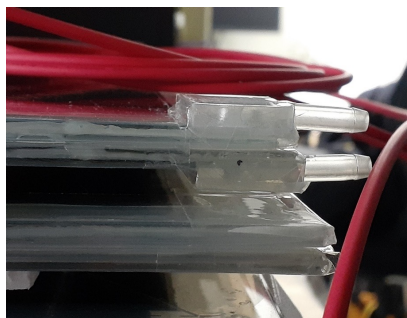
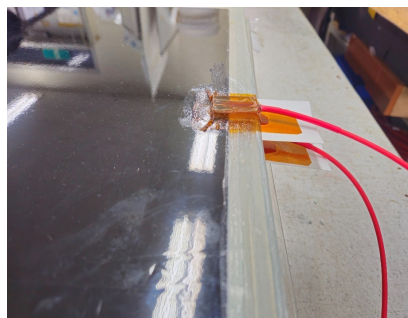
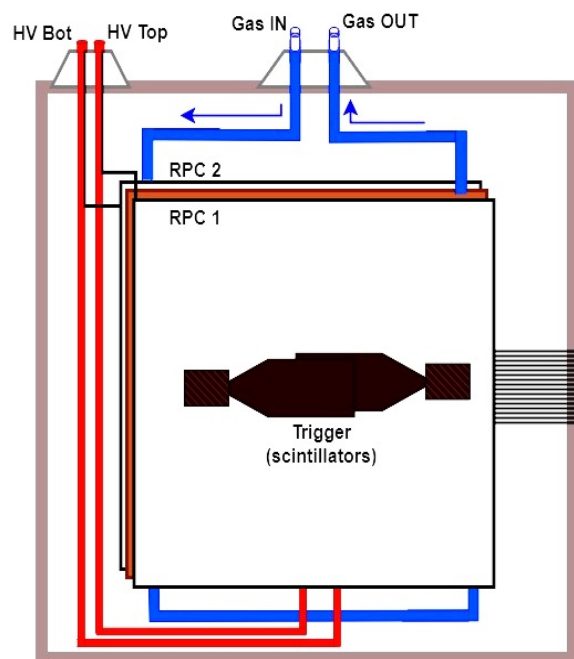


Thin-RPC KRONOS

thin gaps built in
KODEL laboratory

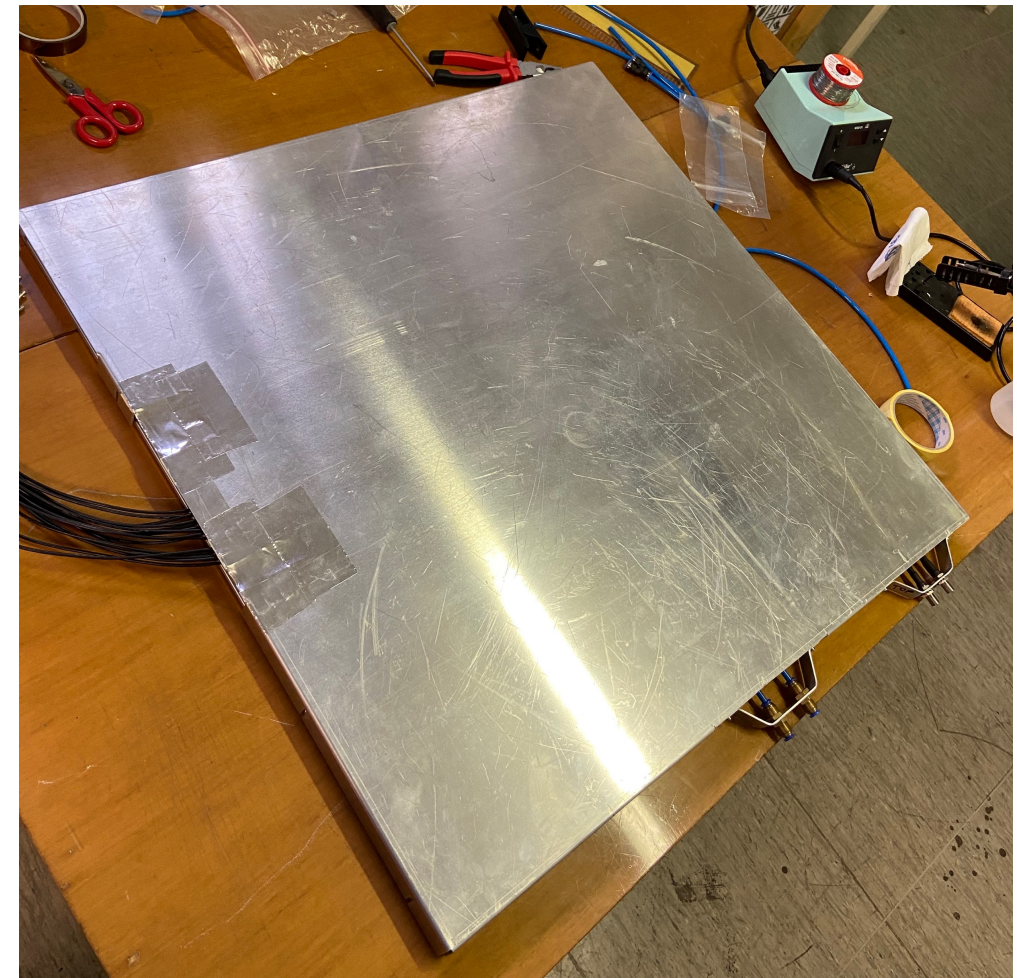
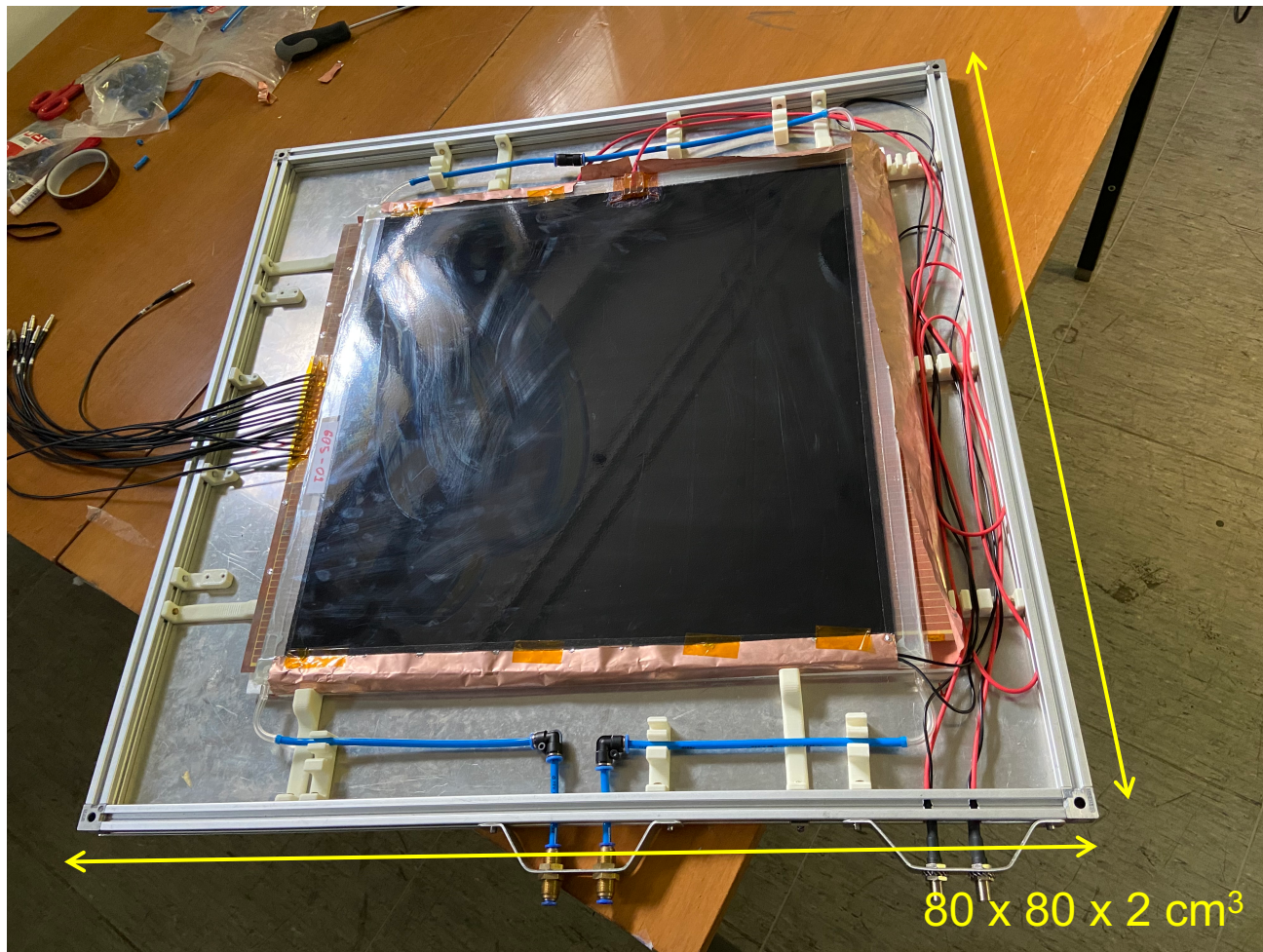


chamber and readout
schema at INFN-BA



- **Double gap** with strip readout panel in between (KODEL-G0p5-01 -> TOP, KODEL-G0p5-02 -> BOT)
 - Soda-lime glass electrodes: 1.1 mm thickness
 - Gas gap: 500 μm thickness
 - Resistivity: $10^{12} \Omega \cdot \text{cm}$ at 20 C
 - Strip width: 5 mm - single readout (strips terminated with 50 Ω)
- Signal readout: [CAEN Digitizer DT5742](https://www.caen.it/Products/DT5742)
 - 16 Ch + Fast trigger @ 5Gs/s
 - Active area: $\sim 10 \times 50 \text{ cm}^2$

Thin-RPC KRONOS

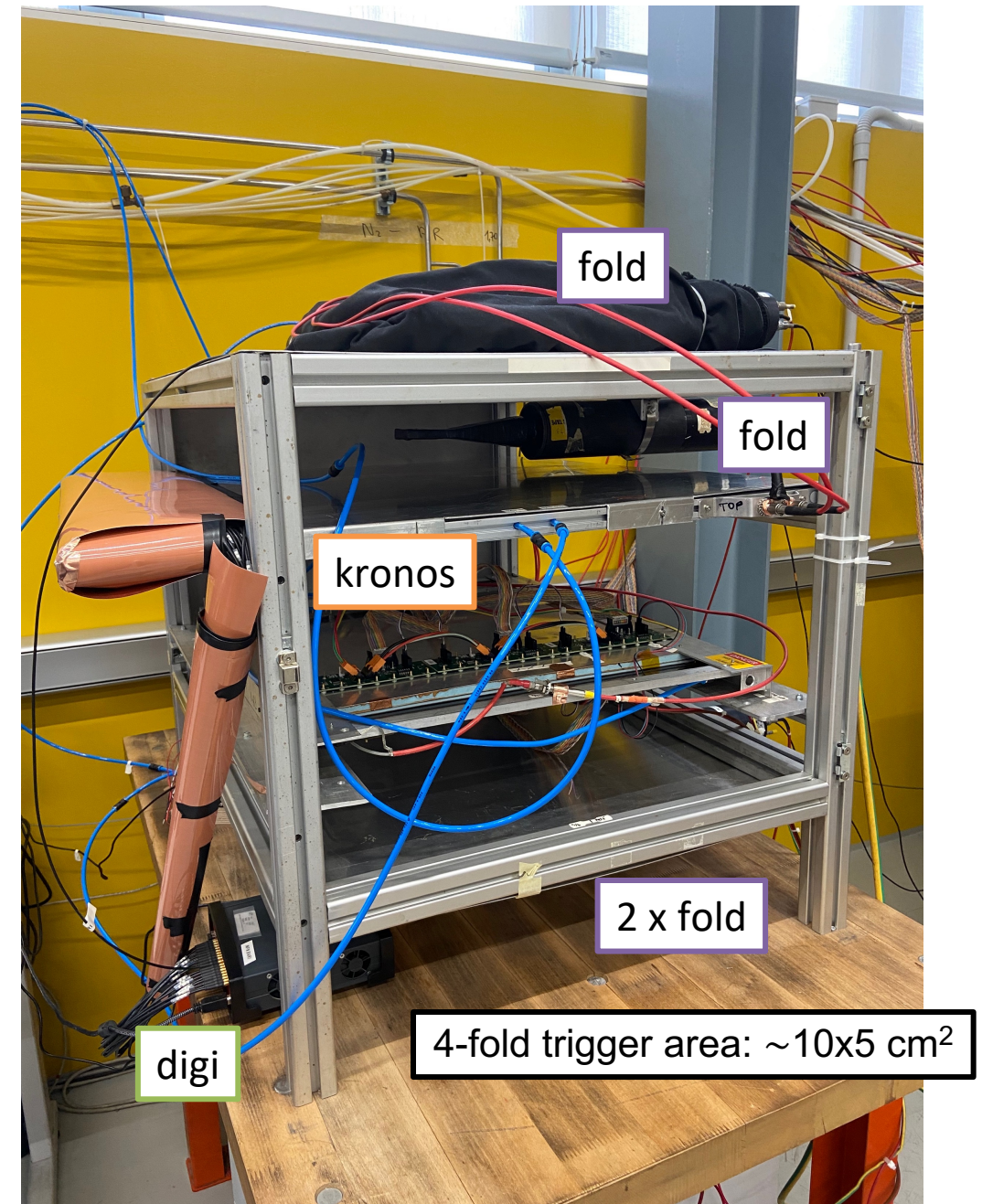


Setup @ INFN-To

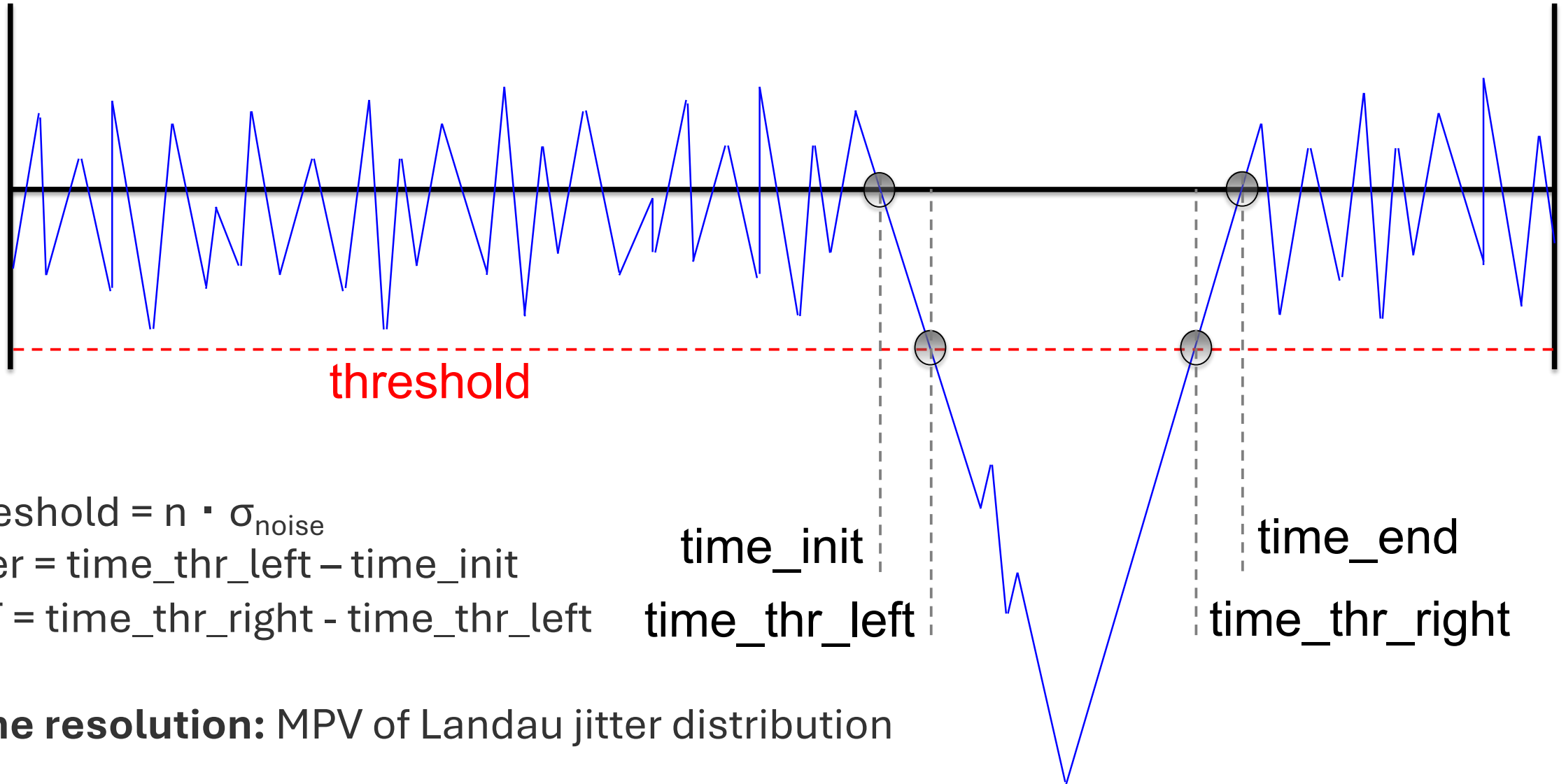
Mixtag	TFE (%)	HFO-1234ze (%)	CO ₂ (%)	iC ₄ H ₁₀ (%)	SF6 (%)	Analysis
STD	95.2	-	-	4.5	0.3	000010
STD2ISO	97.7	-	-	2	0.3	000013
STD0ISO	99.7	-	-	-	0.3	000014
STD30CO2	65	-	30	4	1	000015
ECO65	-	65	30	4	1	000017
TFEISO	95	-	-	5	-	000020
TFE	100	-	-	-	-	000022
Density (g/l)	4.68	5.26	1.98	2.69	6.61	-
GWP	1430	7	1	3	22800	-

test for integration at GDD lab

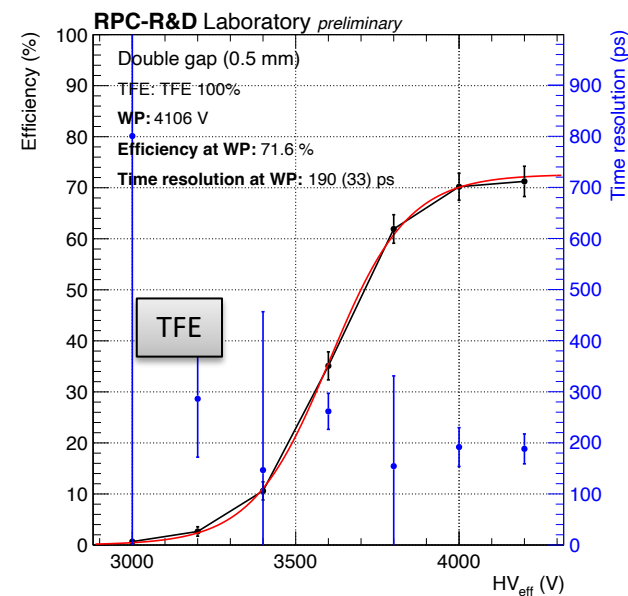
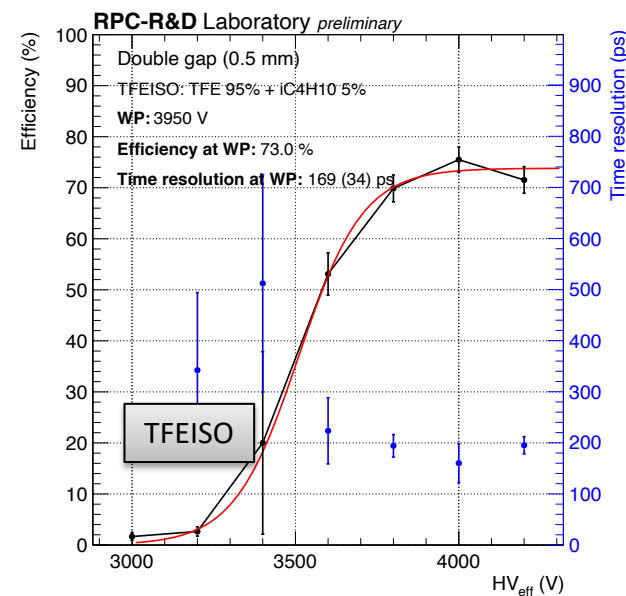
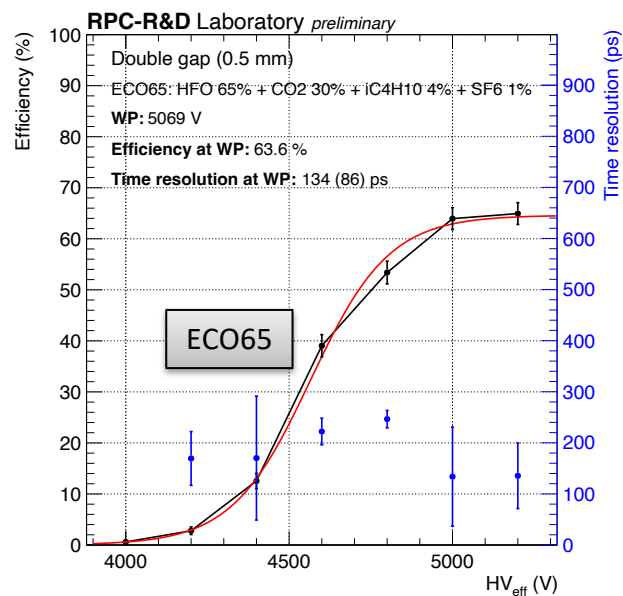
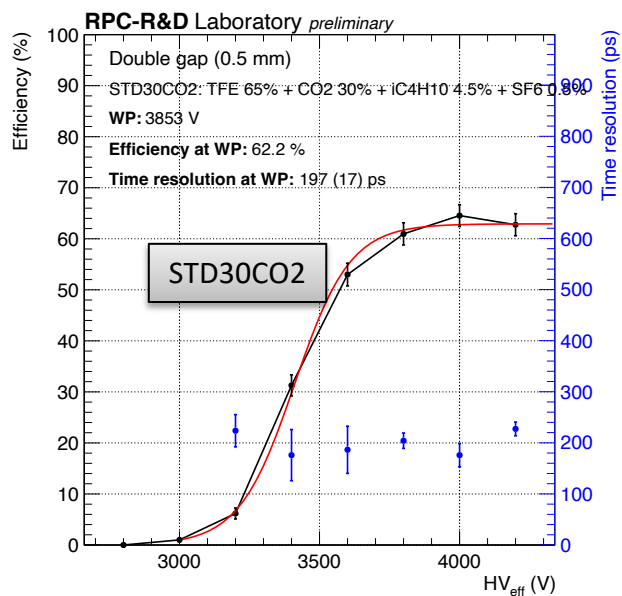
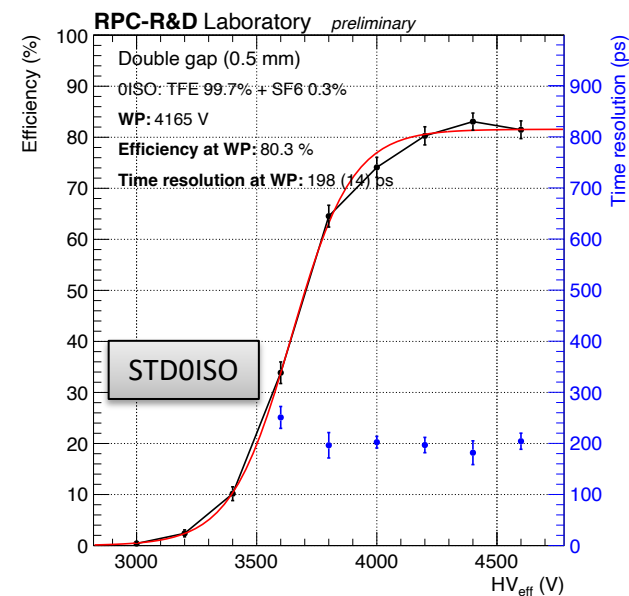
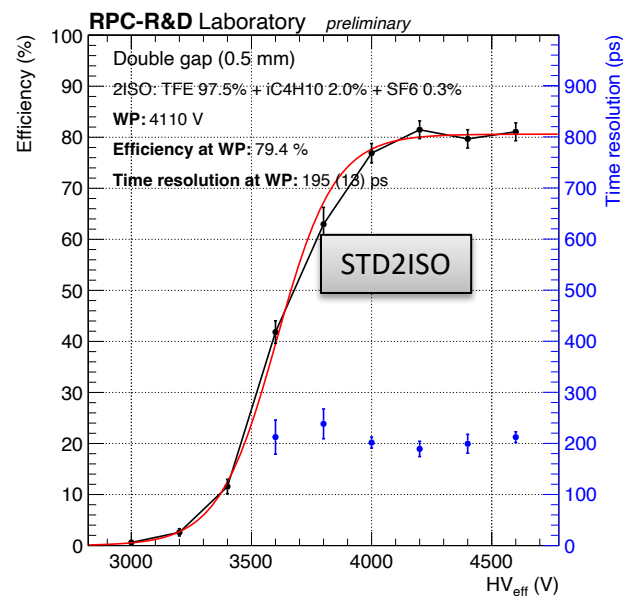
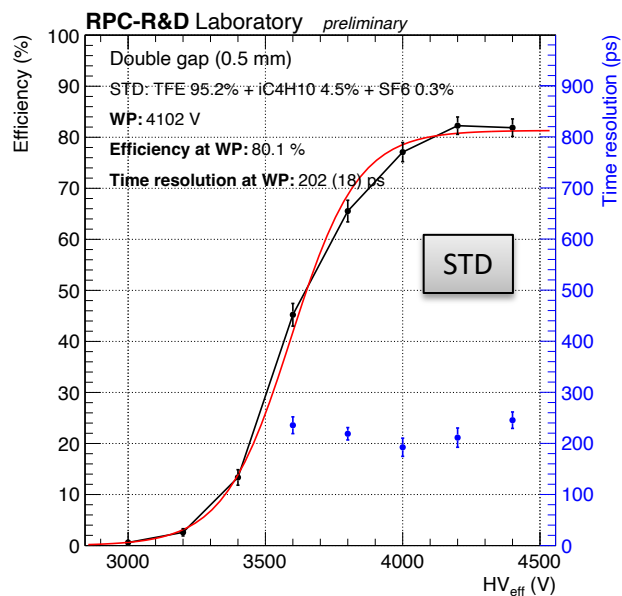
<https://dramosloc.web.cern.ch/kronos/>
<https://codimd.web.cern.ch/3BF8RpzWSNWrs97lpaX08g>

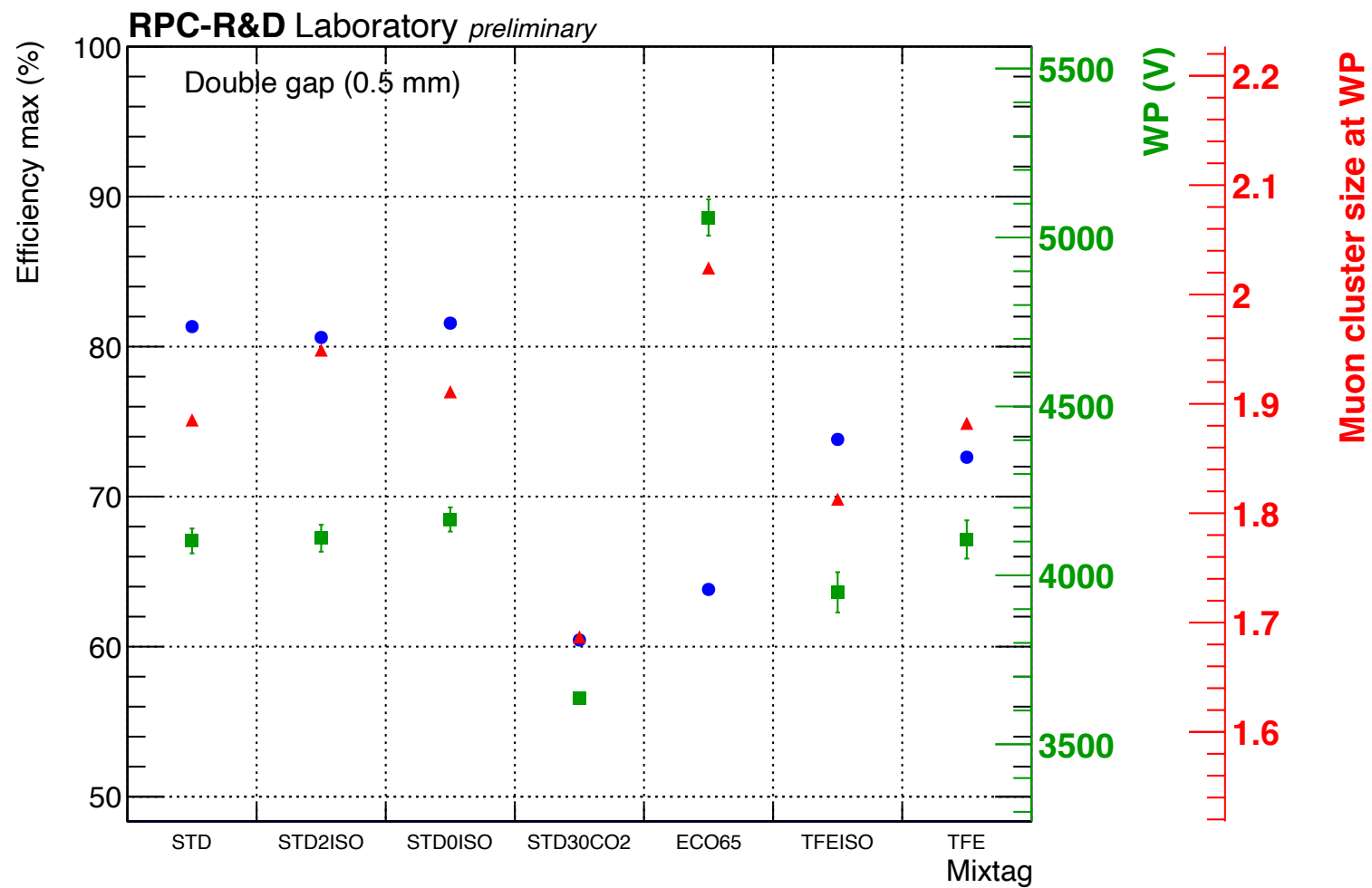


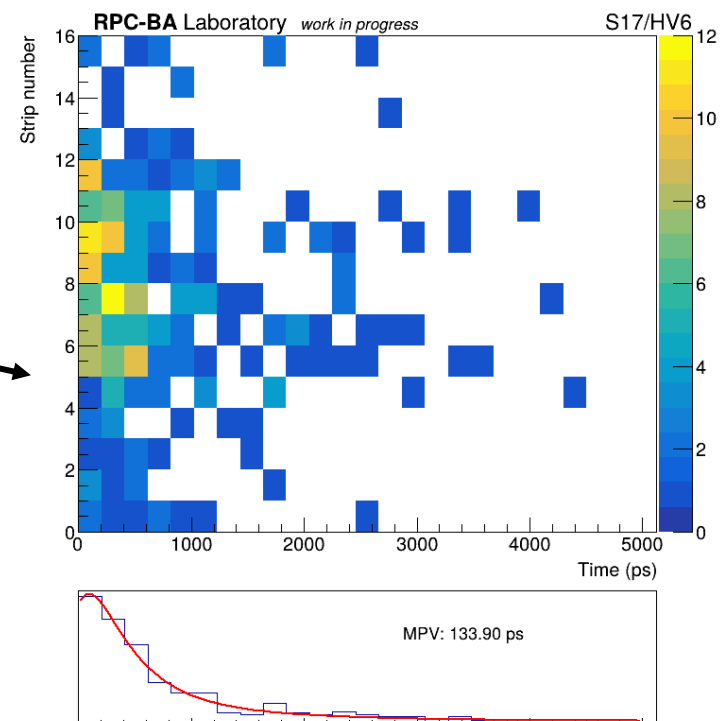
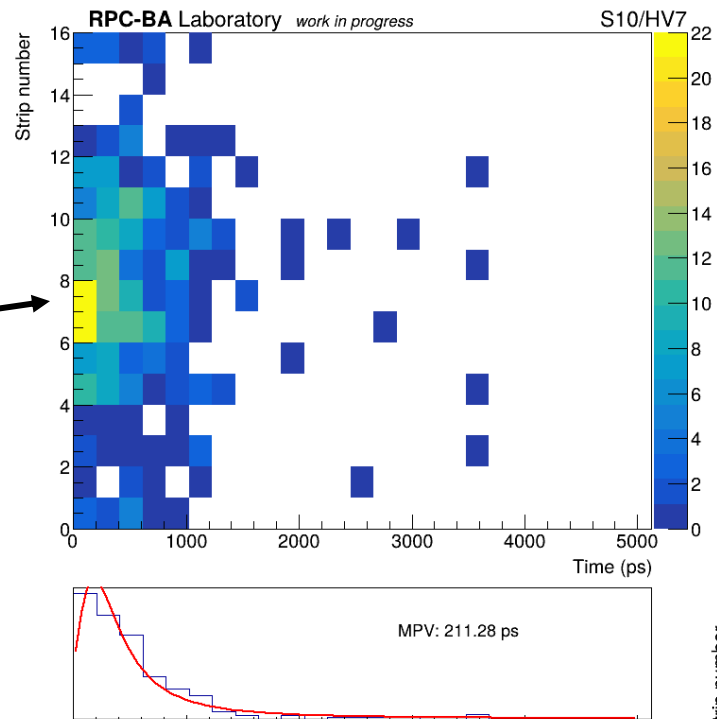
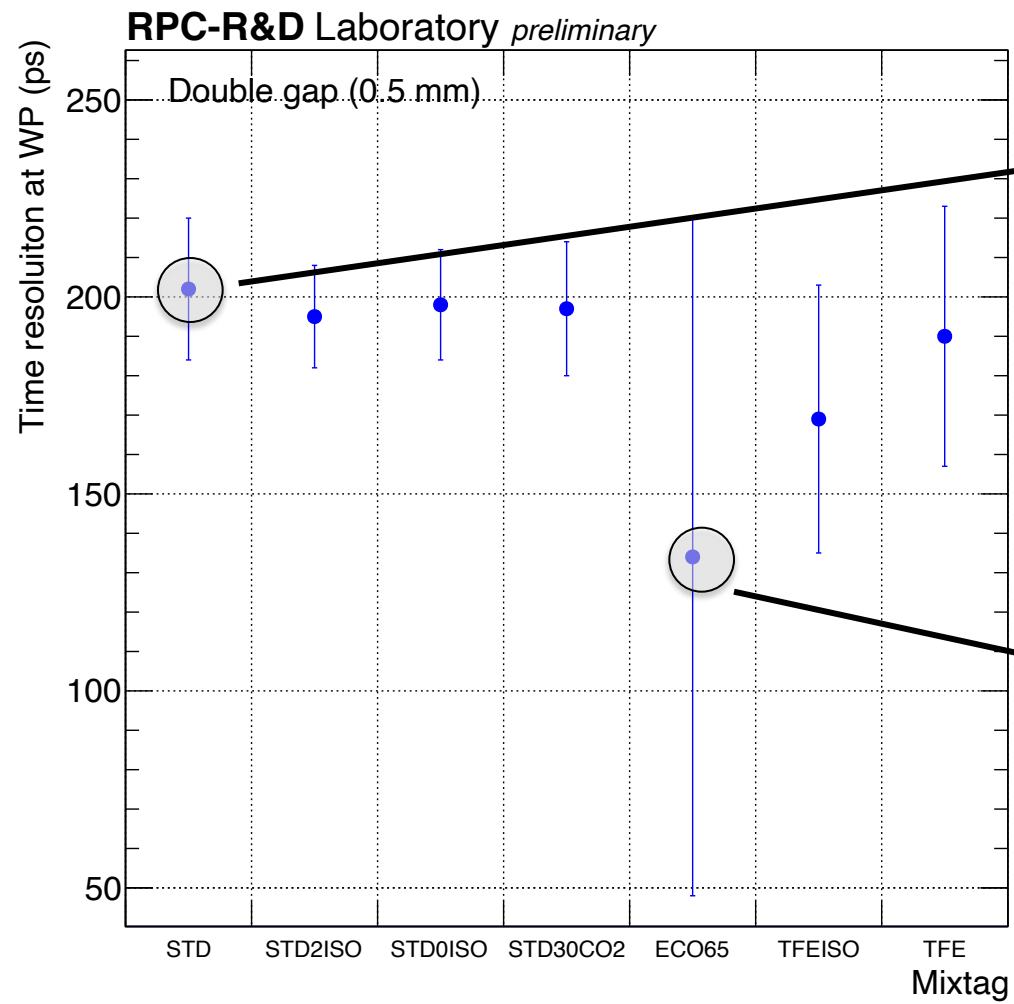
Signal analysis

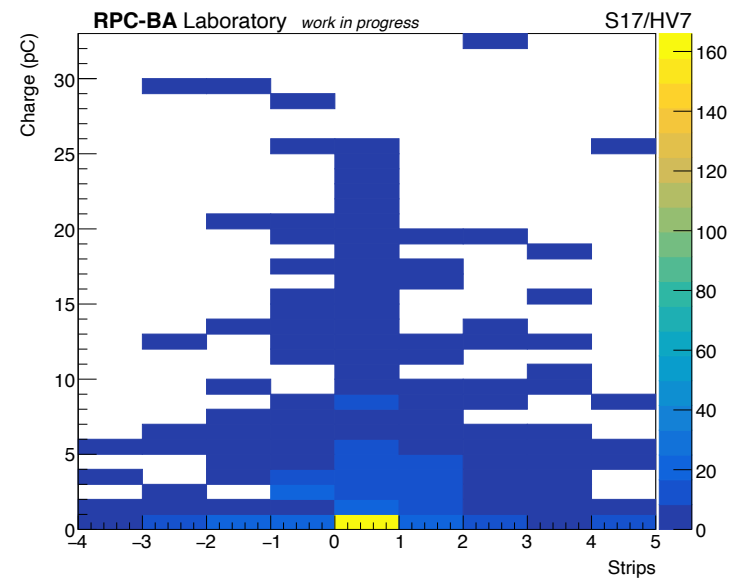
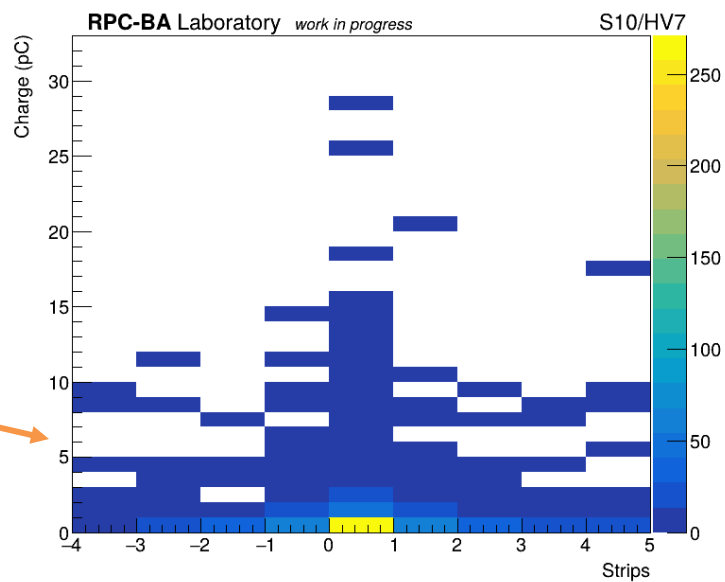
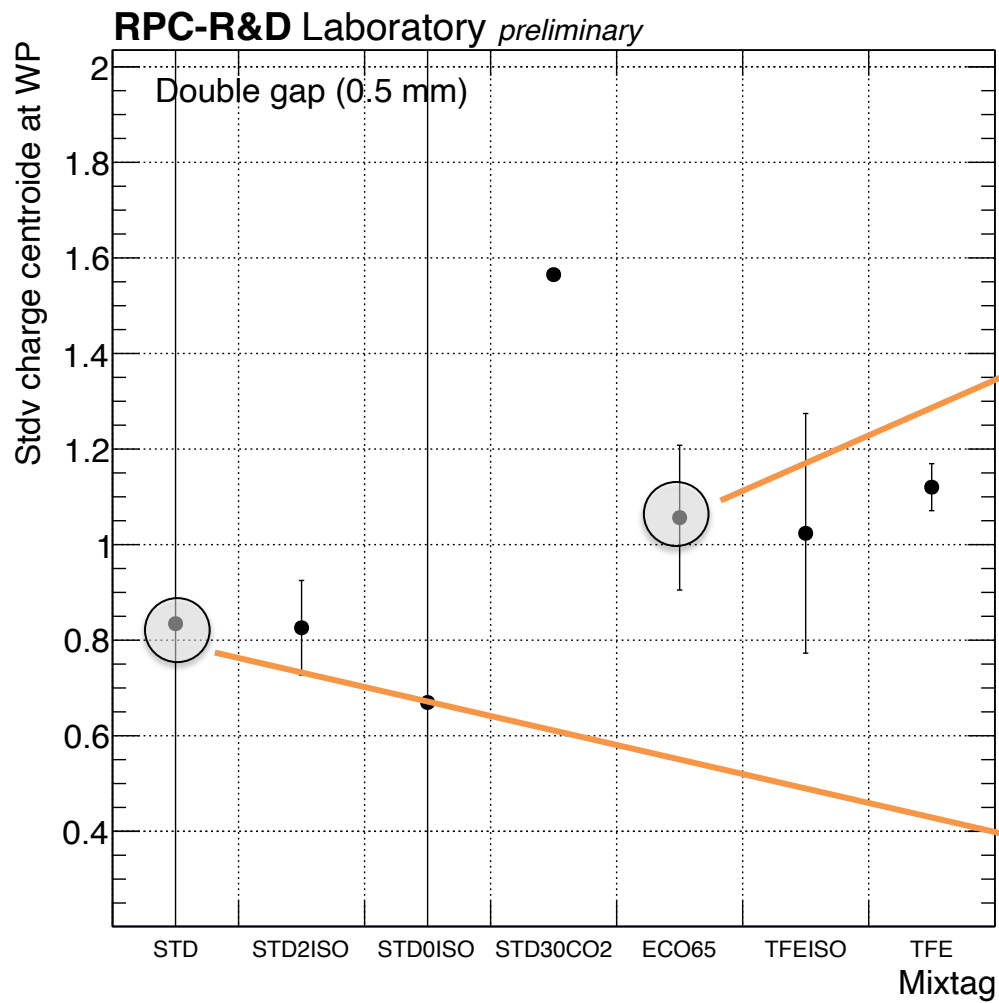


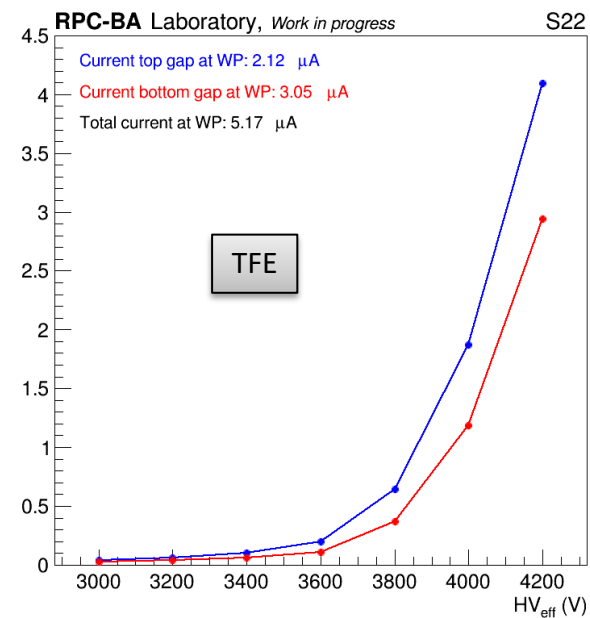
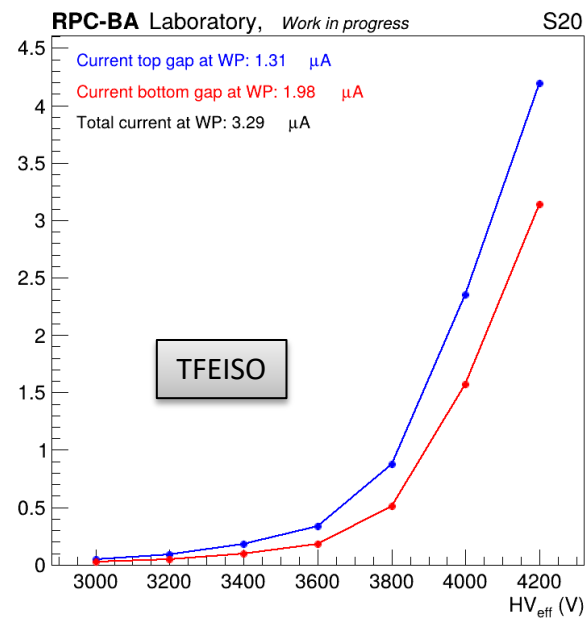
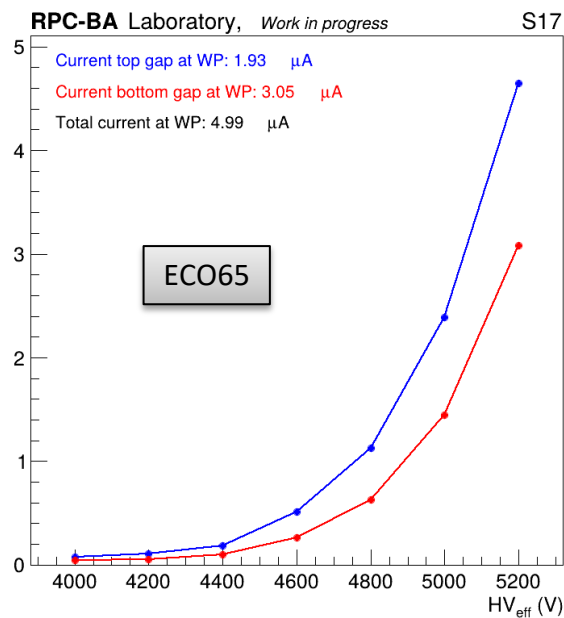
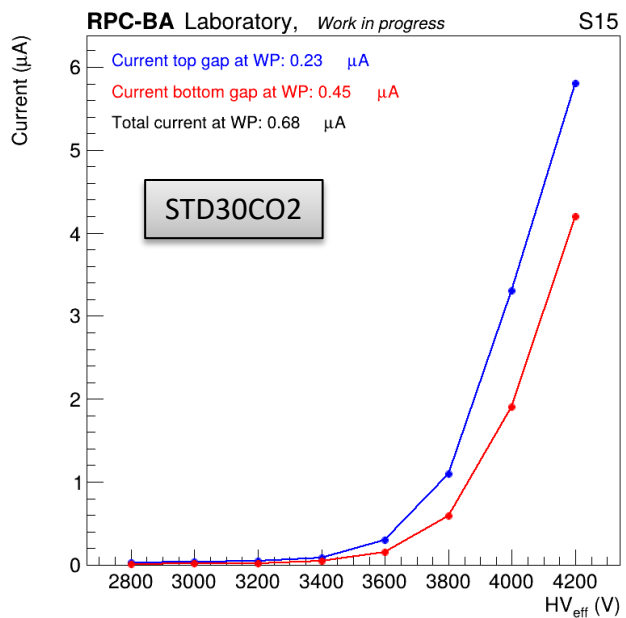
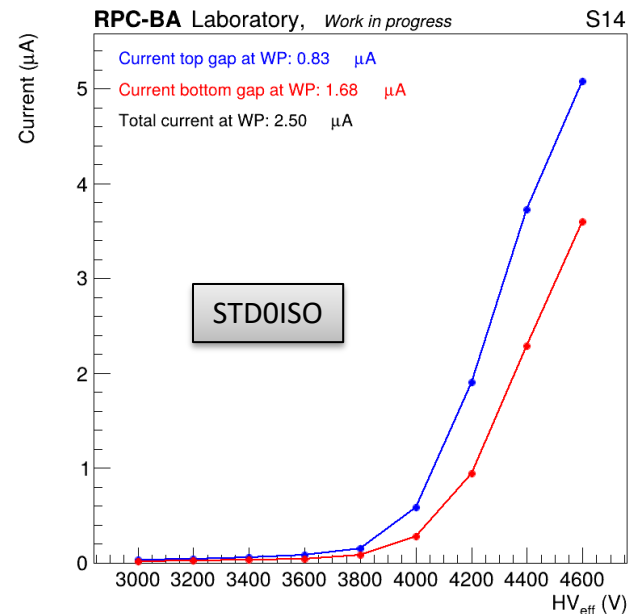
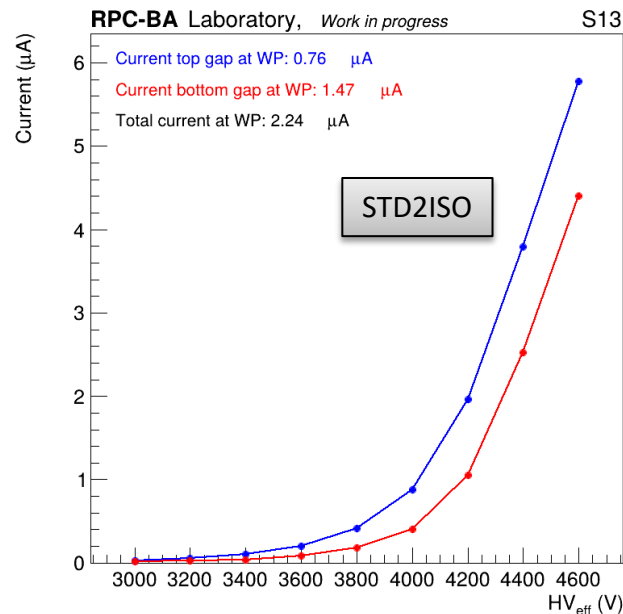
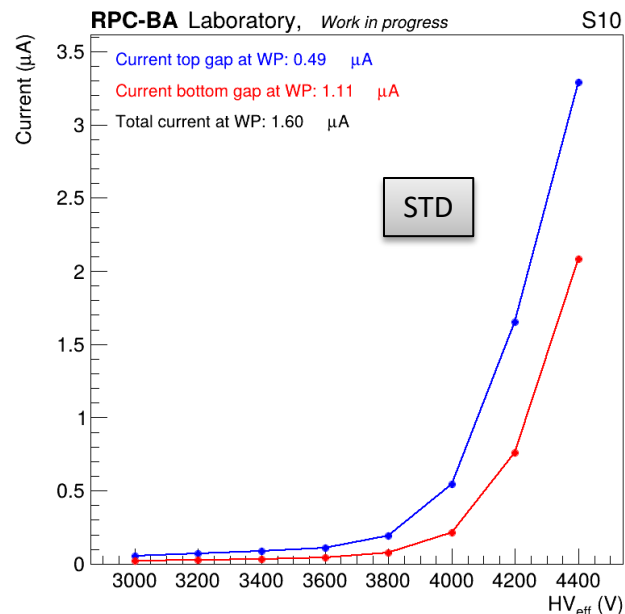
- $\text{threshold} = n \cdot \sigma_{\text{noise}}$
- $\text{jitter} = \text{time_thr_left} - \text{time_init}$
- $\text{ToT} = \text{time_thr_right} - \text{time_thr_left}$
- **Time resolution:** MPV of Landau jitter distribution





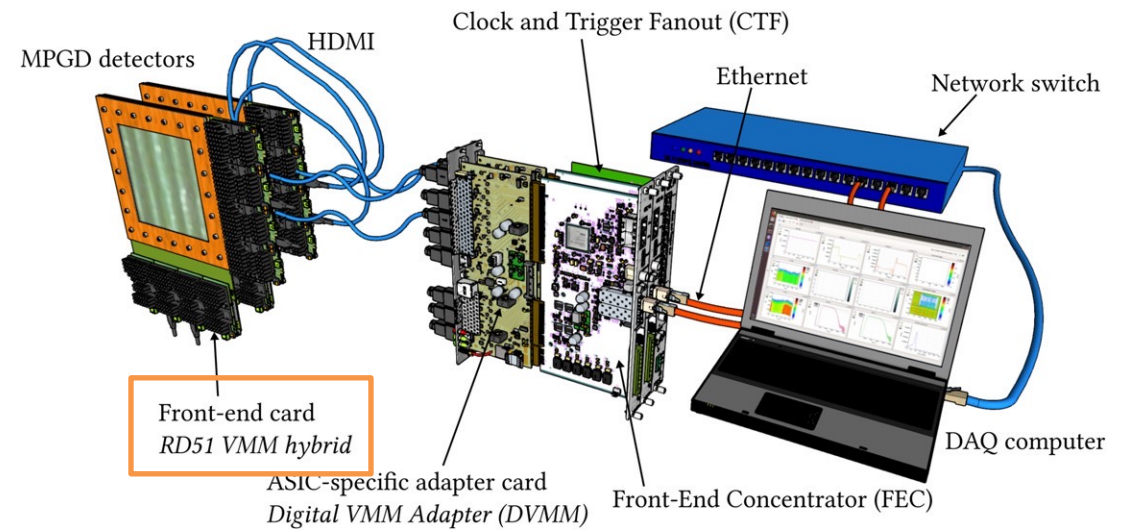






GDD Lab

Motivation: residual position measurements + interest to integrate an RPC into GDD telescope



<https://vmm-srs.docs.cern.ch>

| Charge fine analysis??



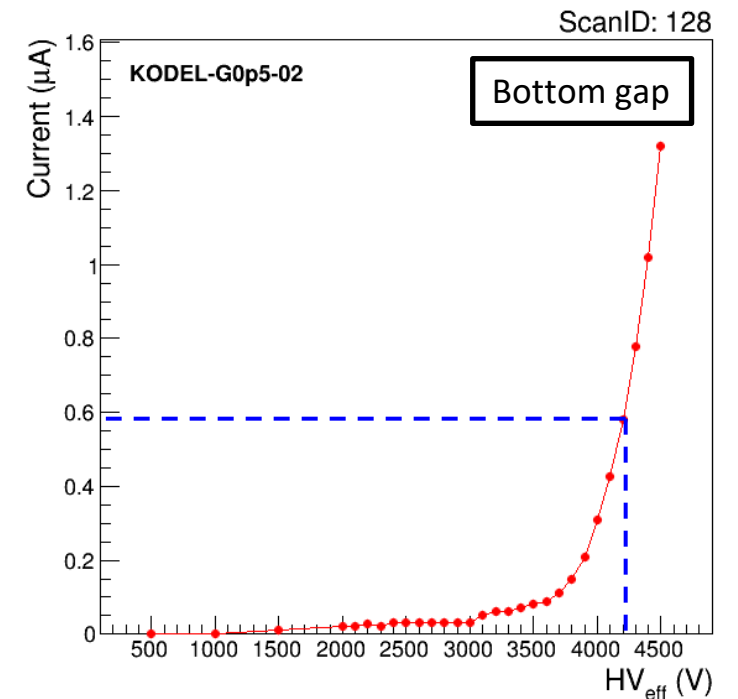
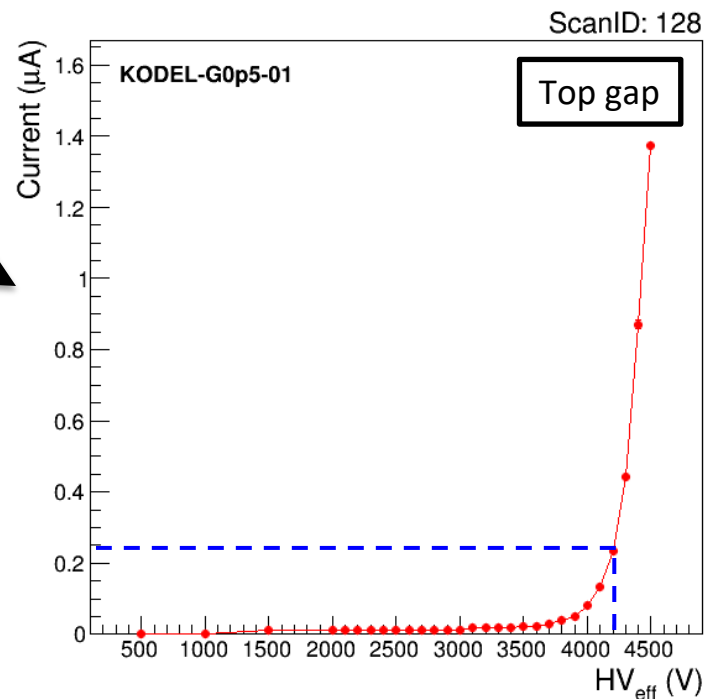
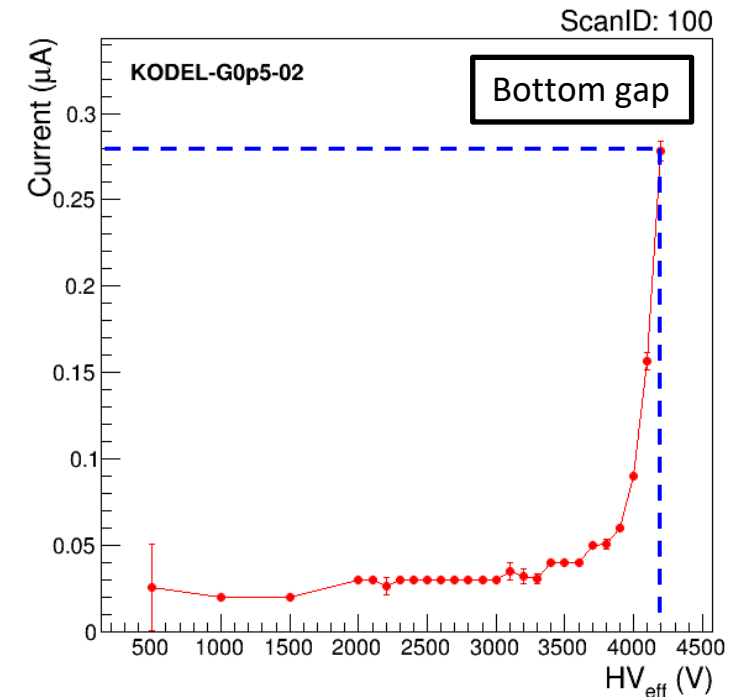
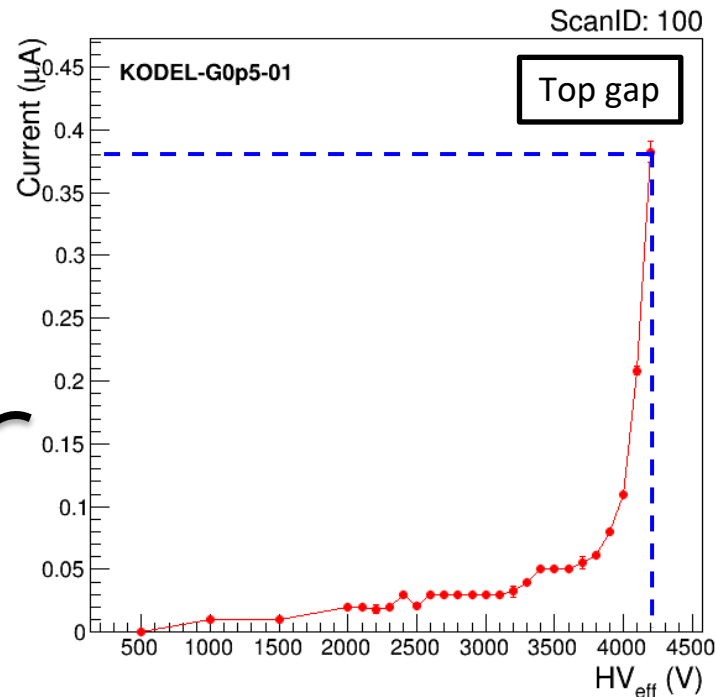
Thanks!



Backup

Currents

- Low ohmic contribution while sharp increase in the physics region
- ~1 month btw scans with long data taking periods (~22 hrs per HV point during data taking)





Politecnico
di Bari



thin RPC for timing

Polytechnic and INFN Bari

D. Ramos Lopez, G. Pugliese, G. Iaselli, N. Ferrara, U. Lakshmaiah

Korea University

K. S. Lee

Hanyang University

T. Kim, M. Kang and Y. Jo

@ DRD1 WP7B meeting