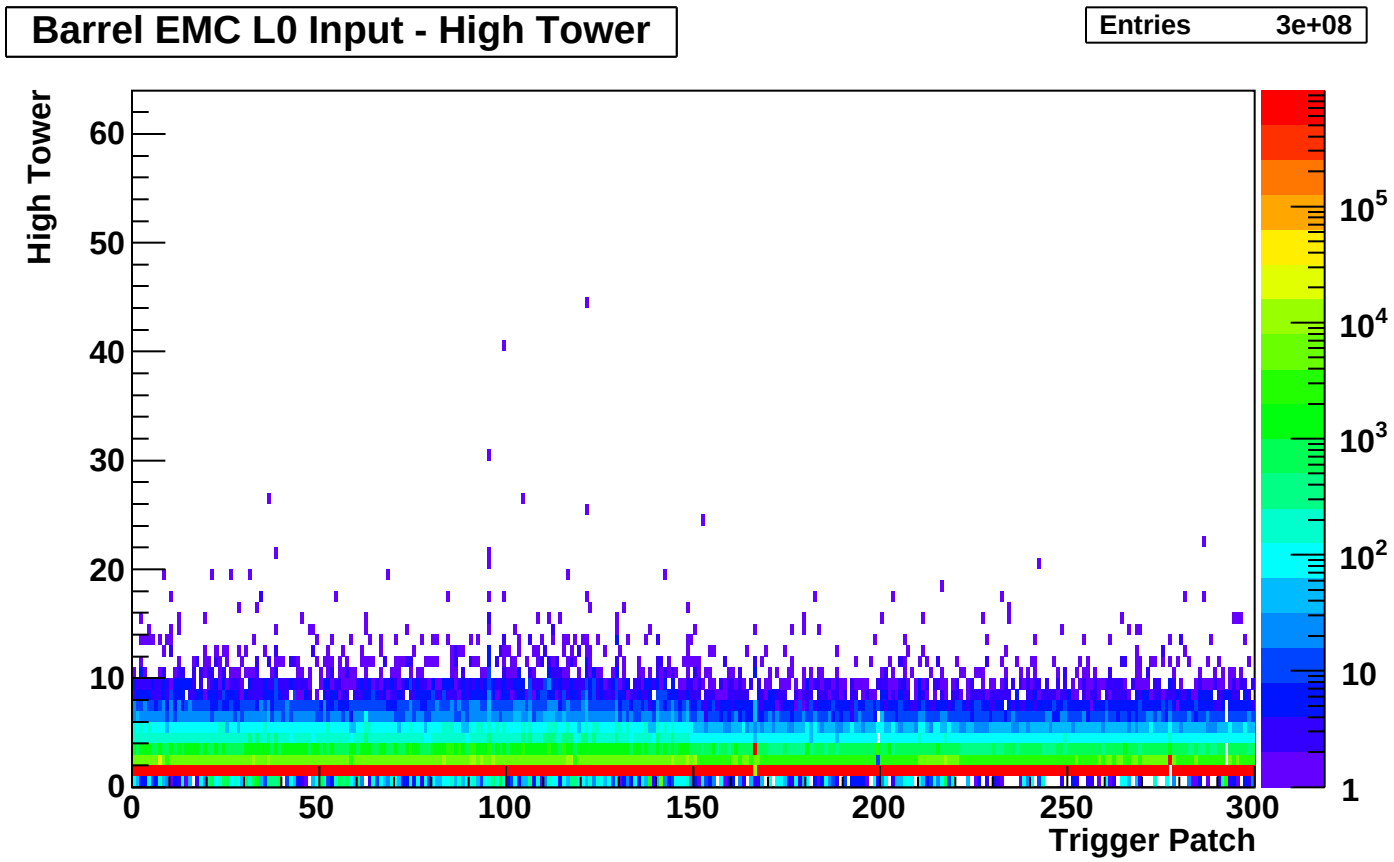
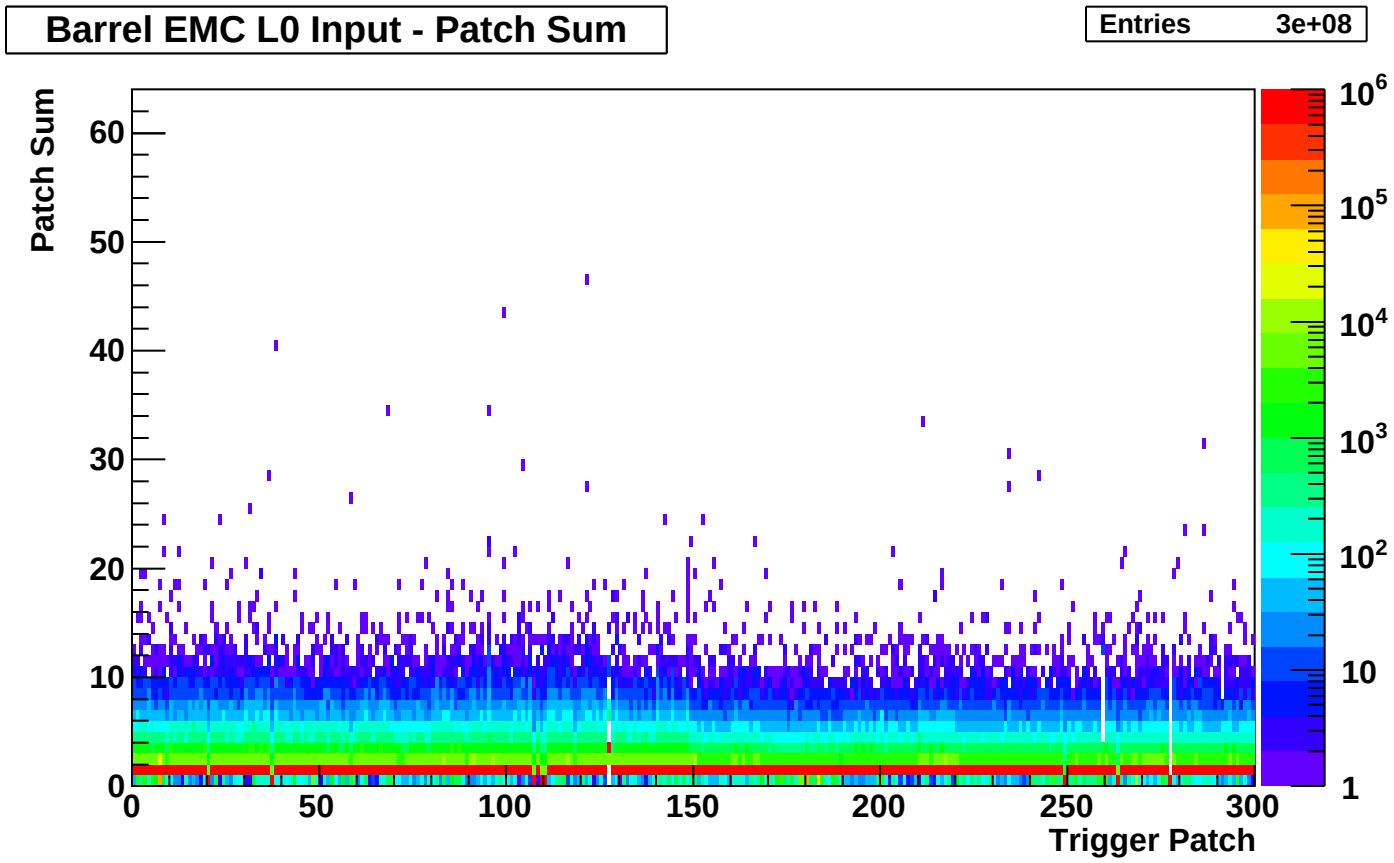
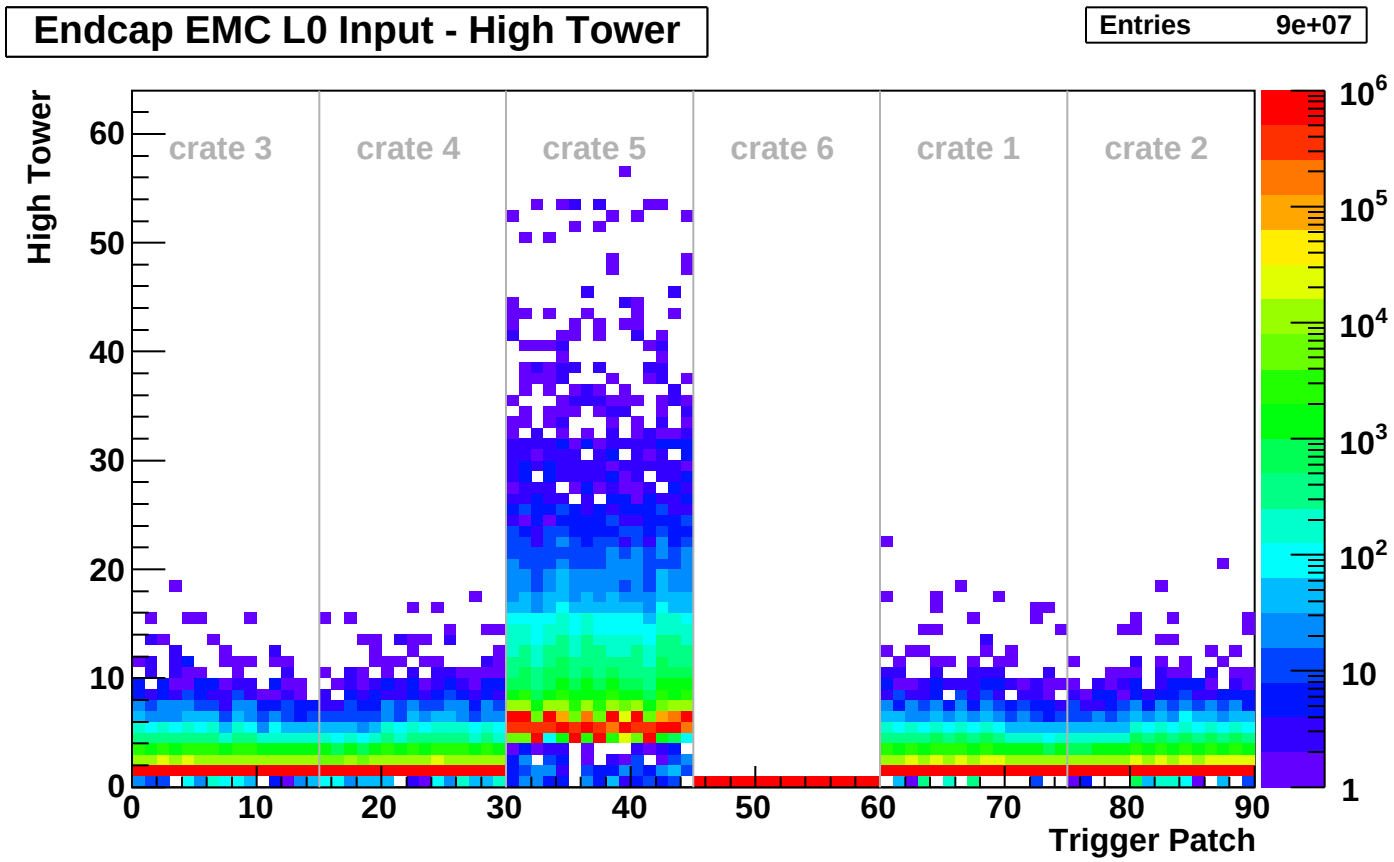
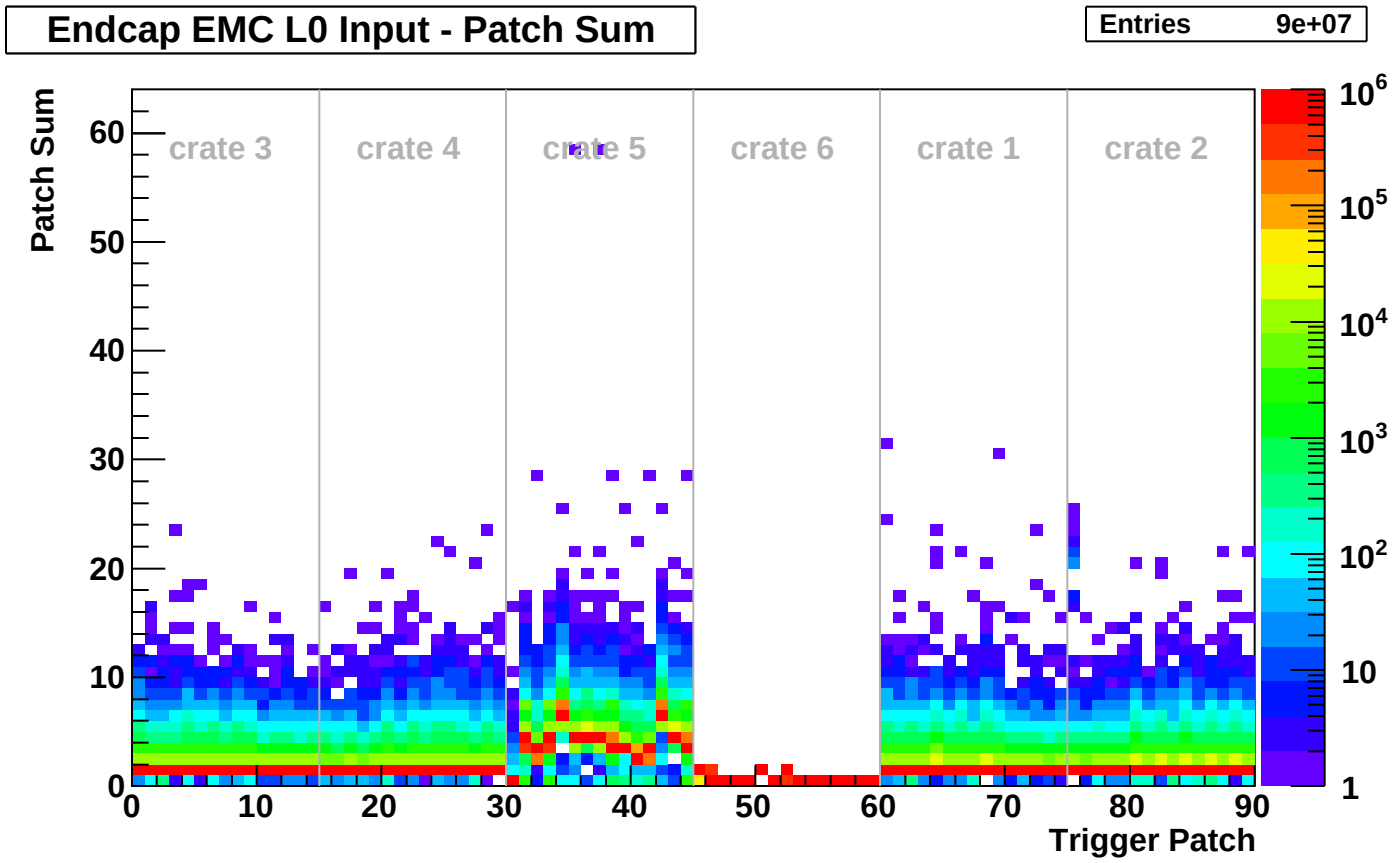
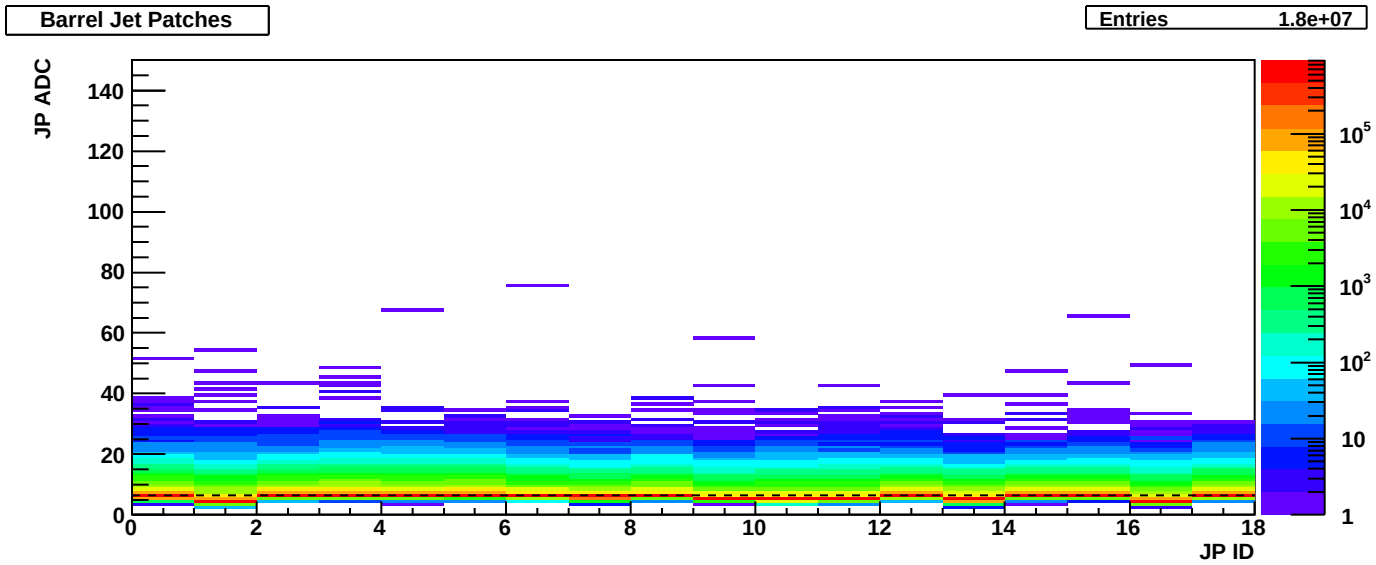
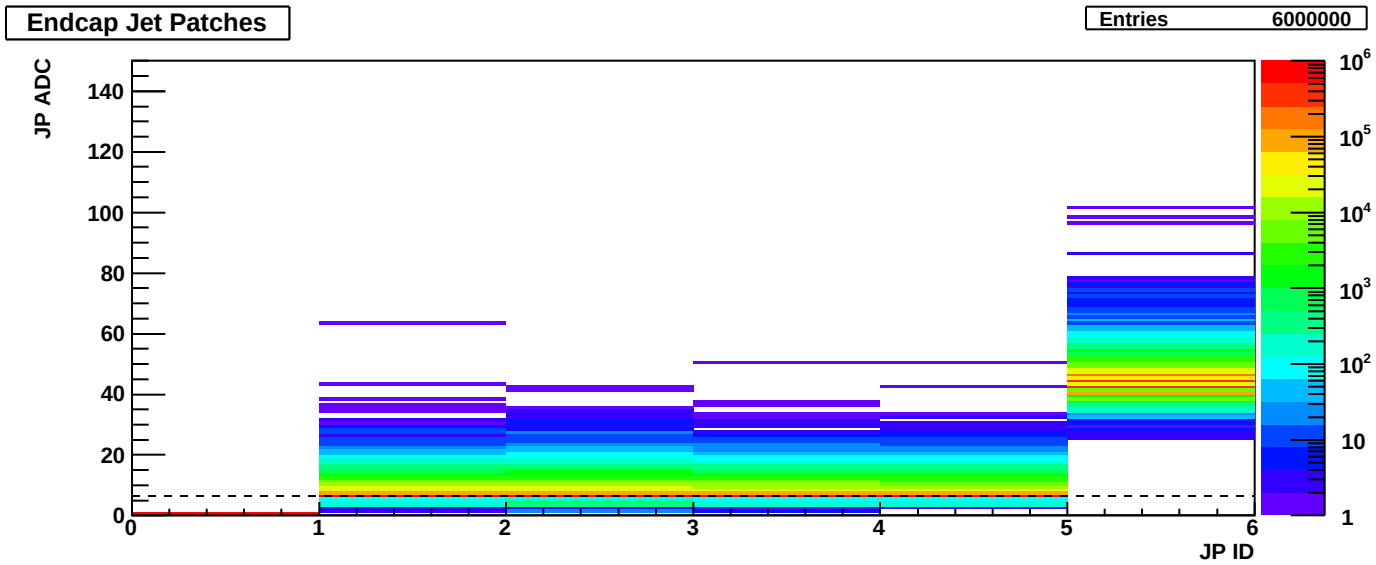

Barrel EMC L0 Input - High Tower
Entries 3e+08
High Tower
Trigger Patch
0
10
20
30
40
50
60
0
50
100
150
200
250
300
1
10
10^2
10^3
10^4
10^5

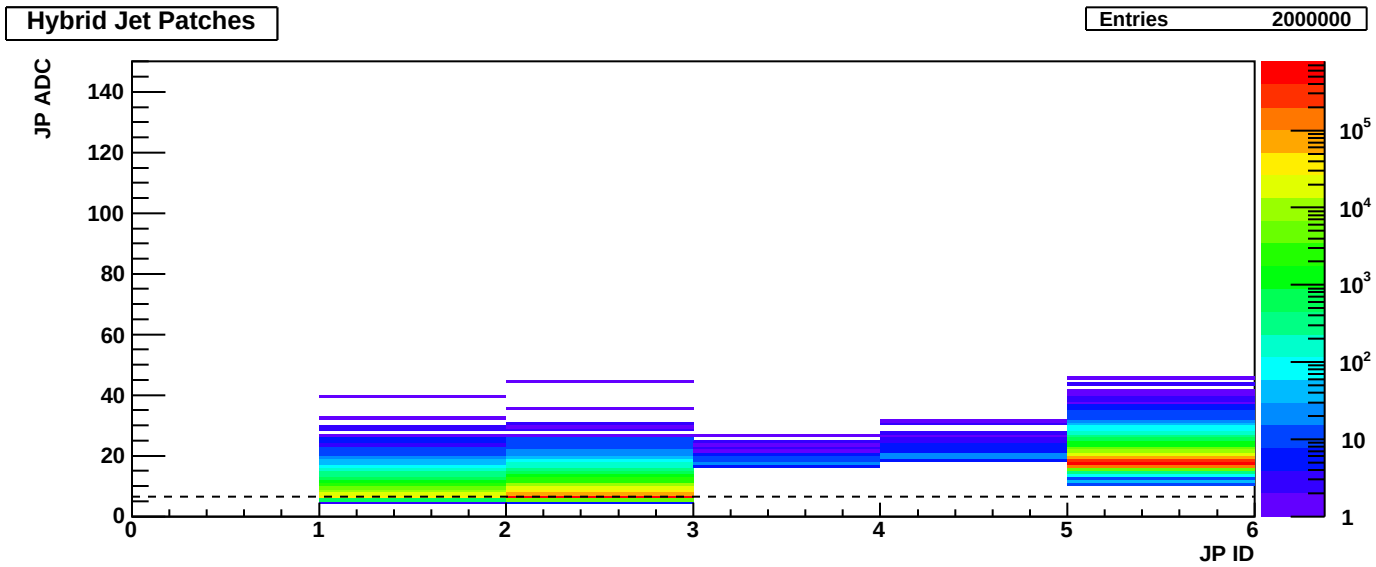

Barrel EMC L0 Input - Patch Sum
Entries 3e+08
Patch Sum
Trigger Patch
0
10
20
30
40
50
60
0
50
100
150
200
250
300
1
10
10^2
10^3
10^4
10^5
10^6

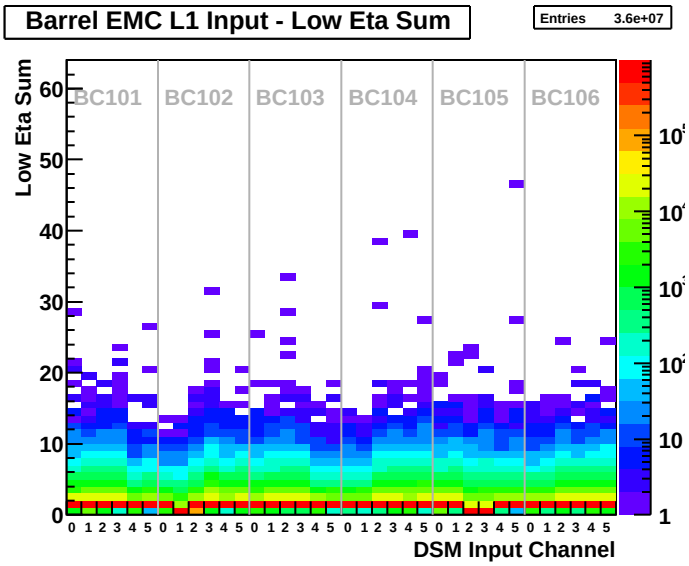

Endcap EMC L0 Input - High Tower
Entries 9e+07
High Tower
crate 3
crate 4
crate 5
crate 6
crate 1
crate 2
Trigger Patch

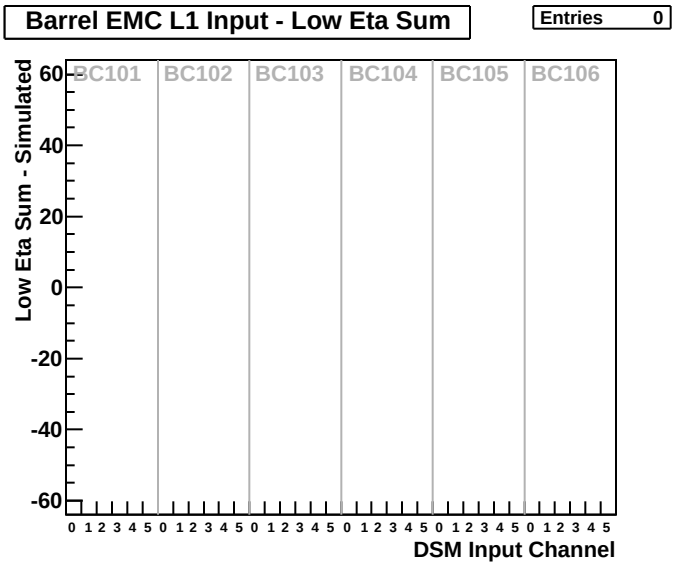

Endcap EMC L0 Input - Patch Sum
Entries 9e+07
Patch Sum
crate 3
crate 4
crate 5
crate 6
crate 1
crate 2
Trigger Patch

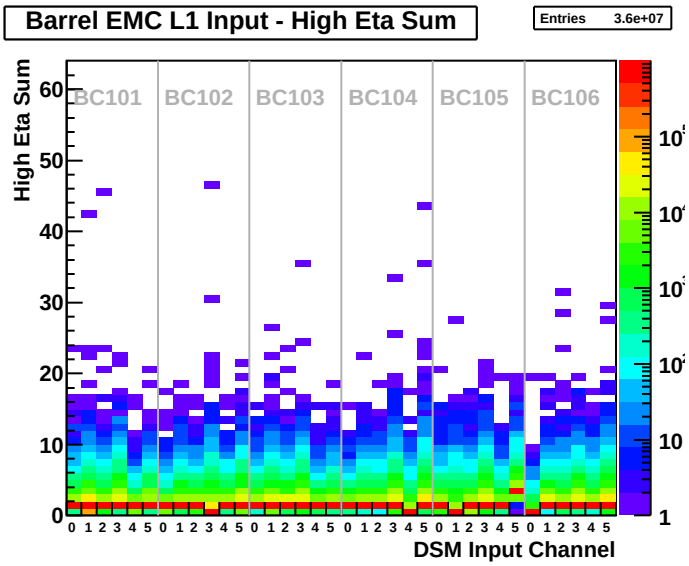

Barrel Jet Patches
Entries 1.8e+07
JP ADC
JP ID

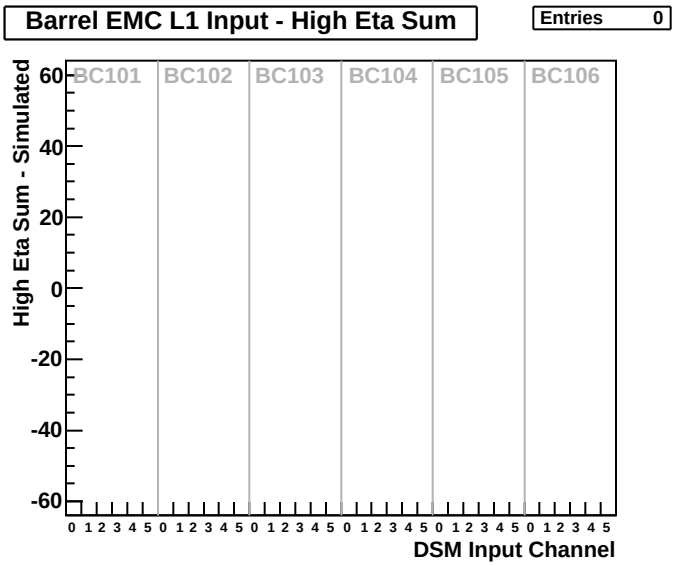

Endcap Jet Patches
Entries 6000000
JP ADC
JP ID

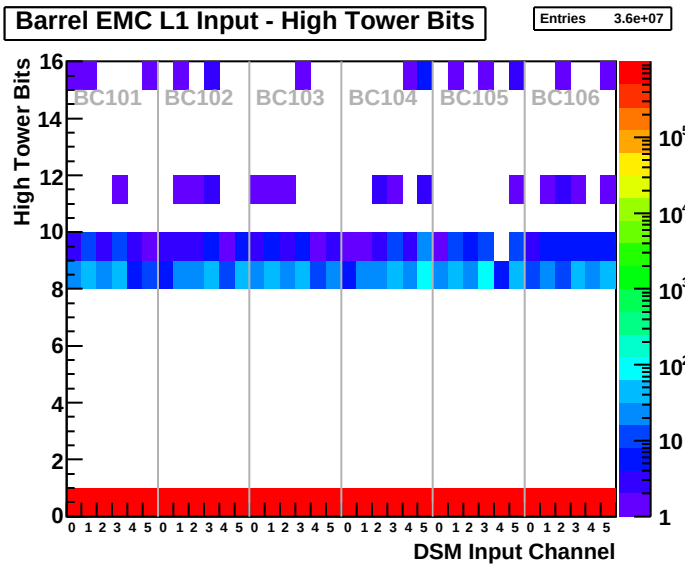

Hybrid Jet Patches
Entries 2000000
JP ADC
JP ID

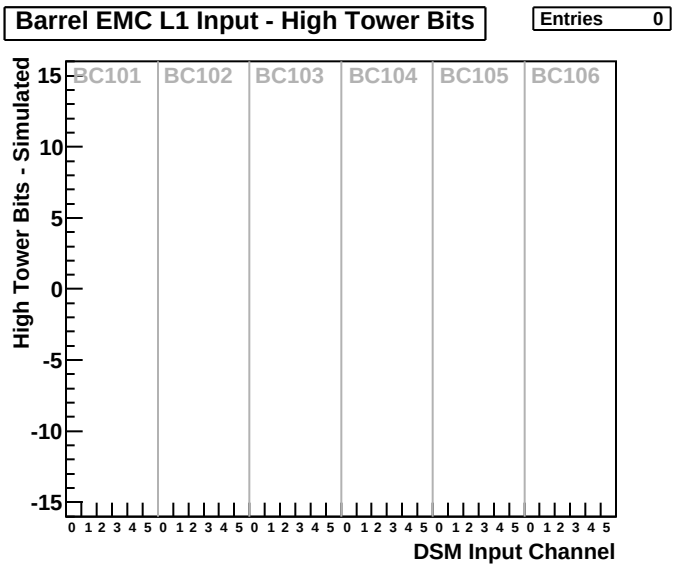

Barrel EMC L1 Input - Low Eta Sum
Entries 3.6e+07
Low Eta Sum
BC101 BC102 BC103 BC104 BC105 BC106
DSM Input Channel

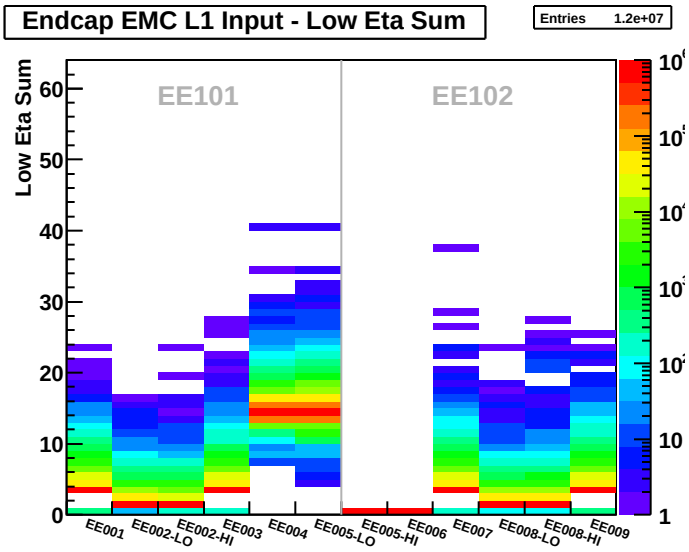

Barrel EMC L1 Input - Low Eta Sum
Entries 0
Low Eta Sum - Simulated
BC101 BC102 BC103 BC104 BC105 BC106
DSM Input Channel

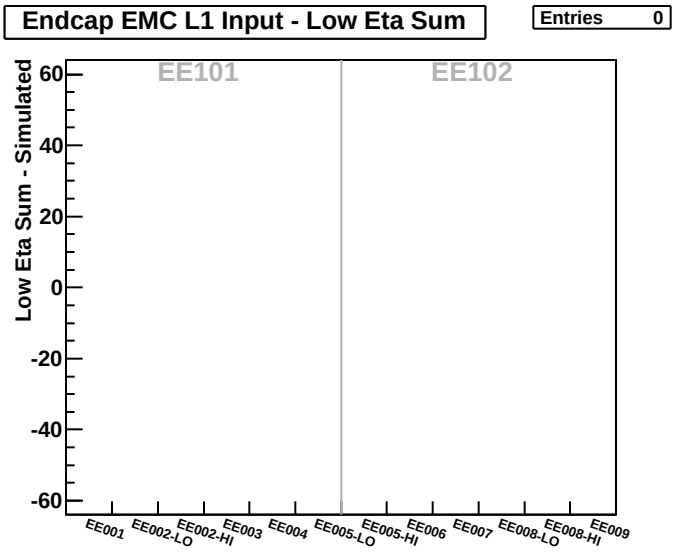

Barrel EMC L1 Input - High Eta Sum
Entries 3.6e+07
High Eta Sum
BC101 BC102 BC103 BC104 BC105 BC106
DSM Input Channel

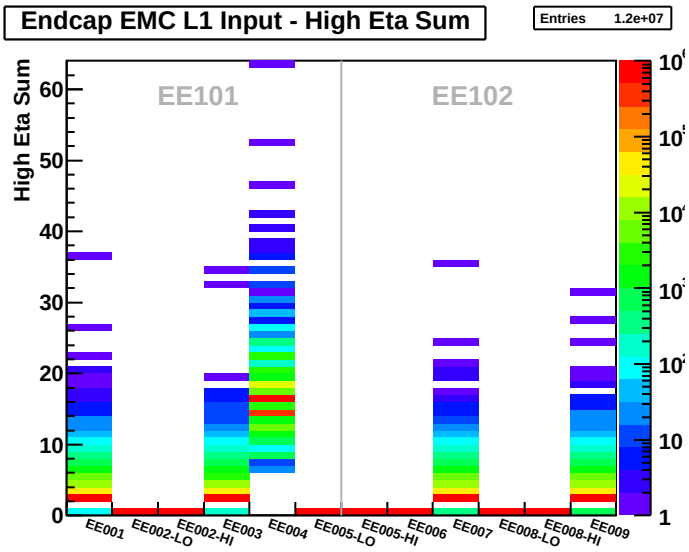

Barrel EMC L1 Input - High Eta Sum
Entries 0
High Eta Sum - Simulated
BC101 BC102 BC103 BC104 BC105 BC106
DSM Input Channel

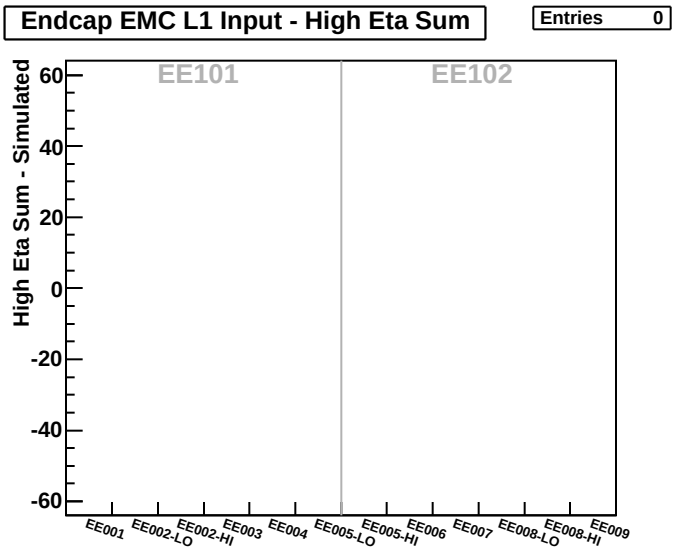

Barrel EMC L1 Input - High Tower Bits
Entries 3.6e+07
High Tower Bits
BC101 BC102 BC103 BC104 BC105 BC106
DSM Input Channel

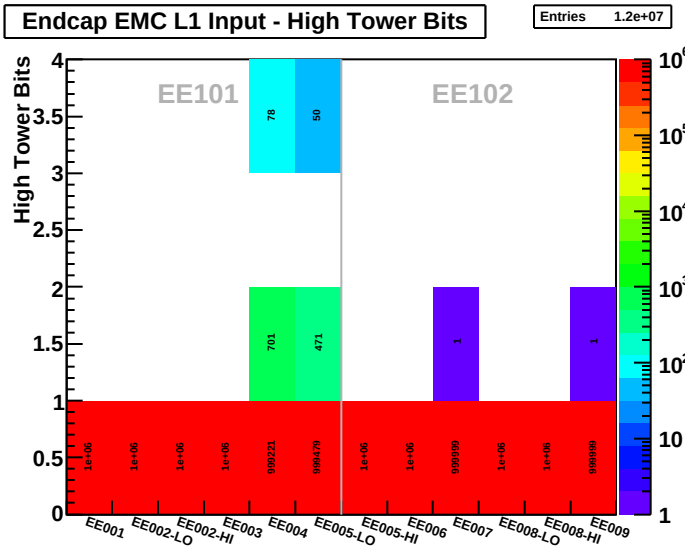

Barrel EMC L1 Input - High Tower Bits
Entries 0
High Tower Bits - Simulated
BC101 BC102 BC103 BC104 BC105 BC106
DSM Input Channel

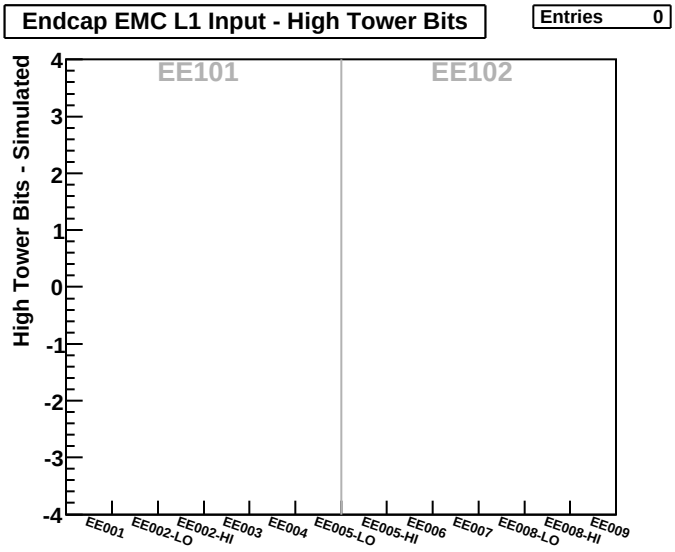

Endcap EMC L1 Input - Low Eta Sum
Entries 1.2e+07
Low Eta Sum
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

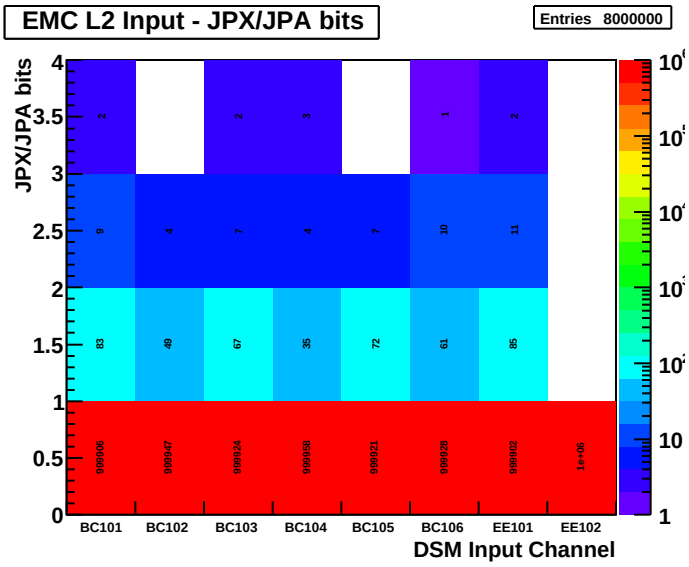

Endcap EMC L1 Input - Low Eta Sum
Entries 0
Low Eta Sum - Simulated
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

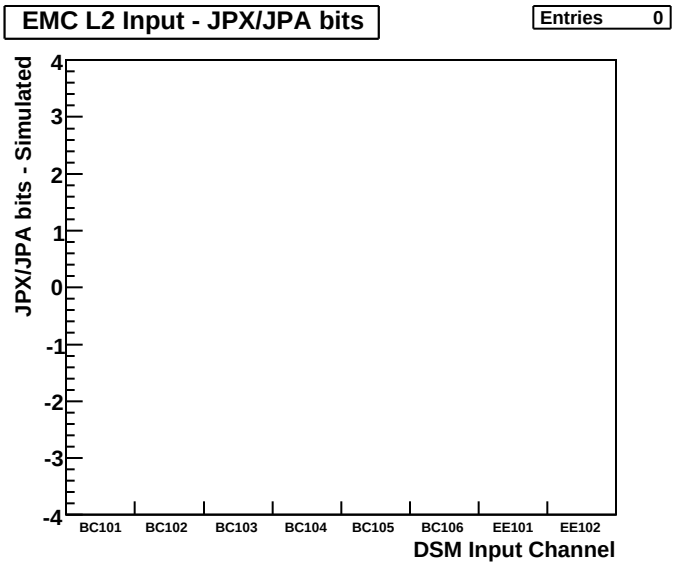

Endcap EMC L1 Input - High Eta Sum
Entries 1.2e+07
High Eta Sum
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

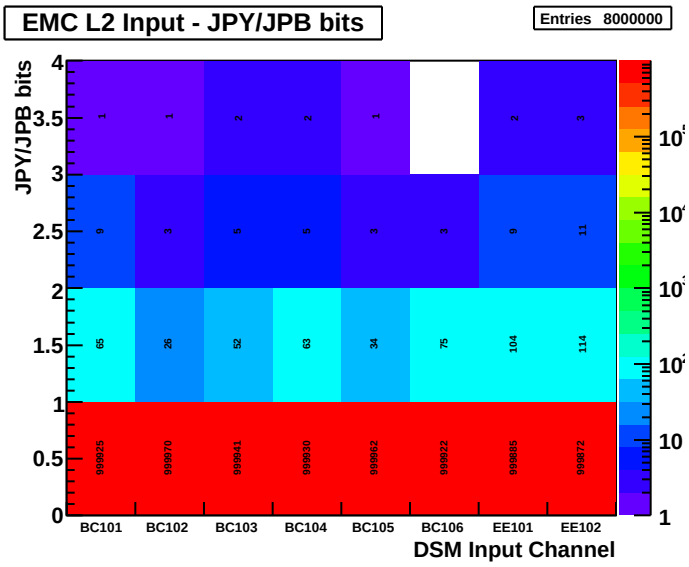

Endcap EMC L1 Input - High Eta Sum
Entries 0
High Eta Sum - Simulated
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

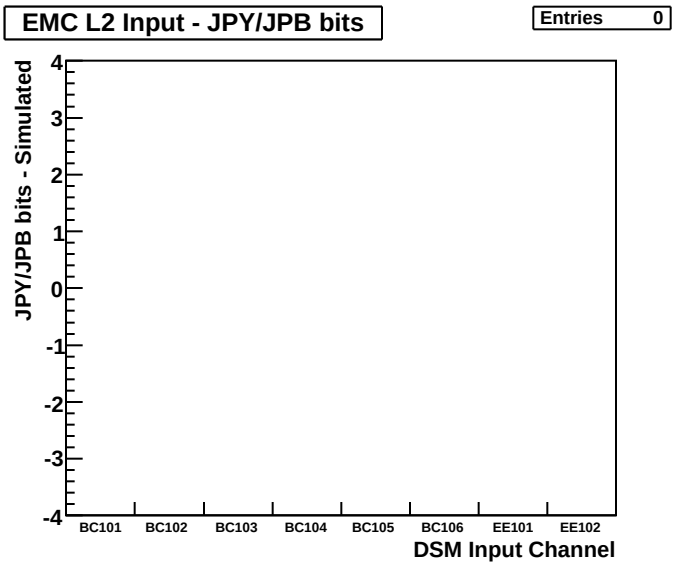

Endcap EMC L1 Input - High Tower Bits
Entries 1.2e+07
High Tower Bits
EE101
EE102
78
50
701
471
1
1
1e+06
999221
999479
999999
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

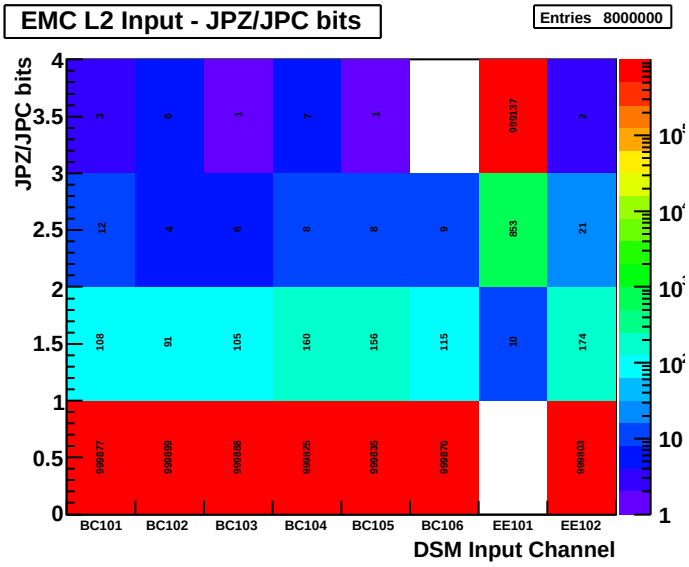

Endcap EMC L1 Input - High Tower Bits
Entries 0
High Tower Bits - Simulated
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

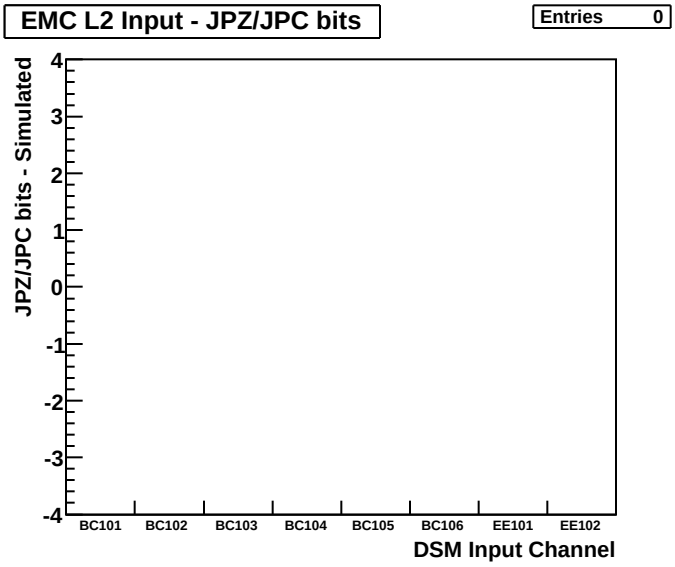

EMC L2 Input - JPX/JPA bits
Entries 8000000
JPX/JPA bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

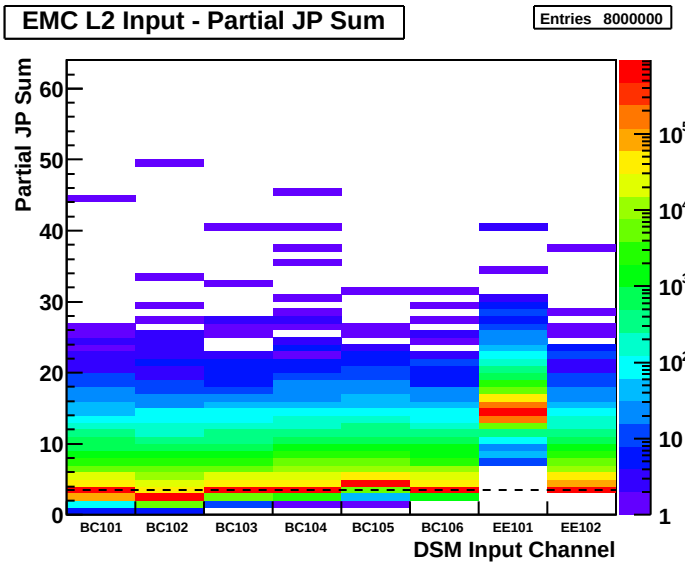

EMC L2 Input - JPX/JPA bits
Entries 0
JPX/JPA bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

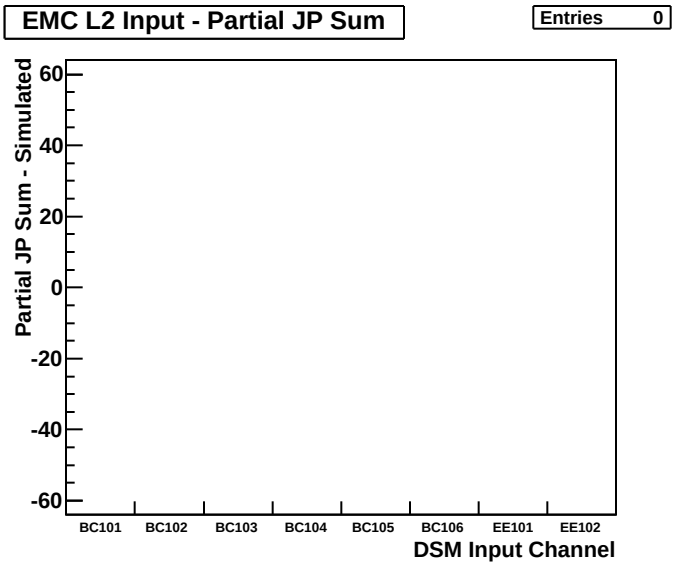

EMC L2 Input - JPY/JPB bits
Entries 8000000
JPY/JPB bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

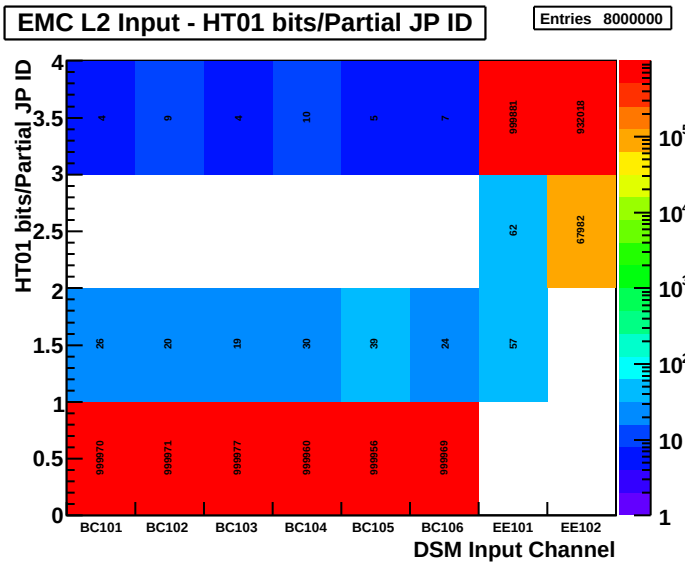

EMC L2 Input - JPY/JPB bits
Entries 0
JPY/JPB bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

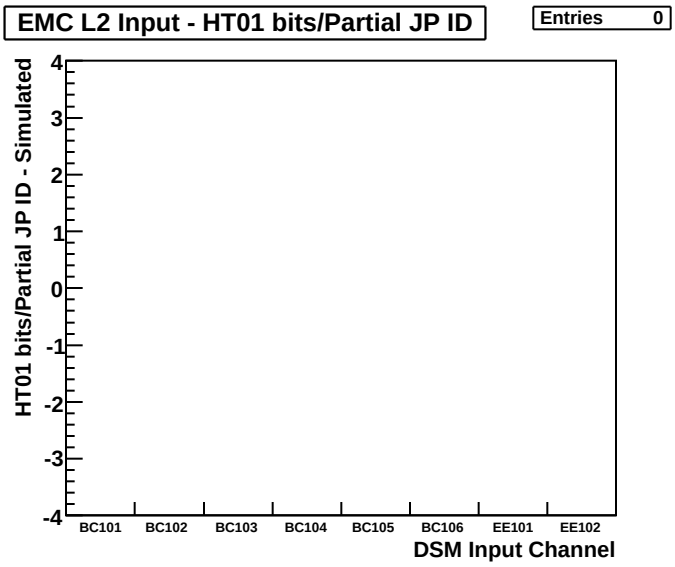

EMC L2 Input - JPZ/JPC bits
Entries 8000000
JPZ/JPC bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

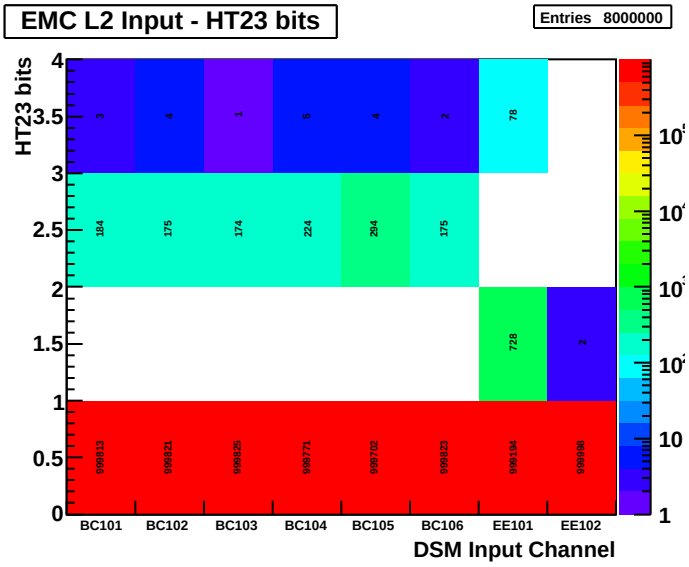

EMC L2 Input - JPZ/JPC bits
Entries 0
JPZ/JPC bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

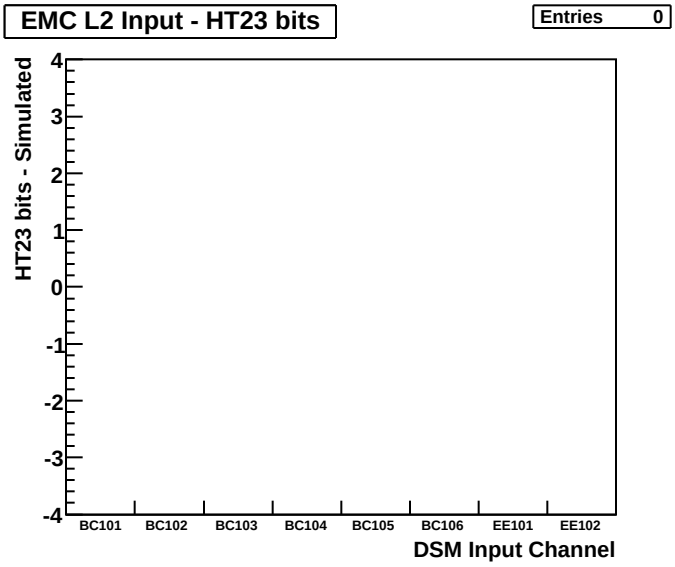

EMC L2 Input - Partial JP Sum
Entries 8000000
Partial JP Sum
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

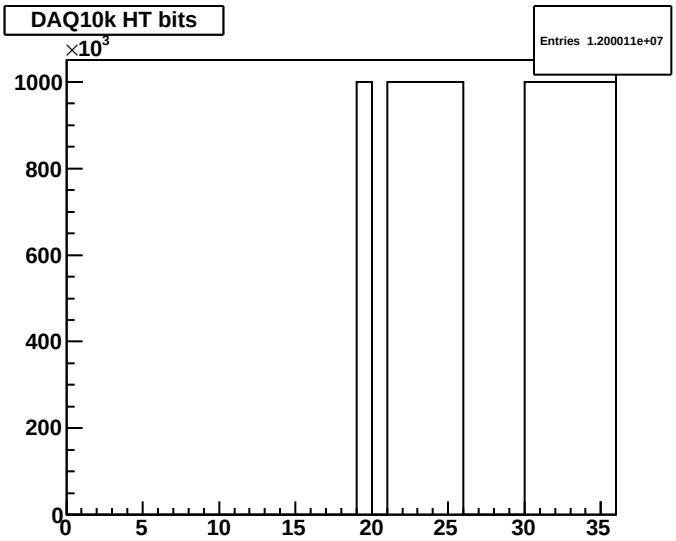

EMC L2 Input - Partial JP Sum
Entries 0
Partial JP Sum - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

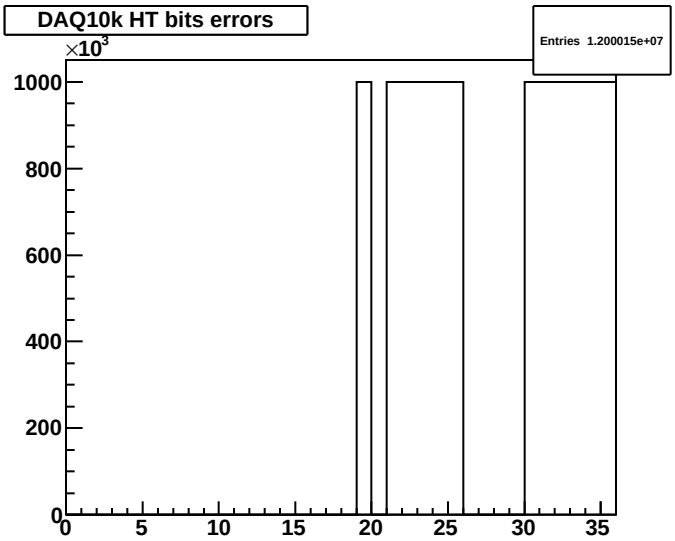

EMC L2 Input - HT01 bits/Partial JP ID
Entries 8000000
HT01 bits/Partial JP ID
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

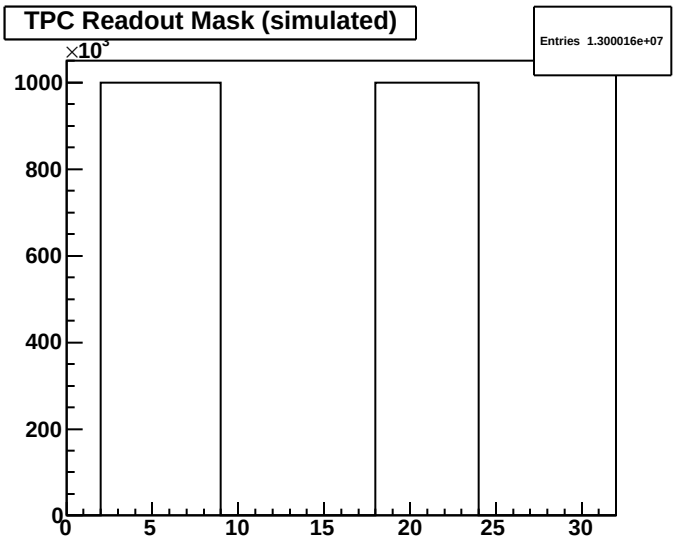

EMC L2 Input - HT01 bits/Partial JP ID
Entries 0
HT01 bits/Partial JP ID - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

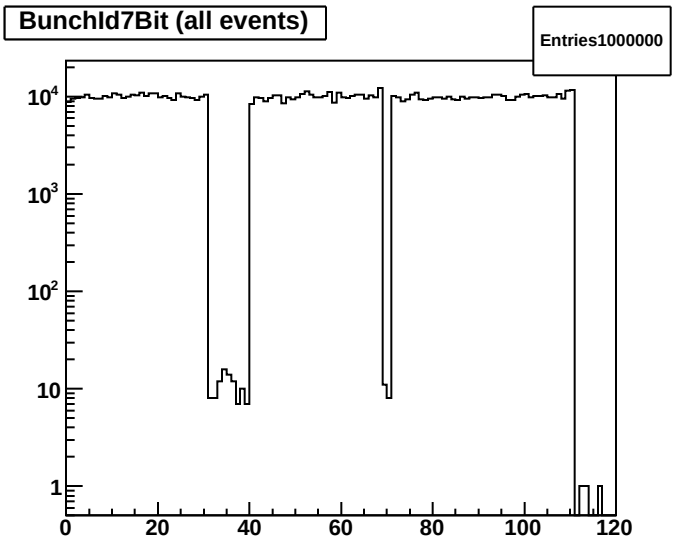

EMC L2 Input - HT23 bits
Entries 8000000
HT23 bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

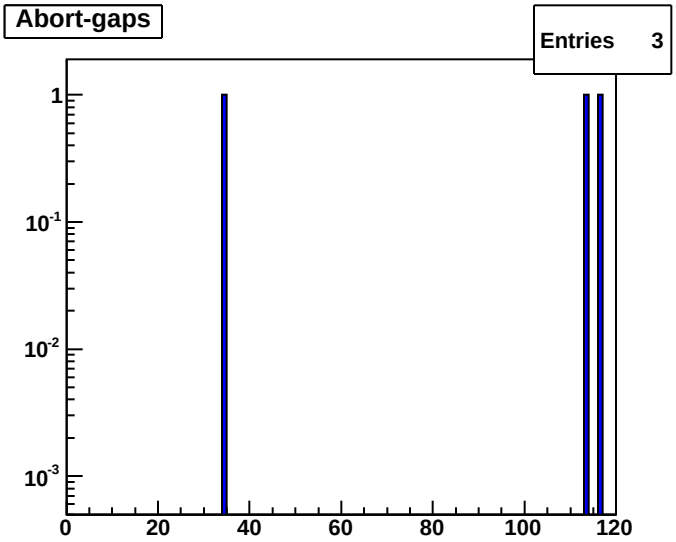

EMC L2 Input - HT23 bits
Entries 0
HT23 bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

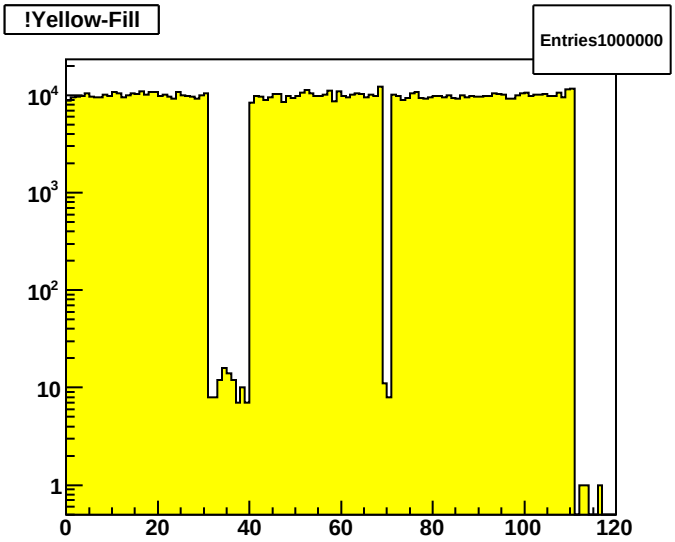

DAQ10k HT bits
Entries 1.200011e+07
×10^3
1000
800
600
400
200
0
0 5 10 15 20 25 30 35

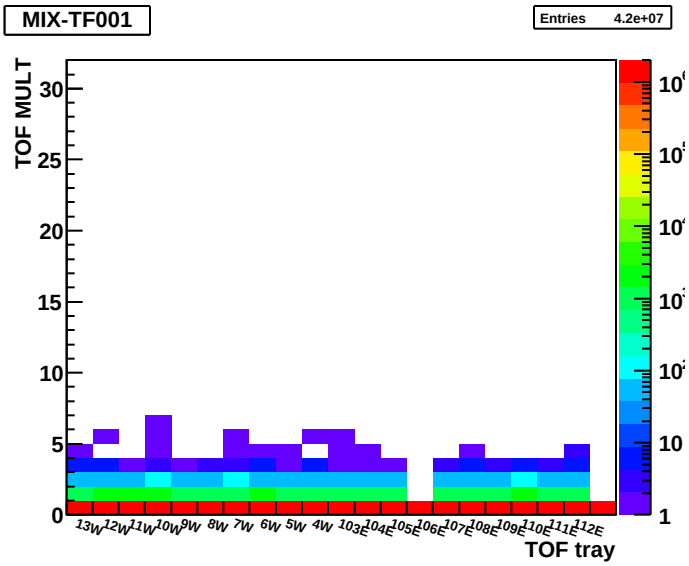

DAQ10k HT bits errors
Entries 1.200015e+07
×10^3
1000
800
600
400
200
0
0 5 10 15 20 25 30 35

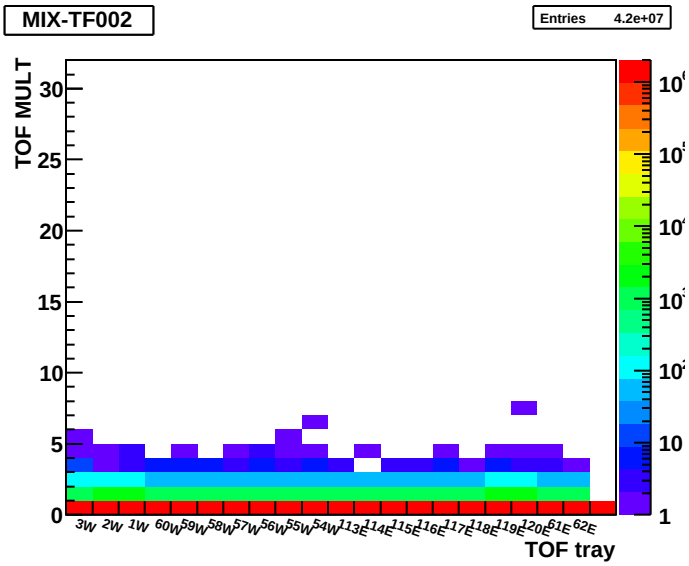

TPC Readout Mask (simulated)
Entries 1.300016e+07
×10^3
1000
800
600
400
200
0
0 5 10 15 20 25 30

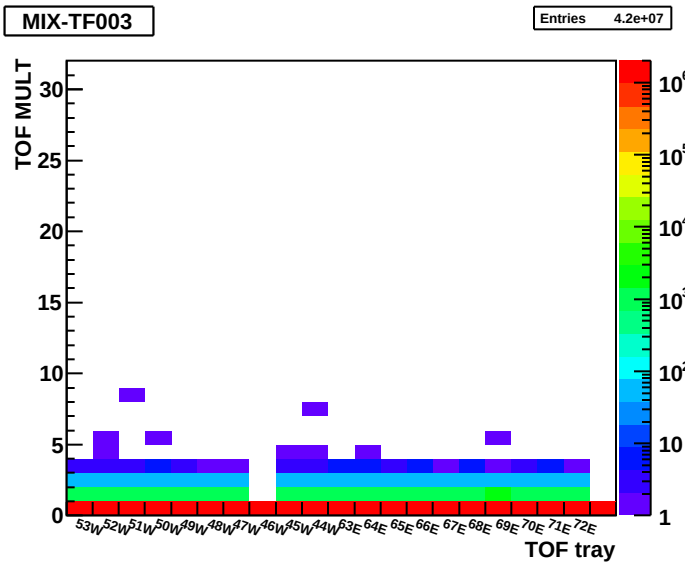

BunchId7Bit (all events)
Entries1000000
10^4
10^3
10^2
10
1
0 20 40 60 80 100 120

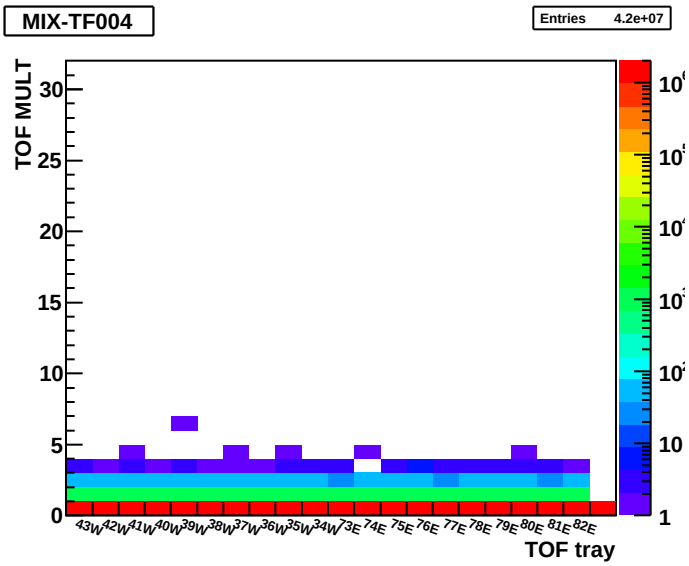

Abort-gaps
Entries 3
1
10^-1
10^-2
10^-3
0 20 40 60 80 100 120

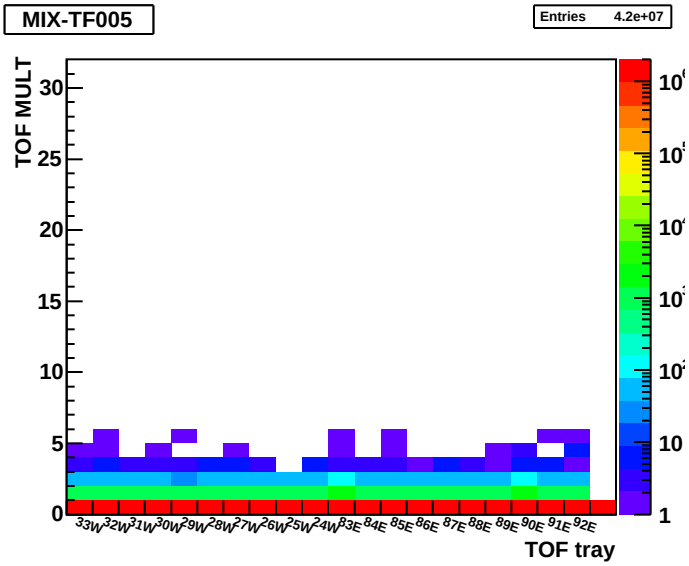

!Yellow-Fill
Entries1000000
10^4
10^3
10^2
10
1
0 20 40 60 80 100 120

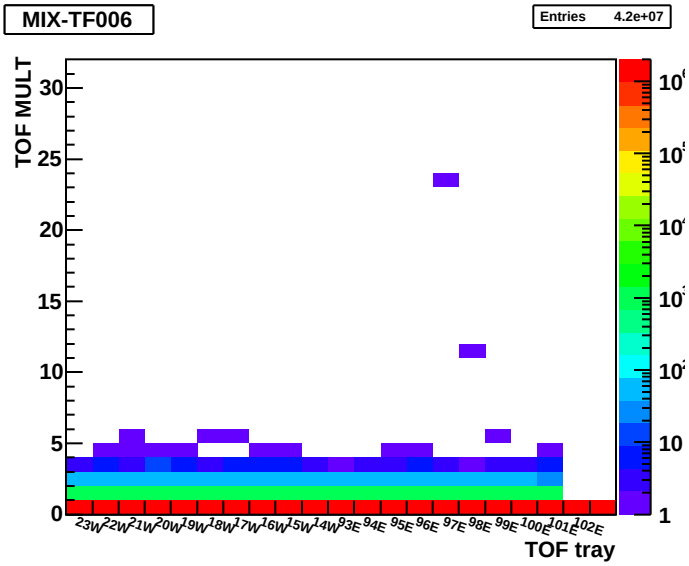

MIX-TF001
Entries 4.2e+07
TOF MULT
TOF tray

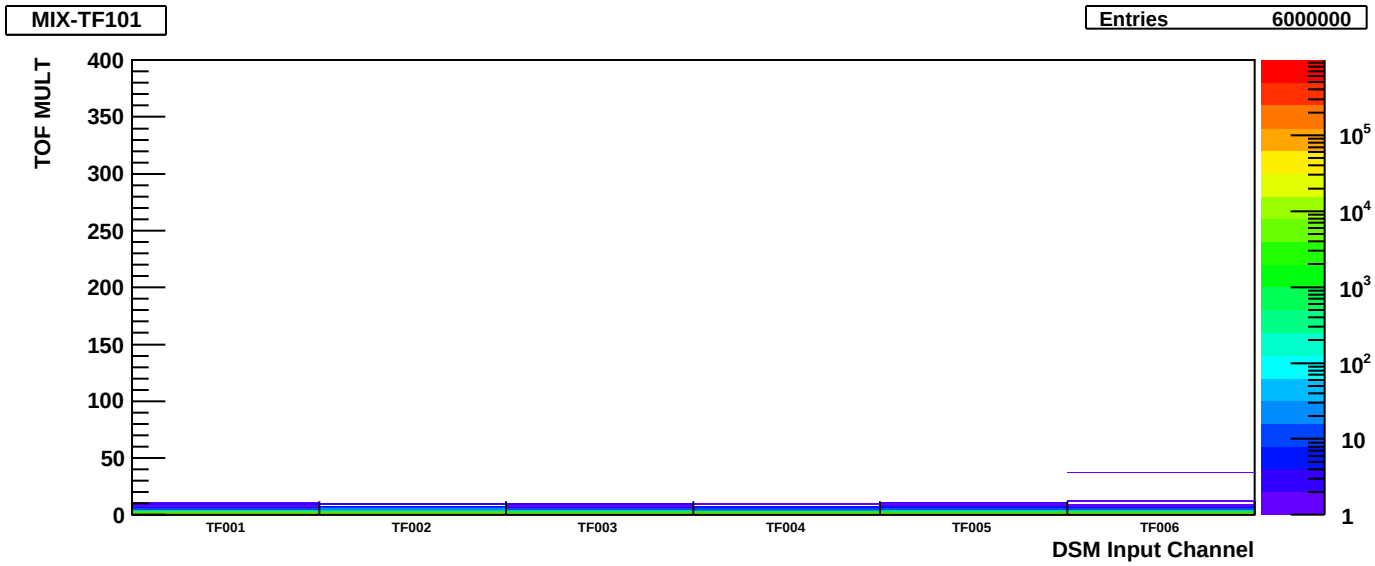

MIX-TF002
Entries 4.2e+07
TOF MULT
TOF tray

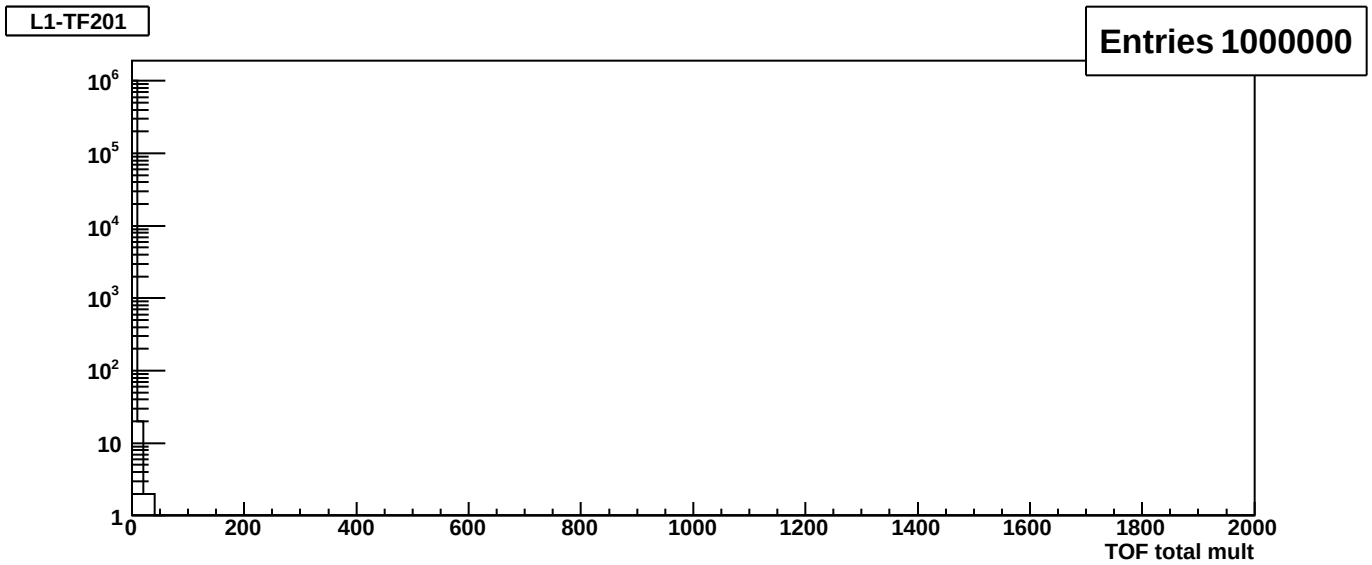

MIX-TF003
Entries 4.2e+07
TOF MULT
TOF tray

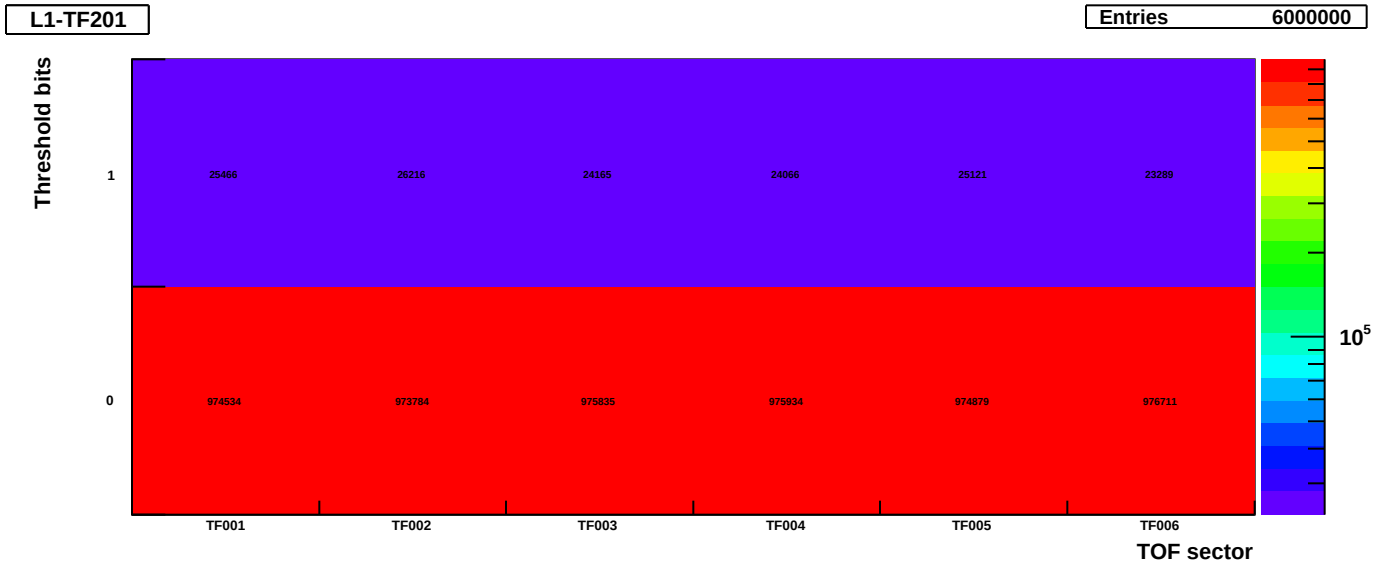

MIX-TF004
Entries 4.2e+07
TOF MULT
TOF tray

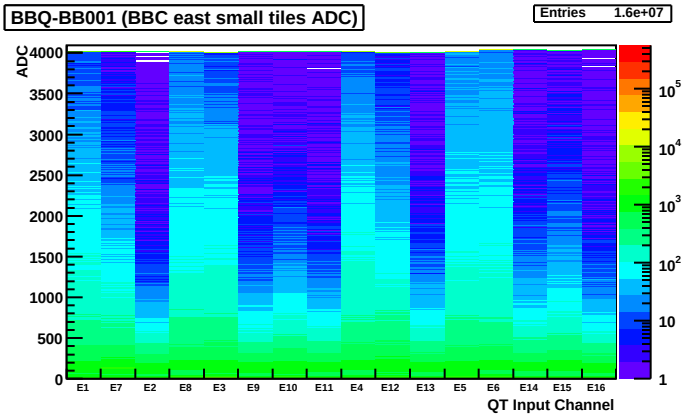

MIX-TF005
Entries 4.2e+07
TOF MULT
TOF tray

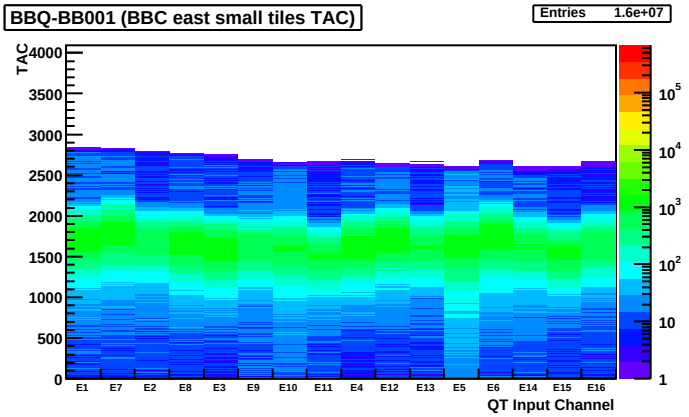

MIX-TF006
Entries 4.2e+07
TOF MULT
TOF tray

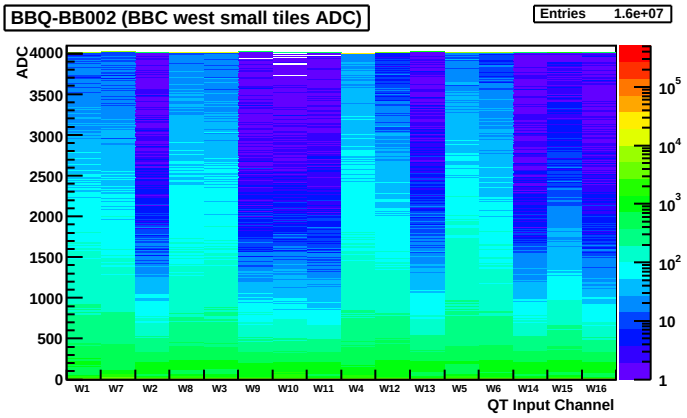

MIX-TF101
Entries 6000000
TOF MULT
400
350
300
250
200
150
100
50
0
TF001
TF002
TF003
TF004
TF005
TF006
DSM Input Channel
10^5
10^4
10^3
10^2
10
1

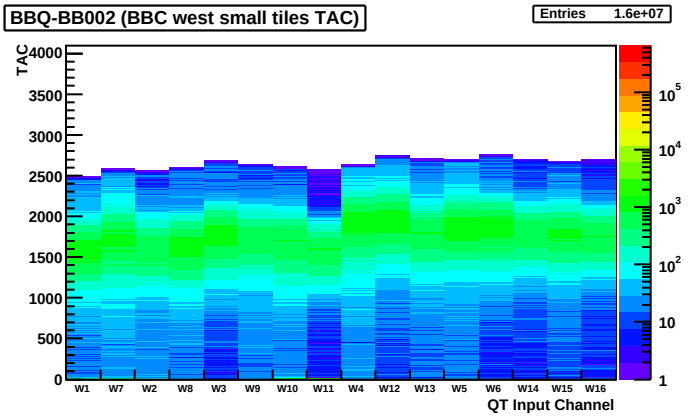

L1-TF201
Entries 1000000
10^6
10^5
10^4
10^3
10^2
10
1
0
200
400
600
800
1000
1200
1400
1600
1800
2000
TOF total mult

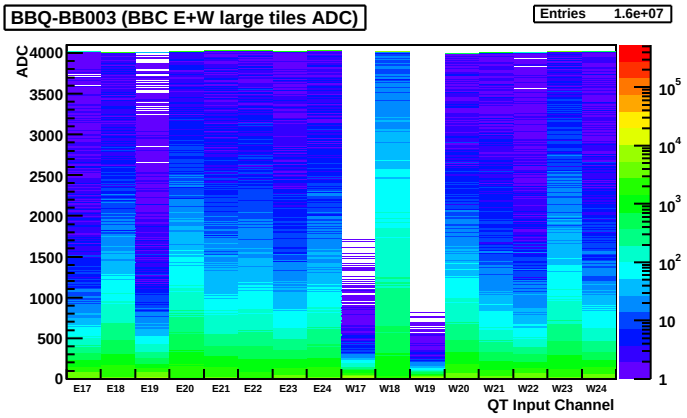

L1-TF201
Entries 6000000
Threshold bits
1
0
25466
26216
24165
24066
25121
23289
974534
973784
975835
975934
974879
976711
TF001
TF002
TF003
TF004
TF005
TF006
TOF sector
10^5

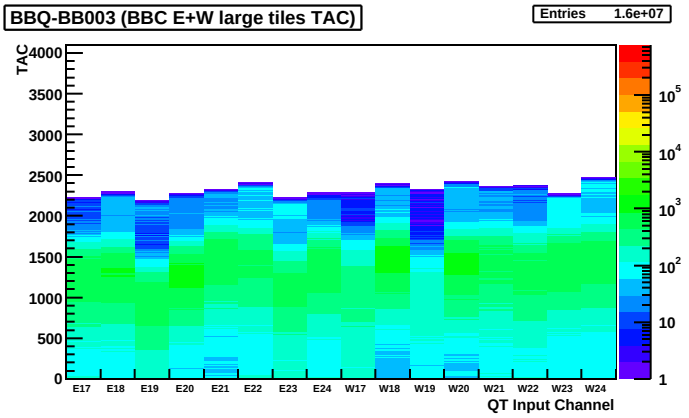

BBQ-BB001 (BBC east small tiles ADC)
Entries 1.6e+07
ADC
QT Input Channel

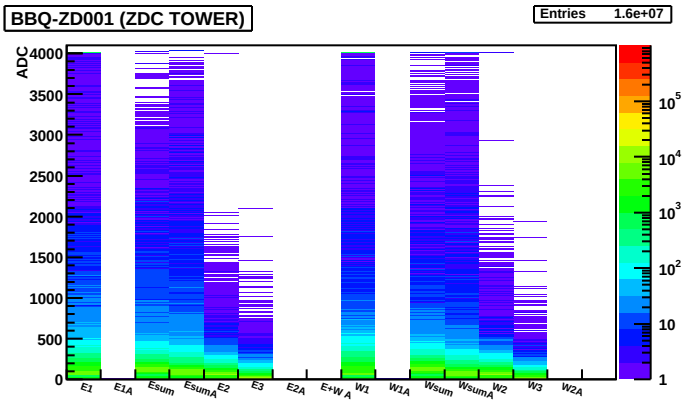

BBQ-BB001 (BBC east small tiles TAC)
Entries 1.6e+07
TAC
QT Input Channel

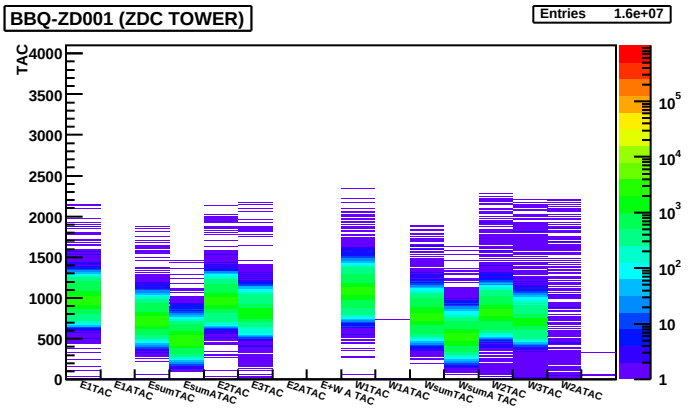

BBQ-BB002 (BBC west small tiles ADC)
Entries 1.6e+07
ADC
QT Input Channel

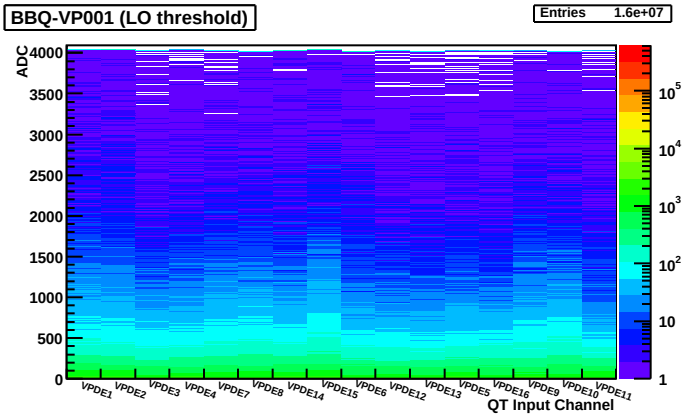

BBQ-BB002 (BBC west small tiles TAC)
Entries 1.6e+07
TAC
QT Input Channel

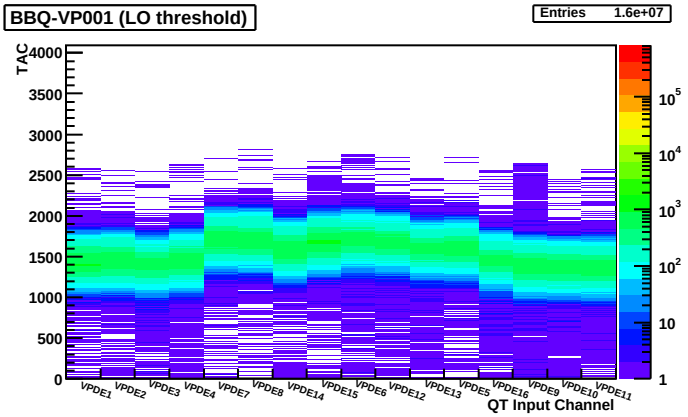

BBQ-BB003 (BBC E+W large tiles ADC)
Entries 1.6e+07
ADC
QT Input Channel

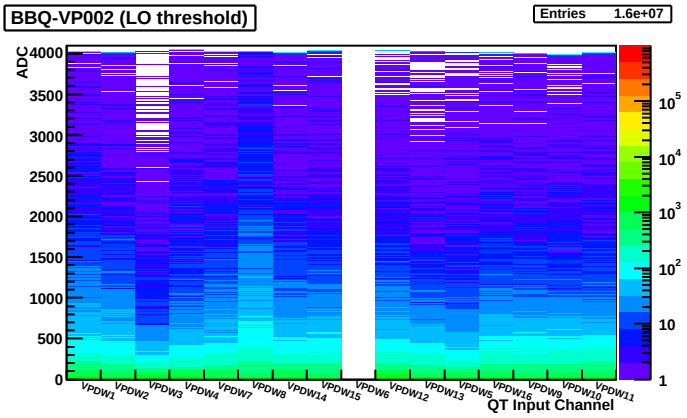

BBQ-BB003 (BBC E+W large tiles TAC)
Entries 1.6e+07
TAC
QT Input Channel

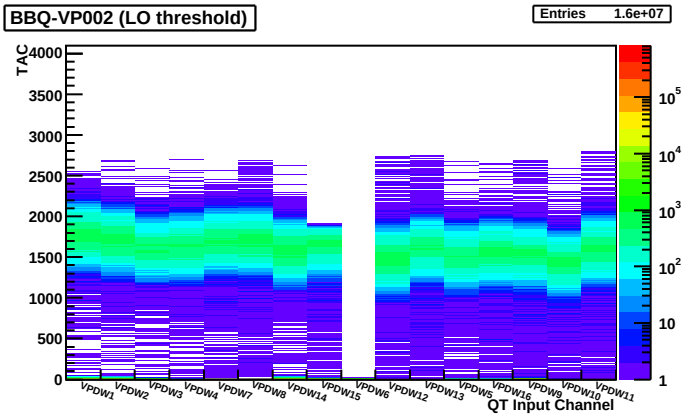

BBQ-ZD001 (ZDC TOWER)
Entries 1.6e+07
ADC

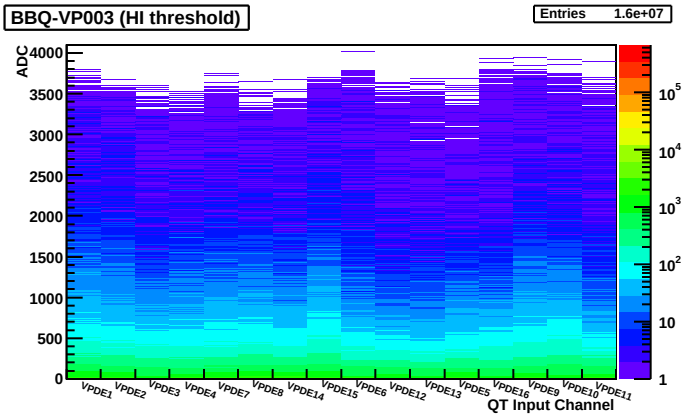

BBQ-ZD001 (ZDC TOWER)
Entries 1.6e+07
TAC

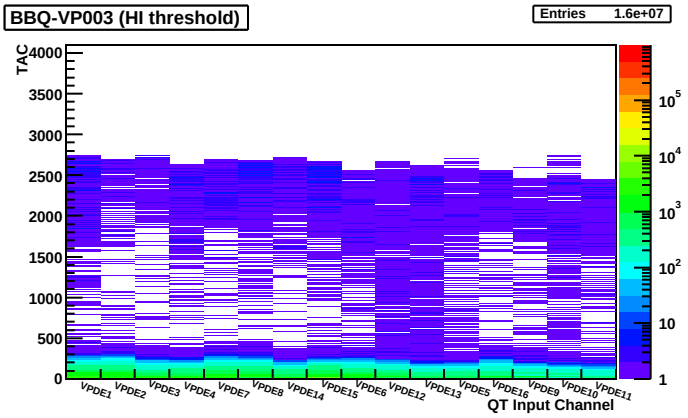

BBQ-VP001 (LO threshold)
Entries 1.6e+07
ADC
QT Input Channel

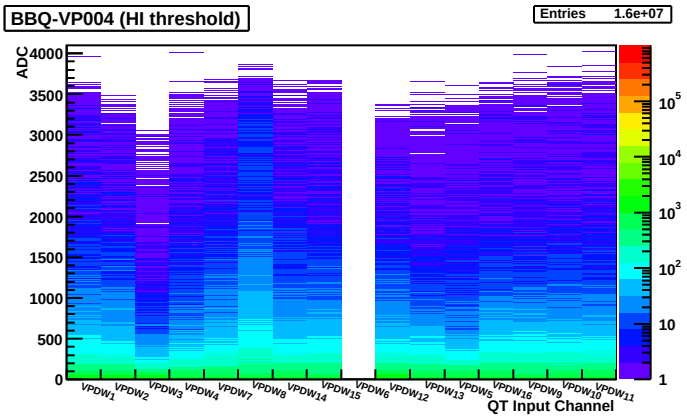

BBQ-VP001 (LO threshold)
Entries 1.6e+07
TAC
QT Input Channel

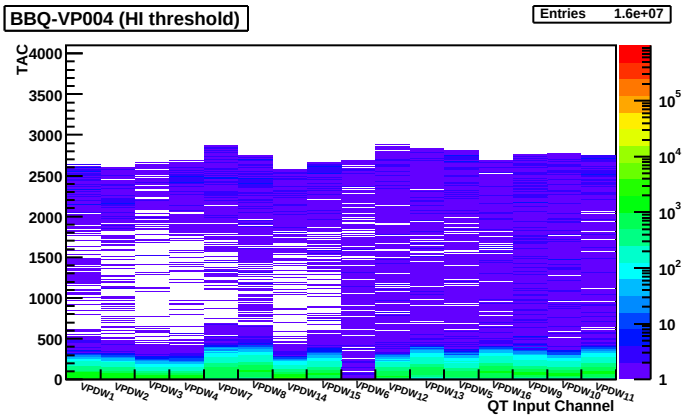

BBQ-VP002 (LO threshold)
Entries 1.6e+07
ADC
QT Input Channel

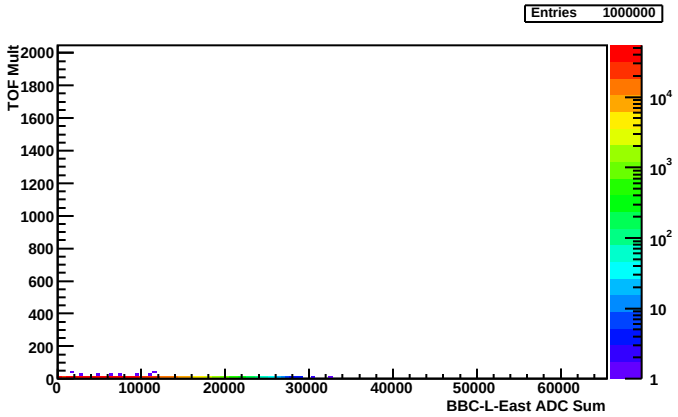

BBQ-VP002 (LO threshold)
Entries 1.6e+07
TAC
QT Input Channel

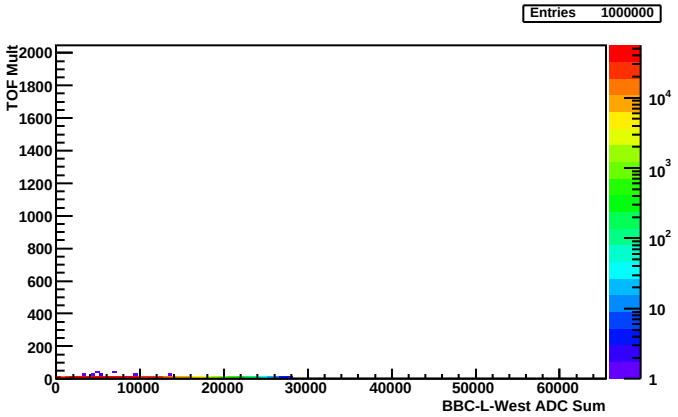

BBQ-VP003 (HI threshold)
Entries 1.6e+07
ADC
QT Input Channel

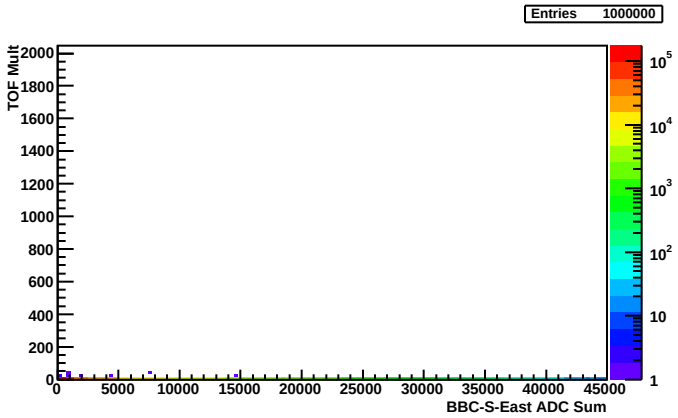

BBQ-VP003 (HI threshold)
Entries 1.6e+07
TAC
QT Input Channel

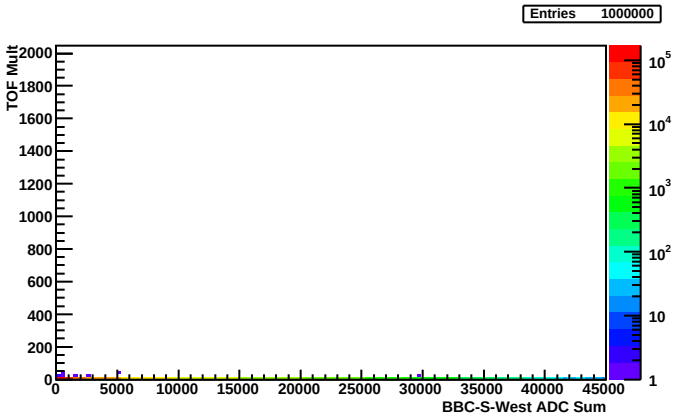

BBQ-VP004 (HI threshold)
Entries 1.6e+07
ADC
QT Input Channel

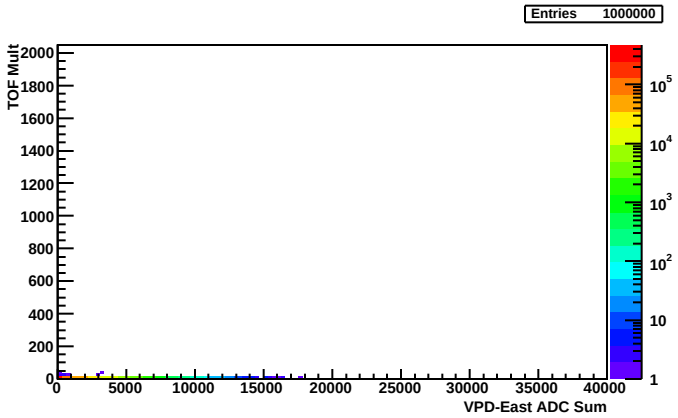

BBQ-VP004 (HI threshold)
Entries 1.6e+07
TAC
QT Input Channel

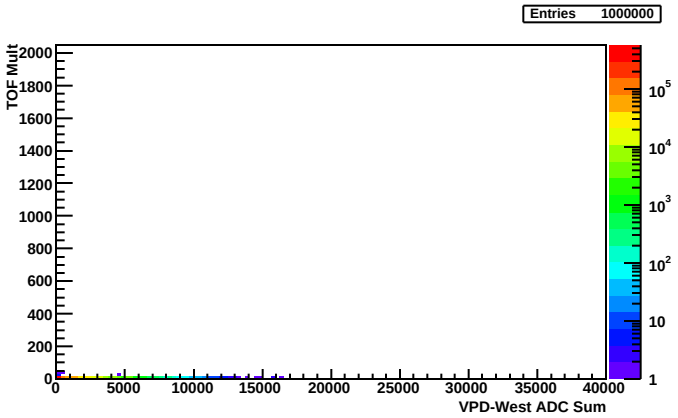

Entries 1000000
TOF Mult
BBC-L-East ADC Sum

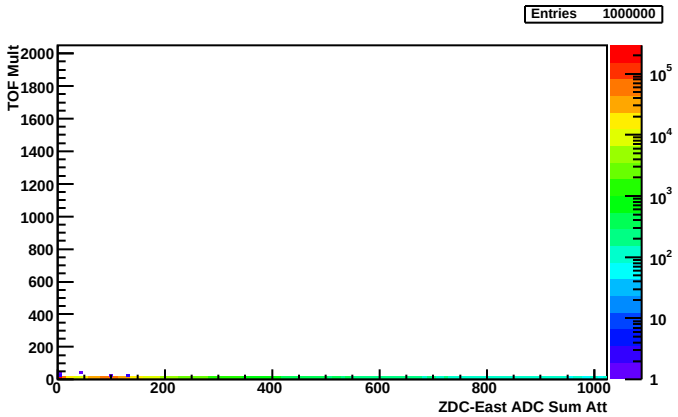

Entries 1000000
TOF Mult
BBC-L-West ADC Sum

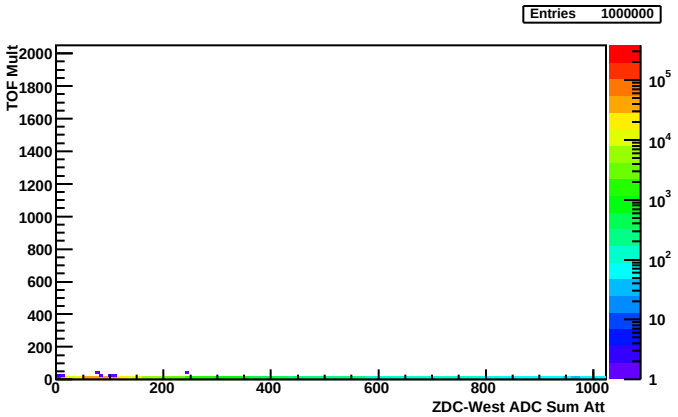

Entries 1000000
TOF Mult
BBC-S-East ADC Sum

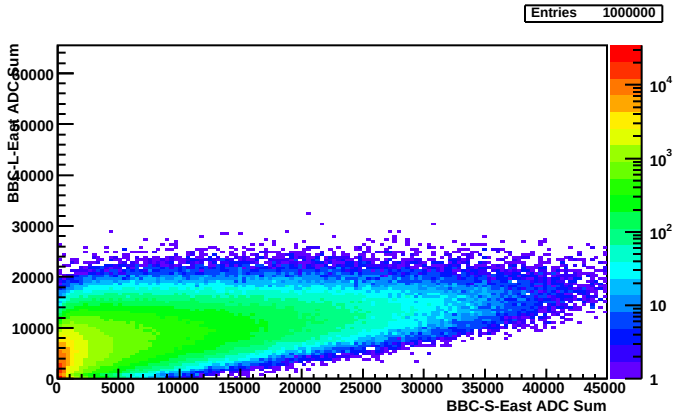

Entries 1000000
TOF Mult
BBC-S-West ADC Sum

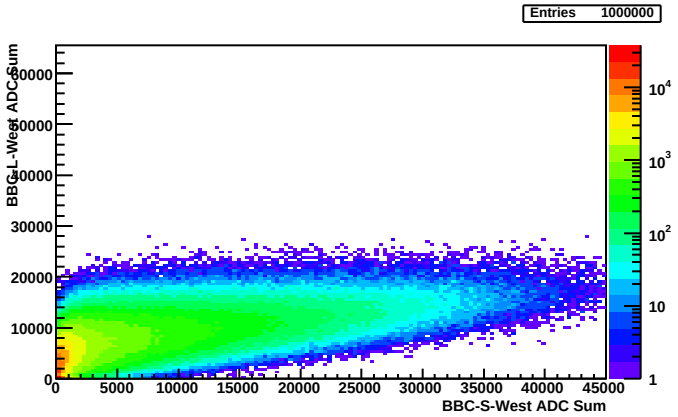

Entries 1000000
TOF Mult
VPD-East ADC Sum

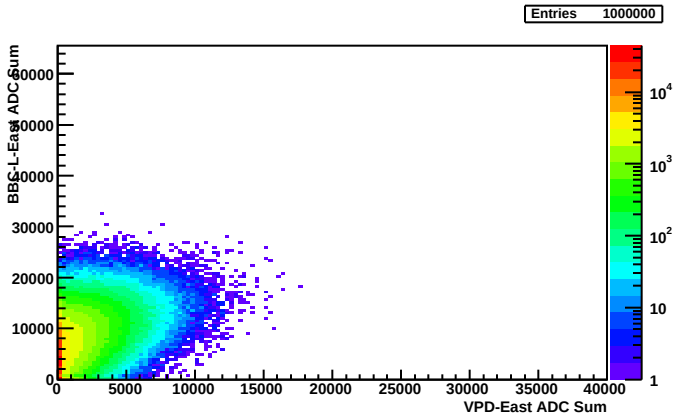

Entries 1000000
TOF Mult
VPD-West ADC Sum

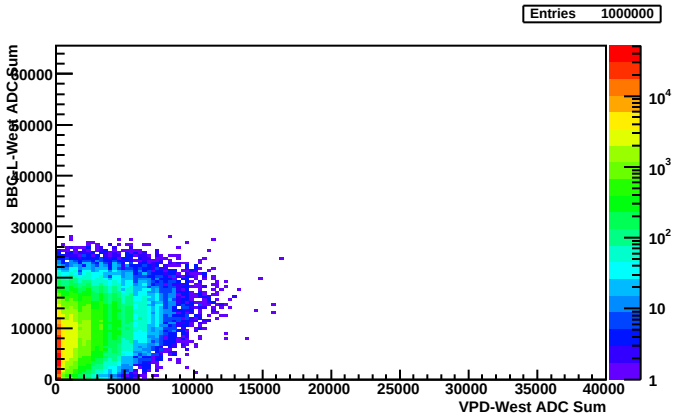

Entries 1000000
TOF Mult
ZDC-East ADC Sum Att

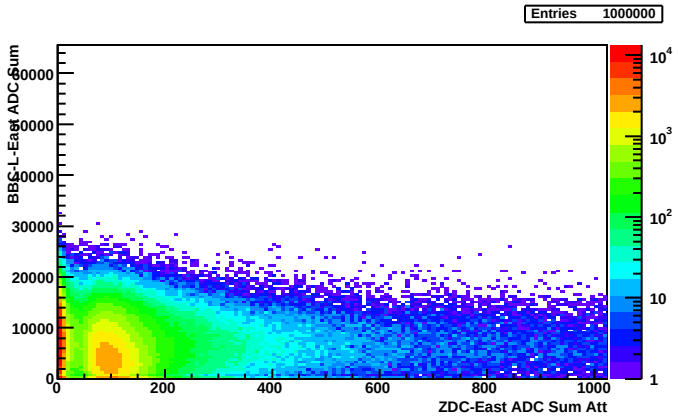

Entries 1000000
TOF Mult
ZDC-West ADC Sum Att

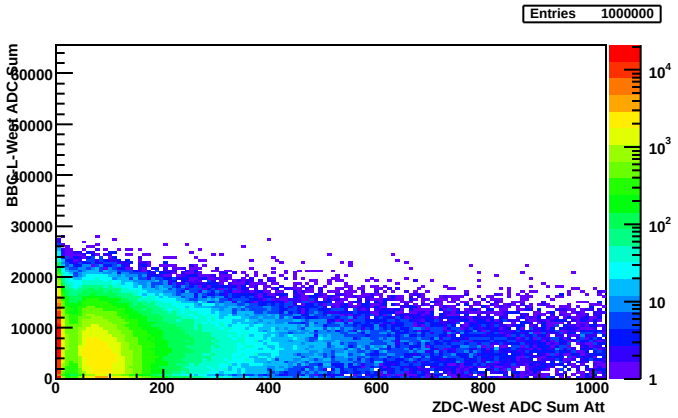

Entries 1000000
BBC-L-East ADC Sum
BBC-S-East ADC Sum

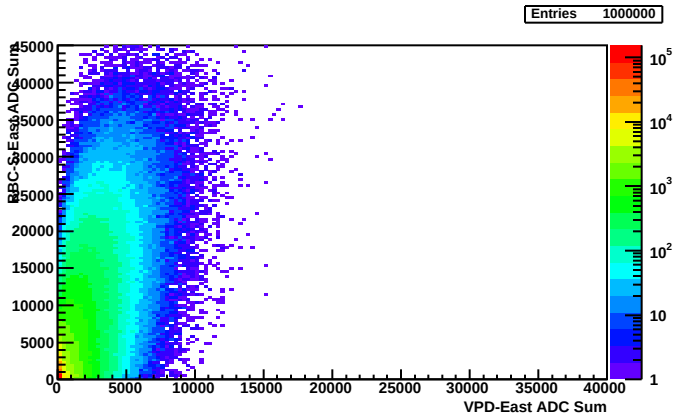

Entries 1000000
BBC-L-West ADC Sum
BBC-S-West ADC Sum

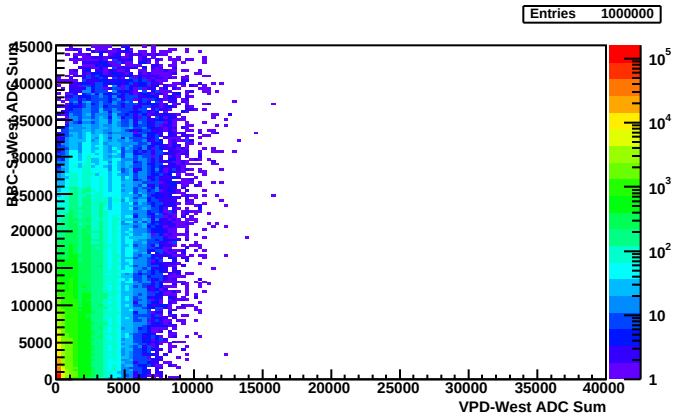

Entries 1000000
BBC-L-East ADC Sum
VPD-East ADC Sum

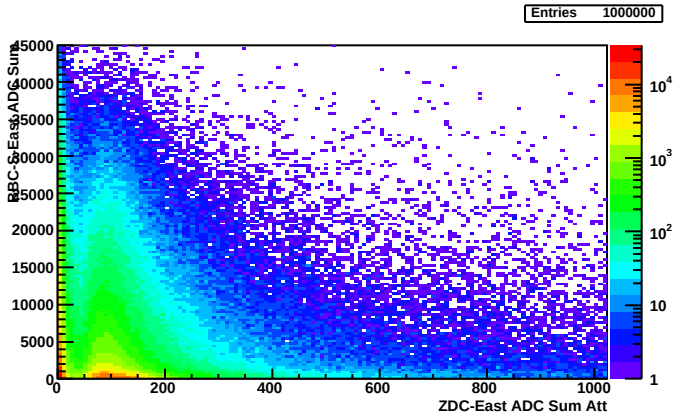

Entries 1000000
BBC-L-West ADC Sum
VPD-West ADC Sum

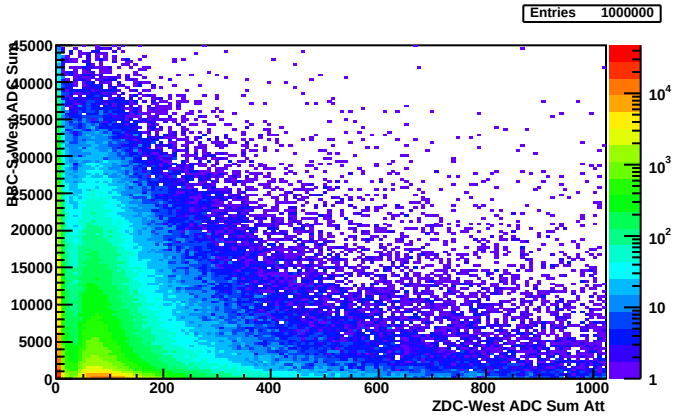

Entries 1000000
BBC-L-East ADC Sum
ZDC-East ADC Sum Att

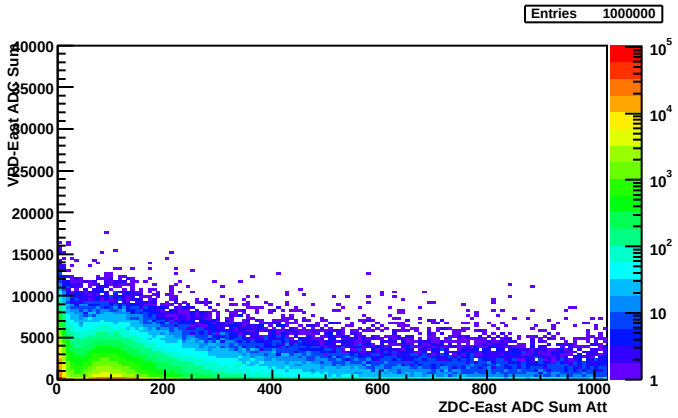

Entries 1000000
BBC-L-West ADC Sum
ZDC-West ADC Sum Att

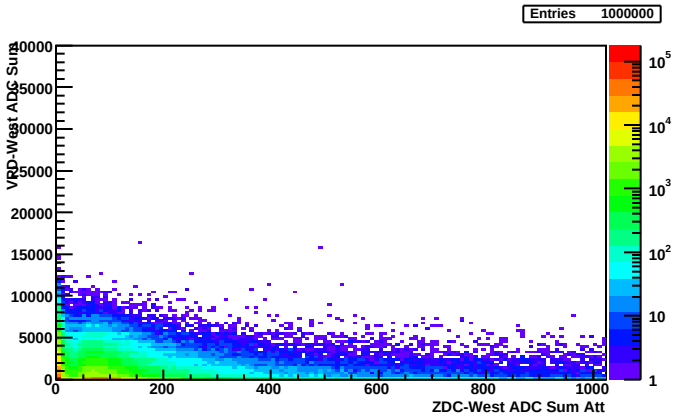

Entries 1000000
BBC-S-East ADC Sum
VPD-East ADC Sum

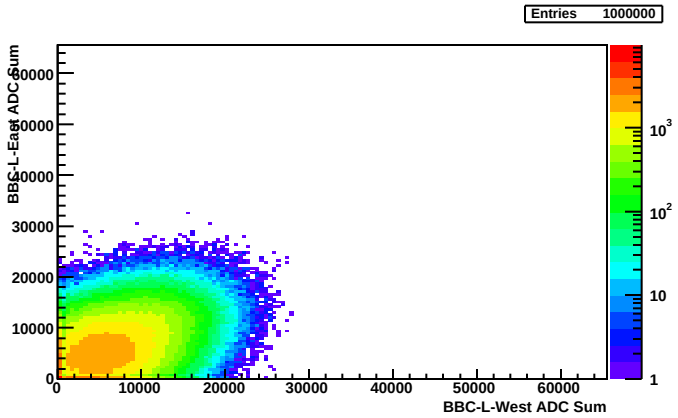

Entries 1000000
BBC-S-West ADC Sum
VPD-West ADC Sum

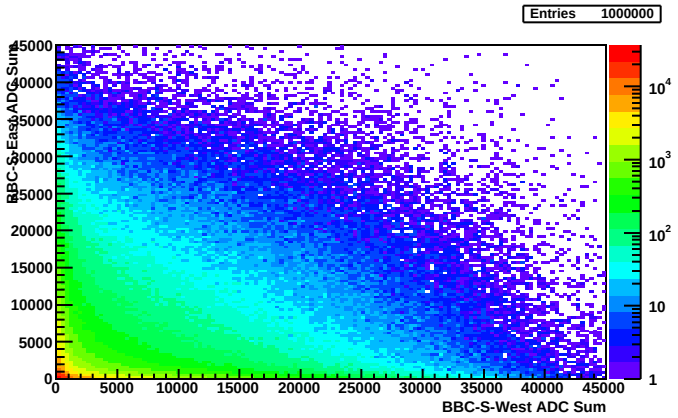

Entries 1000000
BBC-S-East ADC Sum
ZDC-East ADC Sum Att

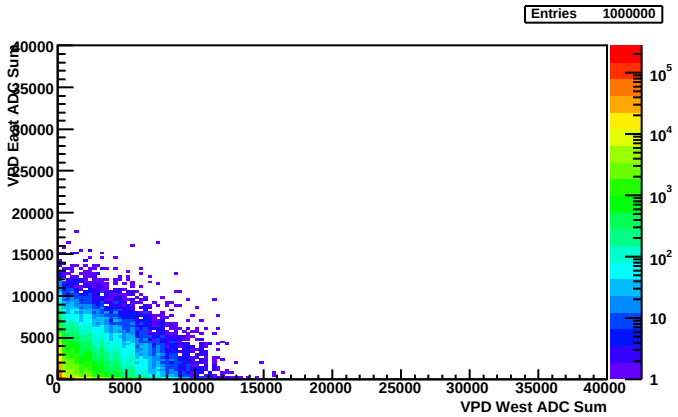

Entries 1000000
BBC-S-West ADC Sum
ZDC-West ADC Sum Att

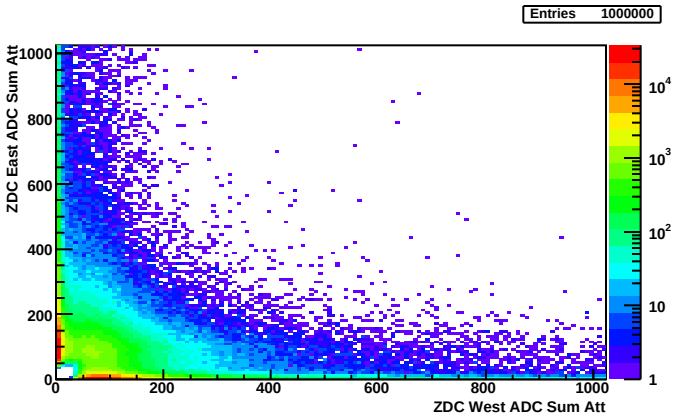

Entries 1000000
VPD-East ADC Sum
ZDC-East ADC Sum Att

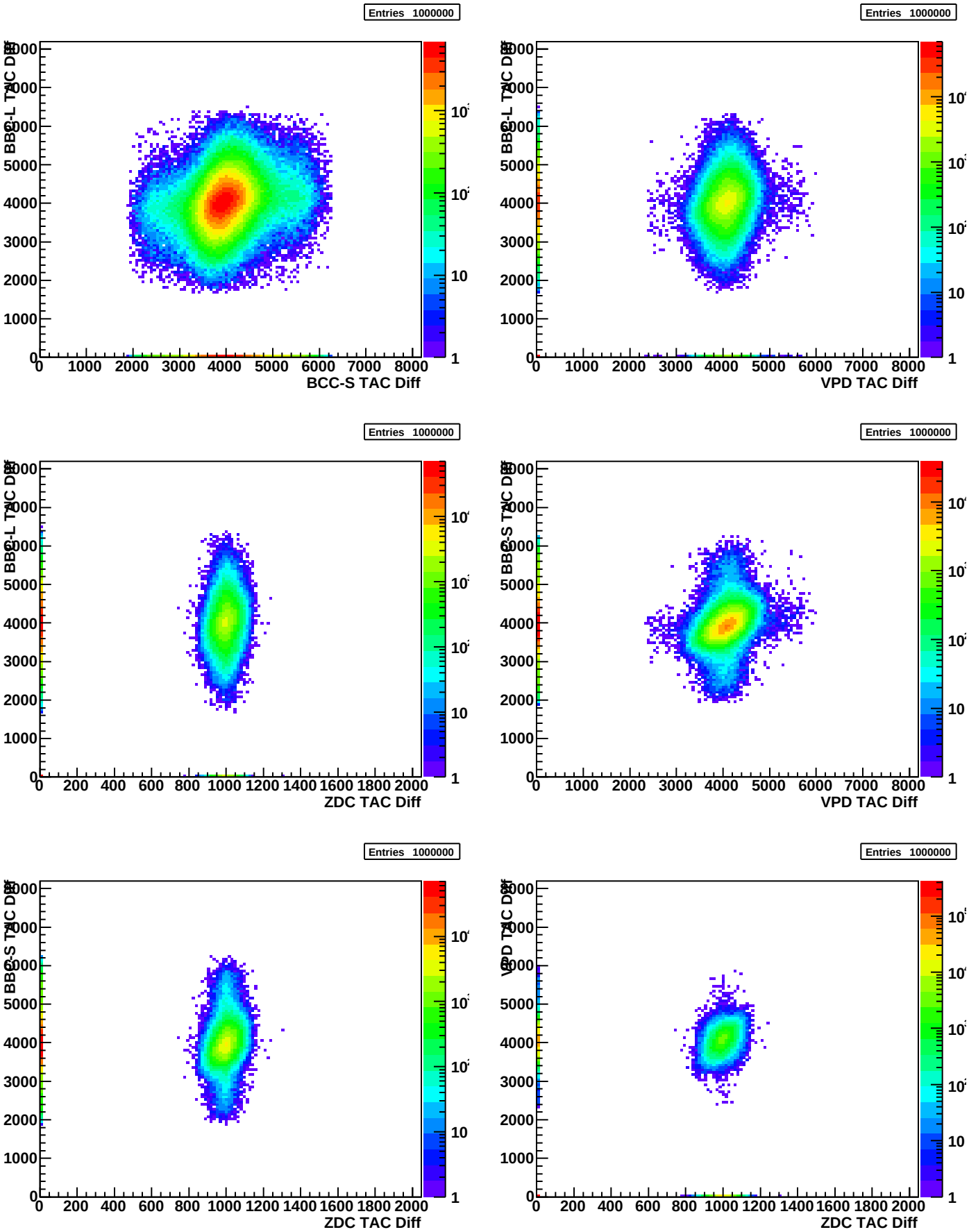

Entries 1000000
VPD-West ADC Sum
ZDC-West ADC Sum Att

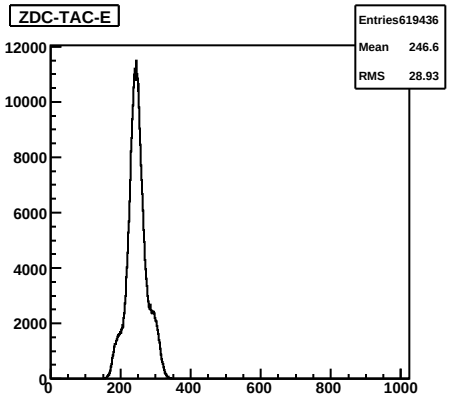

Entries 1000000
BBC-L-East ADC Sum
BBC-L-West ADC Sum

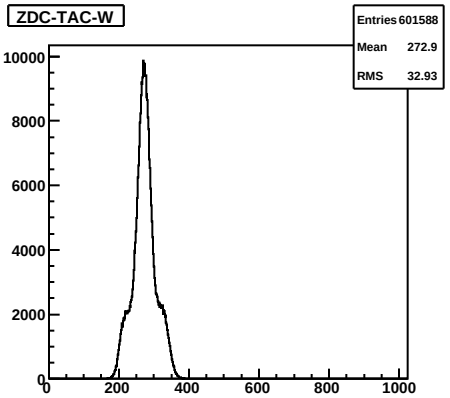

Entries 1000000
BBC-S-East ADC Sum
BBC-S-West ADC Sum

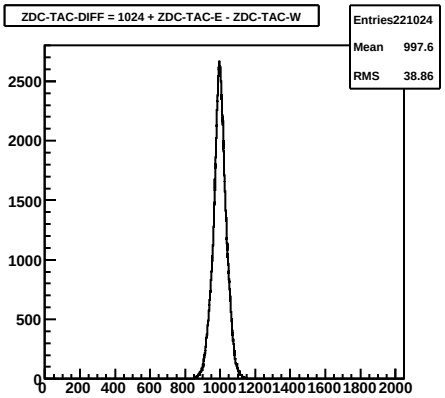

Entries 1000000
VPD East ADC Sum
VPD West ADC Sum

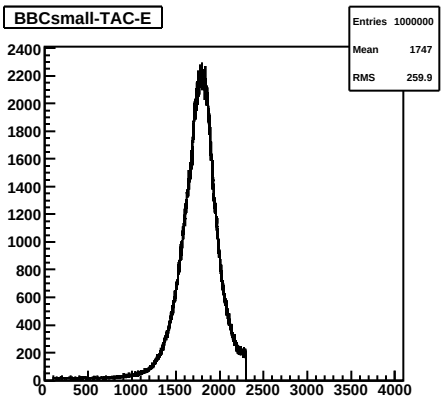

Entries 1000000
ZDC East ADC Sum Att
ZDC West ADC Sum Att

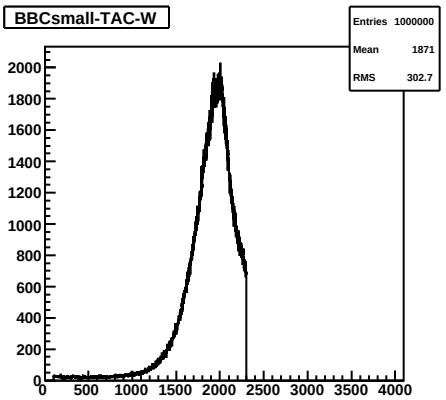

Entries 1000000
BBC-L TAC Diff
BCC-S TAC Diff
Entries 1000000
BBC-L TAC Diff
VPD TAC Diff
Entries 1000000
BBC-L TAC Diff
ZDC TAC Diff
Entries 1000000
BBC-S TAC Diff
VPD TAC Diff
Entries 1000000
BBC-S TAC Diff
ZDC TAC Diff
Entries 1000000
VPD TAC Diff
ZDC TAC Diff

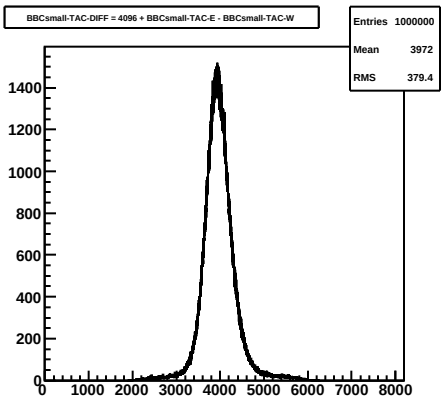

ZDC-TAC-E
Entries 619436
Mean 246.6
RMS 28.93

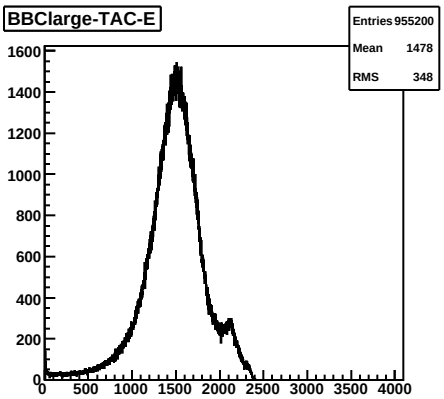

ZDC-TAC-W
Entries 601588
Mean 272.9
RMS 32.93

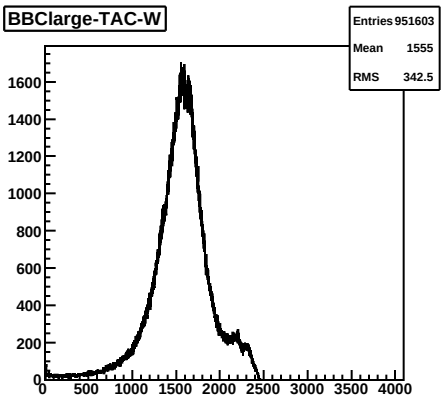

ZDC-TAC-DIFF = 1024 + ZDC-TAC-E - ZDC-TAC-W
Entries 221024
Mean 997.6
RMS 38.86

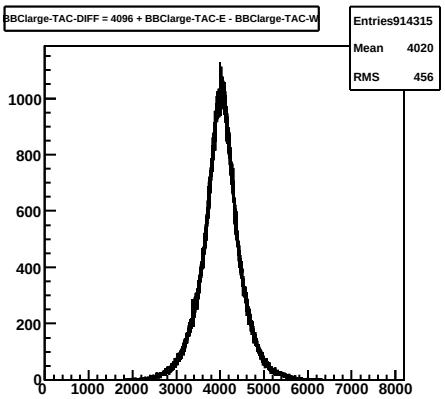

BBCsmall-TAC-E
Entries 1000000
Mean 1747
RMS 259.9

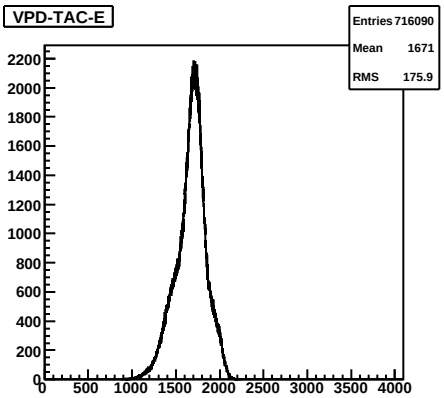

BBCsmall-TAC-W
Entries 1000000
Mean 1871
RMS 302.7

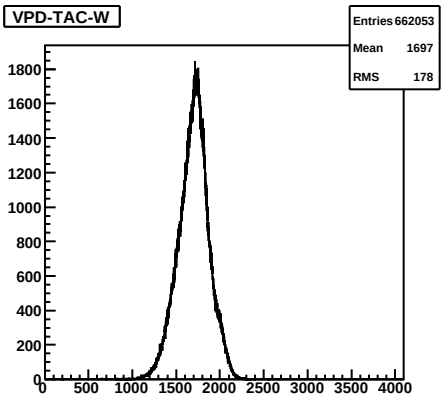

BBCsmall-TAC-DIFF = 4096 + BBCsmall-TAC-E - BBCsmall-TAC-W
Entries 1000000
Mean 3972
RMS 379.4

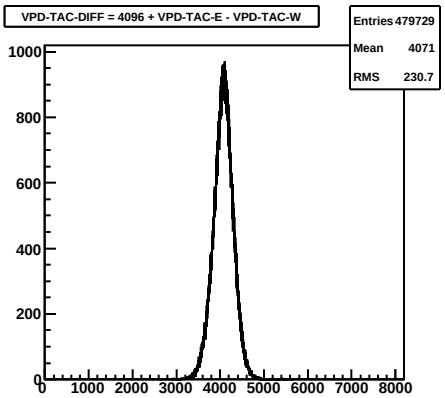

BBClarge-TAC-E
Entries 955200
Mean 1478
RMS 348

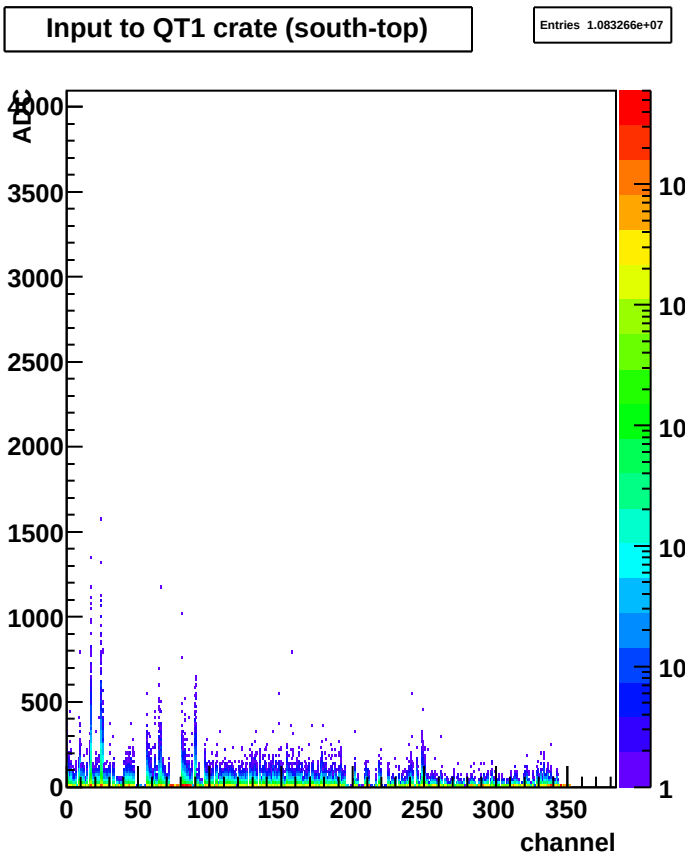

BBClarge-TAC-W
Entries 951603
Mean 1555
RMS 342.5

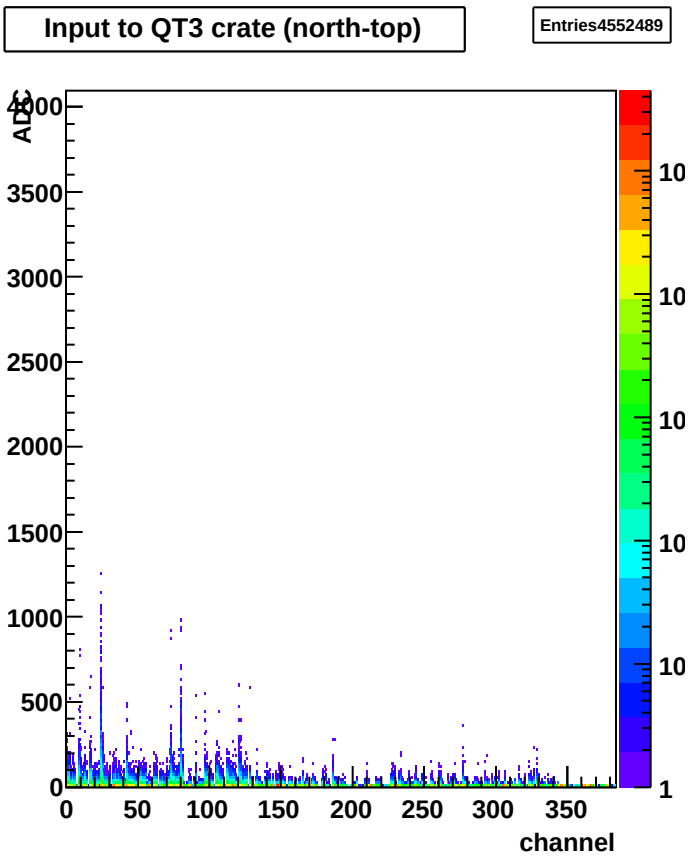

BBClarge-TAC-DIFF = 4096 + BBClarge-TAC-E - BBClarge-TAC-W
Entries 914315
Mean 4020
RMS 456

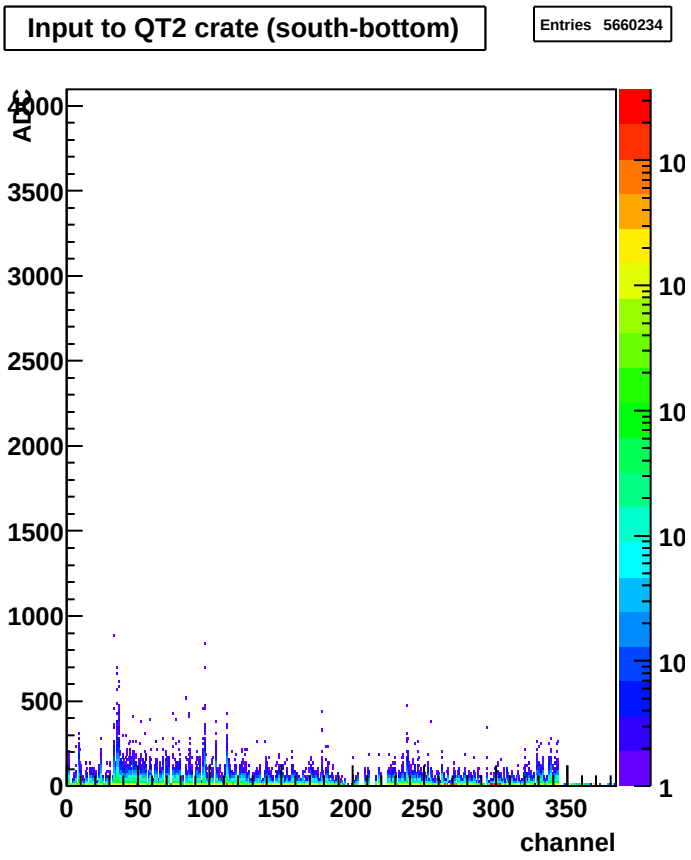

VPD-TAC-E
Entries 716090
Mean 1671
RMS 175.9

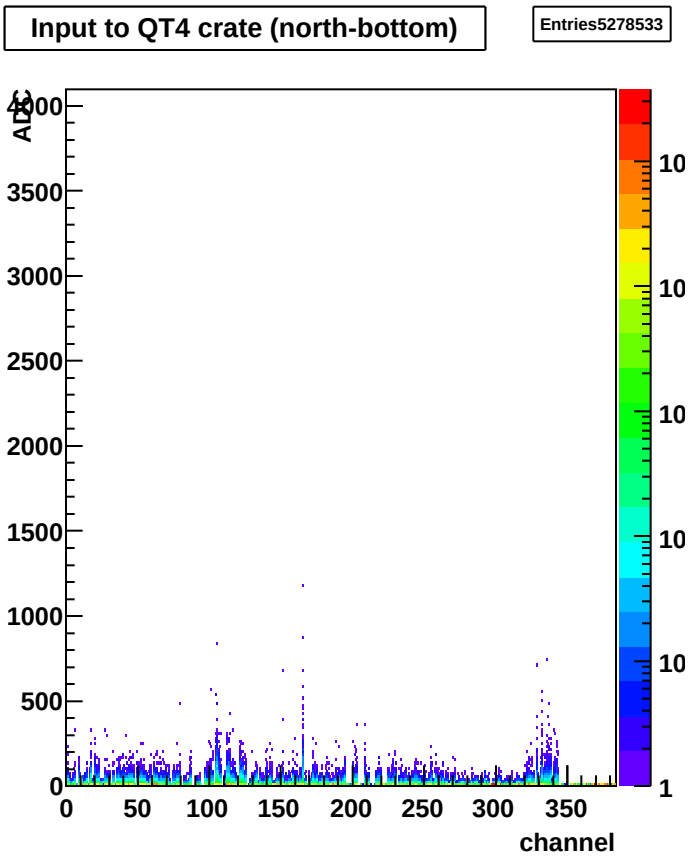

VPD-TAC-W
Entries 662053
Mean 1697
RMS 178

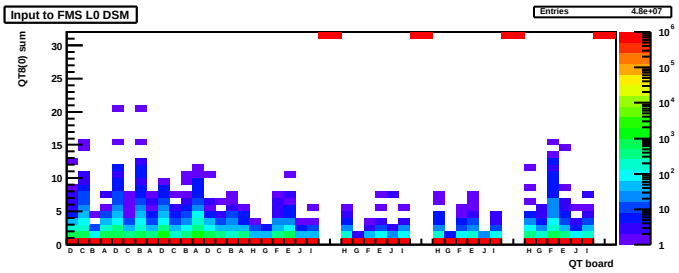

VPD-TAC-DIFF = 4096 + VPD-TAC-E - VPD-TAC-W
Entries 479729
Mean 4071
RMS 230.7

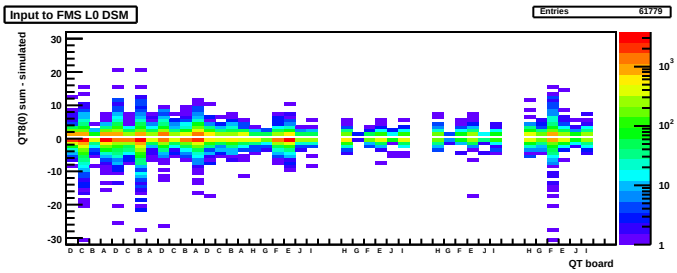

Input to QT1 crate (south-top)
Entries 1.083266e+07
ADC
channel

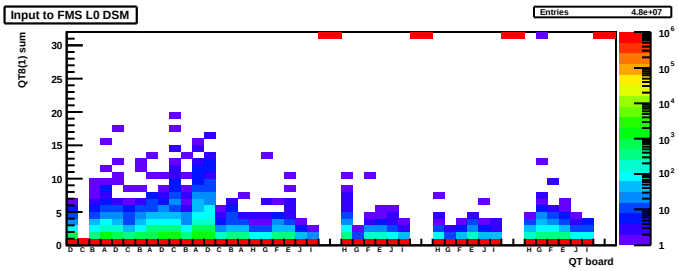

Input to QT3 crate (north-top)
Entries4552489
ADC
channel

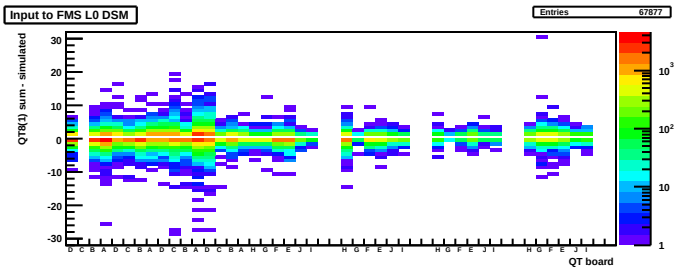

Input to QT2 crate (south-bottom)
Entries 5660234
ADC
channel

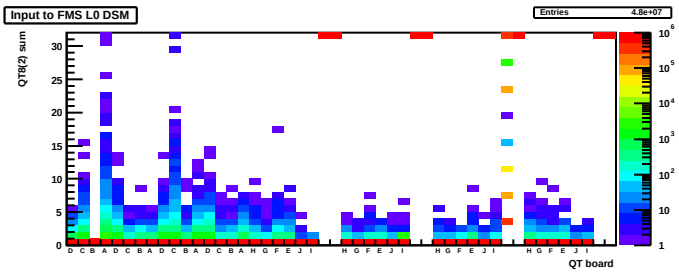

Input to QT4 crate (north-bottom)
Entries5278533
ADC
channel

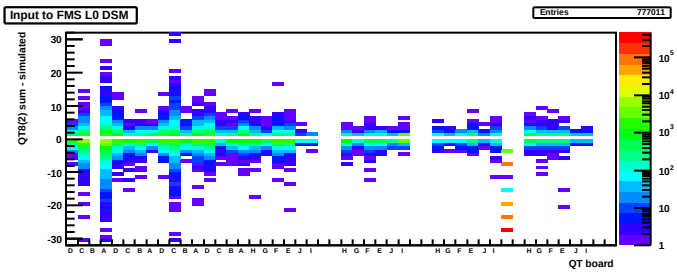

Input to FMS L0 DSM
Entries 4.8e+07
QT8(0) sum
QT board

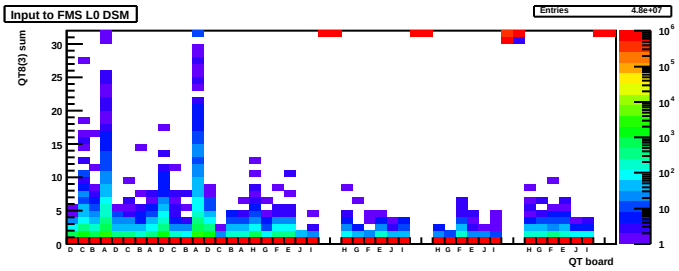

Input to FMS L0 DSM
Entries 61779
QT8(0) sum - simulated
QT board

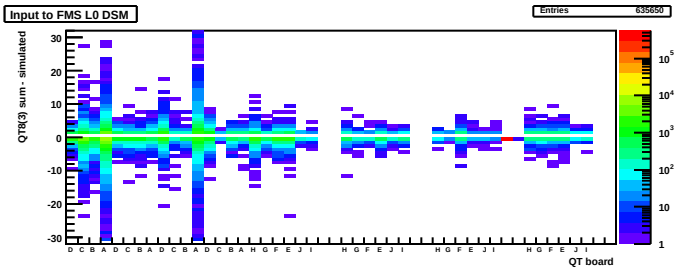

Input to FMS L0 DSM
Entries 4.8e+07
QT8(1) sum
QT board

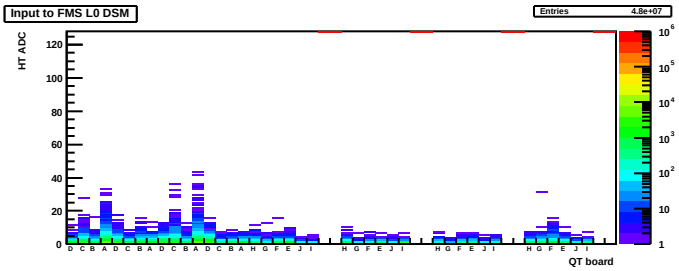

Input to FMS L0 DSM
Entries 67877
QT8(1) sum - simulated
QT board

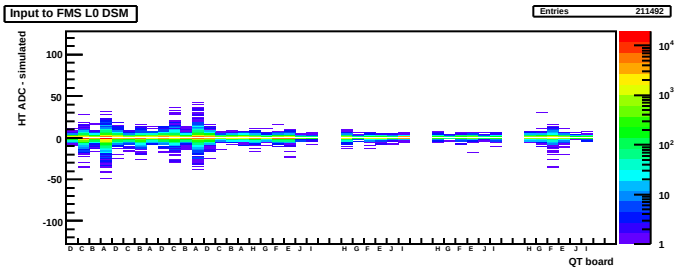

Input to FMS L0 DSM
Entries 4.8e+07
QT8(2) sum
QT board

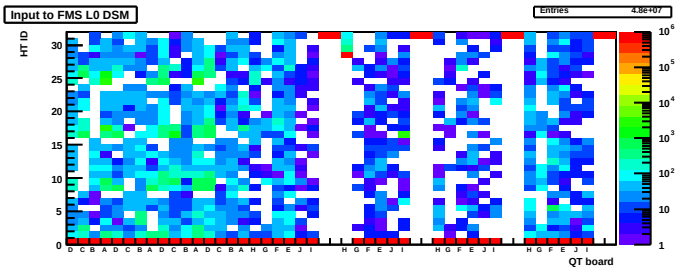

Input to FMS L0 DSM
Entries 777011
QT8(2) sum - simulated
QT board

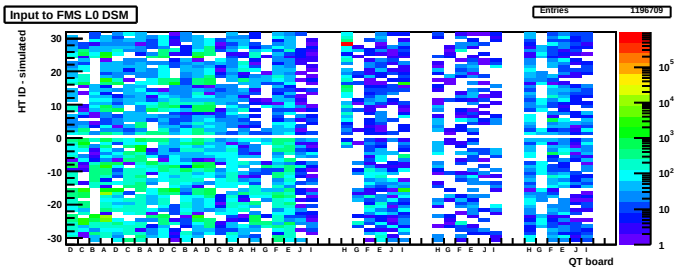

Input to FMS L0 DSM
Entries 4.8e+07
QT8(3) sum
QT board

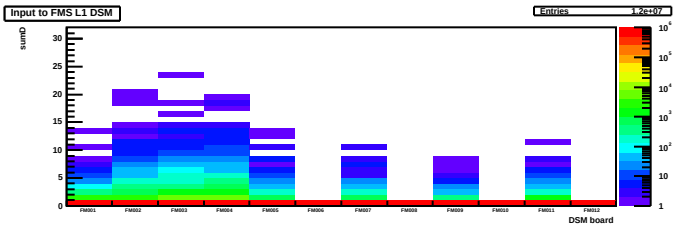

Input to FMS L0 DSM
Entries 635650
QT8(3) sum - simulated
QT board

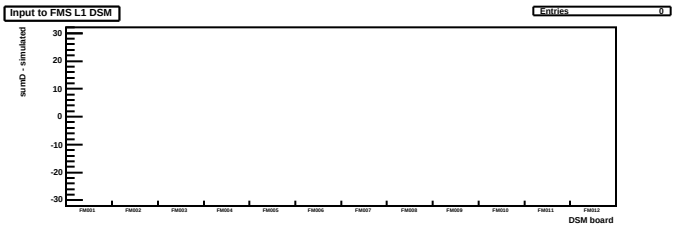

Input to FMS L0 DSM
Entries 4.8e+07
HT ADC
QT board

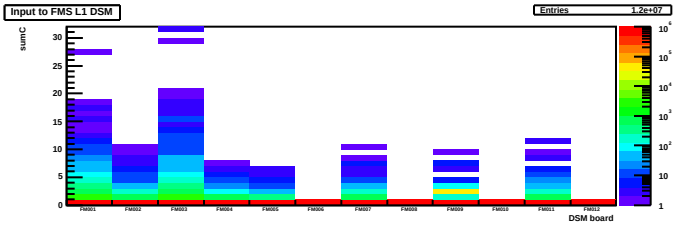

Input to FMS L0 DSM
Entries 211492
HT ADC - simulated
QT board

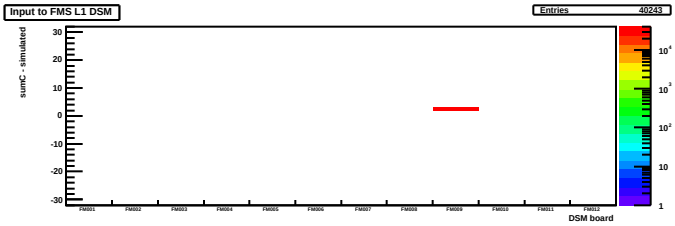

Input to FMS L0 DSM
Entries 4.8e+07
HT ID
QT board

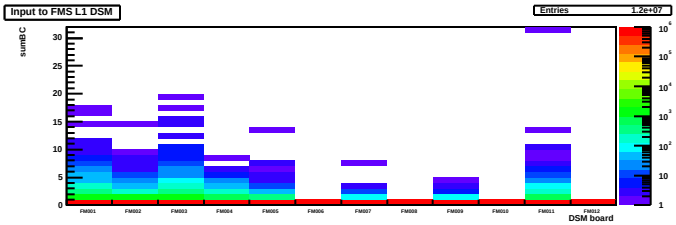

Input to FMS L0 DSM
Entries 1196709
HT ID - simulated
QT board

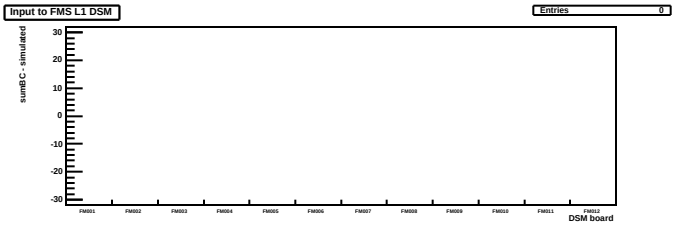

Input to FMS L1 DSM
Entries 1.2e+07
sumD
DSM board

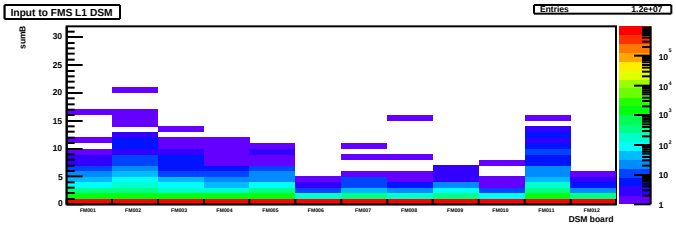

Input to FMS L1 DSM
Entries 0
sumD - simulated
DSM board

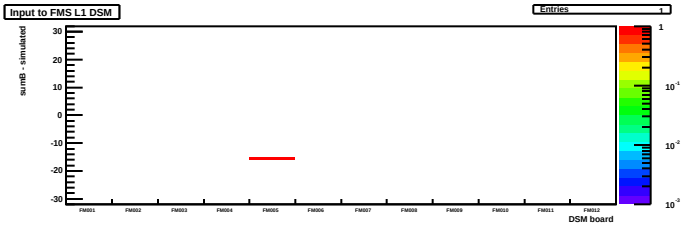

Input to FMS L1 DSM
Entries 1.2e+07
sumC
DSM board

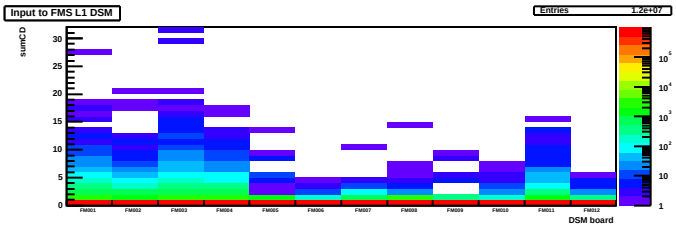

Input to FMS L1 DSM
Entries 40243
sumC - simulated
DSM board

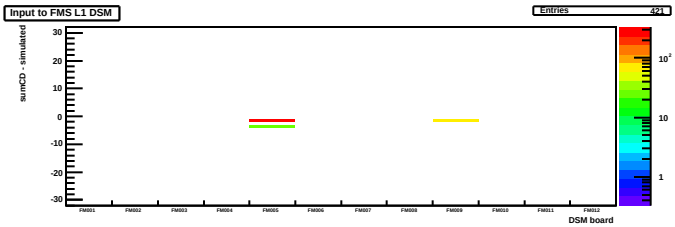

Input to FMS L1 DSM
Entries 1.2e+07
sumBC
DSM board

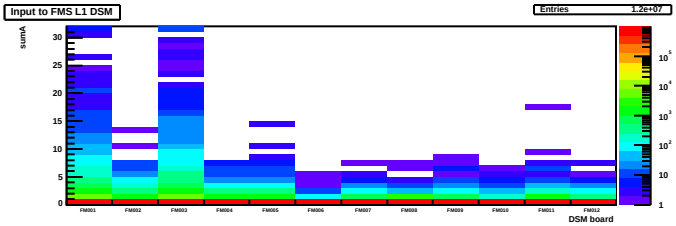

Input to FMS L1 DSM
Entries 0
sumBC - simulated
DSM board

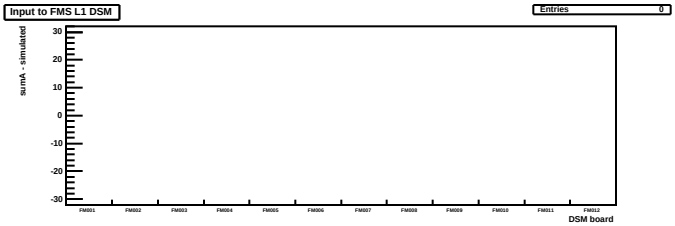

Input to FMS L1 DSM
Entries 1.2e+07
sumB
DSM board

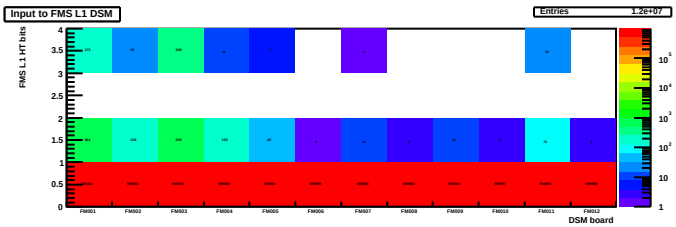

Input to FMS L1 DSM
Entries 1
sumB - simulated
DSM board

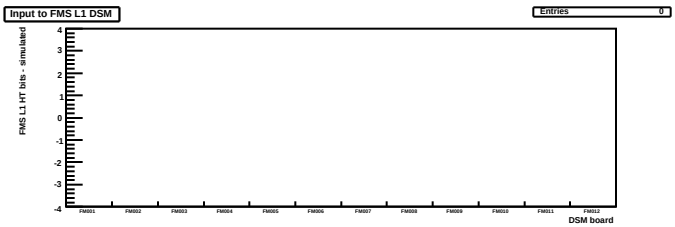

Input to FMS L1 DSM
Entries 1.2e+07
sumCD
DSM board

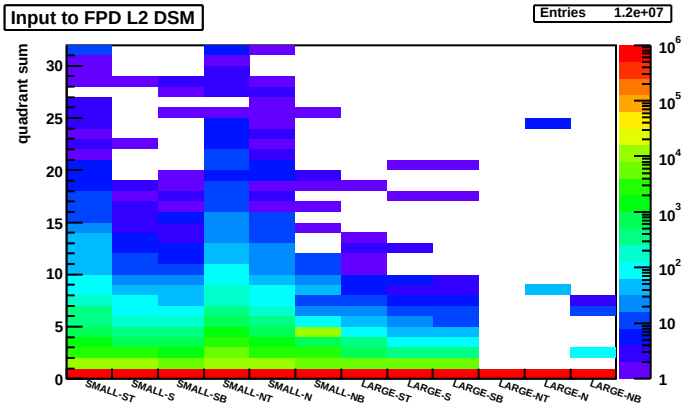

Input to FMS L1 DSM
Entries 421
sumCD - simulated
DSM board

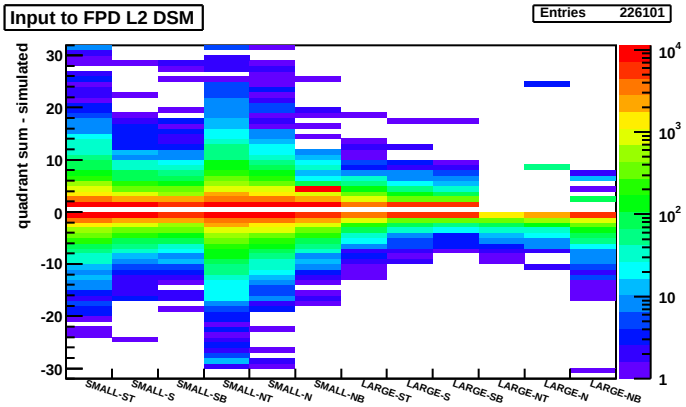

Input to FMS L1 DSM
Entries 1.2e+07
sumA
DSM board

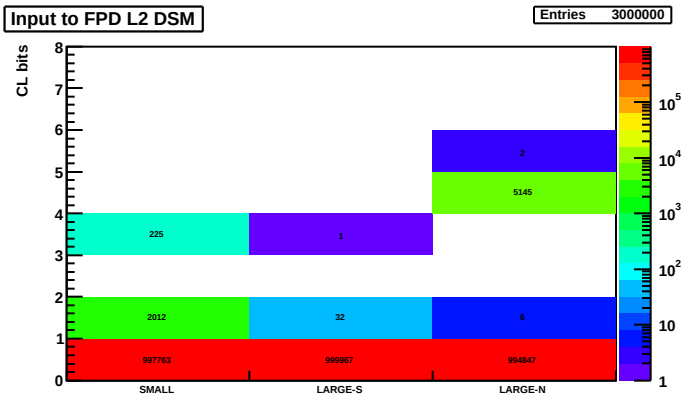

Input to FMS L1 DSM
Entries 0
sumA - simulated
DSM board

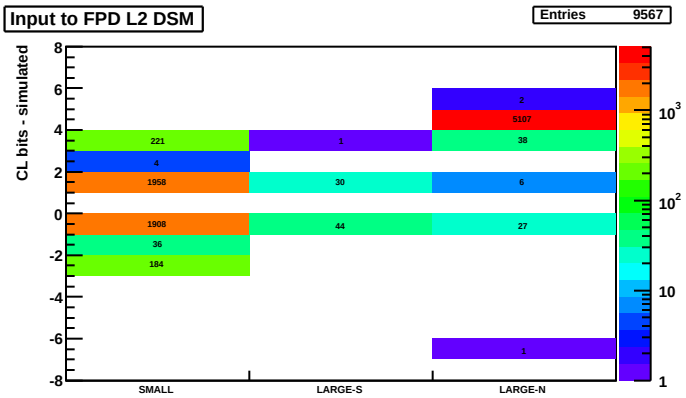

Input to FMS L1 DSM
Entries 1.2e+07
FMS L1 HT bits
DSM board

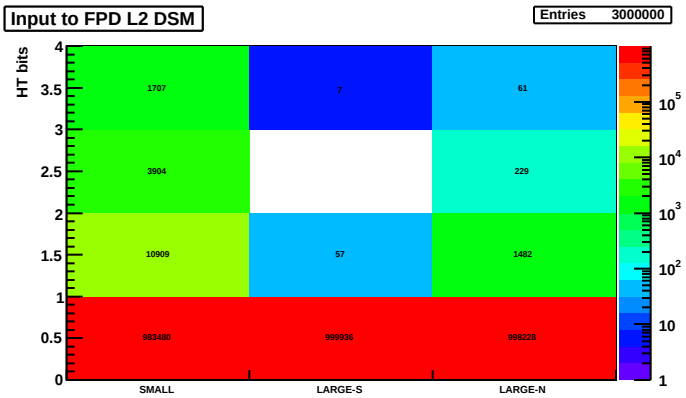

Input to FMS L1 DSM
Entries 0
FMS L1 HT bits - simulated
DSM board

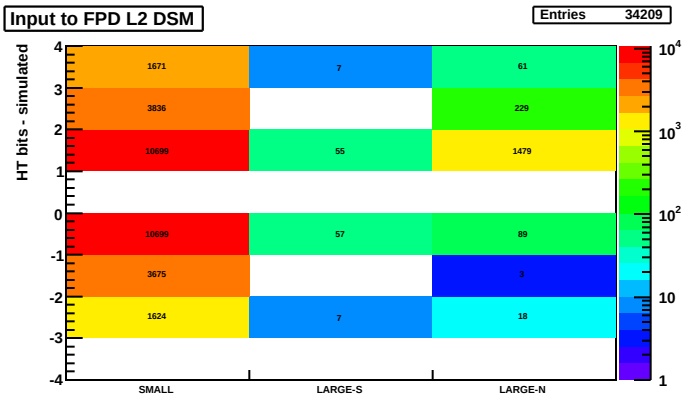

Input to FPD L2 DSM
Entries 1.2e+07
quadrant sum
SMALL-ST
SMALL-S
SMALL-SB
SMALL-NT
SMALL-N
SMALL-NB
LARGE-ST
LARGE-S
LARGE-SB
LARGE-NT
LARGE-N
LARGE-NB

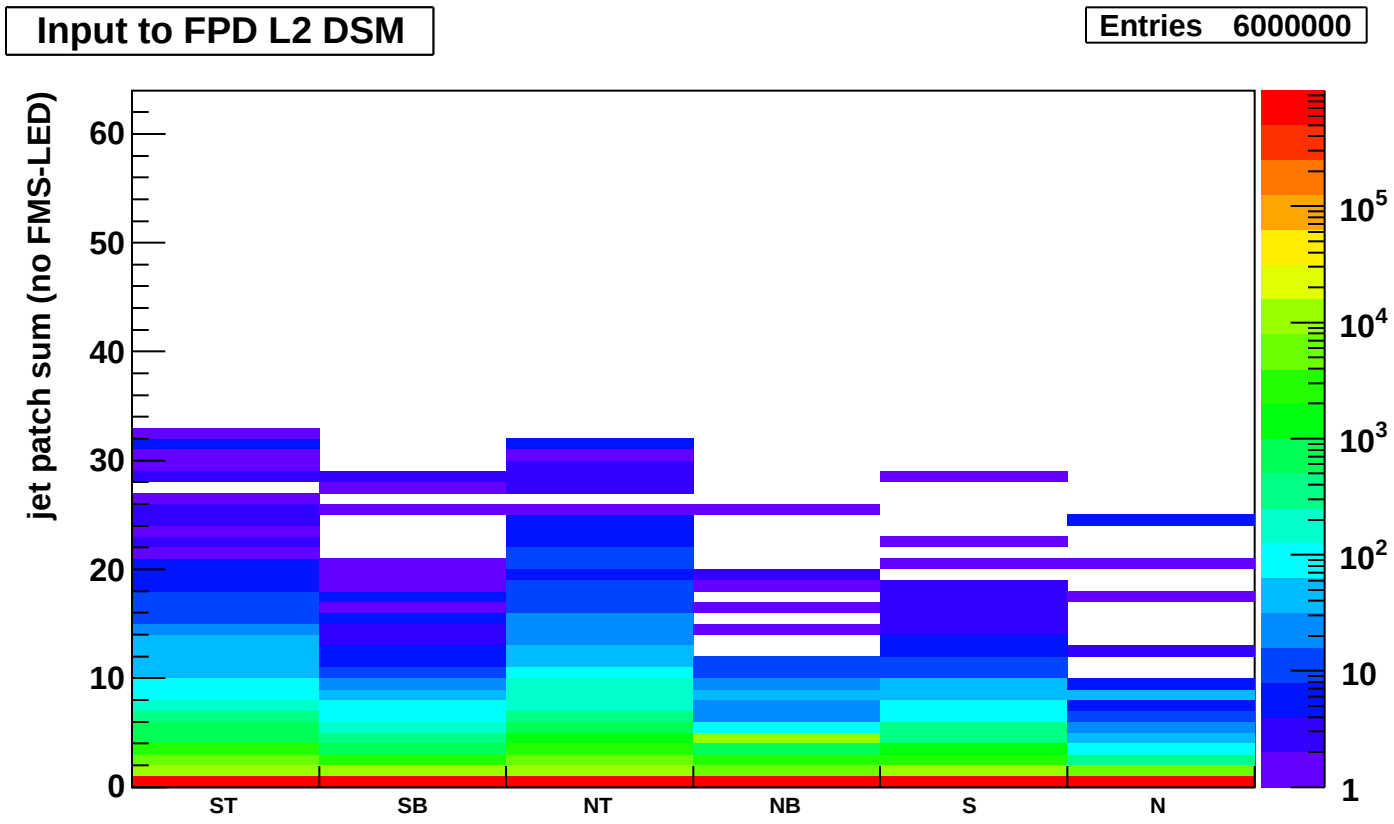

Input to FPD L2 DSM
Entries 226101
quadrant sum - simulated
SMALL-ST
SMALL-S
SMALL-SB
SMALL-NT
SMALL-N
SMALL-NB
LARGE-ST
LARGE-S
LARGE-SB
LARGE-NT
LARGE-N
LARGE-NB

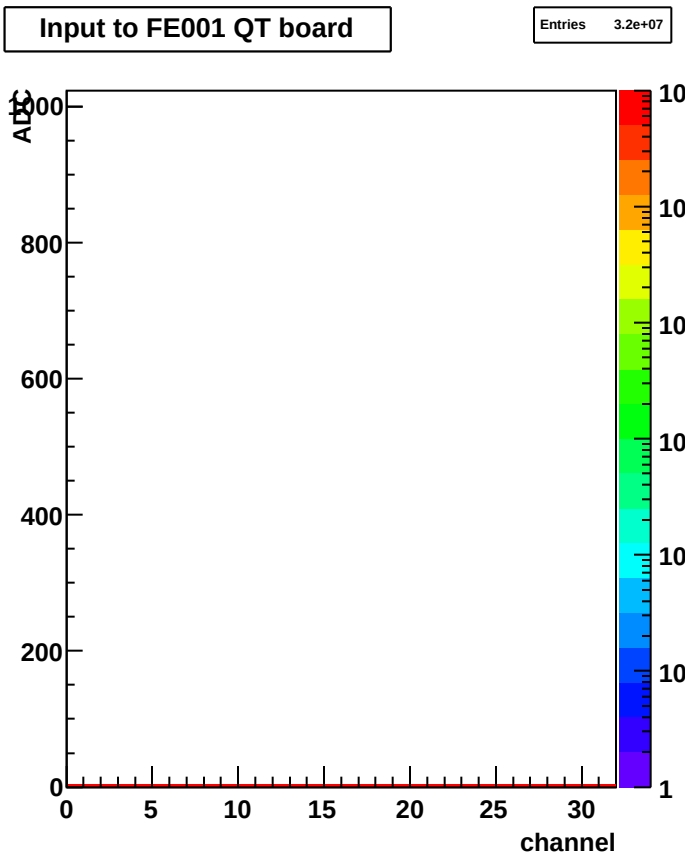

Input to FPD L2 DSM
Entries 3000000
CL bits
225
1
2
5145
2012
32
6
997763
999967
994847
SMALL
LARGE-S
LARGE-N

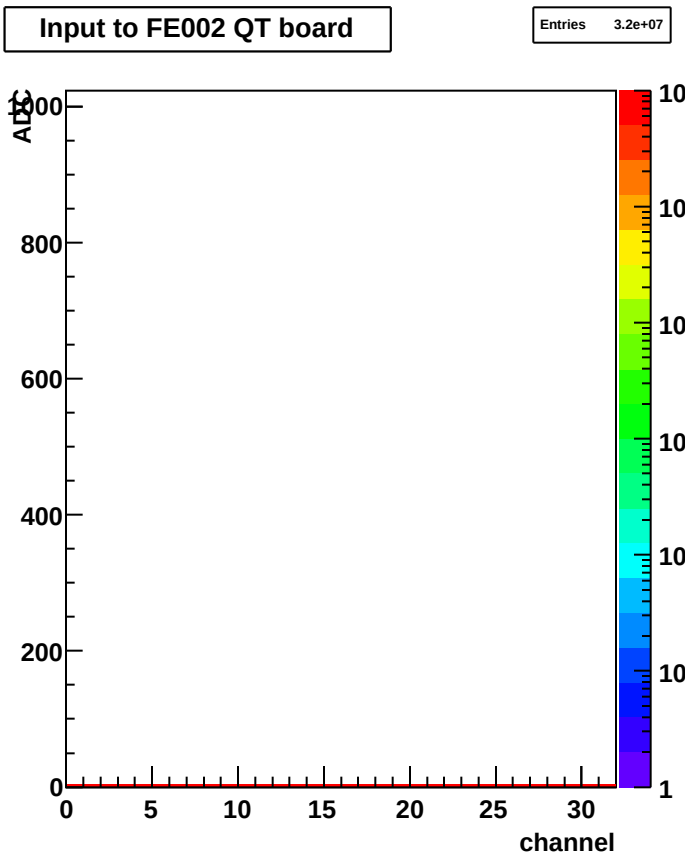

Input to FPD L2 DSM
Entries 9567
CL bits - simulated
221
1
2
5107
38
4
1958
30
6
1908
44
27
36
184
1
SMALL
LARGE-S
LARGE-N

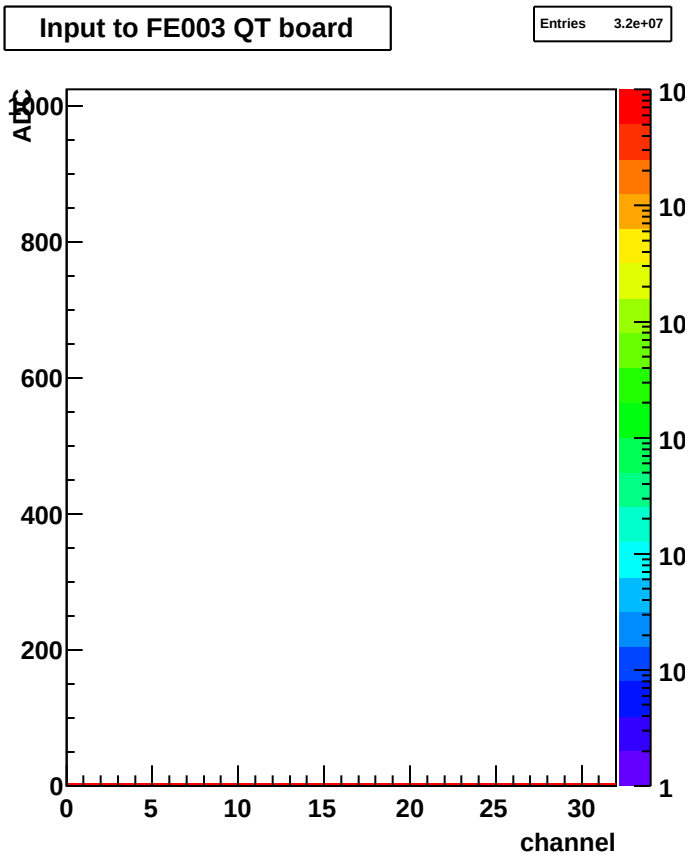

Input to FPD L2 DSM
Entries 3000000
HT bits
1707
7
61
3904
229
10909
57
1482
983480
999936
998228
SMALL
LARGE-S
LARGE-N

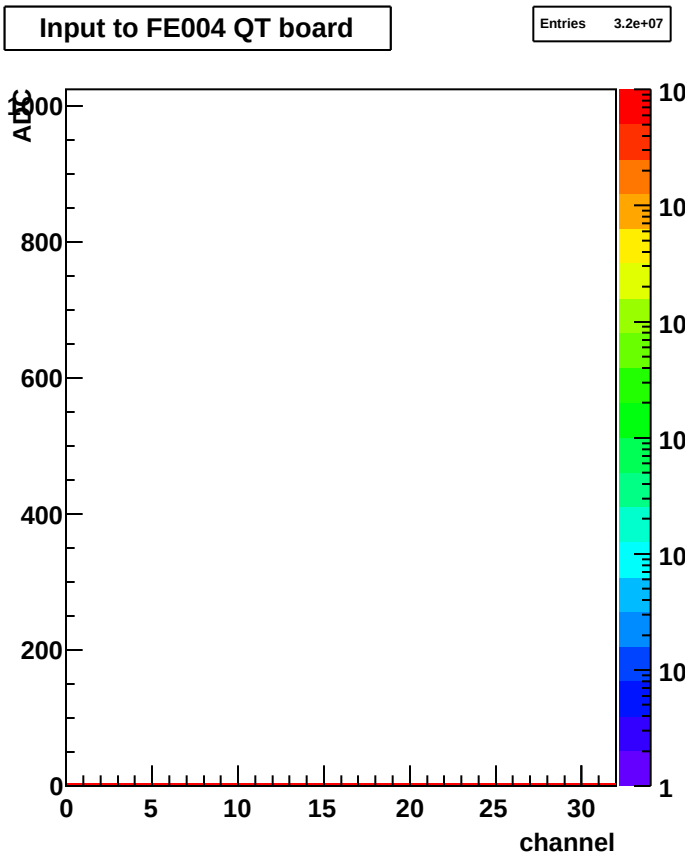

Input to FPD L2 DSM
Entries 34209
HT bits - simulated
1671
7
61
3836
229
10699
55
1479
10699
57
89
3675
3
1624
7
18
SMALL
LARGE-S
LARGE-N

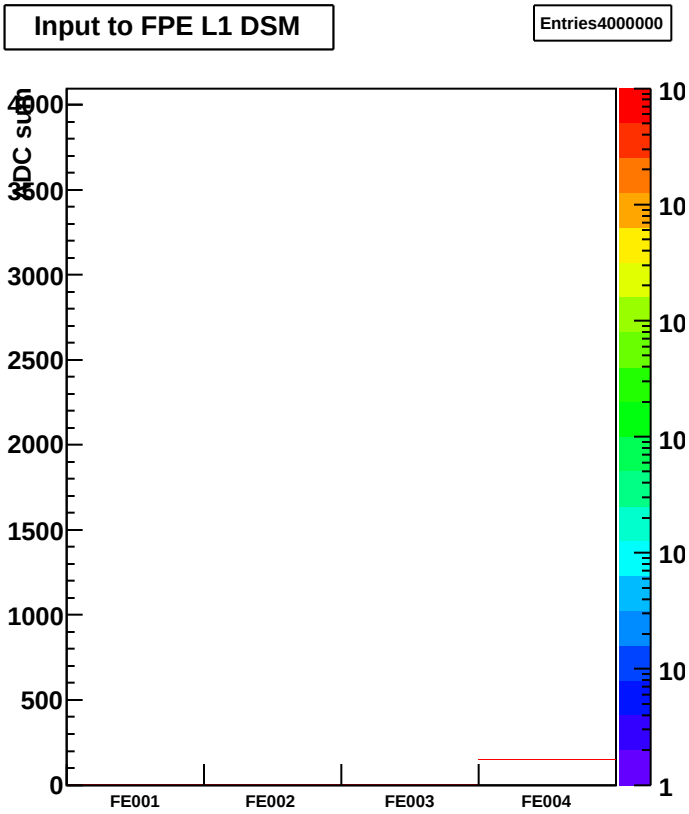

Input to FPD L2 DSM
Entries 6000000
jet patch sum (no FMS-LED)
0
10
20
30
40
50
60
ST
SB
NT
NB
S
N
1
10
10^2
10^3
10^4
10^5

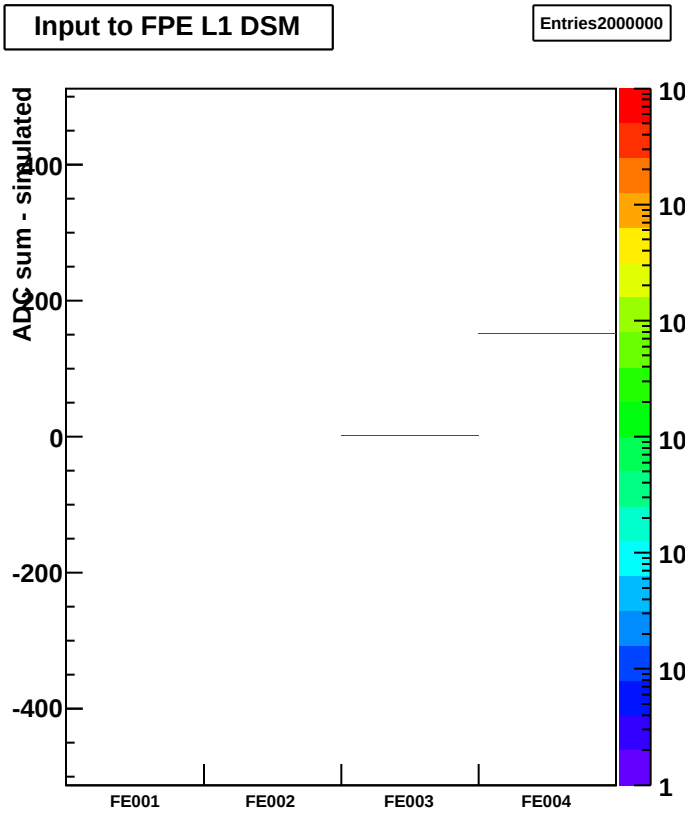

Input to FE001 QT board
Entries 3.2e+07
ADC
channel

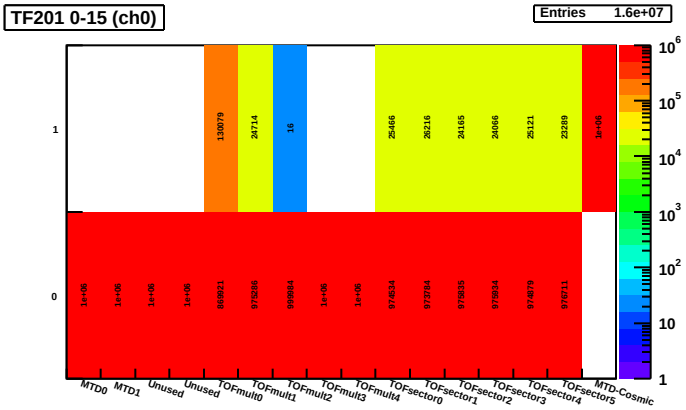

Input to FE002 QT board
Entries 3.2e+07
ADC
channel

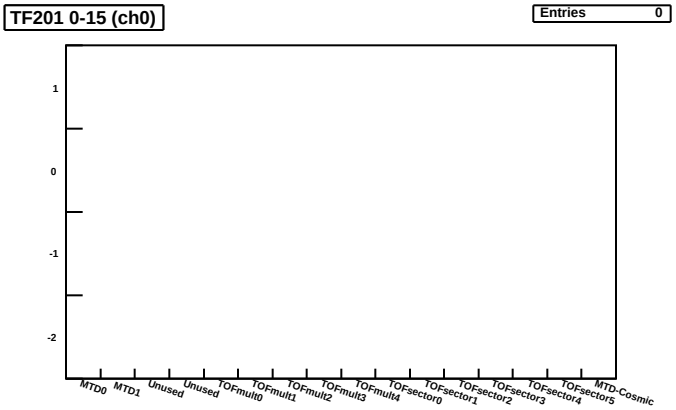

Input to FE003 QT board
Entries 3.2e+07
ADC
channel

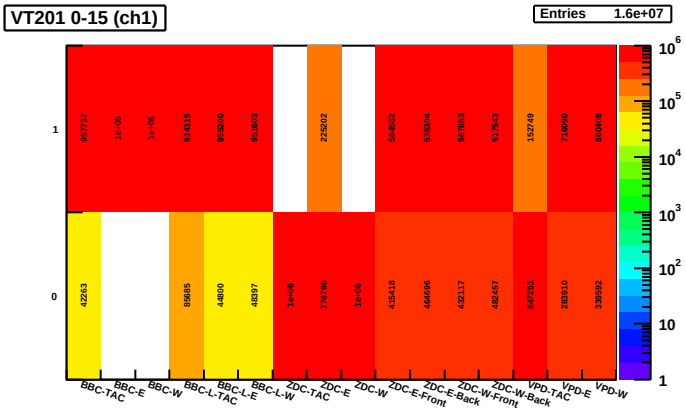

Input to FE004 QT board
Entries 3.2e+07
ADC
channel

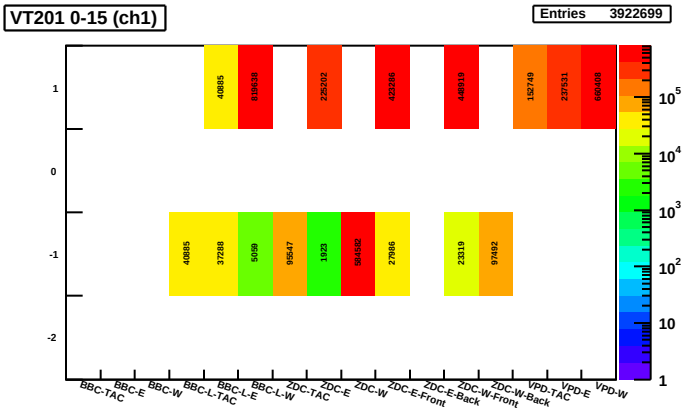

Input to FPE L1 DSM
Entries4000000
ADC sum
4000
3500
3000
2500
2000
1500
1000
500
0
FE001
FE002
FE003
FE004
10
10
10
10
10
10
1

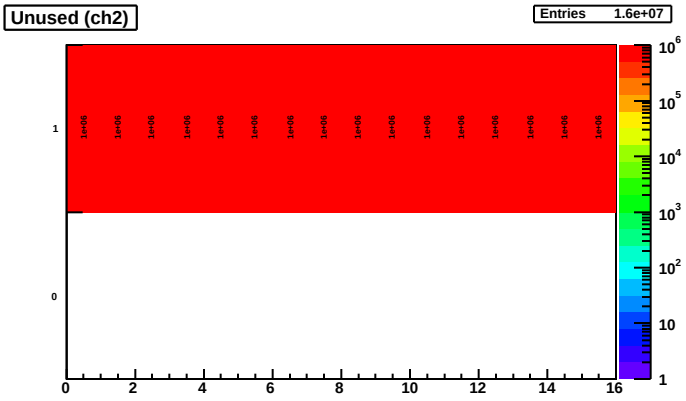

Input to FPE L1 DSM
Entries2000000
ADC sum - simulated
0
-200
-400
FE001
FE002
FE003
FE004
10
10
10
10
10
10
1

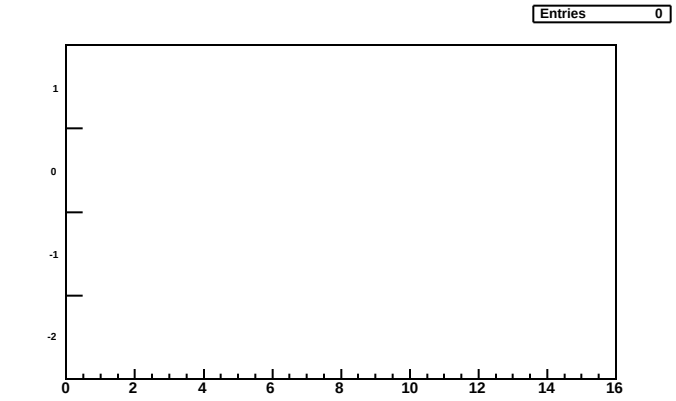

TF201 0-15 (ch0)
Entries 1.6e+07
MTD0 MTD1 Unused Unused TOFmult0 TOFmult1 TOFmult2 TOFmult3 TOFmult4 TOFsector0 TOFsector1 TOFsector2 TOFsector3 TOFsector4 TOFsector5 MTD-Cosmic

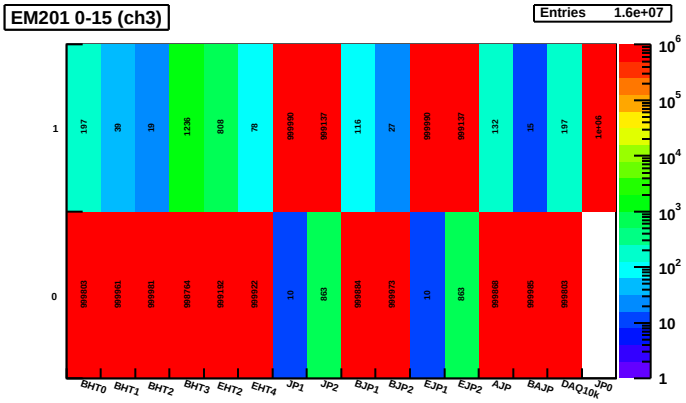

TF201 0-15 (ch0)
Entries 0
MTD0 MTD1 Unused Unused TOFmult0 TOFmult1 TOFmult2 TOFmult3 TOFmult4 TOFsector0 TOFsector1 TOFsector2 TOFsector3 TOFsector4 TOFsector5 MTD-Cosmic

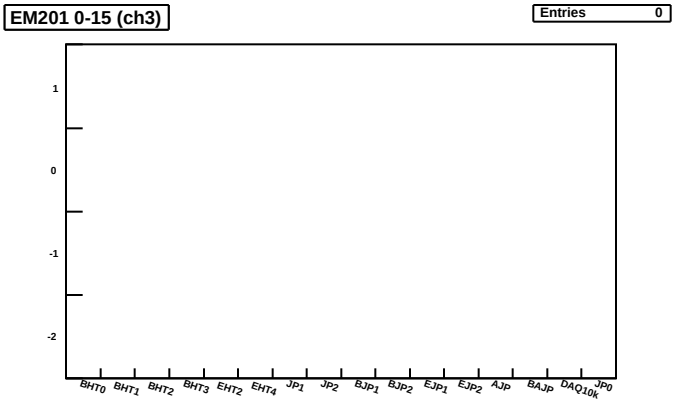

VT201 0-15 (ch1)
Entries 1.6e+07
BBC-TAC BBC-E BBC-W BBC-L-TAC BBC-L-E BBC-L-W ZDC-TAC ZDC-E ZDC-W ZDC-E-Front ZDC-E-Back ZDC-W-Front ZDC-W-Back VPD-TAC VPD-E VPD-W

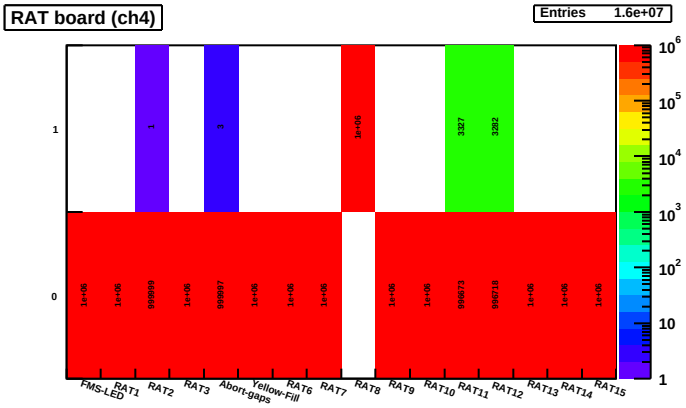

VT201 0-15 (ch1)
Entries 3922699
BBC-TAC BBC-E BBC-W BBC-L-TAC BBC-L-E BBC-L-W ZDC-TAC ZDC-E ZDC-W ZDC-E-Front ZDC-E-Back ZDC-W-Front ZDC-W-Back VPD-TAC VPD-E VPD-W

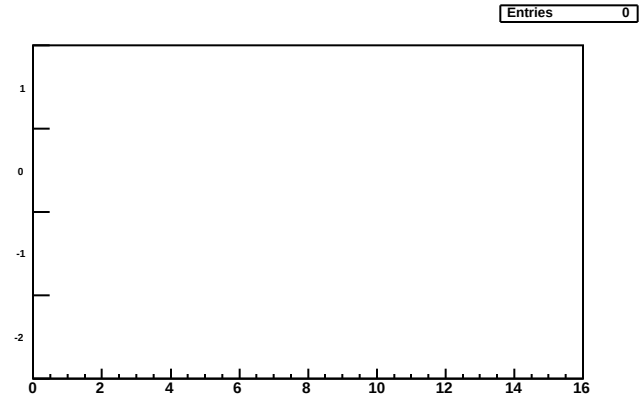

Unused (ch2)
Entries 1.6e+07

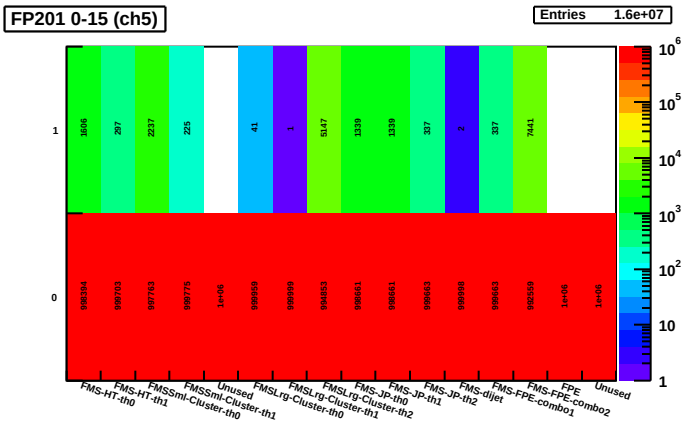

Entries 0

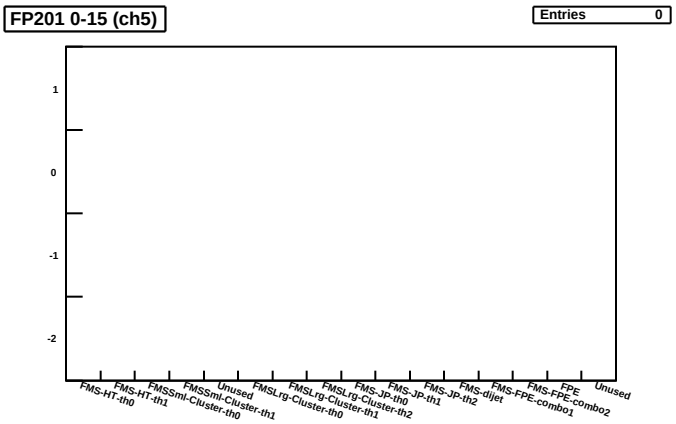

EM201 0-15 (ch3)
Entries 1.6e+07
BHT0 BHT1 BHT2 BHT3 EHT2 EHT4 JP1 JP2 BJP1 BJP2 EJP1 EJP2 AJP BAJP DAQ10k JP0

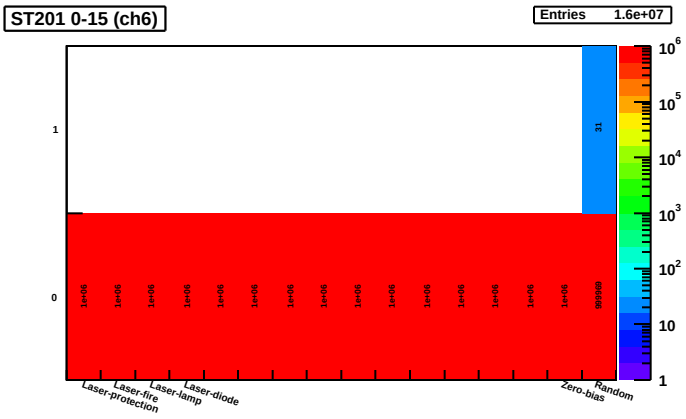

EM201 0-15 (ch3)
Entries 0
BHT0 BHT1 BHT2 BHT3 EHT2 EHT4 JP1 JP2 BJP1 BJP2 EJP1 EJP2 AJP BAJP DAQ10k JP0

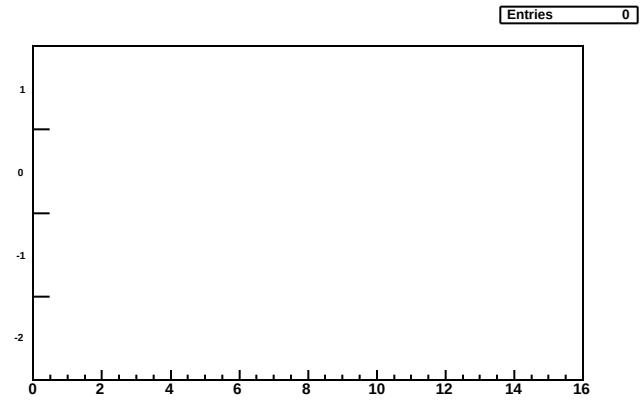

RAT board (ch4)
Entries 1.6e+07
FMS-LED
RAT1
RAT2
RAT3
Abort-gaps
Yellow-Fill
RAT6
RAT7
RAT8
RAT9
RAT10
RAT11
RAT12
RAT13
RAT14
RAT15

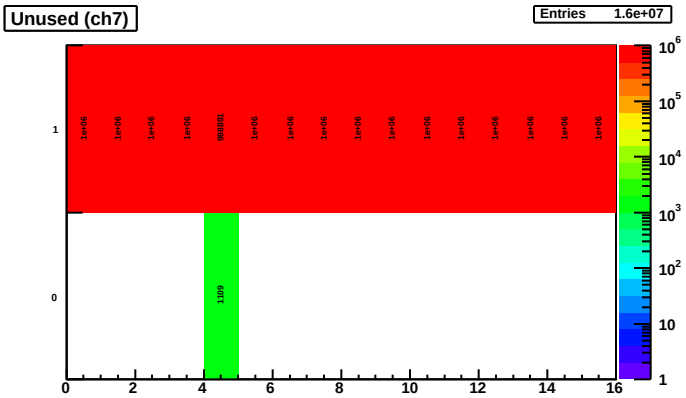

Entries 0

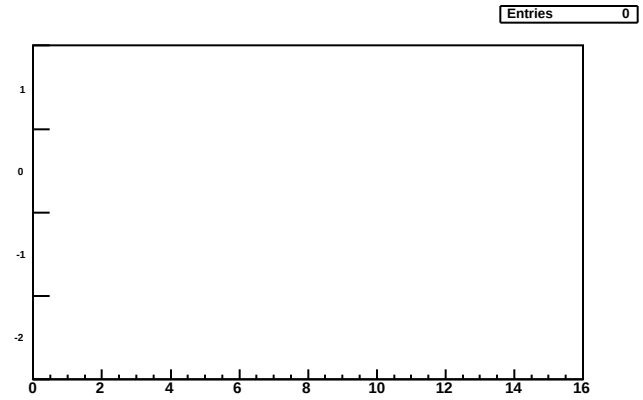

FP201 0-15 (ch5)
Entries 1.6e+07
FMS-HT-th0
FMS-HT-th1
FMSSml-Cluster-th0
FMSSml-Cluster-th1
Unused
FMSLrg-Cluster-th0
FMSLrg-Cluster-th1
FMS-JP-th0
FMS-JP-th1
FMS-JP-th2
FMS-dijet
FMS-FPE-combo1
FPE
FMS-FPE-combo2
Unused


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 1.6e+07
Laser-protection
Laser-fire
Laser-lamp
Laser-diode
Zero-bias
Random


Entries 0


Unused (ch7)
Entries 1.6e+07


Entries 0