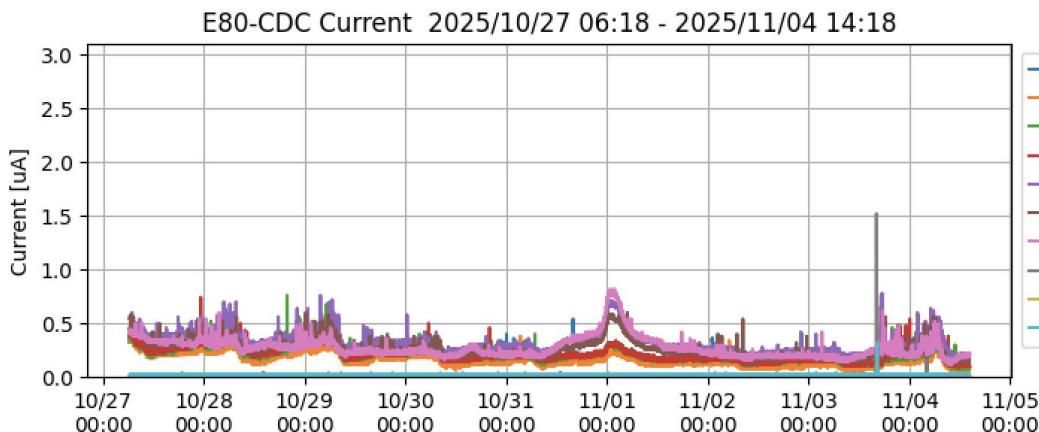
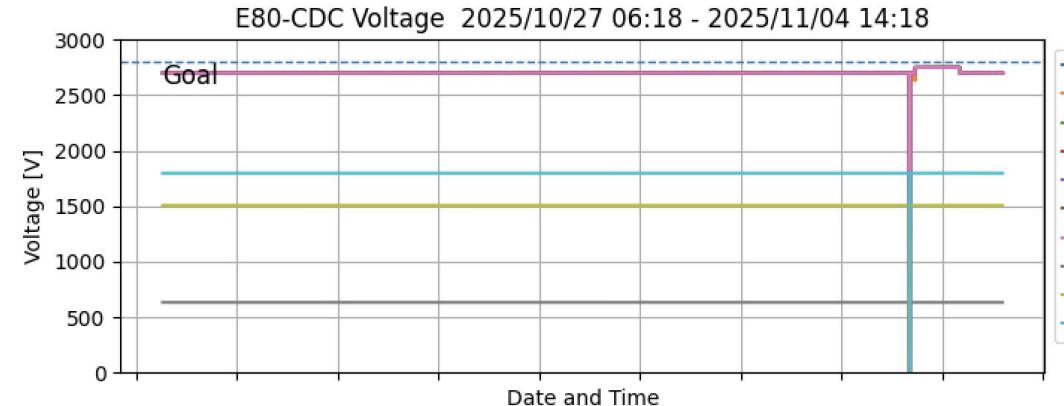


Weekly Meeting 2025.11.04

- ❑ CDC:
 - ❑ HV-Current Status
 - ❑ Rough Gain (SL7)
- ❑ Test Chamber
 - ❑ Status of Tracking Ana
- ❑ To do

CDC > HV-Current Status

- Stable, Good.
- Current intensively depends on humidity.



日立（茨城県） 2025年10月30日（1時間ごとの値）

時	降水量 (mm)	気温 (°C)	露点 温度 (°C)	蒸気圧 (hPa)	湿度 (%)	風速・風向		日照 時間 (h)	雪	
						平均風速 (m/s)	風向		降雪 (cm)	積雪 (cm)
1	0.0	11.9	3.9	8.1	58	3.3	北北東		///	///
2	0.0	11.6	3.9	8.1	59	4.0	北		///	///
3	0.0	11.3	4.3	8.3	62	3.3	北		///	///
4	0.0	11.2	4.4	8.4	63	3.6	北		///	///
5	0.0	11.0	4.2	8.3	63	3.7	北		///	///
6	0.0	11.1	3.9	8.1	61	2.4	北	0.0	///	///
7	0.0	11.9	4.2	8.2	59	2.7	北	0.3	///	///
8	0.0	13.8	5.5	9.0	57	3.0	北	1.0	///	///
9	0.0	15.3	5.5	9.0	52	3.4	北北東	1.0	///	///
10	0.0	16.5	5.5	9.0	48	2.2	北東	1.0	///	///
11	0.0	16.8	6.9	9.9	52	2.3	東北東	1.0	///	///
12	0.0	17.2	7.6	10.4	53	2.1	東北東	1.0	///	///
13	0.0	17.5	8.1	10.8	54	2.5	東北東	1.0	///	///
14	0.0	16.9	7.8	10.6	55	2.8	東北東	1.0	///	///
15	0.0	17.2	8.9	11.4	58	2.3	東北東	1.0	///	///
16	0.0	16.1	9.3	11.7	64	1.7	北東	1.0	///	///
17	0.0	14.9	9.1	11.5	68	2.3	北	0.3	///	///
18	0.0	13.9	8.9	11.4	72	2.5	北		///	///
19	0.0	13.8	9.5	11.8	75	2.4	北		///	///
20	0.0	13.7	9.6	11.9	76	2.9	北		///	///
21	0.0	13.6	9.1	11.5	74	2.7	北		///	///
22	0.0	12.2	8.7	11.2	79	0.9	北西		///	///
23	0.0	11.1	8.9	11.4	86	0.5	北		///	///
24	0.0	11.4	9.2	11.6	86	0.7	東北東		///	///

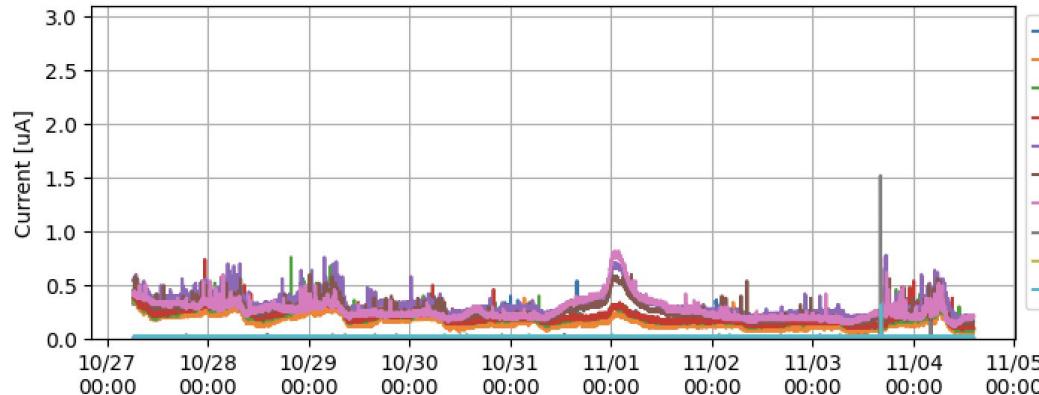
CDC > HV-Current Status

- Stable, Good.
- Current intensively depends on humidity.

E80-CDC Voltage 2025/10/27 06:18 - 2025/11/04 14:18



E80-CDC Current 2025/10/27 06:18 - 2025/11/04 14:18



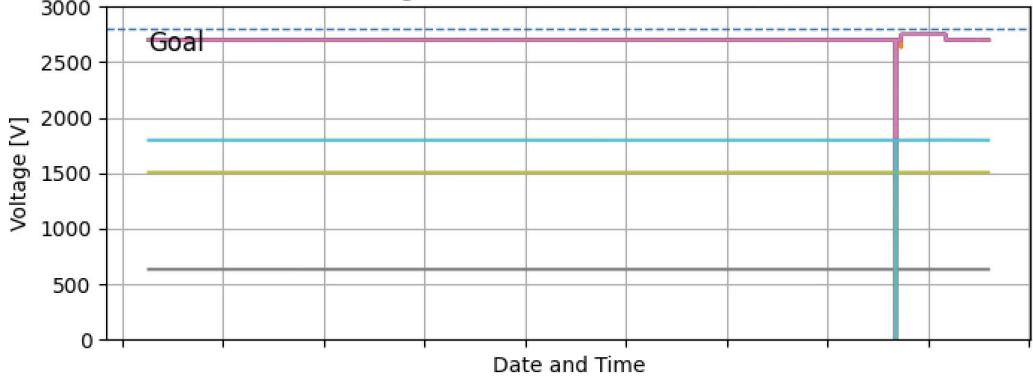
日立（茨城県） 2025年10月31日（1時間ごとの値）

時	降水量 (mm)	気温 (°C)	露点 温度 (°C)	蒸気圧 (hPa)	湿度 (%)	風速・風向		日照 時間 (h)	雪	
						平均風速 (m/s)	風向		降雪 (cm)	積雪 (cm)
1	0.0	12.1	9.8	12.1	86	0.9	北北東		///	///
2	0.0	12.2	9.9	12.2	86	1.2	北		///	///
3	0.0	13.3	9.0	11.5	75	1.9	北		///	///
4	0.0	14.3	9.1	11.6	71	1.4	北北東		///	///
5	0.0	12.4	9.8	12.1	84	0.3	東南東		///	///
6	0.0	13.8	10.4	12.6	80	1.6	北北東	0.0	///	///
7	0.0	16.1	11.3	13.4	73	1.9	北北東	0.1	///	///
8	0.0	17.2	11.5	13.5	69	3.4	北東	0.5	///	///
9	0.0	17.8	12.7	14.7	72	2.7	北東	0.8	///	///
10	0.0	18.0	13.1	15.1	73	2.2	北東	0.2	///	///
11	0.0	17.5	13.4	15.4	77	2.9	北東	0.0	///	///
12	0.0	16.8	14.5	16.5	86	2.5	北東	0.0	///	///
13	0.0	16.2	14.6	16.6	90	2.8	北北東	0.0	///	///
14	0.0	17.1	14.8	16.8	86	2.0	北東	0.0	///	///
15	0.0	16.8	14.3	16.3	85	2.2	北東	0.0	///	///
16	4.0	15.7	14.9	16.9	95	2.6	北北東	0.0	///	///
17	3.0	15.4	14.8	16.8	96	3.6	北北東	0.0	///	///
18	2.5	15.2	14.6	16.6	96	3.8	北東		///	///
19	1.5	15.1	14.3	16.3	95	5.2	北北東		///	///
20	3.5	15.4	14.6	16.6	95	4.7	北北東		///	///
21	7.5	15.6	15.0	17.0	96	5.3	北北東		///	///
22	7.0	16.1	15.5	17.6	96	4.3	北北東		///	///
23	16.0	17.1	16.6	18.9	97	2.4	東北東		///	///
24	14.0	19.9	19.4	22.5	97	5.5	南東		///	///

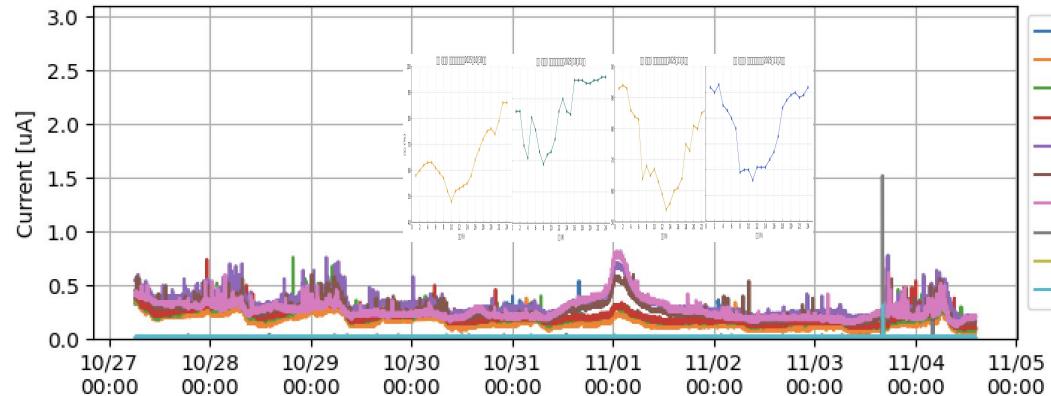
CDC > HV-Current Status

- Stable, Good.
- Current depends on humidity?

E80-CDC Voltage 2025/10/27 06:18 - 2025/11/04 14:18



E80-CDC Current 2025/10/27 06:18 - 2025/11/04 14:18

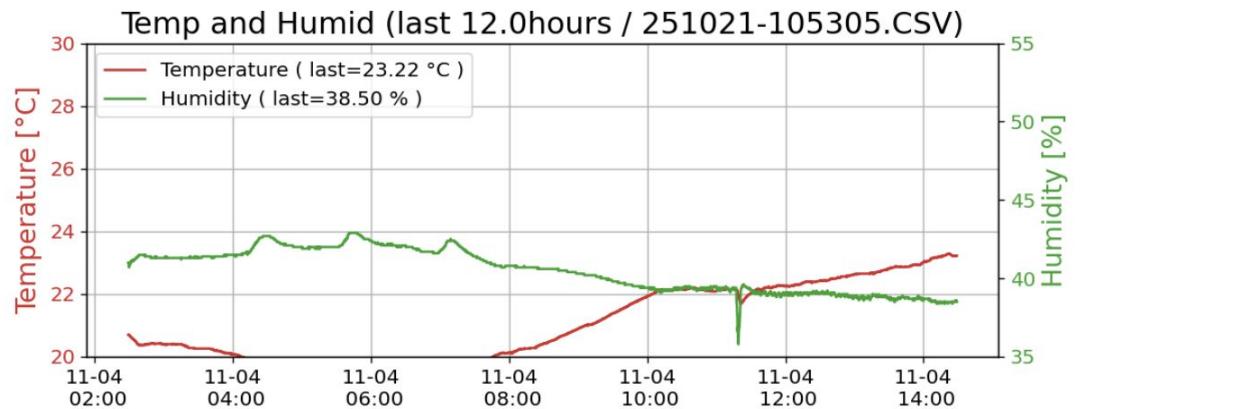
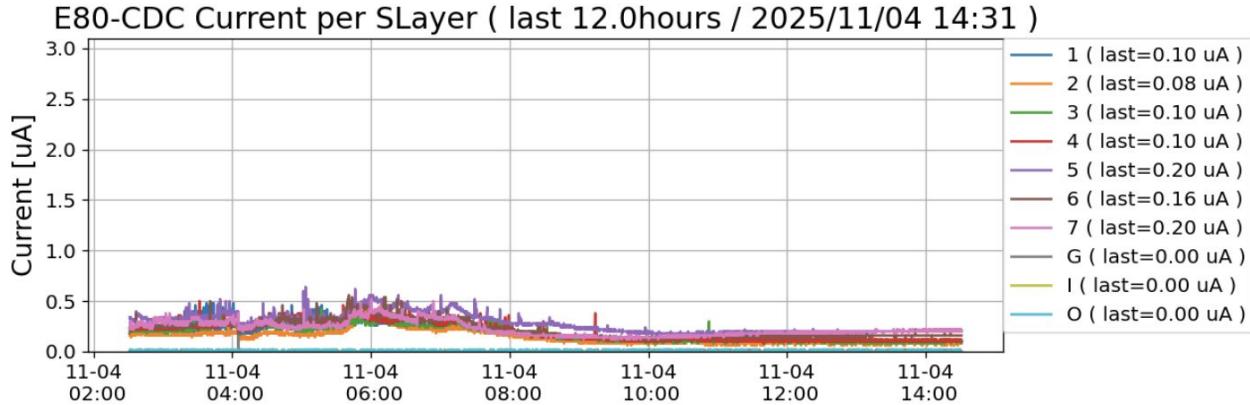


日立（茨城県）2025年11月1日（1時間ごとの値）

時	降水量 (mm)	気温 (°C)	露点 温度 (°C)	蒸気圧 (hPa)	湿度 (%)	風速・風向		日照 時間 (h)	雪	
						平均風速 (m/s)	風向		降雪 (cm)	積雪 (cm)
1	0.5	19.6	18.4	21.2	93	4.1	南南西		///	///
2	0.5	19.0	18.0	20.7	94	4.7	南南西		///	///
3	0.0	16.4	15.3	17.3	93	7.0	南西		///	///
4	0.0	15.4	13.1	15.0	86	6.8	西南西		///	///
5	0.0	14.9	12.9	14.9	88	5.3	西南西		///	///
6	0.0	14.7	11.9	13.9	83	3.6	西		///	///
7	0.0	16.9	10.1	12.3	64	3.5	西北西	0.7	///	///
8	0.0	17.5	11.5	13.6	68	1.8	南西	1.0	///	///
9	0.0	18.4	11.7	13.8	65	3.1	西南西	1.0	///	///
10	0.0	18.5	12.3	14.3	67	2.4	西南西	0.5	///	///
11	0.0	19.6	12.4	14.4	63	1.9	南西	0.3	///	///
12	0.0	20.4	12.1	14.1	59	1.6	西南西	0.5	///	///
13	0.0	20.6	11.0	13.1	54	1.3	南	0.4	///	///
14	0.0	21.0	11.9	13.9	56	1.4	西	0.0	///	///
15	0.0	20.6	12.6	14.6	60	1.4	南南東	0.2	///	///
16	0.0	20.5	12.7	14.7	61	0.9	西南西	0.2	///	///
17	0.0	17.7	10.8	13.0	64	1.5	北北西	0.2	///	///
18	0.0	15.3	10.9	13.0	75	0.8	北西		///	///
19	0.0	14.7	9.9	12.2	73	1.1	北北西		///	///
20	0.0	13.5	10.3	12.5	81	0.6	北		///	///
21	0.0	13.0	9.6	12.0	80	0.3	西		///	///
22	0.0	12.7	10.3	12.5	85	0.5	北北東		///	///
23	0.0	12.9	10.6	12.8	86	0.5	北		///	///
24	0.0	12.4	10.5	12.7	88	0.5	西		///	///

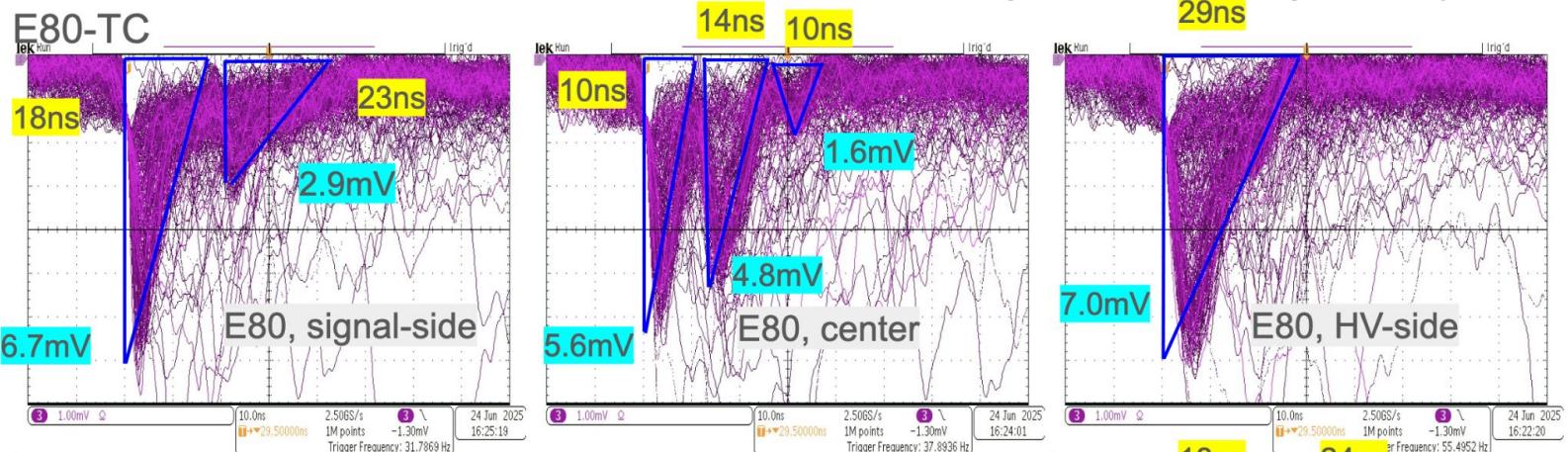
CDC > HV-Current Status

- Stable, Good.
- Current depends on humidity?



CDC > Gain > cf.)Test Chamber

The gain is independent of the wire length, as the cell geometry is the same.



Charge of raw signals with Ar-C₂H₆(50:50), 2800V:
Position Dependence (test chamber, 55Fe)

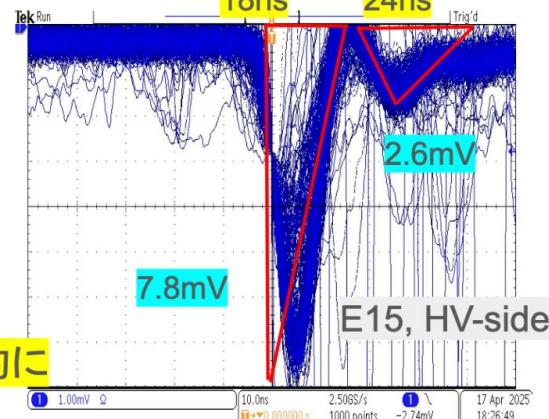
$$Q_{\text{sig_e80}} = (6.7 \text{ mV} \times 18 \text{ ns} / 2 + 2.9 \text{ mV} \times 23 \text{ ns} / 2) / 50\Omega \\ = 1.9 \text{ pC}$$

$$Q_{\text{center_e80}} = (5.6 \times 10 / 2 + 4.8 \times 14 / 2 + 1.6 \times 10 / 2) / 50 \\ = 1.4 \text{ pC}$$

$$Q_{\text{hv_e80}} = (7.0 \times 29 / 2) / 50 \\ = 2.0 \text{ pC}$$

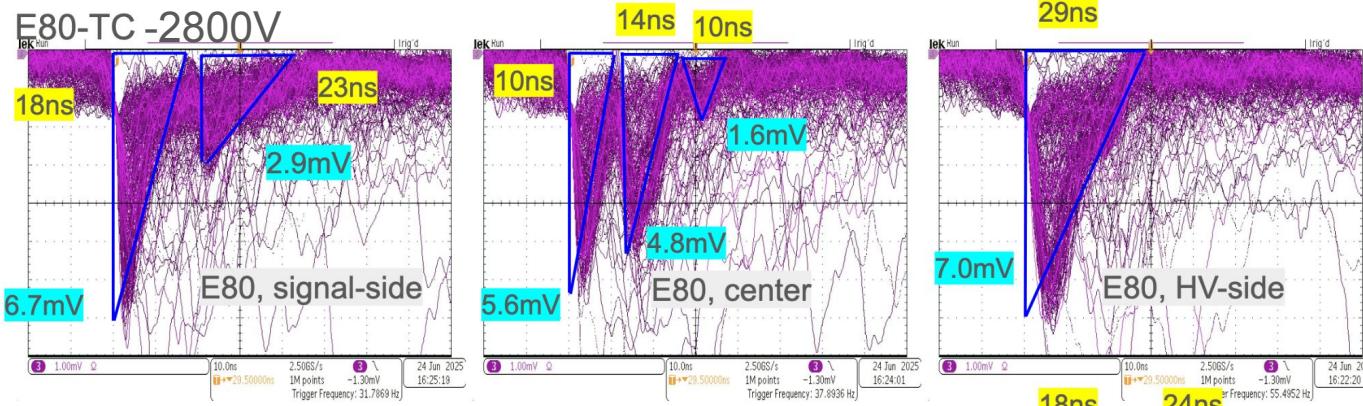
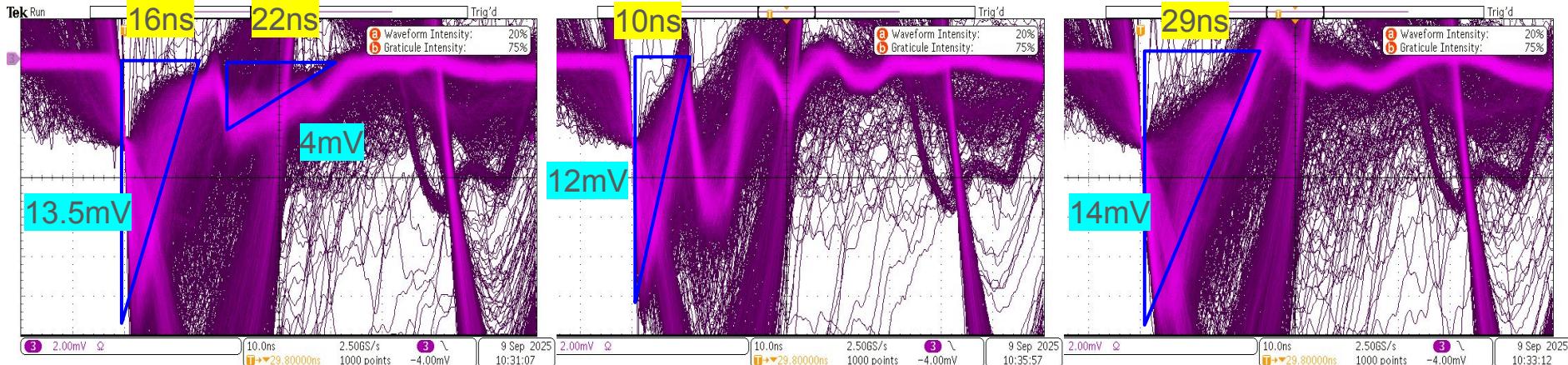
$$Q_{\text{hv_e15}} = (7.8 \times 18 / 2 + 2.6 \times 24 / 2) / 50 \\ = 2.0 \text{ pC}$$

高さ方向の減衰率
幅が広くなる？定量的に



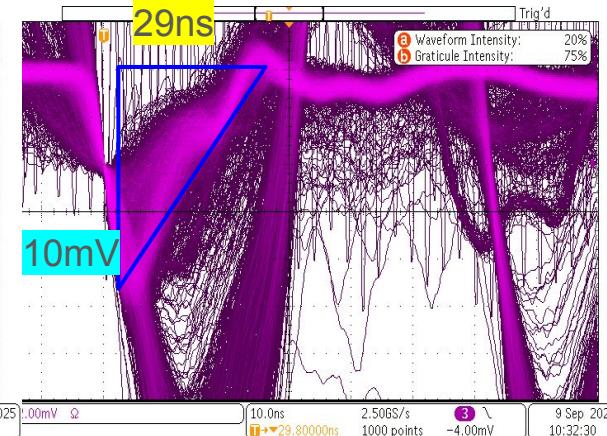
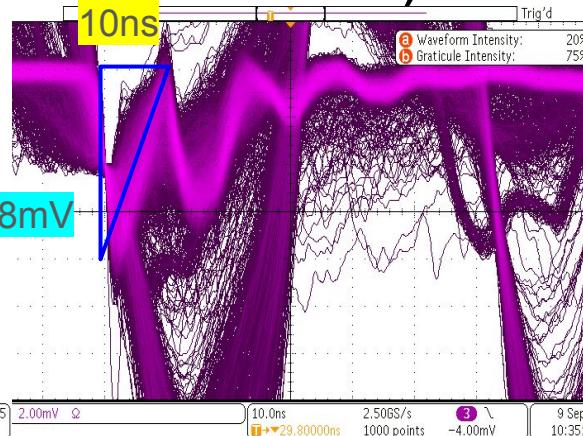
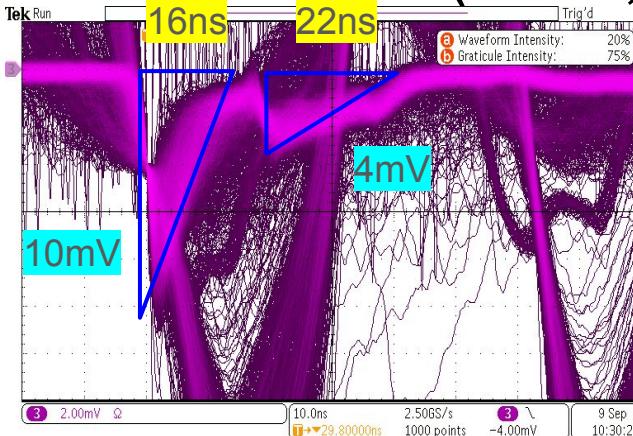
CDC > Gain (55Fe, SL7, -2800V)

The gain of SL7 is about twice that of SL1.

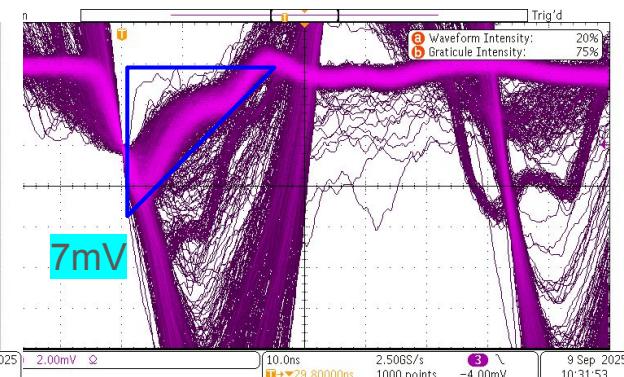
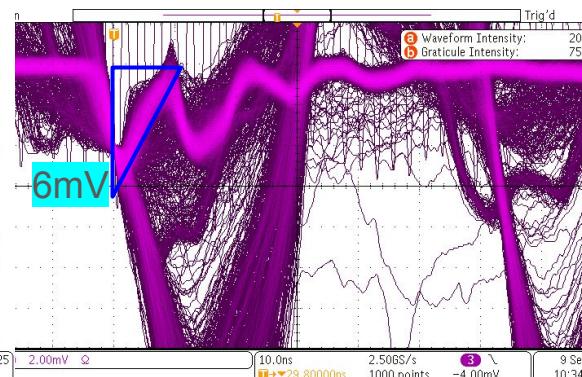
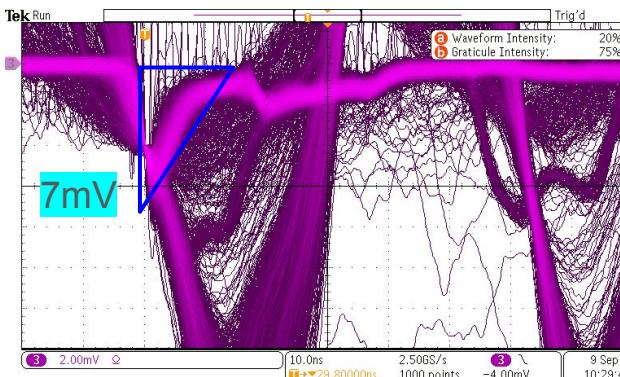


the same time width, but different amplitudes (~2 times, due to SL1 vs SL7)

CDC > Gain (55Fe, SL7, -2700V)



CDC > Gain (55Fe, SL7, -2600V)



CDC > Gain (55Fe, SL7)

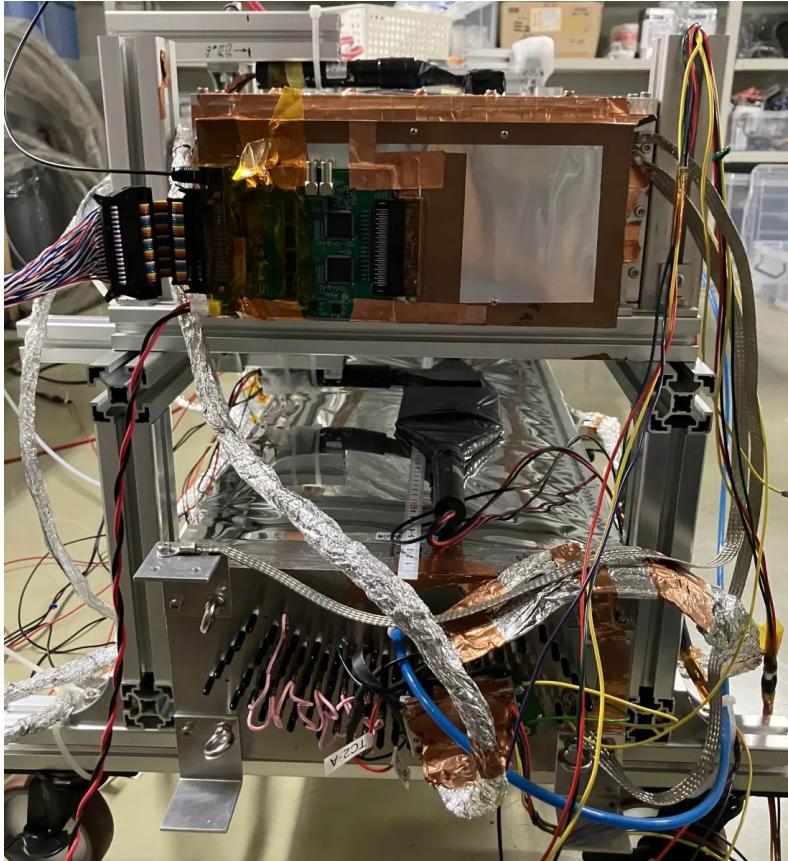
Roughly,
 the gains of “ArC₂H₆(50:50) x E80-CDC x SL7”
 are 5×10^4 for -2800V, 3×10^4 for -2700V
 and 2×10^4 for -2600V.

from my m-th

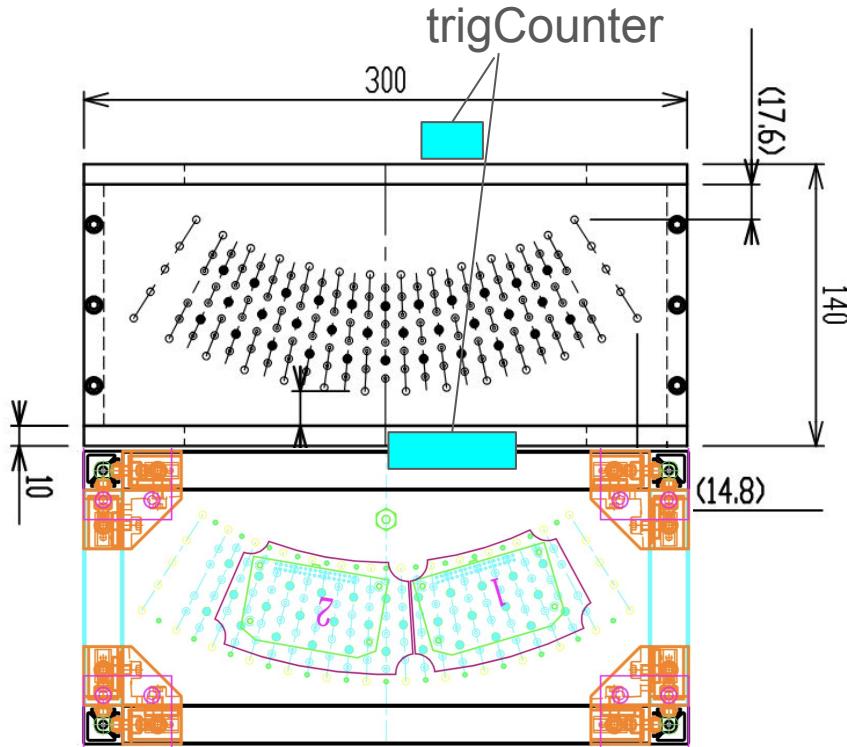
ガス	一次電子数 n_T	印加電圧	電荷量	増幅率	エラー
Ar-C ₂ H ₆ (50:50)	231	2600 V	0.34 pC	9.18×10^3	280
		2700 V	0.57 pC	1.54×10^4	300
		2800 V	0.96 pC	2.59×10^4	300
Ar-CO ₂ (82:18)	215	2400 V	0.55 pC	1.60×10^4	600
		2500 V	0.99 pC	2.88×10^4	600
		2600 V	1.73 pC	5.03×10^4	900
		2700 V	2.73 pC	7.94×10^4	2300
		2800 V	4.38 pC	1.27×10^5	5200
Ar-CO ₂ (87:13)	218	2200 V	0.39 pC	1.12×10^5	300
		2300 V	0.73 pC	2.09×10^4	300
		2400 V	1.44 pC	4.13×10^4	300
		2500 V	2.58 pC	7.39×10^4	300
		2600 V	4.63 pC	1.33×10^5	1000
Ar-CO ₂ (90:10)	220	2100 V	0.25 pC	7.10×10^3	280
		2200 V	0.53 pC	1.50×10^4	300
		2300 V	1.13 pC	3.21×10^4	300
		2400 V	2.23 pC	6.33×10^4	300
Ar-CO ₂ (94:6)	223	2100 V	0.47 pC	1.32×10^4	300
		2200 V	1.11 pC	3.11×10^4	300
		2300 V	2.44 pC	6.84×10^4	300

表 4.2: ^{55}Fe 線源を用いた波形解析結果

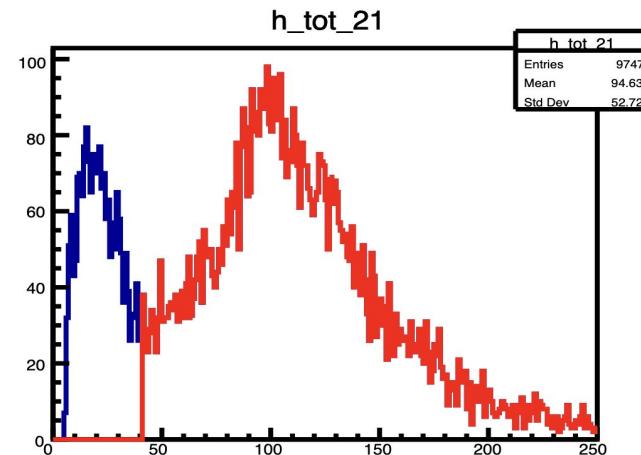
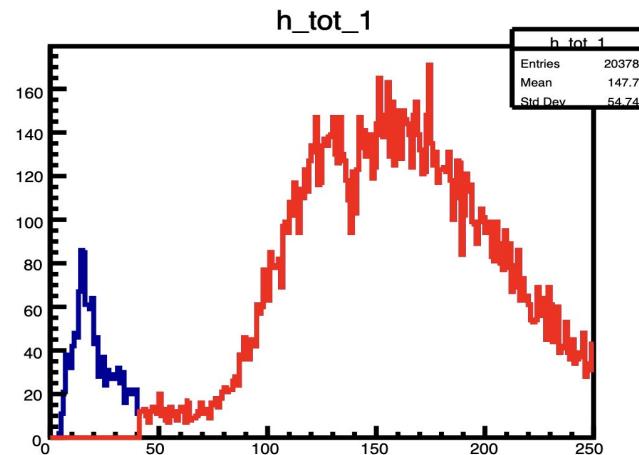
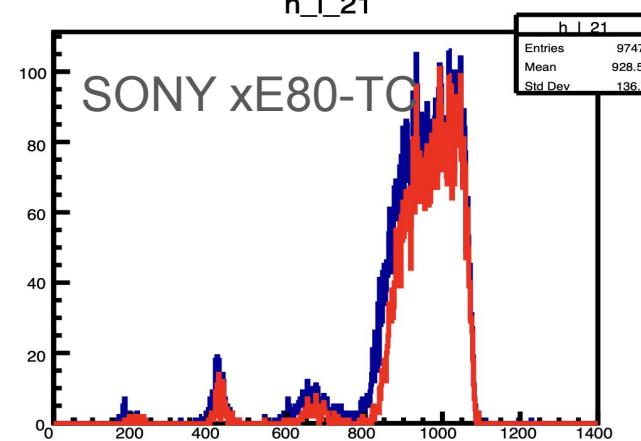
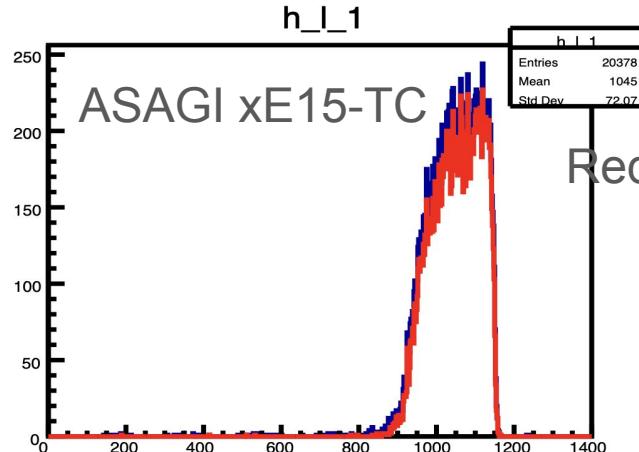
TC > TrackAna > Set-up



- [GasStudy->Run381](#), -2800V, Cosmic
- E15-TC x ASAGI, E80-TC x SONY
- asagi="18:44:11, vth=-39.6mV"
- sony="vth=-3V"

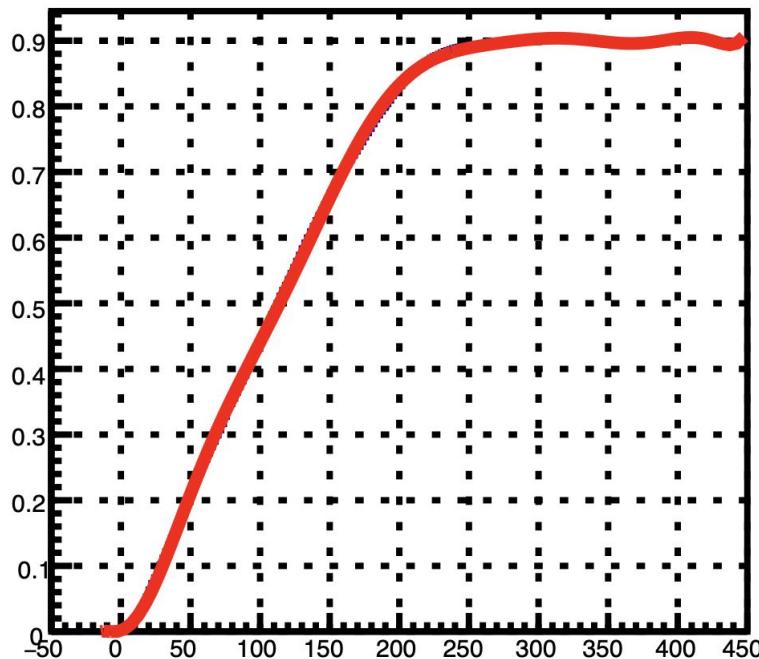


TC > TrackAna > RawTDC and RawTOT (Typical)

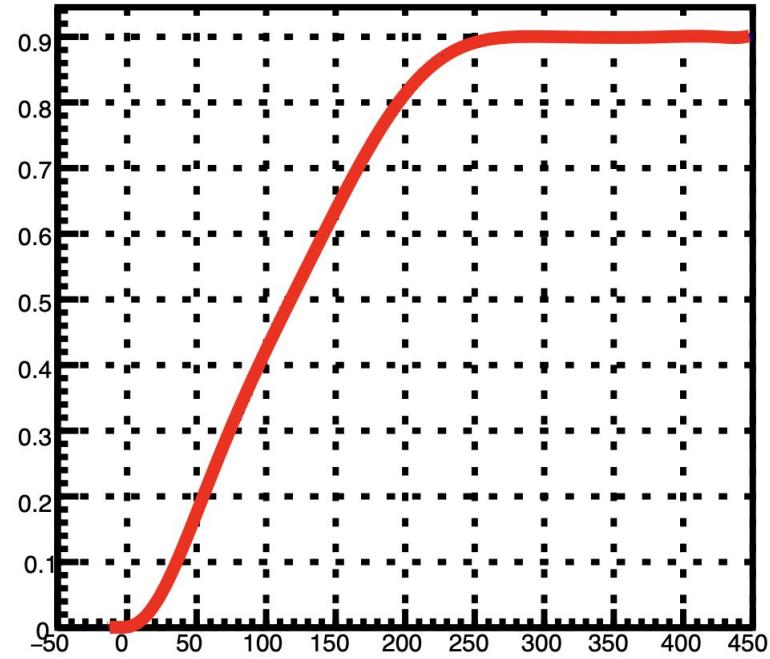


TC > TrackAna > XT curve “TOT>40, FirstHit” (Typical)

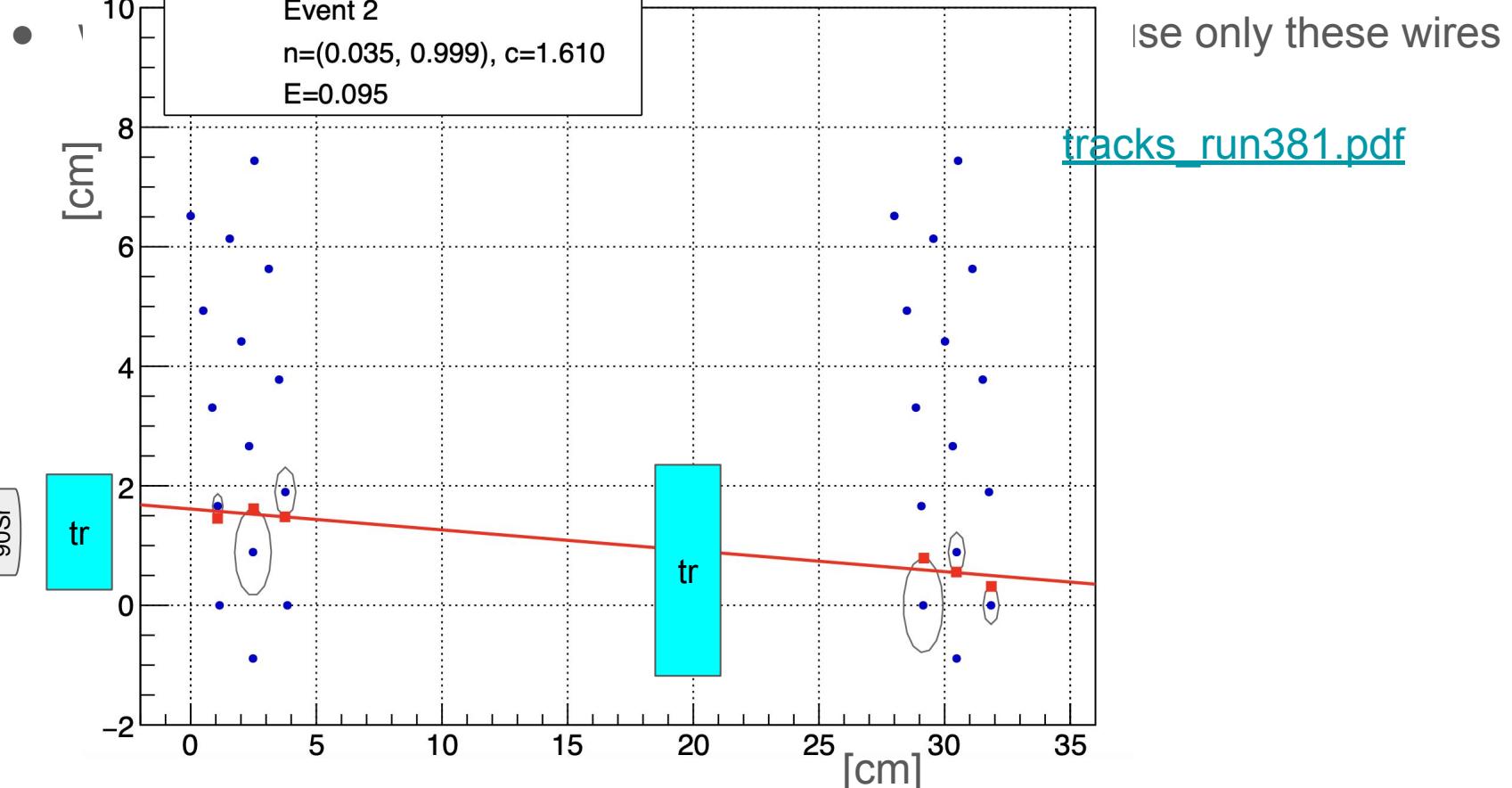
ASAGI xE15-TC
h_dt_1



SONY xE80-TC
h_dt_21



TC > TrackAna > Track “wireList, 6LayerHit, 1Hit1Layer” (Typical)



ToDo

- RARiS WS slide (15min + 5min) (v.0 by Nov. 09, 2025)
- Tracking (by Nov. 30, 2025)
 - Is my linear fit algorithm correct?
 - to refine diffX and diffY between E15-TC and E80-TC
 - **At first, should do tracking E15's and E80's TC independently**
 - XT correction by using 2dim map of “Residual vs dt”
like E15-CDC's XT correction
 - Build a algorithm to get the position resolution of ASAGI w/ test chamber
- ASAGI x Test Chamber Summary and Goal(by Nov. 30, 2025)

