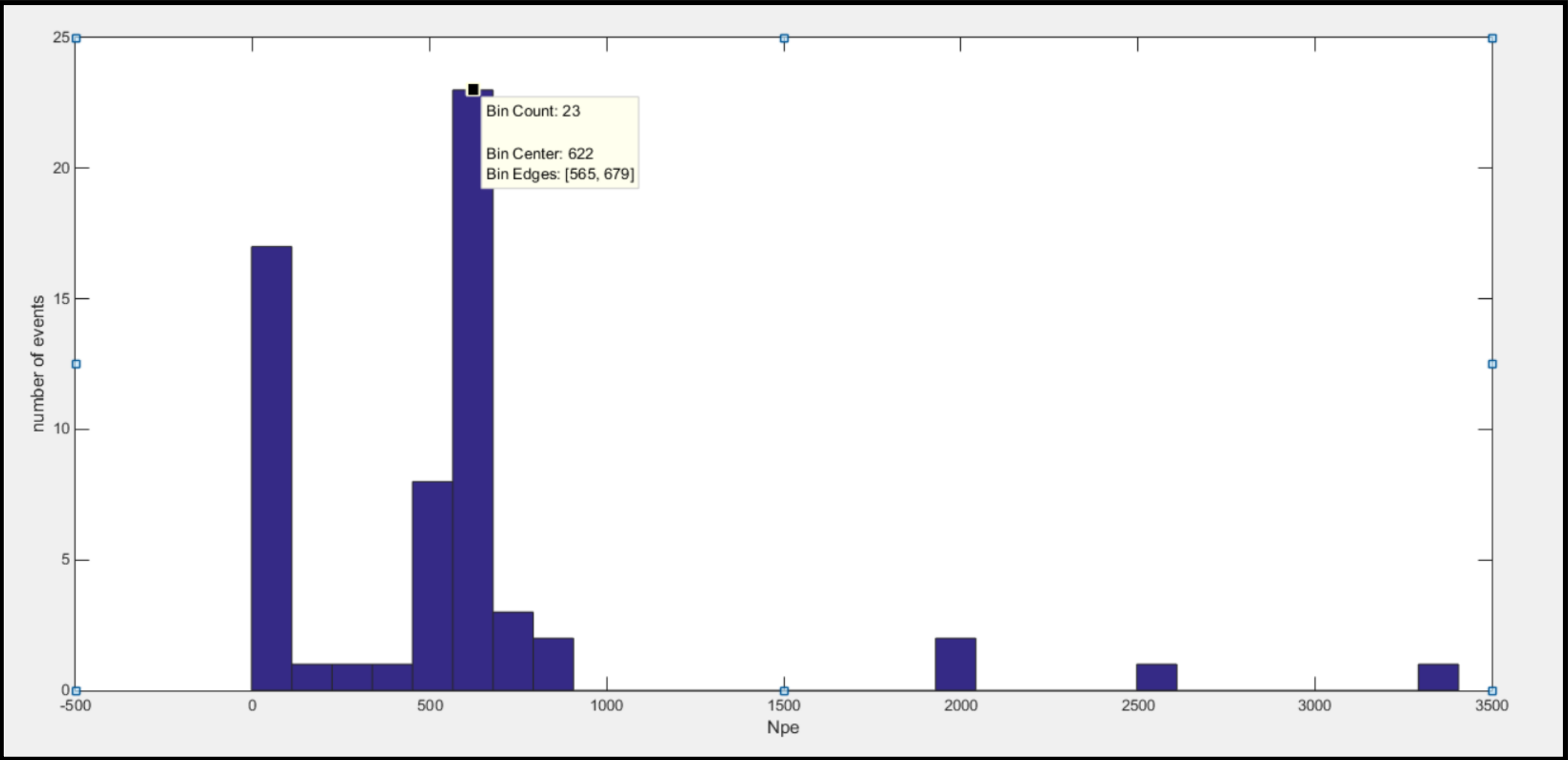


THU2 Cosmic test with SDU PMT (3)

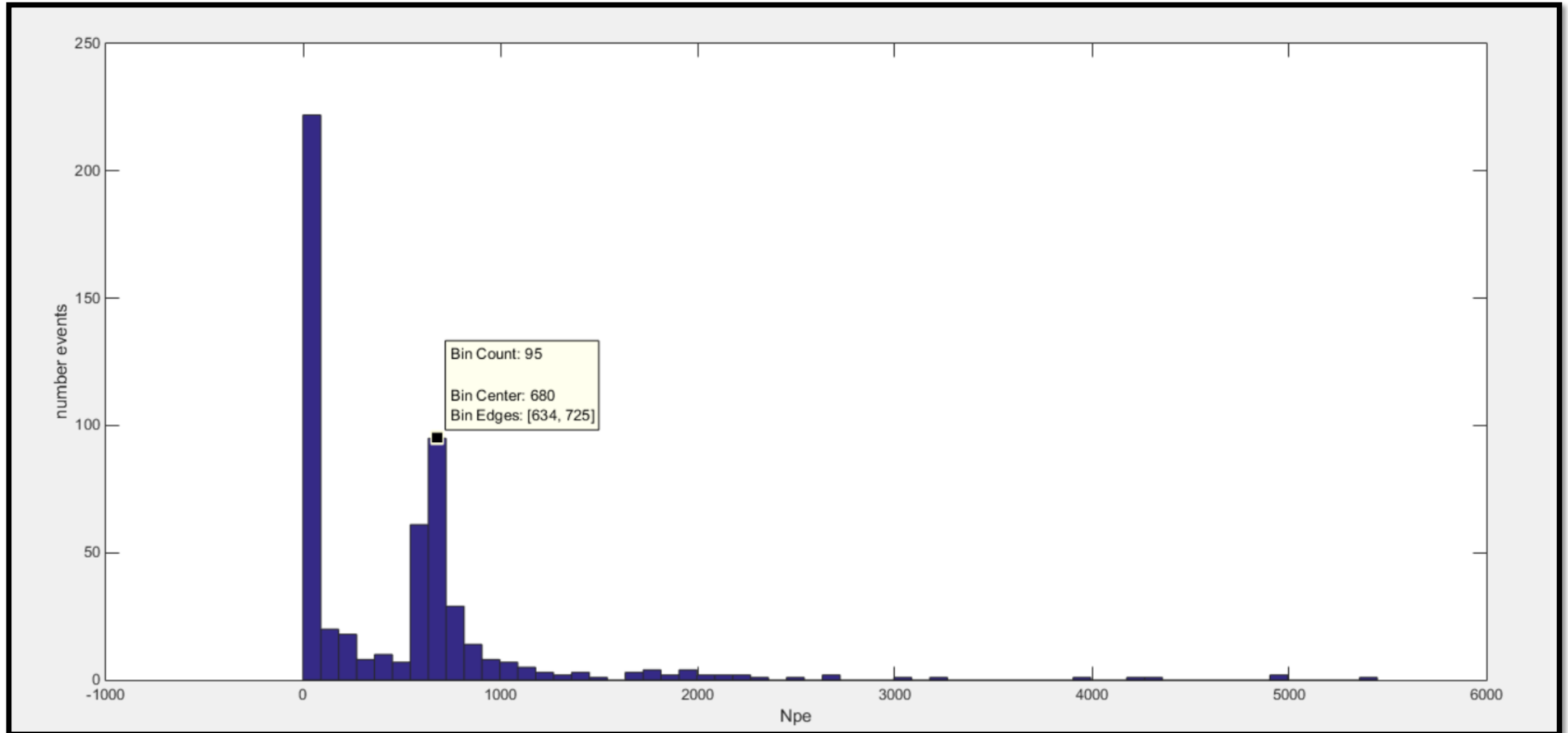
Chendi Shen

2018.2.1

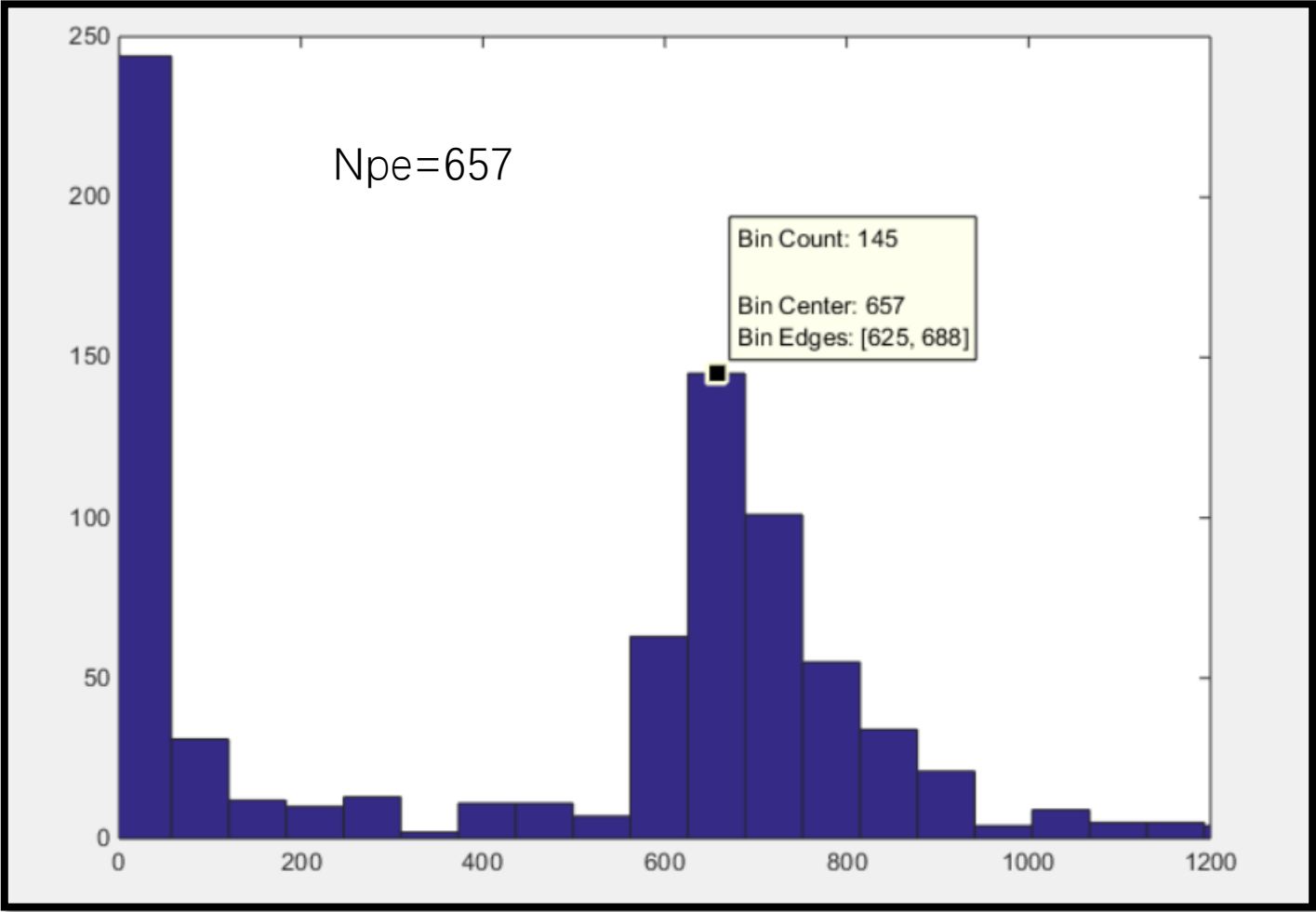
1100V (total number of events: 50)
Npe=622



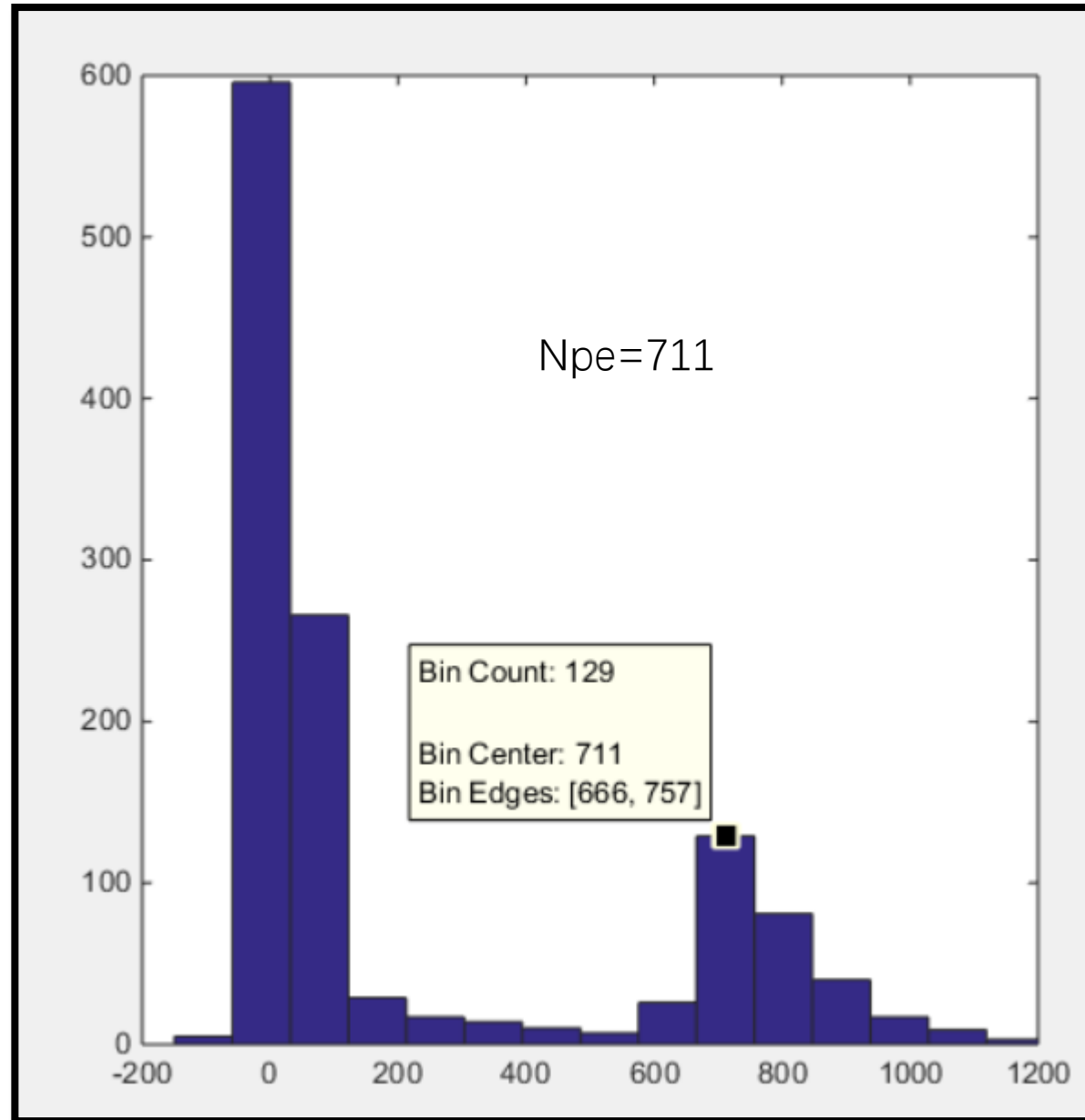
1050V (total number of events:
550) npe=680



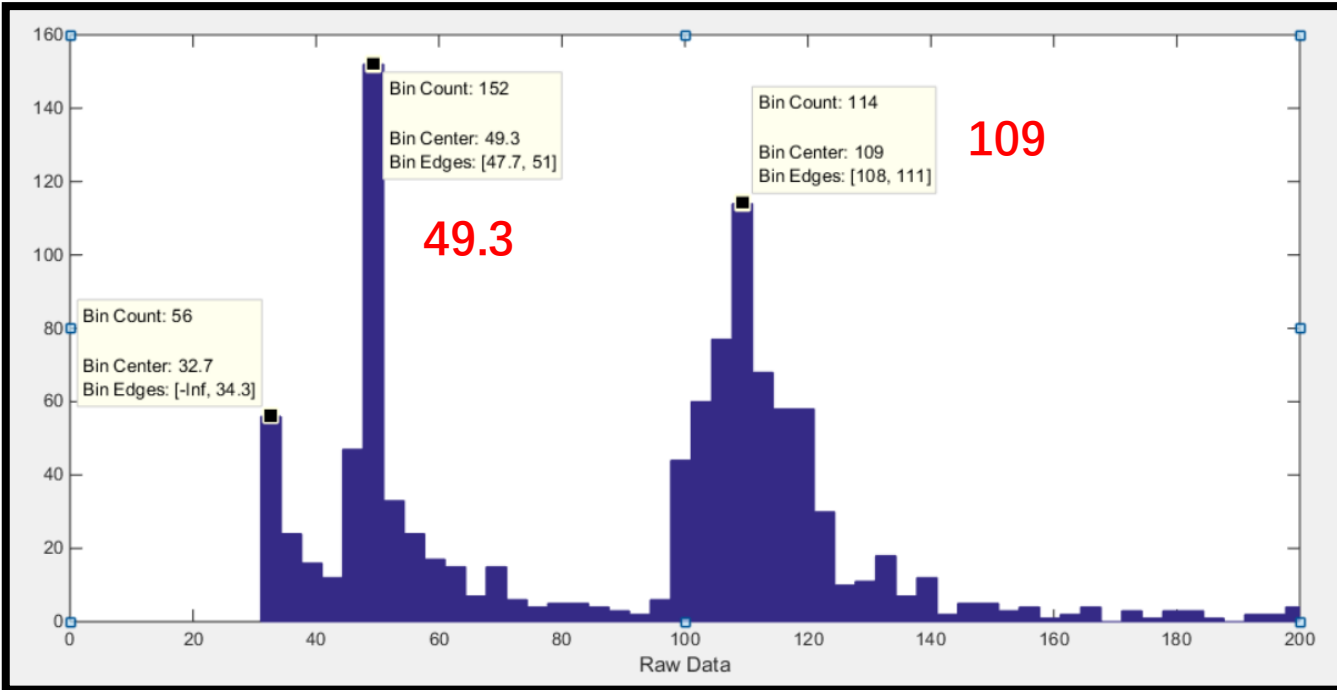
HV=1000 V
number of events 870



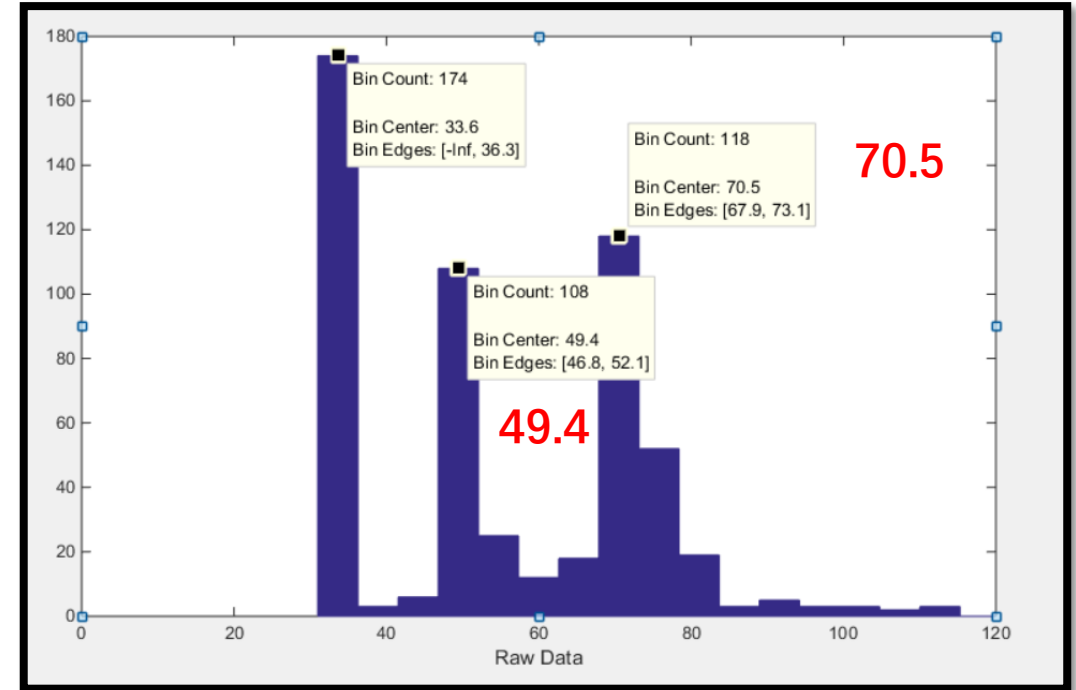
HV=900 V
number of events 1330



Raw Data
HV=800 V
number of events 1160



Raw Data
HV=700 V
number of events 590



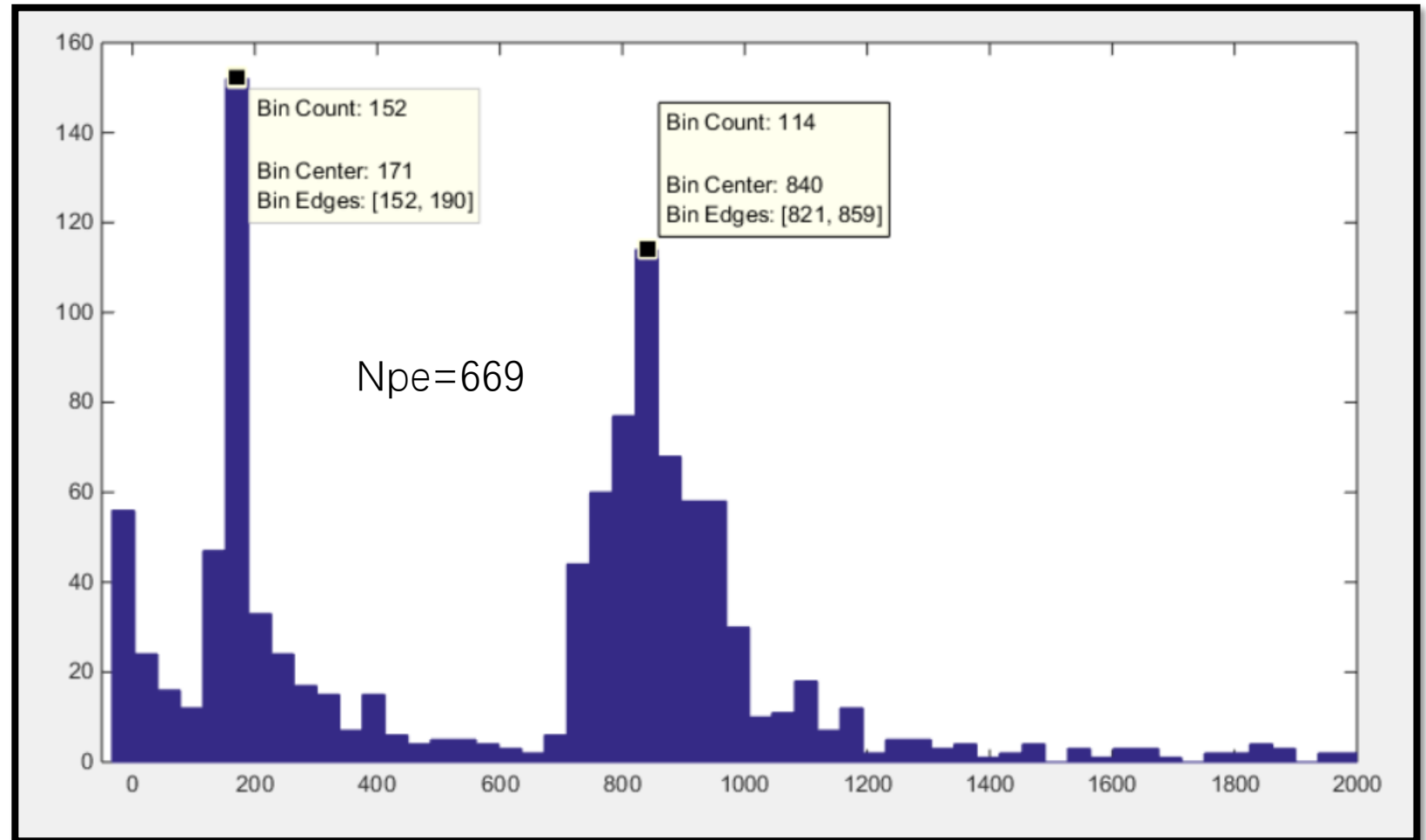
$$N_{pe} = [(Raw\ data - ped) * 0.1pc/chanel * 10^{-12} * 9.4] / (Gain * e)$$

The first peak (49.3/49.4) has nothing to do with high pressure,
So the problem is that long time testing can cause ped to shake.

HV=800 V
number of events 1160

For this long time (70 days)
test, DAQ generated shaking,
which led to the appearance
of the first peak.

$$N_{pe} = 840 - 171 = 669$$

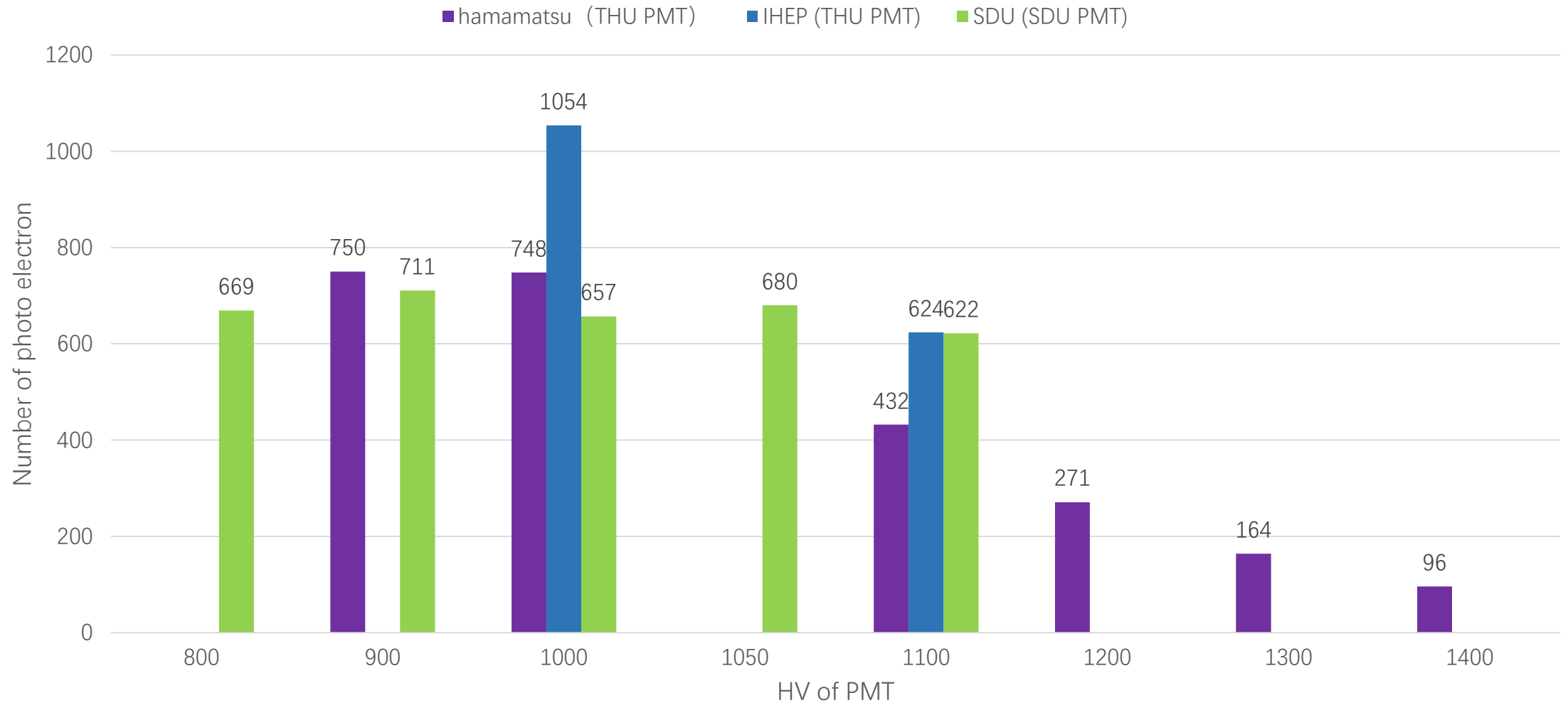


Gain of PMT

	THU PMT		SDU PMT
HV	hamamatsu	IHEP	SDU
800			0.527×10^6
900	1.3×10^6		1.295×10^6
1000	3.1×10^6	2.2×10^6	2.9×10^6
1050			4.11×10^6
1100	6.5×10^6	4.5×10^6	5.997×10^6
1200	13.3×10^6		11.227×10^6
1300	26.1×10^6		

Test results

Number of photo electron with different Gain



- SDU PMT is stable and the result is more reasonable, so Npe of THU2 is around 680.