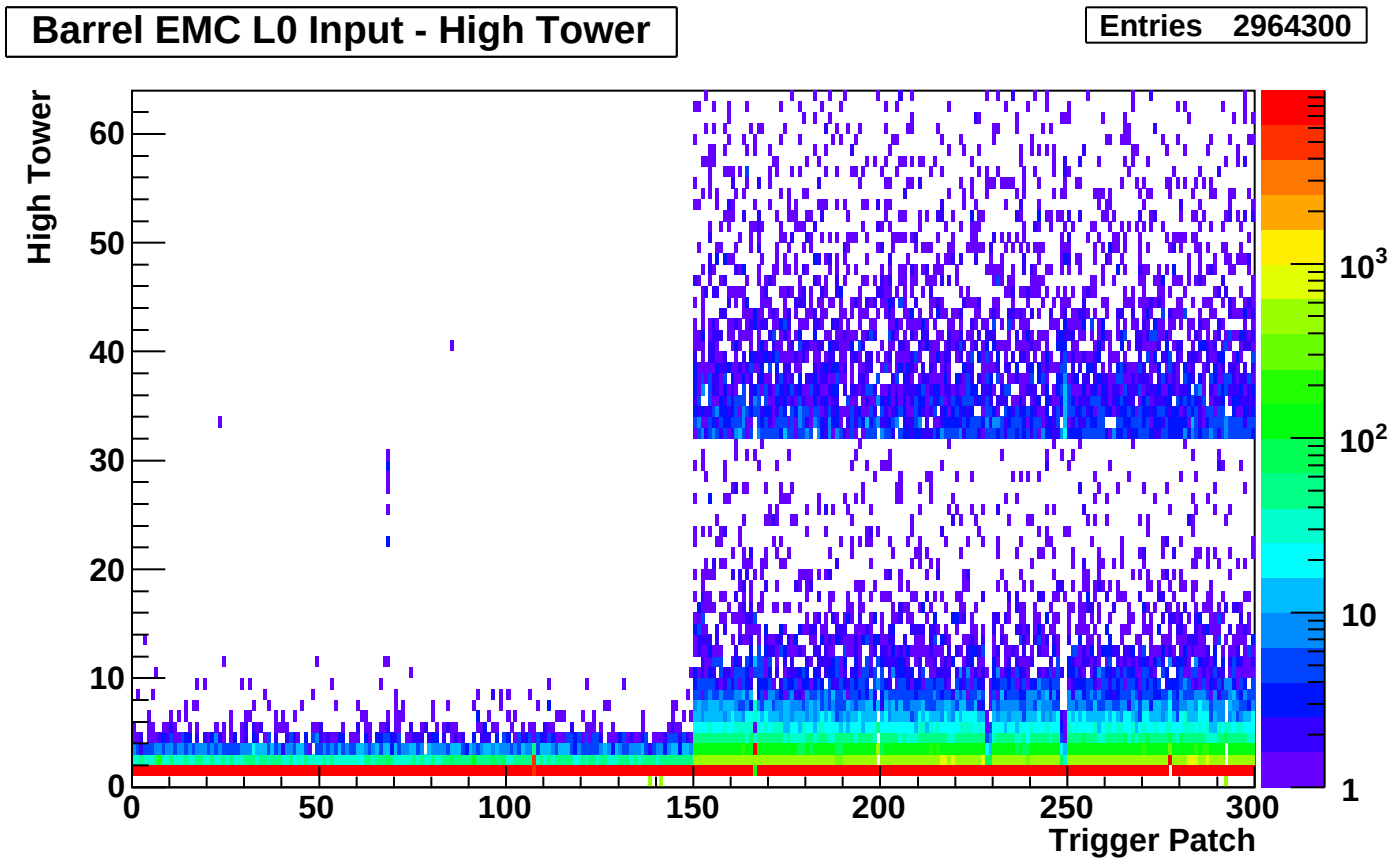
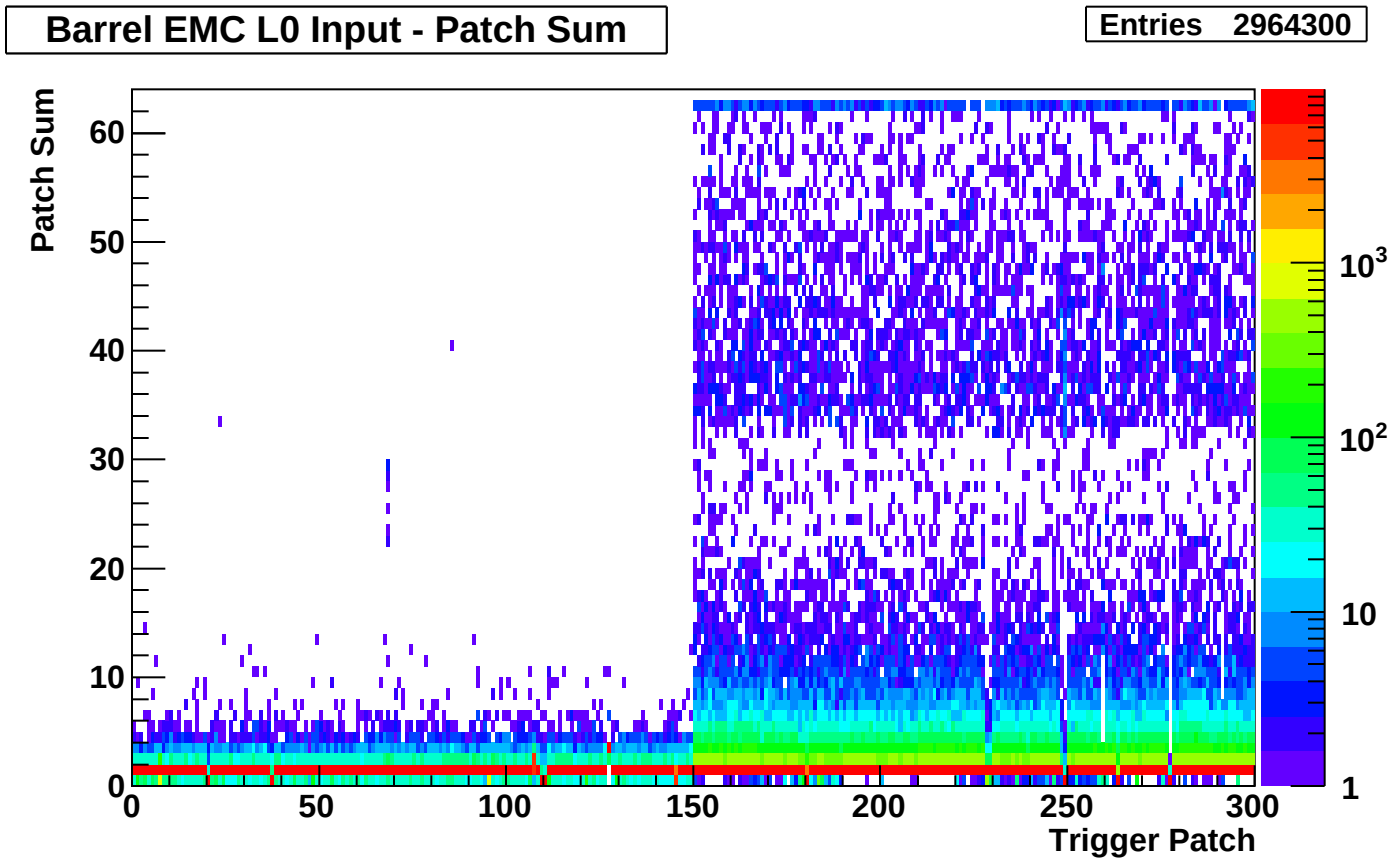
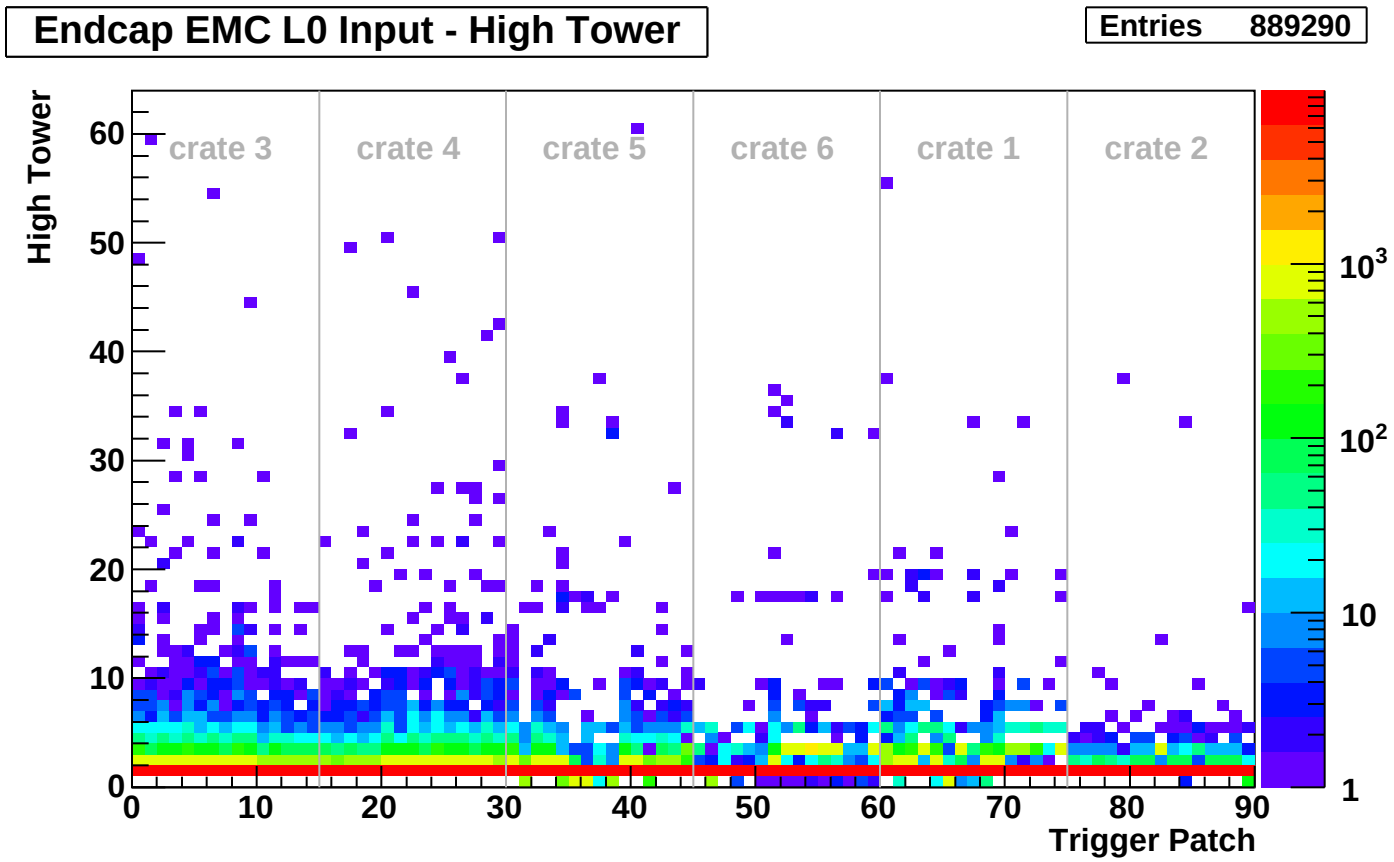
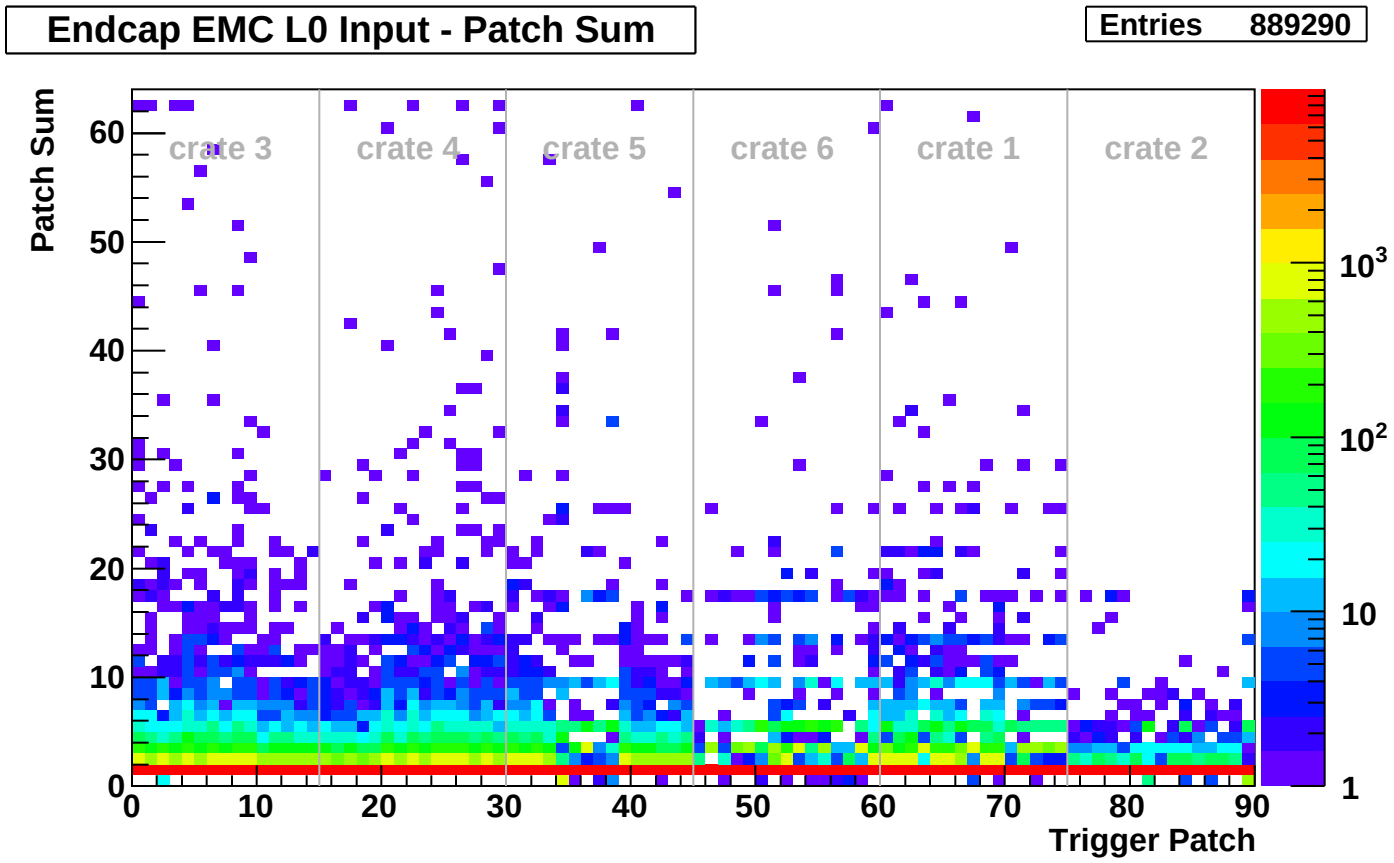
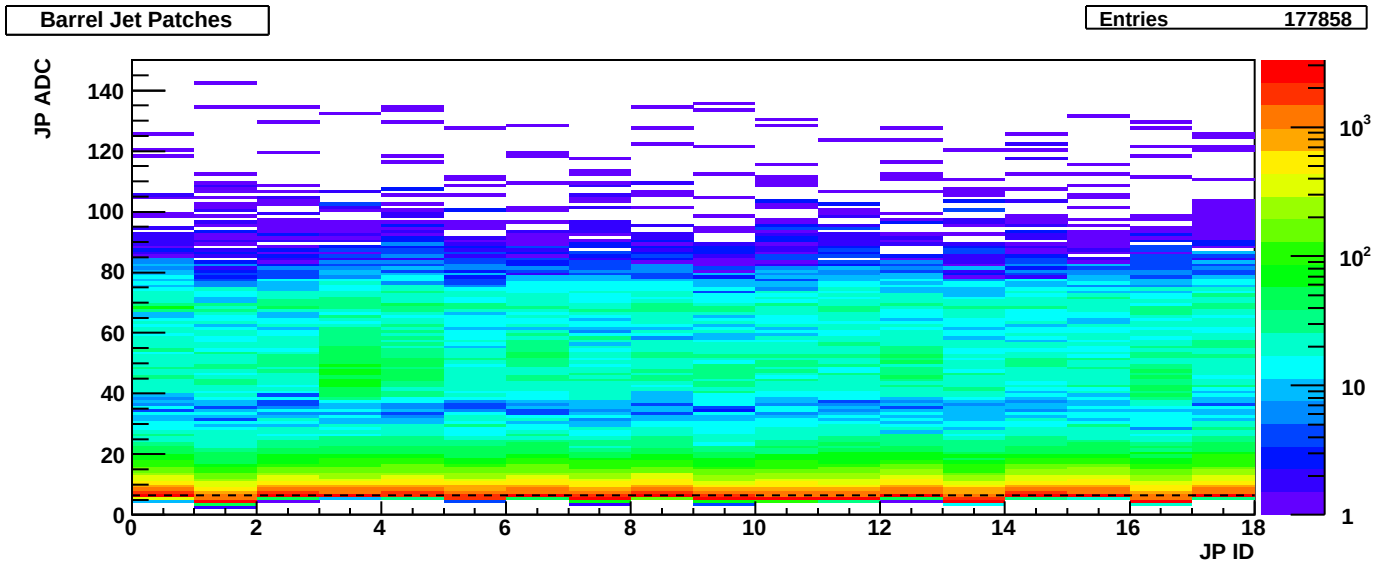
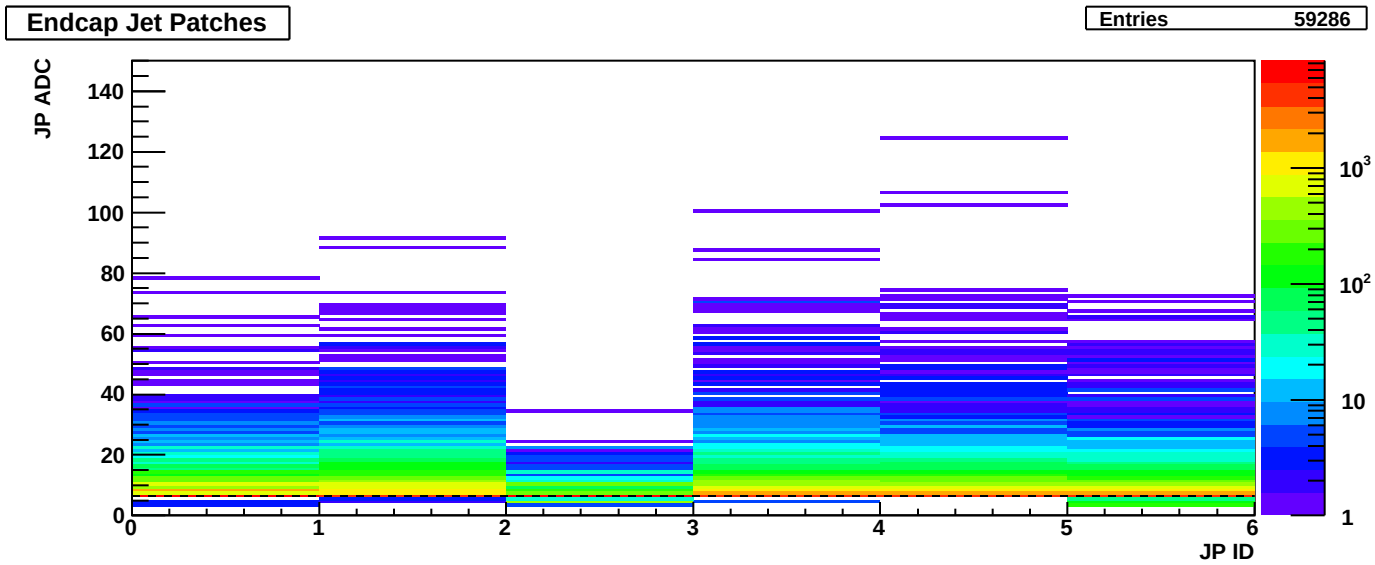

Barrel EMC L0 Input - High Tower
Entries 2964300
High Tower
Trigger Patch
0
10
20
30
40
50
60
0
50
100
150
200
250
300
1
10
10^2
10^3

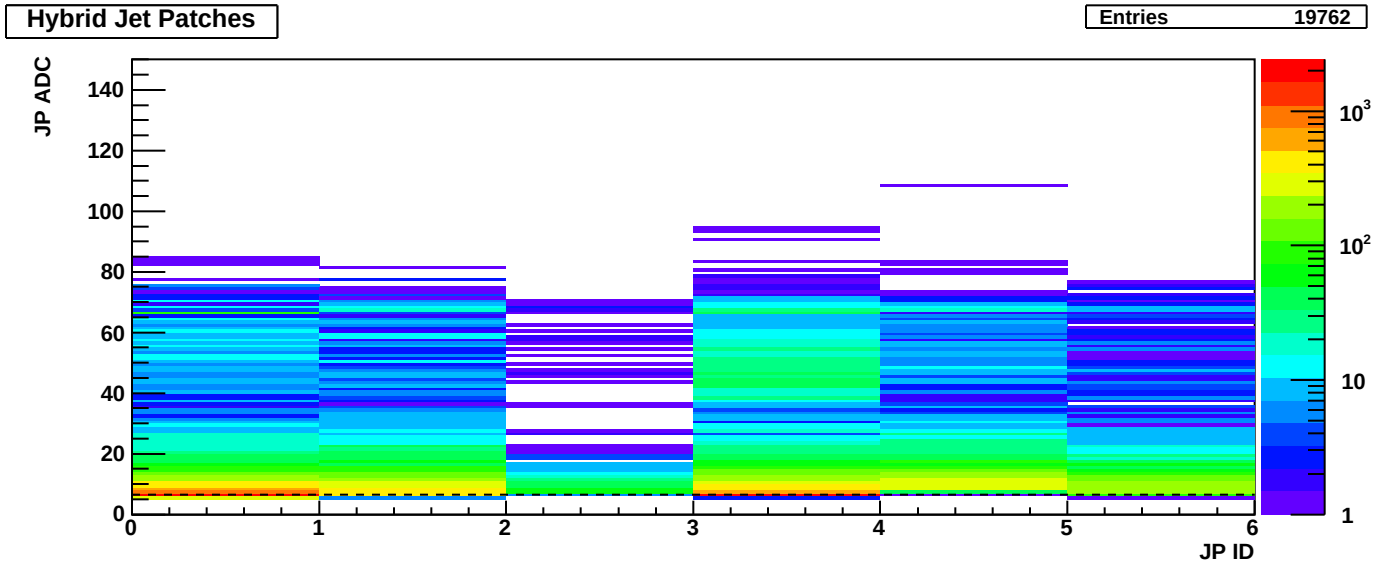

Barrel EMC L0 Input - Patch Sum
Entries 2964300
Patch Sum
Trigger Patch
0
10
20
30
40
50
60
0
50
100
150
200
250
300
1
10
10^2
10^3

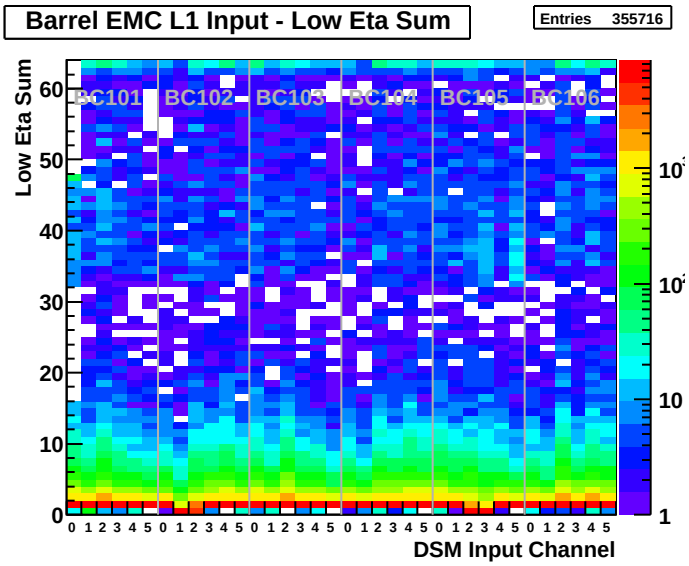

Endcap EMC L0 Input - High Tower
Entries 889290
High Tower
crate 3
crate 4
crate 5
crate 6
crate 1
crate 2
Trigger Patch

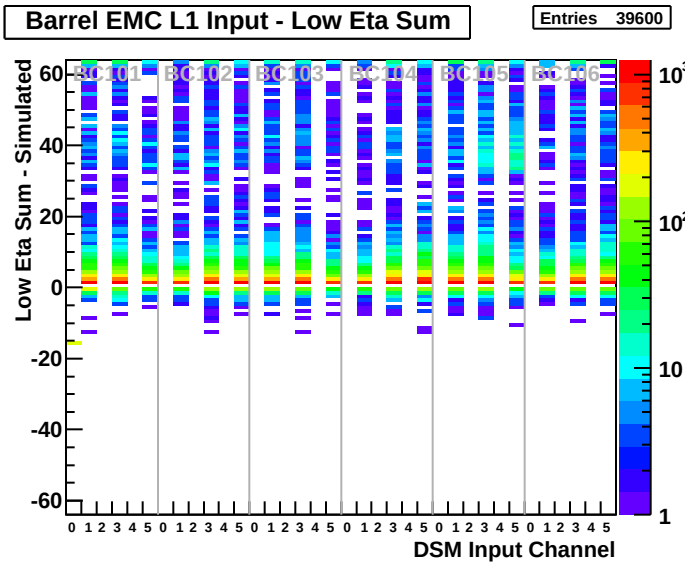

Endcap EMC L0 Input - Patch Sum
Entries 889290
Patch Sum
crate 3
crate 4
crate 5
crate 6
crate 1
crate 2
Trigger Patch

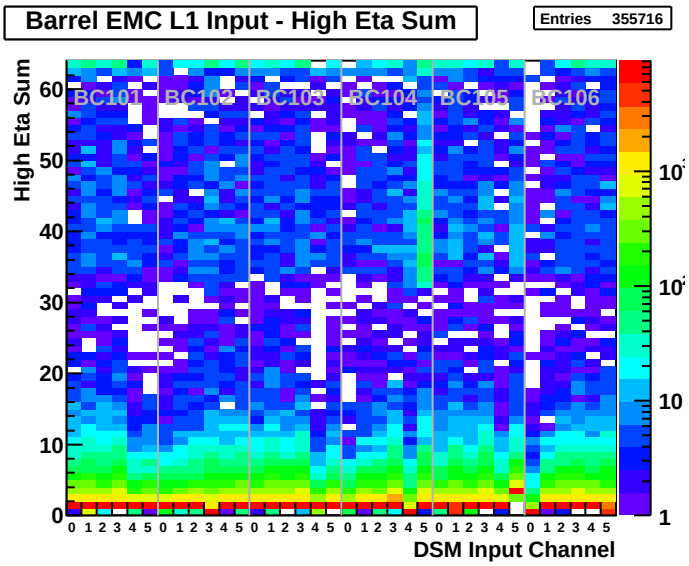

Barrel Jet Patches
Entries 177858
JP ADC
JP ID

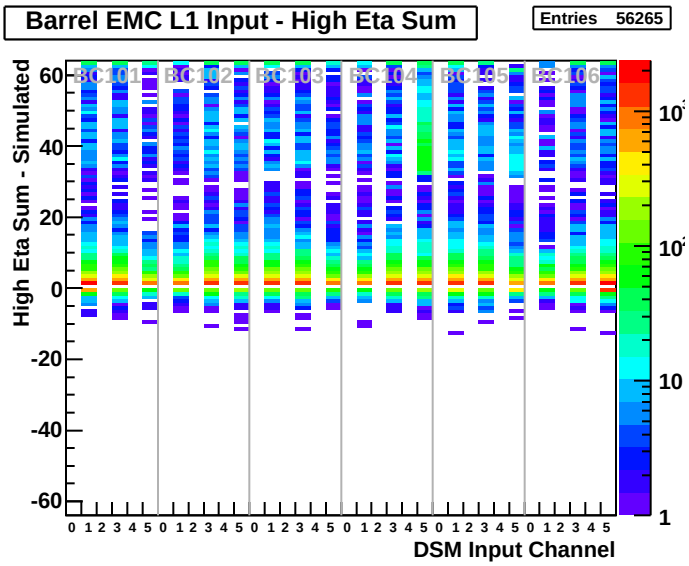

Endcap Jet Patches
Entries 59286
JP ADC
JP ID

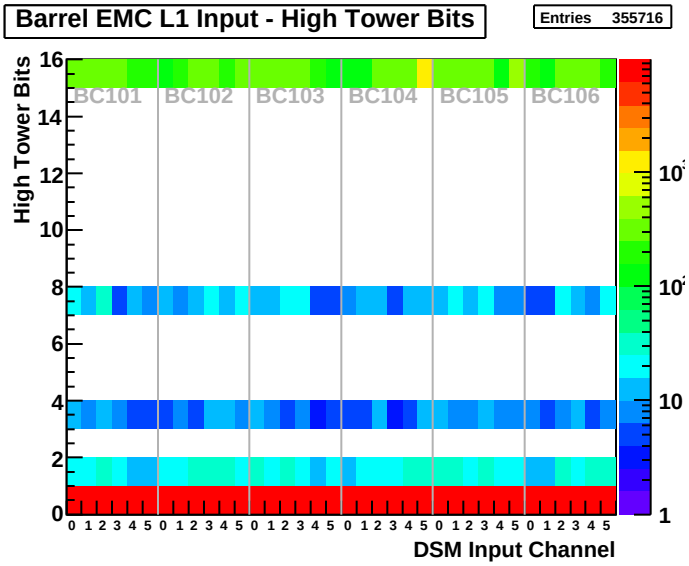

Hybrid Jet Patches
Entries 19762
JP ADC
JP ID

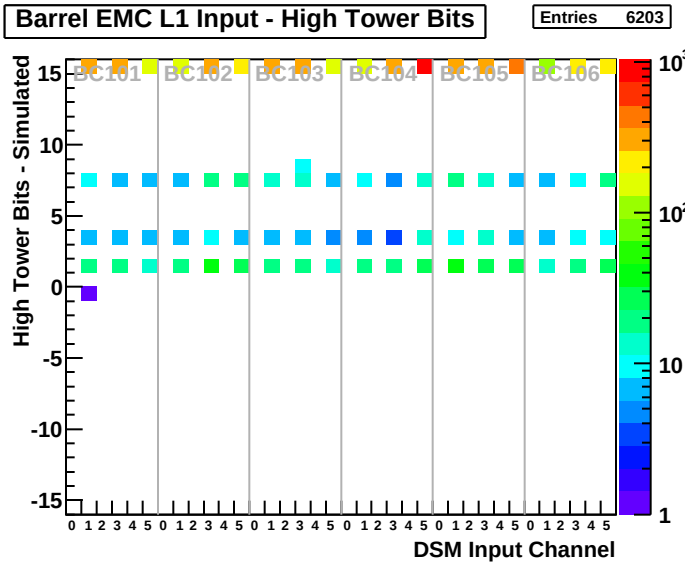

Barrel EMC L1 Input - Low Eta Sum
Entries 355716
Low Eta Sum
BC101 BC102 BC103 BC104 BC105 BC106
DSM Input Channel

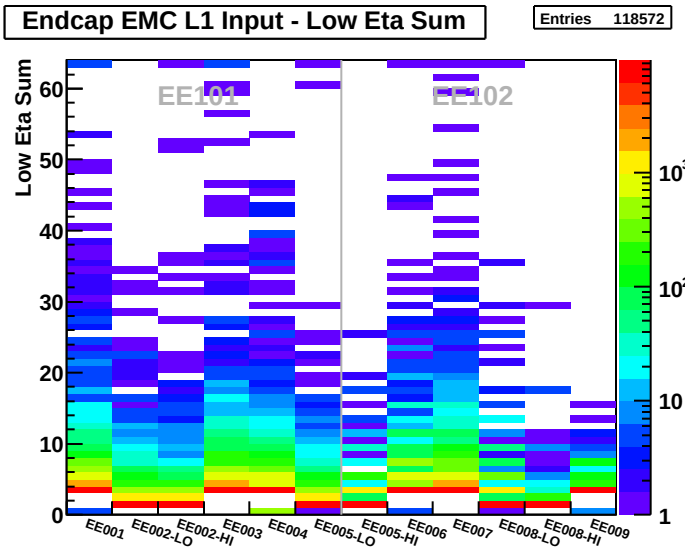

Barrel EMC L1 Input - Low Eta Sum
Entries 39600
Low Eta Sum - Simulated
BC101 BC102 BC103 BC104 BC105 BC106
DSM Input Channel

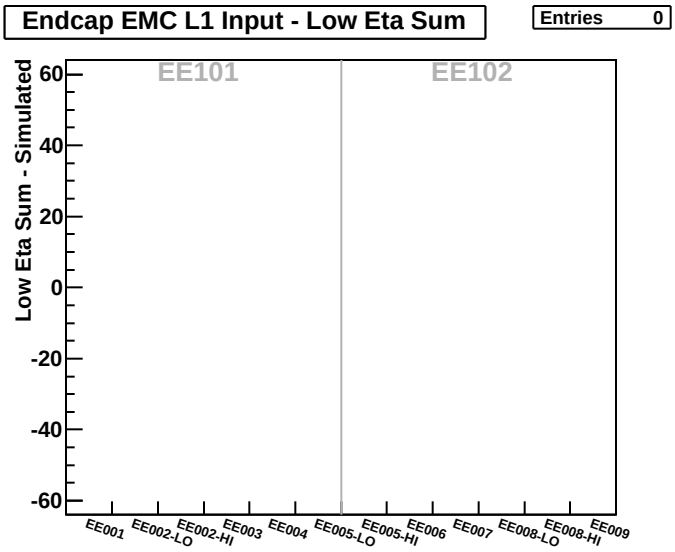

Barrel EMC L1 Input - High Eta Sum
Entries 355716
High Eta Sum
BC101 BC102 BC103 BC104 BC105 BC106
DSM Input Channel

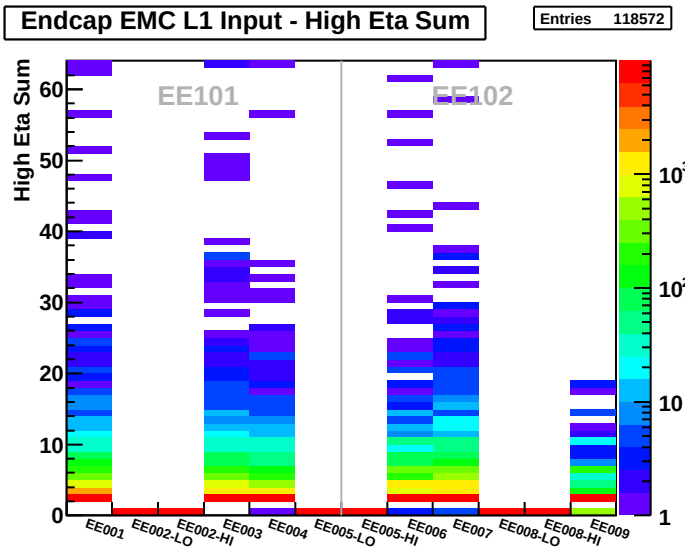

Barrel EMC L1 Input - High Eta Sum
Entries 56265
High Eta Sum - Simulated
BC101 BC102 BC103 BC104 BC105 BC106
DSM Input Channel

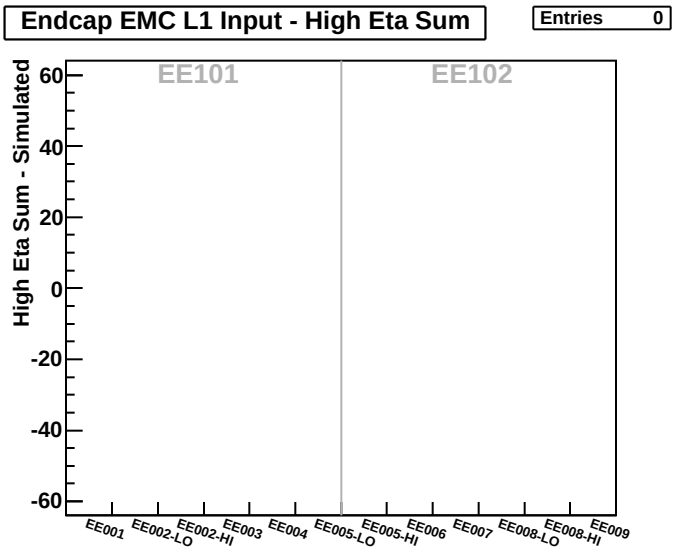

Barrel EMC L1 Input - High Tower Bits
Entries 355716
High Tower Bits
BC101 BC102 BC103 BC104 BC105 BC106
DSM Input Channel

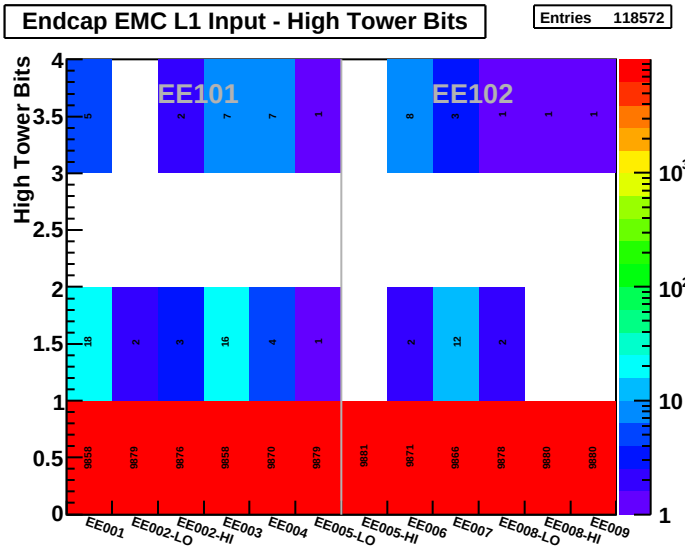

Barrel EMC L1 Input - High Tower Bits
Entries 6203
High Tower Bits - Simulated
BC101 BC102 BC103 BC104 BC105 BC106
DSM Input Channel

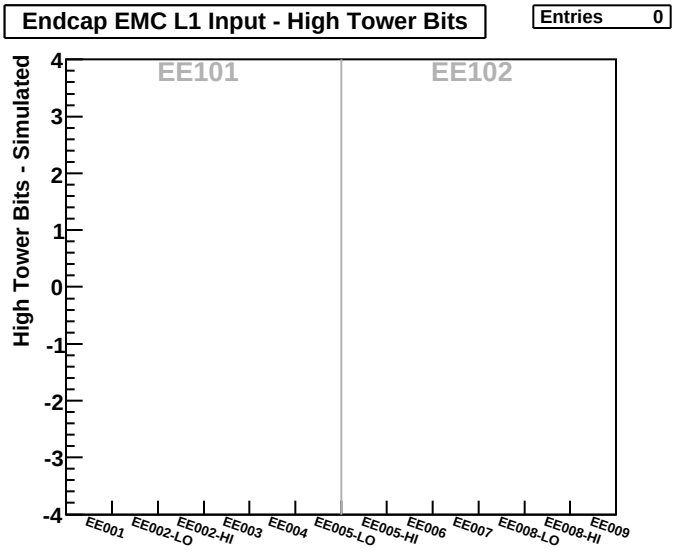

Endcap EMC L1 Input - Low Eta Sum
Entries 118572
Low Eta Sum
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

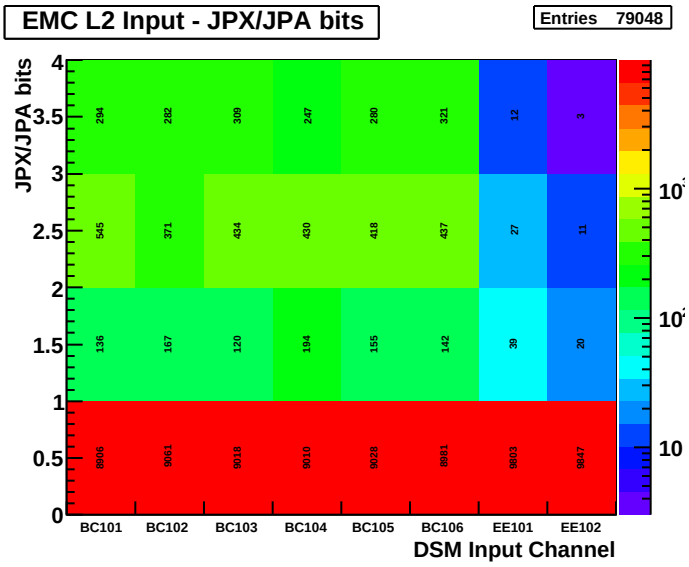

Endcap EMC L1 Input - Low Eta Sum
Entries 0
Low Eta Sum - Simulated
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

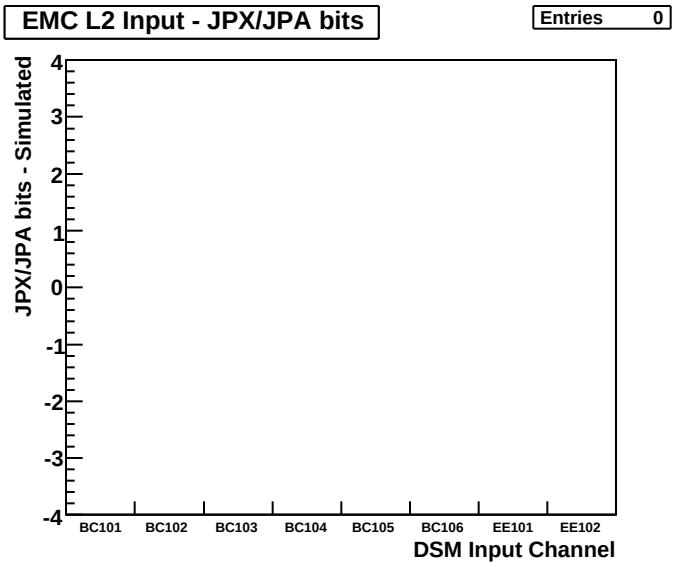

Endcap EMC L1 Input - High Eta Sum
Entries 118572
High Eta Sum
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

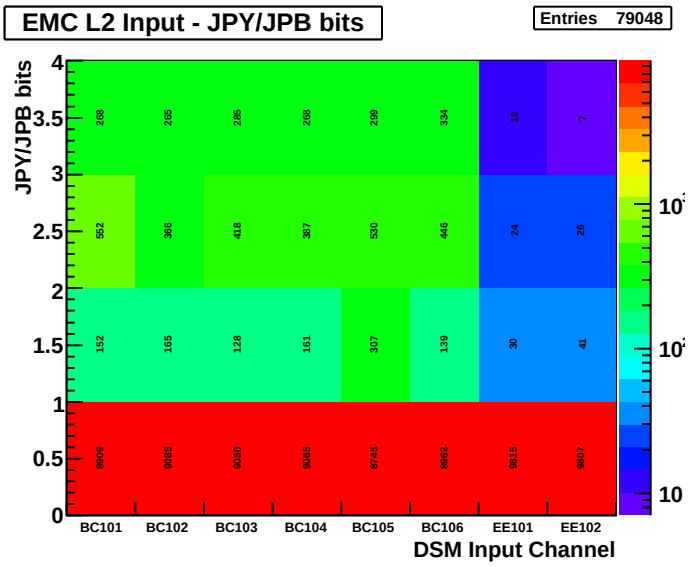

Endcap EMC L1 Input - High Eta Sum
Entries 0
High Eta Sum - Simulated
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

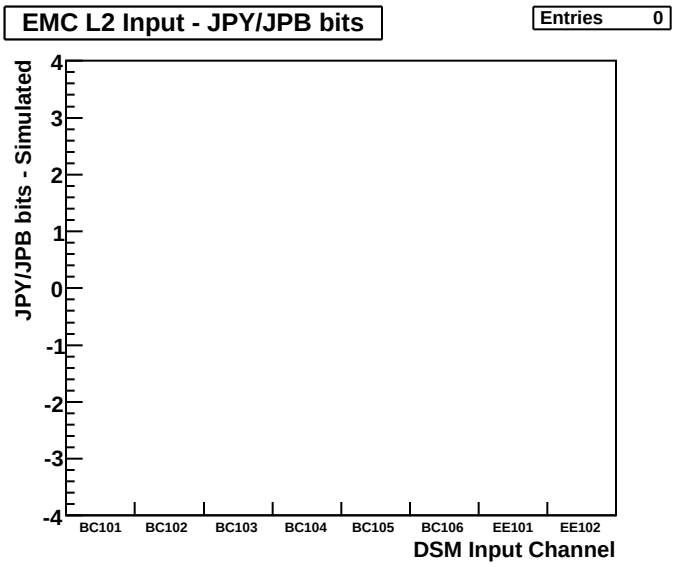

Endcap EMC L1 Input - High Tower Bits
Entries 118572
High Tower Bits
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

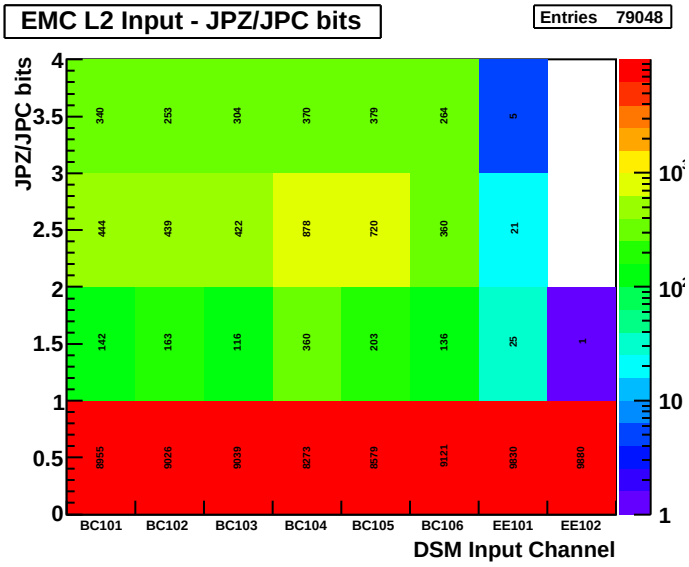

Endcap EMC L1 Input - High Tower Bits
Entries 0
High Tower Bits - Simulated
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

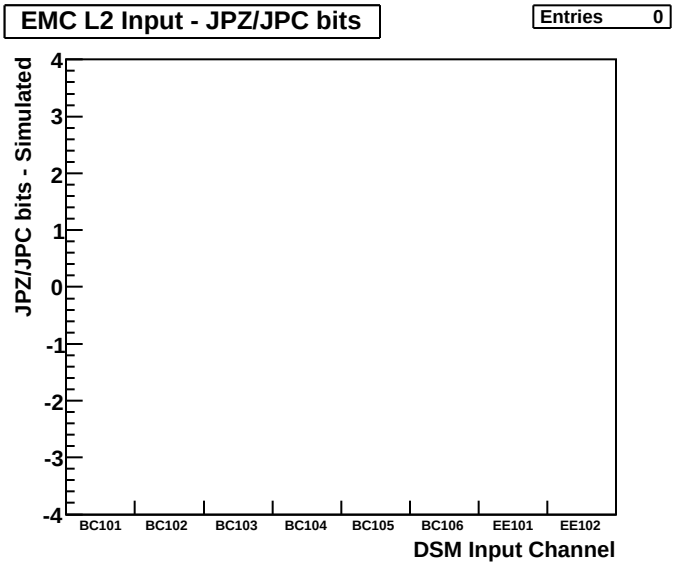

EMC L2 Input - JPX/JPA bits
Entries 79048
JPX/JPA bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102
294 282 309 247 280 321 12 3
545 371 434 430 418 437 27 11
136 167 120 194 155 142 39 20
8906 9061 9018 9010 9028 8981 9803 9847

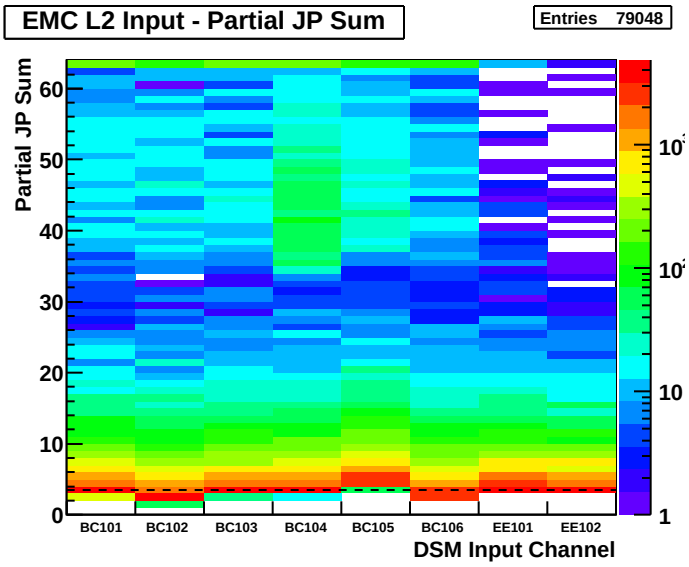

EMC L2 Input - JPX/JPA bits
Entries 0
JPX/JPA bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

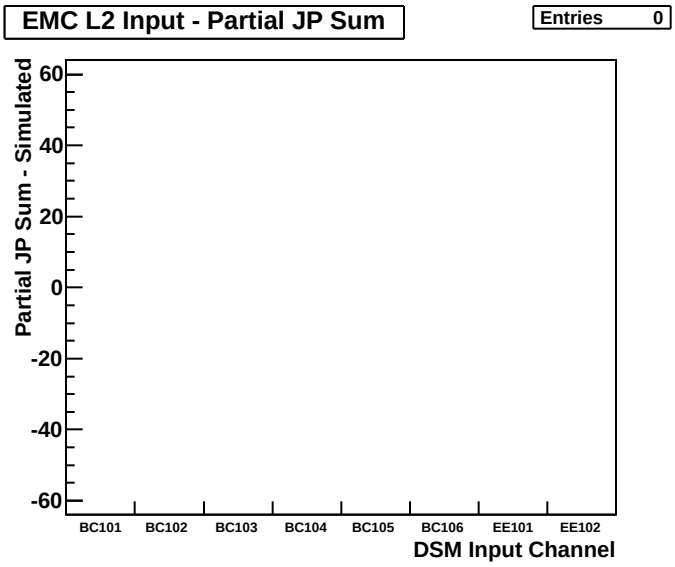

EMC L2 Input - JPY/JPB bits
Entries 79048
JPY/JPB bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102
288 265 285 268 299 334 12 7
552 366 418 387 530 446 24 26
152 165 128 161 307 139 30 41
8809 9085 9050 9065 8745 8962 9815 9807

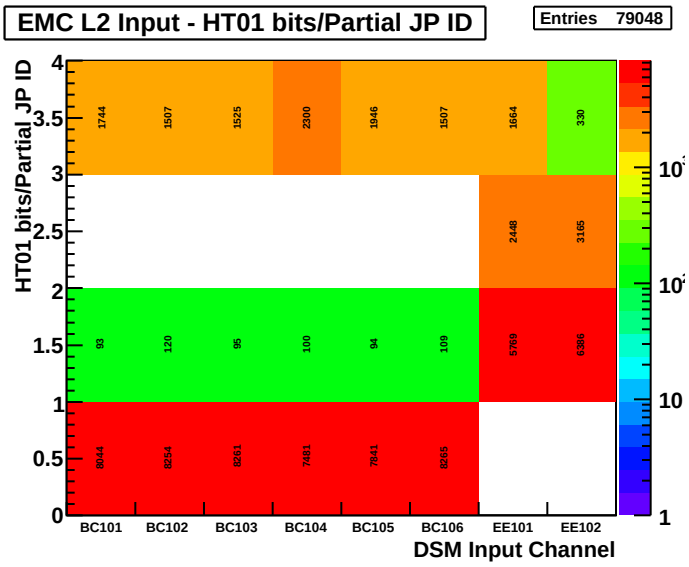

EMC L2 Input - JPY/JPB bits
Entries 0
JPY/JPB bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

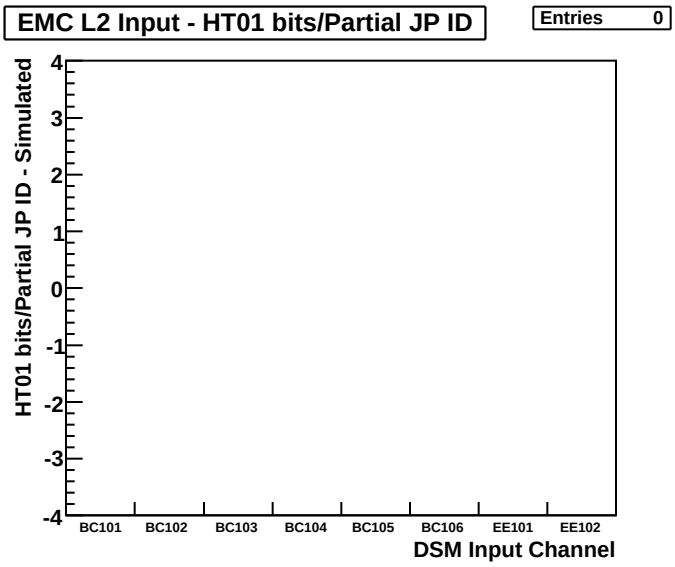

EMC L2 Input - JPZ/JPC bits
Entries 79048
JPZ/JPC bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102
340 253 304 370 379 264 5
444 439 422 878 720 360 21
142 163 116 360 203 136 25 1
8955 9026 9039 8273 8579 9121 9830 9880

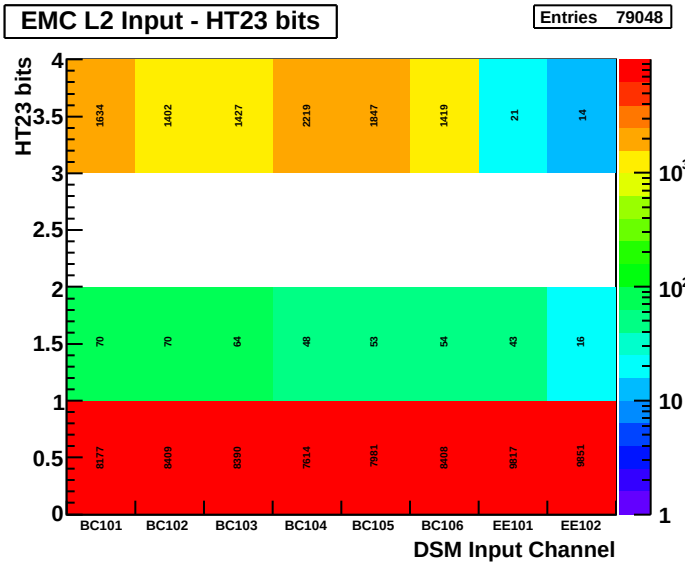

EMC L2 Input - JPZ/JPC bits
Entries 0
JPZ/JPC bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

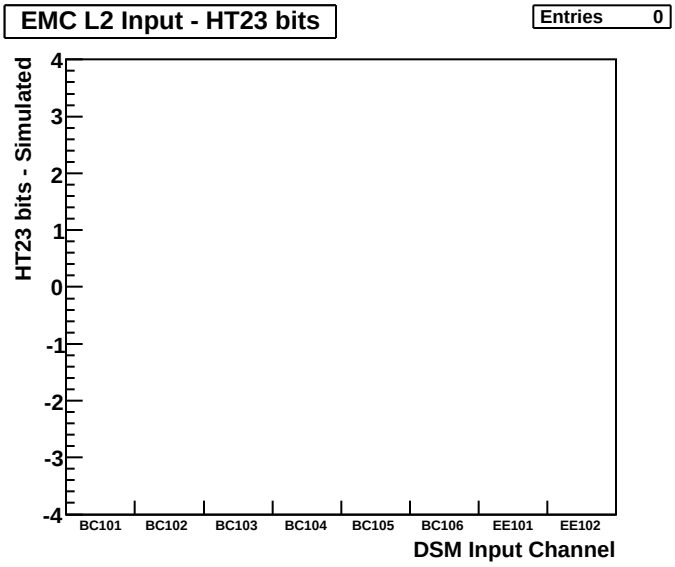

EMC L2 Input - Partial JP Sum
Entries 79048
Partial JP Sum
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

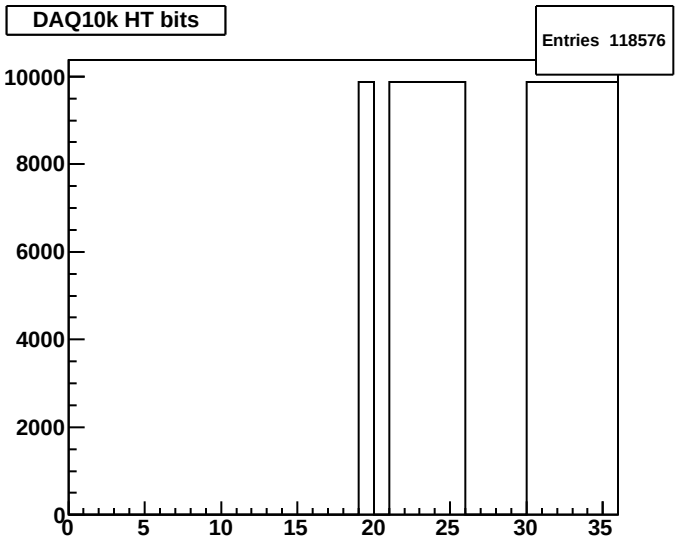

EMC L2 Input - Partial JP Sum
Entries 0
Partial JP Sum - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

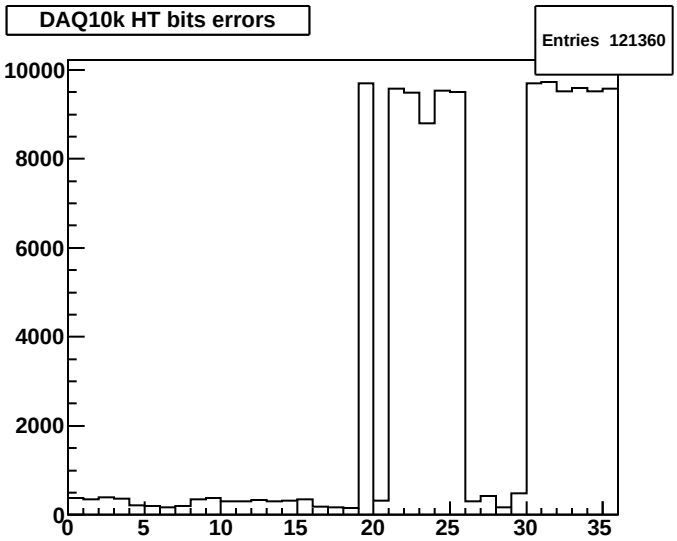

EMC L2 Input - HT01 bits/Partial JP ID
Entries 79048
HT01 bits/Partial JP ID
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

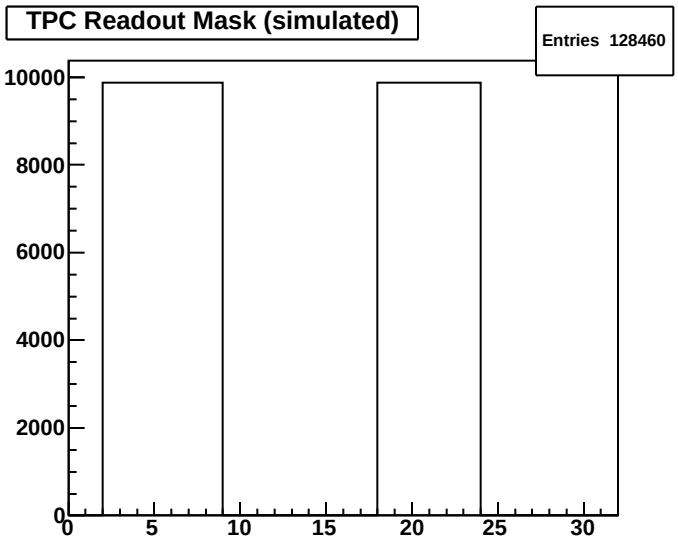

EMC L2 Input - HT01 bits/Partial JP ID
Entries 0
HT01 bits/Partial JP ID - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

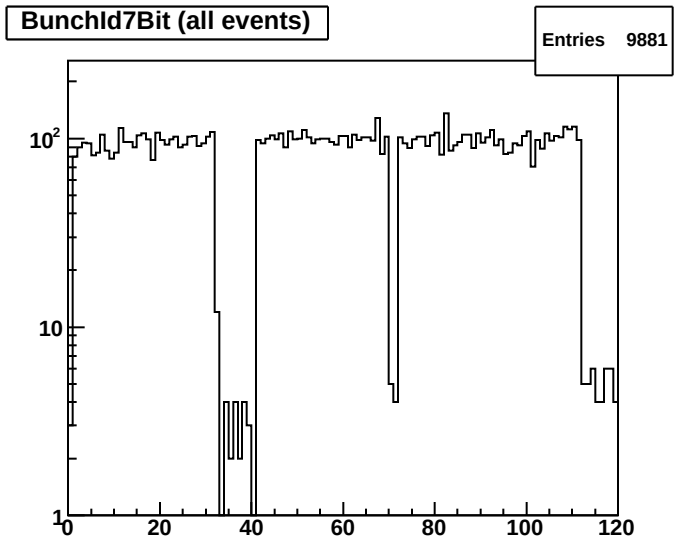

EMC L2 Input - HT23 bits
Entries 79048
HT23 bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

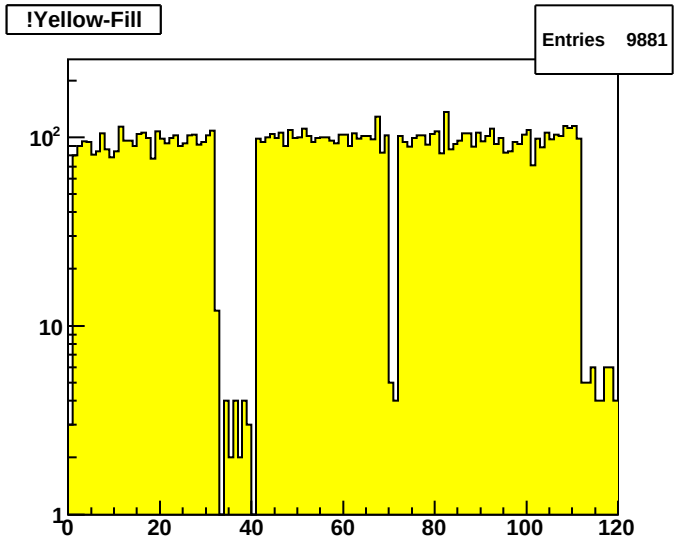

EMC L2 Input - HT23 bits
Entries 0
HT23 bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

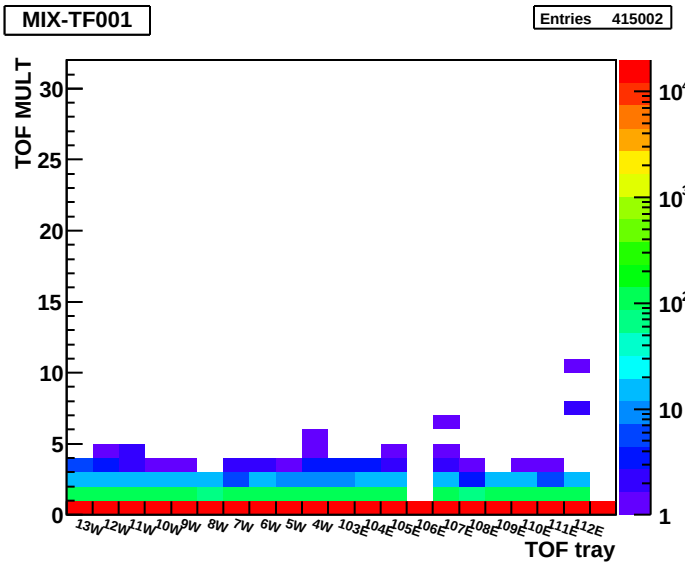

DAQ10k HT bits
Entries 118576
10000
8000
6000
4000
2000
0
0 5 10 15 20 25 30 35

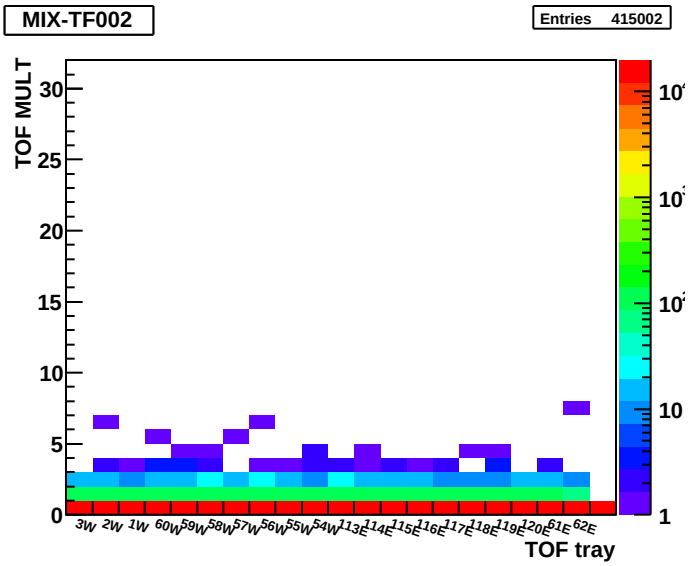

DAQ10k HT bits errors
Entries 121360
10000
8000
6000
4000
2000
0
0 5 10 15 20 25 30 35

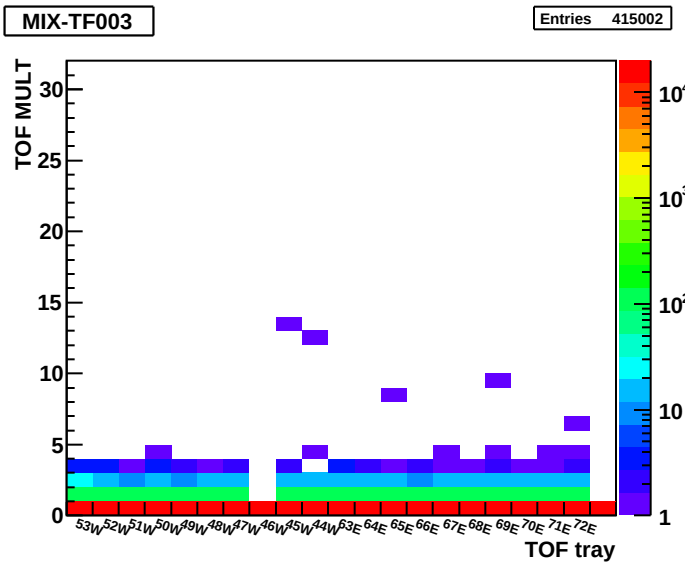

TPC Readout Mask (simulated)
Entries 128460
10000
8000
6000
4000
2000
0
0 5 10 15 20 25 30

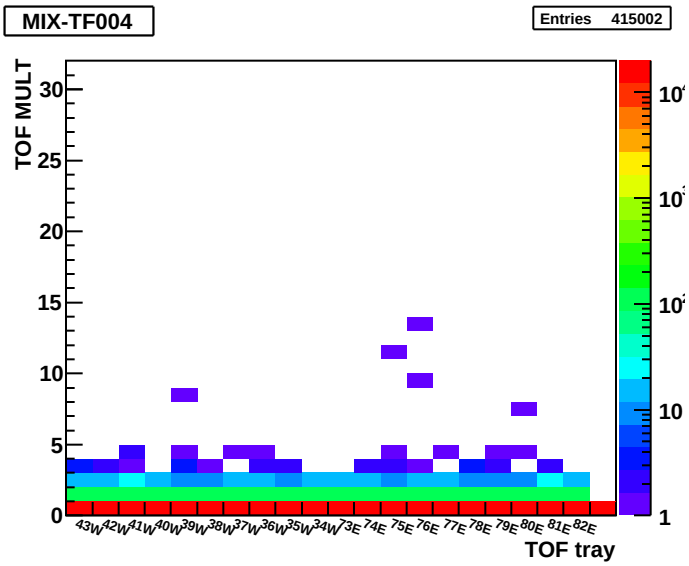

BunchId7Bit (all events)
Entries 9881
10^2
10
1
0 20 40 60 80 100 120

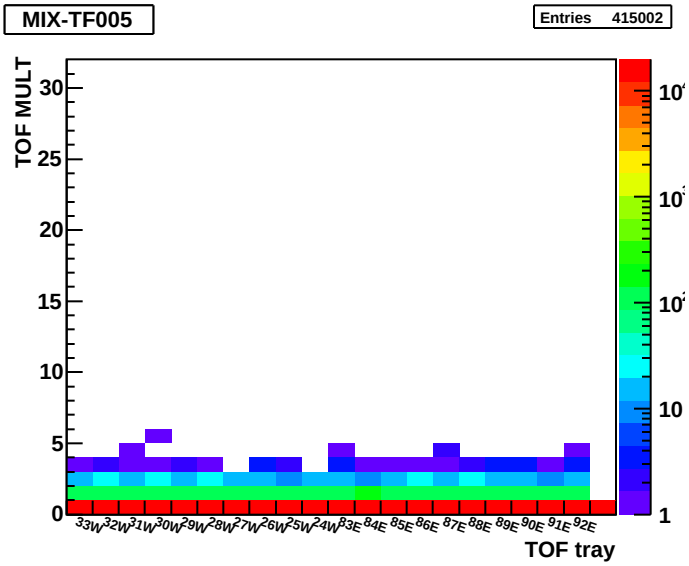

!Yellow-Fill
Entries 9881
10^2
10
1
0 20 40 60 80 100 120

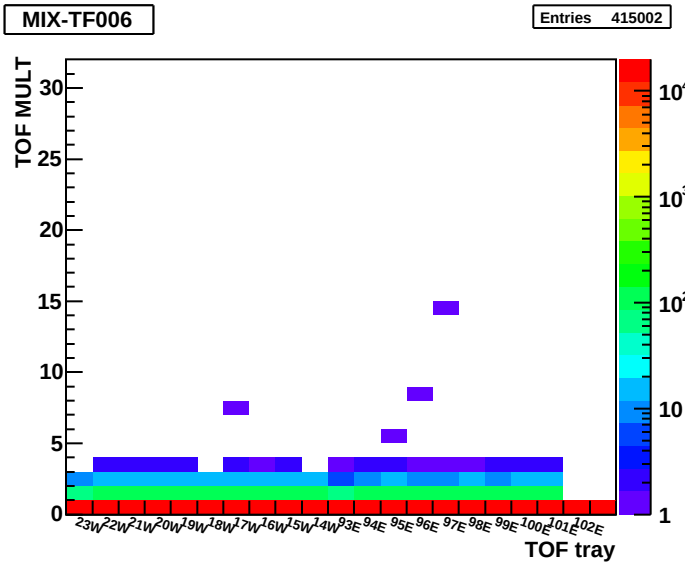

MIX-TF001
Entries 415002
TOF MULT
TOF tray

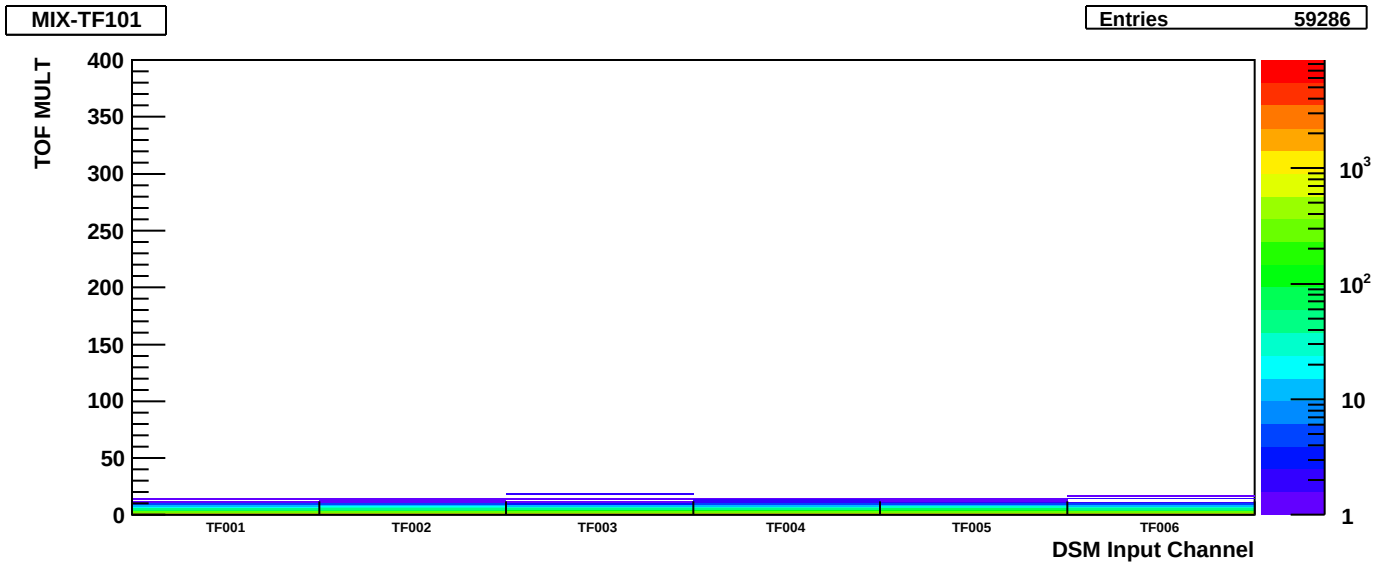

MIX-TF002
Entries 415002
TOF MULT
TOF tray

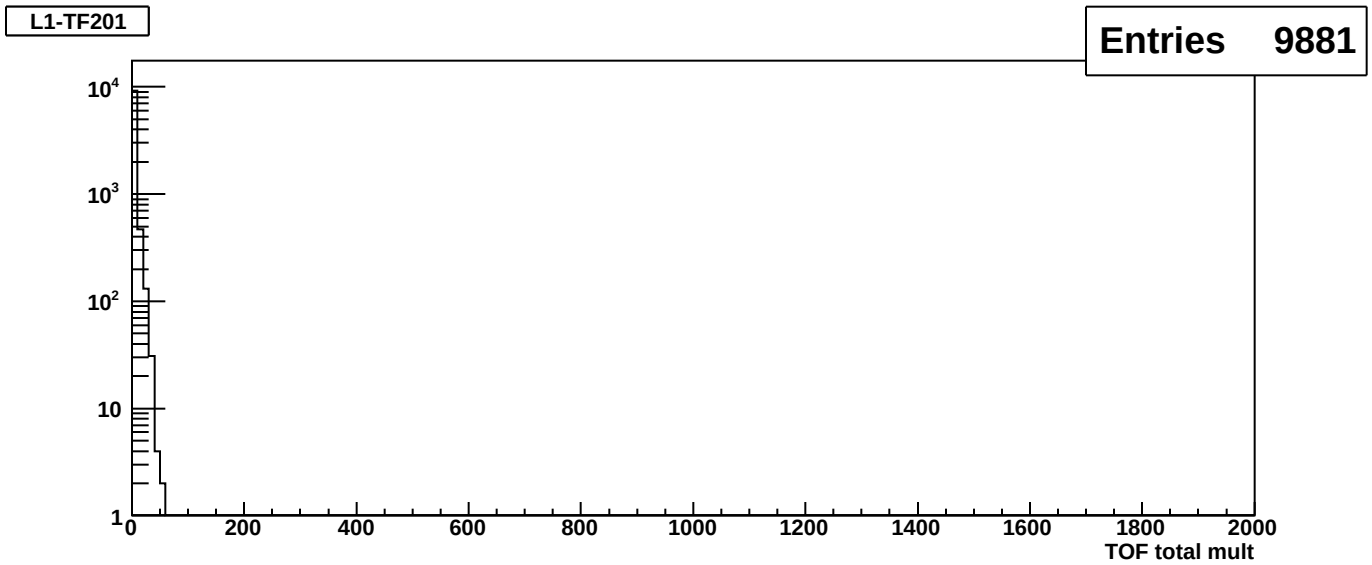

MIX-TF003
Entries 415002
TOF MULT
TOF tray

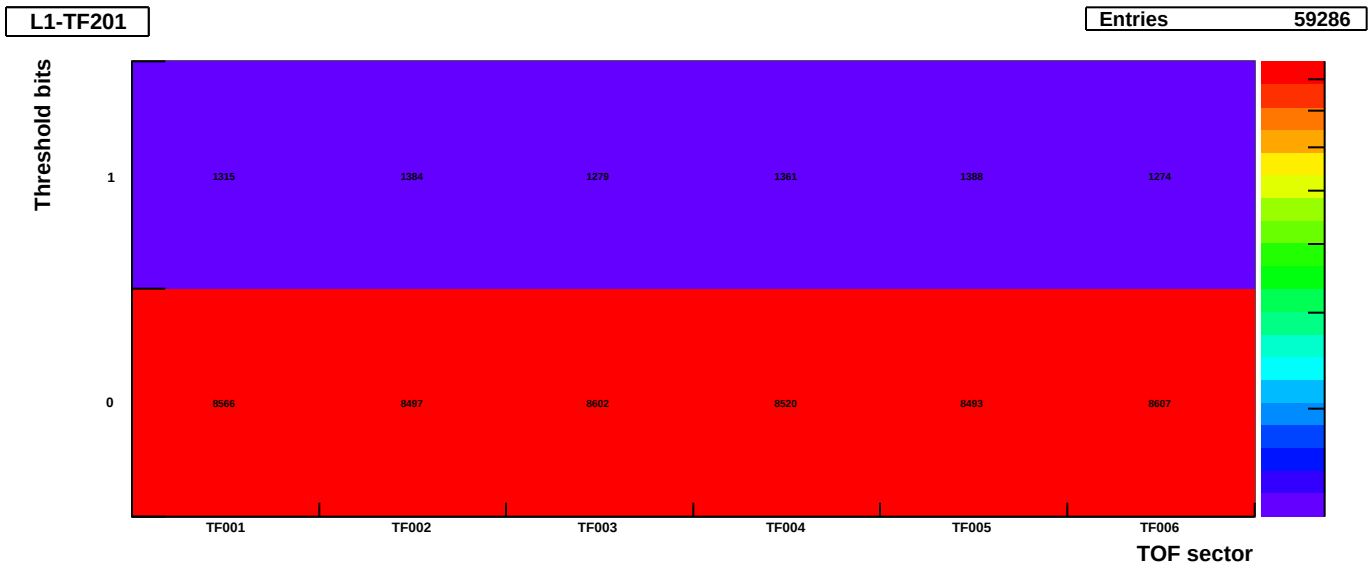

MIX-TF004
Entries 415002
TOF MULT
TOF tray

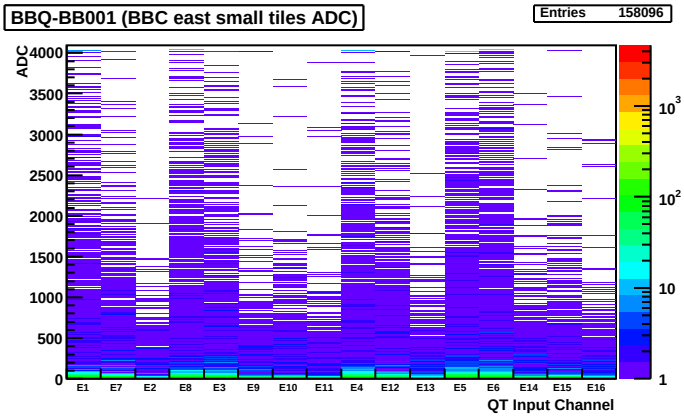

MIX-TF005
Entries 415002
TOF MULT
TOF tray

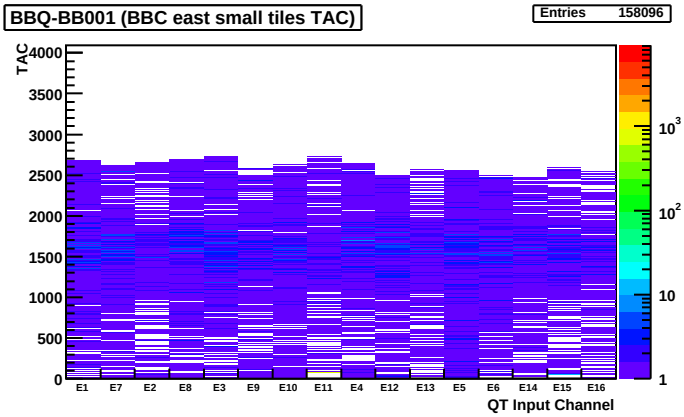

MIX-TF006
Entries 415002
TOF MULT
TOF tray

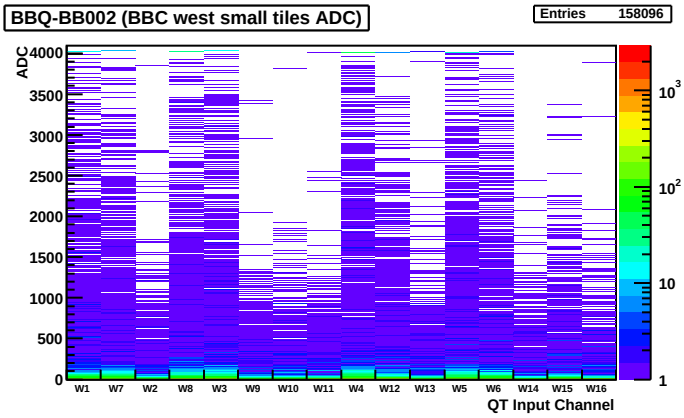

MIX-TF101
Entries 59286
TOF MULT
400
350
300
250
200
150
100
50
0
TF001
TF002
TF003
TF004
TF005
TF006
DSM Input Channel
10^3
10^2
10
1

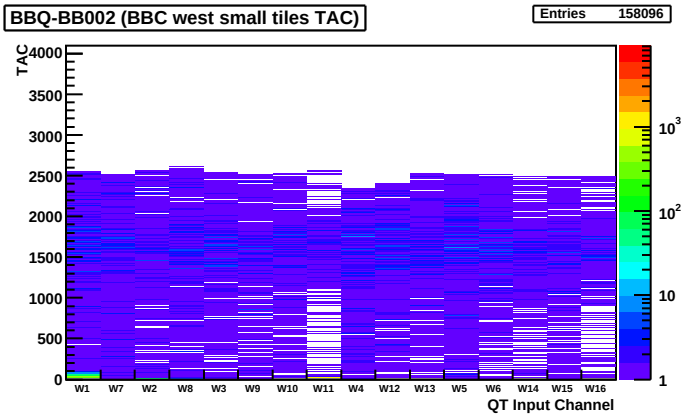

L1-TF201
Entries 9881
10^4
10^3
10^2
10
1
0
200
400
600
800
1000
1200
1400
1600
1800
2000
TOF total mult

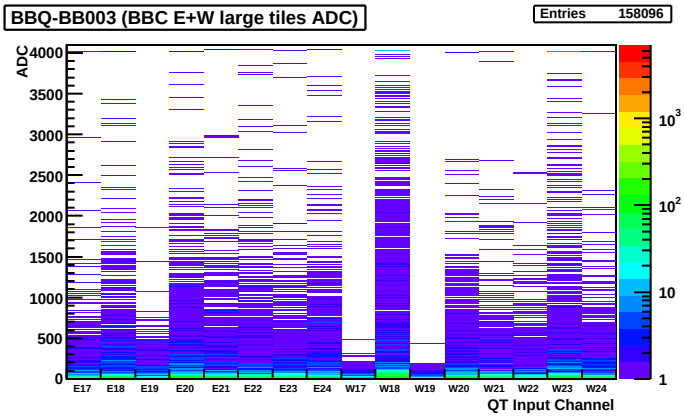

L1-TF201
Entries 59286
Threshold bits
1
0
1315
1384
1279
1361
1388
1274
8566
8497
8602
8520
8493
8607
TF001
TF002
TF003
TF004
TF005
TF006
TOF sector

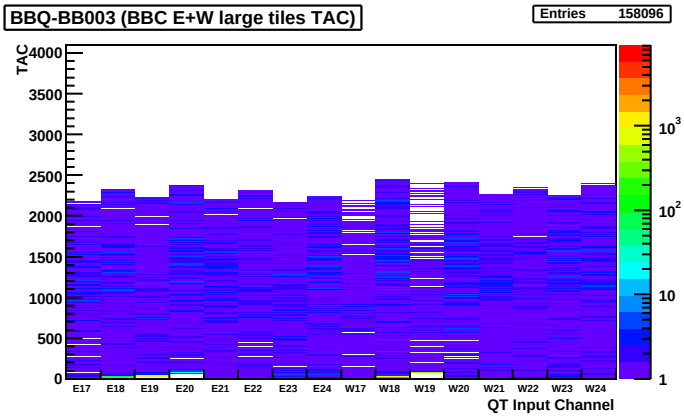

BBQ-BB001 (BBC east small tiles ADC)
Entries 158096
ADC
QT Input Channel
E1 E7 E2 E8 E3 E9 E10 E11 E4 E12 E13 E5 E6 E14 E15 E16

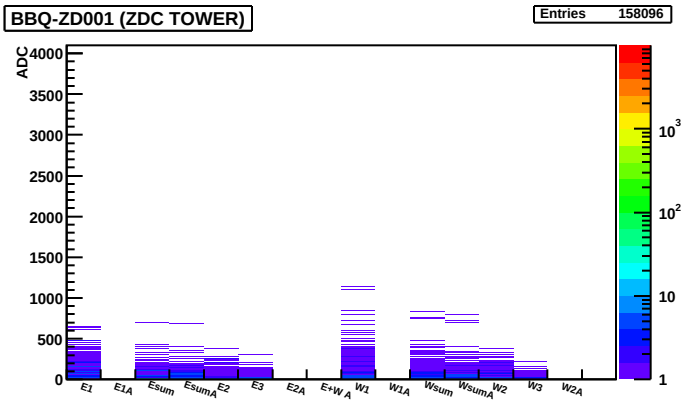

BBQ-BB001 (BBC east small tiles TAC)
Entries 158096
TAC
QT Input Channel
E1 E7 E2 E8 E3 E9 E10 E11 E4 E12 E13 E5 E6 E14 E15 E16

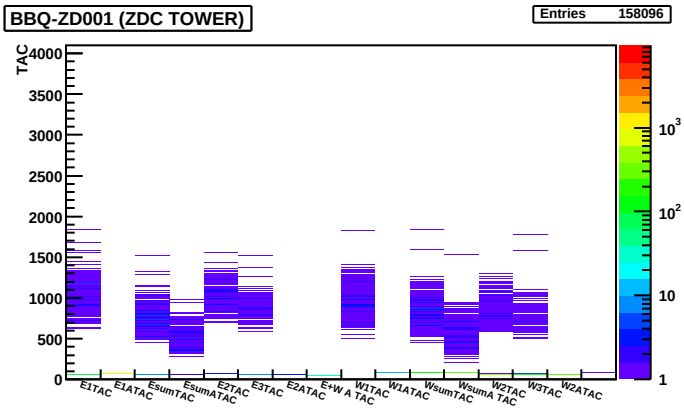

BBQ-BB002 (BBC west small tiles ADC)
Entries 158096
ADC
QT Input Channel
W1 W7 W2 W8 W3 W9 W10 W11 W4 W12 W13 W5 W6 W14 W15 W16

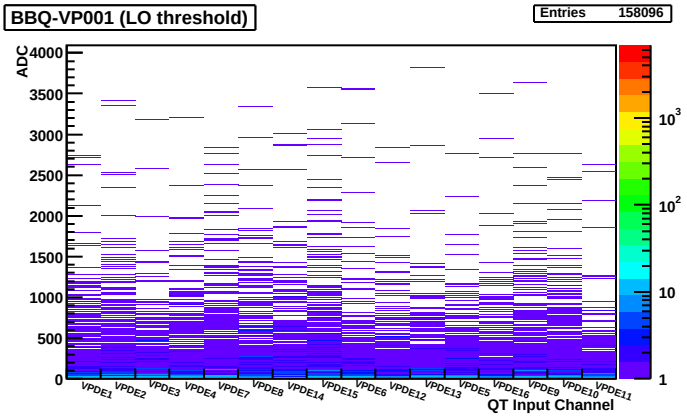

BBQ-BB002 (BBC west small tiles TAC)
Entries 158096
TAC
QT Input Channel
W1 W7 W2 W8 W3 W9 W10 W11 W4 W12 W13 W5 W6 W14 W15 W16

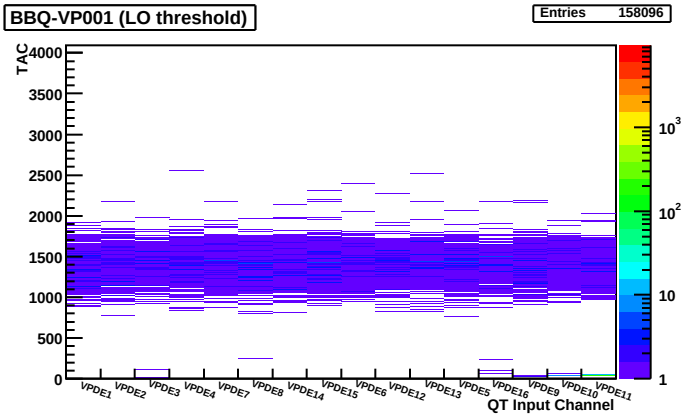

BBQ-BB003 (BBC E+W large tiles ADC)
Entries 158096
ADC
QT Input Channel
E17 E18 E19 E20 E21 E22 E23 E24 W17 W18 W19 W20 W21 W22 W23 W24

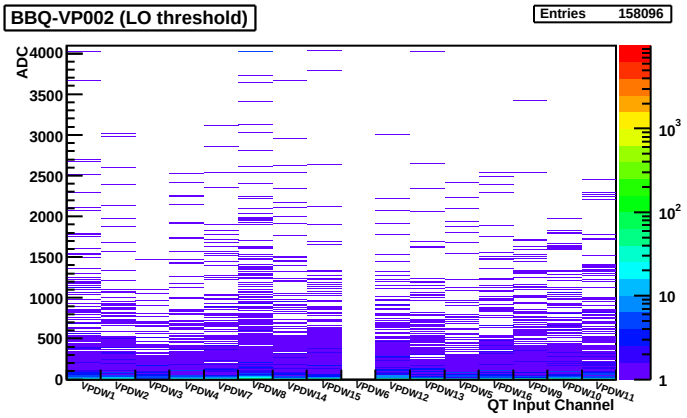

BBQ-BB003 (BBC E+W large tiles TAC)
Entries 158096
TAC
QT Input Channel
E17 E18 E19 E20 E21 E22 E23 E24 W17 W18 W19 W20 W21 W22 W23 W24

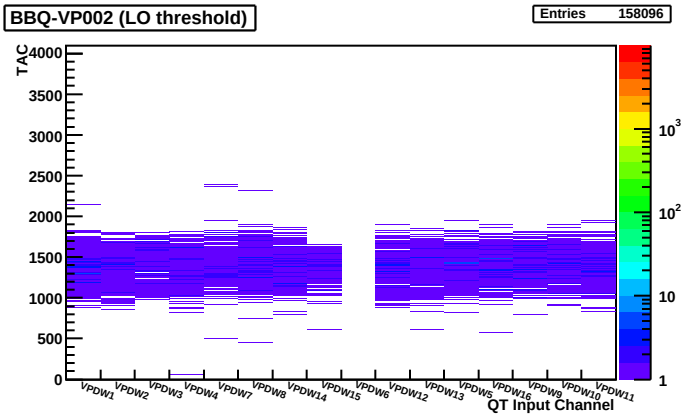

BBQ-ZD001 (ZDC TOWER)
Entries 158096
ADC
E1 E1A Esum EsumA E2 E3 E2A E+W A W1 W1A Wsum WsumA W2 W3 W2A

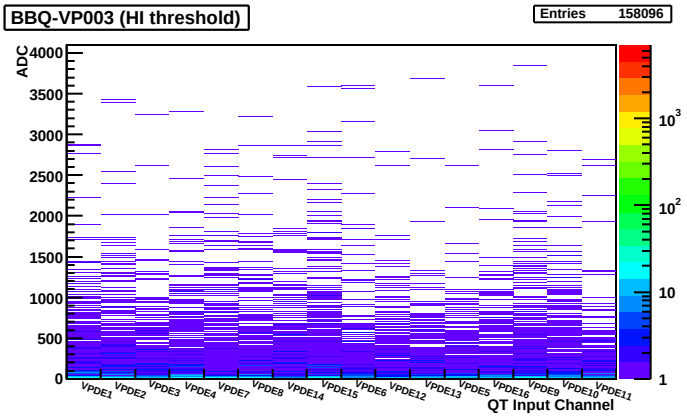

BBQ-ZD001 (ZDC TOWER)
Entries 158096
TAC
E1TAC E1ATAC EsumTAC EsumATAC E2TAC E3TAC E2ATAC E+W A TAC W1TAC W1ATAC WsumTAC WsumA TAC W2TAC W3TAC W2ATAC

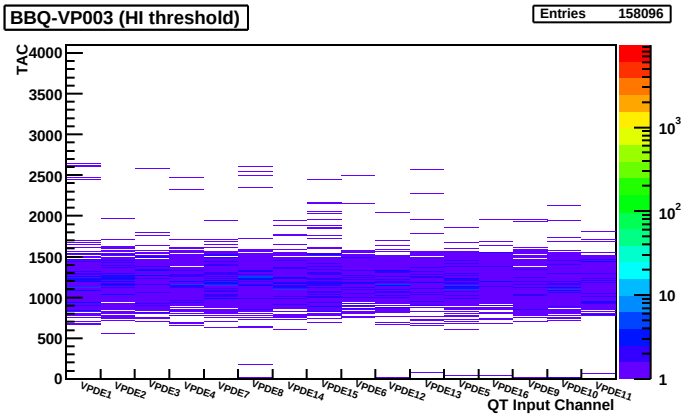

BBQ-VP001 (LO threshold)
Entries 158096
ADC
QT Input Channel

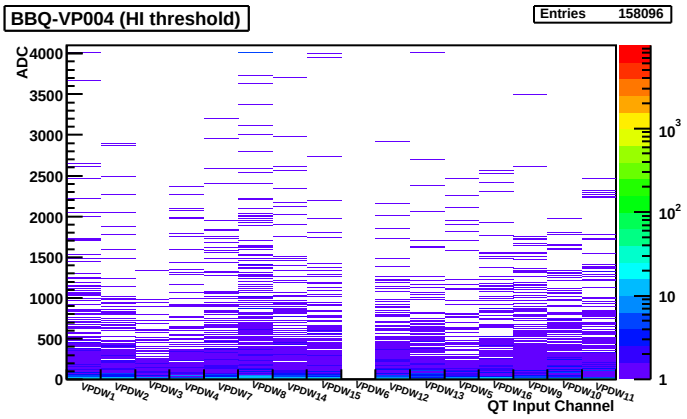

BBQ-VP001 (LO threshold)
Entries 158096
TAC
QT Input Channel

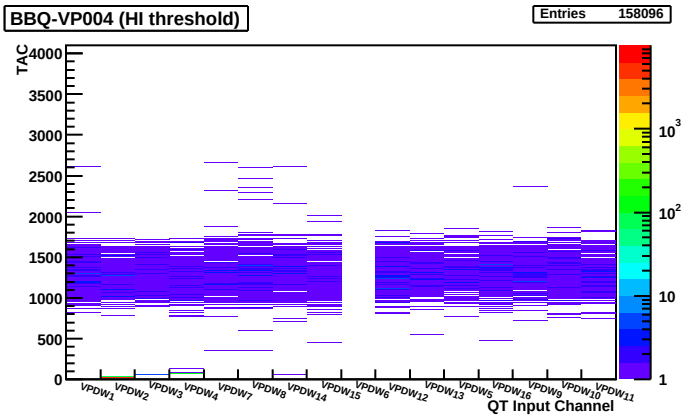

BBQ-VP002 (LO threshold)
Entries 158096
ADC
QT Input Channel

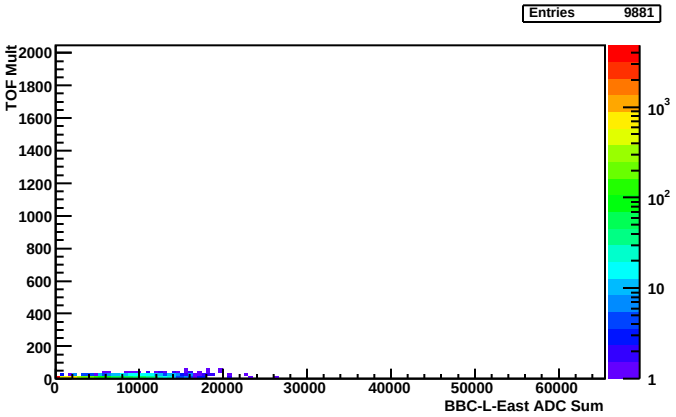

BBQ-VP002 (LO threshold)
Entries 158096
TAC
QT Input Channel

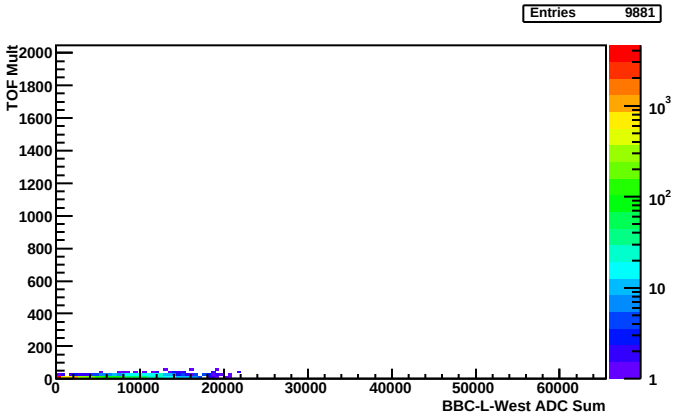

BBQ-VP003 (HI threshold)
Entries 158096
ADC
QT Input Channel

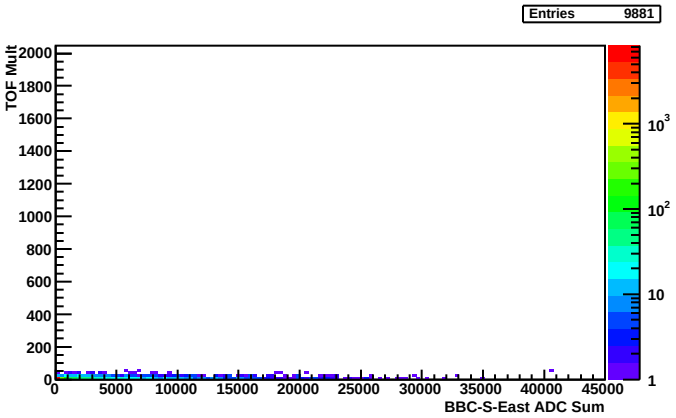

BBQ-VP003 (HI threshold)
Entries 158096
TAC
QT Input Channel

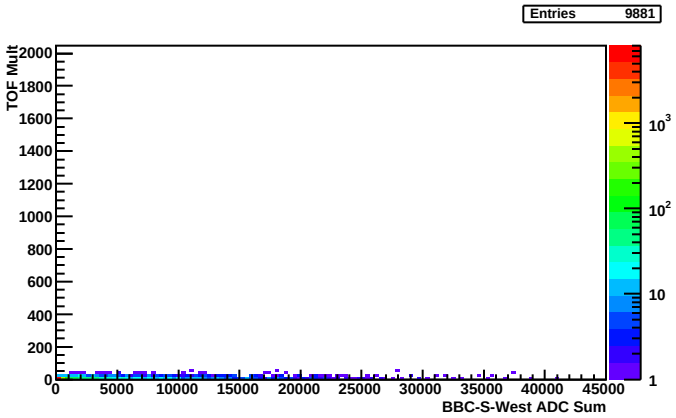

BBQ-VP004 (HI threshold)
Entries 158096
ADC
QT Input Channel

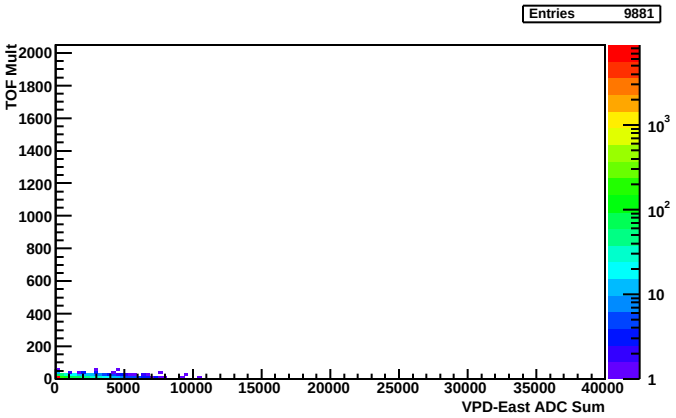

BBQ-VP004 (HI threshold)
Entries 158096
TAC
QT Input Channel

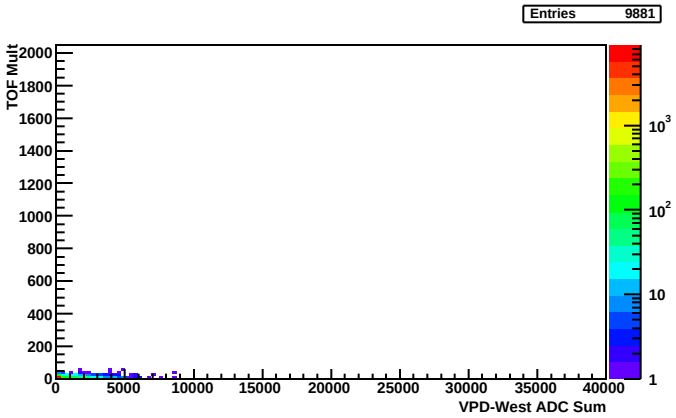

Entries 9881
TOF Mult
BBC-L-East ADC Sum

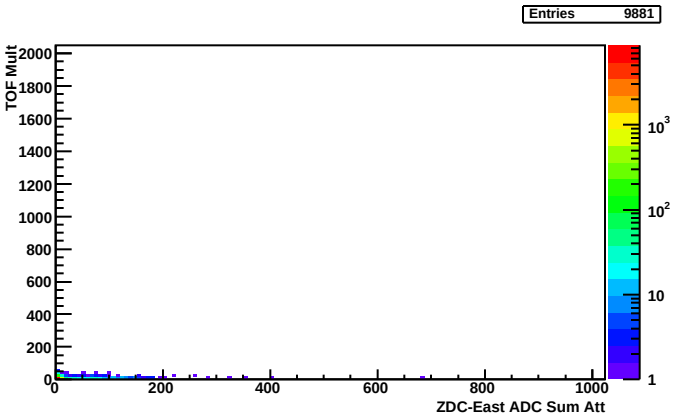

Entries 9881
TOF Mult
BBC-L-West ADC Sum

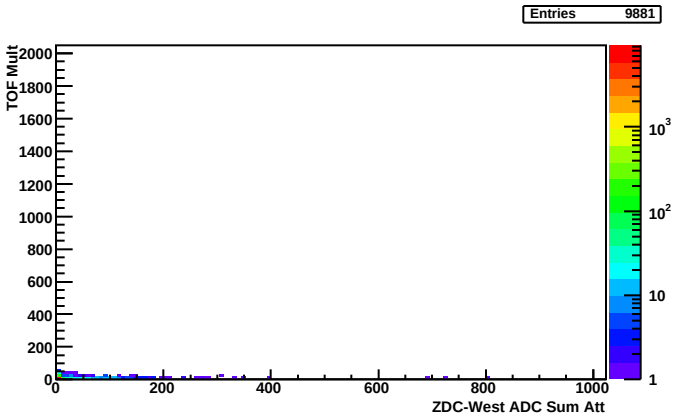

Entries 9881
TOF Mult
BBC-S-East ADC Sum

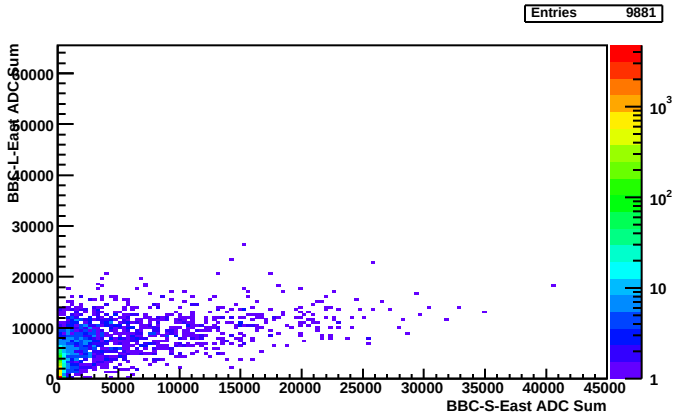

Entries 9881
TOF Mult
BBC-S-West ADC Sum

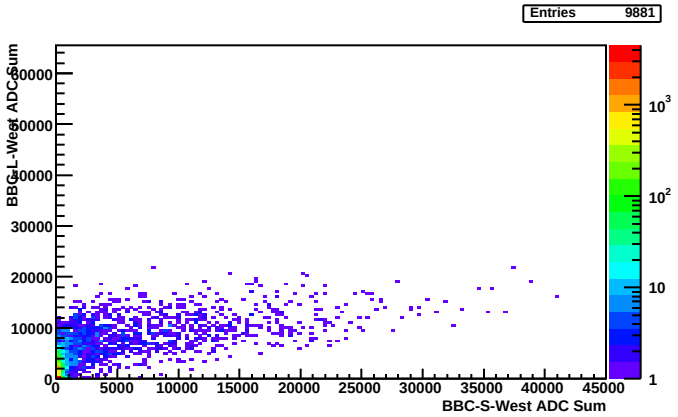

Entries 9881
TOF Mult
VPD-East ADC Sum

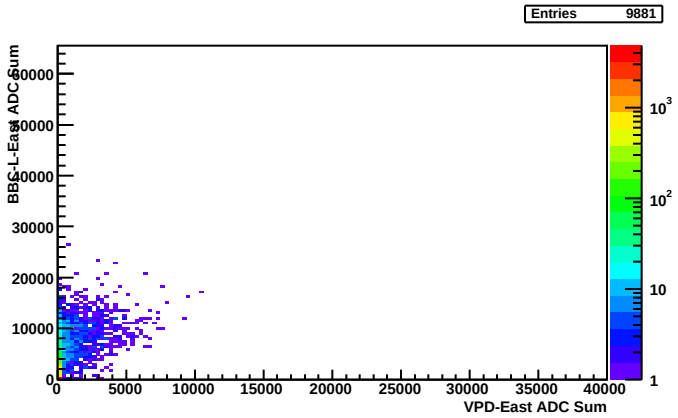

Entries 9881
TOF Mult
VPD-West ADC Sum

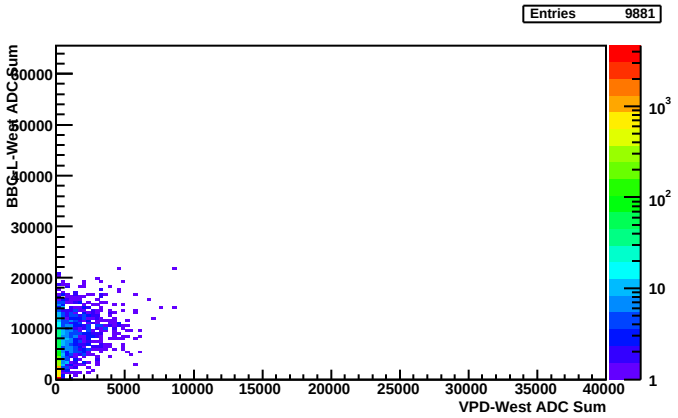

Entries 9881
TOF Mult
ZDC-East ADC Sum Att

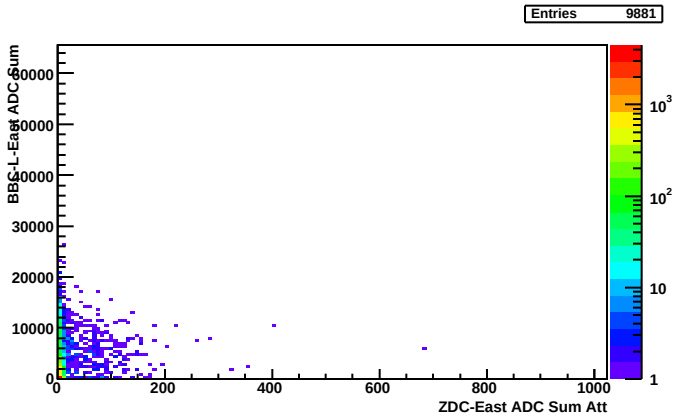

Entries 9881
TOF Mult
ZDC-West ADC Sum Att

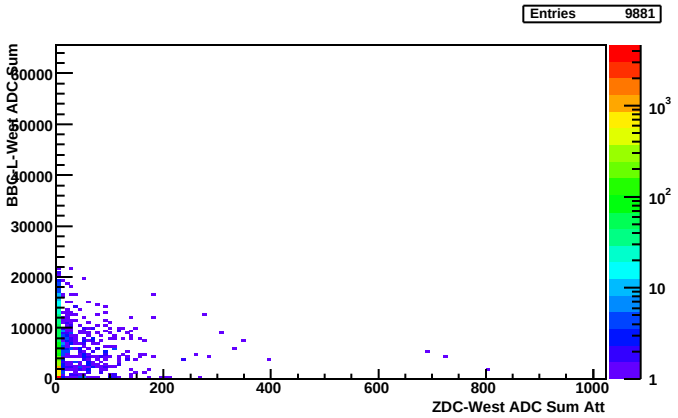

Entries 9881
BBC-L-East ADC Sum
BBC-S-East ADC Sum

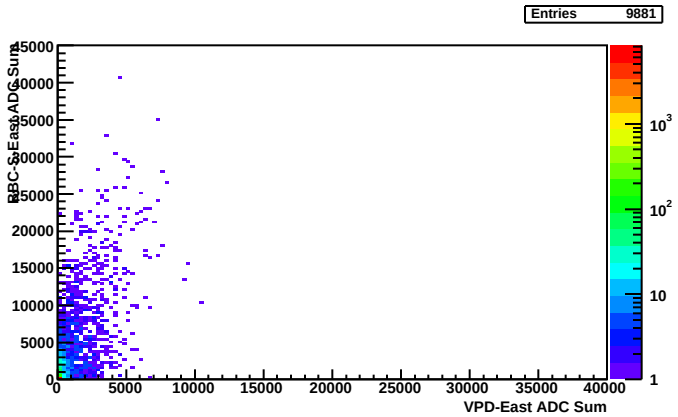

Entries 9881
BBC-L-West ADC Sum
BBC-S-West ADC Sum

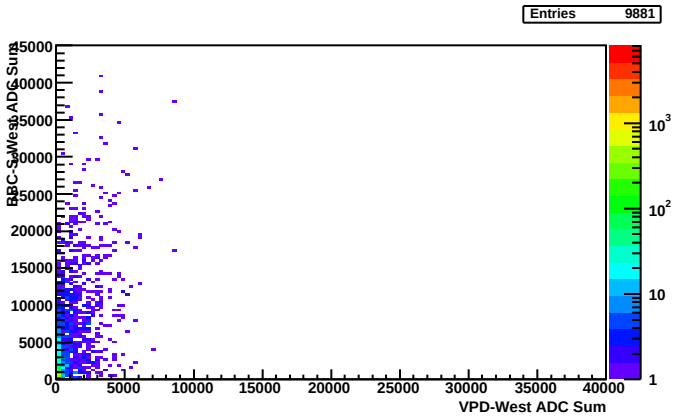

Entries 9881
BBC-L-East ADC Sum
VPD-East ADC Sum

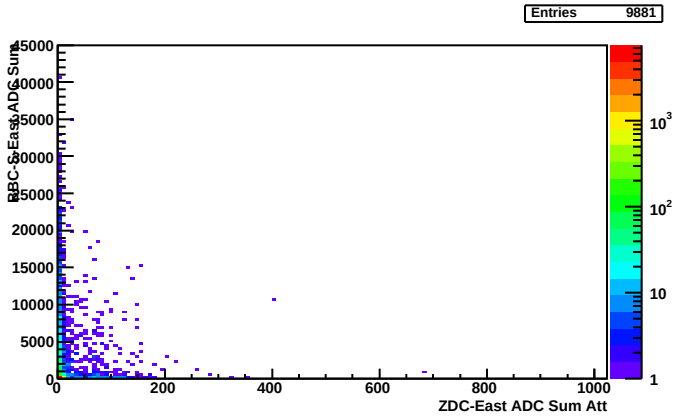

Entries 9881
BBC-L-West ADC Sum
VPD-West ADC Sum

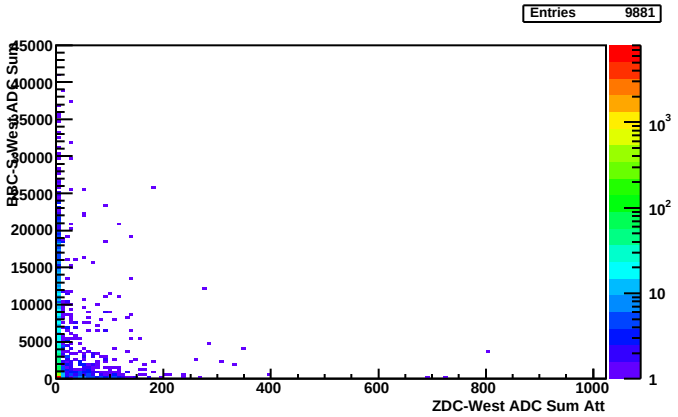

Entries 9881
BBC-L-East ADC Sum
ZDC-East ADC Sum Att

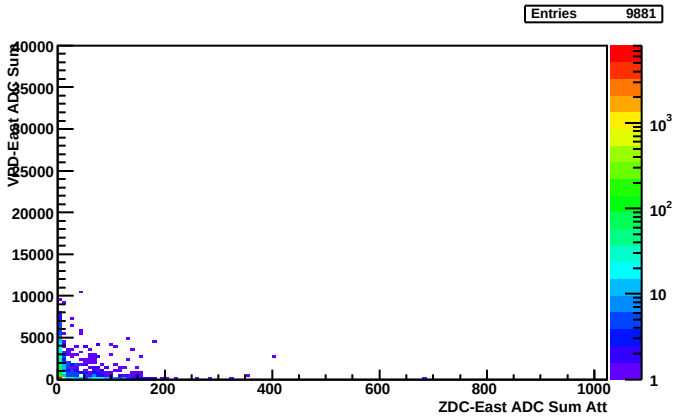

Entries 9881
BBC-L-West ADC Sum
ZDC-West ADC Sum Att

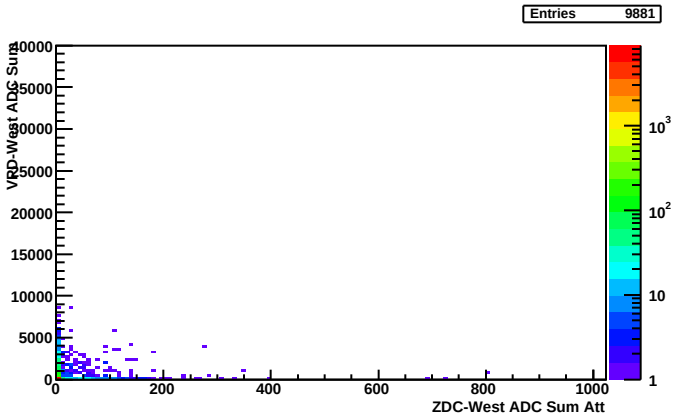

Entries 9881
BBC-S-East ADC Sum
VPD-East ADC Sum

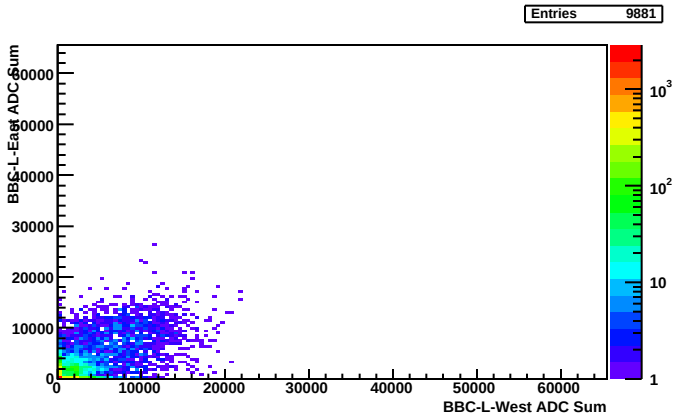

Entries 9881
BBC-S-West ADC Sum
VPD-West ADC Sum

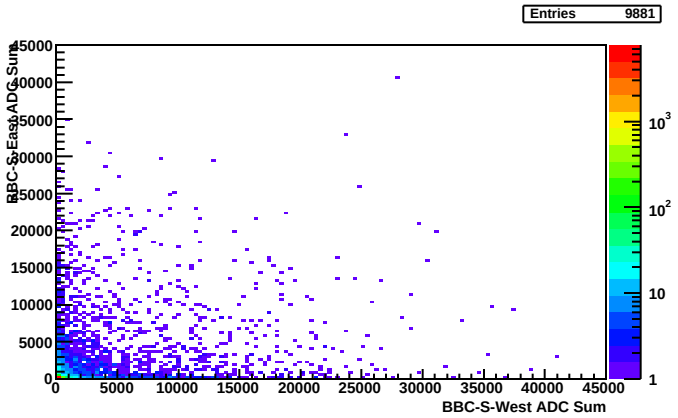

Entries 9881
BBC-S-East ADC Sum
ZDC-East ADC Sum Att

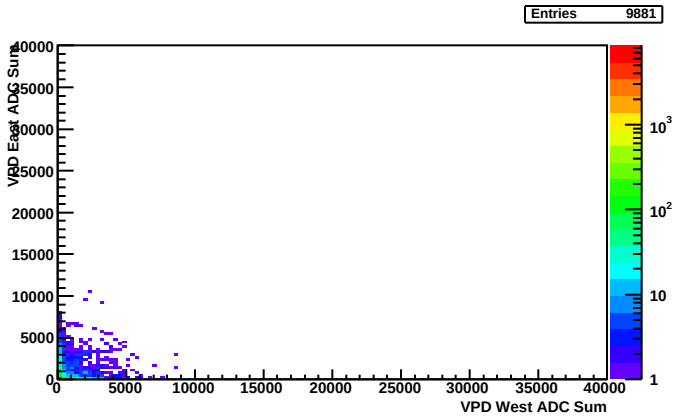

Entries 9881
BBC-S-West ADC Sum
ZDC-West ADC Sum Att

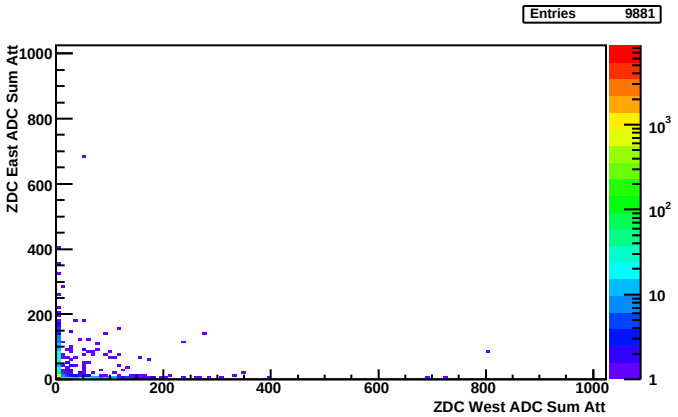

Entries 9881
VPD-East ADC Sum
ZDC-East ADC Sum Att

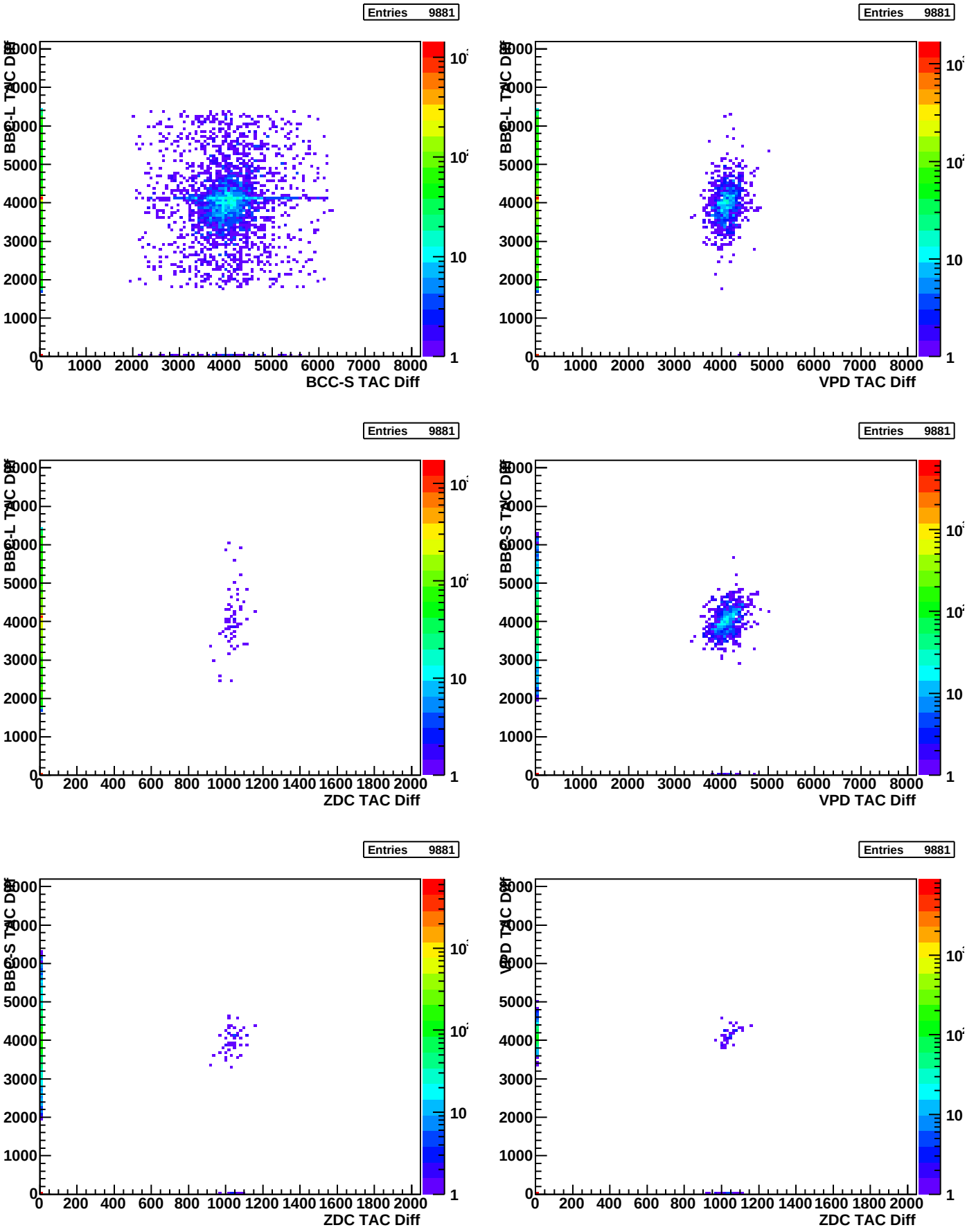

Entries 9881
VPD-West ADC Sum
ZDC-West ADC Sum Att

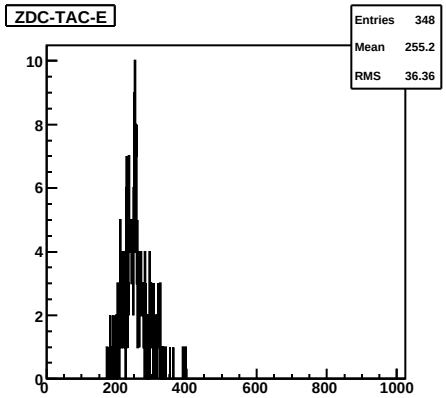

Entries 9881
BBC-L-East ADC Sum
BBC-L-West ADC Sum

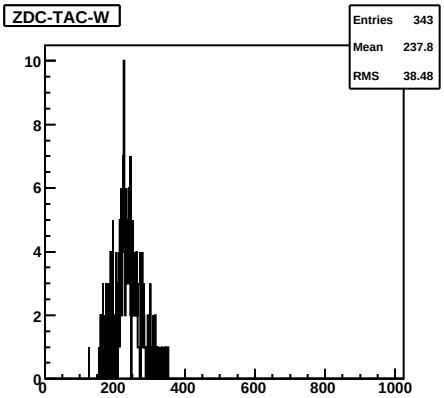

Entries 9881
BBC-S-East ADC Sum
BBC-S-West ADC Sum

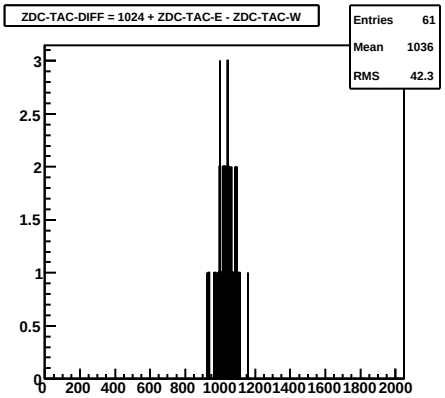

Entries 9881
VPD East ADC Sum
VPD West ADC Sum

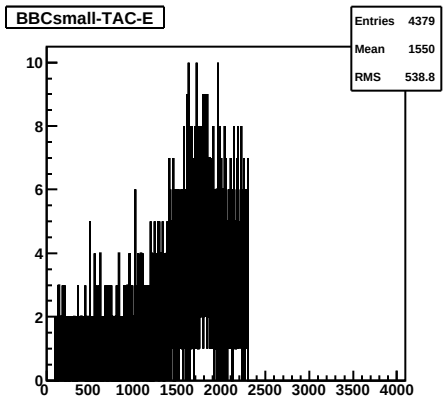

Entries 9881
ZDC East ADC Sum Att
ZDC West ADC Sum Att

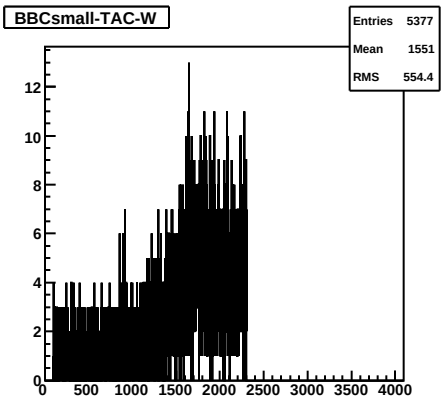

Entries 9881
BBC-L TAC Diff
BCC-S TAC Diff
Entries 9881
BBC-L TAC Diff
VPD TAC Diff
Entries 9881
BBC-L TAC Diff
ZDC TAC Diff
Entries 9881
BBC-S TAC Diff
VPD TAC Diff
Entries 9881
BBC-S TAC Diff
ZDC TAC Diff
Entries 9881
VPD TAC Diff
ZDC TAC Diff

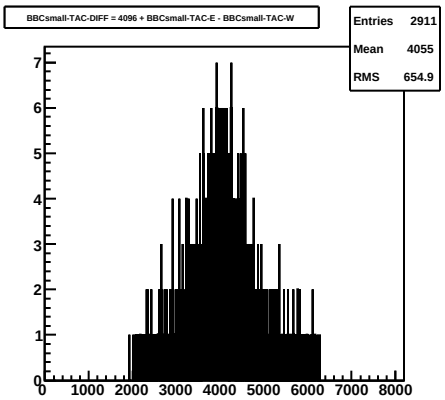

ZDC-TAC-E
Entries 348
Mean 255.2
RMS 36.36

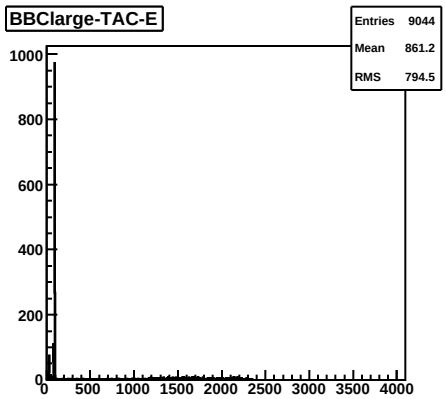

ZDC-TAC-W
Entries 343
Mean 237.8
RMS 38.48

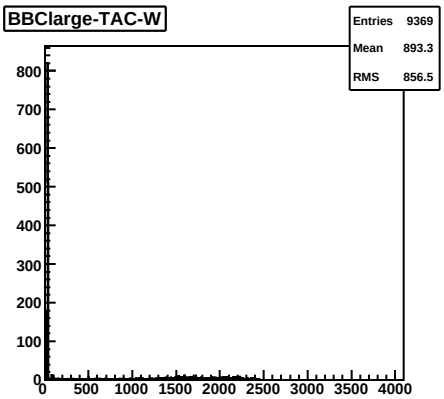

ZDC-TAC-DIFF = 1024 + ZDC-TAC-E - ZDC-TAC-W
Entries 61
Mean 1036
RMS 42.3

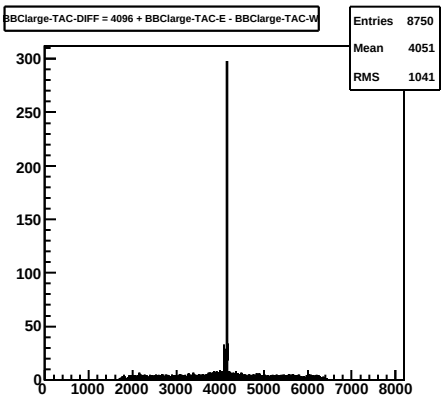

BBCsmall-TAC-E
Entries 4379
Mean 1550
RMS 538.8

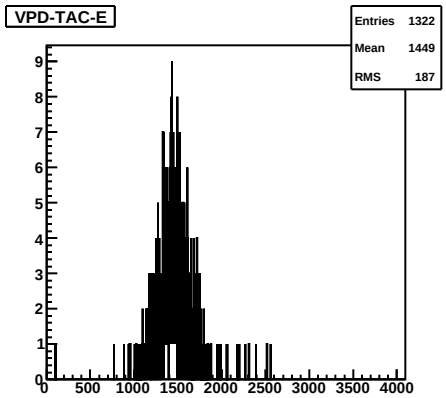

BBCsmall-TAC-W
Entries 5377
Mean 1551
RMS 554.4

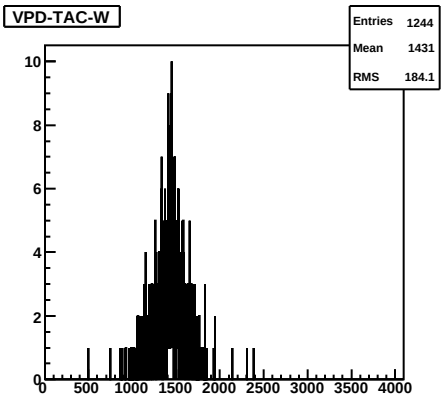

BBCsmall-TAC-DIFF = 4096 + BBCsmall-TAC-E - BBCsmall-TAC-W
Entries 2911
Mean 4055
RMS 654.9

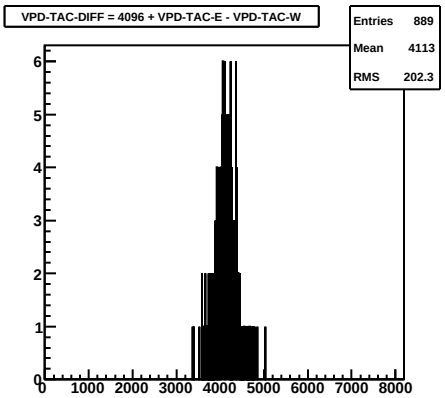

BBClarge-TAC-E
Entries 9044
Mean 861.2
RMS 794.5

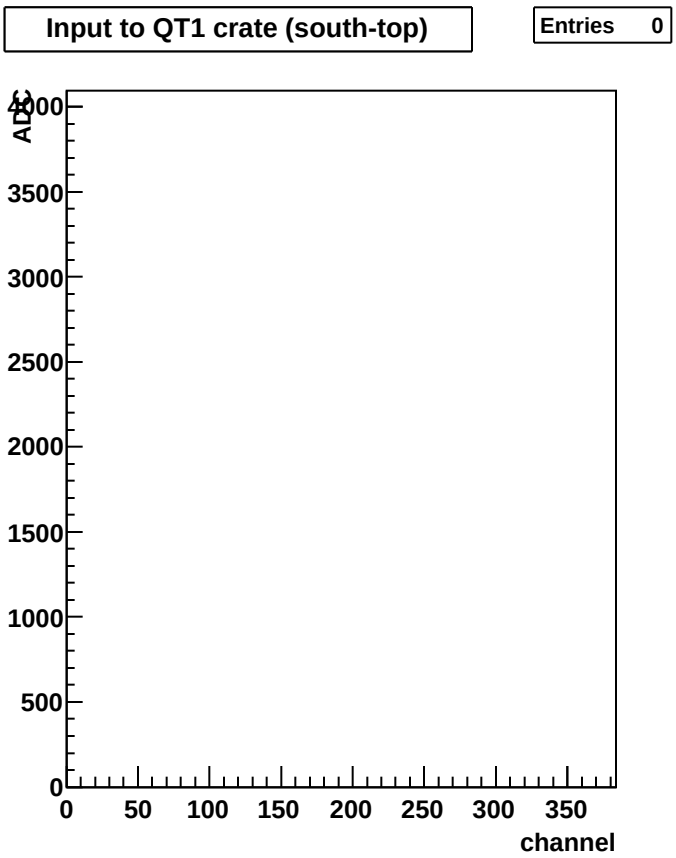

BBClarge-TAC-W
Entries 9369
Mean 893.3
RMS 856.5

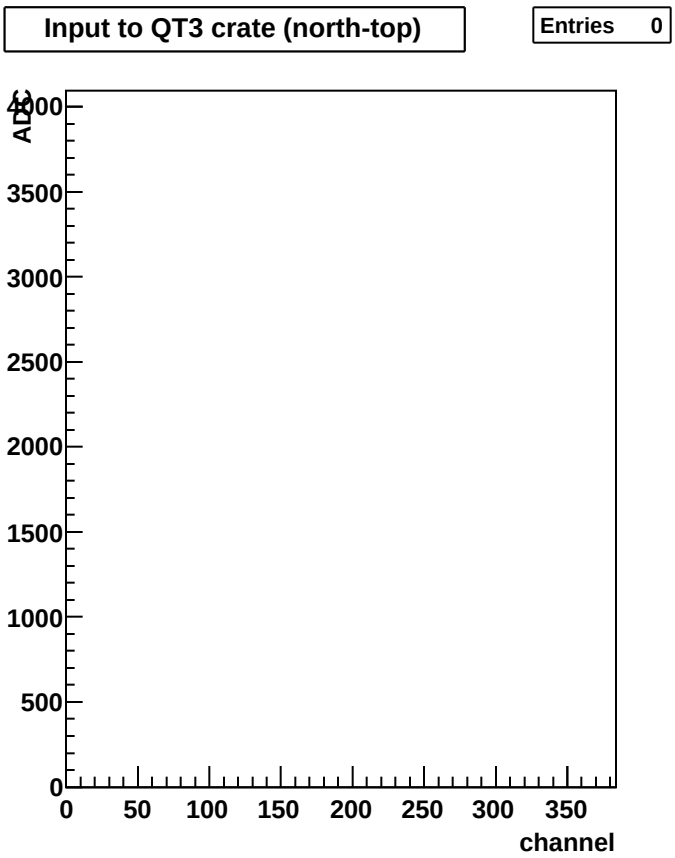

BBClarge-TAC-DIFF = 4096 + BBClarge-TAC-E - BBClarge-TAC-W
Entries 8750
Mean 4051
RMS 1041

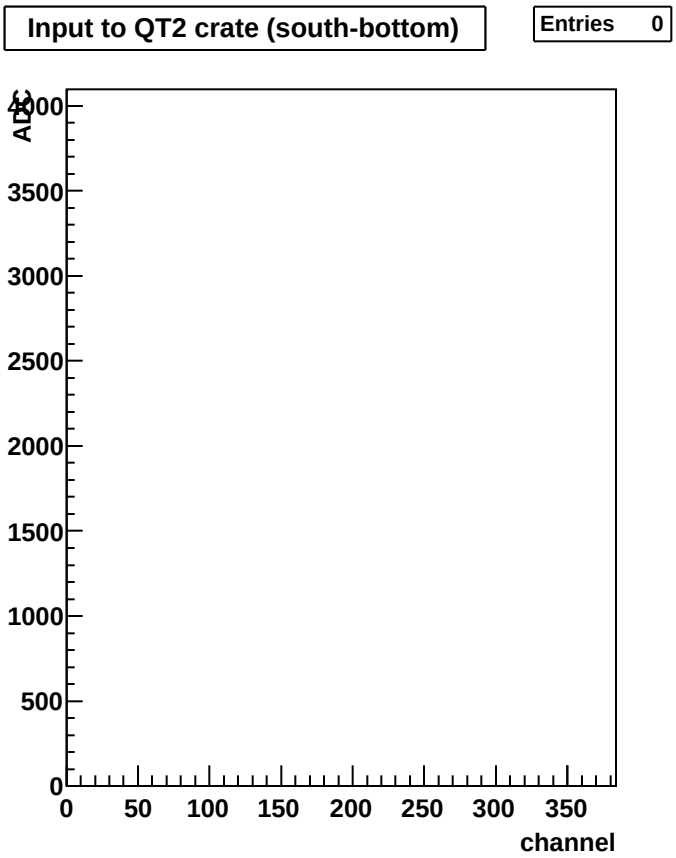

VPD-TAC-E
Entries 1322
Mean 1449
RMS 187

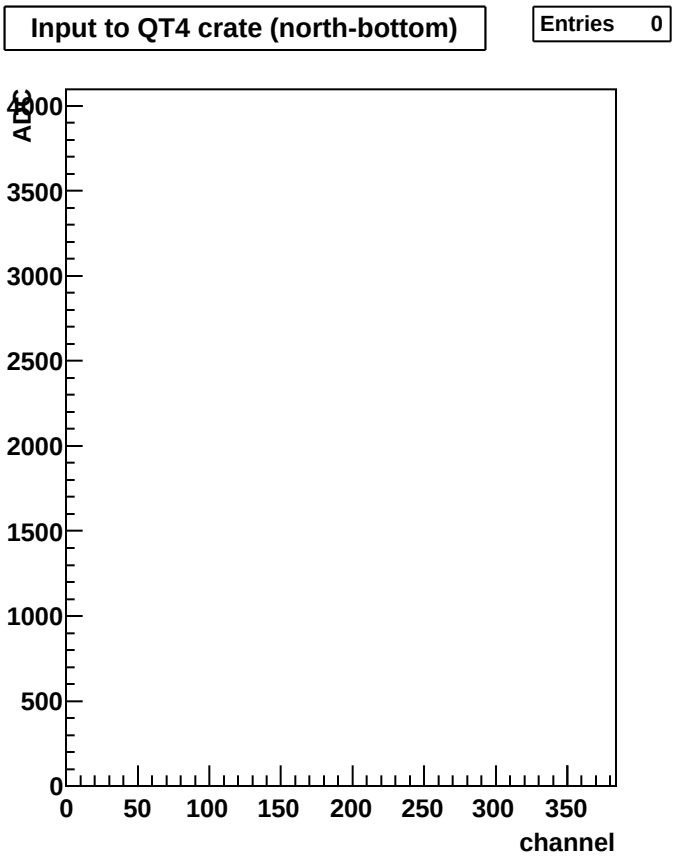

VPD-TAC-W
Entries 1244
Mean 1431
RMS 184.1

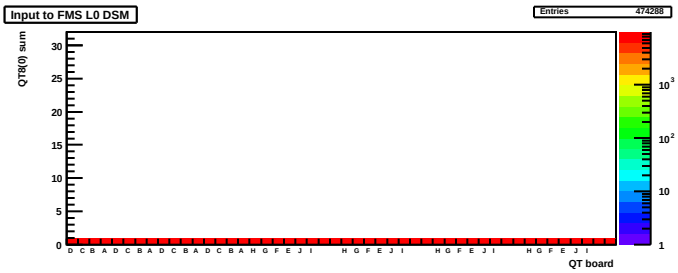

VPD-TAC-DIFF = 4096 + VPD-TAC-E - VPD-TAC-W
Entries 889
Mean 4113
RMS 202.3

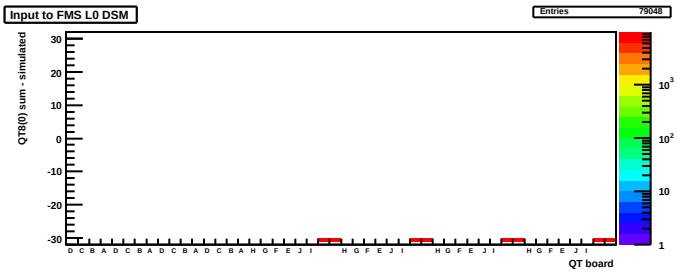

Input to QT1 crate (south-top)
Entries 0
ADC
4000
3500
3000
2500
2000
1500
1000
500
0
0 50 100 150 200 250 300 350
channel

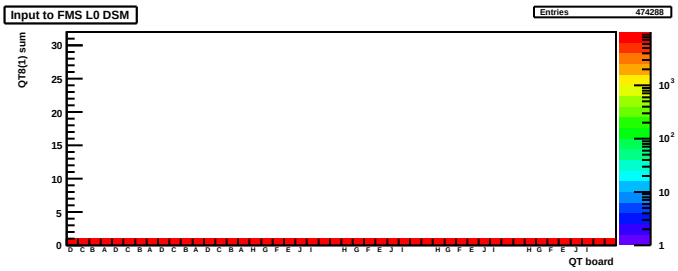

Input to QT3 crate (north-top)
Entries 0
ADC
4000
3500
3000
2500
2000
1500
1000
500
0
0 50 100 150 200 250 300 350
channel

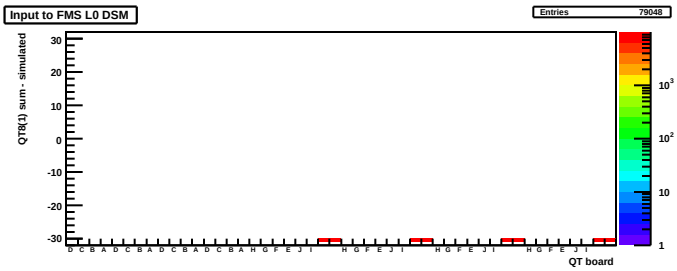

Input to QT2 crate (south-bottom)
Entries 0
ADC
4000
3500
3000
2500
2000
1500
1000
500
0
0 50 100 150 200 250 300 350
channel

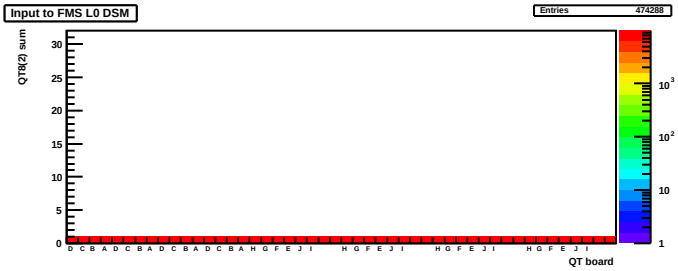

Input to QT4 crate (north-bottom)
Entries 0
ADC
4000
3500
3000
2500
2000
1500
1000
500
0
0 50 100 150 200 250 300 350
channel

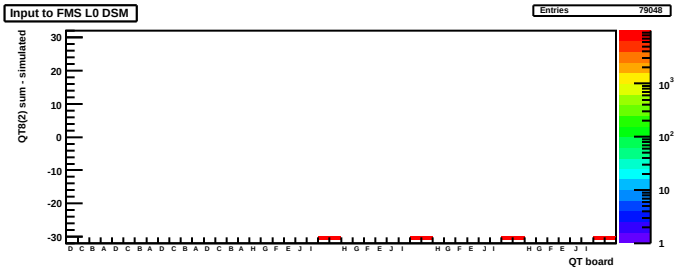

Input to FMS L0 DSM
Entries 474288
QT8(0) sum
QT board

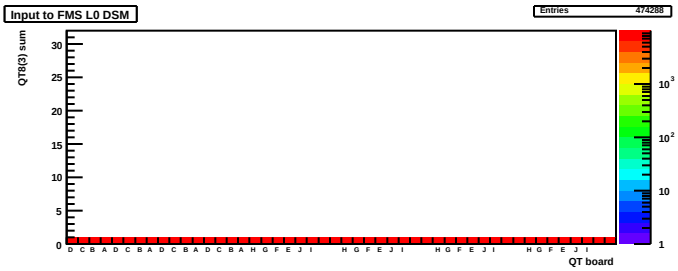

Input to FMS L0 DSM
Entries 79048
QT8(0) sum - simulated
QT board

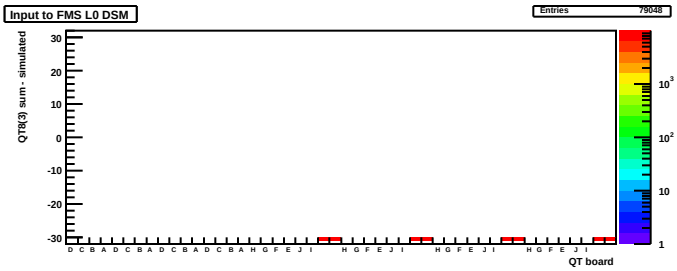

Input to FMS L0 DSM
Entries 474288
QT8(1) sum
QT board

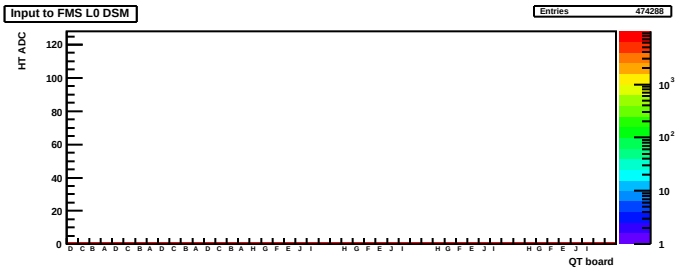

Input to FMS L0 DSM
Entries 79048
QT8(1) sum - simulated
QT board

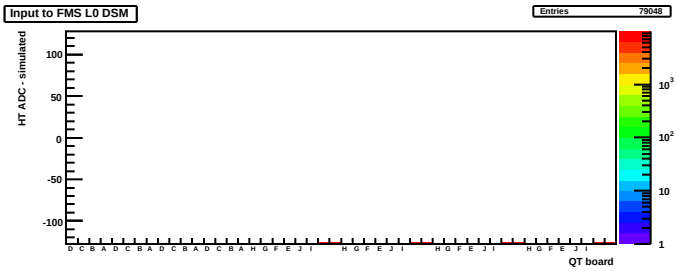

Input to FMS L0 DSM
Entries 474288
QT8(2) sum
QT board

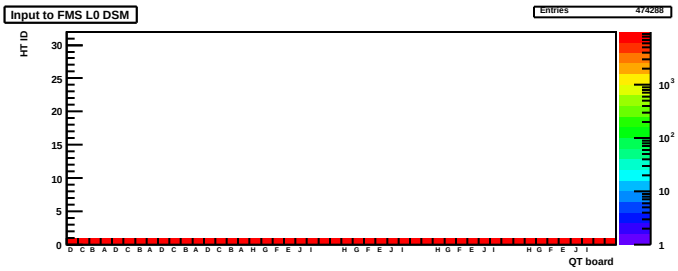

Input to FMS L0 DSM
Entries 79048
QT8(2) sum - simulated
QT board

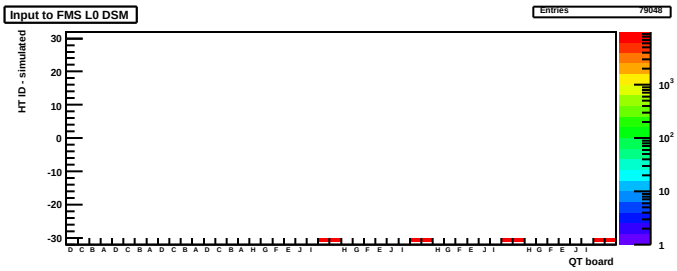

Input to FMS L0 DSM
Entries 474288
QT8(3) sum
QT board

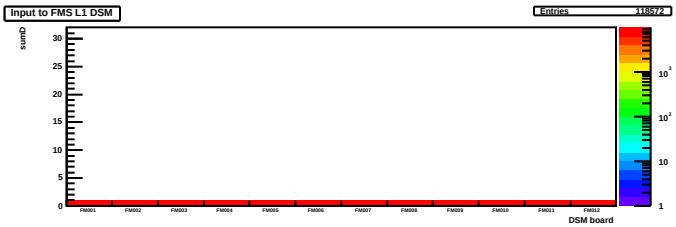

Input to FMS L0 DSM
Entries 79048
QT8(3) sum - simulated
QT board

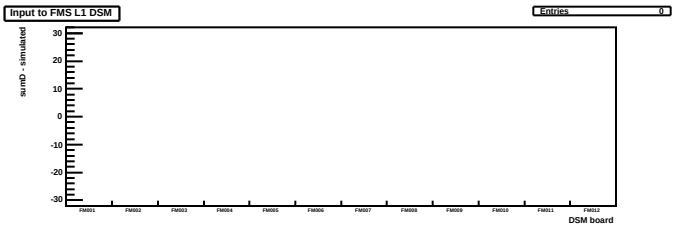

Input to FMS L0 DSM
Entries 474288
HT ADC
QT board

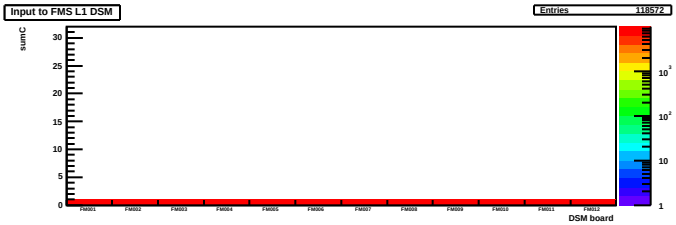

Input to FMS L0 DSM
Entries 79048
HT ADC - simulated
QT board

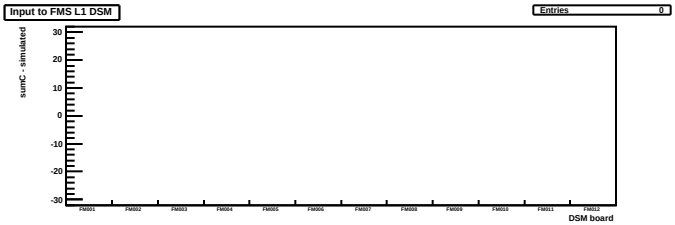

Input to FMS L0 DSM
Entries 474288
HT ID
QT board

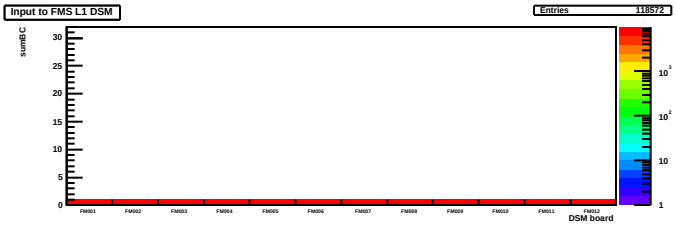

Input to FMS L0 DSM
Entries 79048
HT ID - simulated
QT board

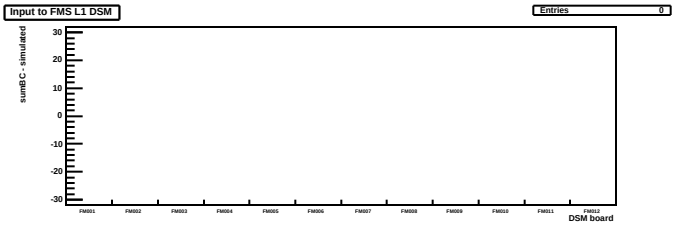

Input to FMS L1 DSM
Entries 118572
sumD
DSM board

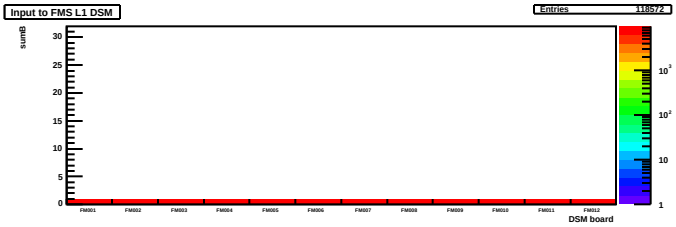

Input to FMS L1 DSM
Entries 0
sumD - simulated
DSM board

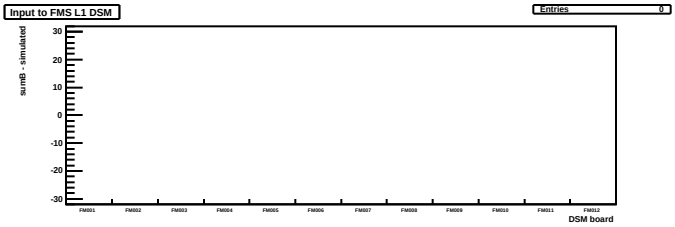

Input to FMS L1 DSM
Entries 118572
sumC
DSM board

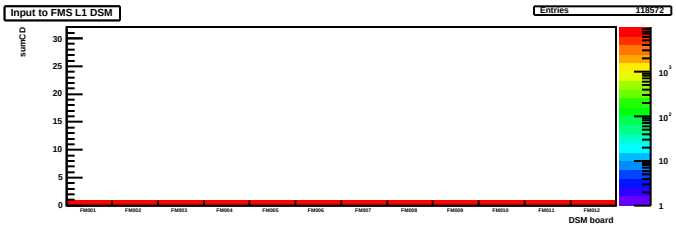

Input to FMS L1 DSM
Entries 0
sumC - simulated
DSM board

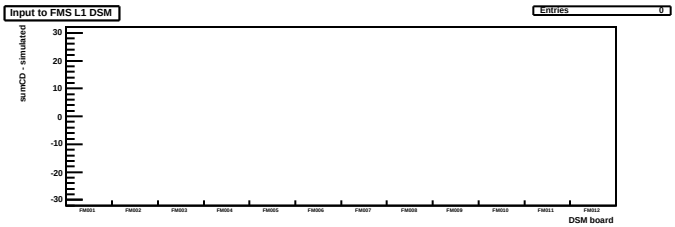

Input to FMS L1 DSM
Entries 118572
sumBC
DSM board

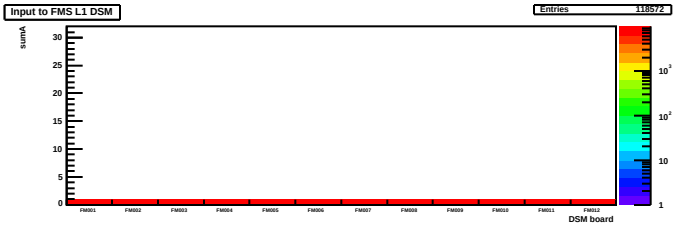

Input to FMS L1 DSM
Entries 0
sumBC - simulated
DSM board

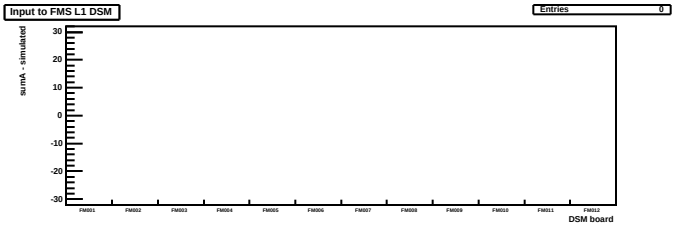

Input to FMS L1 DSM
Entries 118572
sumB
DSM board

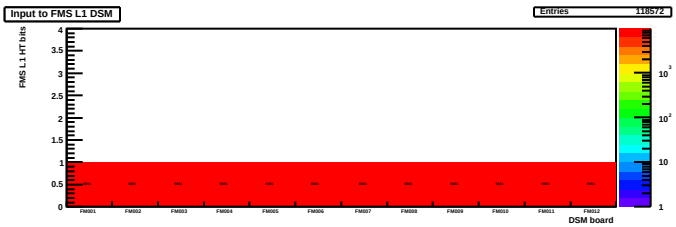

Input to FMS L1 DSM
Entries 0
sumB - simulated
DSM board

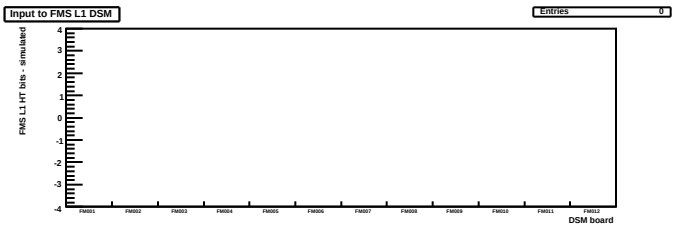

Input to FMS L1 DSM
Entries 118572
sumCD
DSM board

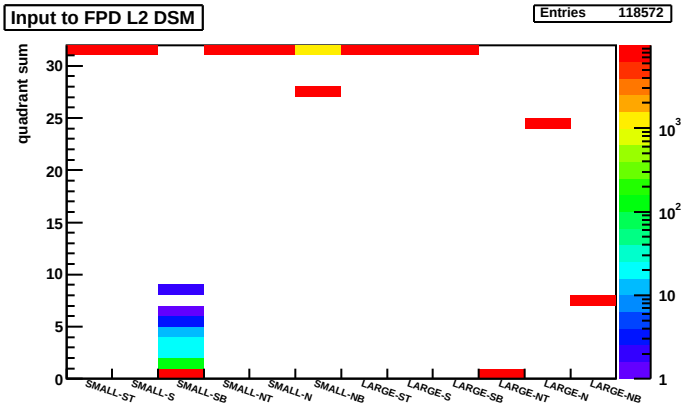

Input to FMS L1 DSM
Entries 0
sumCD - simulated
DSM board

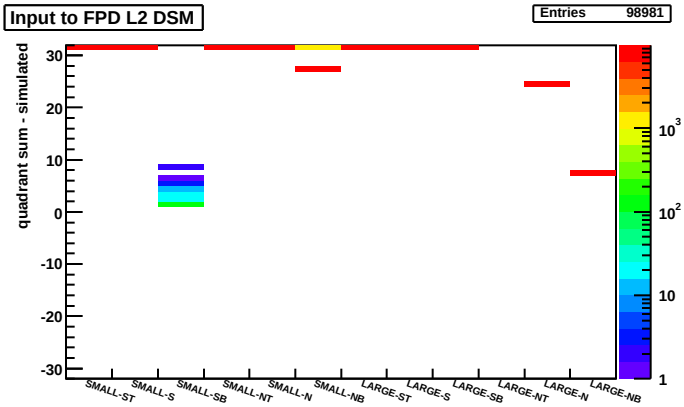

Input to FMS L1 DSM
Entries 118572
sumA
DSM board

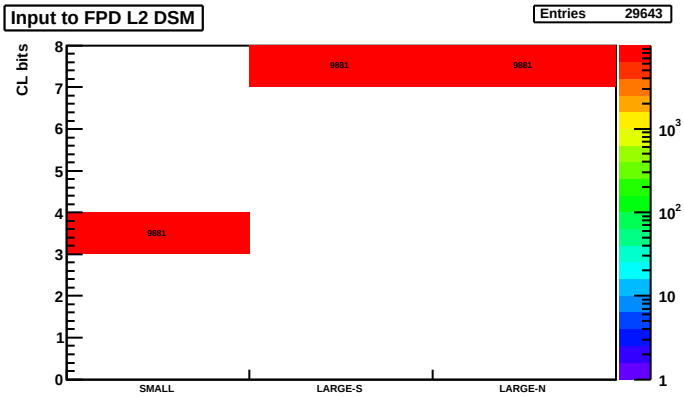

Input to FMS L1 DSM
Entries 0
sumA - simulated
DSM board

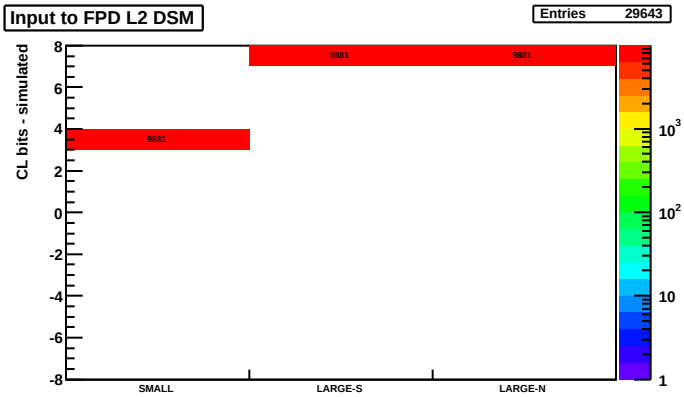

Input to FMS L1 DSM
Entries 118572
FMS L1 HT bits
DSM board

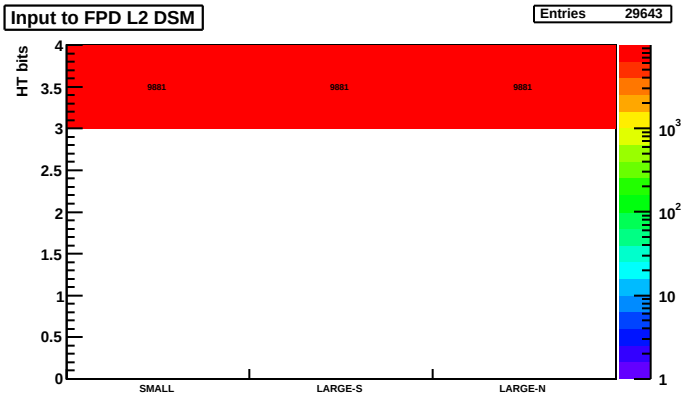

Input to FMS L1 DSM
Entries 0
FMS L1 HT bits - simulated
DSM board

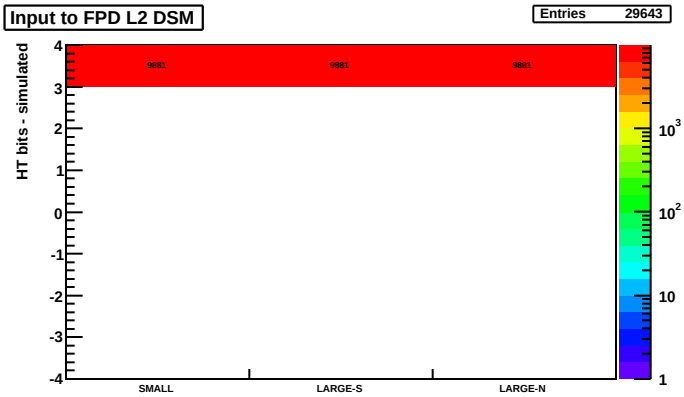

Input to FPD L2 DSM
Entries 118572
quadrant sum
SMALL-ST
SMALL-S
SMALL-SB
SMALL-NT
SMALL-N
SMALL-NB
LARGE-ST
LARGE-S
LARGE-SB
LARGE-NT
LARGE-N
LARGE-NB

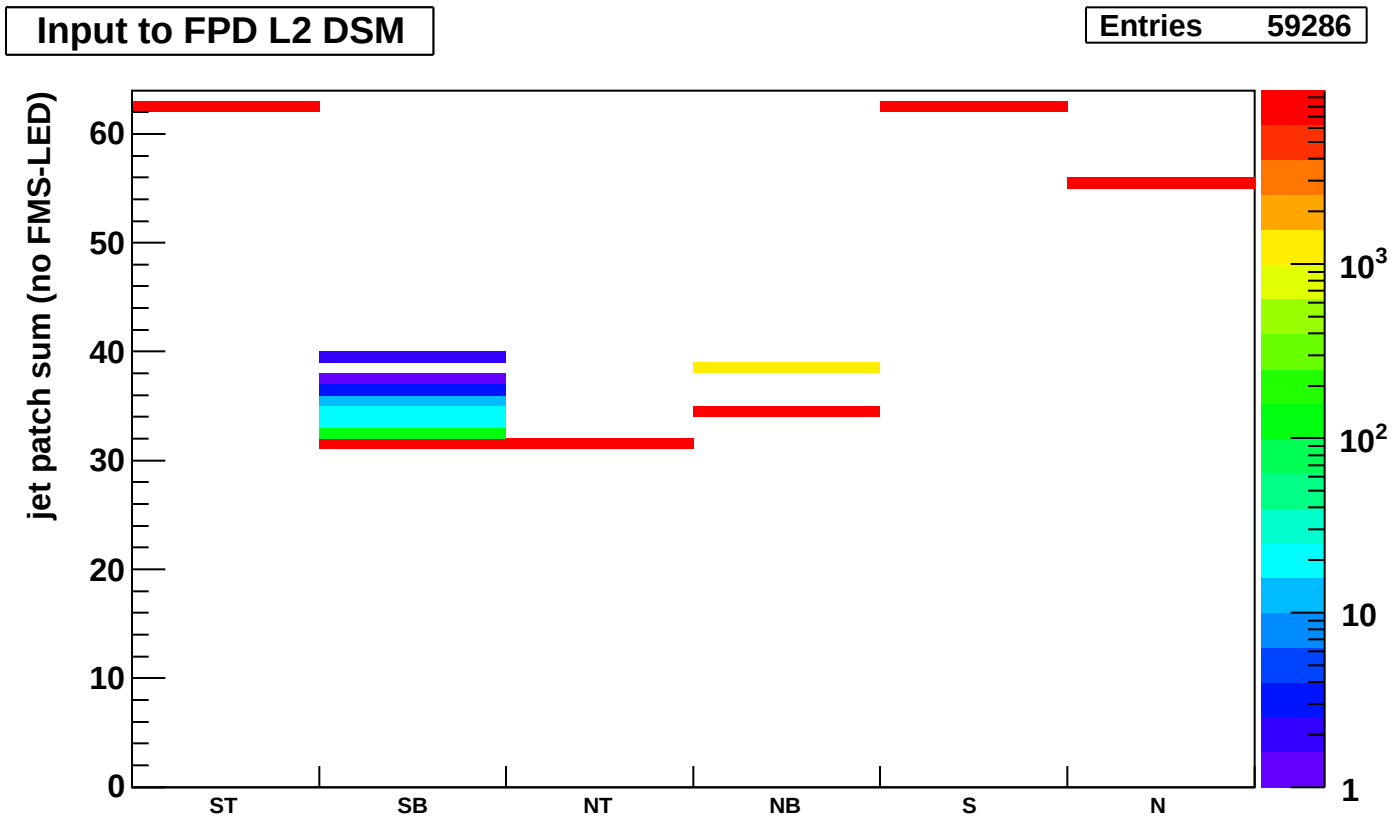

Input to FPD L2 DSM
Entries 98981
quadrant sum - simulated
SMALL-ST
SMALL-S
SMALL-SB
SMALL-NT
SMALL-N
SMALL-NB
LARGE-ST
LARGE-S
LARGE-SB
LARGE-NT
LARGE-N
LARGE-NB

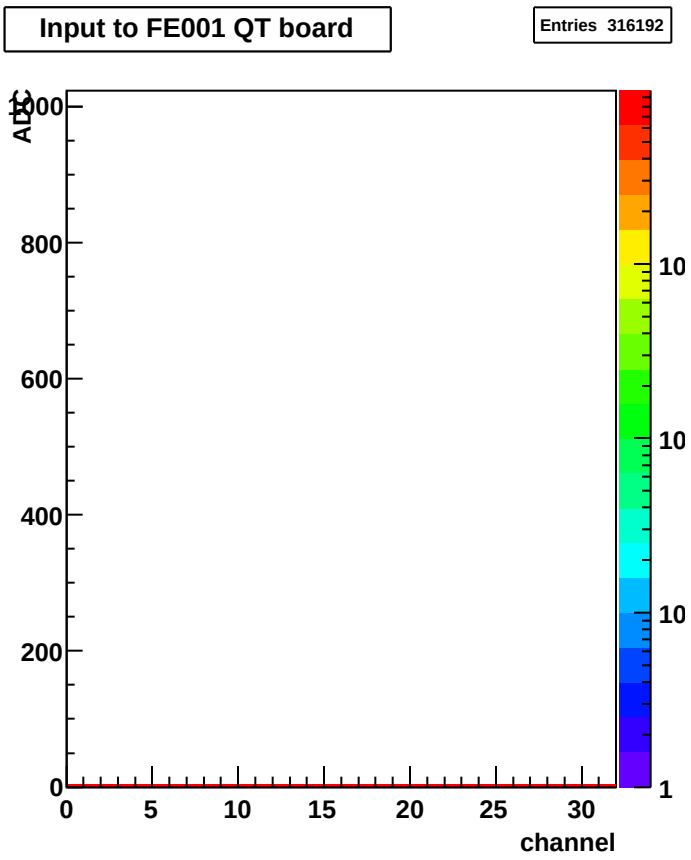

Input to FPD L2 DSM
Entries 29643
CL bits
9881
9881
9881
SMALL
LARGE-S
LARGE-N

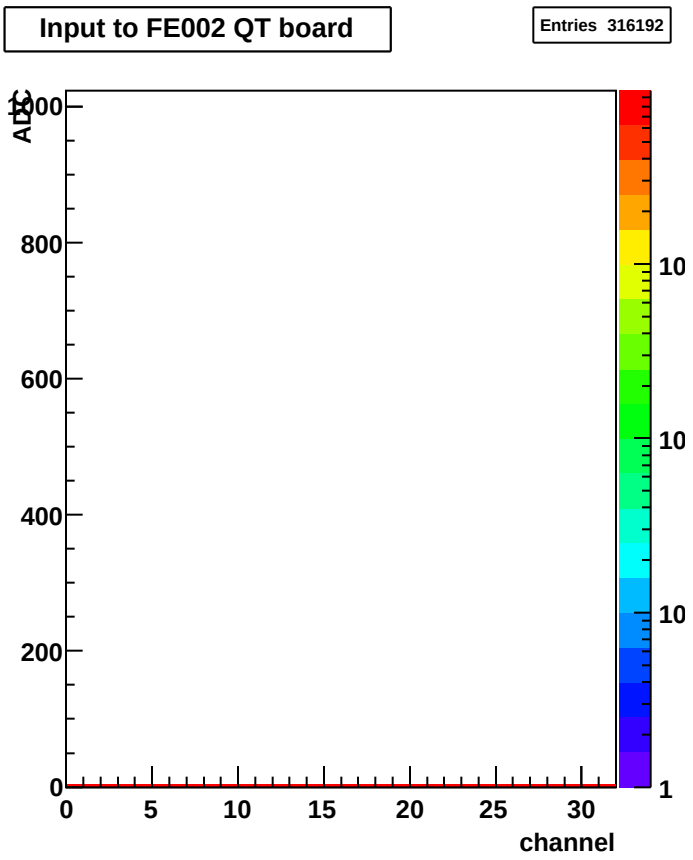

Input to FPD L2 DSM
Entries 29643
CL bits - simulated
9881
9881
9881
SMALL
LARGE-S
LARGE-N

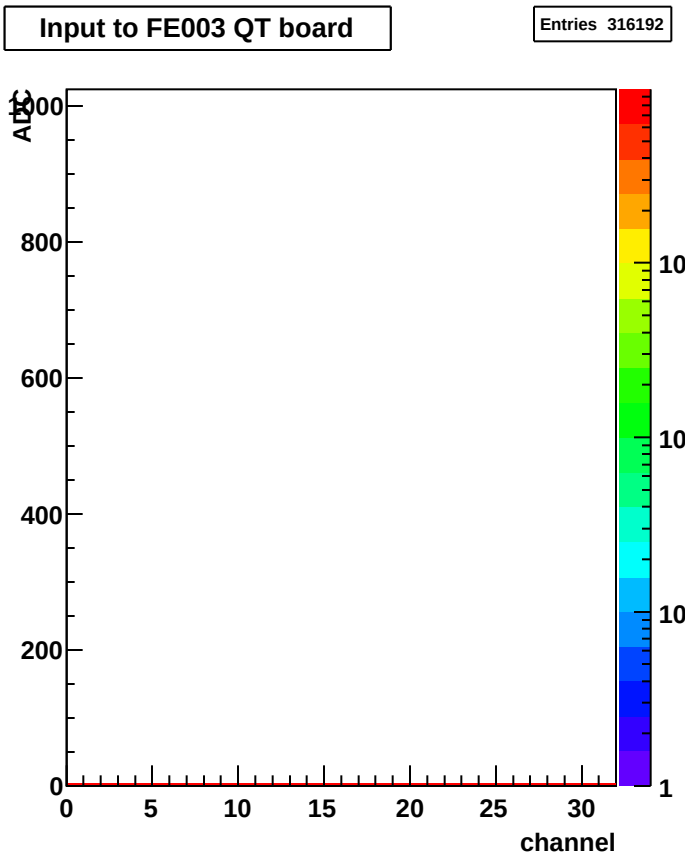

Input to FPD L2 DSM
Entries 29643
HT bits
9881
9881
9881
SMALL
LARGE-S
LARGE-N

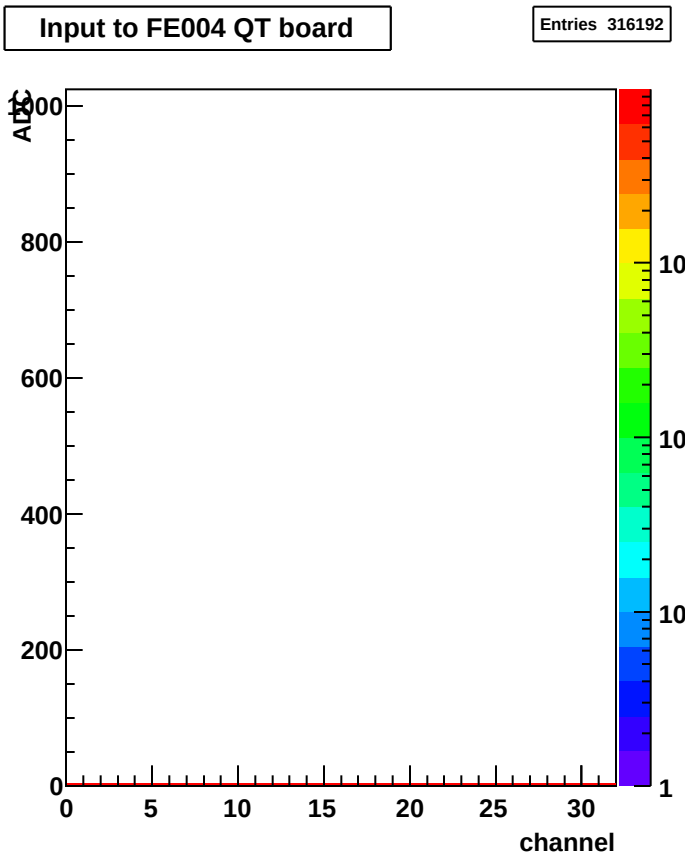

Input to FPD L2 DSM
Entries 29643
HT bits - simulated
9881
9881
9881
SMALL
LARGE-S
LARGE-N

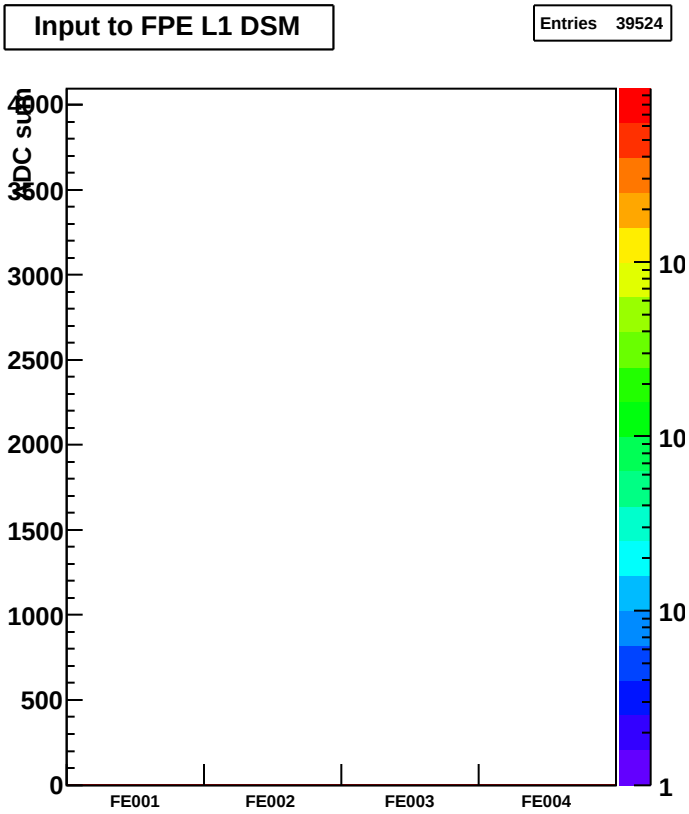

Input to FPD L2 DSM
Entries 59286
jet patch sum (no FMS-LED)
0
10
20
30
40
50
60
ST
SB
NT
NB
S
N
1
10
10^2
10^3

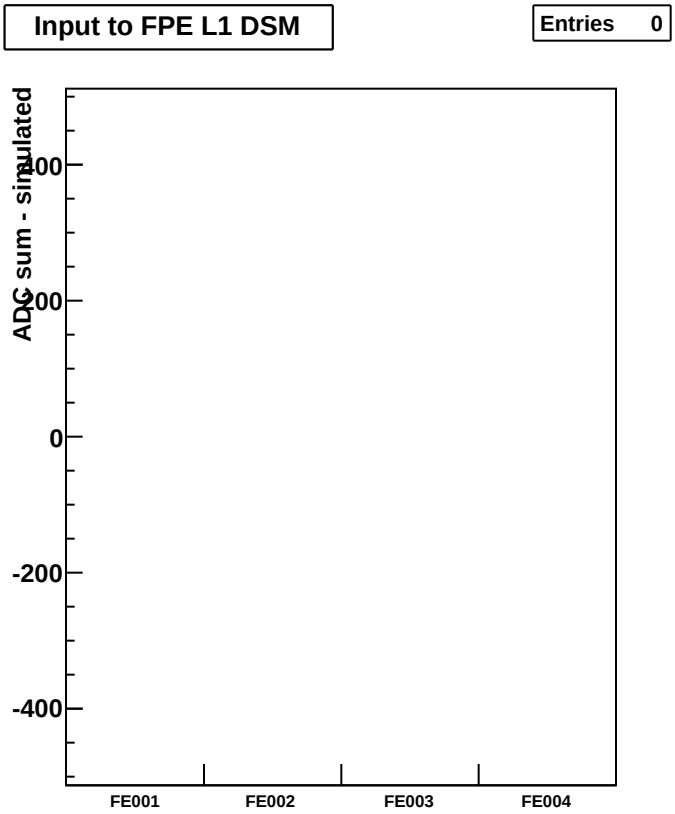

Input to FE001 QT board
Entries 316192
ADC
channel

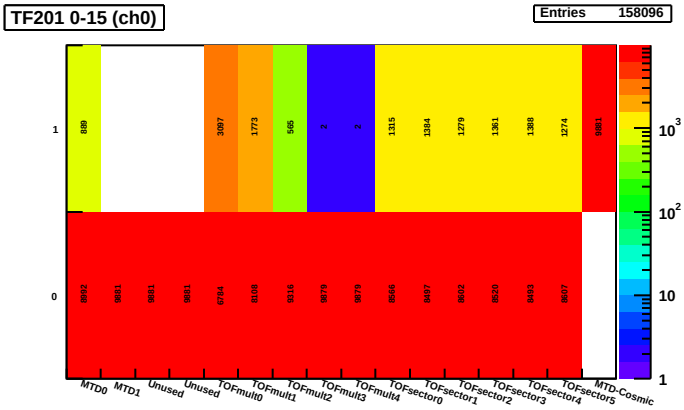

Input to FE002 QT board
Entries 316192
ADC
channel

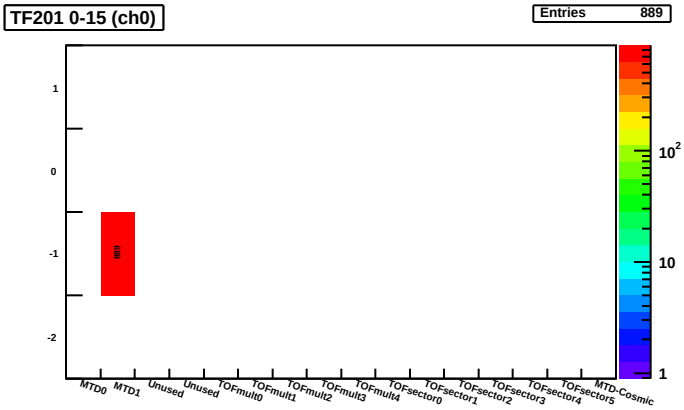

Input to FE003 QT board
Entries 316192
ADC
channel

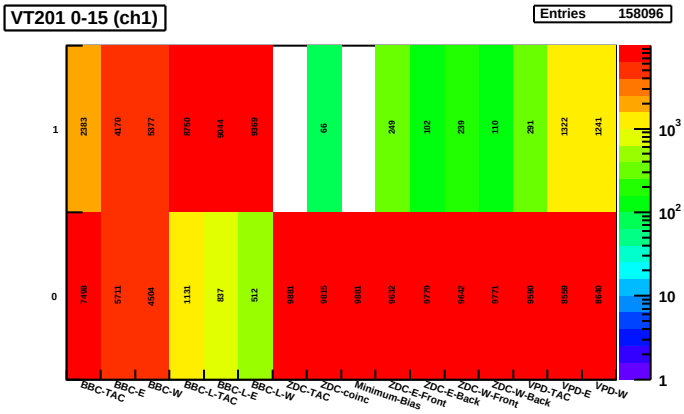

Input to FE004 QT board
Entries 316192
ADC
channel

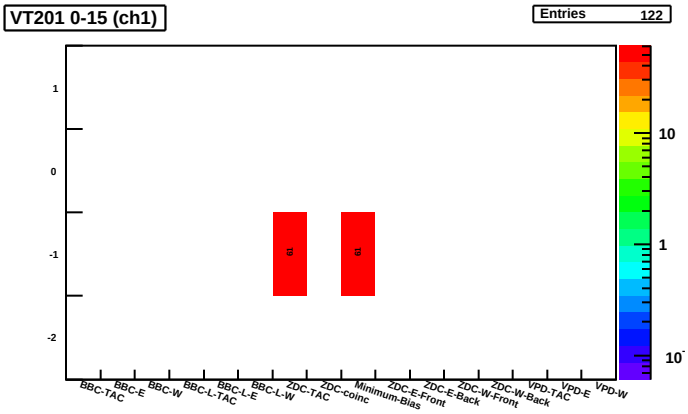

Input to FPE L1 DSM
Entries 39524
ADC sum
4000
3500
3000
2500
2000
1500
1000
500
0
FE001
FE002
FE003
FE004
10
10
10
1

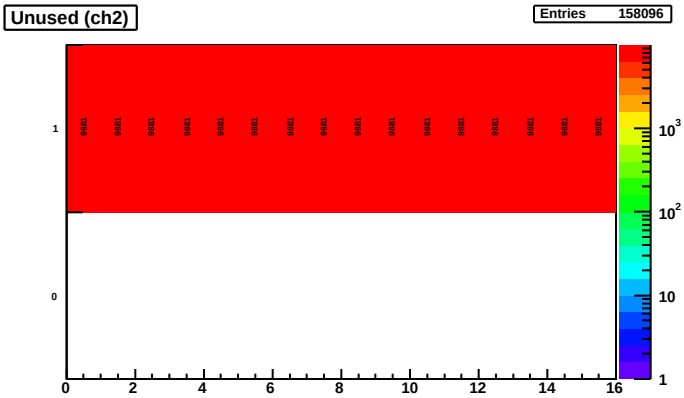

Input to FPE L1 DSM
Entries 0
ADC sum - simulated
100
200
0
-200
-400
FE001
FE002
FE003
FE004

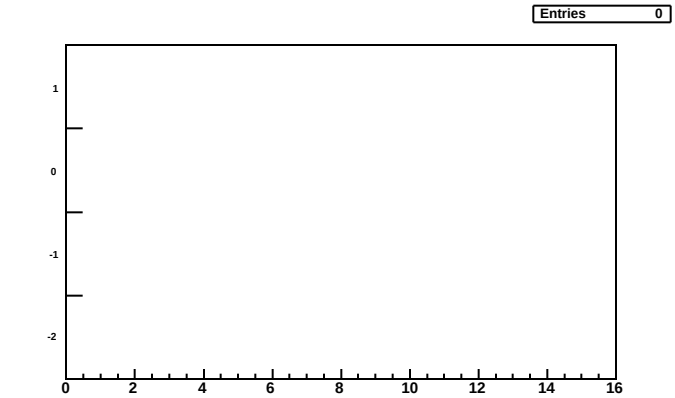

TF201 0-15 (ch0)
Entries 158096
MTD0 MTD1 Unused Unused TOFmult0 TOFmult1 TOFmult2 TOFmult3 TOFmult4 TOFsector0 TOFsector1 TOFsector2 TOFsector3 TOFsector4 TOFsector5 MTD-Cosmic

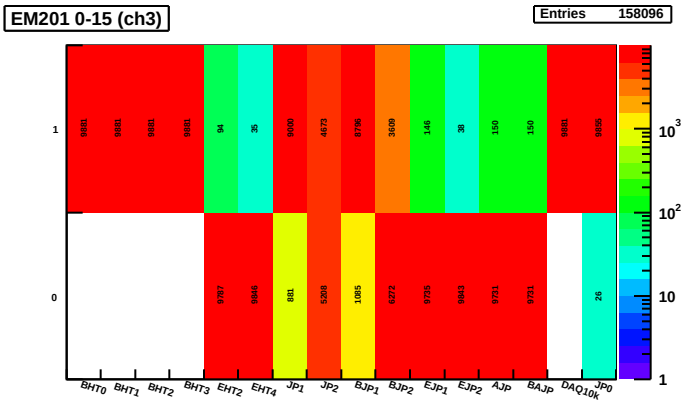

TF201 0-15 (ch0)
Entries 889
MTD0 MTD1 Unused Unused TOFmult0 TOFmult1 TOFmult2 TOFmult3 TOFmult4 TOFsector0 TOFsector1 TOFsector2 TOFsector3 TOFsector4 TOFsector5 MTD-Cosmic

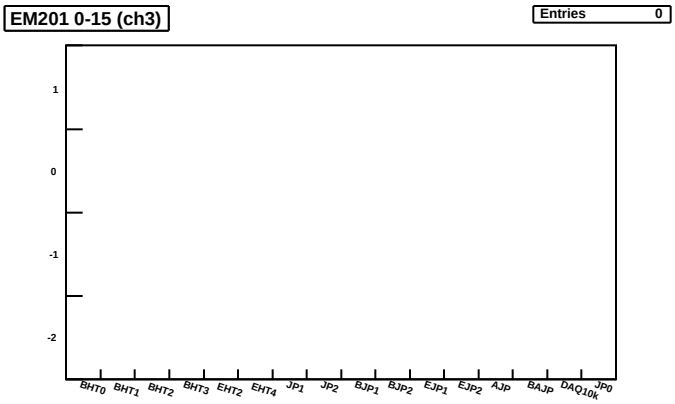

VT201 0-15 (ch1)
Entries 158096
BBC-TAC BBC-E BBC-W BBC-L-TAC BBC-L-E BBC-L-W ZDC-TAC ZDC-coinc Minimum-Bias ZDC-E-Front ZDC-E-Back ZDC-W-Front ZDC-W-Back VPD-TAC VPD-E VPD-W

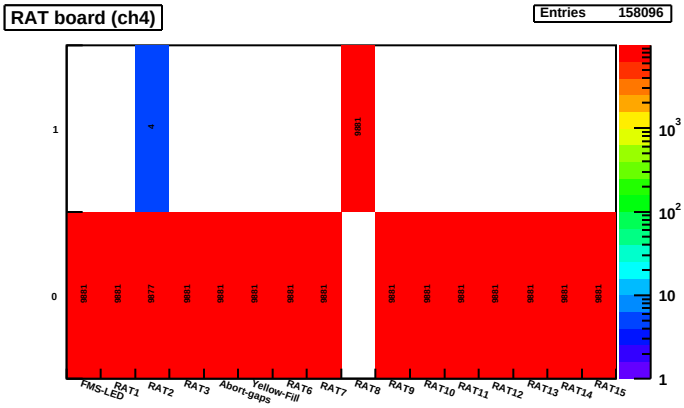

VT201 0-15 (ch1)
Entries 122
BBC-TAC BBC-E BBC-W BBC-L-TAC BBC-L-E BBC-L-W ZDC-TAC ZDC-coinc Minimum-Bias ZDC-E-Front ZDC-E-Back ZDC-W-Front ZDC-W-Back VPD-TAC VPD-E VPD-W

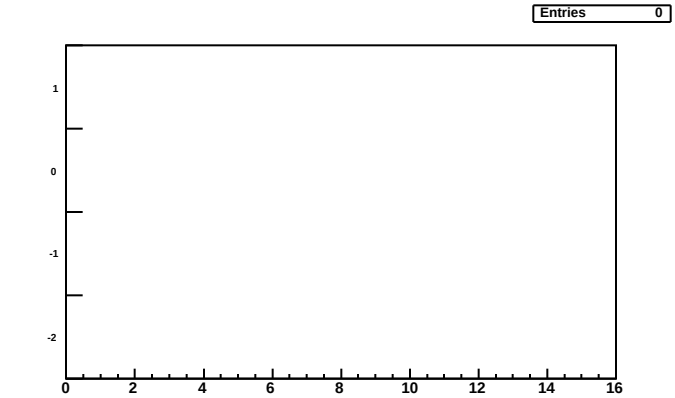

Unused (ch2)
Entries 158096

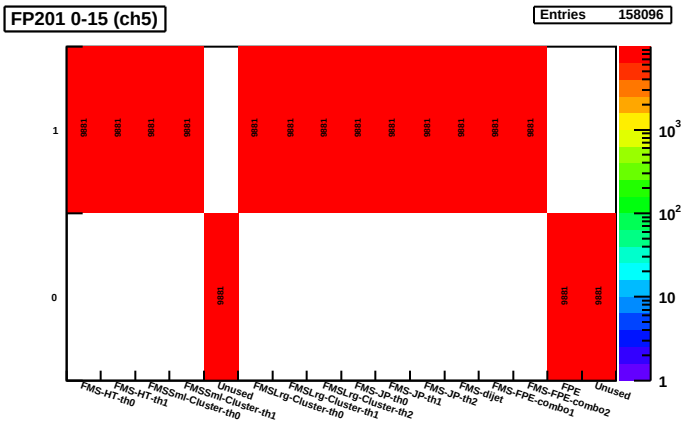

Entries 0

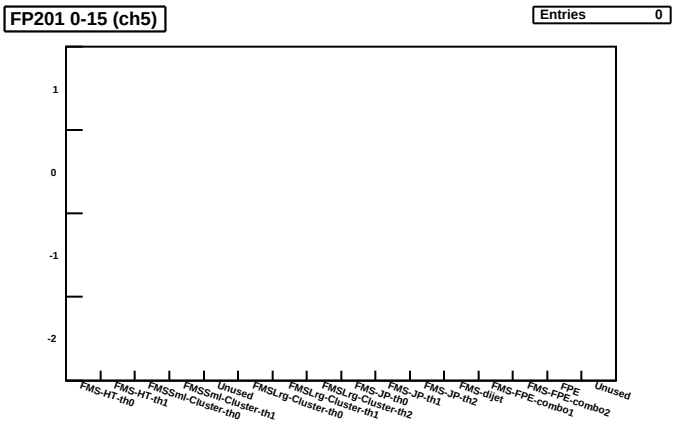

EM201 0-15 (ch3)
Entries 158096
BHT0 BHT1 BHT2 BHT3 EHT2 EHT4 JP1 JP2 BJP1 BJP2 EJP1 EJP2 AJP BAJP DAQ10k JP0

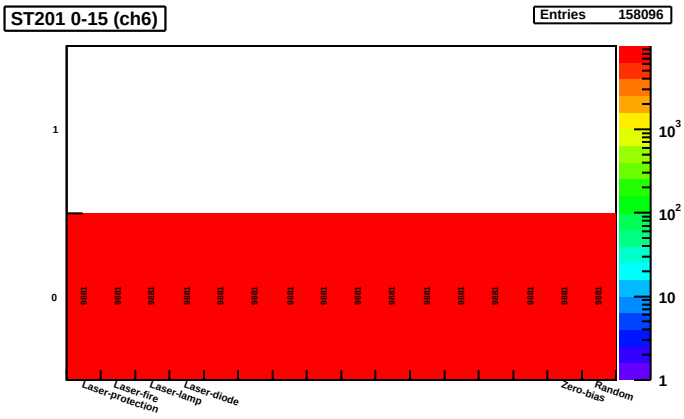

EM201 0-15 (ch3)
Entries 0
BHT0 BHT1 BHT2 BHT3 EHT2 EHT4 JP1 JP2 BJP1 BJP2 EJP1 EJP2 AJP BAJP DAQ10k JP0

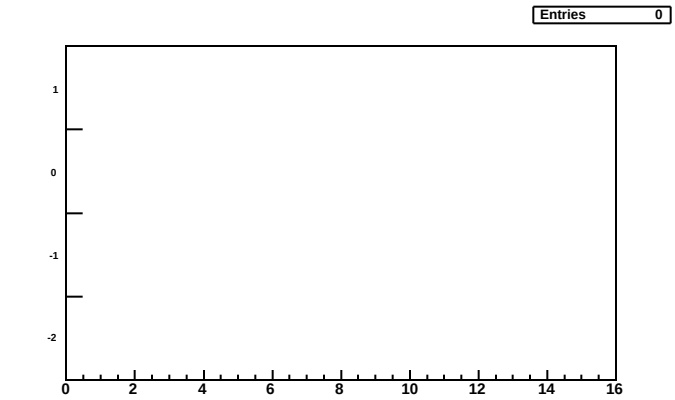

RAT board (ch4)
Entries 158096
FMS-LED
RAT1
RAT2
RAT3
Abort-gaps
Yellow-Fill
RAT6
RAT7
RAT8
RAT9
RAT10
RAT11
RAT12
RAT13
RAT14
RAT15

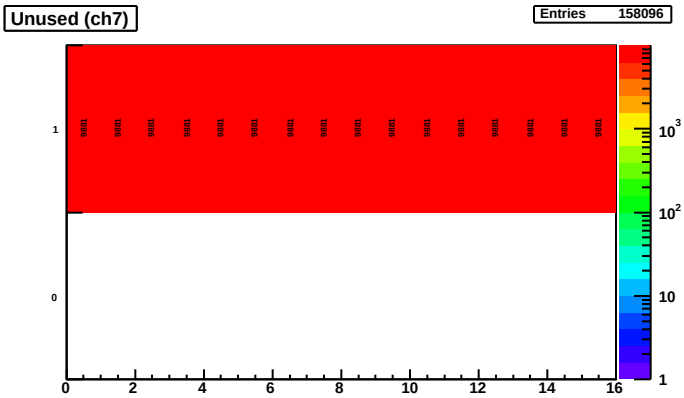

Entries 0

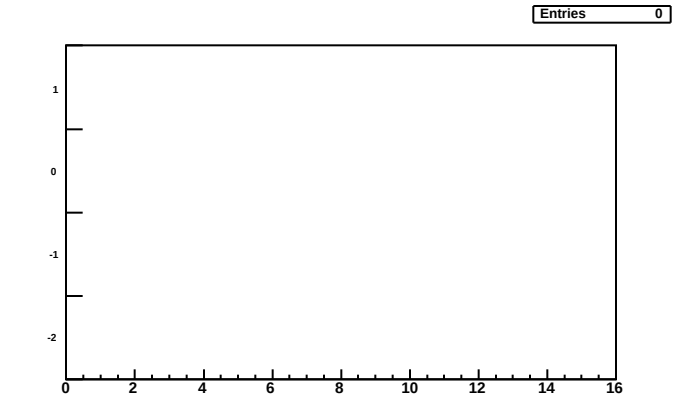

FP201 0-15 (ch5)
Entries 158096
FMS-HT-th0
FMS-HT-th1
FMSSml-Cluster-th0
FMSSml-Cluster-th1
Unused
FMSLrg-Cluster-th0
FMSLrg-Cluster-th1
FMS-JP-th0
FMS-JP-th1
FMS-JP-th2
FMS-diJet
FMS-FPE-combo1
FPE
FMS-FPE-combo2
Unused


FP201 0-15 (ch5)
Entries 0


ST201 0-15 (ch6)
Entries 158096
Laser-protection
Laser-fire
Laser-lamp
Laser-diode
Zero-bias
Random


Entries 0


Unused (ch7)
Entries 158096


Entries 0