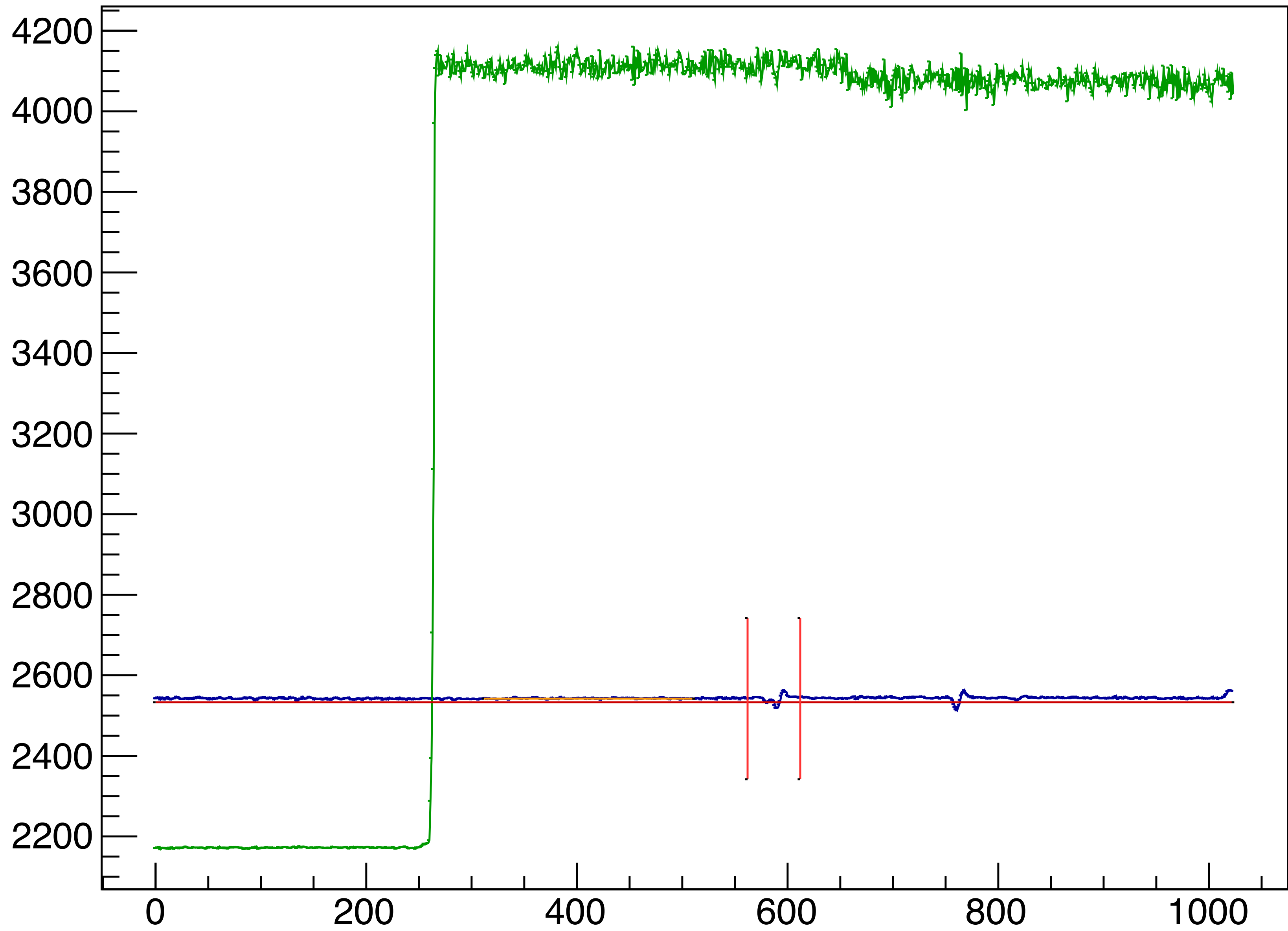


Magnetic field test of the HRPPD (#6) at ANL [Feb 2023]

Deb Sankar Bhattacharya, Silvia Dalla Torre

A word on the how it is done

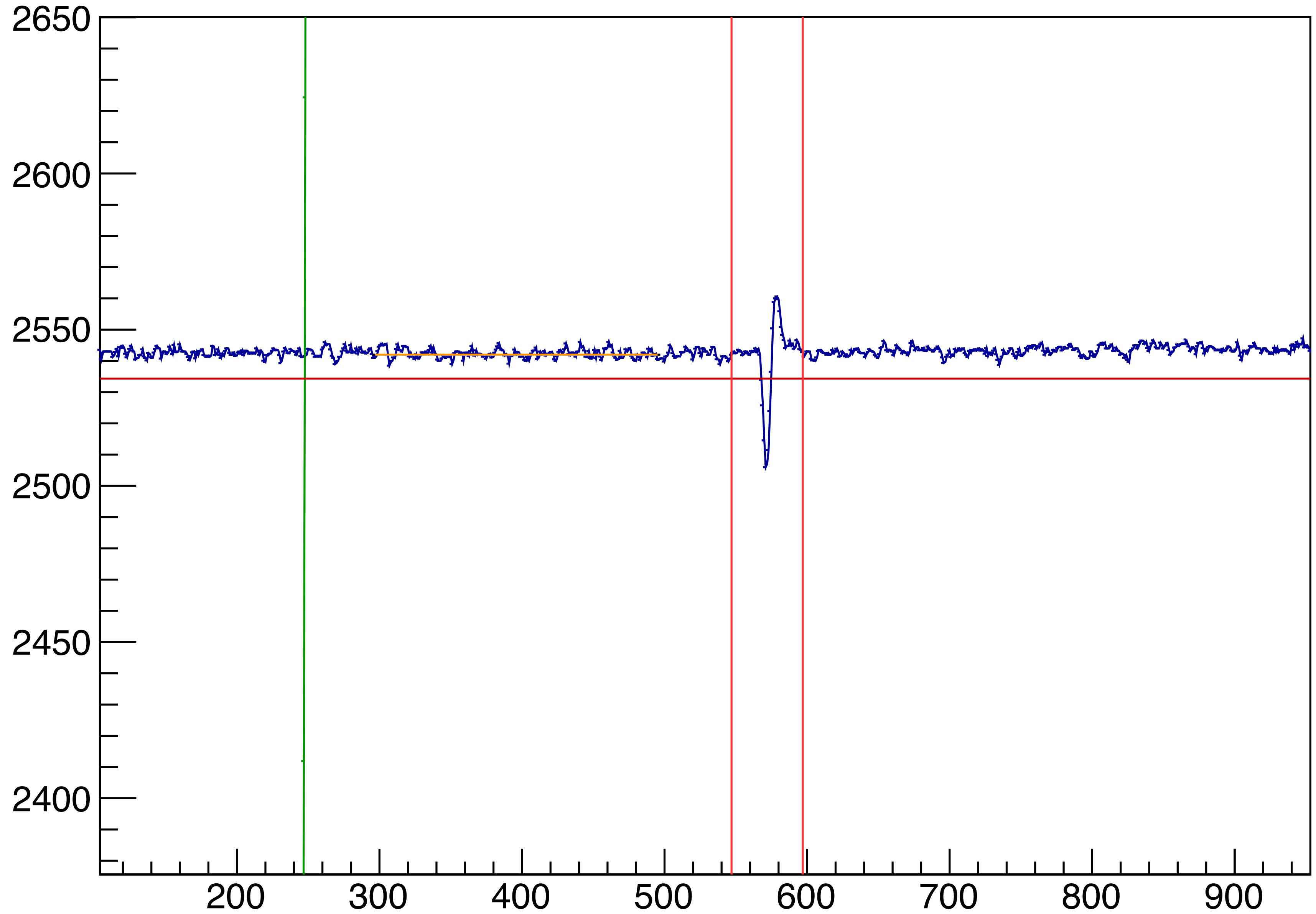
event-62
Run 101



note the dynamic baseline (in orange) *

Example 1

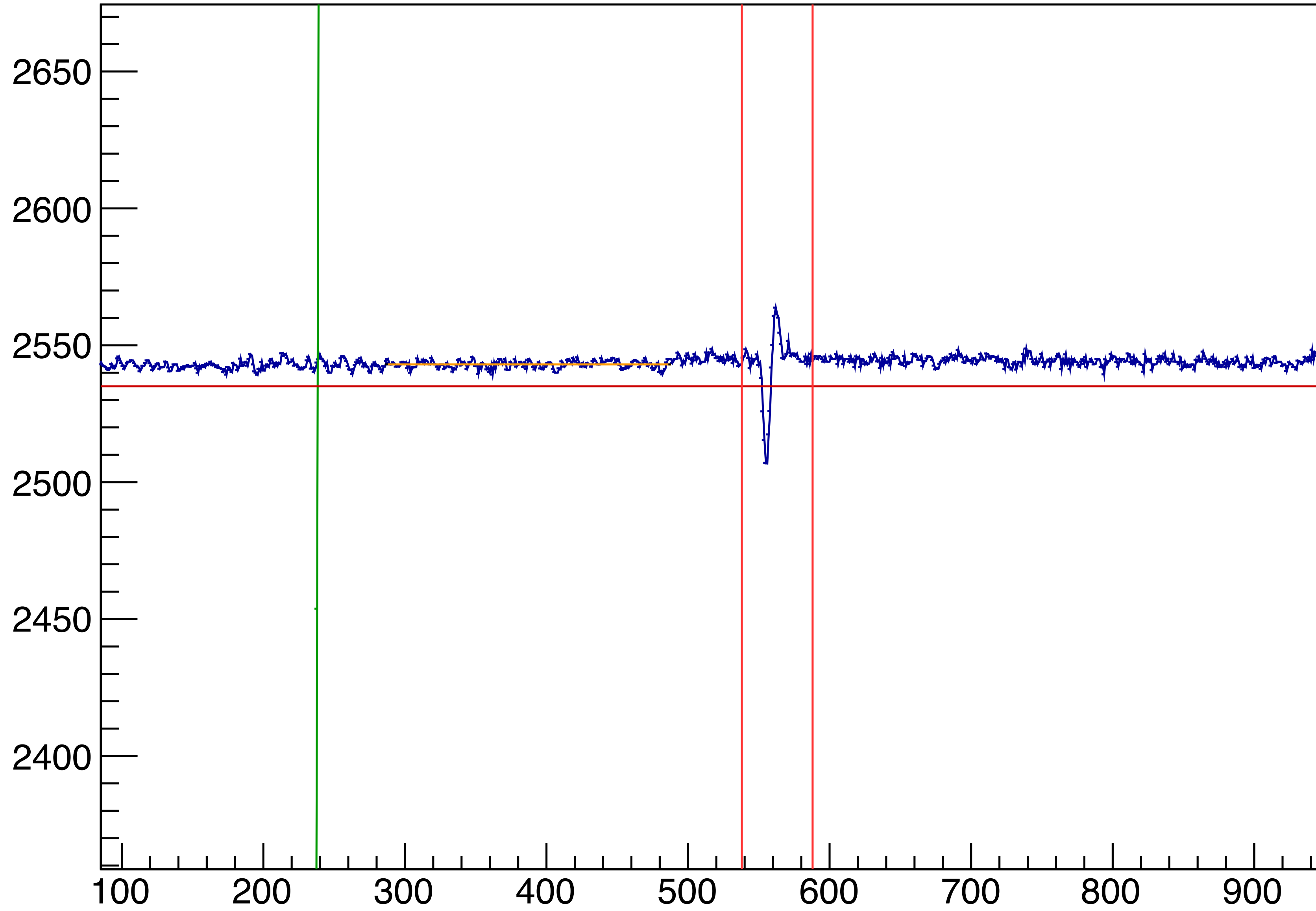
Run 101



note the dynamic baseline *

Example 2

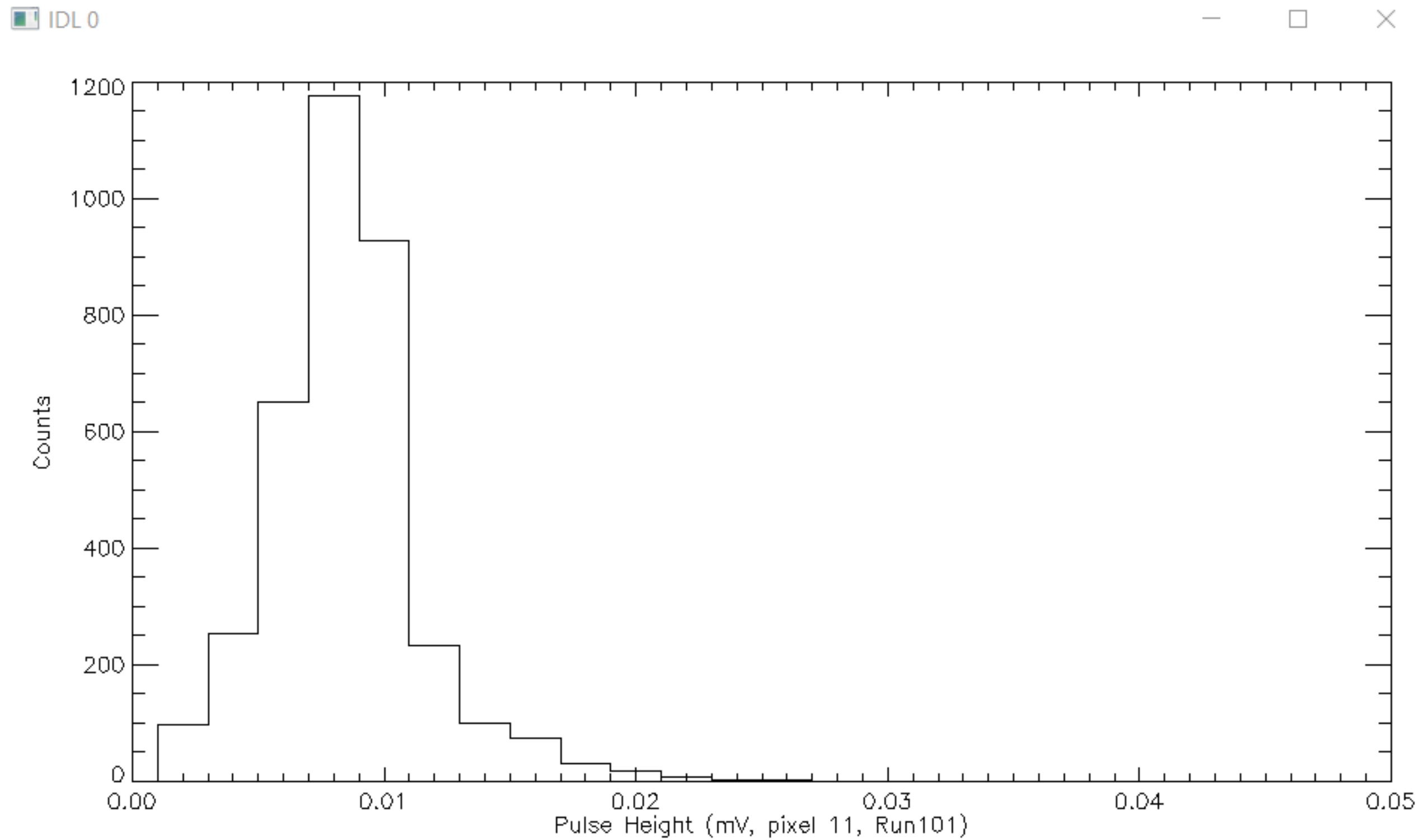
Run 101



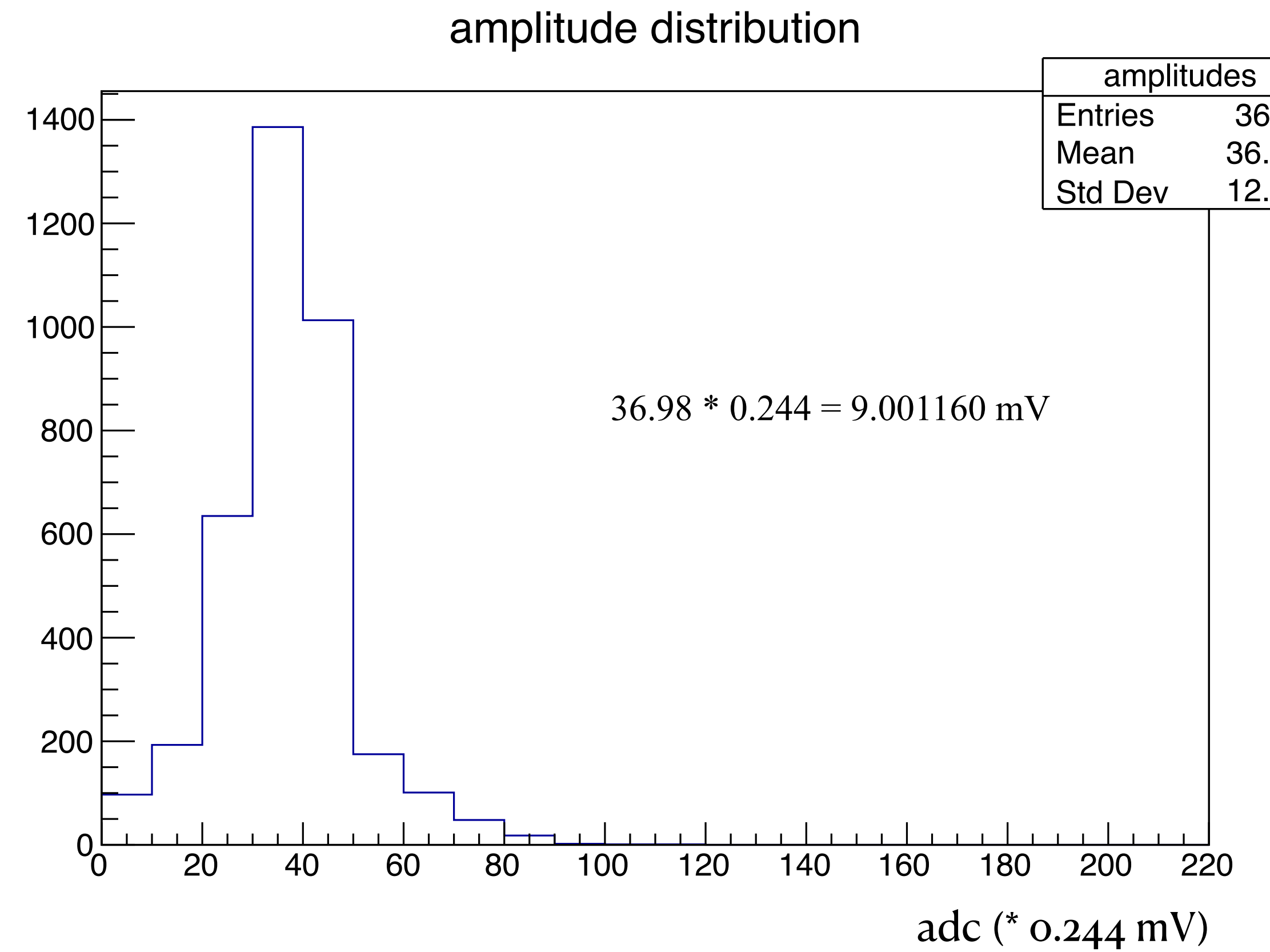
note the dynamic baseline *

Run 101 (Pixel 11) : PC=100 V, MCP = 950 V, Transfer = 200 V, B=0T

threshold = less than 9 adc = less than 2.197266 mV



Estimation by INCOM



Estimation by INFN, Trieste

Pulse-height definition is well agreed

Primary Results

Calculating the Pulse Height distribution for a certain Run

$$A_{ev1} = {}^1A_1 + {}^2A_1 + {}^3A_1 + \dots + {}^{16}A_1$$

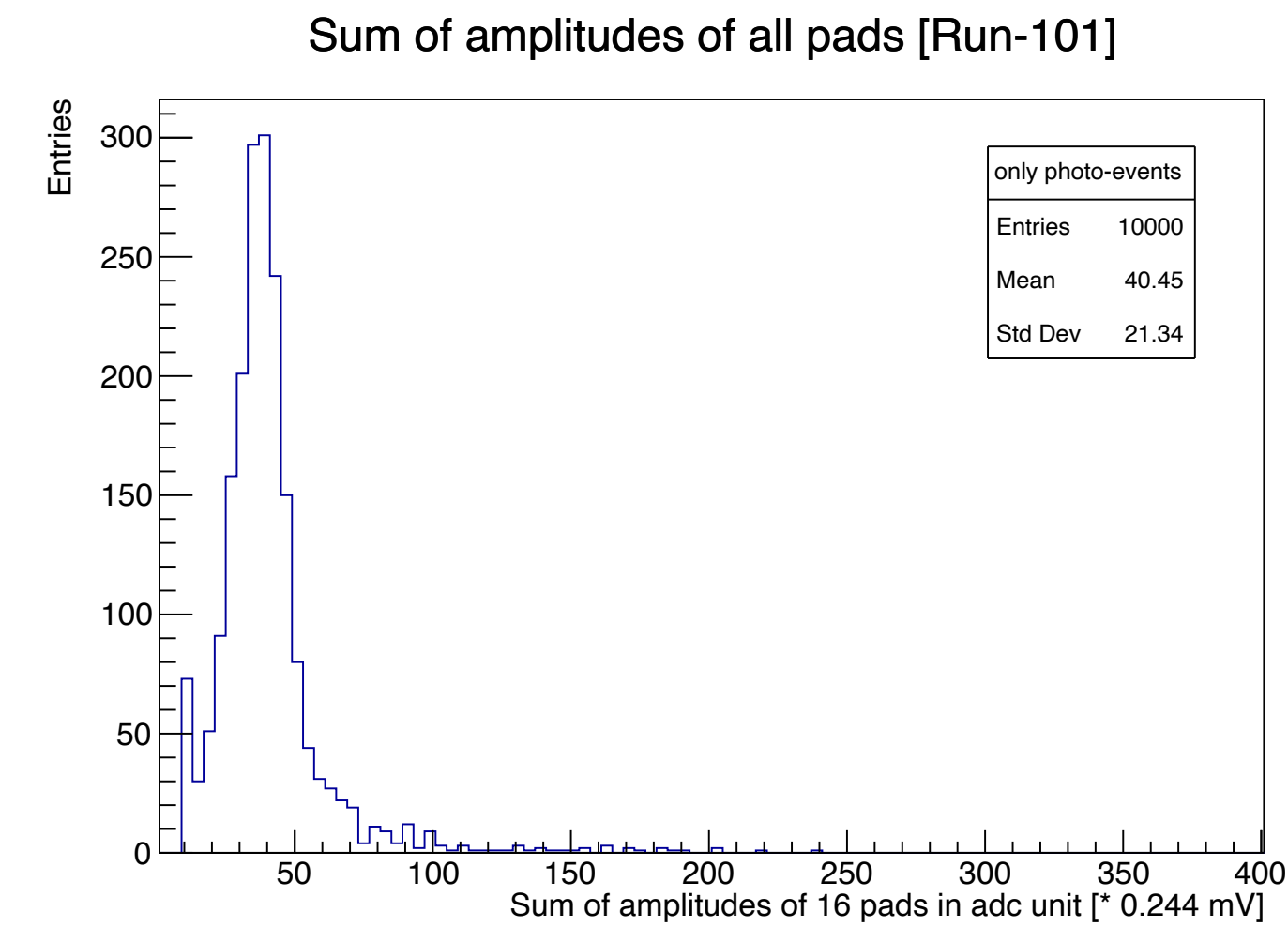
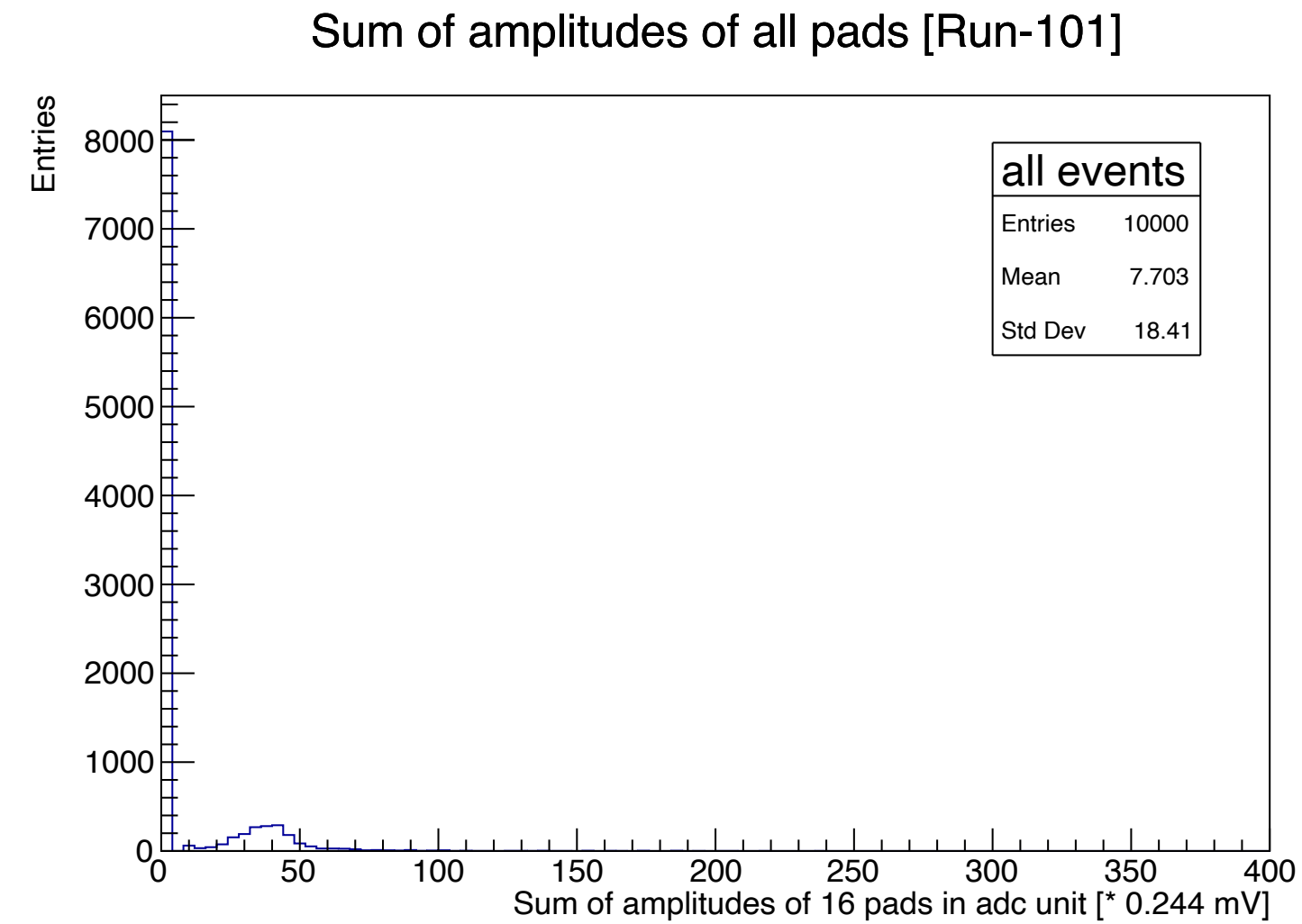
-
-
-

$$A_{ev10K} = {}^1A_{10K} + {}^2A_{10K} + {}^3A_{10K} + \dots + {}^{16}A_{10K}$$

Also, keeping track if it is an empty event, that is if ${}^iA_j = 0$

iA_j , for i being pad-id, j being event-number

distribution of iA_j for a given run



PC = 100 V, MCP = Scan, Transfer = 200 V
 B = 0.04 T, angle = N/A

Run	HV	mean (adc)	pads
101	950	40.45	1.155
147	1075	55.74	1.084

PC = 100 V, MCP = Scan, Transfer = 200 V
 B = 1.4 T, angle = 15 deg

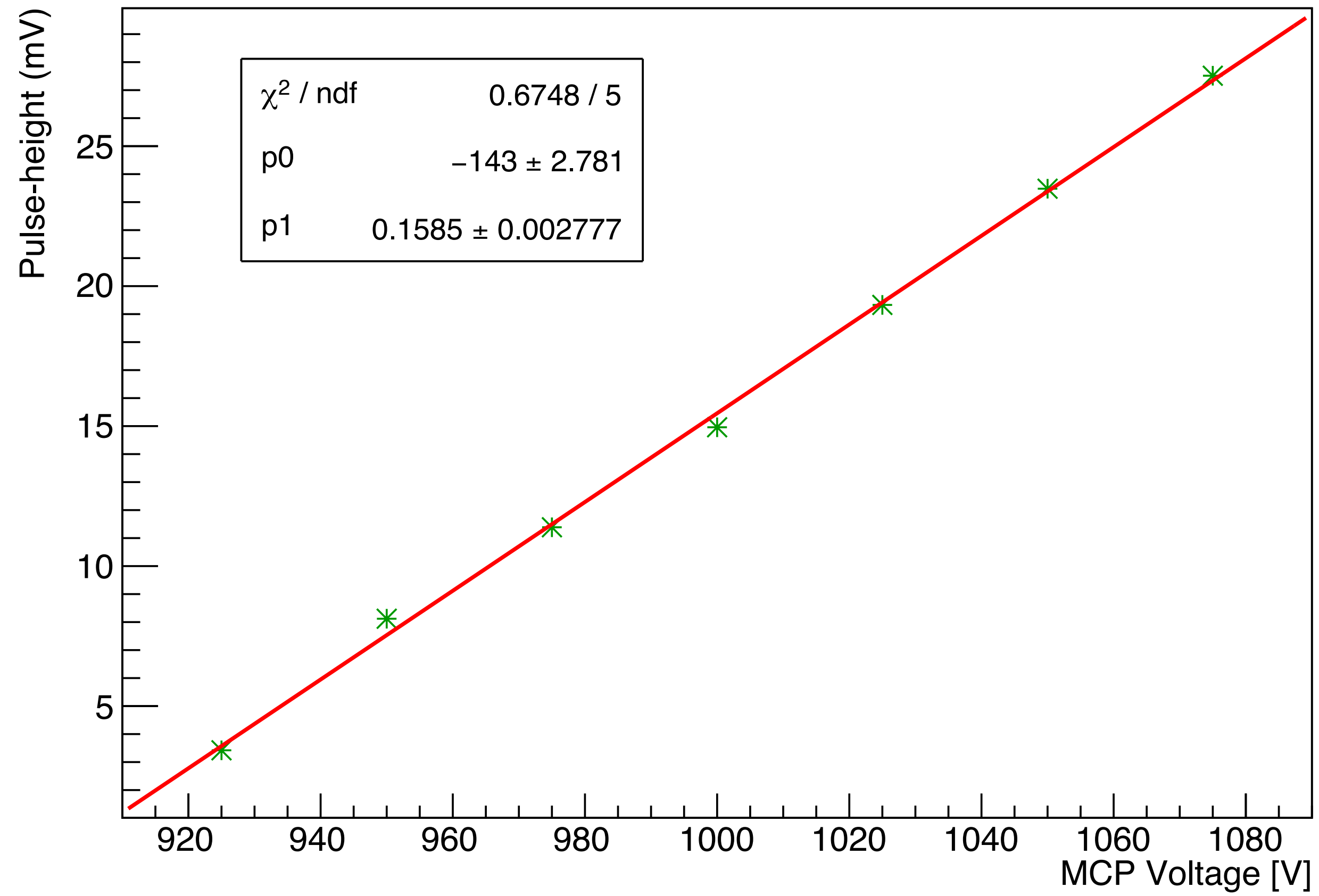
Run	HV	mean (adc)	pads
198	925	14.01*	1.018
199	950	33.26	1.029
200	975	46.64	1.036
201	1000	61.27	1.053
202	1025	79.17	1.080
203	1050	96.17	1.122
204	1075	112.7	1.195

PC = 100 V, MCP = 1075 V, Transfer = 200 V
 B = 1.4 T, angle = Scan (deg)

Run	angle	mean (adc)	pads
148	- 2.5	34.82	1.061
149	- 5.0	30.11	1.050
150	- 7.5	30.14	1.052
151	- 10.	35.01	1.077
152	-15	36.63	1.135
153	- 20.0	24.3*	1.400
157	+ 2.5	33.17	1.048
158	+ 5.0	27.89	1.040
159	+ 7.5	23.23	1.027
160	+ 10.0	22.6	1.024
161	+ 15.0	18.29	1.018
162	+ 20.0	18.23	1.032
163	+ 30.0	24.50	1.030

PC = 100 V, MCP = Scan, Transfer = 200 V
B = 1.4 T, angle = 15 deg; [Run: 198 - 204]

HV scan for Pulse-height [all Pads]



A word on the channel mapping

Therefore, while looking towards the PhotoCathode

Reality

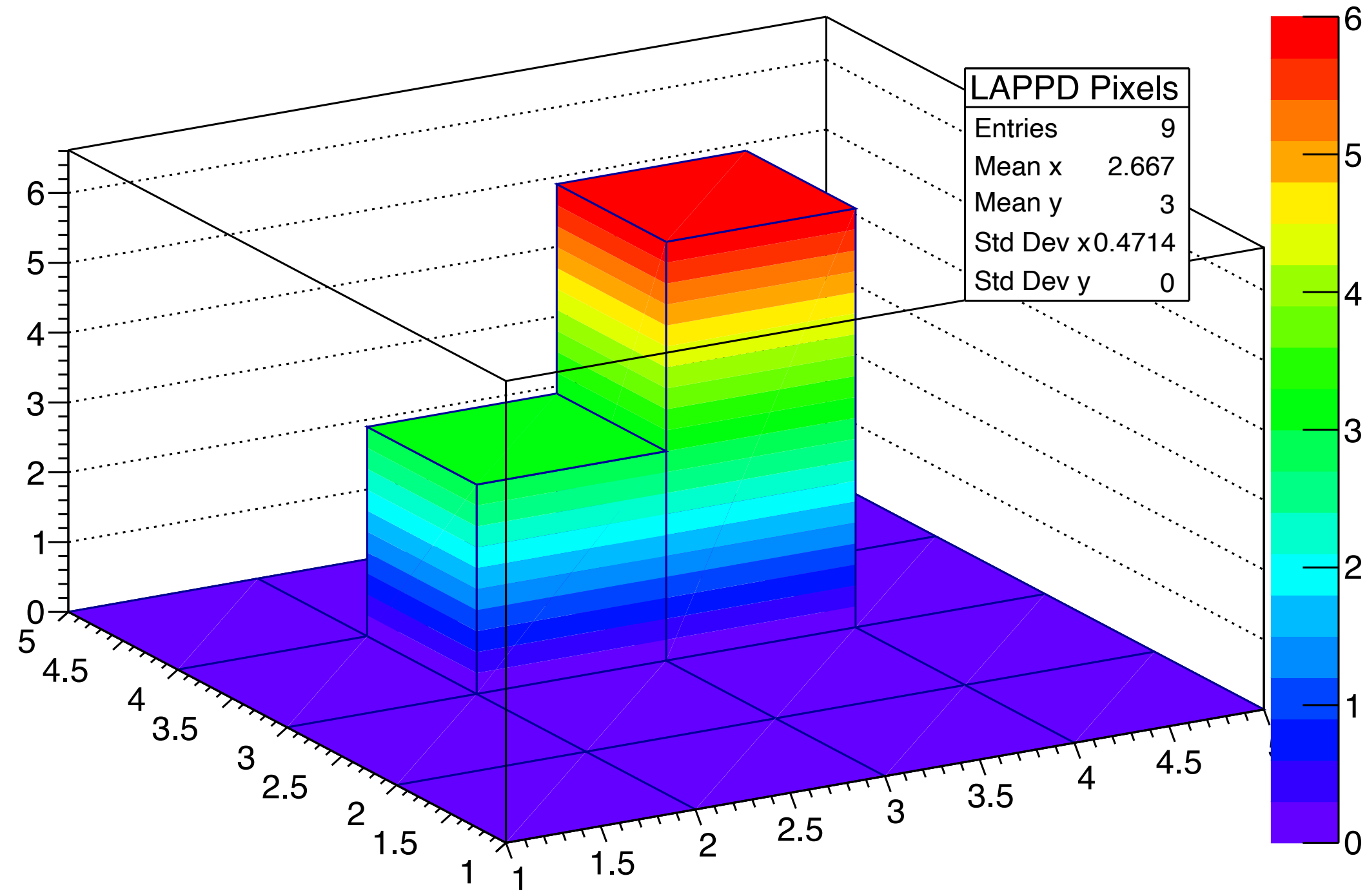
Ch_3	Ch_2	Ch_1	Ch_0
Ch_7	Ch_6	Ch_5	Ch_4
Ch_11	Ch_10	Ch_9	Ch_8
Ch_15	Ch_14	Ch_13	Ch_12

LEGO (just a rotation of 180 deg for now)

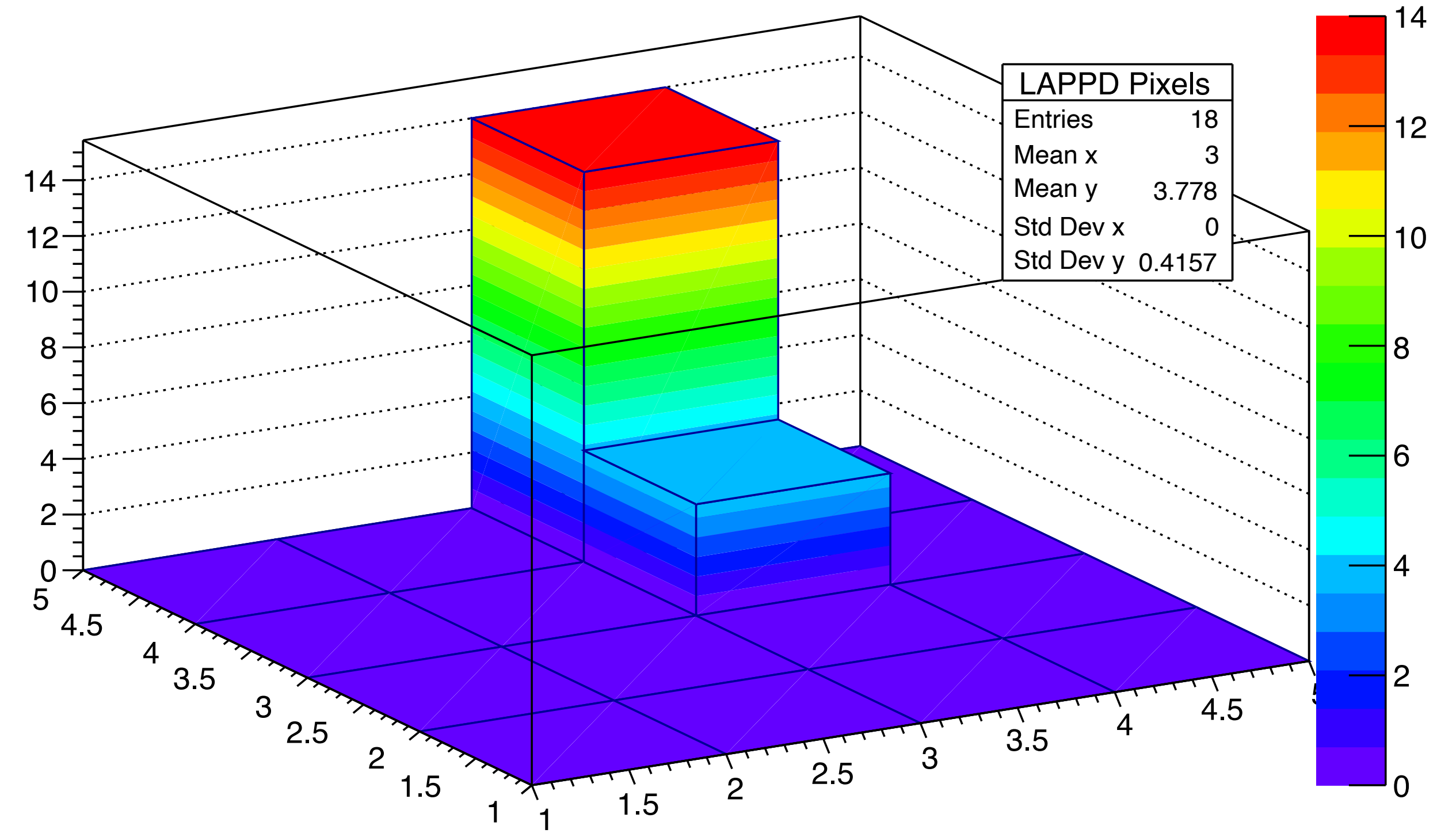
Ch_12	Ch_13	Ch_14	Ch_15
Ch_8	Ch_9	Ch_10	Ch_11
Ch_4	Ch_5	Ch_6	Ch_7
Ch_0	Ch_1	Ch_2	Ch_3

Why the max-pad moves from 11 to 15 ?

Average Pulse-heights for Run_101



Average Pulse-heights for Run_204



Thank You!