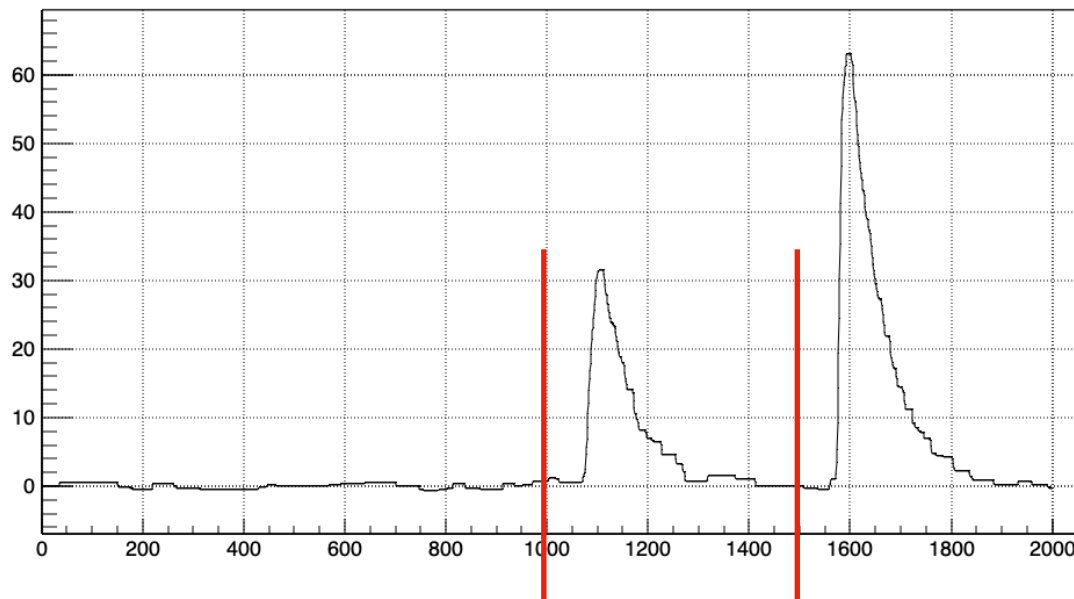


Arapuca calibration. **Run 5927**

Graph



Run with LED light.
The LED produced two
peaks in a fixed position.

3 windows

[0:1000] ticks
[1000:1500] ticks
[1500:2000] ticks

The two windows of 500 ticks are used to integrate the signal and filling the histograms.

The window [0:1000] is used to evaluate the baseline.

In some case there are PEs in the first 1000 ticks.

They are been located and analyzed in order to remove their contribute from the baseline evaluation and secondly to get a histogram from them.

For channels 142, 143 and 274, because the PE packs low resolution, the SPE peak, got from the first 1000 ticks window integration, is used for the calibration.

The calibration is got fitting the first 4 packs of the integrate charge histograms using a gaussian function. Then a linear fit is made with the mean of each Gaussian.

For channels 142, 143 and 274, because the PE packs low resolution, the SPE peak, got from the first 1000 ticks window integration, is used for the calibration.

Here is reported the mean of the Gaussians used for the histograms peaks fit.
The unit is (ADUs x ticks)

In columns “###” is reported the Gaussian mean value of the fit.

In columns “D###” is reported the Gaussian mean value error of the fit.

Ch	132	D132	133	D133	134	D134	135	D135	136	D136	137	D137	138	D138	139	D139	140	D140	141	D141
PE																				
0	-30.2	3.9	-34.8	2.6	-34.8	2.8	-28	3.2	-45.4	4.2	-38.4	3.6	-40.3	7.6	-15.3	5.1	-34.5	30.9	14.7	42.5
1	729.4	5.2	713.2	4.1	737.5	4.2	750	5.1	759.9	5.8	623.4	4	668.2	6.4	615.7	4.7	608.8	10.5	614.2	56.2
2	1513.6	12.4	1449.9	10.3	1505.4	8.9	1567.6	15.7	1586.5	17.5	1294.6	6.4	1380.3	8.1	1255.6	6.1	1268.1	9.5	1253.4	23.2
3	2315.3	18.2	2218.7	45.9	2310	35.5	2310	40.4	2422.8	32	1951.9	12.3	2123.9	13.9	1876.5	16.4	1932	18.2	1847.5	27.7
4	0	0	0	0	0	0	0	0	3184.7	58.6	2623.1	18.5	2913.6	47.1	2507	21.5	2667.4	110.1	2535.9	29.5

Ch	264	D264	265	D265	266	D266	267	D267	278	D278	269	D269	270	D270	271	D271	272	D272	273	D273	275	D275
PE																						
0	-24.3	6	-8.5	7.7	-24.7	7.7	0.7	7	-29.3	71.2	-36	8.6	-30.1	9.6	-6.5	57.6	-82.9	20.3	0	0	-57.1	16.1
1	724.4	4.6	752.9	6.2	720.7	5	617.5	9.1	728.7	15.9	587.3	4.6	648.6	5.7	735.4	11.1	623.4	11.8	709.2	66.4	755.6	7.3
2	1477.6	5.5	1530.4	9.1	1487.6	7	1241.5	8.6	1576.3	35.1	1236.9	6	1307.4	7.5	1461.3	8.8	1248.2	28.9	1463.4	19.6	1589.4	10
3	2230.8	13.4	2317.4	12.7	2297.5	9.3	1882.1	16.1	2368.3	19.9	1889.6	7.9	1966	7.2	2210.9	9.2	1869.6	15.2	2264.9	35.9	2434.9	14.2
4	3012.8	18.7	3108.2	30.3	3048.4	13.4	2507.2	12.4	3171	23.3	2495.3	6.8	2653.2	12.4	2944.1	14.6	2485.8	26.2	3078.7	93	3259.1	12.6

Fitting the Gaussians mean for each channel with: $f(x) = A \cdot x + B$

Ch	Parameter A	Parameter B	Ch	Parameter A	Parameter B
132	782.1 +/-6.7	-41.1 +/- 12.5	264	758.1 +/-3.6	-31.8 +/- 8.8
133	749.7 +/-4.5	-37.8 +/- 8.4	265	779.8 +/-3.4	-19.5 +/- 8.3
134	780.2 +/-5.9	-40.8 +/- 11.0	266	772.3 +/-5.9	-38.7 +/- 14.7
135	783.2 +/-9.9	-24.8 +/-18.5	267	627.8 +/-2.2	-5.7 +/- 5.6
136	812.3 +/-6.9	-53.7 +/- 9.3	268	804.0 +/-6.7	-45.0 +/- 16.4
137	665.1 +/-1.2	-39.4 +/- 2.8	269	636.5 +/-4.5	-38.4 +/- 11.2
138	736.3 +/-9.8	-63.5 +/- 23.9	270	668.4 +/-2.9	-27.8 +/- 7.2
139	630.5 +/-1.6	-13.2 +/- 3.8	271	737.7 +/-1.8	-6.3 +/- 4.3
140	672.7 +/-9.9	-57.0 +/- 24.3	272	638.4 +/-10.1	-47.9 +/- 24.8
141	627.6 +/-8.7	-2.0 +/- 21.3	273	754.5 +/-21.8	-39.4 +/- 31.0
142	720.6 +/-13.2		274	708.8 +/-10.9	
143	744.0 +/-14.1		275	831.2 +/-3.0	-65.9 +/- 7.4

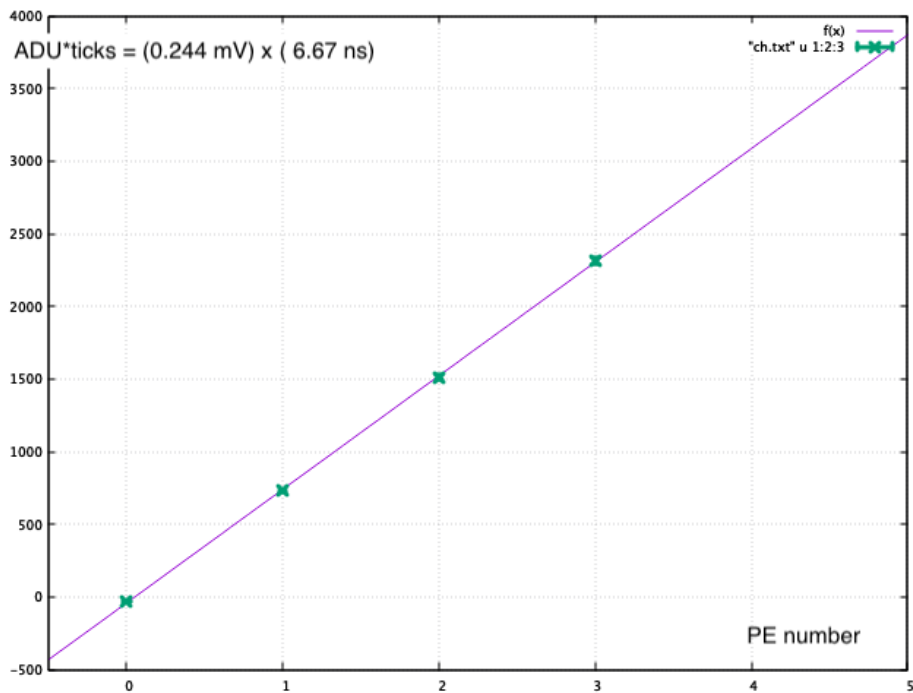
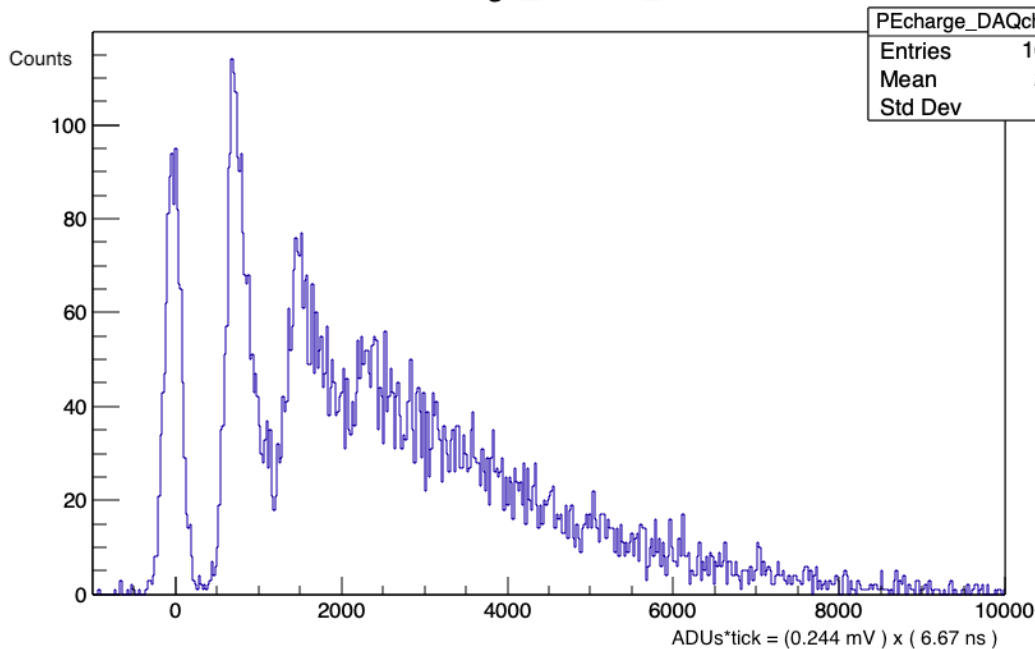
The values for the SPE calibration is represented by parameter A.

It is reported in:

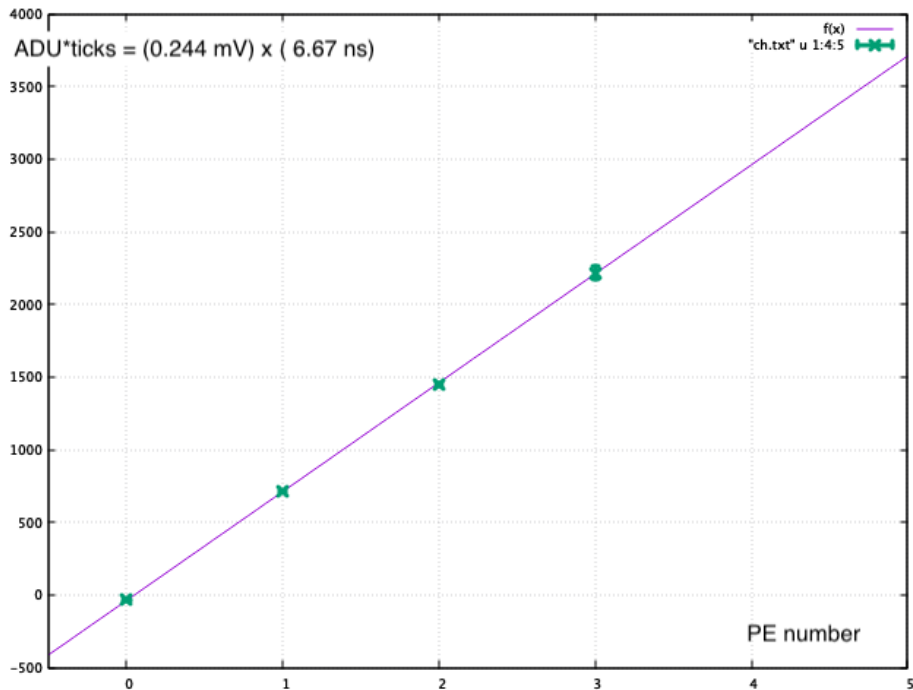
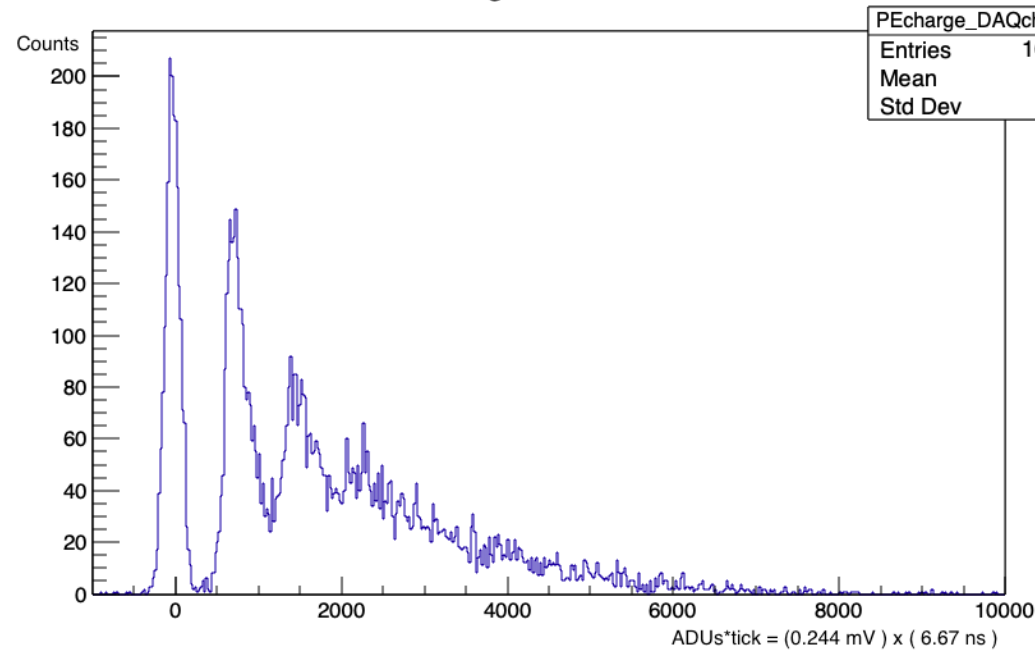
$$ADUs \times ticks = (0.244 mV) \times (6.67 ns)$$

For the channel in “red” is reported the mean of the Gaussian used to fit the 1st peak of the histograms got with the integrated charge in the first 1000 ticks of the waveforms.

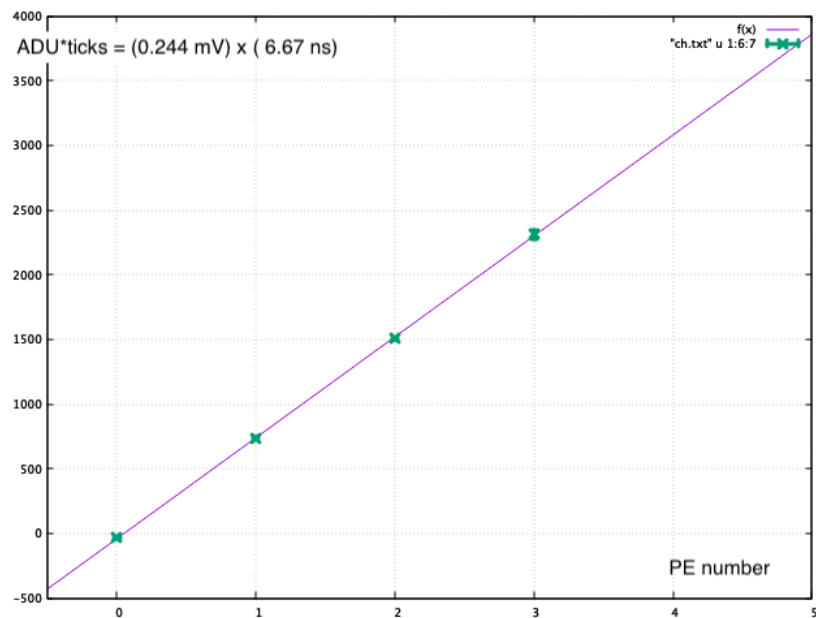
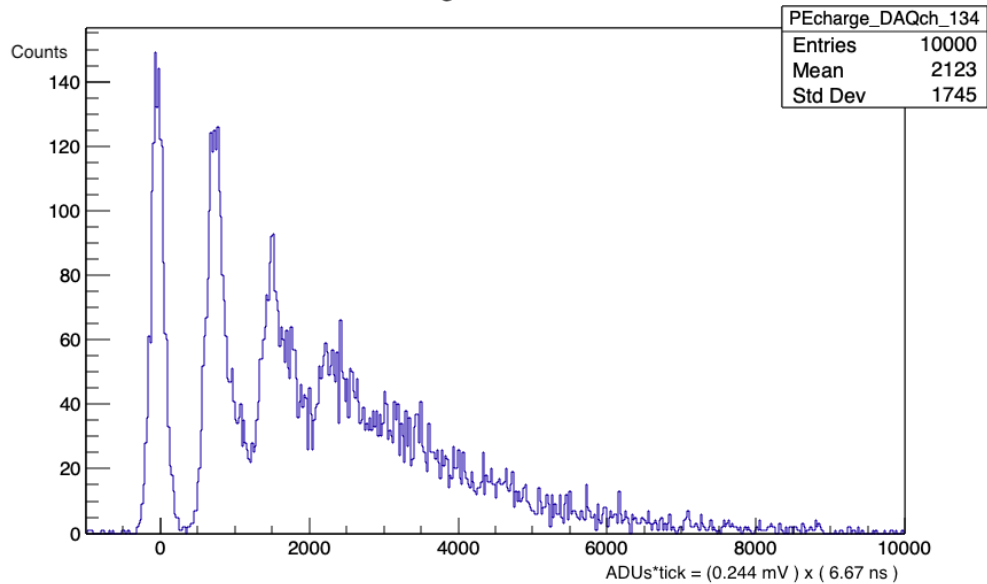
PEcharge_DAQch_132



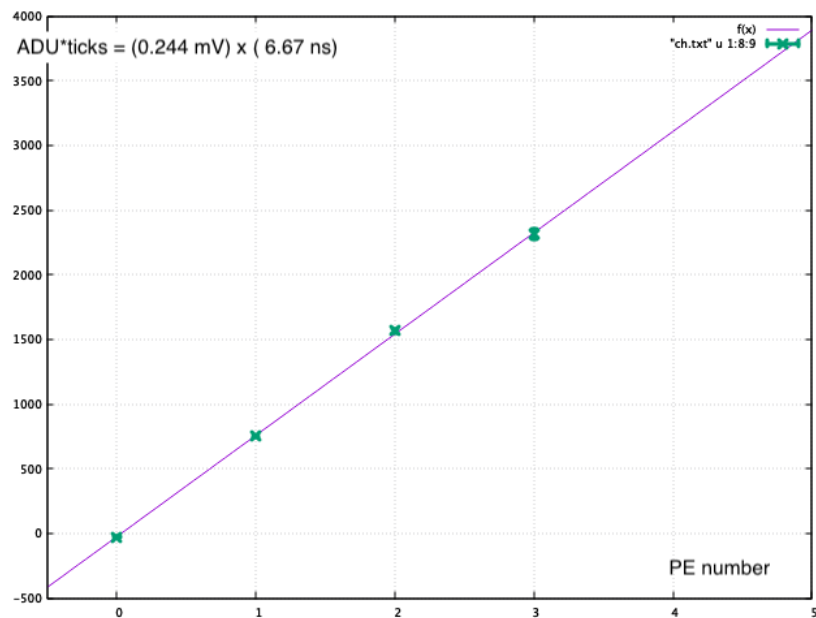
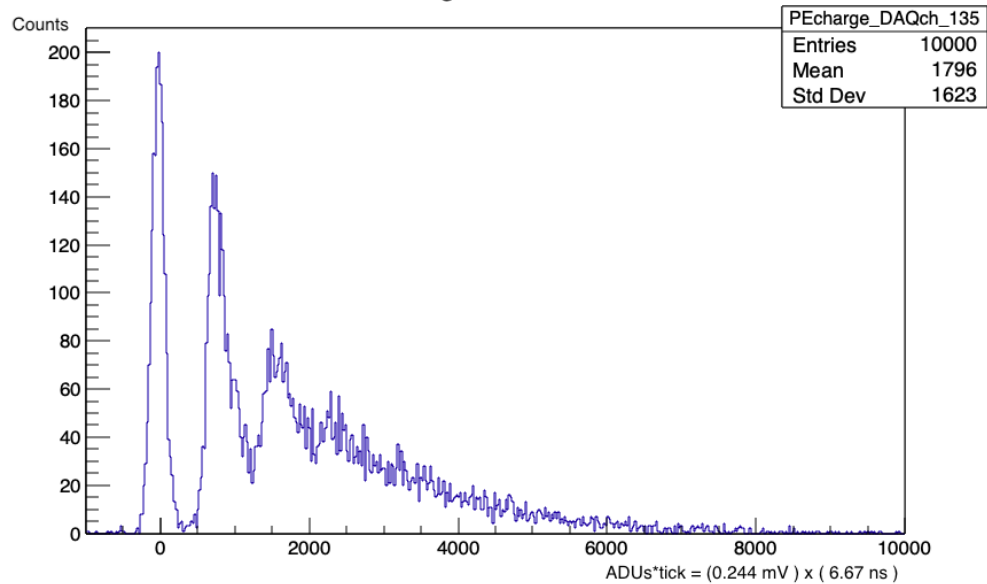
PEcharge_DAQch_133



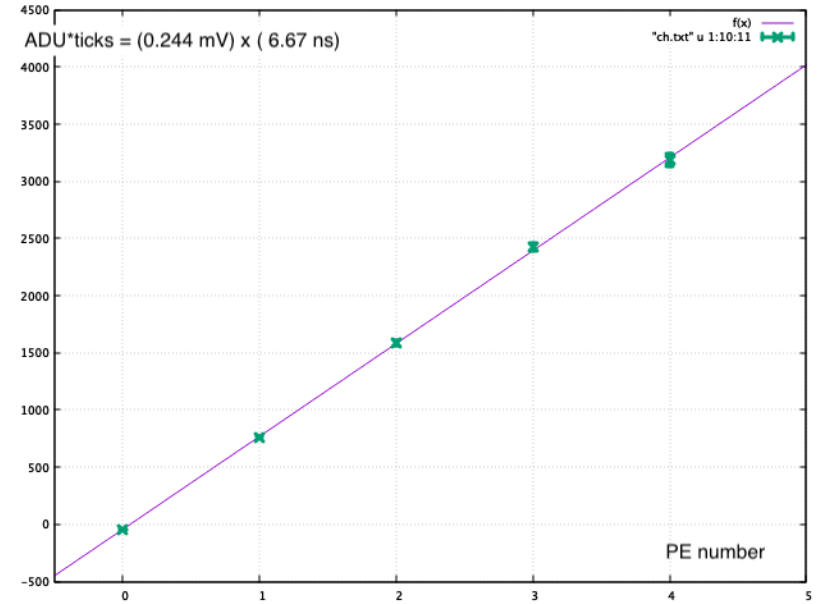
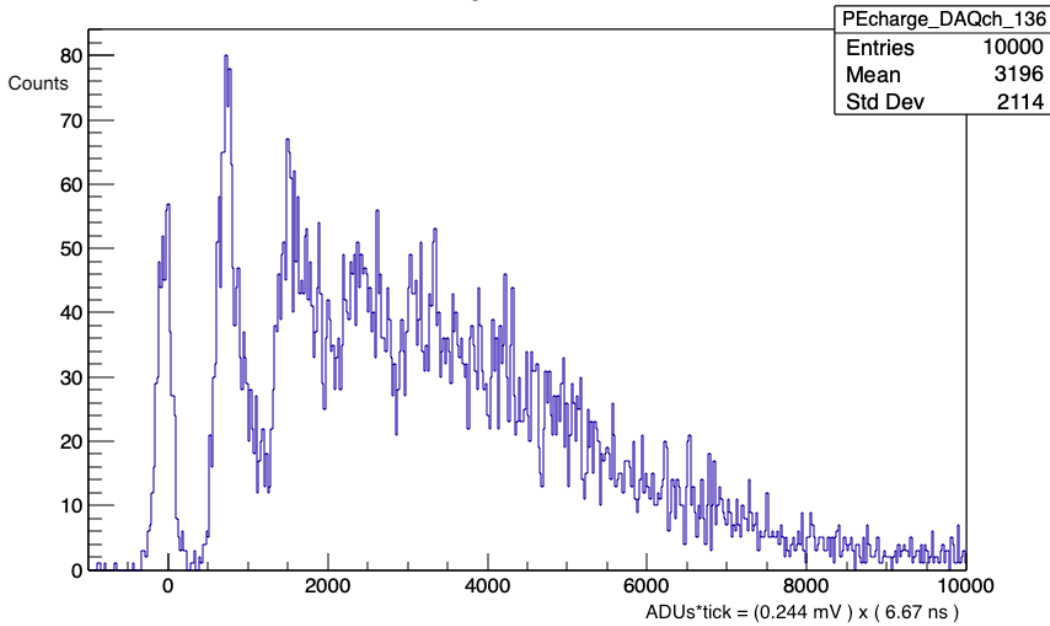
PEcharge_DAQch_134



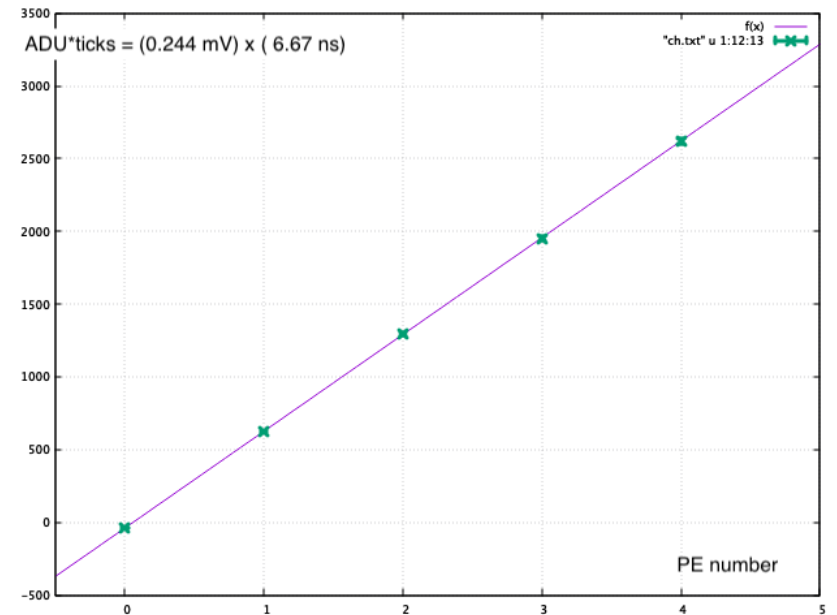
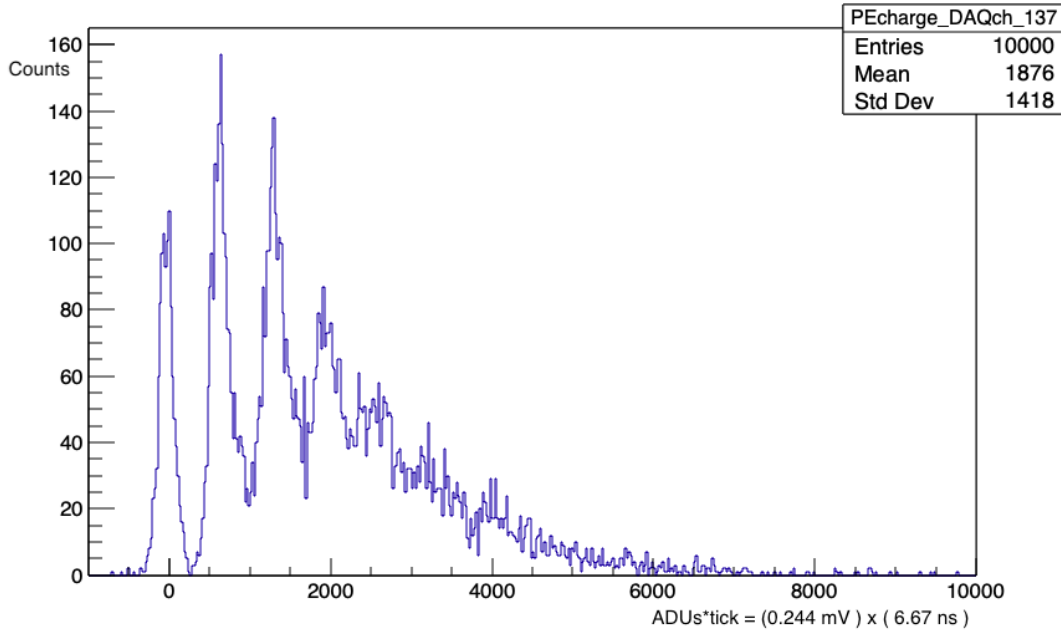
PEcharge_DAQch_135



PEcharge_DAQch_136

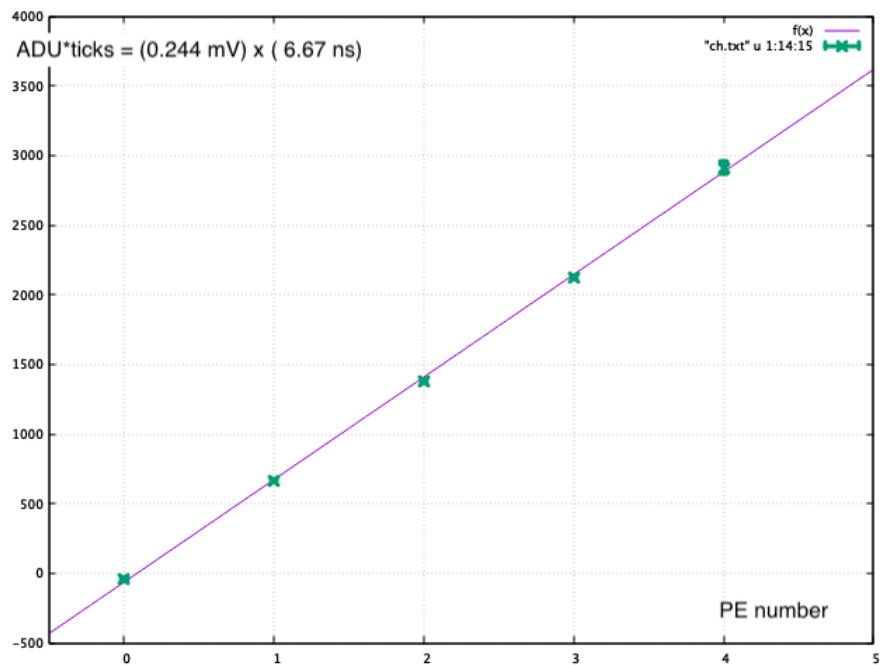
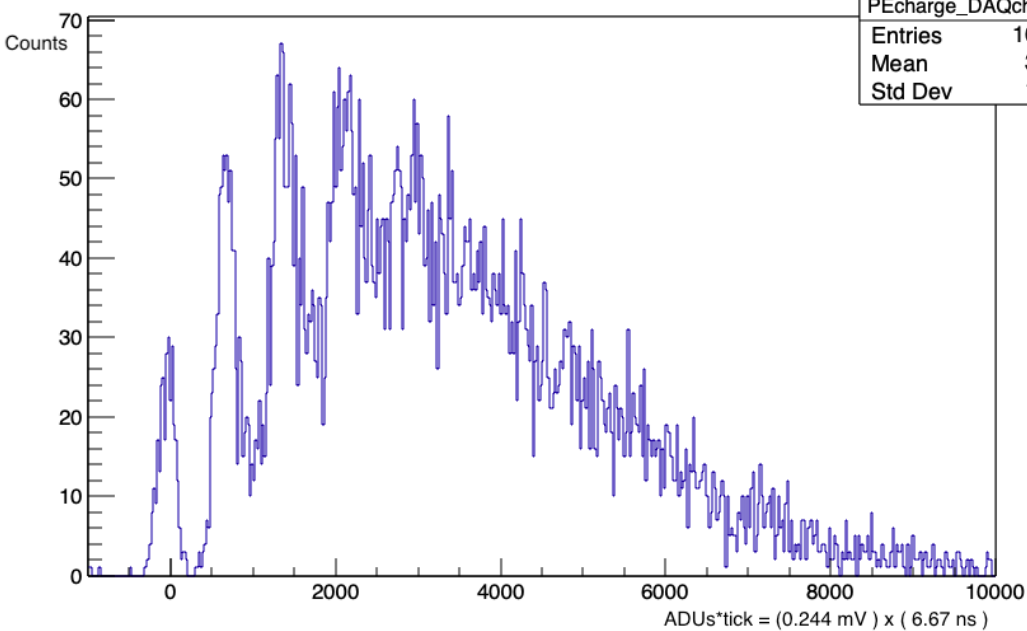


PEcharge_DAQch_137



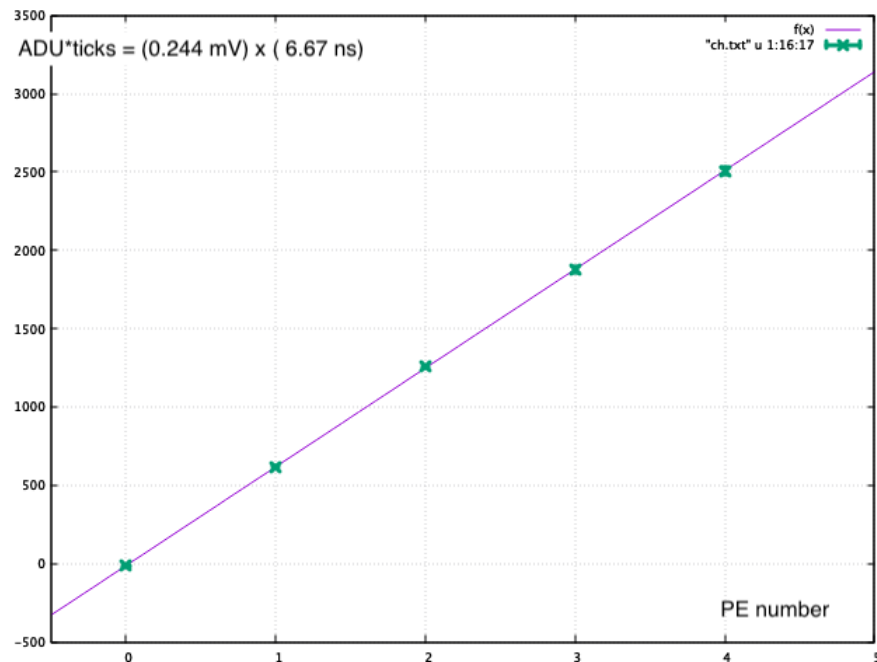
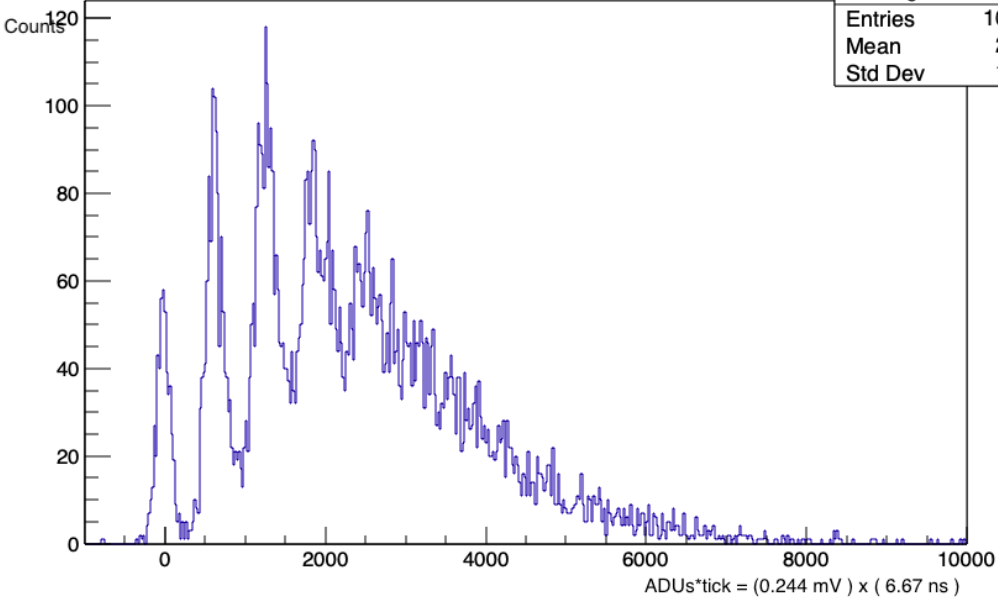
PEcharge_DAQch_138

PEcharge_DAQch_138	
Entries	10000
Mean	3256
Std Dev	1942

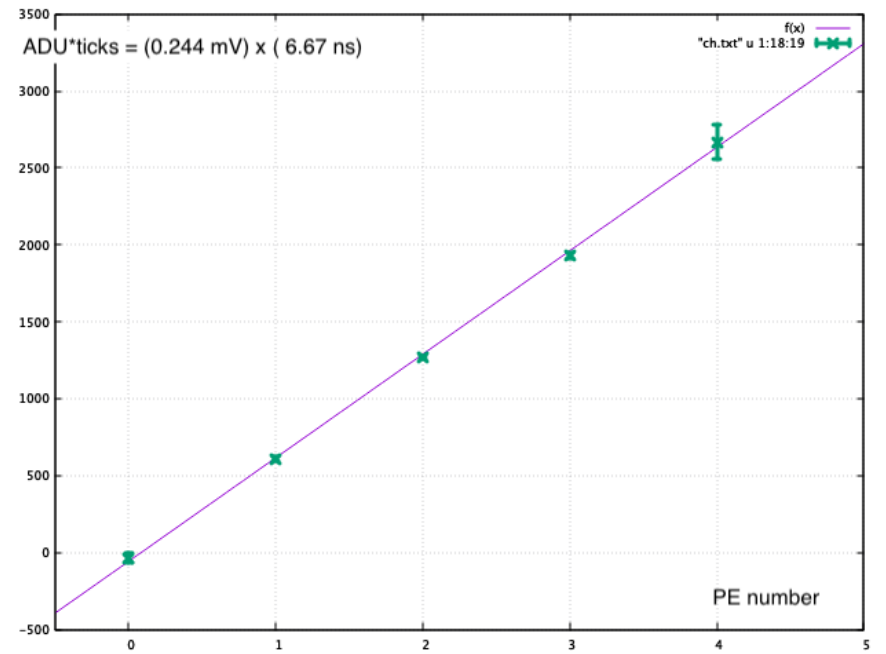
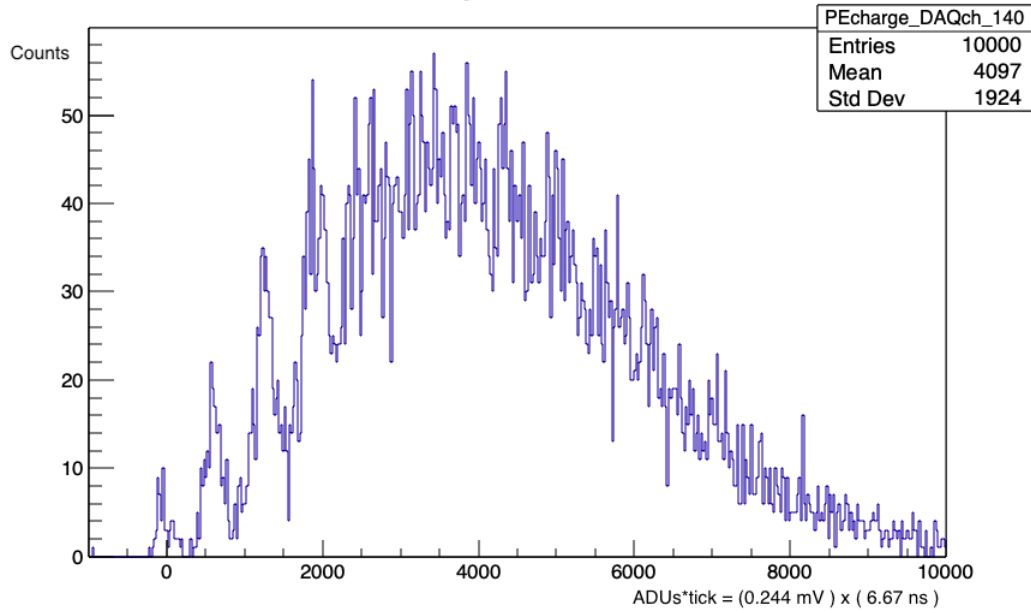


PEcharge_DAQch_139

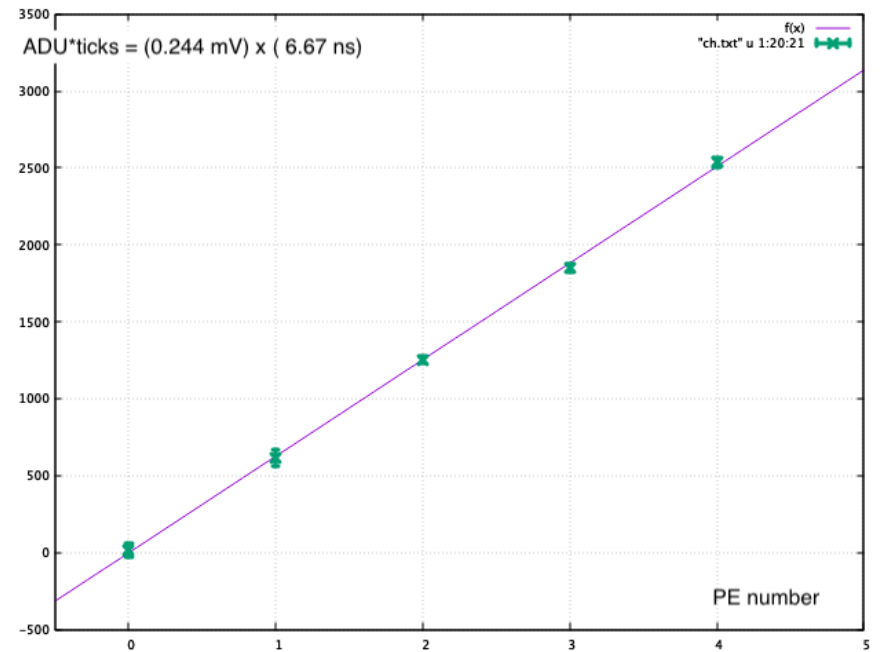
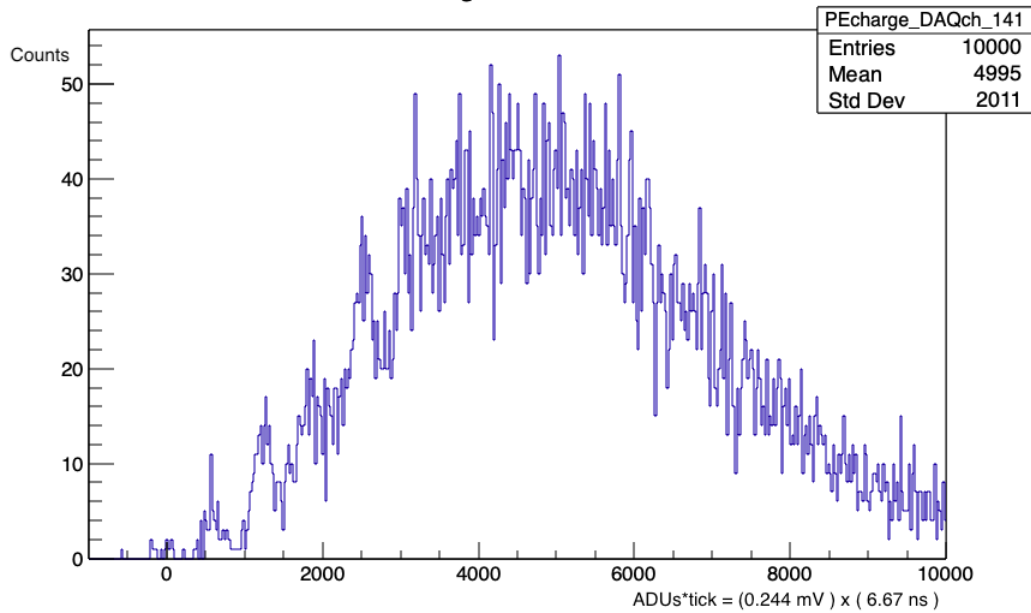
PEcharge_DAQch_139	
Entries	10000
Mean	2342
Std Dev	1496



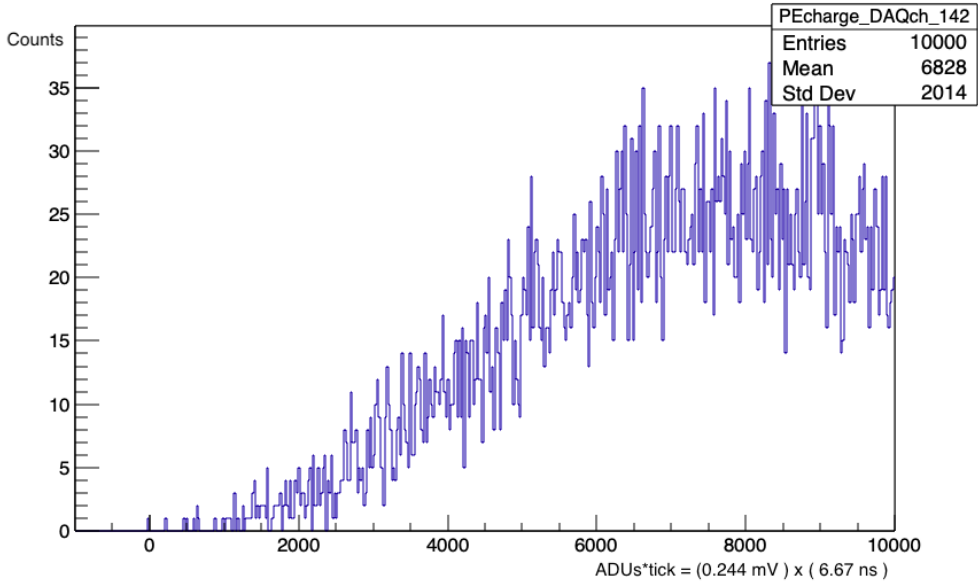
PEcharge_DAQch_140



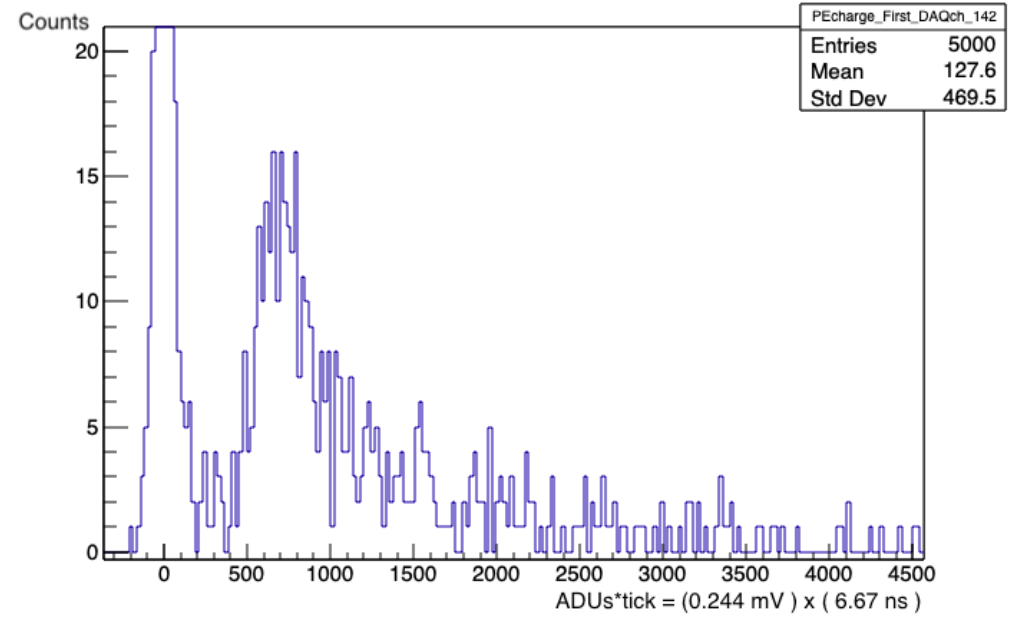
PEcharge_DAQch_141



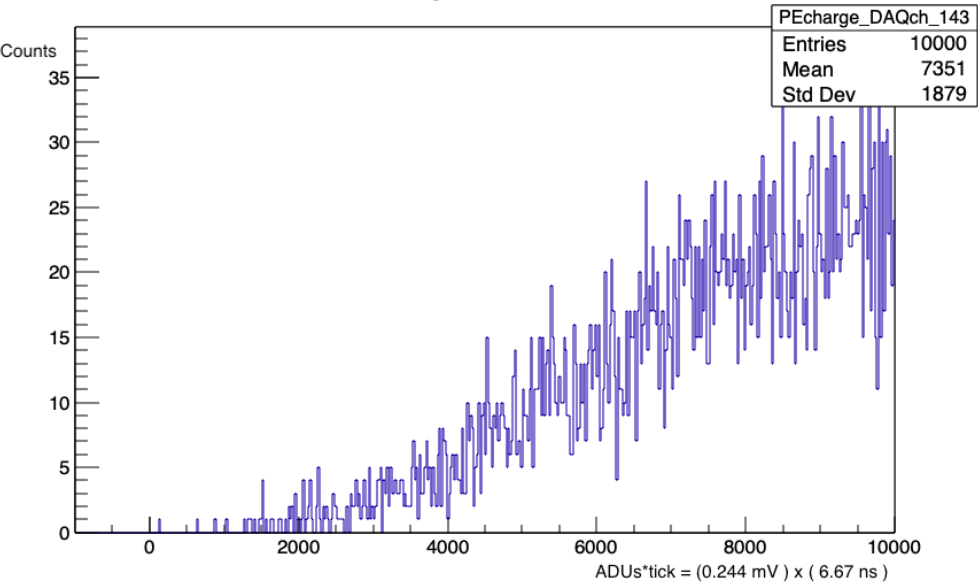
PEcharge_DAQch_142



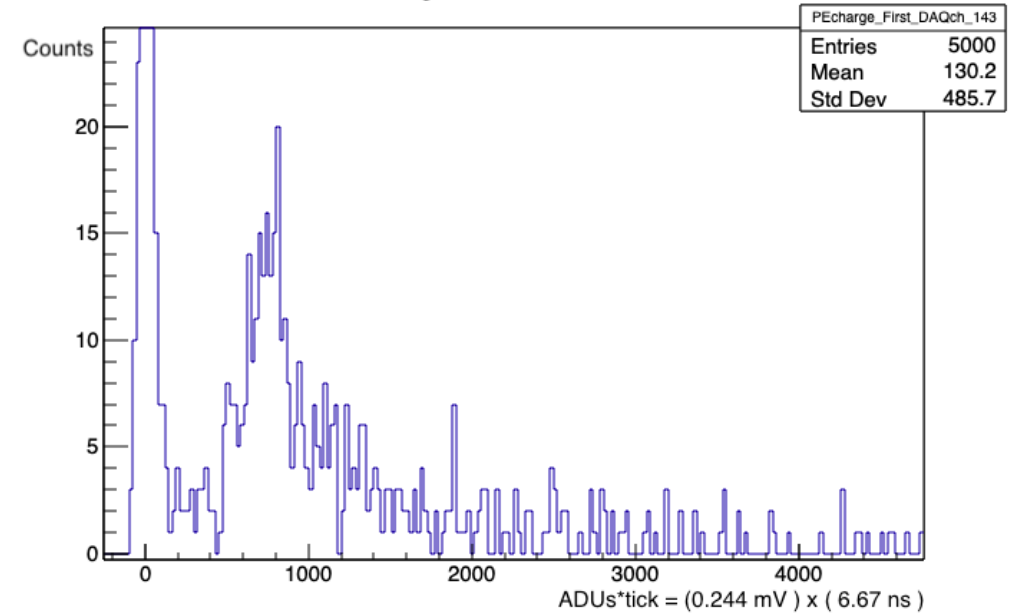
PEcharge_First_DAQch_142



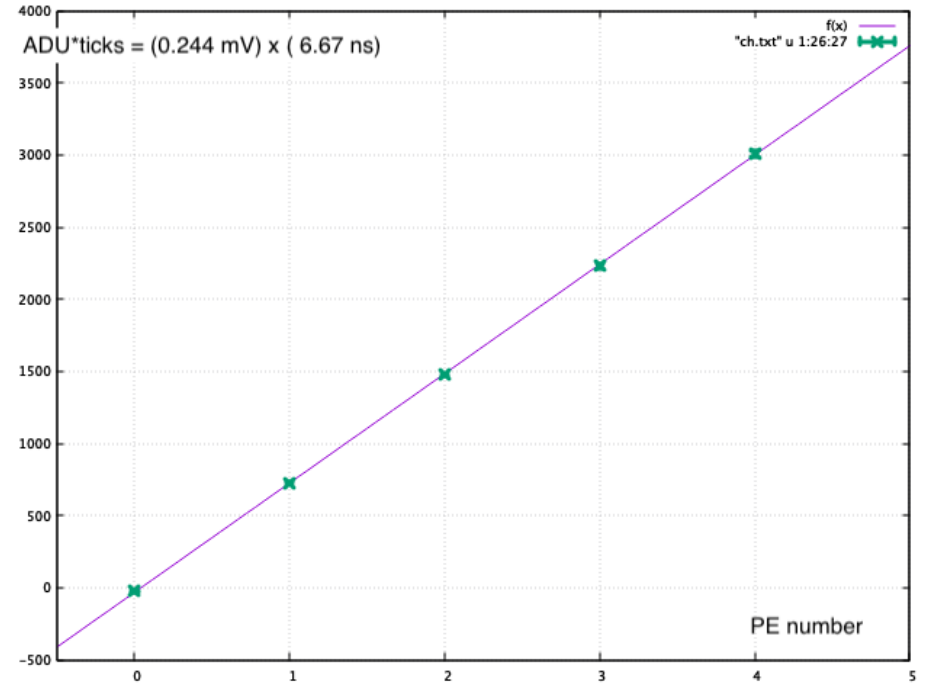
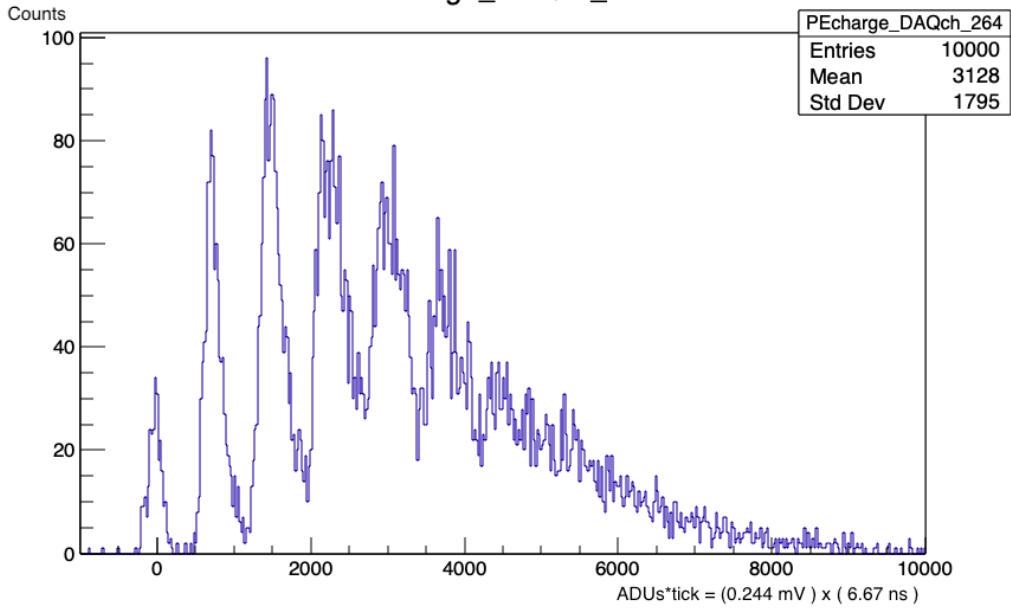
PEcharge_DAQch_143



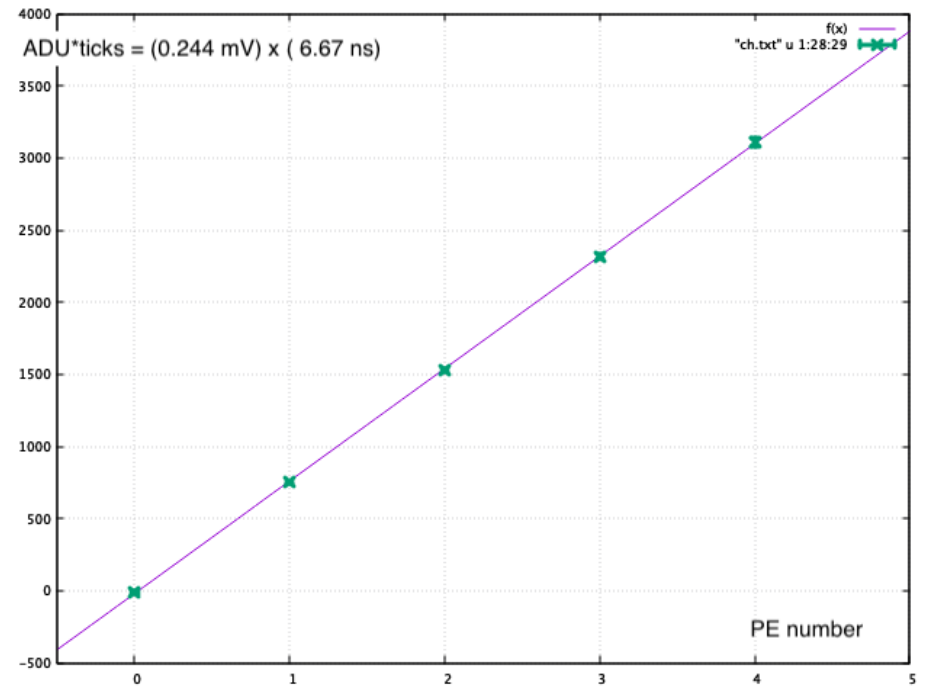
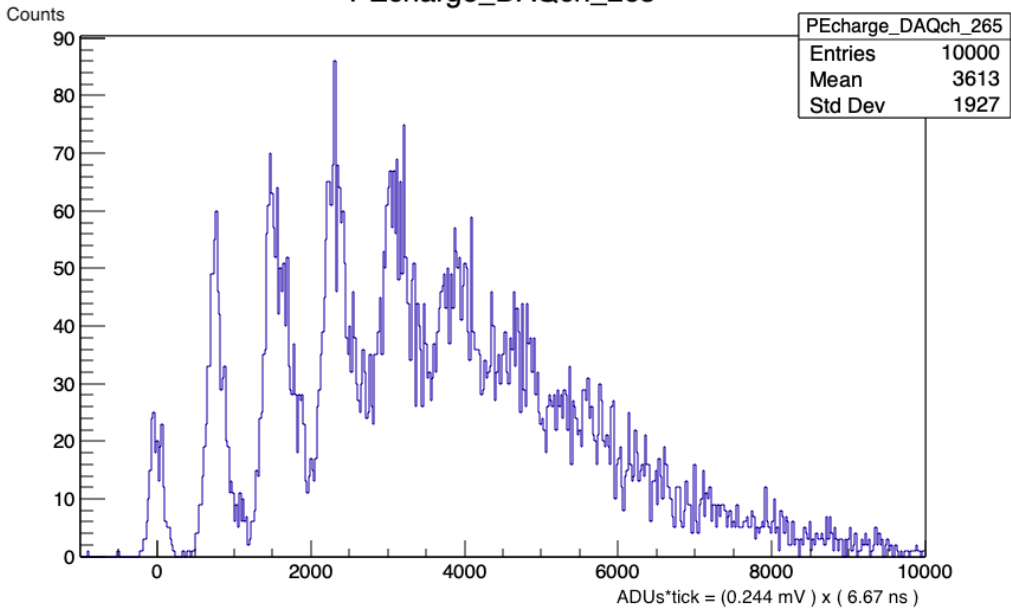
PEcharge_First_DAQch_143



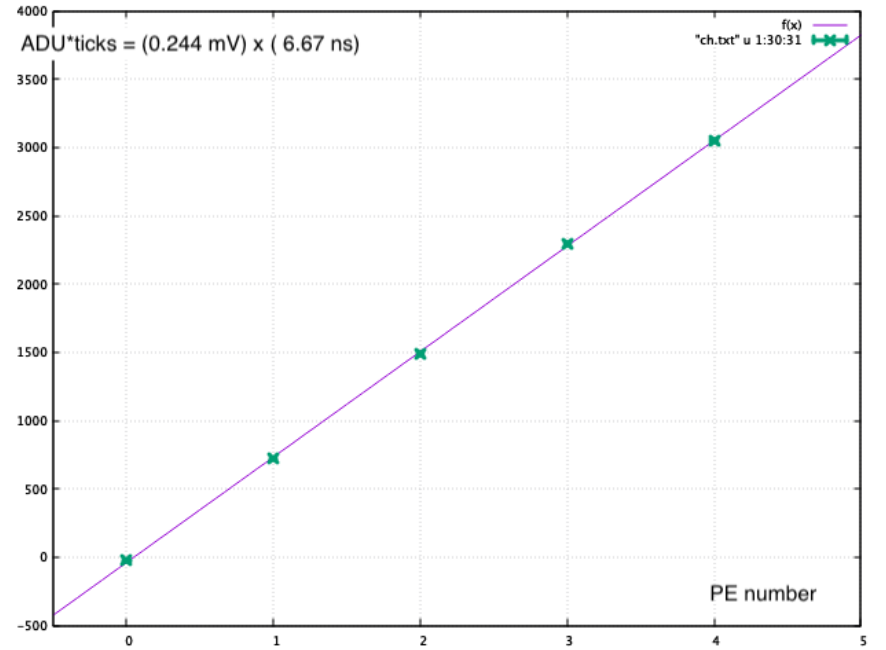
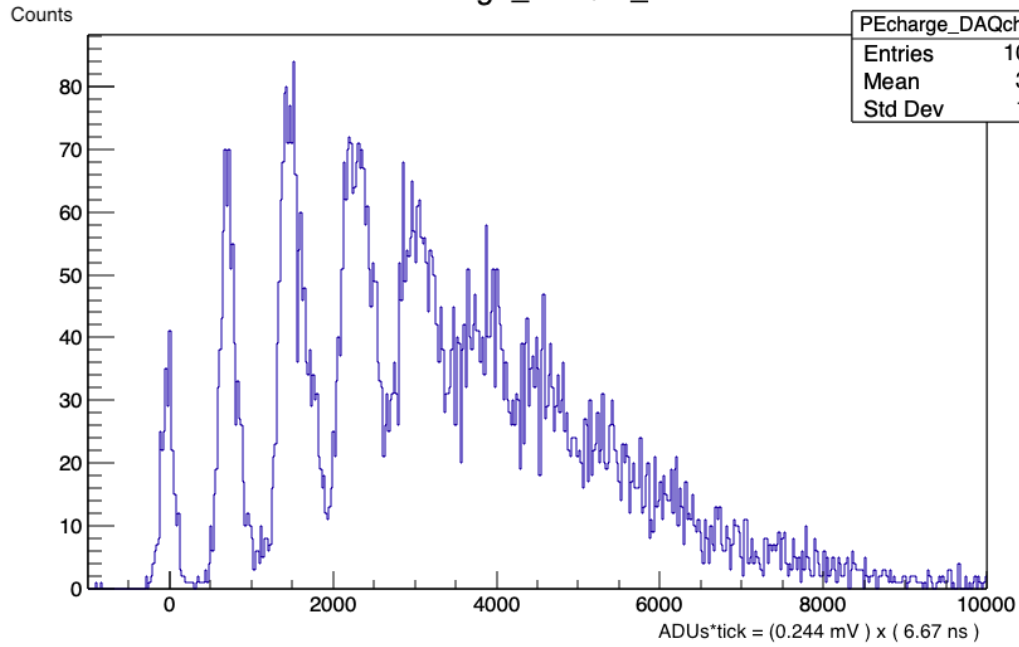
PEcharge_DAQch_264



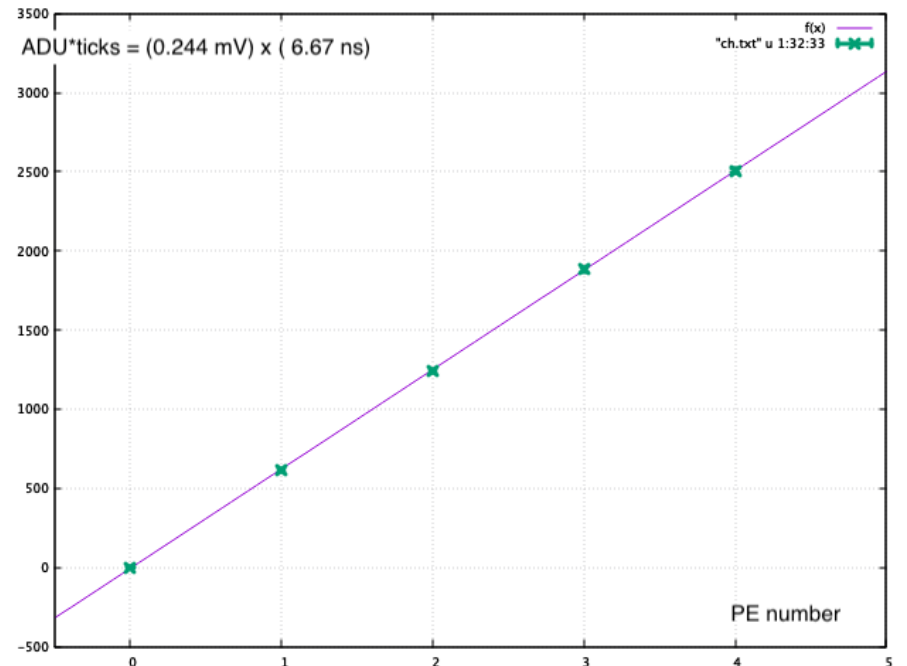
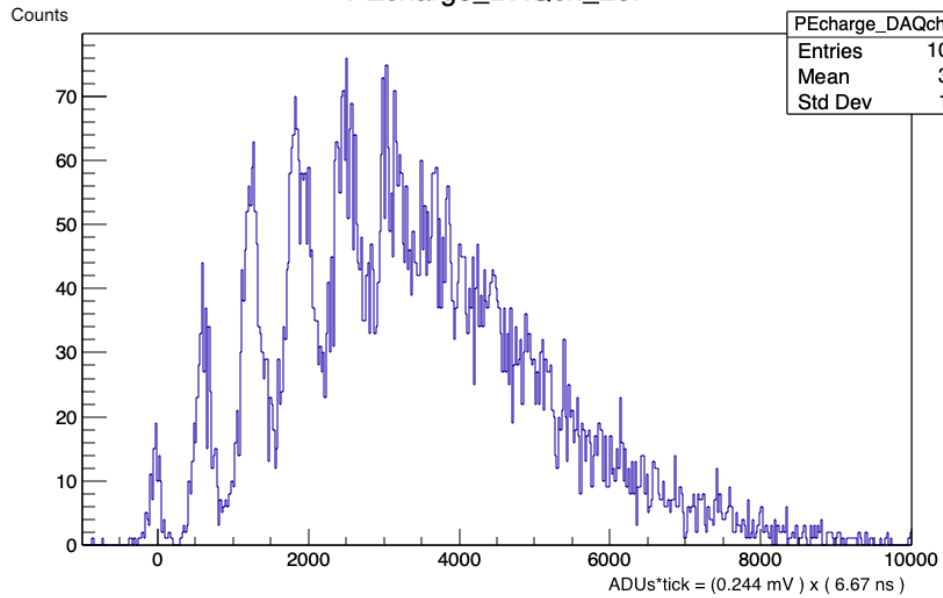
PEcharge_DAQch_265



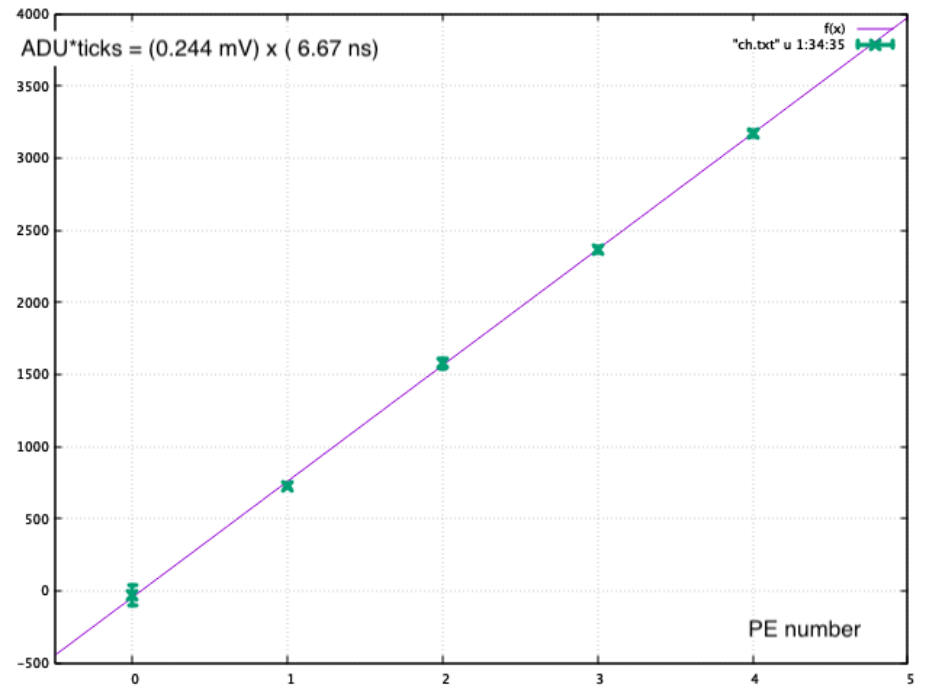
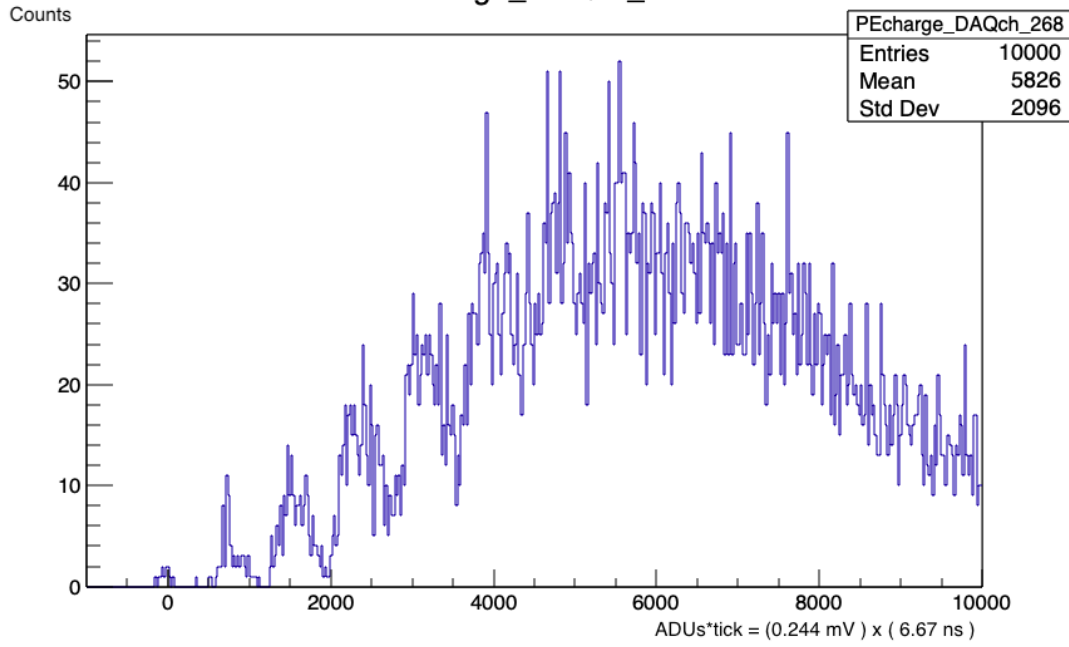
PEcharge_DAQch_266



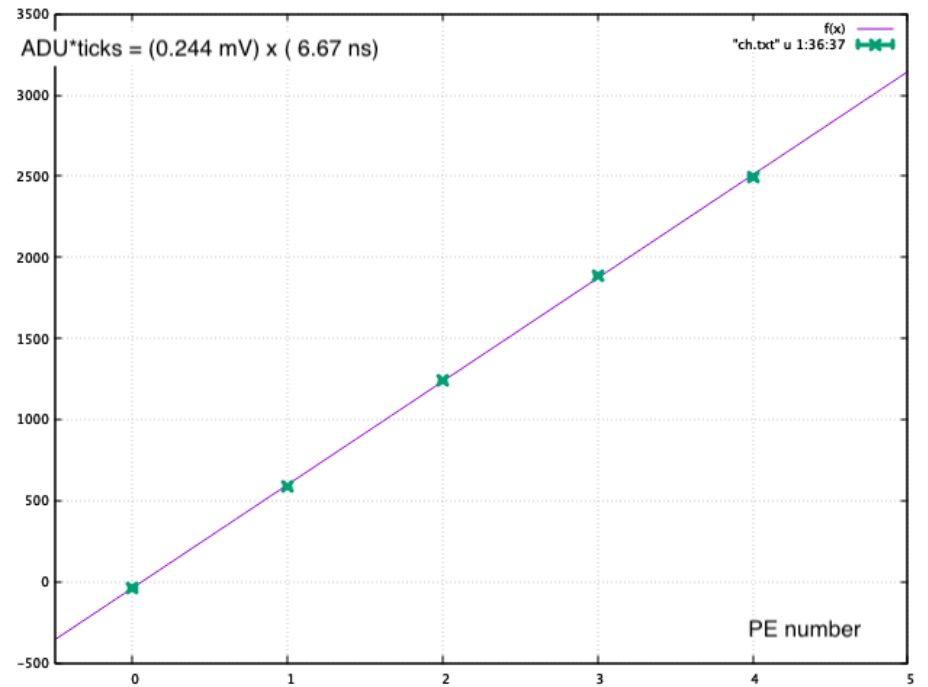
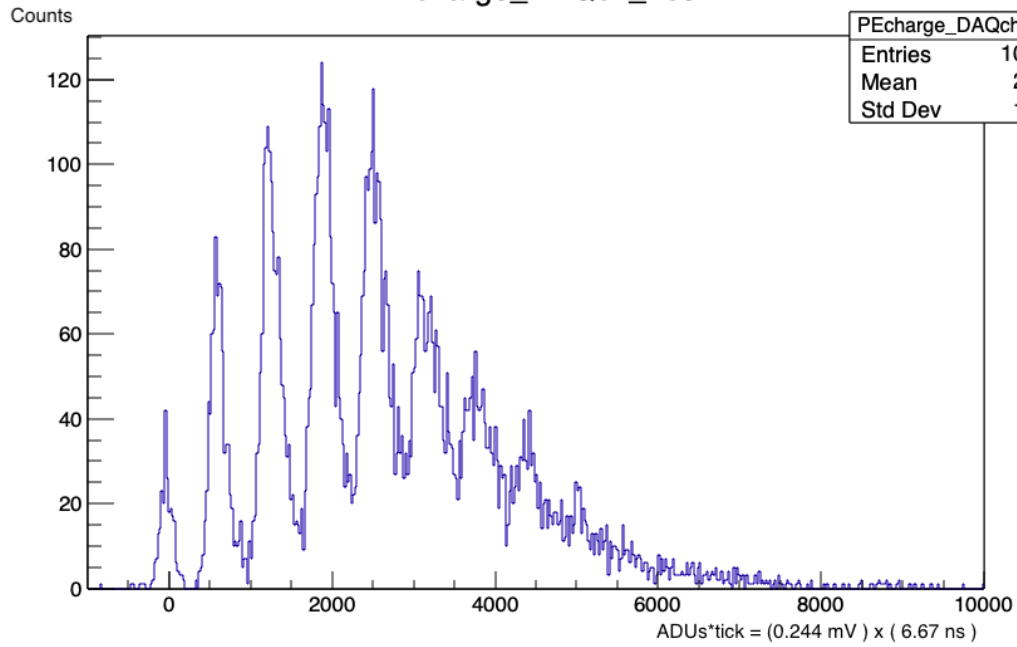
PEcharge_DAQch_267



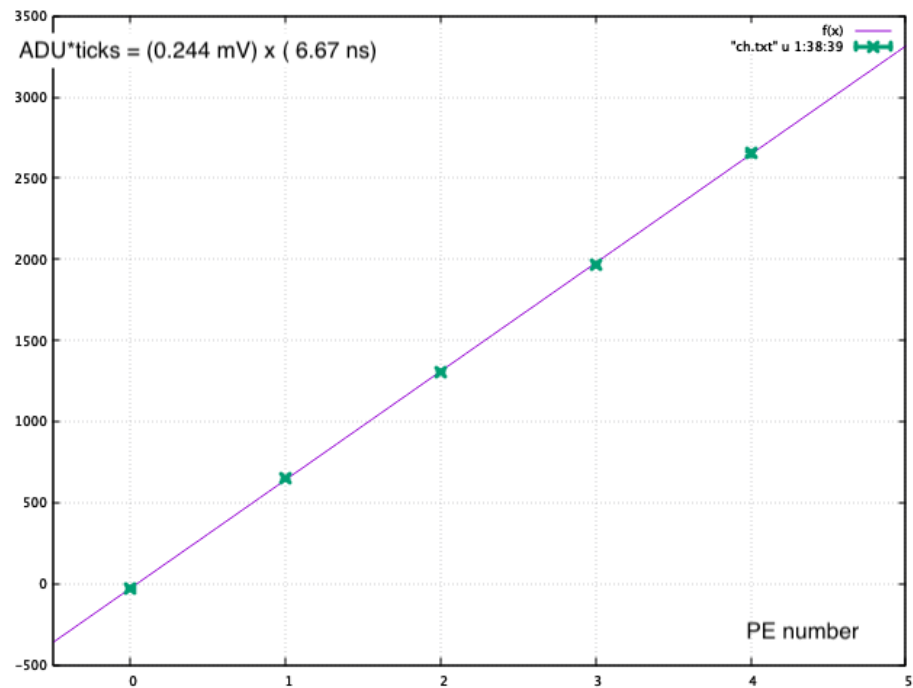
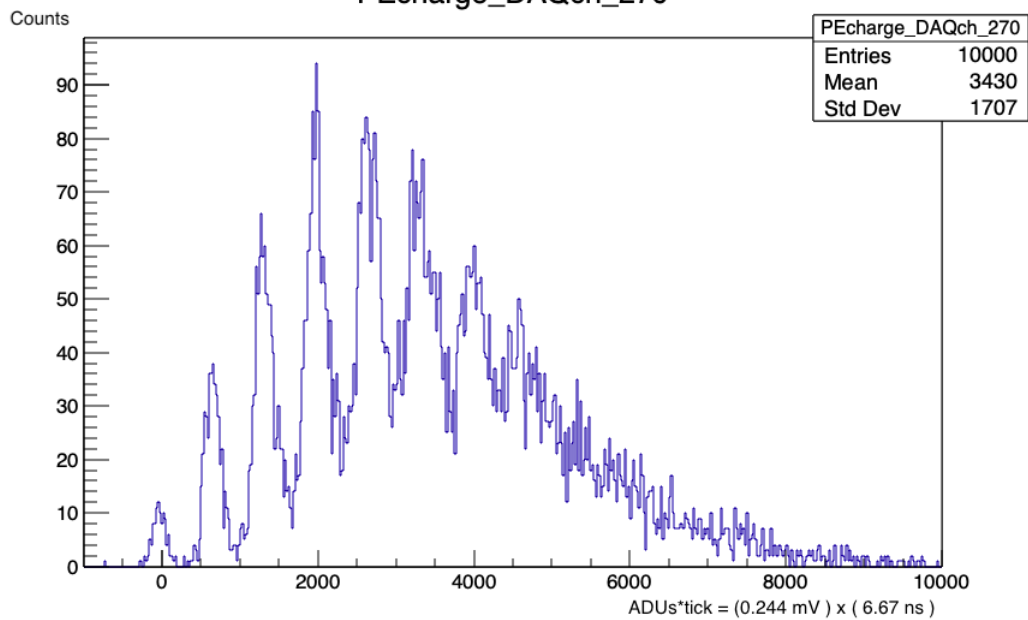
PEcharge_DAQch_268



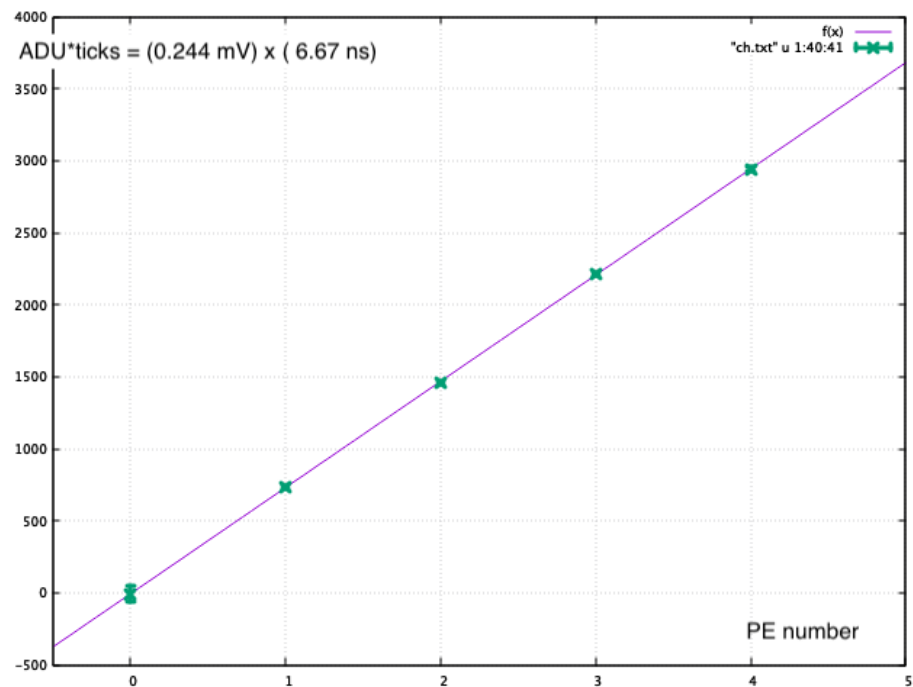
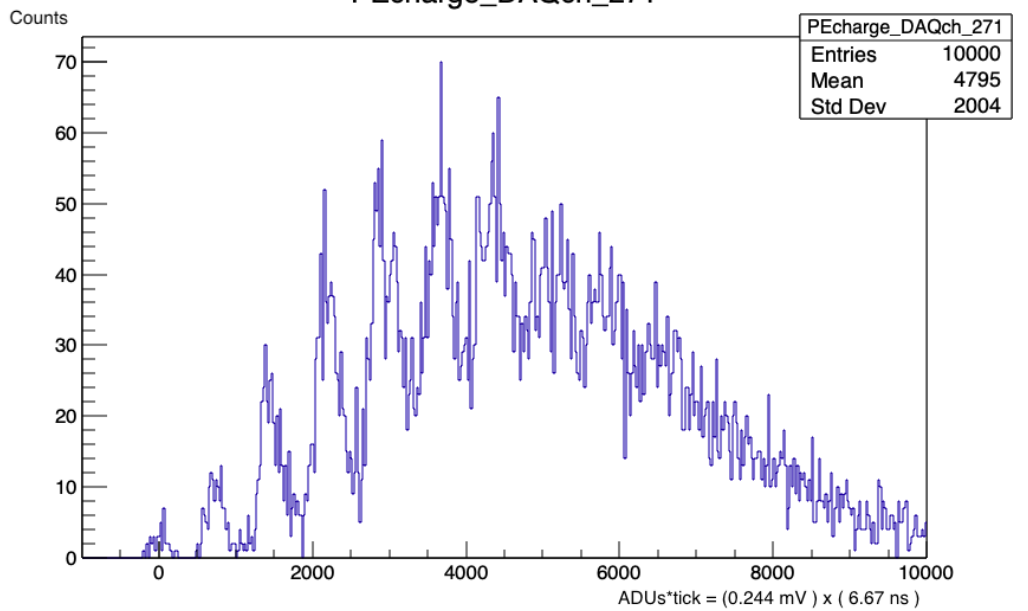
PEcharge_DAQch_269



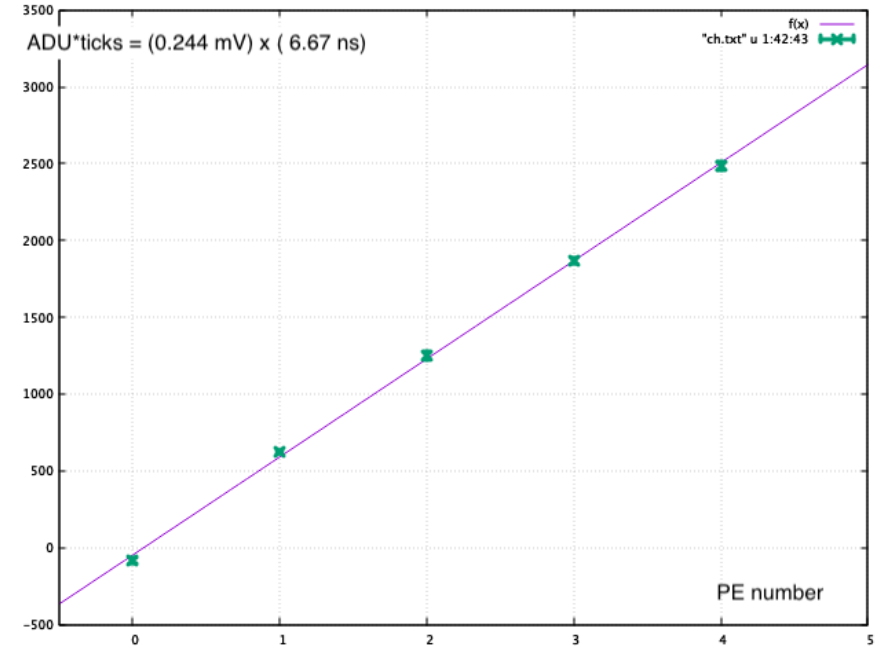
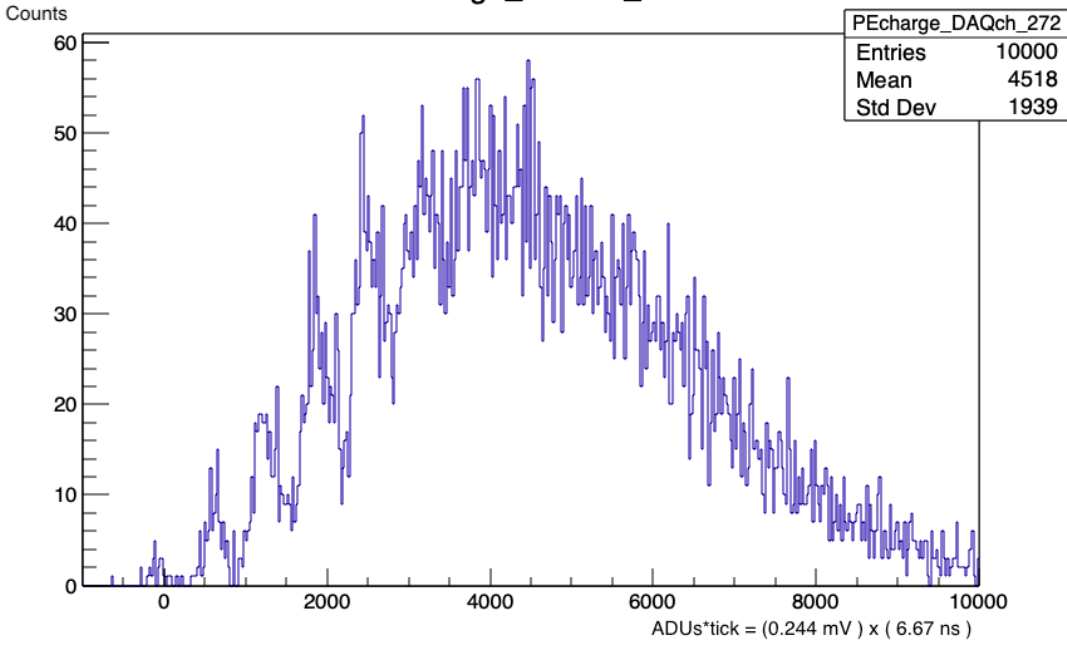
PEcharge_DAQch_270



PEcharge_DAQch_271



PEcharge_DAQch_272



PEcharge_DAQch_273

