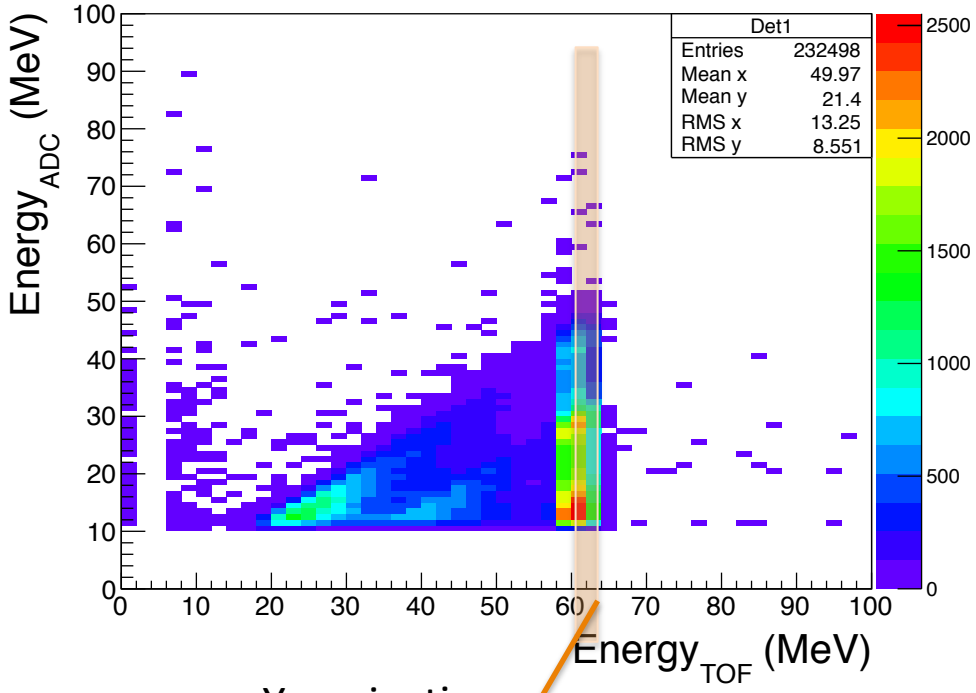
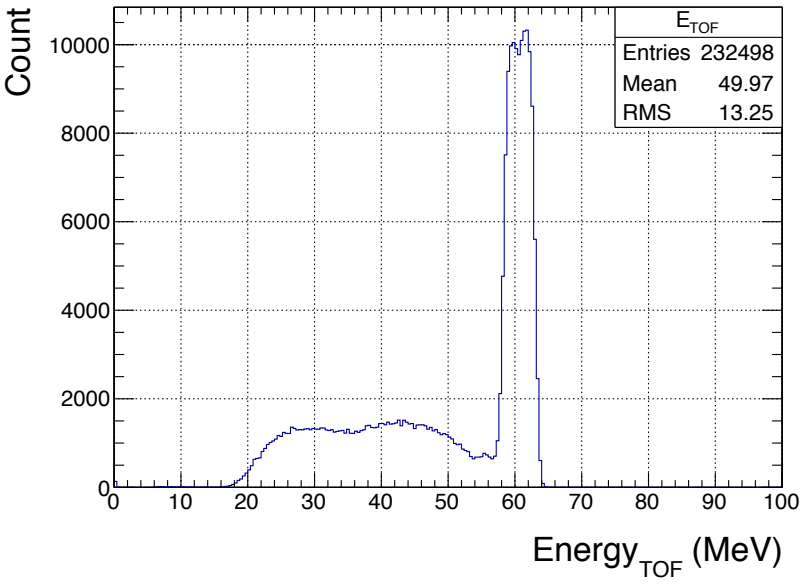
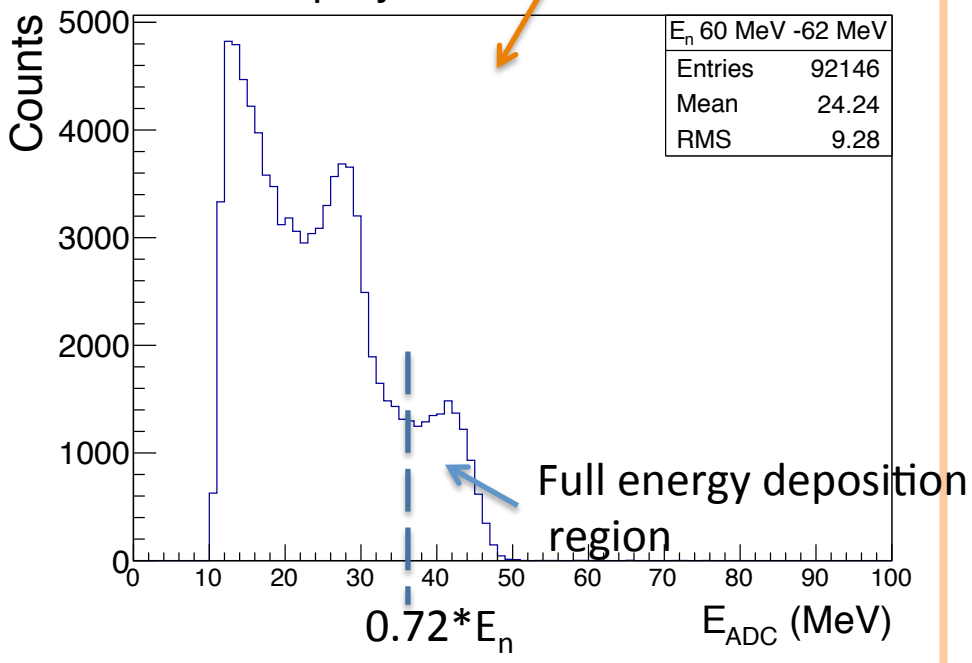
Data : beamNew80(65 MeV)





Y-projection



Full energy deposition region

Recoil nucleus energy :

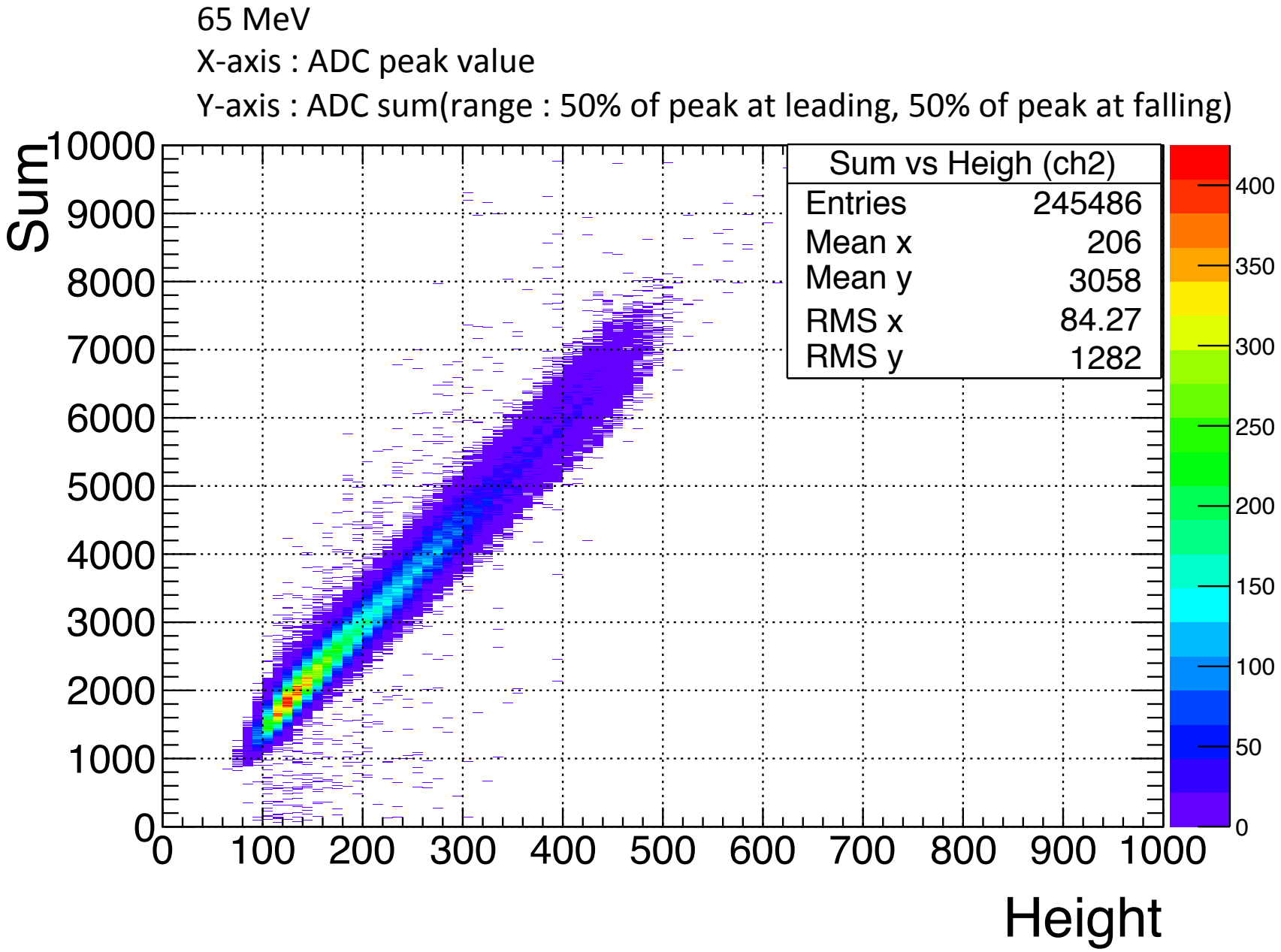
$$E_R = \frac{4A}{(1+A)^2}(\cos^2\Theta)E_n$$

Maximum fractional energy transfer

A : 1 (^{1}H) → 1

A : 12 (^{12}C) → 48/169 = 0.284

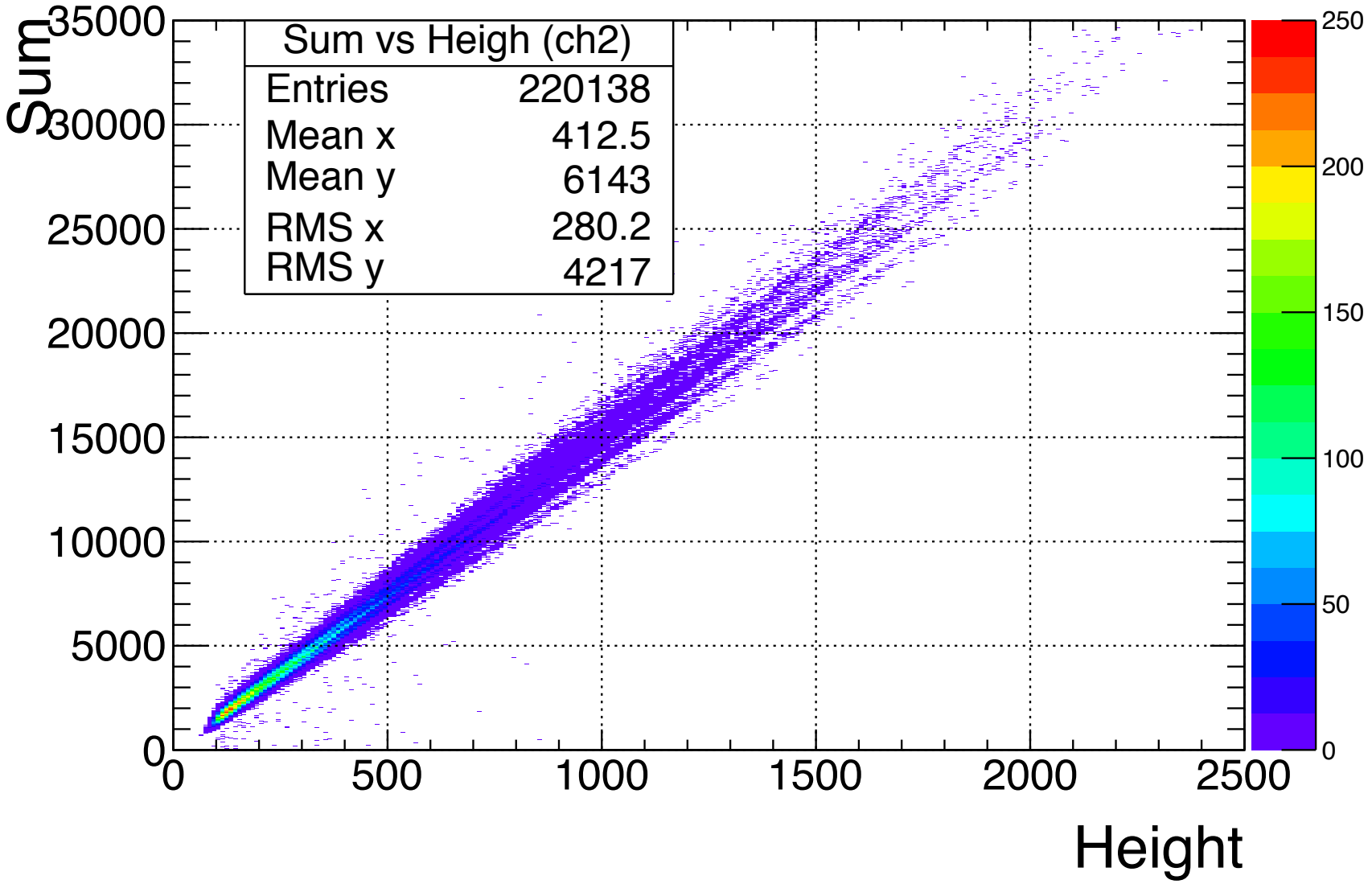
Incident neutrons can lose between 0 and 28% of its initial energy in a carbon scatter


65 MeV
X-axis : ADC peak value
Y-axis : ADC sum(range : 50% of peak at leading, 50% of peak at falling)
Sum vs Heigh (ch2)
Entries 245486
Mean x 206
Mean y 3058
RMS x 84.27
RMS y 1282
Sum
Height
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
0
100
200
300
400
500
600
700
800
900
1000
0
50
100
150
200
250
300
350
400

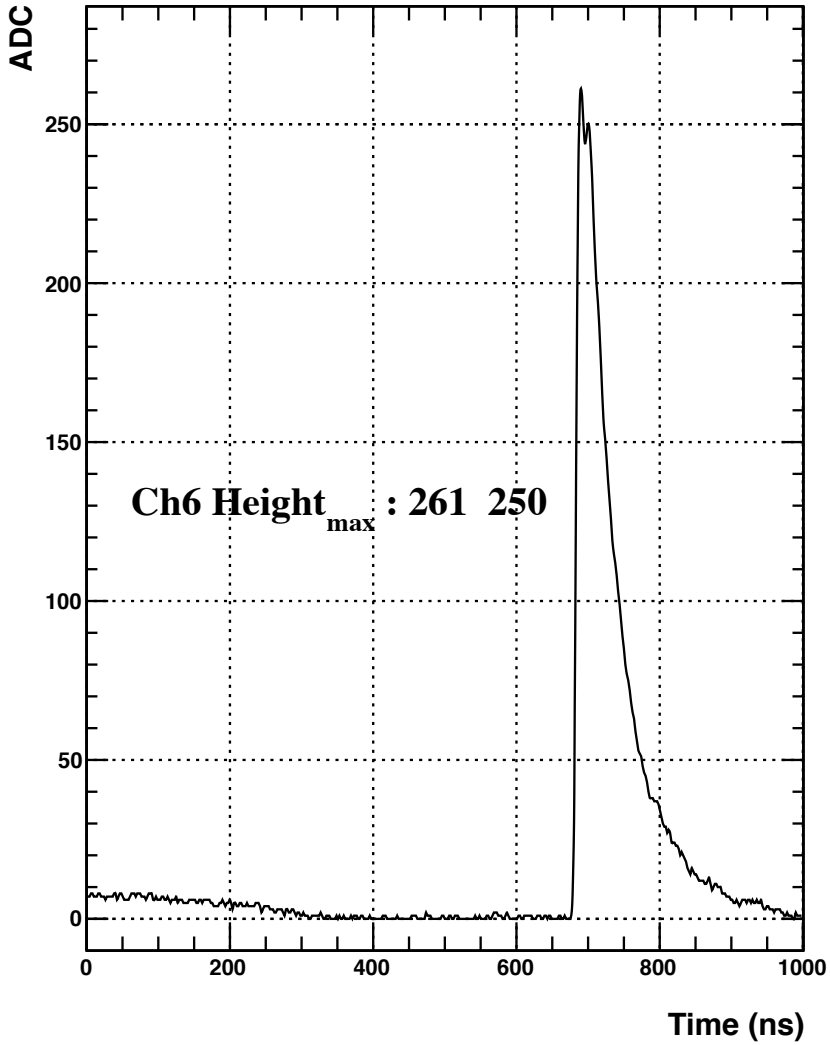
392 MeV

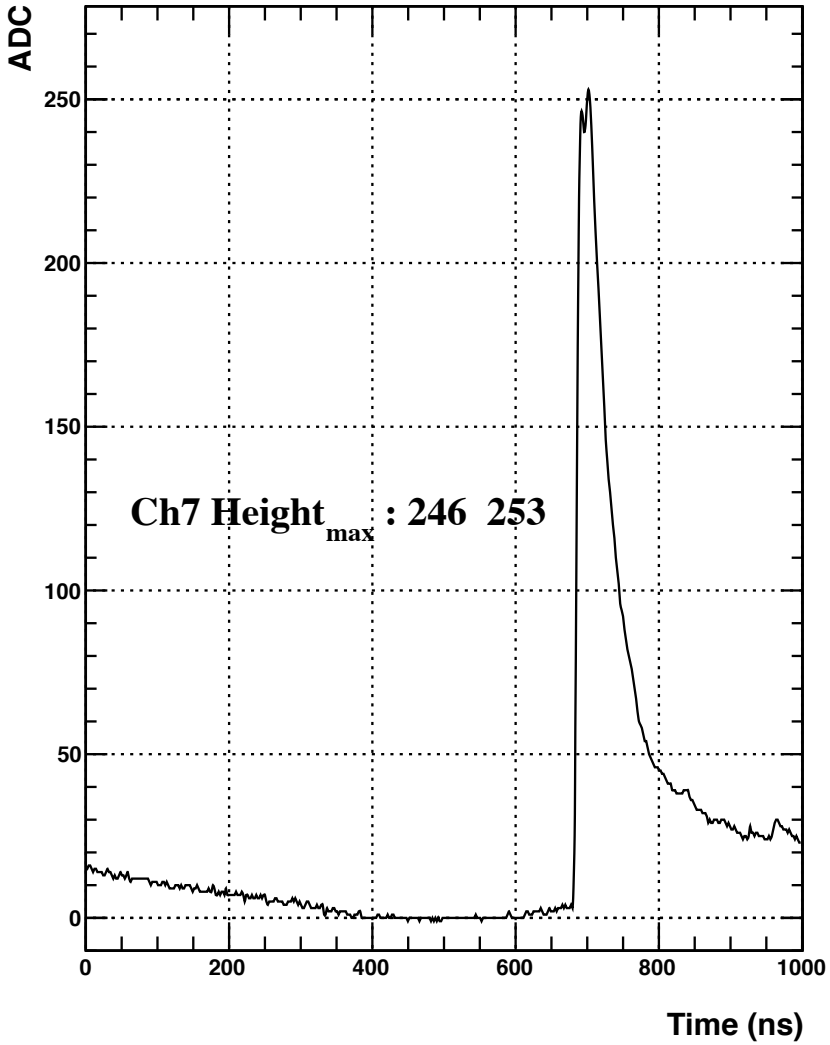
X-axis : ADC peak value

Y-axis : ADC sum(range : 50% of peak at leading, 50% of peak at falling)



beamNew80
eventNum : 704379
Pedestal re-calculation(datapoint200~ 225)

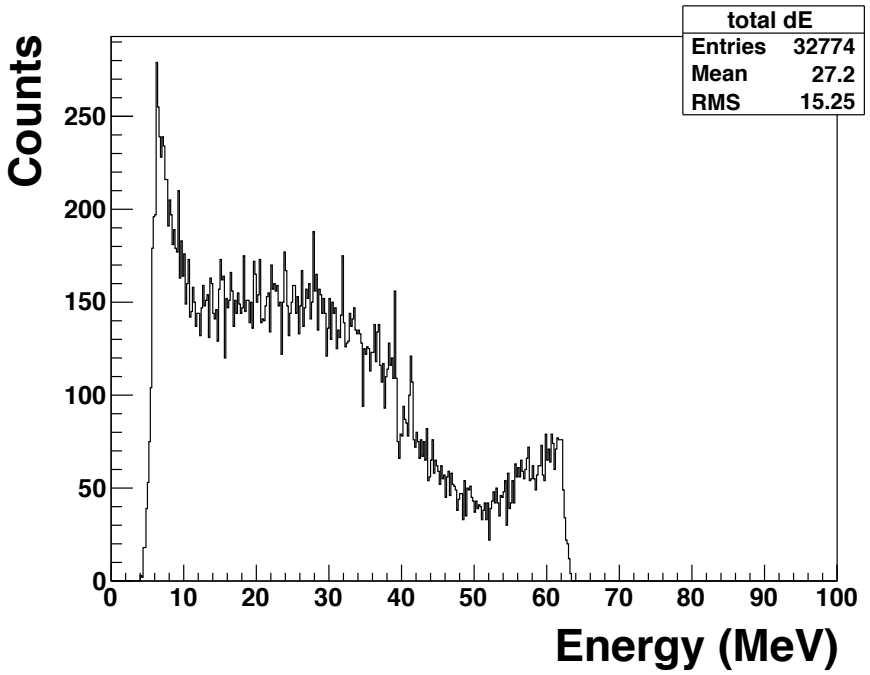


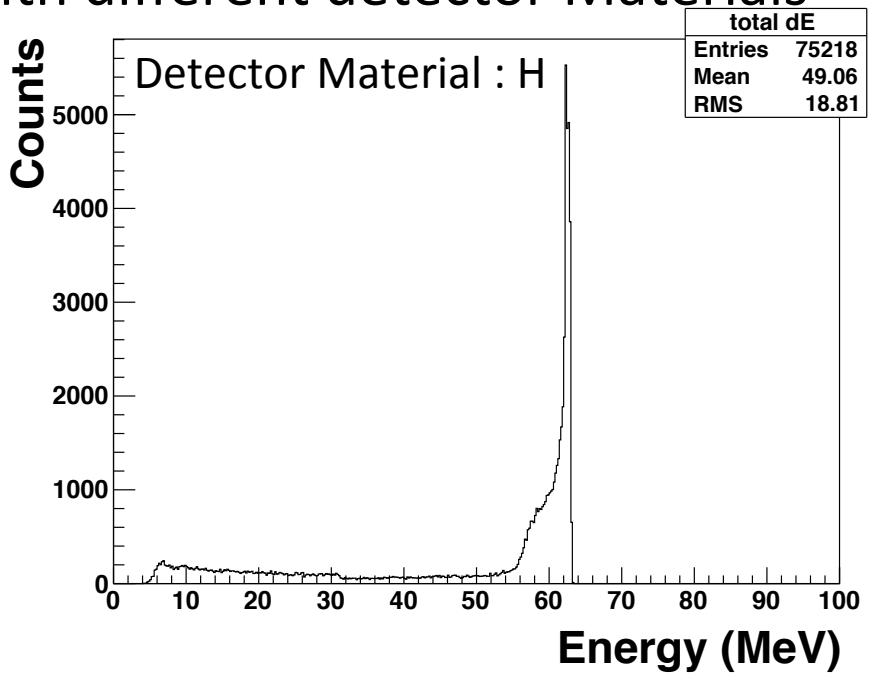


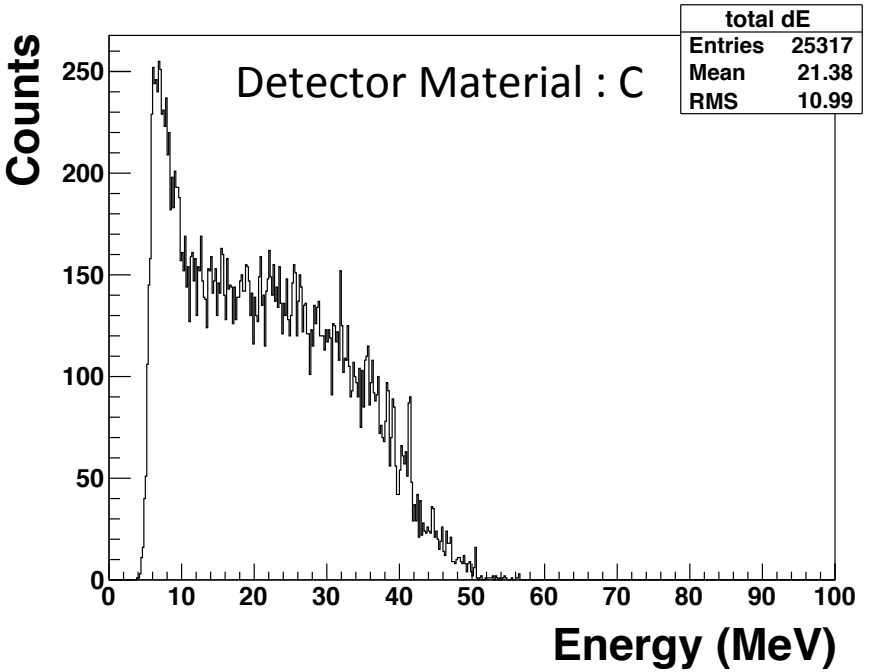
Summed energy of whole detectors with different detector Materials

Geant4 Simulation results
- PhyscisList : QGSP_BIC_HP_EMV
- Detector : same with RNCP exp. Setup
- Not Birks factor applied

Detector Material : $C_{10}H_{11}$







/home/hhshim/LAMPS_RCNP_geant10