

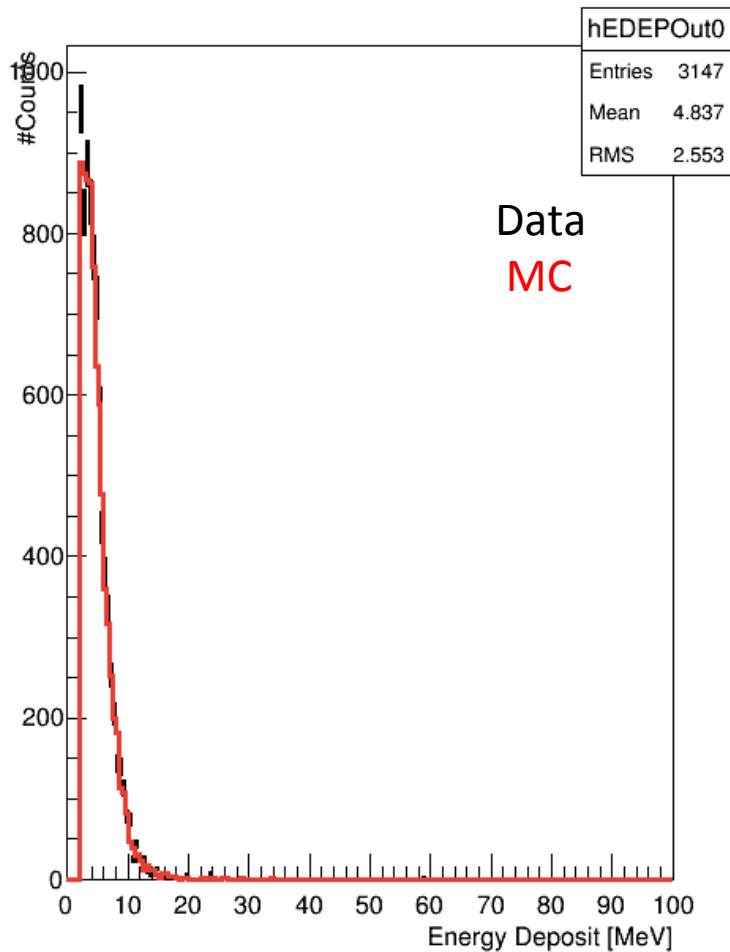
Report_170830

Gamma energy [10,25]

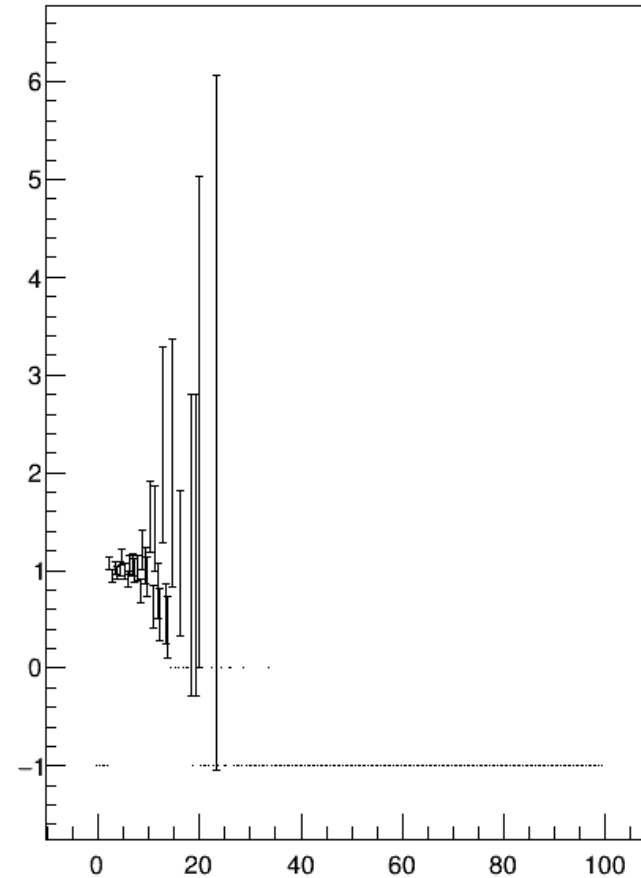
Outer Main Barrel

minimum bias, one hit only

Energy Deposit Distribution



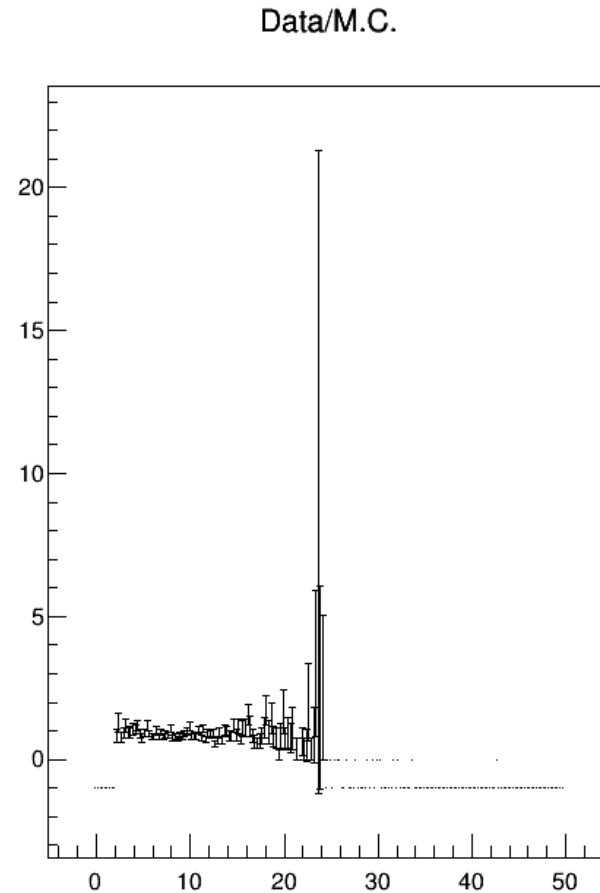
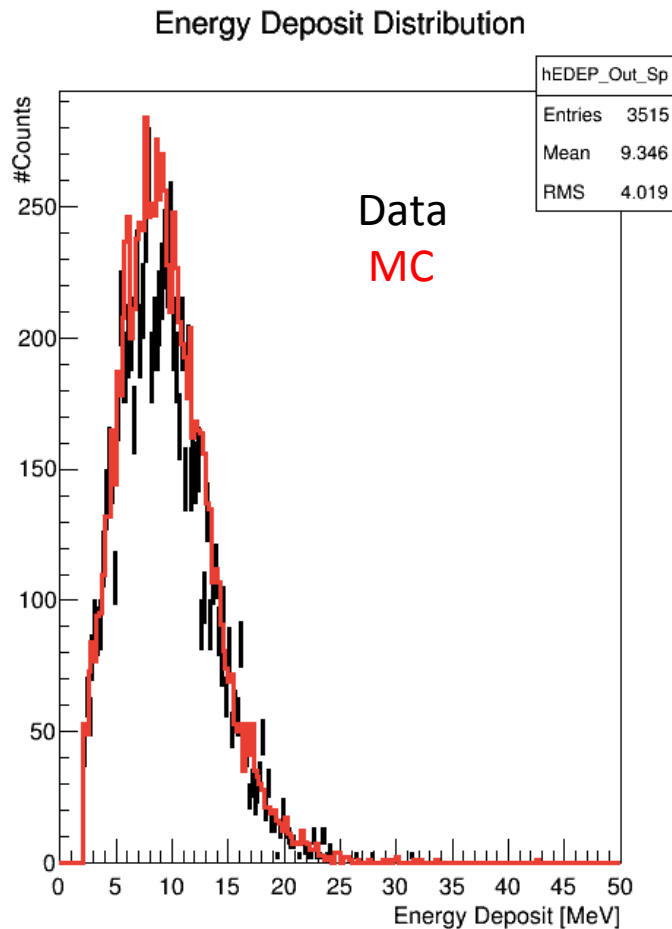
Data/M.C.



Gamma energy [40,60]

Outer Main Barrel

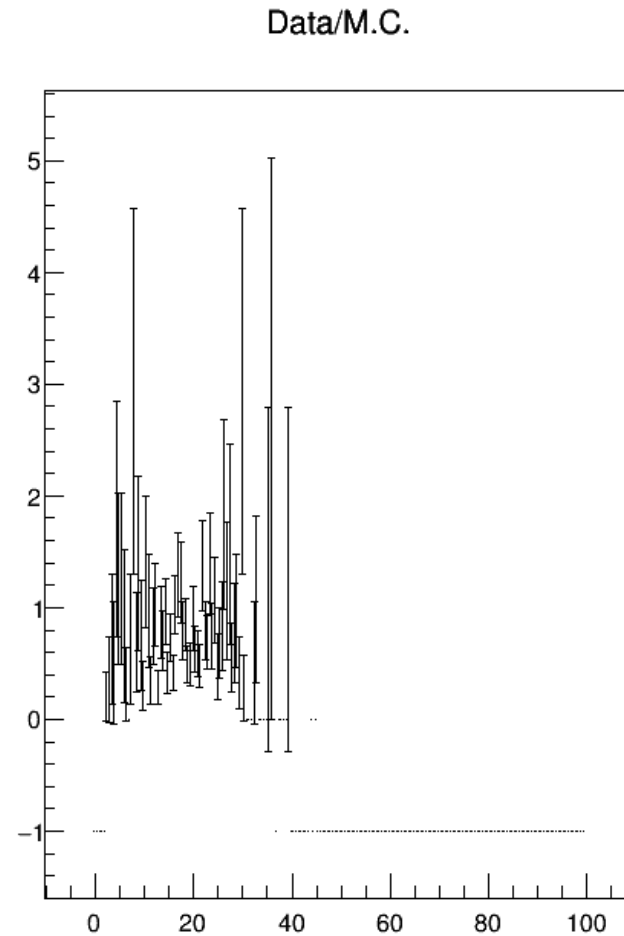
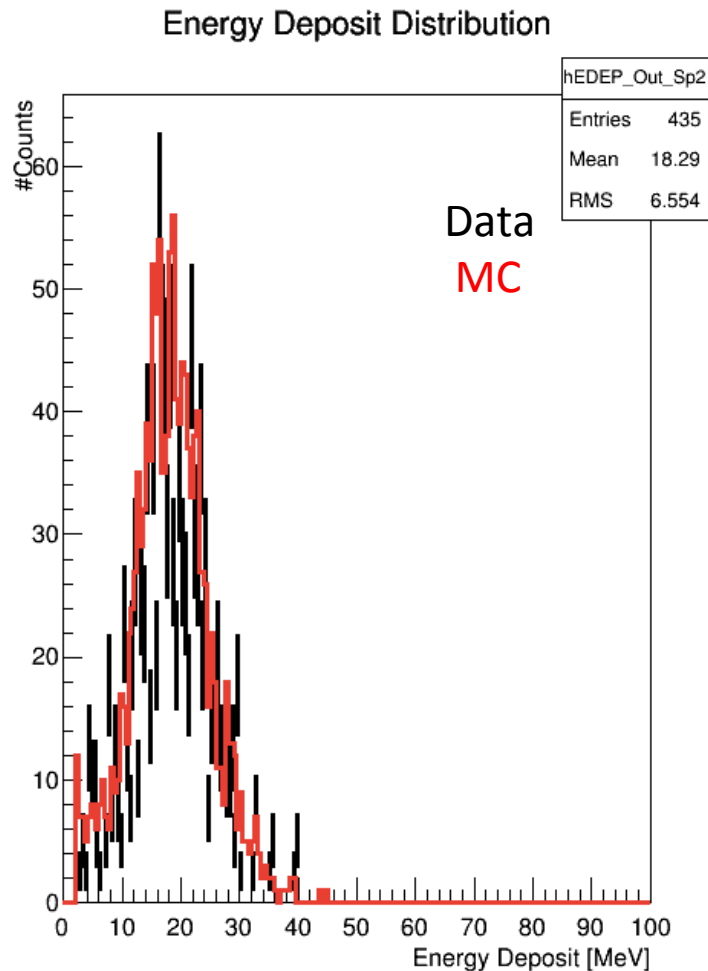
minimum bias, one hit only



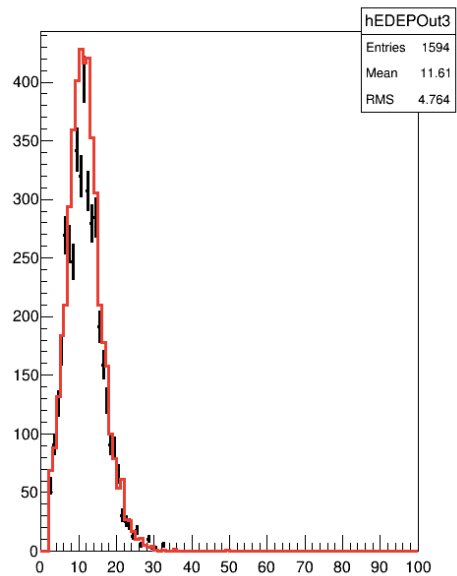
Gamma energy [90,110]

Outer Main Barrel

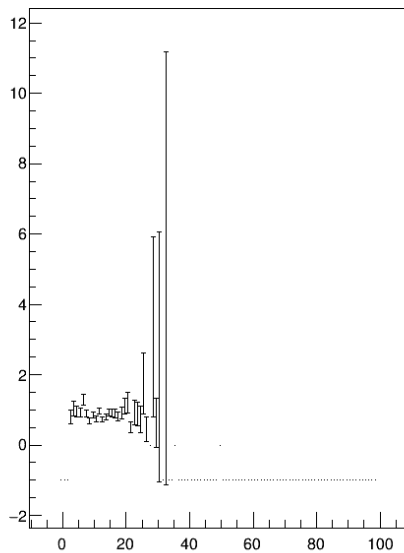
minimum bias, one hit only



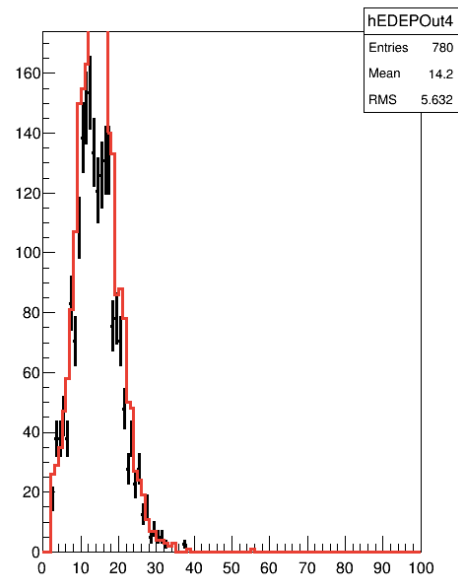
hEDEPOut3



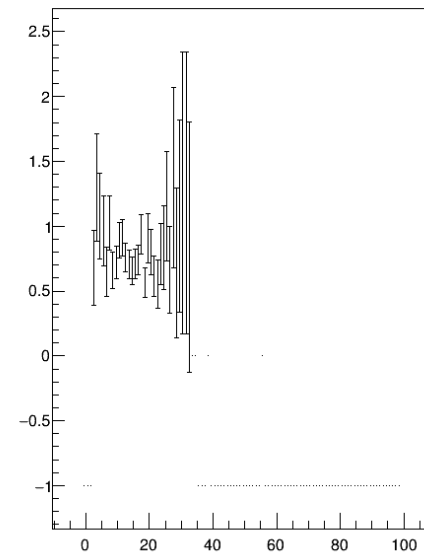
Incident gamma E [55,70]



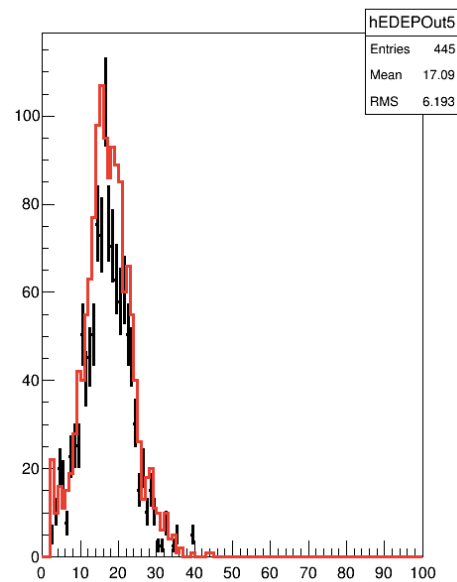
hEDEPOut4



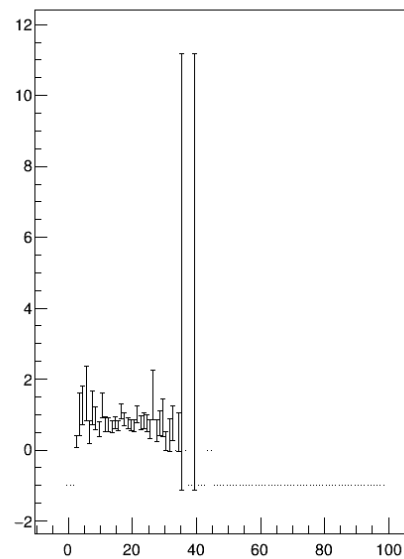
Incident gamma E [70,85]



hEDEPOut5



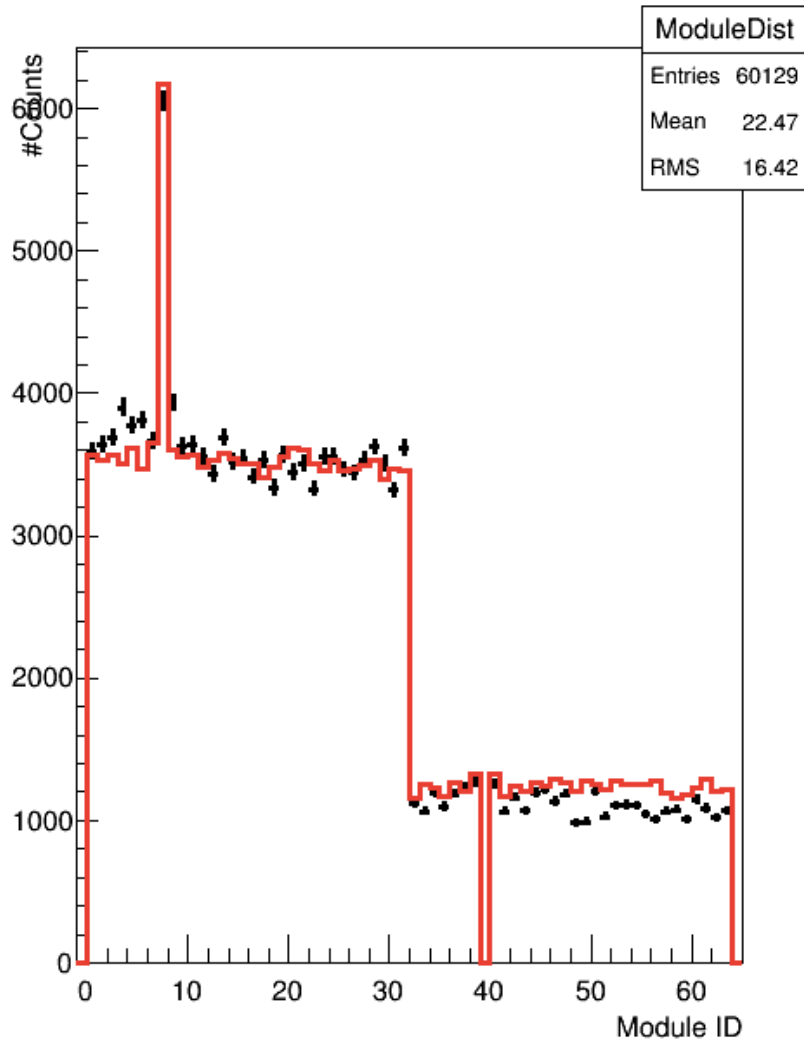
Incident gamma E [85,100]



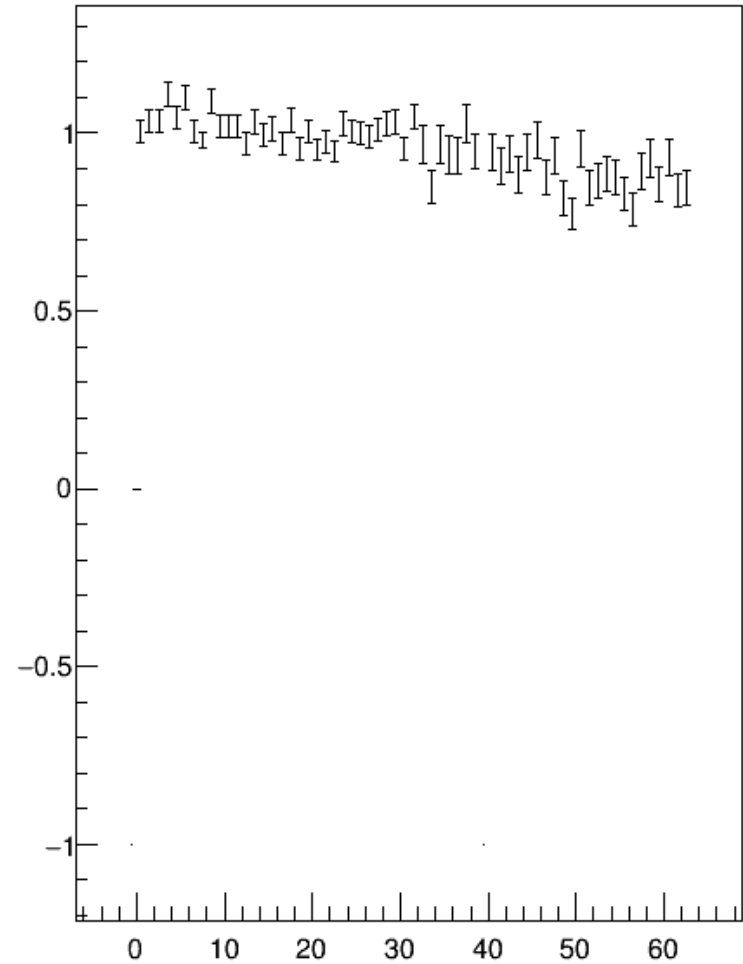
Discrepancy?

Hit Distribution

Hit Distribution

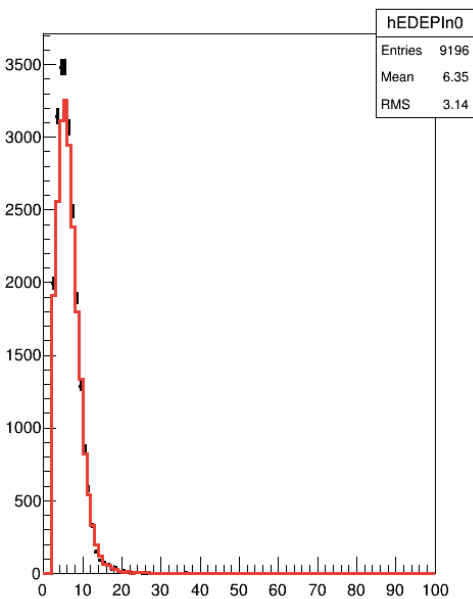


Data/M.C.

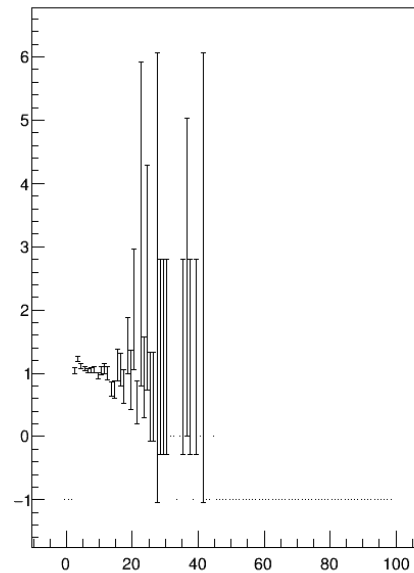


Inner Main Barrel minimum bias, two hits only

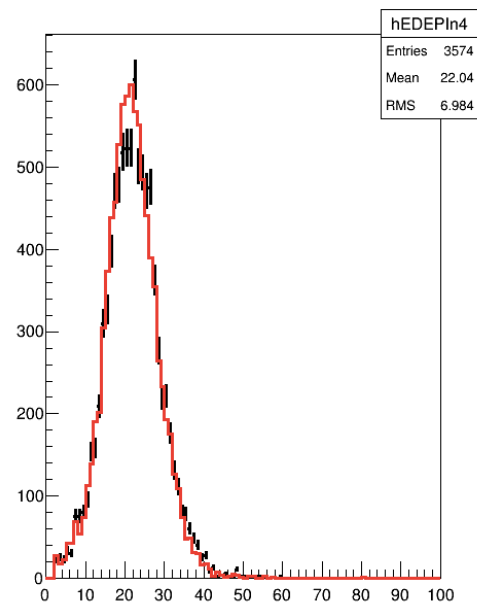
hEDEPIn0



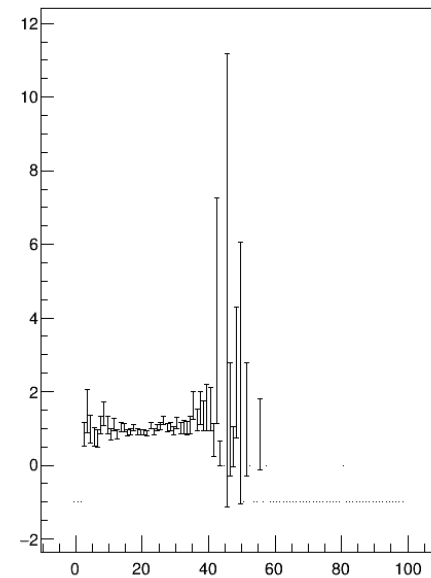
Incident gamma E [10,25]



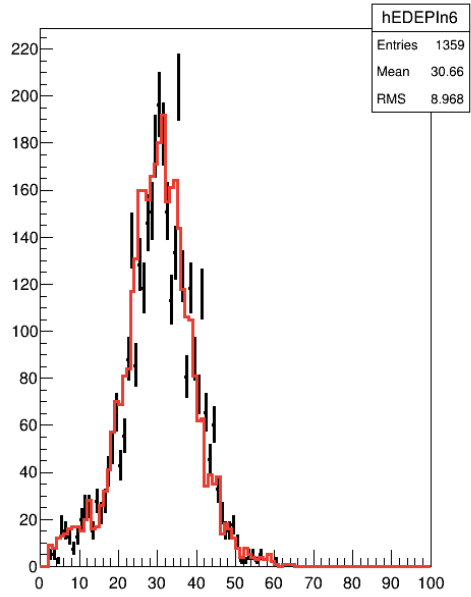
hEDEPIn4



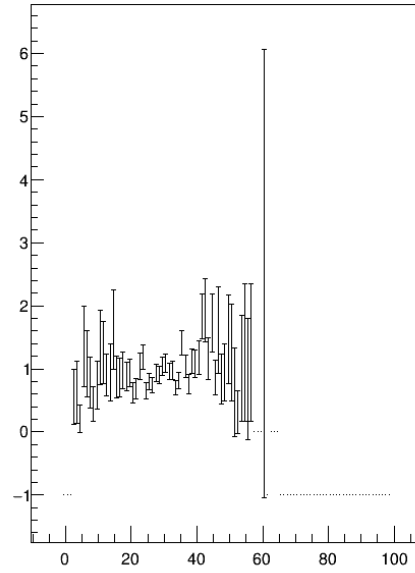
Incident gamma E [70,85]



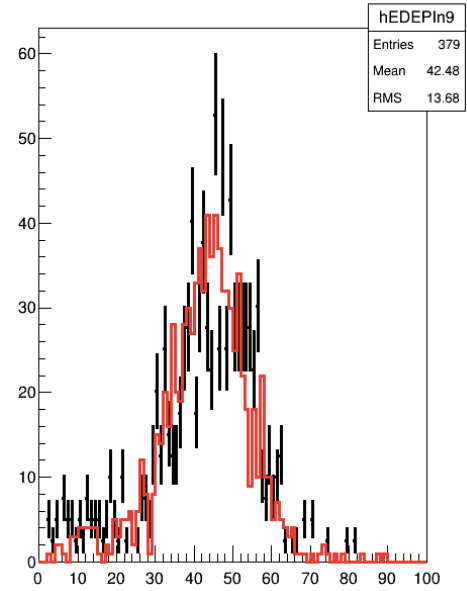
hEDEPIn6



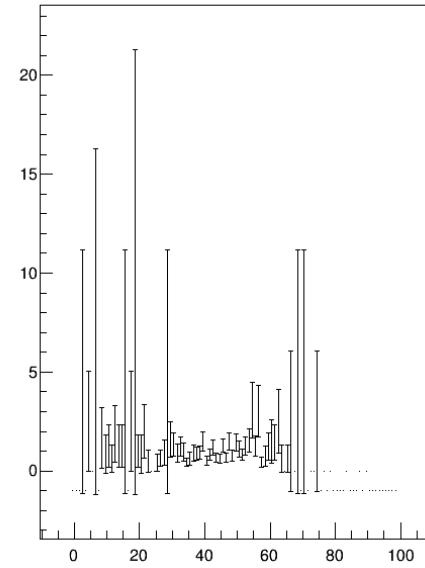
Incident gamma E [100,115]



hEDEPIn9

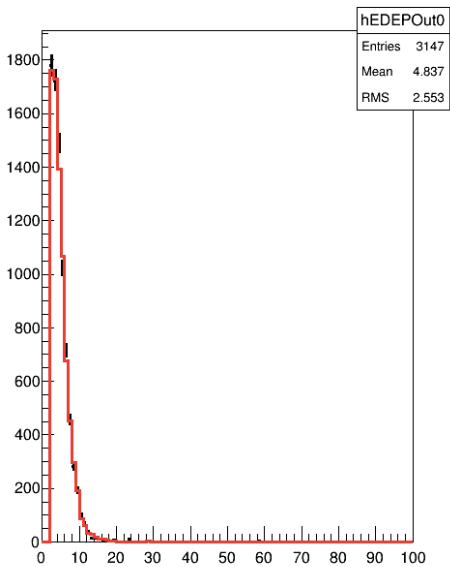


Incident gamma E [145,160]

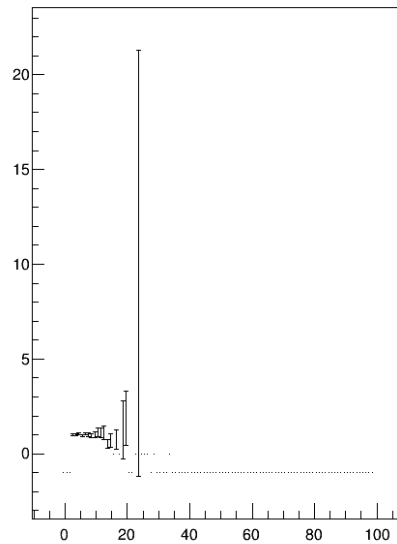


Inner Main Barrel minimum bias, two hits only

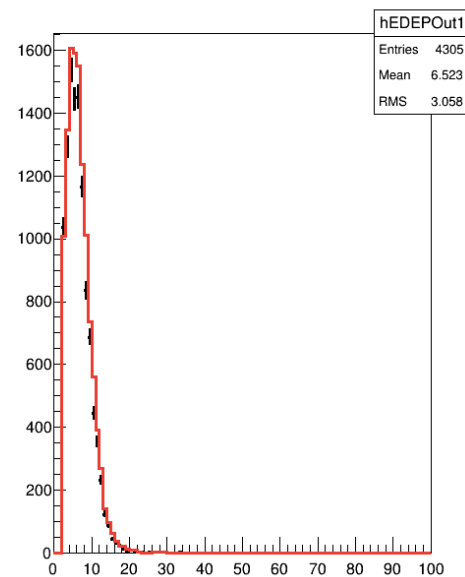
hEDEPOut0



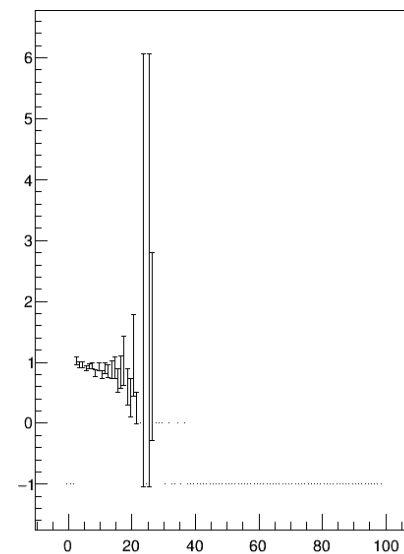
Incident gamma E [10,25]



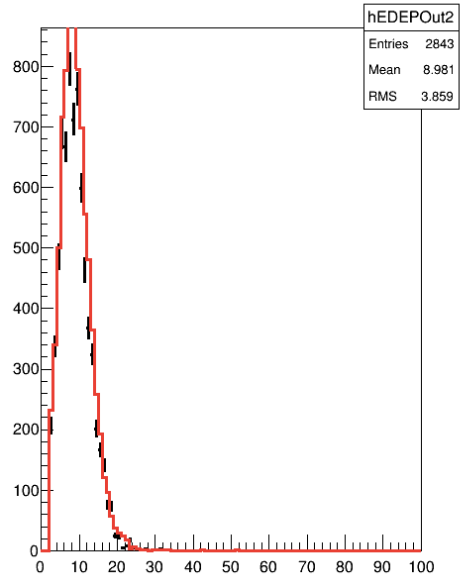
hEDEPOut1



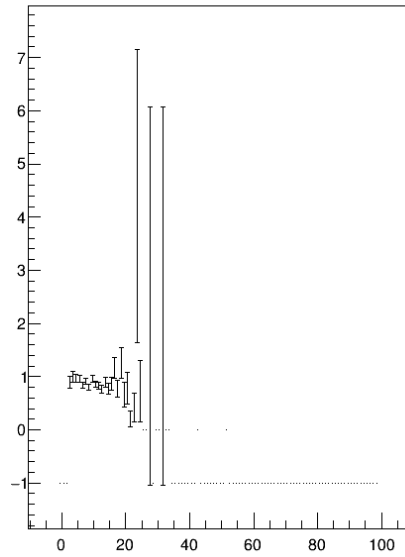
Incident gamma E [25,40]



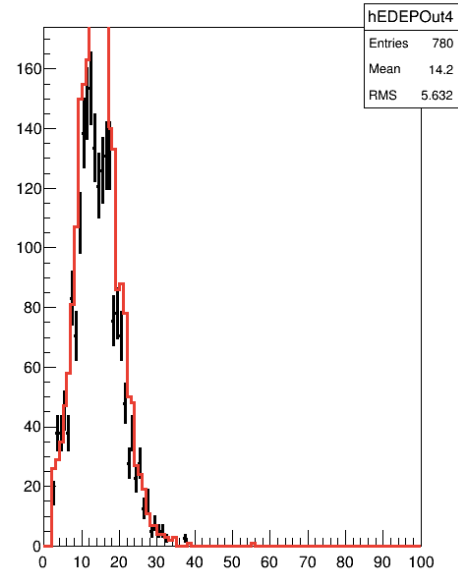
hEDEPOut2



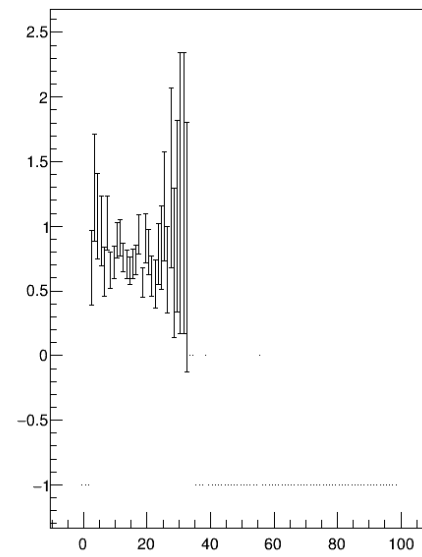
Incident gamma E [40,55]



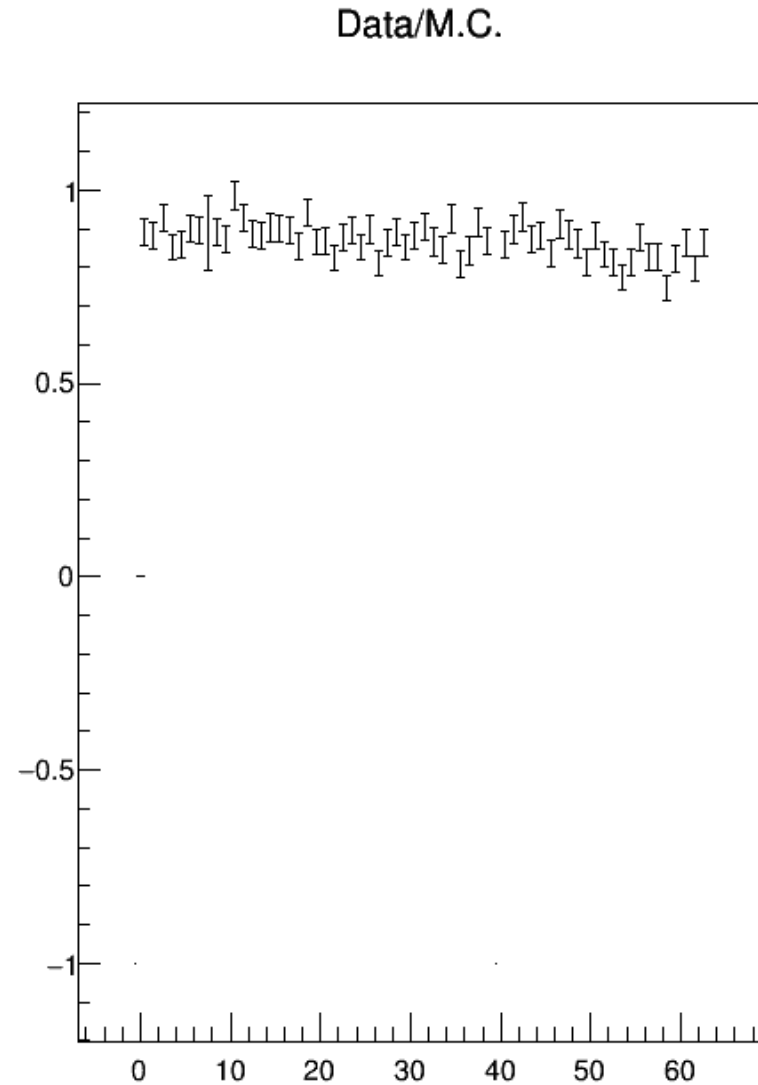
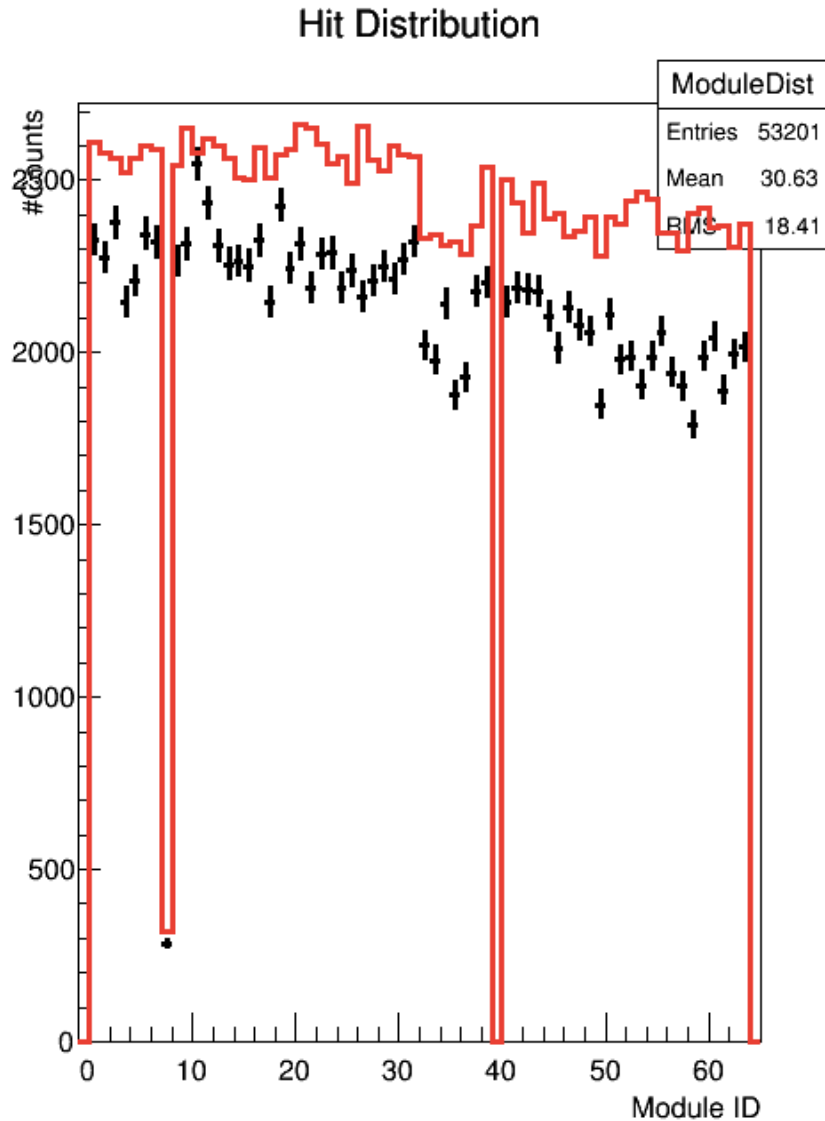
hEDEPOut4



Incident gamma E [70,85]

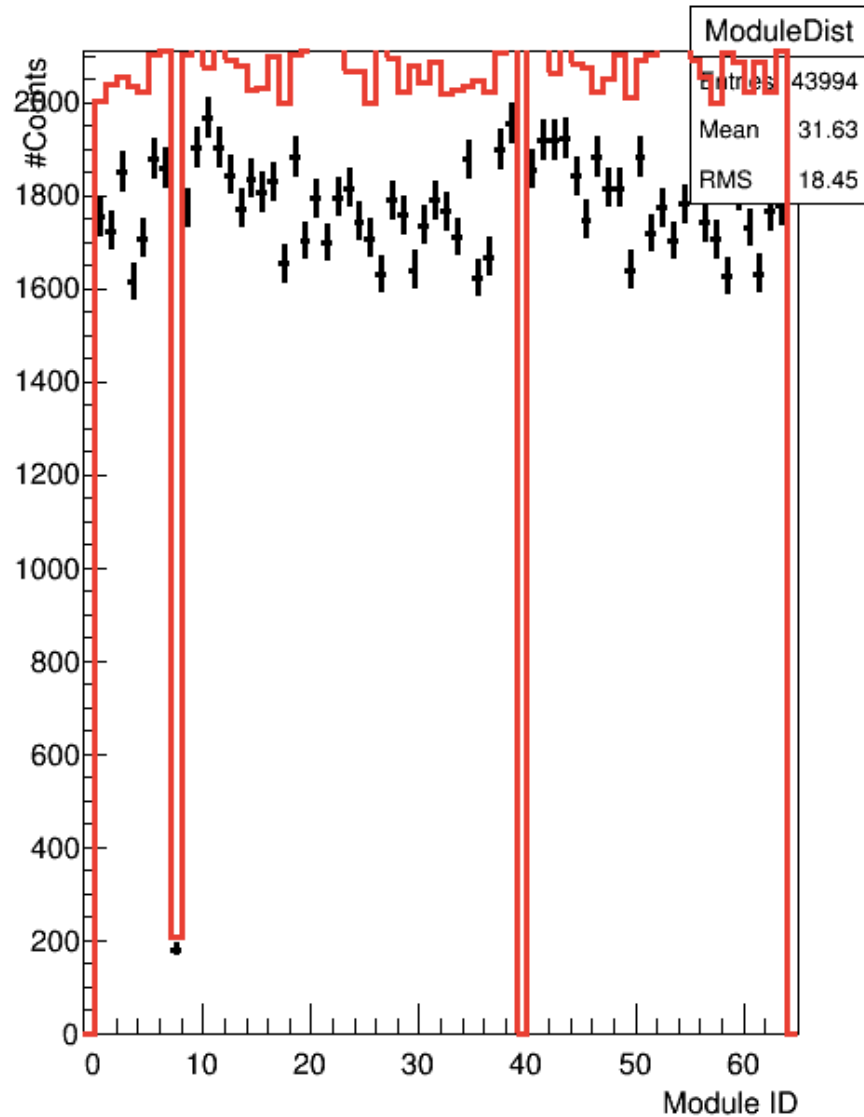


Hit Distribution (individual selection)

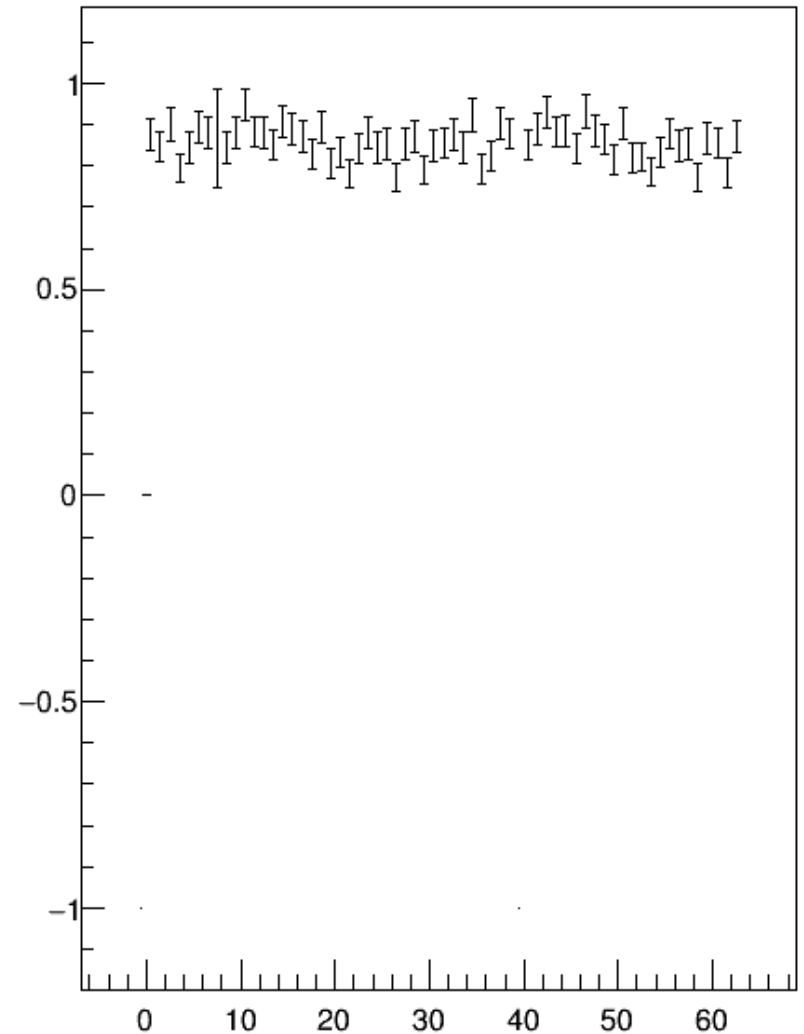


Hit Distribution (selection for two hits)

Hit Distribution

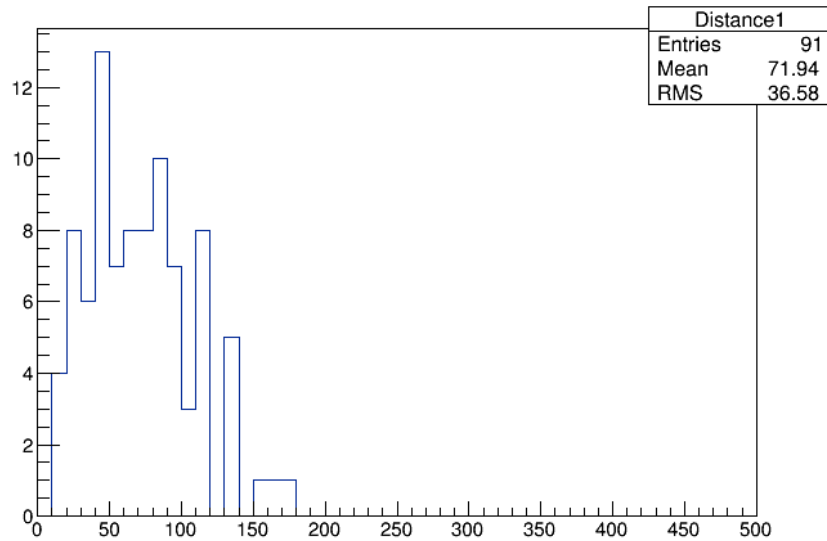


Data/M.C.

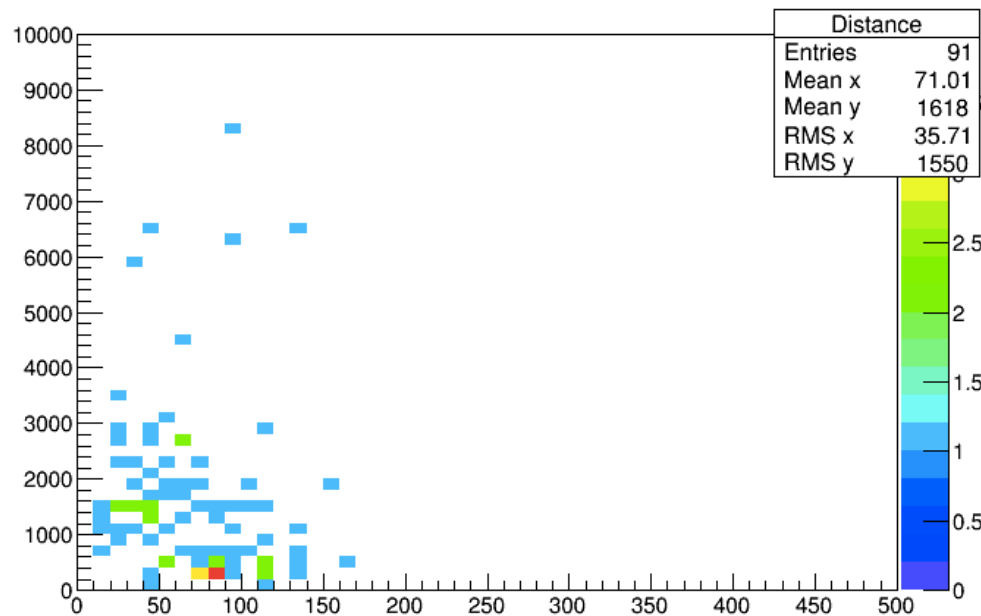
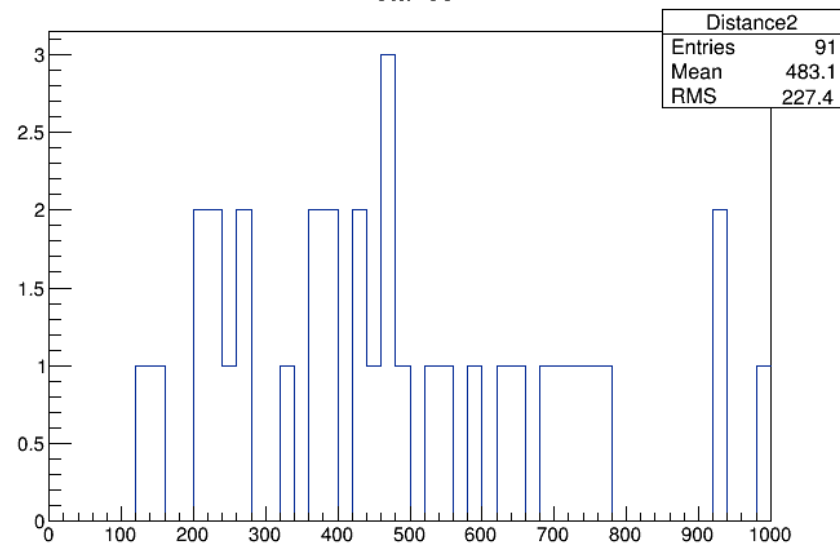


Two gammas going to barrel

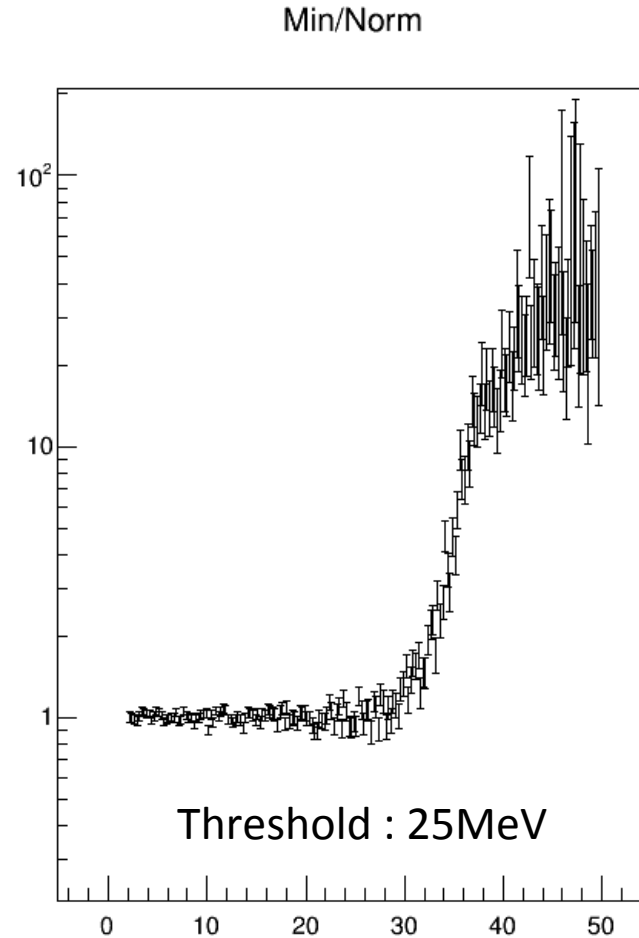
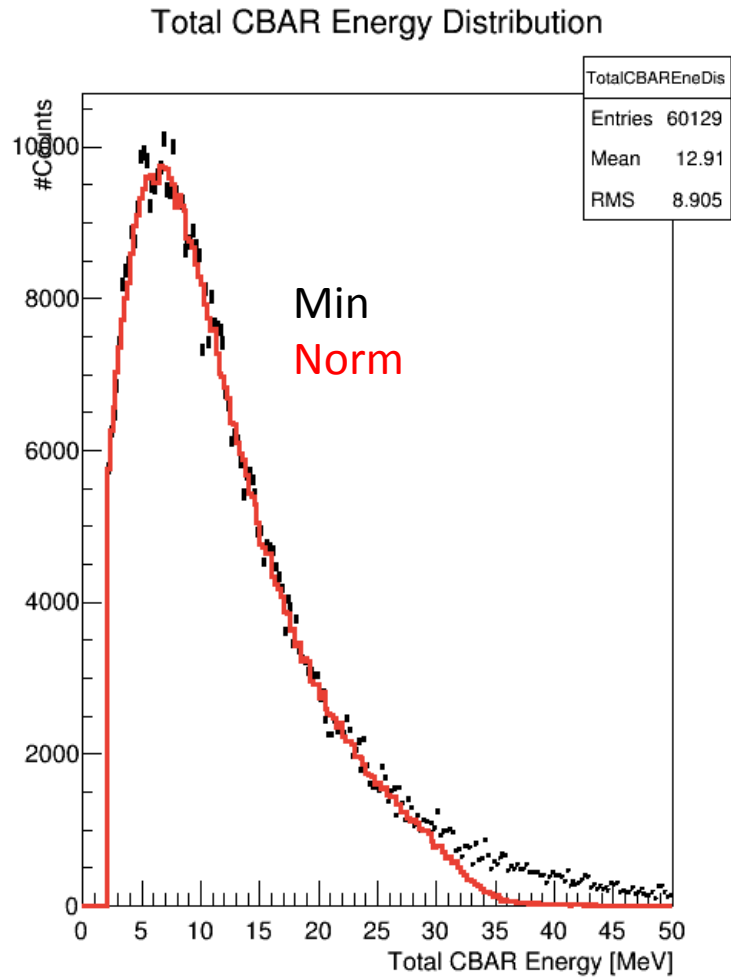
Distance1



Distance2



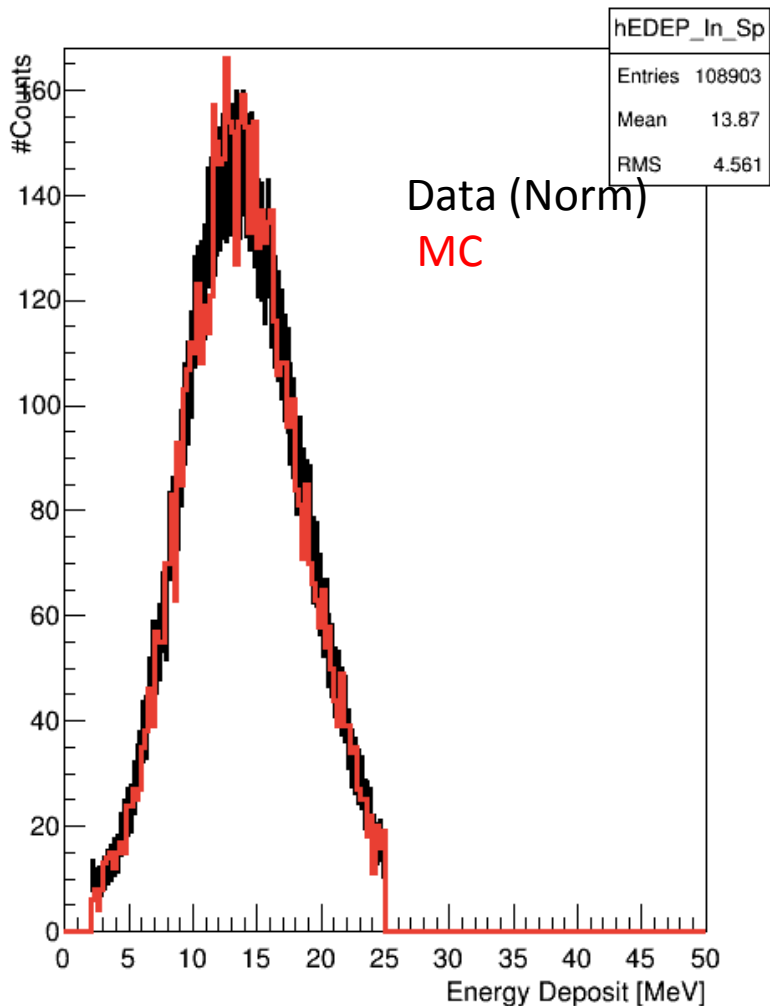
Min/Norm



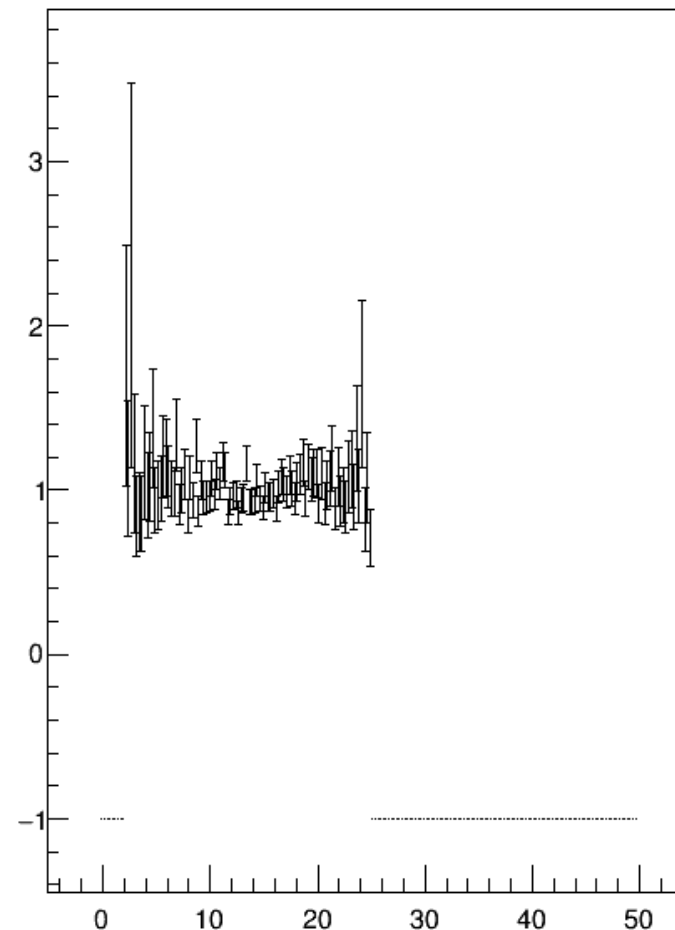
Gamma Energy [40,60]

Inner Main Barrel, one hit only

Gamma Energy Distribution

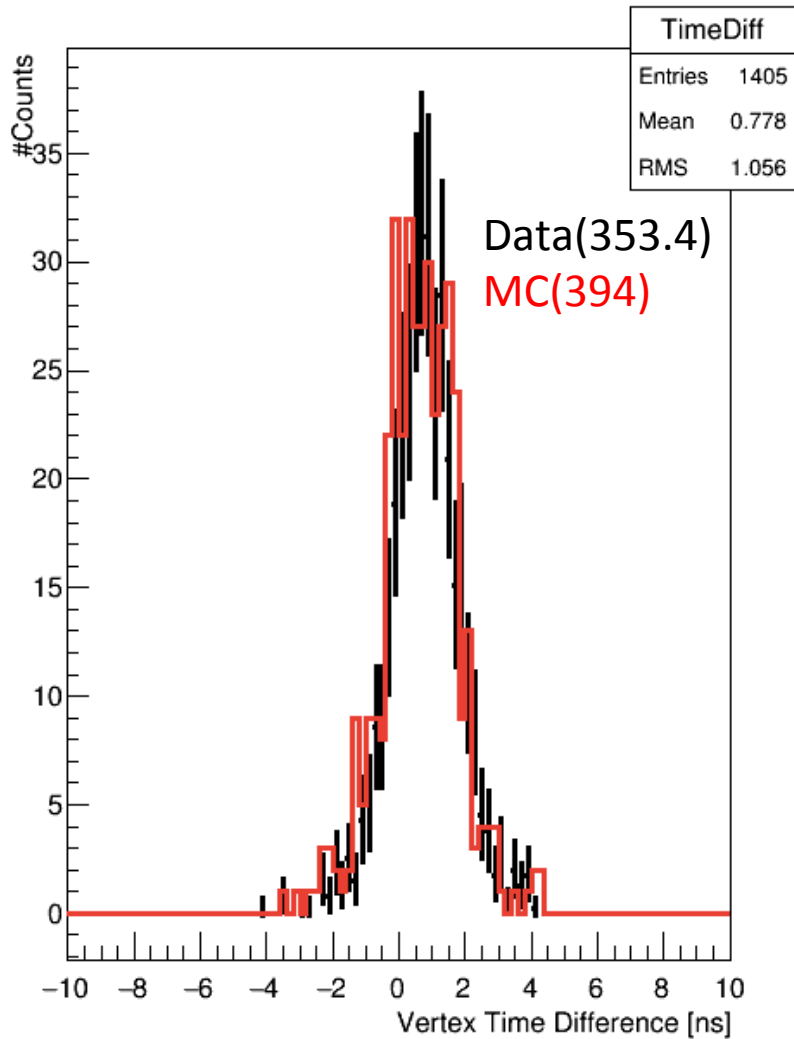


Data/M.C.

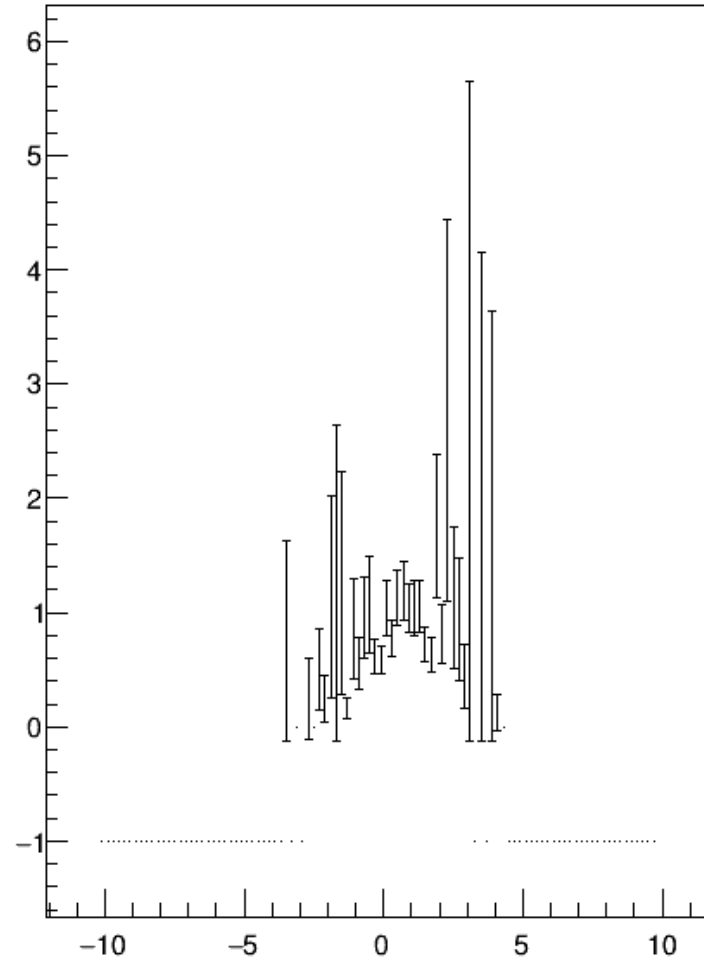


Low Sampling Fraction Event

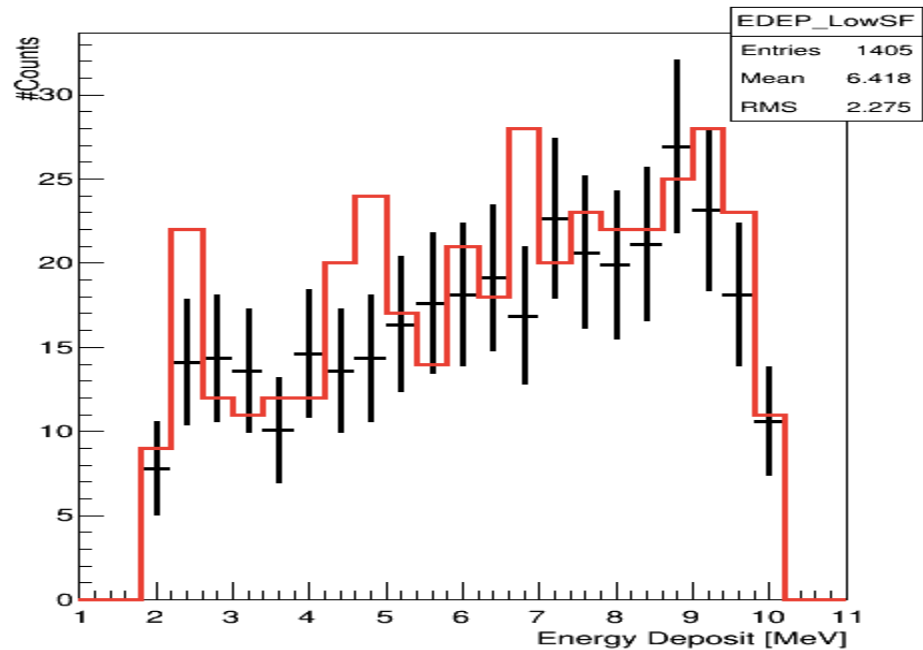
Vertex Time Difference Distribution



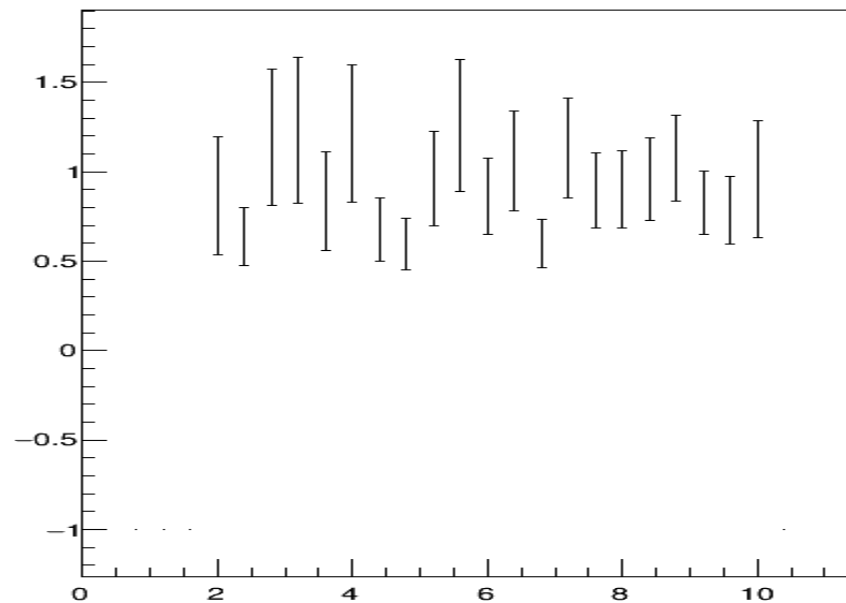
Data/M.C.



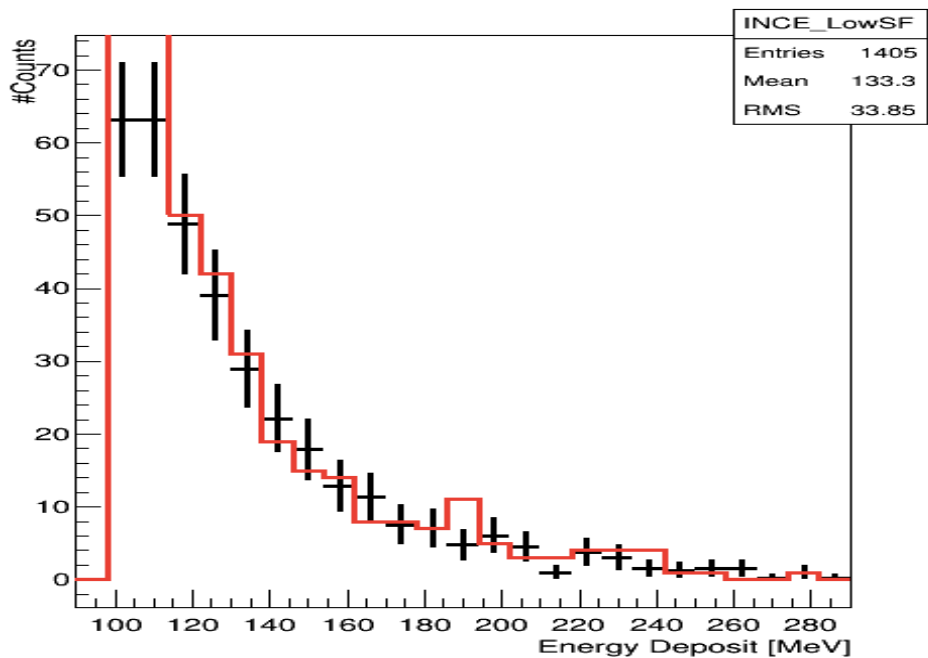
Energy Deposit Distribution



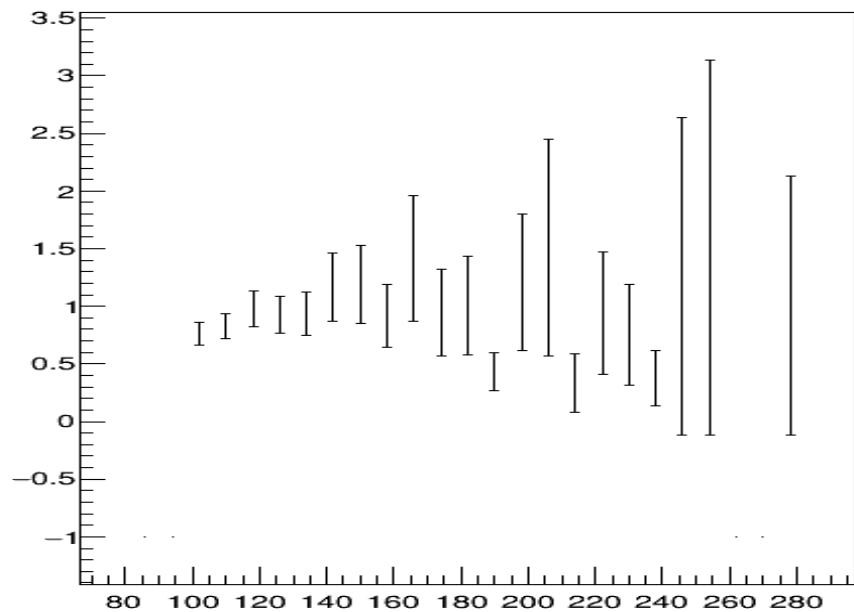
Data/M.C.



Energy Deposit Distribution

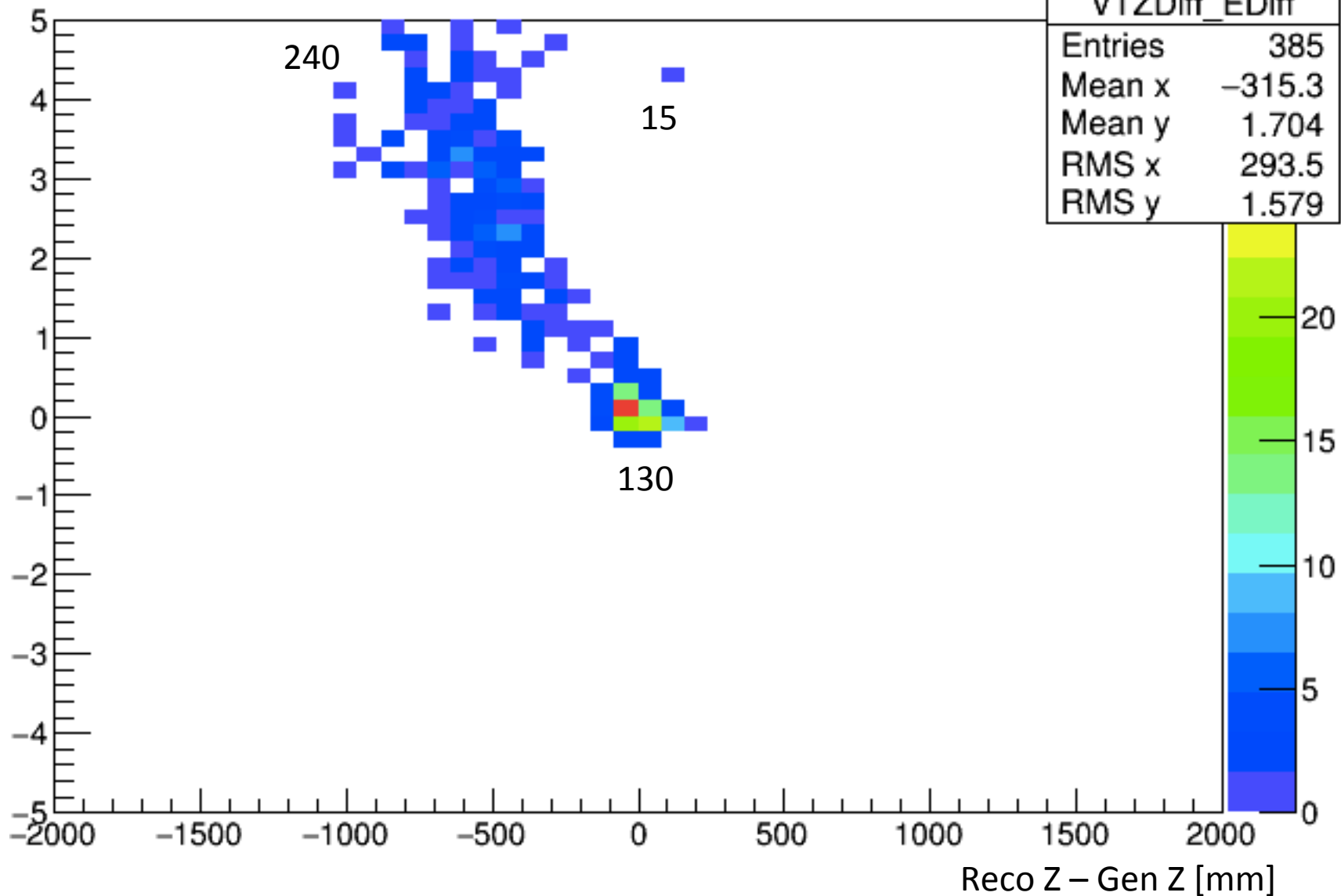


Data/M.C.



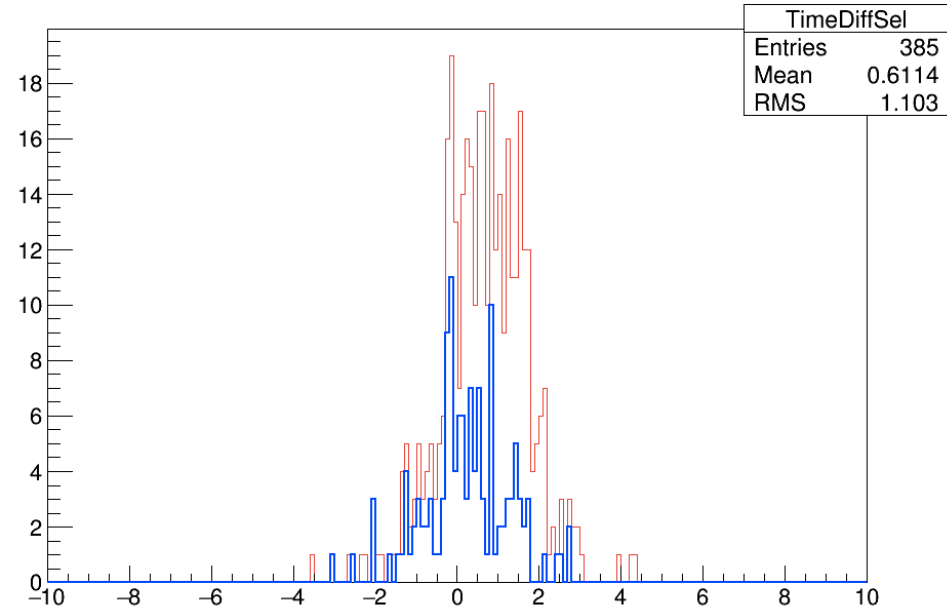
(Reco E – Gen E)/Gen E

VTZDiff_EDiff

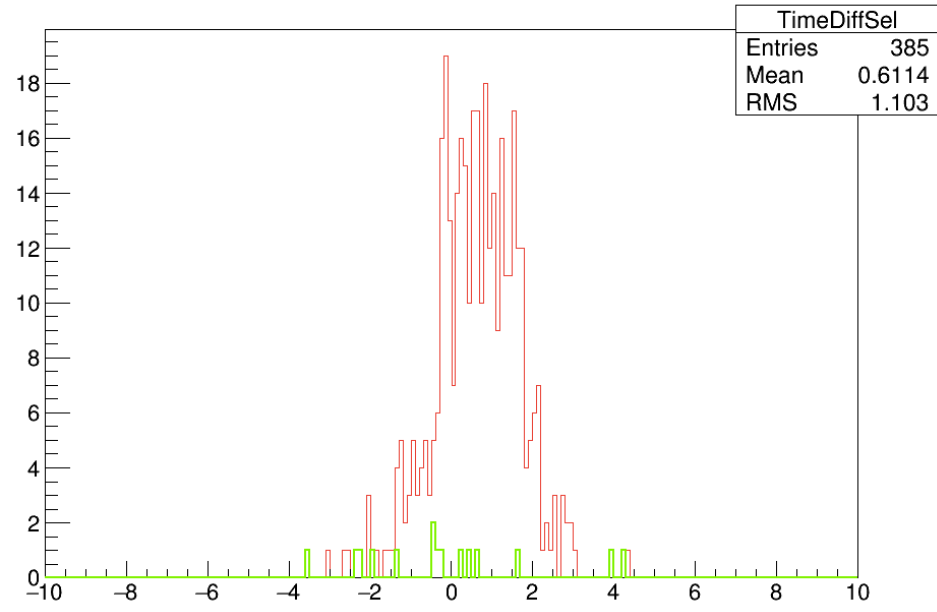


Decomposition

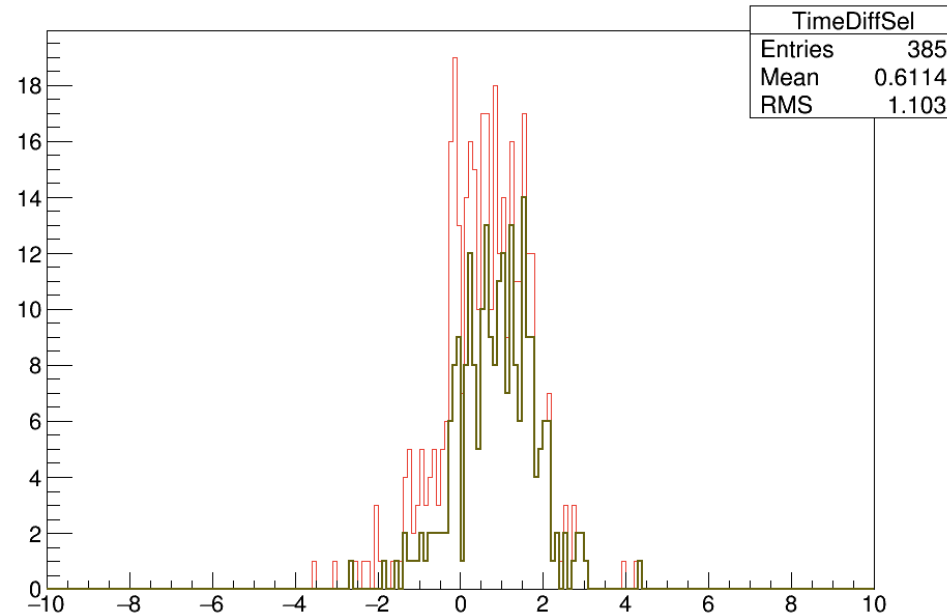
TimeDiffSel



TimeDiffSel

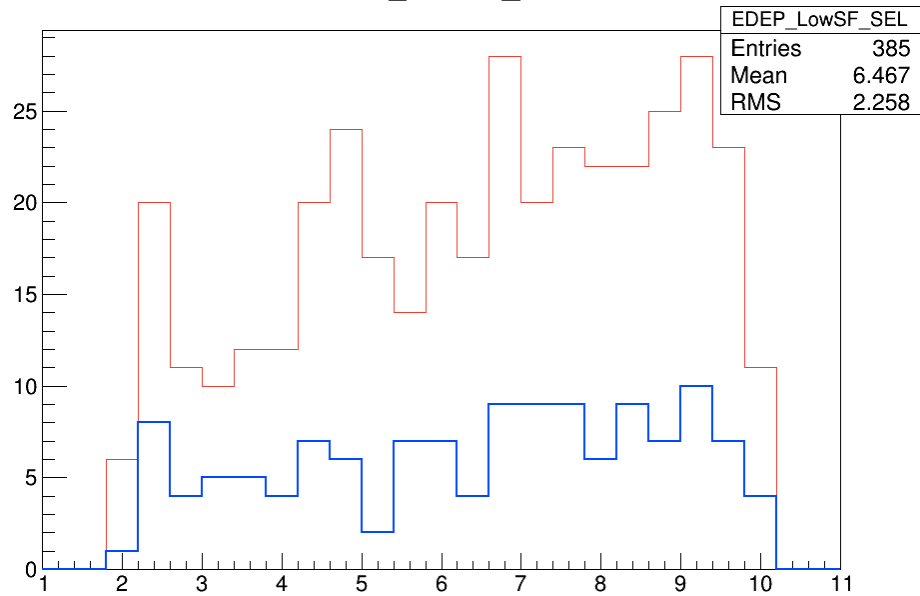


TimeDiffSel

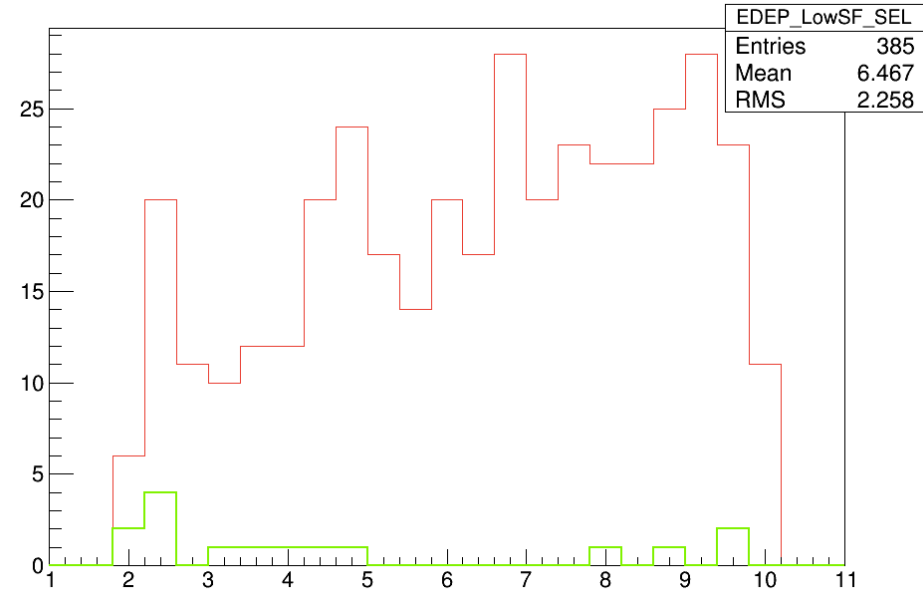


Decomposition

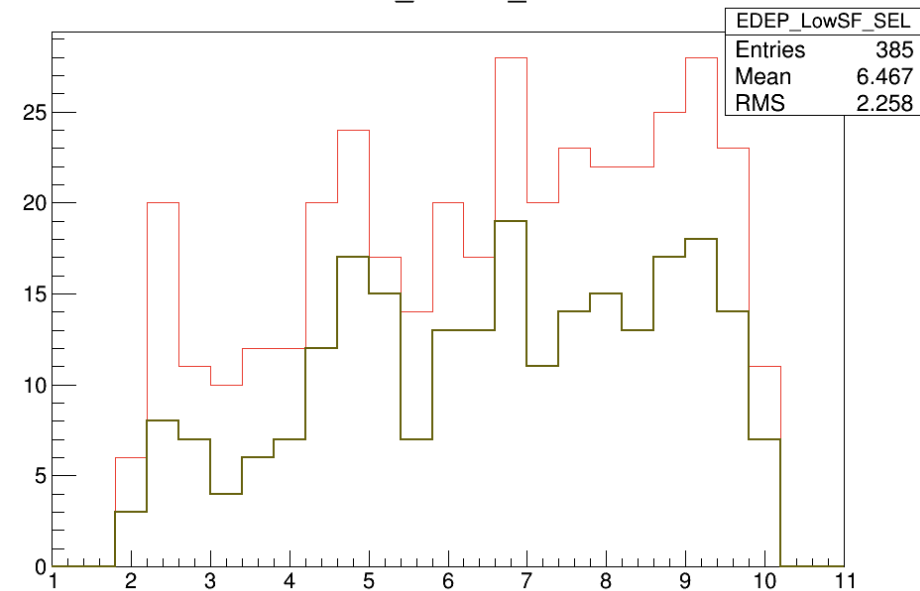
EDEP_LowSF_SEL



EDEP_LowSF_SEL



EDEP_LowSF_SEL



photonuclear event(?)

Main Barrel Data

Mod ID / Energy Deposit / Time / HitZ

11, 2.736, -84.94, 5840
13, 1.465, 8.314, 3016
18, 48.2, 225.6, 6388
19, 2.194, 226.5, 6792
32, 1.69, 89.11, 6550
50, 2.197, 28.55, 4533

Main Barrel True Data

ModID / Energy

11, 0
13, 0.01671
18, 13.17 (*vetoed by time*)
19, 0
32, 0
50, 1.901

GEANT4 Hit track

EDEP / Time / ModID / X/ Y/ Z/ PID

0.04629, 22.08, 50, -1064, -403.9, 4364, 11,
0.7745, 23.04, 50, -1148, -368.4, 4423, 2212,
0.04839, 23.26, 50, -1155, -354.3, 4423, 2112,
0.5913, 23.26, 50, -1155, -354.3, 4423, 2212,
0.2052, 23.74, 50, -1148, -369, 4413, 2212,
0.01014, 24.54, 50, -1153, -368.9, 4407, 2112,
0.001855, 24.78, 50, -1151, -348.9, 4419, 2112,
0.2104, 26.84, 50, -1156, -362.8, 4394, 2212,
0.008263, 27.83, 50, -1152, -365.7, 4390, 2112,
0.0001376, 28.81, 50, -1147, -368.5, 4386, 2112,
0.0009576, 45.5, 50, -1155, -383, 4381, 2112,

Gamma going to Barrel

X, Y, Z, Energy

-979.2, -322.6, 4308, 58.49

Things to do

- $7e9$ M.C. production is done
 - Statistics will be increased to $1e10$
- No surprise happen.
 - More details will be prepared after reaching enough stat($1e10$)
- In overall, discrepancy of 10% about number of events is found
 - OMB