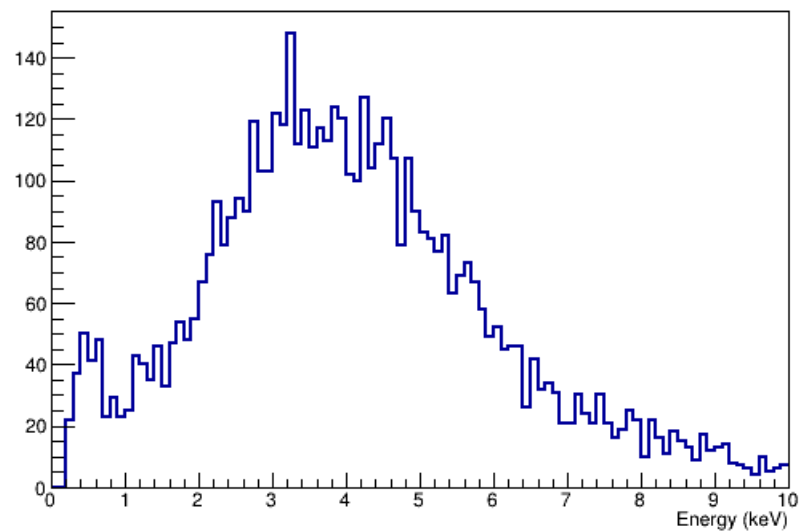
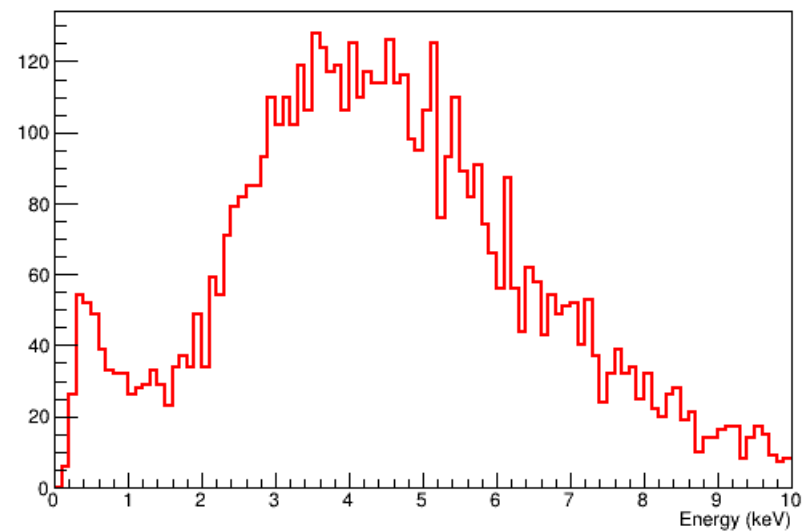


NaI deposit energy

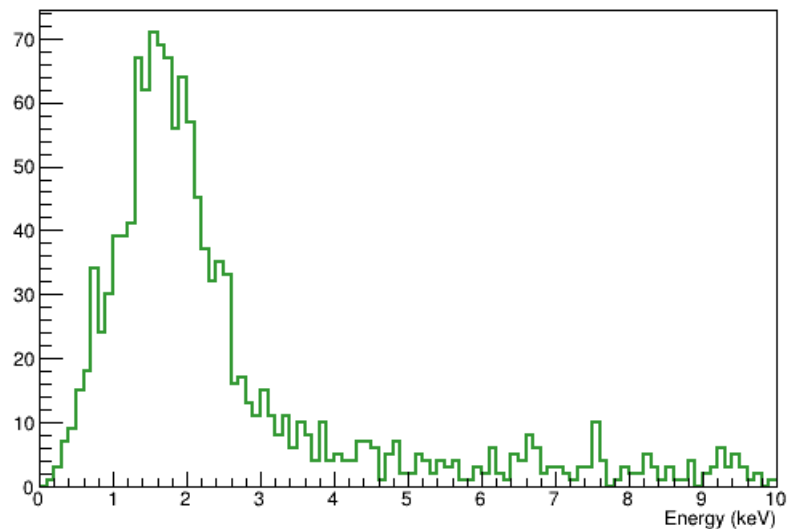
ND1



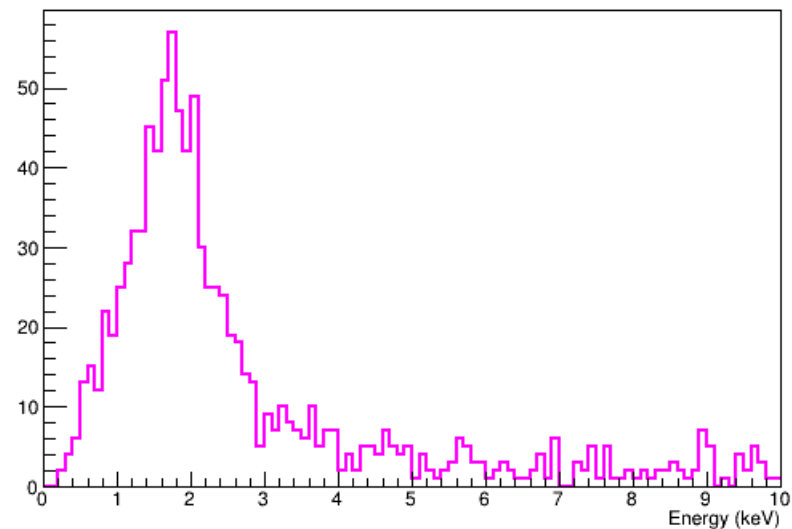
ND2



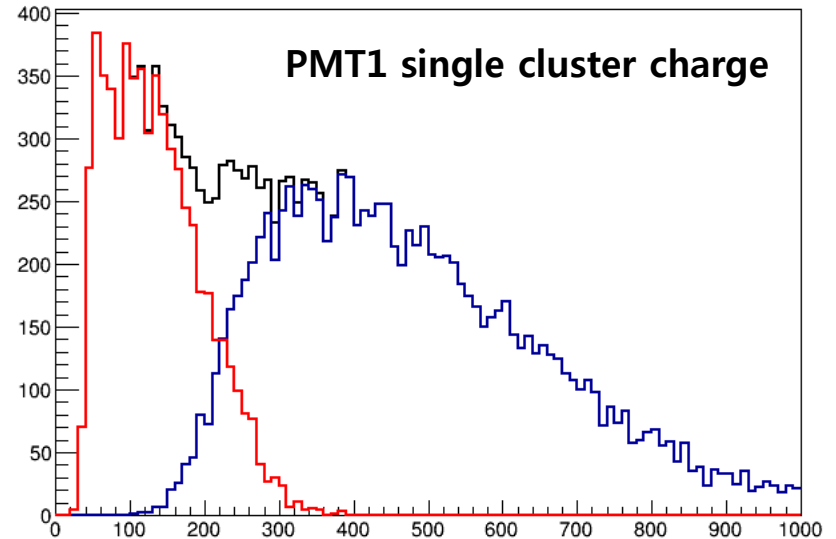
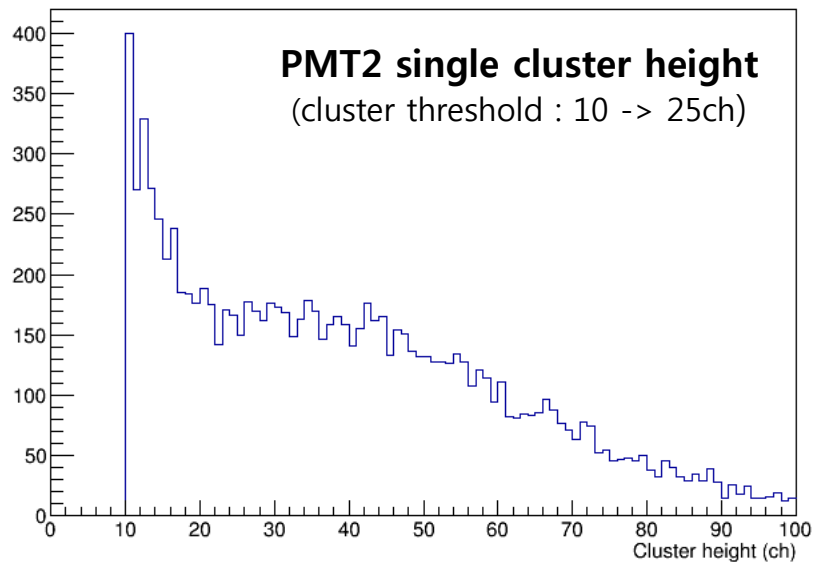
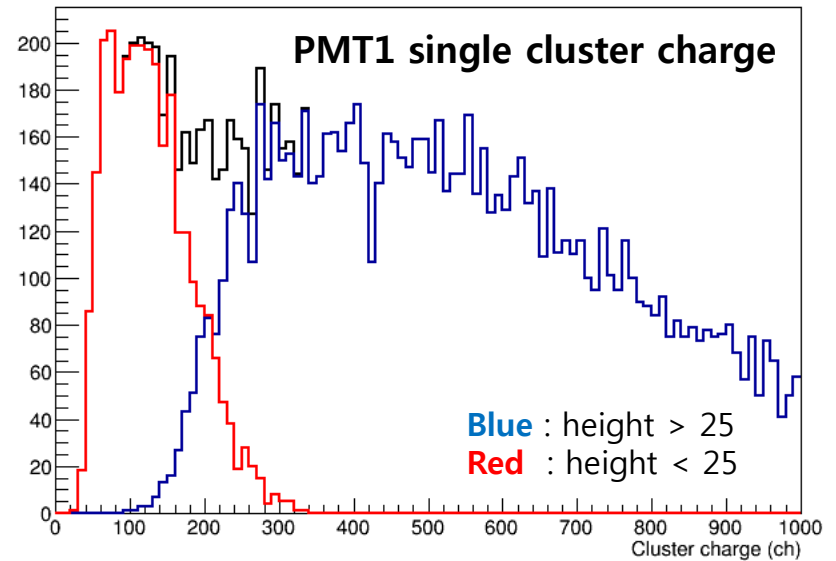
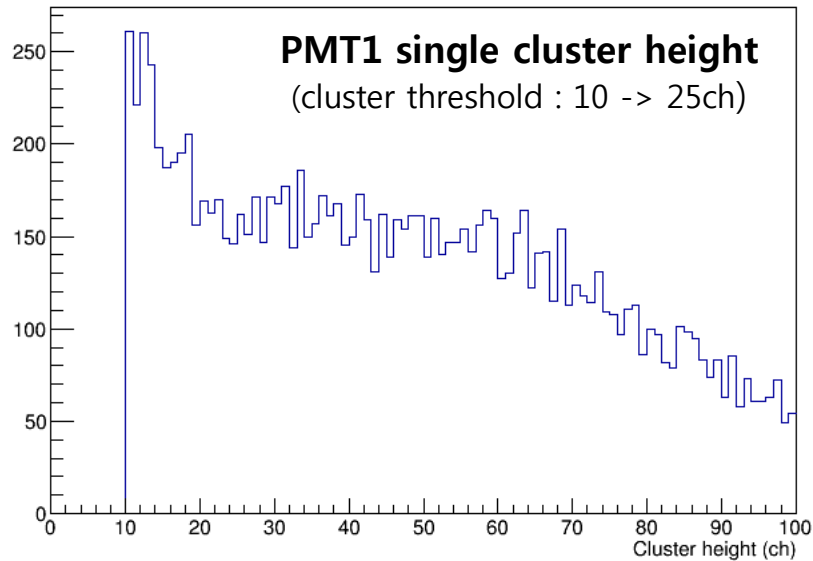
ND3



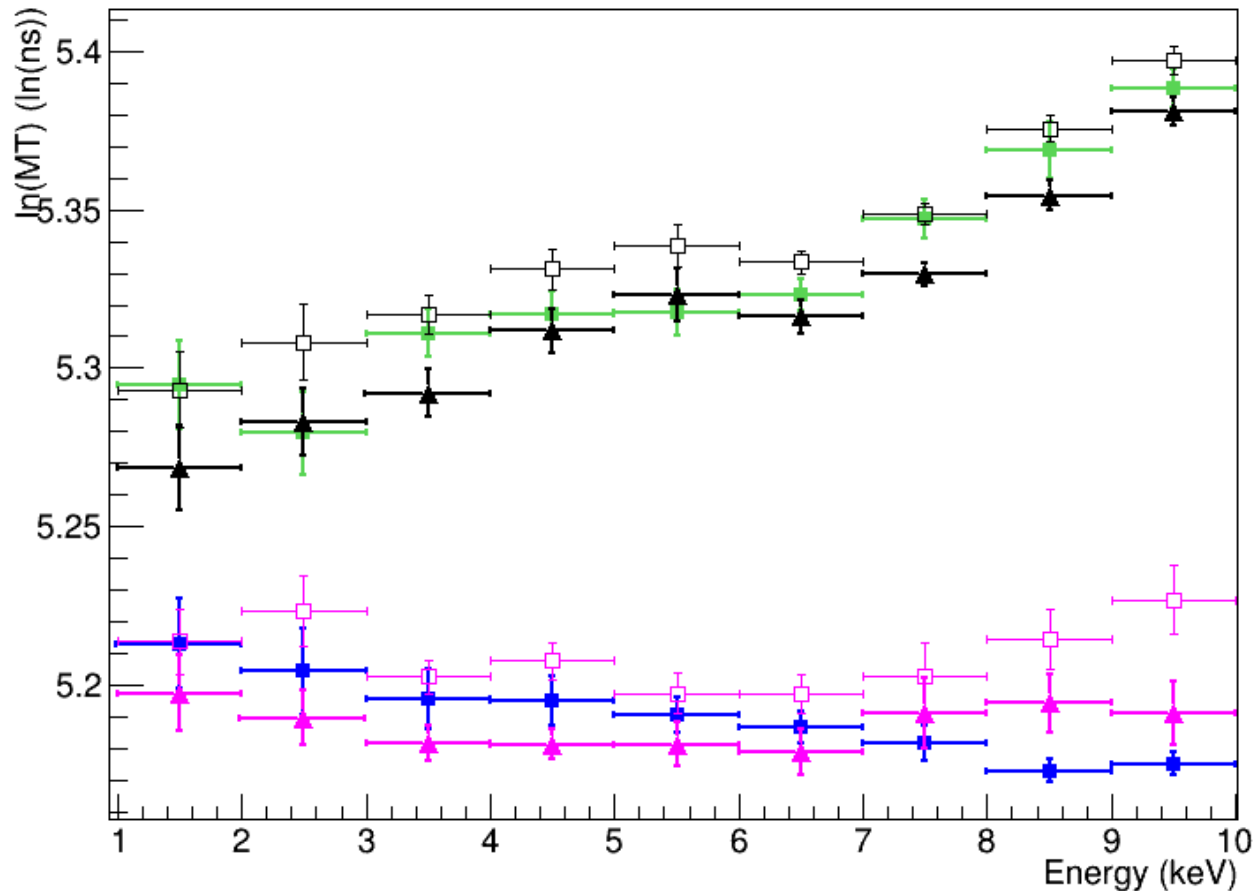
ND4



Height and charge of single clusters



ln(Mean time) vs NaI deposit energy (for nuclear recoils)



Green : 400 MHz FADC, electron recoil

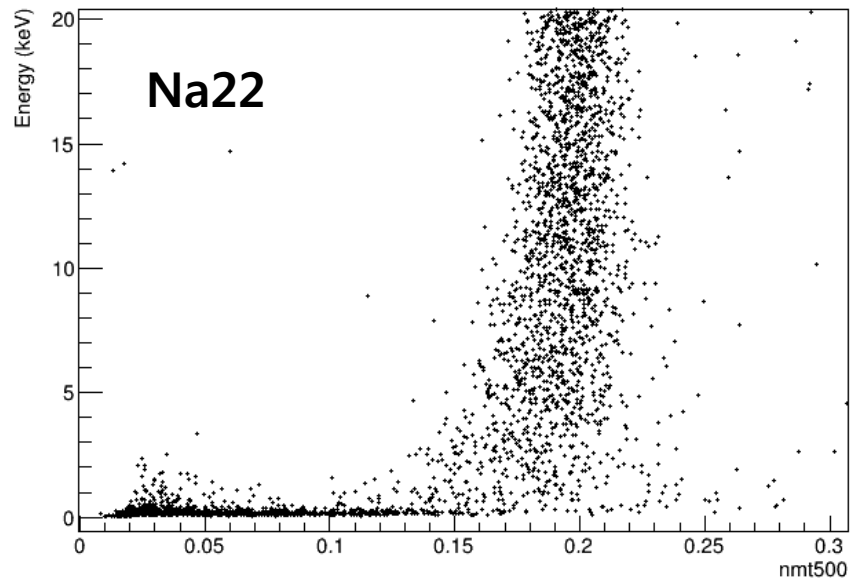
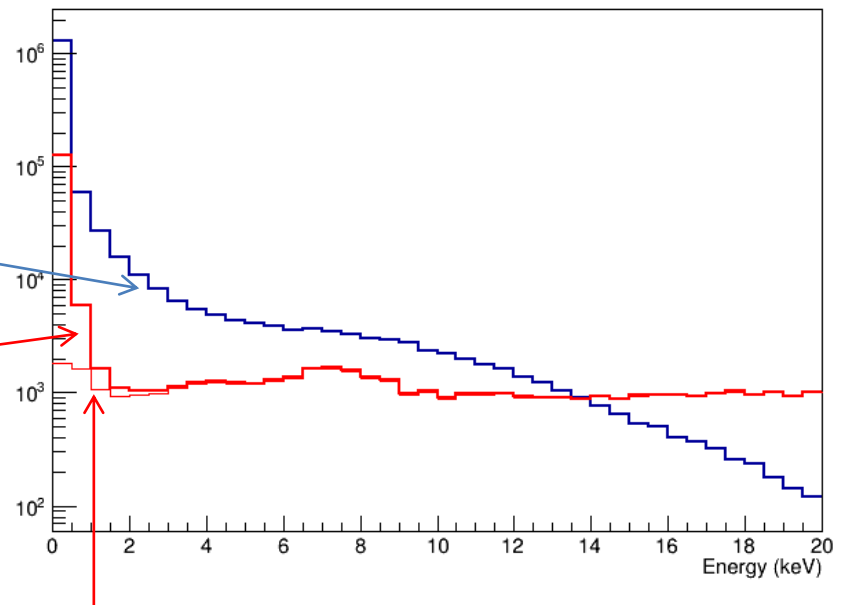
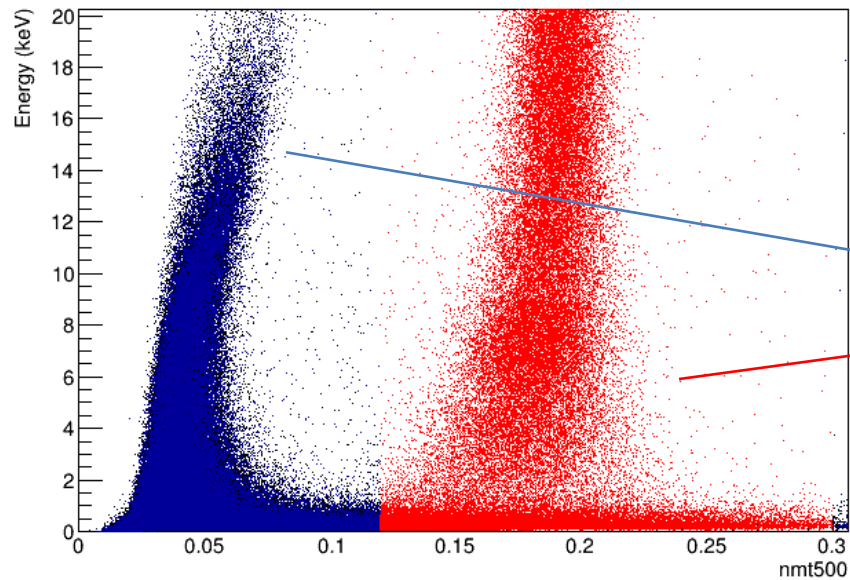
Blue : 400 MHz FADC, nuclear recoil

Black : 500 MHz FADC, electron recoil (thin square : 10mV, bold triangle : 25mV)

Pink : 500 MHz FADC, nuclear recoil (thin square : 10mV, bold triangle : 25mV)

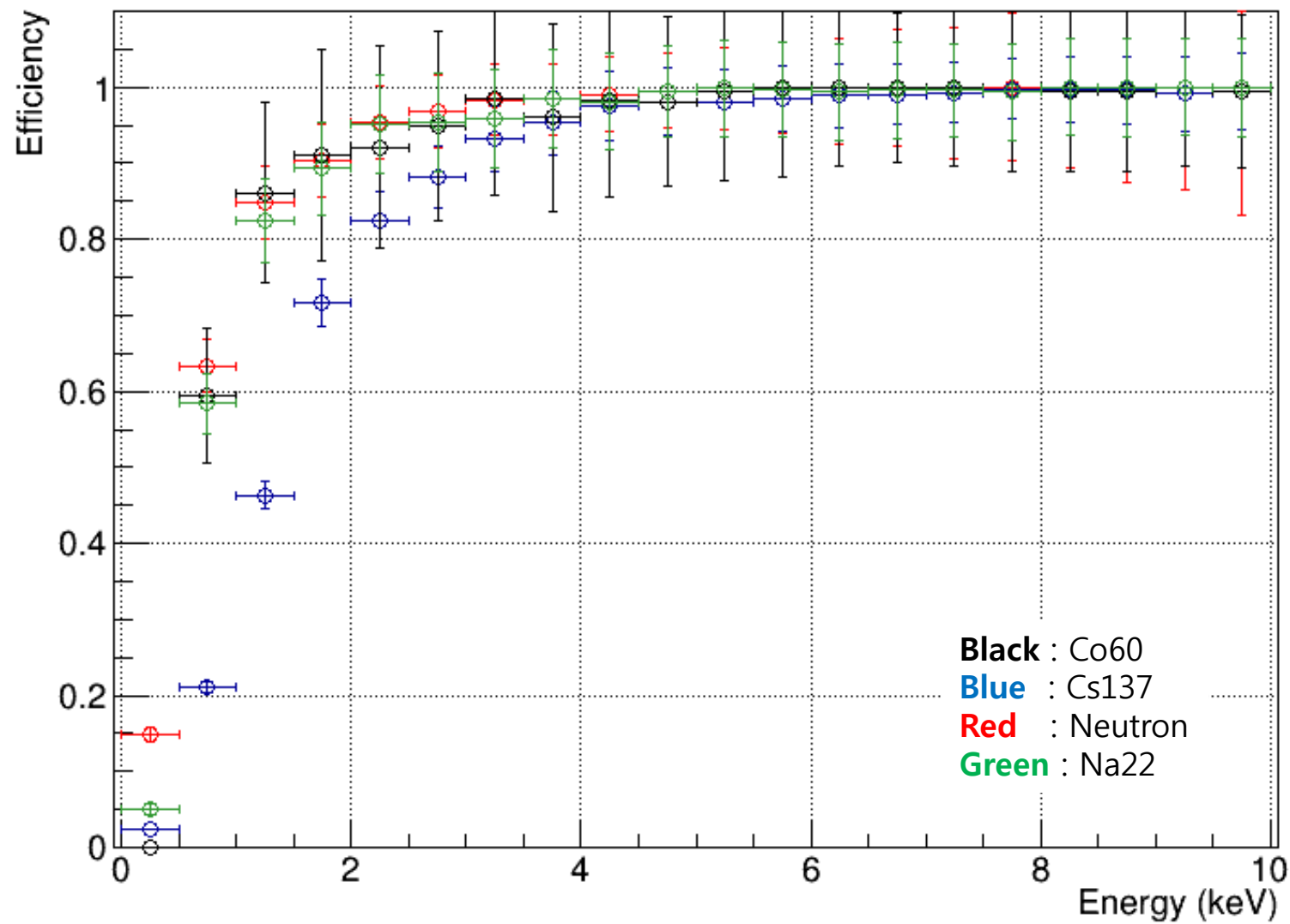
Event selection for electron recoil events

Cs137 $\text{nmt500} > 0.12$: signal

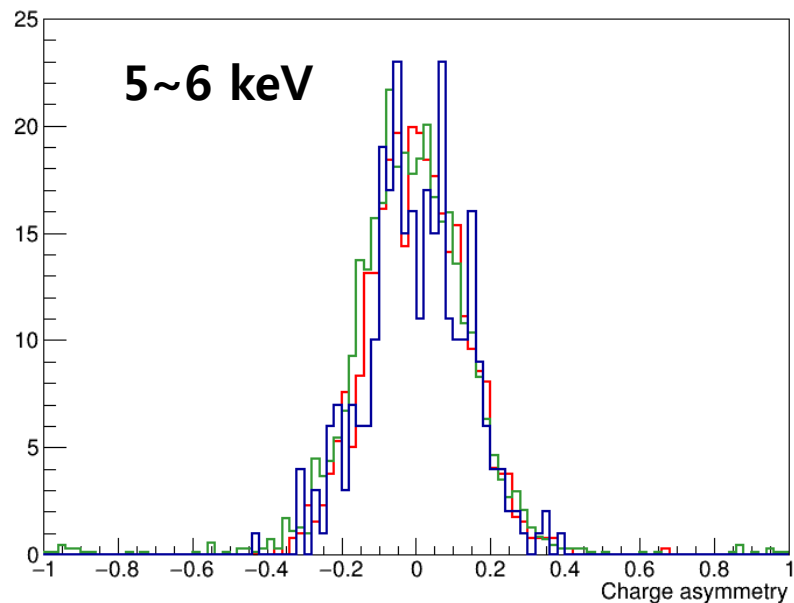
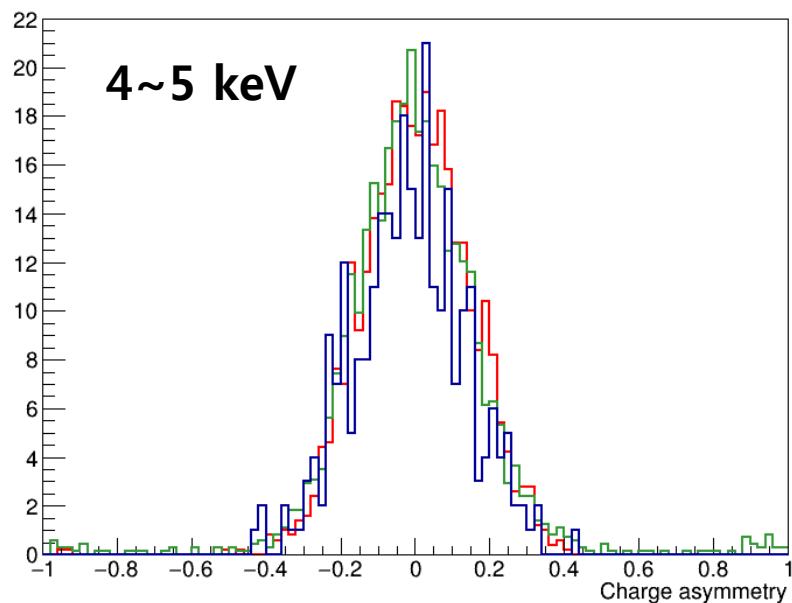
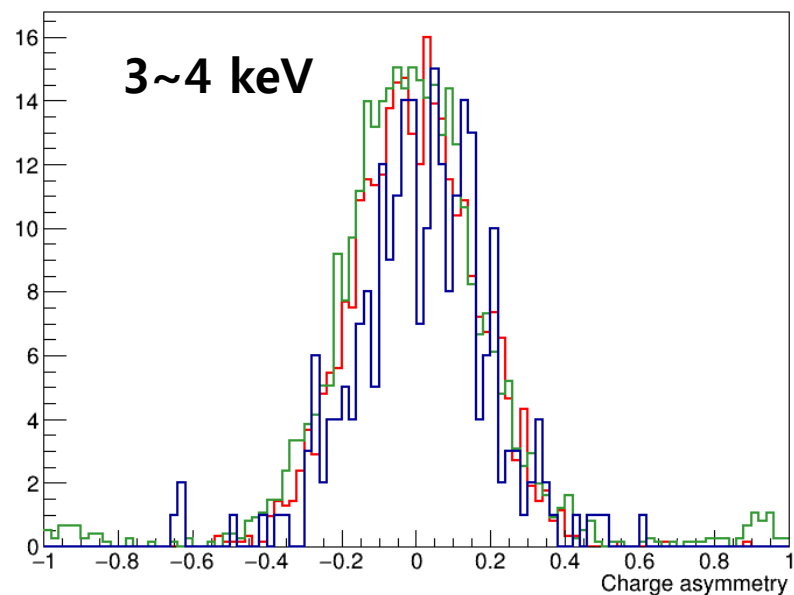
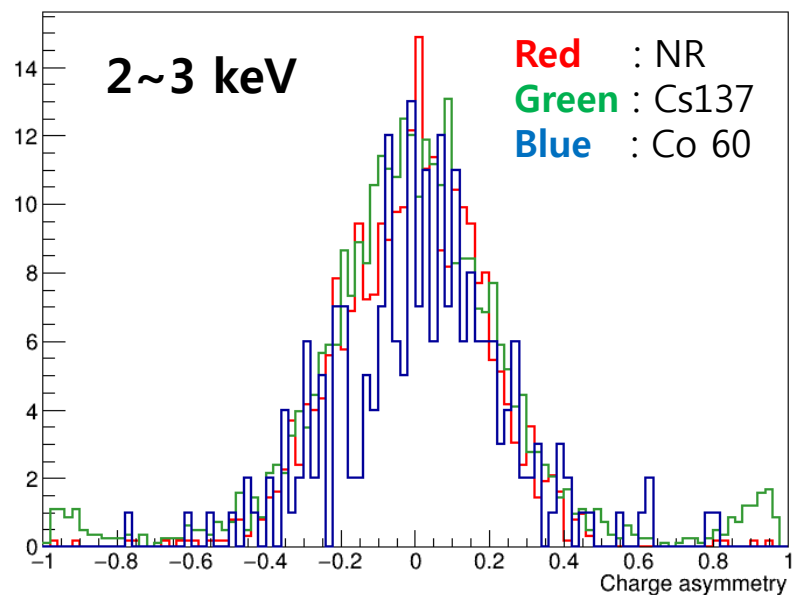


Applied box cut
(asymmetry : $-0.5 \sim 0.5$
 $x1 - x2$: $-0.4 \sim 1$)

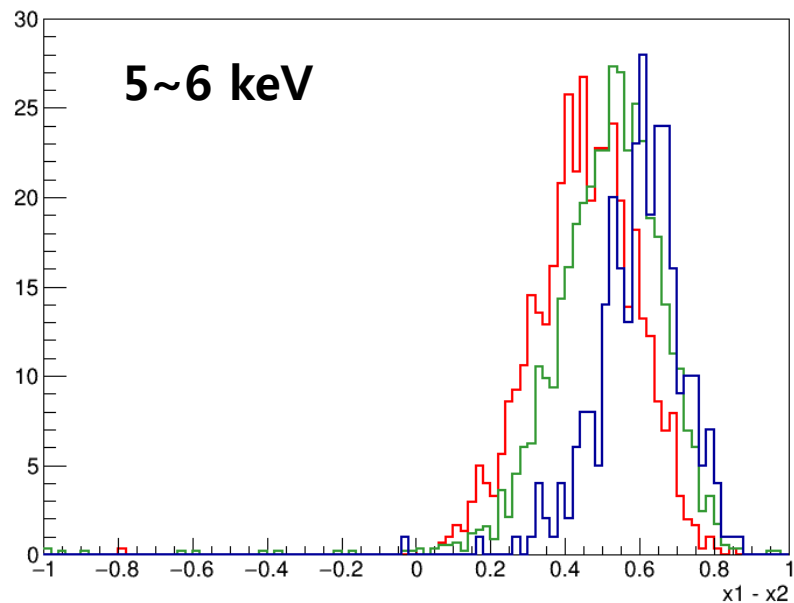
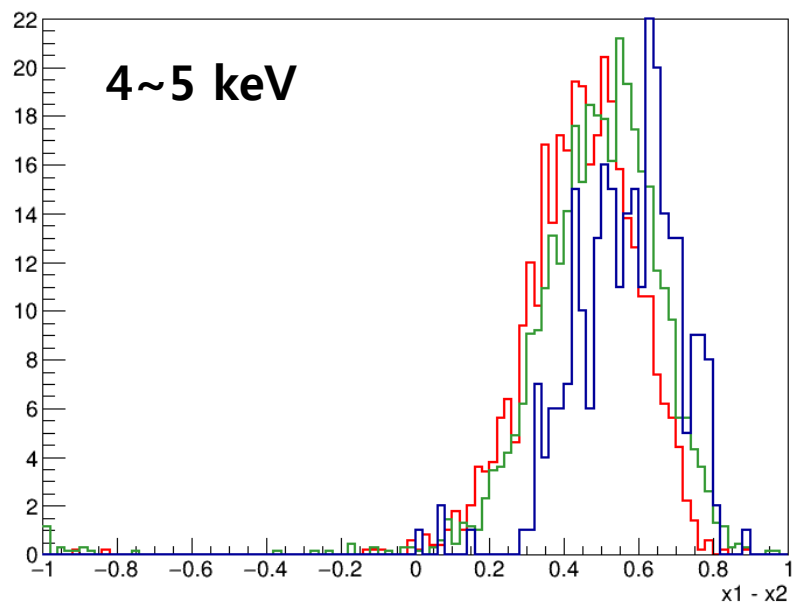
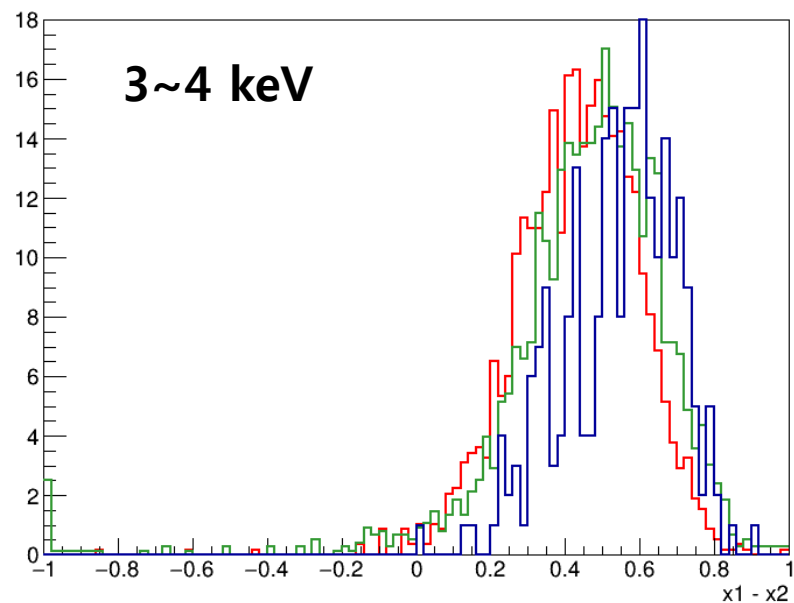
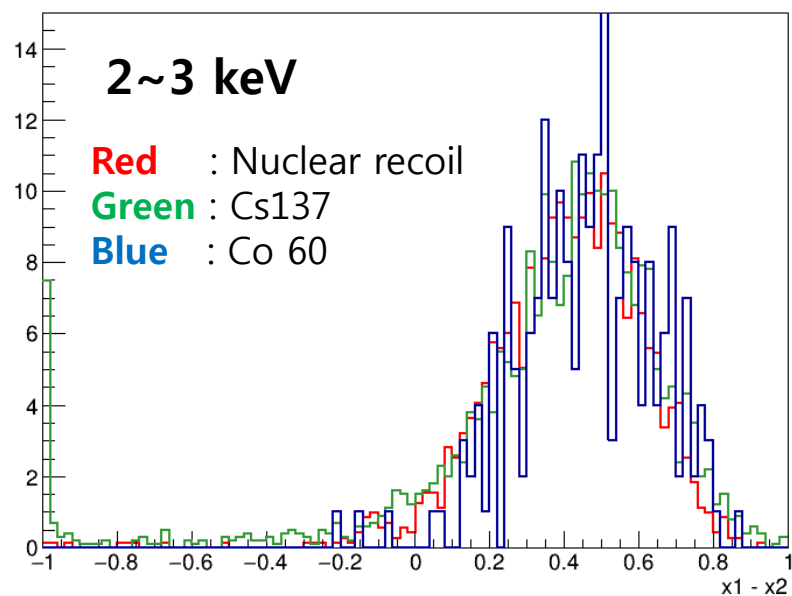
Efficiency summary



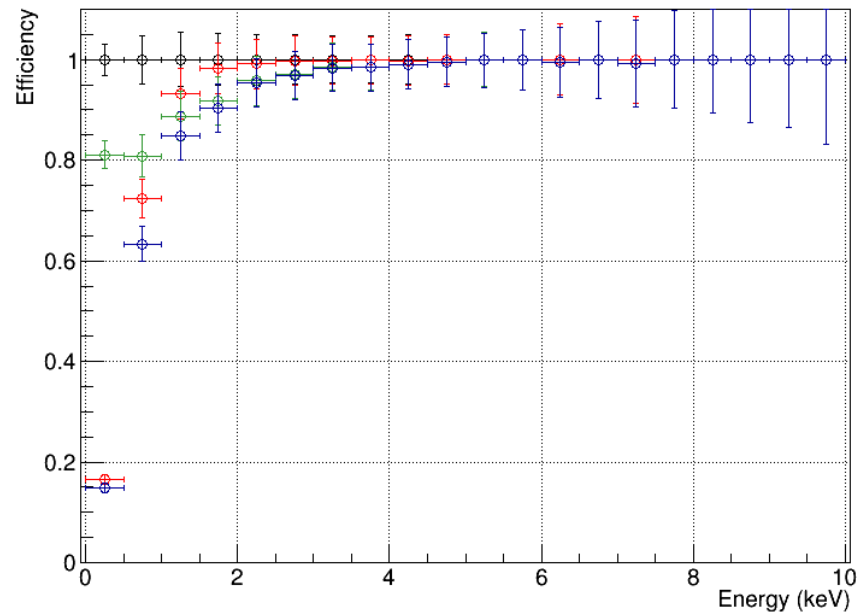
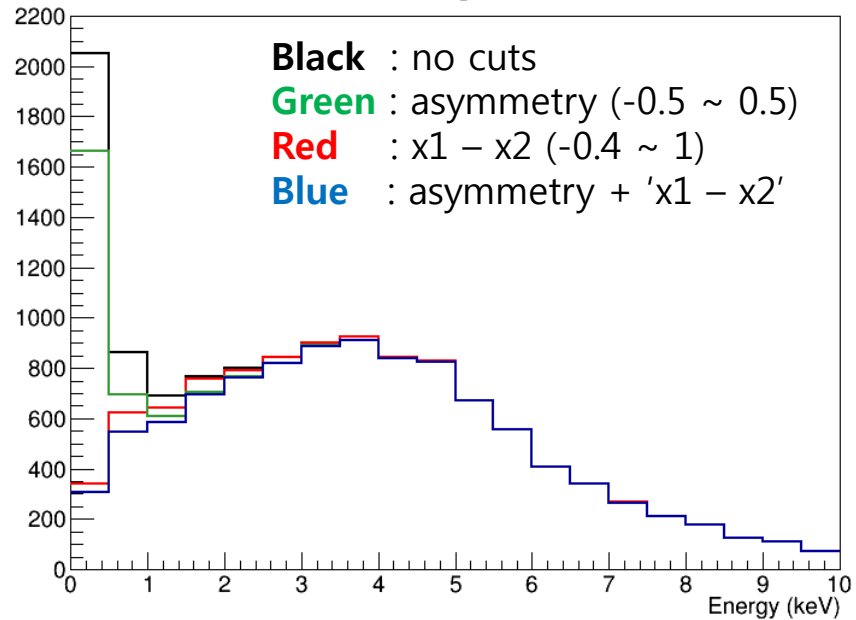
Compare with COSINE Co60 data (Charge asymmetry)



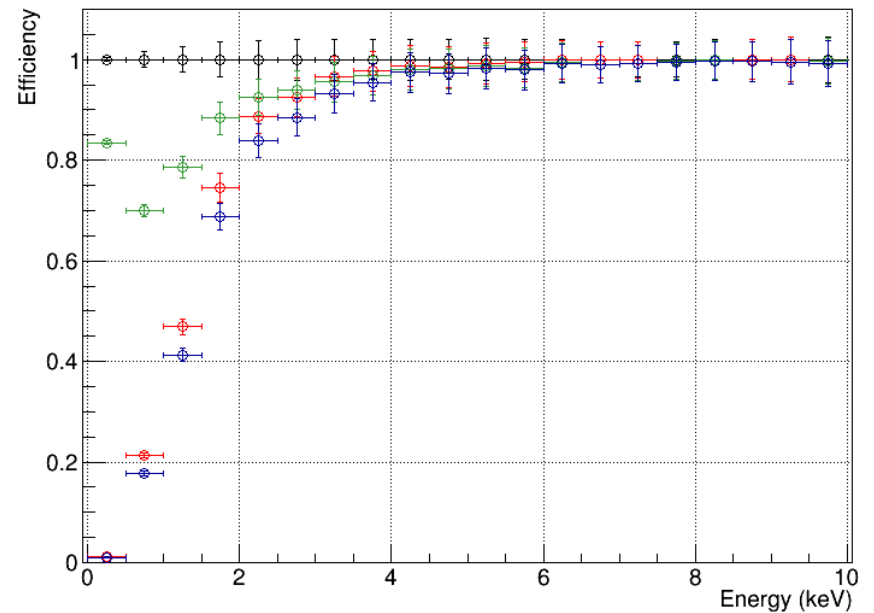
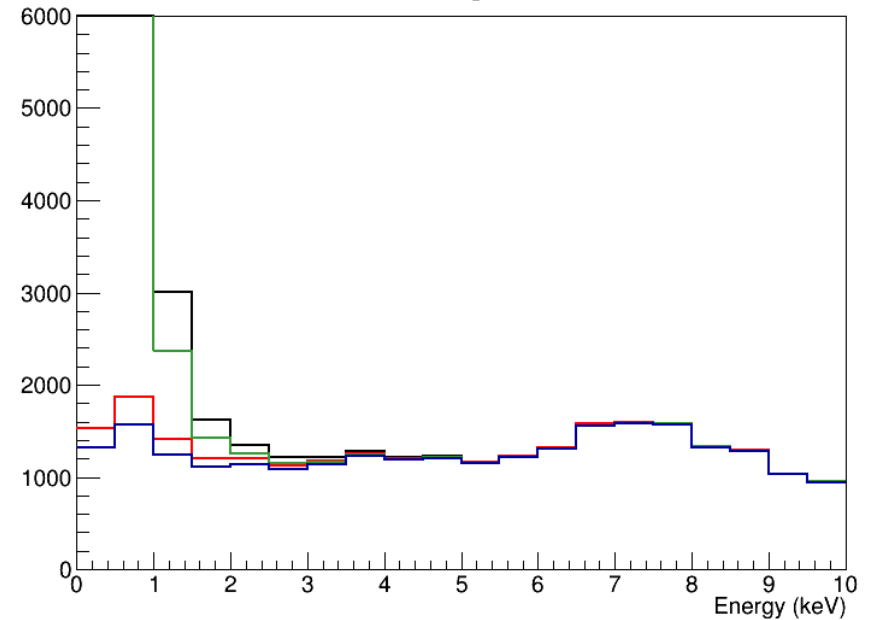
Compare with COSINE Co60 data (x1 - x2)



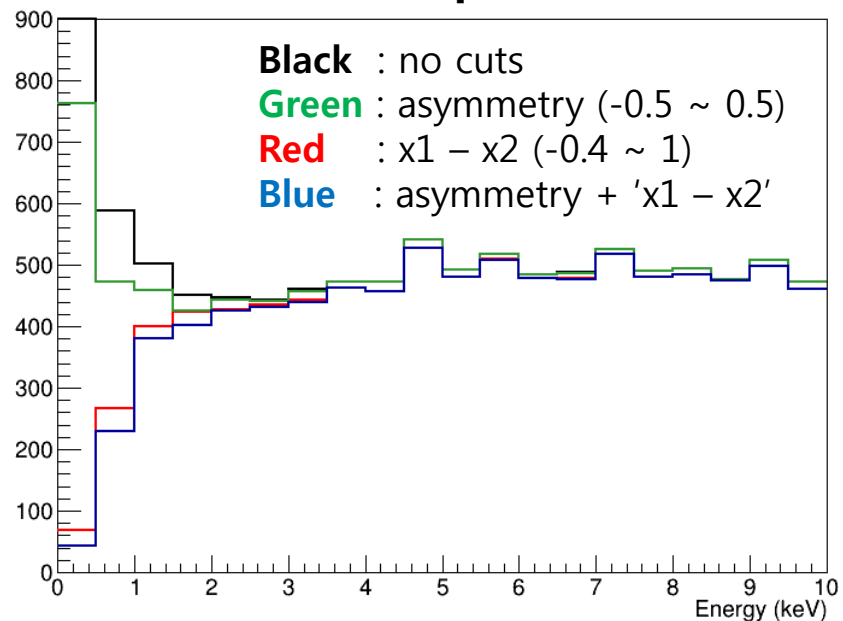
Nuclear recoil (qc5)



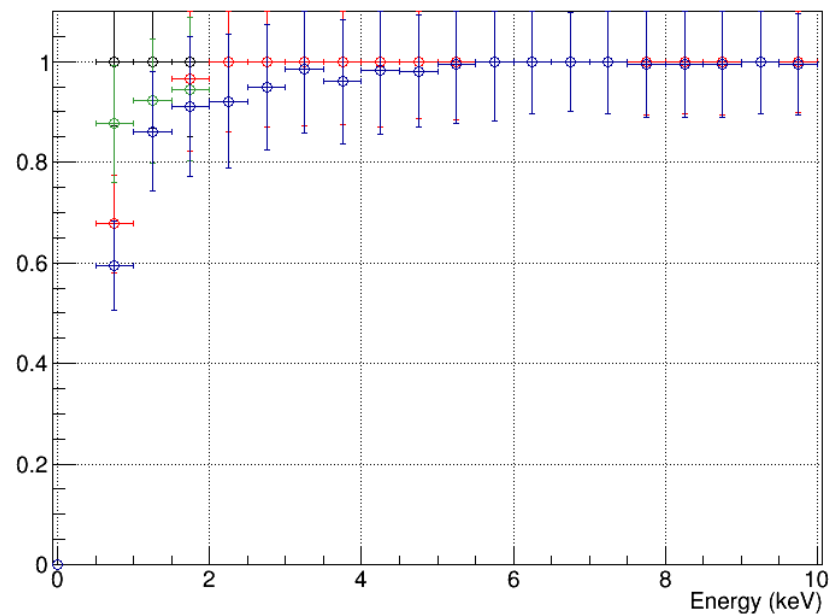
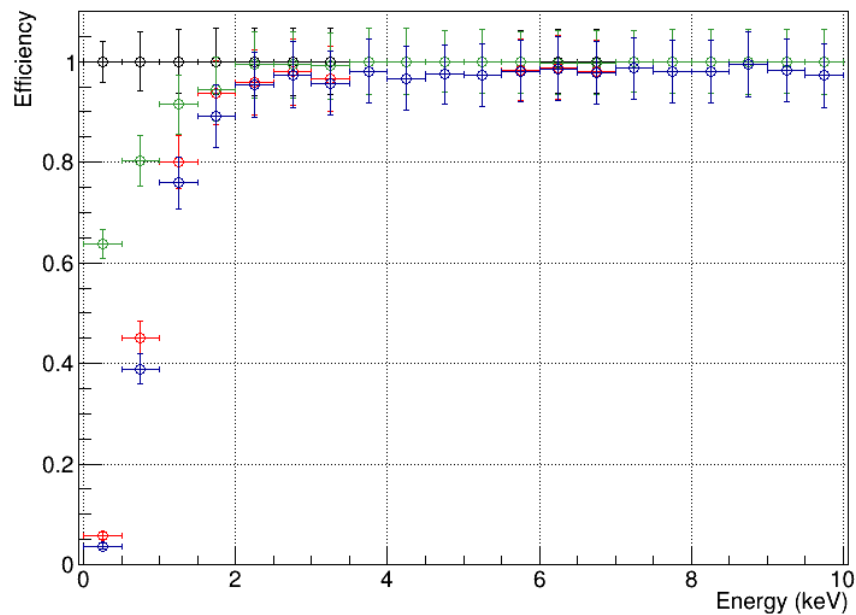
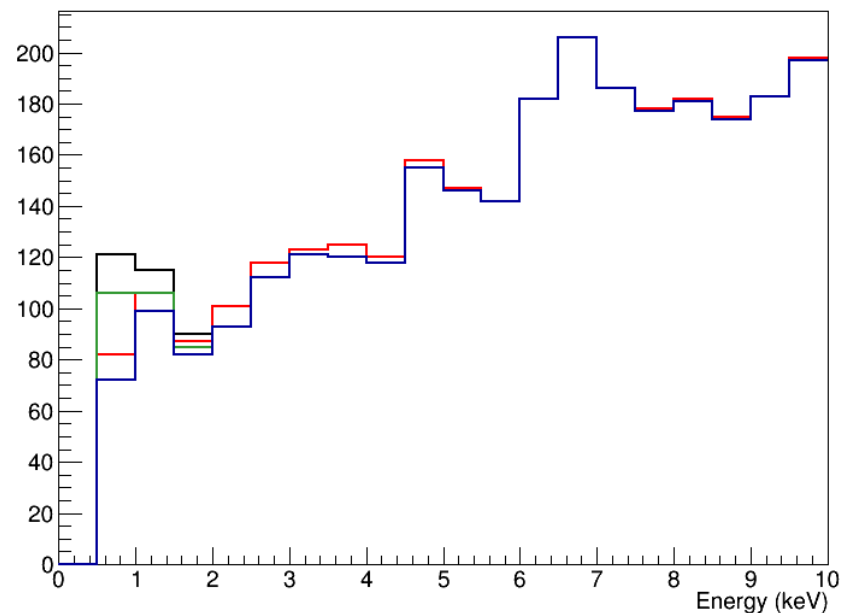
Electron recoil (qc5, Cs137)



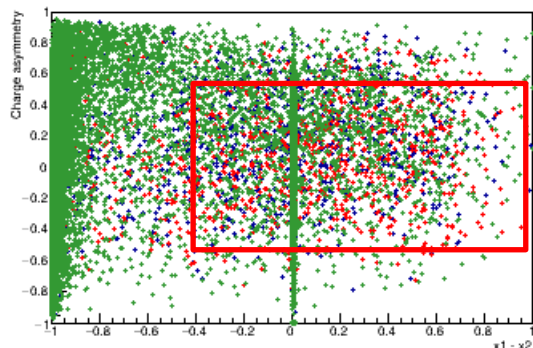
Electron recoil (qc5, Na22)



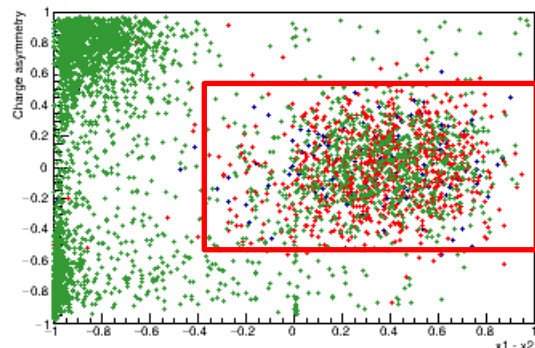
Electron recoil (qc5, Co60)



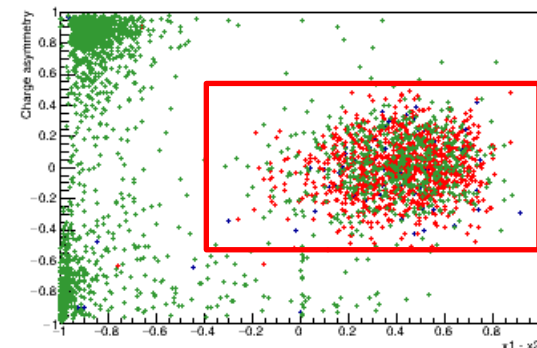
0~1 keV



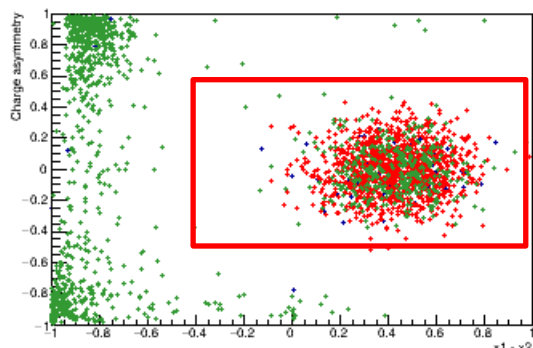
1~2 keV



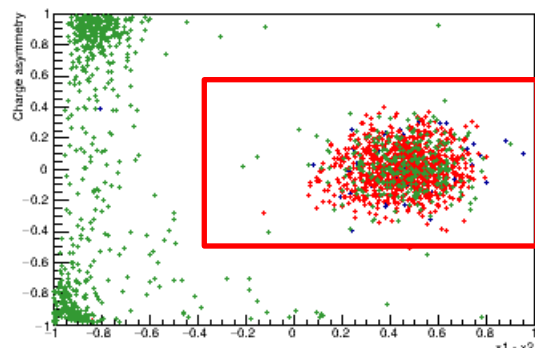
2~3 keV



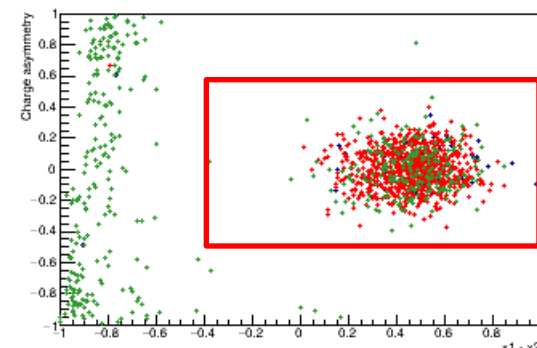
3~4 keV



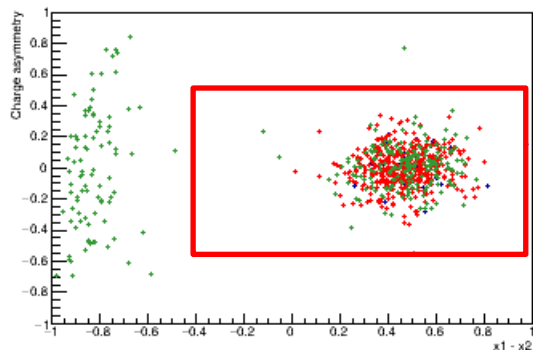
4~5 keV



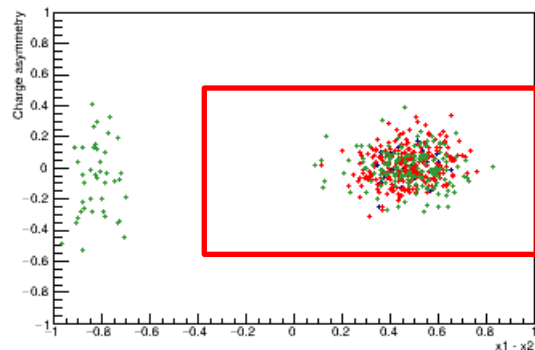
5~6 keV



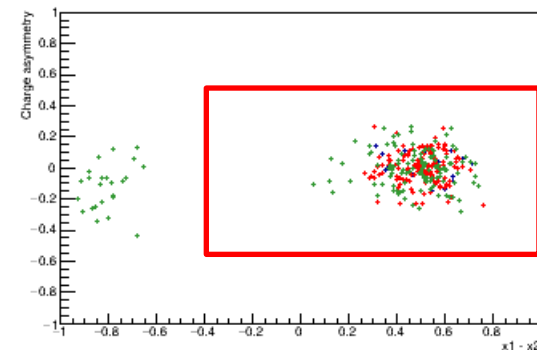
6~7 keV



7~8 keV



8~9 keV



X axis : pmt1.x1 - pmt1.x2

Y axis : PMT charge asymmetry

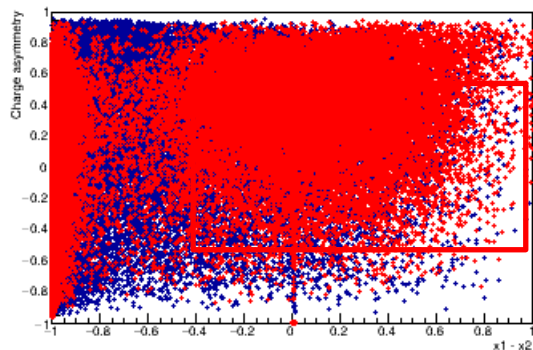
Neutron data

Green : no cuts applied

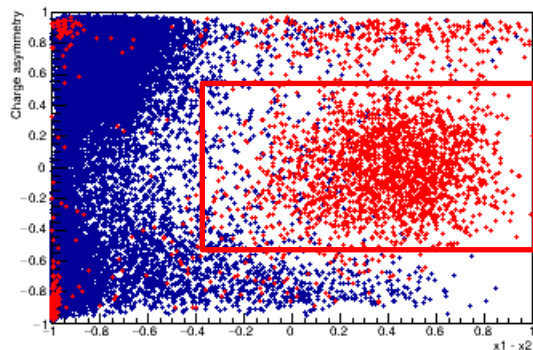
Blue : ND PSD

Red : ND PSD + TOF

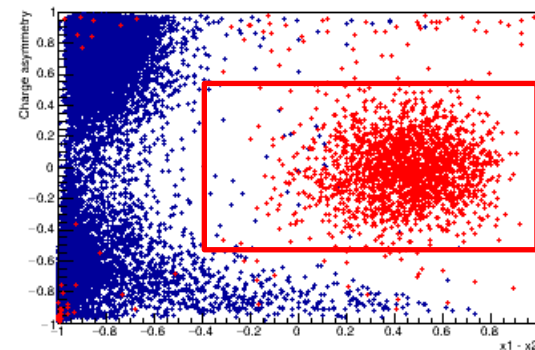
0~1 keV



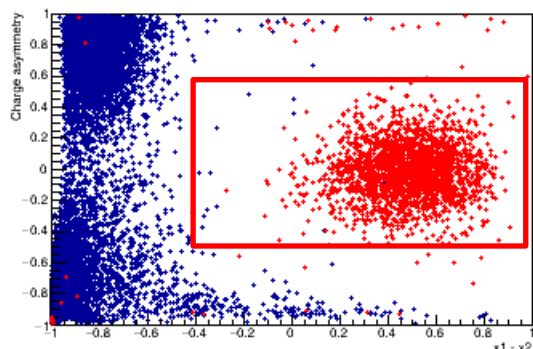
1~2 keV



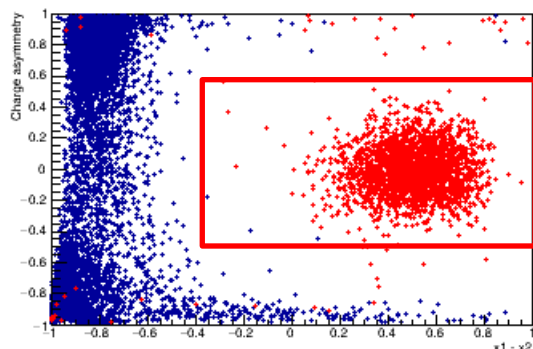
2~3 keV



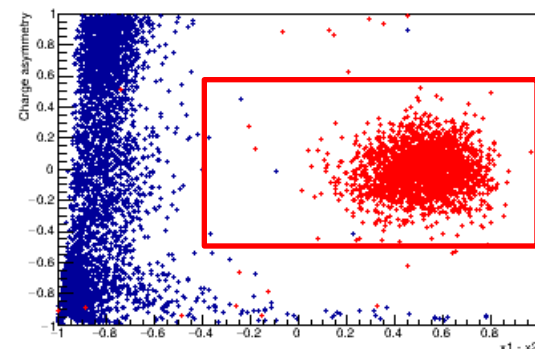
3~4 keV



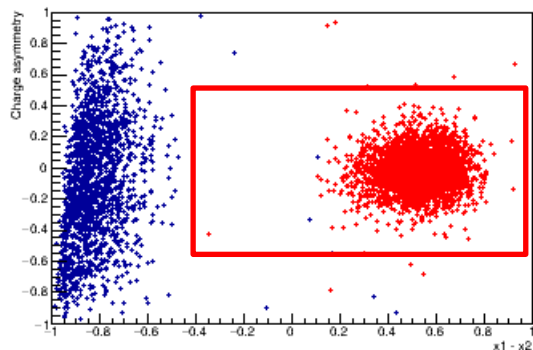
4~5 keV



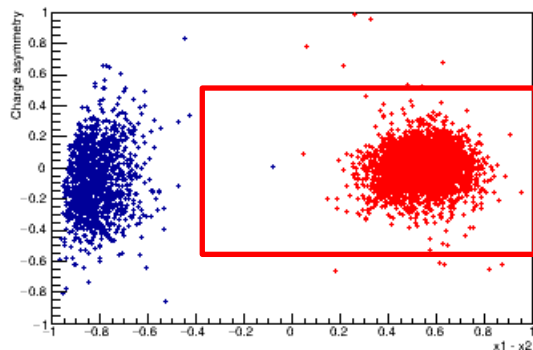
5~6 keV



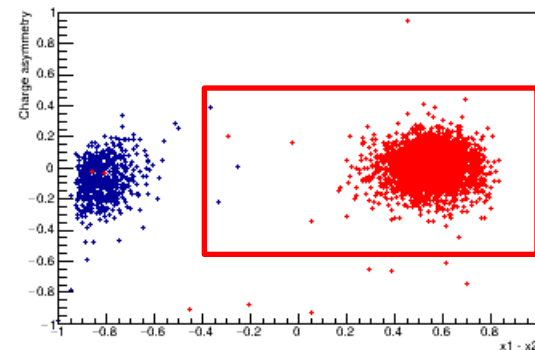
6~7 keV



7~8 keV



8~9 keV



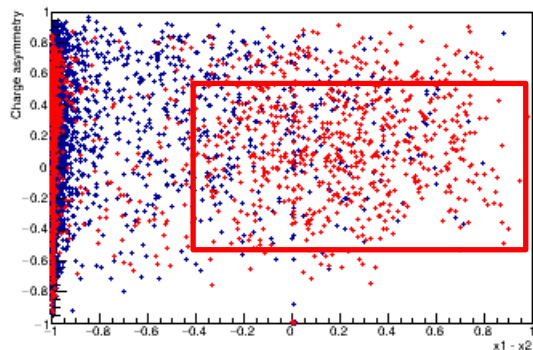
X axis : pmt1.x1 – pmt1.x2

Y axis : PMT charge asymmetry

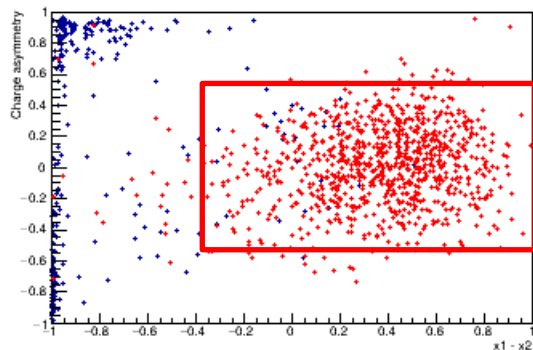
Cs137 data

Blue : noise
 Red : signal (nmt500>0.12)

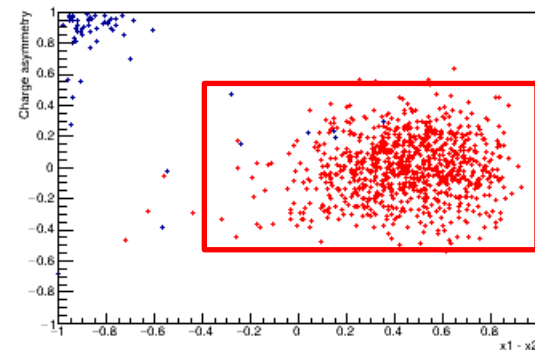
0~1 keV



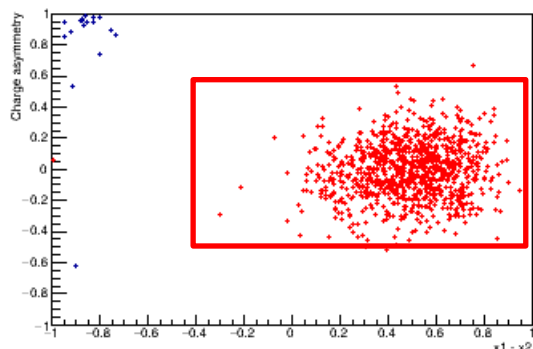
1~2 keV



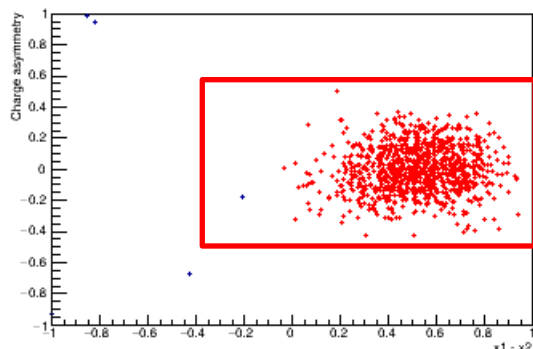
2~3 keV



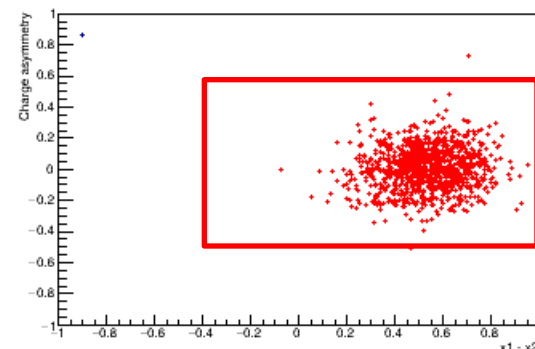
3~4 keV



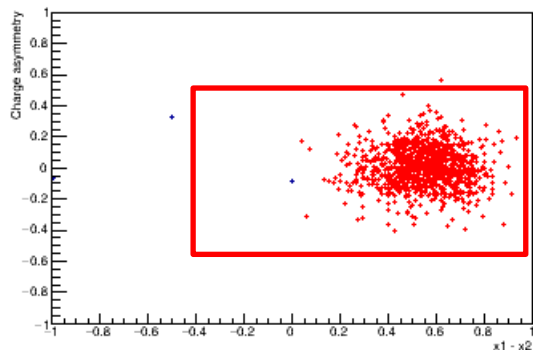
4~5 keV



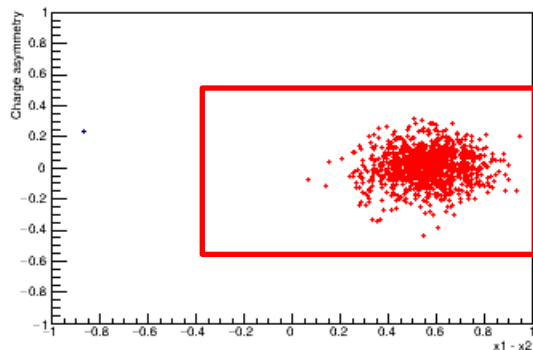
5~6 keV



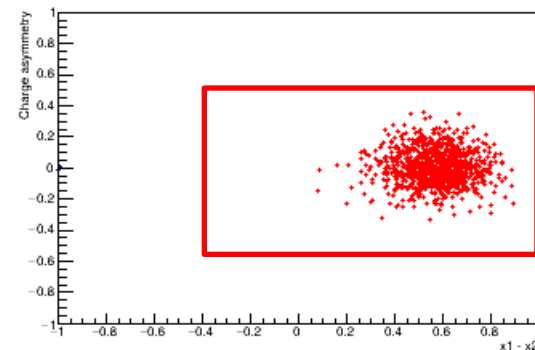
6~7 keV



7~8 keV



8~9 keV

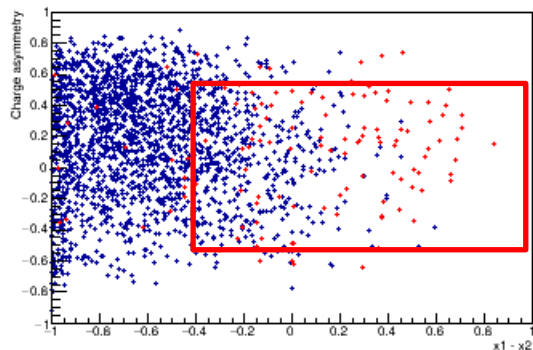


X axis : pmt1.x1 – pmt1.x2
Y axis : PMT charge asymmetry

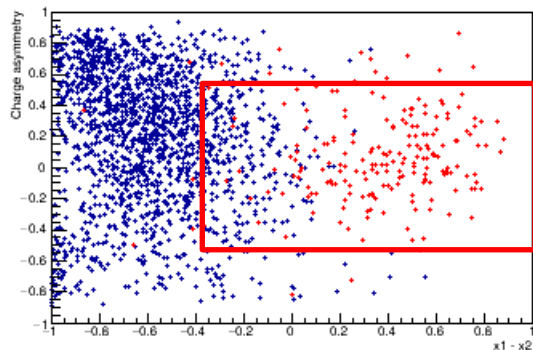
Na22 data

Blue : noise
Red : signal (nmt500>0.12)

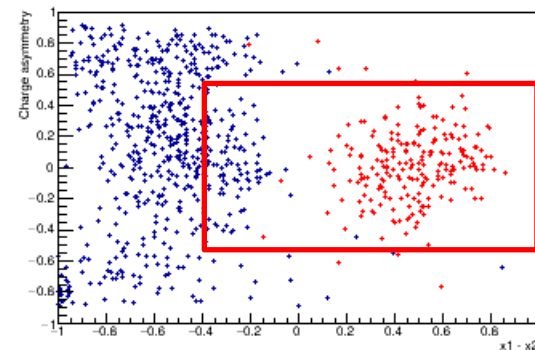
0~1 keV



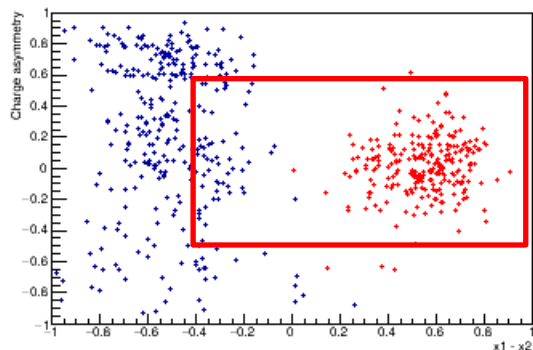
1~2 keV



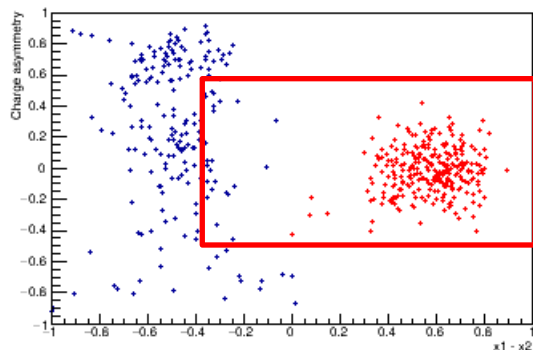
2~3 keV



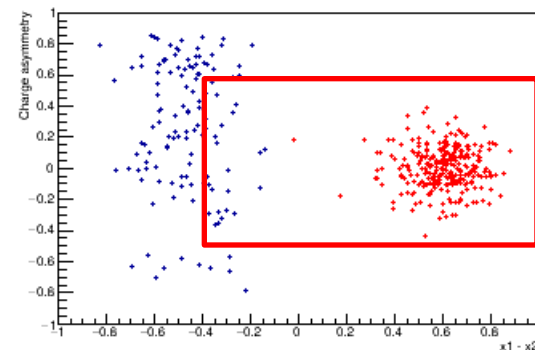
3~4 keV



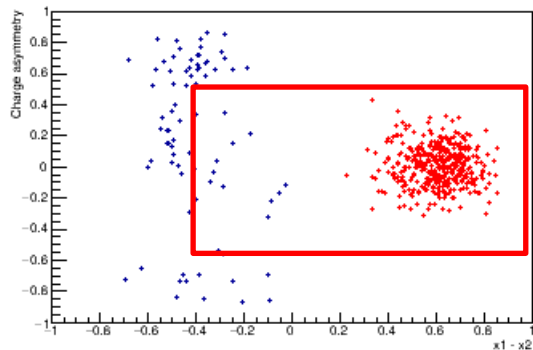
4~5 keV



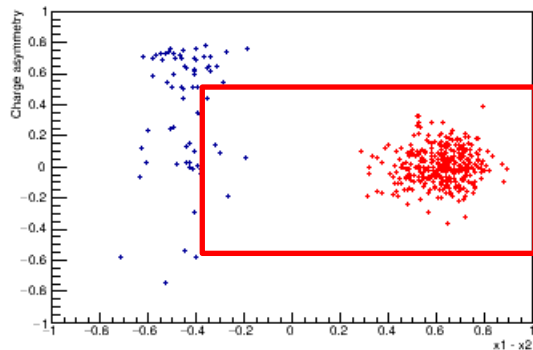
5~6 keV



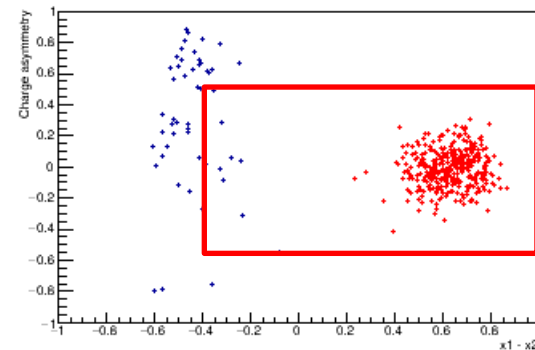
6~7 keV



7~8 keV



8~9 keV



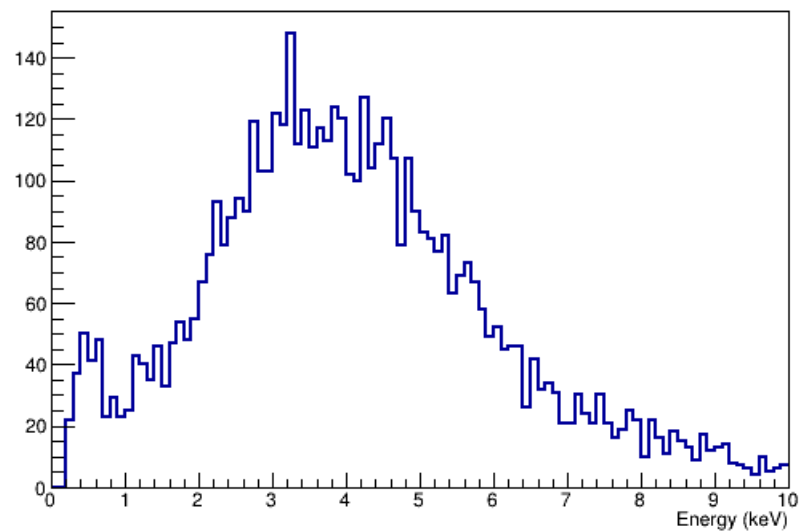
X axis : pmt1.x1 – pmt1.x2
Y axis : PMT charge asymmetry

Co60 data

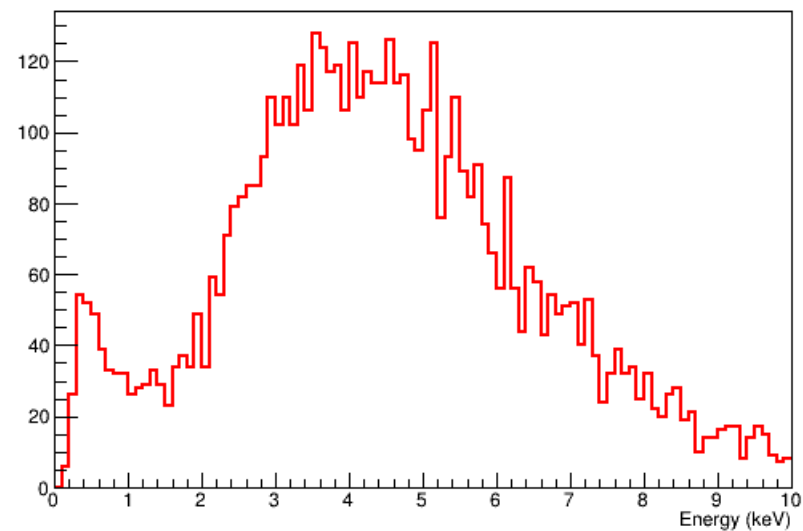
Blue : noise
Red : signal (nmt500>0.12)

NaI deposit energy

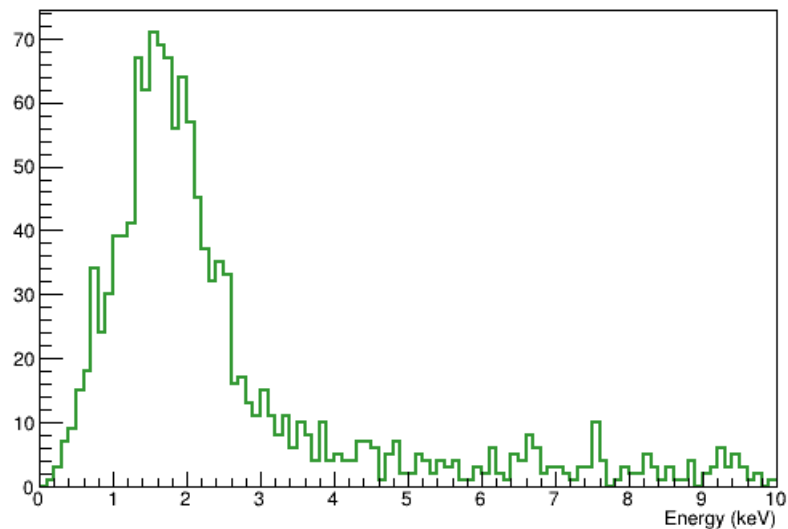
ND1



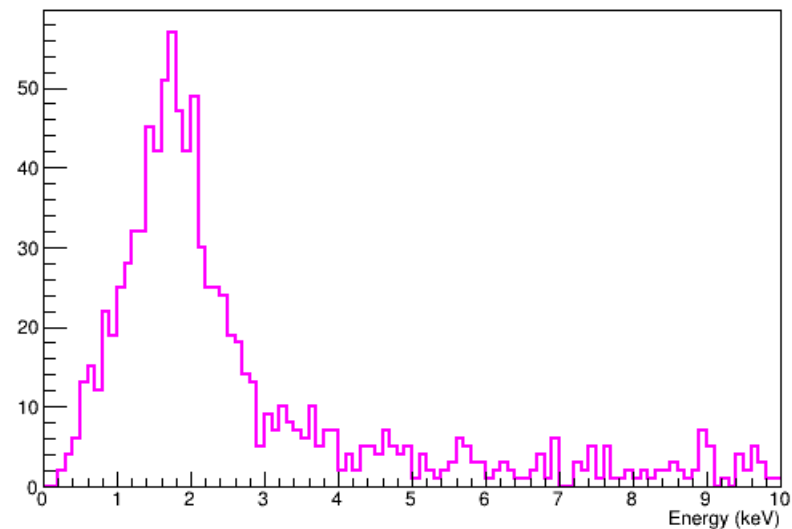
ND2



ND3

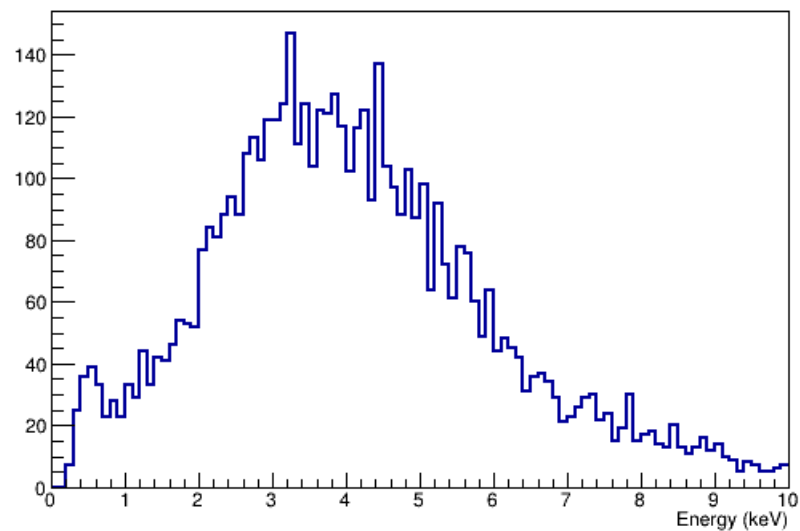


ND4

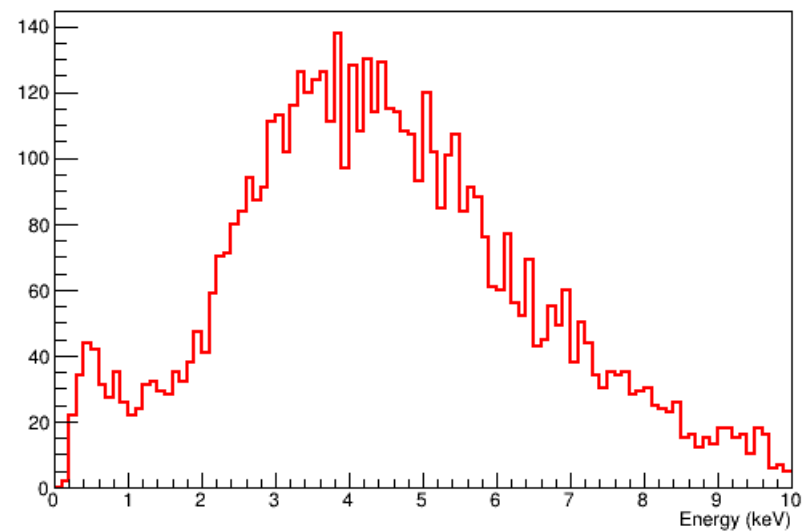


NaI deposit energy

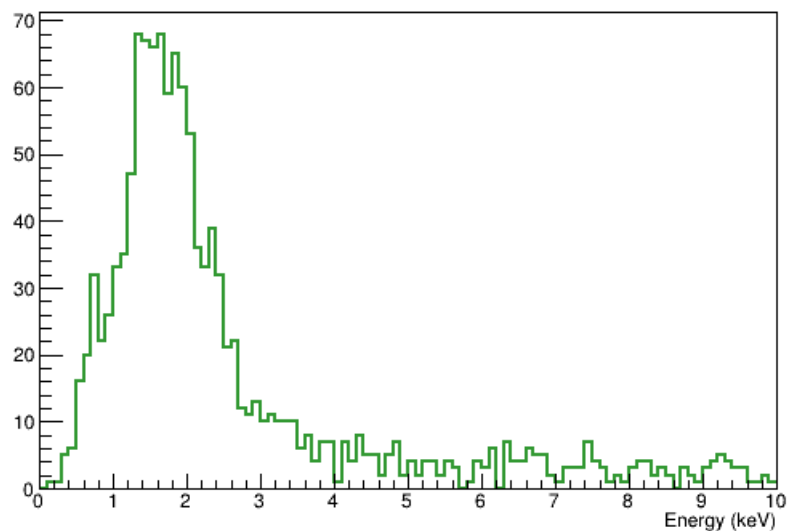
ND1



ND2



ND3



ND4

