Status

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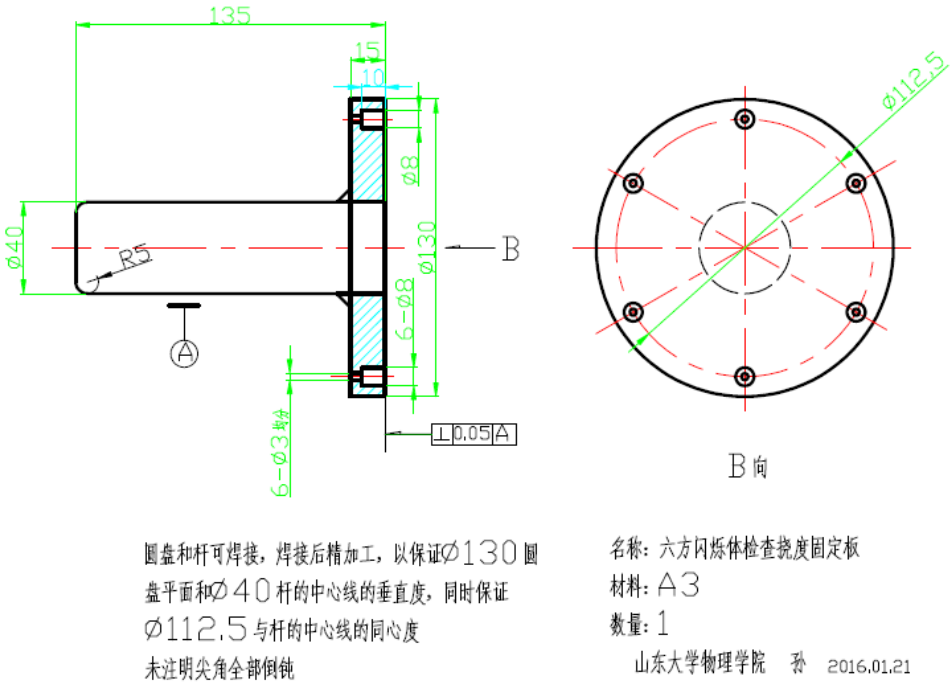
Deformation of the pre-prototype

- Young's modulus:
  - know one equipment in our institute lab, measure the young's modulus using resonance method.
    - Will meet the guy of the lab tomorrow.
- Force calculation:
  - discussed with IHEP(Beijing) colleague, they will re-calculate the force when their time convenience.
    - They suggest us to check the deformation directly with lathe platform.

Lathe to check the deformation

- Special tool design
  - Hold the detector by one end
- The Lathe hold the round bar, the detector fixed on the plate
- The flatform of the lathe used as the standard.



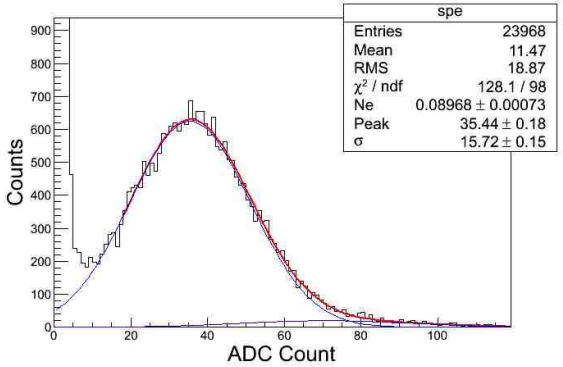
10 PMTs received

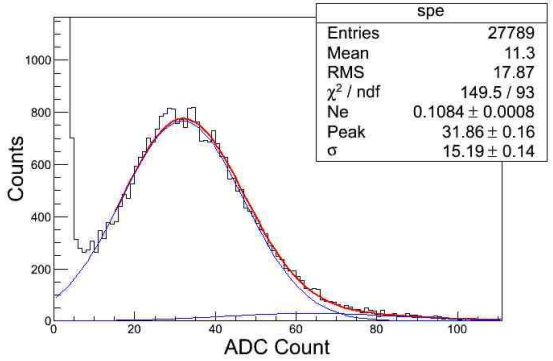
- Type: CR284(=R11102)
- Tapered divider

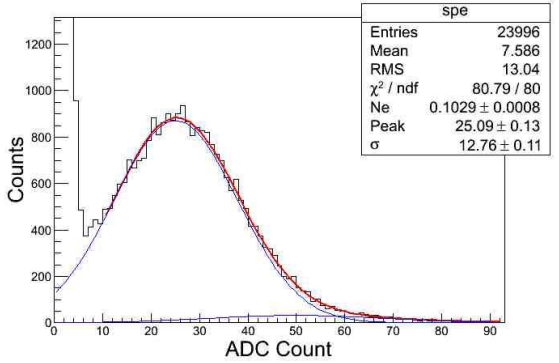
K	DY1	DY2	DY3	DY4	DY5	Dy6	Dy7	Dy8	DY9	DY10	P
2	1	1	1	1	1	1.2	1.5	2.2	3.6	3	
2	1	1	1	1	1	1	2	3	4	3	

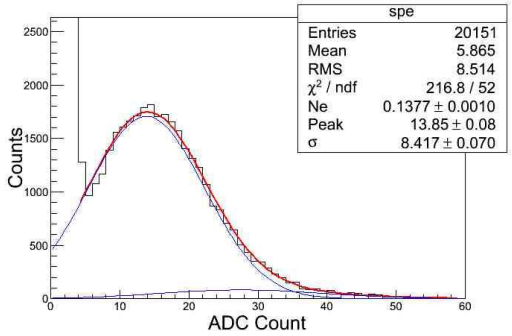
  - Type 1: Hamamatsu recommendation
  - Type 2: improved linear dynamical range

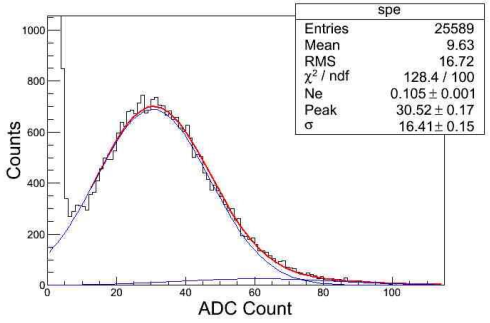
SPE peak at 1500V. No SPE for 1 PMT

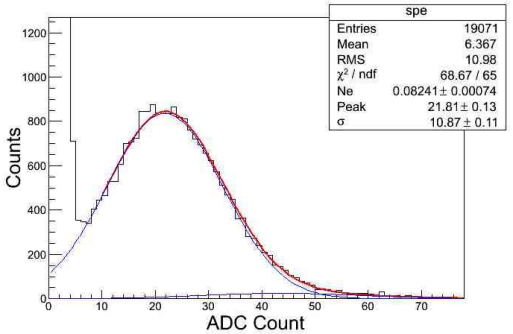


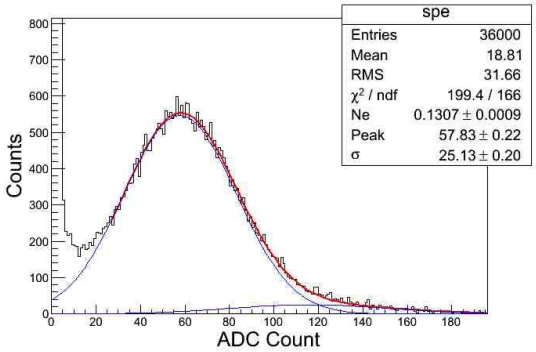


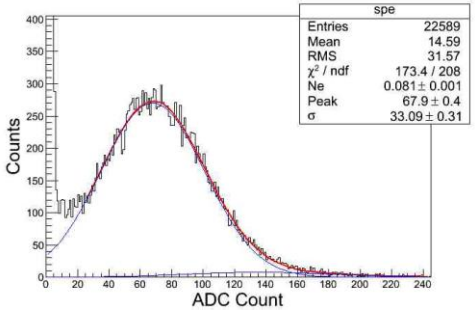


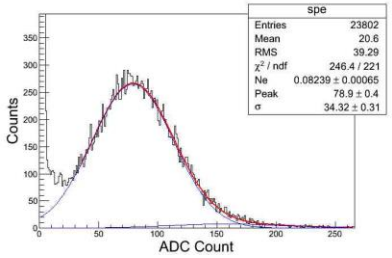




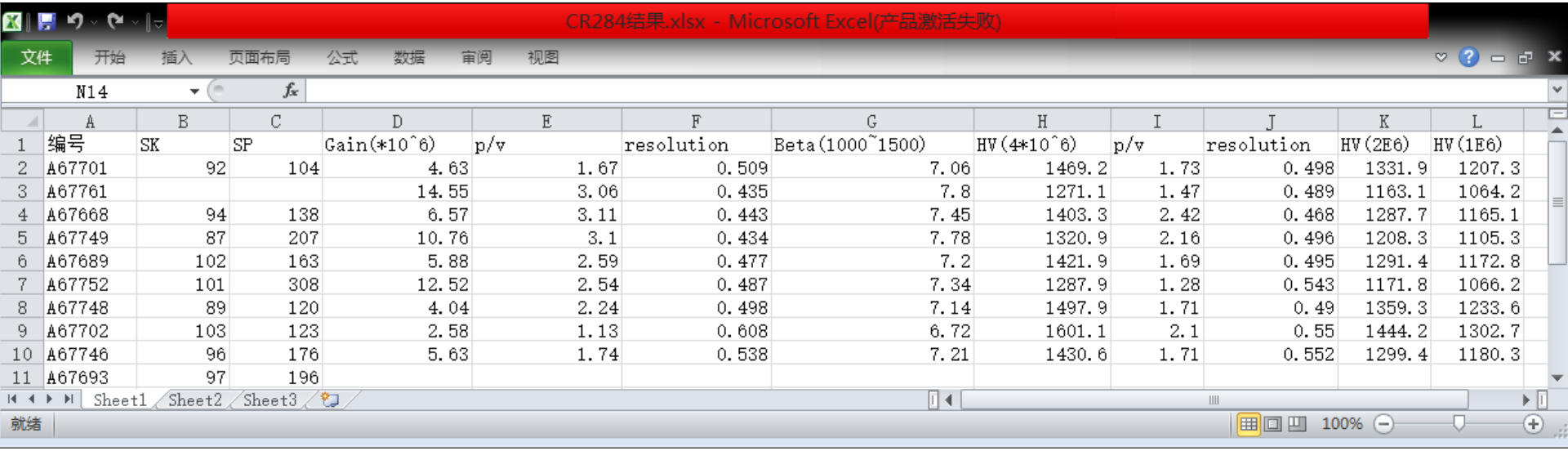








PMT summary

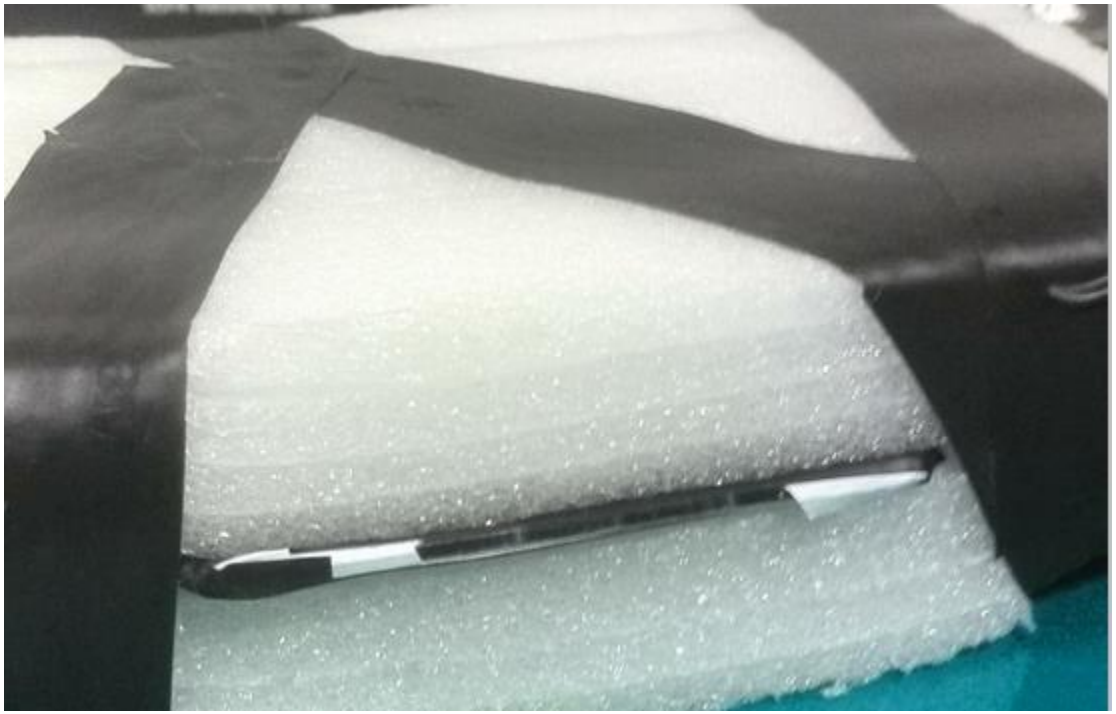


	A	B	C	D	E	F	G	H	I	J	K	L
1	编号	SK	SP	Gain(*10^6)	p/v	resolution	Beta(1000~1500)	HV(4*10^6)	p/v	resolution	HV(2E6)	HV(1E6)
2	A67701	92	104	4.63	1.67	0.509	7.06	1469.2	1.73	0.498	1331.9	1207.3
3	A67761			14.55	3.06	0.435	7.8	1271.1	1.47	0.489	1163.1	1064.2
4	A67668	94	138	6.57	3.11	0.443	7.45	1403.3	2.42	0.468	1287.7	1165.1
5	A67749	87	207	10.76	3.1	0.434	7.78	1320.9	2.16	0.496	1208.3	1105.3
6	A67689	102	163	5.88	2.59	0.477	7.2	1421.9	1.69	0.495	1291.4	1172.8
7	A67752	101	308	12.52	2.54	0.487	7.34	1287.9	1.28	0.543	1171.8	1066.2
8	A67748	89	120	4.04	2.24	0.498	7.14	1497.9	1.71	0.49	1359.3	1233.6
9	A67702	103	123	2.58	1.13	0.608	6.72	1601.1	2.1	0.55	1444.2	1302.7
10	A67746	96	176	5.63	1.74	0.538	7.21	1430.6	1.71	0.552	1299.4	1180.3
11	A67693	97	196									

Scintillator measurement

Reflection inside: print paper
Package: black tape
One side open

Scintillator measurement



Scintillator puts in two pieces foam plastic, help to couple the scintillator to PMT

Scintillator measurement

PMT couples to scintillator

Scintillator measure

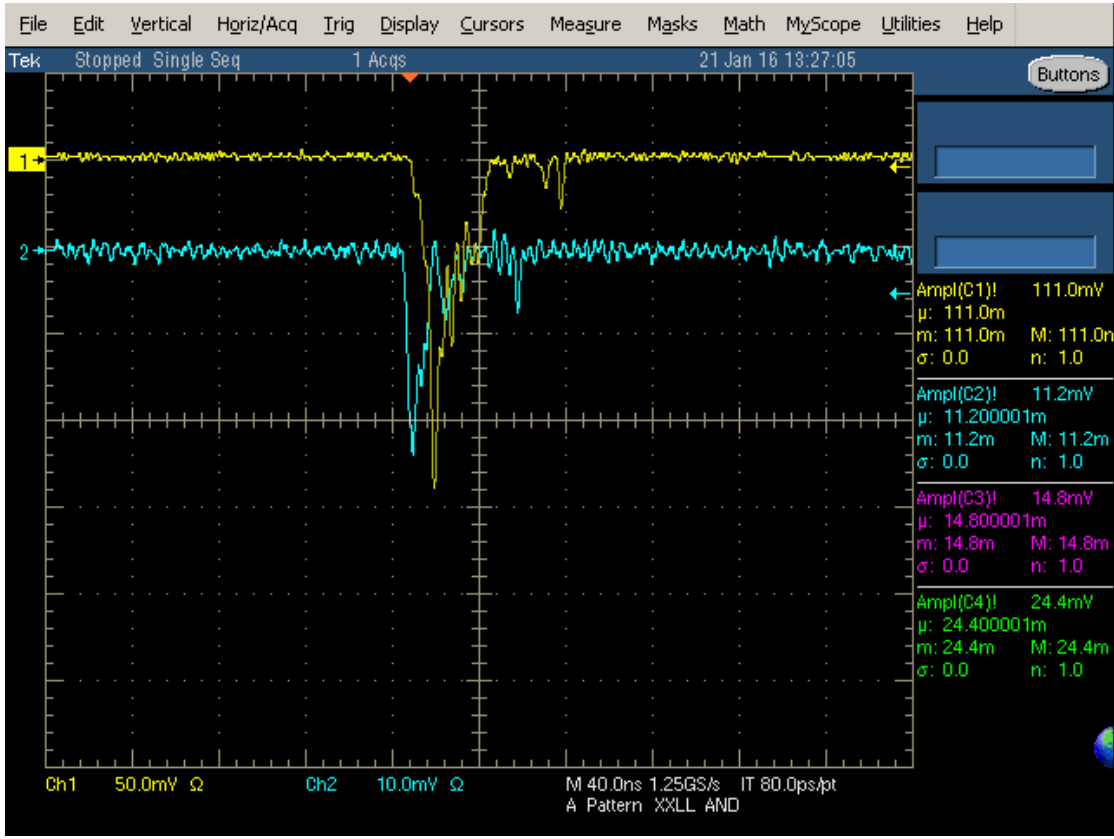
Triggered with two pre-shower scintillator

Threshold: 5mV

One signal of scintillator

Yellow: another pre-shower

Blue: Shashlyk scintillator
gain=2E6

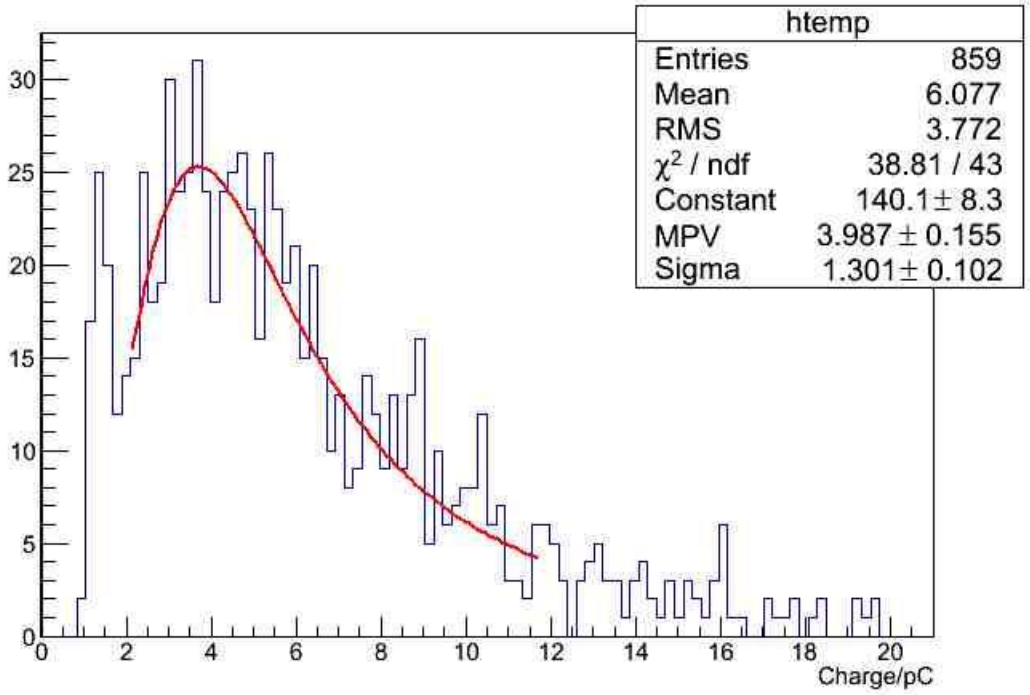


Single muon spectrum

Statistics is accumulating

Peak: 3.987pC

No. of electophoton: 12.5=
3.987*10^-12/(1.6*10^-19*2*10^6)



Next:

1) Uniformity of each piece
2) Uniformity of each batch
3) Affection of different reflection
4) Aging??

Thanks!