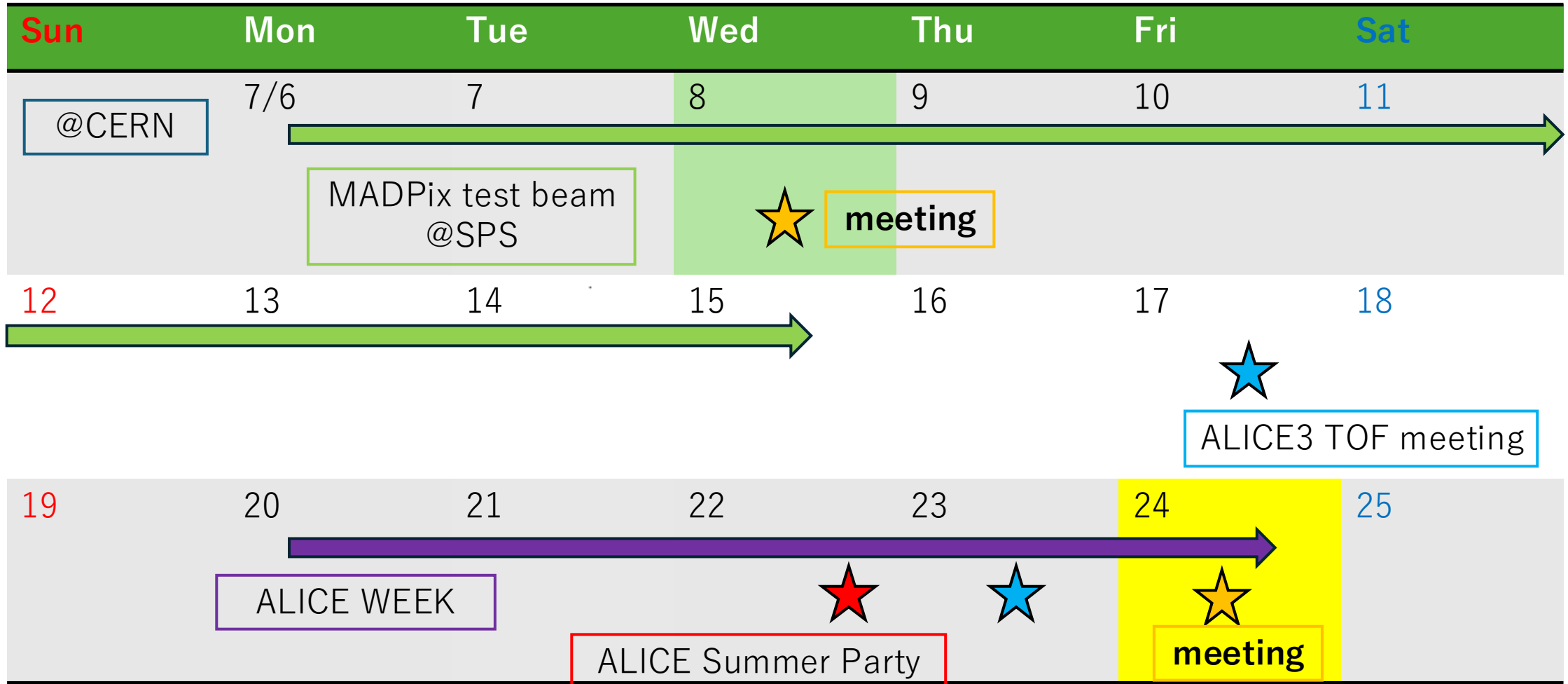




meeting 7/24

Hiroki Iizuka

Calendar



Test beam @SPS



7/6~7/15

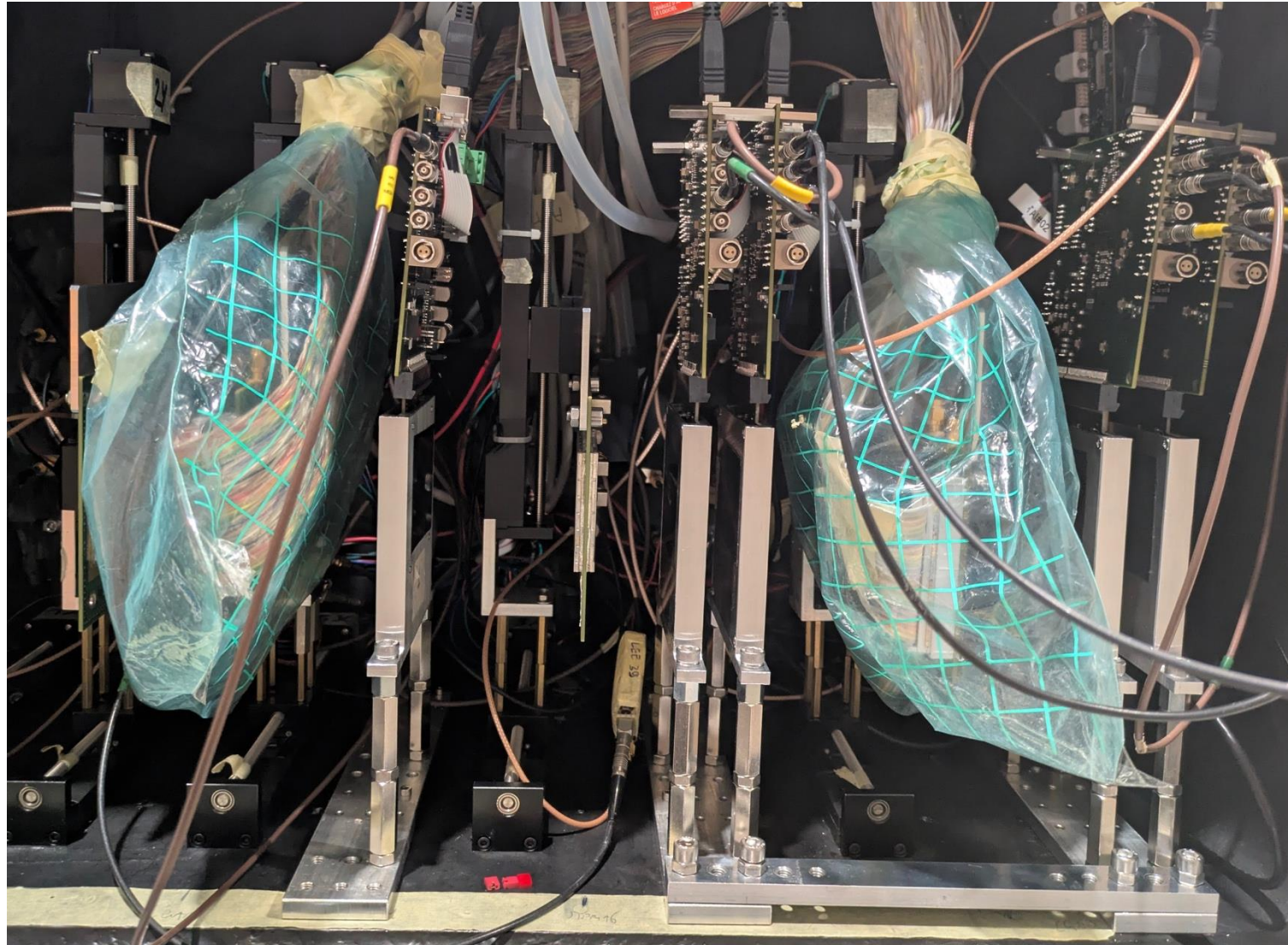
- DUT: MADPixs of 15 μ m/24 μ m thickness



Test beam @SPS



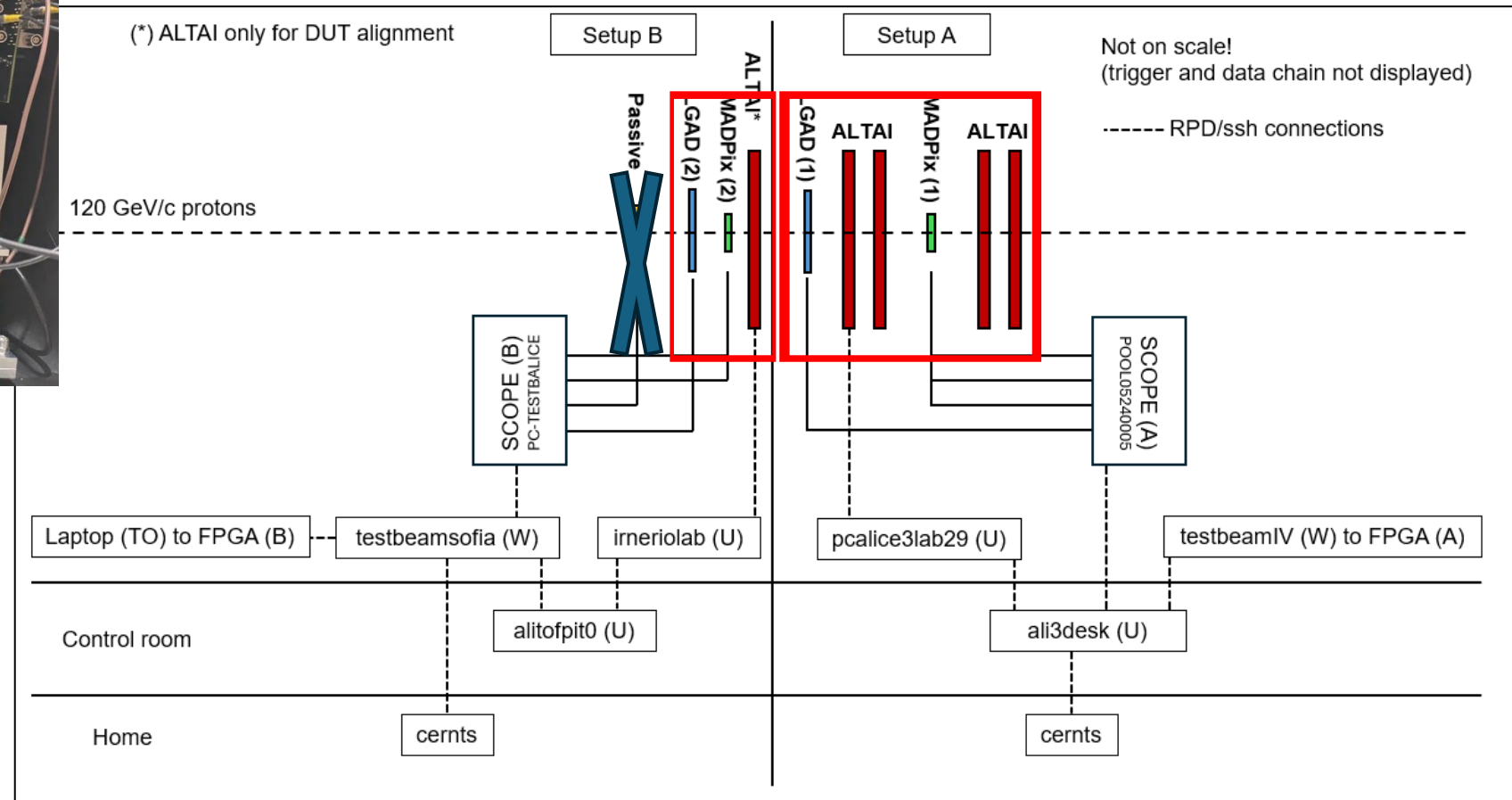
Setup



Test beam @SPS



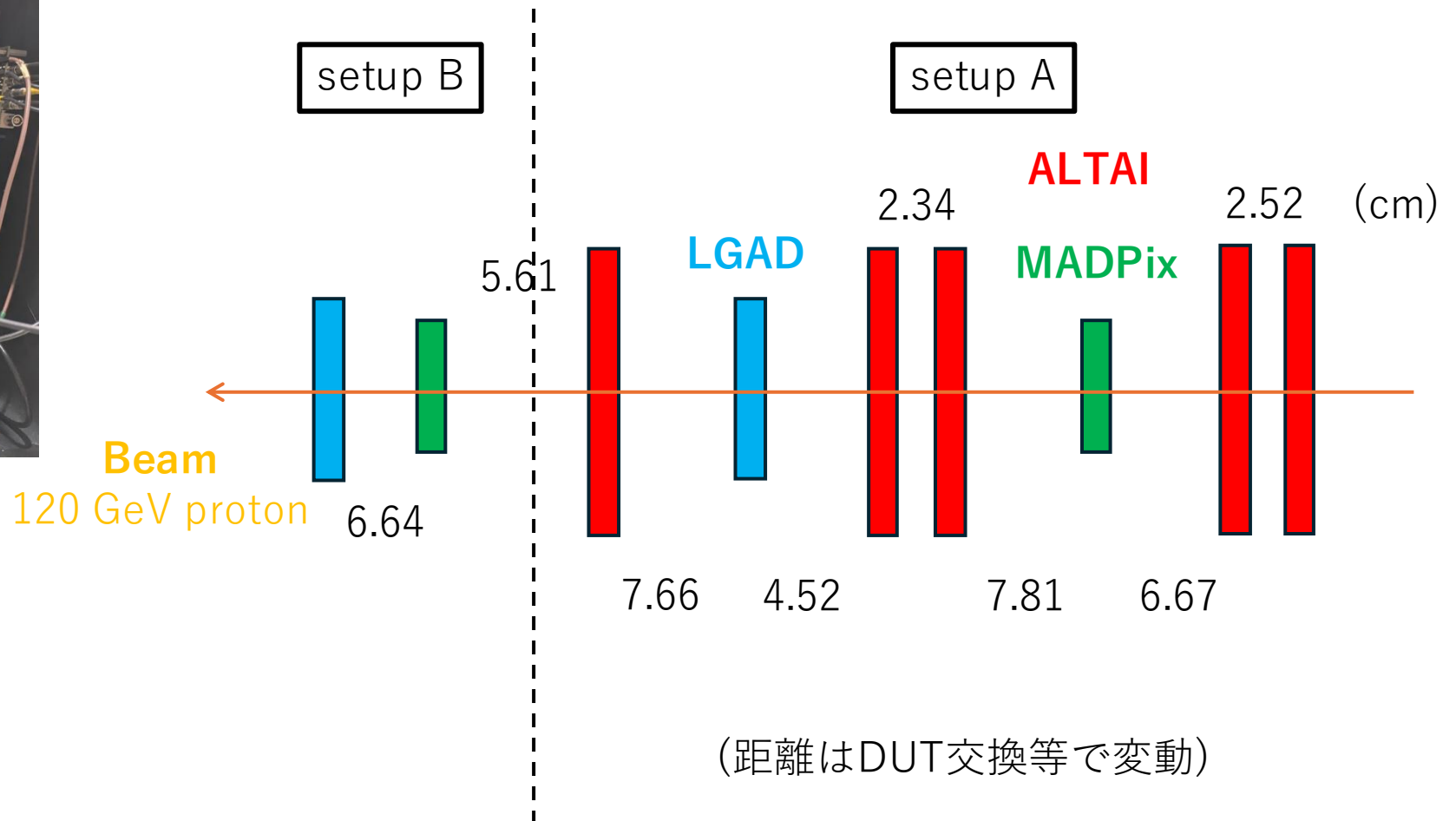
Setup



Test beam @SPS

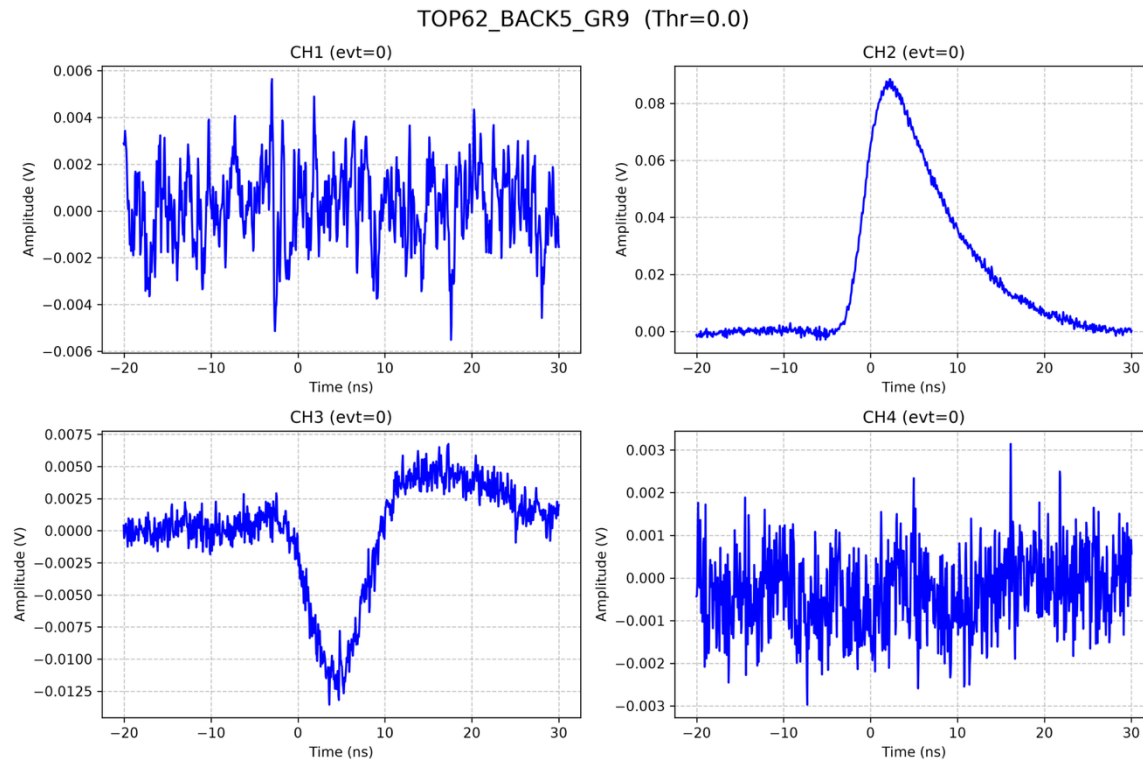


Setup



Test beam analysis

Setup B (telescope無し: timingのみ) の解析を担当



現在は、setup AとBで、同タイプセンサーの結果が同様かcheck中
(詳細は backup: ただし全て “ongoing”)

Outlook



- CERN: ~8/17 (8/18帰国)
 - しばらく解析
- レーザーテストベンチ関連:
 - 出力信号は見えるがモニター信号が見えない問題：
モニター用ファイバーのカプラ(分岐の結合部分)に損傷があったらしい
 - メーカーに交換依頼 → (なぜか) 有償交換
 - 郡司さんが対応してくれるはず？
 - 帰国後またやる
 - 次はPC制御化



Backup

Comparison of 15p sensors

TB11

- $V_{\text{top}} = \{49, 51\} \text{ V}$
- $V_{\text{back}} = 0 \text{ V}$
- $T = 20 \text{ degree}$
- $V_{\text{GR}} = \{8, 9\} \text{ V}$

TB13

- $V_{\text{top}} = \{34, 36, 38, 40, 42, 43, 44, 46, 48, 50, 51\} \text{ V}$
- $V_{\text{back}} = 0 \text{ V}$
- $T = \{0, 20\} \text{ degree}$
- $V_{\text{GR}} = 8 \text{ V}$

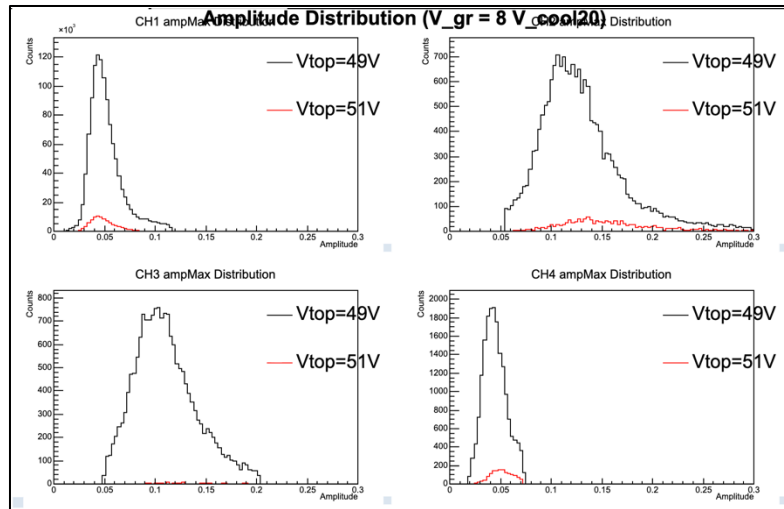
Compared on ①**AmpMax**, ②**Timing Resolution**, ③**Noise**
(between V_{top} , T)

AmpMax: TB11 & TB13

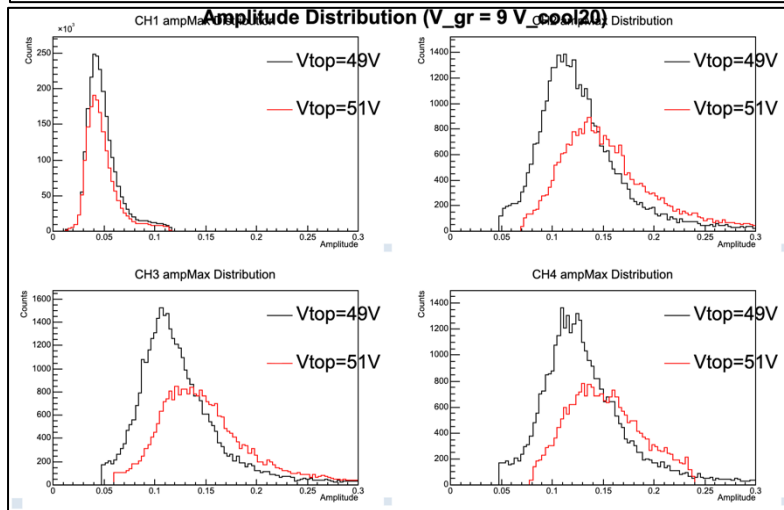
Ongoing

TB11

BACK0
GR8
20 °C

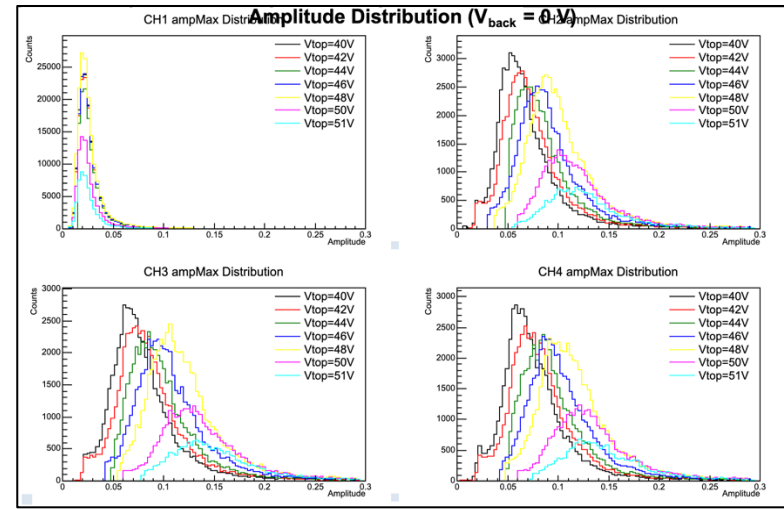


BACK0
GR9
20 °C

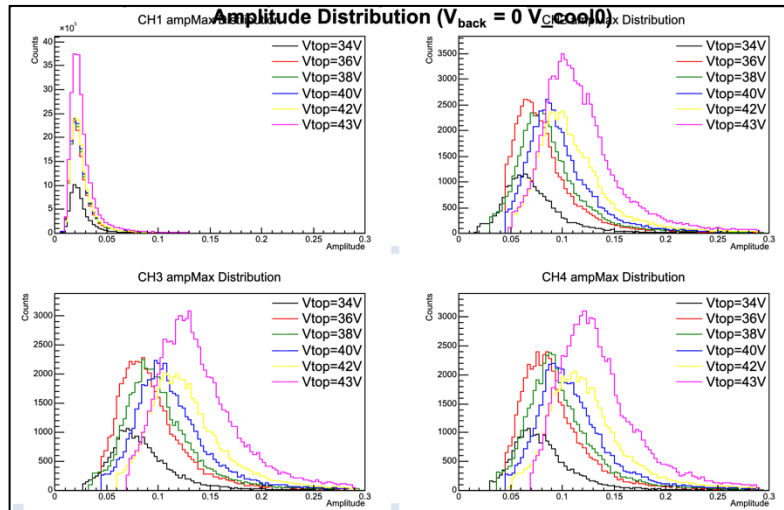


TB13

BACK0
GR8
20 °C



BACK0
GR8
0 °C

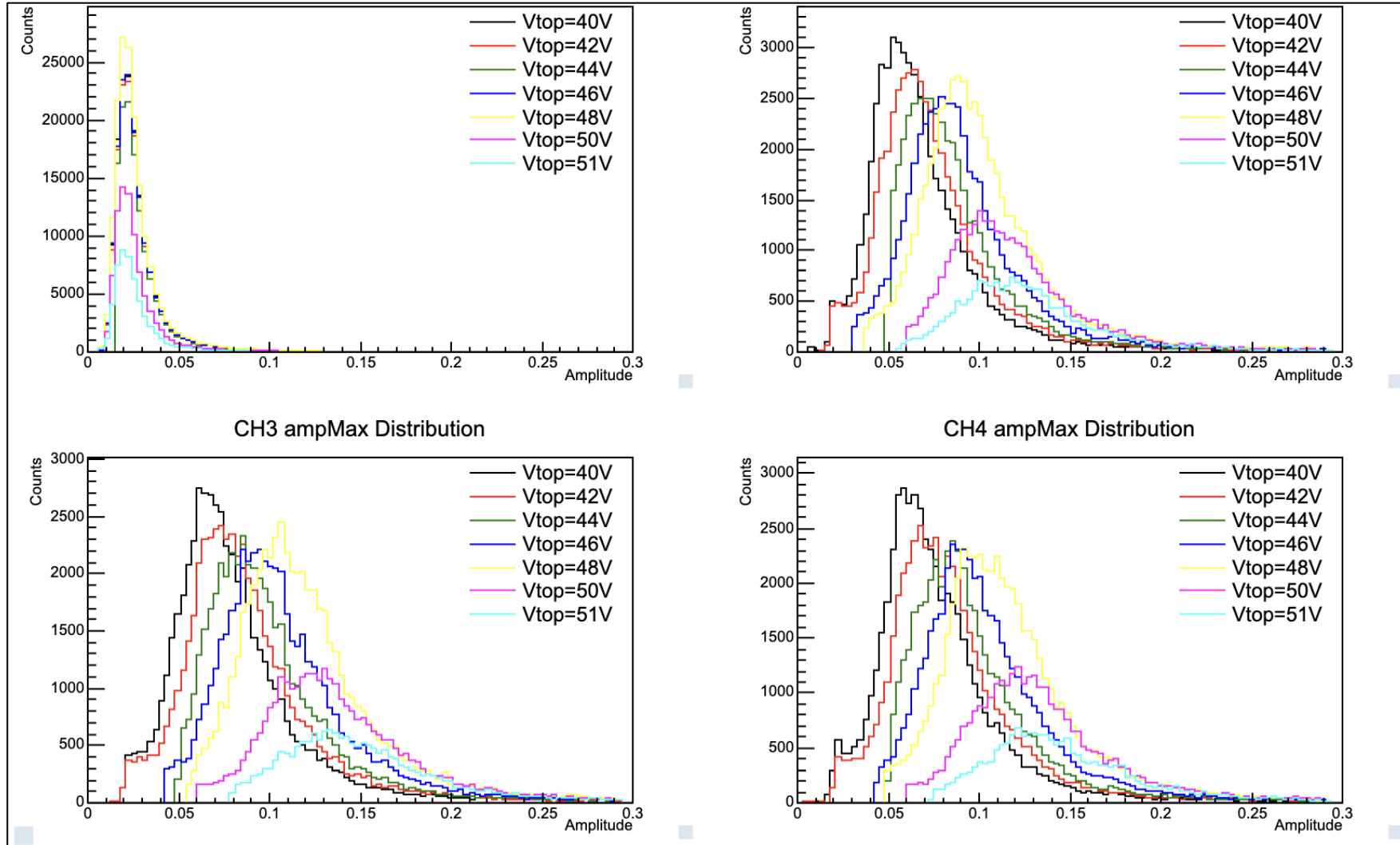


AmpMax: TB11 & TB13

Ongoing

BACK0
GR8
20 °C

TB13

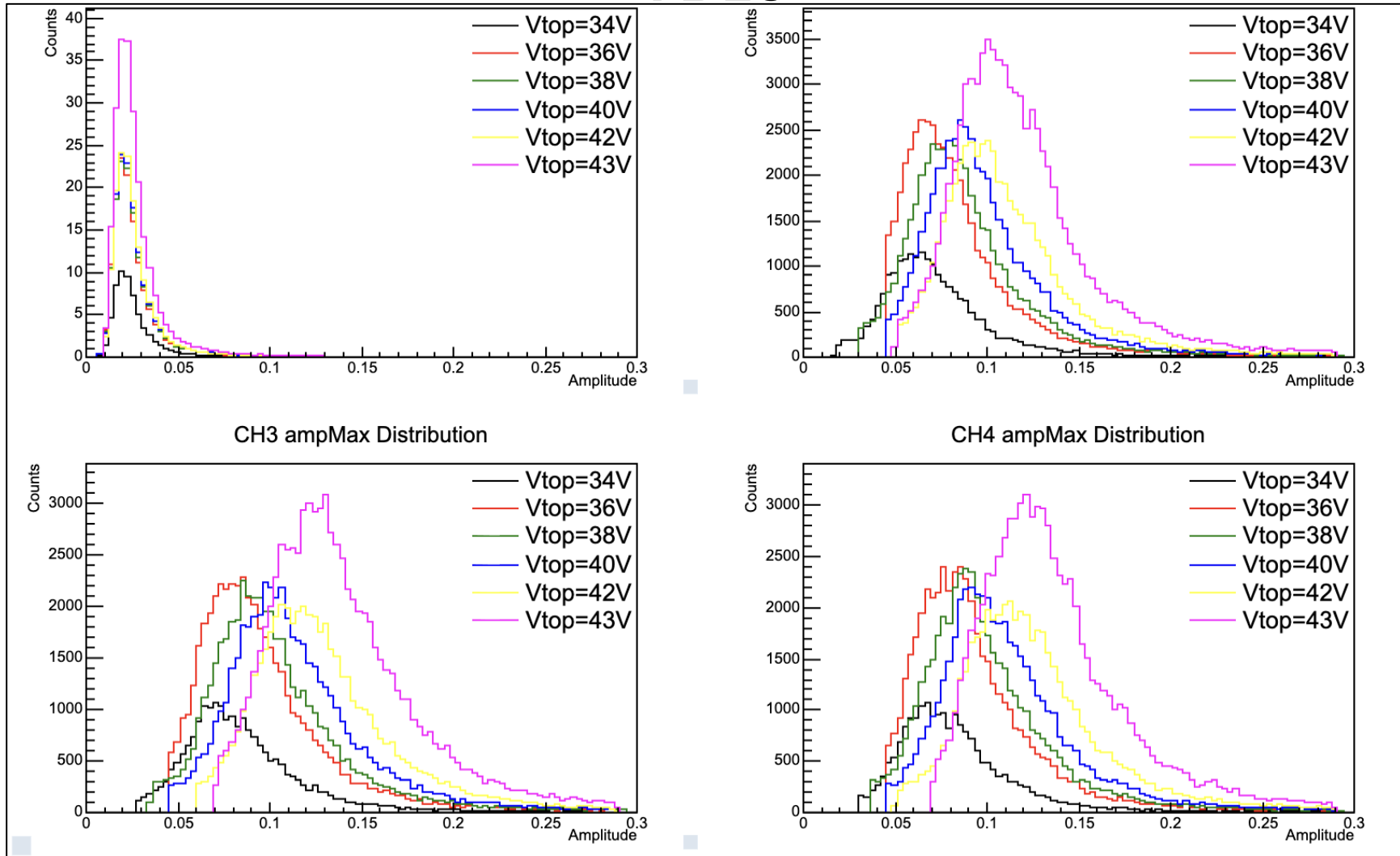


AmpMax: TB11 & TB13

Ongoing

BACK0
GR8
0 °C

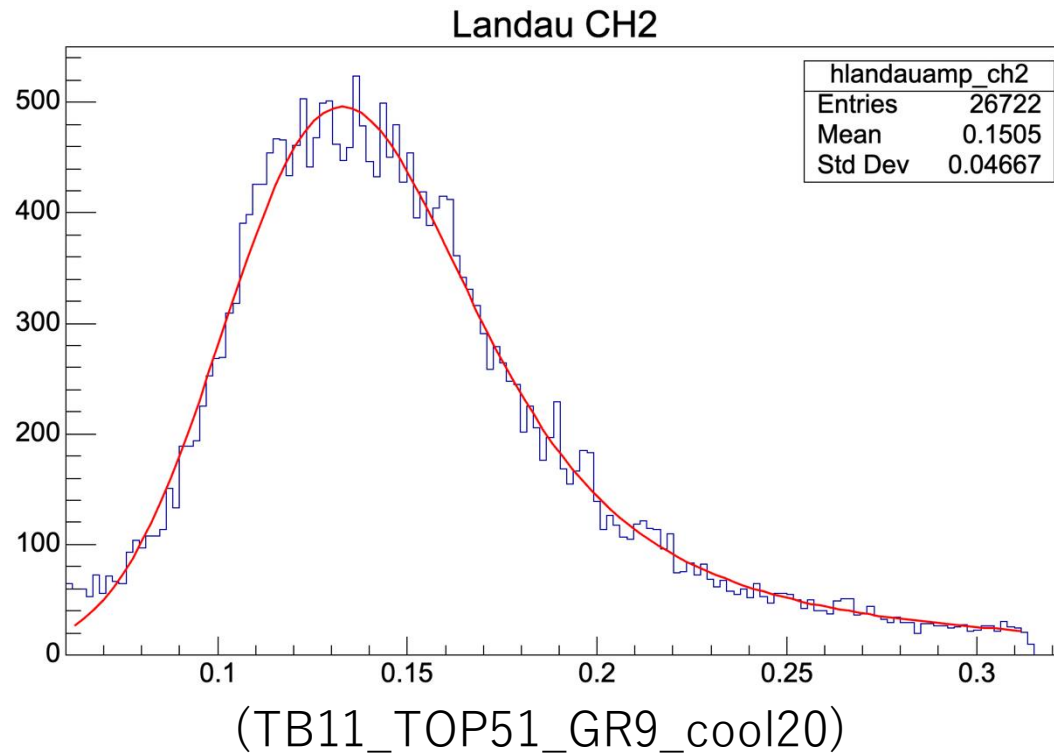
TB13



AmpMax: TB11 & TB13

Ongoing

Histogram → Landau fitting → get parameter (MPV, RMS σ)



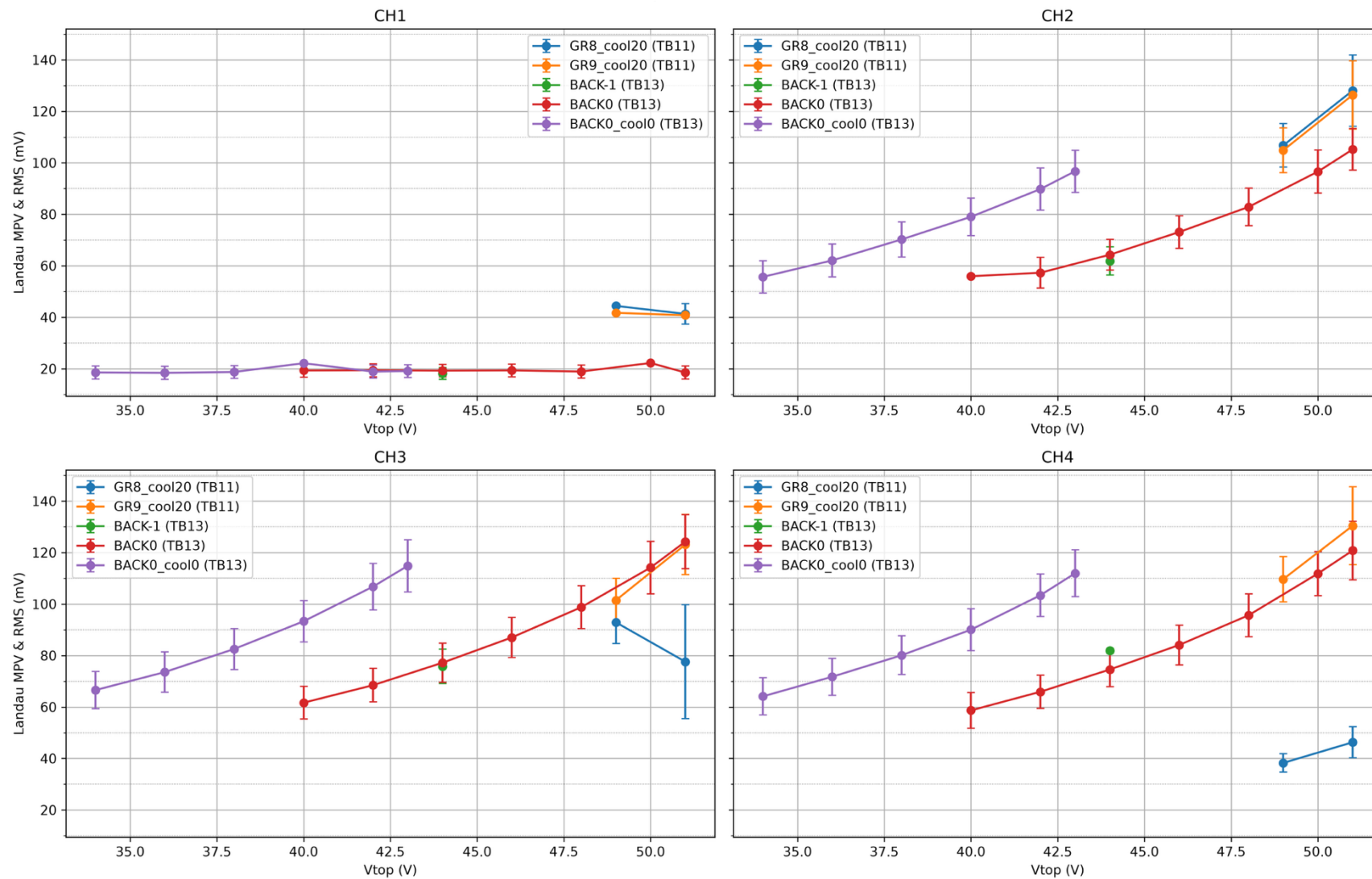
AmpMax: TB11 & TB13

Ongoing



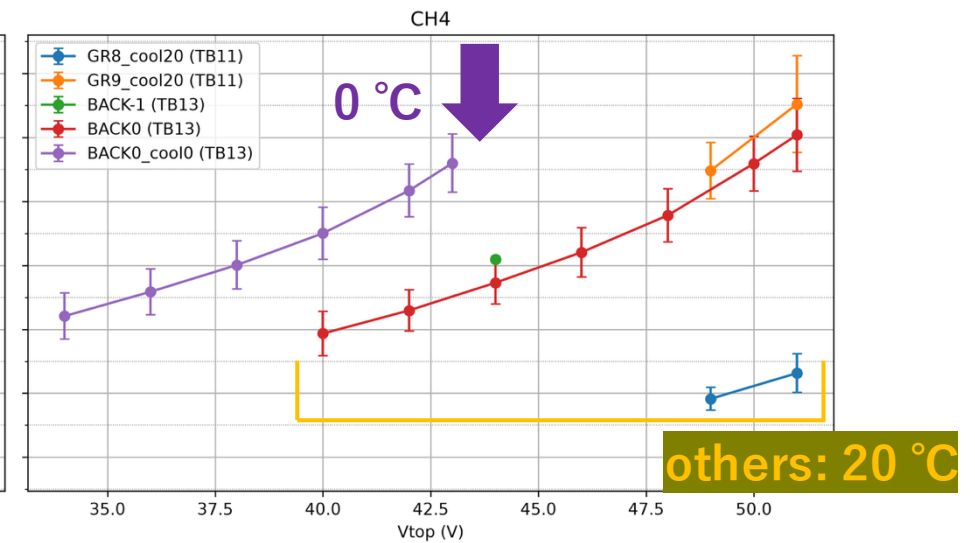
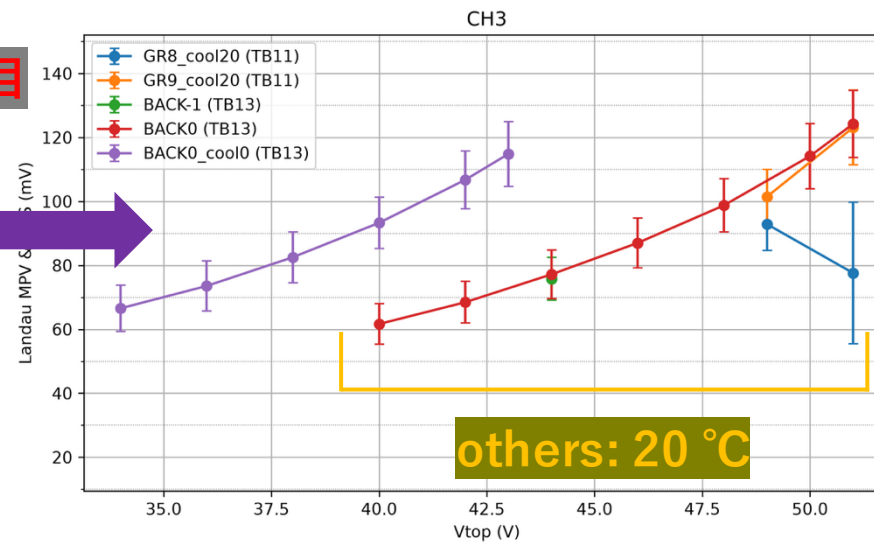
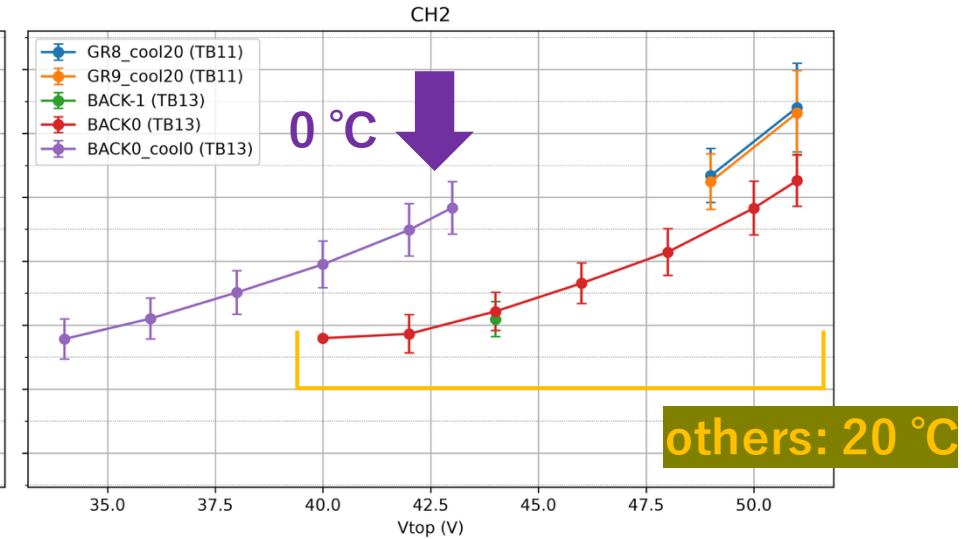
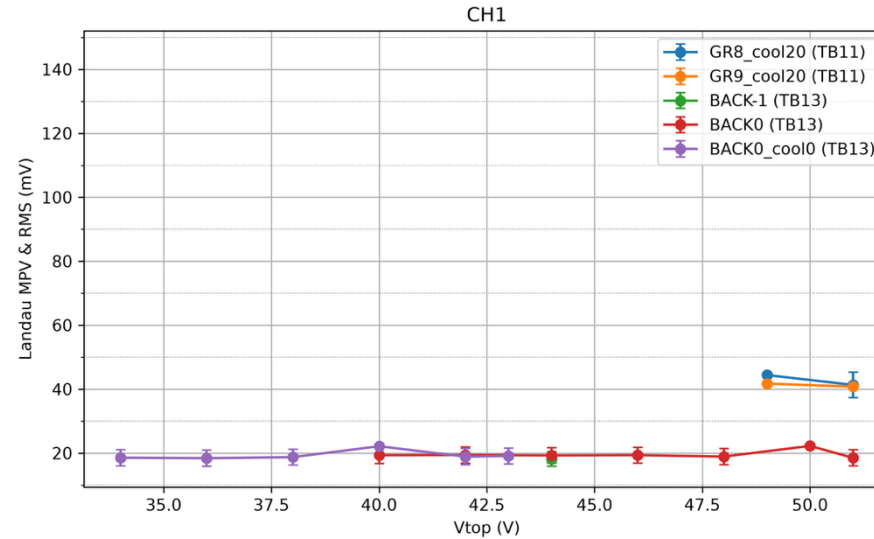
histogram
↓
Landau fitting
↓
get MPV (&RMS)
↓
plot

Vtop vs Landau



AmpMax: TB11 vs TB13 Ongoing

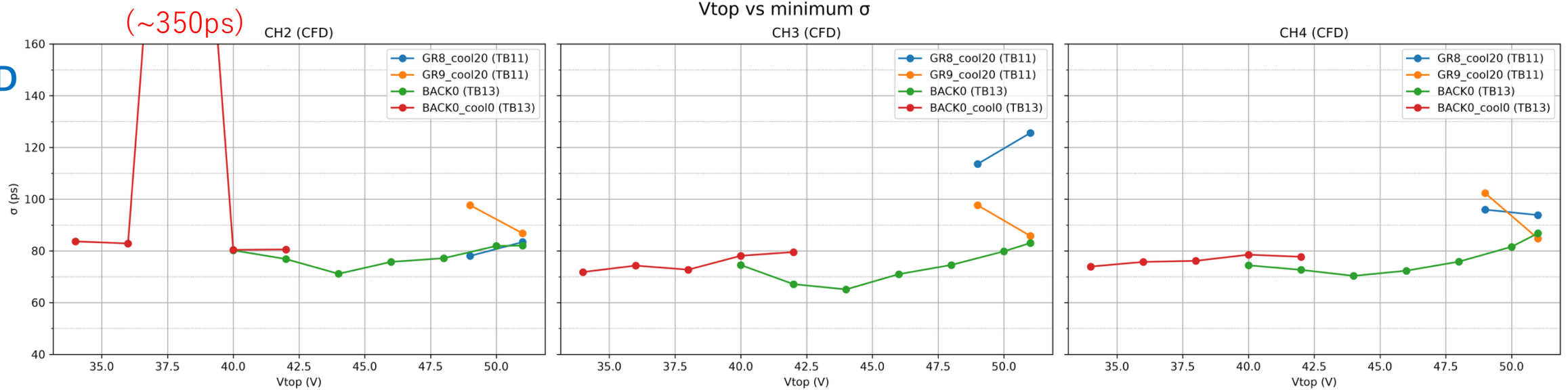
Vtop vs Landau



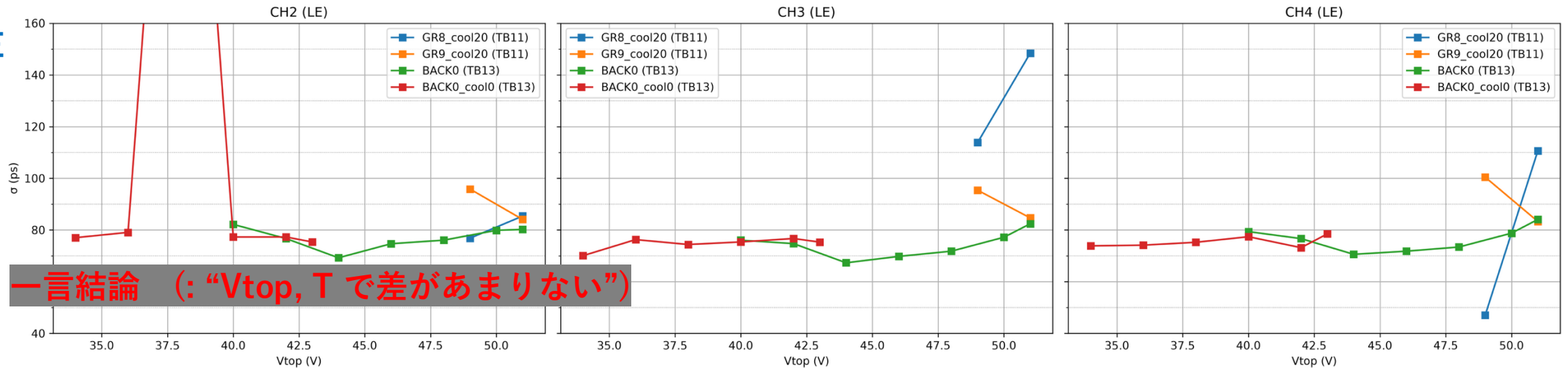
まずはCH2に注目

Timing Resolution: TB11 **Ongoing** 13

CFD



LE



Timing Resolution: TB11 & TB13

CFD

(~350ps)

Vtop vs minimum σ
CH3 (CFD)

Ongoing

CH4 (CFD)

0 °C

0 °C

0 °C

LE

others: 20 °C

others: 20 °C

others: 20 °C

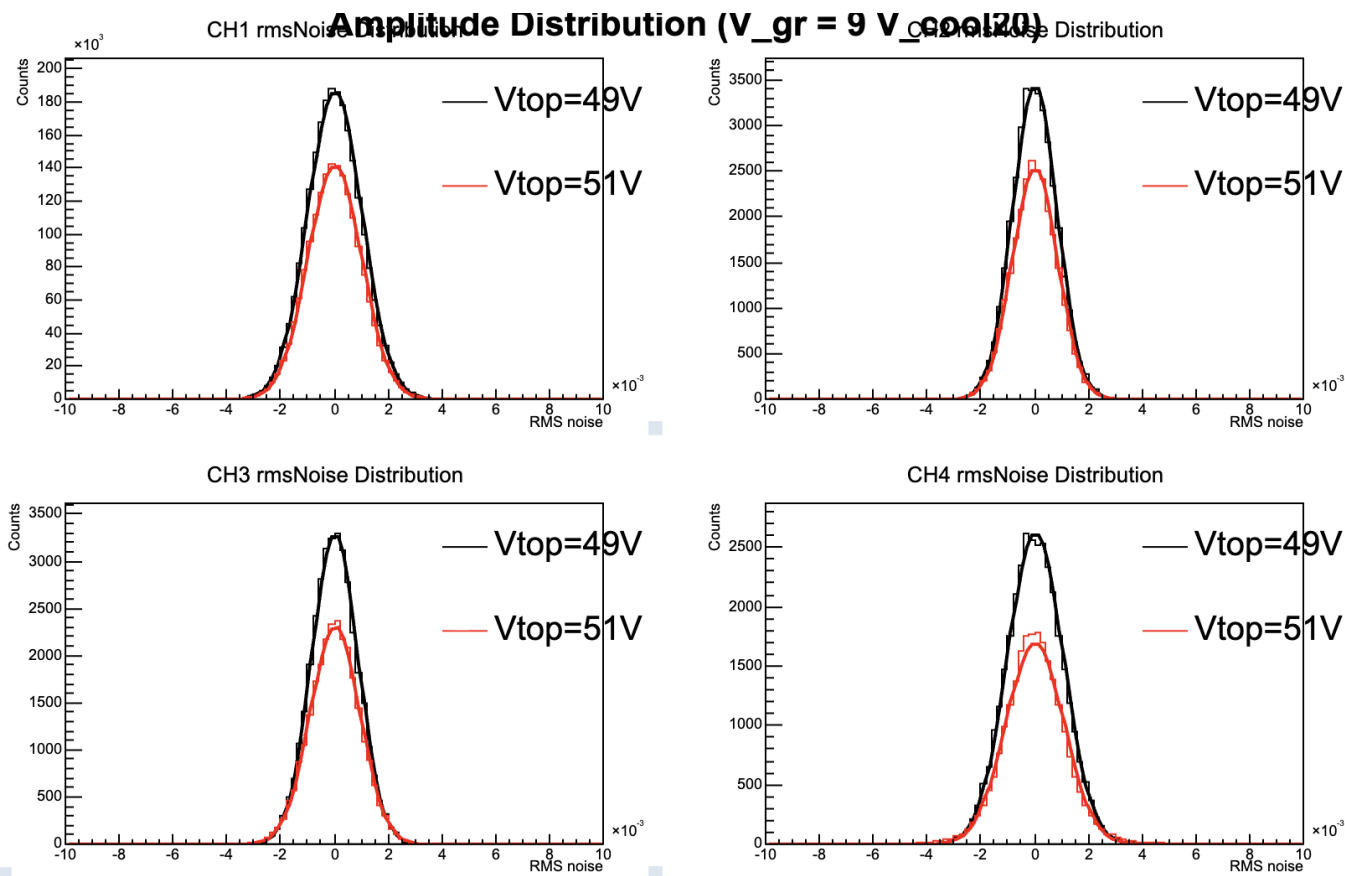
Noise: TB11 & TB13

Ongoing



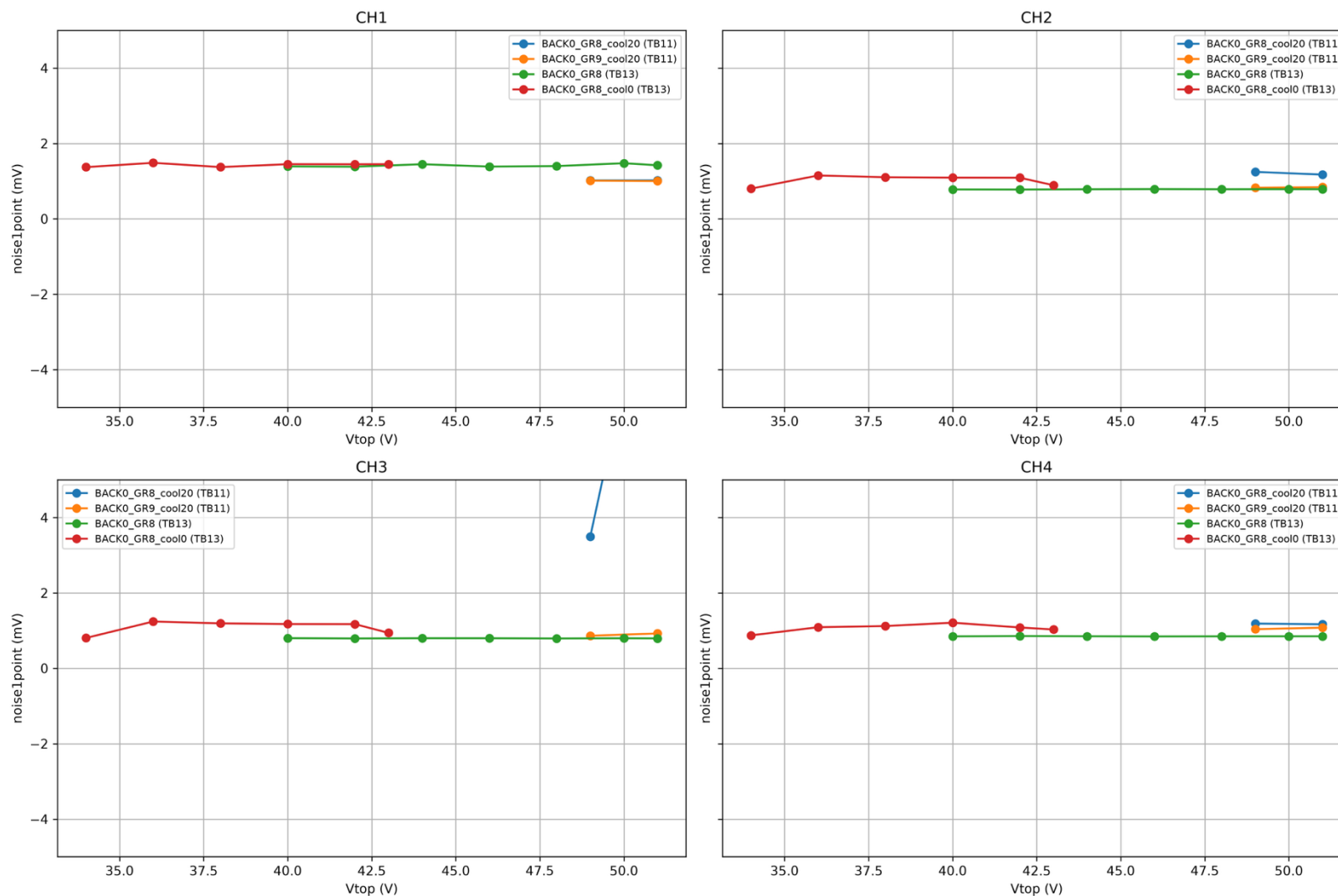
”noise1Point” Histogram → Gaussian fitting → get parameter (RMS σ)

plotの



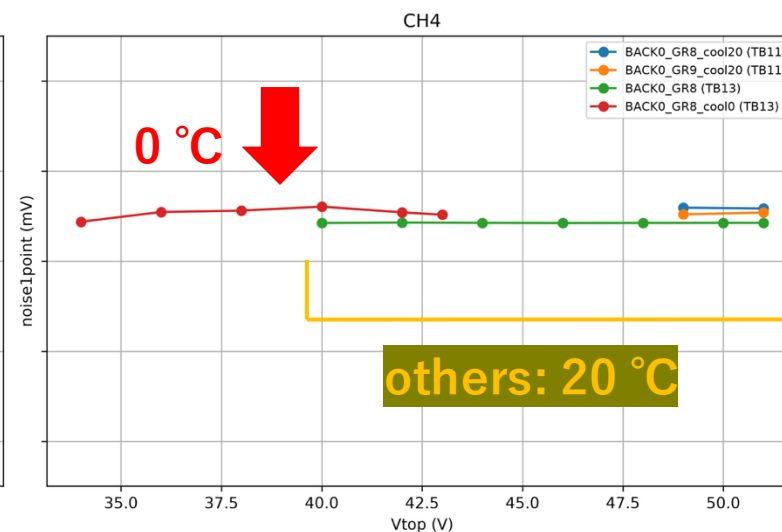
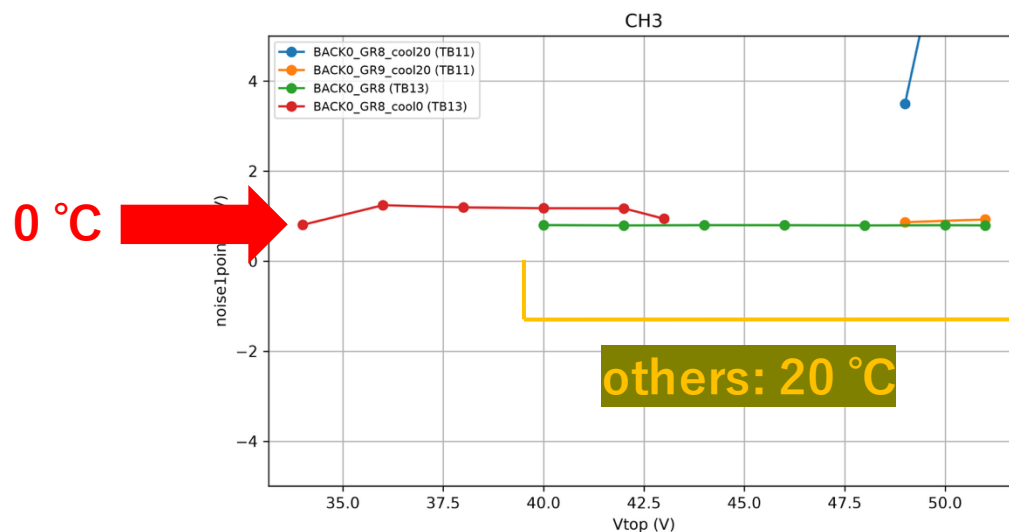
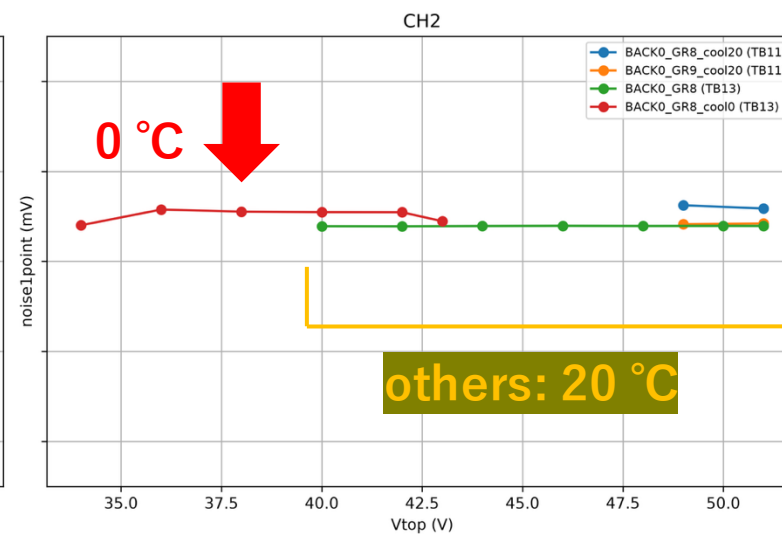
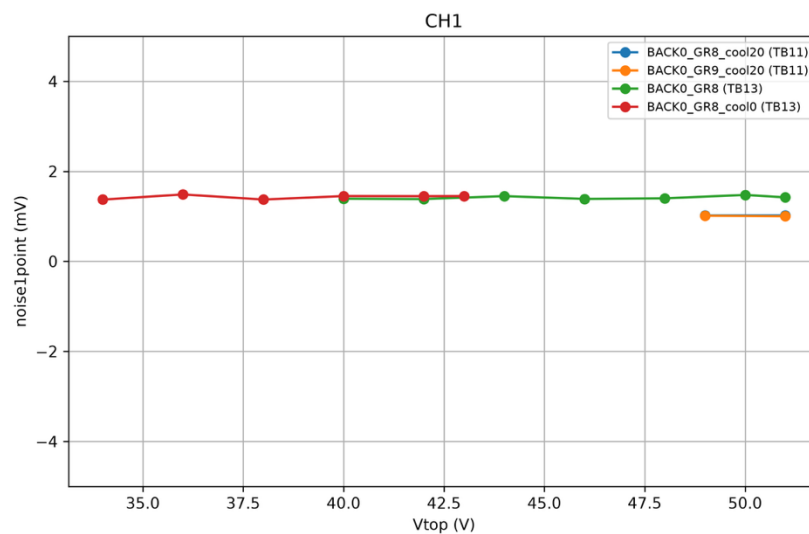
Noise: TB11 & TB13

Ongoing



Noise: TB11 & TB13

Ongoing

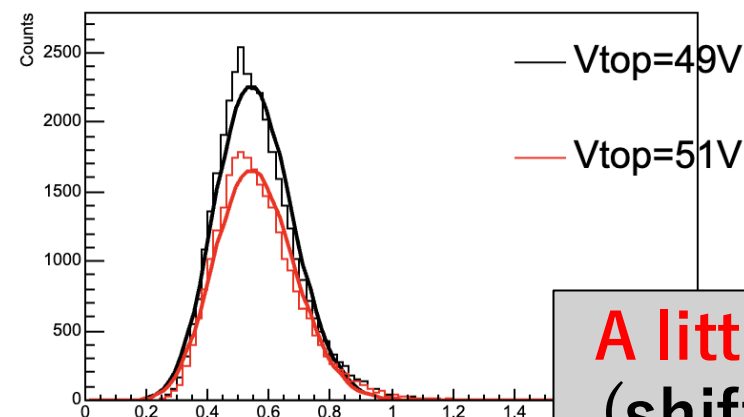
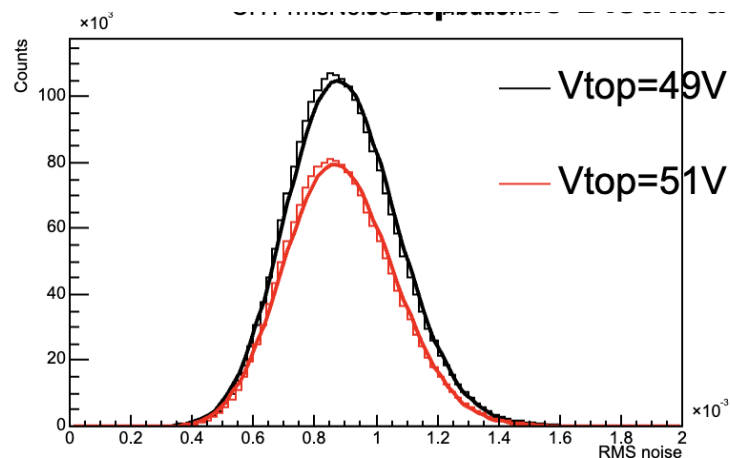


Noise: TB11 & TB13

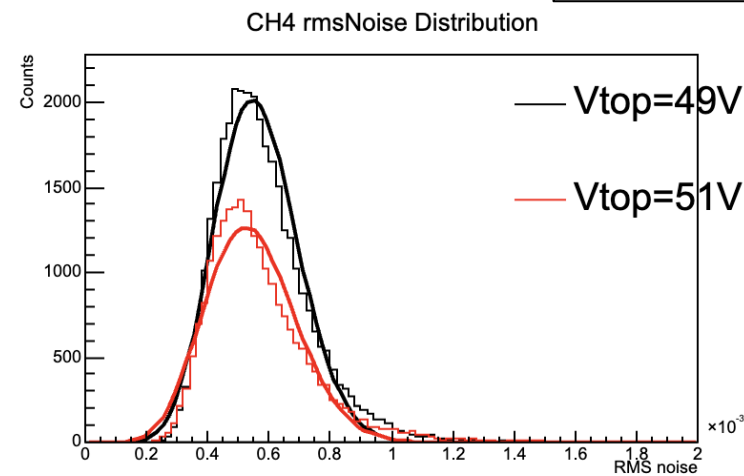
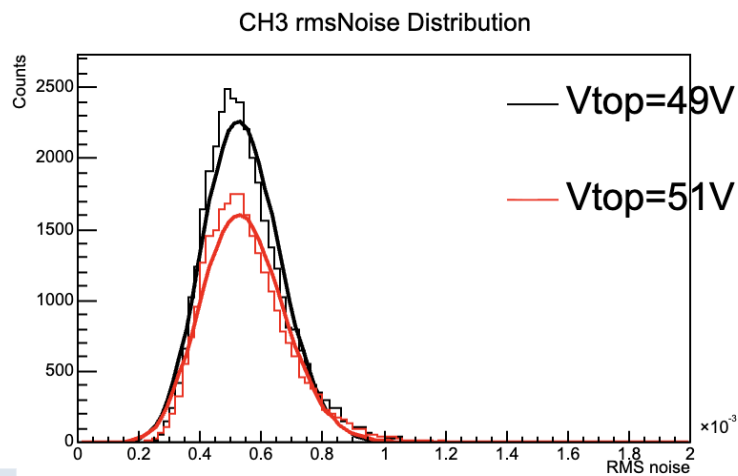
Ongoing



"rmsNoise" Histogram → Chi fitting (ongoing...)



A little BAD fitting
(shift to the right)



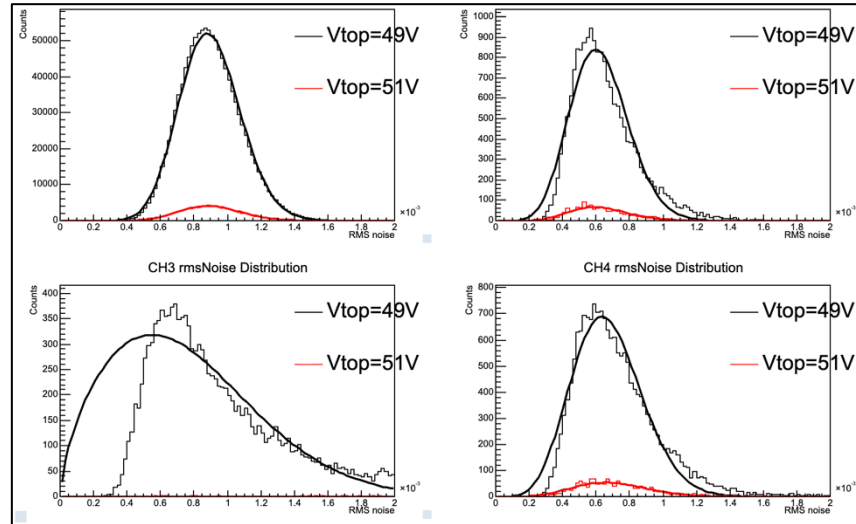
Noise: TB11 & TB13

TB11

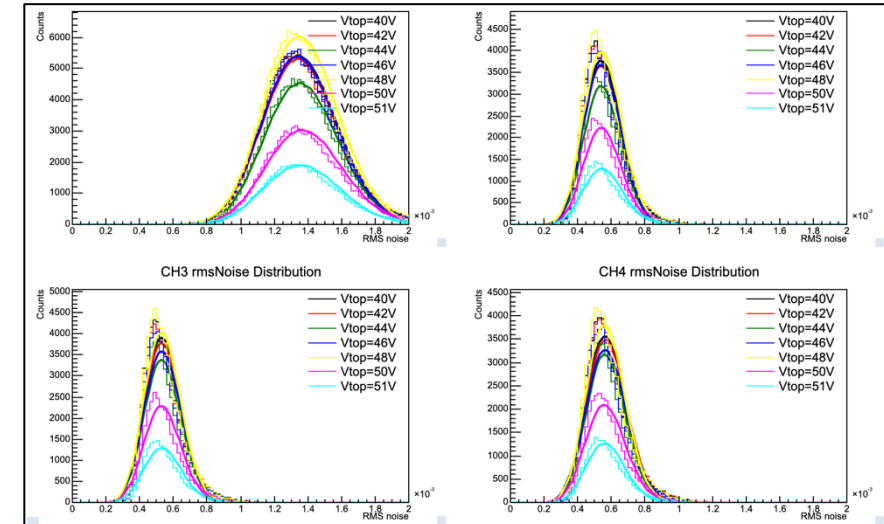
Ongoing

TB13

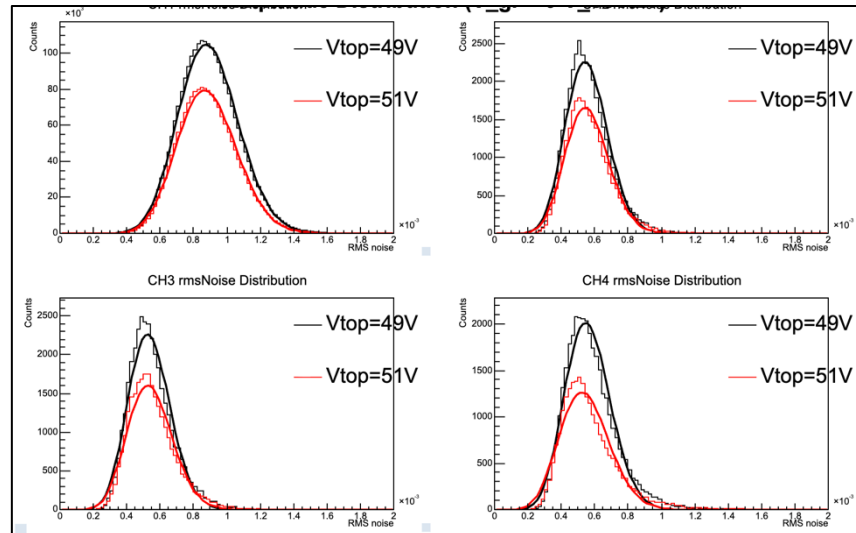
BACK0
GR8
20 °C



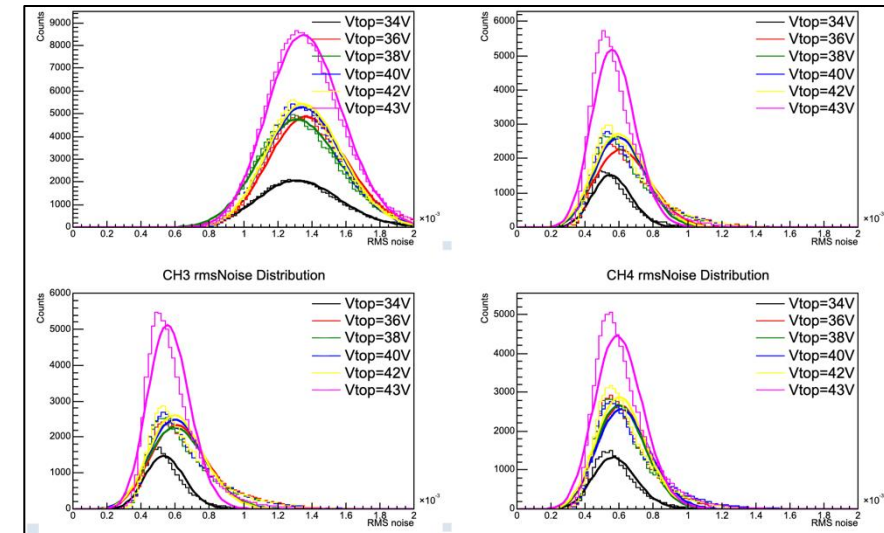
BACK0
GR8
20 °C



BACK0
GR9
20 °C

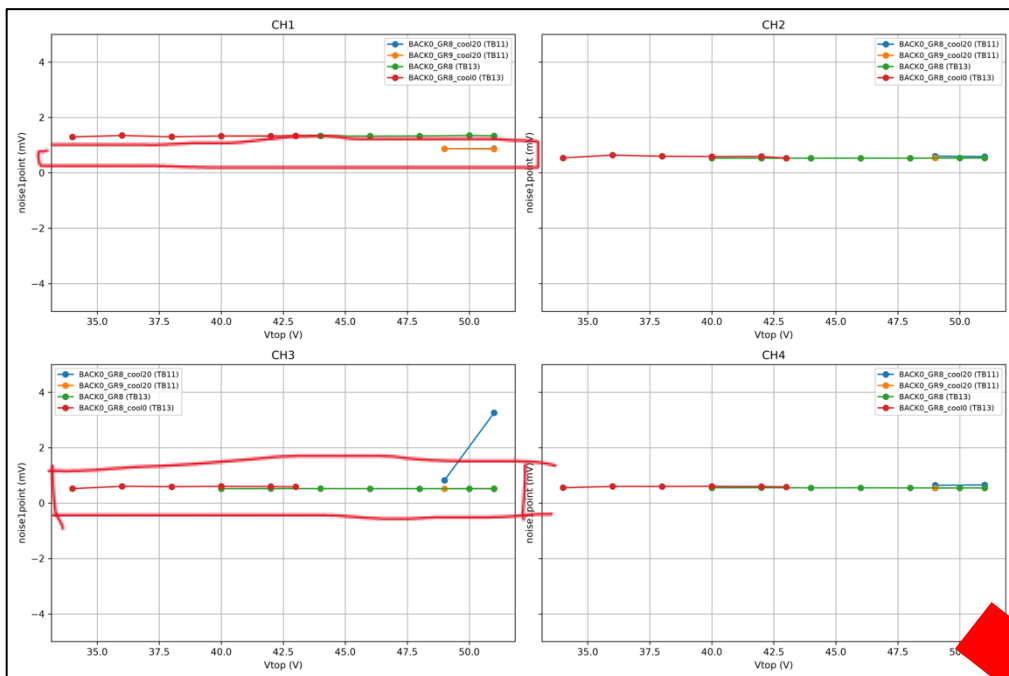


BACK0
GR8
0 °C

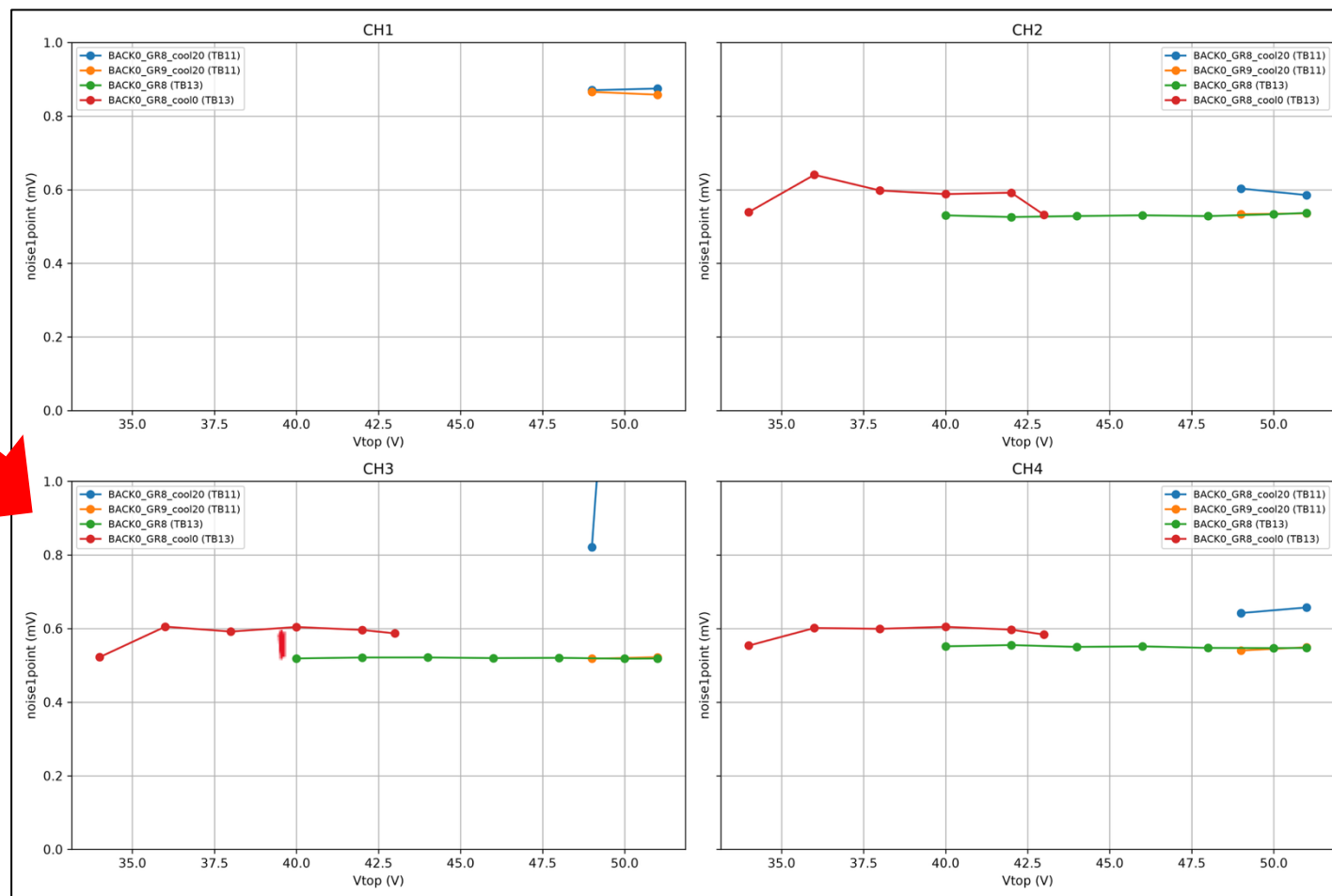


Noise: TB11 & TB13

Ongoing



Enlarge



Laser TCT bench



レーザーのモニター



reference用に分岐: フォトディテクターを通してオシロスコープへ



カメラ (LEDでない方)
USBケーブルを通して
PCで照射位置を確認
: 要PC

パワーメーター
: 要PC