

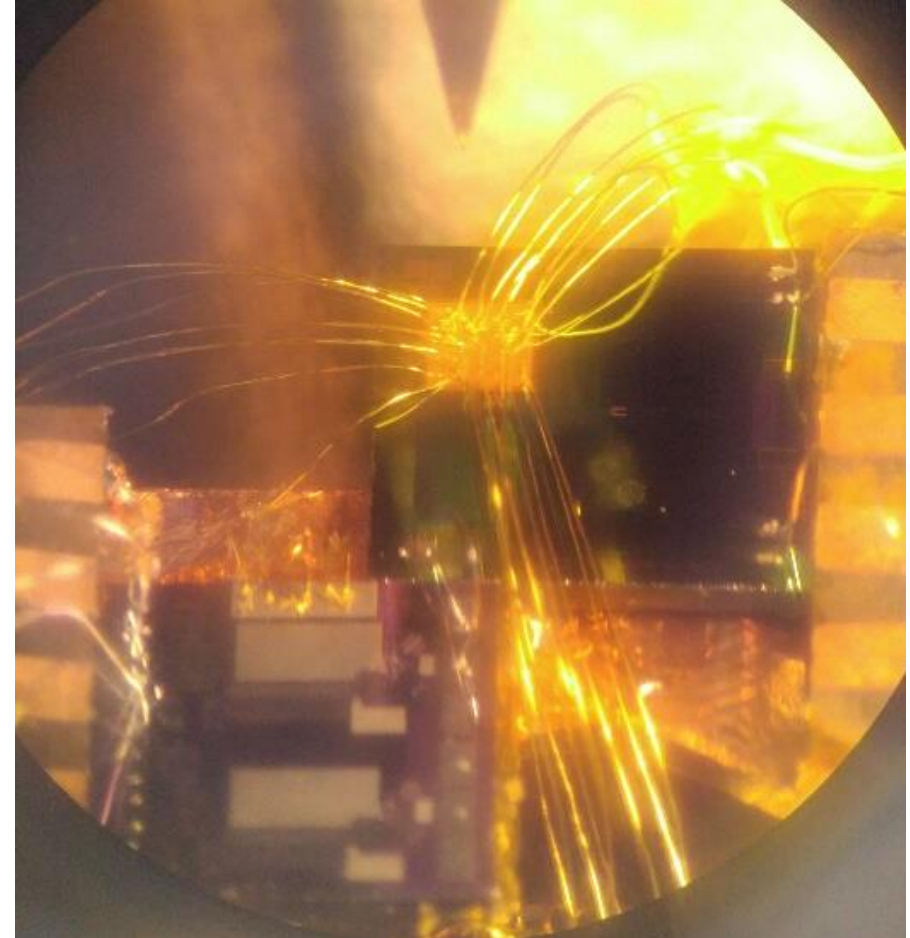
# Weekly Report

2019-08-06

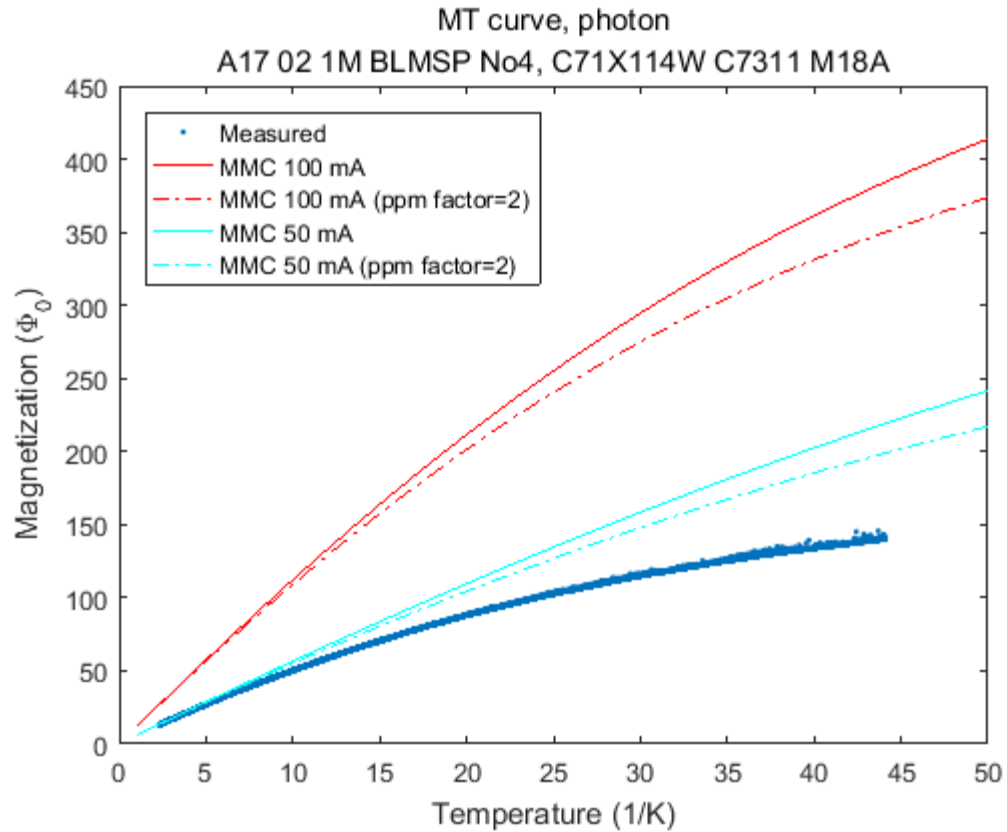
Kim, Hanbeom

# MT curve measurement

- Photon
- Ag:Er absorber (Er: 414 ppm)
- $1 \times 1 \text{ mm}^2$
- Given field current = 100 mA



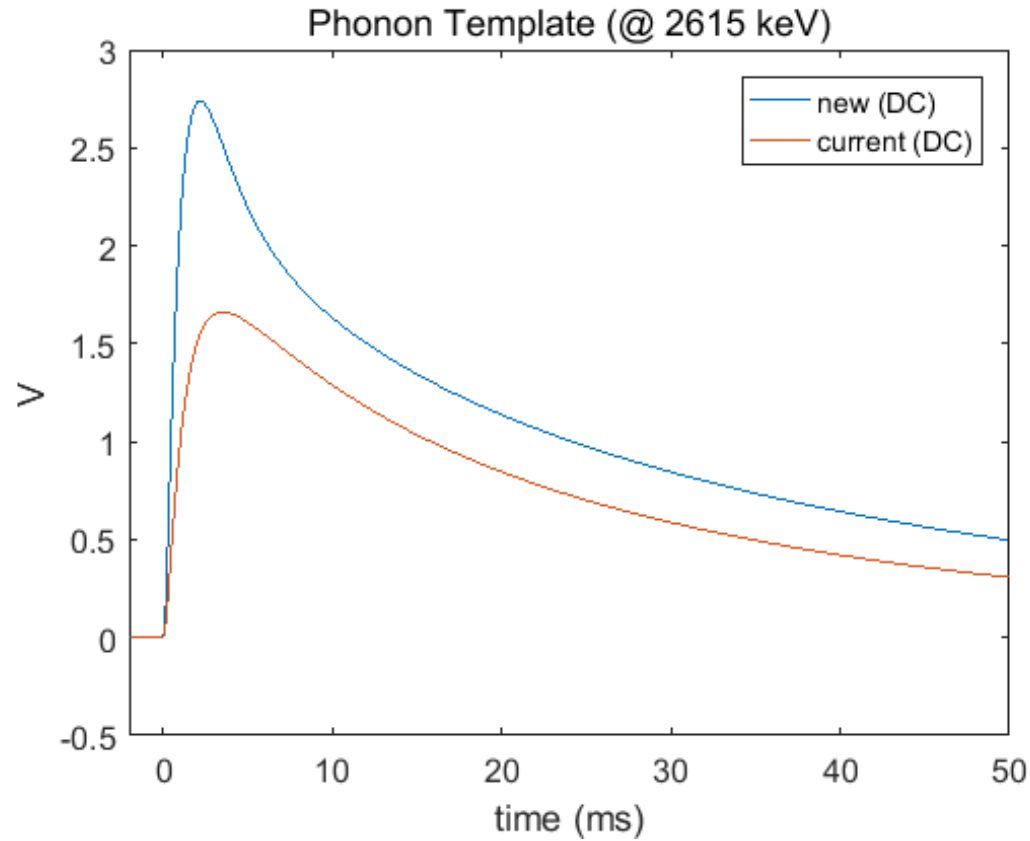
# MT curve measurement



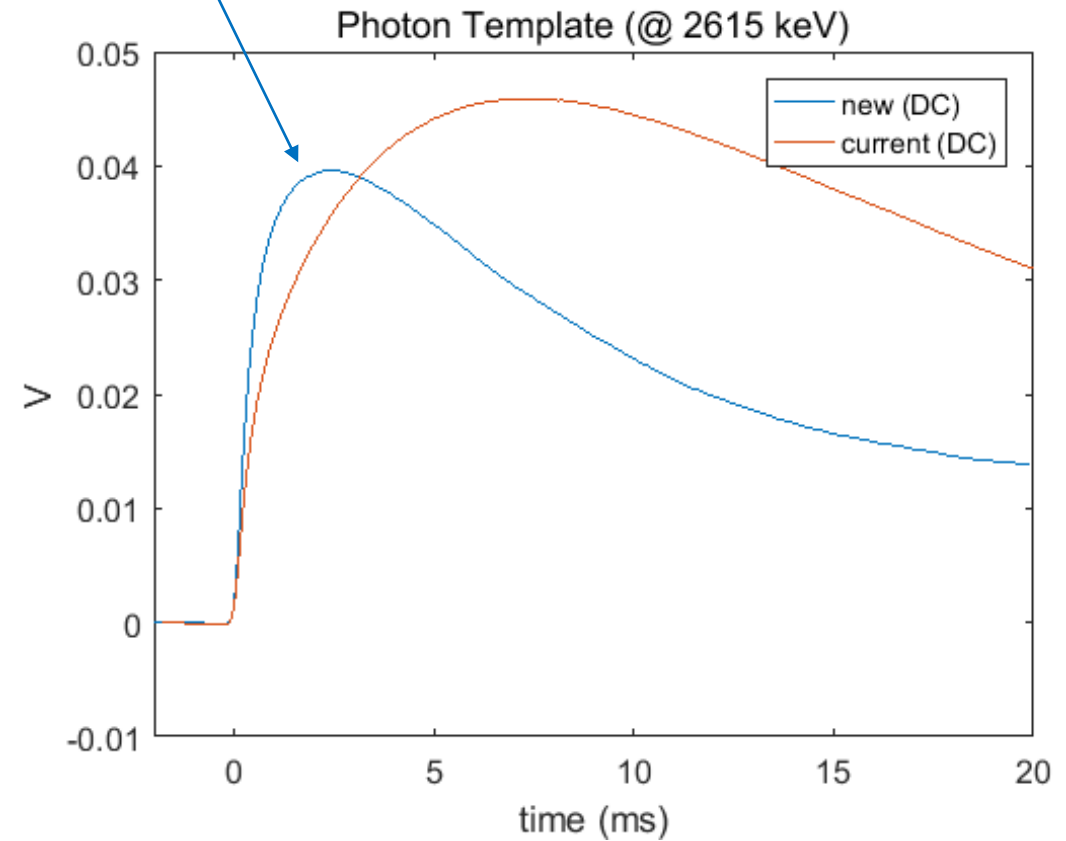
(The ppm factor is for Ag:Er; the other is for Au:Er.)

Field current was not fully inserted?

# Signal Size



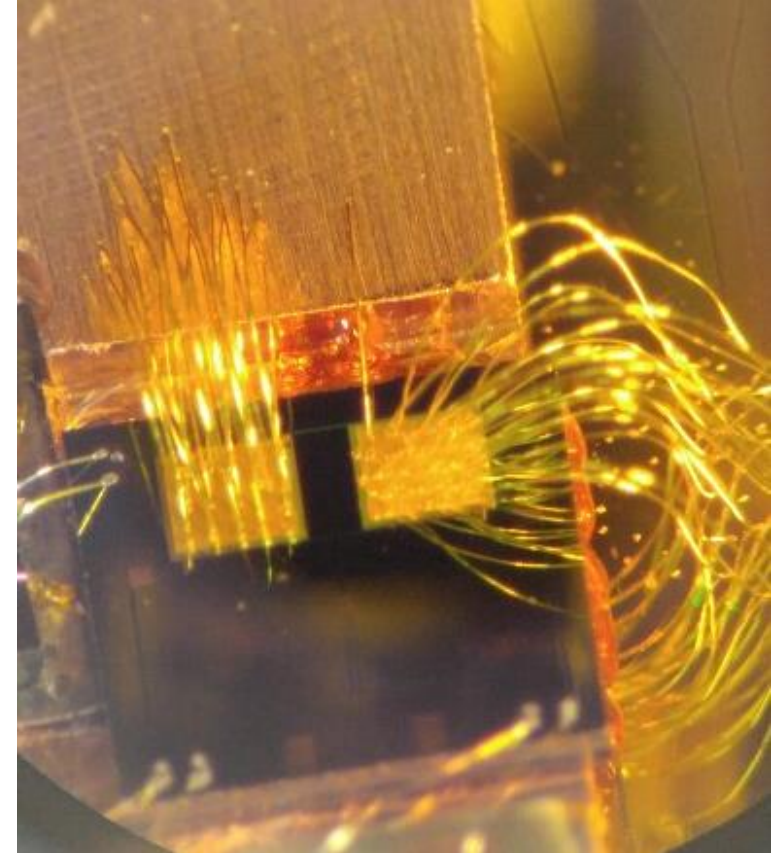
Field current problem?



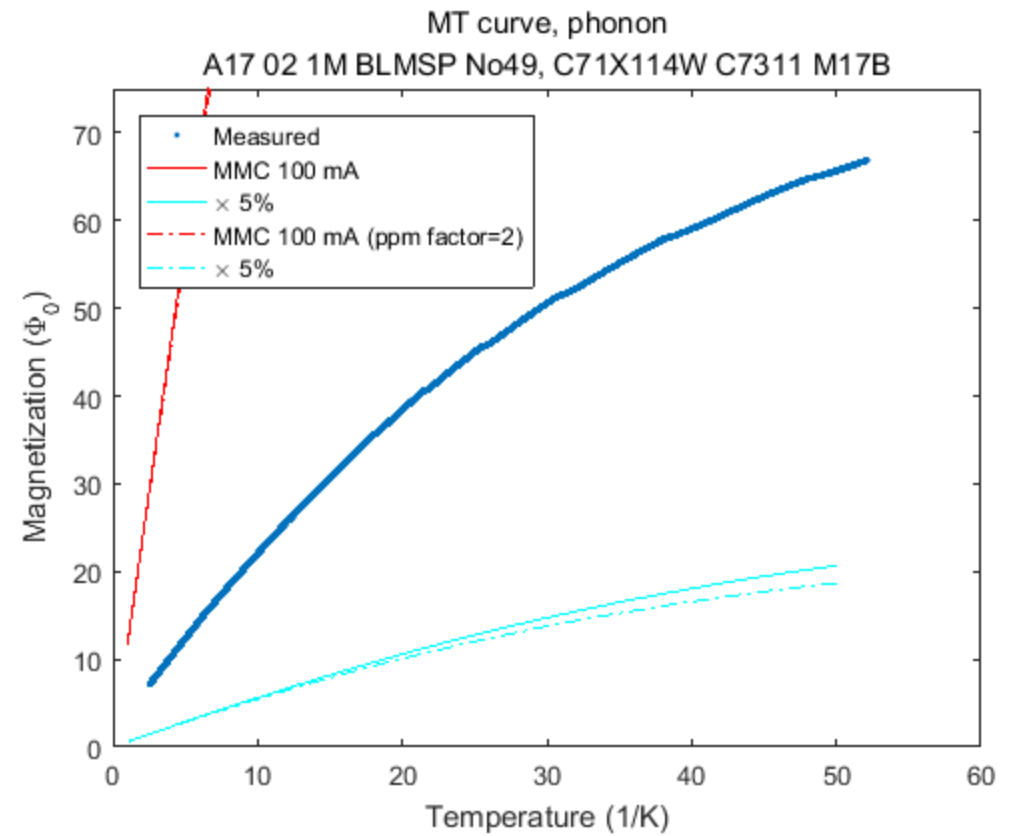
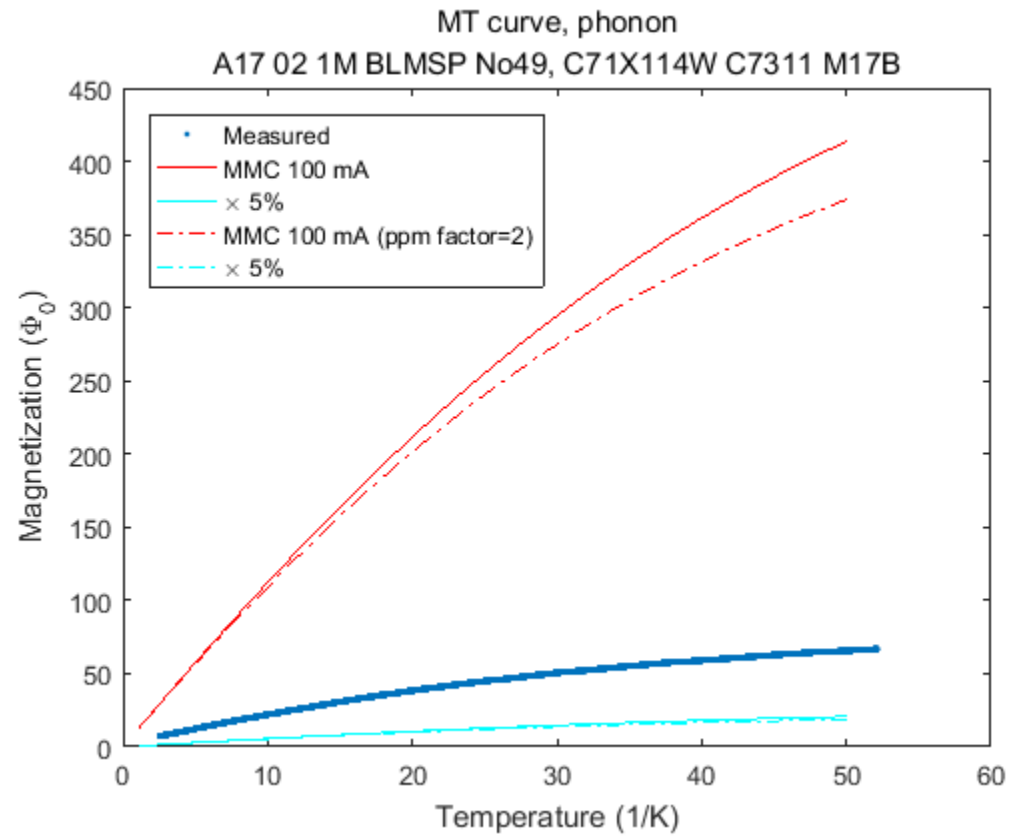
Template Pulse Height (V)	Phonon	Photon
Current	1.66	0.0459
New	2.74	0.0397

# MT curve measurement

- Phonon
- Ag:Er absorbers (Er: 414 ppm)
- One absorber is  $1 \times 1 \text{ mm}^2$ , and the other is 5% smaller
- It is the first time to measure this kind of MMC.
- Given field current = 100 mA

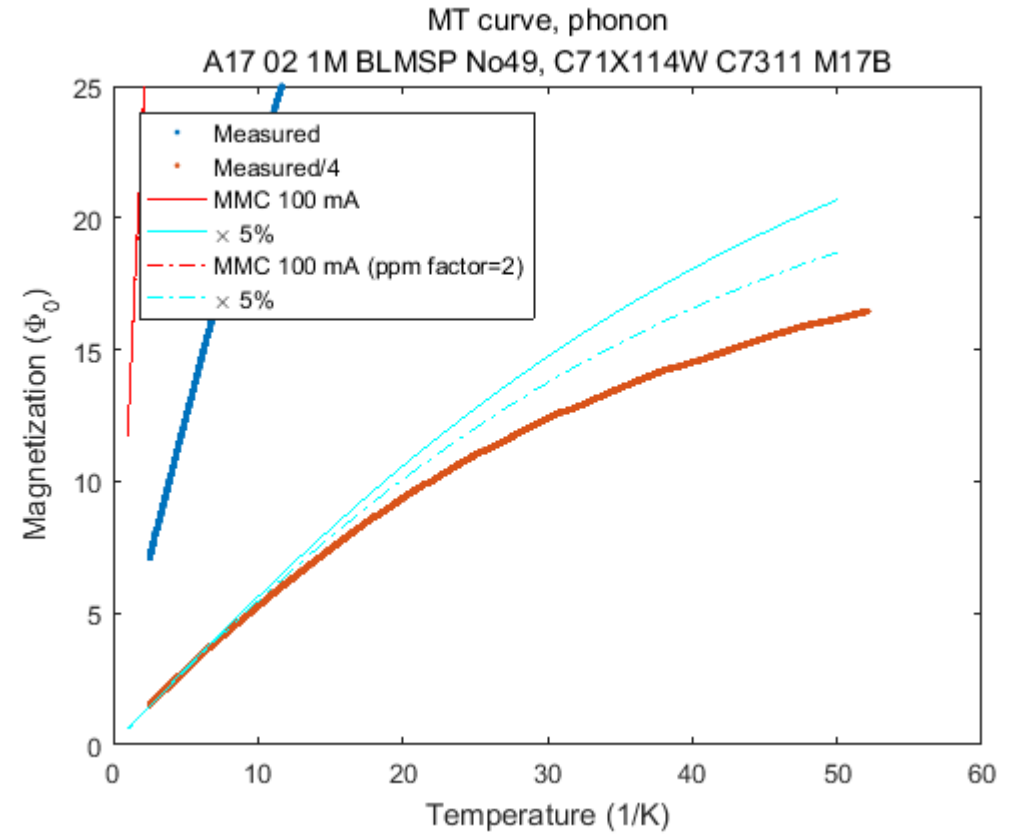
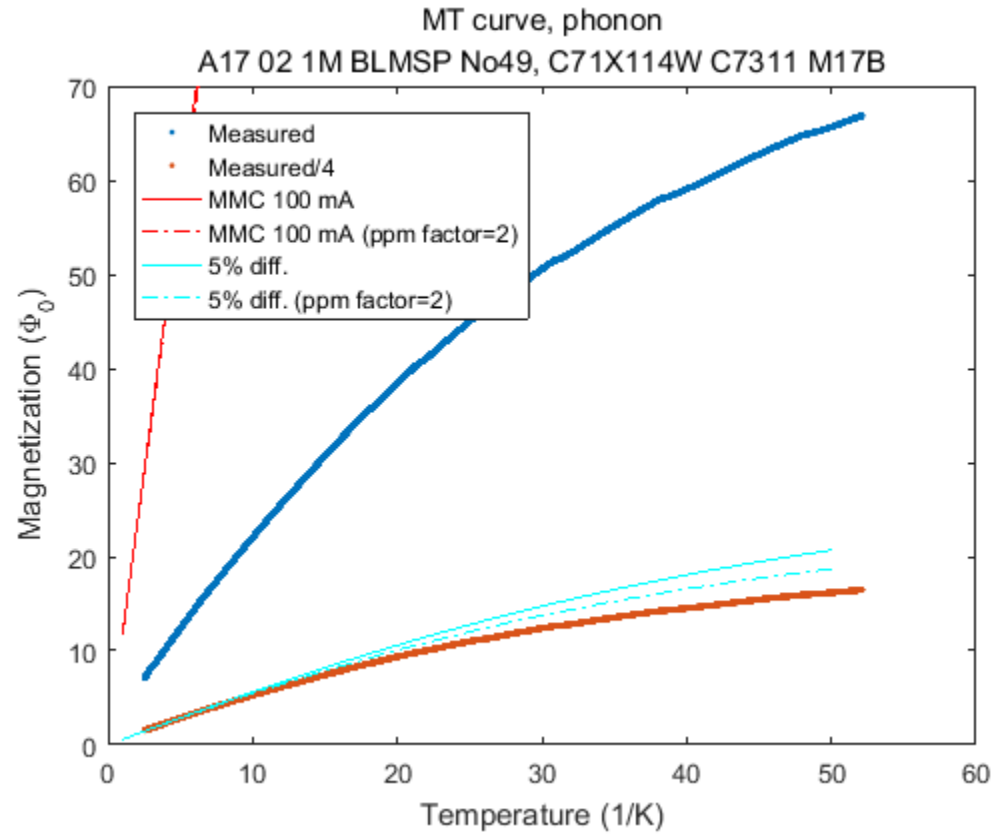


# MT curve measurement



The result is far from 5% difference of magnetization.

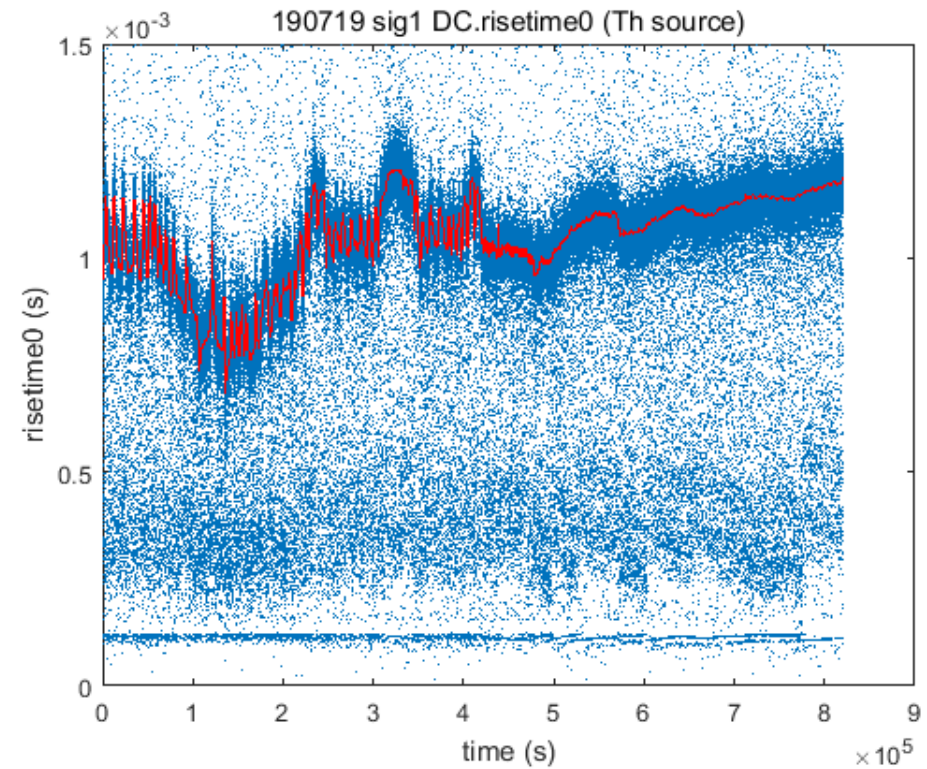
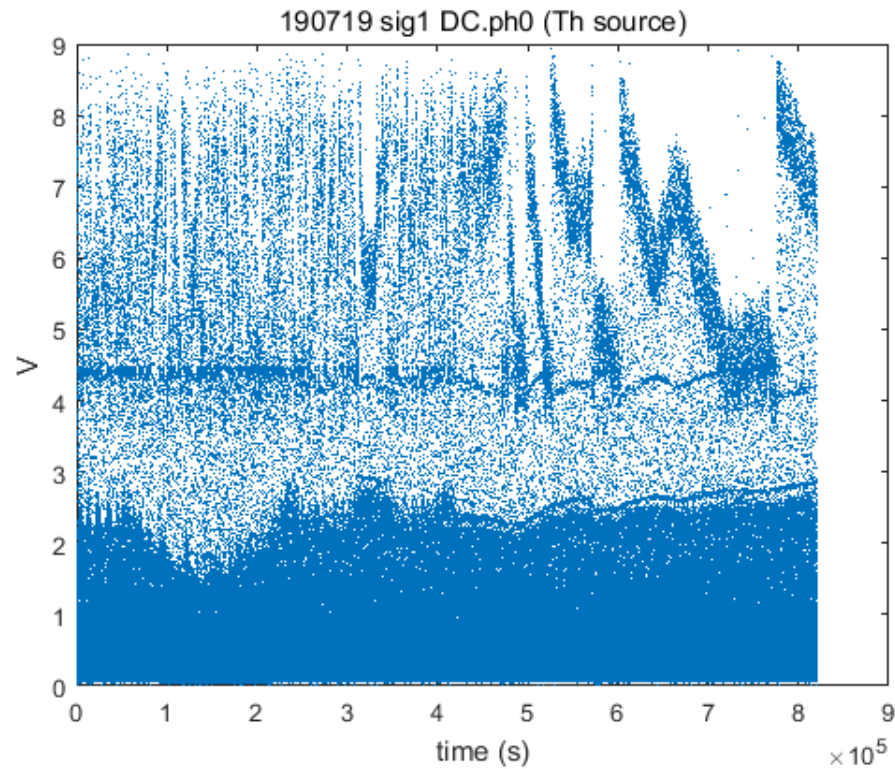
# MT curve measurement



$\frac{1}{4}$  of the result is similar to the theoretical value.  
Why?

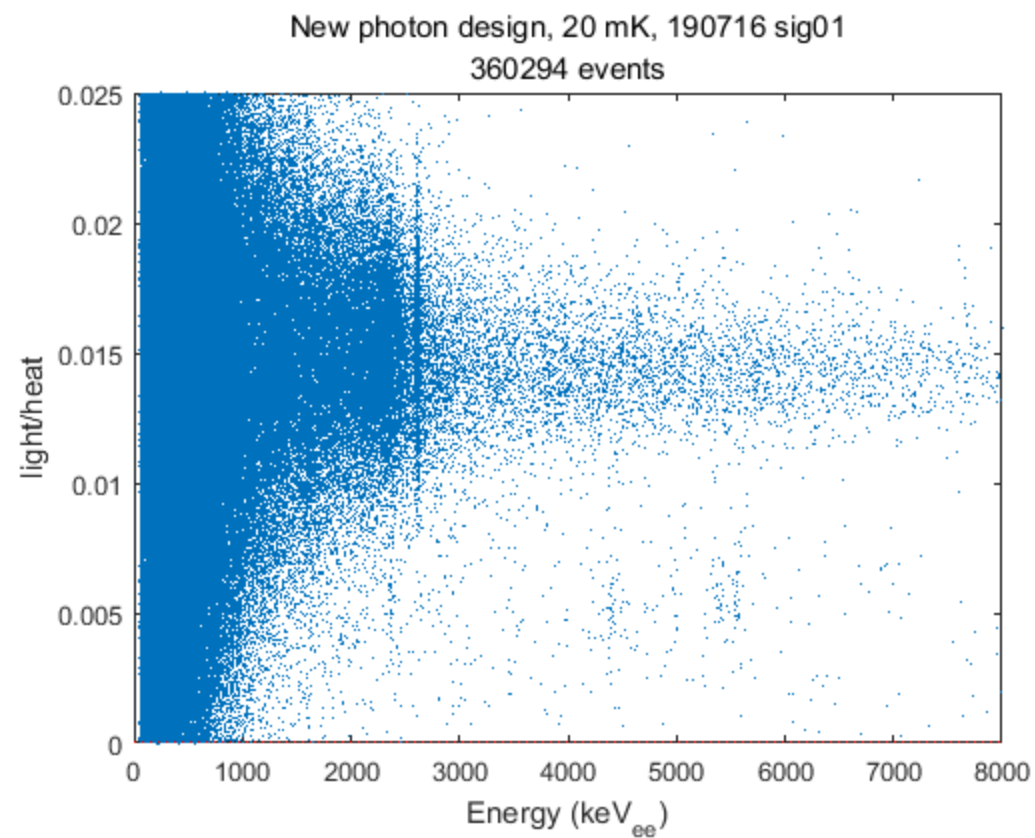
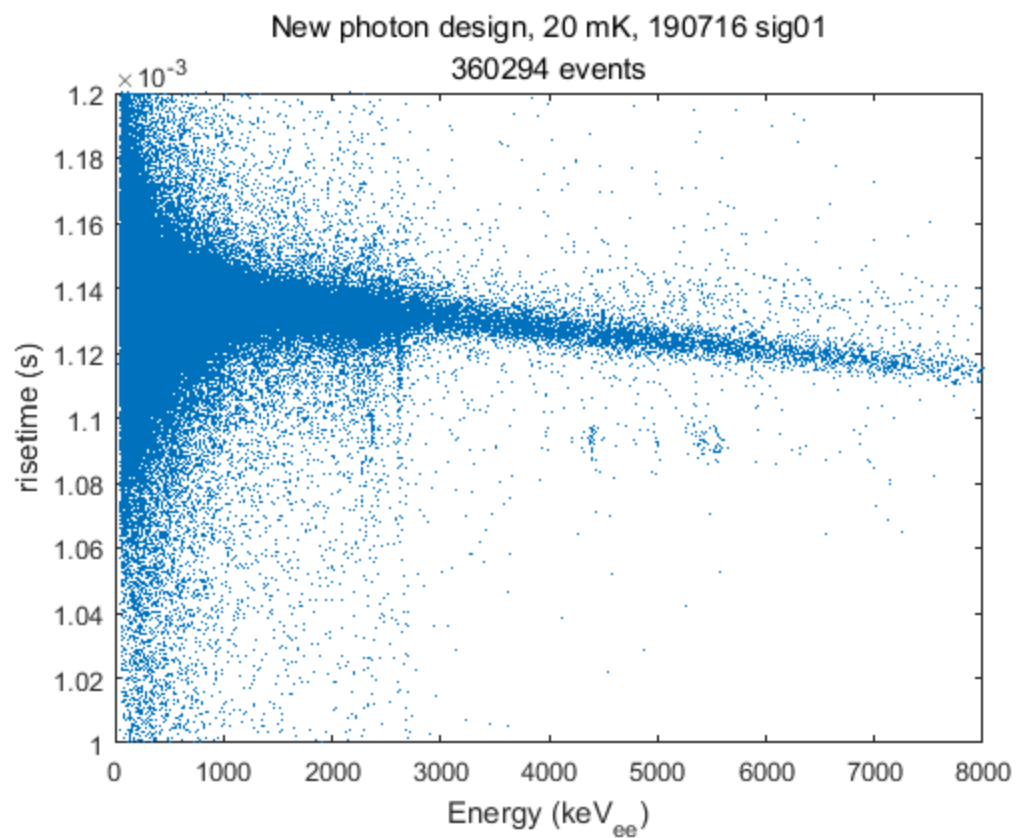
# Analysis

- New set of data
  - 190719~0729 (LTD-18)
  - Tl source
  - 870293 events

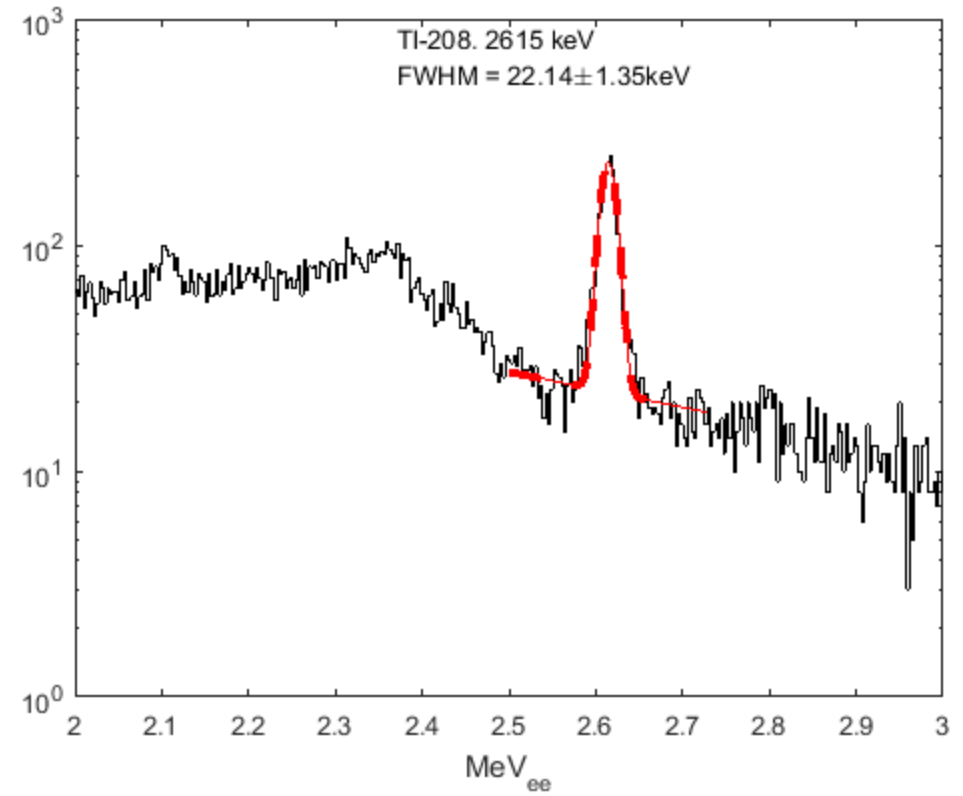
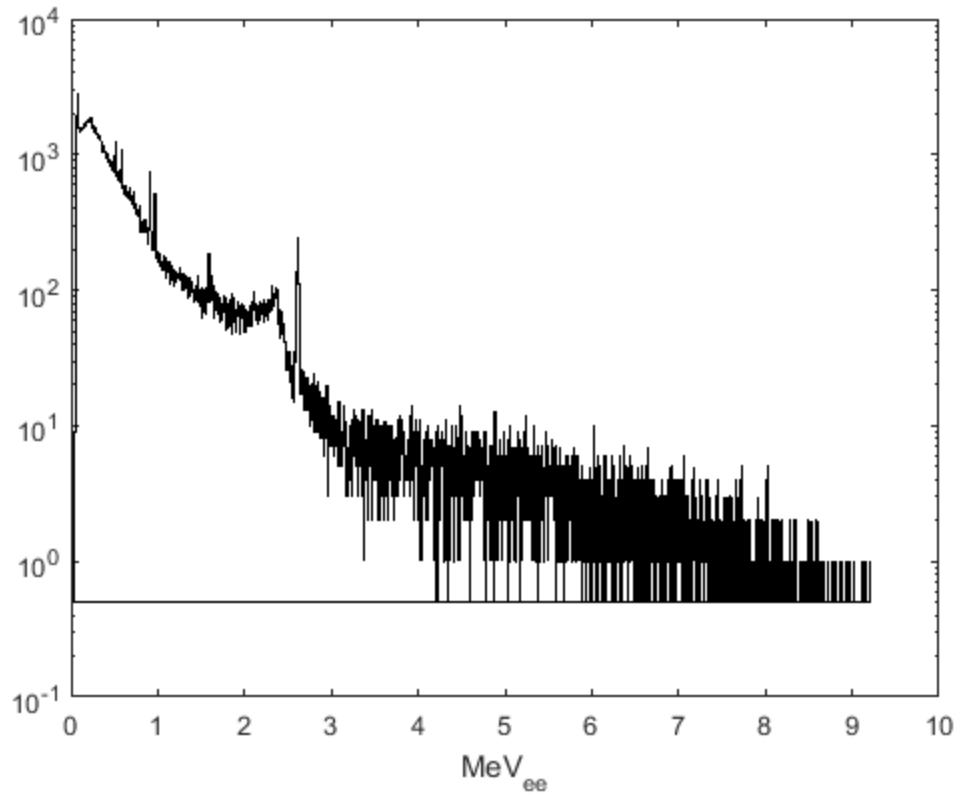




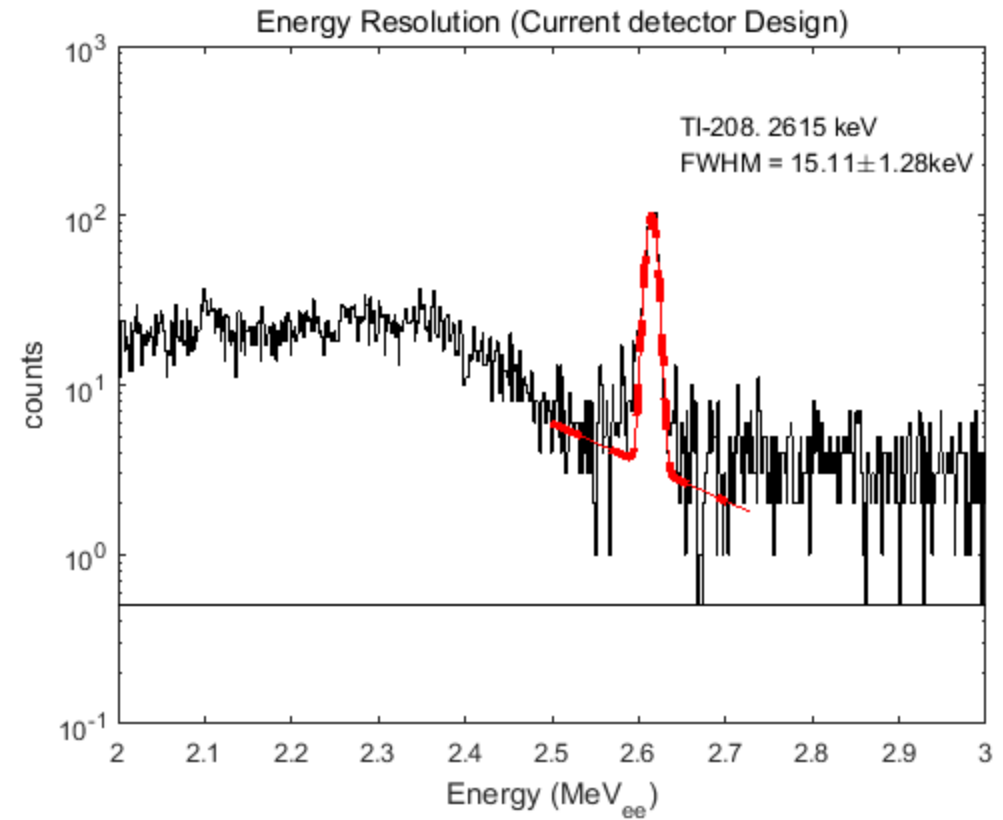
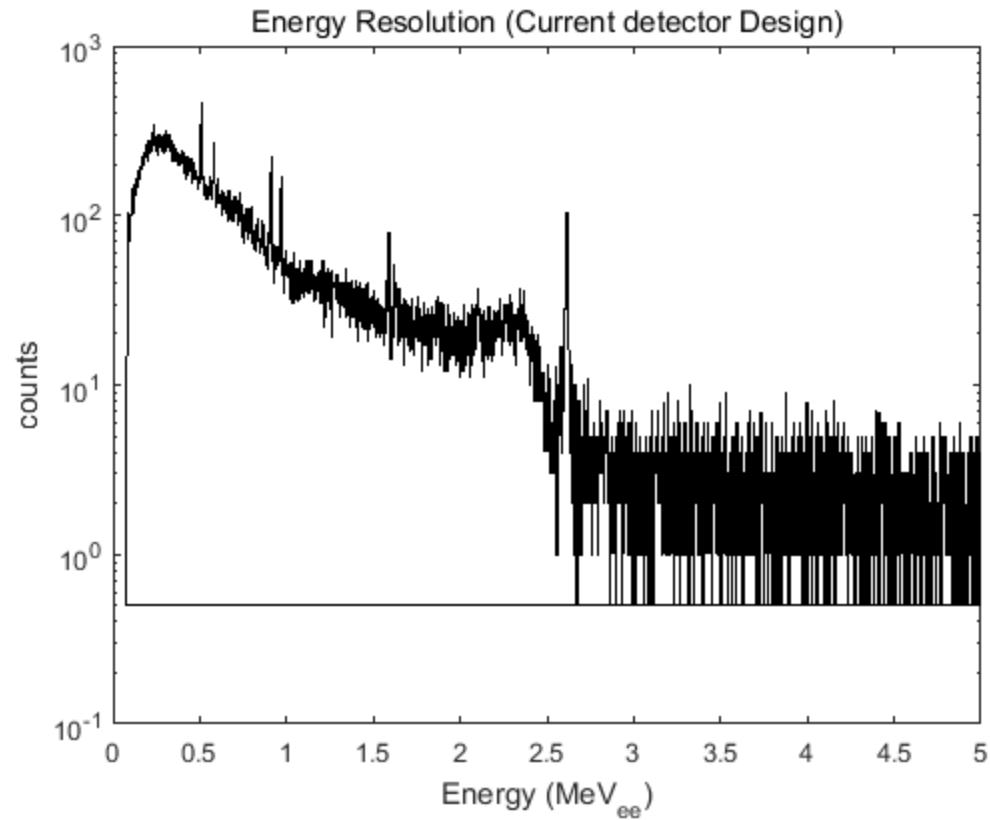
# Analysis



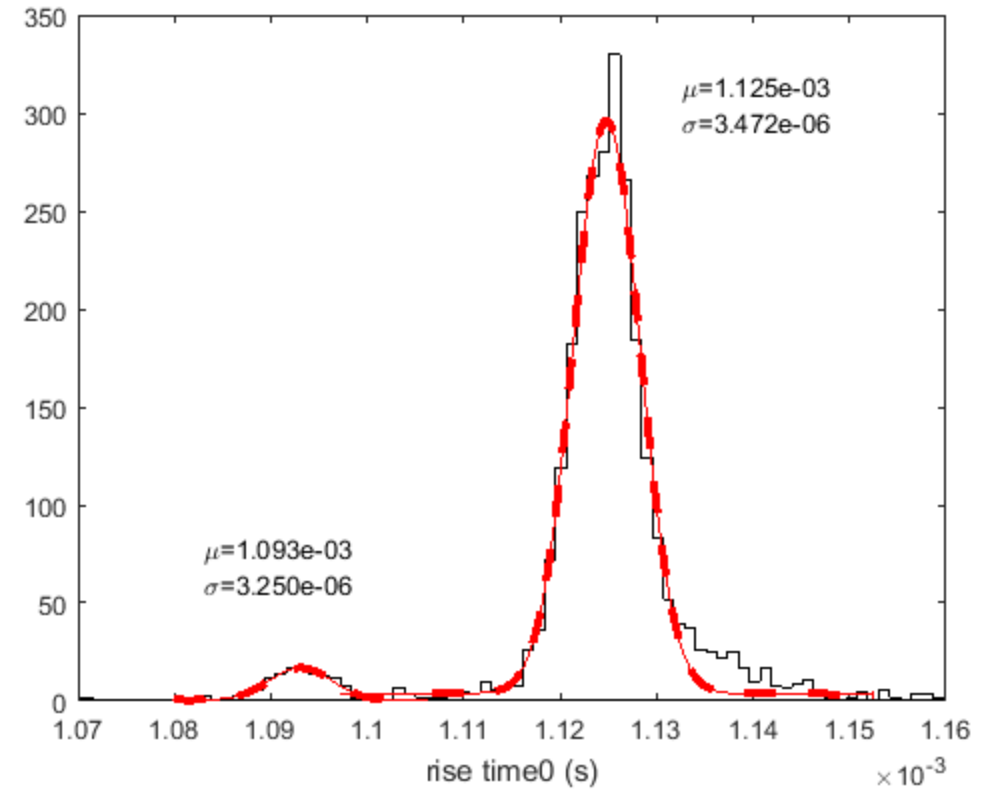
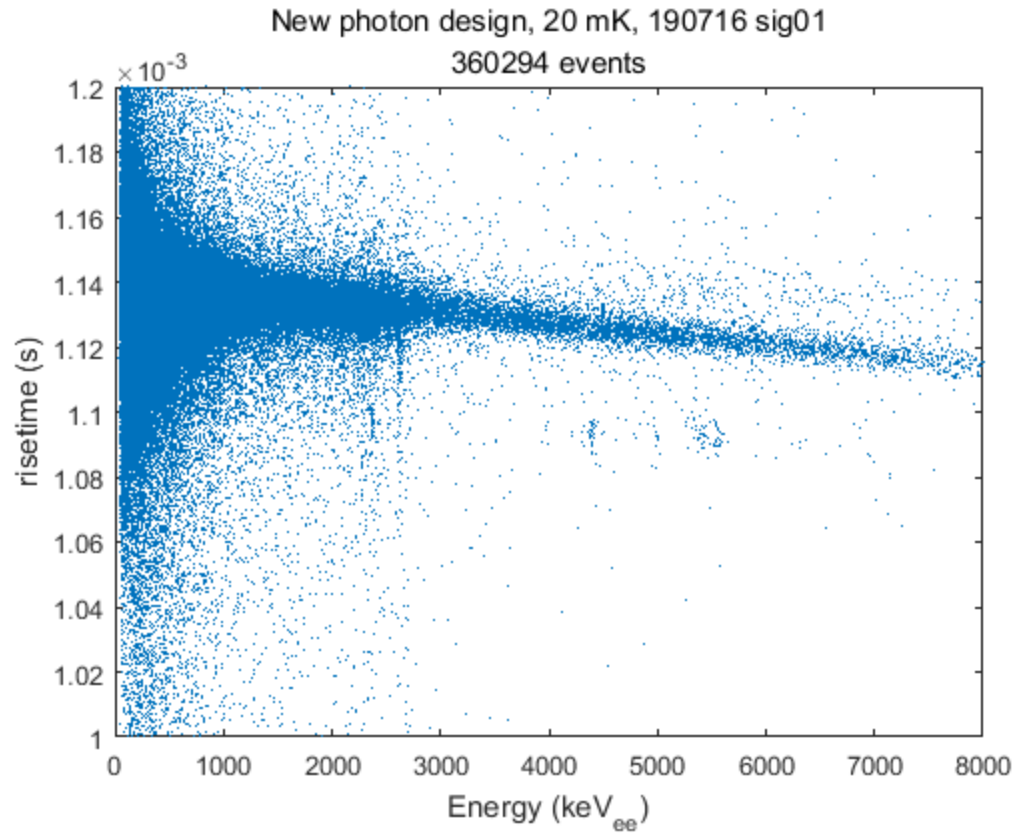
# Analysis



# Analysis

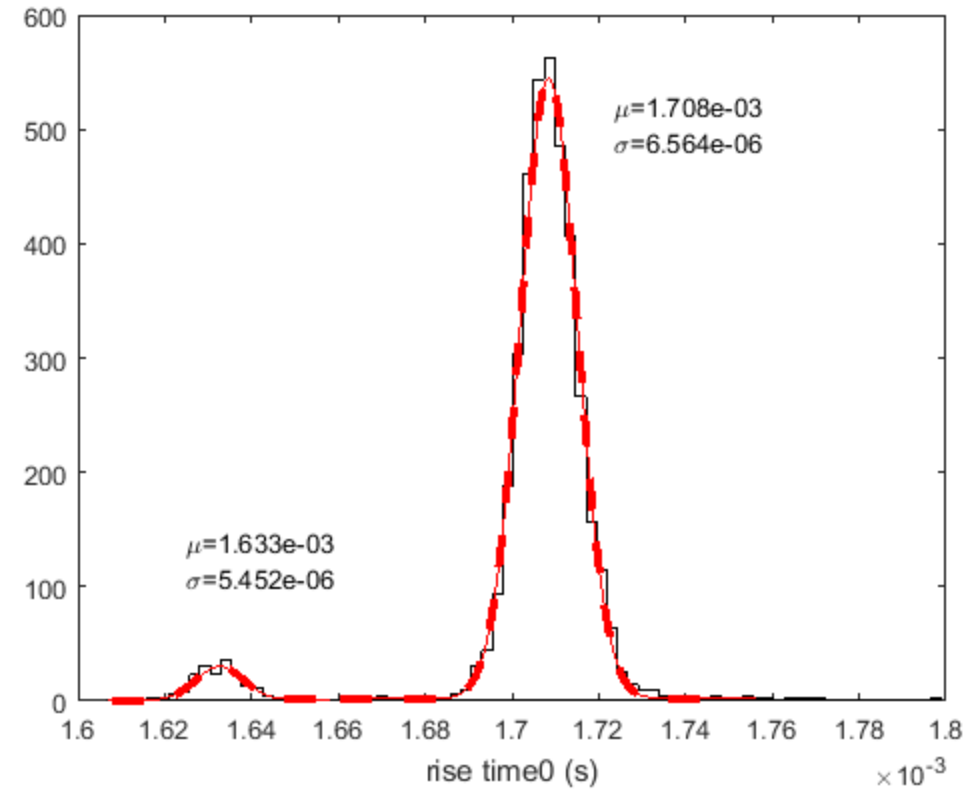
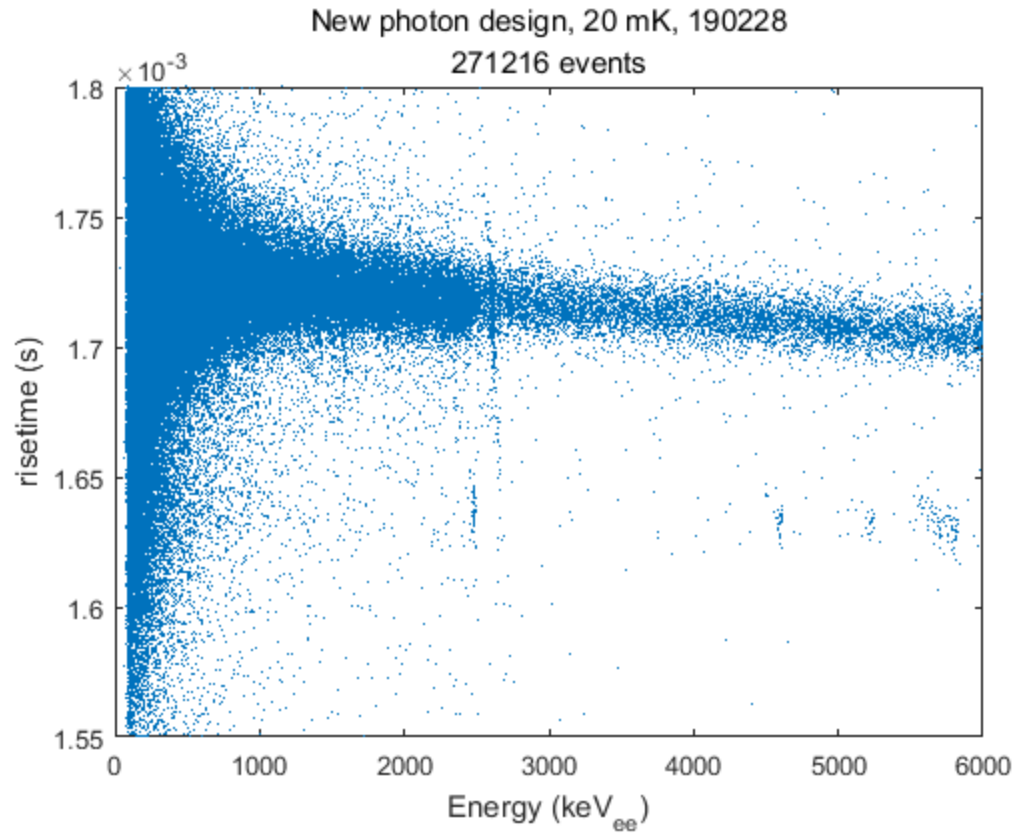


# Analysis



$$\text{Discrimination Power} = \frac{|\mu_1 - \mu_2|}{\sqrt{\sigma_1^2 + \sigma_2^2}} = 6.671$$

# Analysis



$$\text{Discrimination Power} = \frac{|\mu_1 - \mu_2|}{\sqrt{\sigma_1^2 + \sigma_2^2}} = 8.890$$

# Analysis

- Worse parameters? Need to study.....