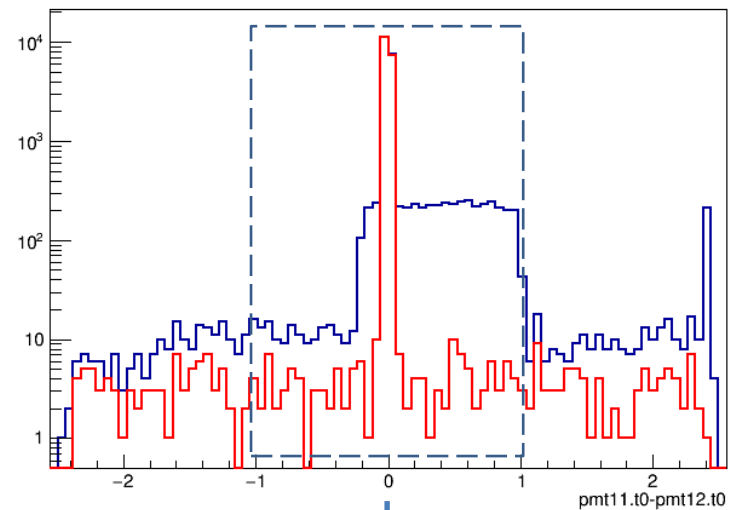
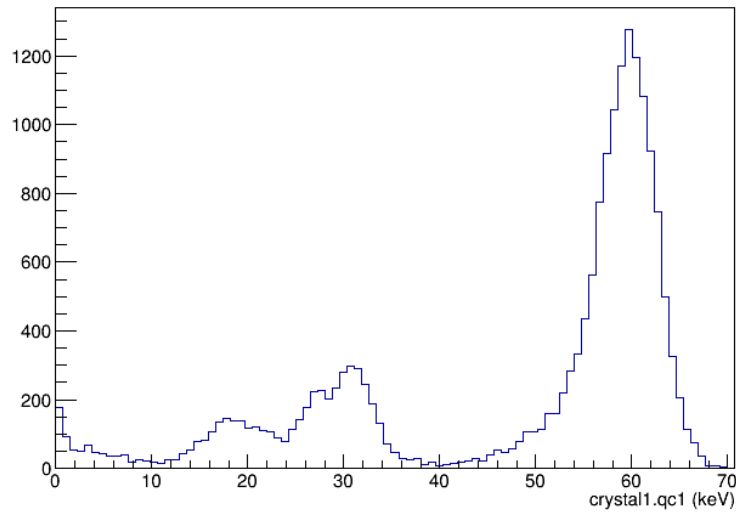


Calibration with ^{241}Am source

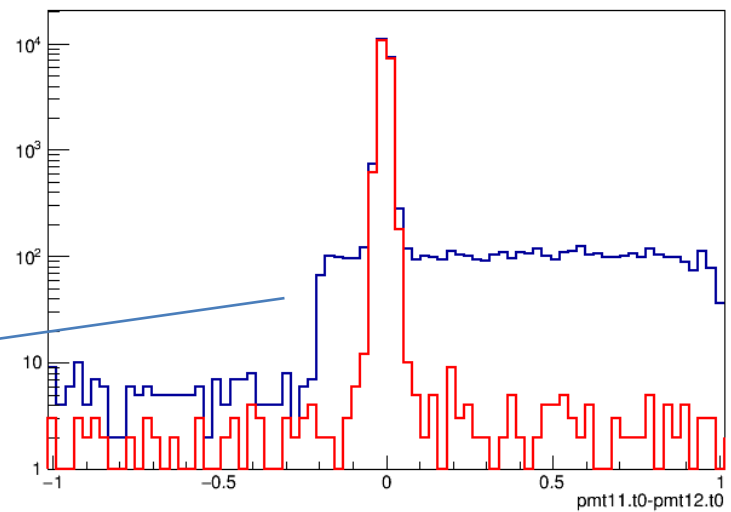
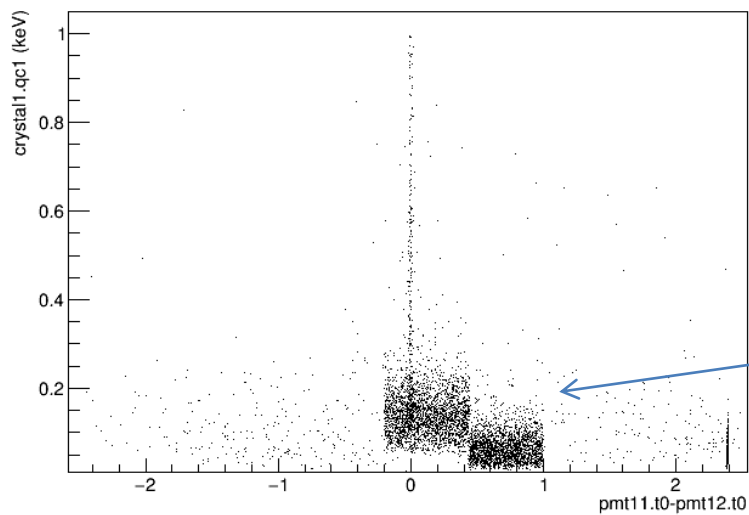
(~ 15 cm from the NaI crystal : ~ 90 Hz)

Blue : total

Red : > 0.3 keV



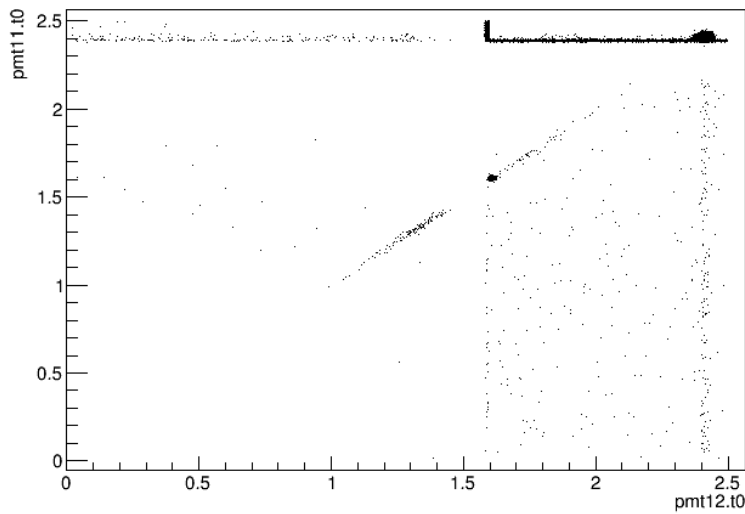
zoomed



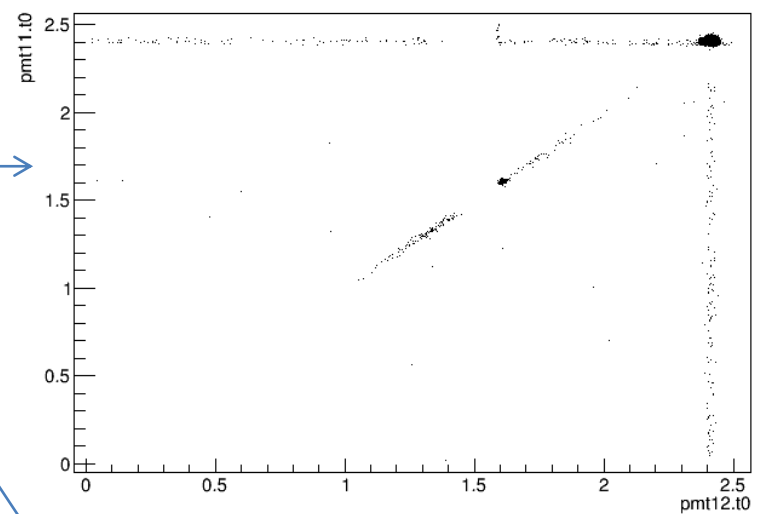
Calibration with ^{241}Am source

(~ 15 cm from the NaI crystal : ~ 90 Hz)

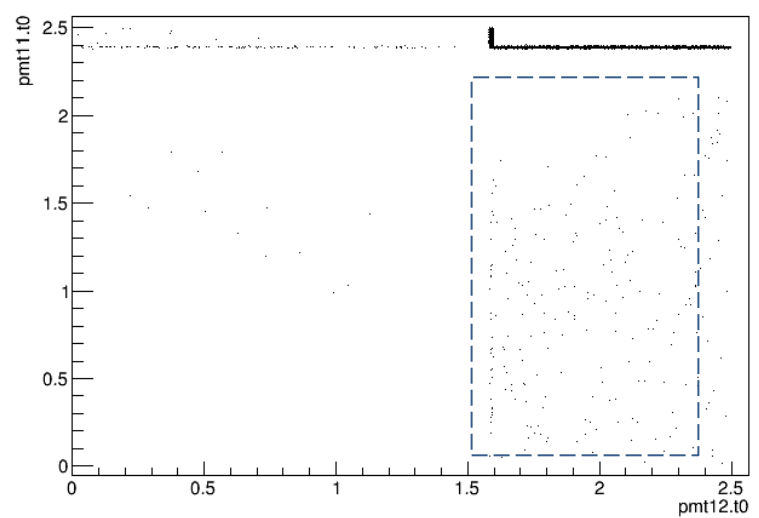
Total events



Above 0.3 keV

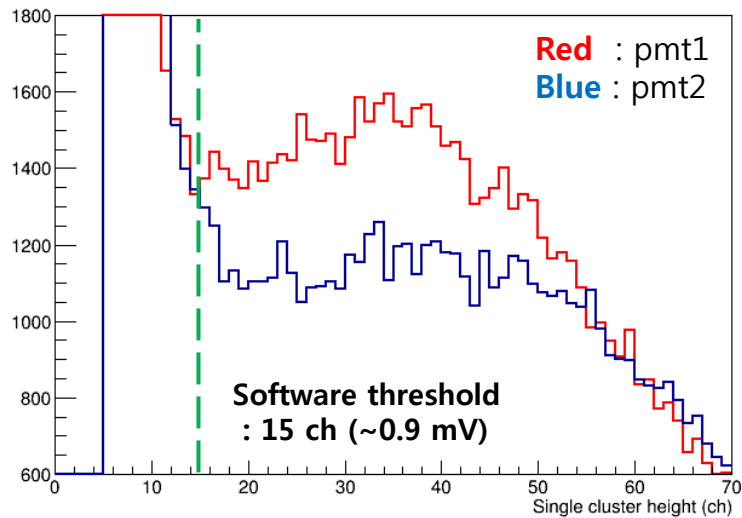
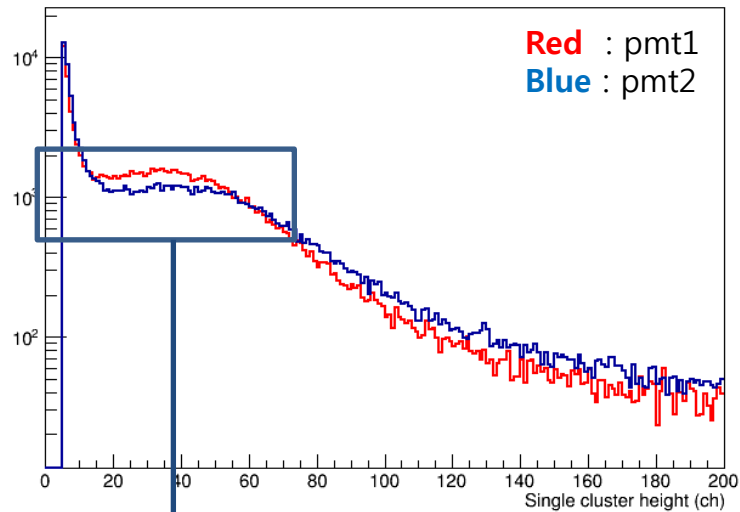


Below 0.3 keV



Calibration with 241 Am source

(~15 cm from the NaI crystal : ~90 Hz)

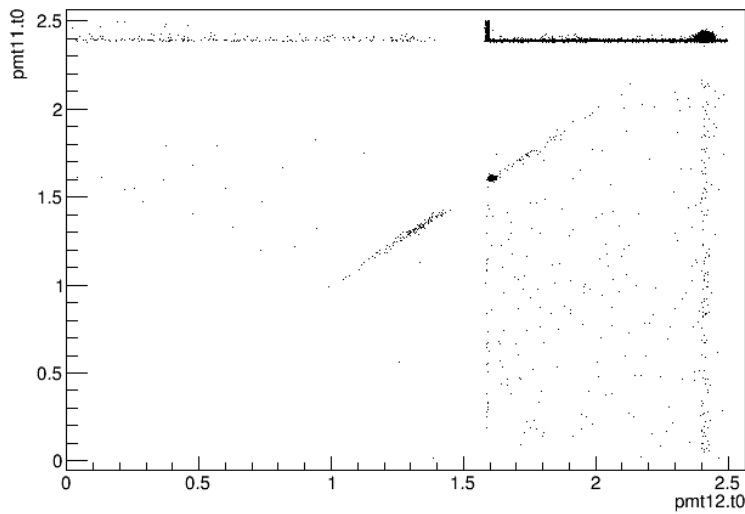


Changed pmt2 threshold : 15 ch -> 20 ch

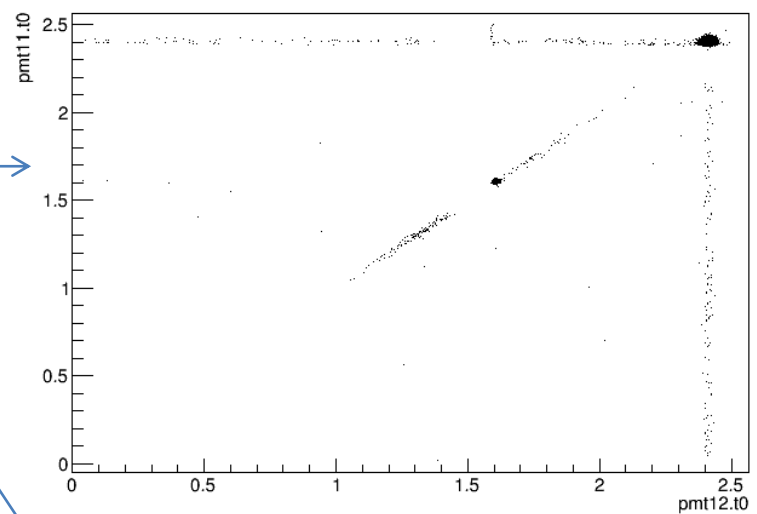
Calibration with ^{241}Am source

(~15 cm from the NaI crystal : ~90 Hz)

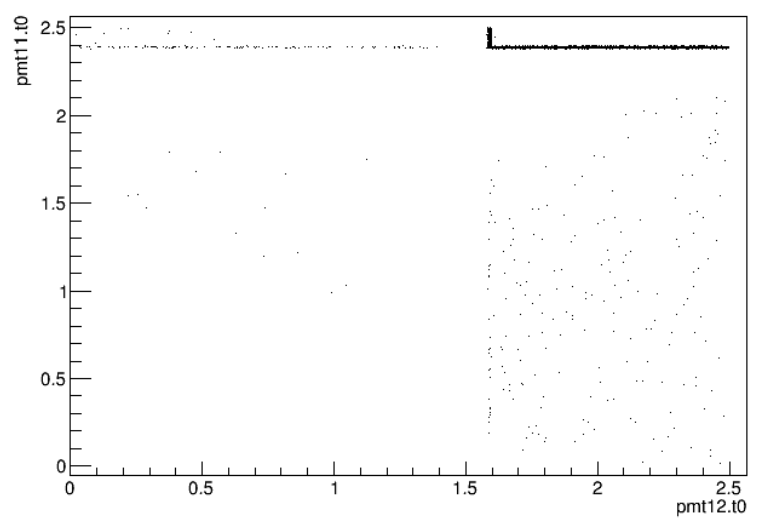
Total events



Above 0.3 keV



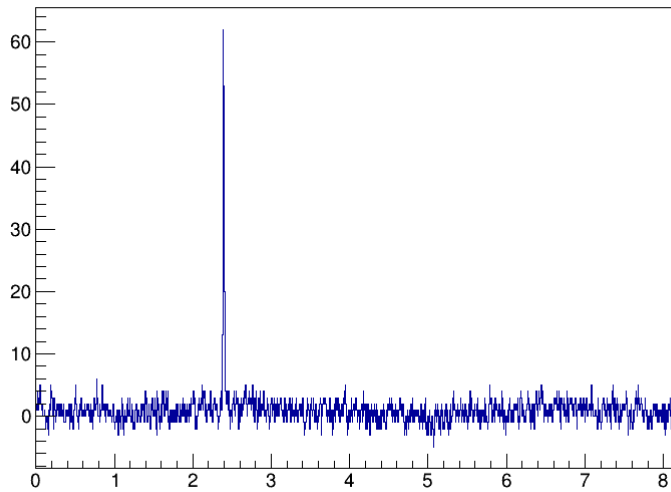
Below 0.3 keV



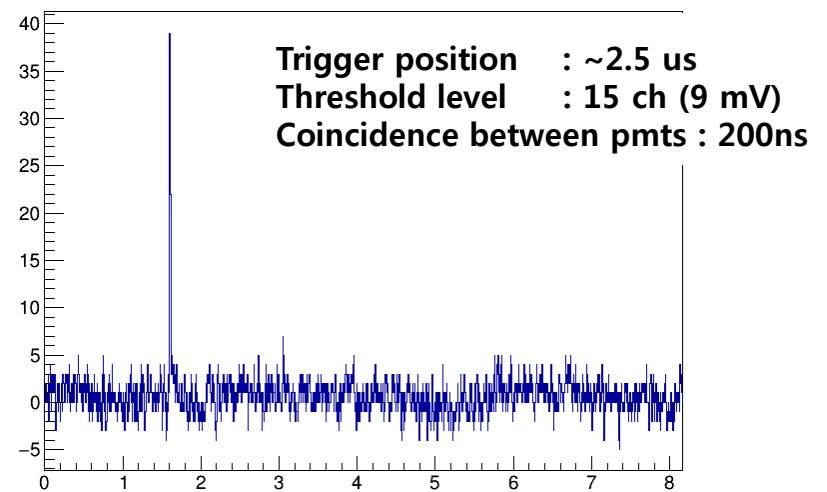
Calibration with 241 Am source

(~15 cm from the NaI crystal : ~90 Hz)

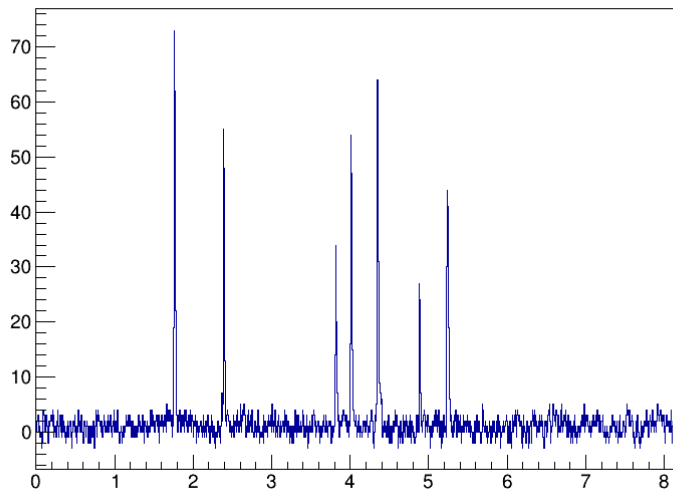
PMT1



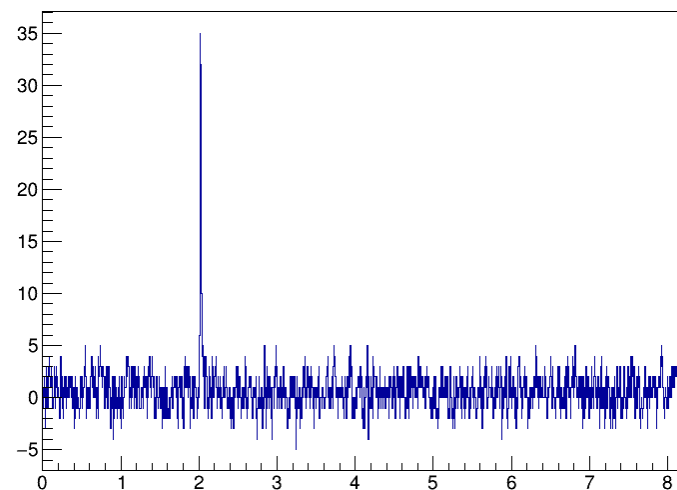
PMT2



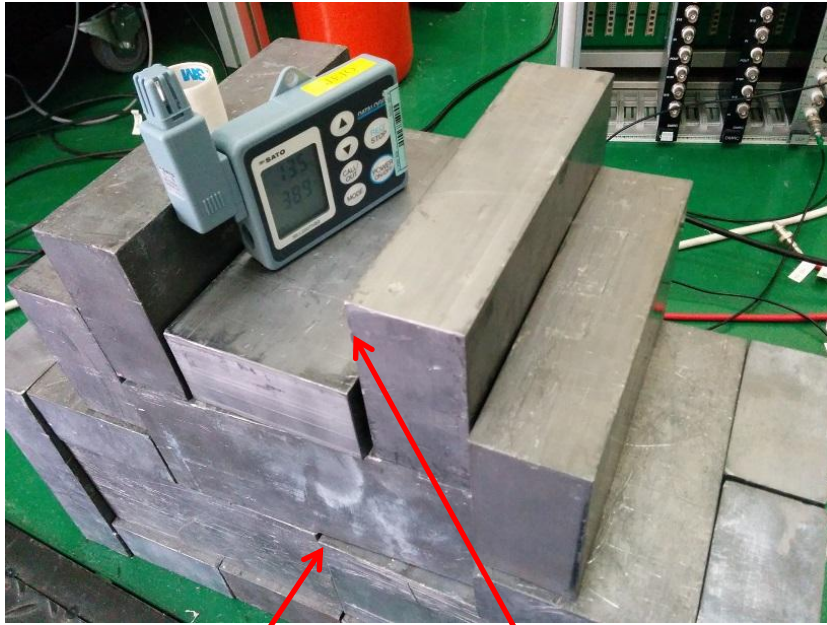
PMT1



PMT2



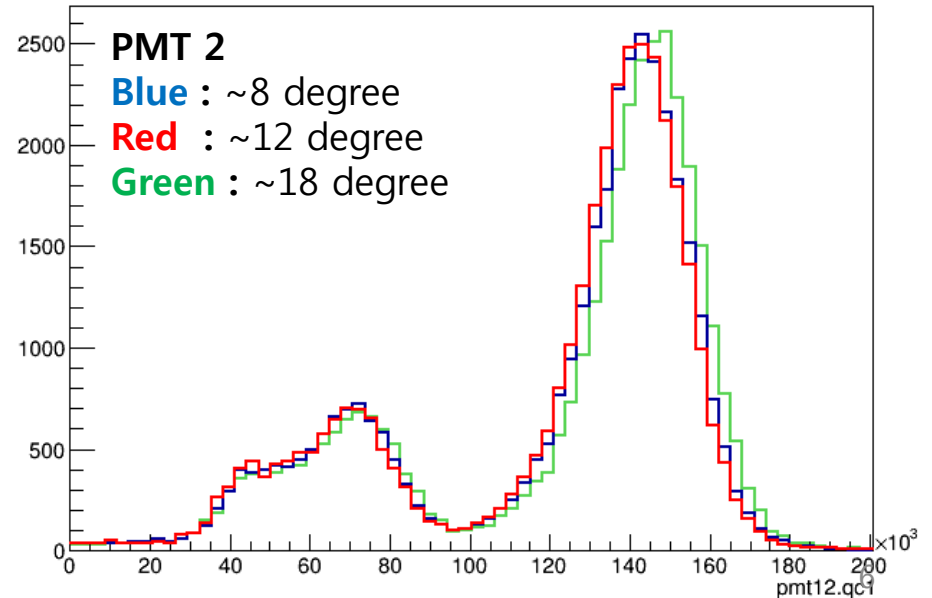
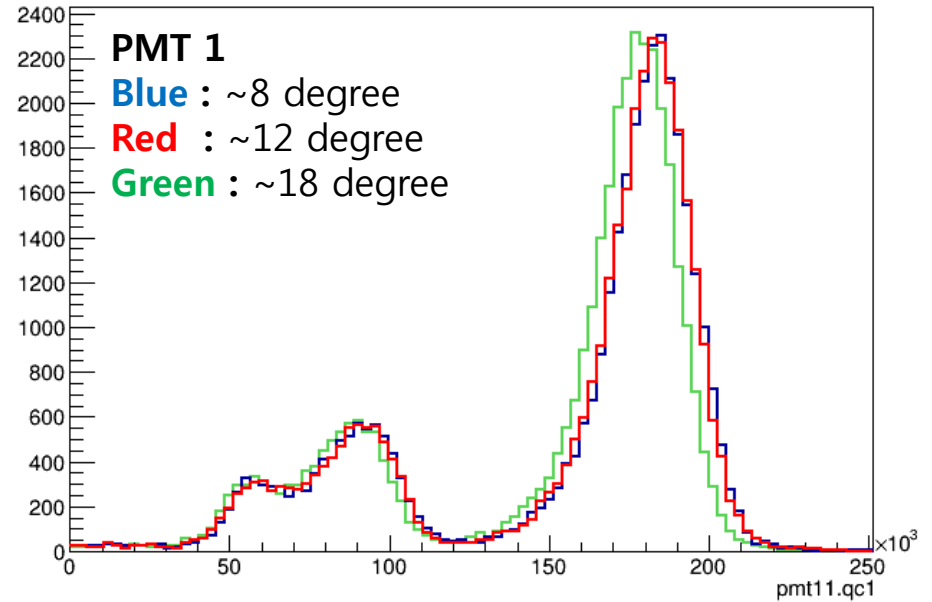
Calibration with ^{241}Am source (~ 15 cm from the NaI crystal : ~ 90 Hz)



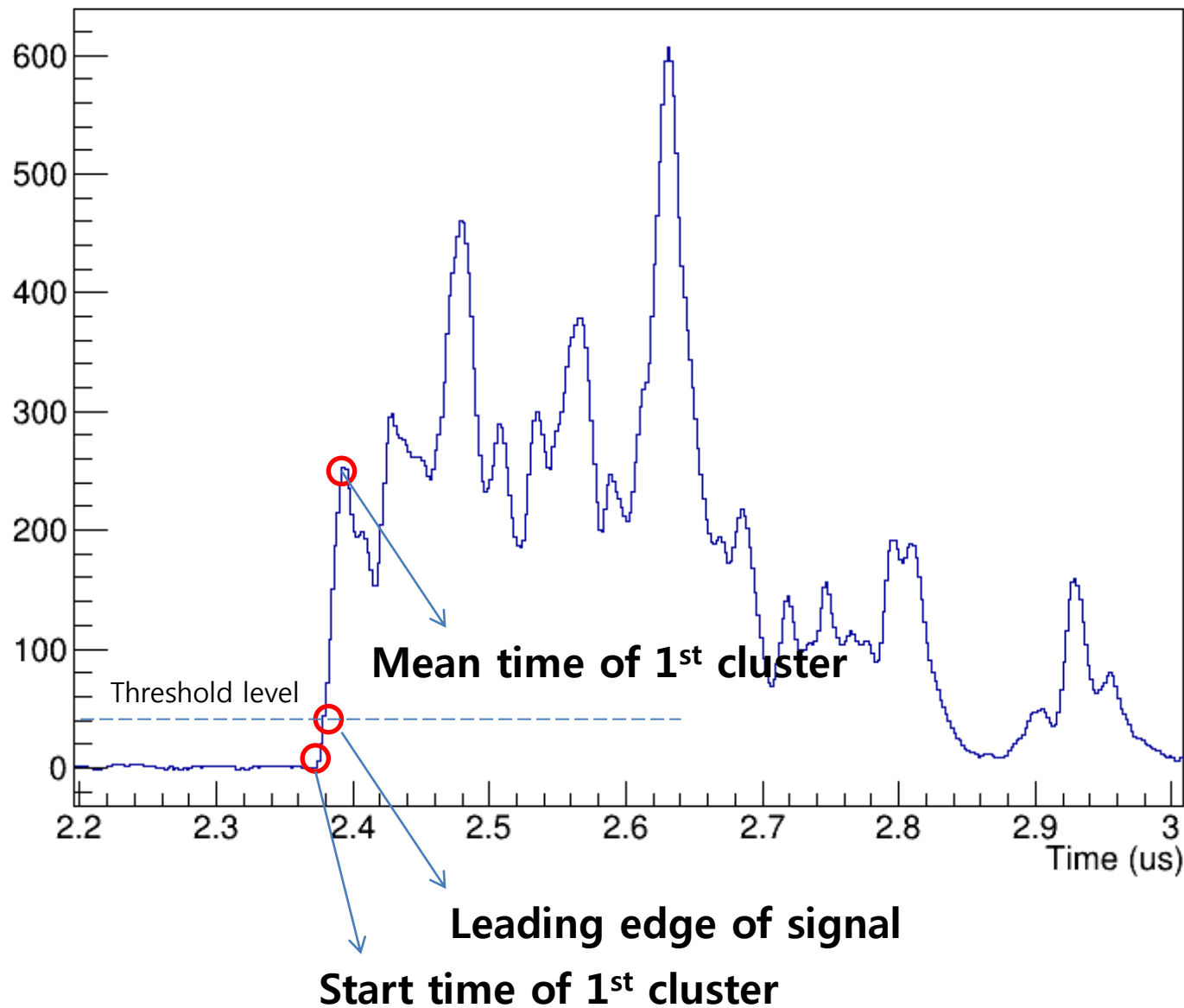
Am 241 source is attached below this block
NaI inside lead blocks

Temperature	pmt11.qc1	pmt12.qc1
$\sim 8^\circ$	1.83 ($\pm 0\%$)	1.43 ($\pm 0\%$)
$\sim 12^\circ$	1.83 ($\pm 0\%$)	1.42 (-0.7%)
$\sim 18^\circ$	1.78 (-2.8%)	1.46 ($+2.8\%$)

* 18° data was taken at different day

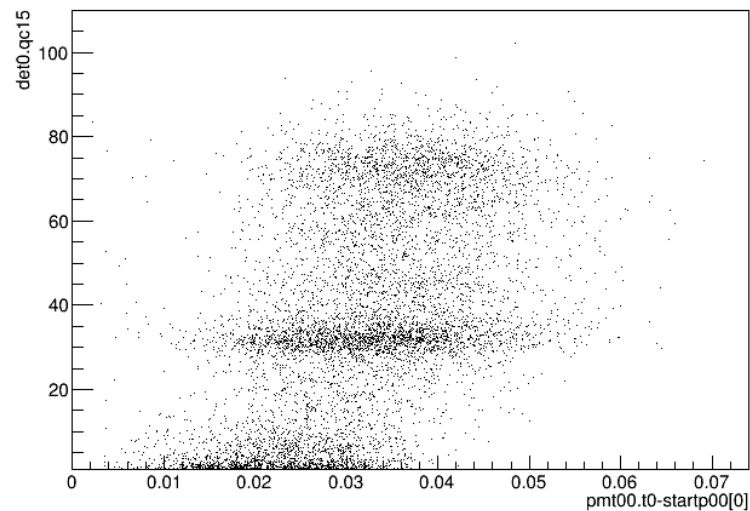
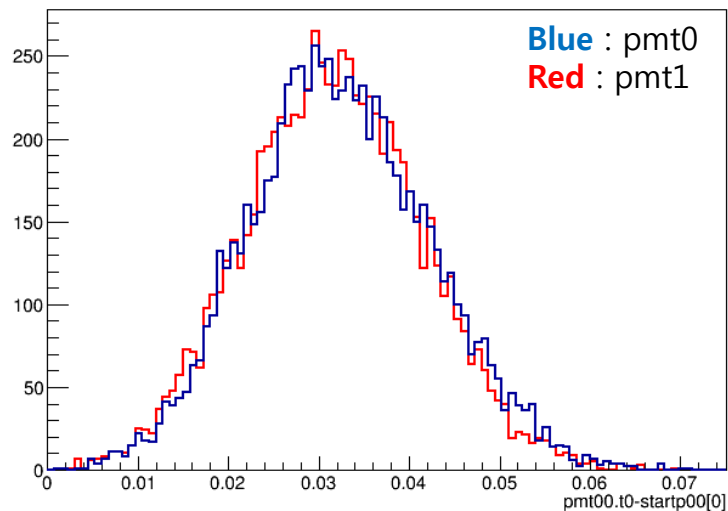


Calculate mean decay time with start time of signal

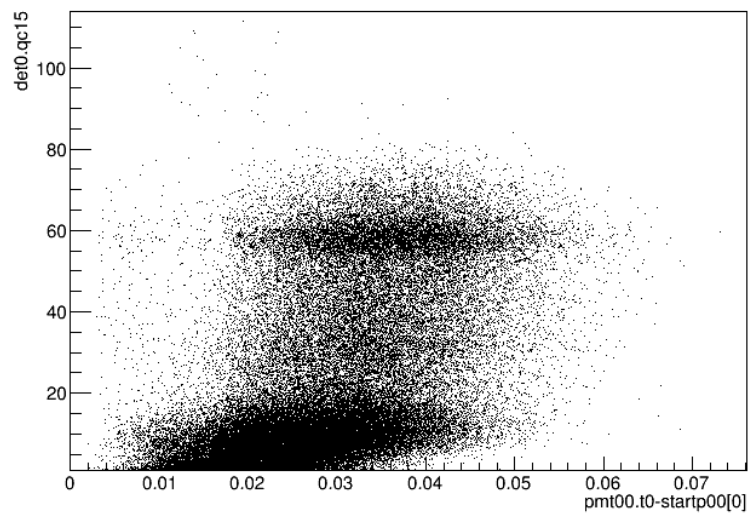
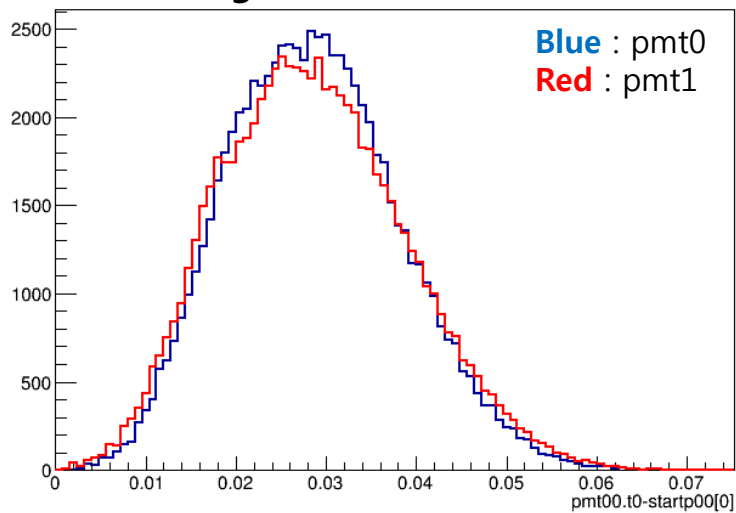


Mean decay time calculation with leading edge

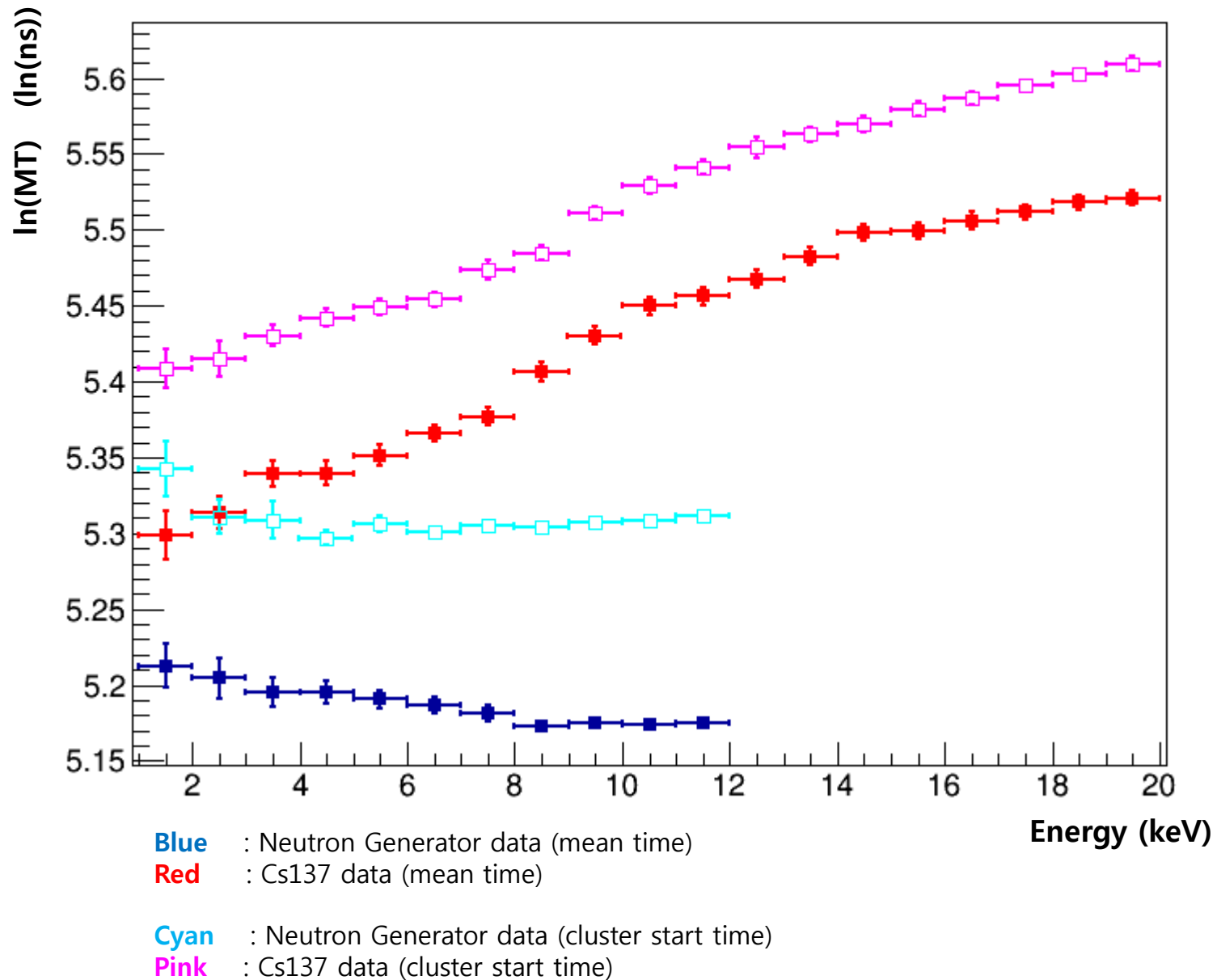
Cs137 data



Neutron generator data

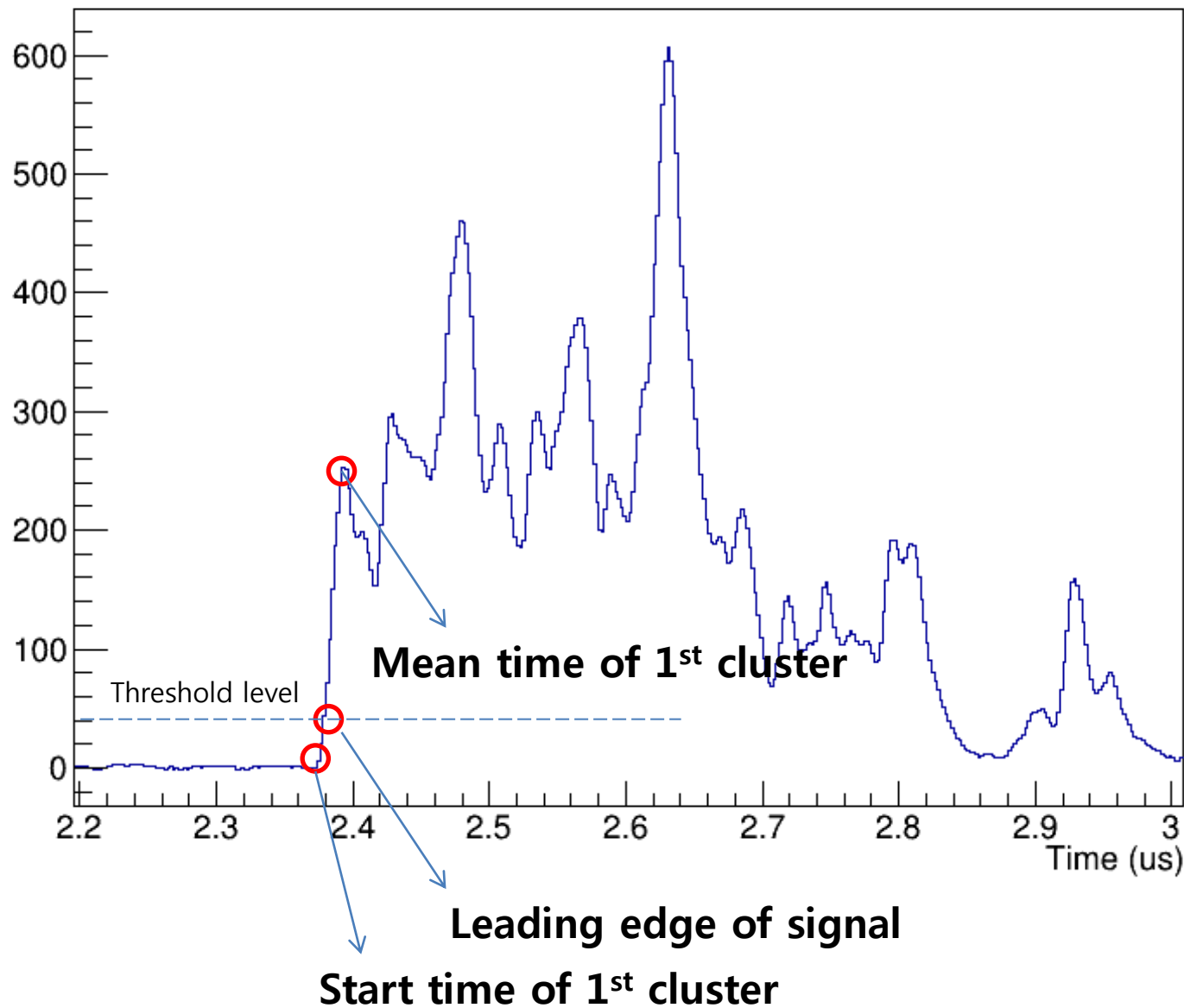


ln(MT)

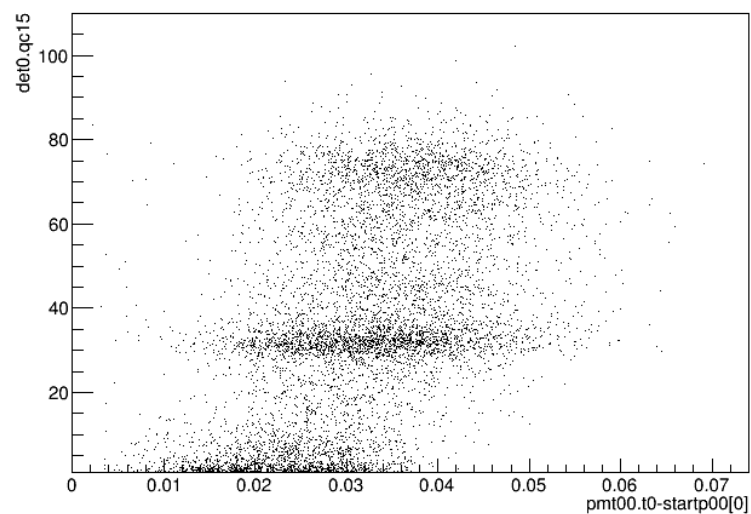
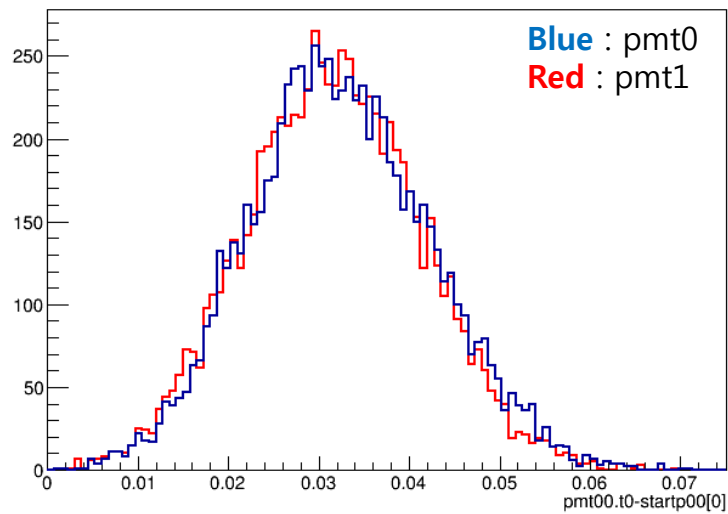


Backup Slides

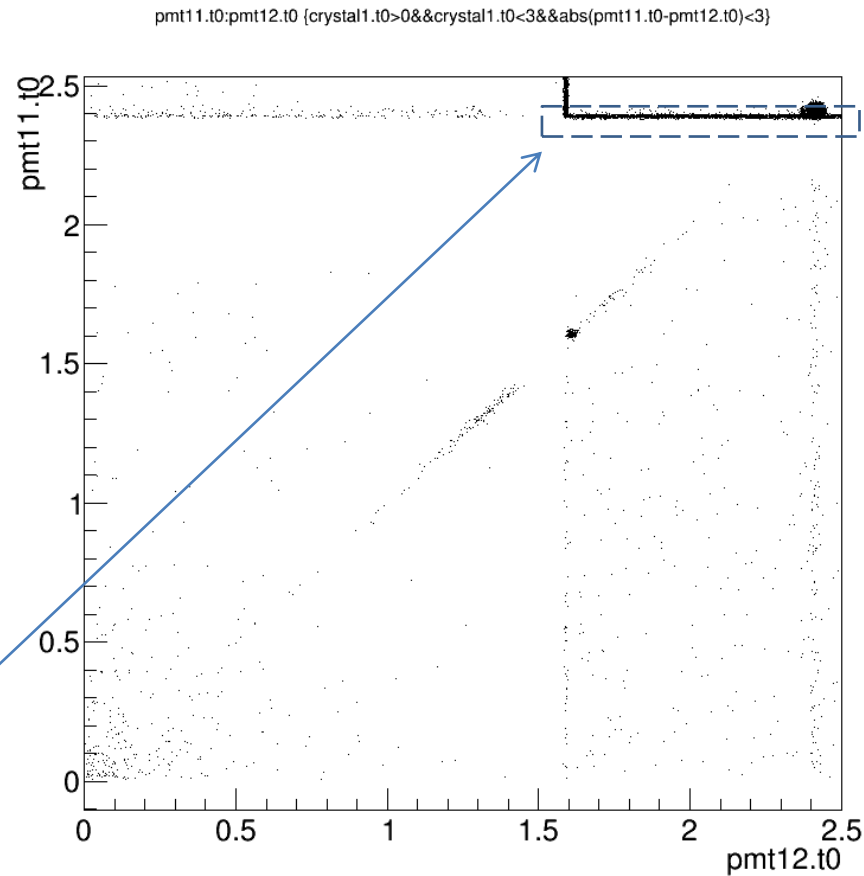
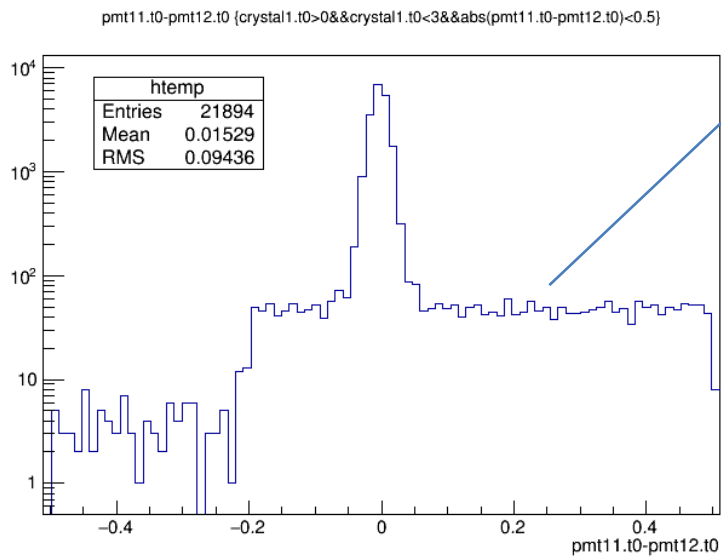
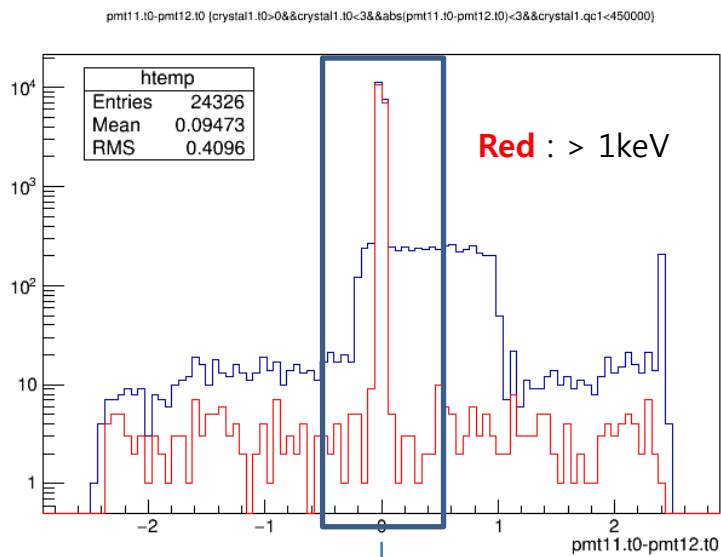
Calculate mean decay time with start time of signal



Mean decay time calculation with leading edge



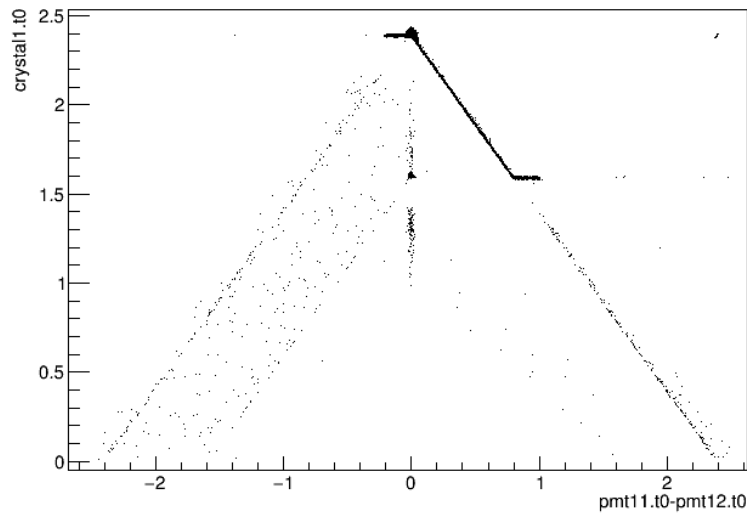
Time difference of two PMTs



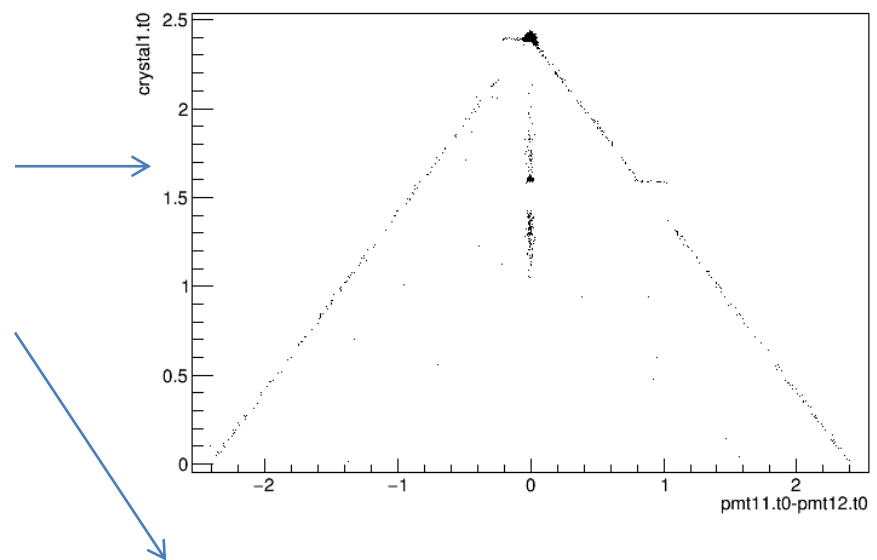
Calibration with 241 Am source

(~15 cm from the NaI crystal : ~90 Hz)

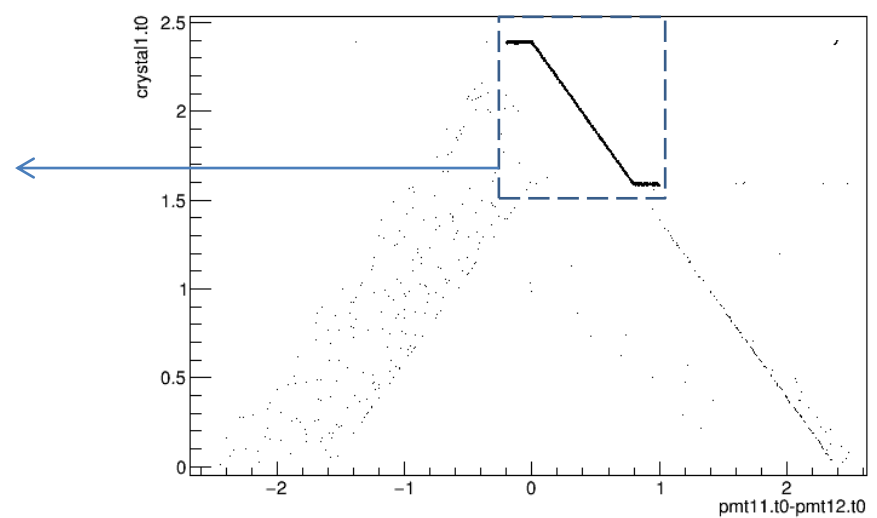
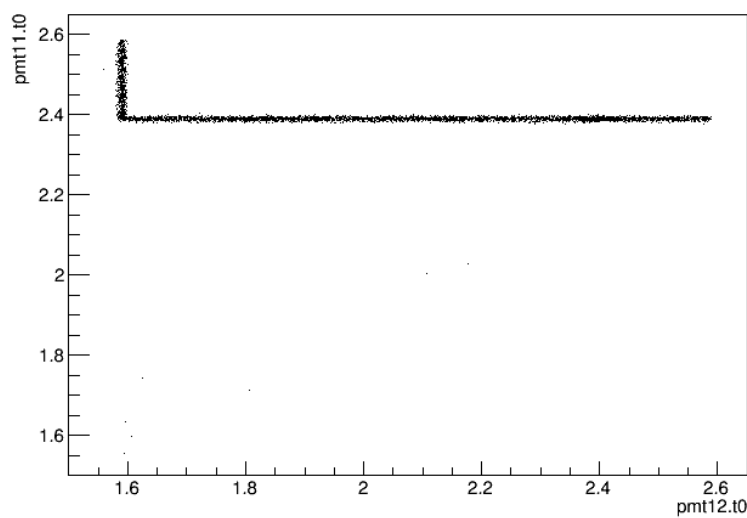
Total events



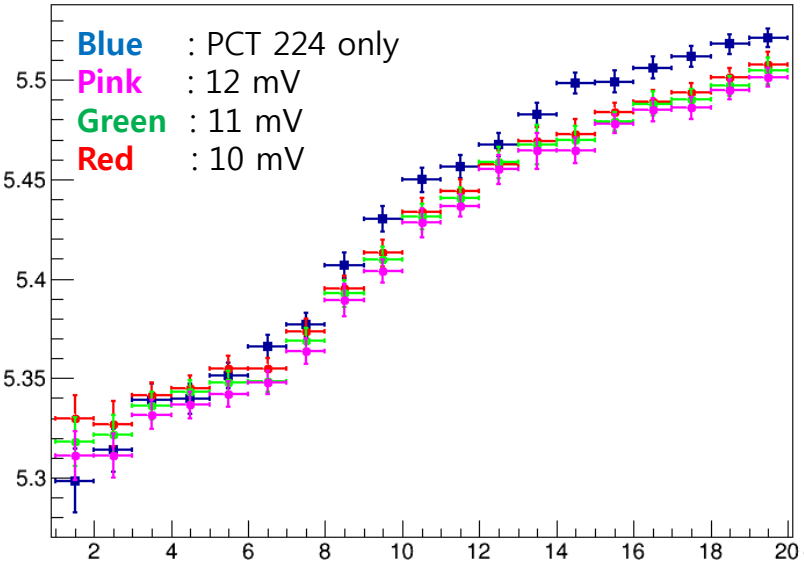
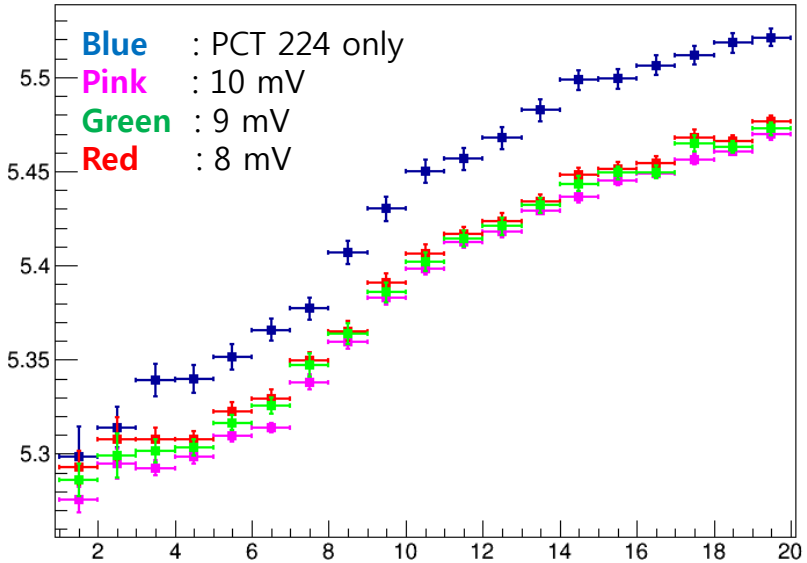
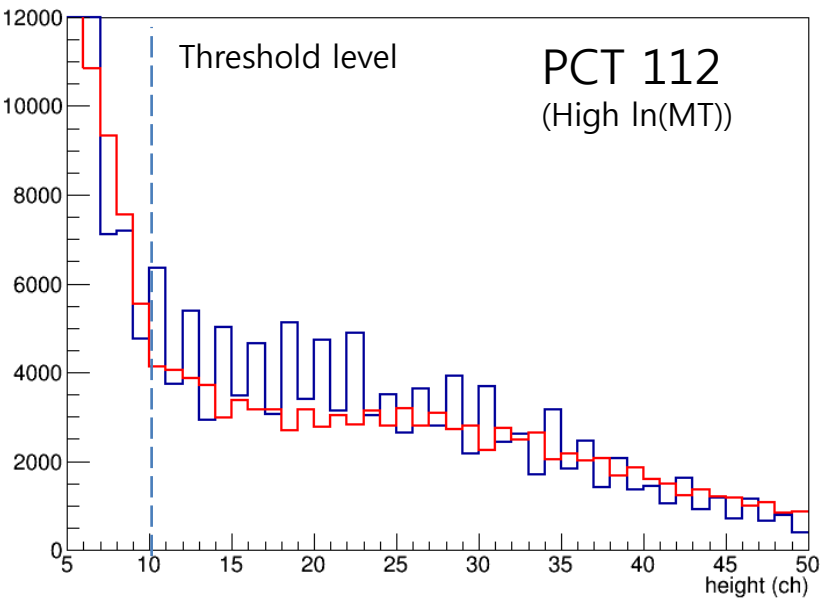
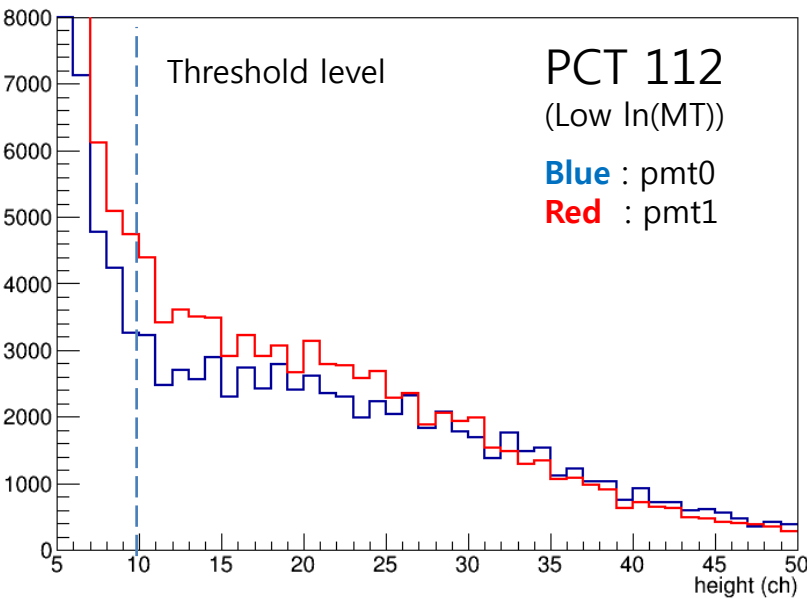
Above 0.3 keV



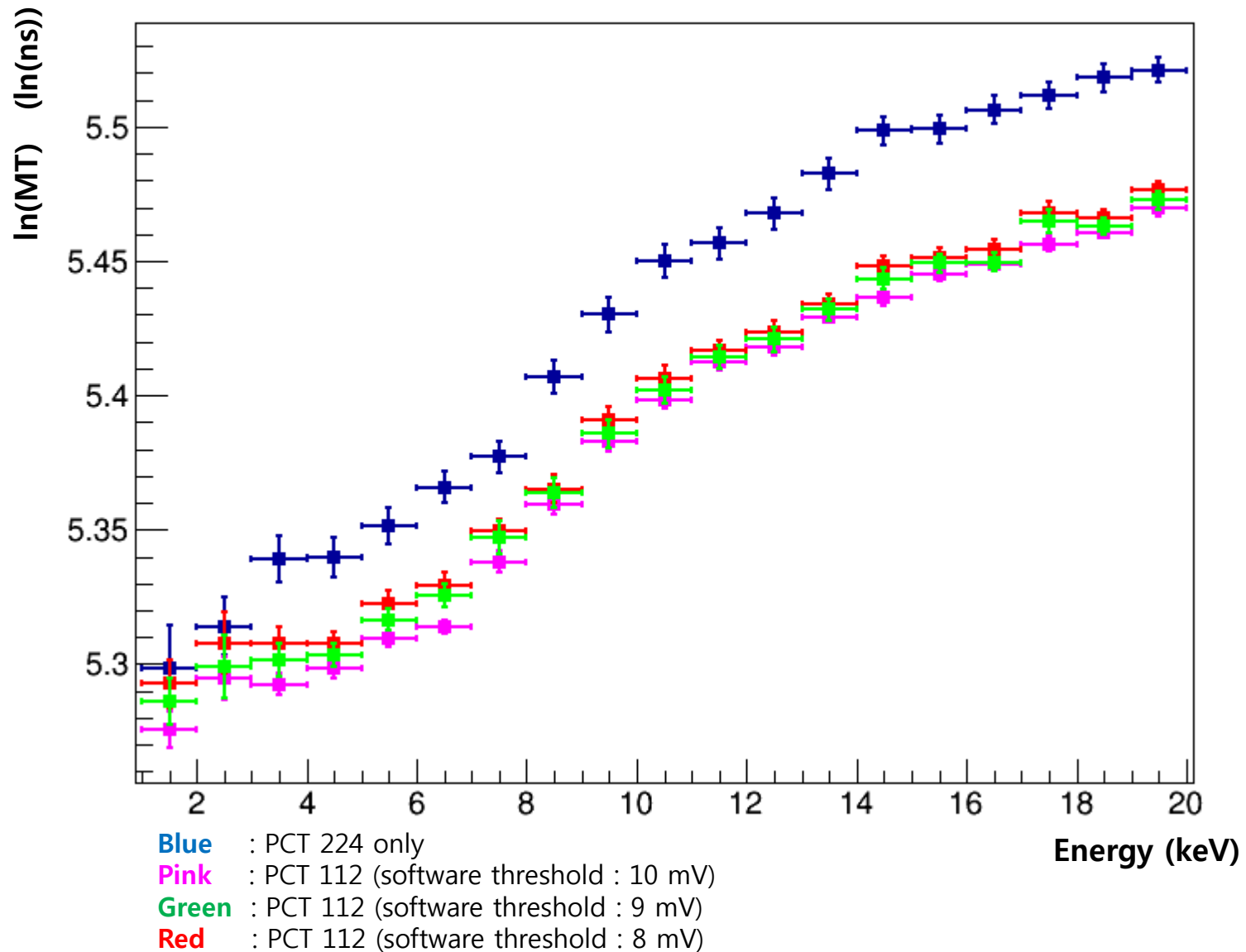
Below 0.3 keV



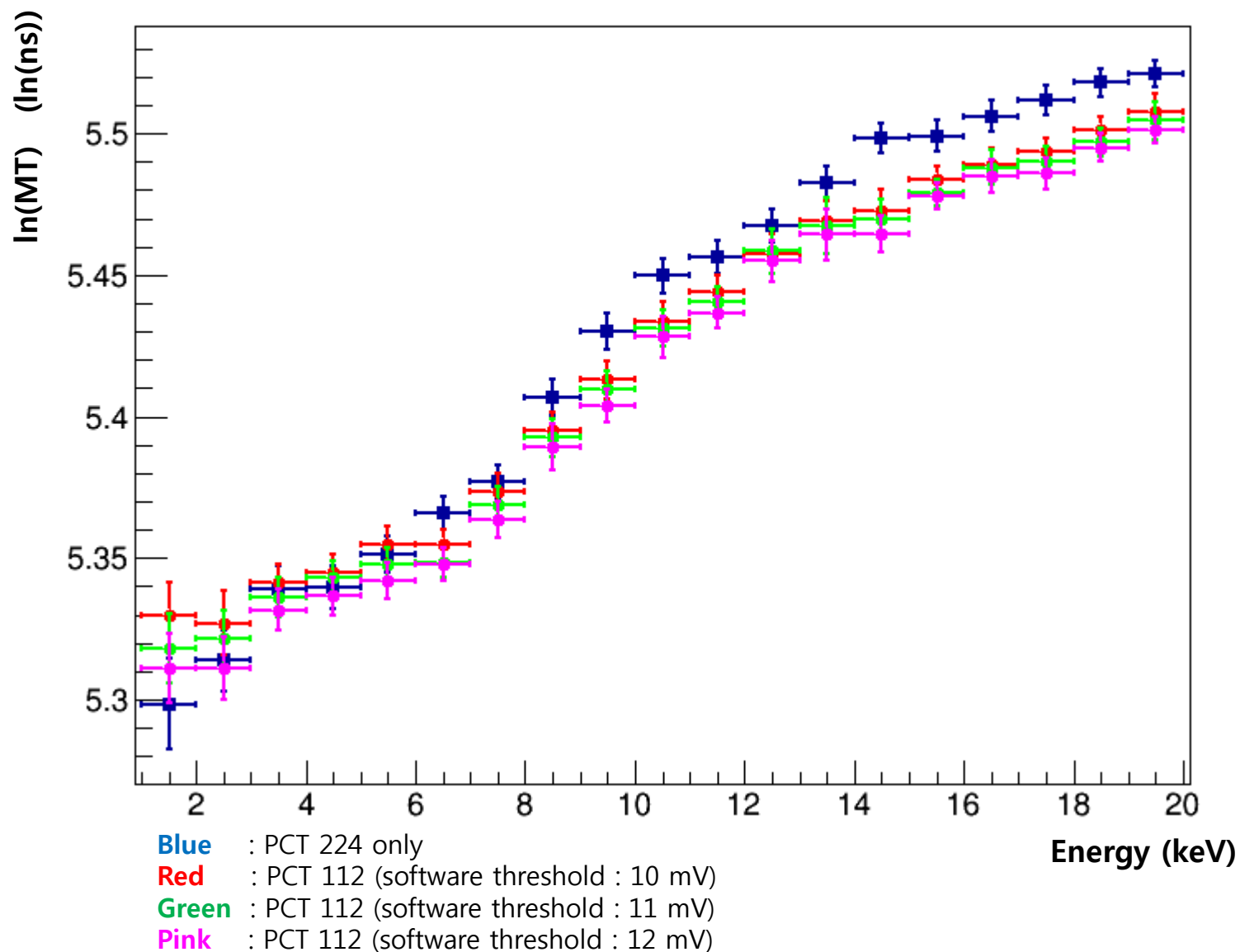
Pulse height distribution (With Am241 calibration data)

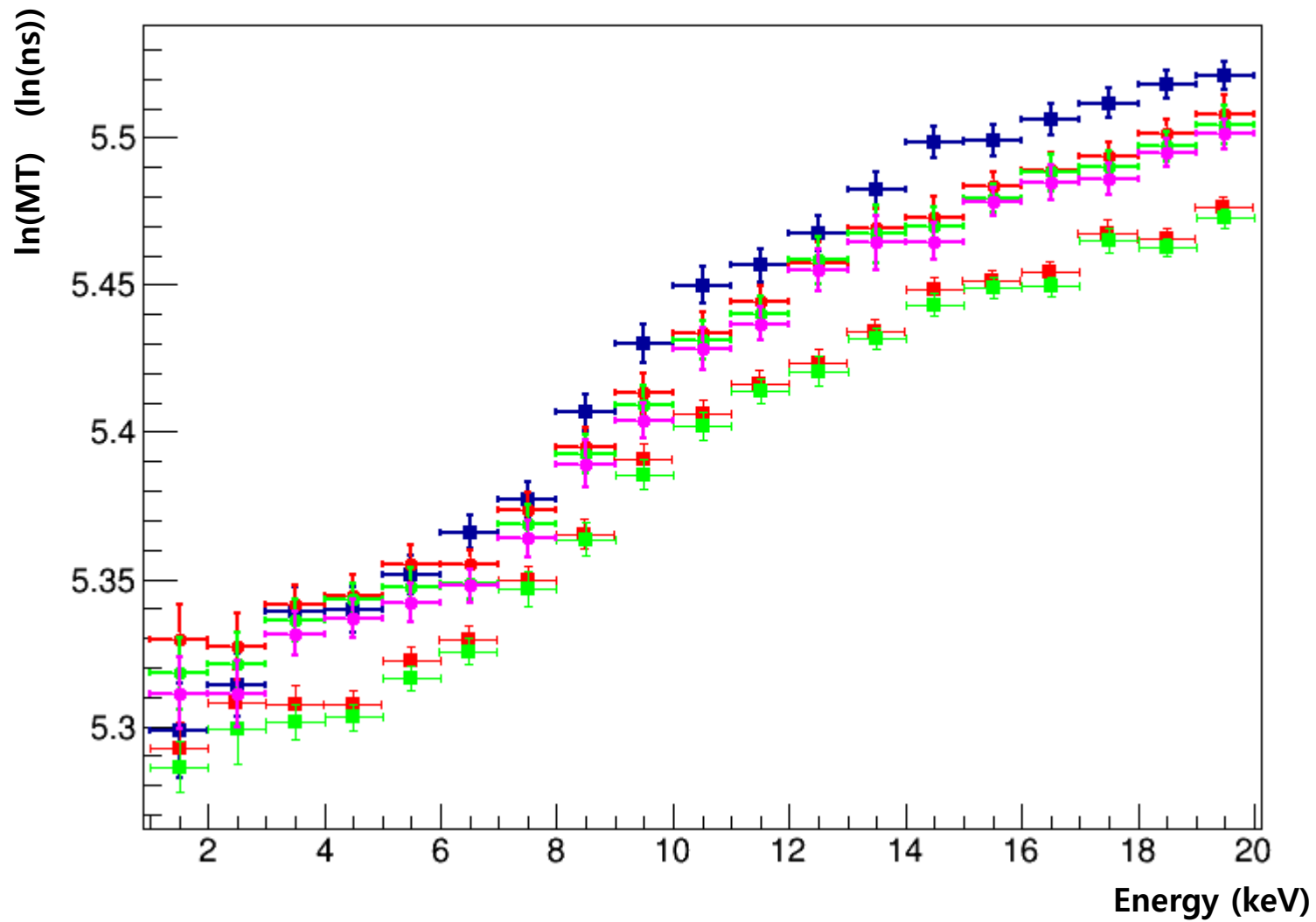


ln(MT) – low gain



ln(MT) – high gain



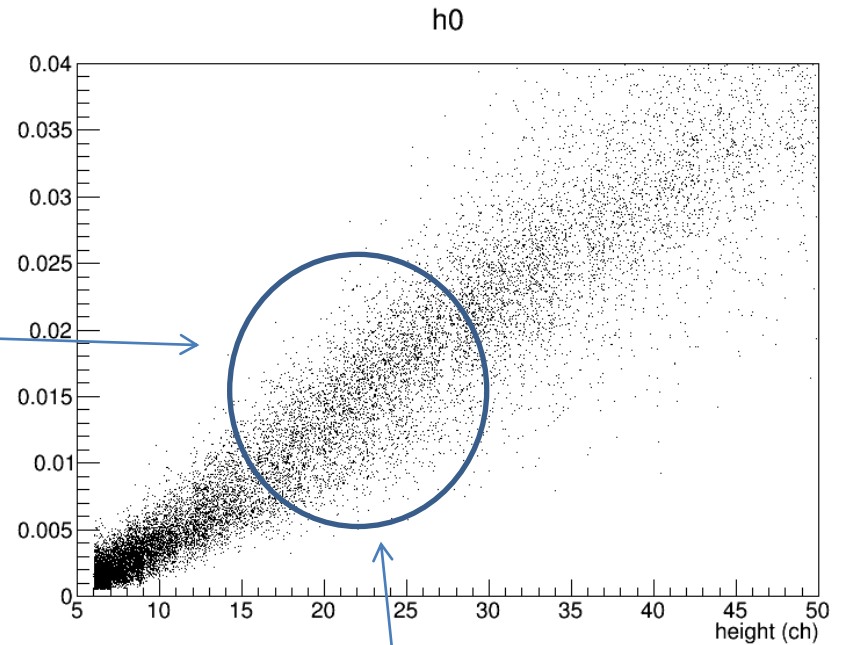
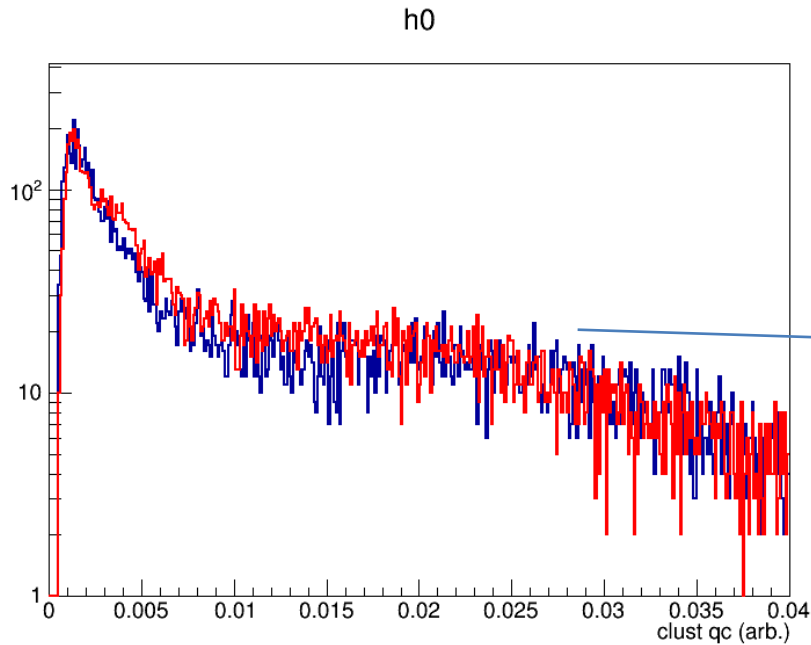


PMT gains for each data set

	PMT0 HV	PMT1 HV	pmt0.qc	pmt1.qc	det0.qc
SNU	1100	950	7.47	9.66	17.13
PCT 224 (wrong trg)	1140	1025	8.07	8.77	16.84
PCT 112 (fixed trg)	1170	985	7.68	7.88	15.56
New	1170	1015	8.44	8.25	16.69

pmt.qc : charge sum in ch. unit for 60 keV from Am241

Pulse height distribution (With Am241 calibration data)



$$8.285 : 59.54 \text{ (keV)} = 0.02 : X \text{ (keV)}$$

$$\rightarrow X = 0.144 \text{ (keV)}$$

(= 6.96 P.E per keV)

