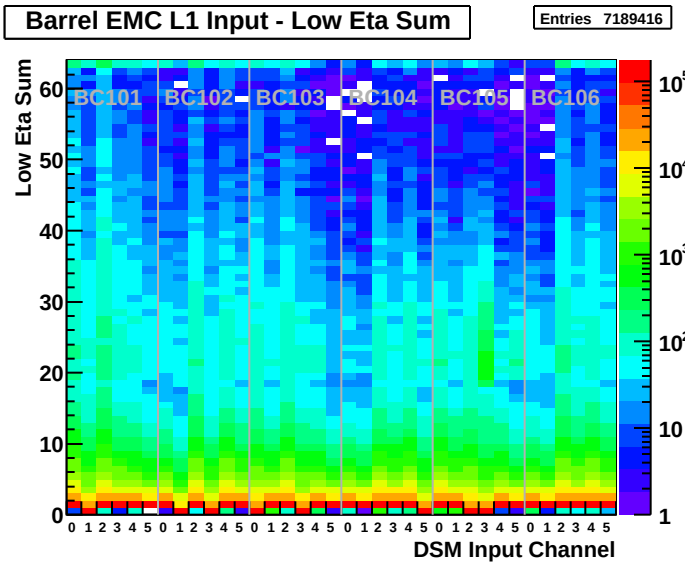
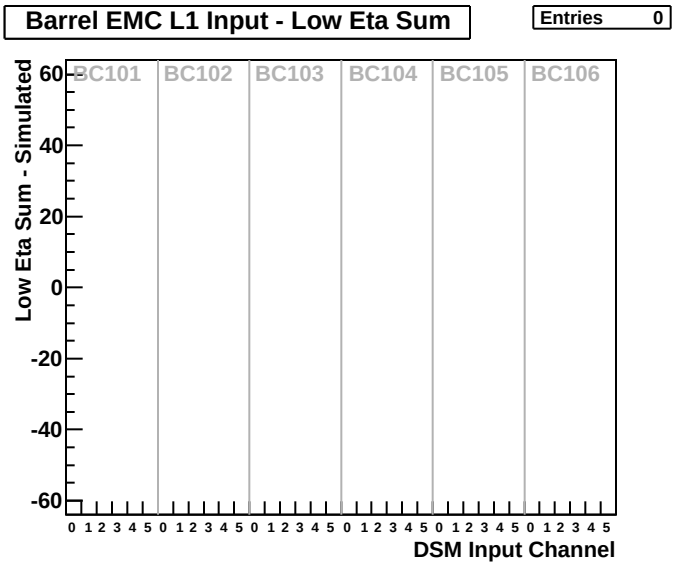
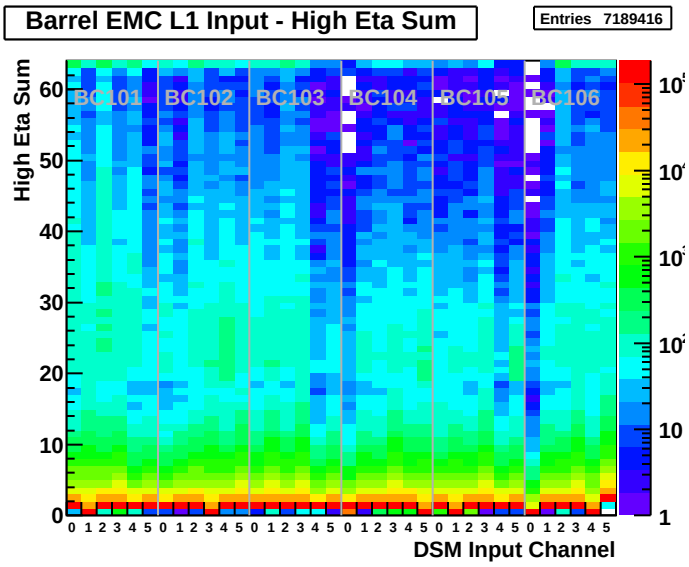
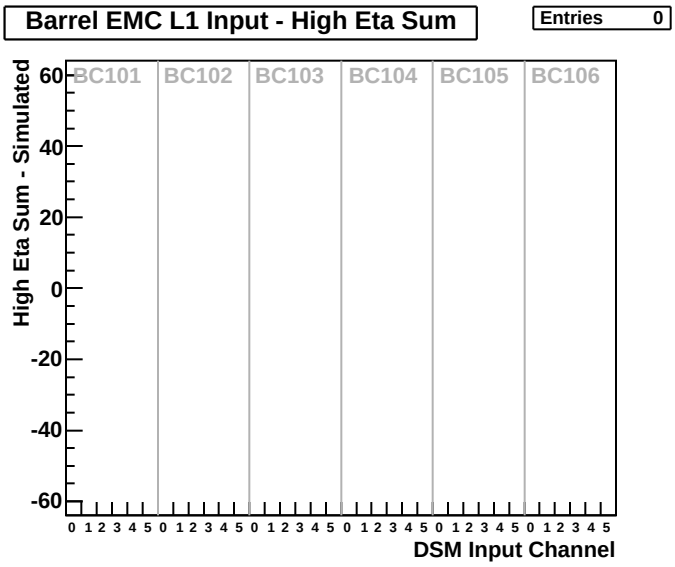
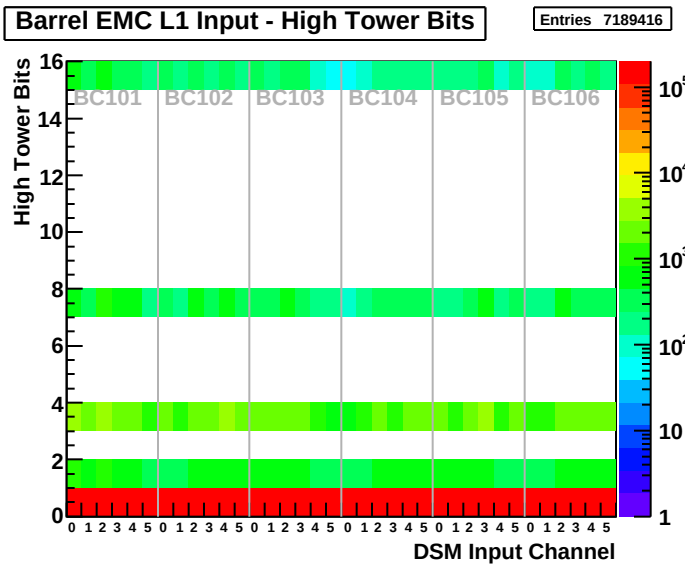
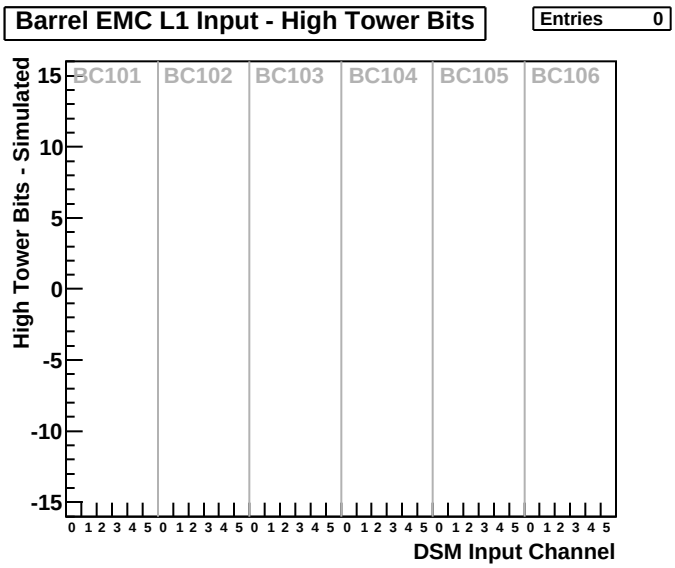

Barrel EMC L1 Input - Low Eta Sum
Entries 7189416
Low Eta Sum
BC101 BC102 BC103 BC104 BC105 BC106
DSM Input Channel

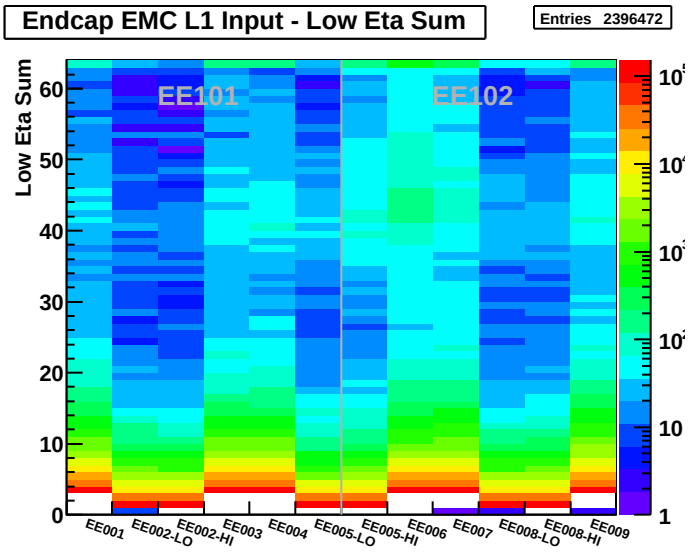

Barrel EMC L1 Input - Low Eta Sum
Entries 0
Low Eta Sum - Simulated
BC101 BC102 BC103 BC104 BC105 BC106
DSM Input Channel

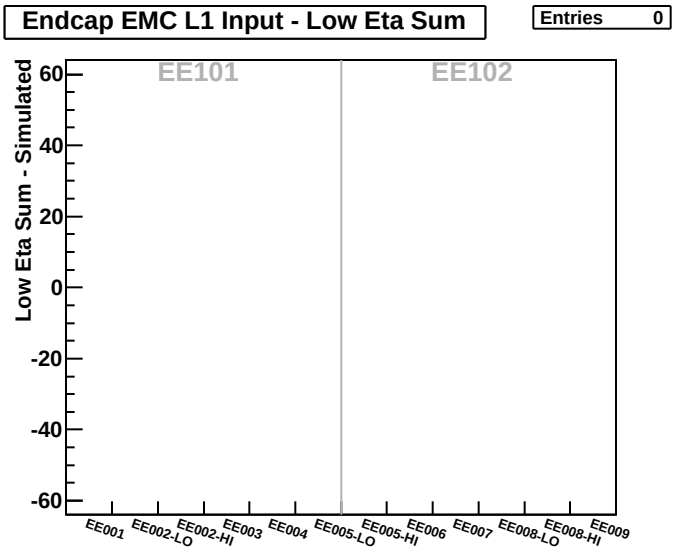

Barrel EMC L1 Input - High Eta Sum
Entries 7189416
High Eta Sum
BC101 BC102 BC103 BC104 BC105 BC106
DSM Input Channel

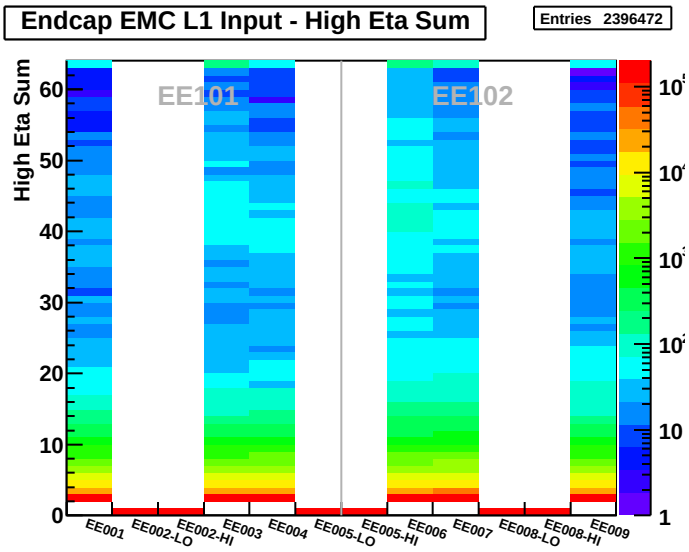

Barrel EMC L1 Input - High Eta Sum
Entries 0
High Eta Sum - Simulated
BC101 BC102 BC103 BC104 BC105 BC106
DSM Input Channel

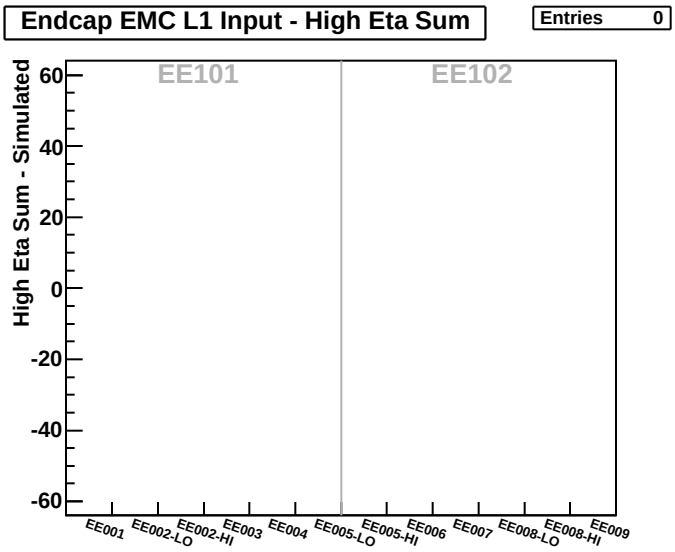

Barrel EMC L1 Input - High Tower Bits
Entries 7189416
High Tower Bits
BC101 BC102 BC103 BC104 BC105 BC106
DSM Input Channel

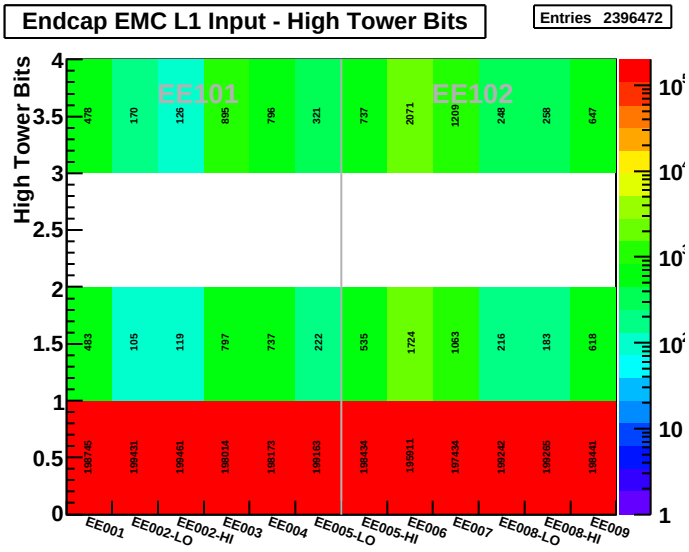

Barrel EMC L1 Input - High Tower Bits
Entries 0
High Tower Bits - Simulated
BC101 BC102 BC103 BC104 BC105 BC106
DSM Input Channel

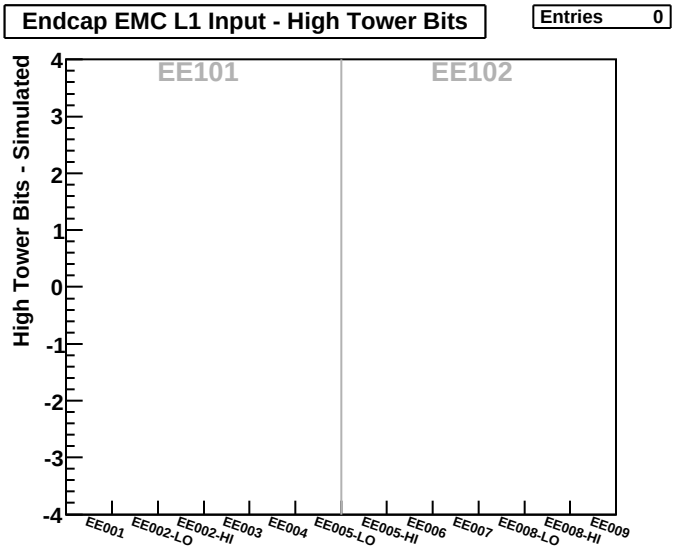

Endcap EMC L1 Input - Low Eta Sum
Entries 2396472
Low Eta Sum
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

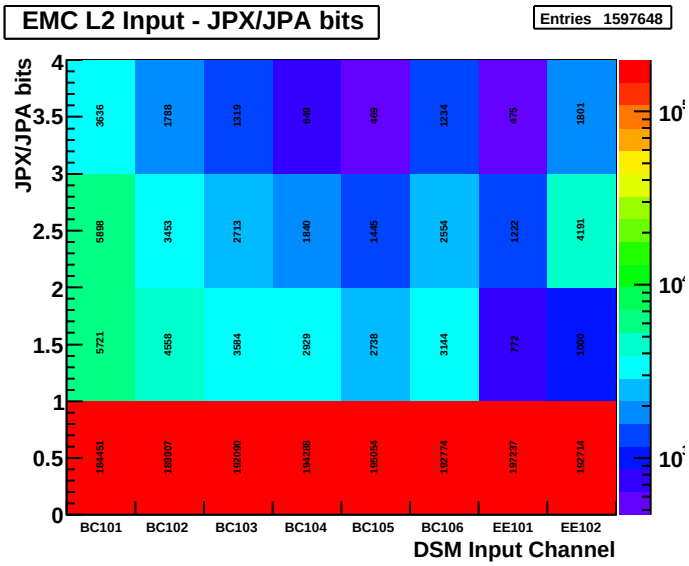

Endcap EMC L1 Input - Low Eta Sum
Entries 0
Low Eta Sum - Simulated
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

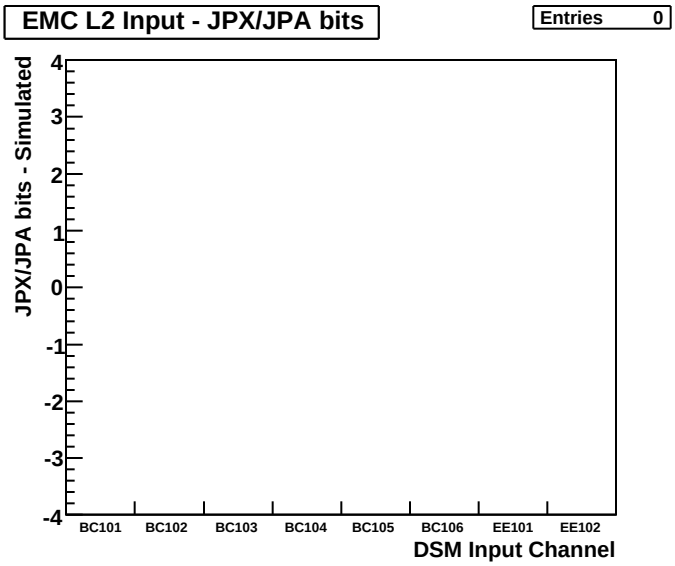

Endcap EMC L1 Input - High Eta Sum
Entries 2396472
High Eta Sum
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

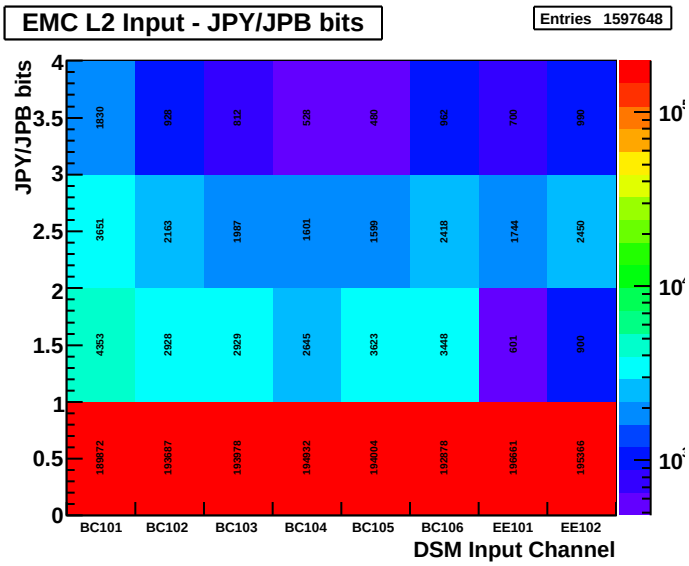

Endcap EMC L1 Input - High Eta Sum
Entries 0
High Eta Sum - Simulated
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

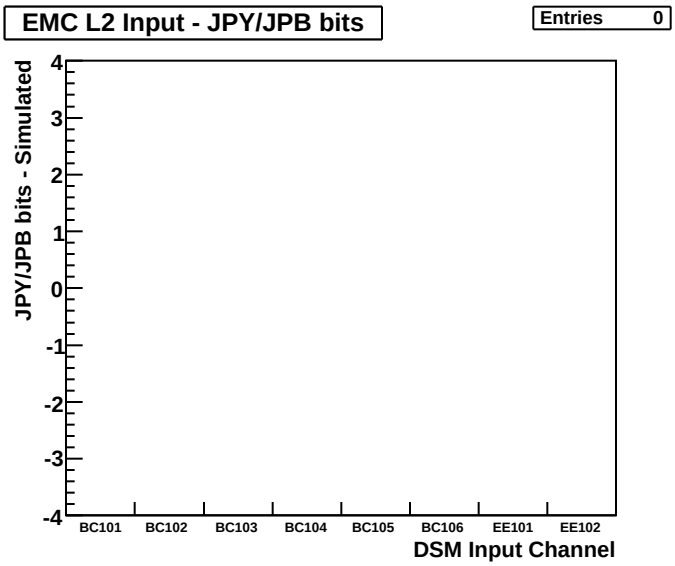

Endcap EMC L1 Input - High Tower Bits
Entries 2396472
High Tower Bits
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

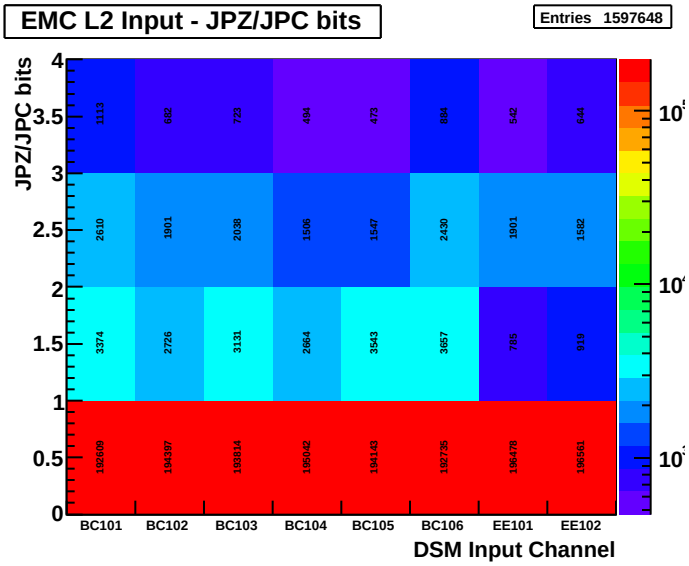

Endcap EMC L1 Input - High Tower Bits
Entries 0
High Tower Bits - Simulated
EE101
EE102
EE001 EE002-LO EE002-HI EE003 EE004 EE005-LO EE005-HI EE006 EE007 EE008-LO EE008-HI EE009

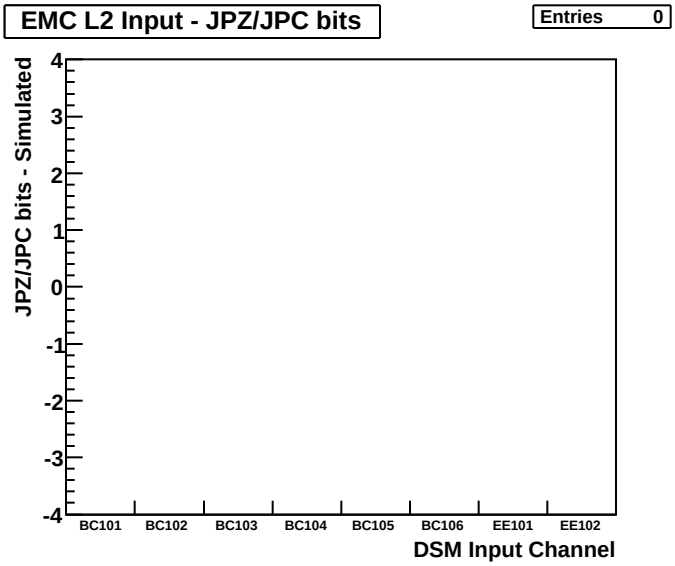

EMC L2 Input - JPX/JPA bits
Entries 1597648
JPX/JPA bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102
3836 1768 1319 649 469 1234 475 1801
5898 3453 2713 1840 1445 2554 1222 4191
5721 4558 3584 2929 2738 3144 772 1000
184451 189907 192090 194288 195054 192774 197237 192714

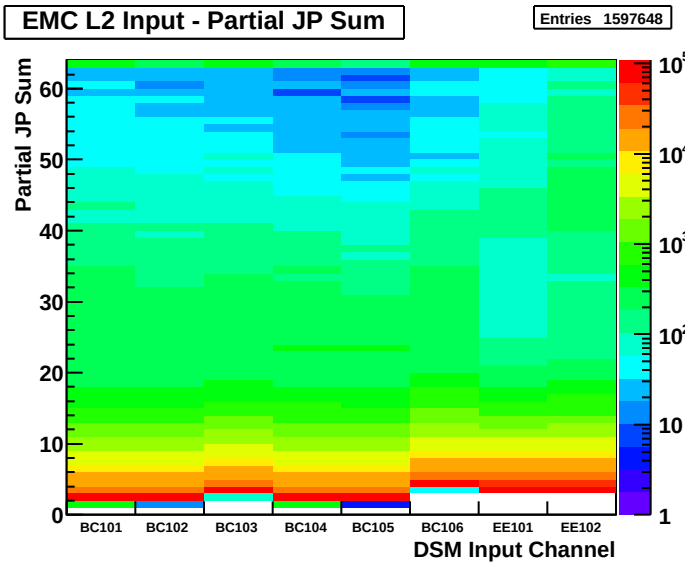

EMC L2 Input - JPX/JPA bits
Entries 0
JPX/JPA bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

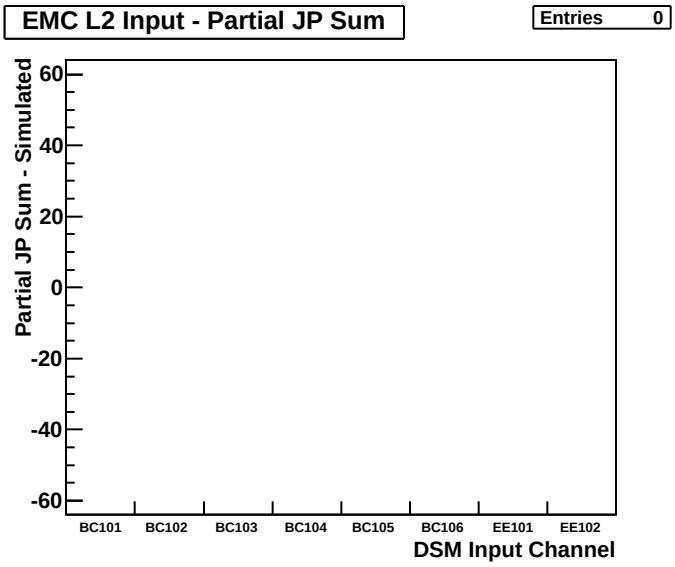

EMC L2 Input - JPY/JPB bits
Entries 1597648
JPY/JPB bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102
1830 926 812 528 480 962 700 990
3651 2163 1987 1601 1599 2418 1744 2450
4353 2928 2929 2645 3623 3448 601 900
188872 193687 193978 194932 194004 192878 196661 195366

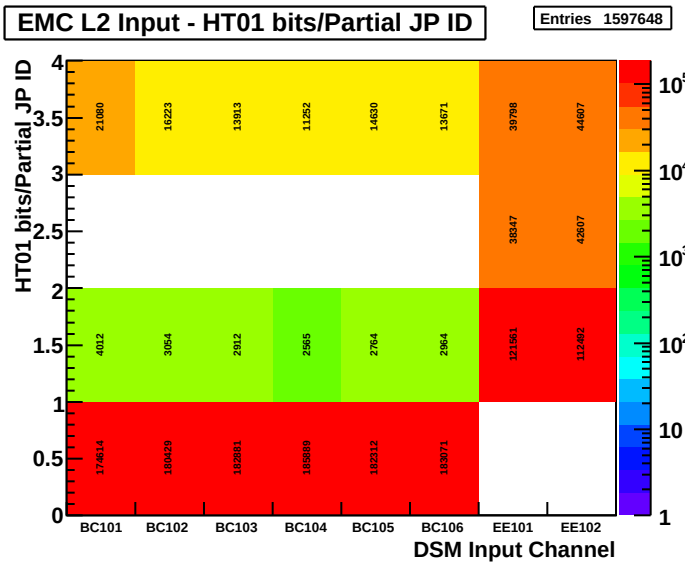

EMC L2 Input - JPY/JPB bits
Entries 0
JPY/JPB bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

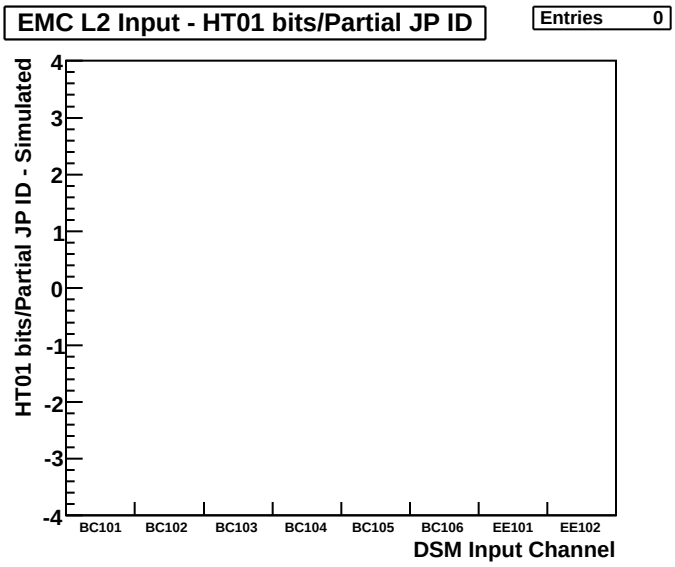

EMC L2 Input - JPZ/JPC bits
Entries 1597648
JPZ/JPC bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102
1113 682 723 494 473 834 542 644
2610 1901 2038 1506 1547 2430 1901 1582
3374 2726 3131 2664 3543 3657 785 919
192509 194397 193814 195042 194143 192735 196478 196561

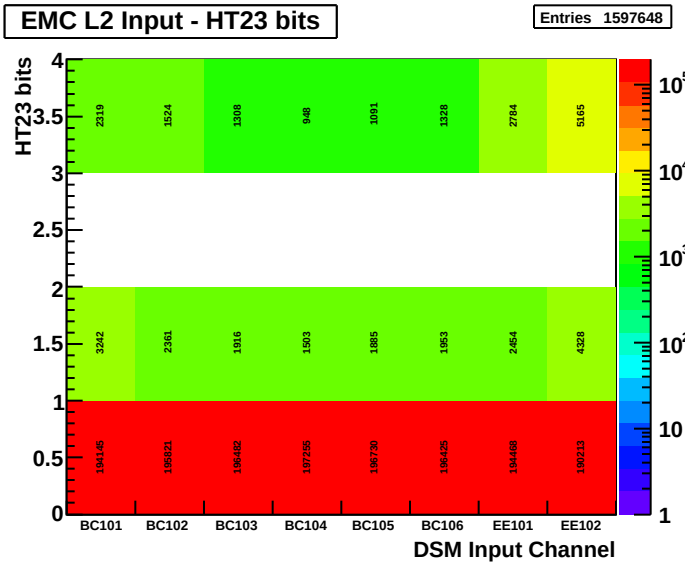

EMC L2 Input - JPZ/JPC bits
Entries 0
JPZ/JPC bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

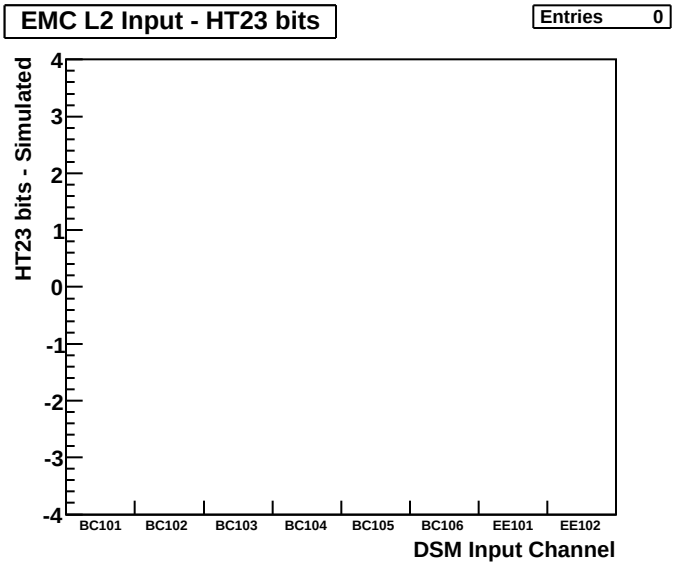

EMC L2 Input - Partial JP Sum
Entries 1597648
Partial JP Sum
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

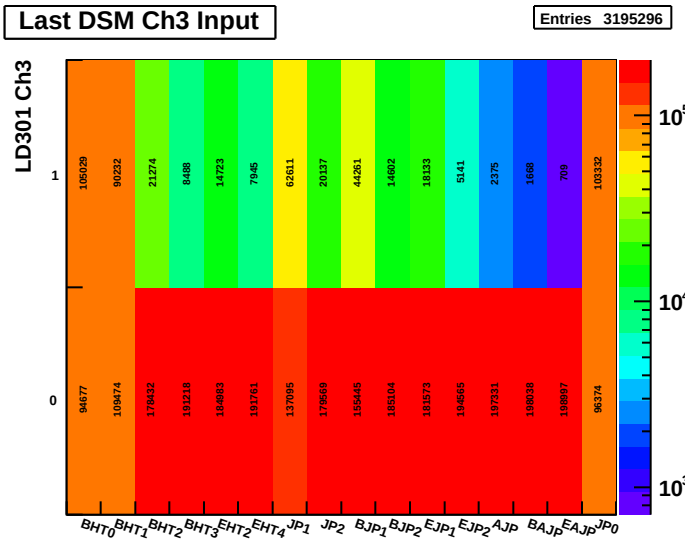

EMC L2 Input - Partial JP Sum
Entries 0
Partial JP Sum - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

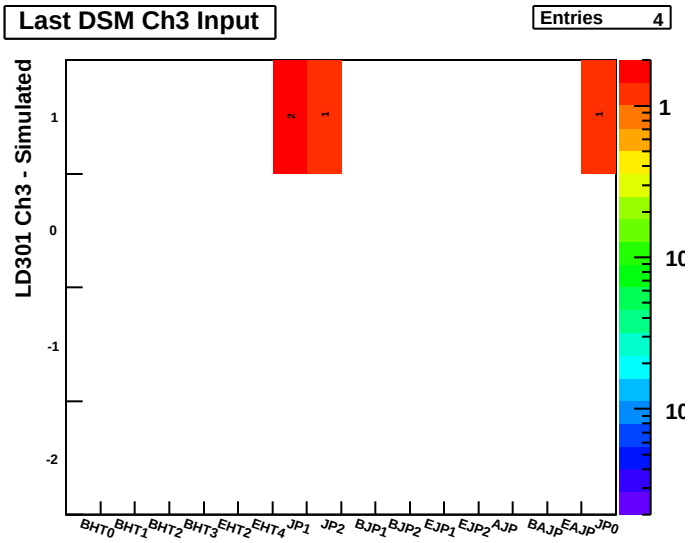

EMC L2 Input - HT01 bits/Partial JP ID
Entries 1597648
HT01 bits/Partial JP ID
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

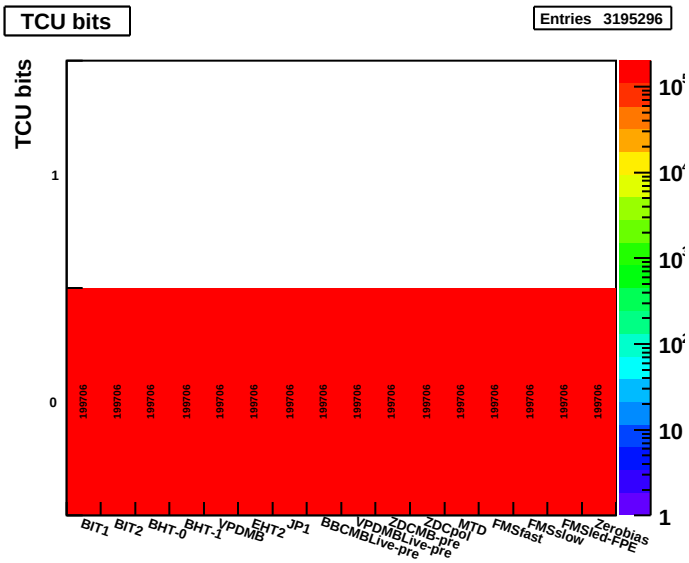

EMC L2 Input - HT01 bits/Partial JP ID
Entries 0
HT01 bits/Partial JP ID - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

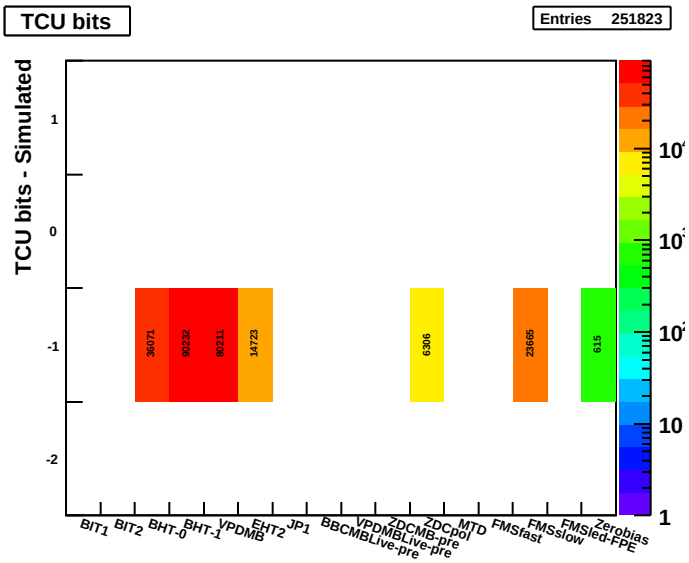

EMC L2 Input - HT23 bits
Entries 1597648
HT23 bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

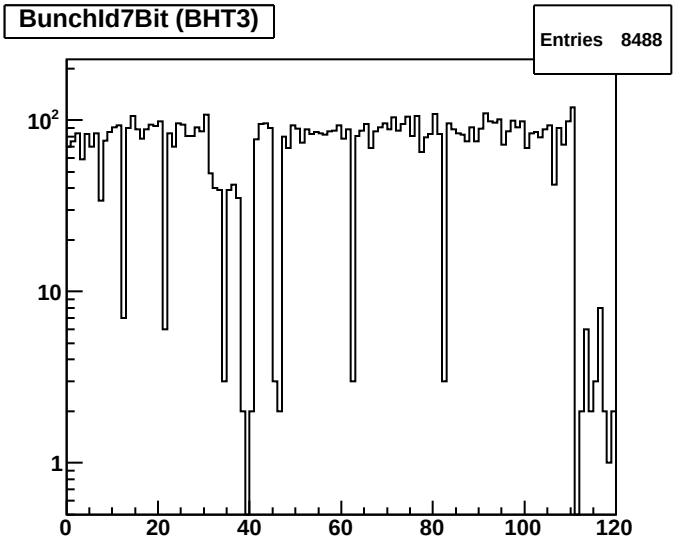

EMC L2 Input - HT23 bits
Entries 0
HT23 bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

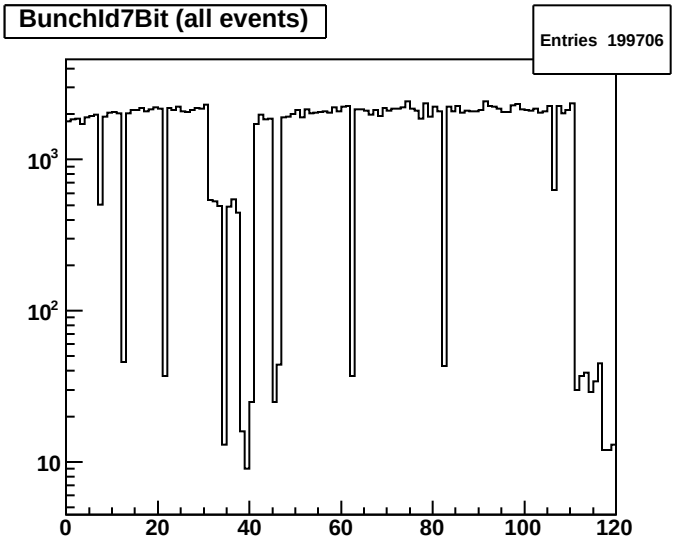

Last DSM Ch3 Input
Entries 3195296
LD301 Ch3
1
0
105029 90232 21274 8488 14723 7945 62611 20137 44261 14602 18133 5141 2375 1668 709 103332
94677 109474 178432 191218 184983 191761 137095 179569 155445 185104 181573 194565 197331 198038 198997 96374
BHT0 BHT1 BHT2 BHT3 EHT2 EHT4 JP1 JP2 BJP1 BJP2 EJP1 EJP2 AJP BAJP EAJP JP0

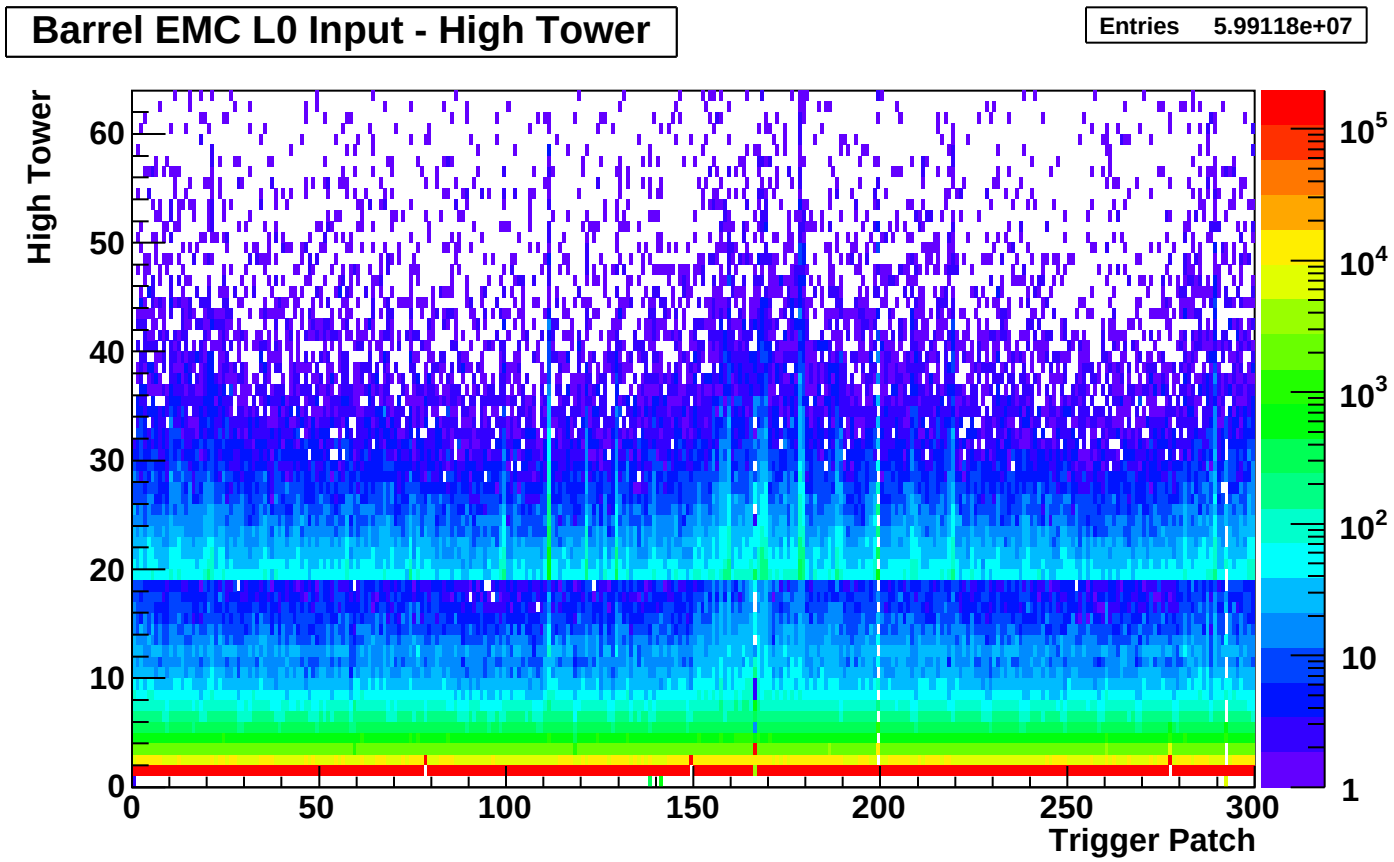

Last DSM Ch3 Input
Entries 4
LD301 Ch3 - Simulated
1
0
-1
-2
2 1 1
BHT0 BHT1 BHT2 BHT3 EHT2 EHT4 JP1 JP2 BJP1 BJP2 EJP1 EJP2 AJP BAJP EAJP JP0

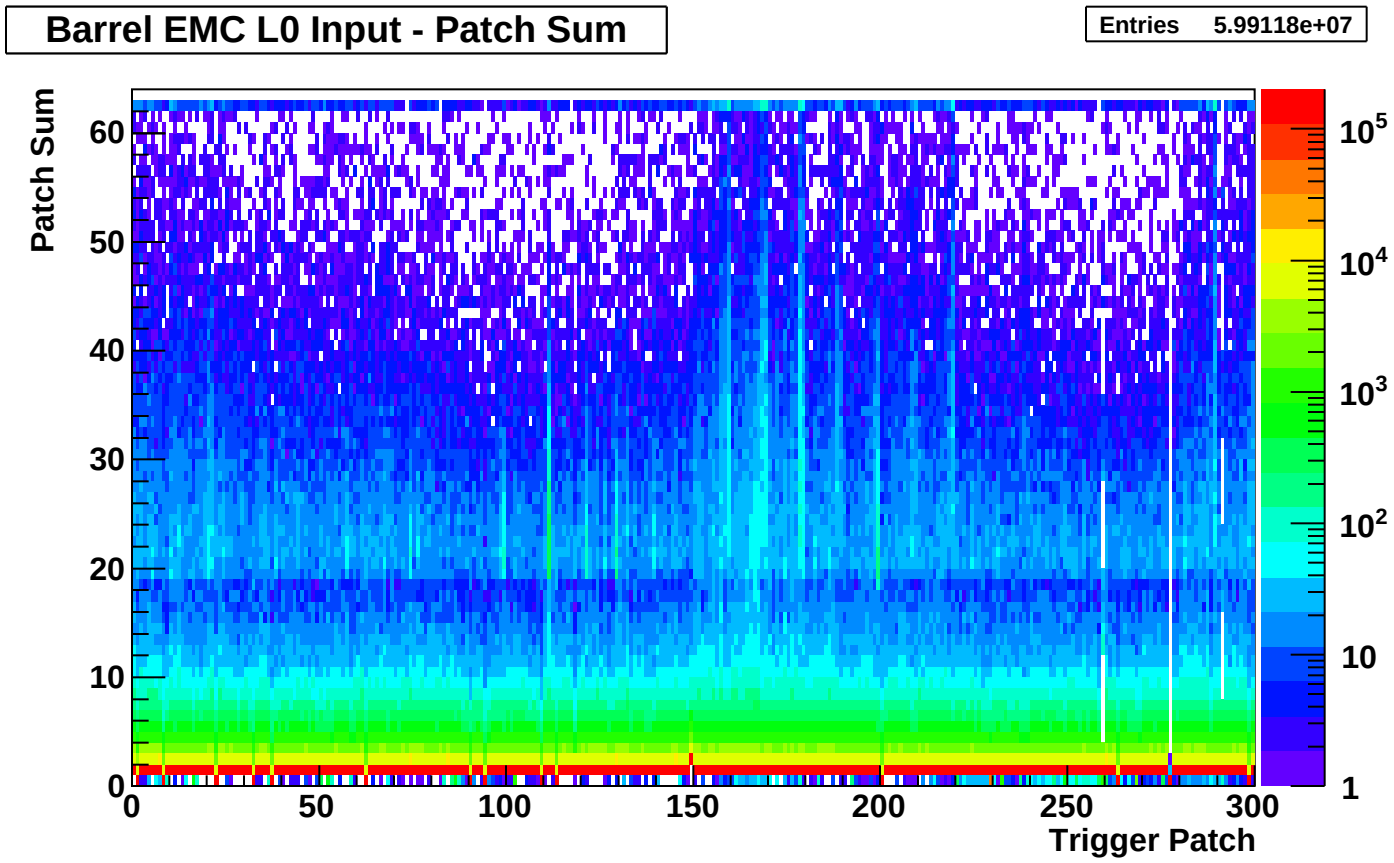

TCU bits
Entries 3195296
TCU bits
1
0
199706 199706 199706 199706 199706 199706 199706 199706 199706 199706 199706 199706 199706 199706 199706 199706
BIT1 BIT2 BHT-0 BHT-1 VPDMB EHT2 JP1 BBCMBLive-pre VPDMBLive-pre ZDCMB-pre ZDCpol MTD FMSfast FMSslow FMSled-FPE Zerobias

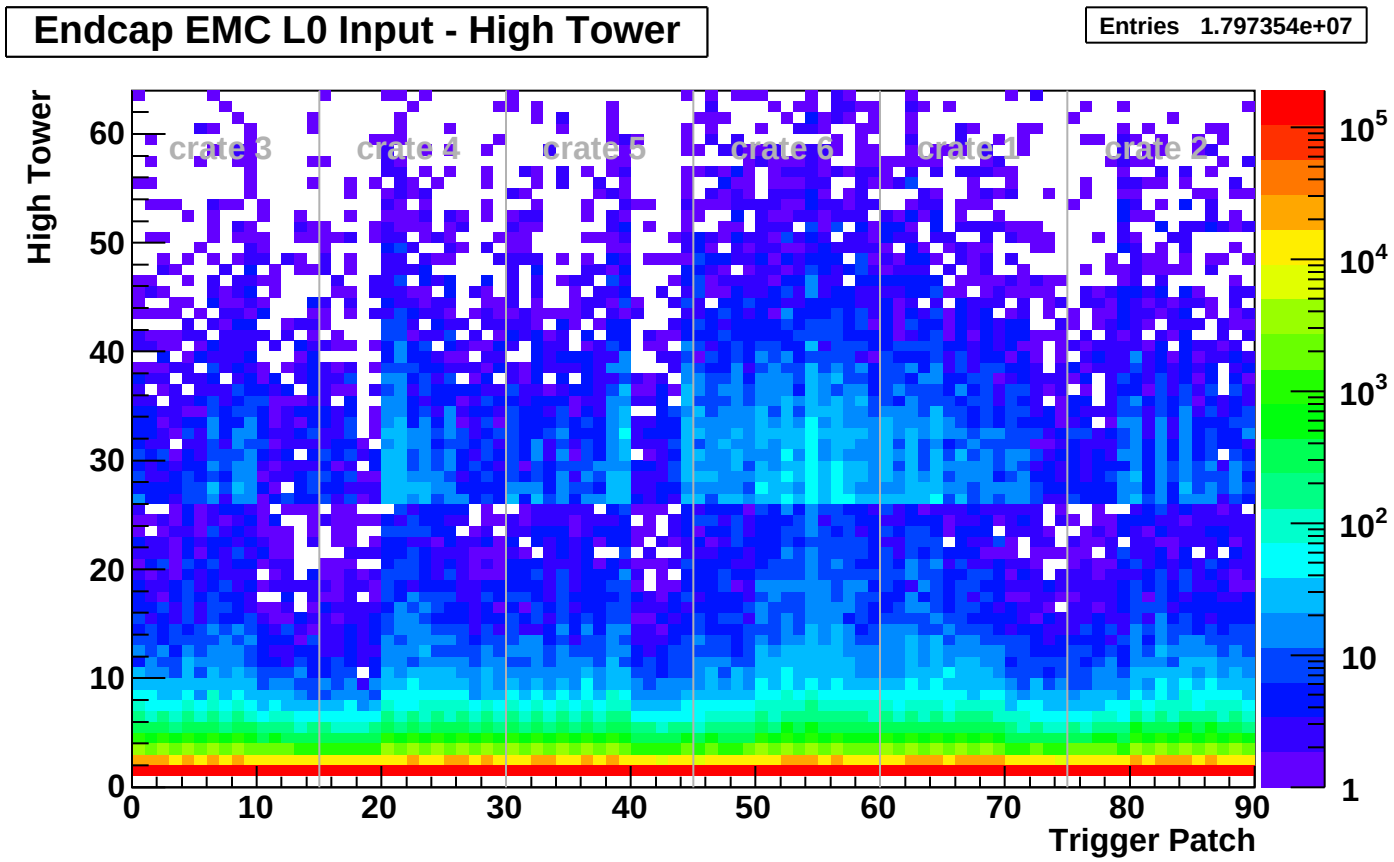

TCU bits
Entries 251823
TCU bits - Simulated
1
0
-1
-2
36071 90232 80211 14723 6306 23665 615
BIT1 BIT2 BHT-0 BHT-1 VPDMB EHT2 JP1 BBCMBLive-pre VPDMBLive-pre ZDCMB-pre ZDCpol MTD FMSfast FMSslow FMSled-FPE Zerobias

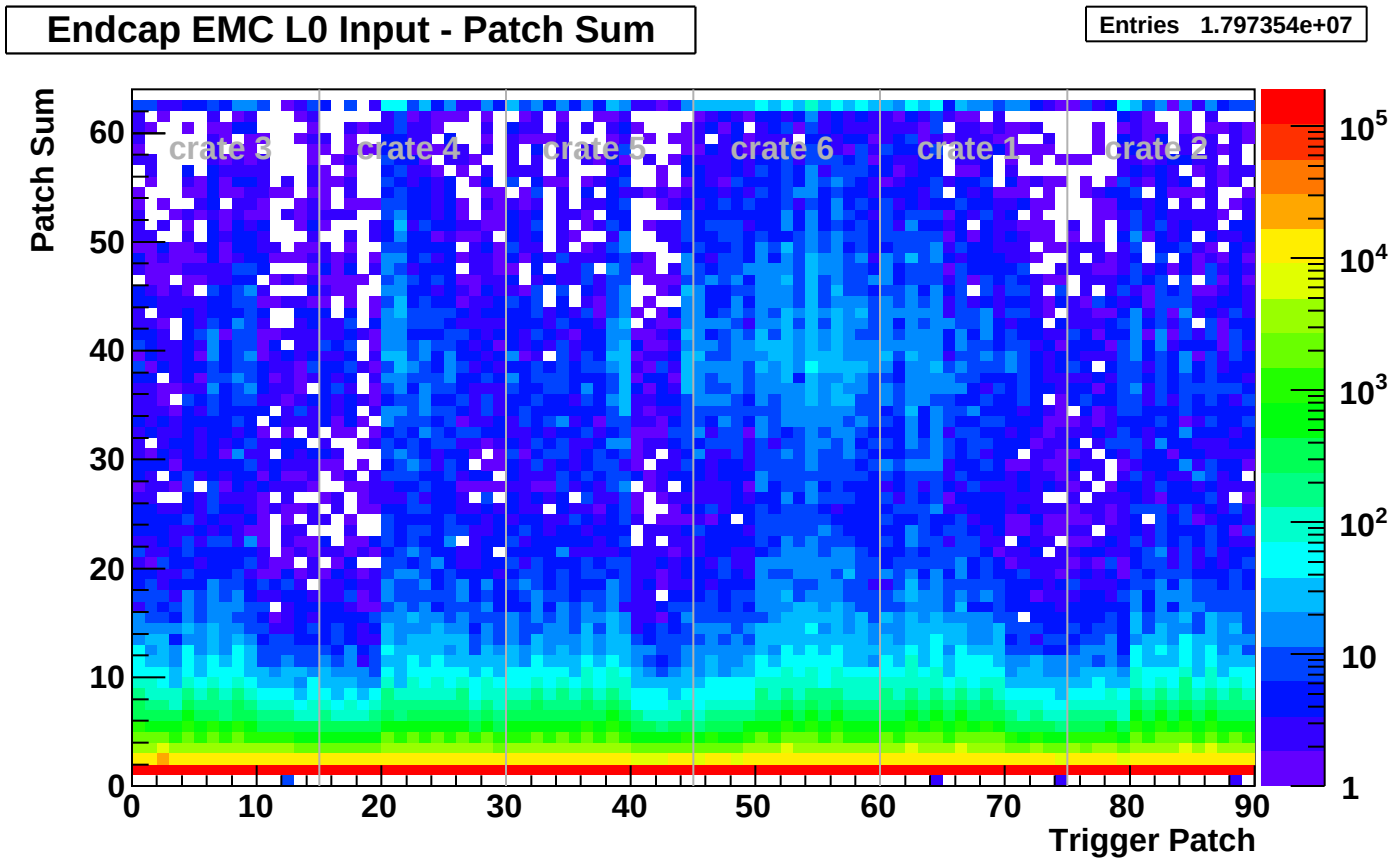

BunchId7Bit (BHT3)
Entries 8488
10²
10
1
0 20 40 60 80 100 120

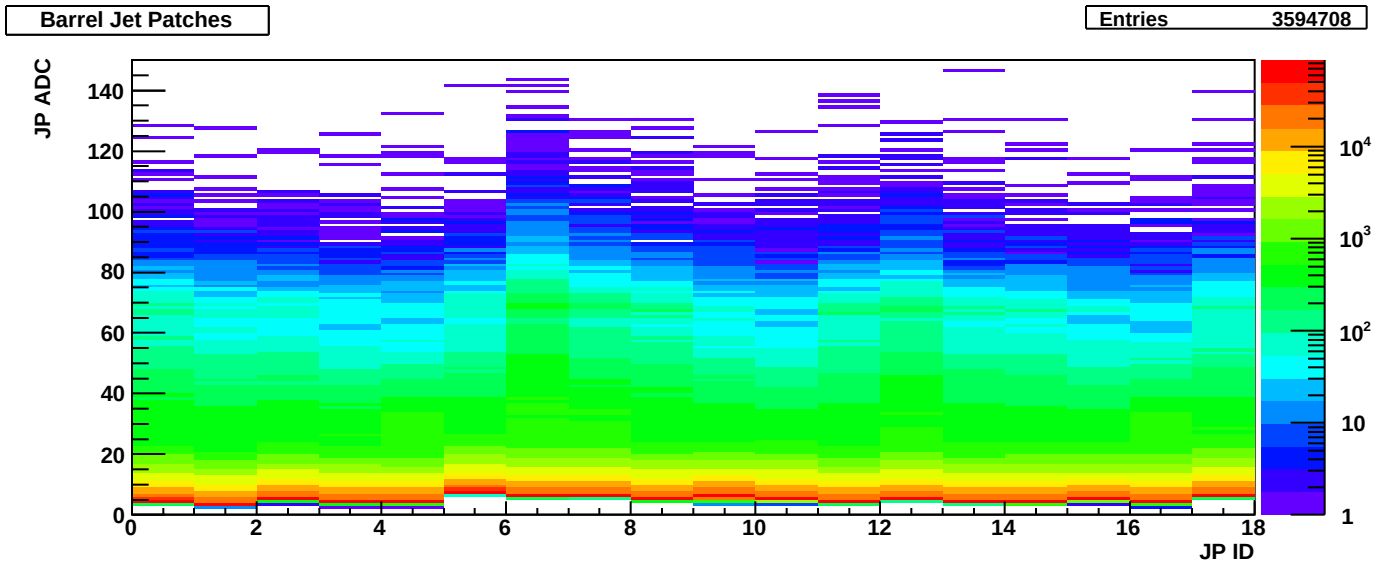

BunchId7Bit (all events)
Entries 199706
10³
10²
10
0 20 40 60 80 100 120

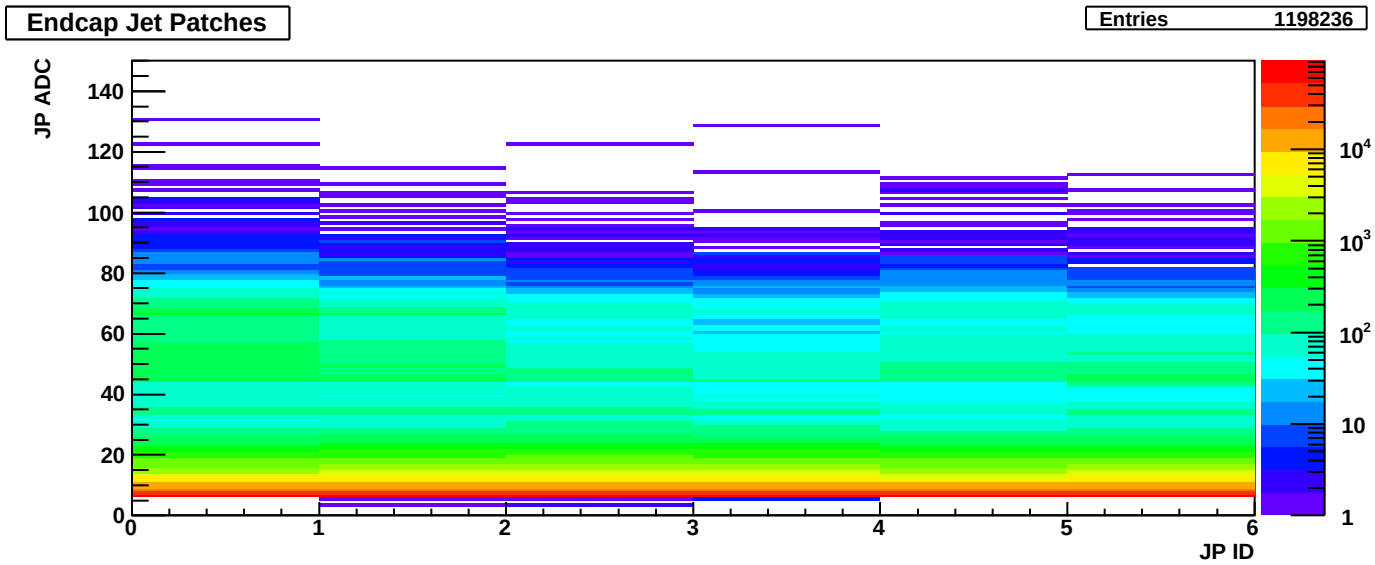

Barrel EMC L0 Input - High Tower
Entries 5.99118e+07
High Tower
Trigger Patch
0
10
20
30
40
50
60
0
50
100
150
200
250
300
1
10
$10^2$
$10^3$
$10^4$
$10^5$

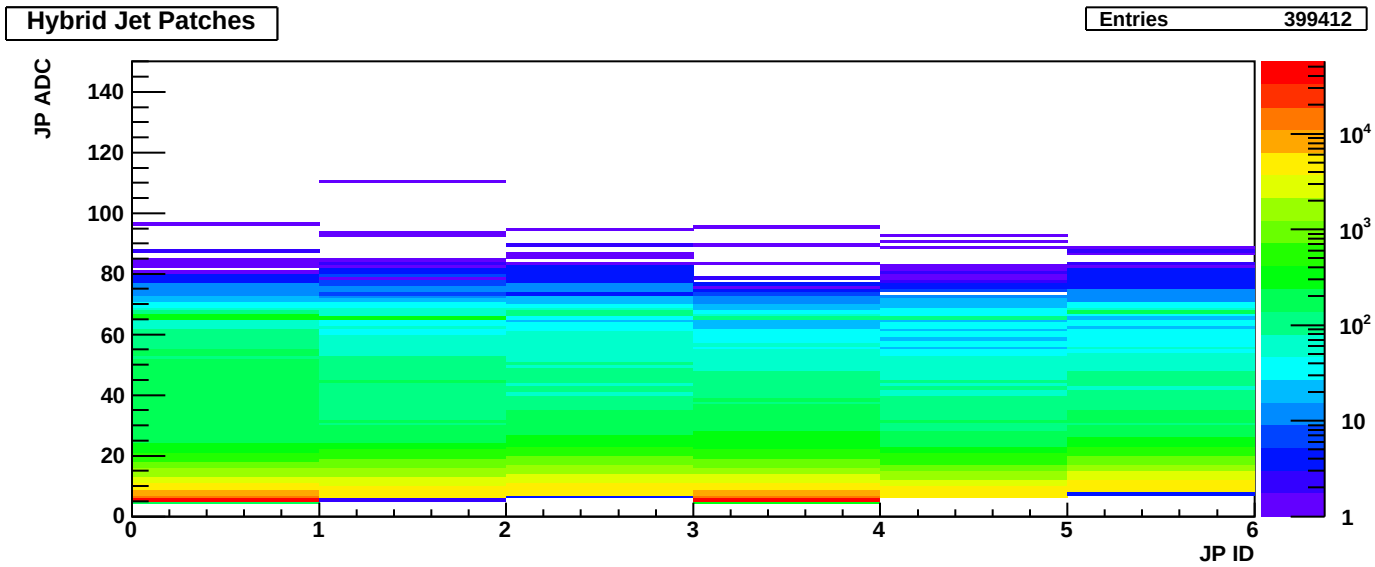

Barrel EMC L0 Input - Patch Sum
Entries 5.99118e+07
Patch Sum
Trigger Patch
0
10
20
30
40
50
60
0
50
100
150
200
250
300
1
10
$10^2$
$10^3$
$10^4$
$10^5$

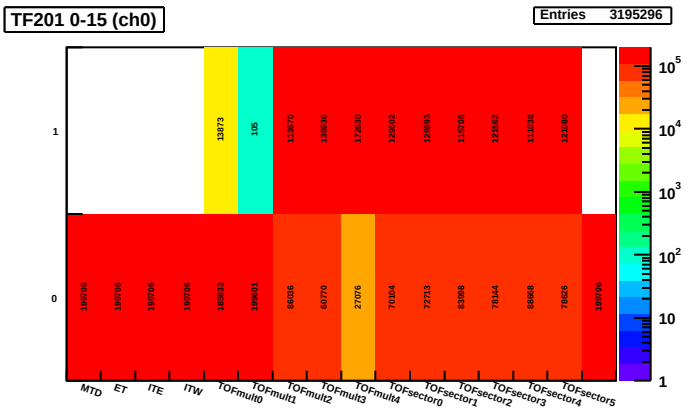

Endcap EMC L0 Input - High Tower
Entries 1.797354e+07
High Tower
Trigger Patch
crate 3
crate 4
crate 5
crate 6
crate 1
crate 2

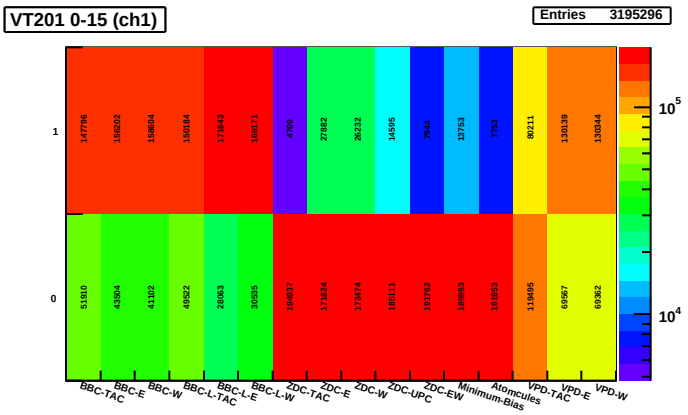

Endcap EMC L0 Input - Patch Sum
Entries 1.797354e+07
Patch Sum
Trigger Patch
crate 3
crate 4
crate 5
crate 6
crate 1
crate 2

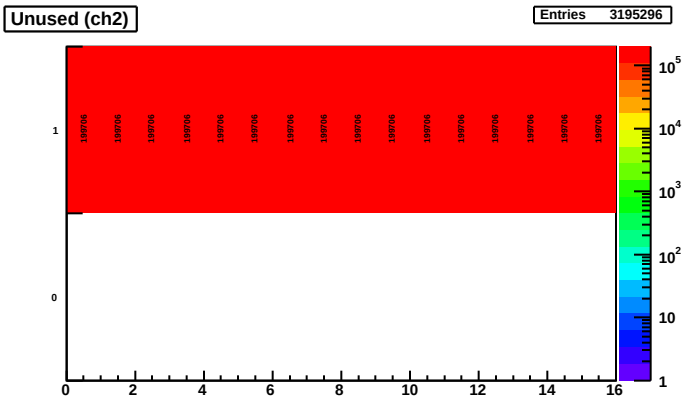

Barrel Jet Patches
Entries 3594708
JP ADC
JP ID

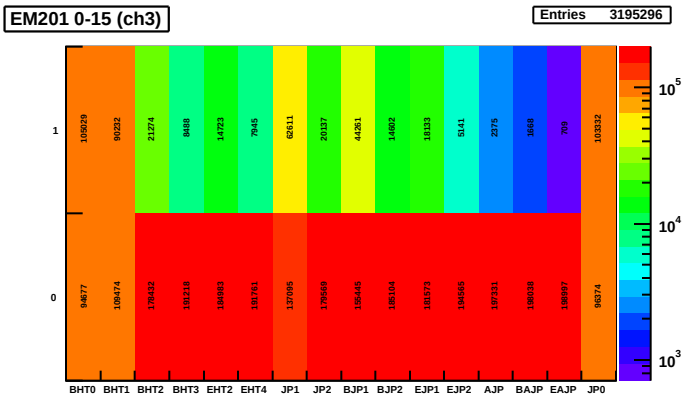

Endcap Jet Patches
Entries 1198236
JP ADC
JP ID

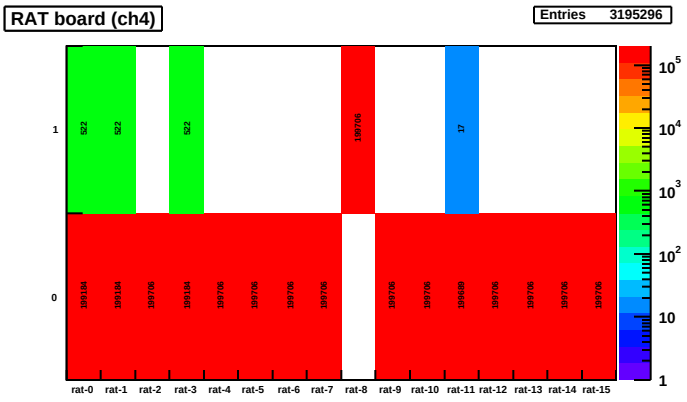

Hybrid Jet Patches
Entries 399412
JP ADC
JP ID

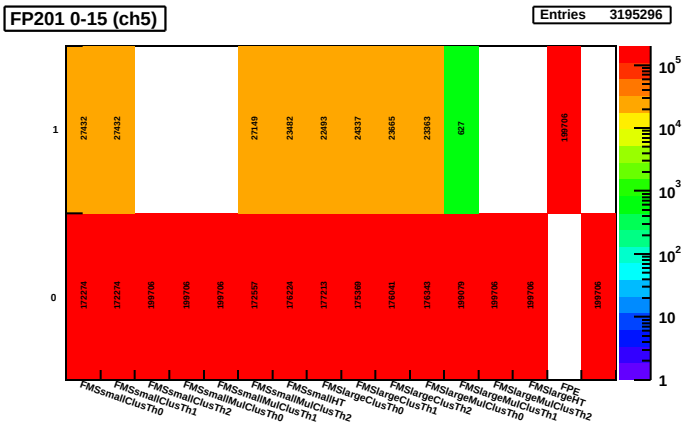

TF201 0-15 (ch0)
Entries 3195296
MTD
ET
ITE
ITW
TOFmult0
TOFmult1
TOFmult2
TOFmult3
TOFmult4
TOFsector0
TOFsector1
TOFsector2
TOFsector3
TOFsector4
TOFsector5

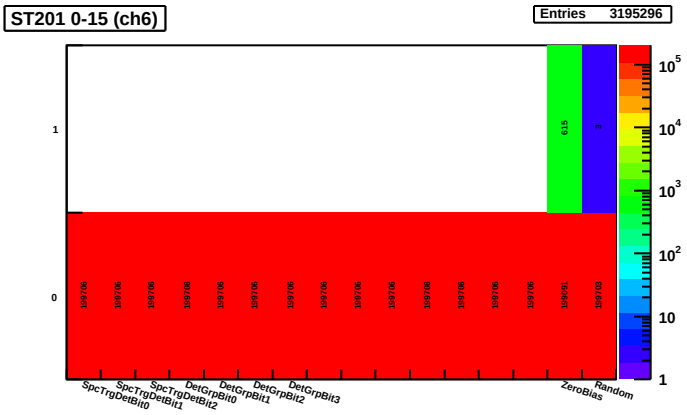

VT201 0-15 (ch1)
Entries 3195296
BBC-TAC
BBC-E
BBC-W
BBC-L-TAC
BBC-L-E
BBC-L-W
ZDC-TAC
ZDC-E
ZDC-W
ZDC-UPC
ZDC-EW
Minimum-Bias
Atomcules
VPD-TAC
VPD-E
VPD-W

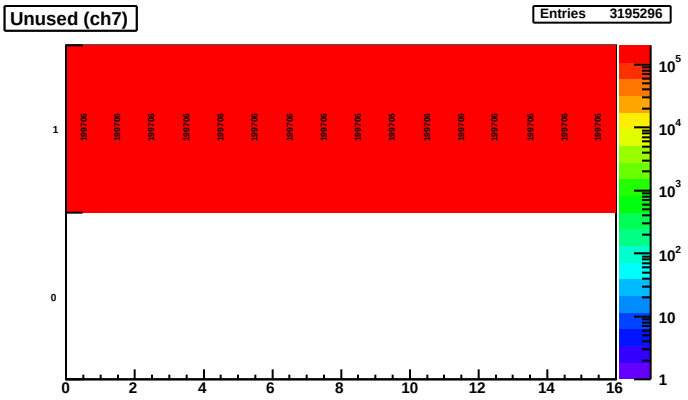

Unused (ch2)
Entries 3195296

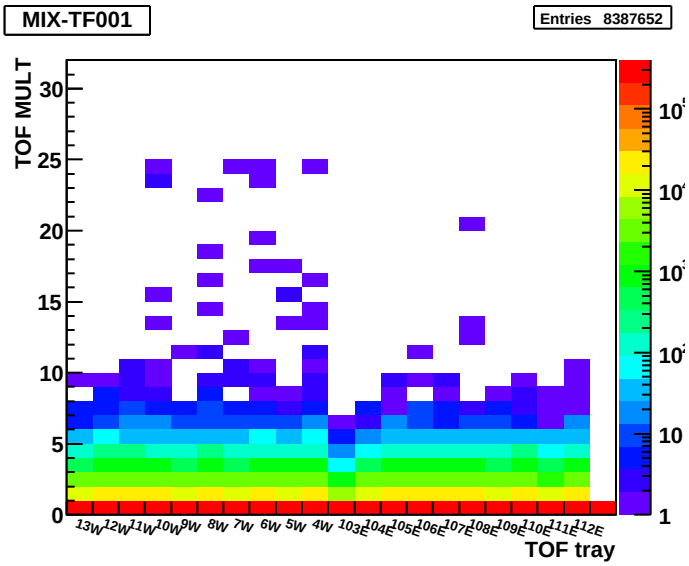

EM201 0-15 (ch3)
Entries 3195296
BHT0
BHT1
BHT2
BHT3
EHT2
EHT4
JP1
JP2
BJP1
BJP2
EJP1
EJP2
AJP
BAJP
EAJP
JP0

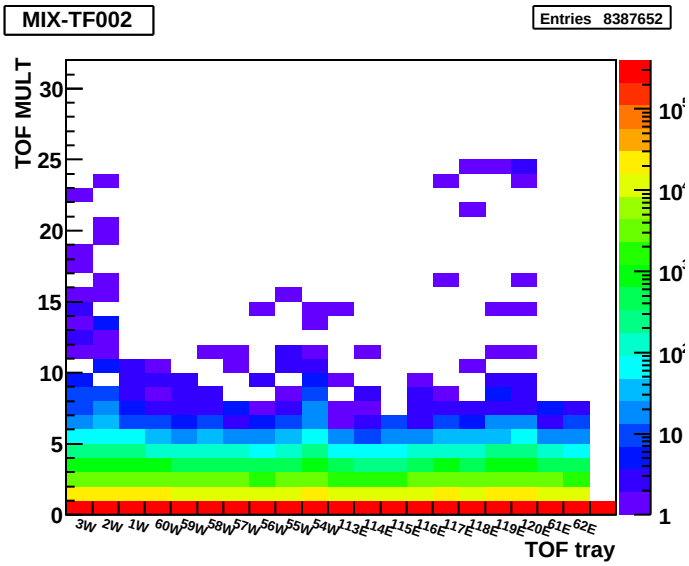

RAT board (ch4)
Entries 3195296
rat-0
rat-1
rat-2
rat-3
rat-4
rat-5
rat-6
rat-7
rat-8
rat-9
rat-10
rat-11
rat-12
rat-13
rat-14
rat-15

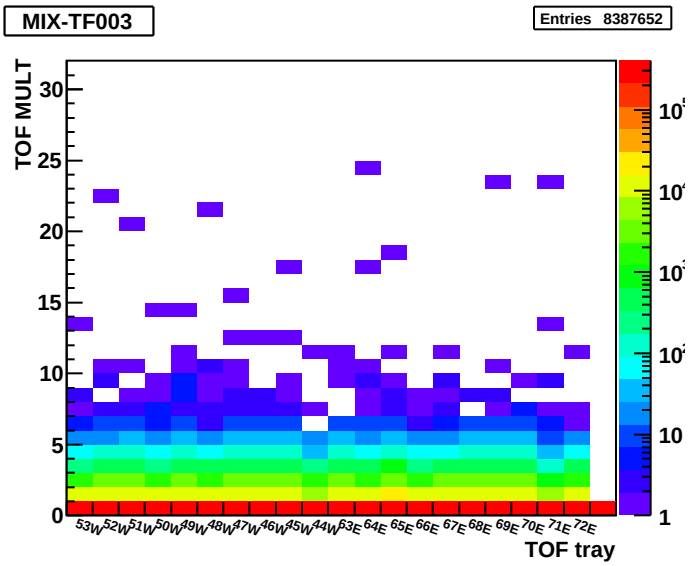

FP201 0-15 (ch5)
Entries 3195296
FMSsmallClusTh0
FMSsmallClusTh1
FMSsmallClusTh2
FMSsmallMulClusTh0
FMSsmallMulClusTh1
FMSsmallMulClusTh2
FMSsmallHT
FMSlargeClusTh0
FMSlargeClusTh1
FMSlargeClusTh2
FMSlargeMulClusTh0
FMSlargeMulClusTh1
FMSlargeMulClusTh2
FMSlargeHT
FPE

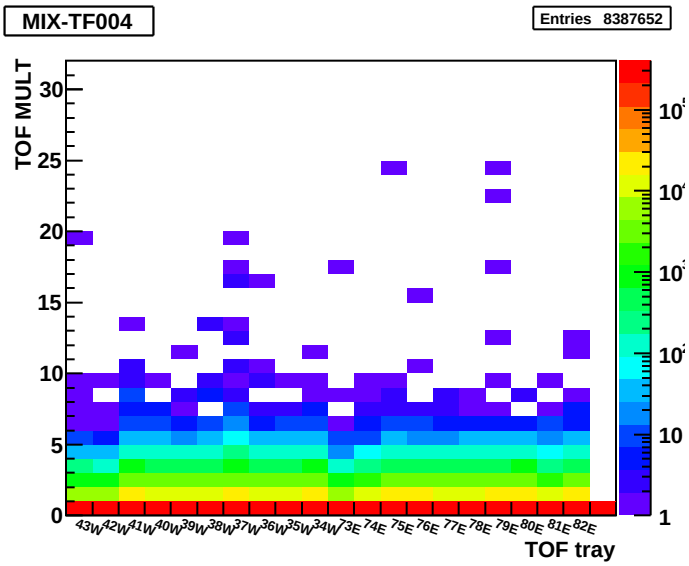

ST201 0-15 (ch6)
Entries 3195296
SpcTrgDetBit0
SpcTrgDetBit1
SpcTrgDetBit2
DetCrpBit0
DetCrpBit1
DetCrpBit2
DetCrpBit3
ZeroBias
Random

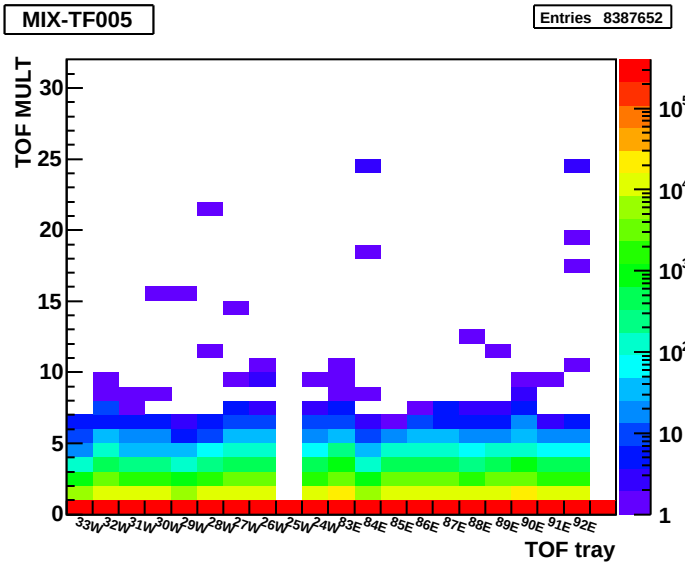

Unused (ch7)
Entries 3195296

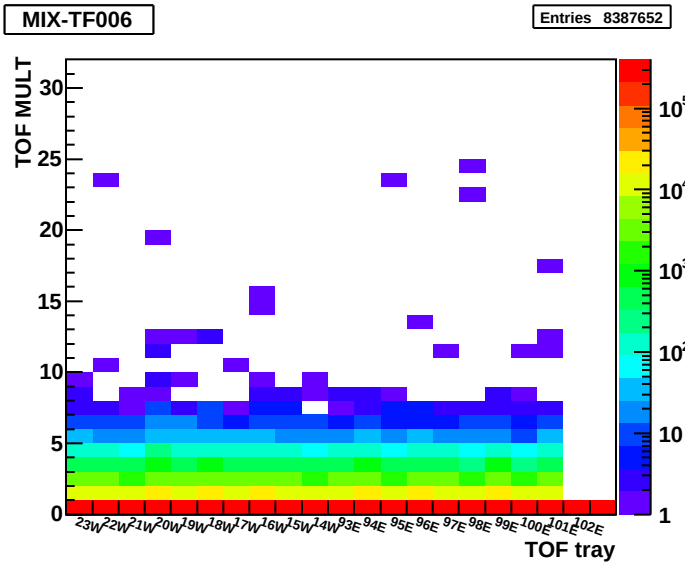

MIX-TF001
Entries 8387652
TOF MULT
TOF tray

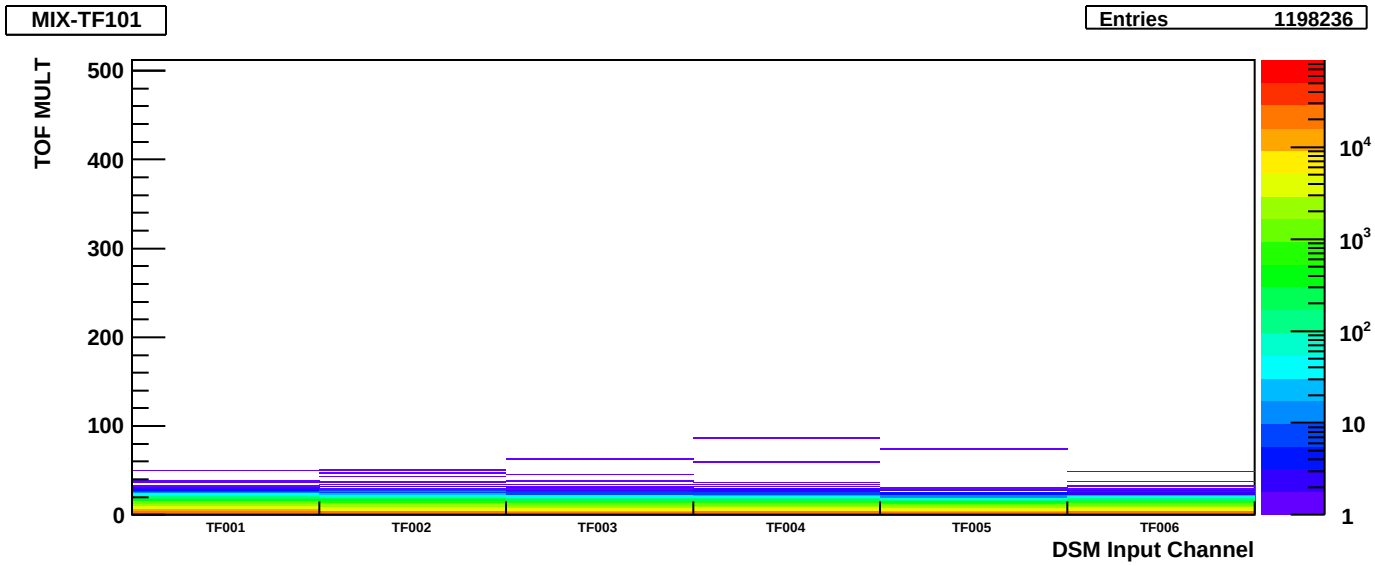

MIX-TF002
Entries 8387652
TOF MULT
TOF tray

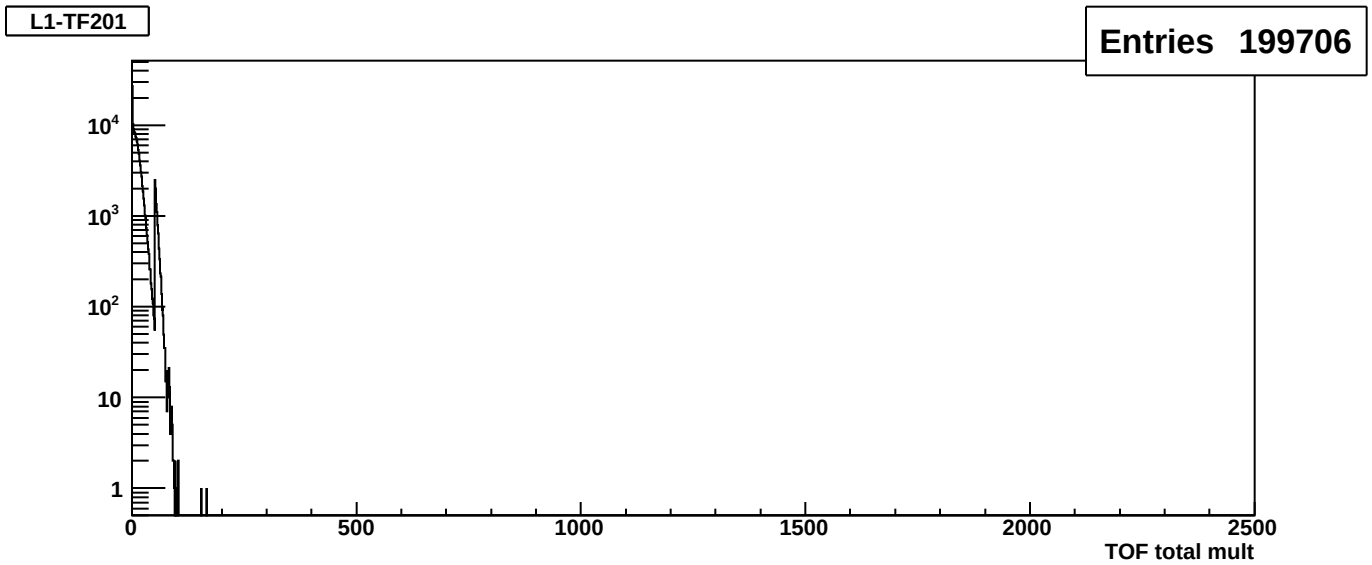

MIX-TF003
Entries 8387652
TOF MULT
TOF tray

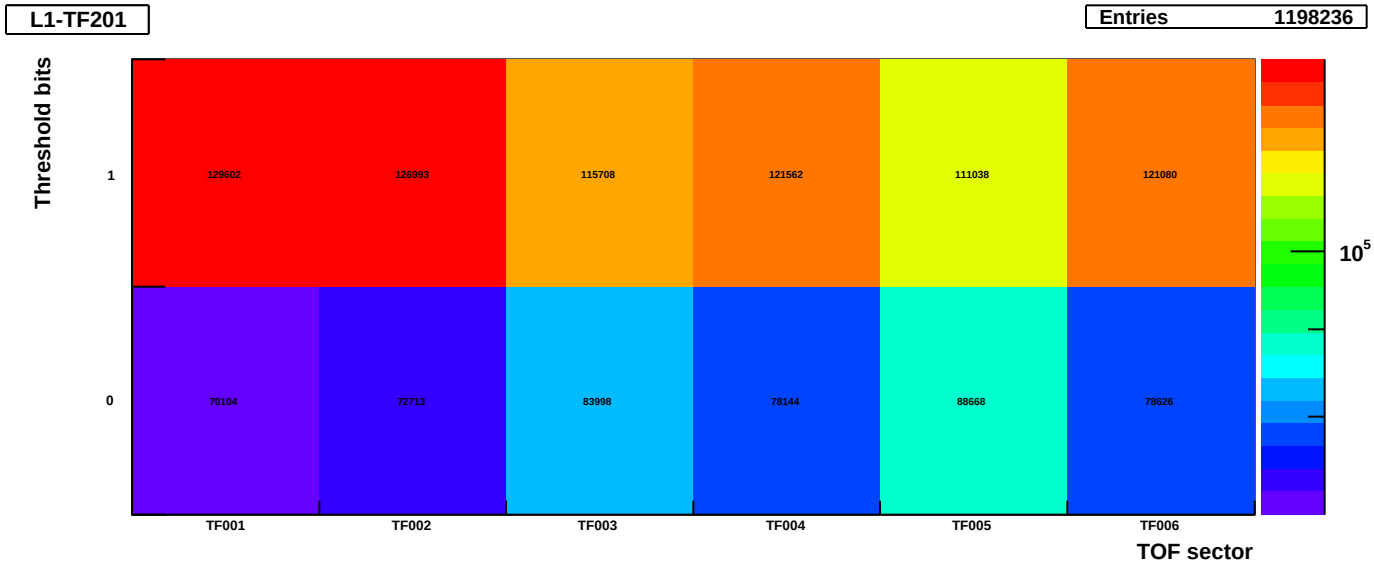

MIX-TF004
Entries 8387652
TOF MULT
TOF tray

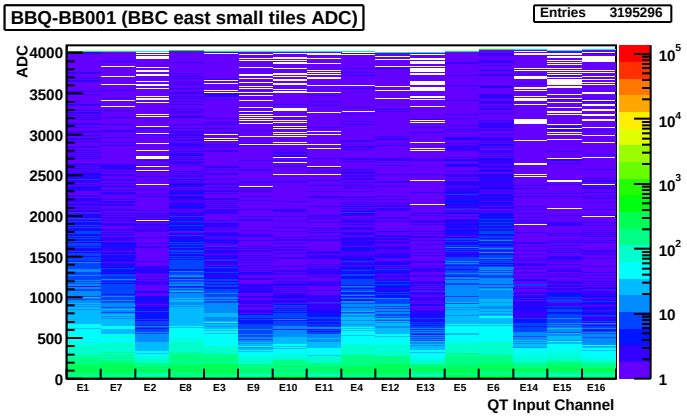

MIX-TF005
Entries 8387652
TOF MULT
TOF tray

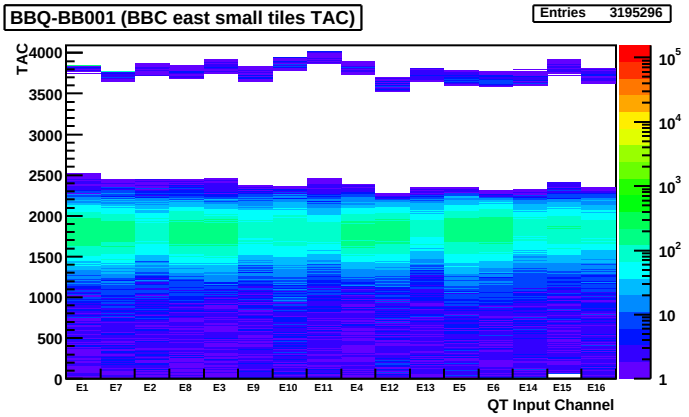

MIX-TF006
Entries 8387652
TOF MULT
TOF tray

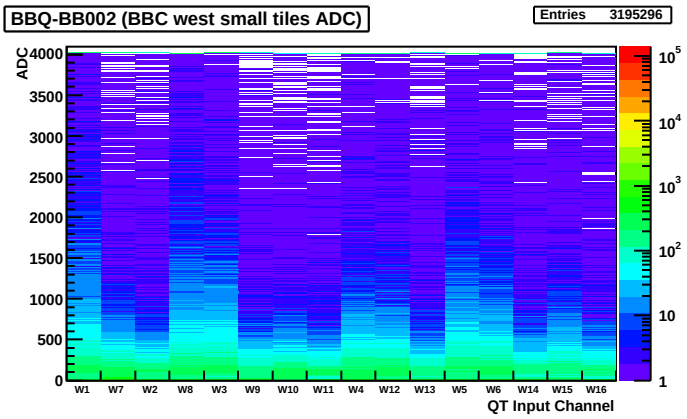

MIX-TF101
Entries 1198236
TOF MULT
500
400
300
200
100
0
TF001
TF002
TF003
TF004
TF005
TF006
DSM Input Channel
$10^4$
$10^3$
$10^2$
10
1

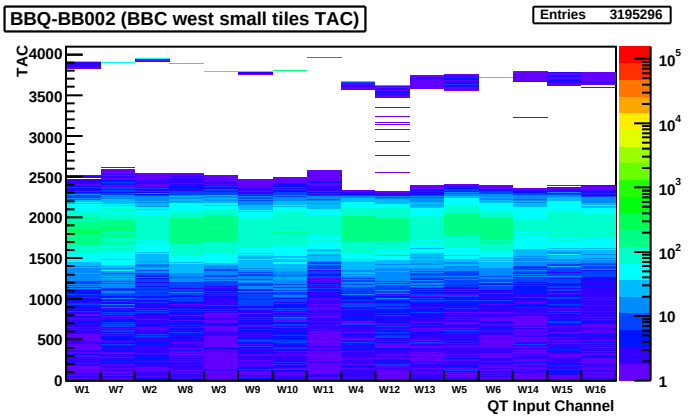

L1-TF201
Entries 199706
$10^4$
$10^3$
$10^2$
10
1
0
500
1000
1500
2000
2500
TOF total mult

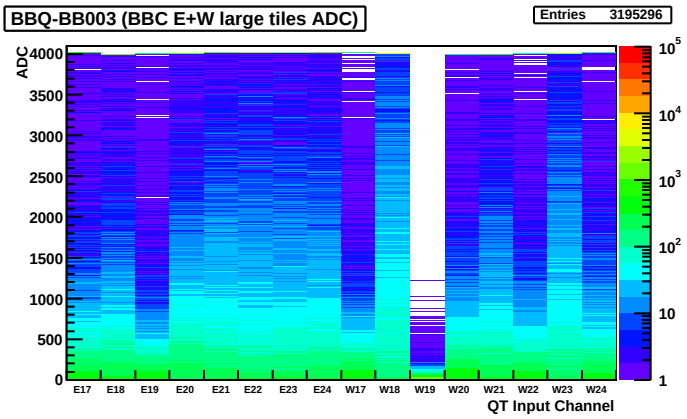

L1-TF201
Entries 1198236
Threshold bits
1
0
129602
126993
115708
121562
111038
121080
70104
72713
83998
78144
88668
78626
TF001
TF002
TF003
TF004
TF005
TF006
TOF sector
$10^5$

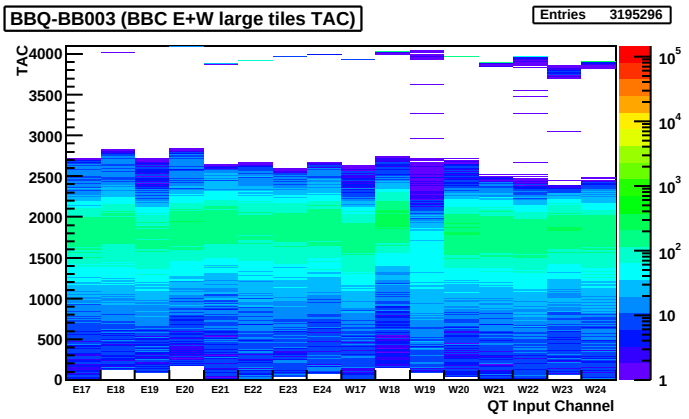

BBQ-BB001 (BBC east small tiles ADC)
Entries 3195296
ADC
QT Input Channel

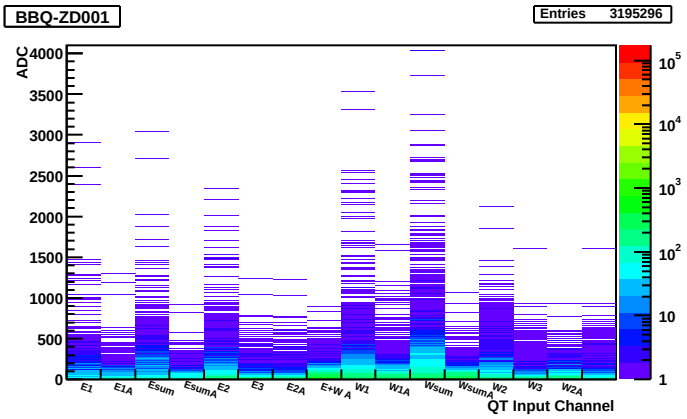

BBQ-BB001 (BBC east small tiles TAC)
Entries 3195296
TAC
QT Input Channel

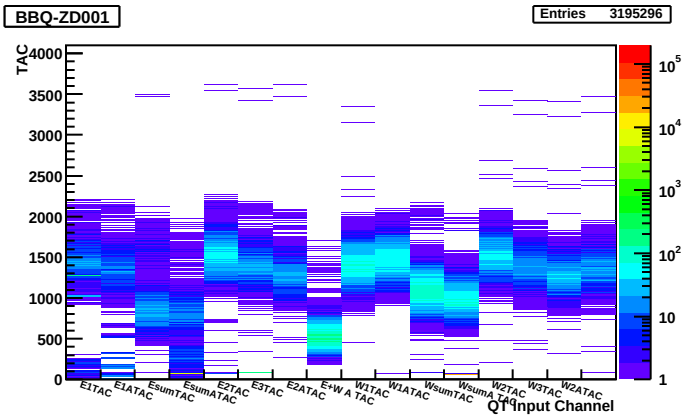

BBQ-BB002 (BBC west small tiles ADC)
Entries 3195296
ADC
QT Input Channel

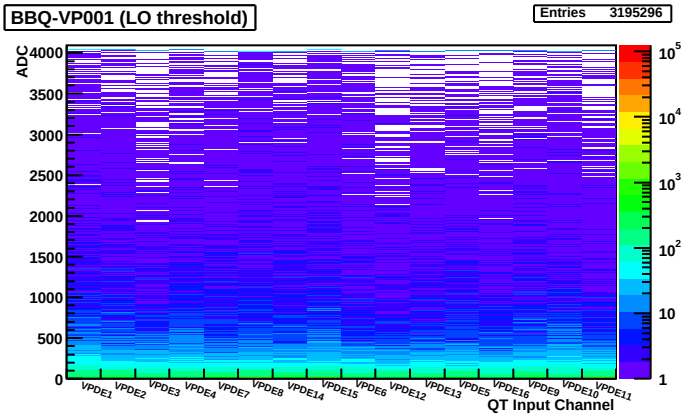

BBQ-BB002 (BBC west small tiles TAC)
Entries 3195296
TAC
QT Input Channel

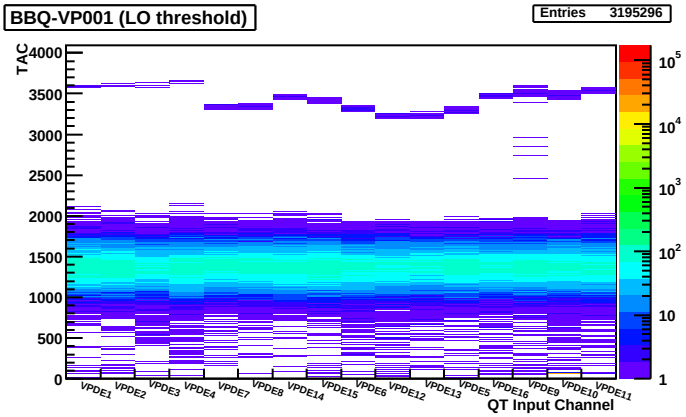

BBQ-BB003 (BBC E+W large tiles ADC)
Entries 3195296
ADC
QT Input Channel

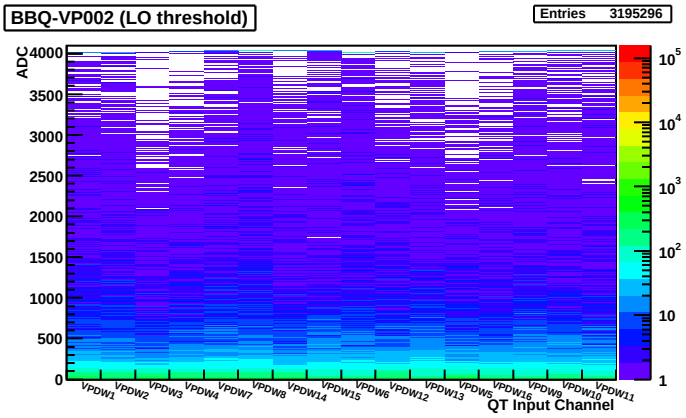

BBQ-BB003 (BBC E+W large tiles TAC)
Entries 3195296
TAC
QT Input Channel

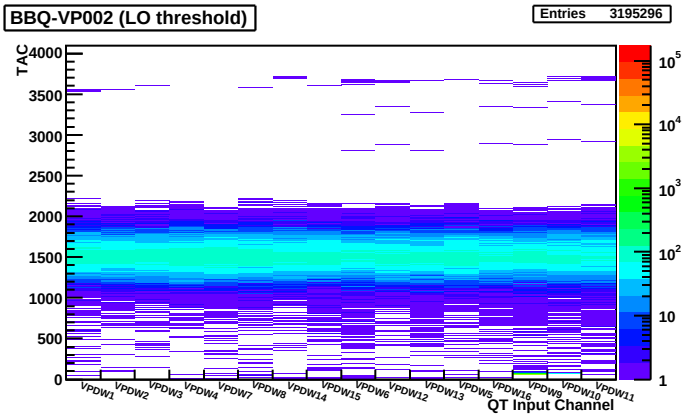

BBQ-ZD001
Entries 3195296
ADC
QT Input Channel

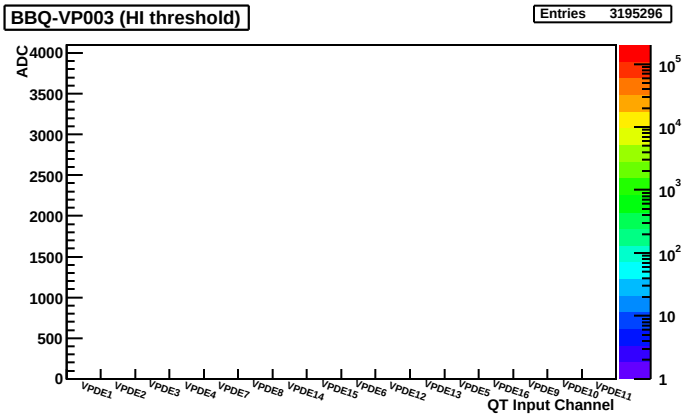

BBQ-ZD001
Entries 3195296
TAC
QT Input Channel

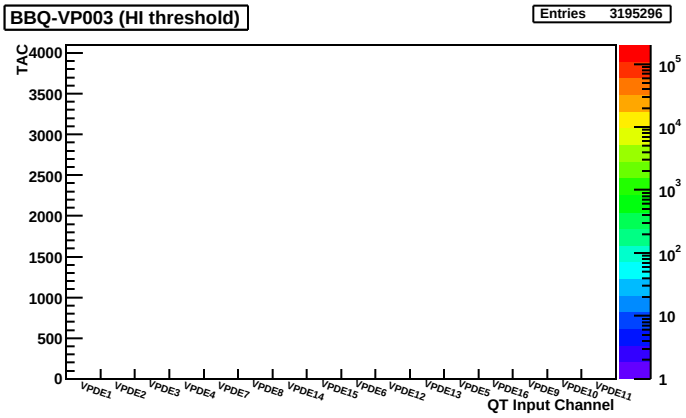

BBQ-VP001 (LO threshold)
Entries 3195296
ADC
QT Input Channel

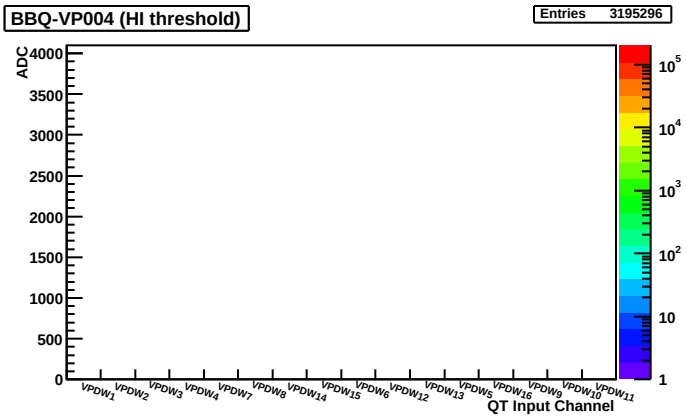

BBQ-VP001 (LO threshold)
Entries 3195296
TAC
QT Input Channel

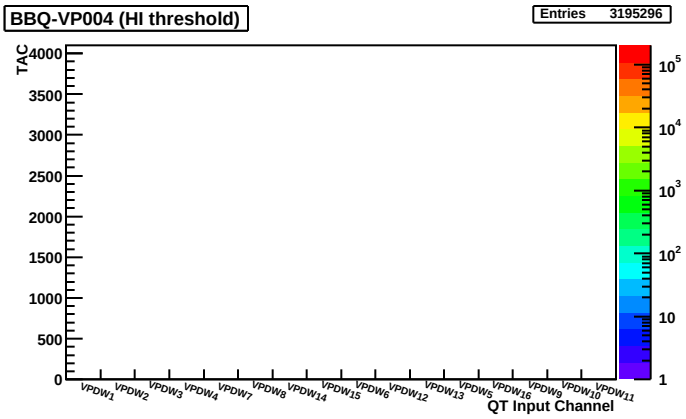

BBQ-VP002 (LO threshold)
Entries 3195296
ADC
QT Input Channel

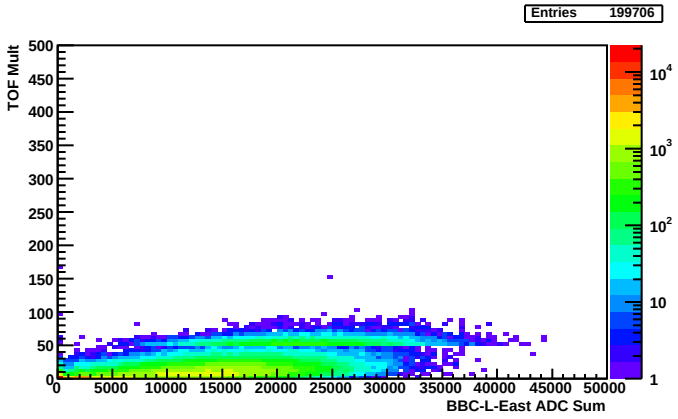

BBQ-VP002 (LO threshold)
Entries 3195296
TAC
QT Input Channel

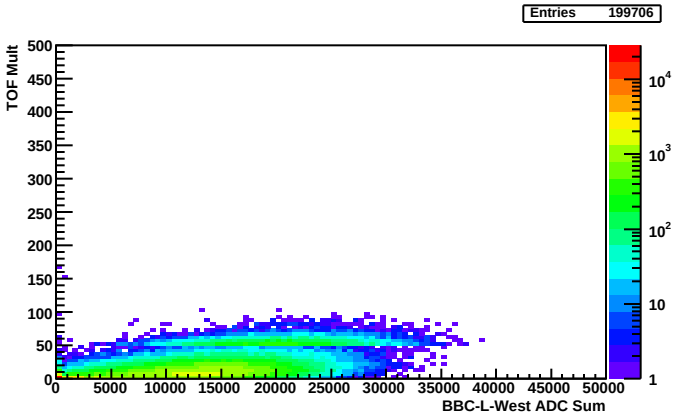

BBQ-VP003 (HI threshold)
Entries 3195296
ADC
QT Input Channel

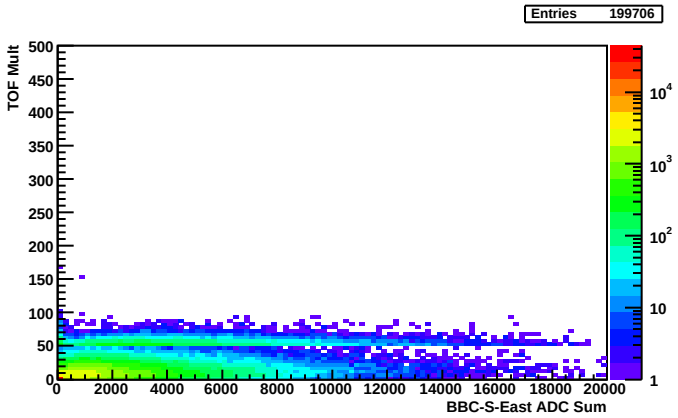

BBQ-VP003 (HI threshold)
Entries 3195296
TAC
QT Input Channel

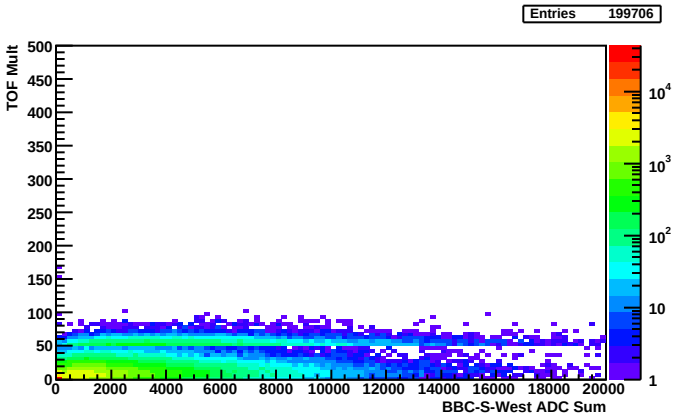

BBQ-VP004 (HI threshold)
Entries 3195296
ADC
QT Input Channel

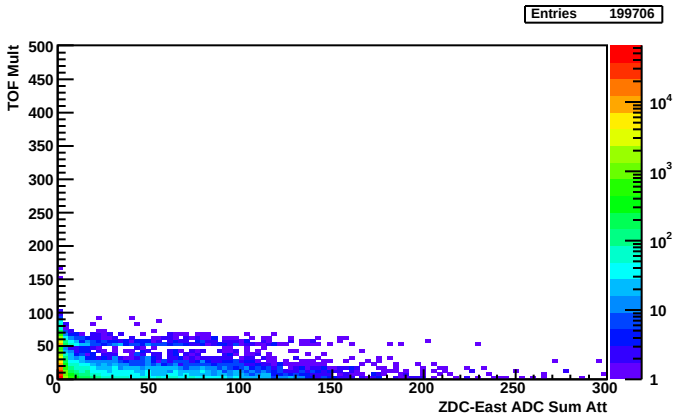

BBQ-VP004 (HI threshold)
Entries 3195296
TAC
QT Input Channel

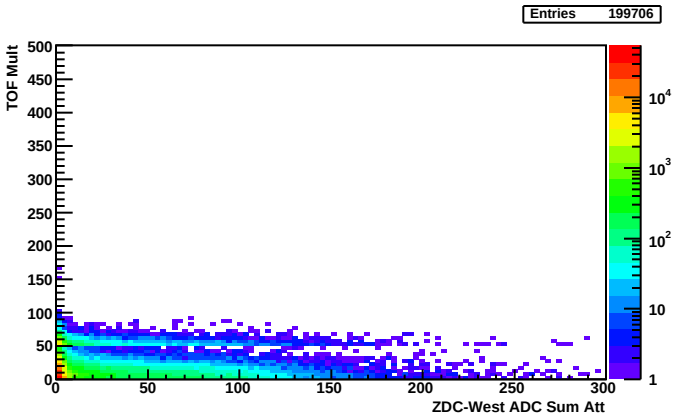

Entries 199706
TOF Mult
BBC-L-East ADC Sum

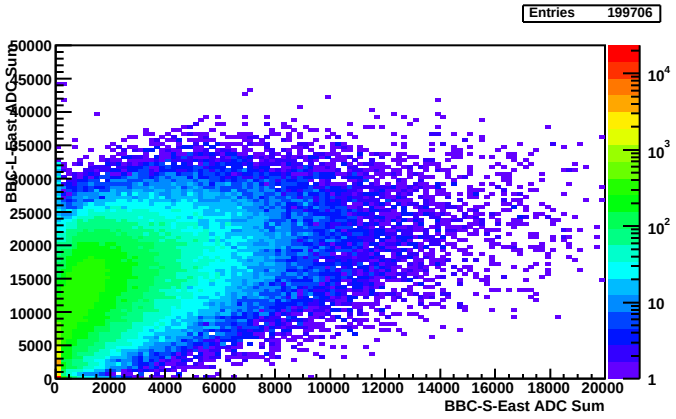

Entries 199706
TOF Mult
BBC-L-West ADC Sum

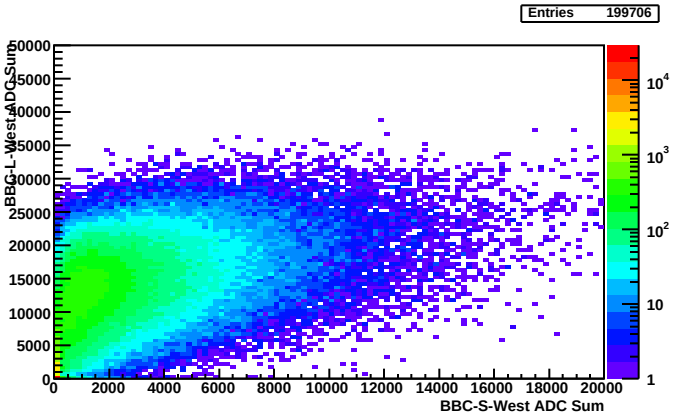

Entries 199706
TOF Mult
BBC-S-East ADC Sum

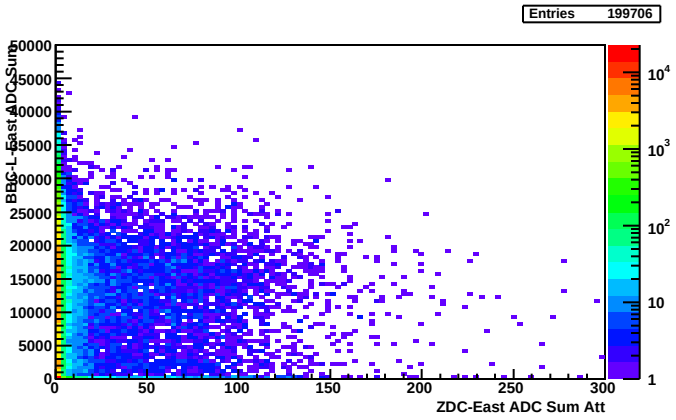

Entries 199706
TOF Mult
BBC-S-West ADC Sum

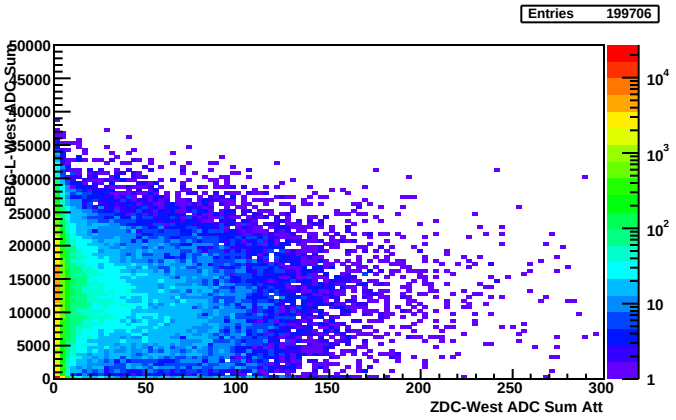

Entries 199706
TOF Mult
ZDC-East ADC Sum Att

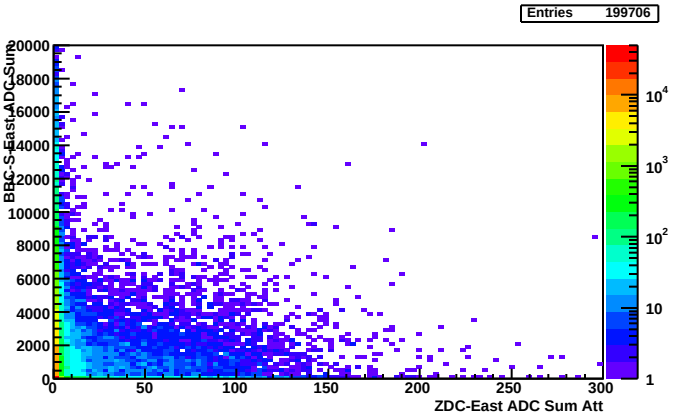

Entries 199706
TOF Mult
ZDC-West ADC Sum Att

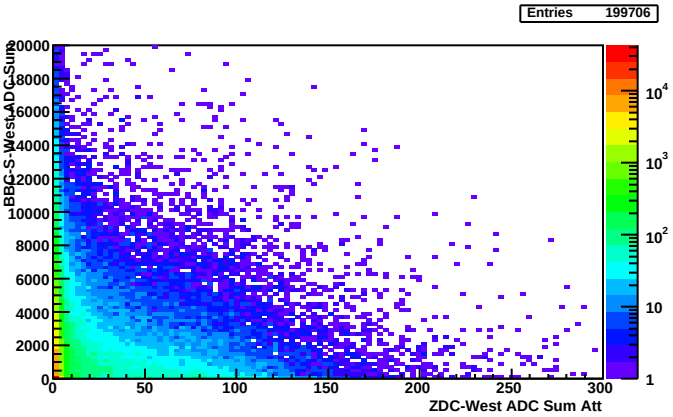

Entries 199706
BBC-L-East ADC Sum
BBC-S-East ADC Sum

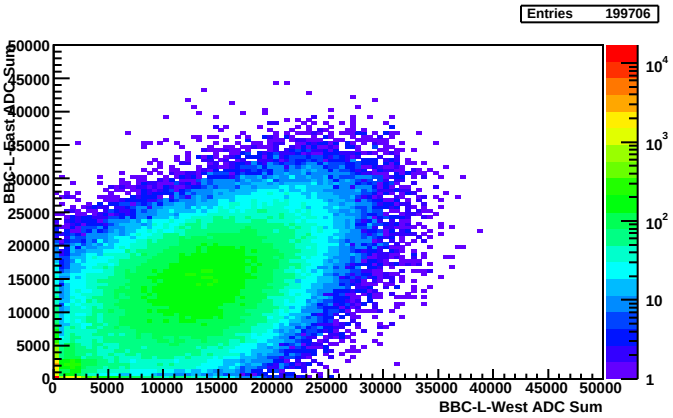

Entries 199706
BBC-L-West ADC Sum
BBC-S-West ADC Sum

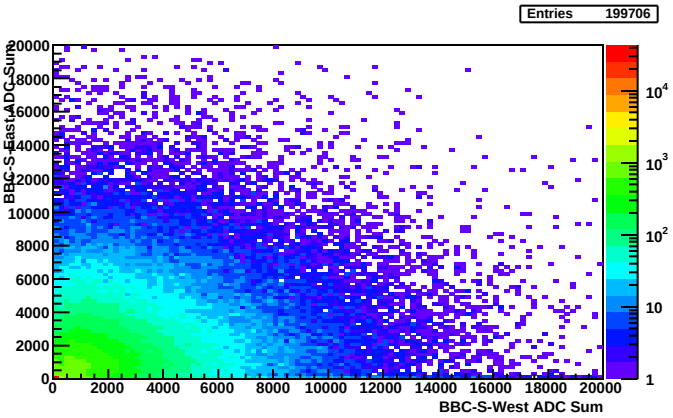

Entries 199706
BBC-L-East ADC Sum
ZDC-East ADC Sum Att

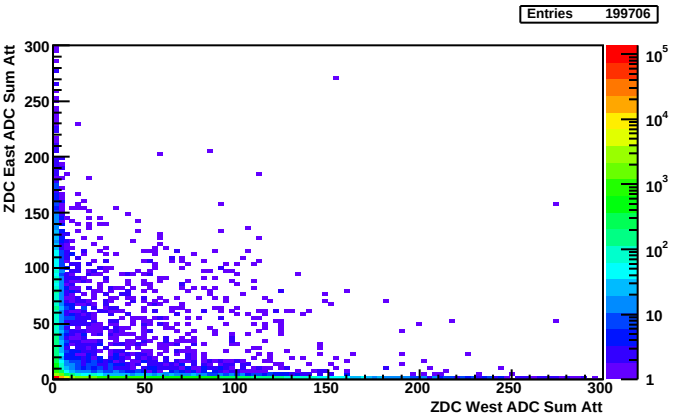

Entries 199706
BBC-L-West ADC Sum
ZDC-West ADC Sum Att

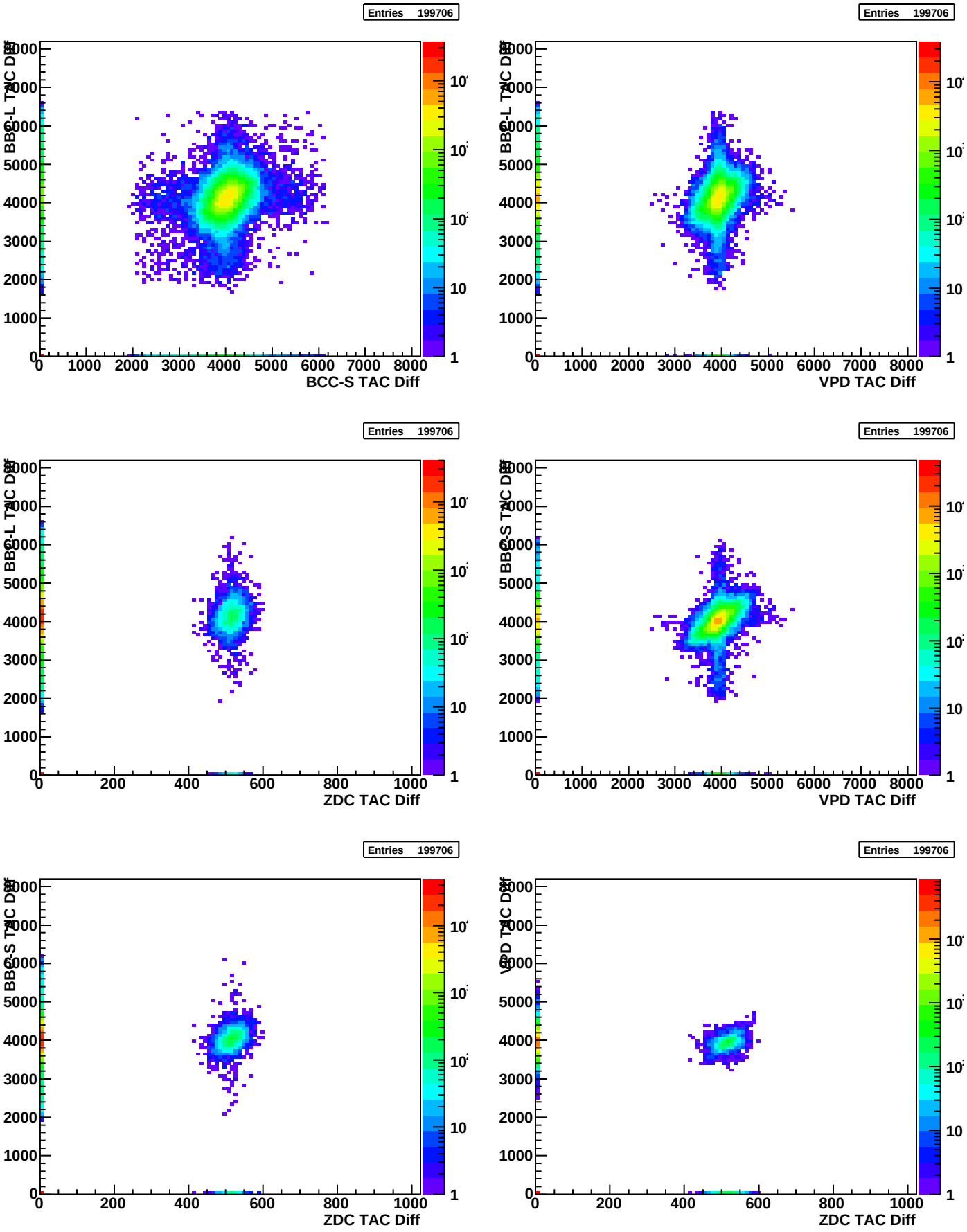

Entries 199706
BBC-S-East ADC Sum
ZDC-East ADC Sum Att

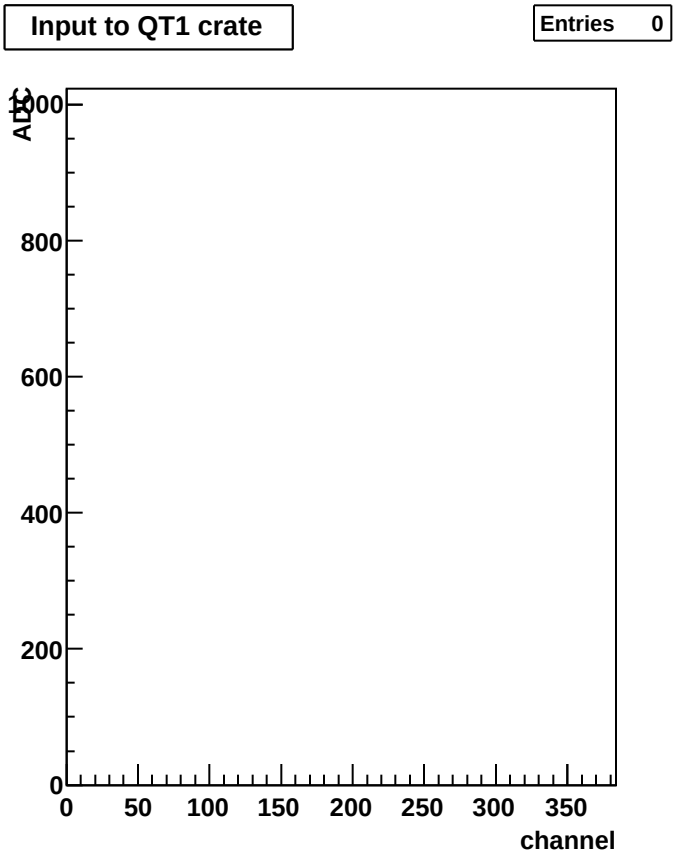

Entries 199706
BBC-S-West ADC Sum
ZDC-West ADC Sum Att

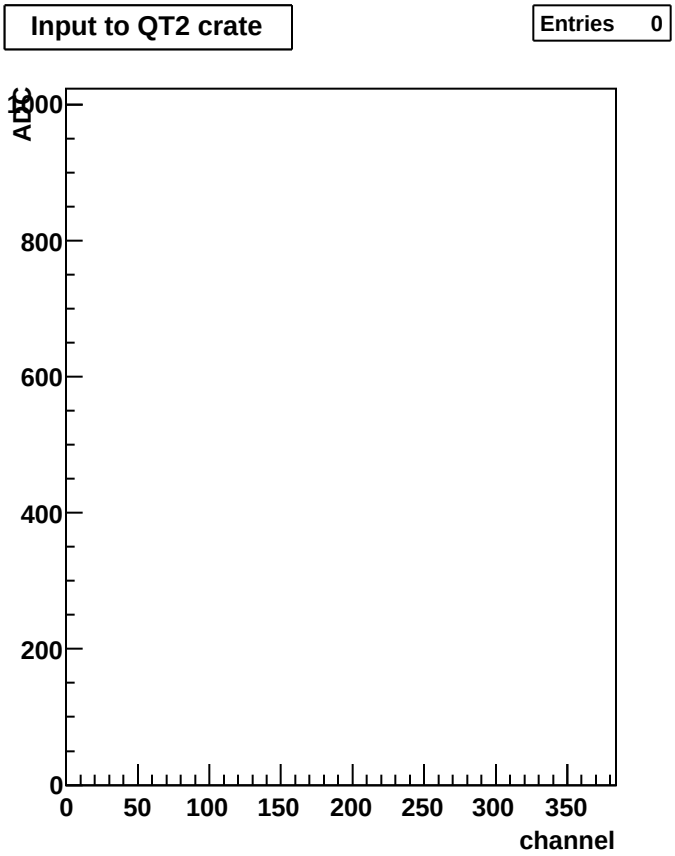

Entries 199706
BBC-L-East ADC Sum
BBC-L-West ADC Sum

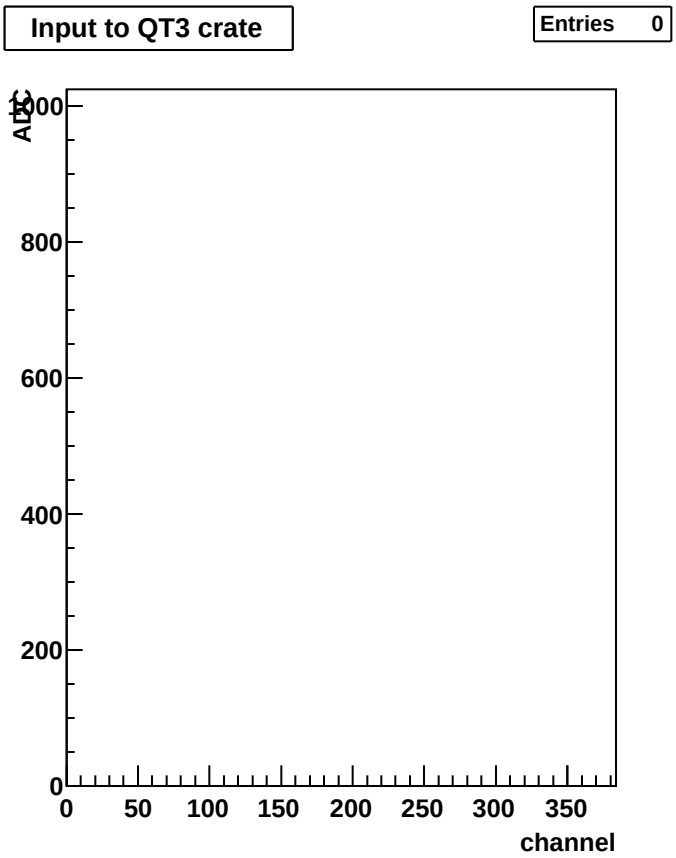

Entries 199706
BBC-S-East ADC Sum
BBC-S-West ADC Sum

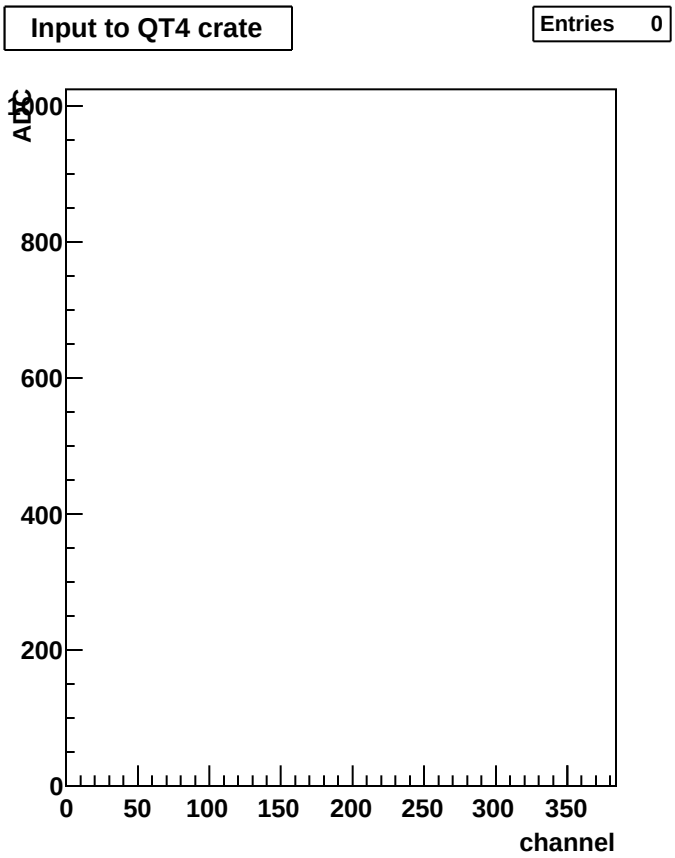

Entries 199706
ZDC East ADC Sum Att
ZDC West ADC Sum Att

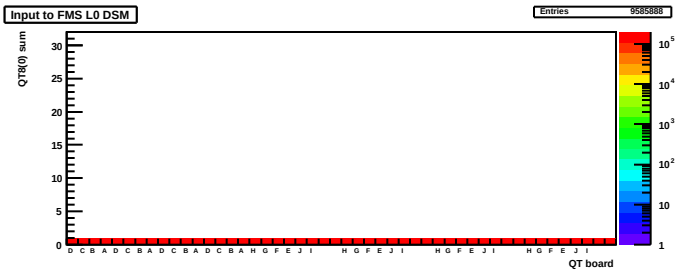

Entries 199706
BBC-L TAC Diff
BCC-S TAC Diff
Entries 199706
BBC-L TAC Diff
VPD TAC Diff
Entries 199706
BBC-L TAC Diff
ZDC TAC Diff
Entries 199706
BBC-S TAC Diff
VPD TAC Diff
Entries 199706
BBC-S TAC Diff
ZDC TAC Diff
Entries 199706
VPD TAC Diff
ZDC TAC Diff

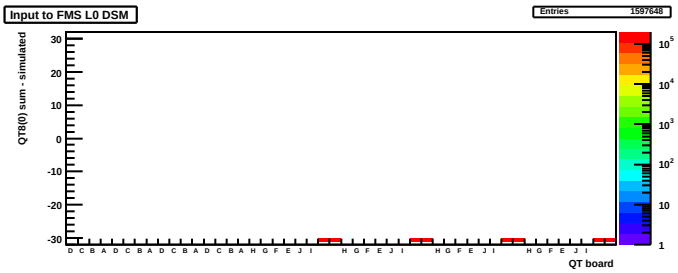

Input to QT1 crate
Entries 0
ADC
1000
800
600
400
200
0
0 50 100 150 200 250 300 350
channel

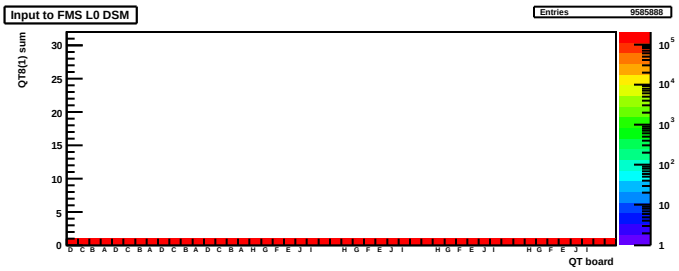

Input to QT2 crate
Entries 0
ADC
1000
800
600
400
200
0
0 50 100 150 200 250 300 350
channel

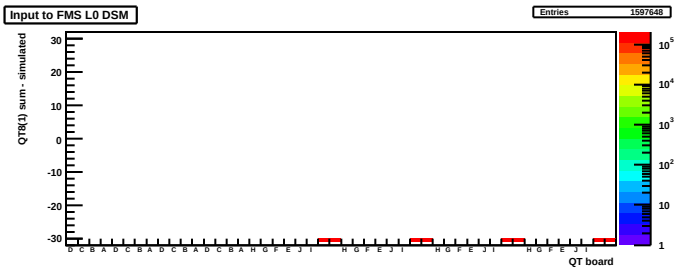

Input to QT3 crate
Entries 0
ADC
1000
800
600
400
200
0
0 50 100 150 200 250 300 350
channel

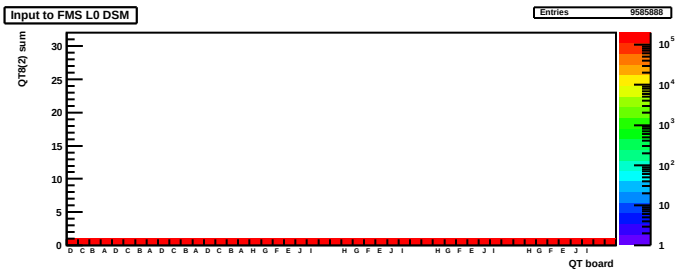

Input to QT4 crate
Entries 0
ADC
1000
800
600
400
200
0
0 50 100 150 200 250 300 350
channel

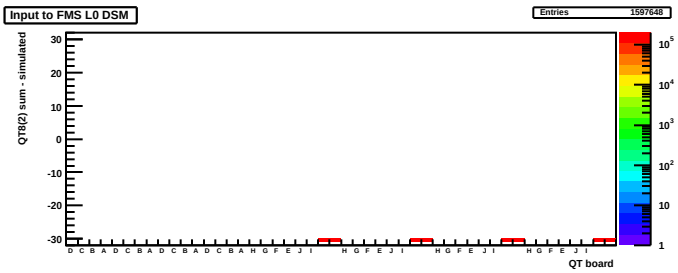

Input to FMS L0 DSM
Entries 9585888
QT8(0) sum
QT board

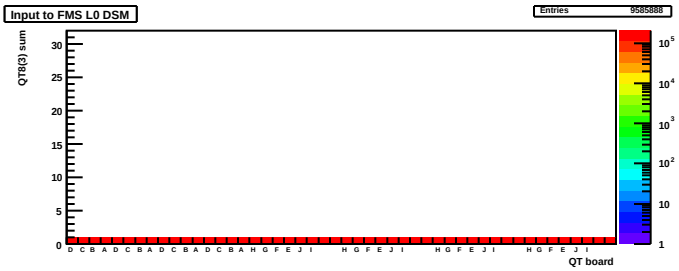

Input to FMS L0 DSM
Entries 1597648
QT8(0) sum - simulated
QT board

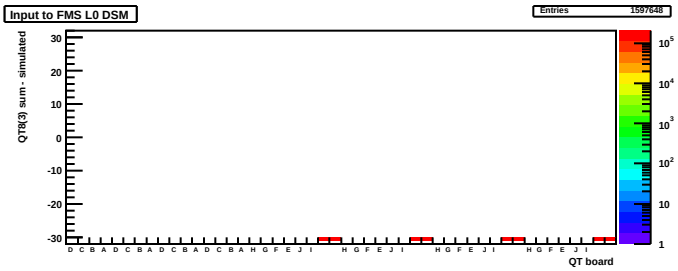

Input to FMS L0 DSM
Entries 9585888
QT8(1) sum
QT board

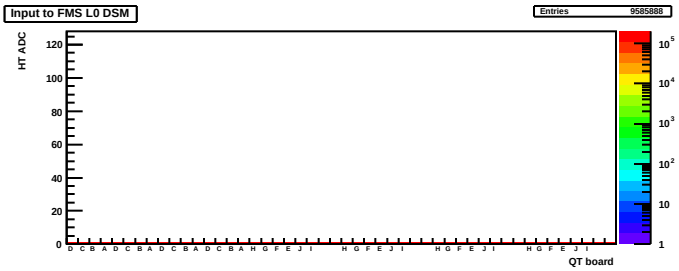

Input to FMS L0 DSM
Entries 1597648
QT8(1) sum - simulated
QT board

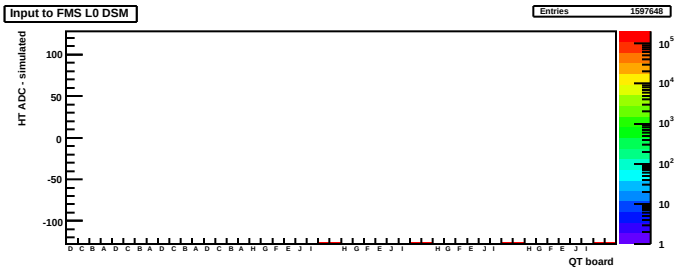

Input to FMS L0 DSM
Entries 9585888
QT8(2) sum
QT board

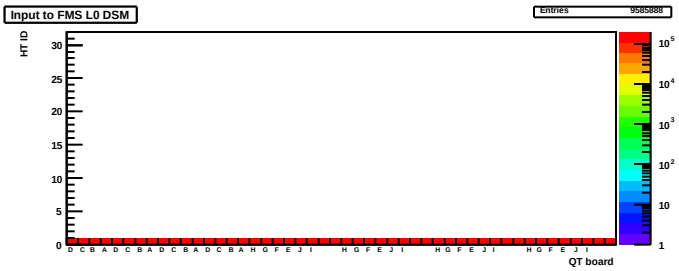

Input to FMS L0 DSM
Entries 1597648
QT8(2) sum - simulated
QT board

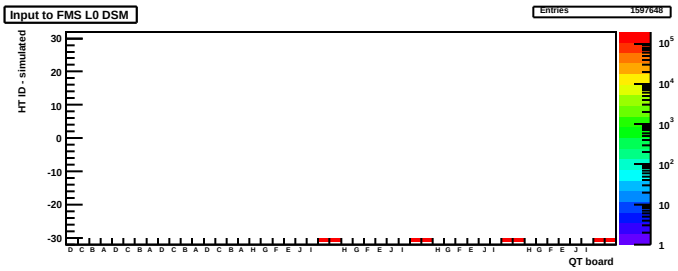

Input to FMS L0 DSM
Entries 9585888
QT8(3) sum
QT board

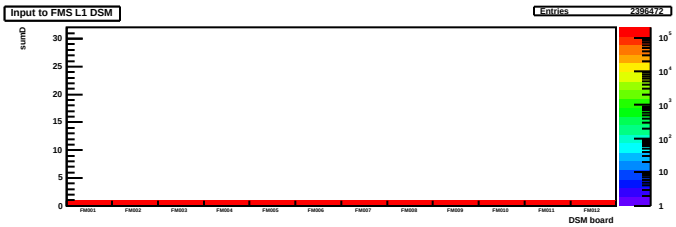

Input to FMS L0 DSM
Entries 1597648
QT8(3) sum - simulated
QT board

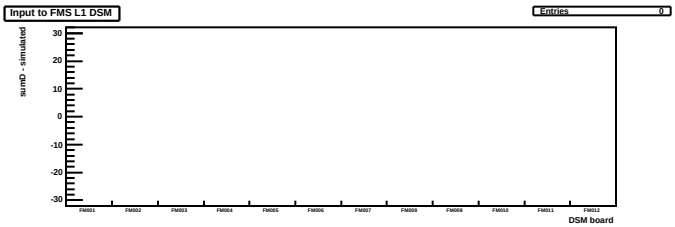

Input to FMS L0 DSM
Entries 9585888
HT ADC
QT board

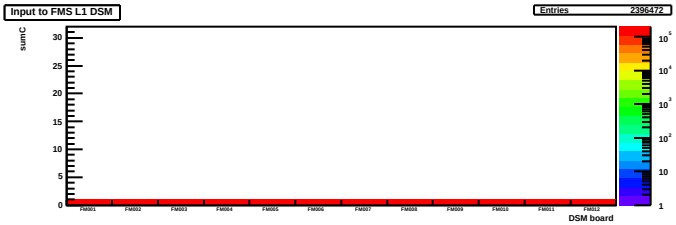

Input to FMS L0 DSM
Entries 1597648
HT ADC - simulated
QT board

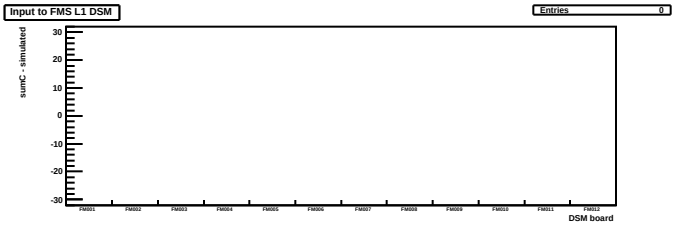

Input to FMS L0 DSM
Entries 9585888
HT ID
QT board

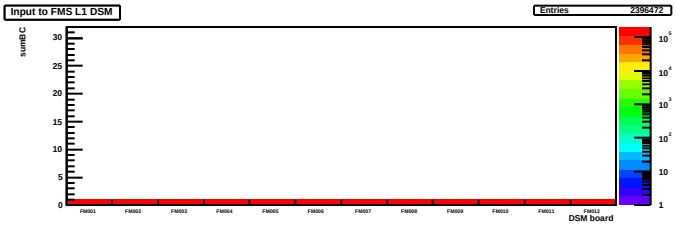

Input to FMS L0 DSM
Entries 1597648
HT ID - simulated
QT board

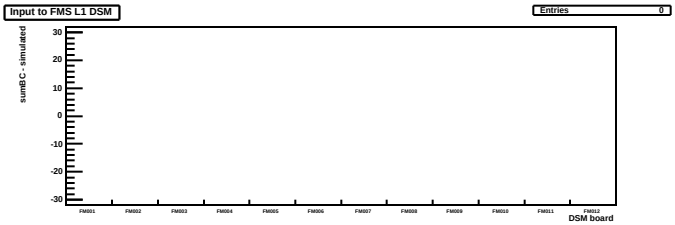

Input to FMS L1 DSM
Entries 2396472
sumD
DSM board

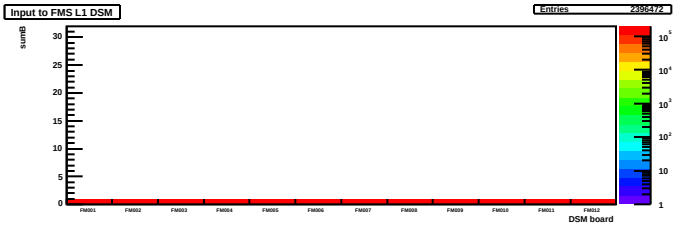

Input to FMS L1 DSM
Entries 0
sumD - simulated
DSM board

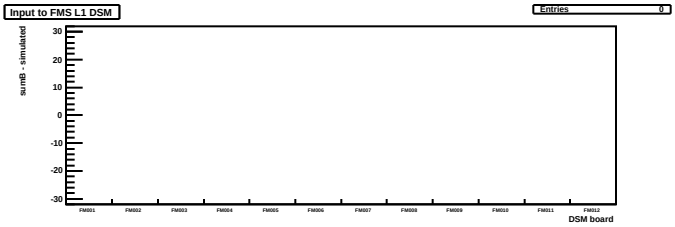

Input to FMS L1 DSM
Entries 2396472
sumC
DSM board

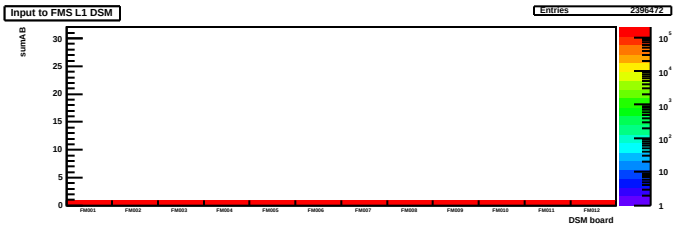

Input to FMS L1 DSM
Entries 0
sumC - simulated
DSM board

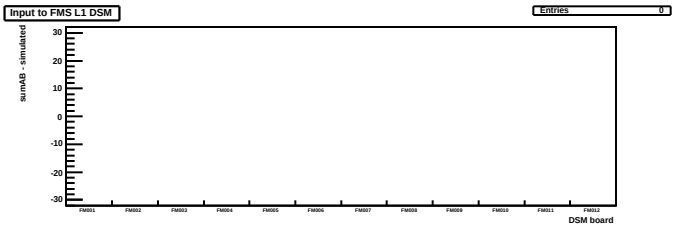

Input to FMS L1 DSM
Entries 2396472
sumBC
DSM board

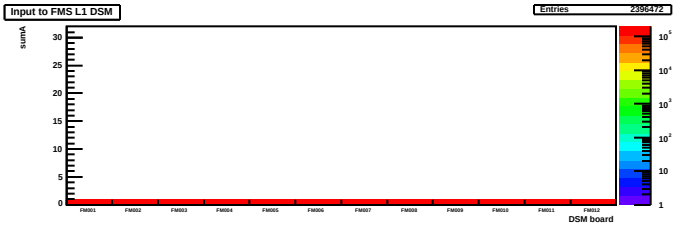

Input to FMS L1 DSM
Entries 0
sumBC - simulated
DSM board

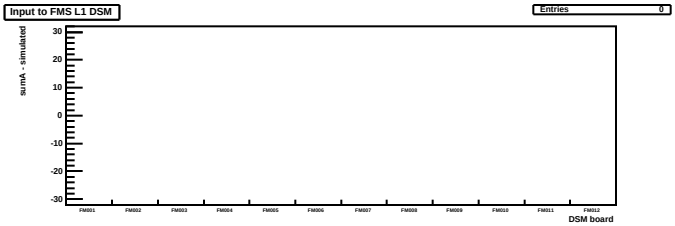

Input to FMS L1 DSM
Entries 2396472
sumB
DSM board

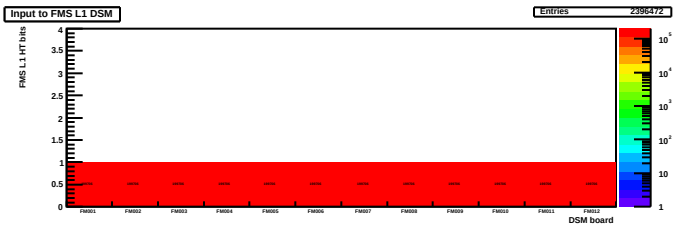

Input to FMS L1 DSM
Entries 0
sumB - simulated
DSM board

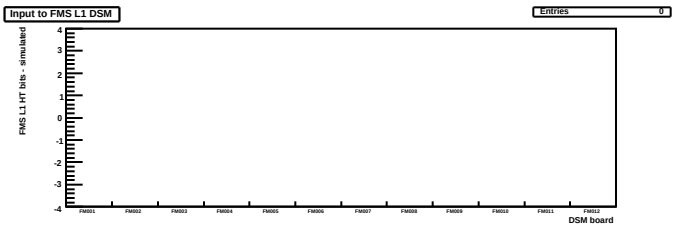

Input to FMS L1 DSM
Entries 2396472
sumAB
DSM board

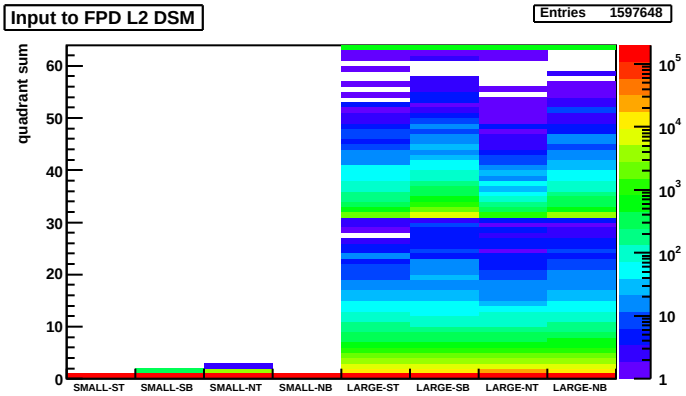

Input to FMS L1 DSM
Entries 0
sumAB - simulated
DSM board

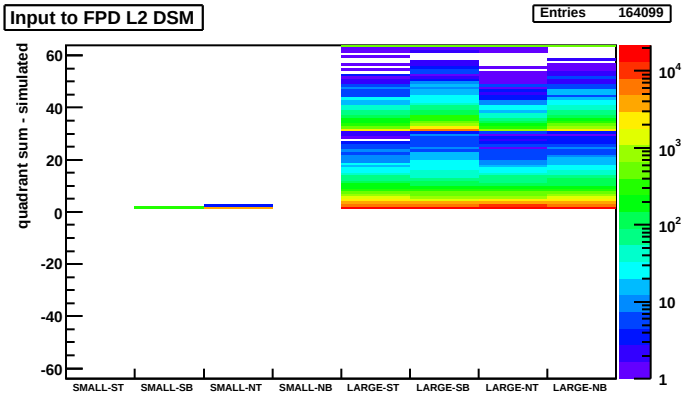

Input to FMS L1 DSM
Entries 2396472
sumA
DSM board

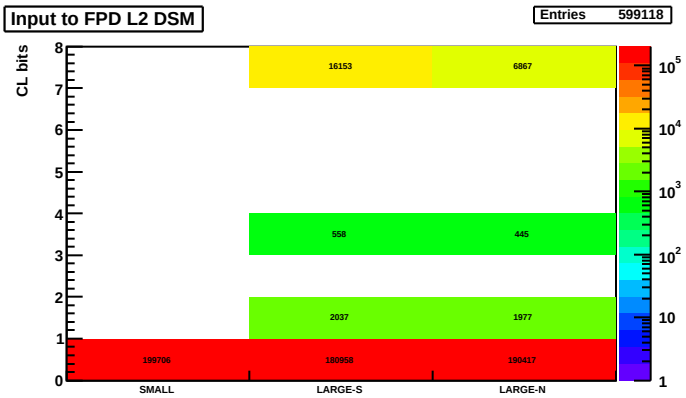

Input to FMS L1 DSM
Entries 0
sumA - simulated
DSM board

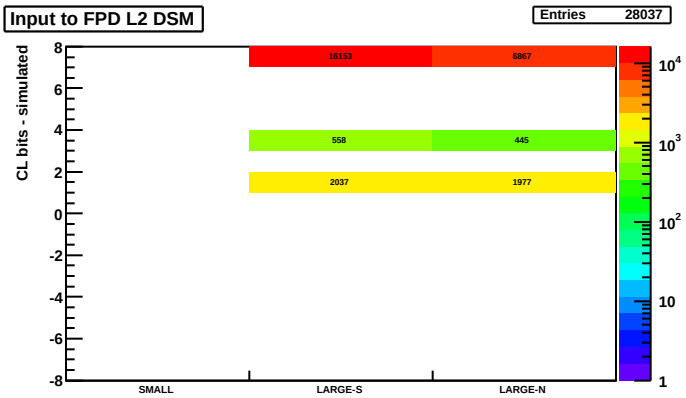

Input to FMS L1 DSM
Entries 2396472
FMS L1 HT bits
DSM board

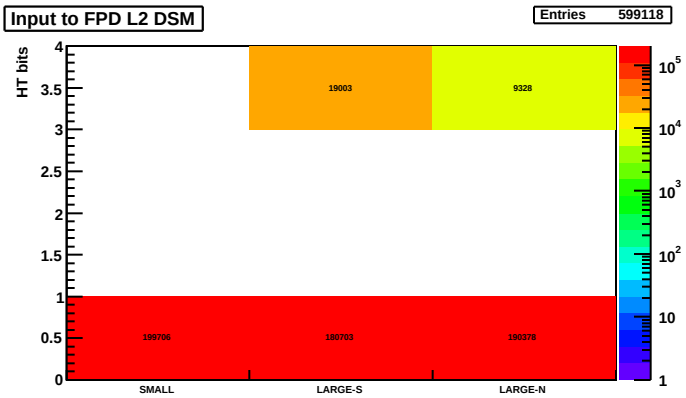

Input to FMS L1 DSM
Entries 0
FMS L1 HT bits - simulated
DSM board

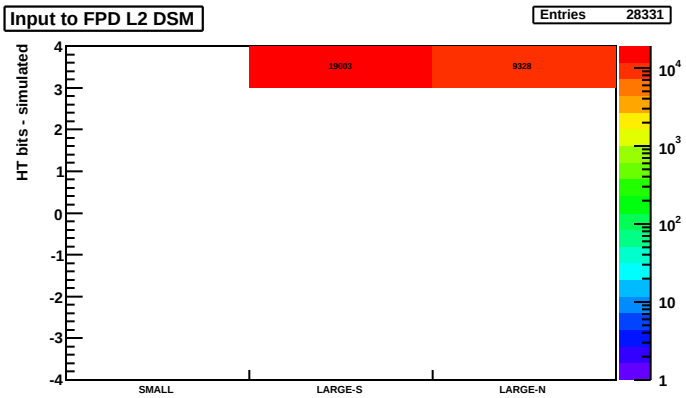

Input to FPD L2 DSM
Entries 1597648
quadrant sum
SMALL-ST
SMALL-SB
SMALL-NT
SMALL-NB
LARGE-ST
LARGE-SB
LARGE-NT
LARGE-NB

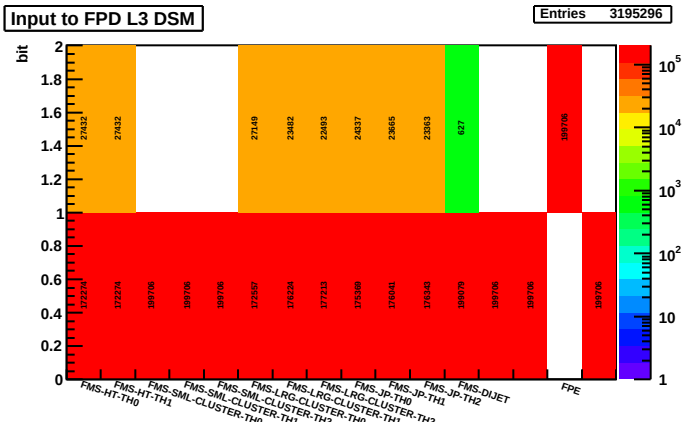

Input to FPD L2 DSM
Entries 164099
quadrant sum - simulated
SMALL-ST
SMALL-SB
SMALL-NT
SMALL-NB
LARGE-ST
LARGE-SB
LARGE-NT
LARGE-NB

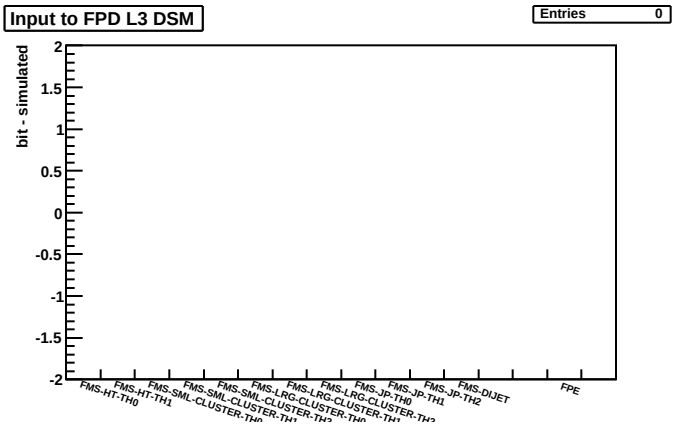

Input to FPD L2 DSM
Entries 599118
CL bits
16153
6867
558
445
2037
1977
199706
180958
190417
SMALL
LARGE-S
LARGE-N

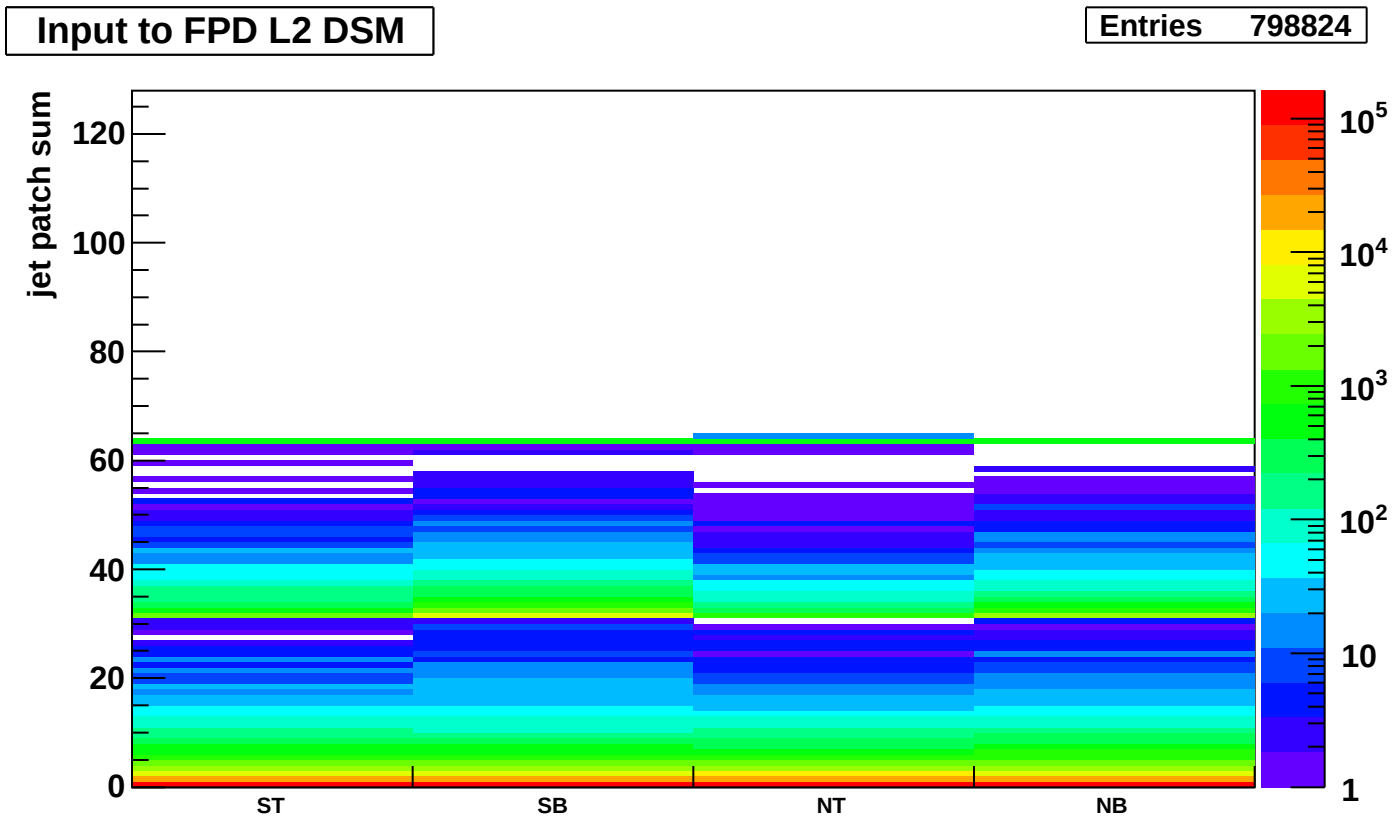

Input to FPD L2 DSM
Entries 28037
CL bits - simulated
16153
6867
558
445
2037
1977
SMALL
LARGE-S
LARGE-N

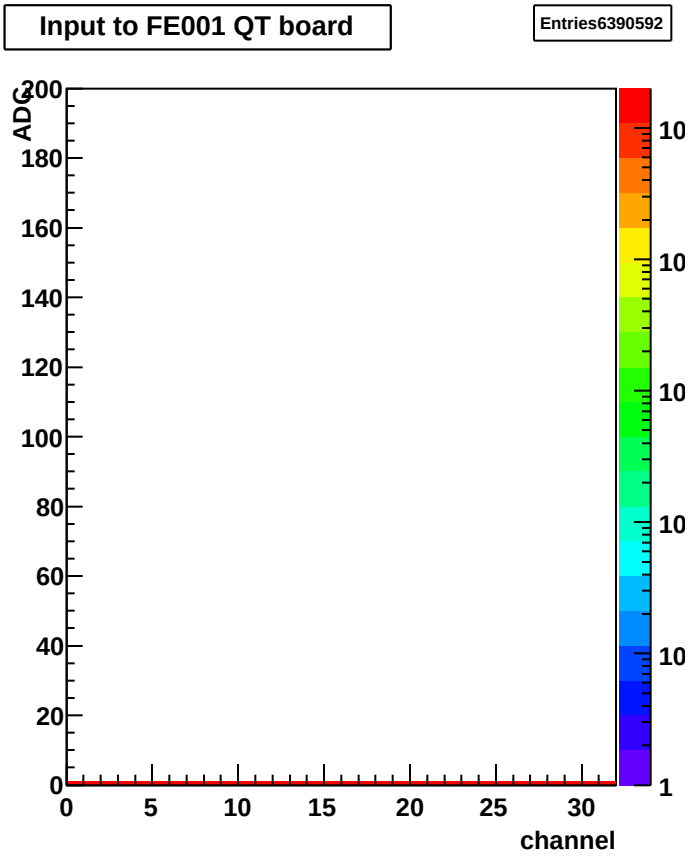

Input to FPD L2 DSM
Entries 599118
HT bits
19003
9328
199706
180703
190378
SMALL
LARGE-S
LARGE-N

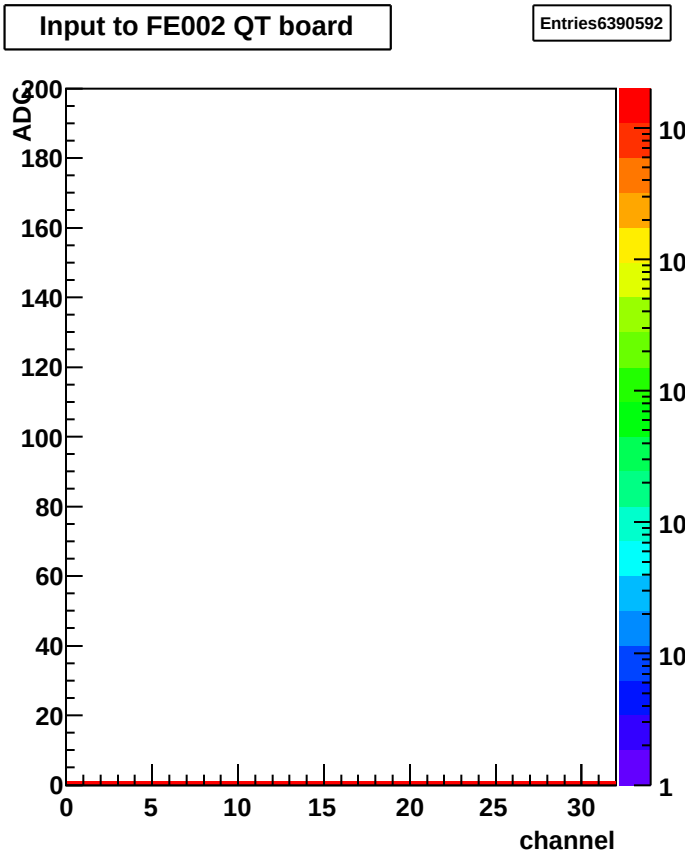

Input to FPD L2 DSM
Entries 28331
HT bits - simulated
19003
9328
SMALL
LARGE-S
LARGE-N

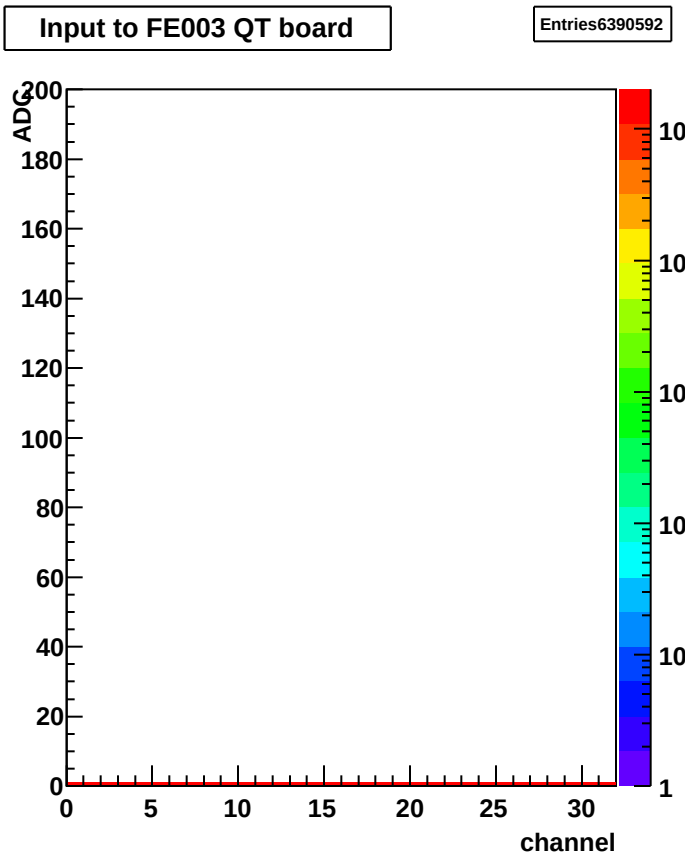

Input to FPD L3 DSM
Entries 3195296
bit
27432
27432
27149
23492
22493
24337
23665
23363
627
199706
172274
172274
199706
199706
199706
172557
176224
177213
175369
176041
176343
190079
199706
199706
199706
FMS-HT-TH0
FMS-HT-TH1
FMS-SML-CLUSTER-TH0
FMS-SML-CLUSTER-TH1
FMS-SML-CLUSTER-TH2
FMS-LRG-CLUSTER-TH0
FMS-LRG-CLUSTER-TH1
FMS-LRG-CLUSTER-TH2
FMS-JP-TH0
FMS-JP-TH1
FMS-JP-TH2
FMS-DIJET
FPE

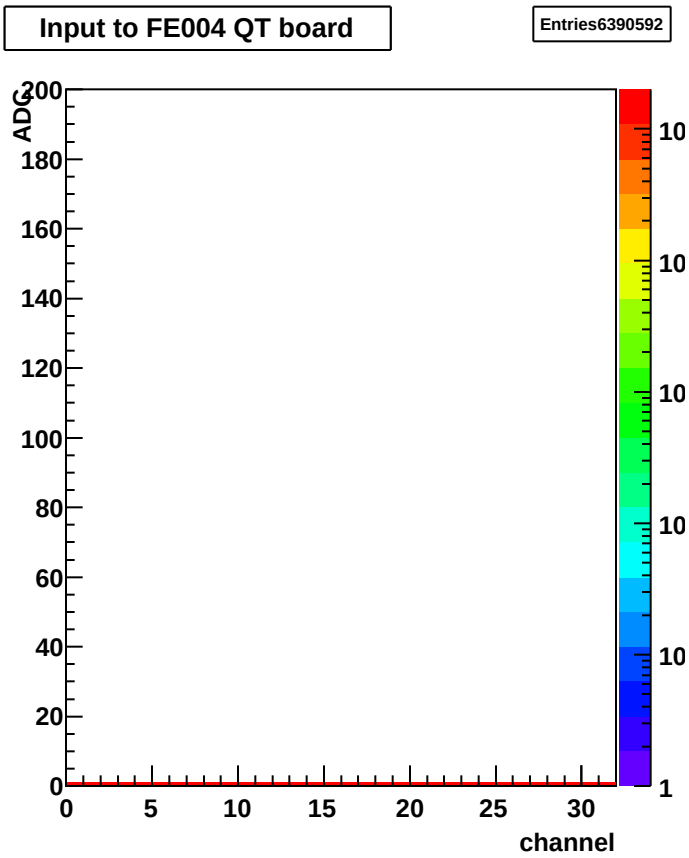

Input to FPD L3 DSM
Entries 0
bit - simulated
FMS-HT-TH0
FMS-HT-TH1
FMS-SML-CLUSTER-TH0
FMS-SML-CLUSTER-TH1
FMS-SML-CLUSTER-TH2
FMS-LRG-CLUSTER-TH0
FMS-LRG-CLUSTER-TH1
FMS-LRG-CLUSTER-TH2
FMS-JP-TH0
FMS-JP-TH1
FMS-JP-TH2
FMS-DIJET
FPE

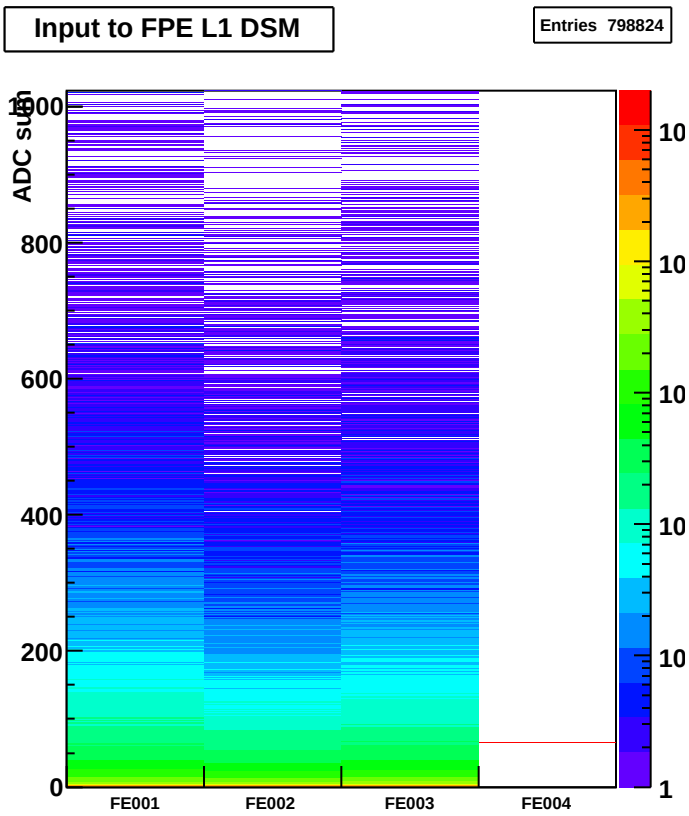

Input to FPD L2 DSM
Entries 798824
jet patch sum
0
20
40
60
80
100
120
ST
SB
NT
NB
1
10
$10^2$
$10^3$
$10^4$
$10^5$

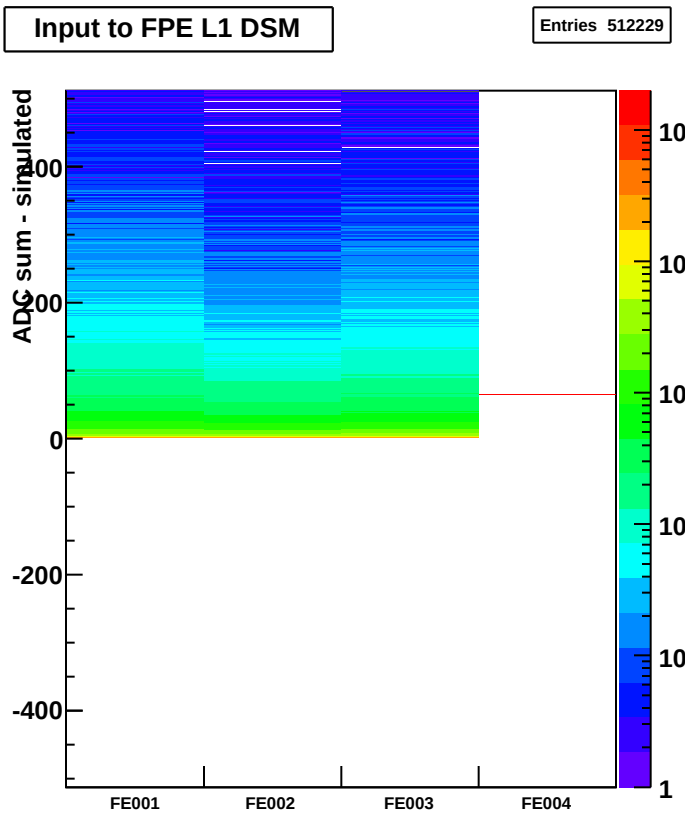

Input to FE001 QT board
Entries6390592
ADC
channel

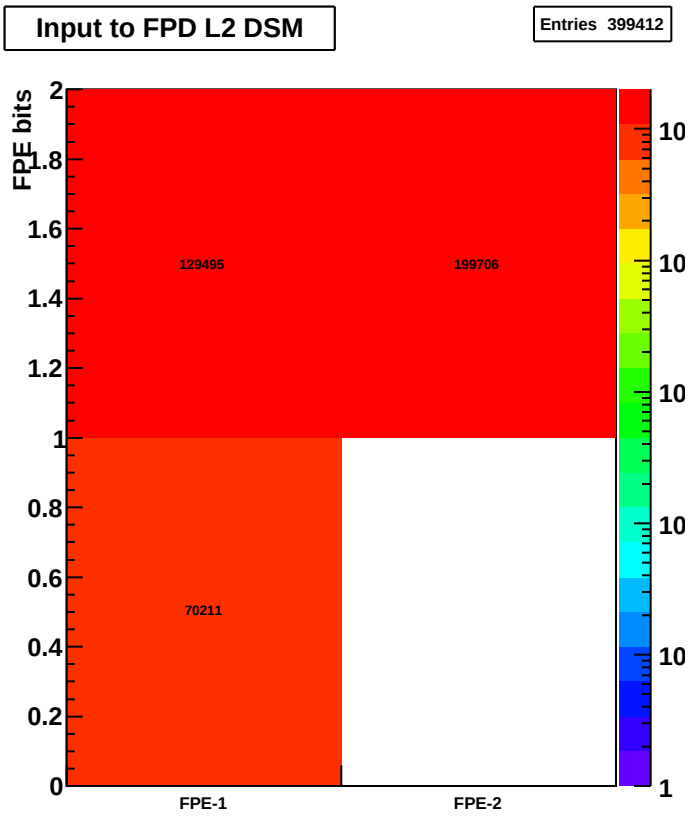

Input to FE002 QT board
Entries6390592
ADC
channel

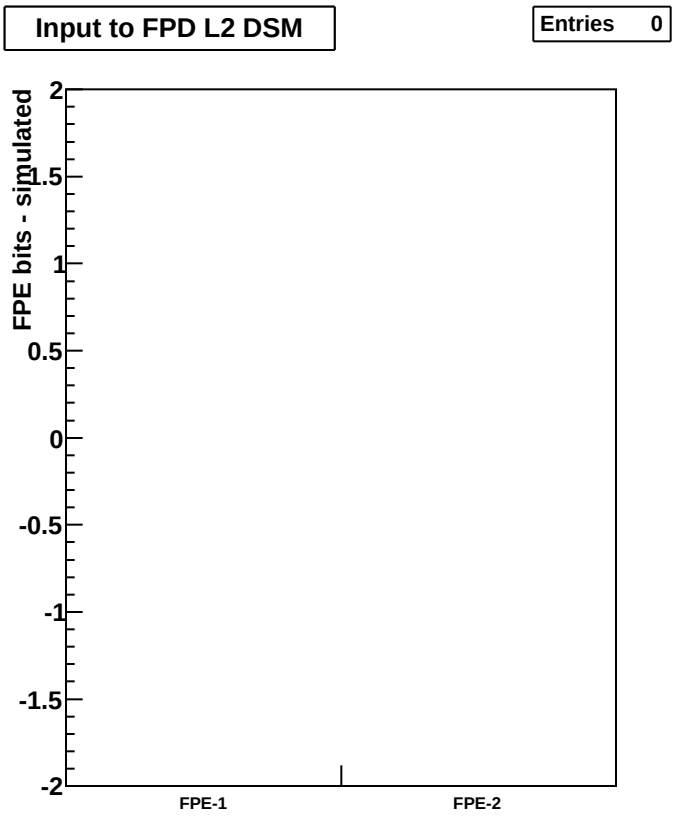

Input to FE003 QT board
Entries6390592
ADC
channel


Input to FE004 QT board
Entries6390592
ADC
channel


Input to FPE L1 DSM
Entries 798824
ADC sum
1000
800
600
400
200
0
FE001
FE002
FE003
FE004
10
10
10
10
10
1


Input to FPE L1 DSM
Entries 512229
ADC sum - simulated
400
200
0
-200
-400
FE001
FE002
FE003
FE004
10
10
10
10
10
1


Input to FPD L2 DSM
Entries 399412
FPE bits
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
129495
199706
70211
FPE-1
FPE-2
10
10
10
10
1


Input to FPD L2 DSM
Entries 0
FPE bits - simulated
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
FPE-1
FPE-2