

20170922 STATUS REPORT

Ahram lee

CERN data analysis

Data Information

dataRC

/home/arlee/dataRC/LOG, RAW, HIST, CONFIG
/runcatalog.db

runnum : ~#160

From 2017-08-11 to 2017-09-06

Data taking by PC
Vers. 1.2.0

dataRC_old

/home/arlee/dataRC_old/LOG, RAW, HISTS
/runcatalog.db

runnum : ~#205

From 2017-03-16 to 2017-07-26

Data taking by laptop
Vers. 1.1.0

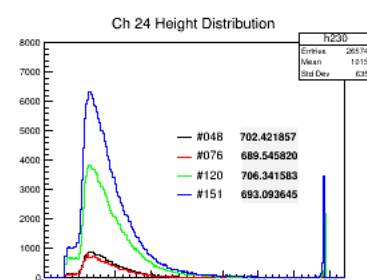
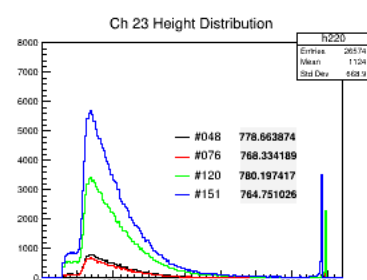
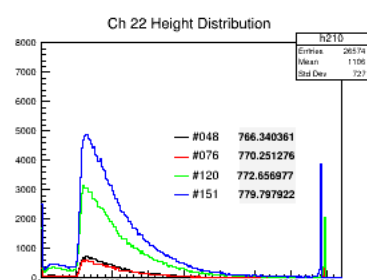
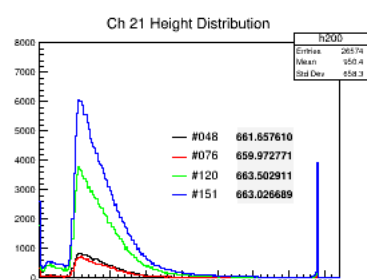
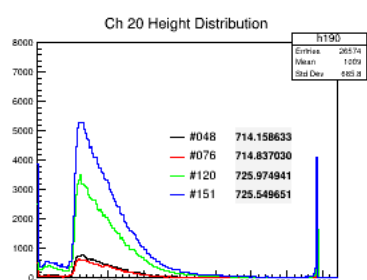
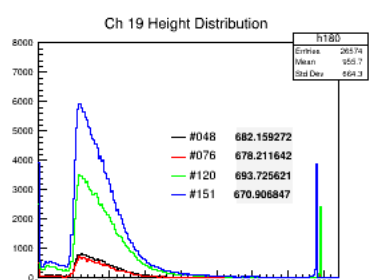
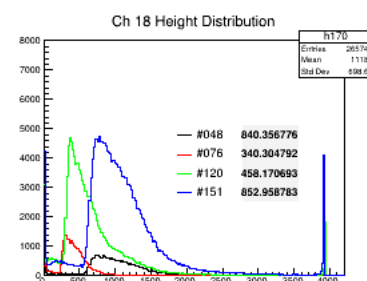
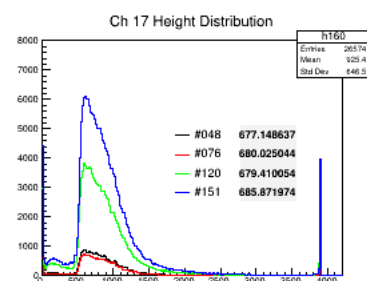
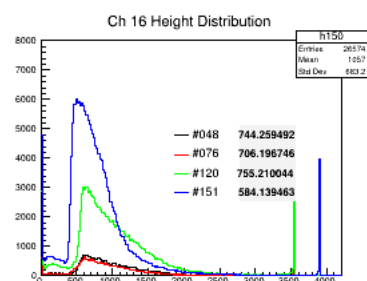
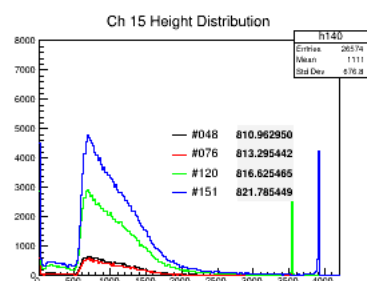
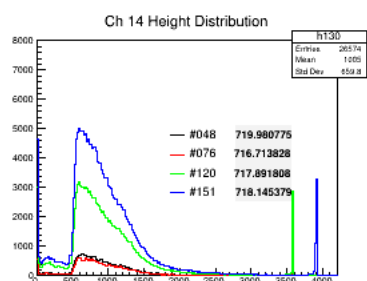
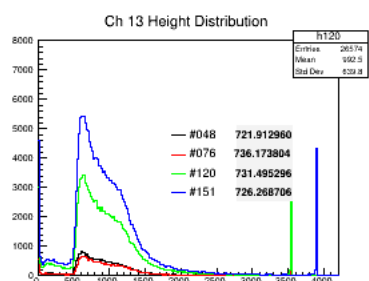
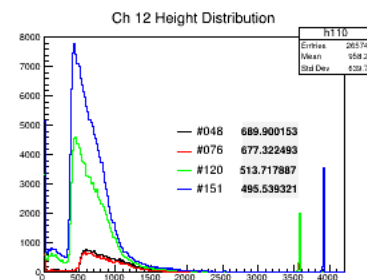
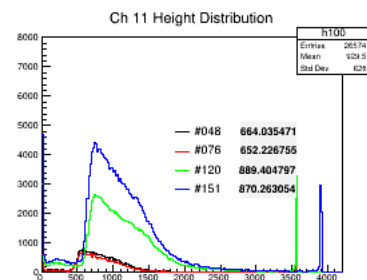
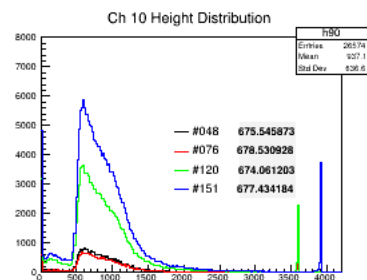
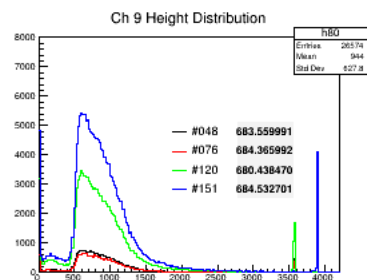
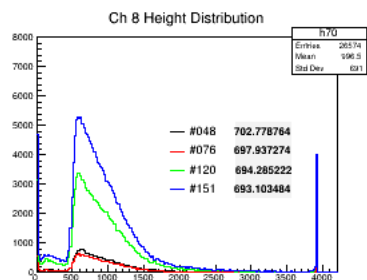
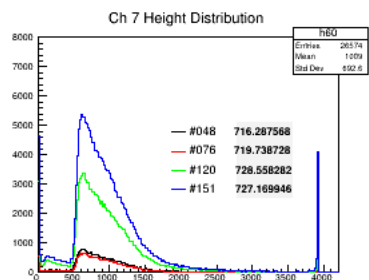
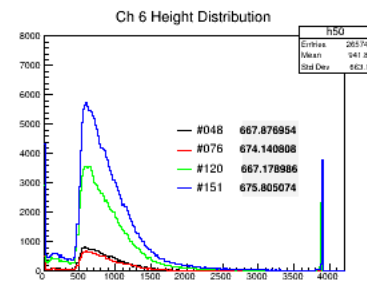
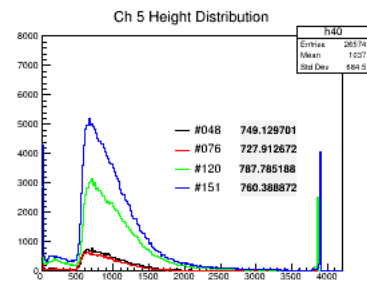
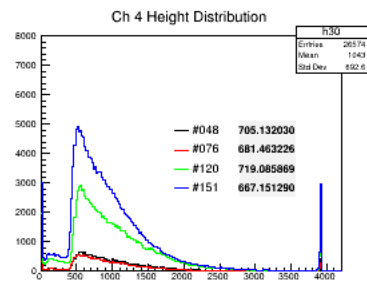
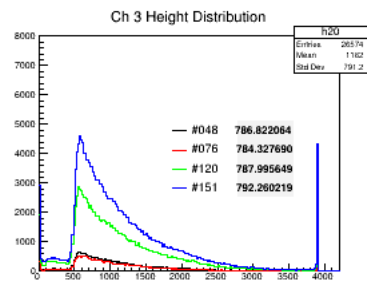
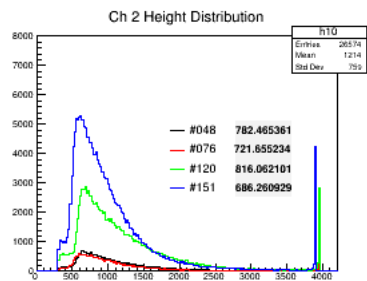
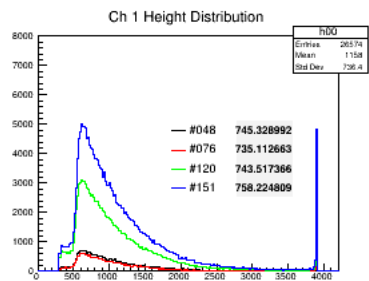
CERN data analysis

Gain Stability Check

/dataRC_old/	#181	07-21 (3h)	4bar trigger, th=200
--------------	------	------------	----------------------

/dataRC/	#48	08-17 ~ 08-18 (2d)	6bar trigger, th=100
	#76	08-21 ~ 08-22 (2d)	
	#120	08-25 ~ 08-29 (4d)	
	#151	08-30 ~ 09-06 (7d)	

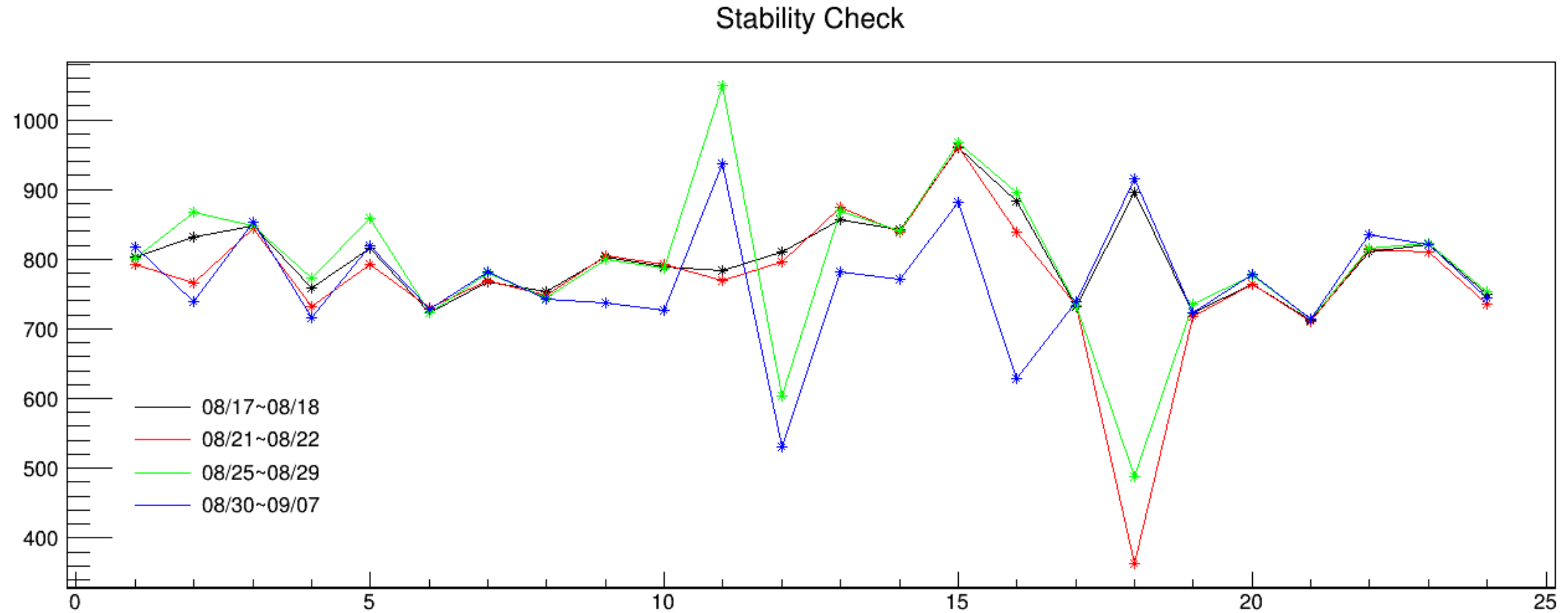
Cut	height[0], height[1], height[22], height[23] > 300
	bar1 bar11



CERN data analysis

Gain Stability Check

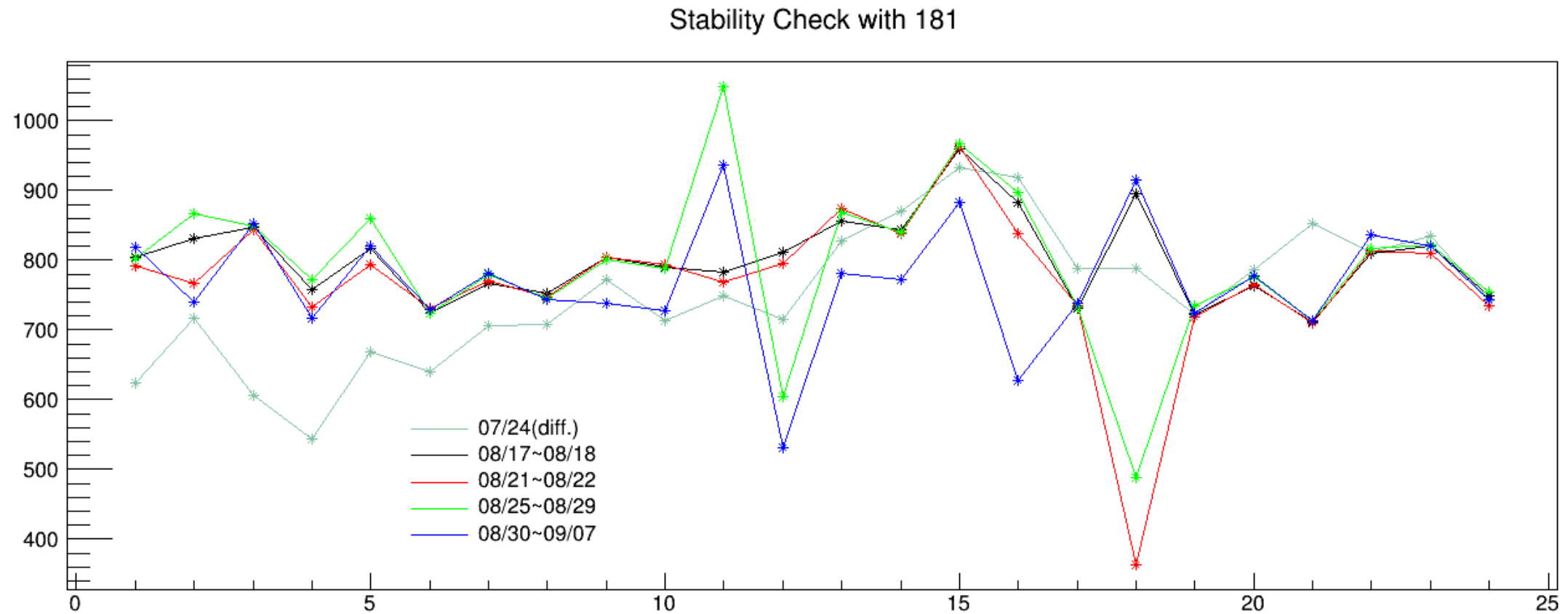
Without old#181



CERN data analysis

Gain Stability Check

With old#181



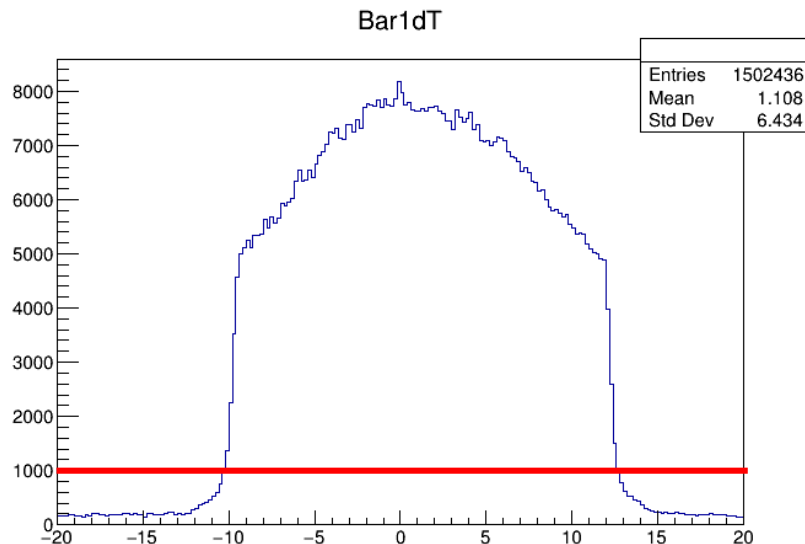
CERN data analysis

Muon Fit : [ch] – [MeV] conversion

08-30 ~ 09-06
6bar trigger
#151

To calibrate a signal height variation which depends Muon hit position,
Select signals which passed near a center of each counter.

1. obtain time width



Bar1dT = (Left) – (Right) t0 of Bar1
when larger than 1000

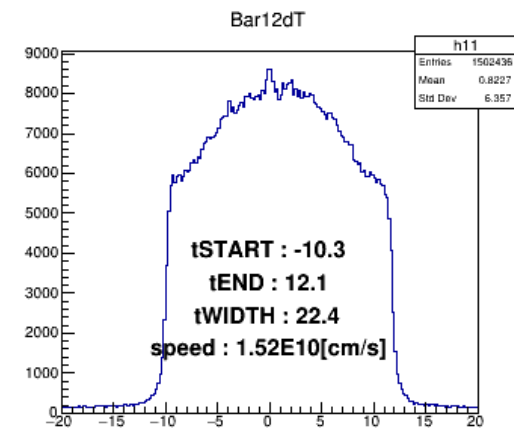
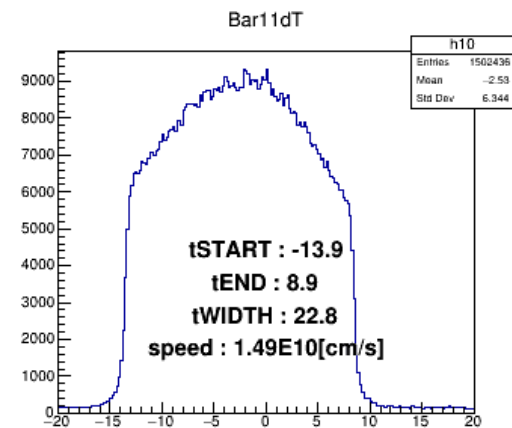
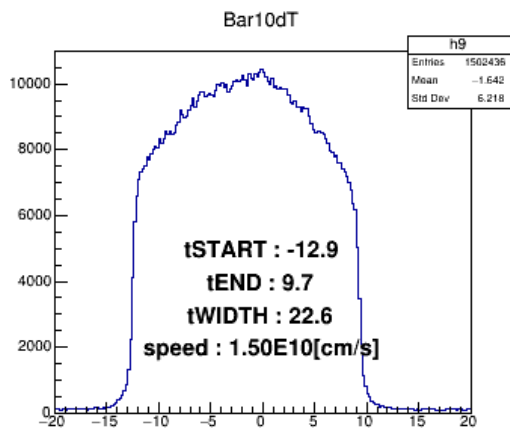
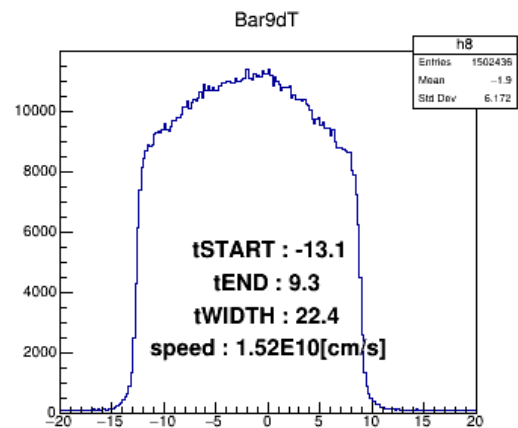
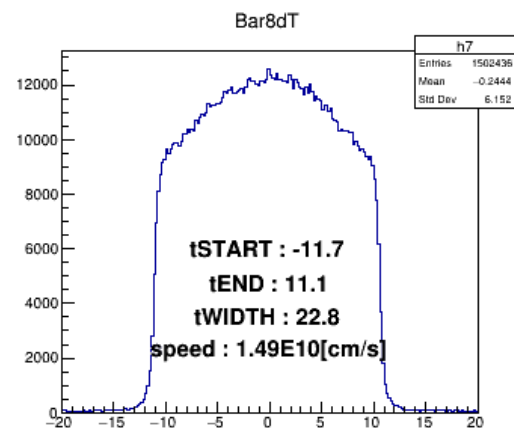
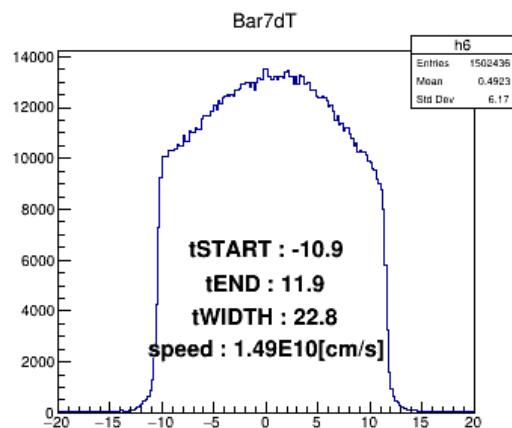
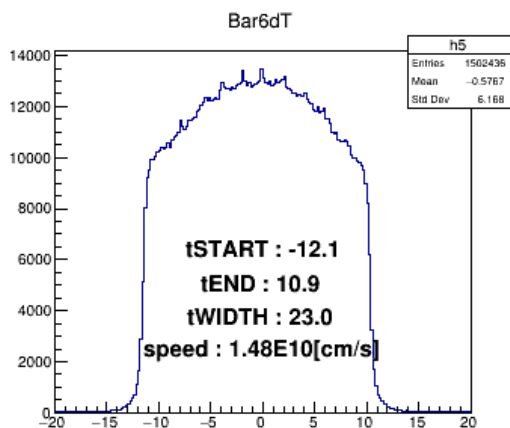
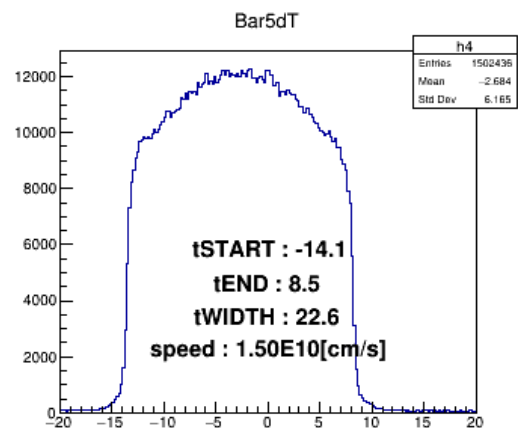
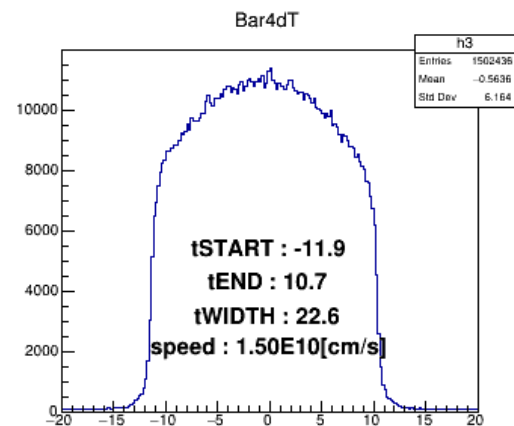
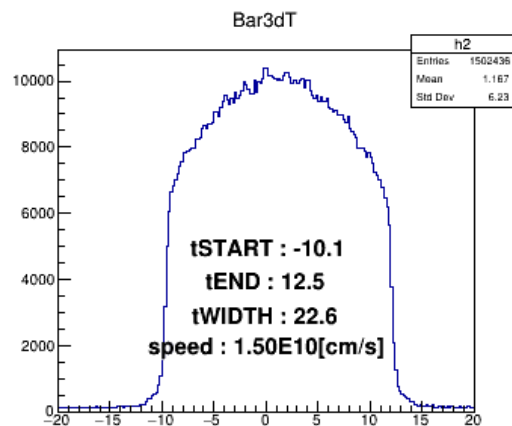
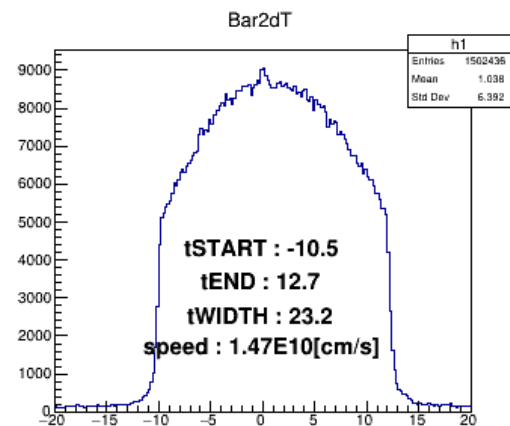
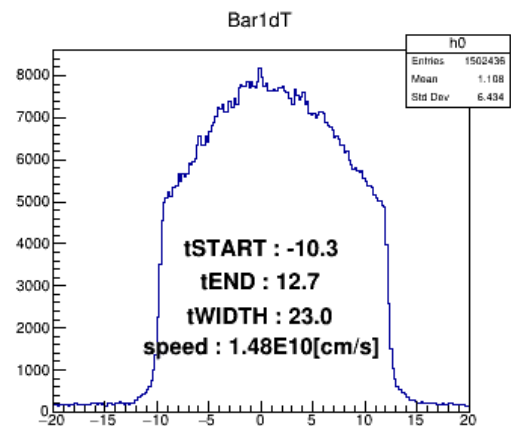
2. calculate speed

$$tWIDTH[0] = 23.0 \text{ [ns]}$$

$$\text{time to pass a counter} = \frac{tWIDTH[0]}{2} = 12.5 \text{ [ns]}$$

$$speed = \frac{170 \text{ cm}}{12.5} = 1.48 * 10^{10} \text{ [cm/s]}$$

$$\rightarrow 1 \text{ cm} = \frac{1}{14.8} \text{ [ns]} = 0.068 \text{ [ns]}$$



CERN data analysis

Muon Fit : [ch] – [MeV] conversion

08-30 ~ 09-06
6bar trigger
#151

To calibrate a signal height variation which depends Muon hit position,
Select signals which passed near a center of each counter.

- by using a near bar, select Muon Fits within near counter center ($-3\text{cm} \sim +3\text{cm}$)
Fit those histogram(experimental) by simulation results

