Status report #9

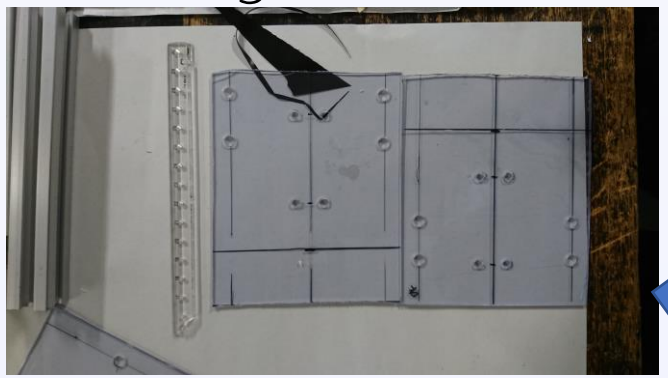
2019. 12. 24 (Tue)

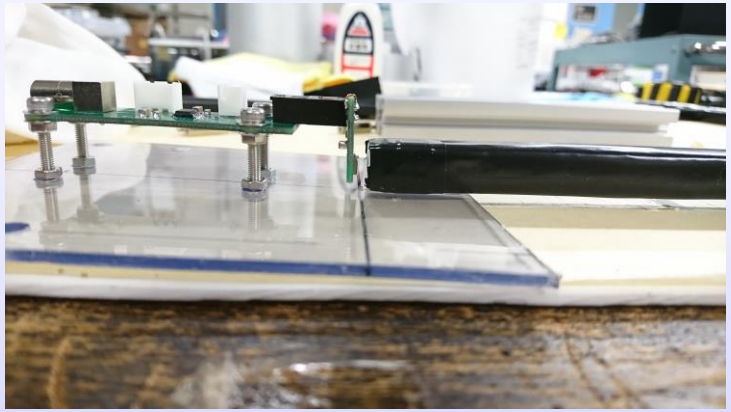
B4 T. FUJIWARA

- Beam time at ELPH
  - Preparation new ToF counter
  - Rough result

New ToF counter

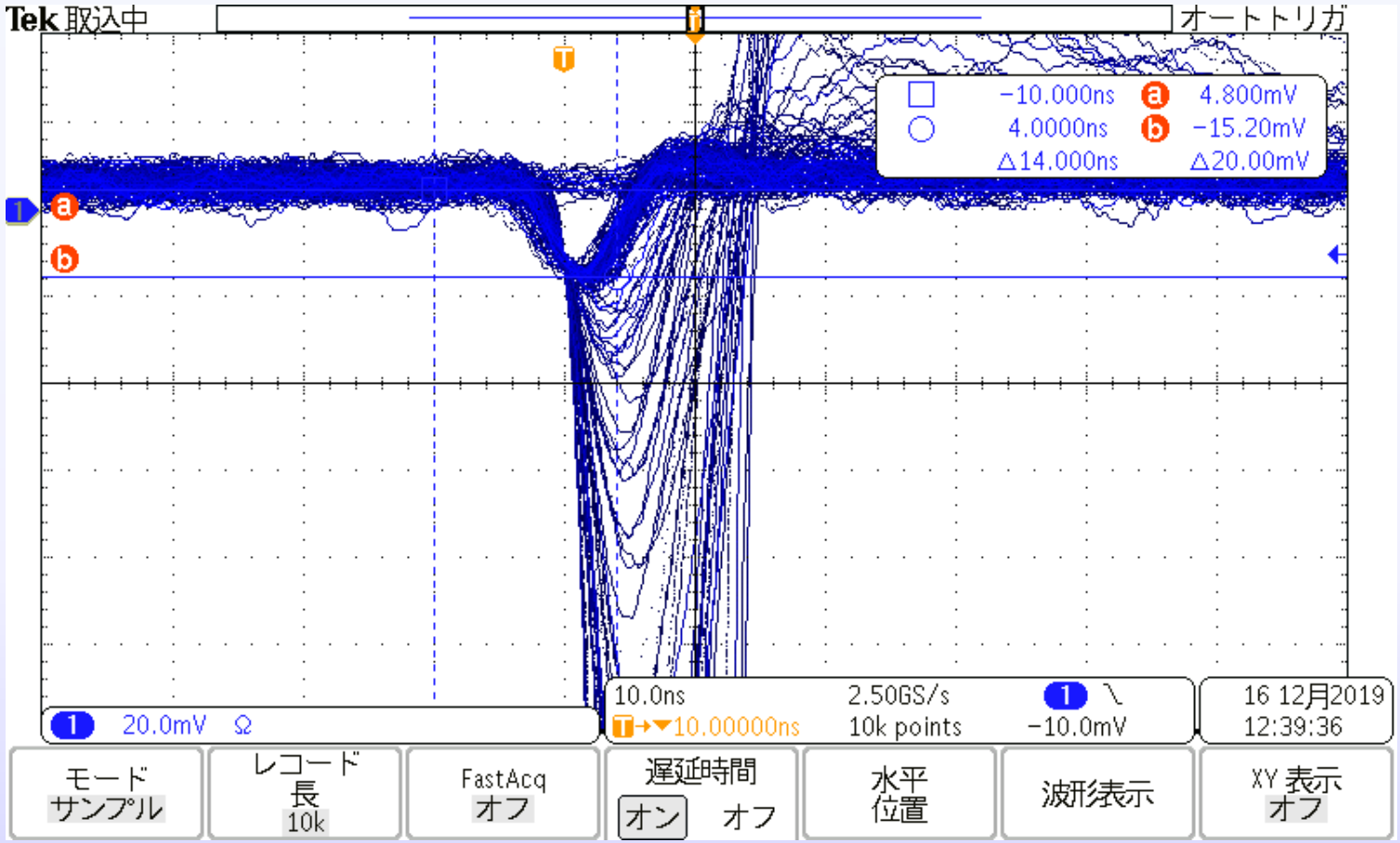
- Making the frame for setting ToF counter with acrylic board & aluminum frame





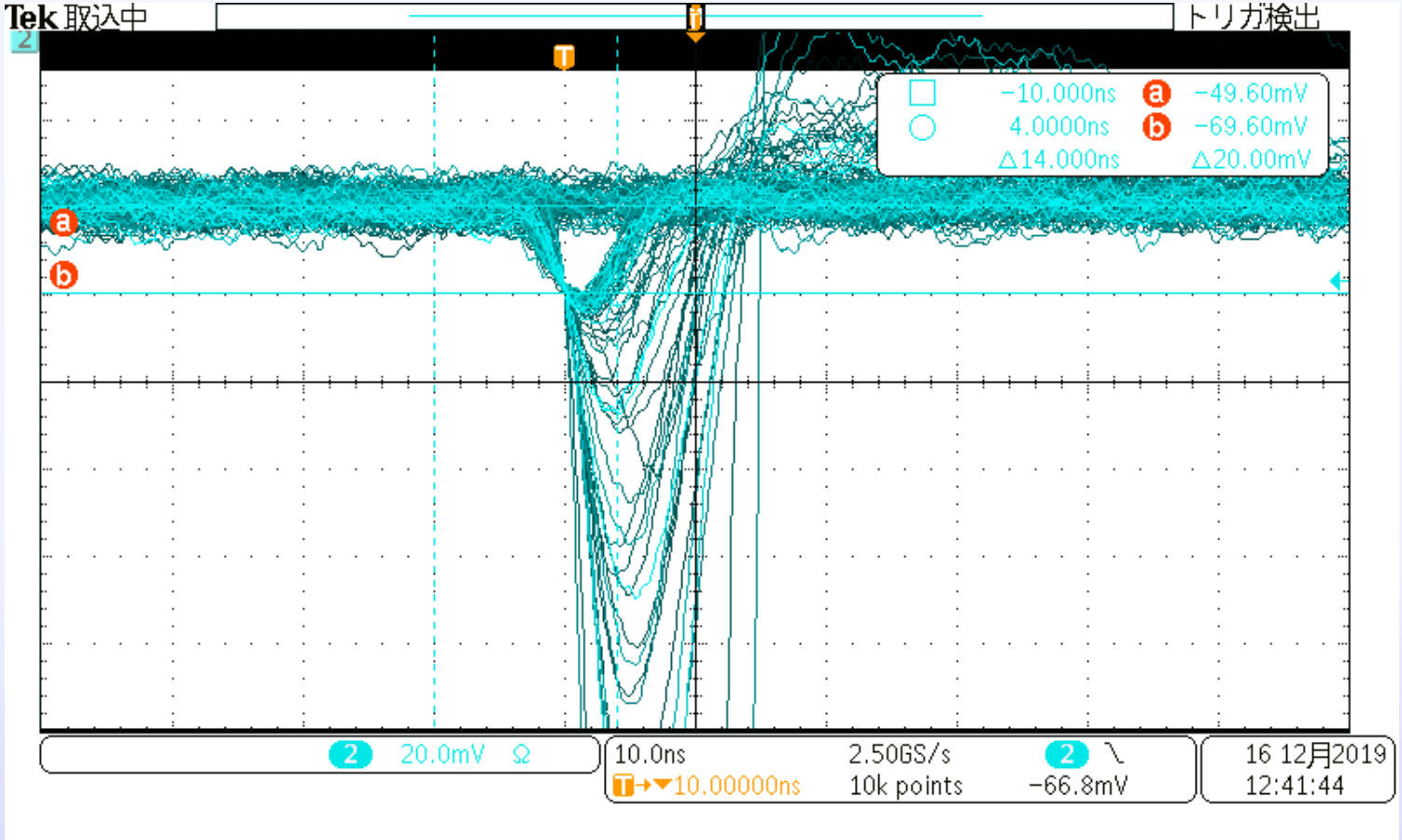
Signal of new TOF counters

- ベータ線源無, PMamp + 印加電圧: V=44.7V(= Vop + 3.0V) でのsignal
  - TOF-R R1



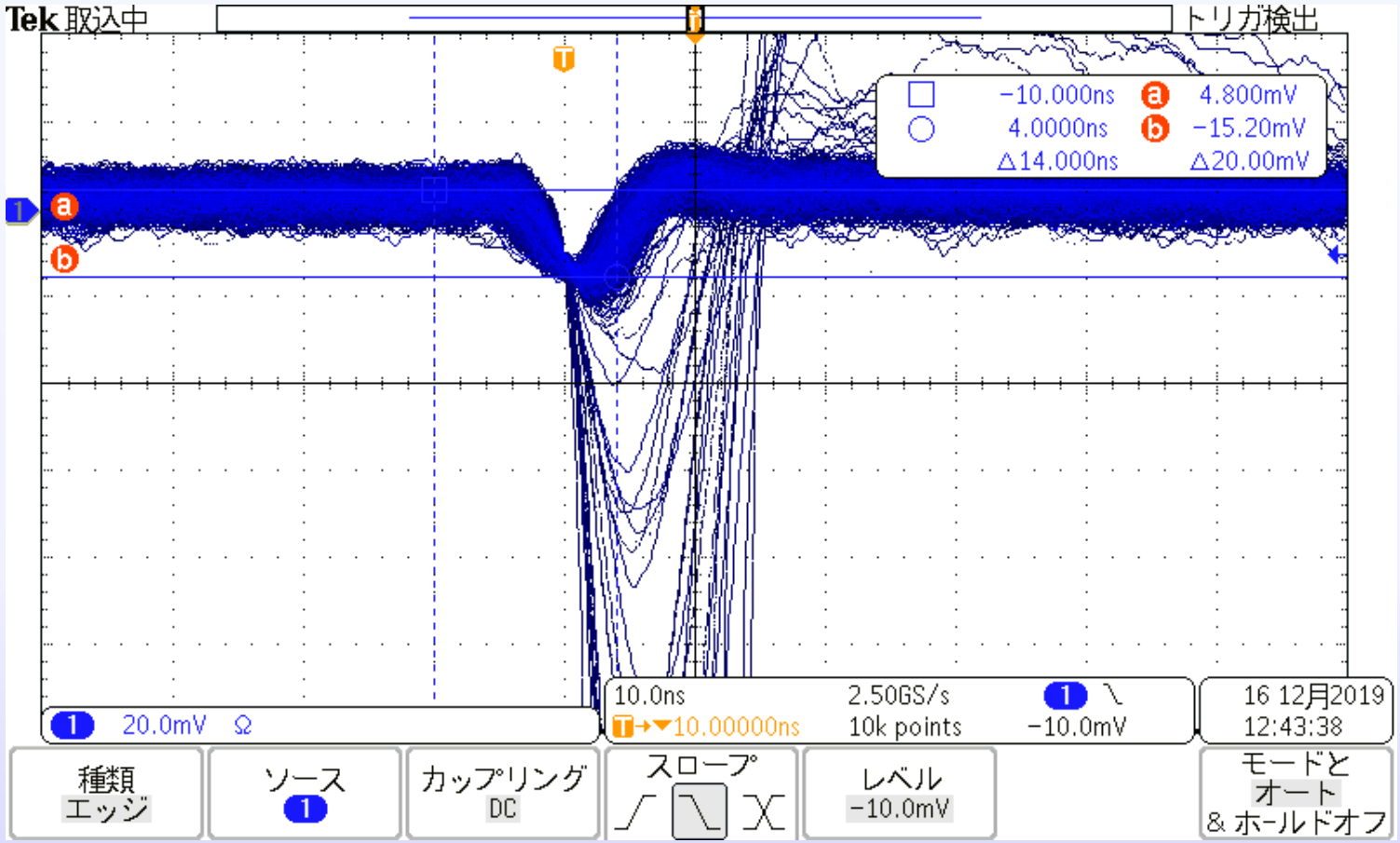
Signal of new TOF counters

- ベータ線源無, PMamp + 印加電圧: V=44.7V(= Vop + 3.0V) でのsignal
  - TOF-R R2



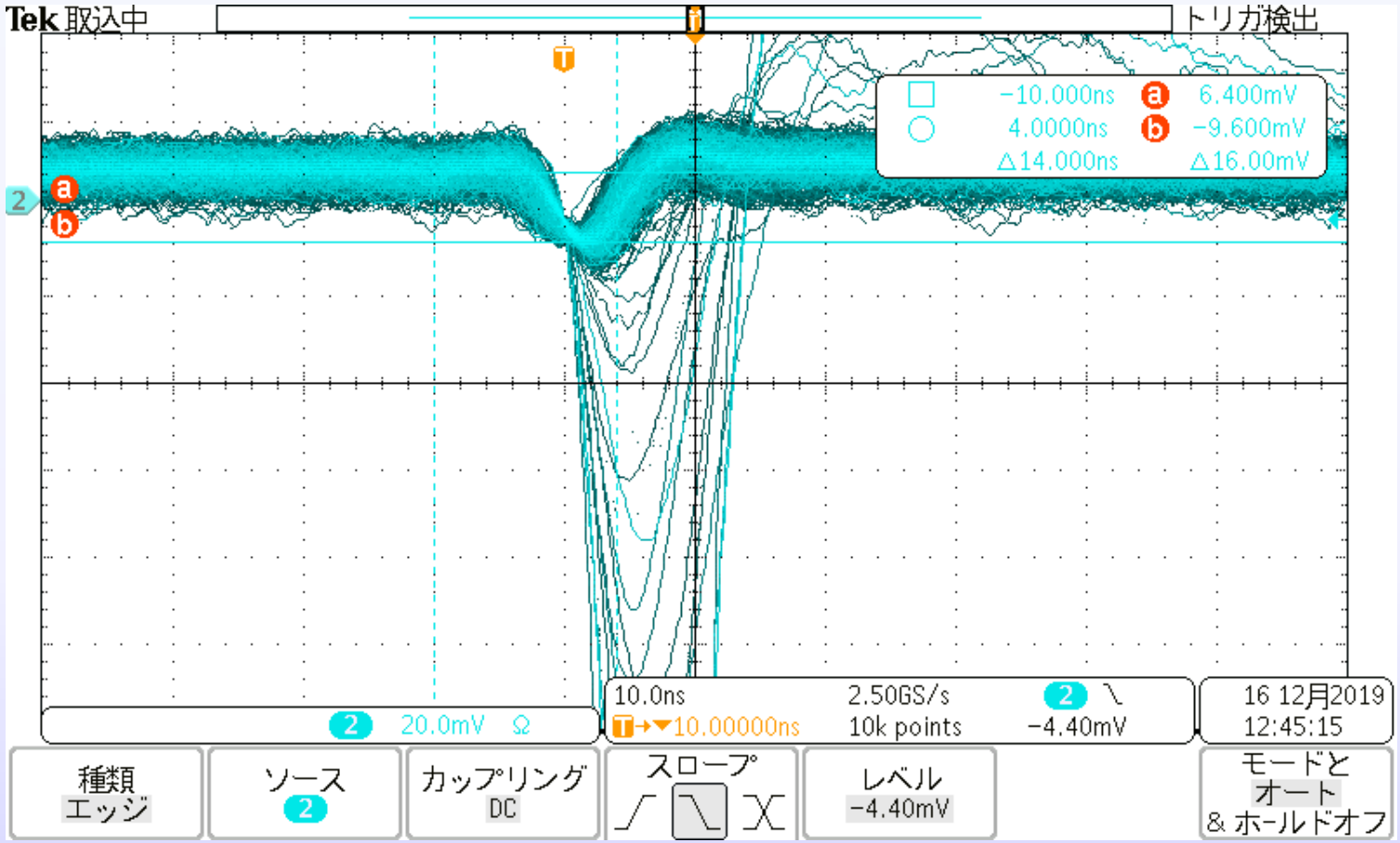
Signal of new TOF counters

- ベータ線源無, PMamp + 印加電圧: V=44.7V(= Vop + 3.0V) でのsignal
  - TOF-L L1



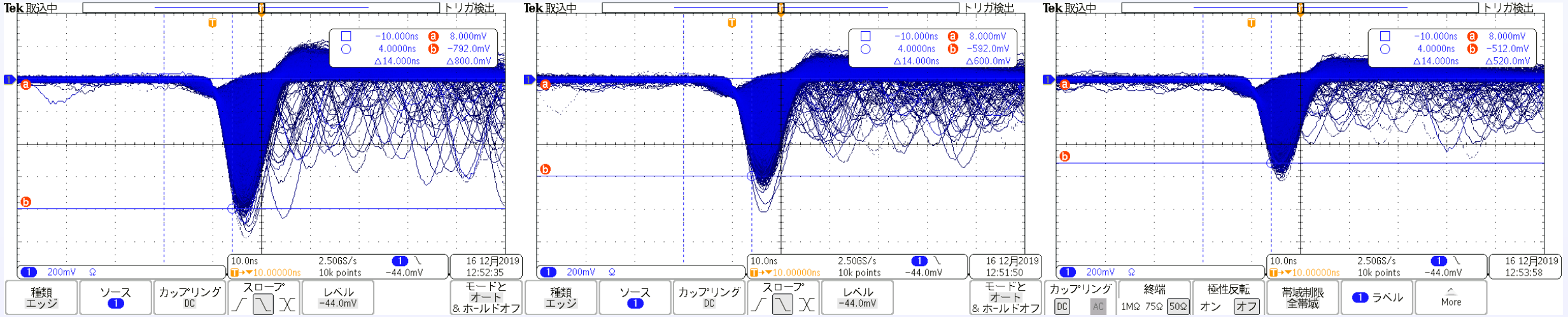
Signal of new TOF counters

- ベータ線源無, PMamp + 印加電圧: V=44.7V(= Vop + 3.0V) でのsignal
  - TOF-L L2



Signal of new TOF counters -1-

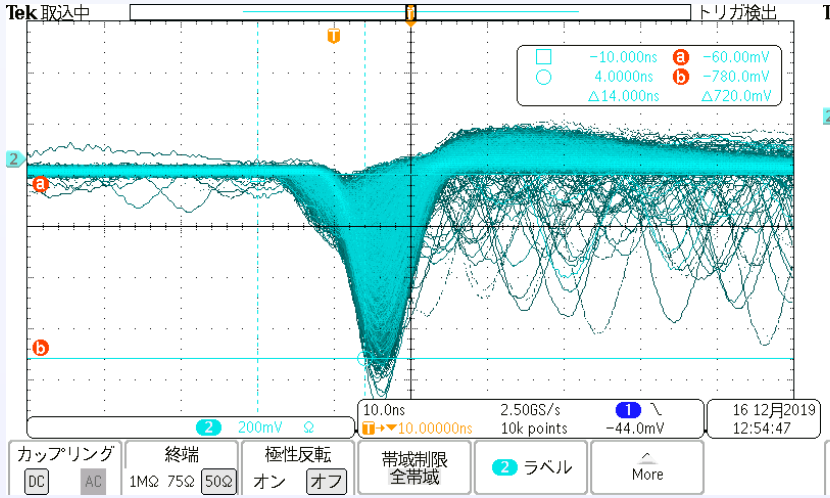
- ベータ線源有, PMamp + 印加電圧: V=44.7V(= Vop + 3.0V) でのMIP
  - TOF-R R1

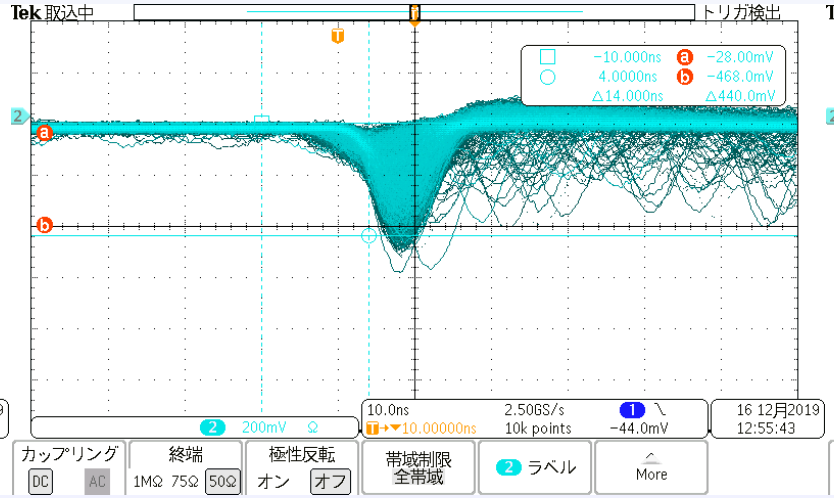


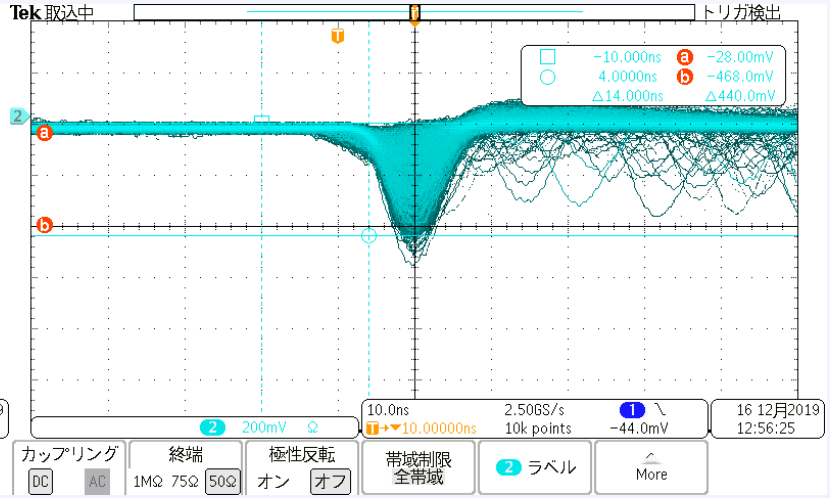
位置	pulse height [mV]
center	**600**
near	**800**
far	**500**

Signal of new TOF counters -2-

- ベータ線源有, PMamp + 印加電圧: V=44.7V(= Vop + 3.0V) でのMIP
  - TOF-R R2



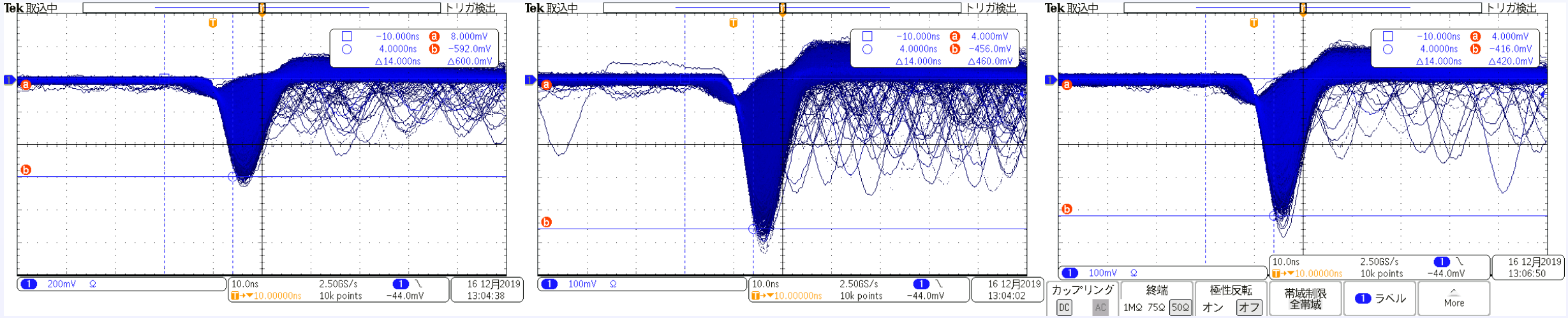




位置	pulse height [mV]
center	**450**
near	**700**
far	**400**

Signal of new TOF counters -3-

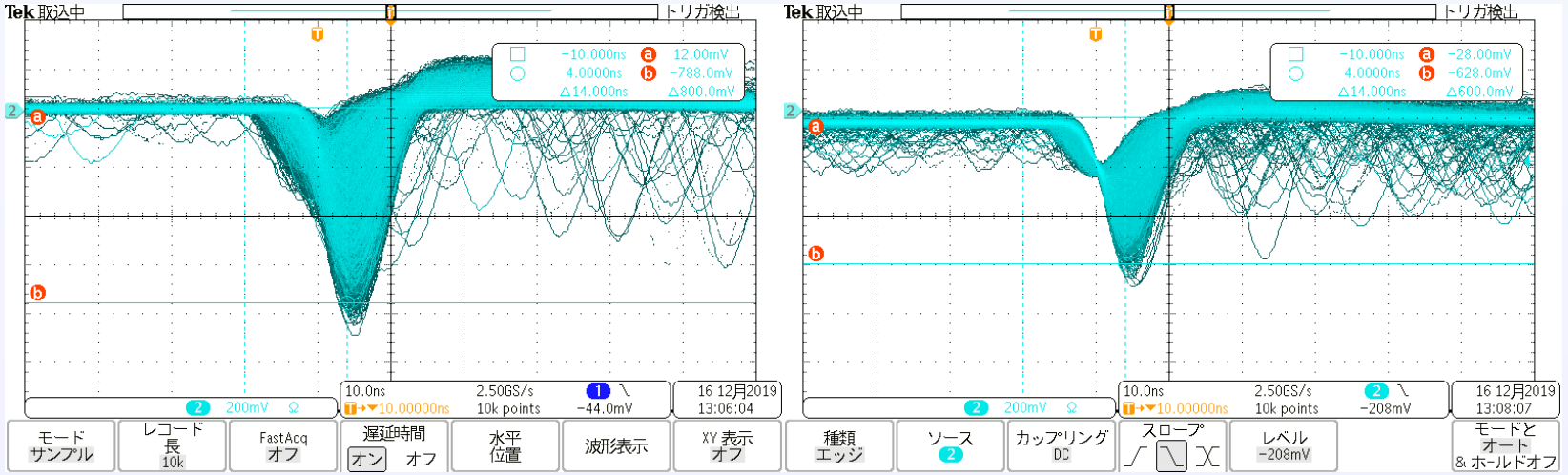
- ベータ線源有, PMamp + 印加電圧: V=44.7V(= Vop + 3.0V) でのMIP
  - TOF-L L1



位置	pulse height [mV]
center	**450**
near	**600**
far	**400**

Signal of new TOF counters -4-

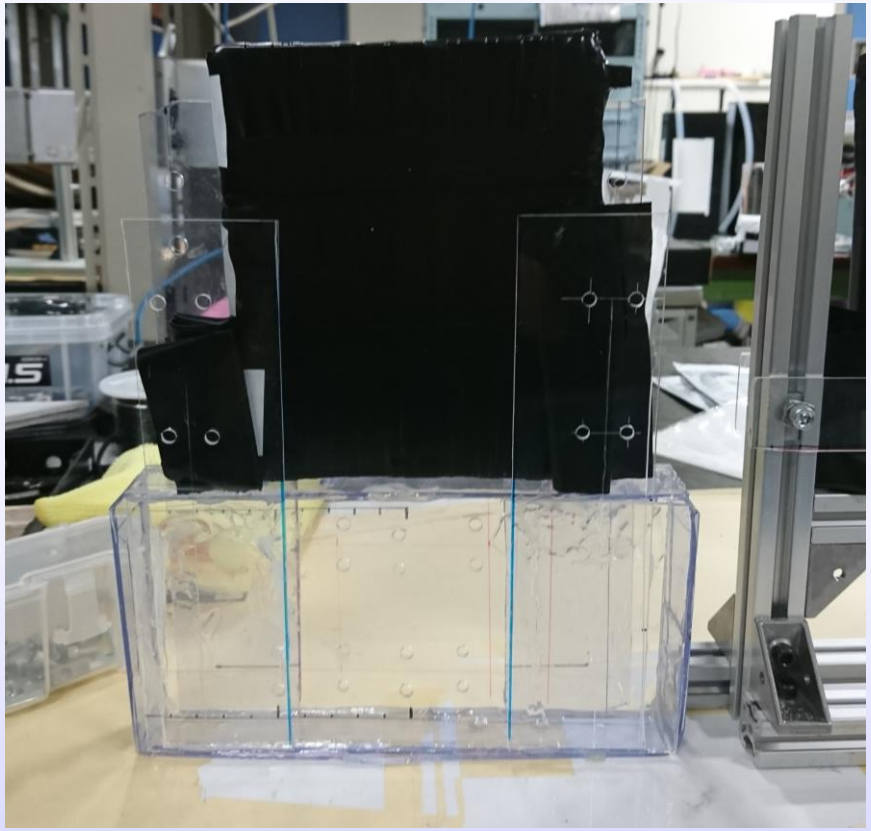
- ベータ線源有, PMamp + 印加電圧: V=44.7V(= Vop + 3.0V) でのMIP
  - TOF-L L2

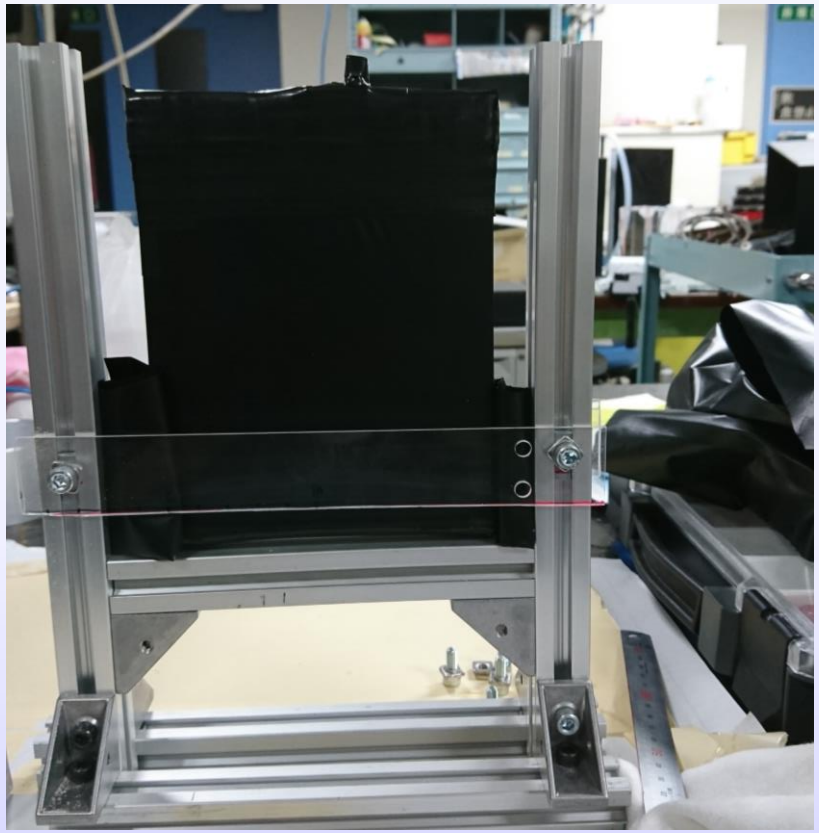


位置	pulse height [mV]
center	**600**
near	**800**
far	**500**

Making T1s & T2 frame

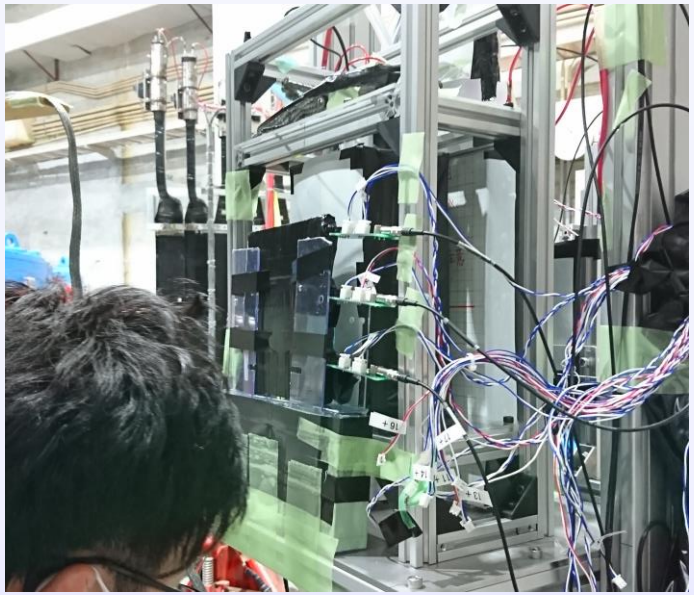
- T1 : acrylic board, use only ~3cm length direction of beam
- T2: aluminum frame ~5cm

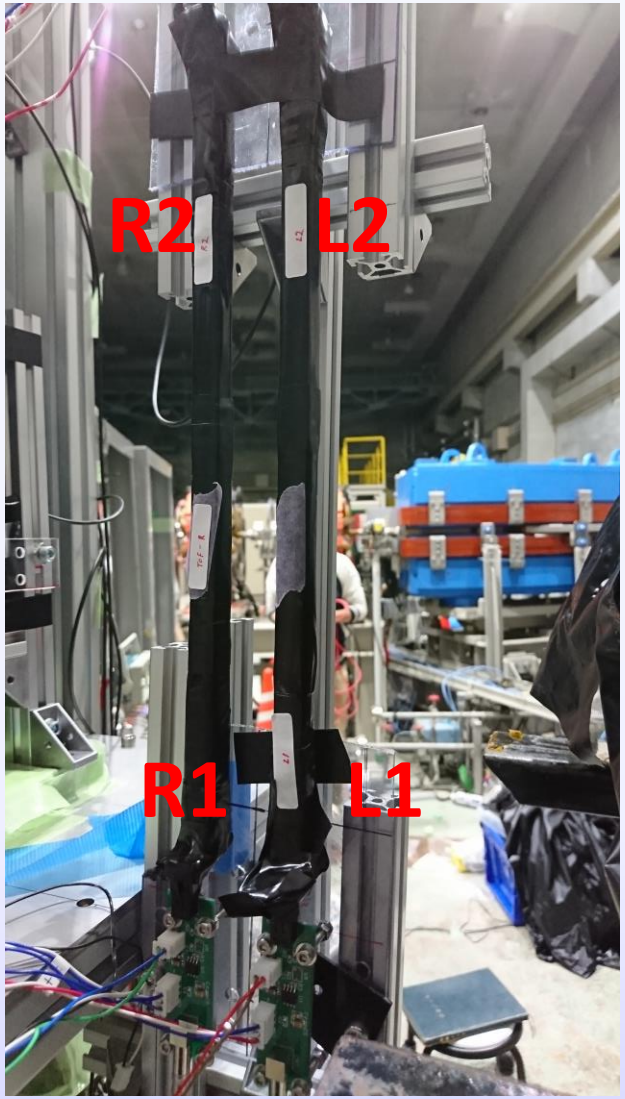




At ELPH

- Setting on the frame with other detectors





Taking data

- Study bias voltage and threshold dependence
- bias voltage: 41.7, 43.2, 43.7, 44.7, 45.7, 46.2, 47.7, 49.2, (49.7, 50.7, 51.7, 52.7, 53.7, 55.2, 56.7)
- threshold: about~-30mV, ~-50mV(initial + 20), ~-100mV(initial + 70), ~-150mV(initial + 120)
  - Initial value [mV]: R1 : -31.4, R2: -25.0, L1: -24.5, L2: -34.7

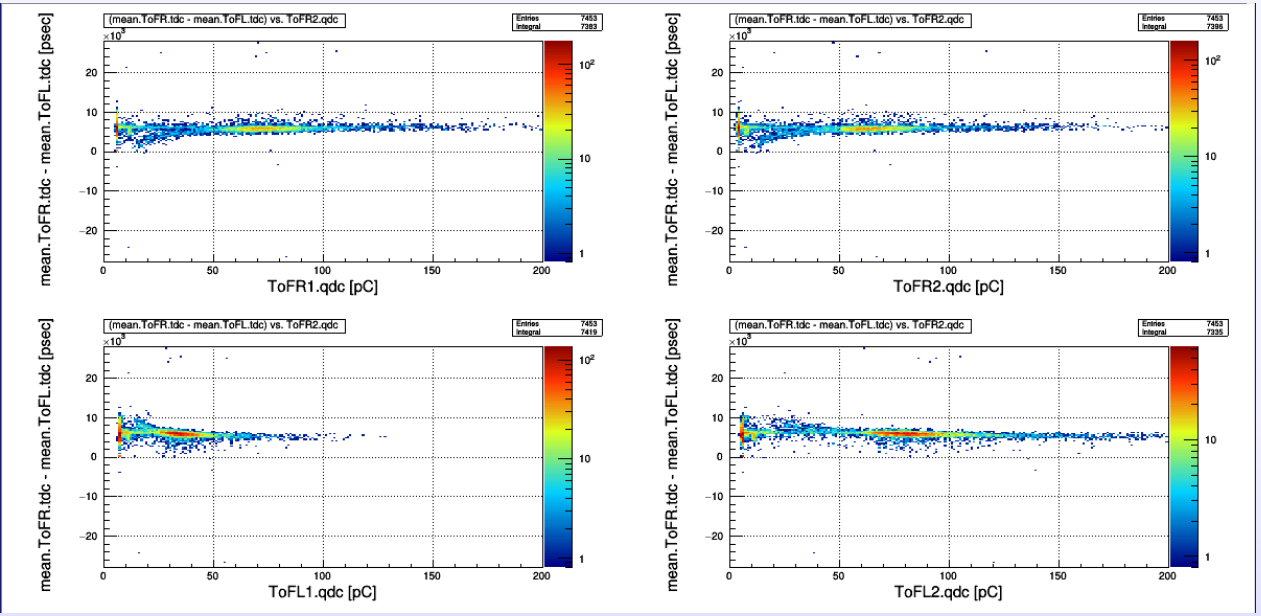
- Total : 45 points taking

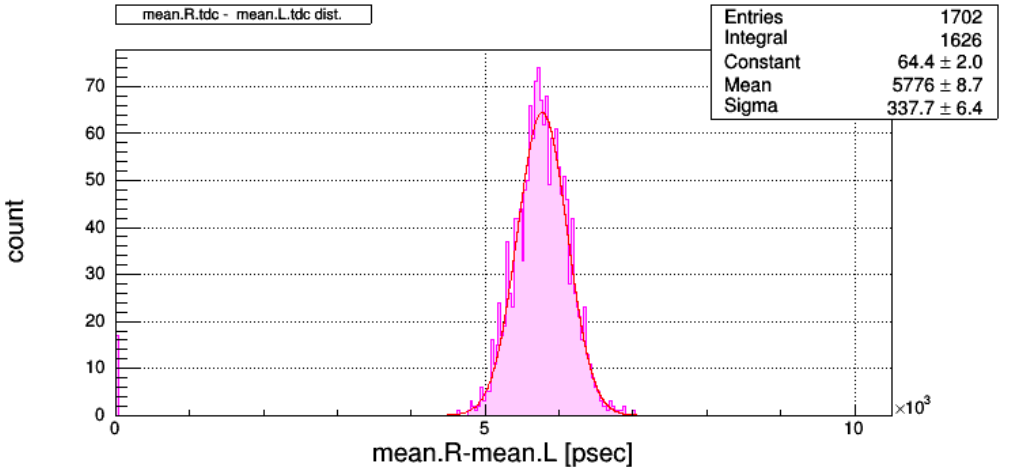
Rough result

- Sorry but I have only rough result…

(forget copying figure from ELPH machine to my pc…)

For example: run0123(V=44.7, threshold ~-50mV)





run0123

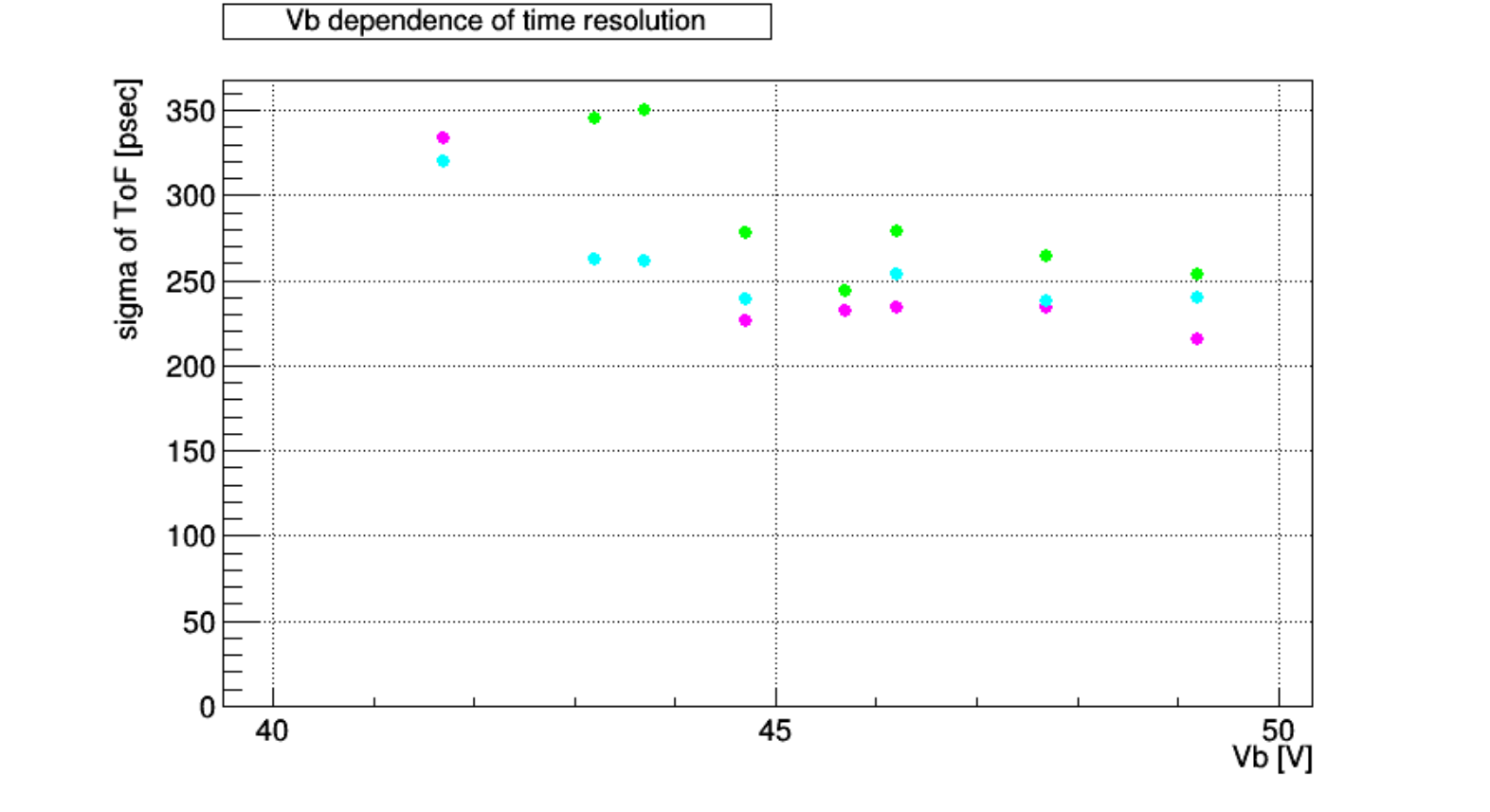
V_b = 44.7

cut condition [ch]: 650 <R1.qdc< 810, 280 <L1.qdc< 400

$\sigma_{detector}$ = 239

Rough result

- HV dependence



To Do next

- Data analysis → より詳細に…(time walk correction, event selection)
- (Preparation for hyper nuclear seminar)

皆様，良いお年を…
Have a good year...