

Status report

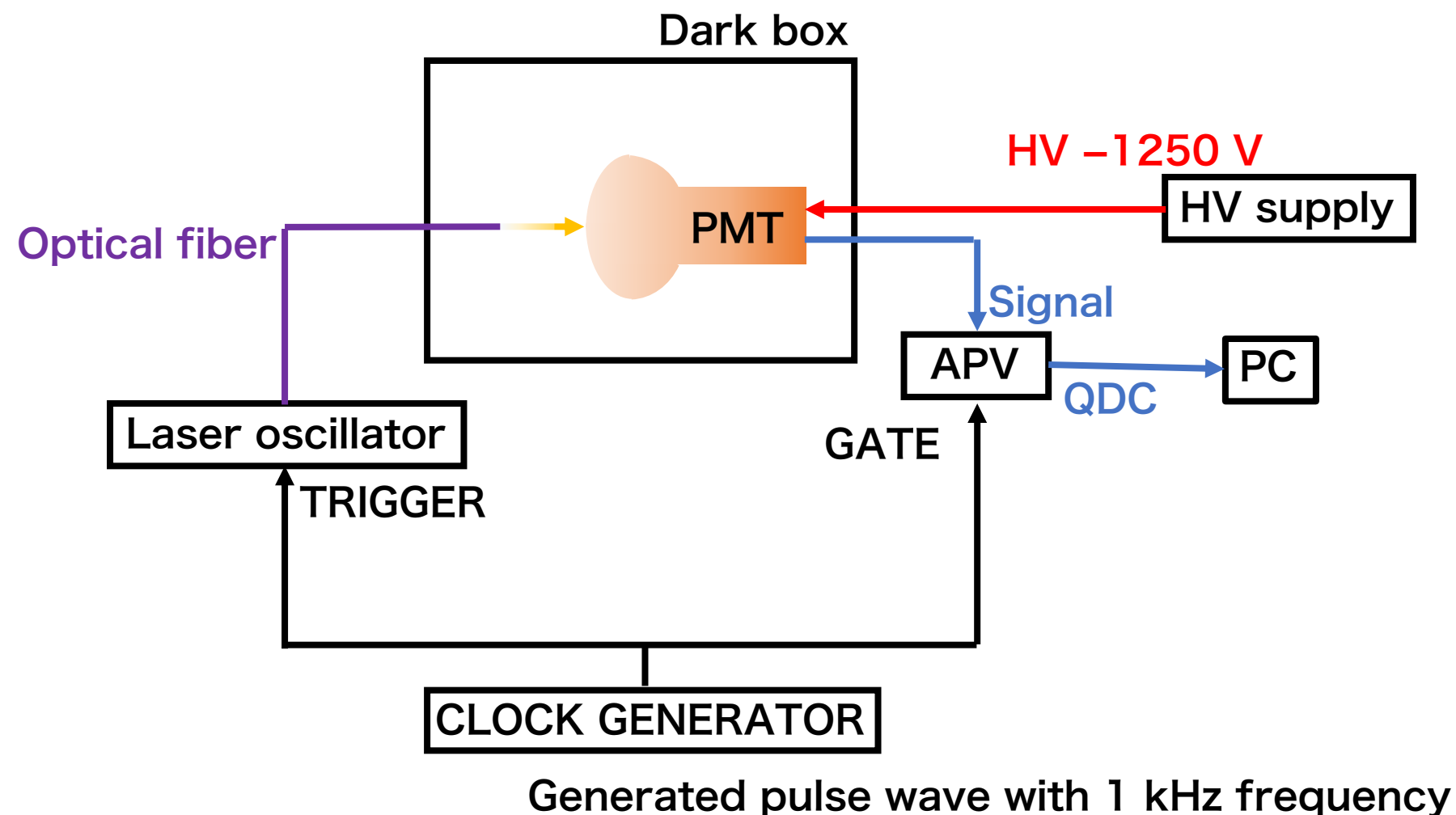
10/04/2019

Tokyo University of Science

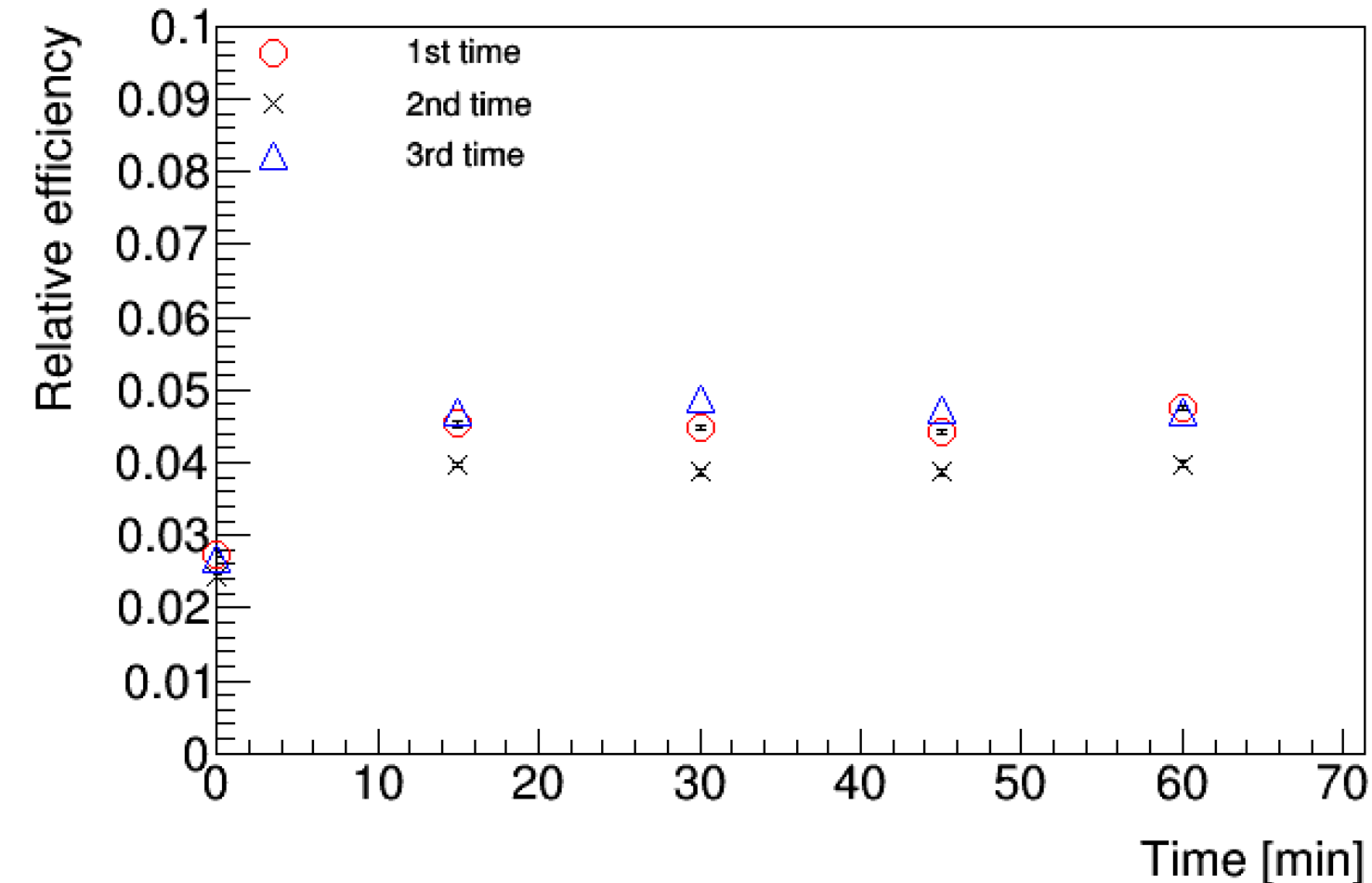
Michitaka Inomoto

Light intensity

- I checked the time dependence of the light intensity with the laser oscillator.
- Measurement time is 5 min.



Light intensity



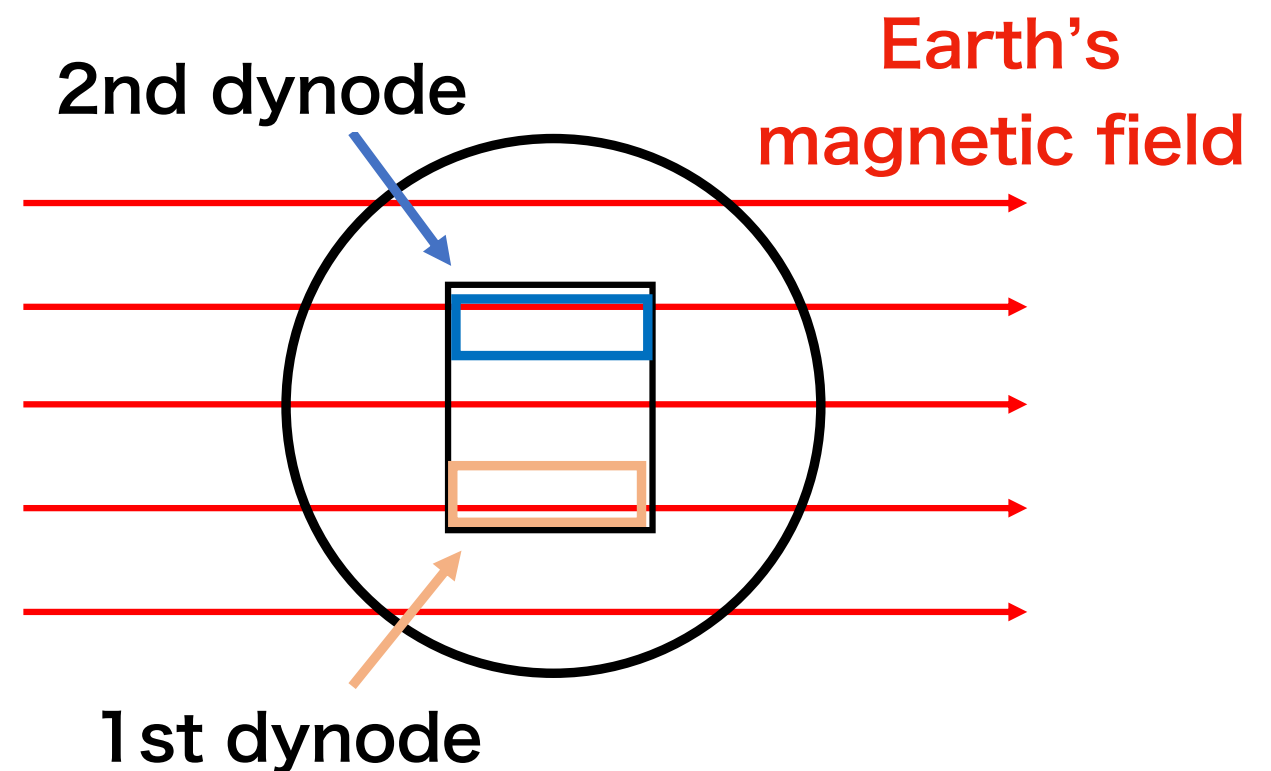
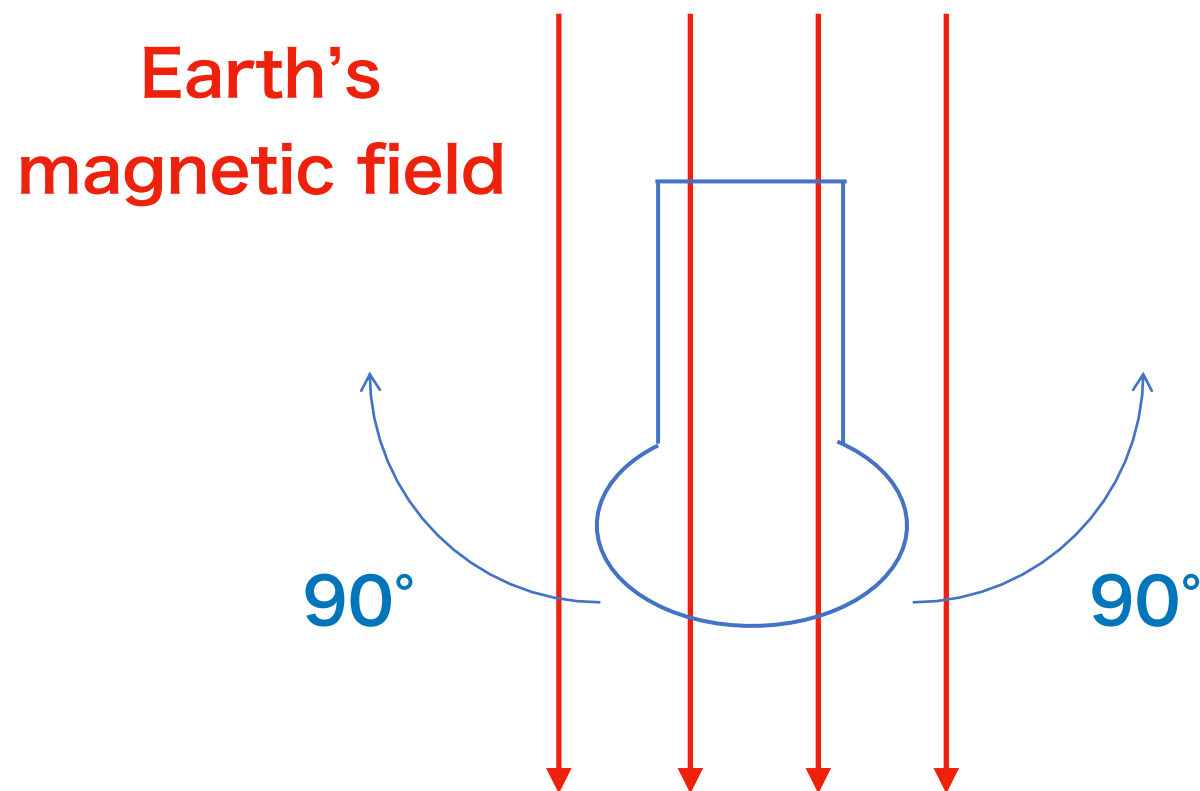
- The result shows that the time dependence is stable after about 15 min.
- Variation of the efficiency is less than 10 %.

Average relative efficiency : 15 min - 60 min

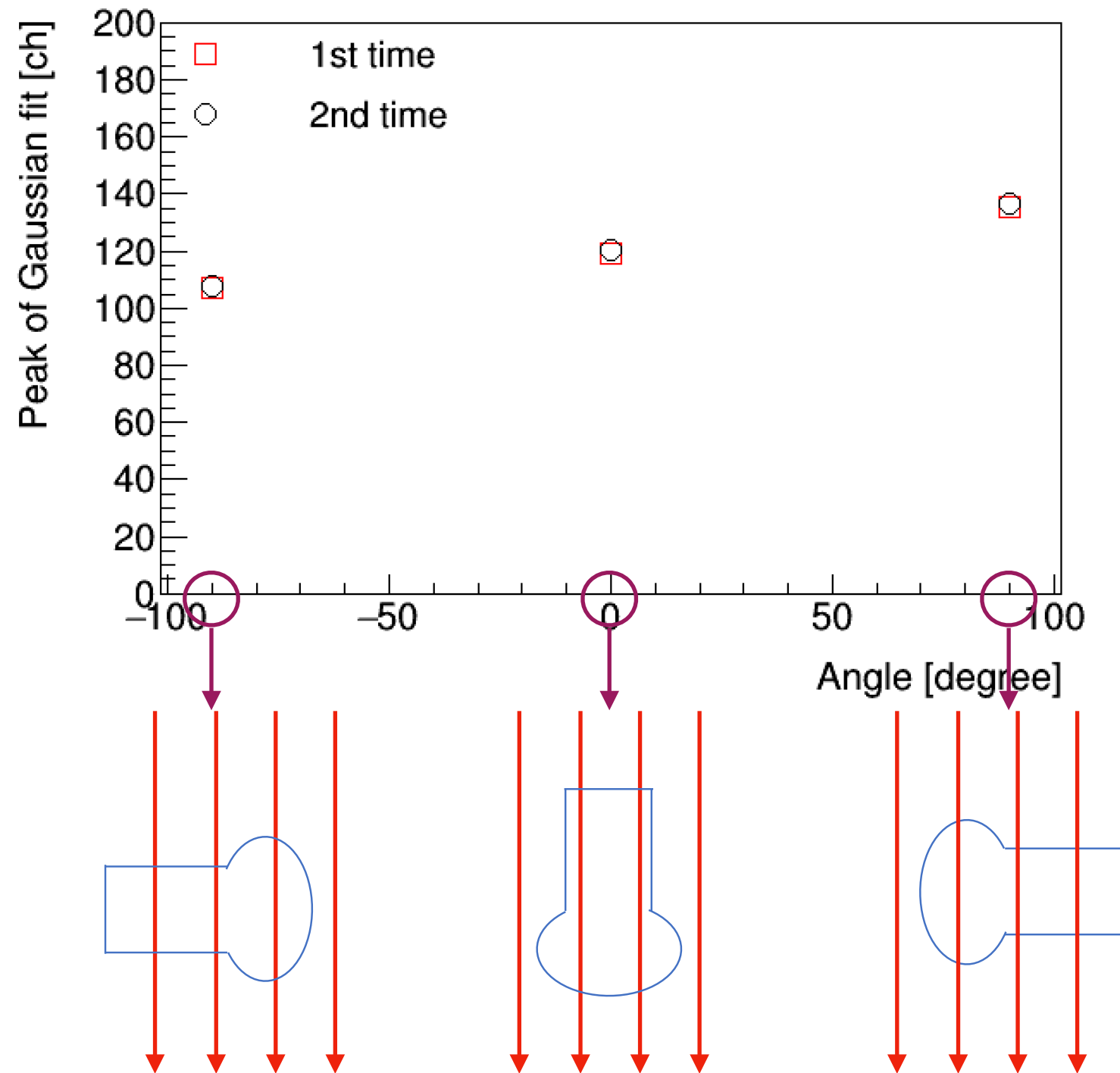
	1st time	2nd time	3rd time
Average	0.0455	0.0392	0.0474
Standard deviation	0.0014	0.0007	0.0009

Dynode Structure

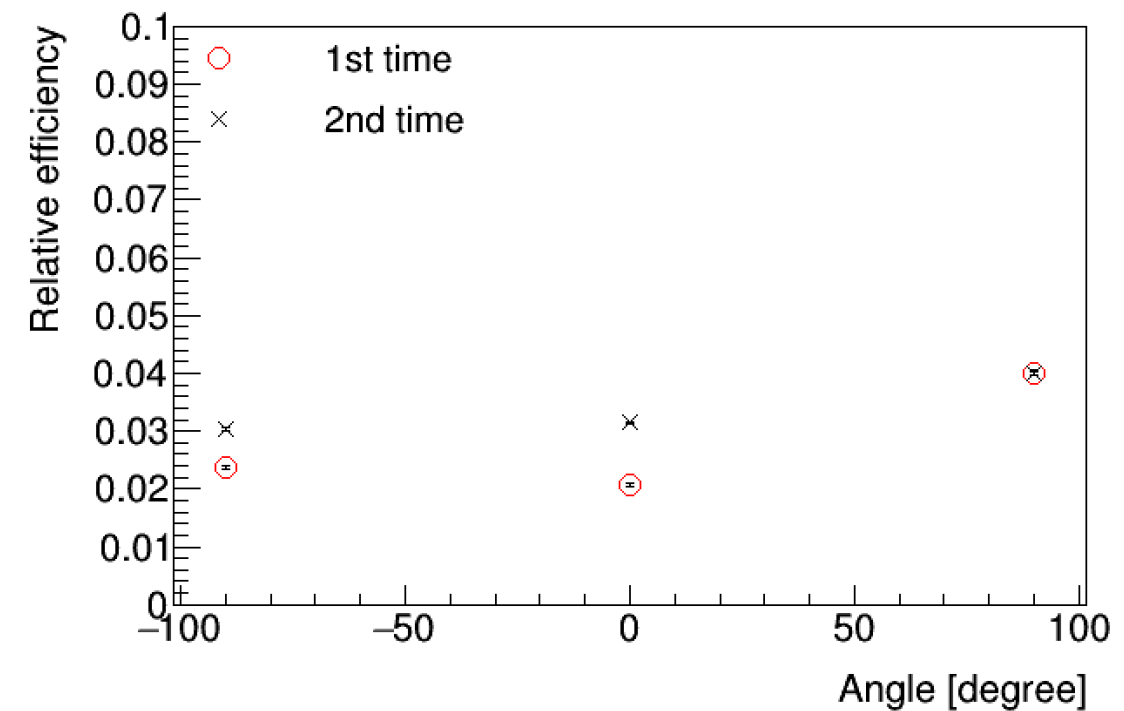
- I set a non-HA coated PMT so that 1st dynode was at the bottom without the coil.
- I checked the gain of the PMT.
- Earth's magnetic field in the laboratory is about 0.037 ± 0.003 mT.
- I measured the gain in three types of PMT's angles to Earth's magnetic field.
 - The angles : -90° , 0° , 90° .



Dynode Structure



- The result shows that Variation of the gain is about 20 %.



Future plan

- I will check the gains of other PMTs.

Backup

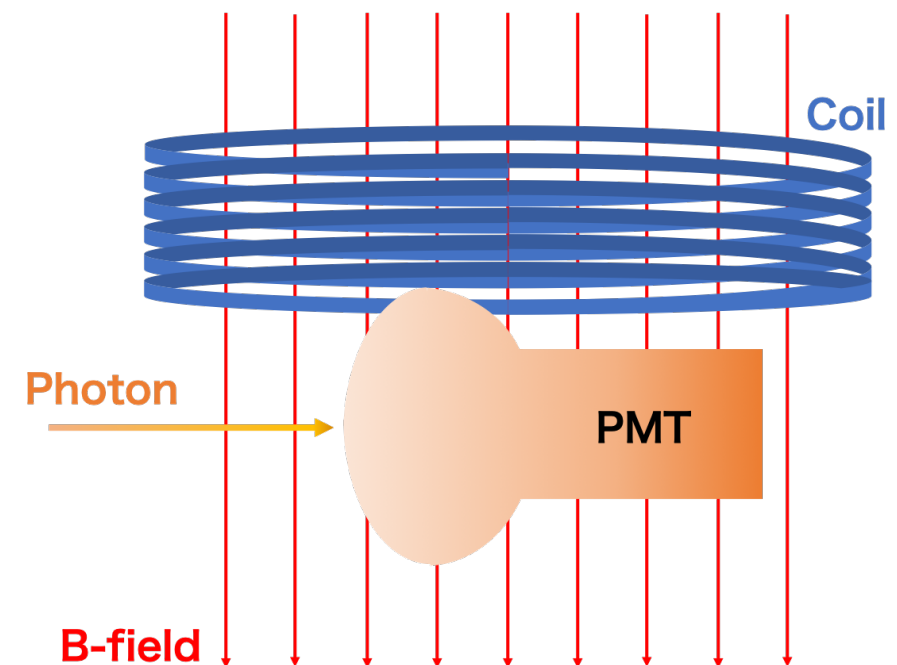
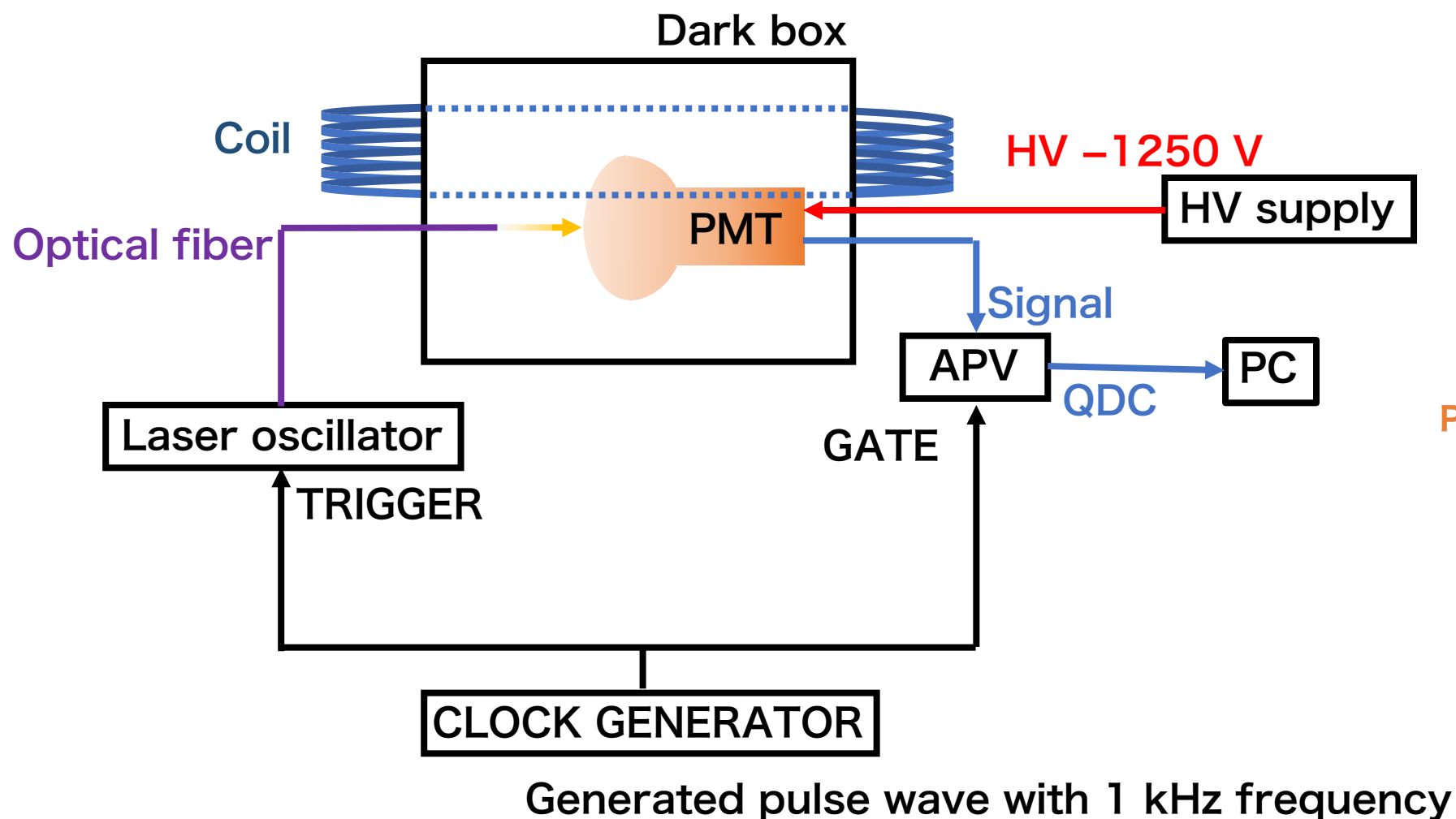
Relative efficiency

Relative efficiency is defined as follows:

$$\text{Relative efficiency} = \frac{\text{the number of PMT's signals}}{\text{the number of signals from clock generator}}$$

“the number of PMT's signals” is the counts above the threshold.

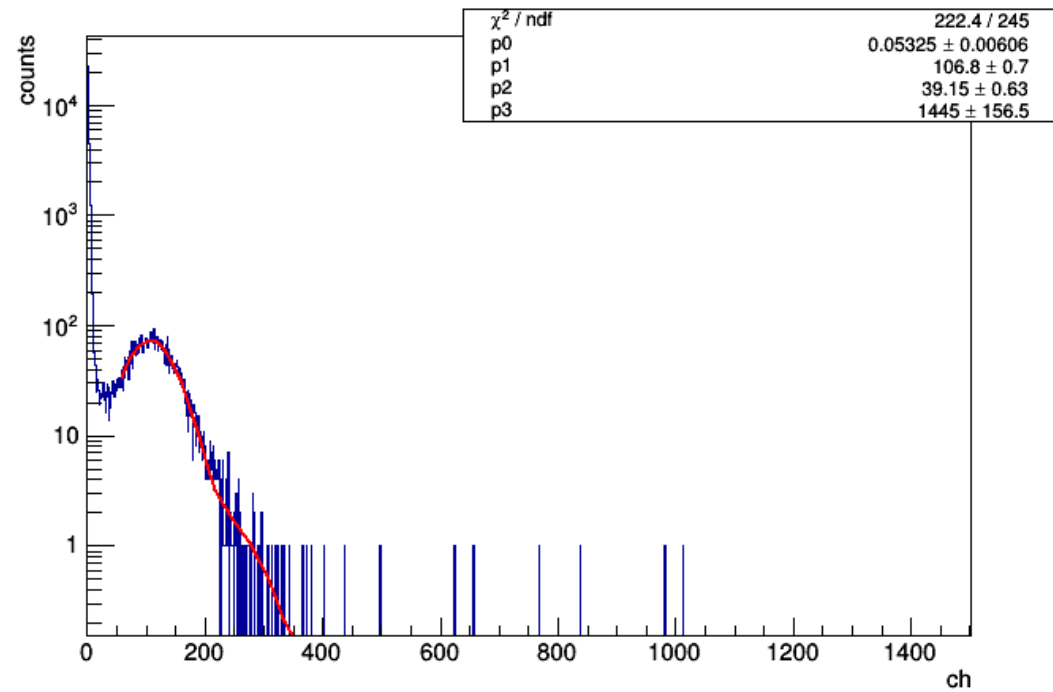
I measured relative efficiencies of non-HA coated PMT with B-field parallel to photo-cathode.



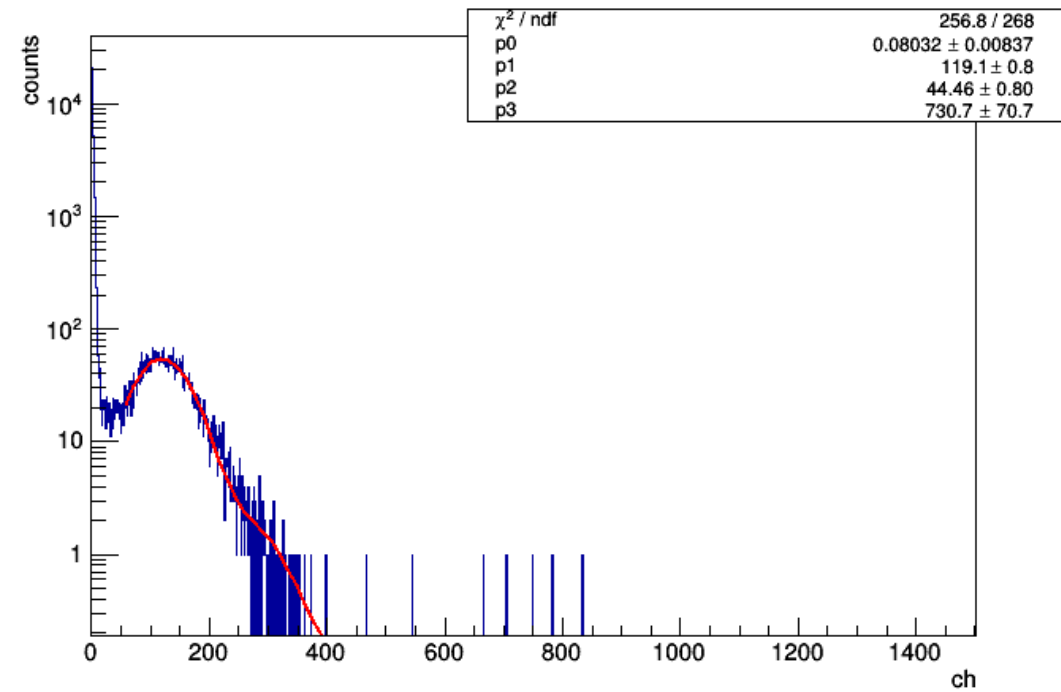
Dynode Structure

1st time

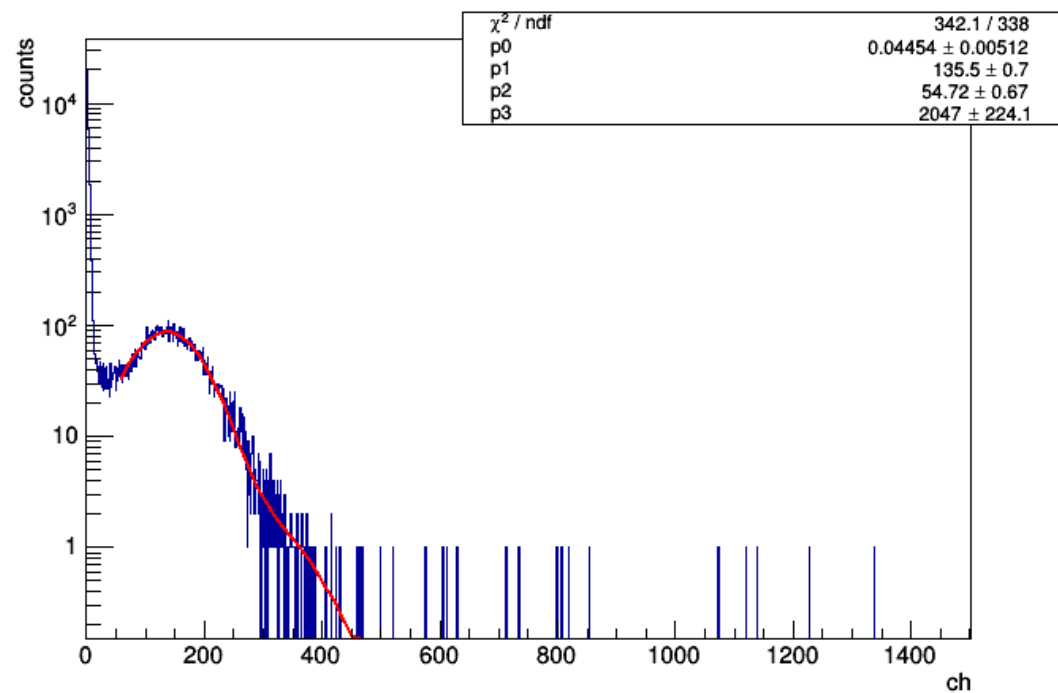
-90°



0°

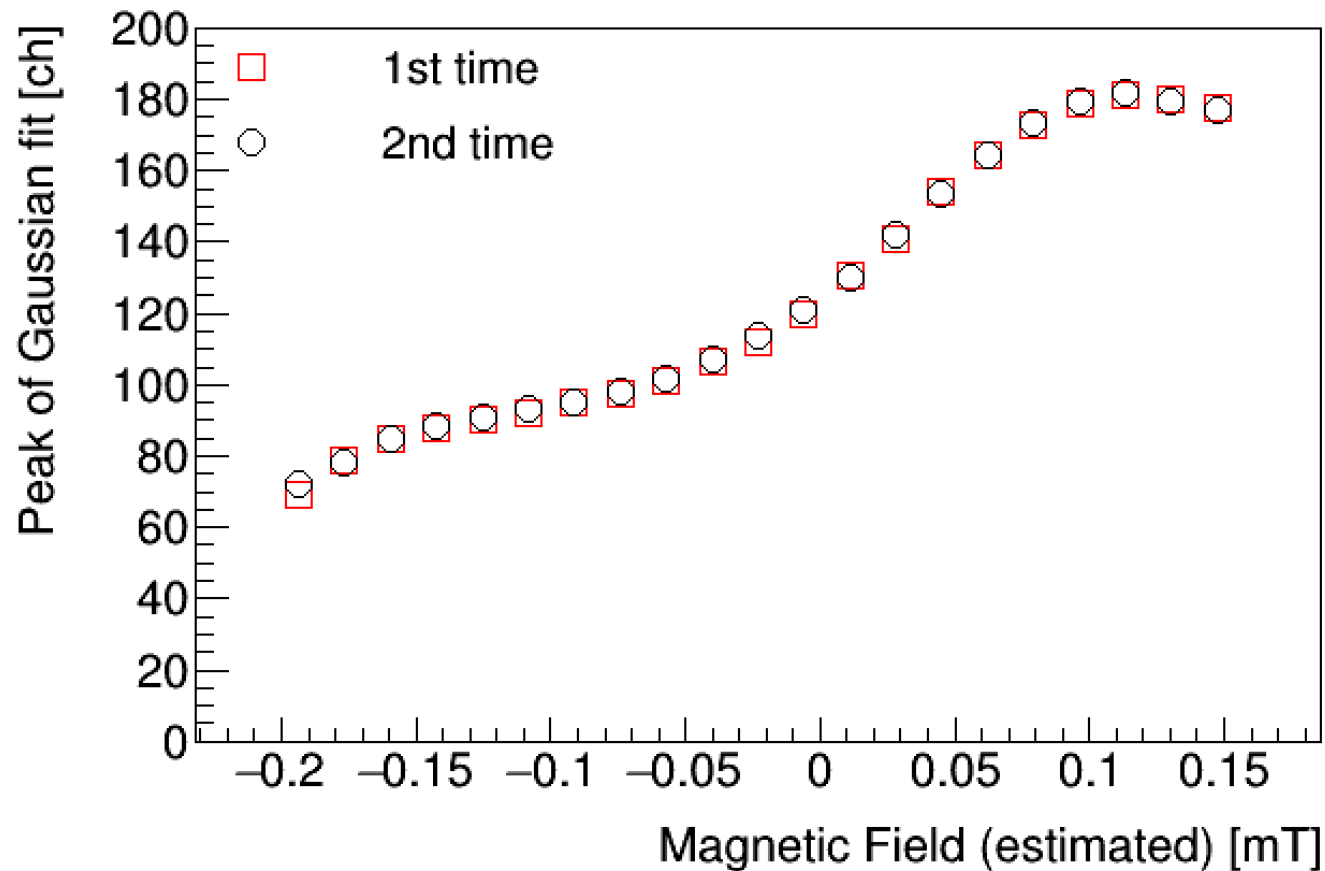


90°



Dynode Structure

- I set the PMT so that 1st dynode was at the bottom.
- I checked the gain of the non-HA coated PMT.



- As B-field increases, the gain increases.

