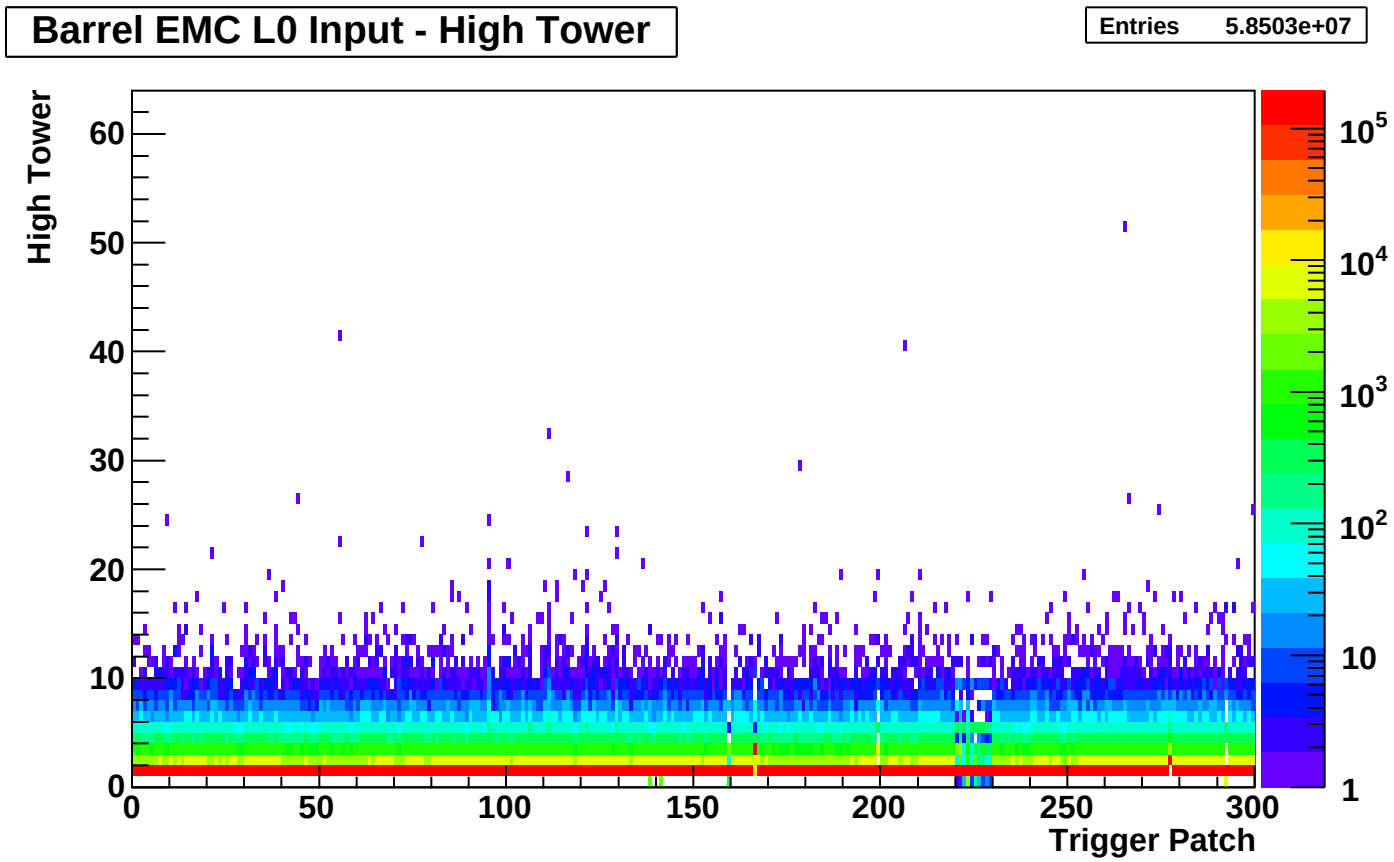
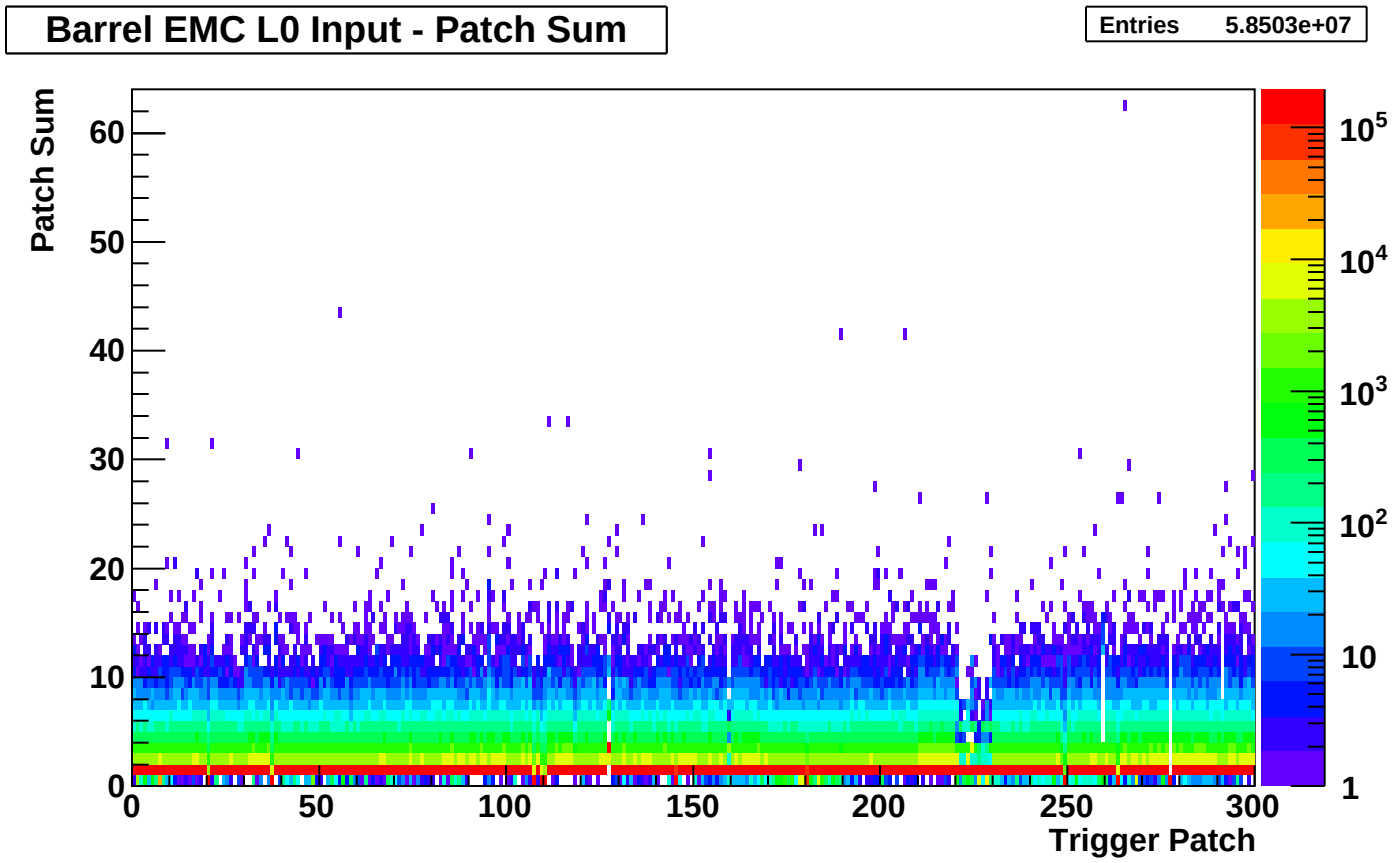
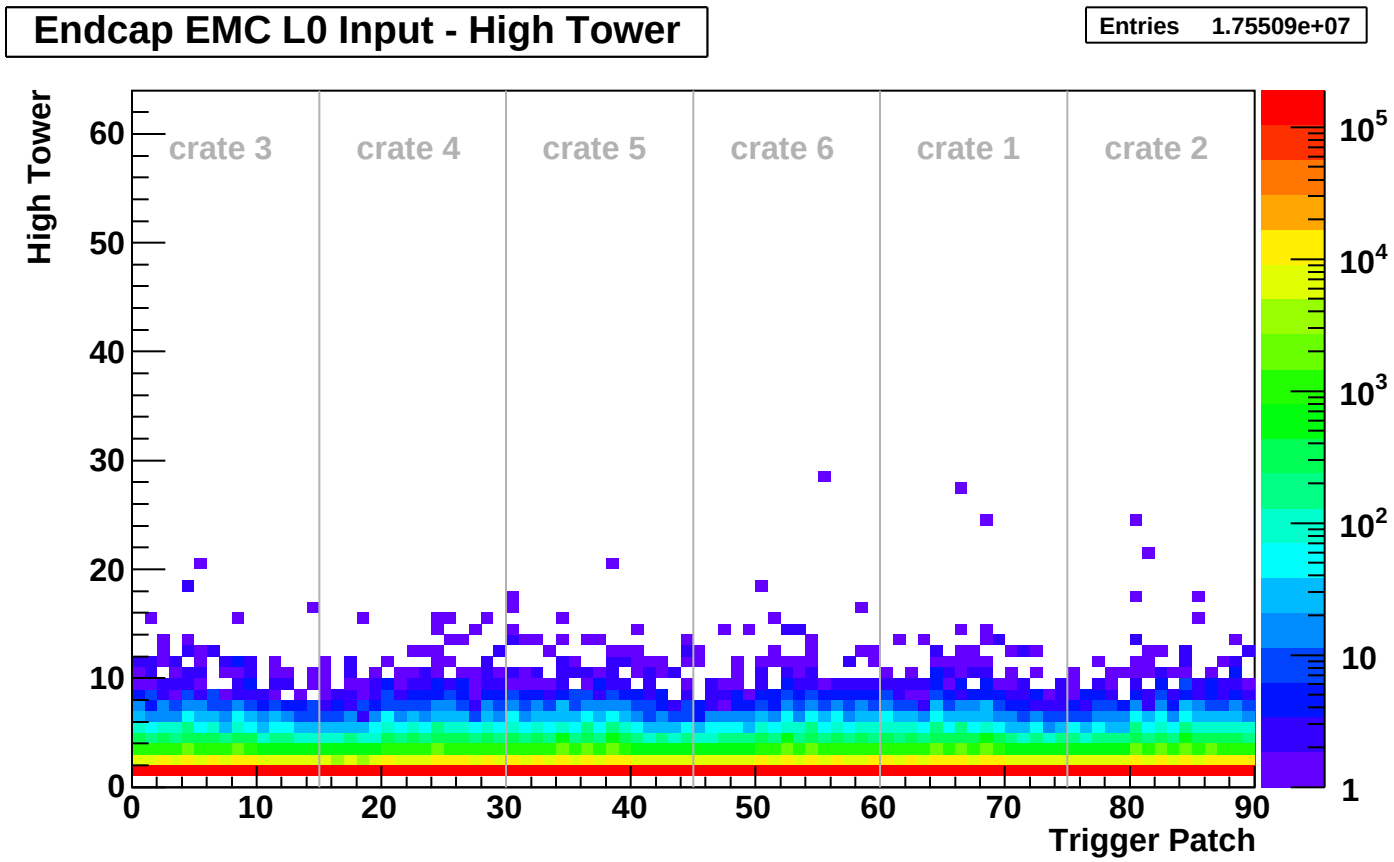
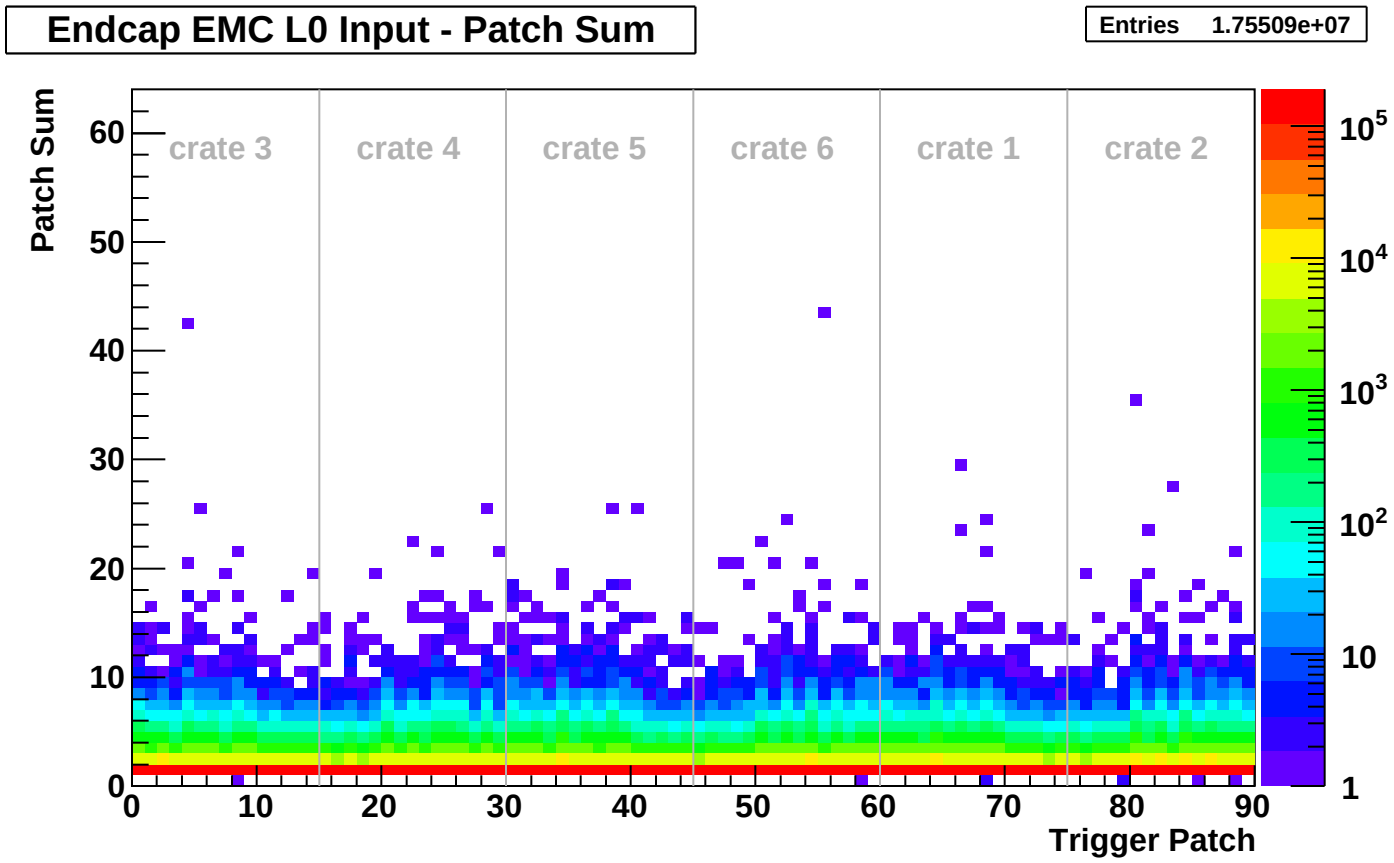
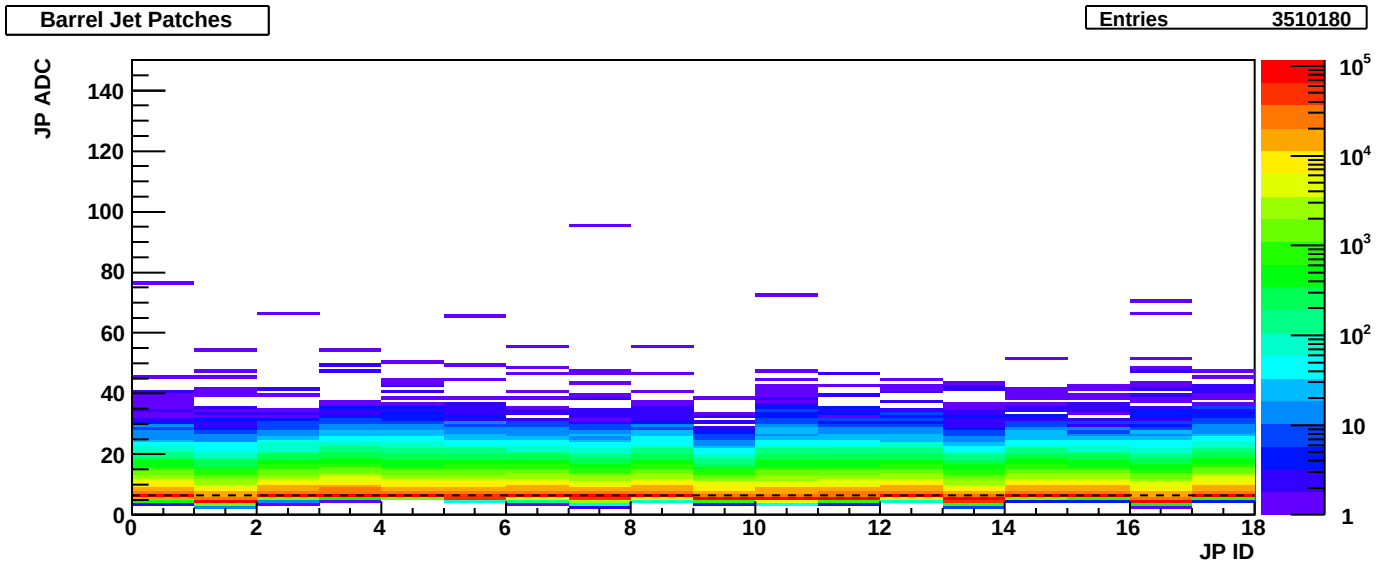
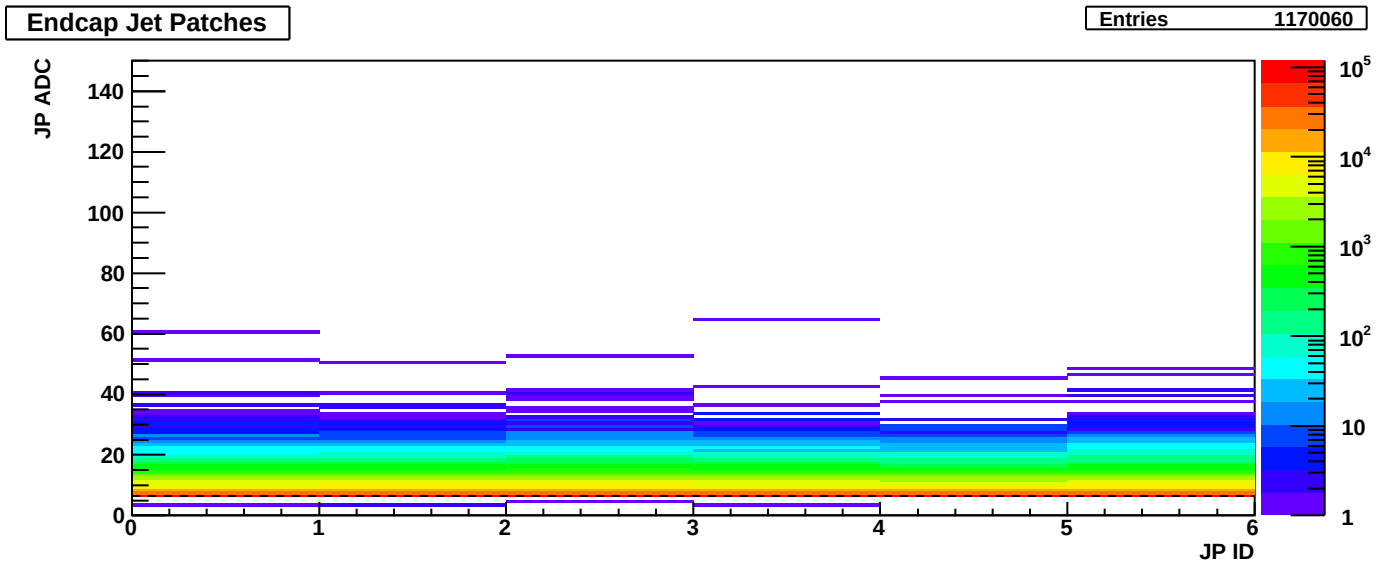

Barrel EMC L0 Input - High Tower
Entries 5.8503e+07
High Tower
Trigger Patch
0
10
20
30
40
50
60
0
50
100
150
200
250
300
1
10
10^2
10^3
10^4
10^5

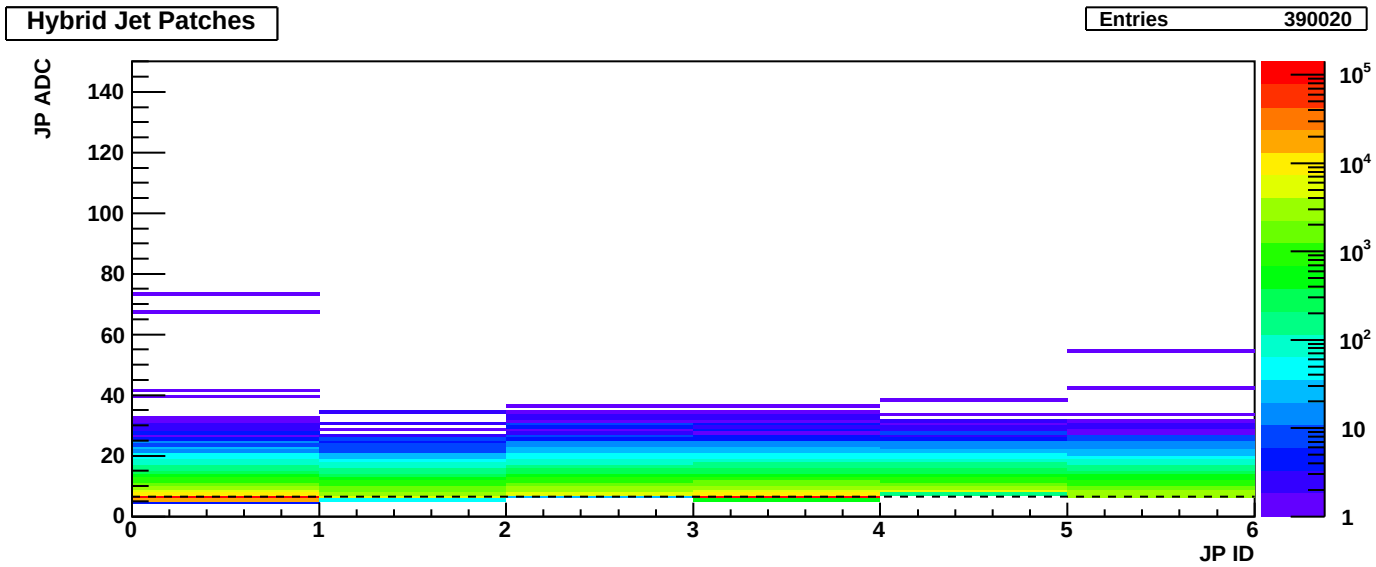

Barrel EMC L0 Input - Patch Sum
Entries 5.8503e+07
Patch Sum
Trigger Patch
0
10
20
30
40
50
60
0
50
100
150
200
250
300
1
10
10^2
10^3
10^4
10^5

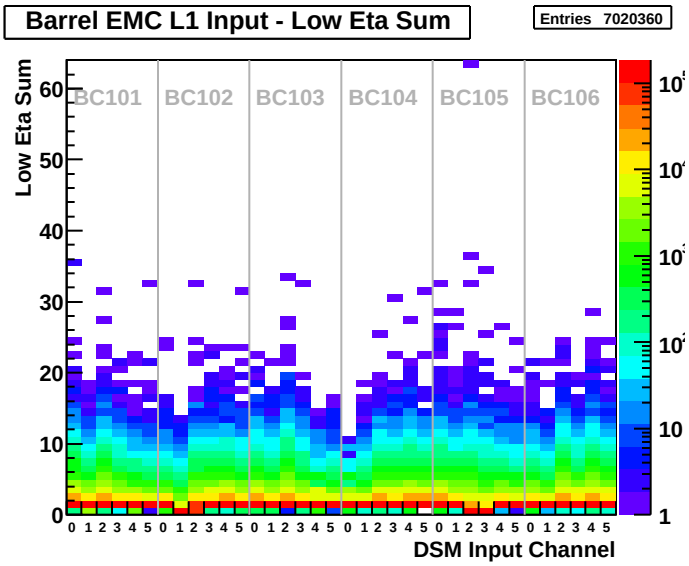

Endcap EMC L0 Input - High Tower
Entries 1.75509e+07
High Tower
crate 3
crate 4
crate 5
crate 6
crate 1
crate 2
Trigger Patch

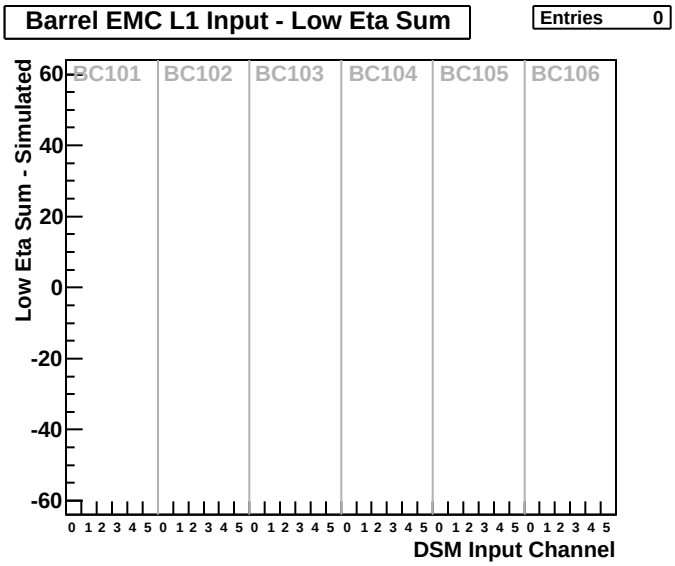

Endcap EMC L0 Input - Patch Sum
Entries 1.75509e+07
Patch Sum
crate 3
crate 4
crate 5
crate 6
crate 1
crate 2
Trigger Patch

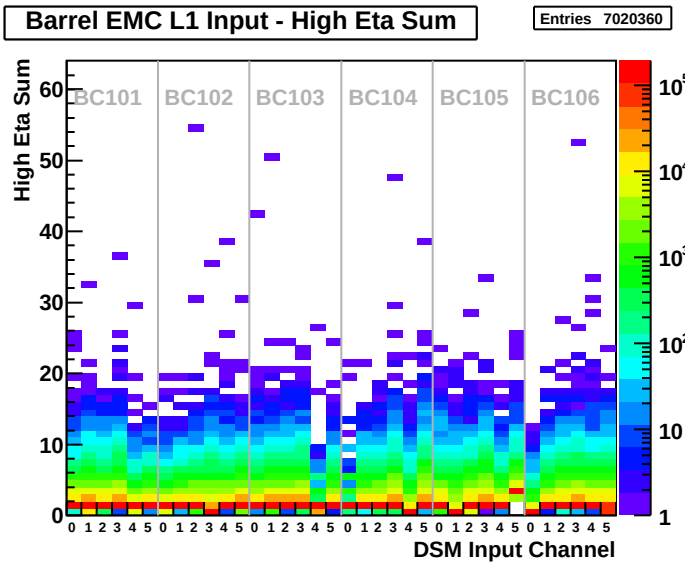

Barrel Jet Patches
Entries 3510180
JP ADC
JP ID

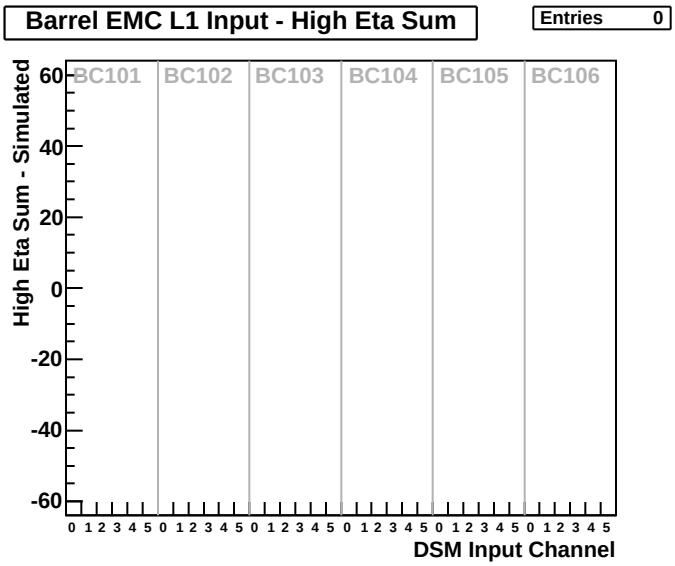

Endcap Jet Patches
Entries 1170060
JP ADC
JP ID

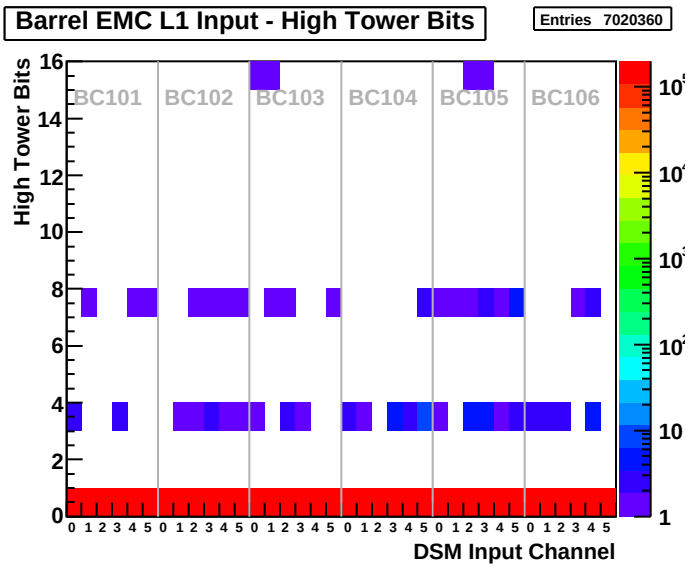

Hybrid Jet Patches
Entries 390020
JP ADC
JP ID

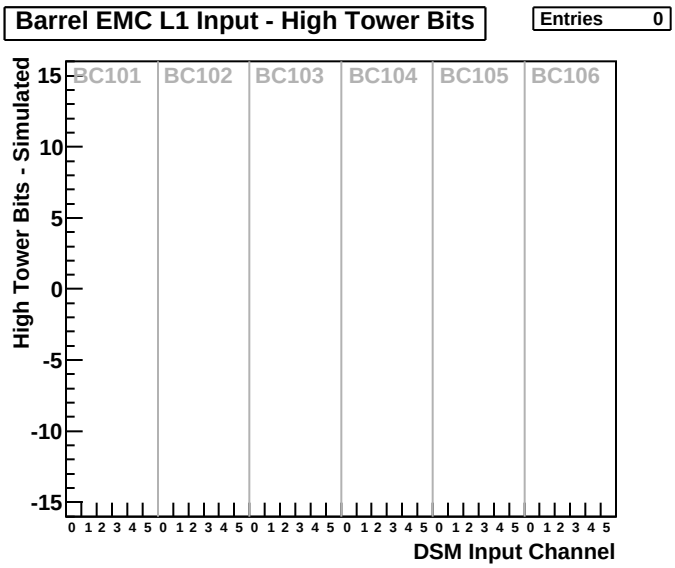

Barrel EMC L1 Input - Low Eta Sum
Entries 7020360
Low Eta Sum
BC101
BC102
BC103
BC104
BC105
BC106
DSM Input Channel

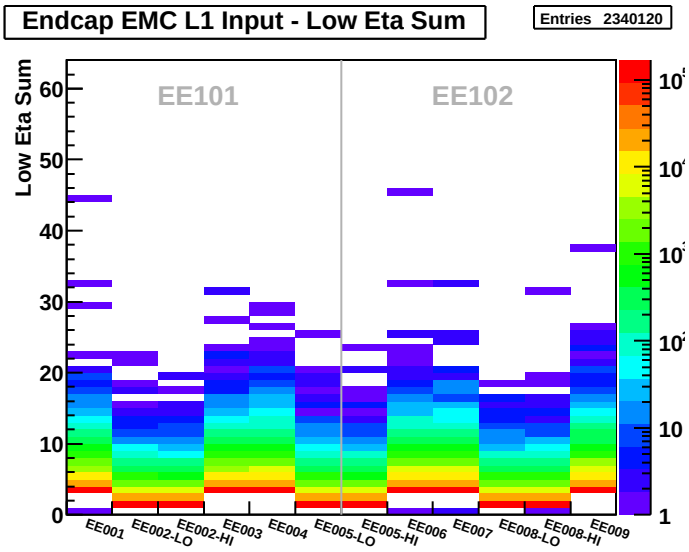

Barrel EMC L1 Input - Low Eta Sum
Entries 0
Low Eta Sum - Simulated
BC101
BC102
BC103
BC104
BC105
BC106
DSM Input Channel

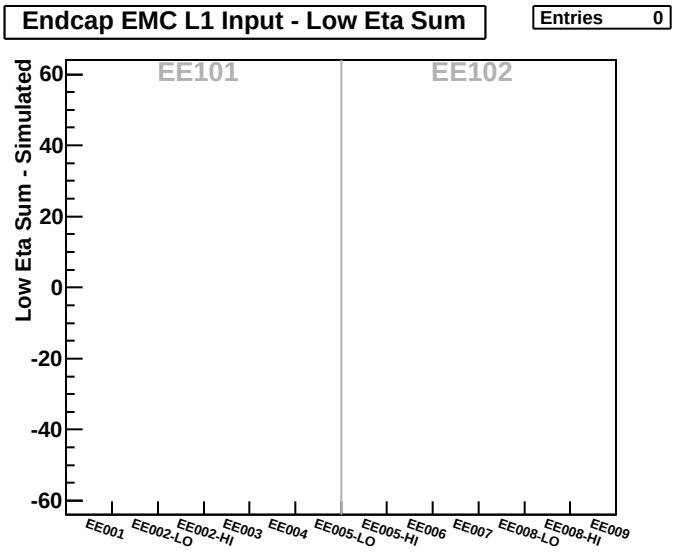

Barrel EMC L1 Input - High Eta Sum
Entries 7020360
High Eta Sum
BC101
BC102
BC103
BC104
BC105
BC106
DSM Input Channel

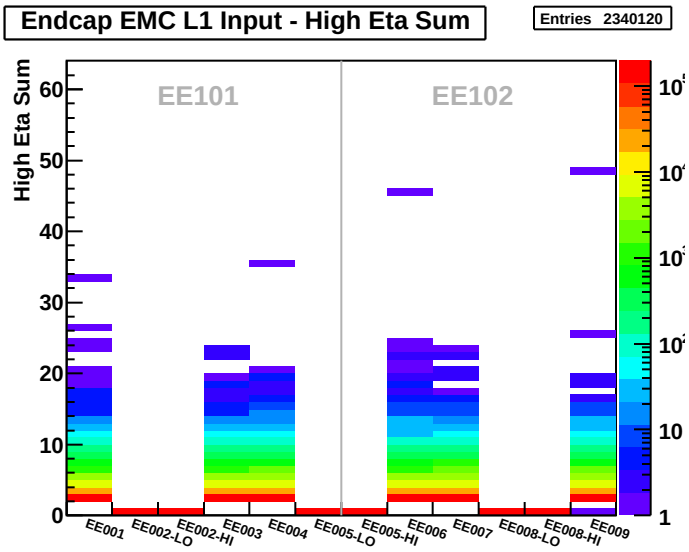

Barrel EMC L1 Input - High Eta Sum
Entries 0
High Eta Sum - Simulated
BC101
BC102
BC103
BC104
BC105
BC106
DSM Input Channel

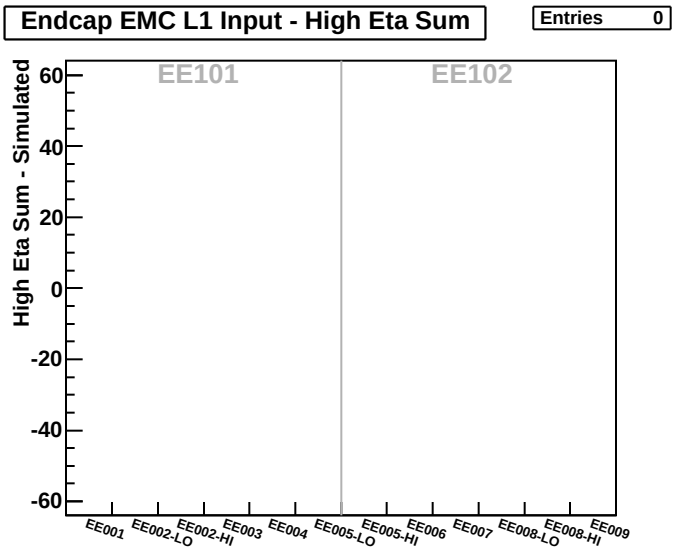

Barrel EMC L1 Input - High Tower Bits
Entries 7020360
High Tower Bits
BC101
BC102
BC103
BC104
BC105
BC106
DSM Input Channel

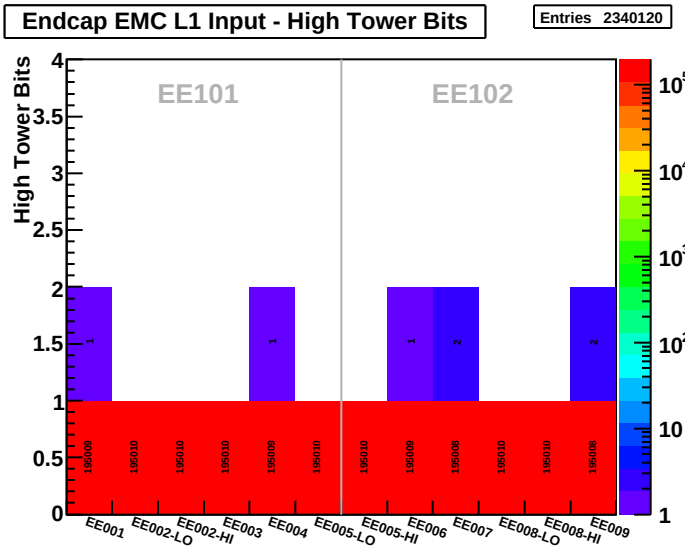

Barrel EMC L1 Input - High Tower Bits
Entries 0
High Tower Bits - Simulated
BC101
BC102
BC103
BC104
BC105
BC106
DSM Input Channel

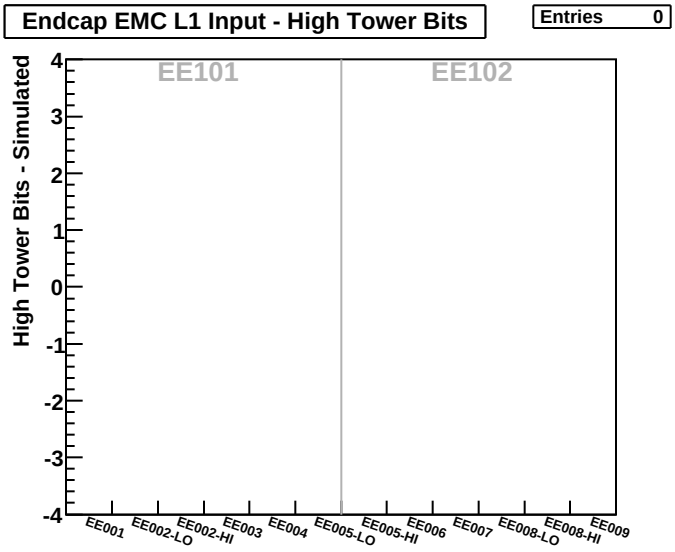

Endcap EMC L1 Input - Low Eta Sum
Entries 2340120
Low Eta Sum
EE101
EE102
EE001
EE002-LO
EE002-HI
EE003
EE004
EE005-LO
EE005-HI
EE006
EE007
EE008-LO
EE008-HI
EE009

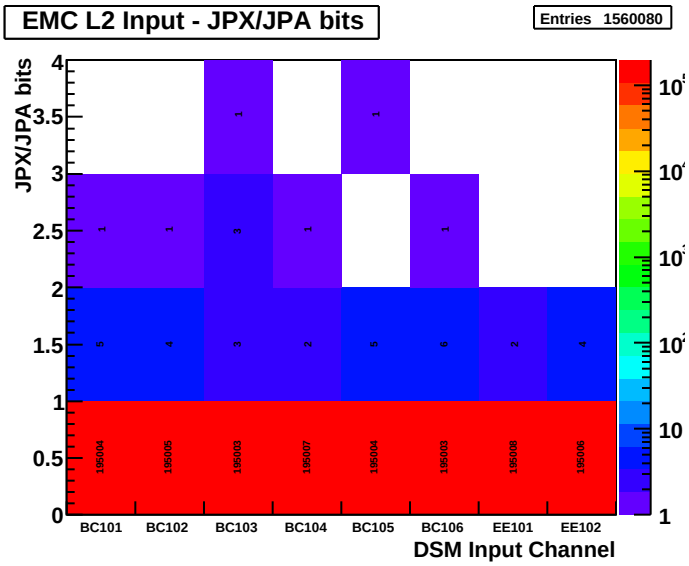

Endcap EMC L1 Input - Low Eta Sum
Entries 0
Low Eta Sum - Simulated
EE101
EE102
EE001
EE002-LO
EE002-HI
EE003
EE004
EE005-LO
EE005-HI
EE006
EE007
EE008-LO
EE008-HI
EE009

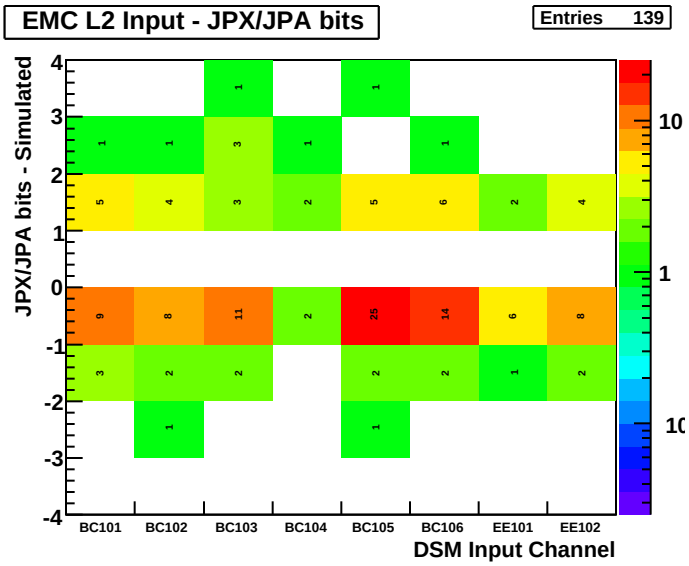

Endcap EMC L1 Input - High Eta Sum
Entries 2340120
High Eta Sum
EE101
EE102
EE001
EE002-LO
EE002-HI
EE003
EE004
EE005-LO
EE005-HI
EE006
EE007
EE008-LO
EE008-HI
EE009

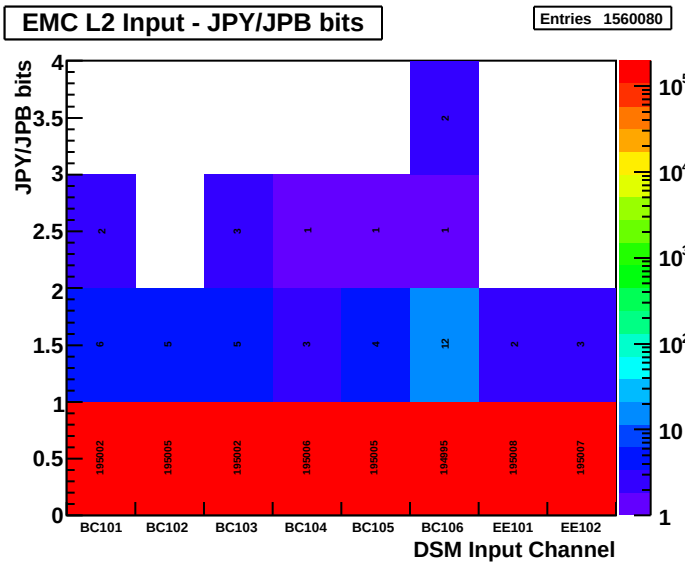

Endcap EMC L1 Input - High Eta Sum
Entries 0
High Eta Sum - Simulated
EE101
EE102
EE001
EE002-LO
EE002-HI
EE003
EE004
EE005-LO
EE005-HI
EE006
EE007
EE008-LO
EE008-HI
EE009

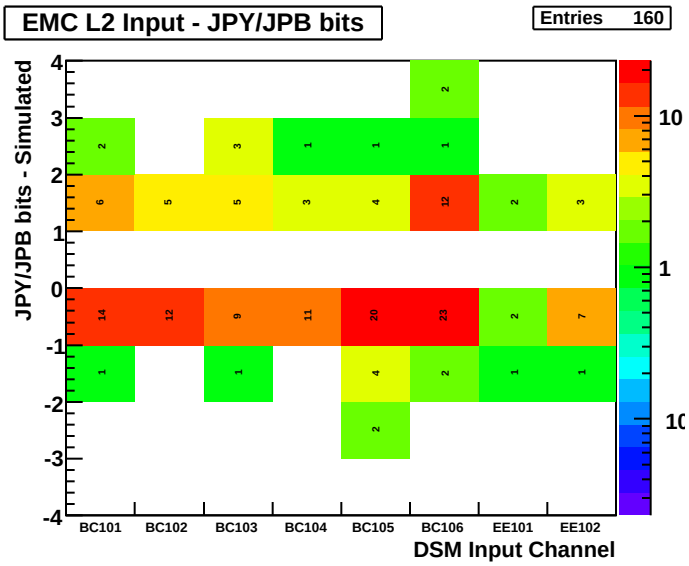

Endcap EMC L1 Input - High Tower Bits
Entries 2340120
High Tower Bits
EE101
EE102
EE001
EE002-LO
EE002-HI
EE003
EE004
EE005-LO
EE005-HI
EE006
EE007
EE008-LO
EE008-HI
EE009

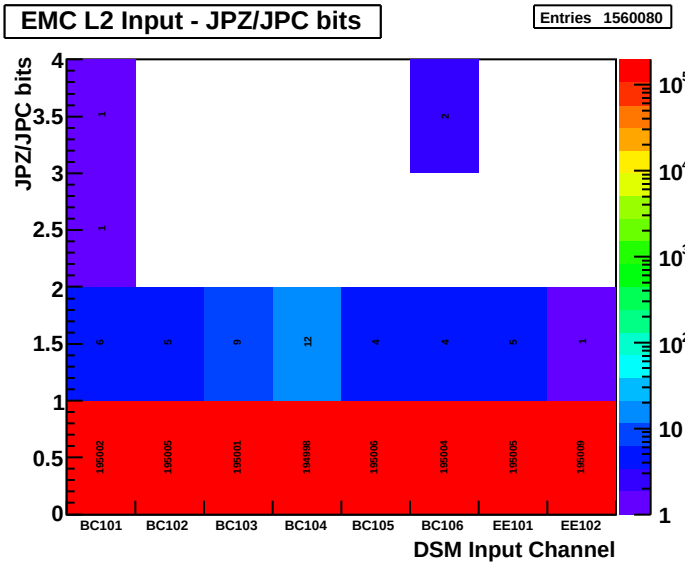

Endcap EMC L1 Input - High Tower Bits
Entries 0
High Tower Bits - Simulated
EE101
EE102
EE001
EE002-LO
EE002-HI
EE003
EE004
EE005-LO
EE005-HI
EE006
EE007
EE008-LO
EE008-HI
EE009

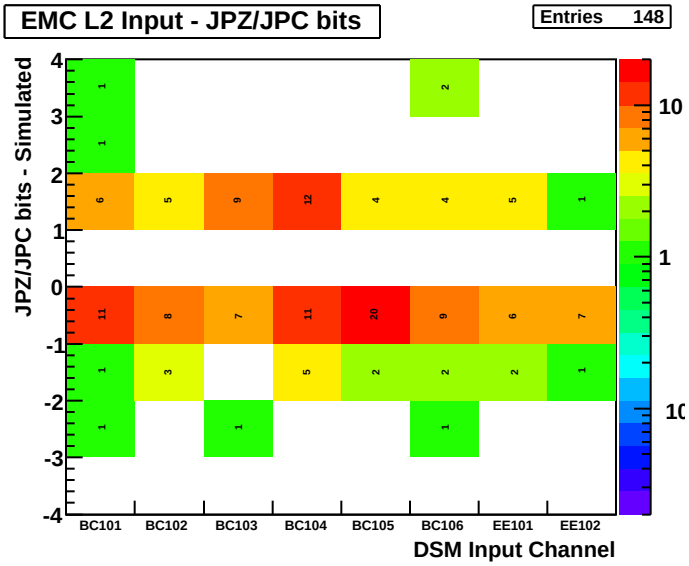

EMC L2 Input - JPX/JPA bits
Entries 1560080
JPX/JPA bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

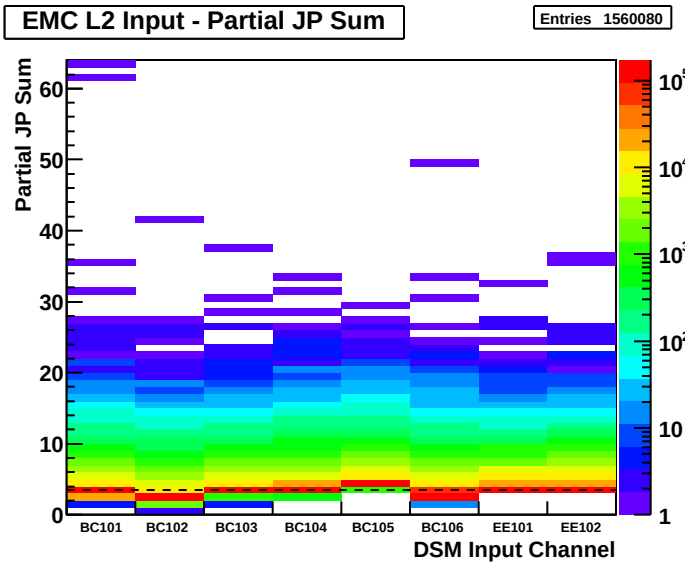

EMC L2 Input - JPX/JPA bits
Entries 139
JPX/JPA bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

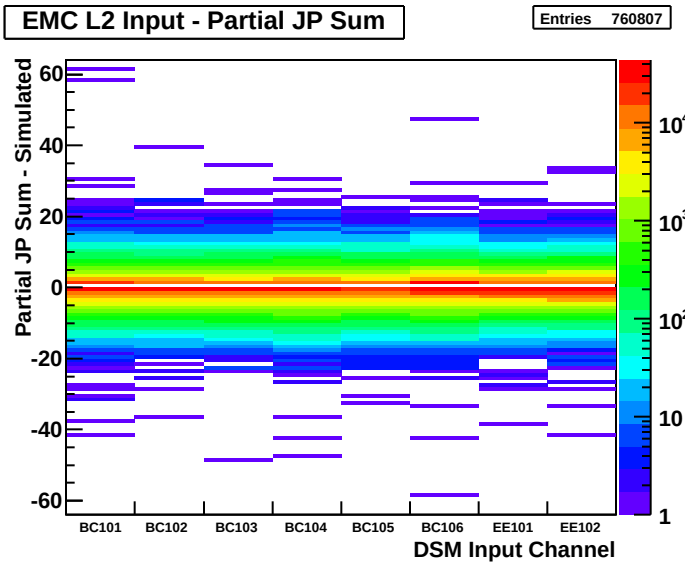

EMC L2 Input - JPY/JPB bits
Entries 1560080
JPY/JPB bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

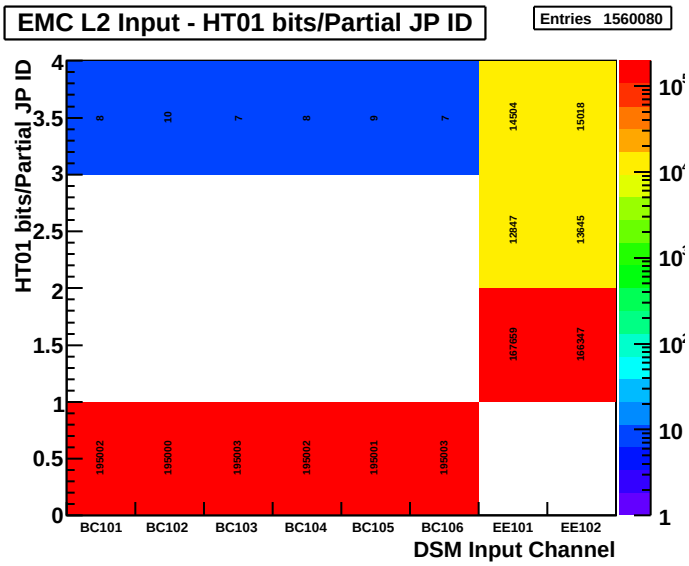

EMC L2 Input - JPY/JPB bits
Entries 160
JPY/JPB bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

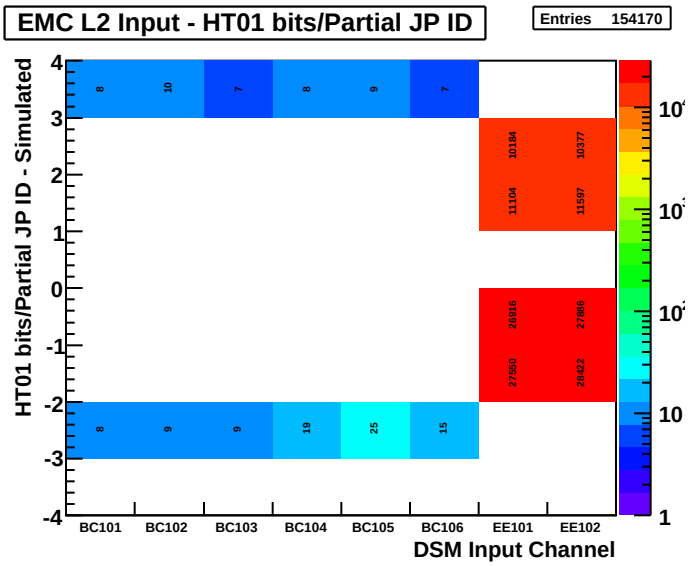

EMC L2 Input - JPZ/JPC bits
Entries 1560080
JPZ/JPC bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

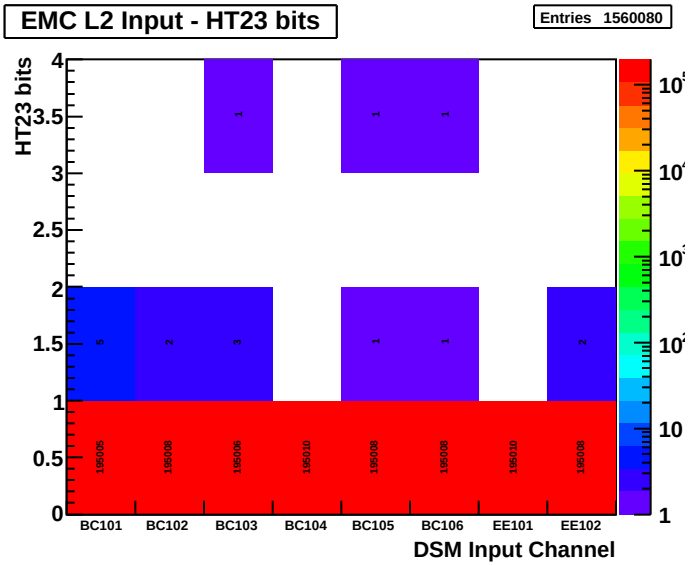

EMC L2 Input - JPZ/JPC bits
Entries 148
JPZ/JPC bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

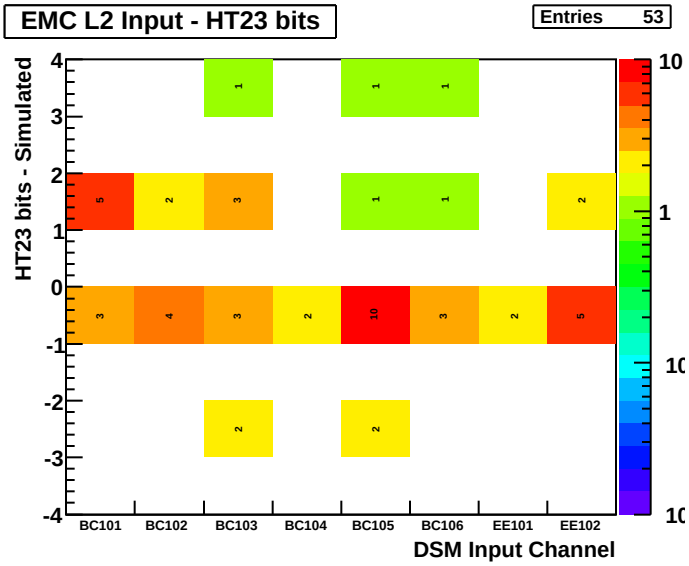

EMC L2 Input - Partial JP Sum
Entries 1560080
Partial JP Sum
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

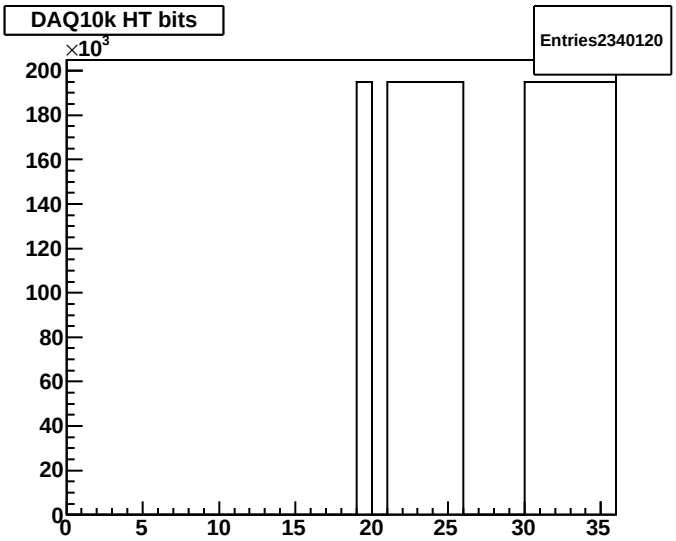

EMC L2 Input - Partial JP Sum
Entries 760807
Partial JP Sum - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

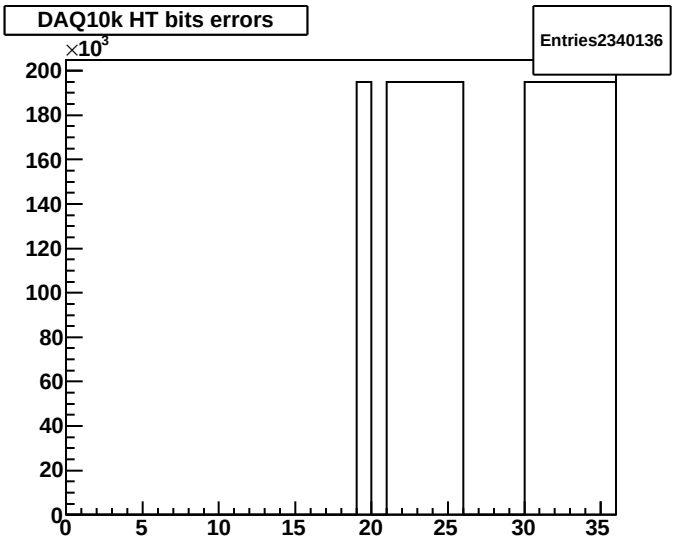

EMC L2 Input - HT01 bits/Partial JP ID
Entries 1560080
HT01 bits/Partial JP ID
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

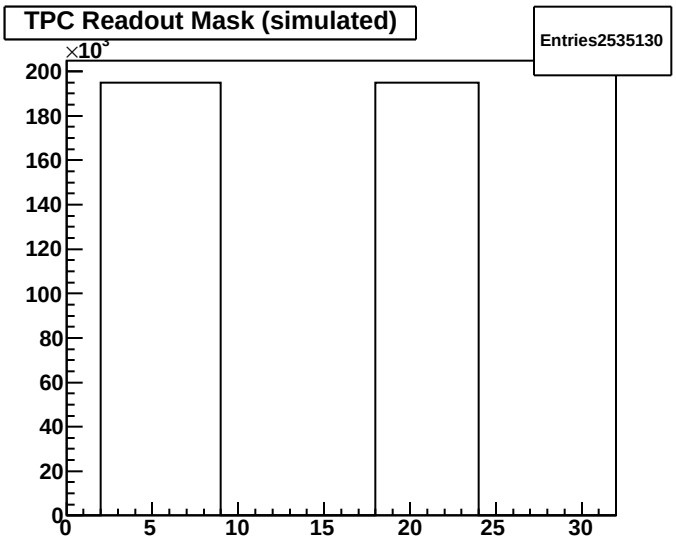

EMC L2 Input - HT01 bits/Partial JP ID
Entries 154170
HT01 bits/Partial JP ID - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

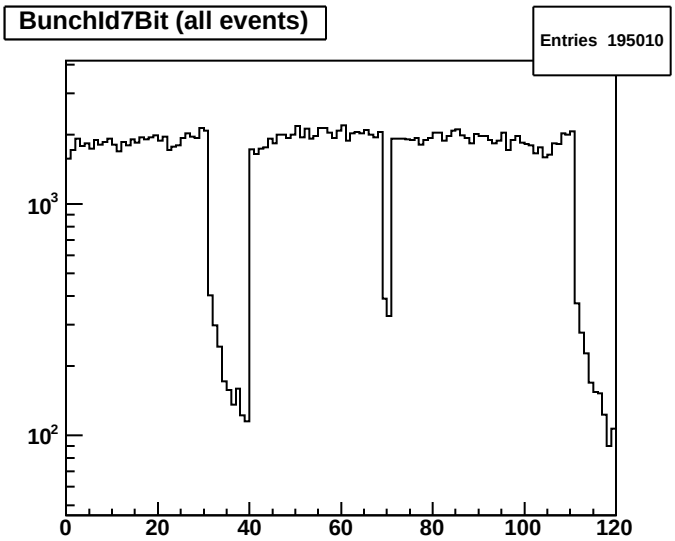

EMC L2 Input - HT23 bits
Entries 1560080
HT23 bits
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

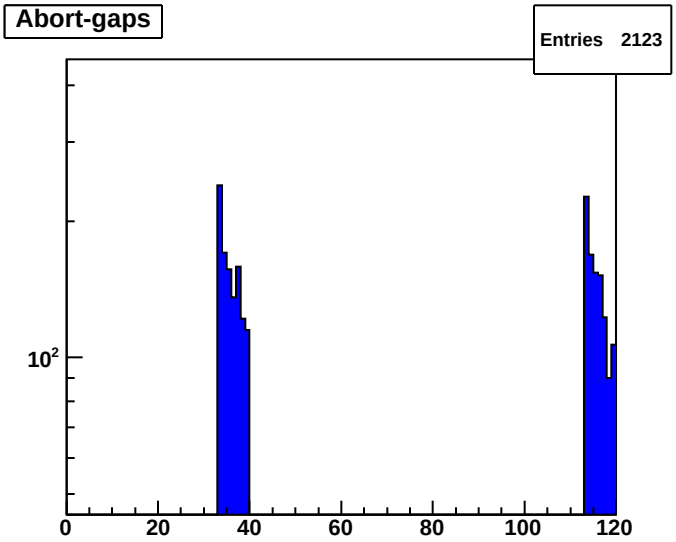

EMC L2 Input - HT23 bits
Entries 53
HT23 bits - Simulated
DSM Input Channel
BC101 BC102 BC103 BC104 BC105 BC106 EE101 EE102

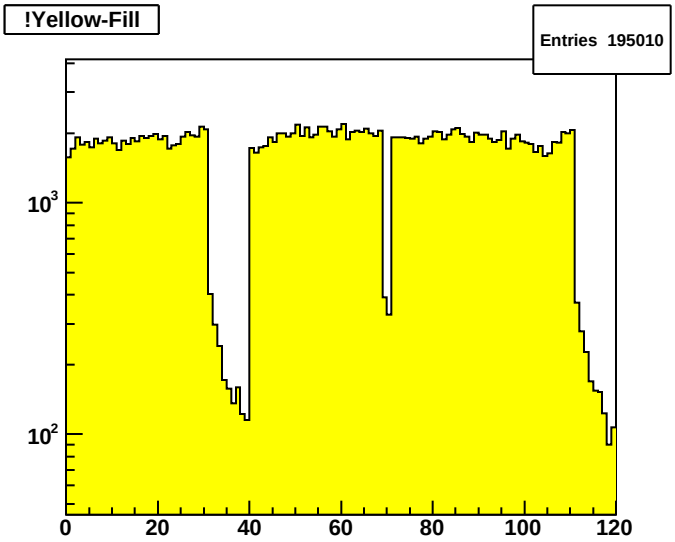

DAQ10k HT bits
Entries2340120
×10^3
200
180
160
140
120
100
80
60
40
20
0
0
5
10
15
20
25
30
35

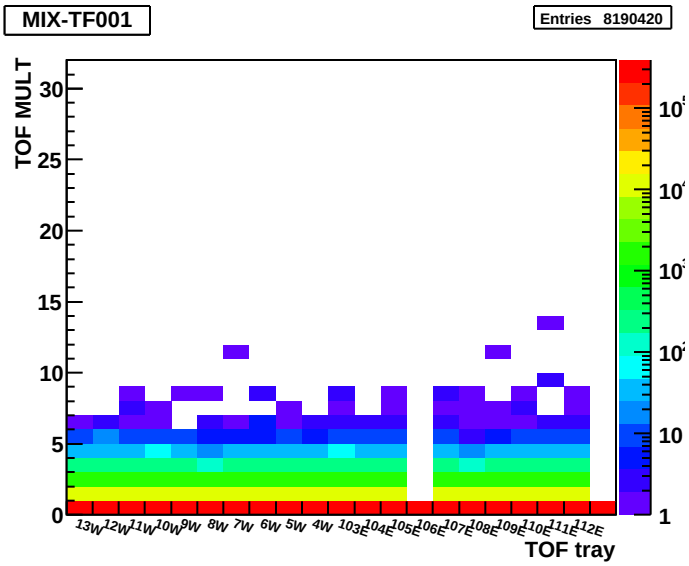

DAQ10k HT bits errors
Entries2340136
×10^3
200
180
160
140
120
100
80
60
40
20
0
0
5
10
15
20
25
30
35

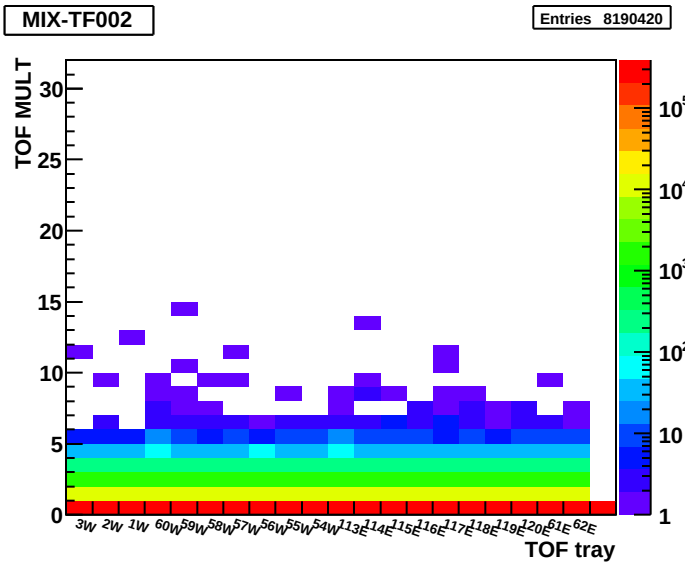

TPC Readout Mask (simulated)
Entries2535130
×10^3
200
180
160
140
120
100
80
60
40
20
0
0
5
10
15
20
25
30

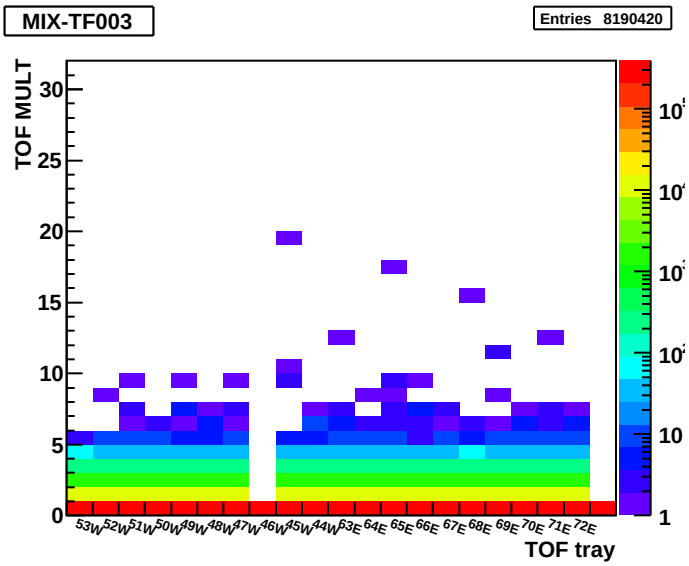

BunchId7Bit (all events)
Entries 195010
10^3
10^2
0
20
40
60
80
100
120

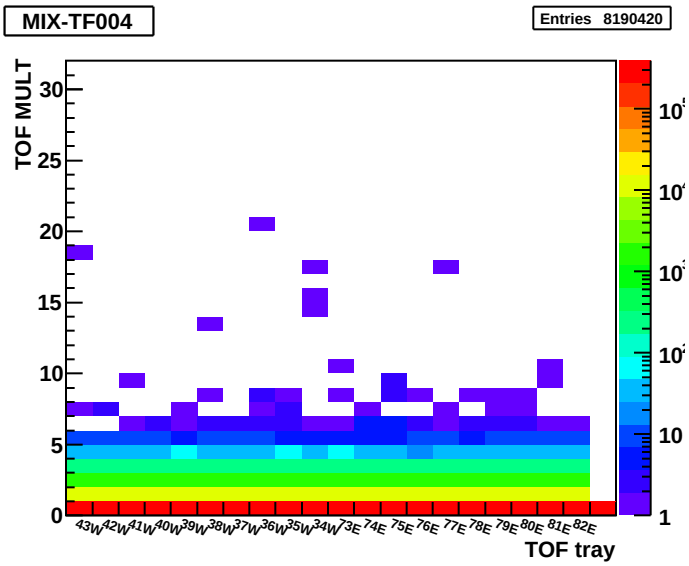

Abort-gaps
Entries 2123
10^2
0
20
40
60
80
100
120

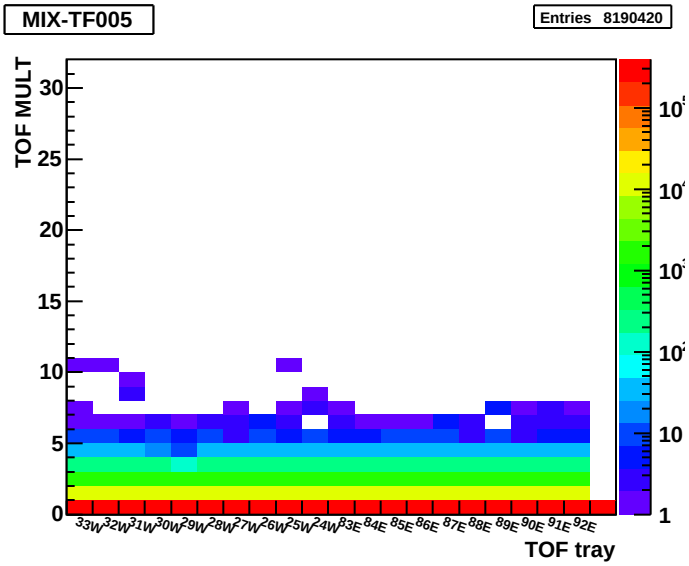

!Yellow-Fill
Entries 195010
10^3
10^2
0
20
40
60
80
100
120

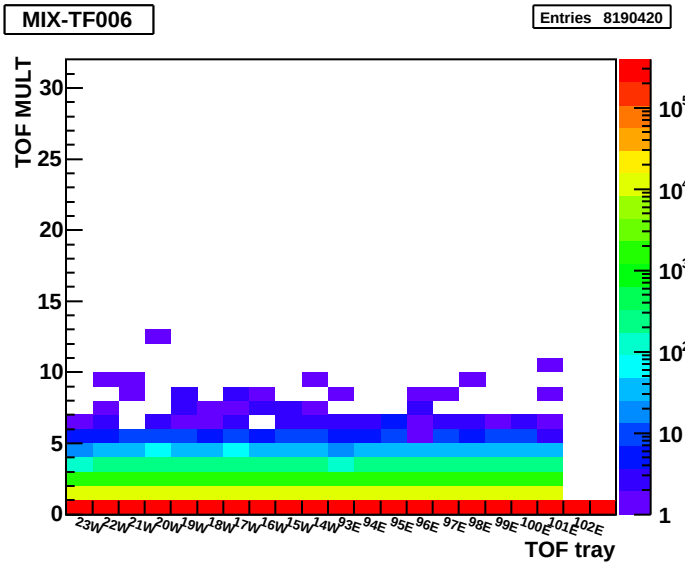

MIX-TF001
Entries 8190420
TOF MULT
TOF tray

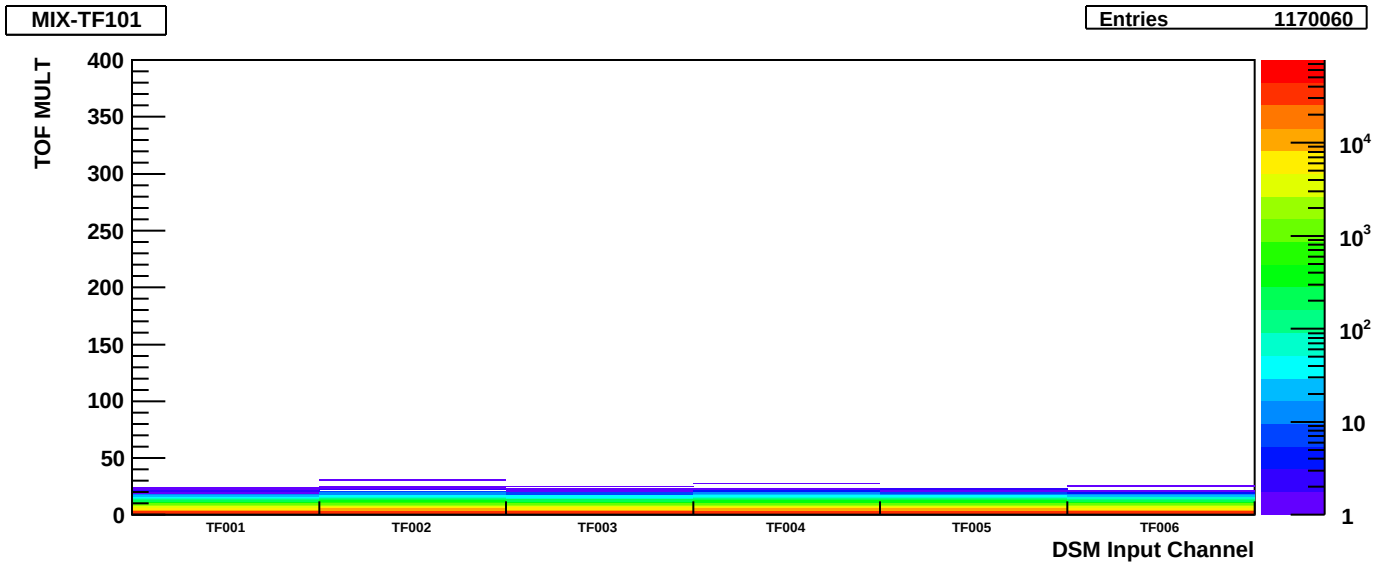

MIX-TF002
Entries 8190420
TOF MULT
TOF tray

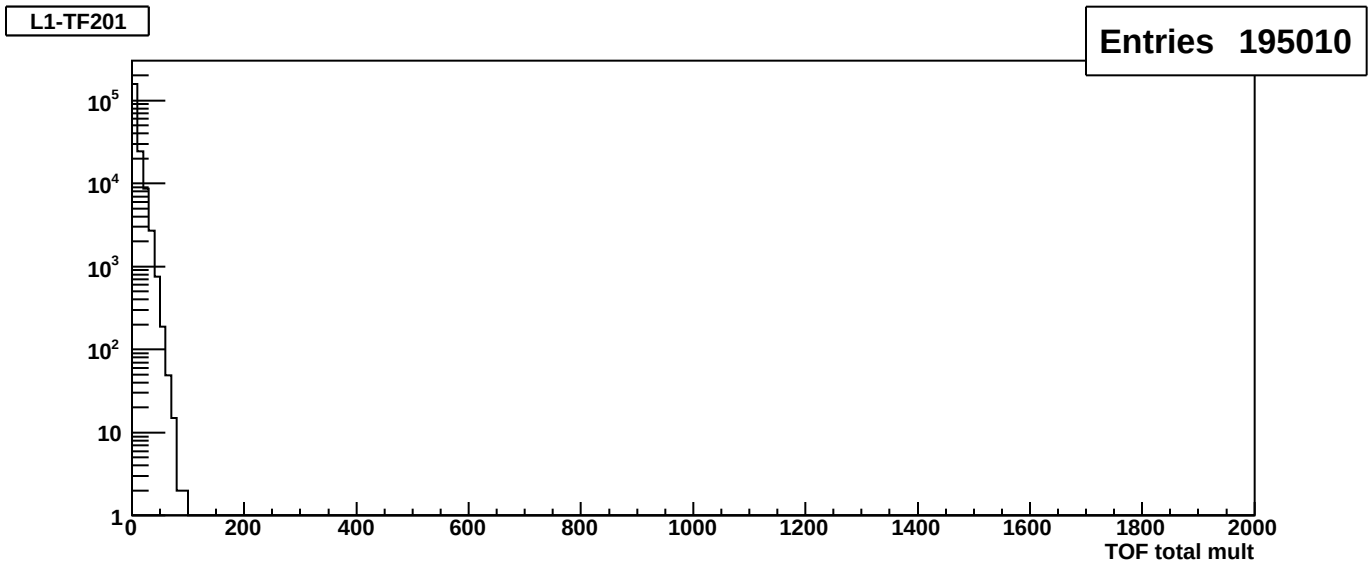

MIX-TF003
Entries 8190420
TOF MULT
TOF tray

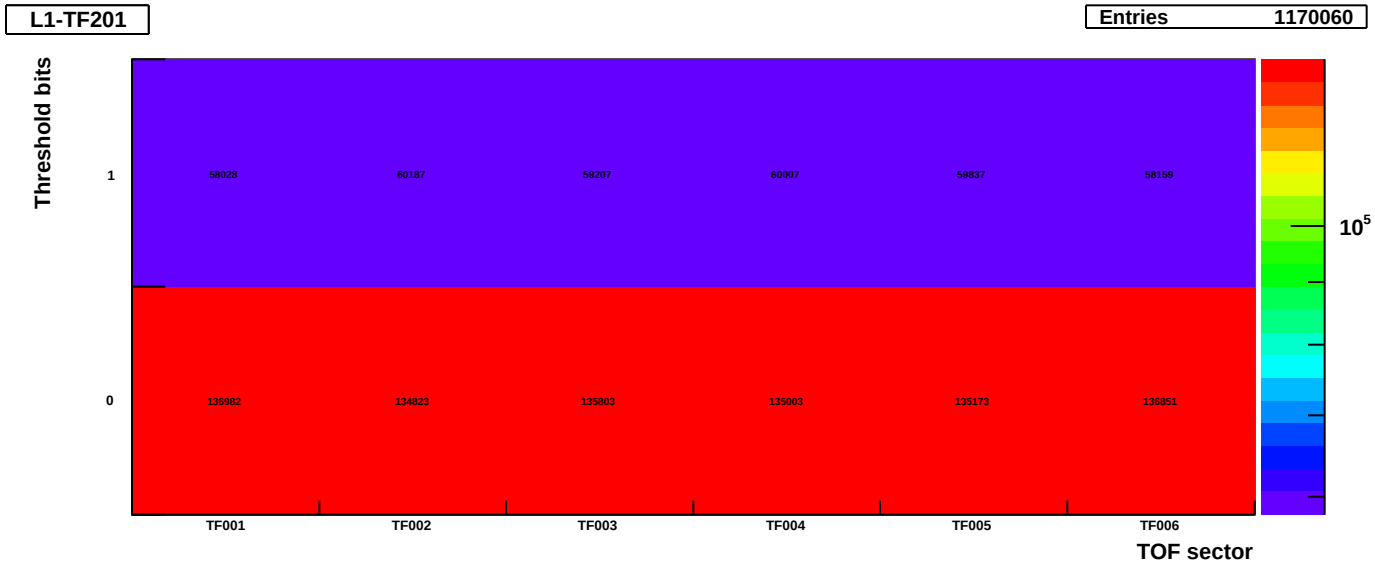

MIX-TF004
Entries 8190420
TOF MULT
TOF tray

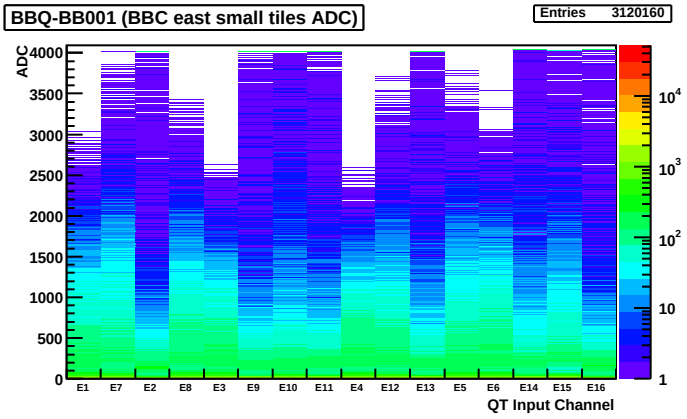

MIX-TF005
Entries 8190420
TOF MULT
TOF tray

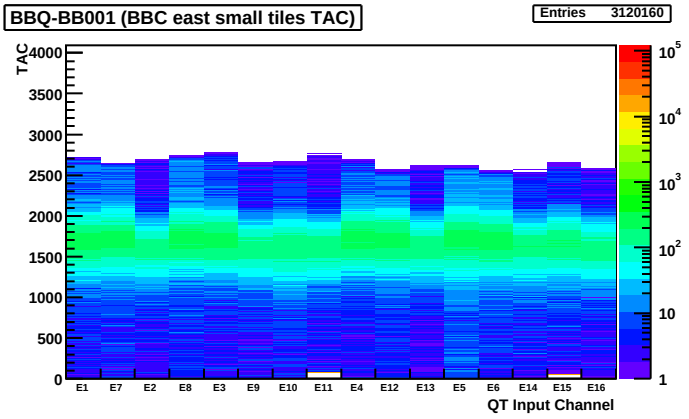

MIX-TF006
Entries 8190420
TOF MULT
TOF tray

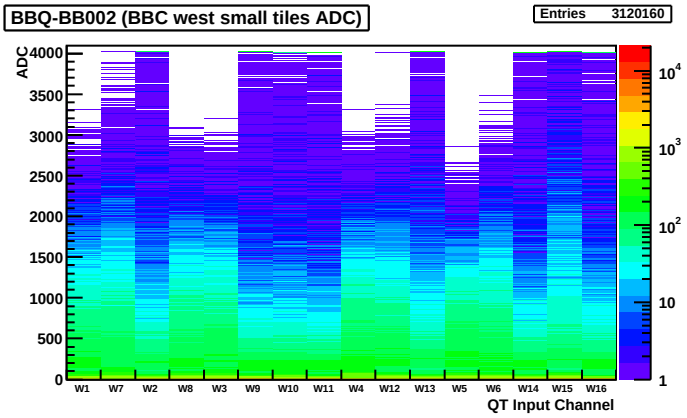

MIX-TF101
Entries 1170060
TOF MULT
400
350
300
250
200
150
100
50
0
TF001
TF002
TF003
TF004
TF005
TF006
DSM Input Channel
10^4
10^3
10^2
10
1

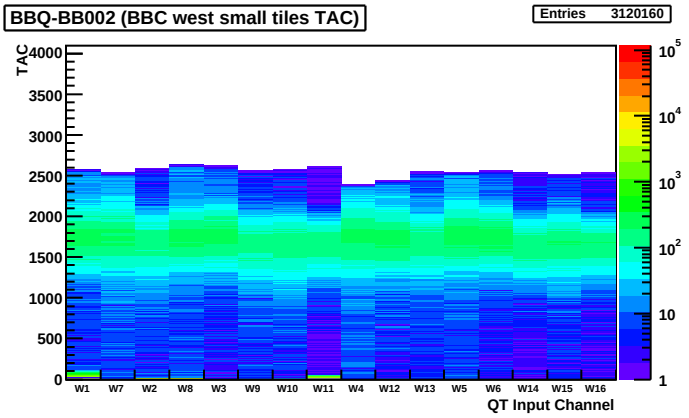

L1-TF201
Entries 195010
10^5
10^4
10^3
10^2
10
1
0
200
400
600
800
1000
1200
1400
1600
1800
2000
TOF total mult

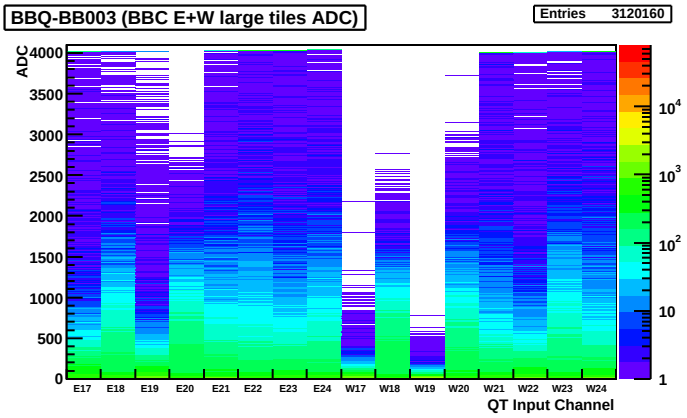

L1-TF201
Entries 1170060
Threshold bits
1
0
58028
60187
59207
60007
59837
58159
136982
134823
135803
135003
135173
136851
TF001
TF002
TF003
TF004
TF005
TF006
TOF sector
10^5

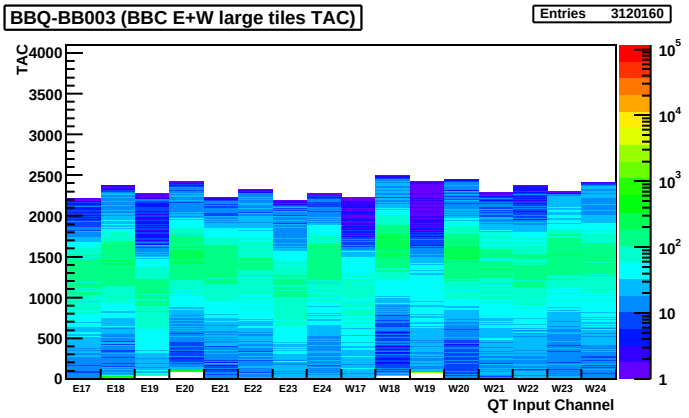

BBQ-BB001 (BBC east small tiles ADC)
Entries 3120160
ADC
QT Input Channel

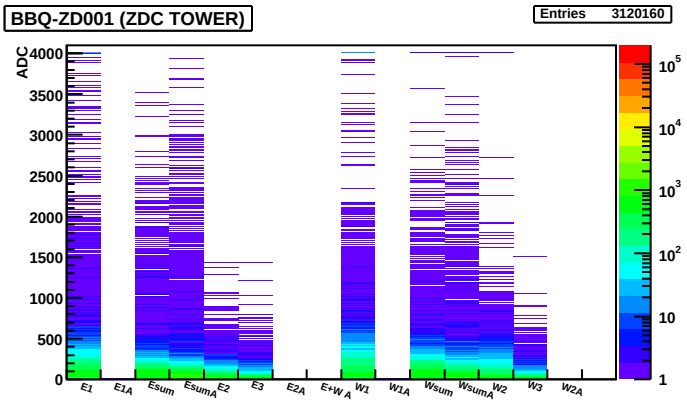

BBQ-BB001 (BBC east small tiles TAC)
Entries 3120160
TAC
QT Input Channel

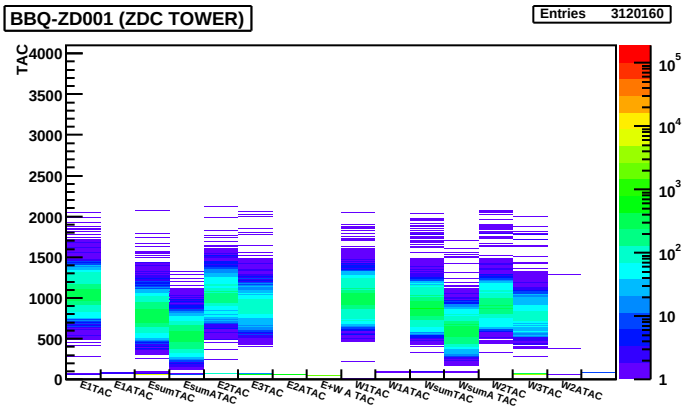

BBQ-BB002 (BBC west small tiles ADC)
Entries 3120160
ADC
QT Input Channel

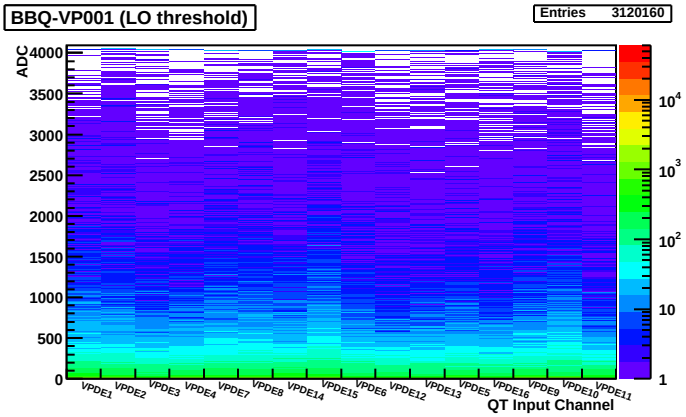

BBQ-BB002 (BBC west small tiles TAC)
Entries 3120160
TAC
QT Input Channel

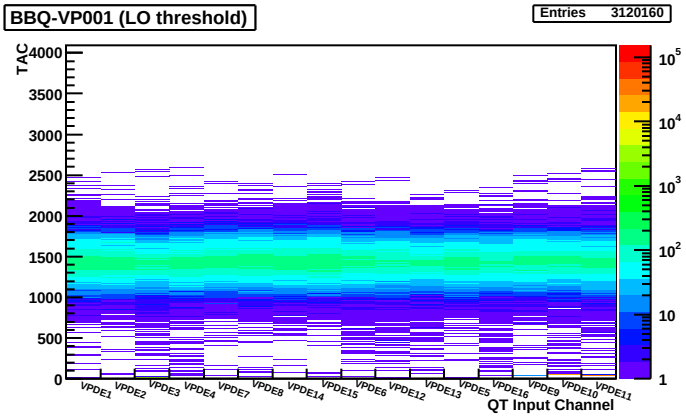

BBQ-BB003 (BBC E+W large tiles ADC)
Entries 3120160
ADC
QT Input Channel

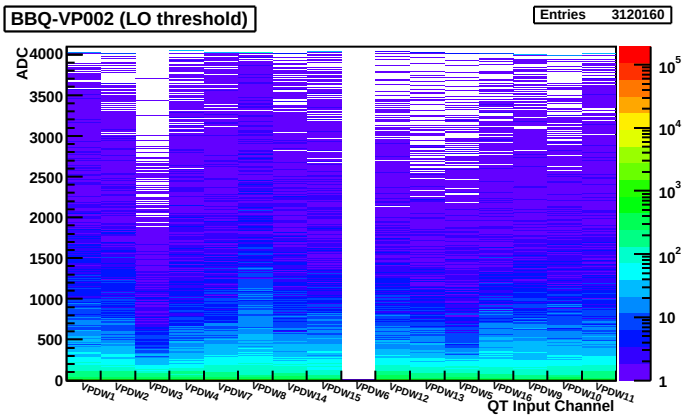

BBQ-BB003 (BBC E+W large tiles TAC)
Entries 3120160
TAC
QT Input Channel

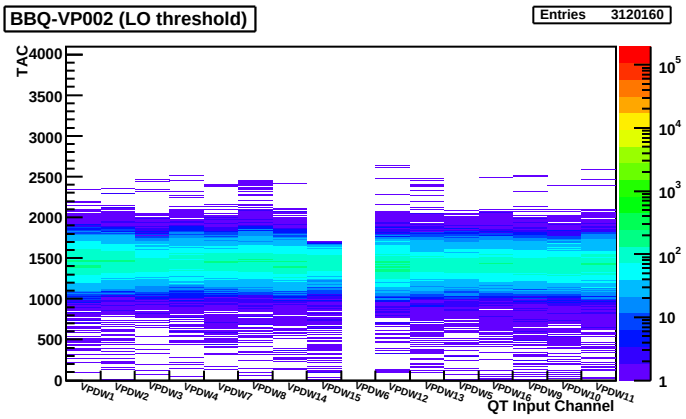

BBQ-ZD001 (ZDC TOWER)
Entries 3120160
ADC

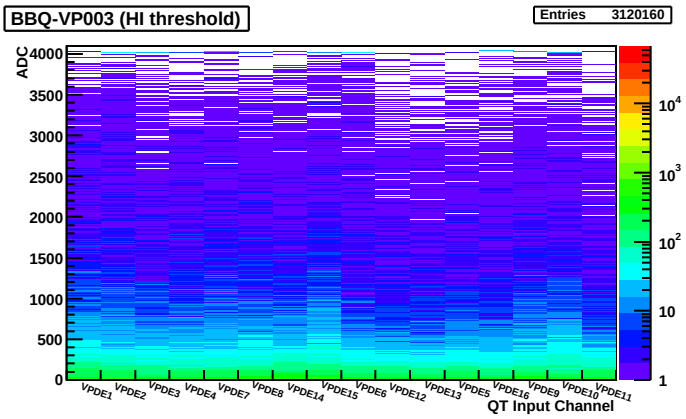

BBQ-ZD001 (ZDC TOWER)
Entries 3120160
TAC

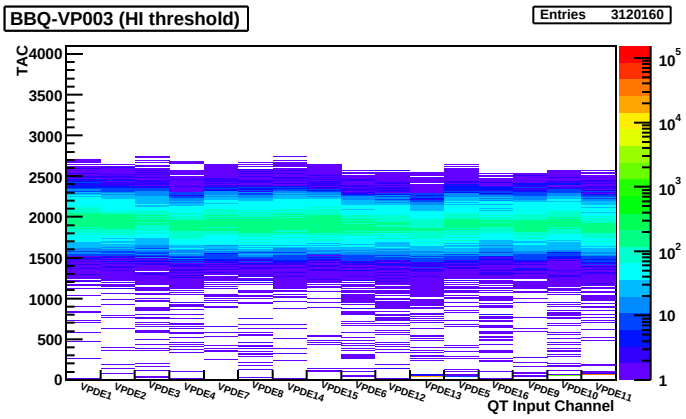

BBQ-VP001 (LO threshold)
Entries 3120160
ADC
QT Input Channel

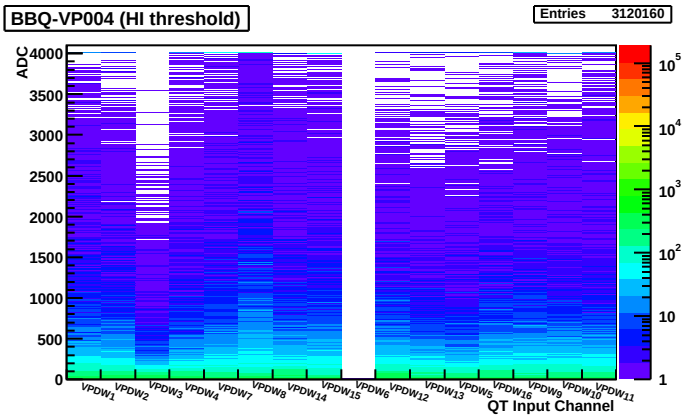

BBQ-VP001 (LO threshold)
Entries 3120160
TAC
QT Input Channel

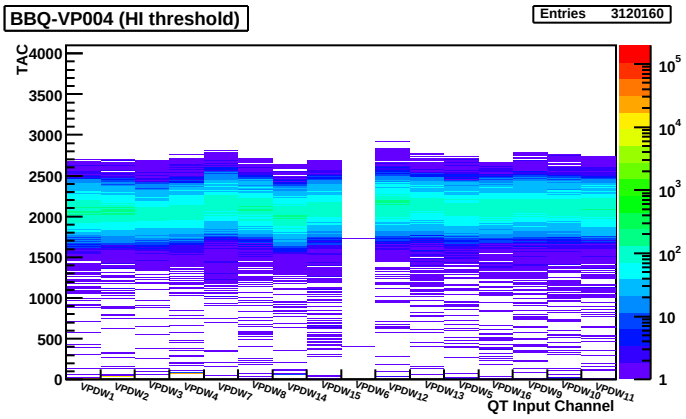

BBQ-VP002 (LO threshold)
Entries 3120160
ADC
QT Input Channel

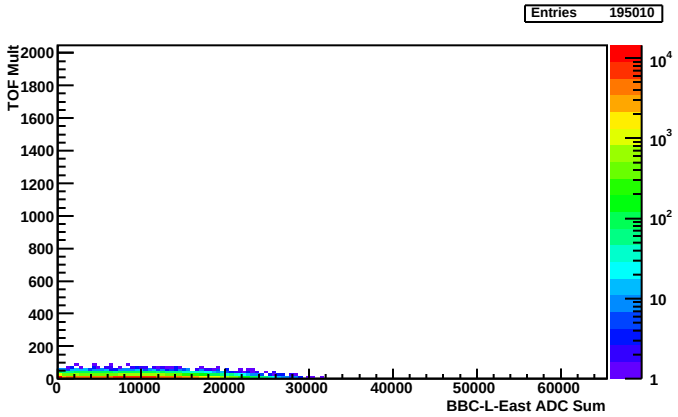

BBQ-VP002 (LO threshold)
Entries 3120160
TAC
QT Input Channel

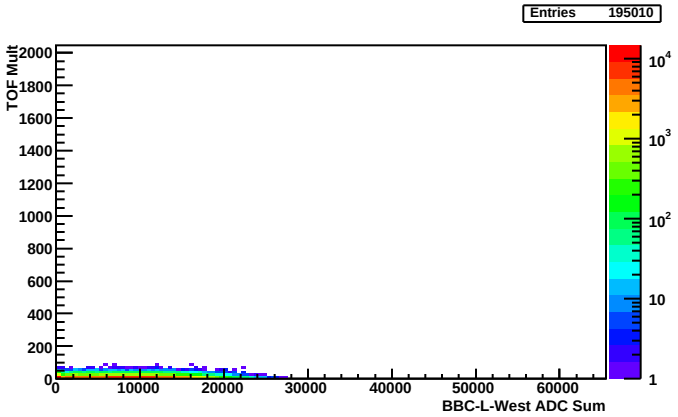

BBQ-VP003 (HI threshold)
Entries 3120160
ADC
QT Input Channel

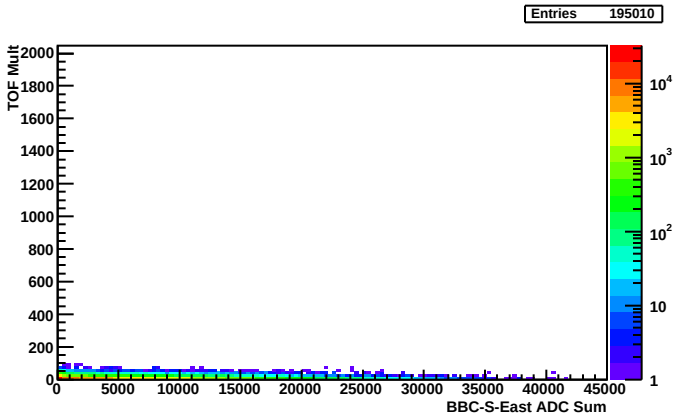

BBQ-VP003 (HI threshold)
Entries 3120160
TAC
QT Input Channel

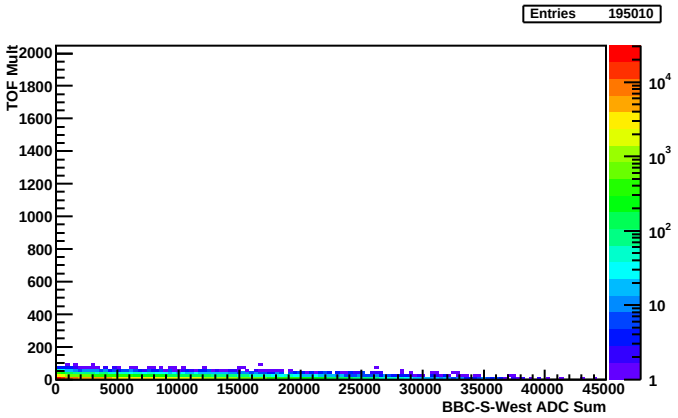

BBQ-VP004 (HI threshold)
Entries 3120160
ADC
QT Input Channel

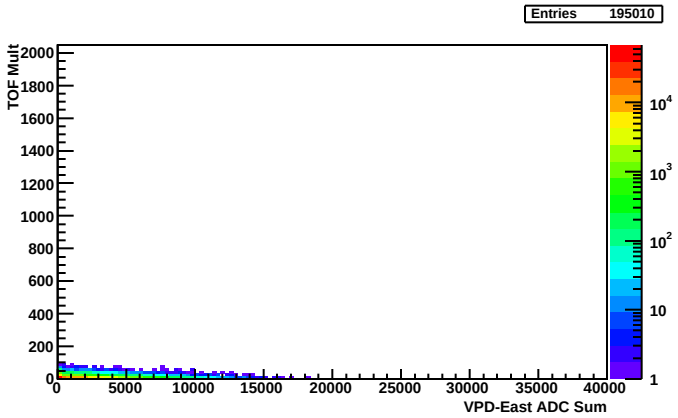

BBQ-VP004 (HI threshold)
Entries 3120160
TAC
QT Input Channel

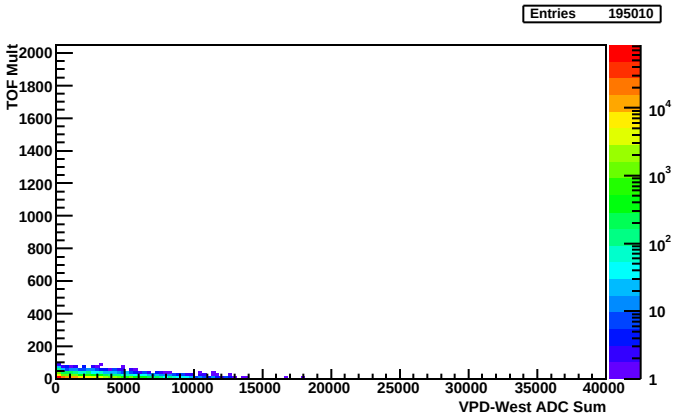

Entries 195010
TOF Mult
BBC-L-East ADC Sum

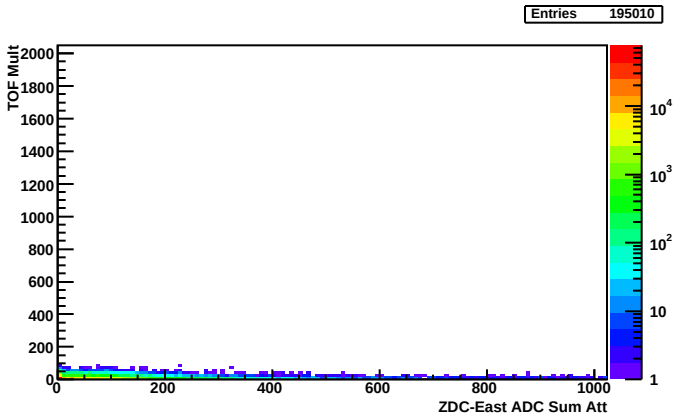

Entries 195010
TOF Mult
BBC-L-West ADC Sum

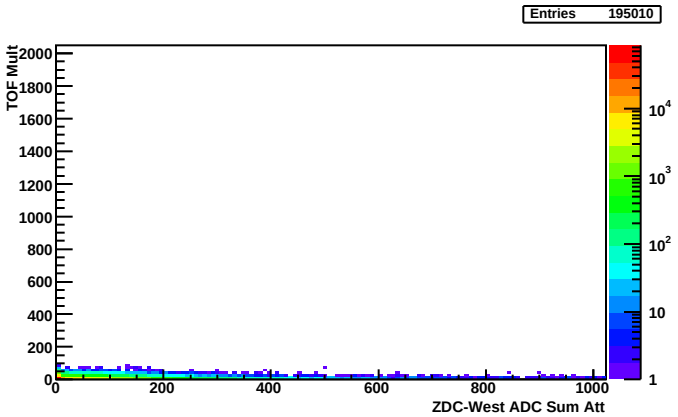

Entries 195010
TOF Mult
BBC-S-East ADC Sum

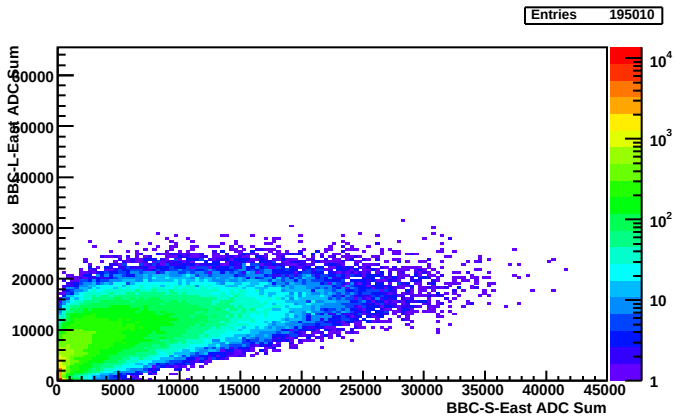

Entries 195010
TOF Mult
BBC-S-West ADC Sum

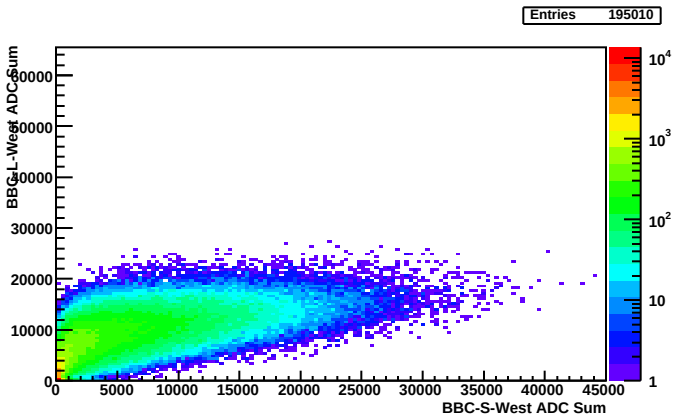

Entries 195010
TOF Mult
VPD-East ADC Sum

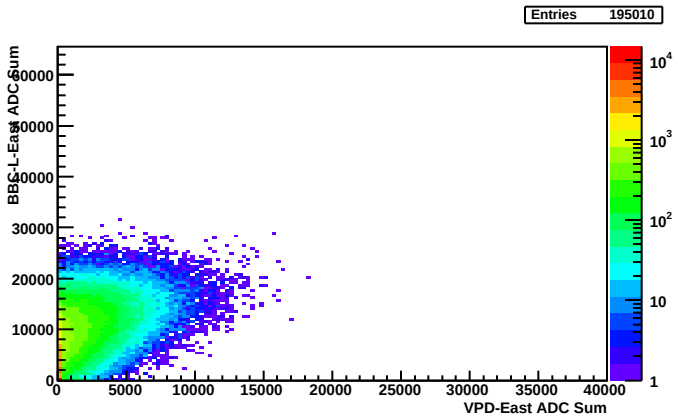

Entries 195010
TOF Mult
VPD-West ADC Sum

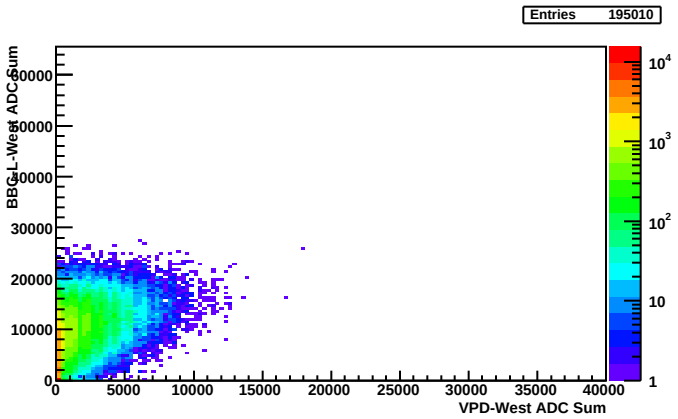

Entries 195010
TOF Mult
ZDC-East ADC Sum Att

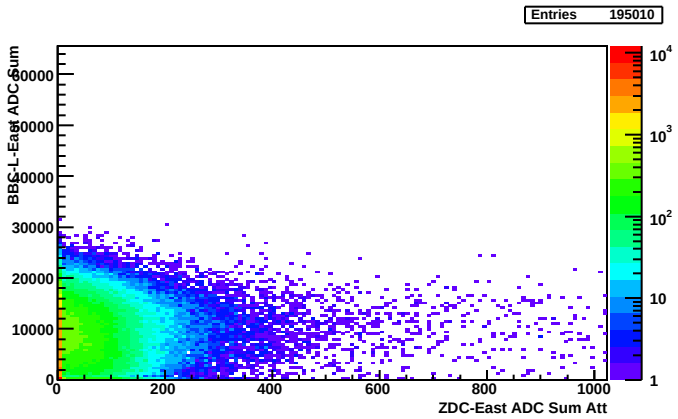

Entries 195010
TOF Mult
ZDC-West ADC Sum Att

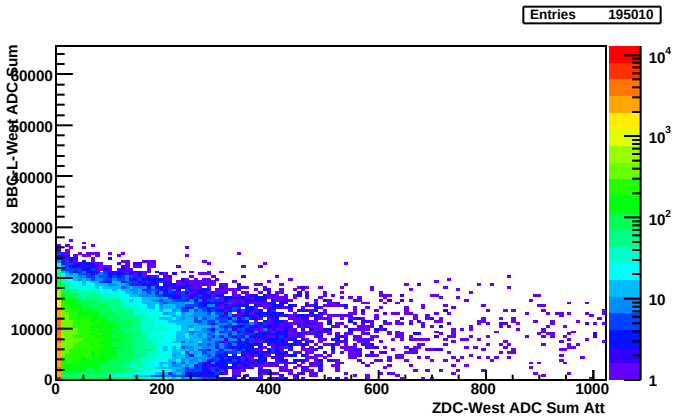

Entries 195010
BBC-L-East ADC Sum
BBC-S-East ADC Sum

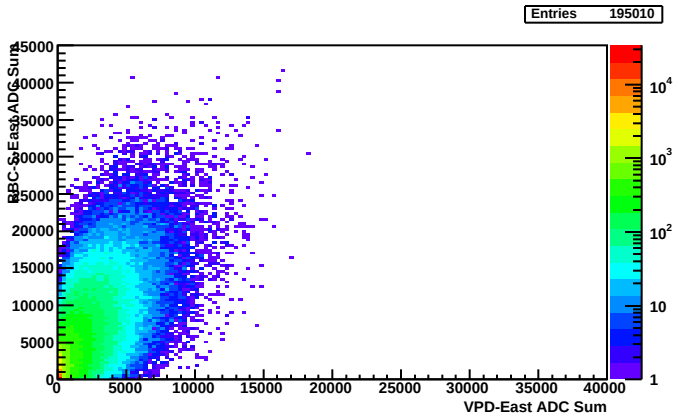

Entries 195010
BBC-L-West ADC Sum
BBC-S-West ADC Sum

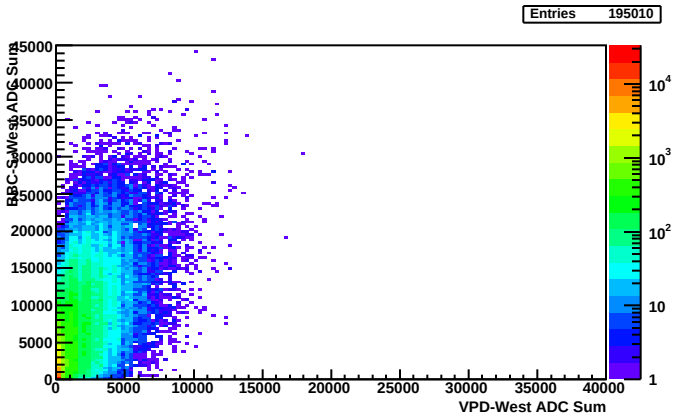

Entries 195010
BBC-L-East ADC Sum
VPD-East ADC Sum

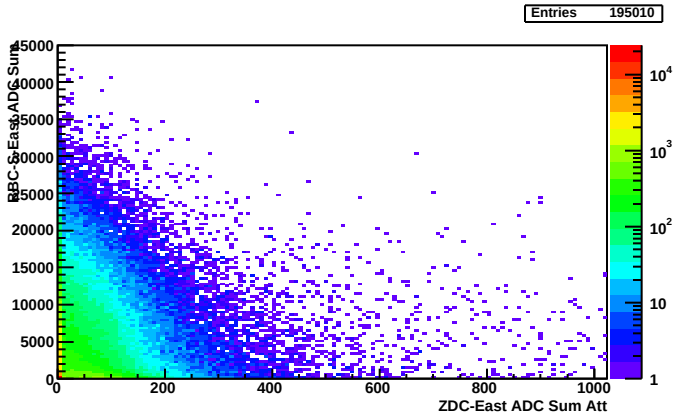

Entries 195010
BBC-L-West ADC Sum
VPD-West ADC Sum

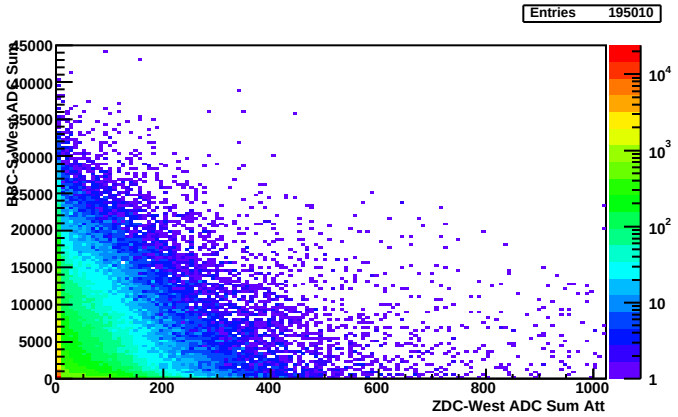

Entries 195010
BBC-L-East ADC Sum
ZDC-East ADC Sum Att

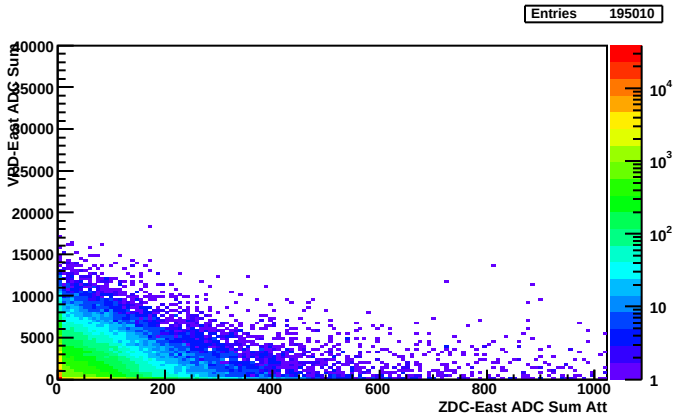

Entries 195010
BBC-L-West ADC Sum
ZDC-West ADC Sum Att

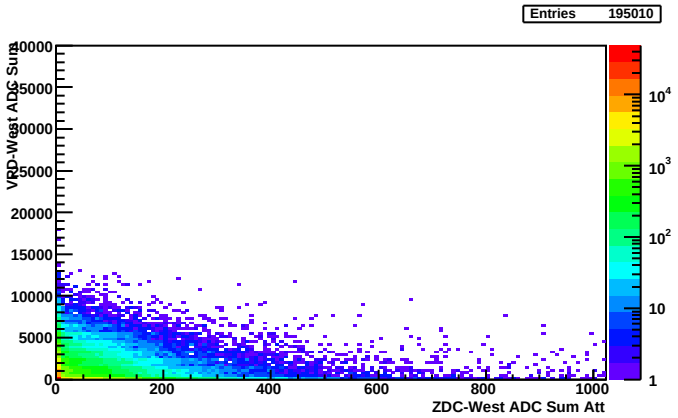

Entries 195010
BBC-S-East ADC Sum
VPD-East ADC Sum

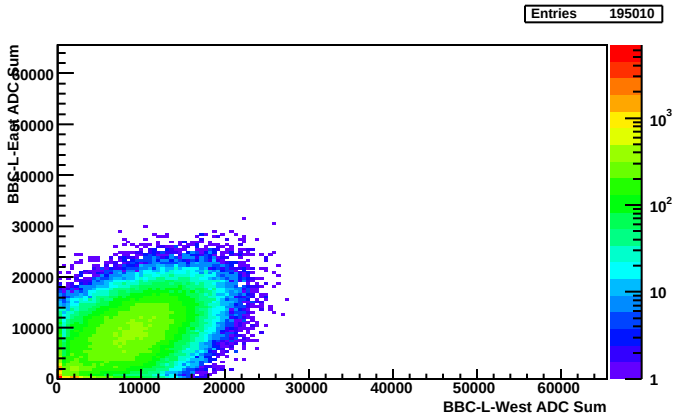

Entries 195010
BBC-S-West ADC Sum
VPD-West ADC Sum

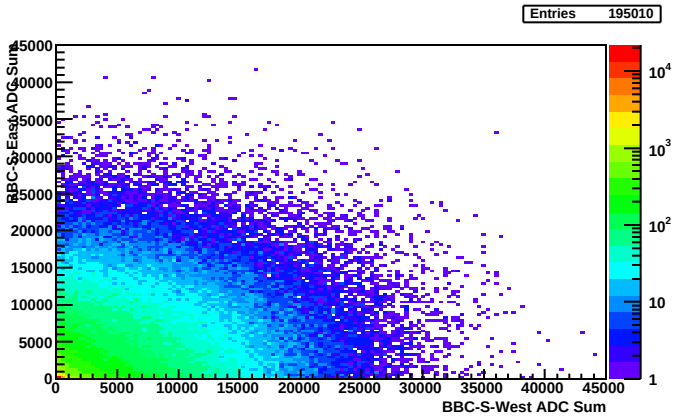

Entries 195010
BBC-S-East ADC Sum
ZDC-East ADC Sum Att

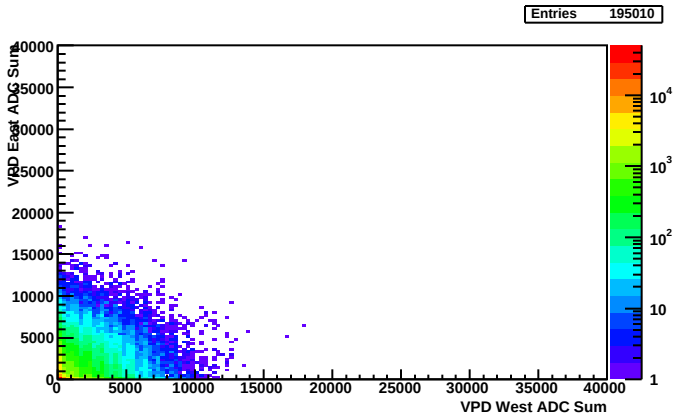

Entries 195010
BBC-S-West ADC Sum
ZDC-West ADC Sum Att

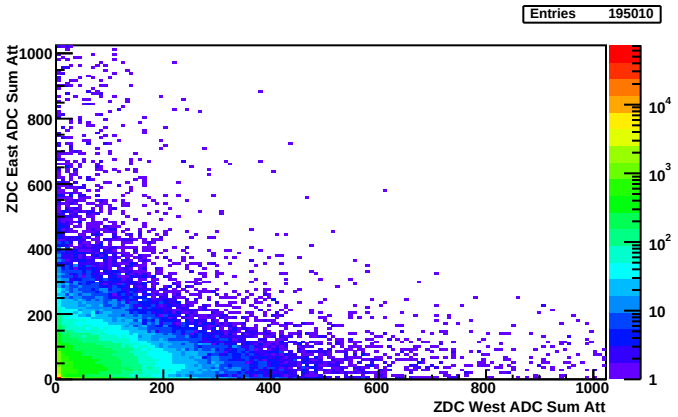

Entries 195010
VPD-East ADC Sum
ZDC-East ADC Sum Att

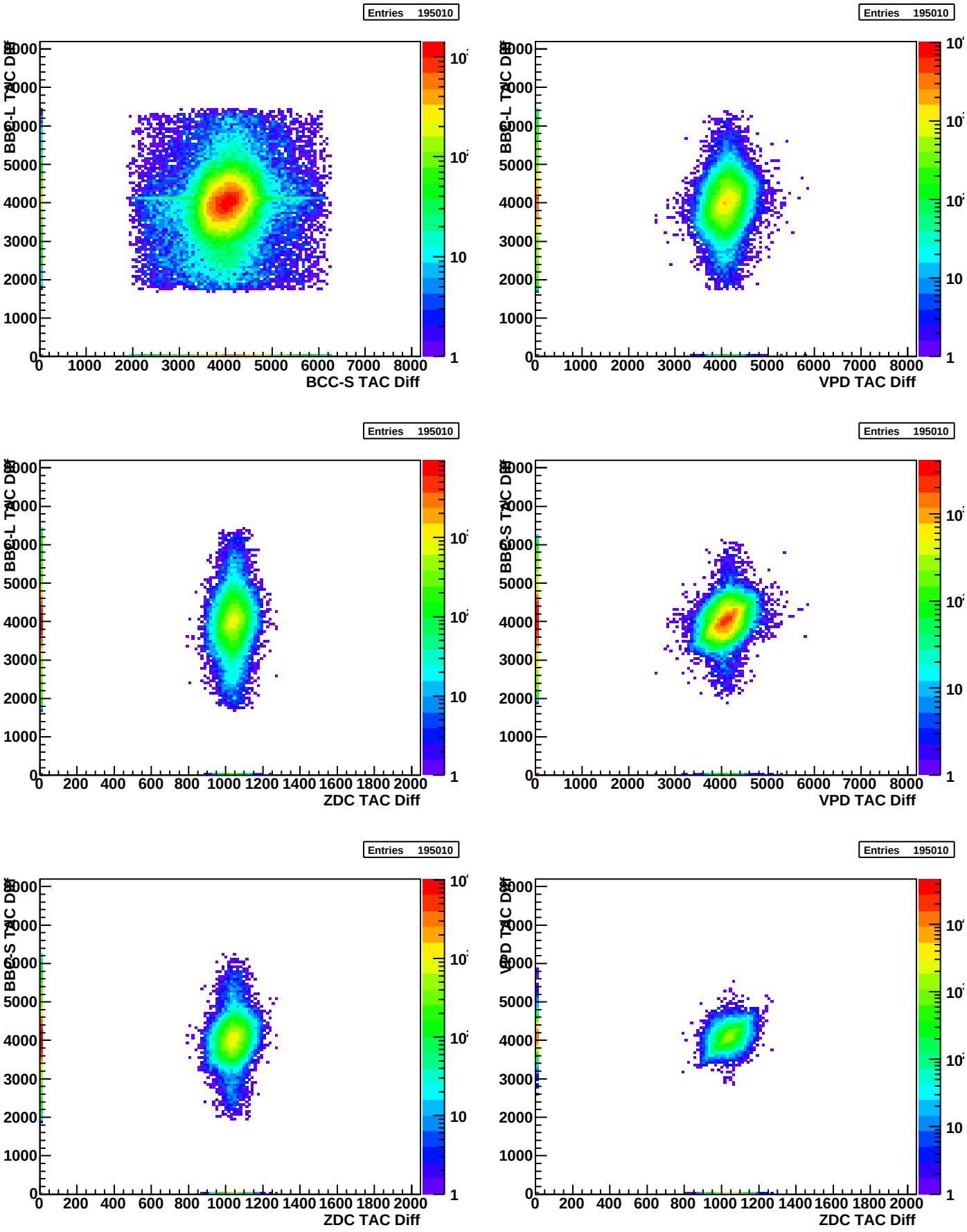

Entries 195010
VPD-West ADC Sum
ZDC-West ADC Sum Att

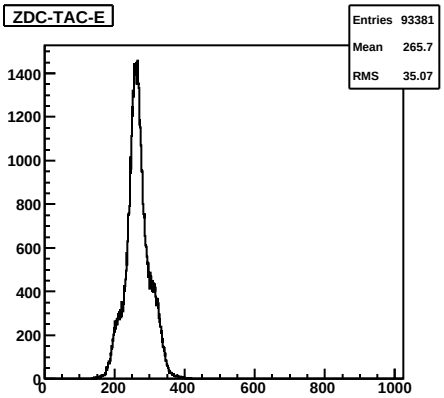

Entries 195010
BBC-L-East ADC Sum
BBC-L-West ADC Sum

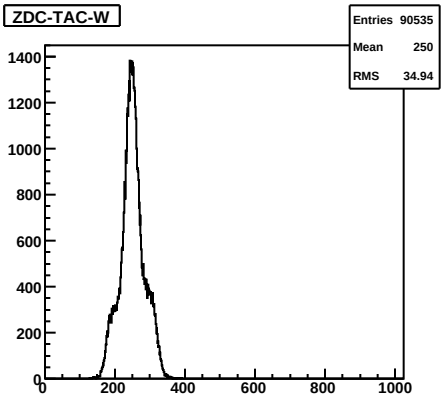

Entries 195010
BBC-S-East ADC Sum
BBC-S-West ADC Sum

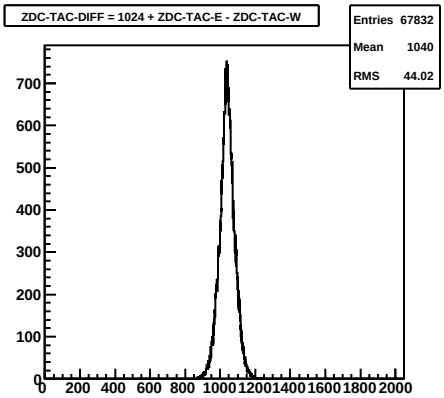

Entries 195010
VPD East ADC Sum
VPD West ADC Sum

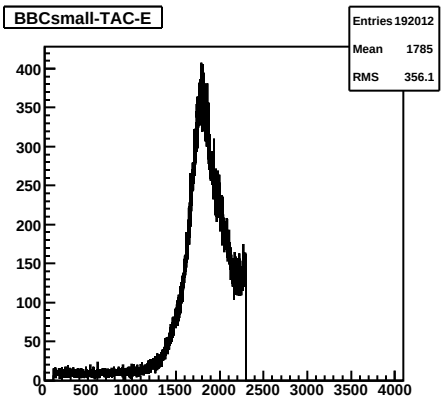

Entries 195010
ZDC East ADC Sum Att
ZDC West ADC Sum Att

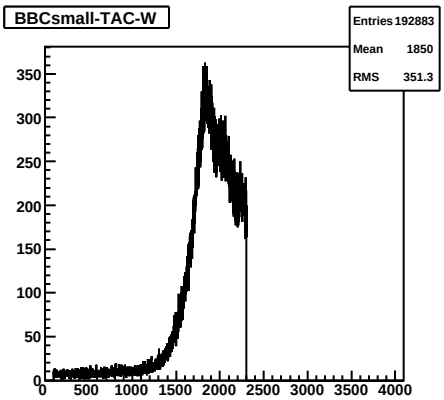

Entries 195010
BBC-L TAC Diff
BCC-S TAC Diff
Entries 195010
BBC-L TAC Diff
VPD TAC Diff
Entries 195010
BBC-L TAC Diff
ZDC TAC Diff
Entries 195010
BBC-S TAC Diff
VPD TAC Diff
Entries 195010
BBC-S TAC Diff
ZDC TAC Diff
Entries 195010
VPD TAC Diff
ZDC TAC Diff

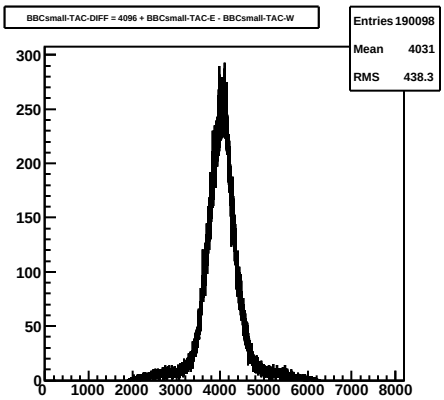

ZDC-TAC-E
Entries 93381
Mean 265.7
RMS 35.07

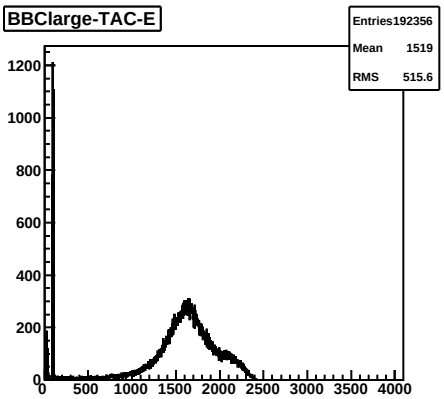

ZDC-TAC-W
Entries 90535
Mean 250
RMS 34.94

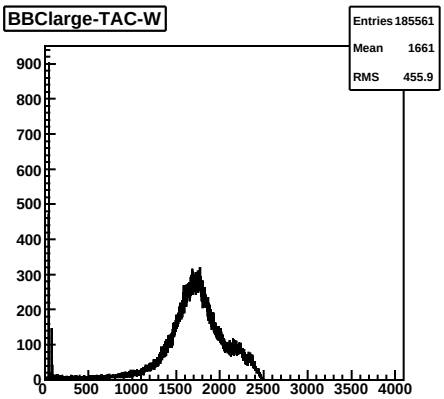

ZDC-TAC-DIFF = 1024 + ZDC-TAC-E - ZDC-TAC-W
Entries 67832
Mean 1040
RMS 44.02

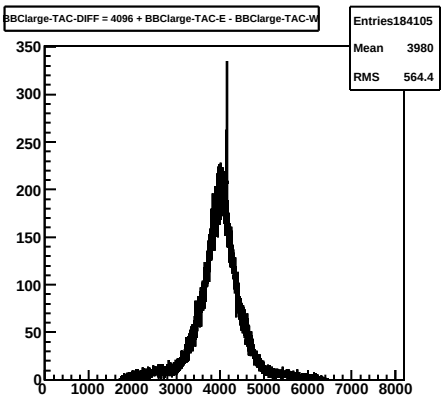

BBCsmall-TAC-E
Entries 192012
Mean 1785
RMS 356.1

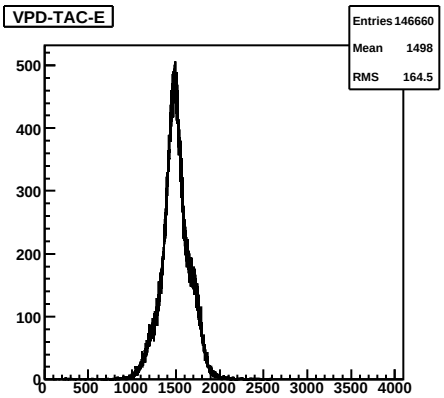

BBCsmall-TAC-W
Entries 192883
Mean 1850
RMS 351.3

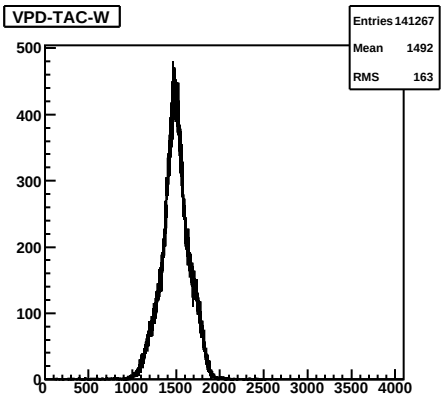

BBCsmall-TAC-DIFF = 4096 + BBCsmall-TAC-E - BBCsmall-TAC-W
Entries 190098
Mean 4031
RMS 438.3

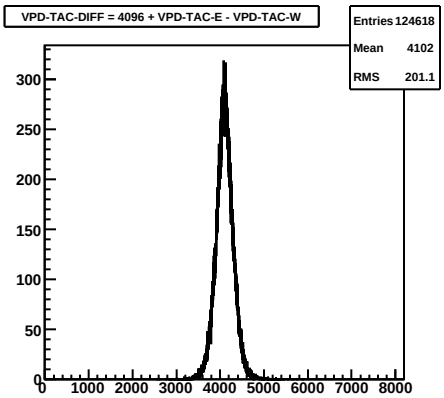

BBClarge-TAC-E
Entries 192356
Mean 1519
RMS 515.6

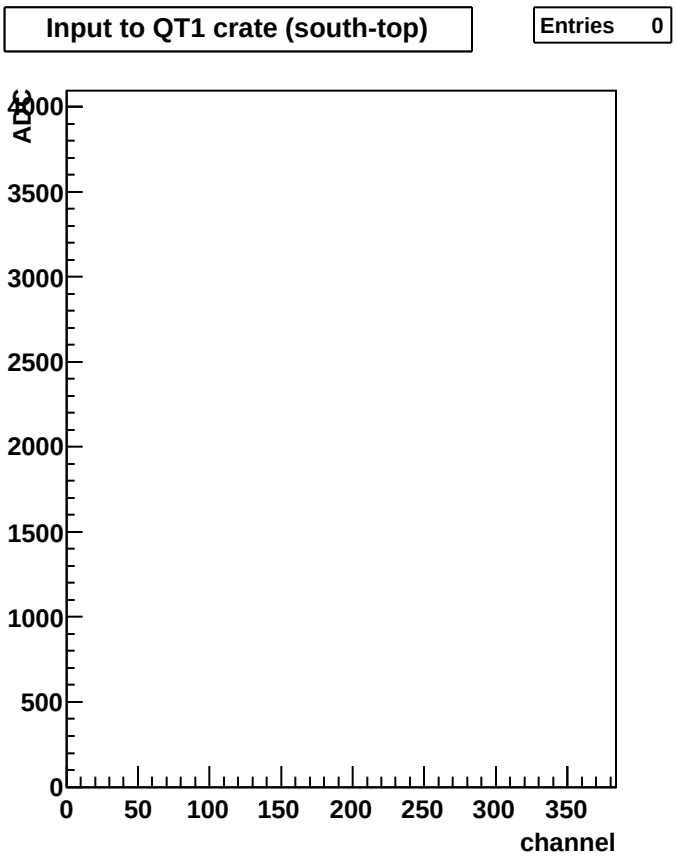

BBClarge-TAC-W
Entries 185561
Mean 1661
RMS 455.9

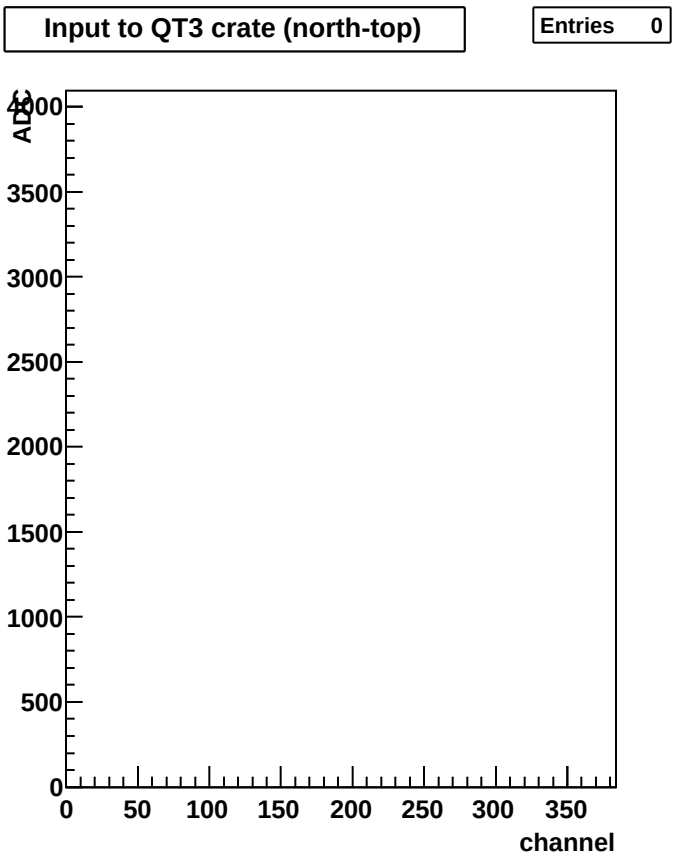

BBClarge-TAC-DIFF = 4096 + BBClarge-TAC-E - BBClarge-TAC-W
Entries 184105
Mean 3980
RMS 564.4

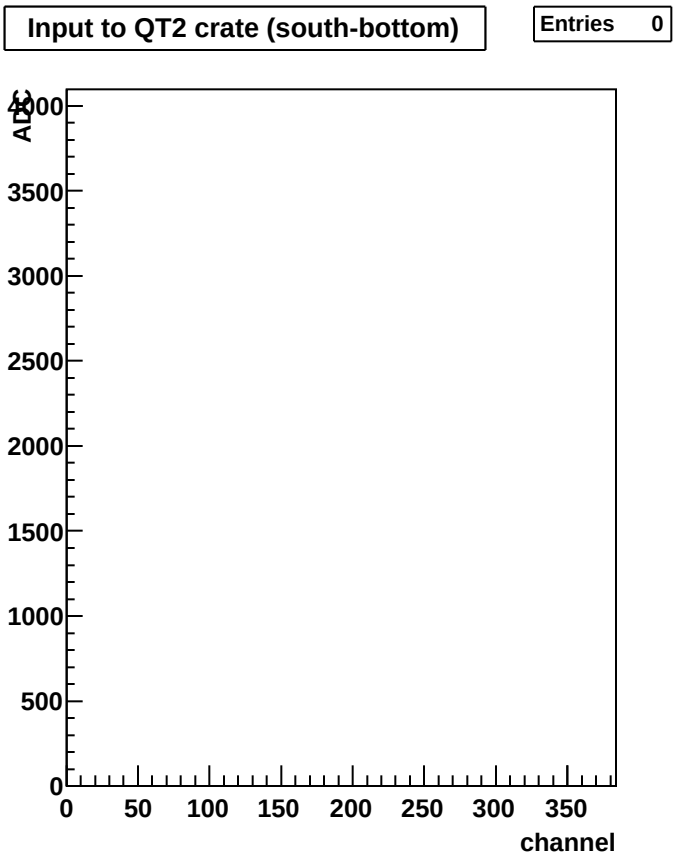

VPD-TAC-E
Entries 146660
Mean 1498
RMS 164.5

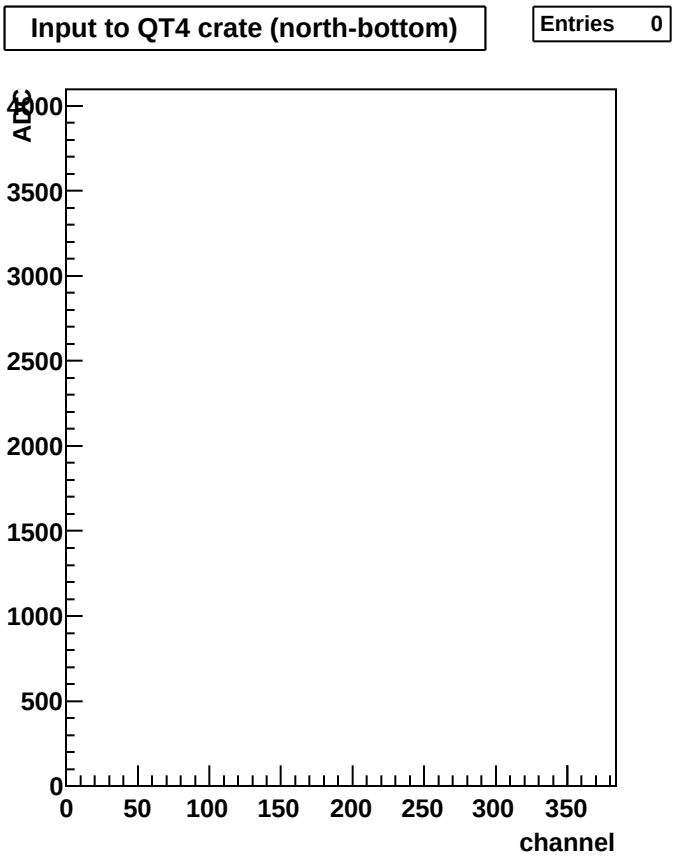

VPD-TAC-W
Entries 141267
Mean 1492
RMS 163

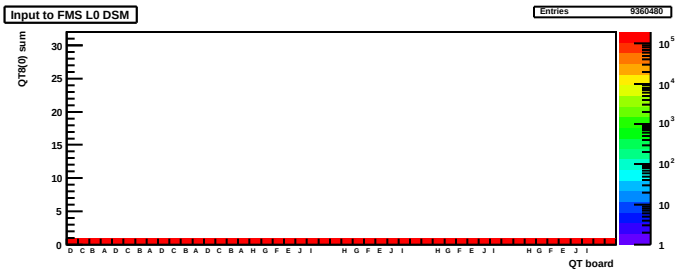

VPD-TAC-DIFF = 4096 + VPD-TAC-E - VPD-TAC-W
Entries 124618
Mean 4102
RMS 201.1

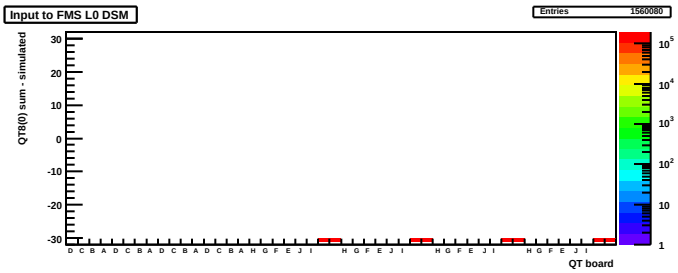

Input to QT1 crate (south-top)
Entries 0
ADC
4000
3500
3000
2500
2000
1500
1000
500
0
0 50 100 150 200 250 300 350
channel

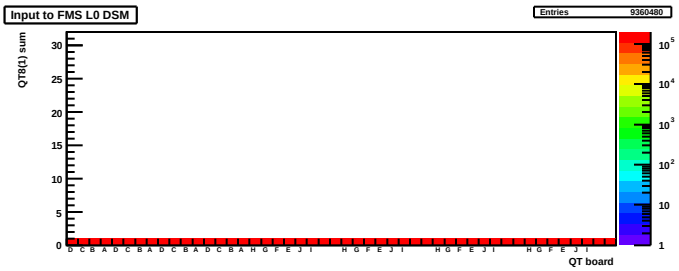

Input to QT3 crate (north-top)
Entries 0
ADC
4000
3500
3000
2500
2000
1500
1000
500
0
0 50 100 150 200 250 300 350
channel

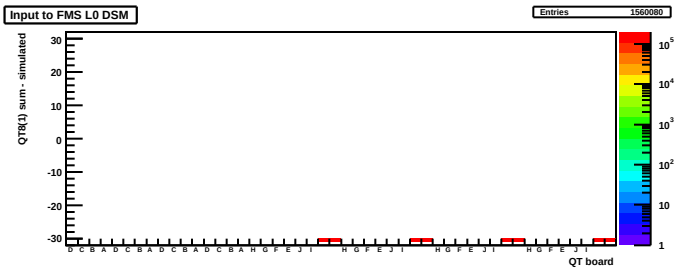

Input to QT2 crate (south-bottom)
Entries 0
ADC
4000
3500
3000
2500
2000
1500
1000
500
0
0 50 100 150 200 250 300 350
channel

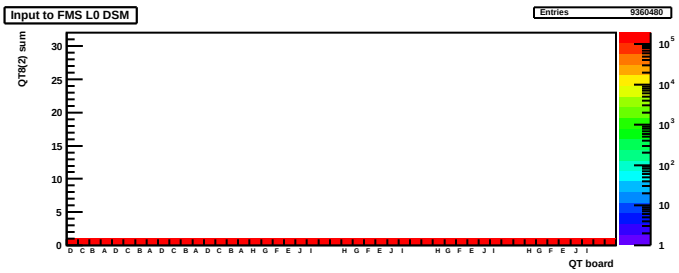

Input to QT4 crate (north-bottom)
Entries 0
ADC
4000
3500
3000
2500
2000
1500
1000
500
0
0 50 100 150 200 250 300 350
channel

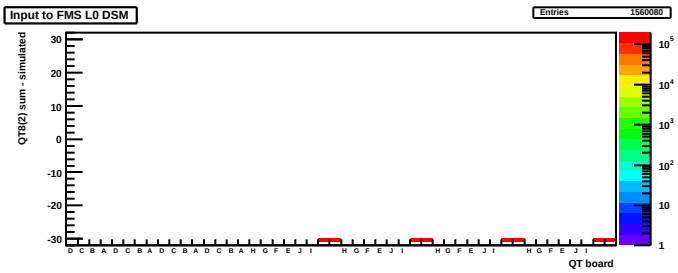

Input to FMS L0 DSM
Entries 9360480
QT8(0) sum
QT board

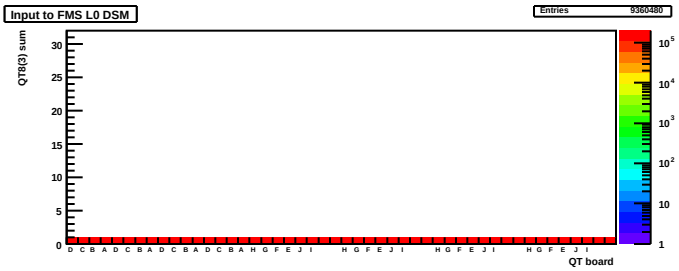

Input to FMS L0 DSM
Entries 1560080
QT8(0) sum - simulated
QT board

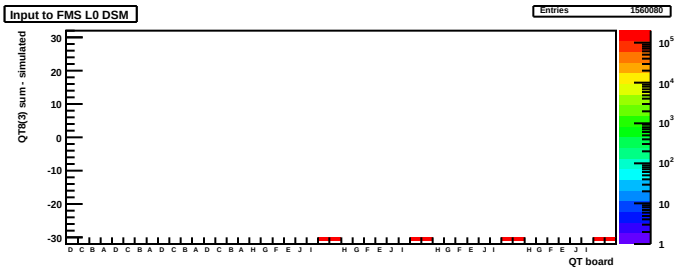

Input to FMS L0 DSM
Entries 9360480
QT8(1) sum
QT board

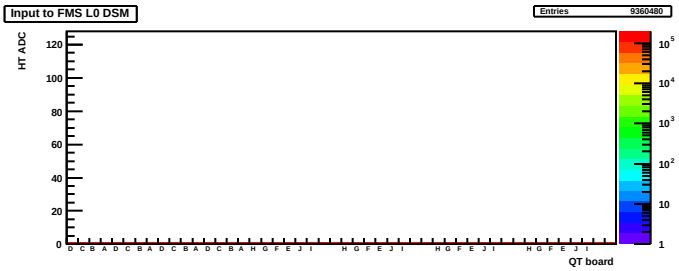

Input to FMS L0 DSM
Entries 1560080
QT8(1) sum - simulated
QT board

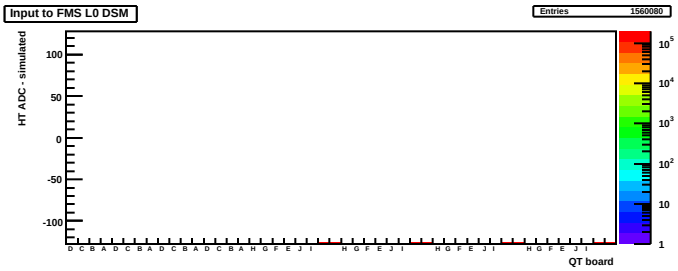

Input to FMS L0 DSM
Entries 9360480
QT8(2) sum
QT board

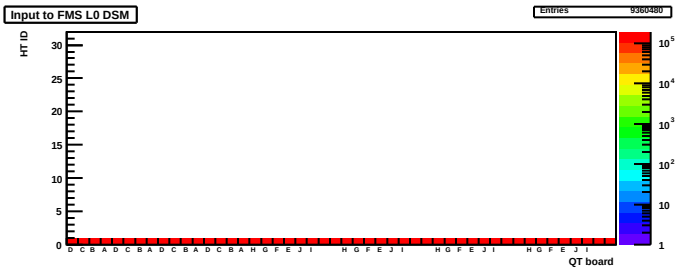

Input to FMS L0 DSM
Entries 1560080
QT8(2) sum - simulated
QT board

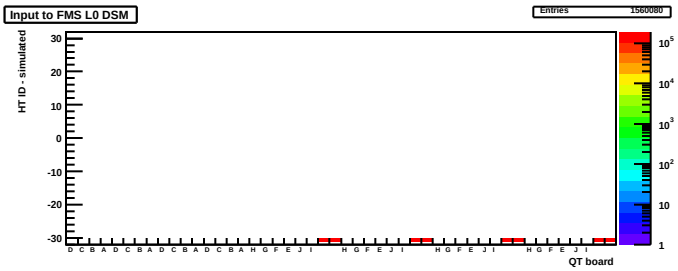

Input to FMS L0 DSM
Entries 9360480
QT8(3) sum
QT board

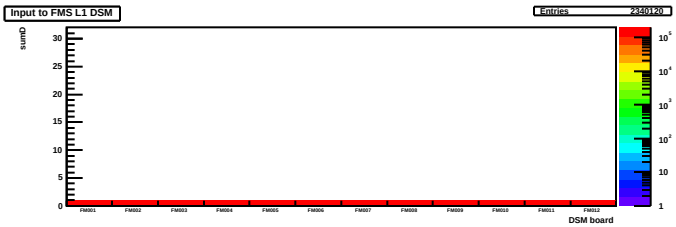

Input to FMS L0 DSM
Entries 1560080
QT8(3) sum - simulated
QT board

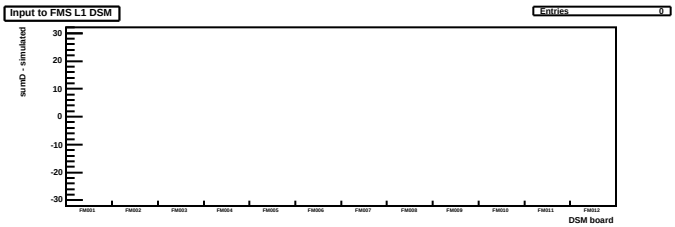

Input to FMS L0 DSM
Entries 9360480
HT ADC
QT board

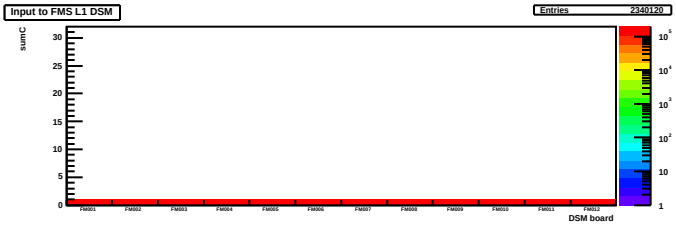

Input to FMS L0 DSM
Entries 1560080
HT ADC - simulated
QT board

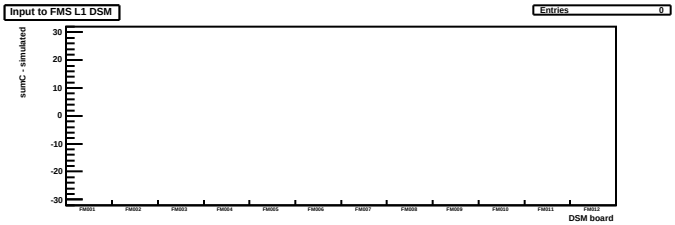

Input to FMS L0 DSM
Entries 9360480
HT ID
QT board

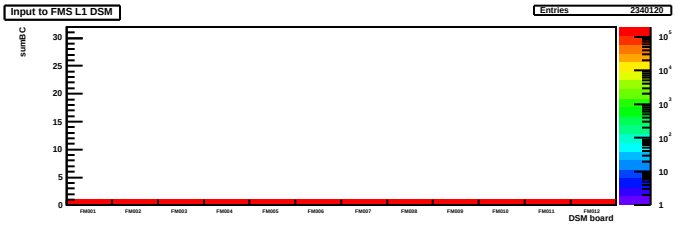

Input to FMS L0 DSM
Entries 1560080
HT ID - simulated
QT board

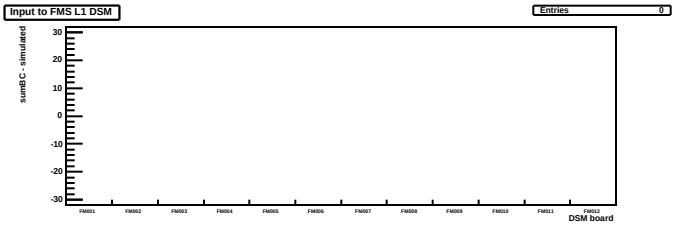

Input to FMS L1 DSM
Entries 2340120
sumD
DSM board

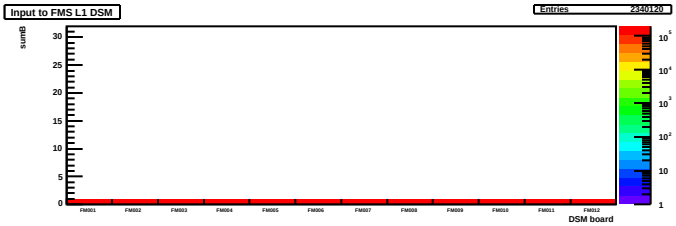

Input to FMS L1 DSM
Entries 0
sumD - simulated
DSM board

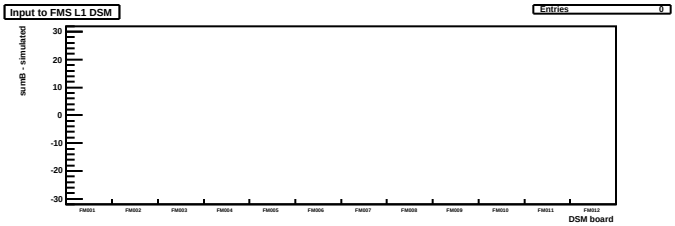

Input to FMS L1 DSM
Entries 2340120
sumC
DSM board

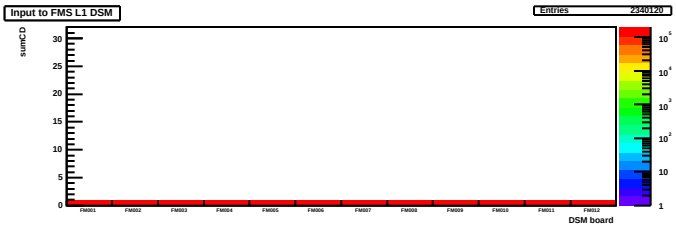

Input to FMS L1 DSM
Entries 0
sumC - simulated
DSM board

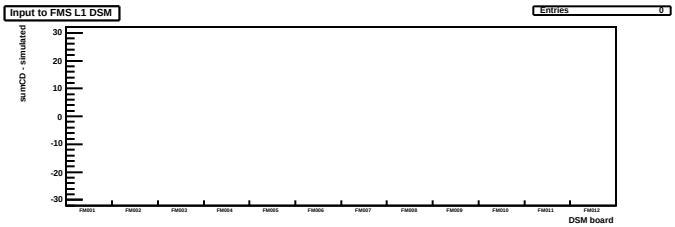

Input to FMS L1 DSM
Entries 2340120
sumBC
DSM board

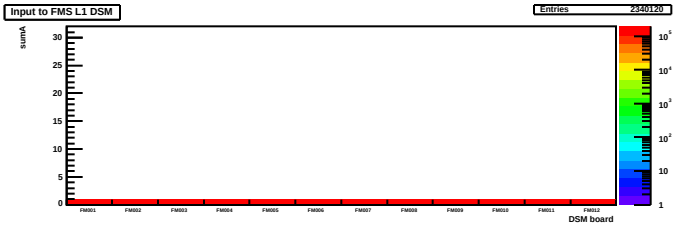

Input to FMS L1 DSM
Entries 0
sumBC - simulated
DSM board

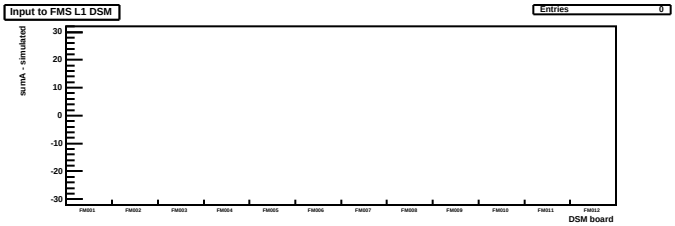

Input to FMS L1 DSM
Entries 2340120
sumB
DSM board

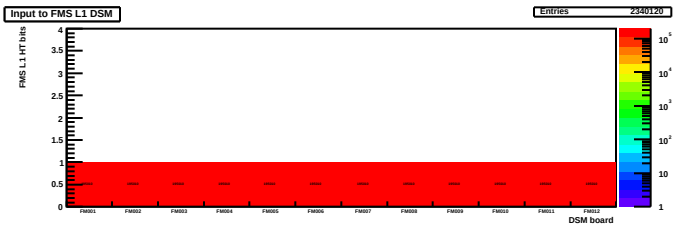

Input to FMS L1 DSM
Entries 0
sumB - simulated
DSM board

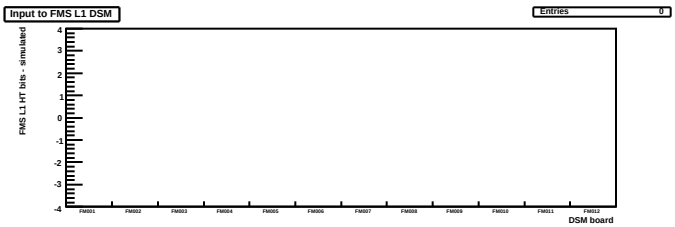

Input to FMS L1 DSM
Entries 2340120
sumCD
DSM board

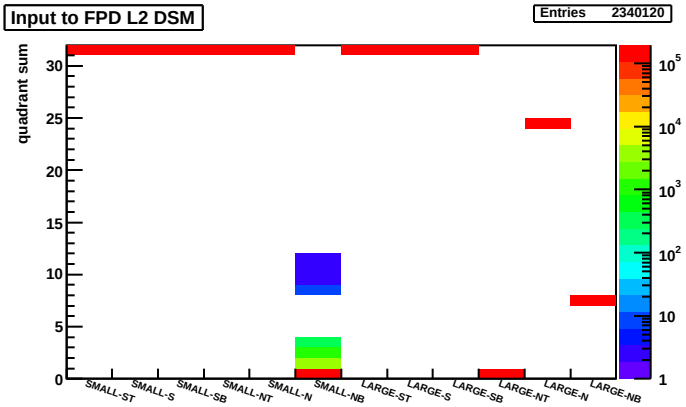

Input to FMS L1 DSM
Entries 0
sumCD - simulated
DSM board

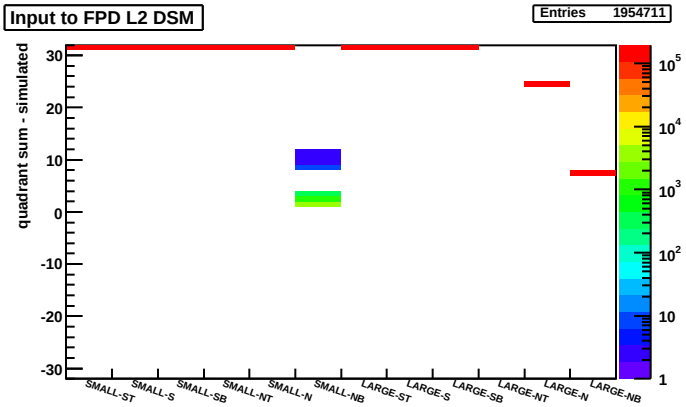

Input to FMS L1 DSM
Entries 2340120
sumA
DSM board

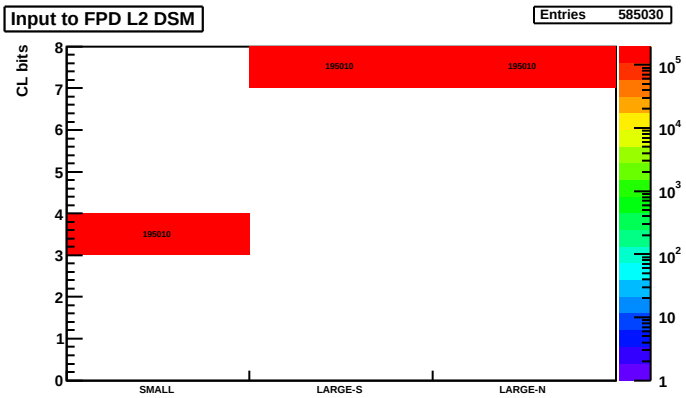

Input to FMS L1 DSM
Entries 0
sumA - simulated
DSM board

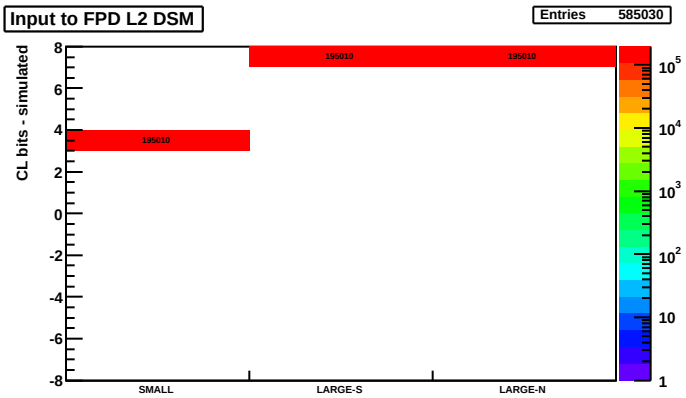

Input to FMS L1 DSM
Entries 2340120
FMS L1 HT bits
DSM board

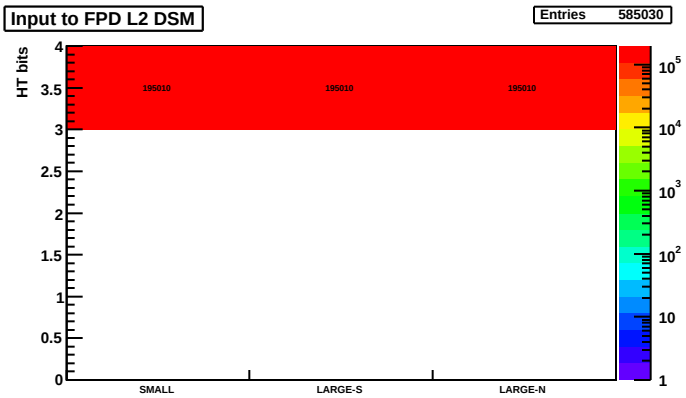

Input to FMS L1 DSM
Entries 0
FMS L1 HT bits - simulated
DSM board

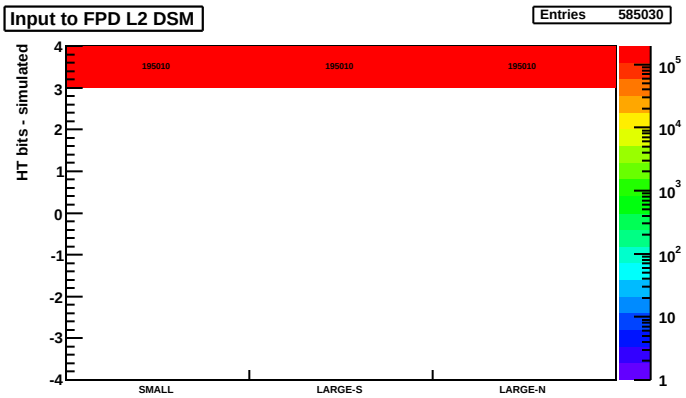

Input to FPD L2 DSM
Entries 2340120
quadrant sum
SMALL-ST
SMALL-S
SMALL-SB
SMALL-NT
SMALL-N
SMALL-NB
LARGE-ST
LARGE-S
LARGE-SB
LARGE-NT
LARGE-N
LARGE-NB

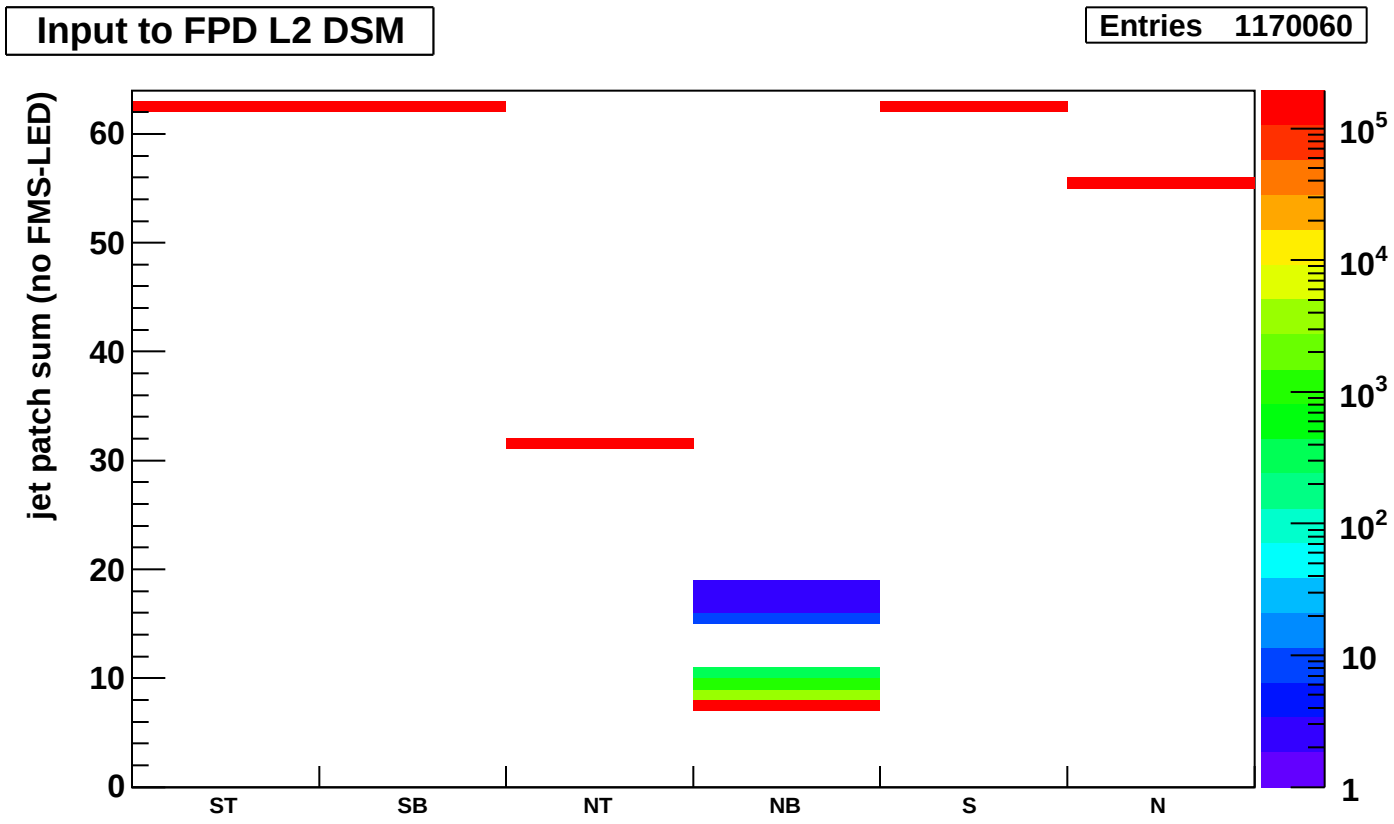

Input to FPD L2 DSM
Entries 1954711
quadrant sum - simulated
SMALL-ST
SMALL-S
SMALL-SB
SMALL-NT
SMALL-N
SMALL-NB
LARGE-ST
LARGE-S
LARGE-SB
LARGE-NT
LARGE-N
LARGE-NB

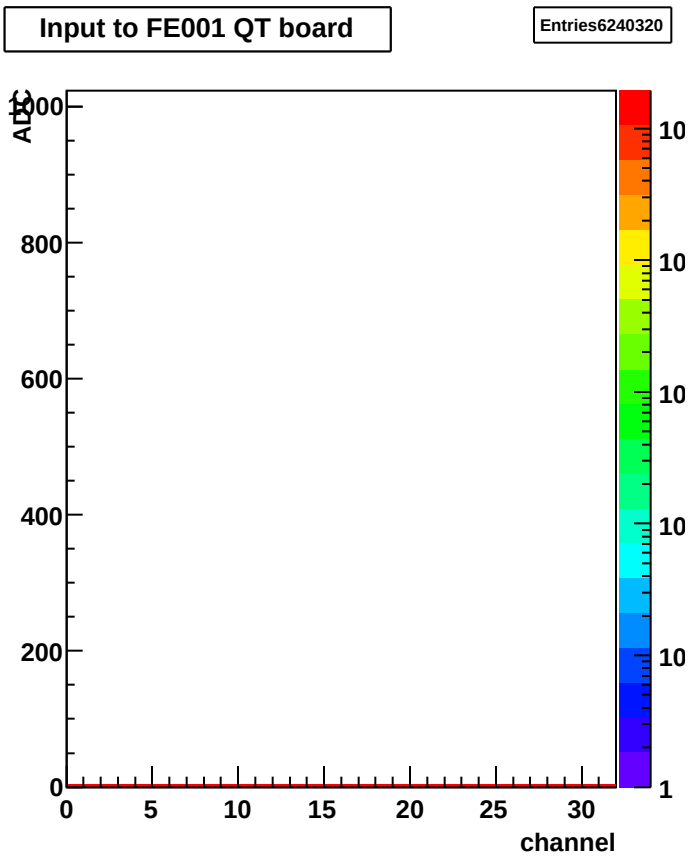

Input to FPD L2 DSM
Entries 585030
CL bits
195010
195010
195010
SMALL
LARGE-S
LARGE-N

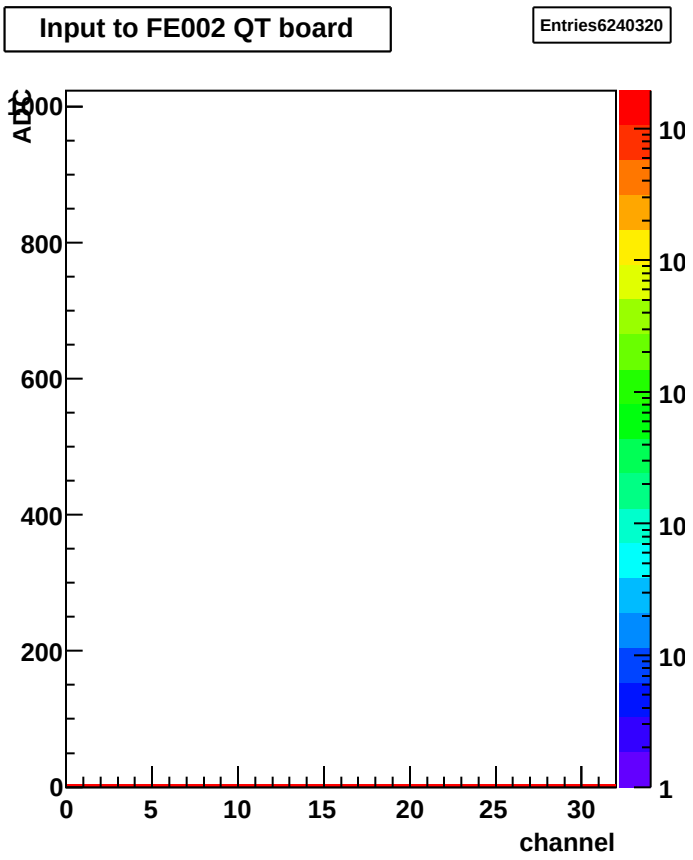

Input to FPD L2 DSM
Entries 585030
CL bits - simulated
195010
195010
195010
SMALL
LARGE-S
LARGE-N

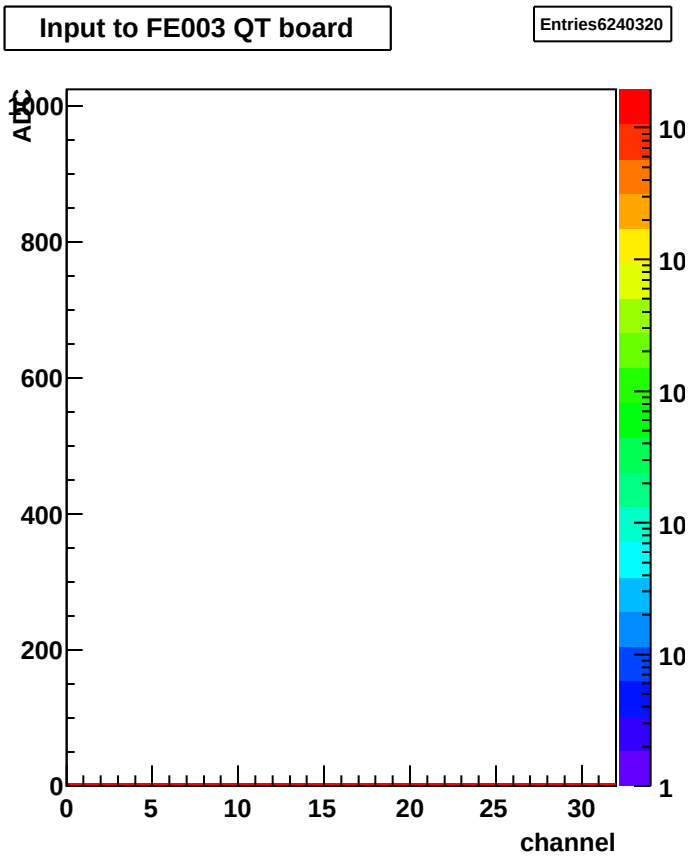

Input to FPD L2 DSM
Entries 585030
HT bits
195010
195010
195010
SMALL
LARGE-S
LARGE-N

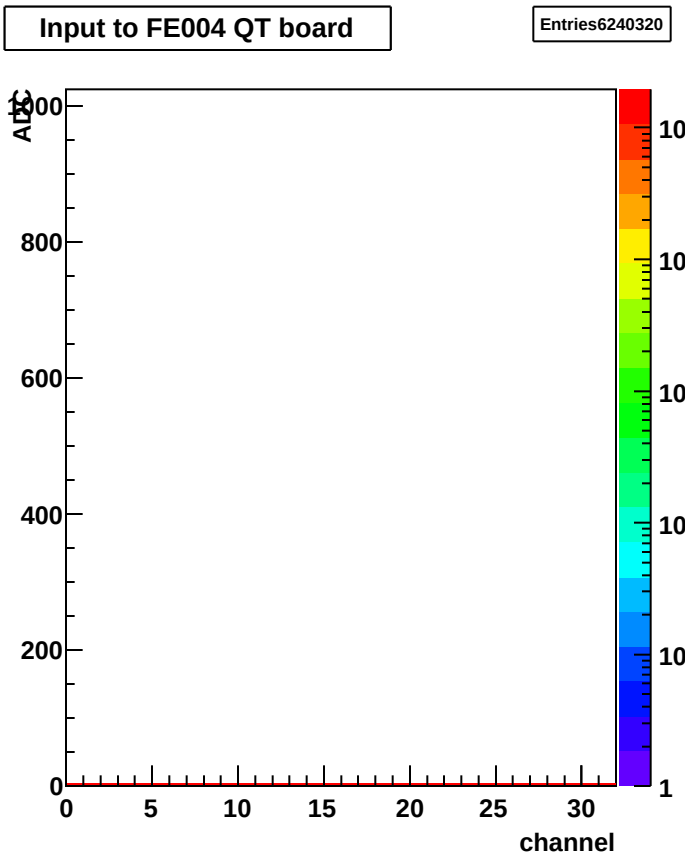

Input to FPD L2 DSM
Entries 585030
HT bits - simulated
195010
195010
195010
SMALL
LARGE-S
LARGE-N

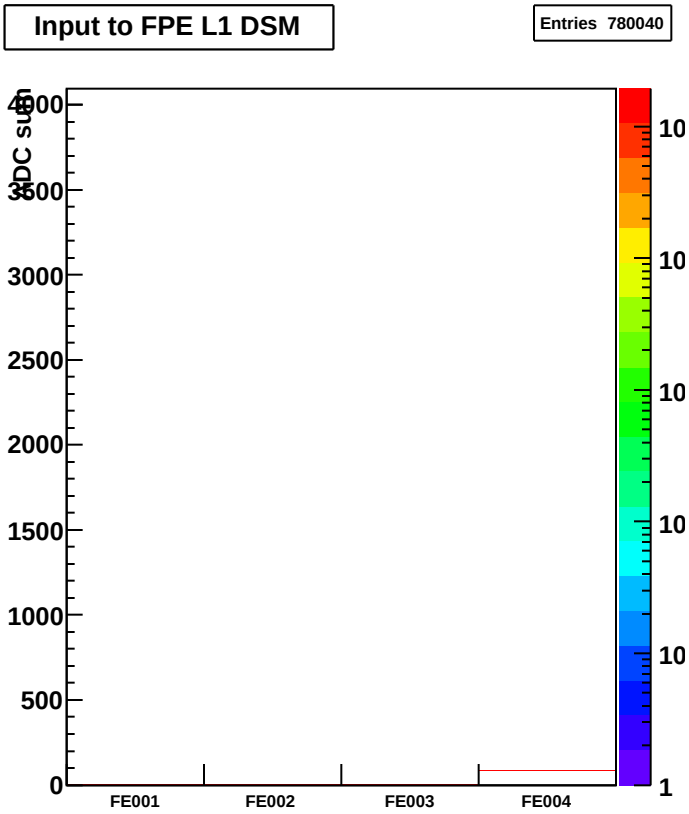

Input to FPD L2 DSM
Entries 1170060
jet patch sum (no FMS-LED)
0
10
20
30
40
50
60
ST
SB
NT
NB
S
N
1
10
10^2
10^3
10^4
10^5

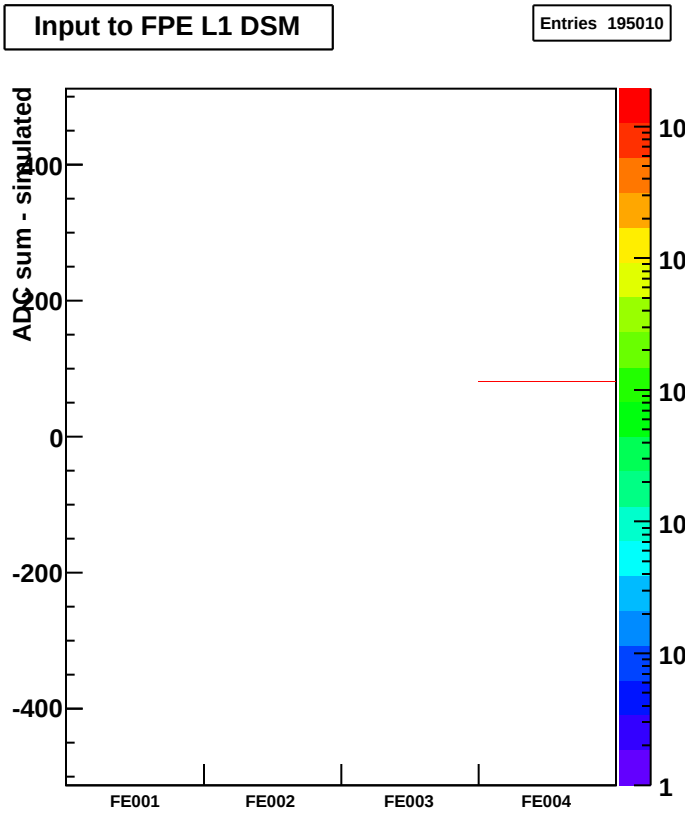

Input to FE001 QT board
Entries6240320
ADC
channel


Input to FE002 QT board
Entries6240320
ADC
channel

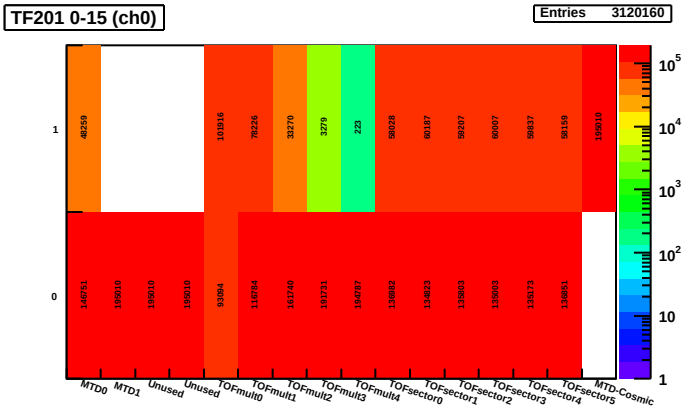

Input to FE003 QT board
Entries6240320
ADC
channel


Input to FE004 QT board
Entries6240320
ADC
channel

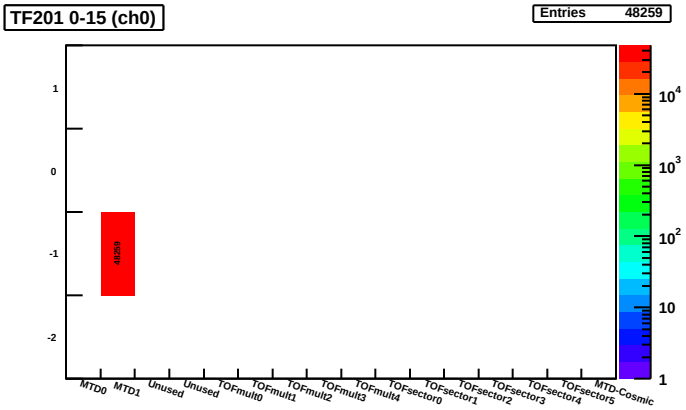

Input to FPE L1 DSM
Entries 780040
ADC sum
4000
3500
3000
2500
2000
1500
1000
500
0
FE001
FE002
FE003
FE004
10
10
10
10
10
1


Input to FPE L1 DSM
Entries 195010
ADC sum - simulated
0
-200
-400
FE001
FE002
FE003
FE004
10
10
10
10
10
1

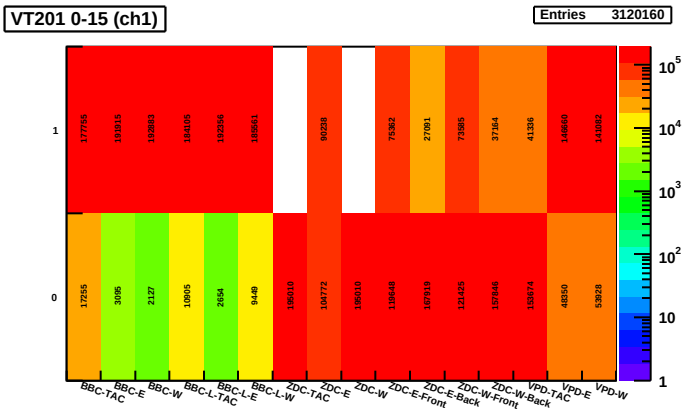
TF201 0-15 (ch0)



TF201 0-15 (ch0)



VT201 0-15 (ch1)



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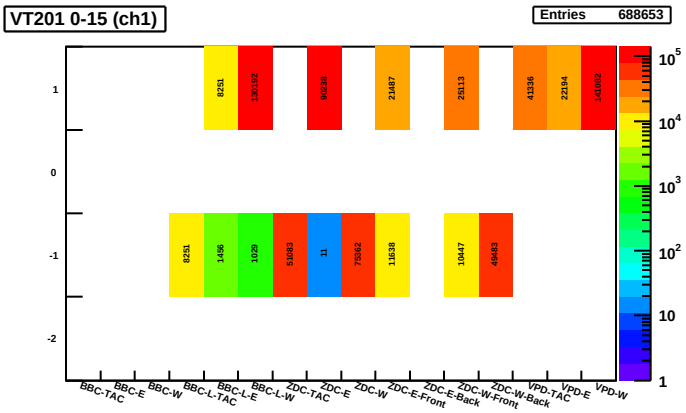

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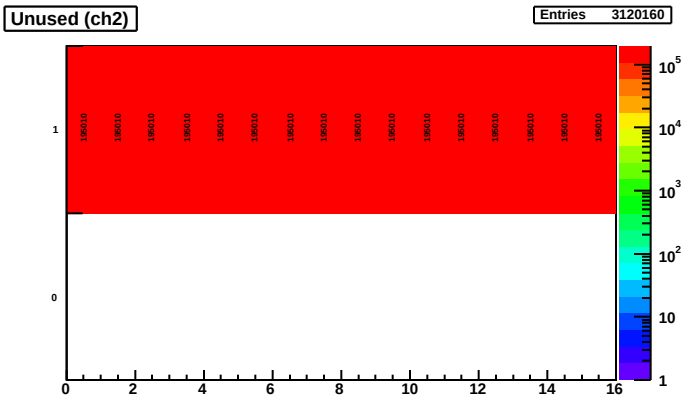

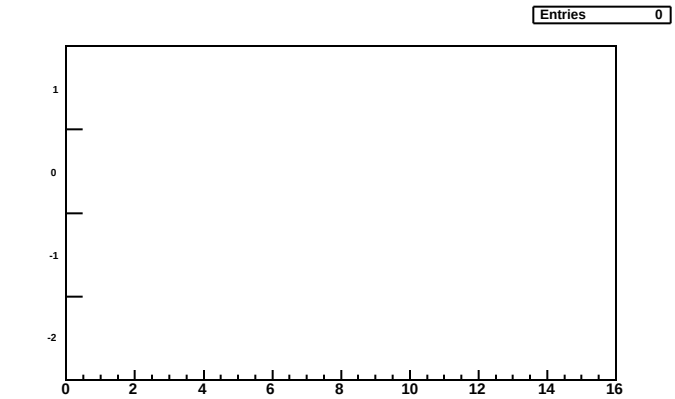

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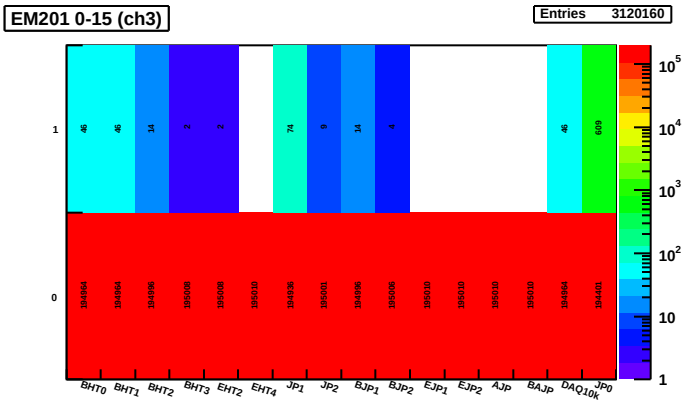

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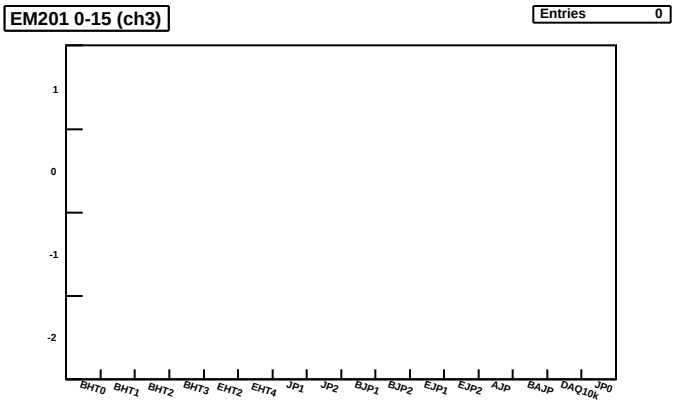
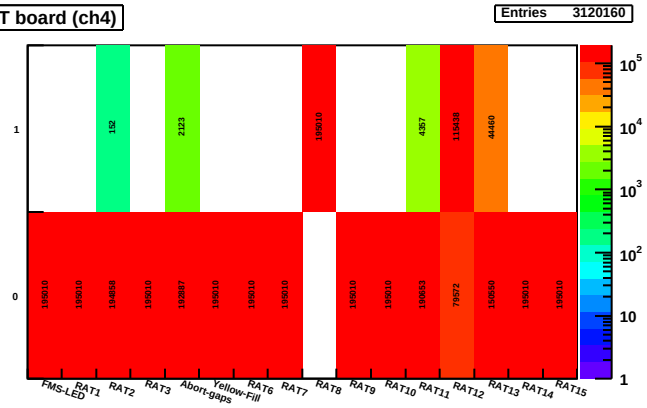
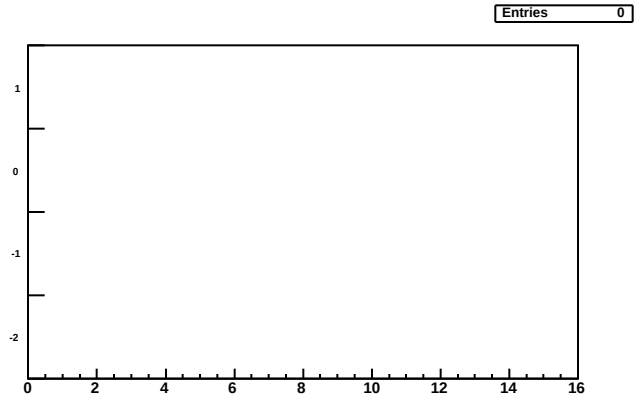
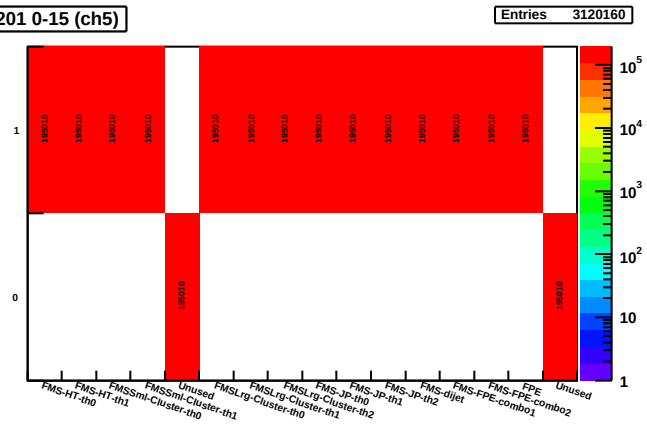


RAT board (ch4)

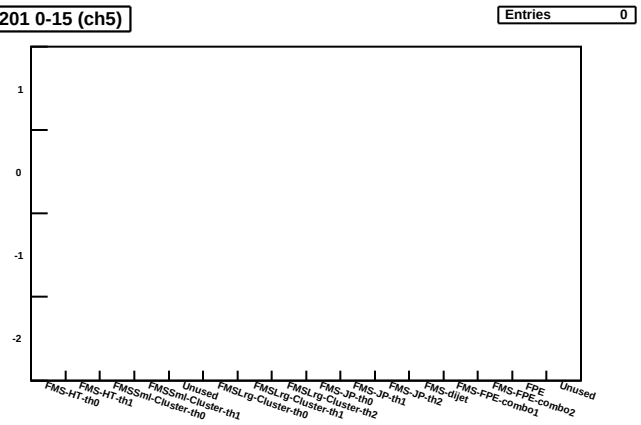




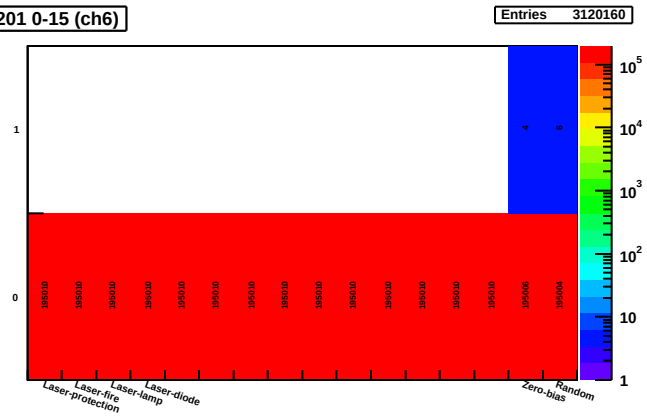
FP201 0-15 (ch5)

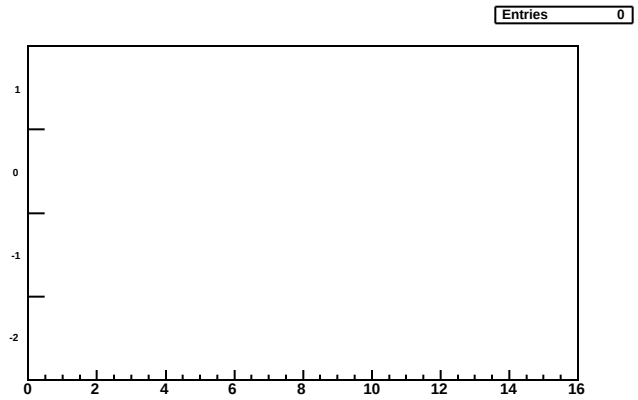
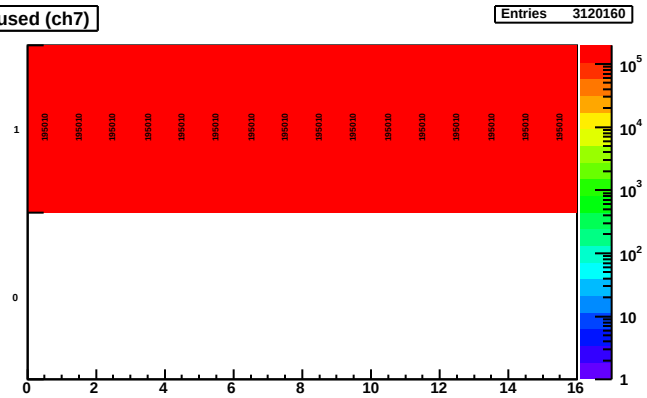
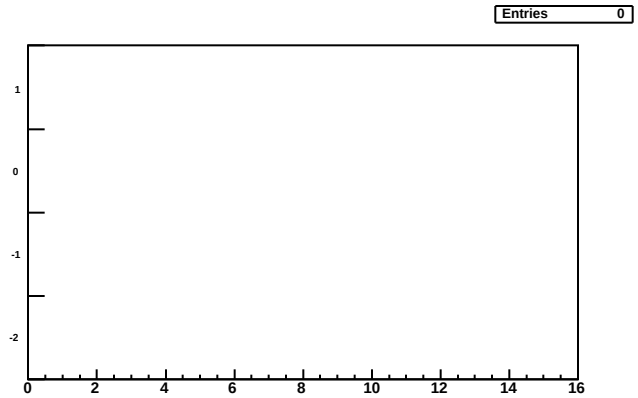


FP201 0-15 (ch5)



ST201 0-15 (ch6)





Unused (ch7)