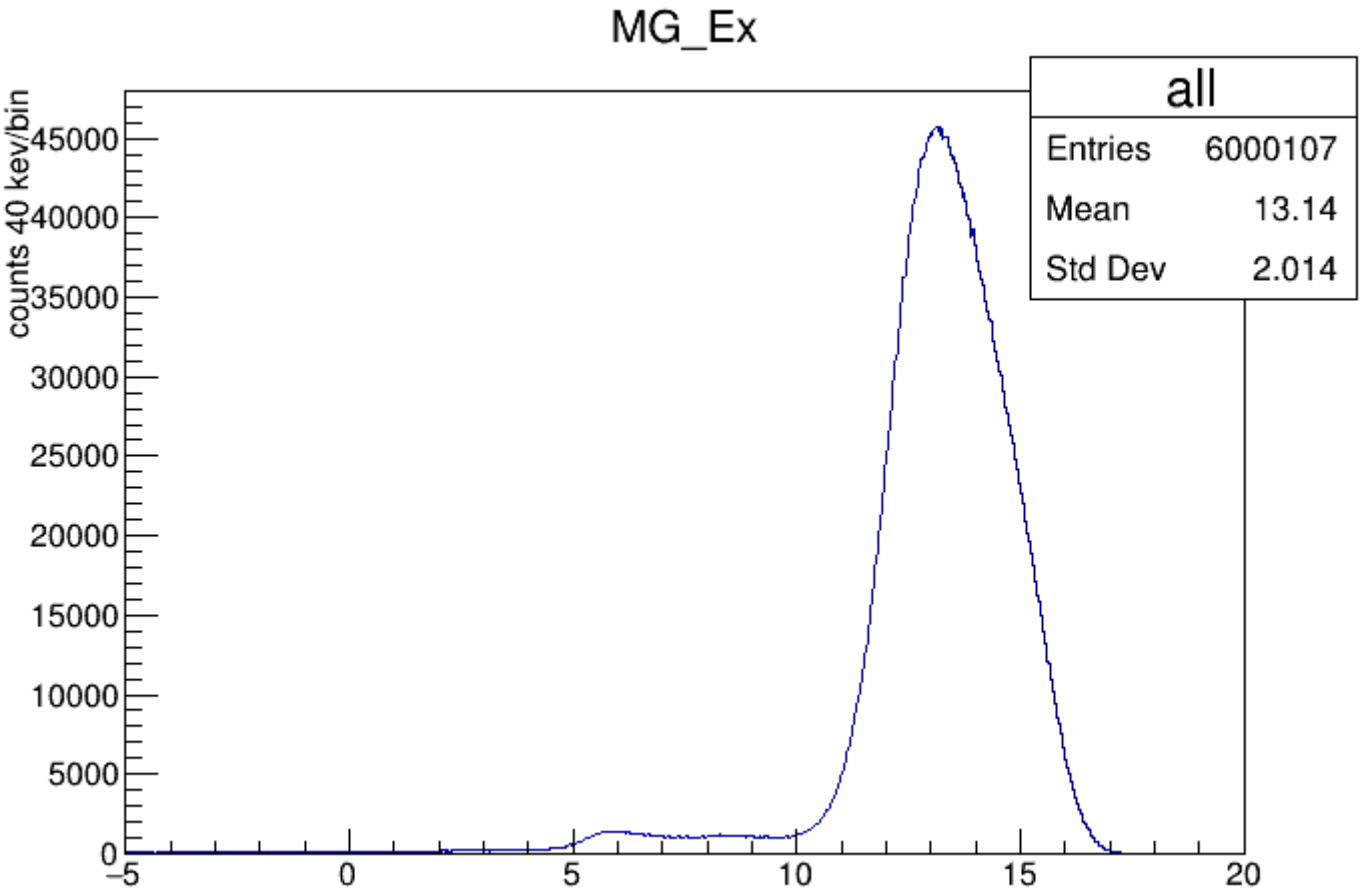
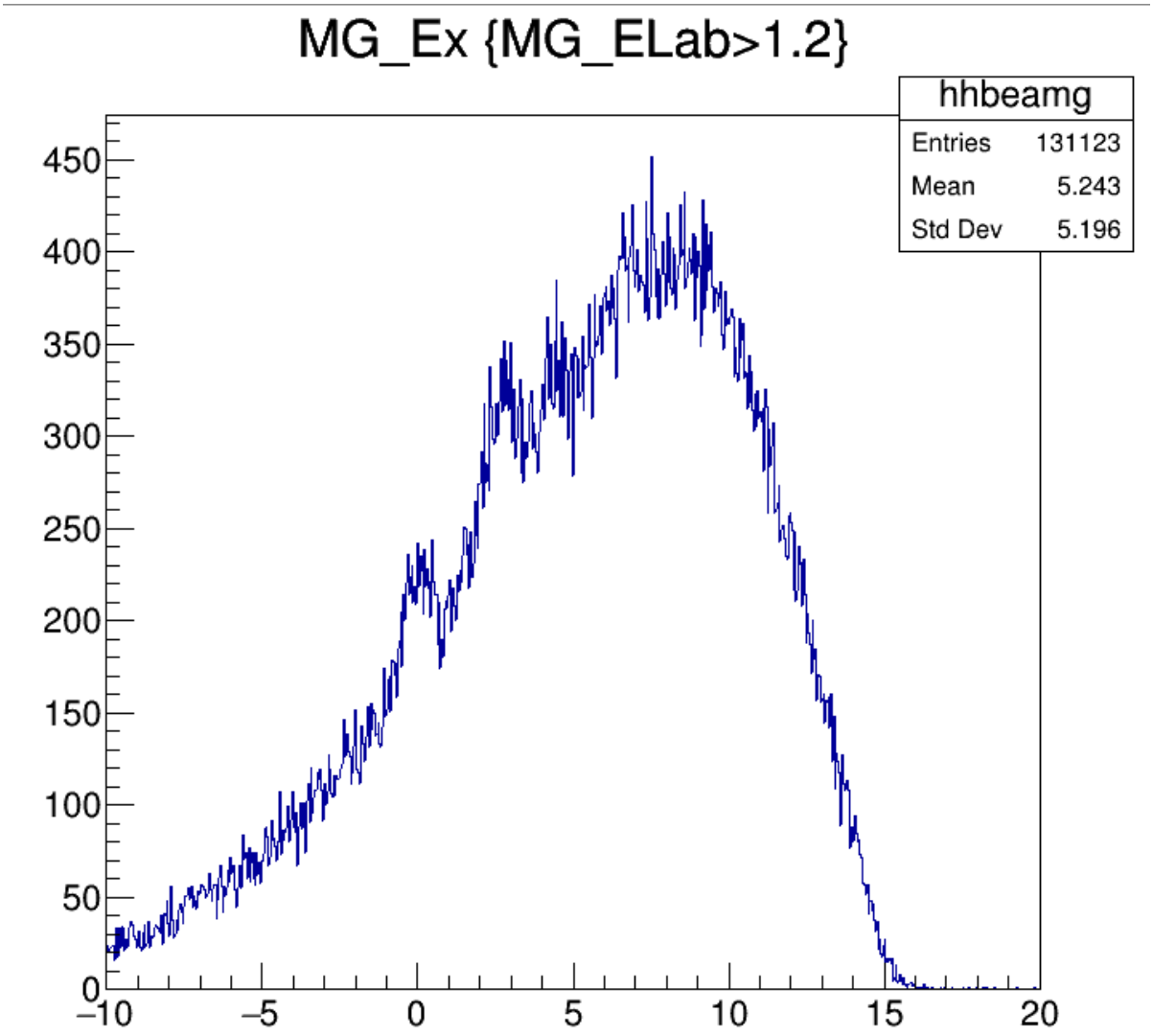
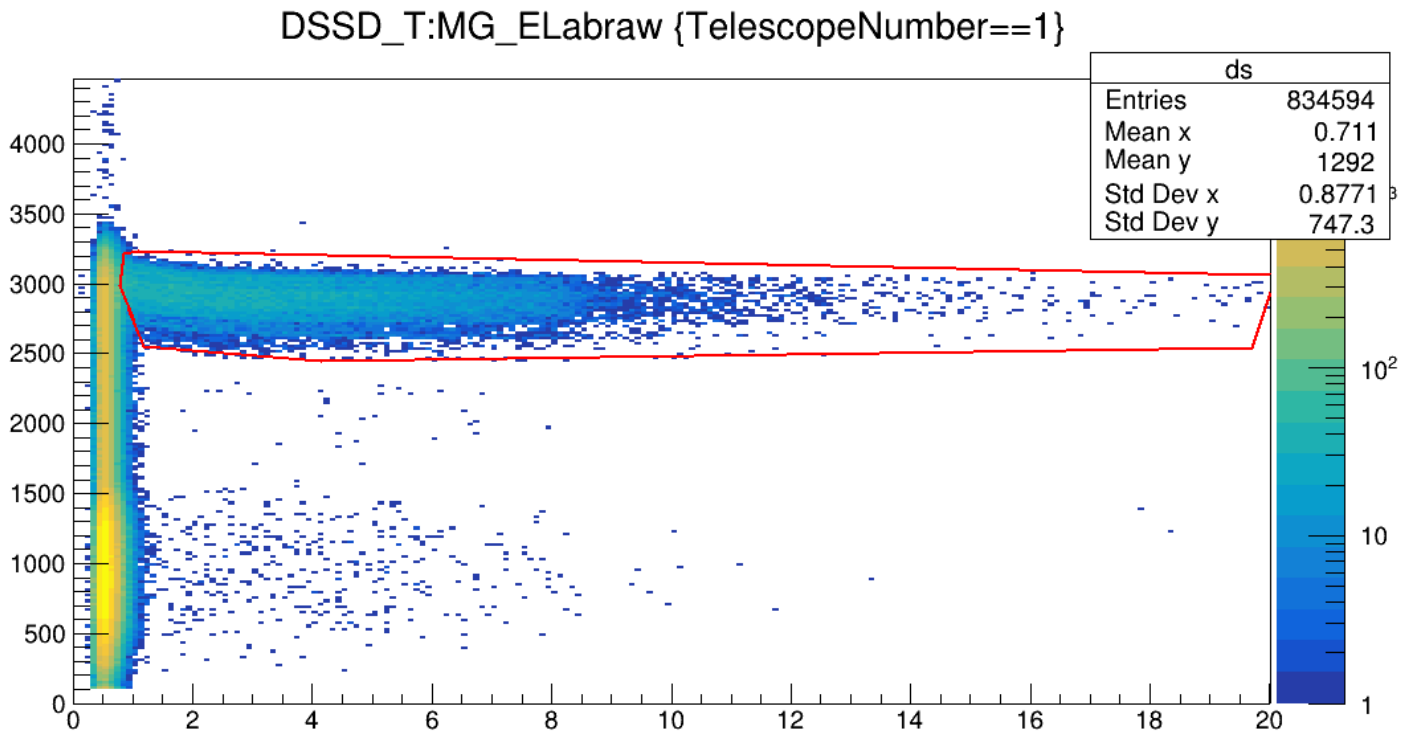
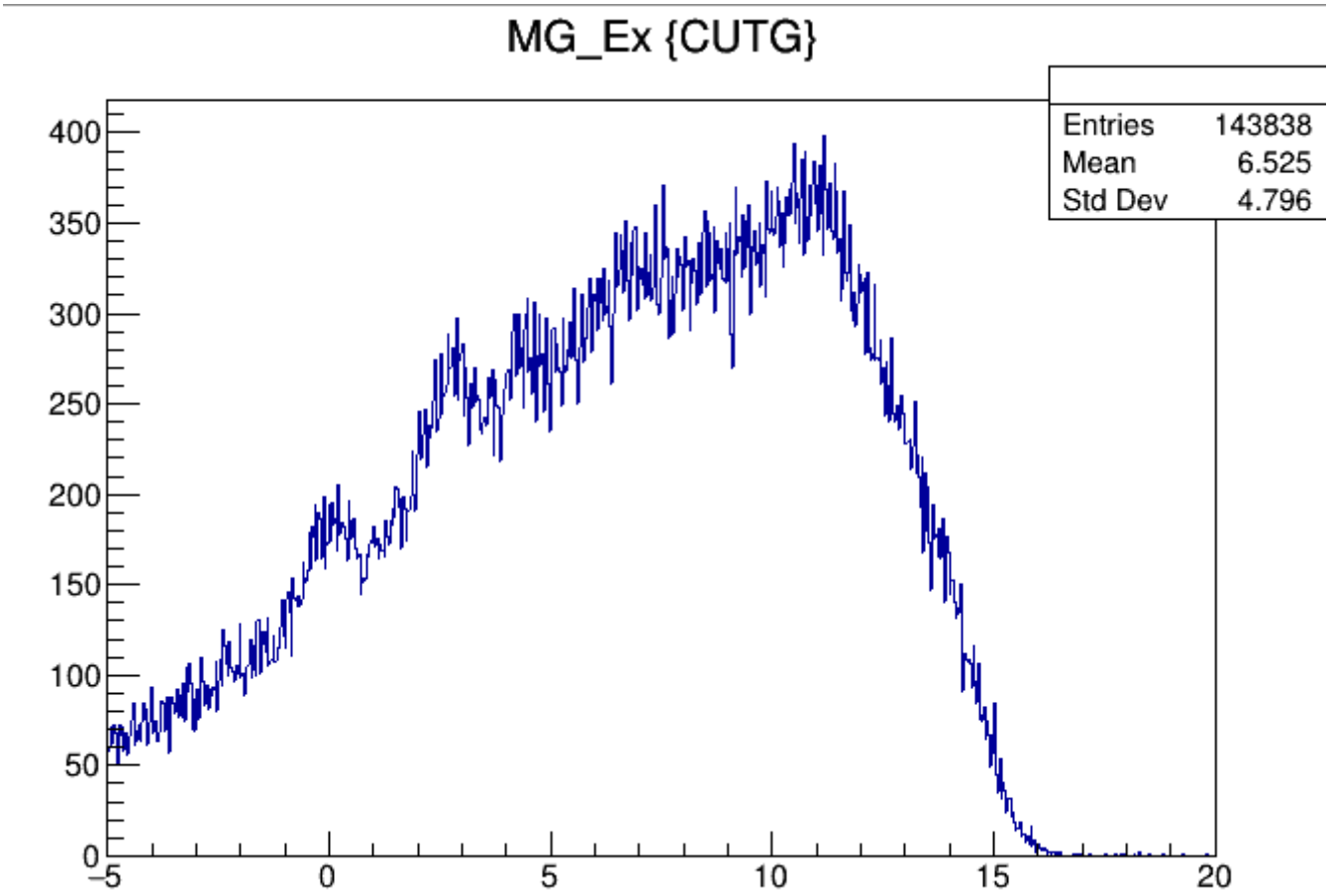
Cuts for the Ex step by step



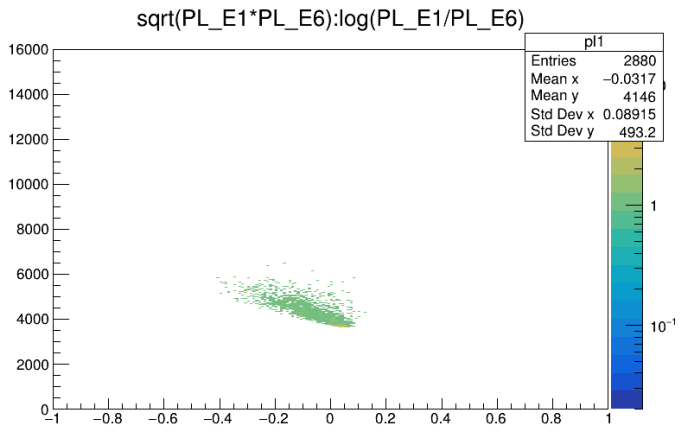


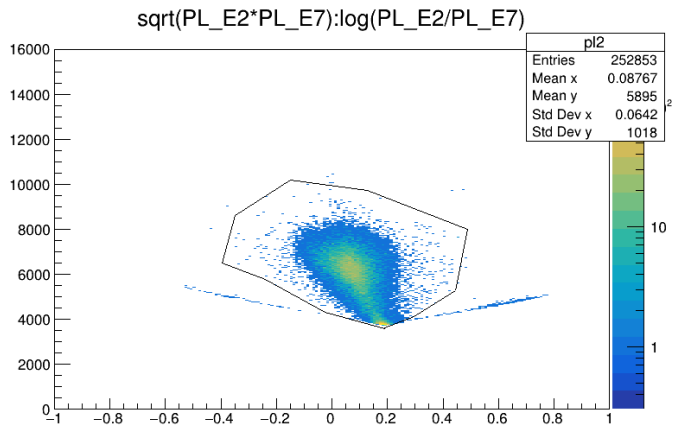
Big bump comes all the time here X axis is Energy and Y axis is Time.

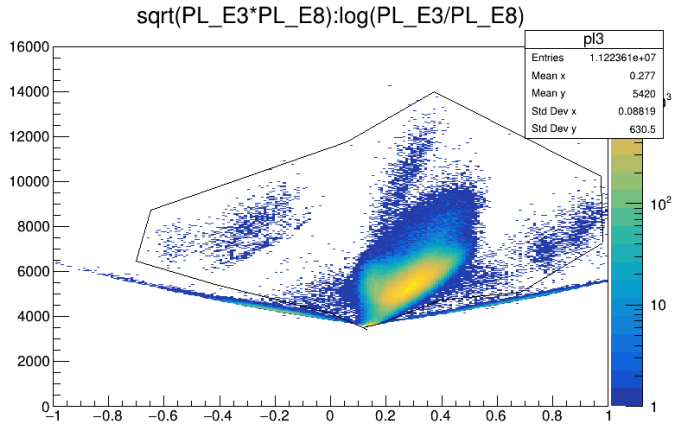


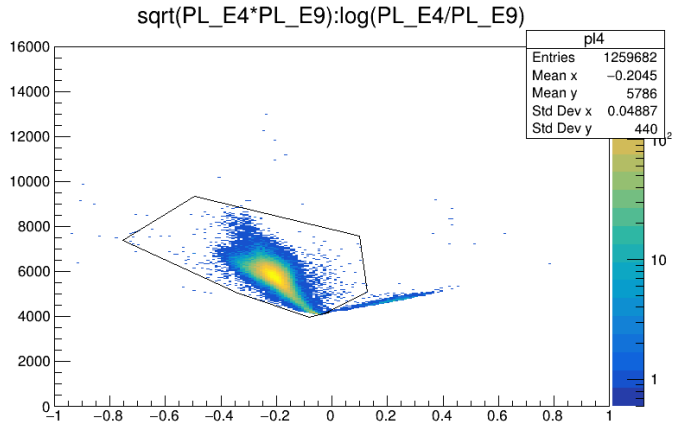


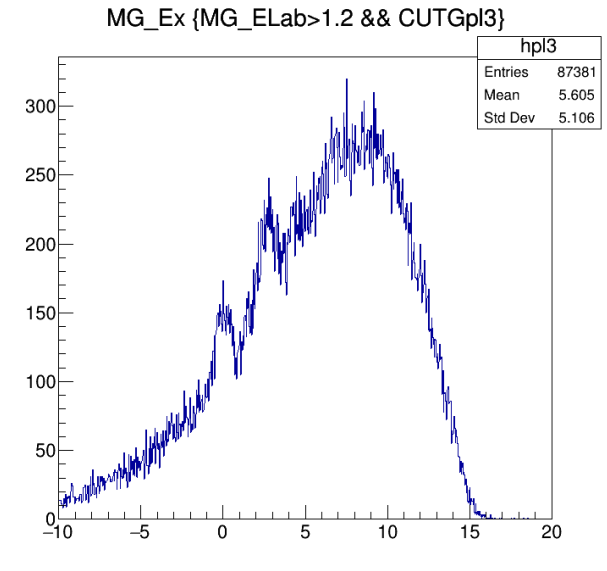
PLASTICS

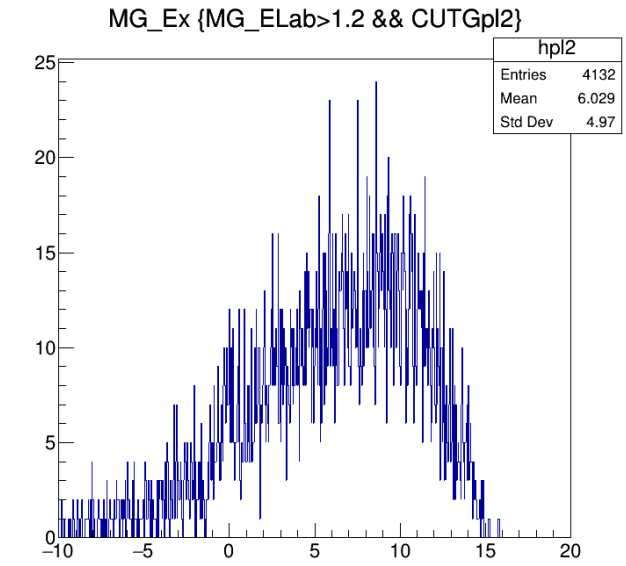

sqrt(PL_E1*PL_E6):log(PL_E1/PL_E6)
pl1
Entries 2880
Mean x −0.0317
Mean y 4146
Std Dev x 0.08915
Std Dev y 493.2

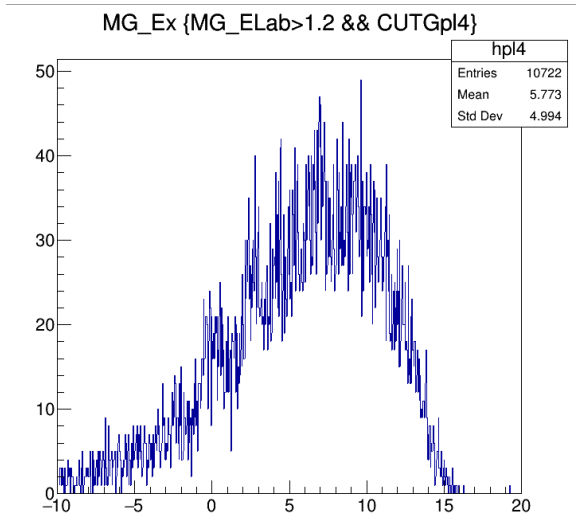

sqrt(PL_E2*PL_E7):log(PL_E2/PL_E7)
pl2
Entries 252853
Mean x 0.08767
Mean y 5895
Std Dev x 0.0642
Std Dev y 1018

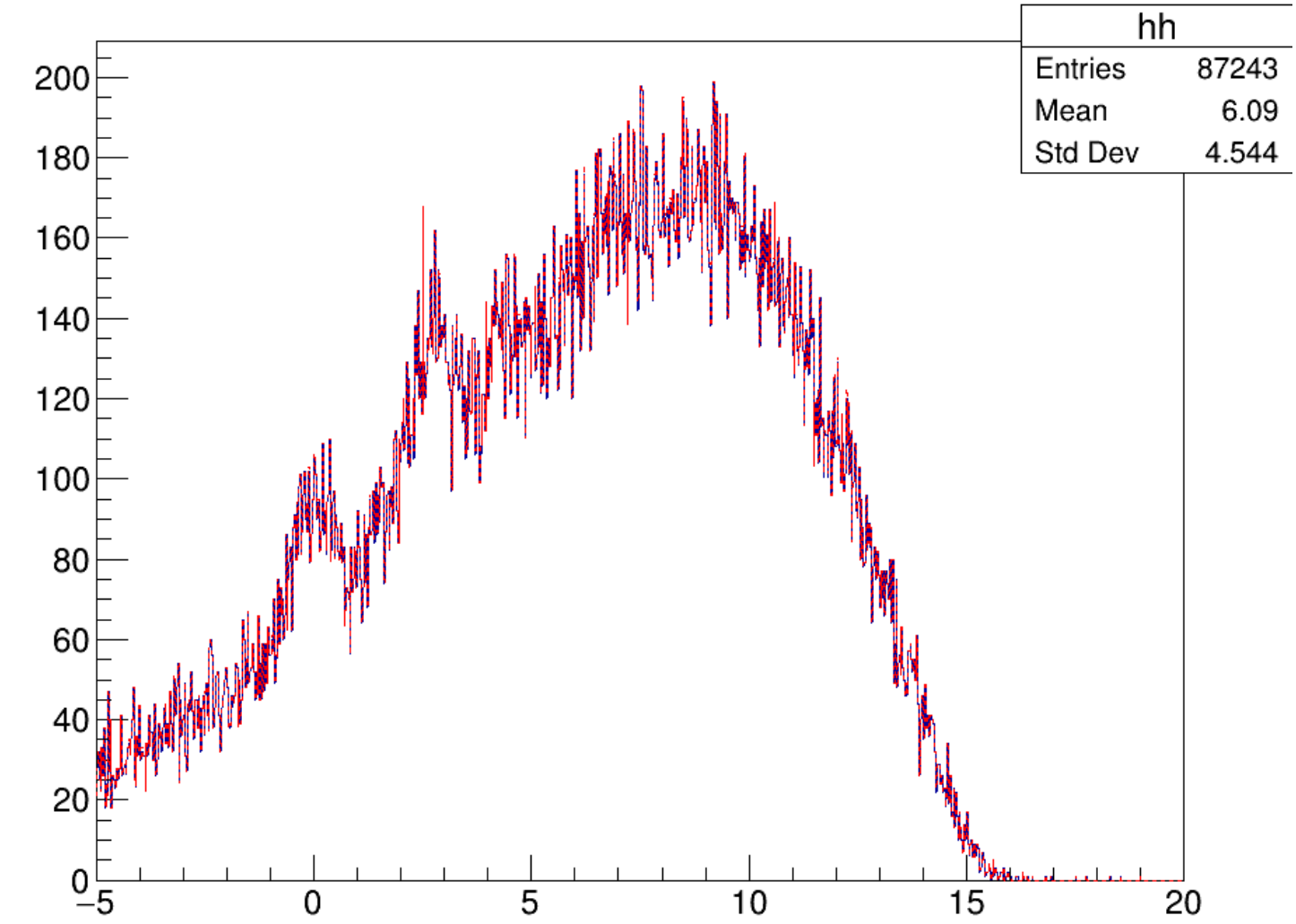

sqrt(PL_E3*PL_E8):log(PL_E3/PL_E8)
pl3
Entries 1.122361e+07
Mean x 0.277
Mean y 5420
Std Dev x 0.08819
Std Dev y 630.5


sqrt(PL_E4*PL_E9):log(PL_E4/PL_E9)
pl4
Entries 1259682
Mean x −0.2045
Mean y 5786
Std Dev x 0.04887
Std Dev y 440

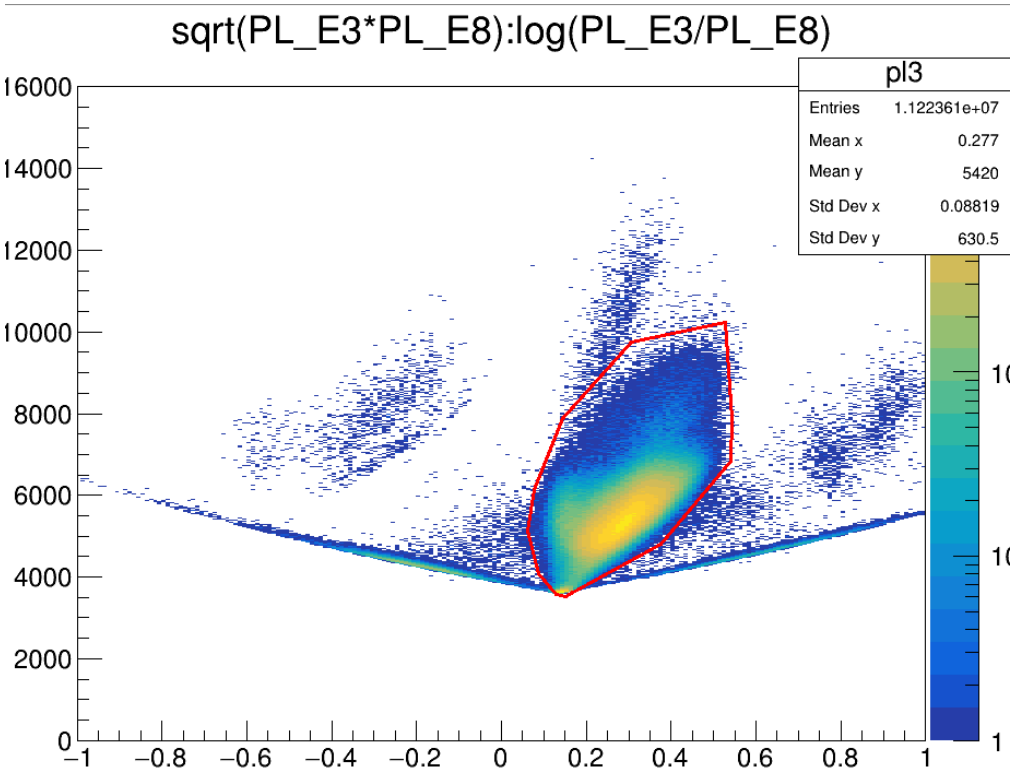

MG_Ex {MG_ELab>1.2 && CUTGpl3}
hpl3
Entries 87381
Mean 5.605
Std Dev 5.106


MG_Ex {MG_ELab>1.2 && CUTGpl2}
hpl2
Entries 4132
Mean 6.029
Std Dev 4.97

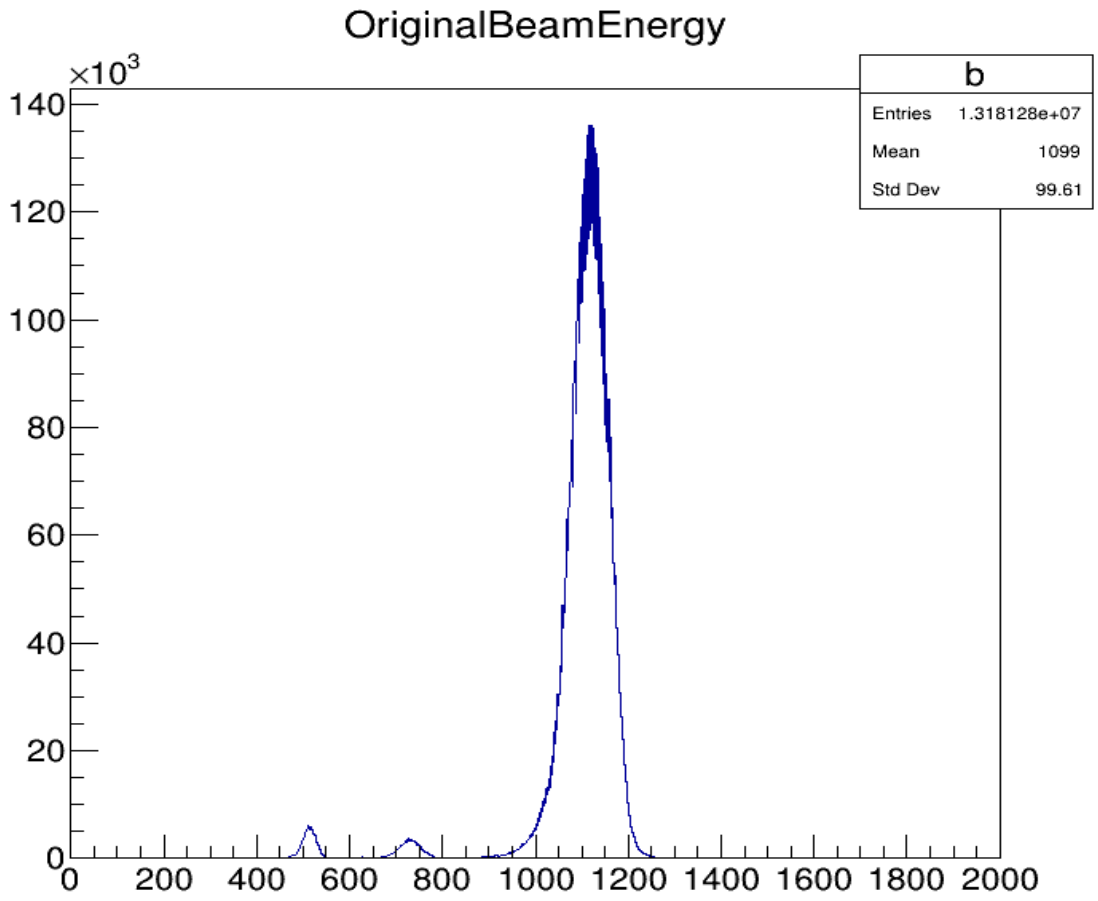

MG_Ex {MG_ELab>1.2 && CUTGpl4}
hpl4
Entries 10722
Mean 5.773
Std Dev 4.994

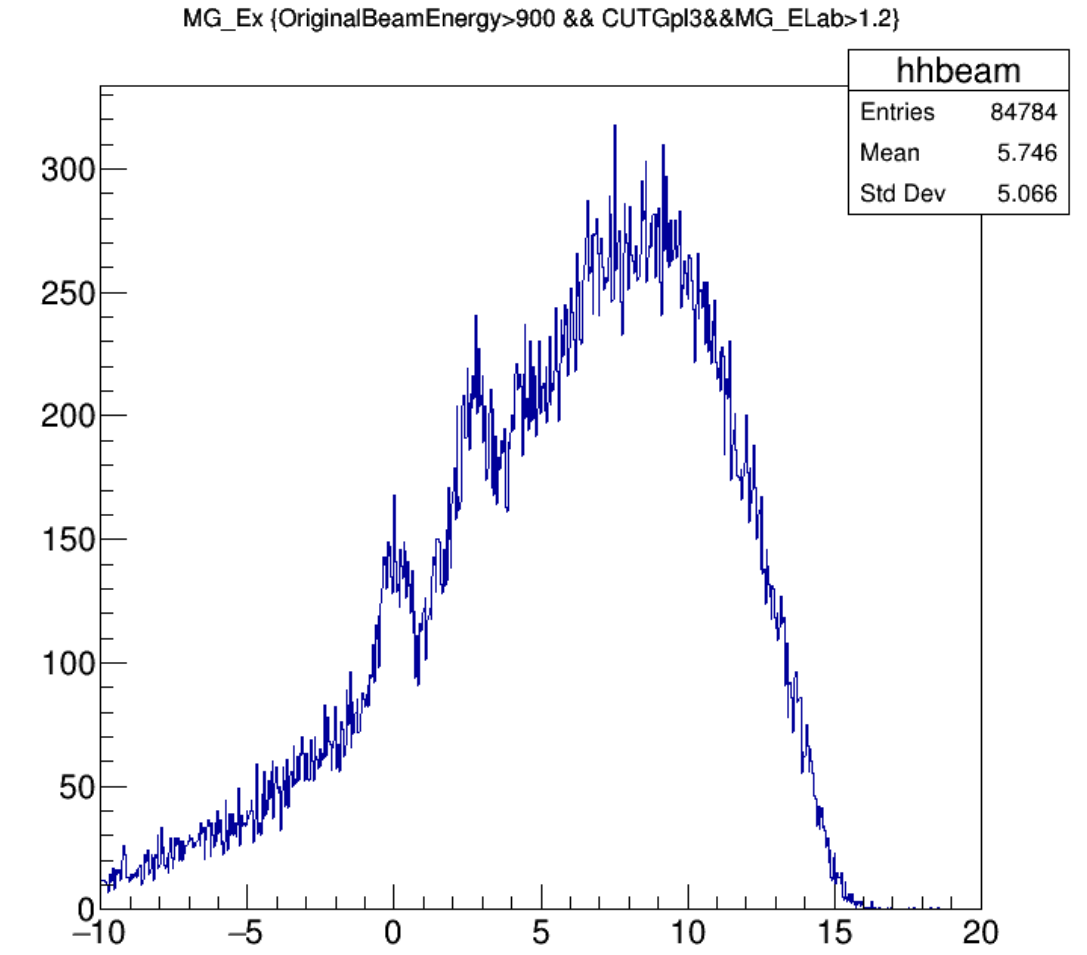


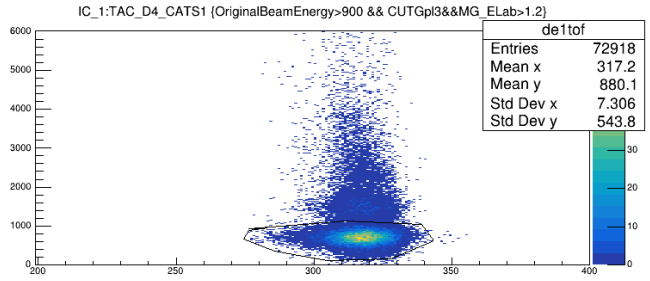
140 events change between big cut and small one.

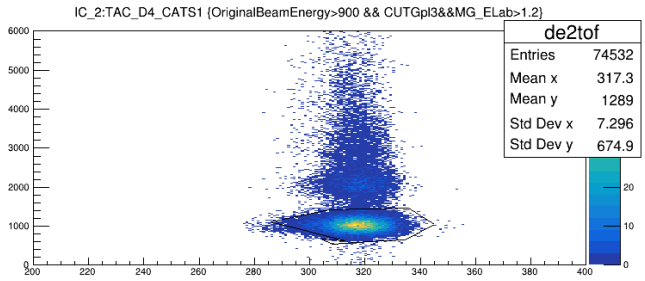


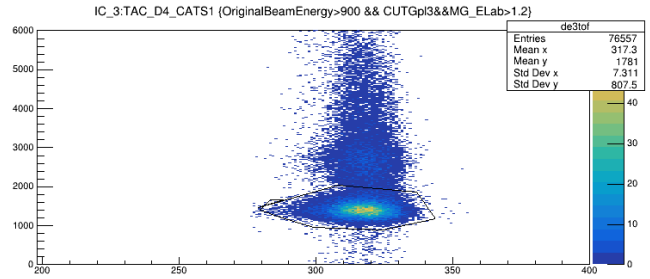
Beamenergy

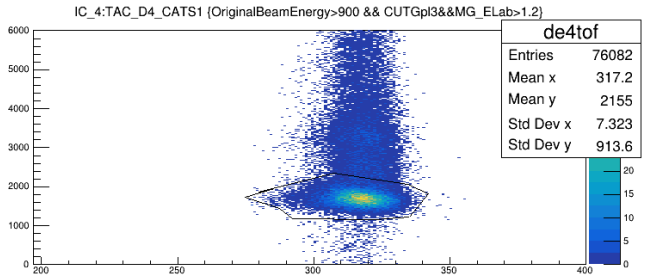

OriginalBeamEnergy
×10^3
b
Entries 1.318128e+07
Mean 1099
Std Dev 99.61
140
120
100
80
60
40
20
0
0 200 400 600 800 1000 1200 1400 1600 1800 2000

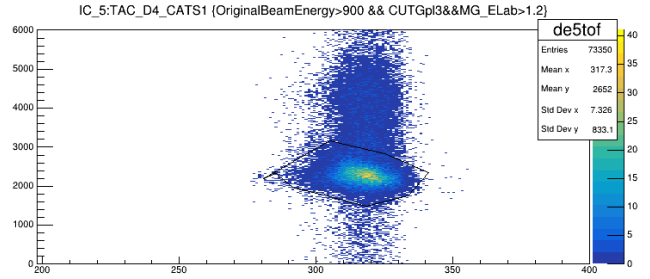

MG_Ex {OriginalBeamEnergy>900 && CUTGpl3&&MG_ELab>1.2}
hhbeam
Entries 84784
Mean 5.746
Std Dev 5.066
300
250
200
150
100
50
0
−10 −5 0 5 10 15 20

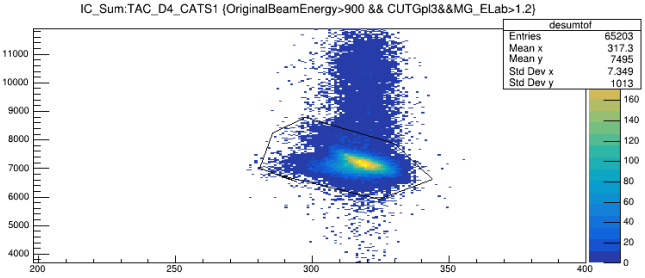

IC_1:TAC_D4_CATS1 {OriginalBeamEnergy>900 && CUTGpl3&&MG_ELab>1.2}
de1tof
Entries 72918
Mean x 317.2
Mean y 880.1
Std Dev x 7.306
Std Dev y 543.8

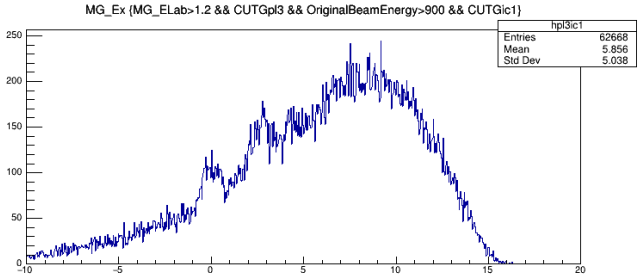

IC_2:TAC_D4_CATS1 {OriginalBeamEnergy>900 && CUTGpl3&&MG_ELab>1.2}
de2tof
Entries 74532
Mean x 317.3
Mean y 1289
Std Dev x 7.296
Std Dev y 674.9

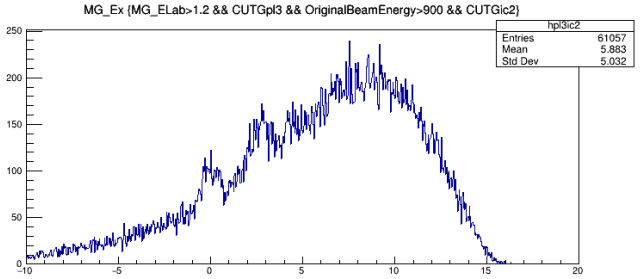

IC_3:TAC_D4_CATS1 {OriginalBeamEnergy>900 && CUTGpl3&&MG_ELab>1.2}
de3tof
Entries 76557
Mean x 317.3
Mean y 1781
Std Dev x 7.311
Std Dev y 807.5

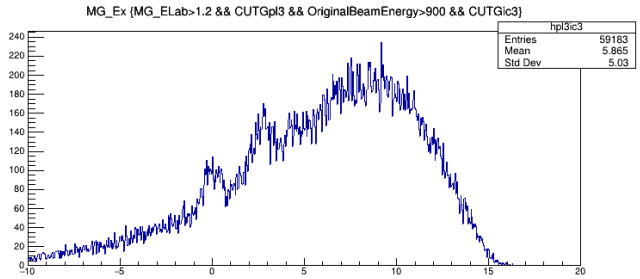

IC_4:TAC_D4_CATS1 {OriginalBeamEnergy>900 && CUTGpl3&&MG_ELab>1.2}
de4tof
Entries 76082
Mean x 317.2
Mean y 2155
Std Dev x 7.323
Std Dev y 913.6

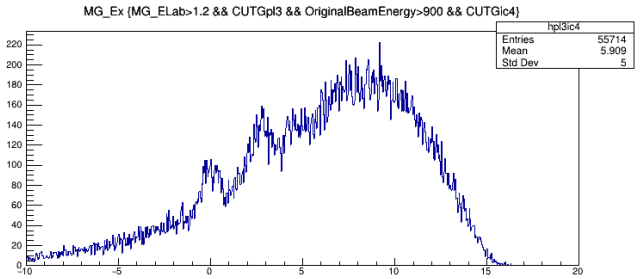

IC_5:TAC_D4_CATS1 {OriginalBeamEnergy>900 && CUTGpl3&&MG_ELab>1.2}
de5tof
Entries 73350
Mean x 317.3
Mean y 2652
Std Dev x 7.326
Std Dev y 833.1

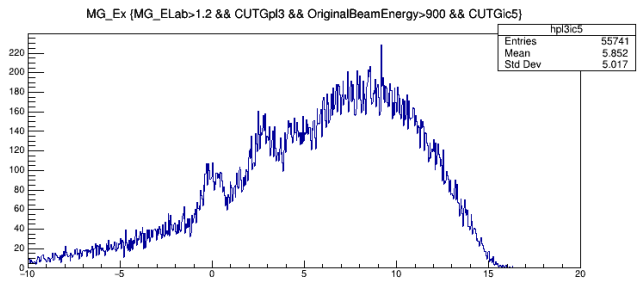

IC_Sum:TAC_D4_CATS1 {OriginalBeamEnergy>900 && CUTGpl3&&MG_ELab>1.2}
desumtof
Entries 65203
Mean x 317.3
Mean y 7495
Std Dev x 7.349
Std Dev y 1013

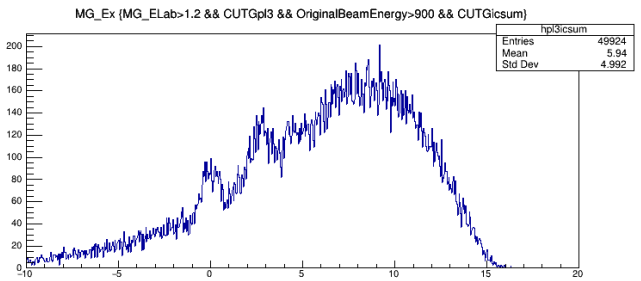

MG_Ex {MG_ELab>1.2 && CUTGpl3 && OriginalBeamEnergy>900 && CUTGic1}
hpl3ic1
Entries 62668
Mean 5.856
Std Dev 5.038

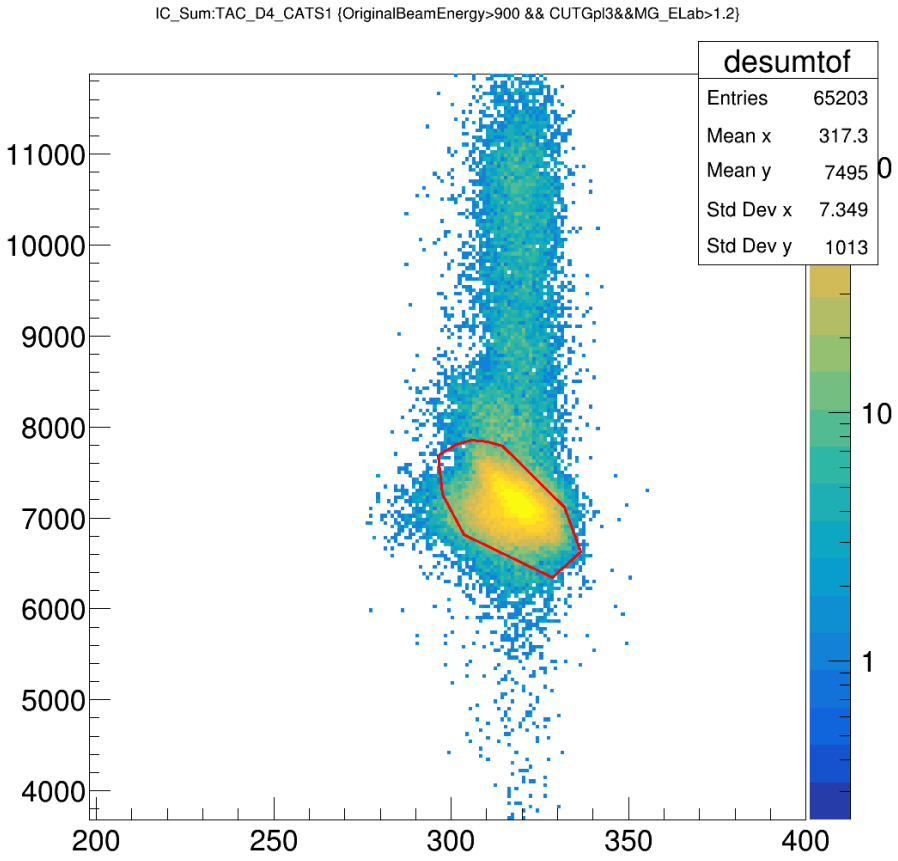

MG_Ex {MG_ELab>1.2 && CUTGpl3 && OriginalBeamEnergy>900 && CUTGic2}
hpl3ic2
Entries 61057
Mean 5.883
Std Dev 5.032

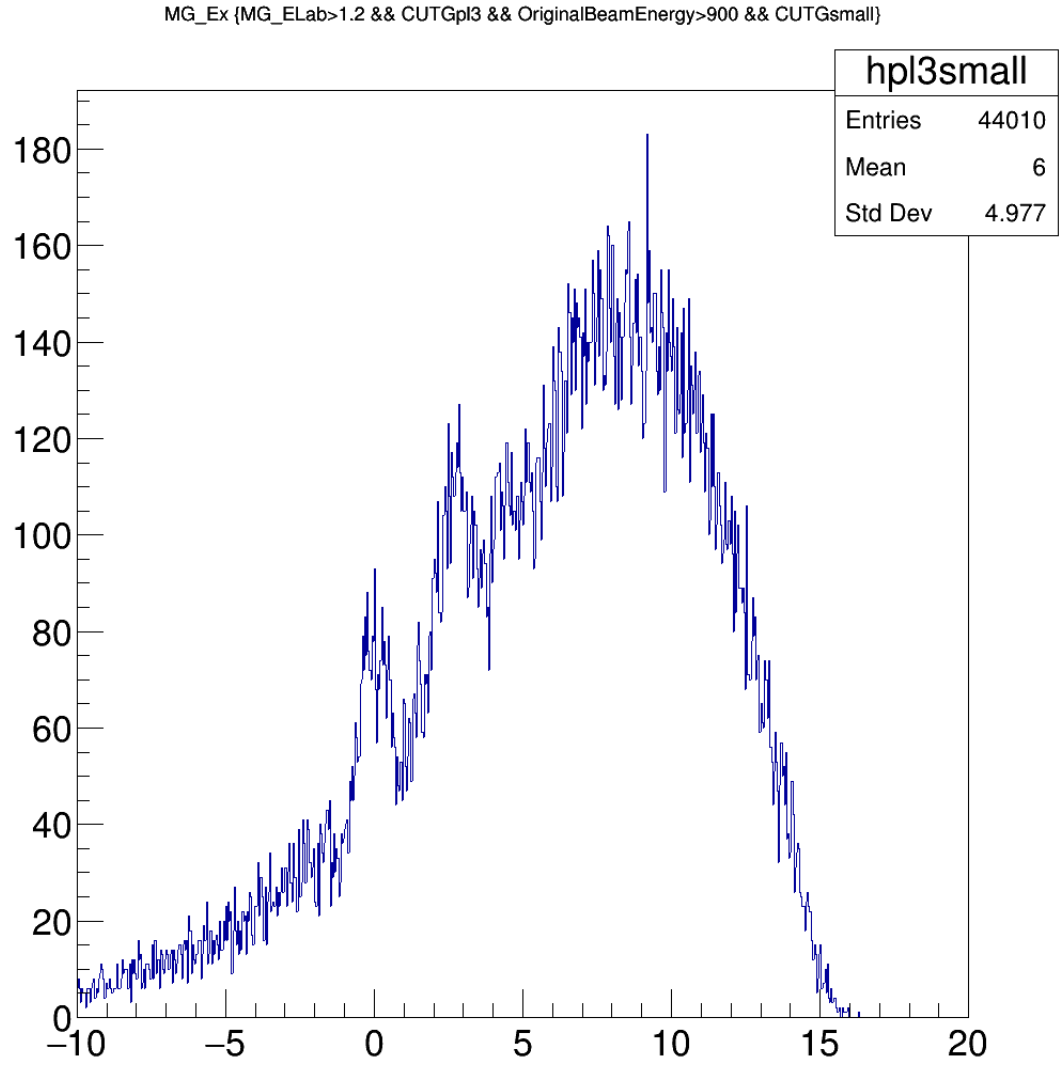

MG_Ex {MG_ELab>1.2 && CUTGpl3 && OriginalBeamEnergy>900 && CUTGic3}
hpl3ic3
Entries 59183
Mean 5.865
Std Dev 5.03


MG_Ex {MG_ELab>1.2 && CUTGpl3 && OriginalBeamEnergy>900 && CUTGic4}
hpl3ic4
Entries 55714
Mean 5.909
Std Dev 5

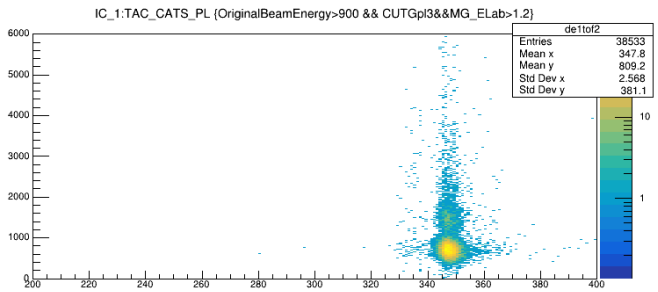

MG_Ex {MG_ELab>1.2 && CUTGpl3 && OriginalBeamEnergy>900 && CUTGic5}
hpl3ic5
Entries 55741
Mean 5.852
Std Dev 5.017

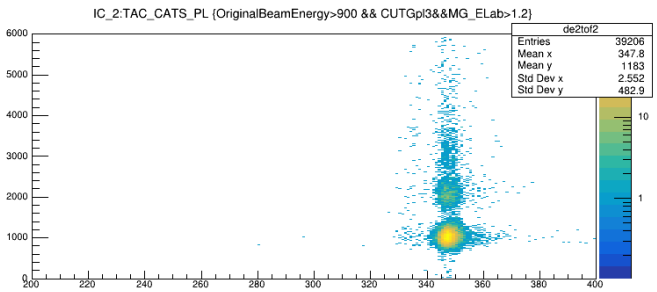

MG_Ex {MG_ELab>1.2 && CUTGpl3 && OriginalBeamEnergy>900 && CUTGicsum}
hpl3icsum
Entries 49924
Mean 5.94
Std Dev 4.992

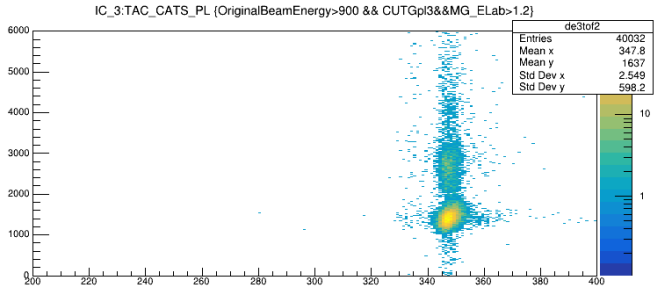

IC_Sum:TAC_D4_CATS1 {OriginalBeamEnergy>900 && CUTGpl3&&MG_ELab>1.2}
desumtof
Entries 65203
Mean x 317.3
Mean y 7495
Std Dev x 7.349
Std Dev y 1013
11000
10000
9000
8000
7000
6000
5000
4000
200
250
300
350
400
10
1

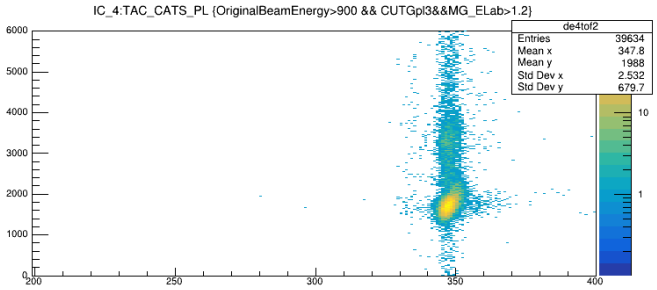

MG_Ex {MG_ELab>1.2 && CUTGpl3 && OriginalBeamEnergy>900 && CUTGsmall}
hpl3small
Entries 44010
Mean 6
Std Dev 4.977
180
160
140
120
100
80
60
40
20
0
−10
−5
0
5
10
15
20

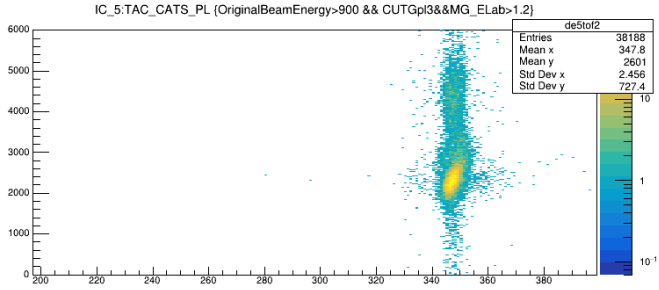
cc->Draw("MG_Ex0>>pold(250,-5,20)"," IC_E@.size()==5 && PL_E>0 && DSSD_E@.size()>0&& PL_TS>0 && CUTG2 && MG_ELab>1.2 && CUTGdETof && CUTGdEPL && MG_ThetaLab0<110","")

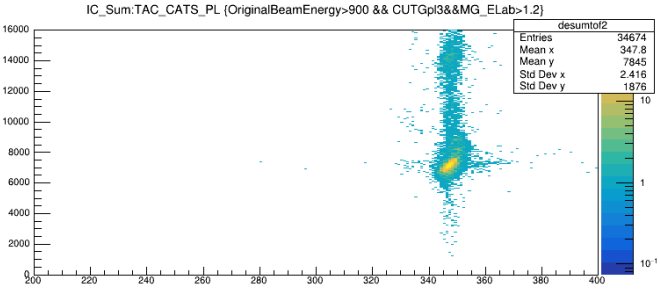


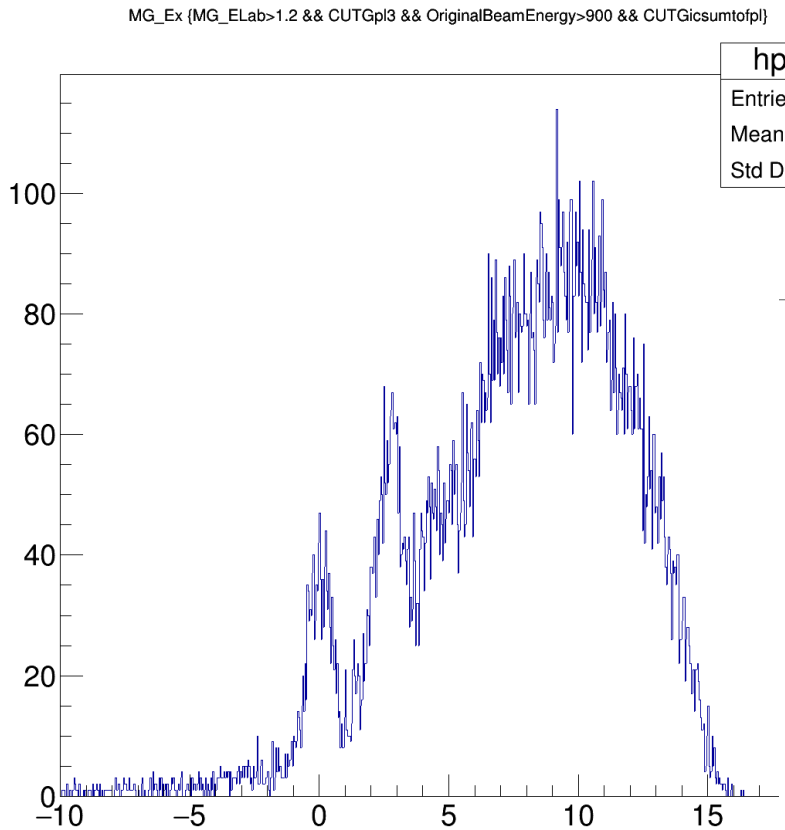


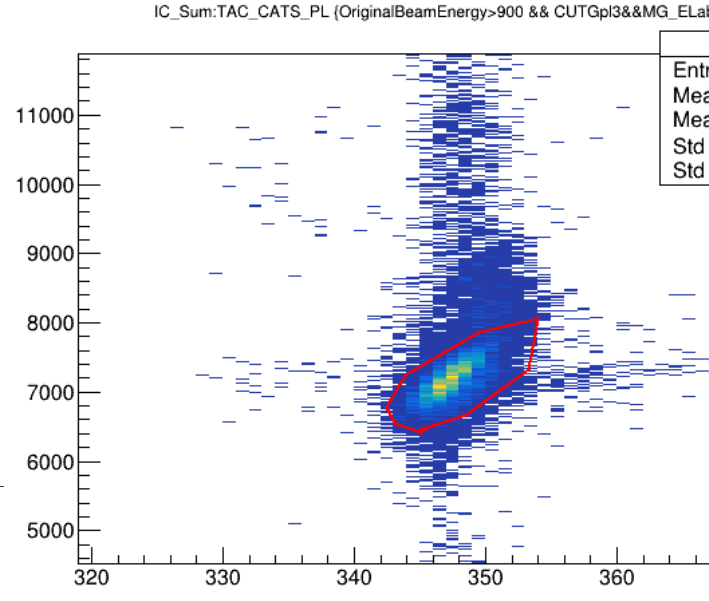




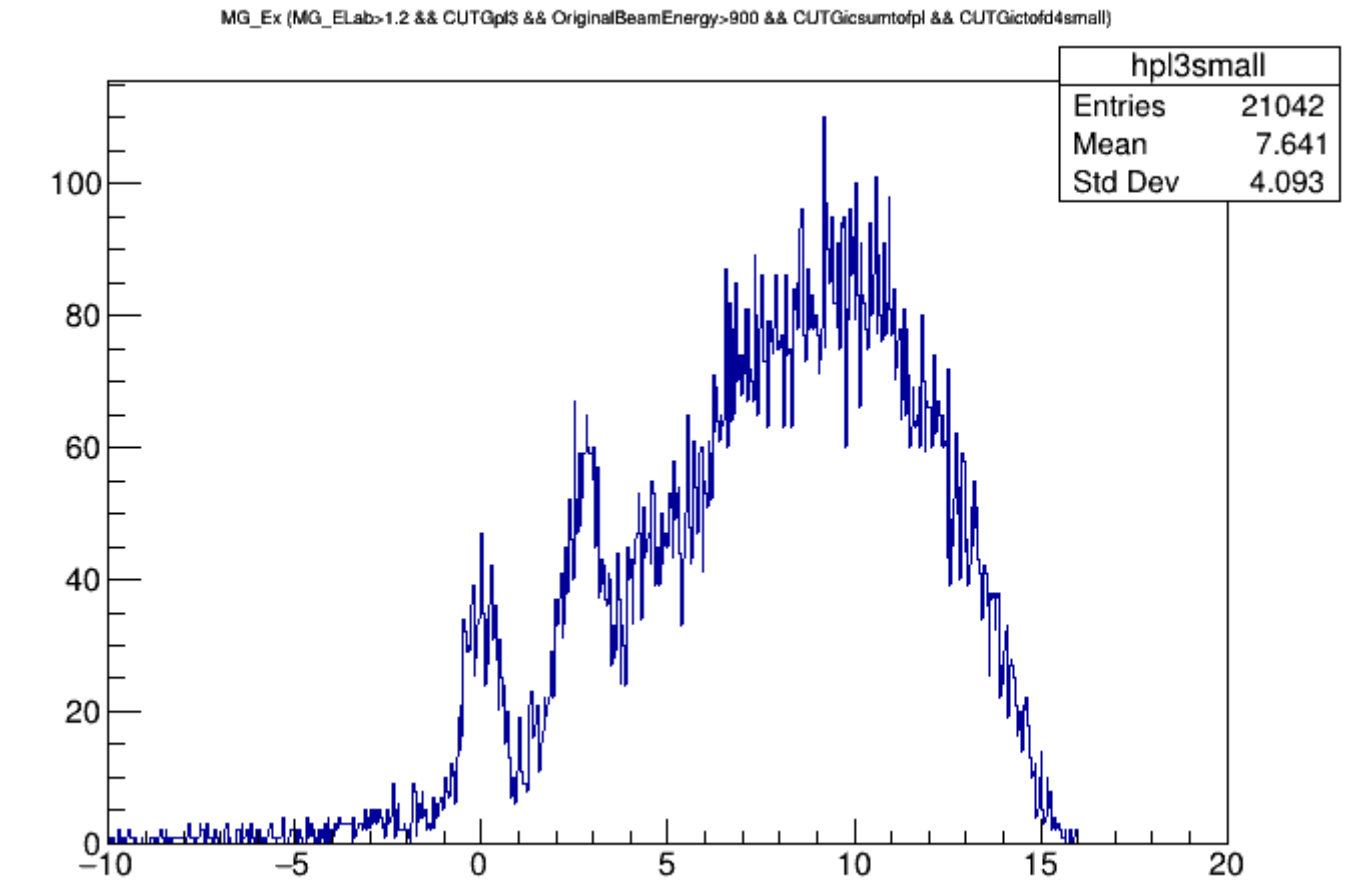


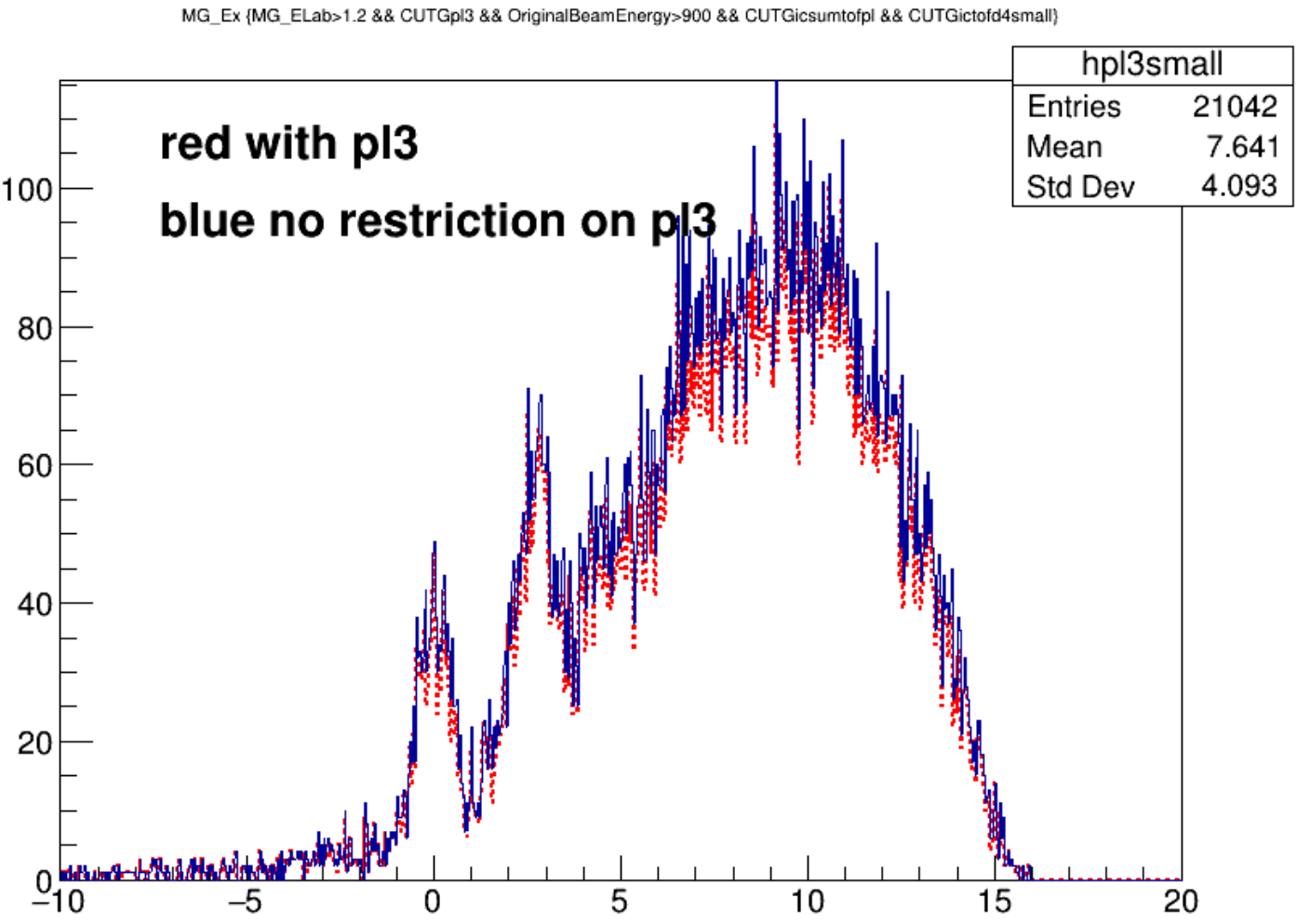


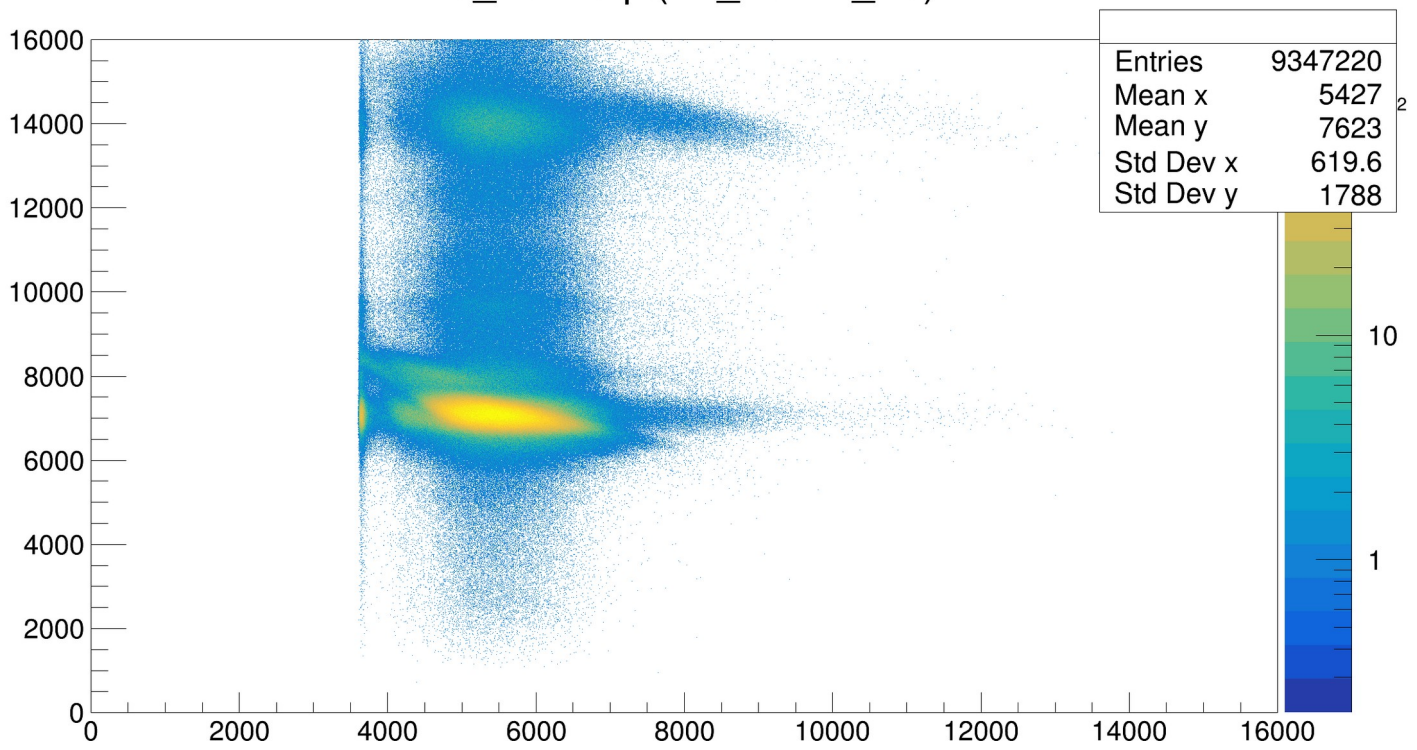


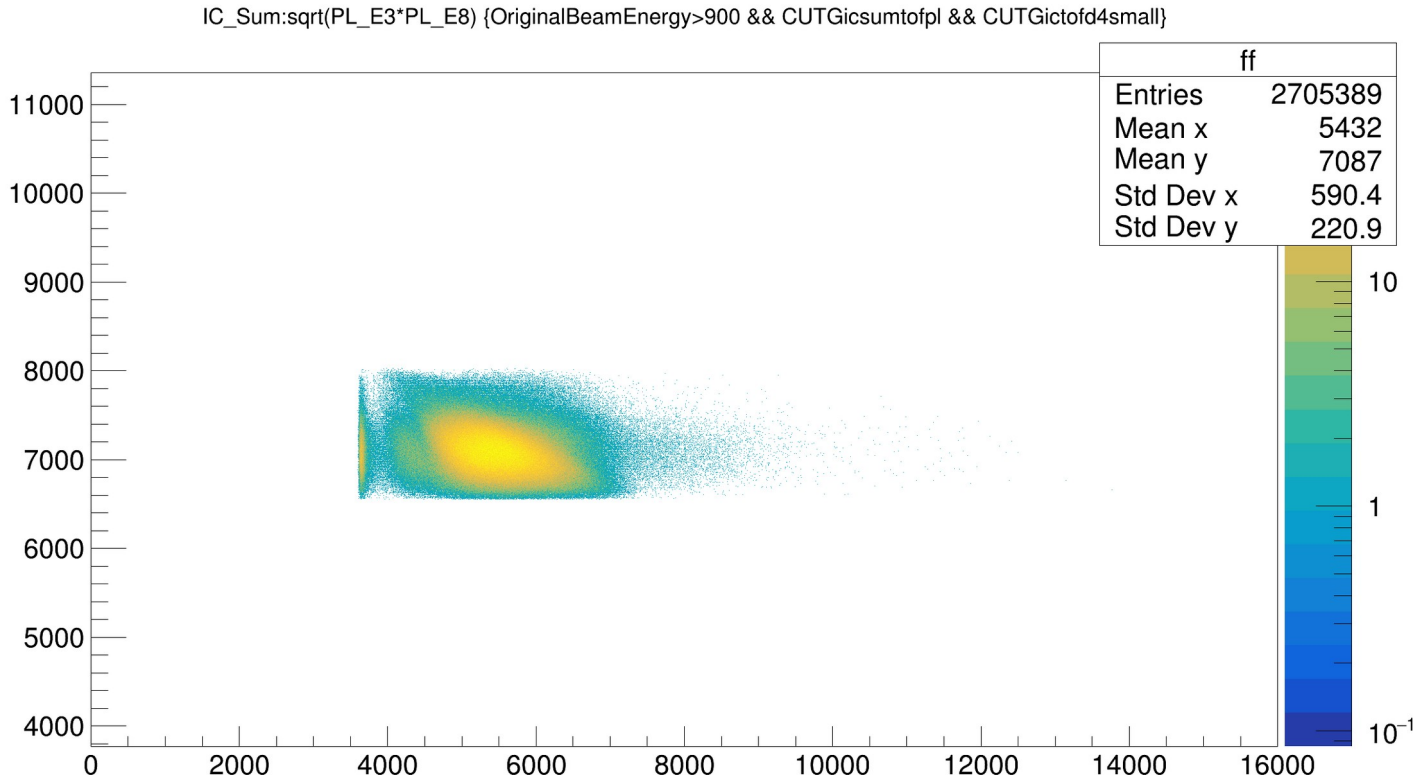


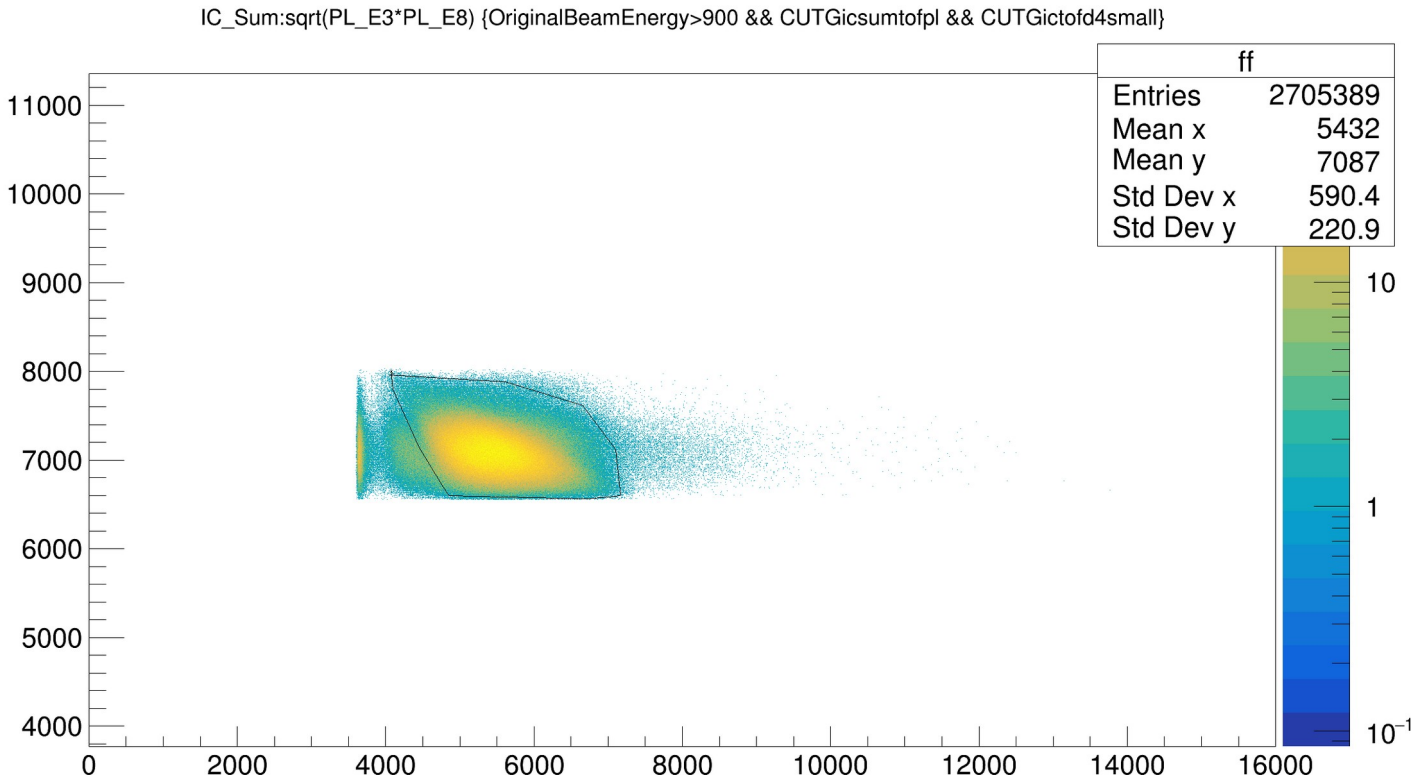
Both gates in icsum with tof d4 and tof pl

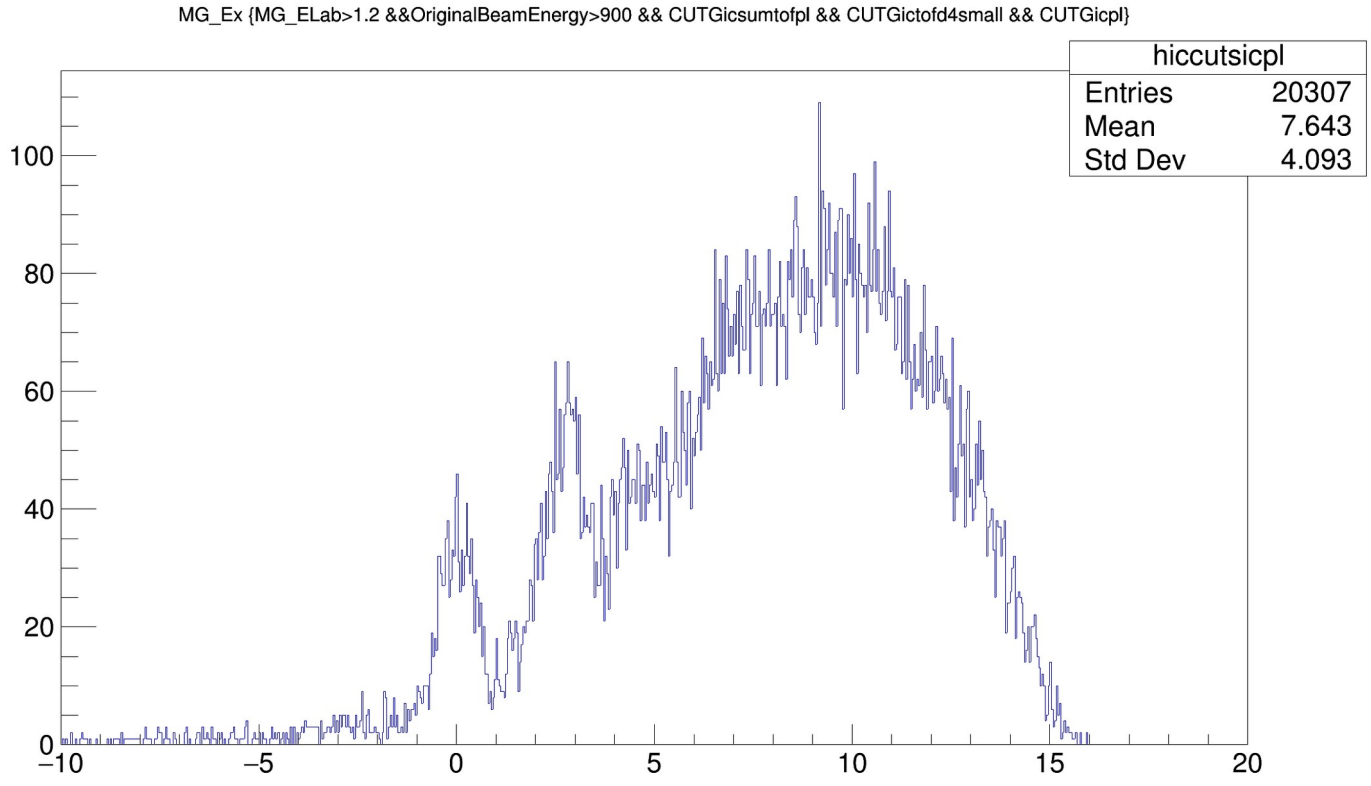




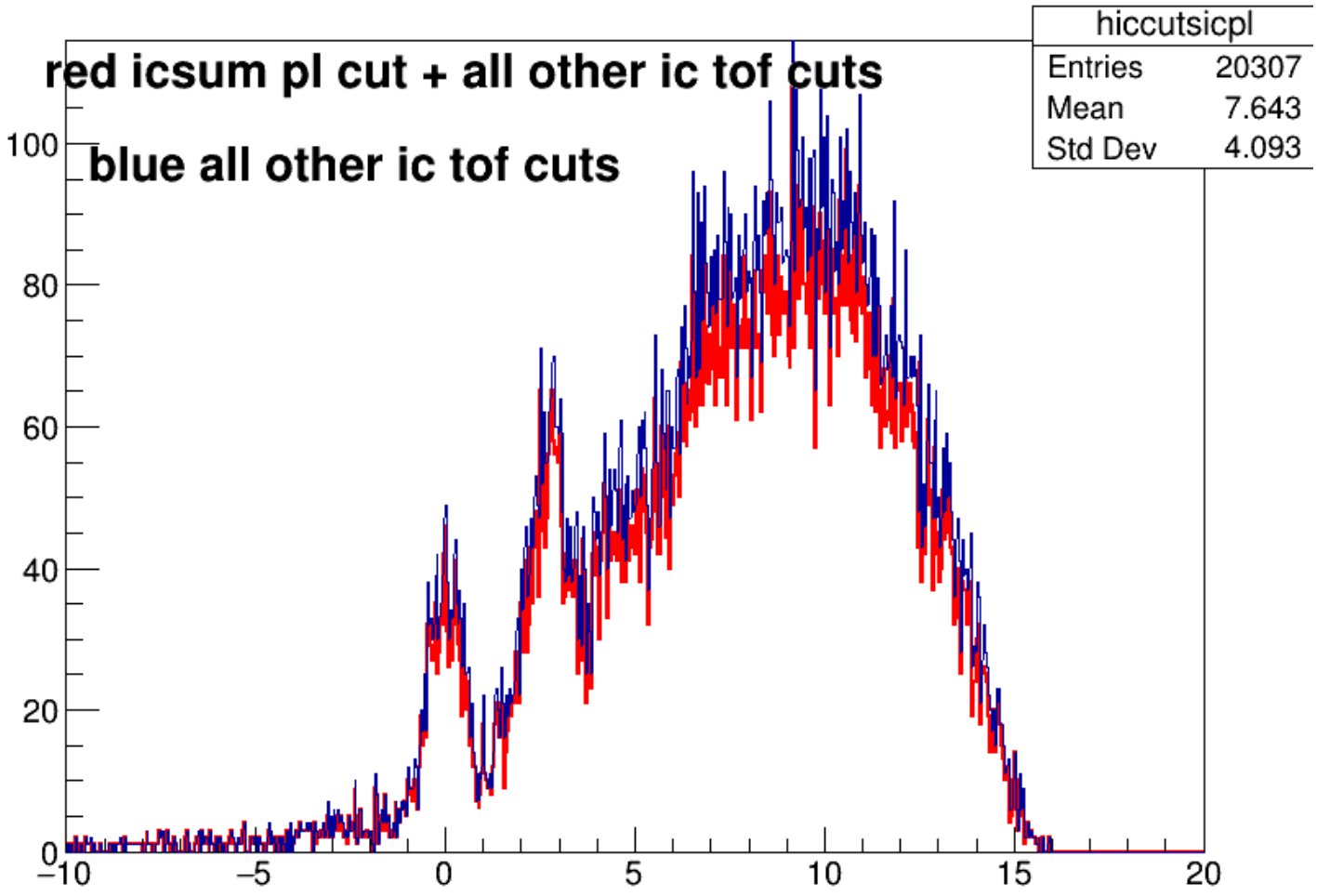

IC_Sum:sqrt(PL_E3*PL_E8)
Entries 9347220
Mean x 5427
Mean y 7623
Std Dev x 619.6
Std Dev y 1788
16000
14000
12000
10000
8000
6000
4000
2000
0
0
2000
4000
6000
8000
10000
12000
14000
16000
10
1

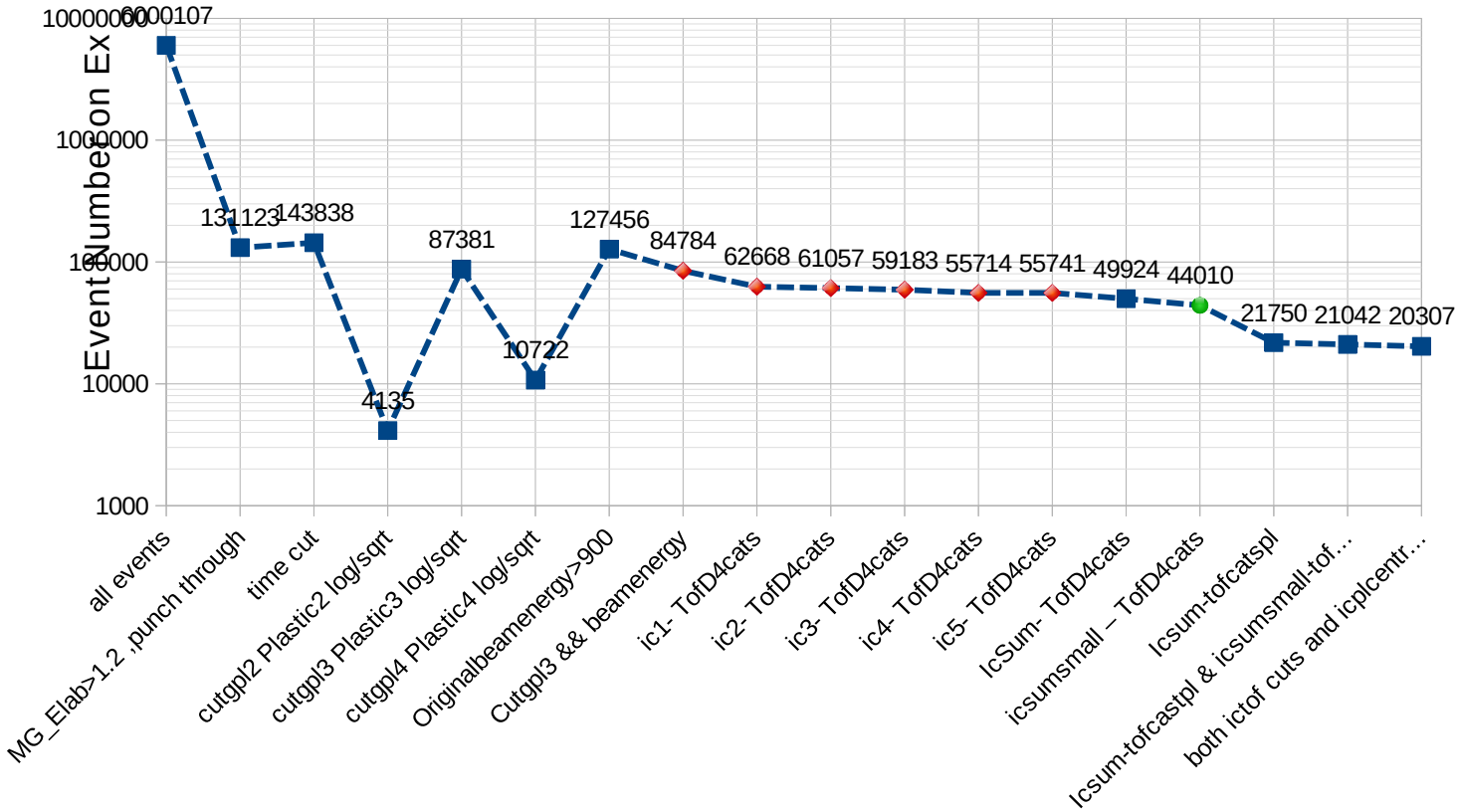

IC_Sum:sqrt(PL_E3*PL_E8) {OriginalBeamEnergy>900 && CUTGicsumtofpl && CUTGictofd4small}
ff
Entries 2705389
Mean x 5432
Mean y 7087
Std Dev x 590.4
Std Dev y 220.9
11000
10000
9000
8000
7000
6000
5000
4000
0
2000
4000
6000
8000
10000
12000
14000
16000
10
1
10^{-1}

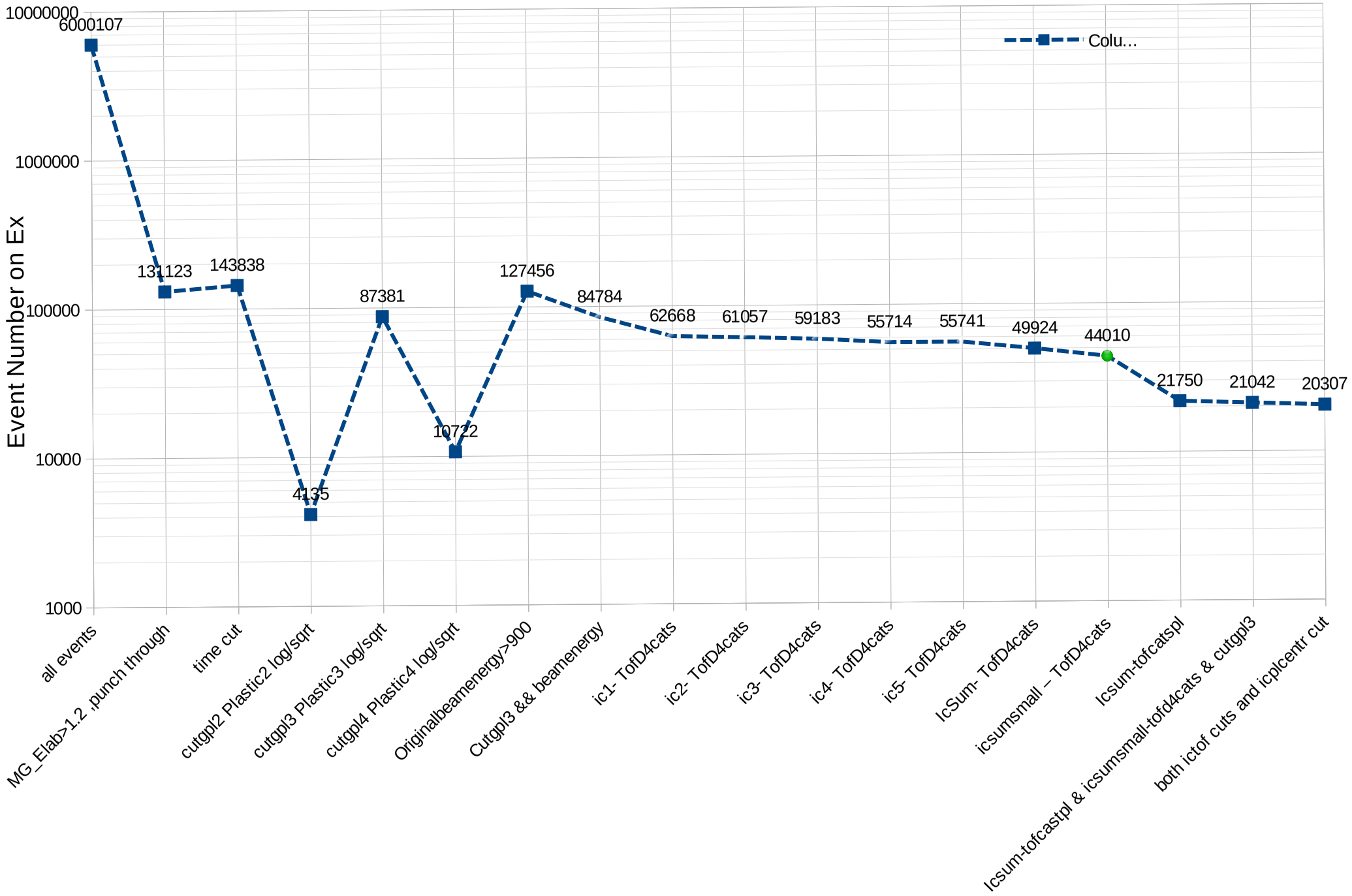

IC_Sum:sqrt(PL_E3*PL_E8) {OriginalBeamEnergy>900 && CUTGicsumtofpl && CUTGictofd4small}
ff
Entries 2705389
Mean x 5432
Mean y 7087
Std Dev x 590.4
Std Dev y 220.9
11000
10000
9000
8000
7000
6000
5000
4000
0
2000
4000
6000
8000
10000
12000
14000
16000
10
1
10^{-1}


MG_Ex {MG_ELab>1.2 &&OriginalBeamEnergy>900 && CUTGicsumtofpl && CUTGictofd4small && CUTGicpl}
hiccutsicpl
Entries 20307
Mean 7.643
Std Dev 4.093
100
80
60
40
20
0
−10
−5
0
5
10
15
20

MG_Ex {MG_ELab>1.2 &&OriginalBeamEnergy>900 && CUTGicsumtofpl && CUTGictofd4small && CUTGicpl}






Event Number on Ex
10000000
1000000
100000
10000
1000
Colu...
6000107
131123
143838
4135
87381
10722
127456
84784
62668
61057
59183
55714
55741
49924
44010
21750
21042
20307
all events
MG_Elab>1.2 ,punch through
time cut
cutgpl2 Plastic2 log/sqrt
cutgpl3 Plastic3 log/sqrt
cutgpl4 Plastic4 log/sqrt
Originalbeamenergy>900
Cutgpl3 && beamenergy
ic1- TofD4cats
ic2- TofD4cats
ic3- TofD4cats
ic4- TofD4cats
ic5- TofD4cats
IcSum- TofD4cats
icsumsmall – TofD4cats
Icsum-tofcatspl
Icsum-tofcastpl & icsumsmall-tofd4cats & cutgpl3
both ictof cuts and icplcentr cut