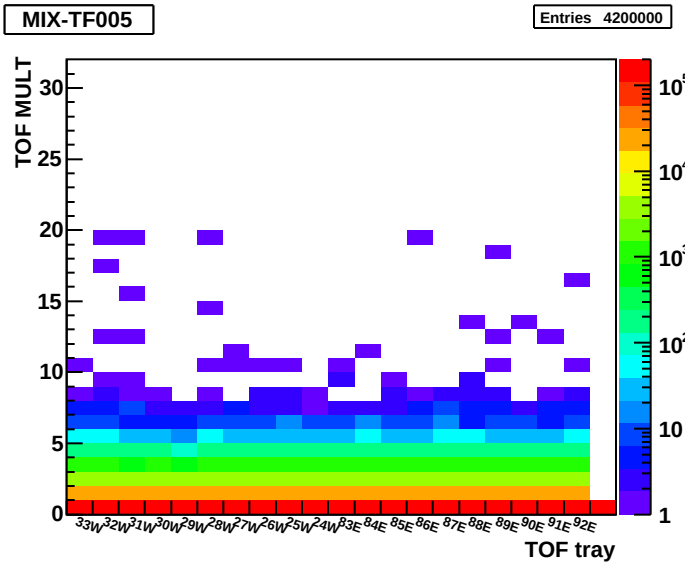

!Yellow-Fill
Entries 100000
10^3
10^2
10
1
0 20 40 60 80 100 120

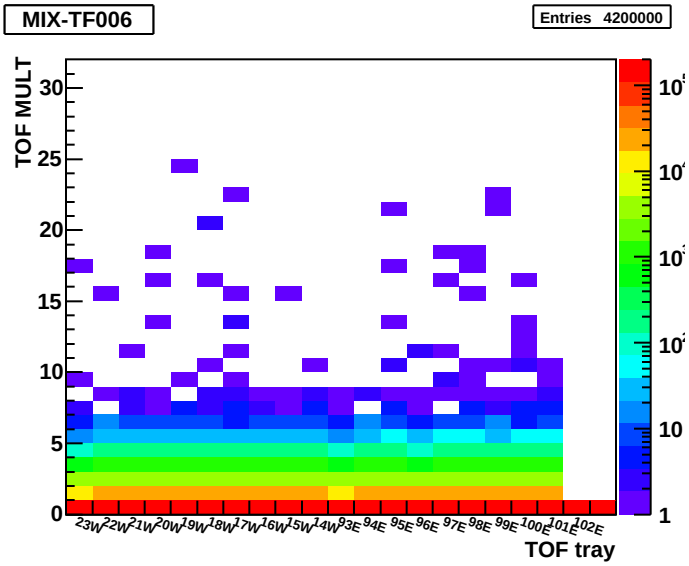

MIX-TF001
Entries 4200000
TOF MULT
TOF tray

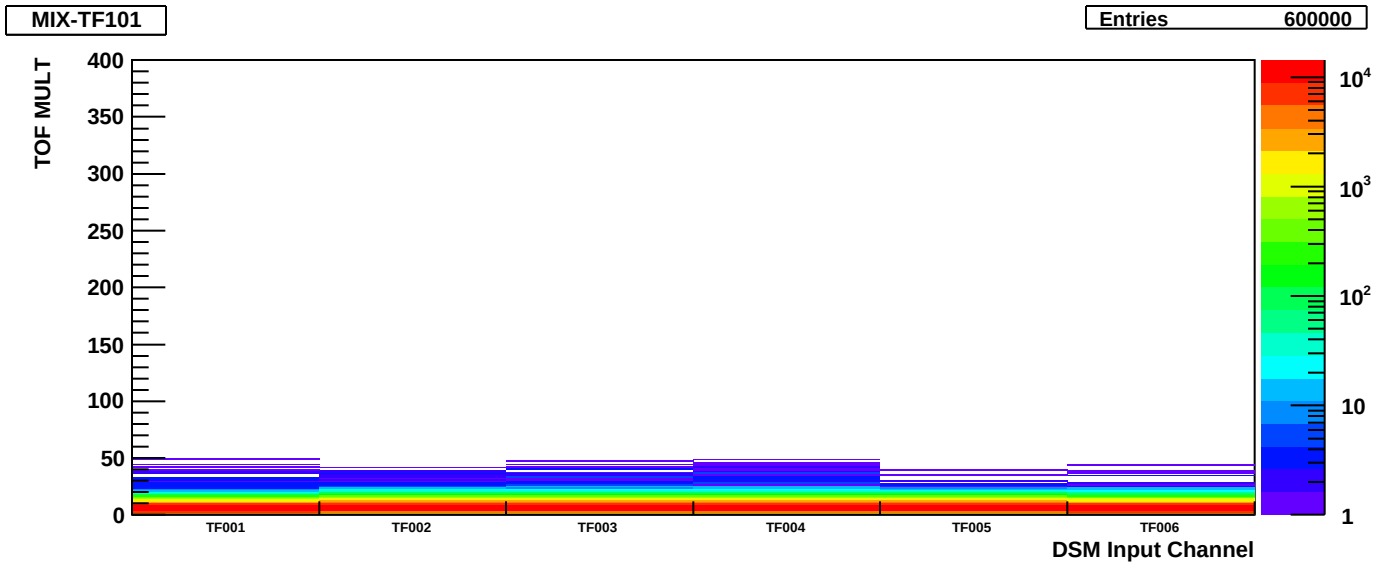

MIX-TF002
Entries 4200000
TOF MULT
TOF tray

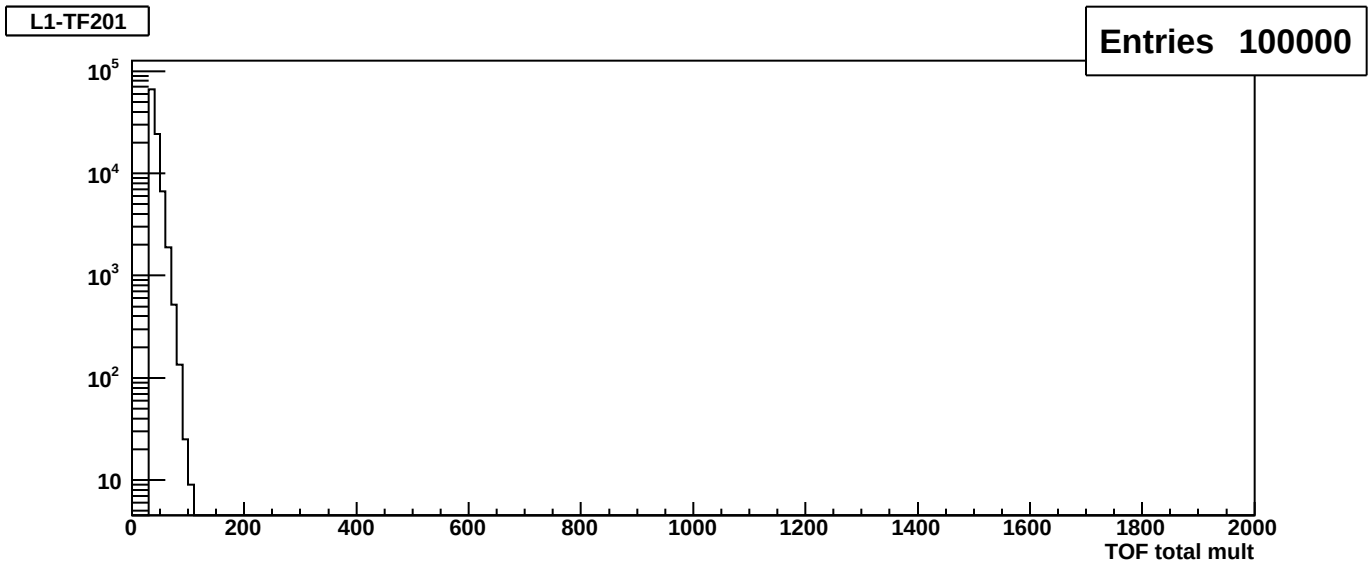

MIX-TF003
Entries 4200000
TOF MULT
TOF tray

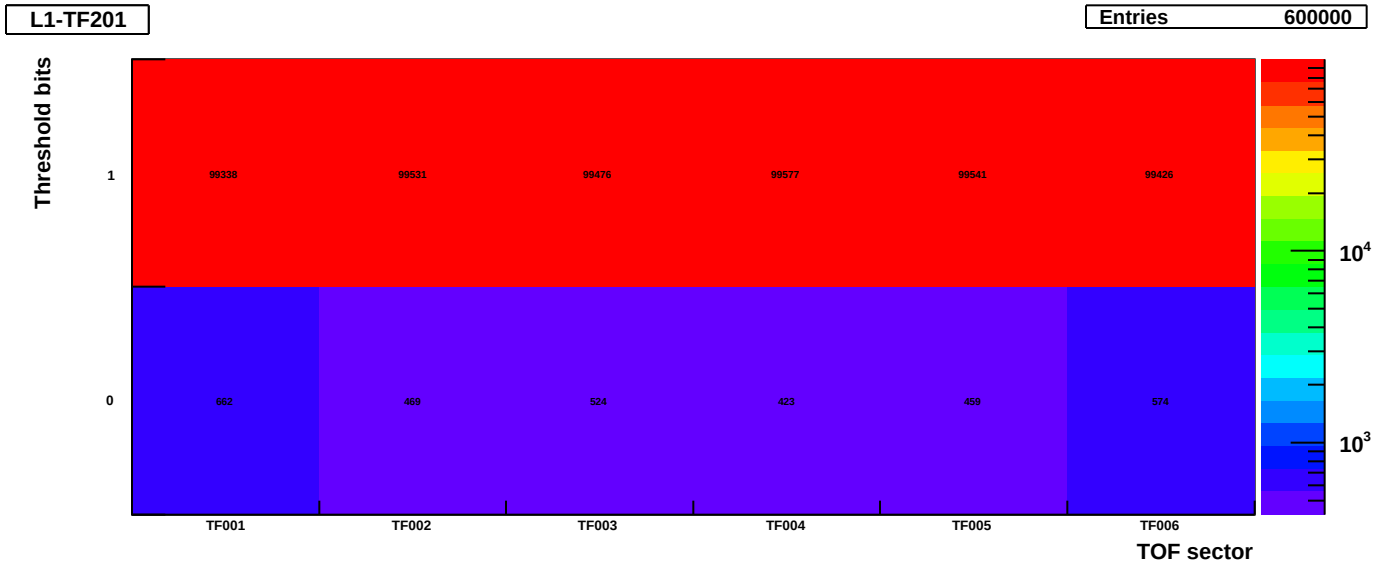

MIX-TF004
Entries 4200000
TOF MULT
TOF tray

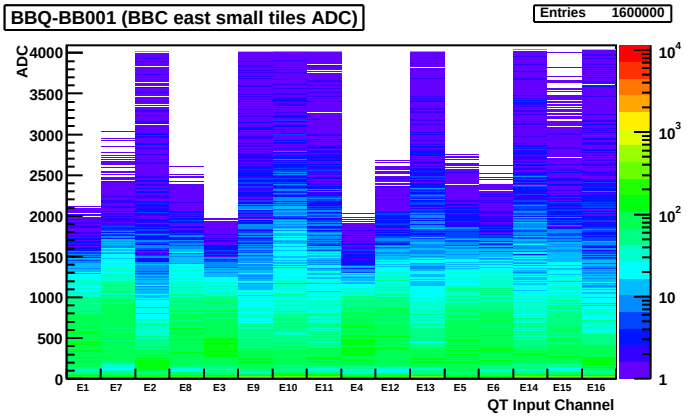

MIX-TF005
Entries 4200000
TOF MULT
TOF tray

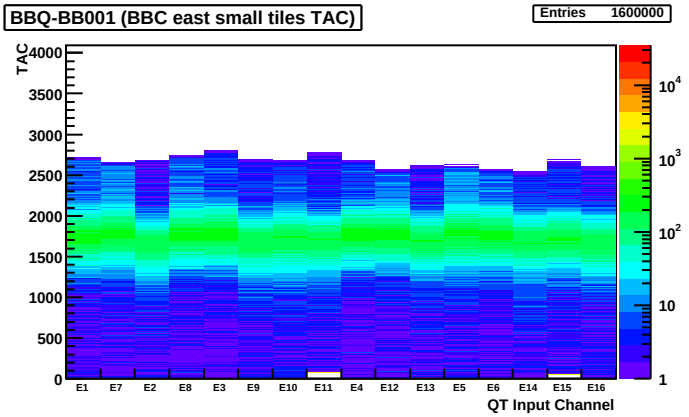

MIX-TF006
Entries 4200000
TOF MULT
TOF tray

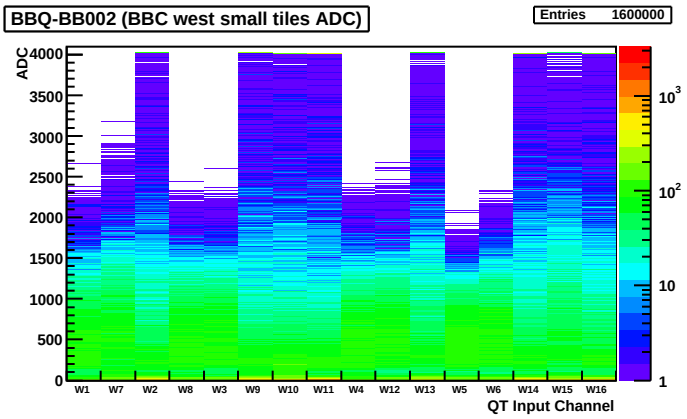

MIX-TF101
Entries 600000
TOF MULT
400
350
300
250
200
150
100
50
0
TF001
TF002
TF003
TF004
TF005
TF006
DSM Input Channel
10^4
10^3
10^2
10
1

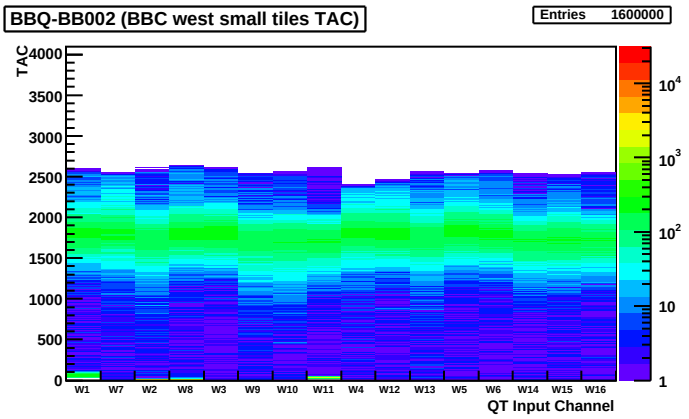

L1-TF201
Entries 100000
10^5
10^4
10^3
10^2
10
0
200
400
600
800
1000
1200
1400
1600
1800
2000
TOF total mult

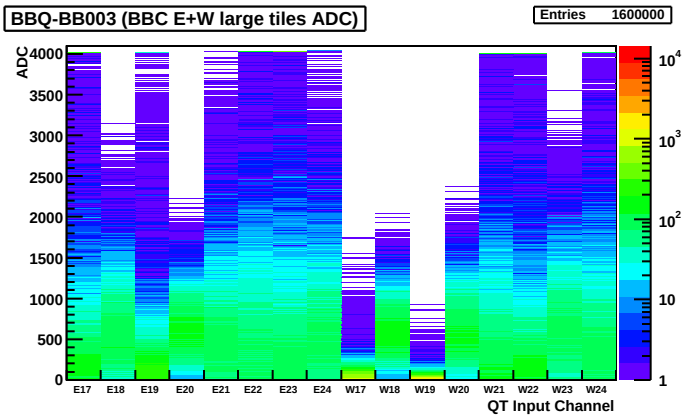

L1-TF201
Entries 600000
Threshold bits
1
0
99338
99531
99476
99577
99541
99426
662
469
524
423
459
574
TF001
TF002
TF003
TF004
TF005
TF006
TOF sector
10^4
10^3

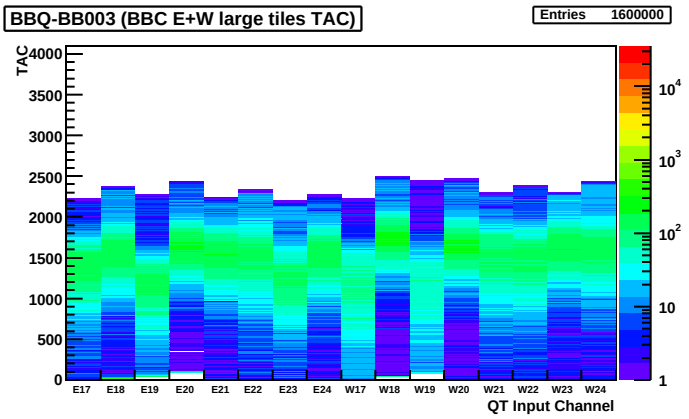

BBQ-BB001 (BBC east small tiles ADC)
Entries 1600000
ADC
QT Input Channel

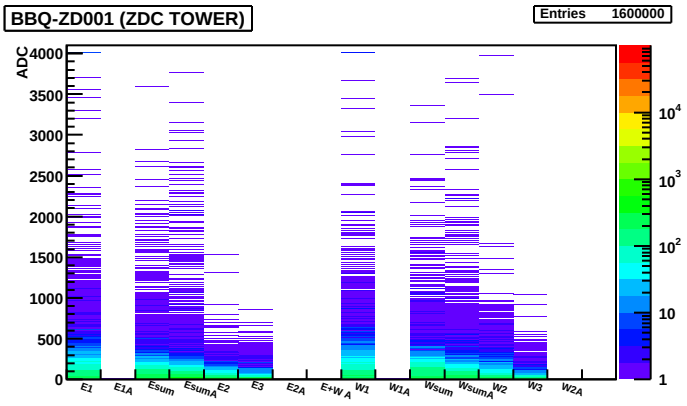

BBQ-BB001 (BBC east small tiles TAC)
Entries 1600000
TAC
QT Input Channel

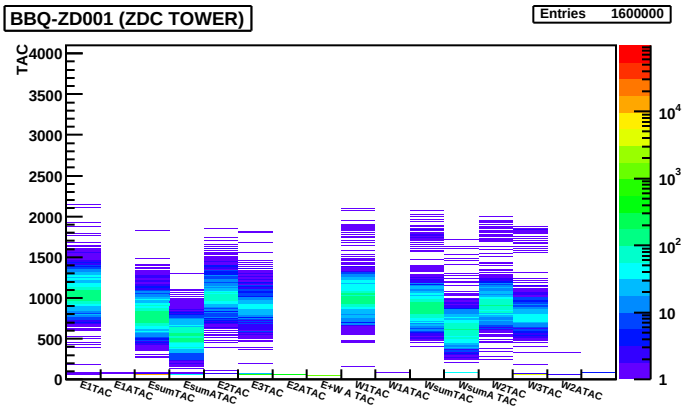

BBQ-BB002 (BBC west small tiles ADC)
Entries 1600000
ADC
QT Input Channel

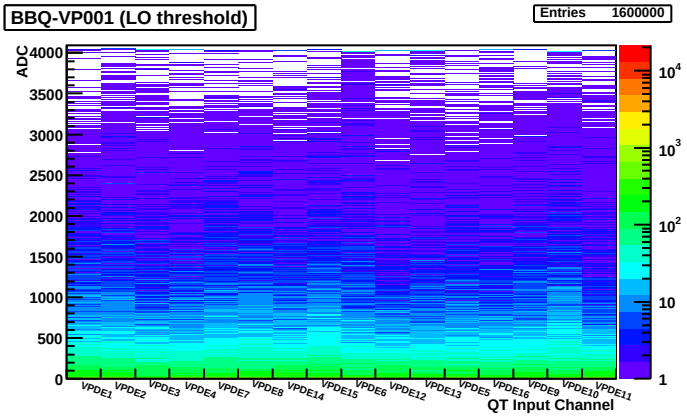

BBQ-BB002 (BBC west small tiles TAC)
Entries 1600000
TAC
QT Input Channel

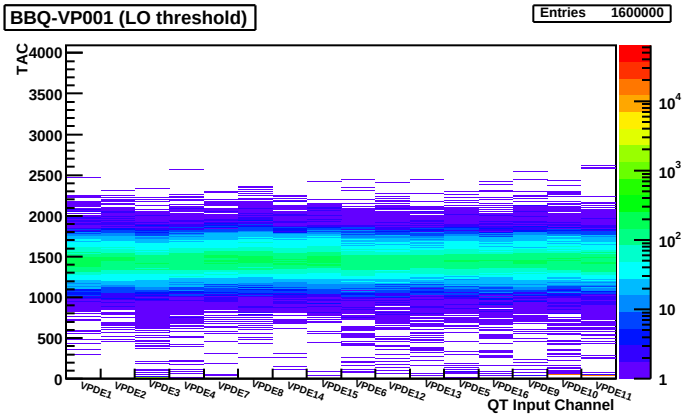

BBQ-BB003 (BBC E+W large tiles ADC)
Entries 1600000
ADC
QT Input Channel

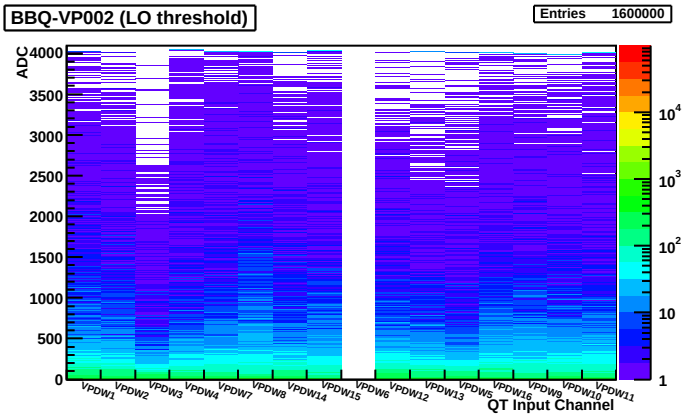

BBQ-BB003 (BBC E+W large tiles TAC)
Entries 1600000
TAC
QT Input Channel

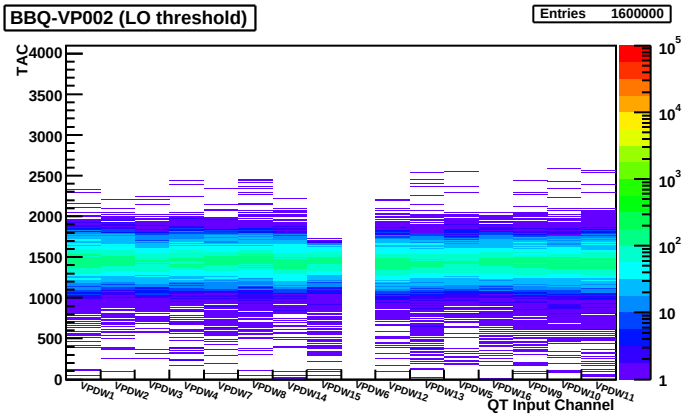

BBQ-ZD001 (ZDC TOWER)
Entries 1600000
ADC

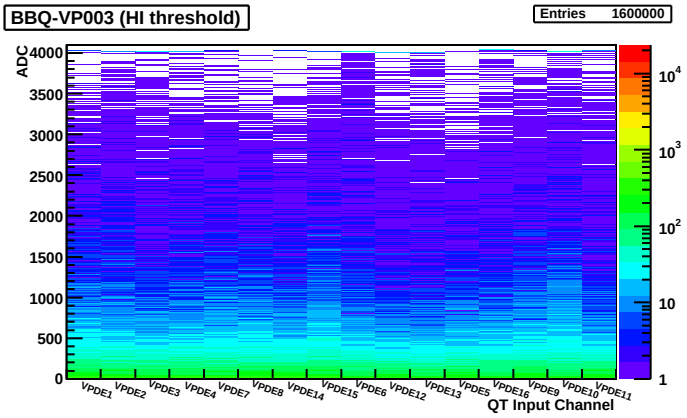

BBQ-ZD001 (ZDC TOWER)
Entries 1600000
TAC

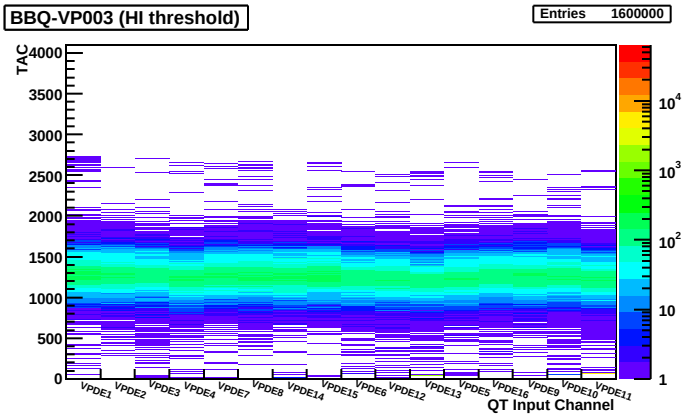

BBQ-VP001 (LO threshold)
Entries 1600000
ADC
QT Input Channel

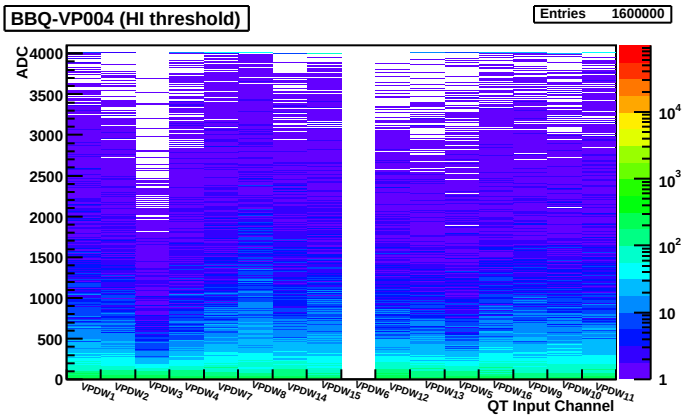

BBQ-VP001 (LO threshold)
Entries 1600000
TAC
QT Input Channel

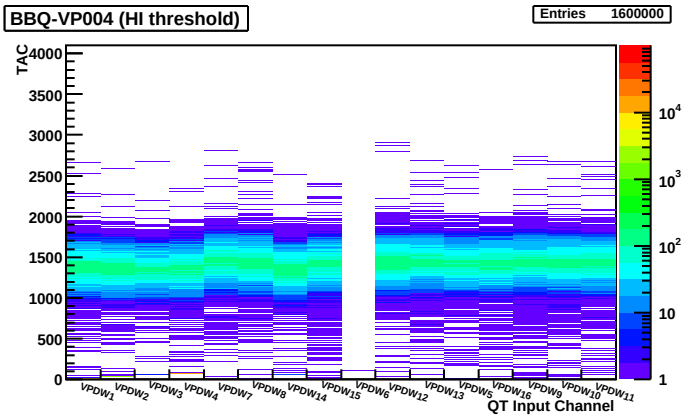

BBQ-VP002 (LO threshold)
Entries 1600000
ADC
QT Input Channel

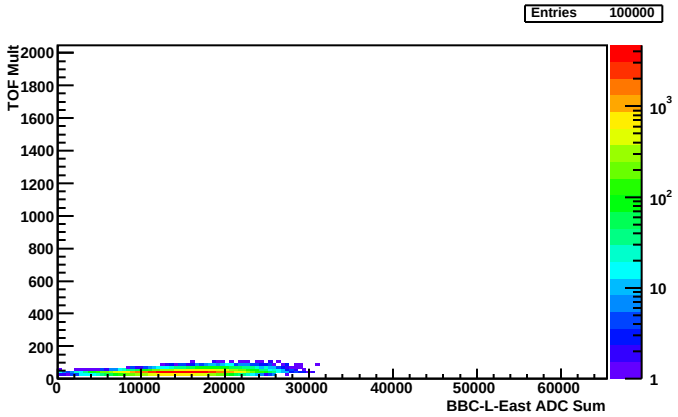

BBQ-VP002 (LO threshold)
Entries 1600000
TAC
QT Input Channel

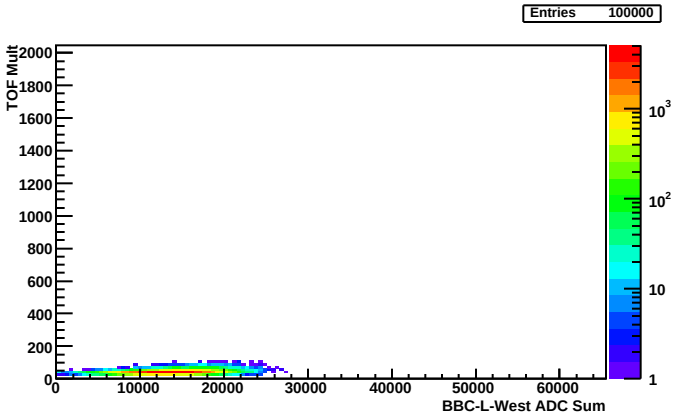

BBQ-VP003 (HI threshold)
Entries 1600000
ADC
QT Input Channel

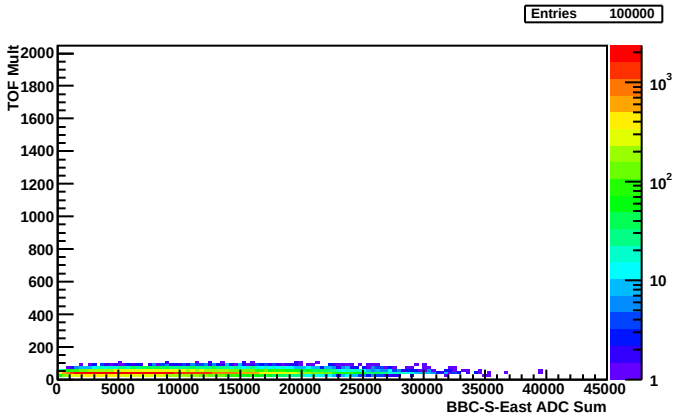

BBQ-VP003 (HI threshold)
Entries 1600000
TAC
QT Input Channel

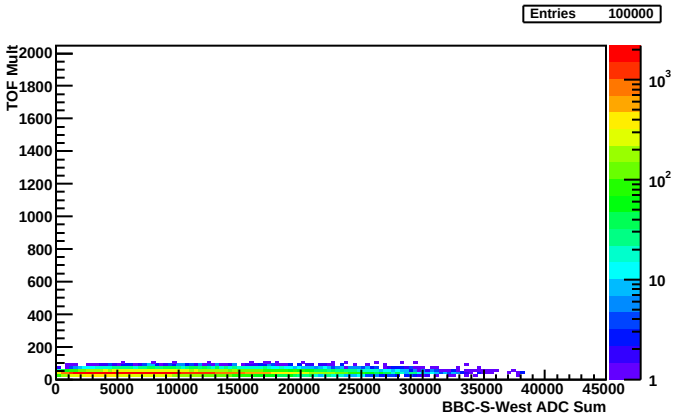

BBQ-VP004 (HI threshold)
Entries 1600000
ADC
QT Input Channel

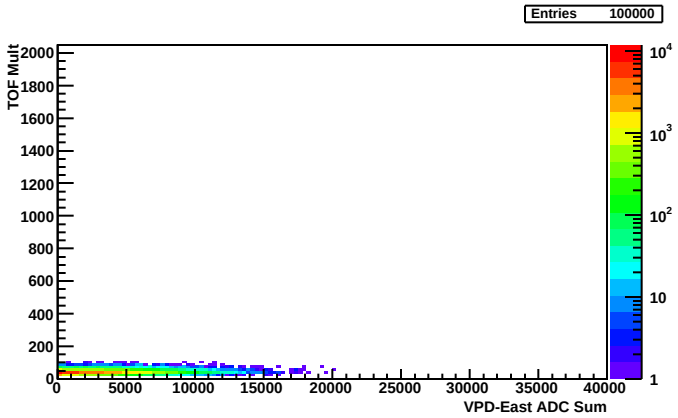

BBQ-VP004 (HI threshold)
Entries 1600000
TAC
QT Input Channel

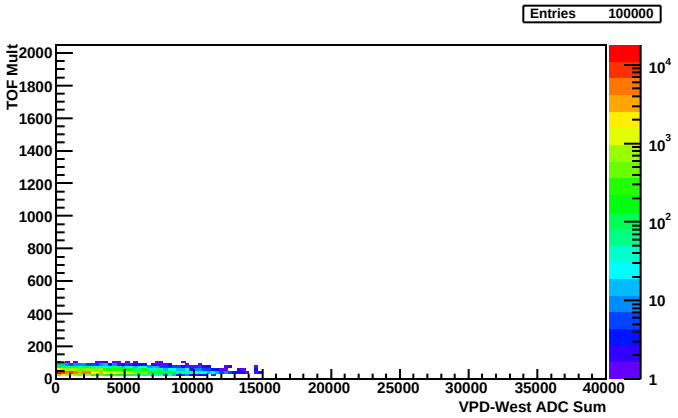

Entries 100000
TOF Mult
BBC-L-East ADC Sum

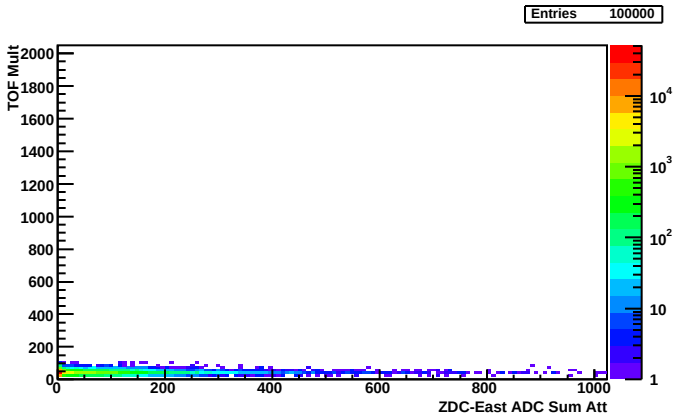

Entries 100000
TOF Mult
BBC-L-West ADC Sum

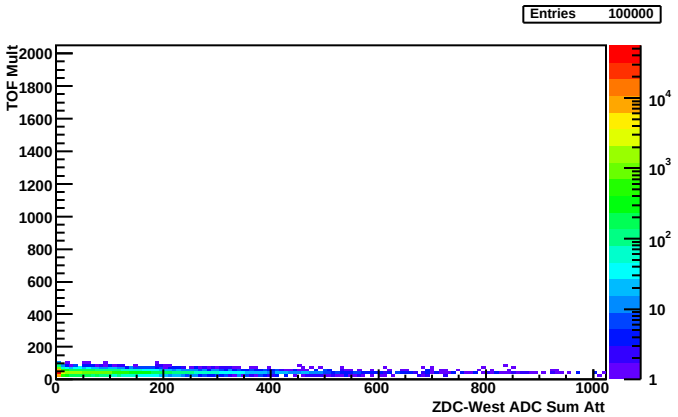

Entries 100000
TOF Mult
BBC-S-East ADC Sum

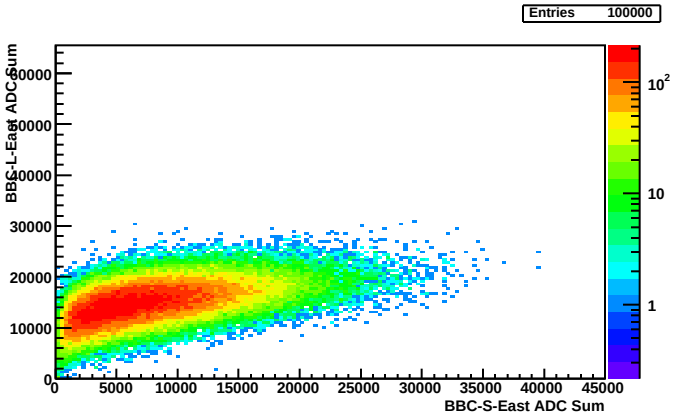

Entries 100000
TOF Mult
BBC-S-West ADC Sum

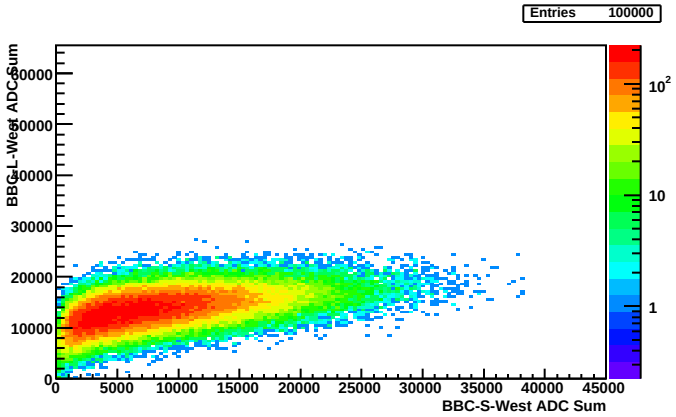

Entries 100000
TOF Mult
VPD-East ADC Sum

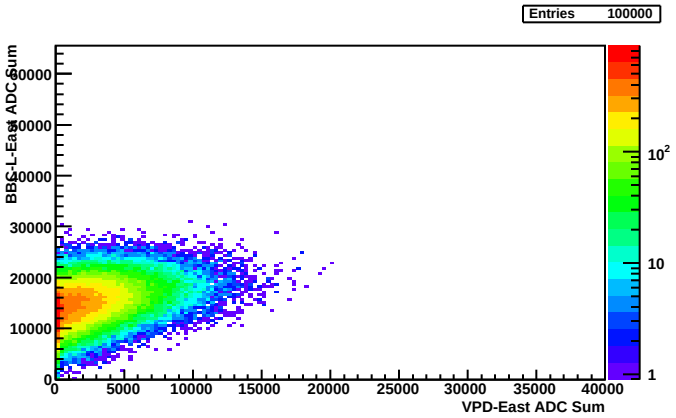

Entries 100000
TOF Mult
VPD-West ADC Sum

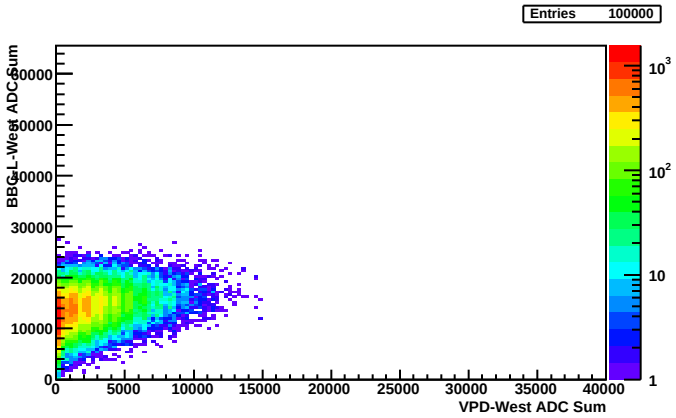

Entries 100000
TOF Mult
ZDC-East ADC Sum Att

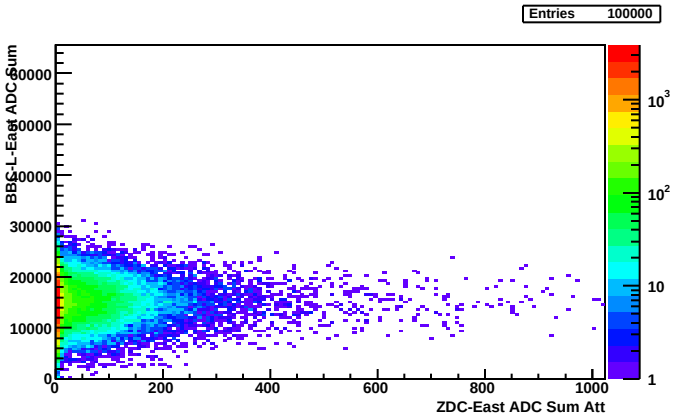

Entries 100000
TOF Mult
ZDC-West ADC Sum Att

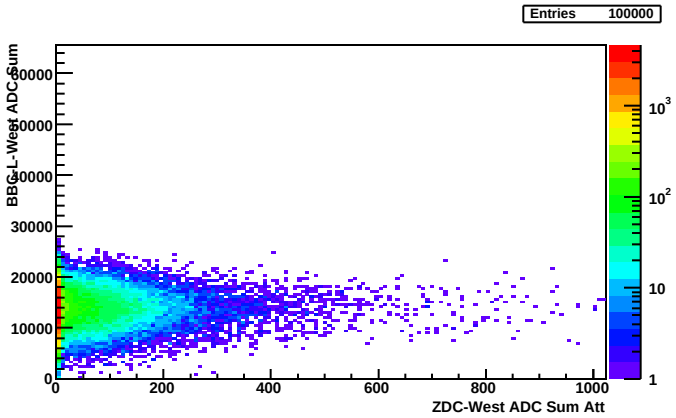

Entries 100000
BBC-L-East ADC Sum
BBC-S-East ADC Sum

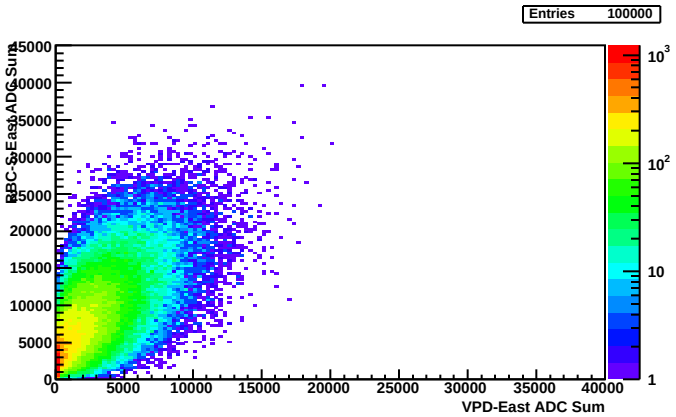

Entries 100000
BBC-L-West ADC Sum
BBC-S-West ADC Sum

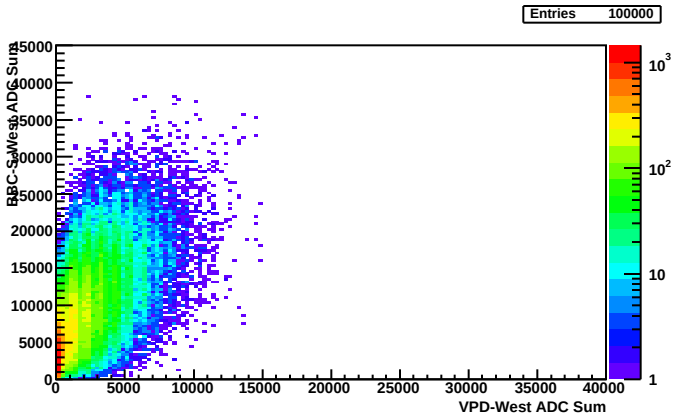

Entries 100000
BBC-L-East ADC Sum
VPD-East ADC Sum

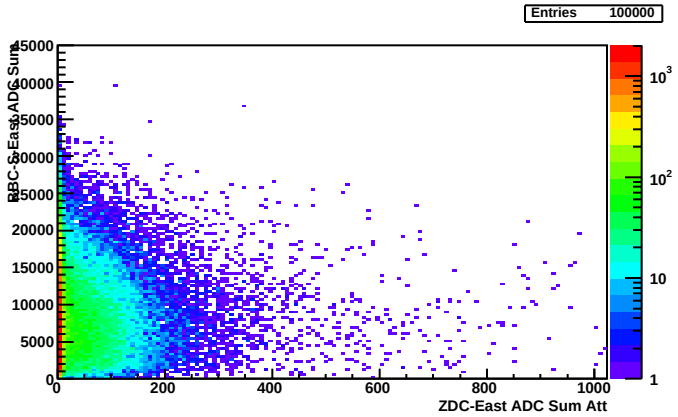

Entries 100000
BBC-L-West ADC Sum
VPD-West ADC Sum

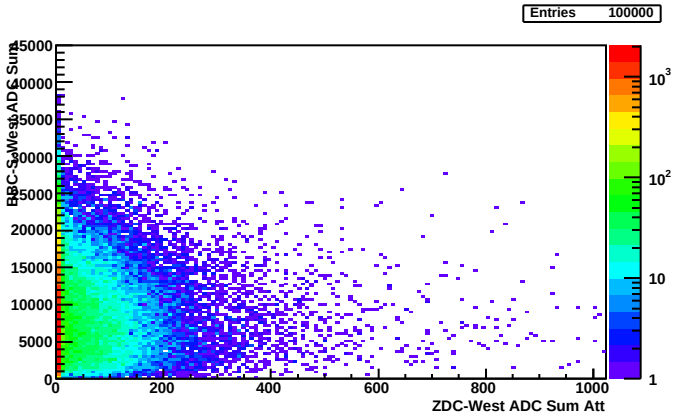

Entries 100000
BBC-L-East ADC Sum
ZDC-East ADC Sum Att

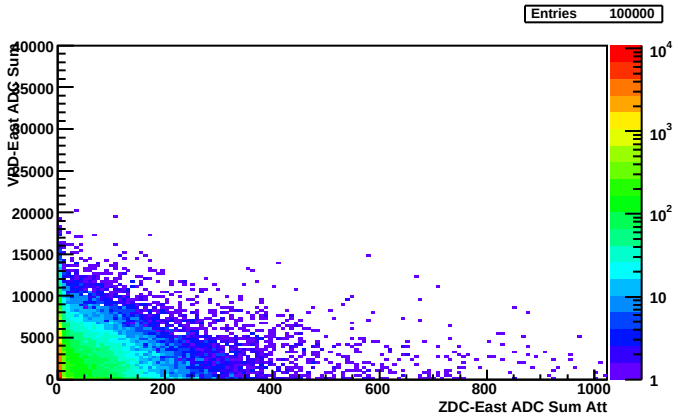

Entries 100000
BBC-L-West ADC Sum
ZDC-West ADC Sum Att

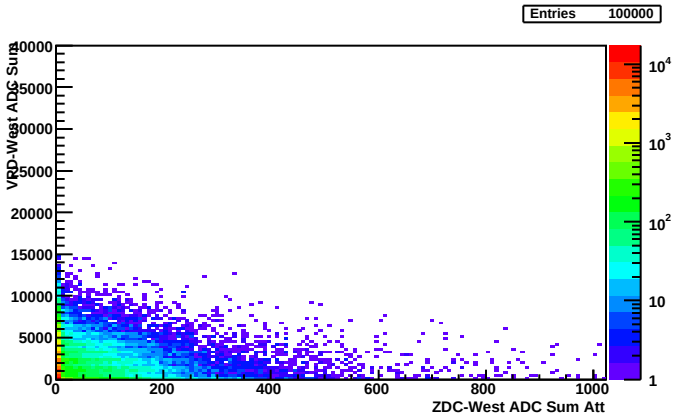

Entries 100000
BBC-S-East ADC Sum
VPD-East ADC Sum

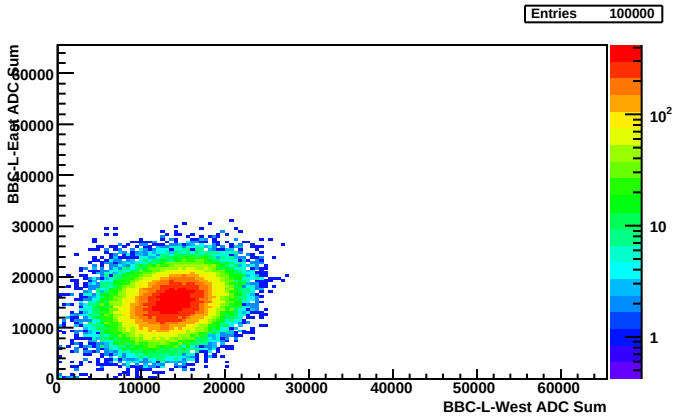

Entries 100000
BBC-S-West ADC Sum
VPD-West ADC Sum

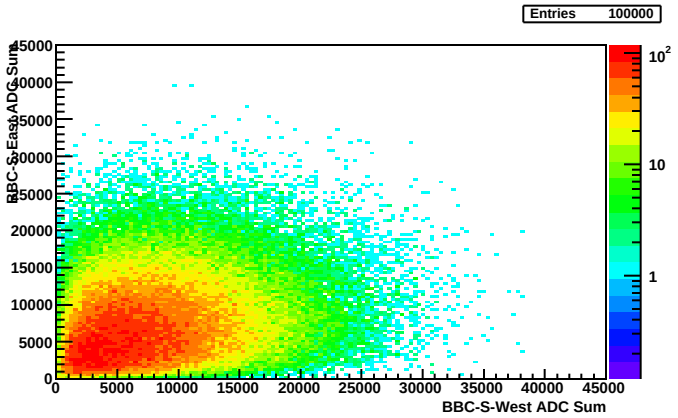

Entries 100000
BBC-S-East ADC Sum
ZDC-East ADC Sum Att

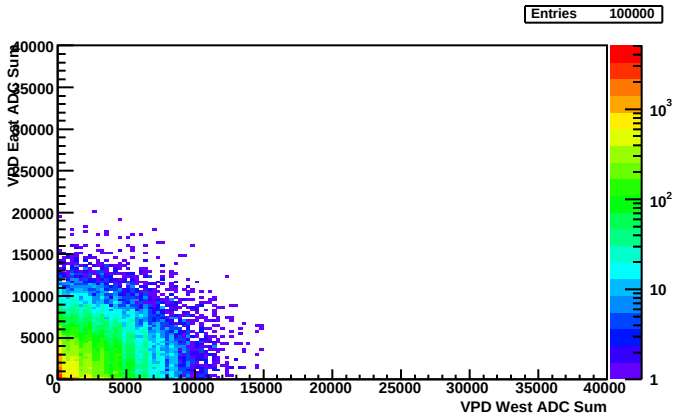

Entries 100000
BBC-S-West ADC Sum
ZDC-West ADC Sum Att

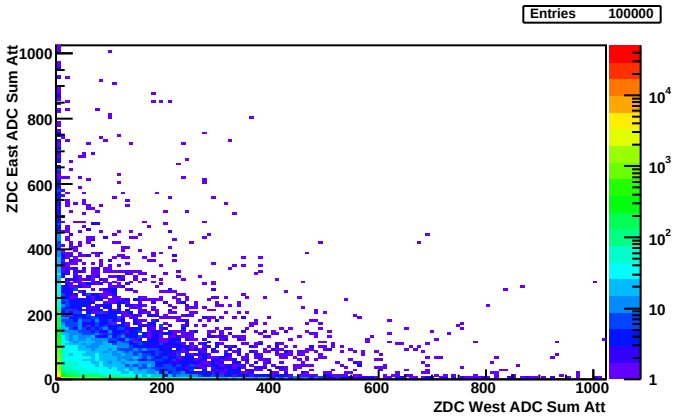

Entries 100000
VPD-East ADC Sum
ZDC-East ADC Sum Att

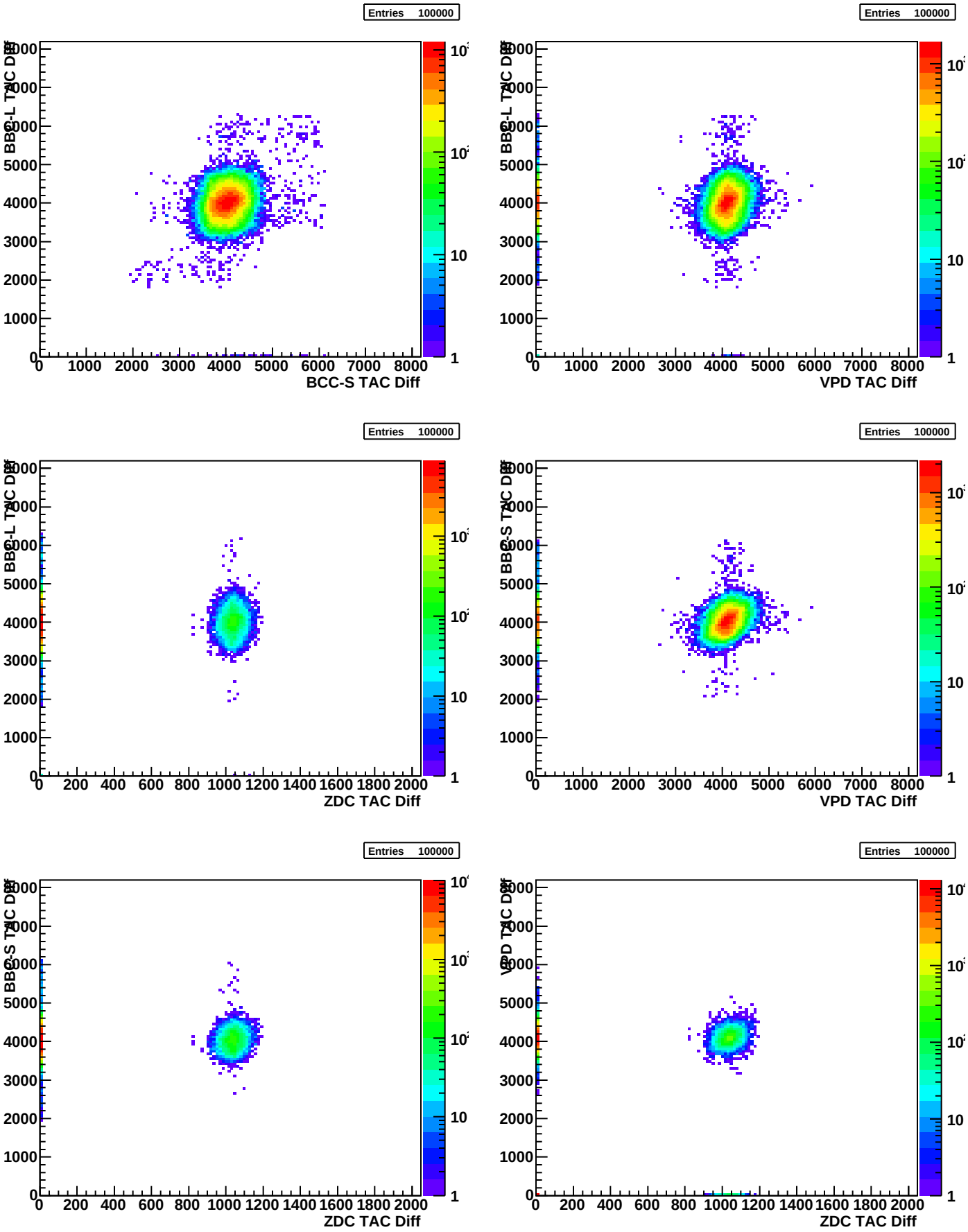

Entries 100000
VPD-West ADC Sum
ZDC-West ADC Sum Att

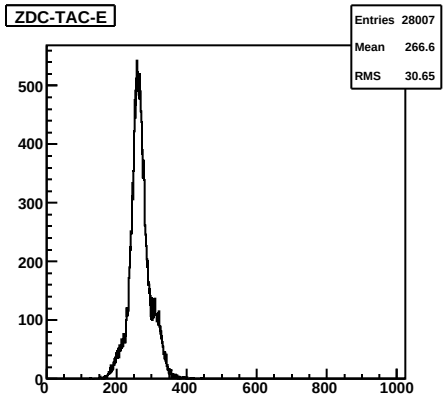

Entries 100000
BBC-L-East ADC Sum
BBC-L-West ADC Sum

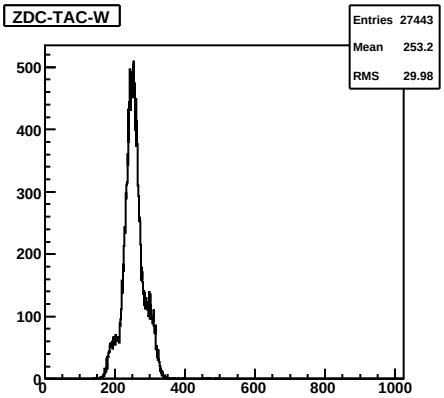

Entries 100000
BBC-S-East ADC Sum
BBC-S-West ADC Sum

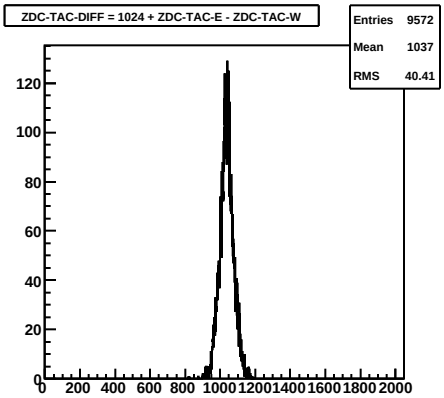

Entries 100000
VPD East ADC Sum
VPD West ADC Sum

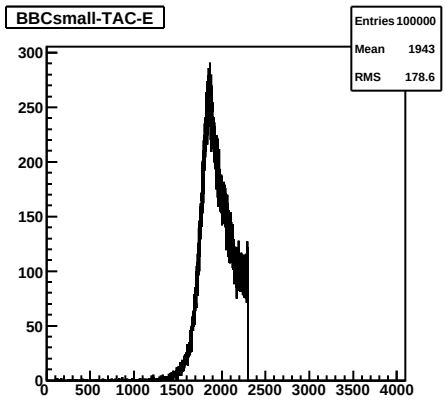

Entries 100000
ZDC East ADC Sum Att
ZDC West ADC Sum Att

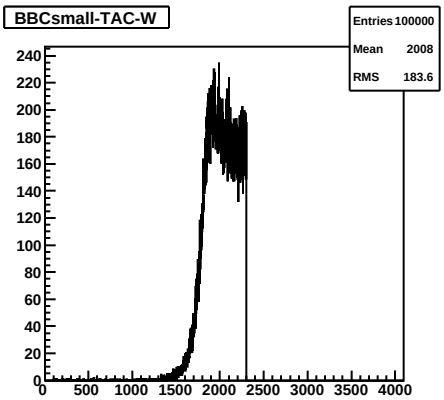

Entries 100000
BBC-L TAC Diff
BCC-S TAC Diff
Entries 100000
BBC-L TAC Diff
VPD TAC Diff
Entries 100000
BBC-L TAC Diff
ZDC TAC Diff
Entries 100000
BBC-S TAC Diff
VPD TAC Diff
Entries 100000
BBC-S TAC Diff
ZDC TAC Diff
Entries 100000
VPD TAC Diff
ZDC TAC Diff

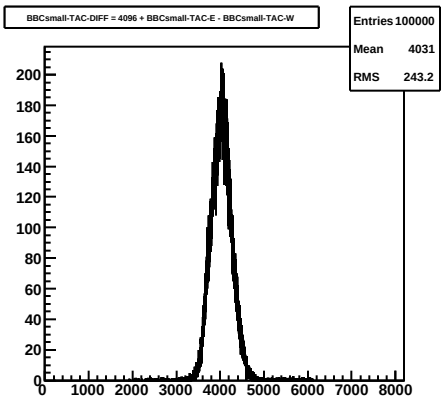

ZDC-TAC-E
Entries 28007
Mean 266.6
RMS 30.65

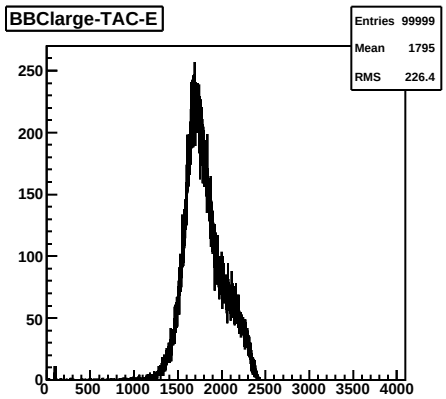

ZDC-TAC-W
Entries 27443
Mean 253.2
RMS 29.98

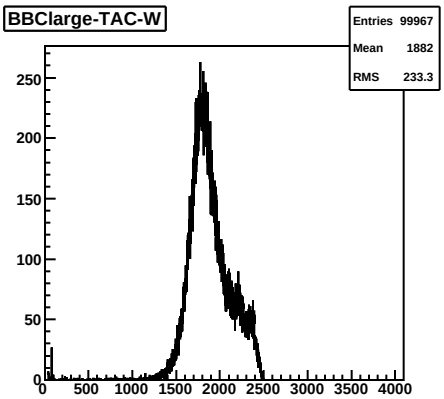

ZDC-TAC-DIFF = 1024 + ZDC-TAC-E - ZDC-TAC-W
Entries 9572
Mean 1037
RMS 40.41

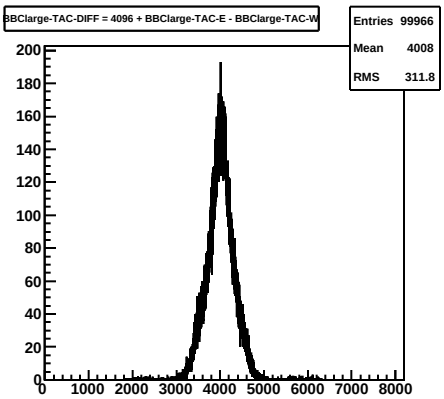

BBCsmall-TAC-E
Entries 100000
Mean 1943
RMS 178.6

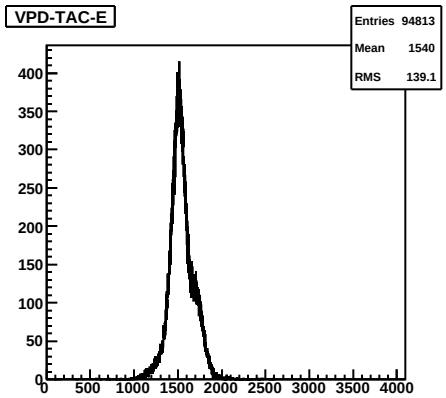

BBCsmall-TAC-W
Entries 100000
Mean 2008
RMS 183.6

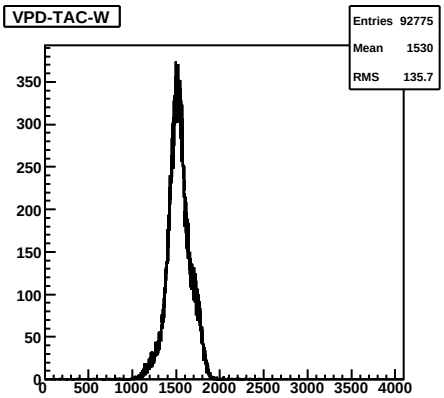

BBCsmall-TAC-DIFF = 4096 + BBCsmall-TAC-E - BBCsmall-TAC-W
Entries 100000
Mean 4031
RMS 243.2

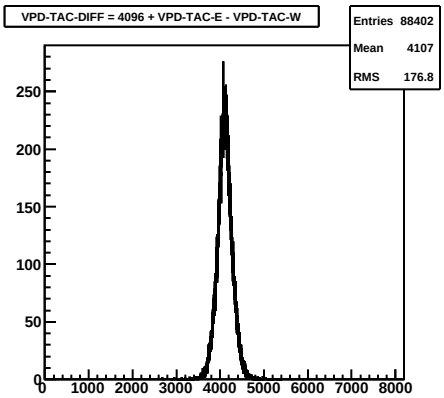

BBClarge-TAC-E
Entries 99999
Mean 1795
RMS 226.4

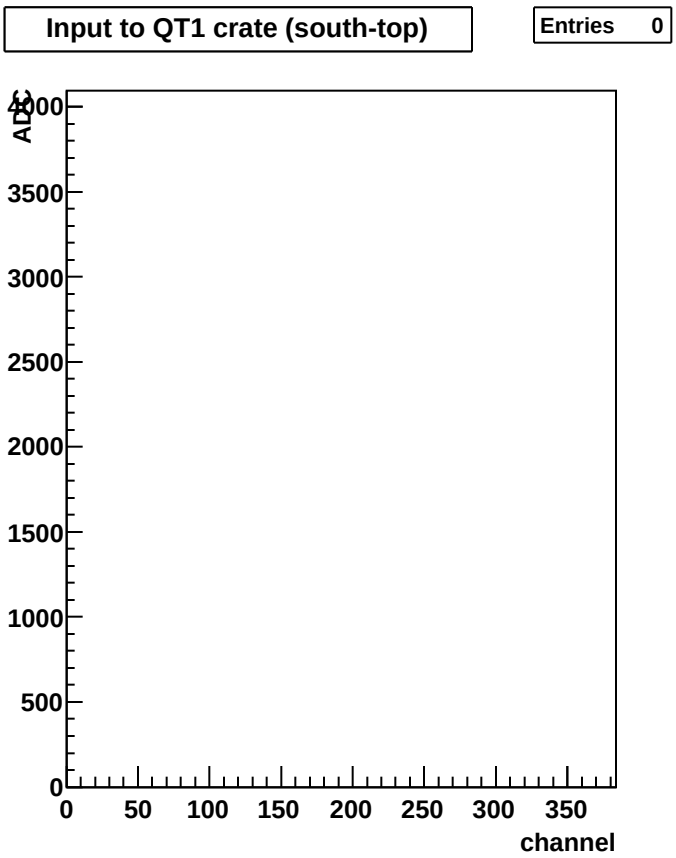

BBClarge-TAC-W
Entries 99967
Mean 1882
RMS 233.3

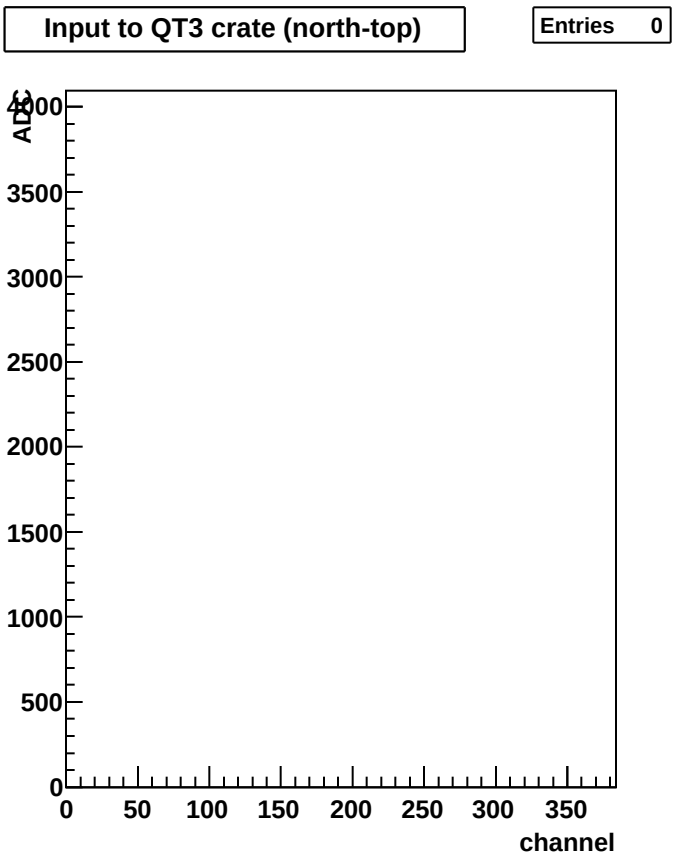

BBClarge-TAC-DIFF = 4096 + BBClarge-TAC-E - BBClarge-TAC-W
Entries 99966
Mean 4008
RMS 311.8

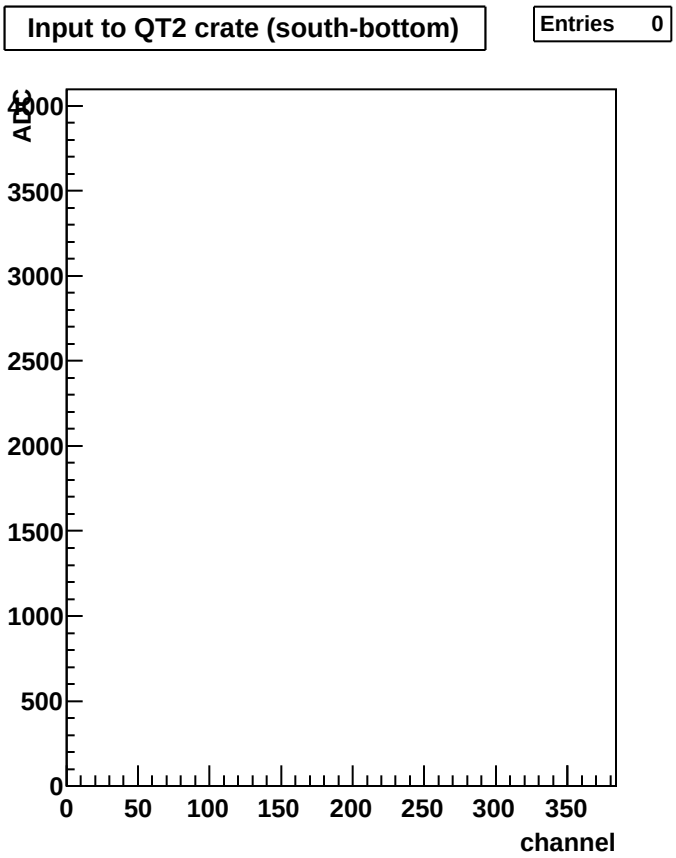

VPD-TAC-E
Entries 94813
Mean 1540
RMS 139.1

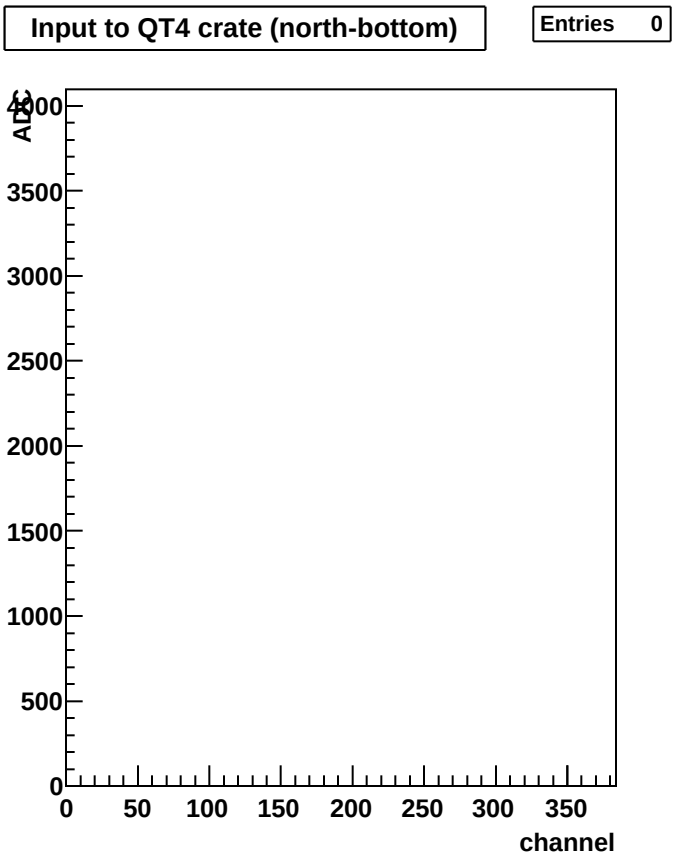

VPD-TAC-W
Entries 92775
Mean 1530
RMS 135.7

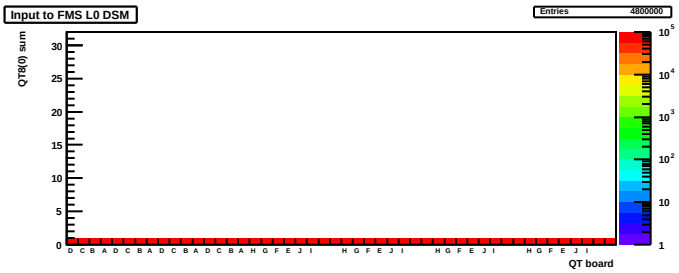

VPD-TAC-DIFF = 4096 + VPD-TAC-E - VPD-TAC-W
Entries 88402
Mean 4107
RMS 176.8

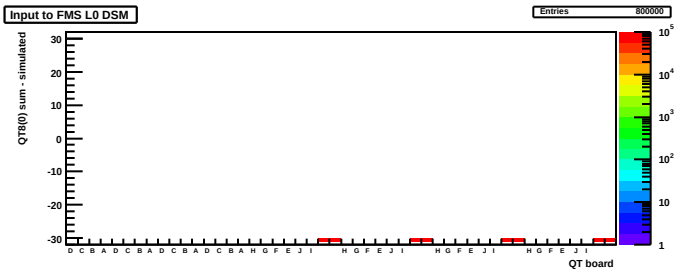

Input to QT1 crate (south-top)
Entries 0
ADC
4000
3500
3000
2500
2000
1500
1000
500
0
0 50 100 150 200 250 300 350
channel

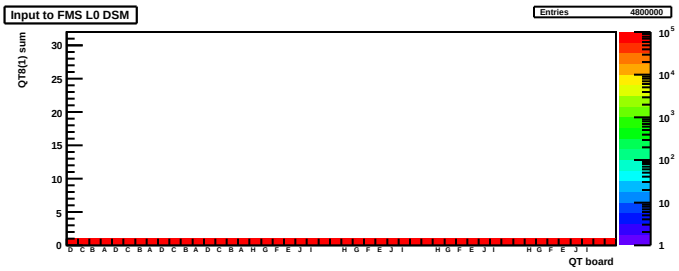

Input to QT3 crate (north-top)
Entries 0
ADC
4000
3500
3000
2500
2000
1500
1000
500
0
0 50 100 150 200 250 300 350
channel

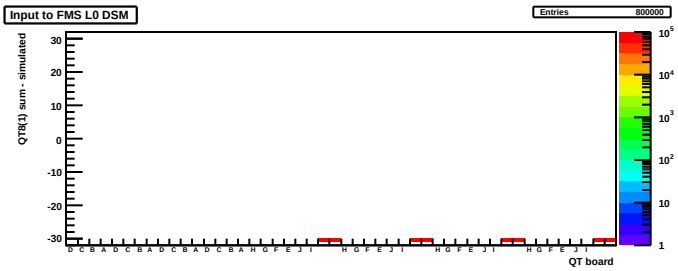

Input to QT2 crate (south-bottom)
Entries 0
ADC
4000
3500
3000
2500
2000
1500
1000
500
0
0 50 100 150 200 250 300 350
channel

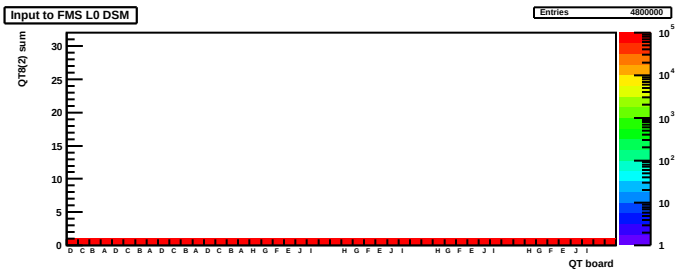

Input to QT4 crate (north-bottom)
Entries 0
ADC
4000
3500
3000
2500
2000
1500
1000
500
0
0 50 100 150 200 250 300 350
channel

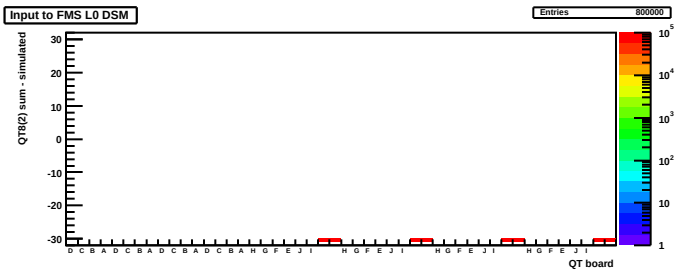

Input to FMS L0 DSM
Entries 4800000
QT8(0) sum
QT board

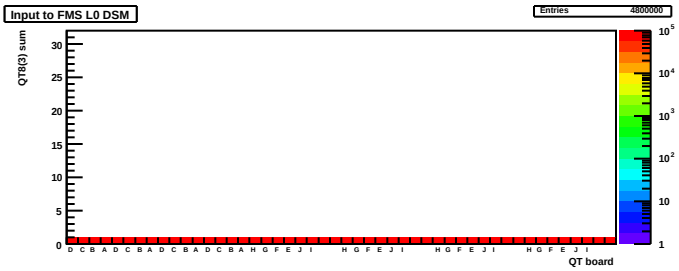

Input to FMS L0 DSM
Entries 800000
QT8(0) sum - simulated
QT board

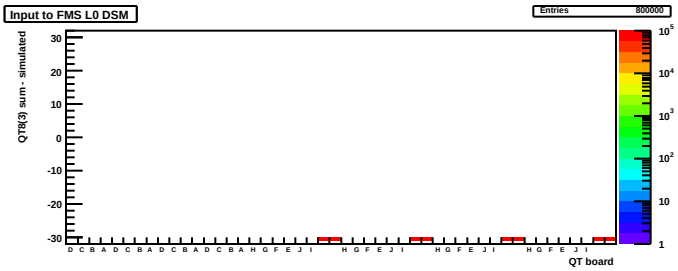

Input to FMS L0 DSM
Entries 4800000
QT8(1) sum
QT board

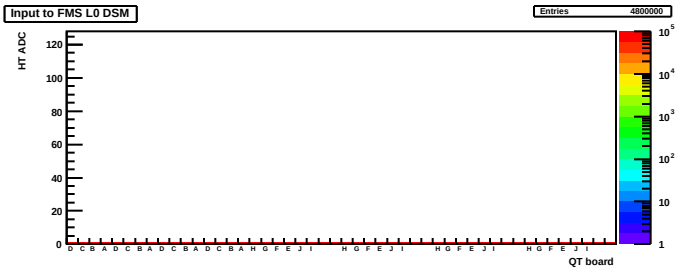

Input to FMS L0 DSM
Entries 800000
QT8(1) sum - simulated
QT board

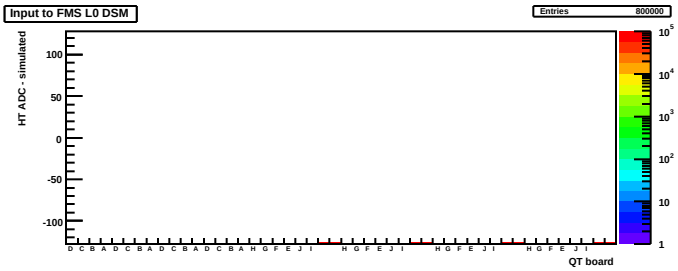

Input to FMS L0 DSM
Entries 4800000
QT8(2) sum
QT board

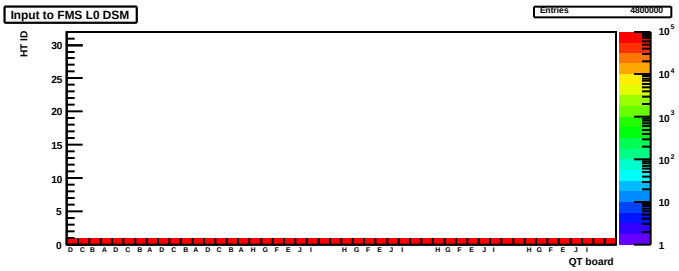

Input to FMS L0 DSM
Entries 800000
QT8(2) sum - simulated
QT board

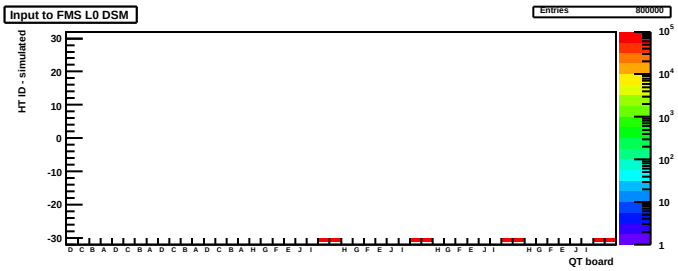

Input to FMS L0 DSM
Entries 4800000
QT8(3) sum
QT board

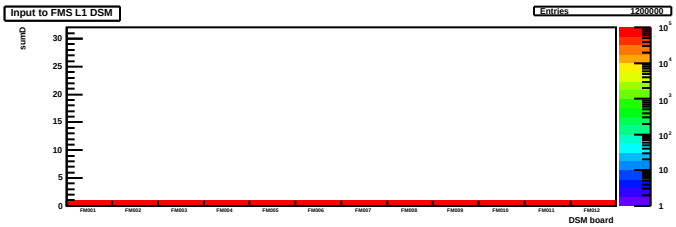

Input to FMS L0 DSM
Entries 800000
QT8(3) sum - simulated
QT board

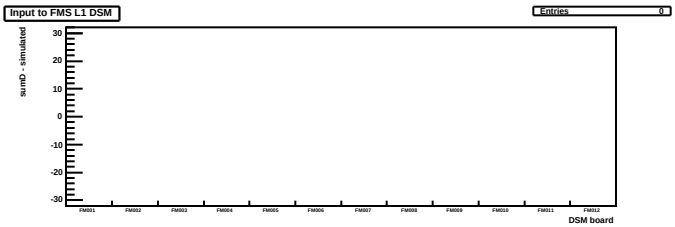

Input to FMS L0 DSM
Entries 4800000
HT ADC
QT board

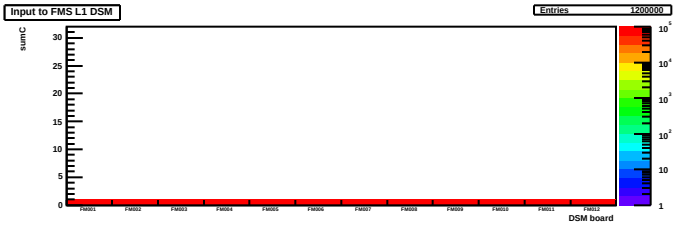

Input to FMS L0 DSM
Entries 800000
HT ADC - simulated
QT board

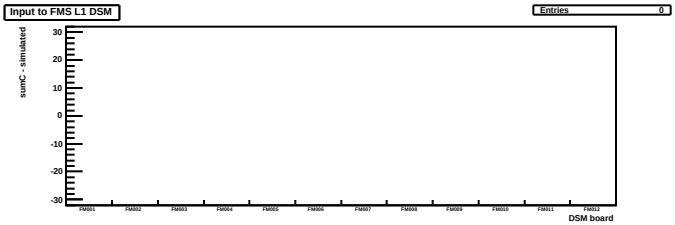

Input to FMS L0 DSM
Entries 4800000
HT ID
QT board

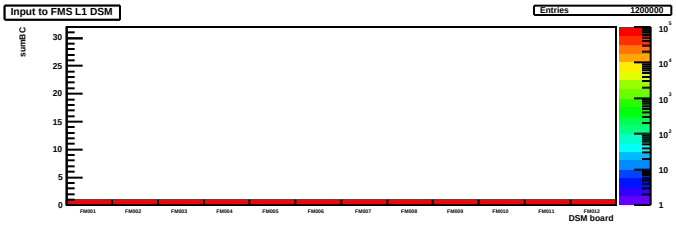

Input to FMS L0 DSM
Entries 800000
HT ID - simulated
QT board

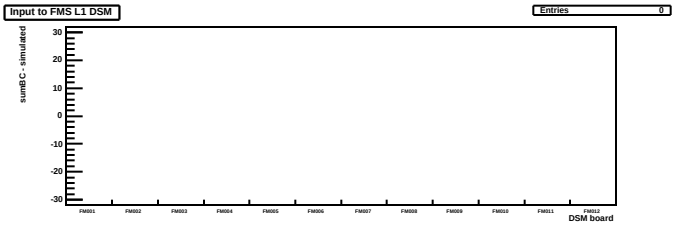

Input to FMS L1 DSM
Entries 1200000
sumD
DSM board

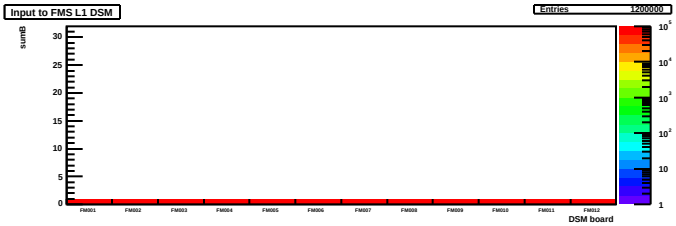

Input to FMS L1 DSM
Entries 0
sumD - simulated
DSM board

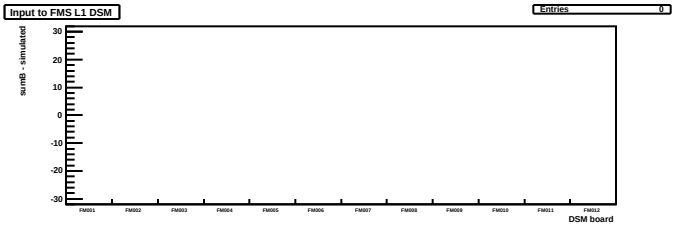

Input to FMS L1 DSM
Entries 1200000
sumC
DSM board

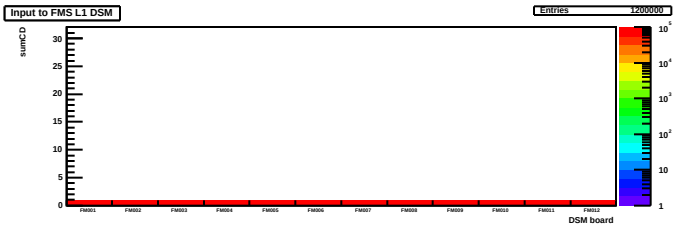

Input to FMS L1 DSM
Entries 0
sumC - simulated
DSM board

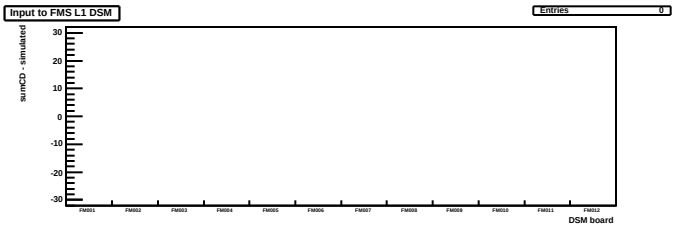

Input to FMS L1 DSM
Entries 1200000
sumBC
DSM board

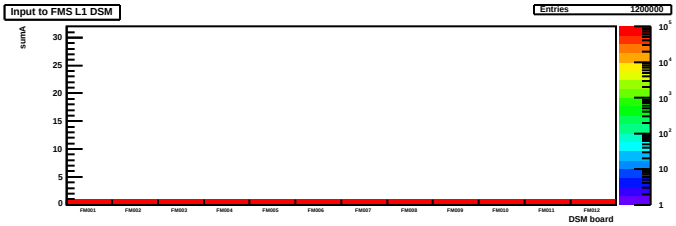

Input to FMS L1 DSM
Entries 0
sumBC - simulated
DSM board

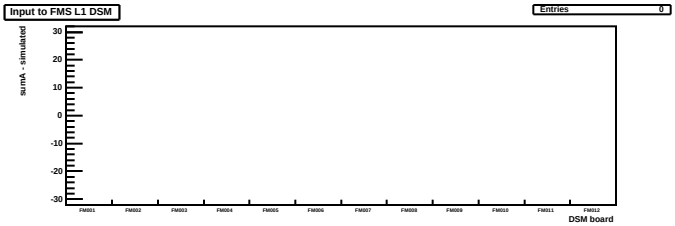

Input to FMS L1 DSM
Entries 1200000
sumB
DSM board

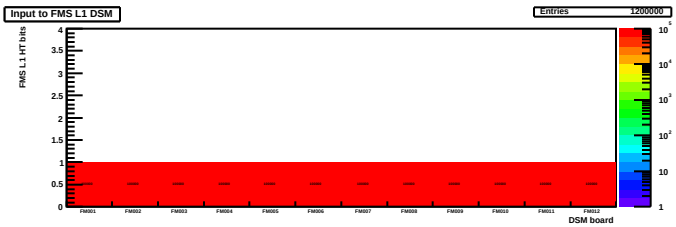

Input to FMS L1 DSM
Entries 0
sumB - simulated
DSM board

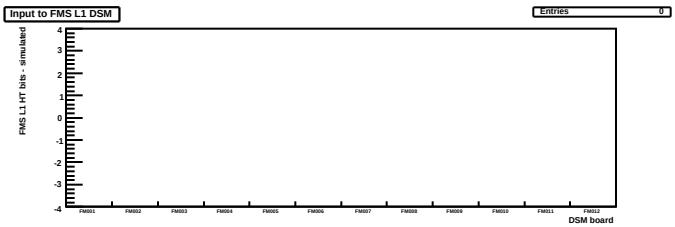

Input to FMS L1 DSM
Entries 1200000
sumCD
DSM board

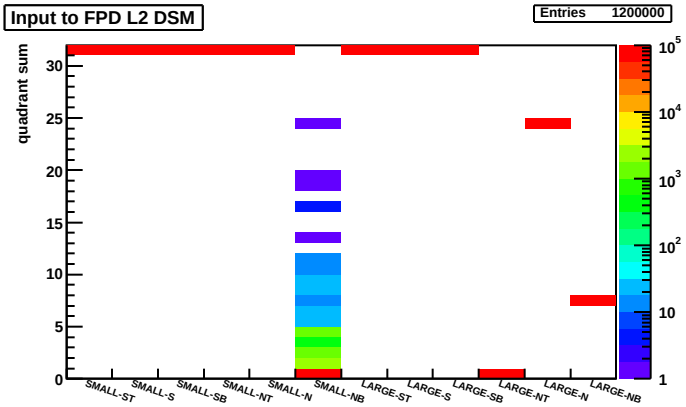

Input to FMS L1 DSM
Entries 0
sumCD - simulated
DSM board

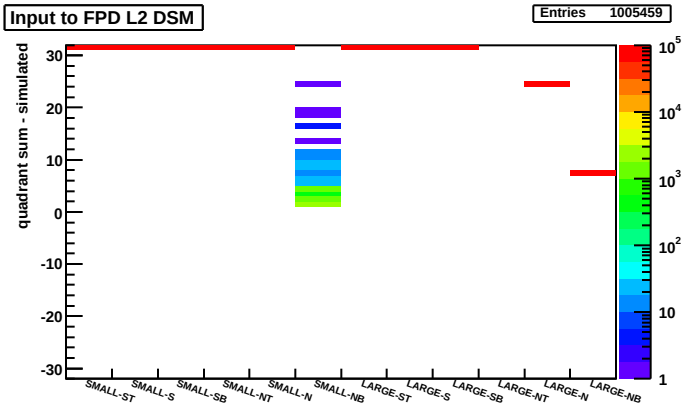

Input to FMS L1 DSM
Entries 1200000
sumA
DSM board

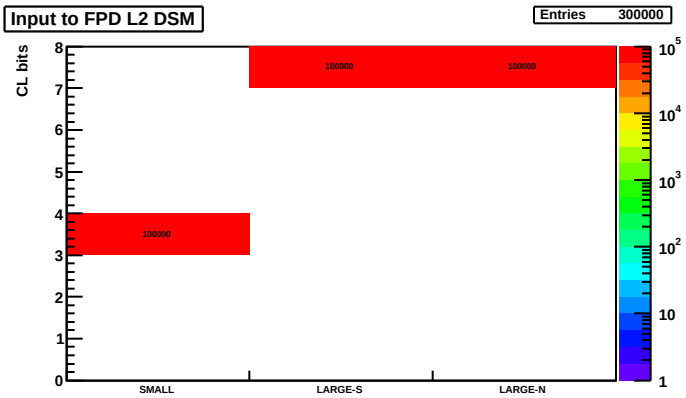

Input to FMS L1 DSM
Entries 0
sumA - simulated
DSM board

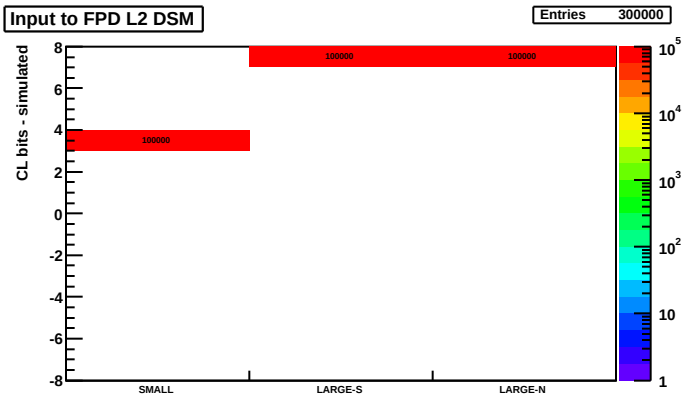

Input to FMS L1 DSM
Entries 1200000
FMS L1 HT bits
DSM board

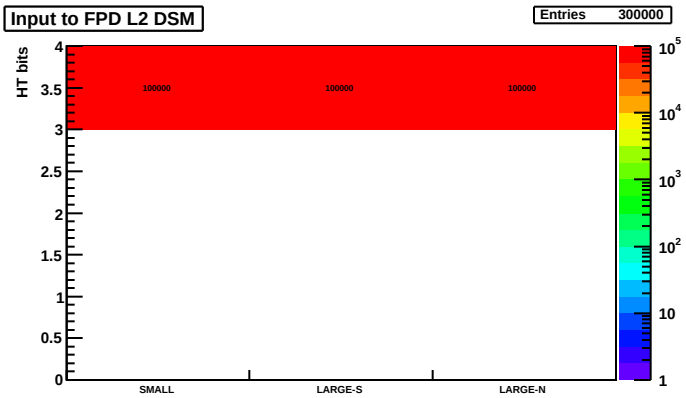

Input to FMS L1 DSM
Entries 0
FMS L1 HT bits - simulated
DSM board

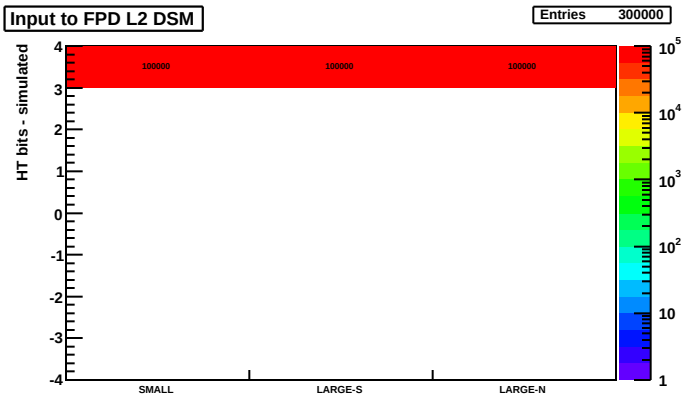

Input to FPD L2 DSM
Entries 1200000
quadrant sum
SMALL-ST
SMALL-S
SMALL-SB
SMALL-NT
SMALL-N
SMALL-NB
LARGE-ST
LARGE-S
LARGE-SB
LARGE-NT
LARGE-N
LARGE-NB

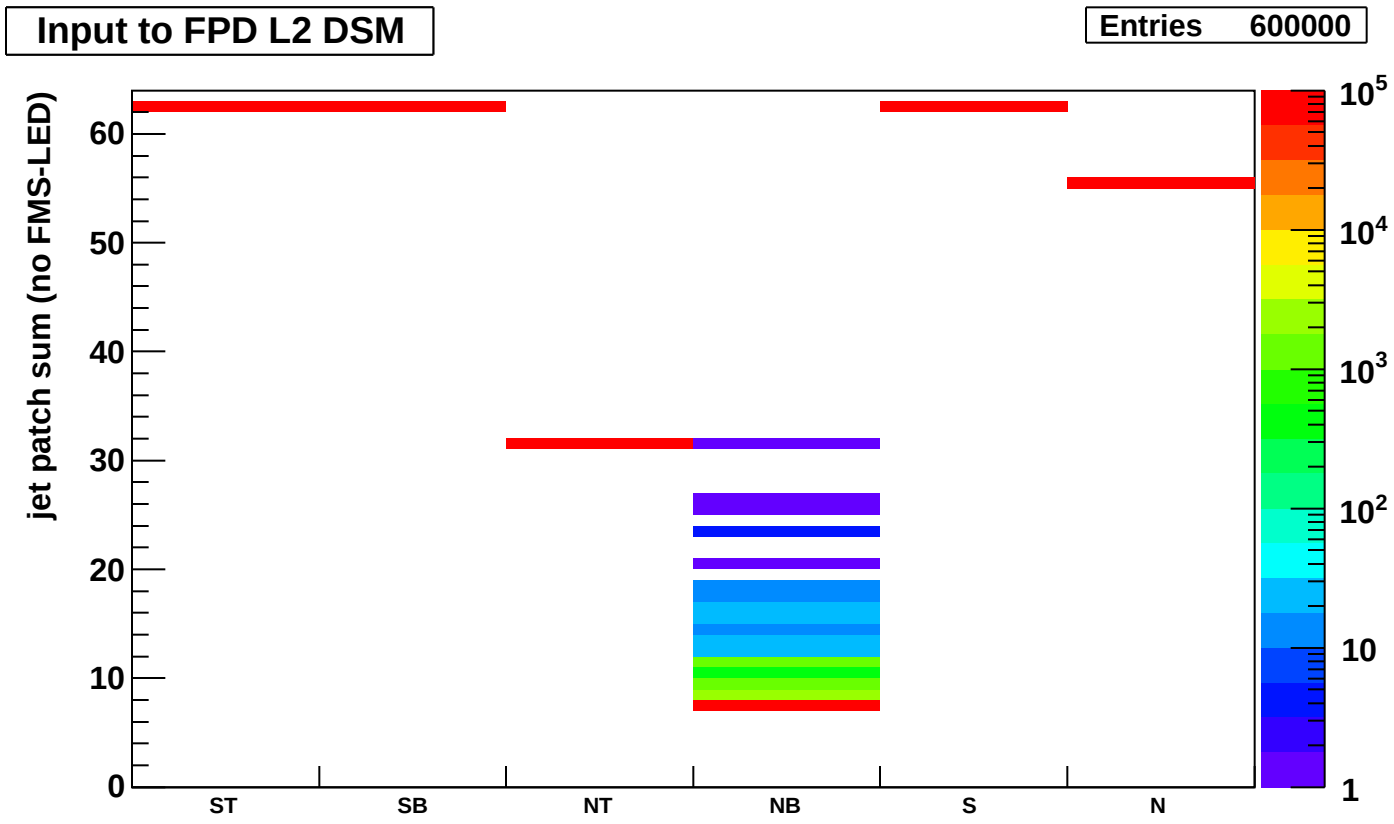

Input to FPD L2 DSM
Entries 1005459
quadrant sum - simulated
SMALL-ST
SMALL-S
SMALL-SB
SMALL-NT
SMALL-N
SMALL-NB
LARGE-ST
LARGE-S
LARGE-SB
LARGE-NT
LARGE-N
LARGE-NB

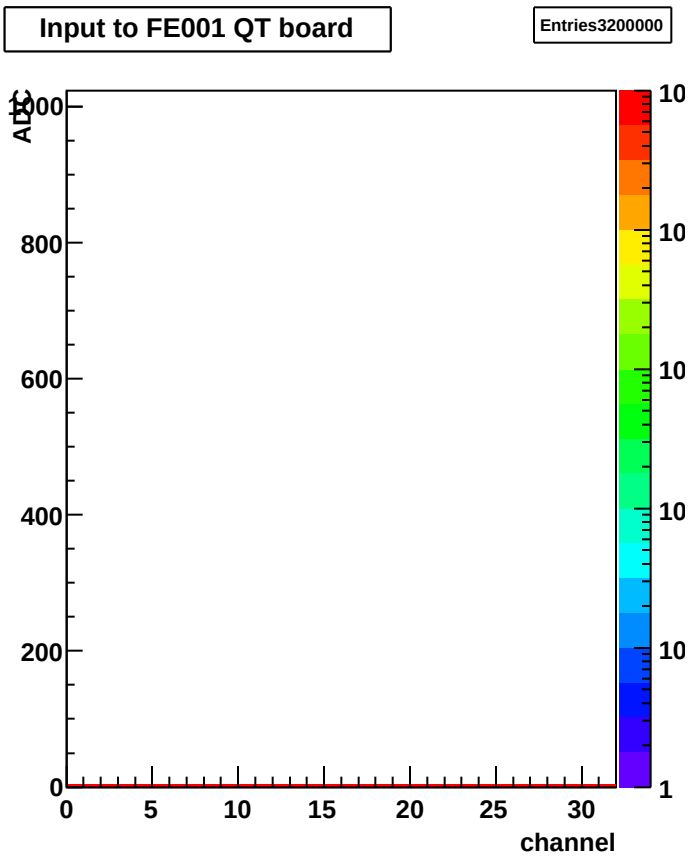

Input to FPD L2 DSM
Entries 300000
CL bits
100000
100000
100000
SMALL
LARGE-S
LARGE-N

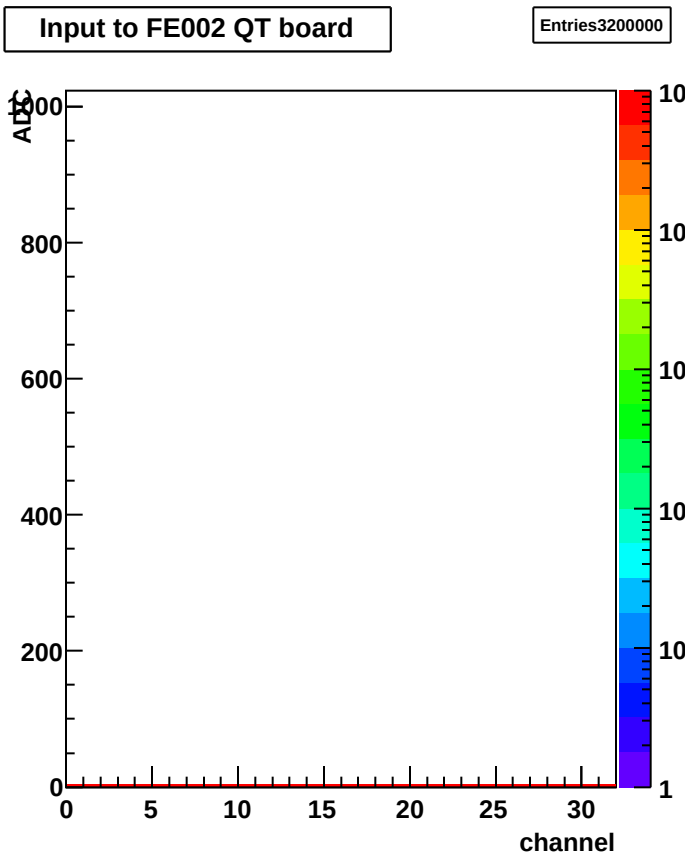

Input to FPD L2 DSM
Entries 300000
CL bits - simulated
100000
100000
100000
SMALL
LARGE-S
LARGE-N

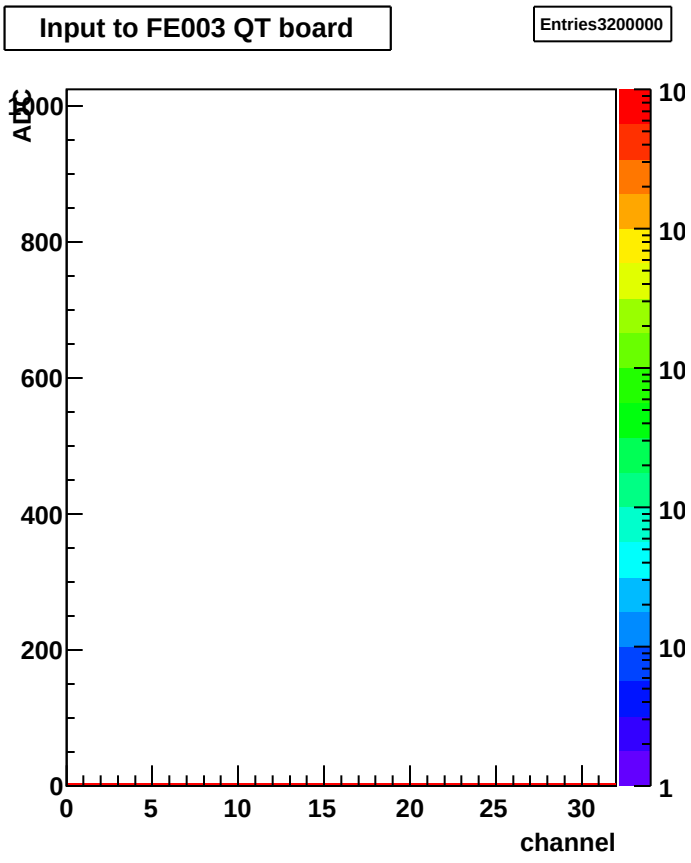

Input to FPD L2 DSM
Entries 300000
HT bits
100000
100000
100000
SMALL
LARGE-S
LARGE-N

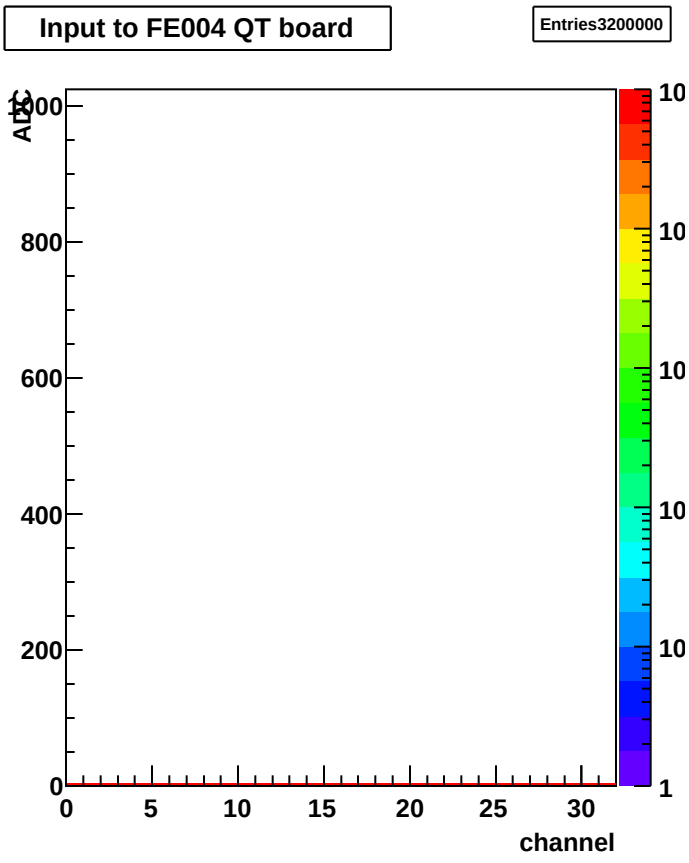

Input to FPD L2 DSM
Entries 300000
HT bits - simulated
100000
100000
100000
SMALL
LARGE-S
LARGE-N

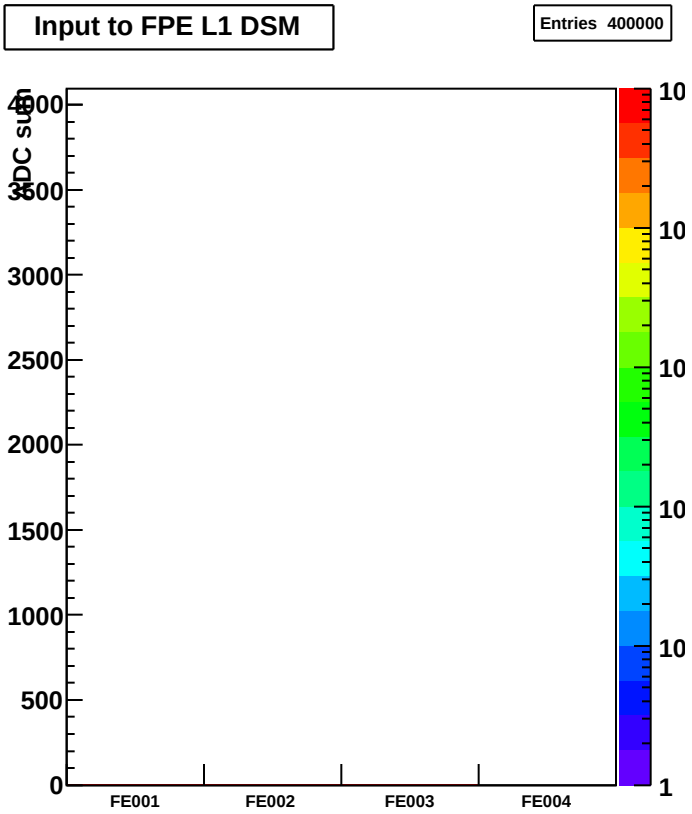

Input to FPD L2 DSM
Entries 600000
jet patch sum (no FMS-LED)
0
10
20
30
40
50
60
ST
SB
NT
NB
S
N
1
10
10^2
10^3
10^4
10^5

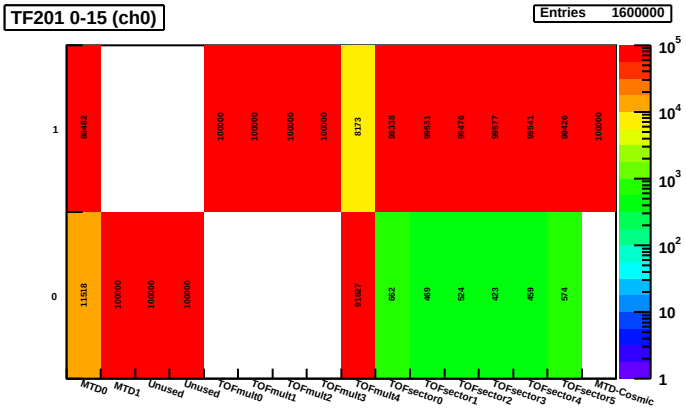

Input to FE001 QT board
Entries3200000
ADC
channel

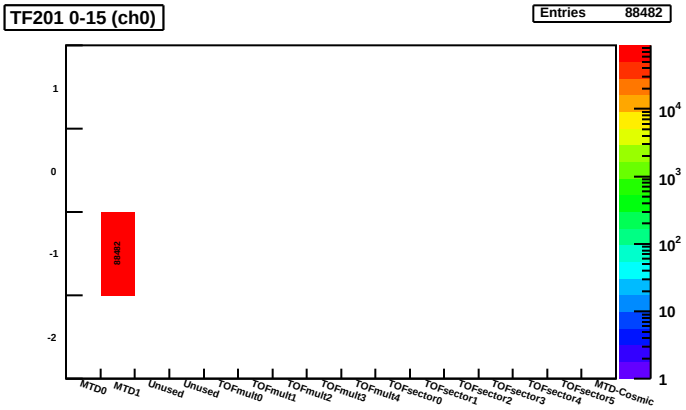

Input to FE002 QT board
Entries3200000
ADC
channel

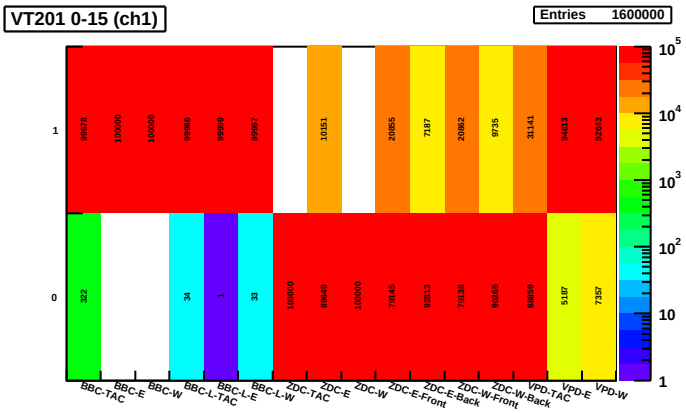

Input to FE003 QT board
Entries3200000
ADC
channel

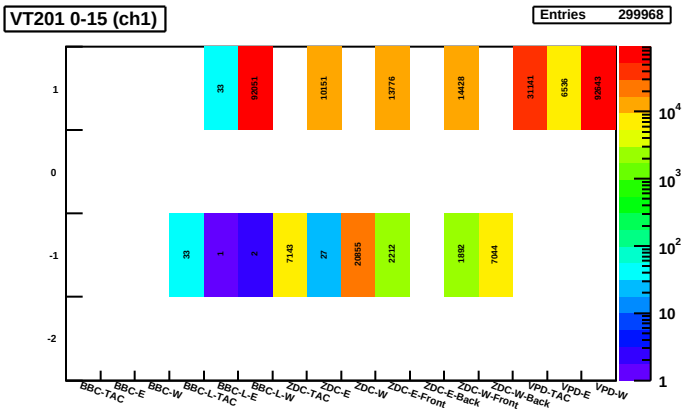

Input to FE004 QT board
Entries3200000
ADC
channel

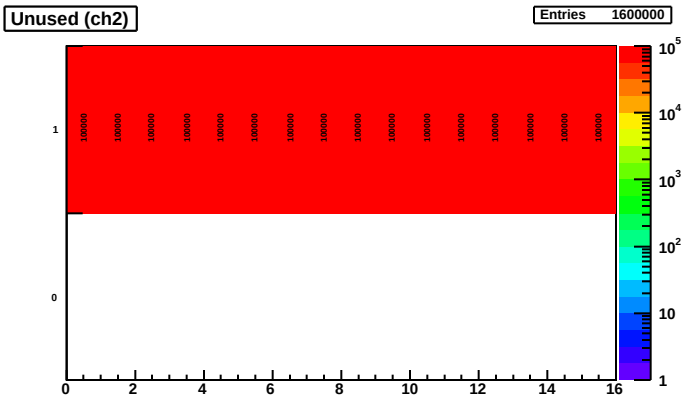

Input to FPE L1 DSM
Entries 400000
ADC sum
4000
3500
3000
2500
2000
1500
1000
500
0
FE001
FE002
FE003
FE004
10
10
10
10
10
1

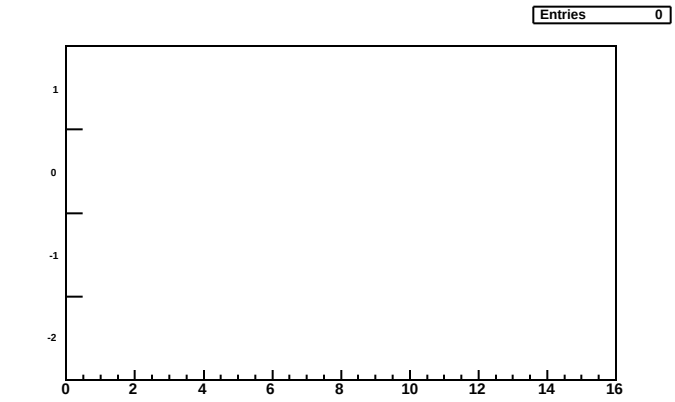

TF201 0-15 (ch0)
Entries 1600000
MTD0 MTD1 Unused Unused TOFmult0 TOFmult1 TOFmult2 TOFmult3 TOFmult4 TOFsector0 TOFsector1 TOFsector2 TOFsector3 TOFsector4 TOFsector5 MTD-Cosmic

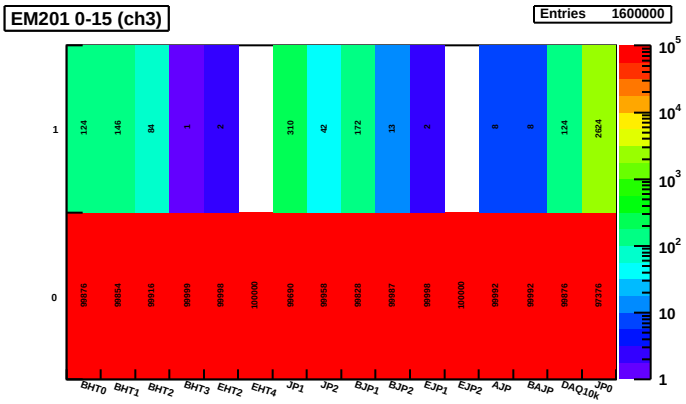

TF201 0-15 (ch0)
Entries 88482
MTD0 MTD1 Unused Unused TOFmult0 TOFmult1 TOFmult2 TOFmult3 TOFmult4 TOFsector0 TOFsector1 TOFsector2 TOFsector3 TOFsector4 TOFsector5 MTD-Cosmic

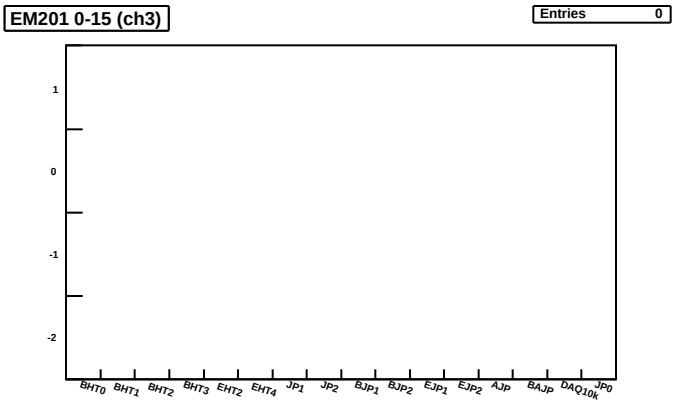

VT201 0-15 (ch1)
Entries 1600000
BBC-TAC BBC-E BBC-W BBC-L-TAC BBC-L-E BBC-L-W ZDC-TAC ZDC-E ZDC-W ZDC-E-Front ZDC-E-Back ZDC-W-Front ZDC-W-Back VPD-TAC VPD-E VPD-W

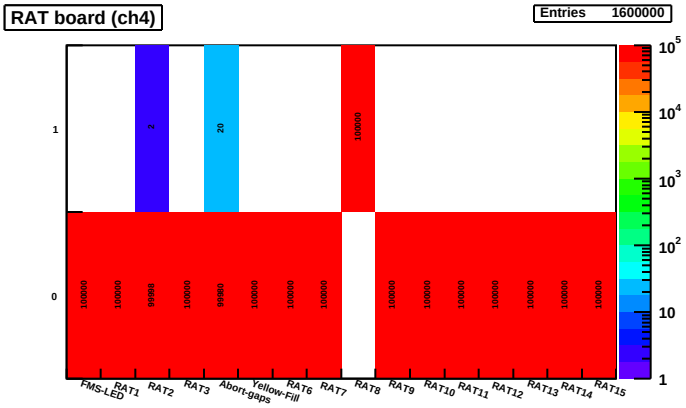

VT201 0-15 (ch1)
Entries 299968
BBC-TAC BBC-E BBC-W BBC-L-TAC BBC-L-E BBC-L-W ZDC-TAC ZDC-E ZDC-W ZDC-E-Front ZDC-E-Back ZDC-W-Front ZDC-W-Back VPD-TAC VPD-E VPD-W

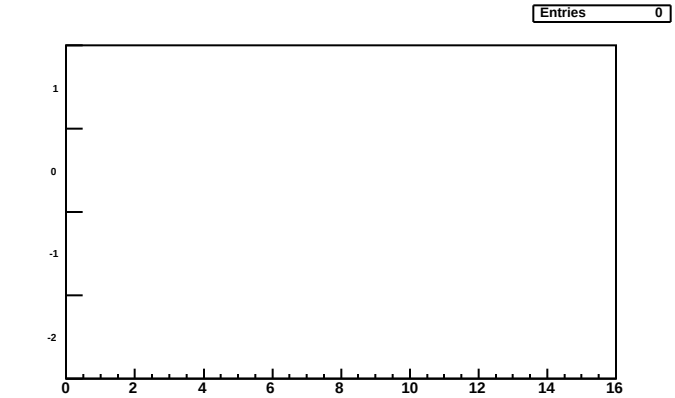

Unused (ch2)
Entries 1600000

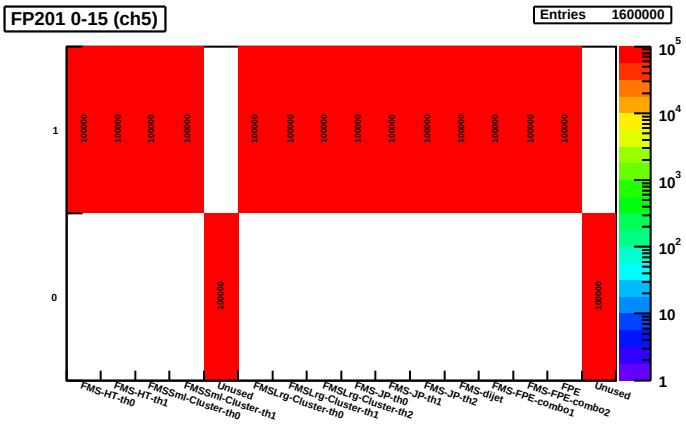

Entries 0

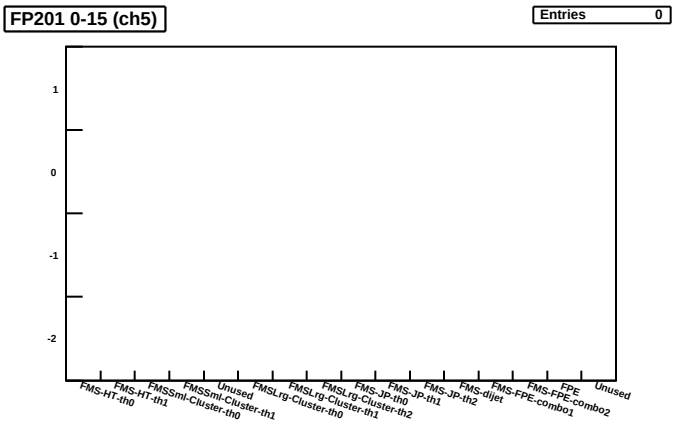

EM201 0-15 (ch3)
Entries 1600000
BHT0 BHT1 BHT2 BHT3 EHT2 EHT4 JP1 JP2 BJP1 BJP2 EJP1 EJP2 AJP BAJP DAQ10k JP0

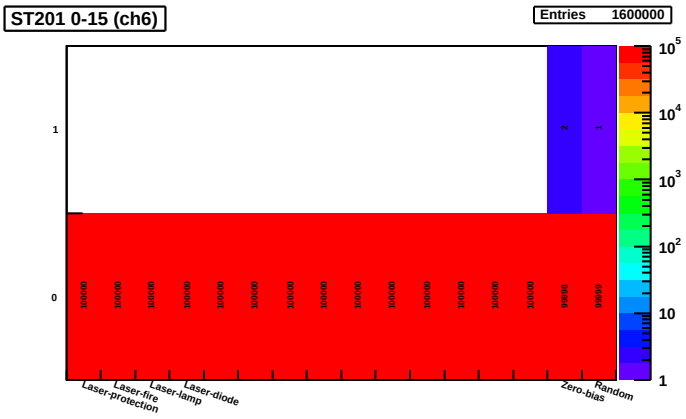

EM201 0-15 (ch3)
Entries 0
BHT0 BHT1 BHT2 BHT3 EHT2 EHT4 JP1 JP2 BJP1 BJP2 EJP1 EJP2 AJP BAJP DAQ10k JP0

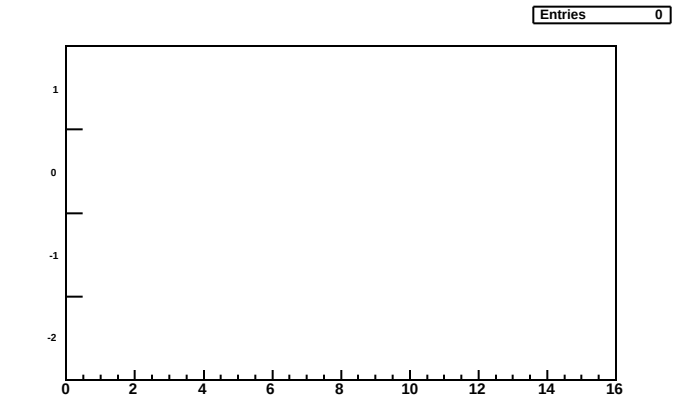

RAT board (ch4)
Entries 1600000
FMS-LED
RAT1
RAT2
RAT3
Abort-gaps
Yellow-Fill
RAT6
RAT7
RAT8
RAT9
RAT10
RAT11
RAT12
RAT13
RAT14
RAT15

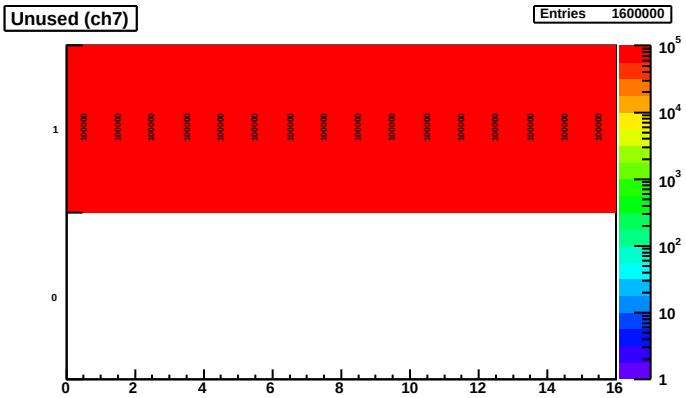

Entries 0

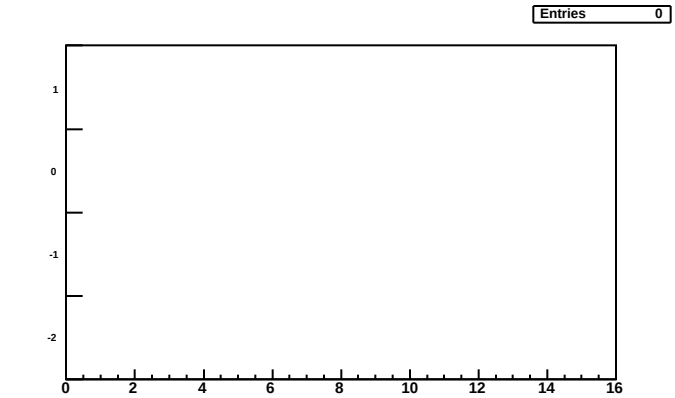

FP201 0-15 (ch5)
Entries 1600000
FMS-HT-th0
FMS-HT-th1
FMSSml-Cluster-th0
FMSSml-Cluster-th1
Unused
FMSLrg-Cluster-th0
FMSLrg-Cluster-th1
FMS-JP-th0
FMS-JP-th1
FMS-JP-th2
FMS-dijet
FMS-FPE-combo1
FPE
FMS-FPE-combo2
Unused


FP201 0-15 (ch5)
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 1600000
Laser-protection
Laser-fire
Laser-lamp
Laser-diode
Zero-bias
Random


Entries 0


Unused (ch7)
Entries 1600000


Entries 0