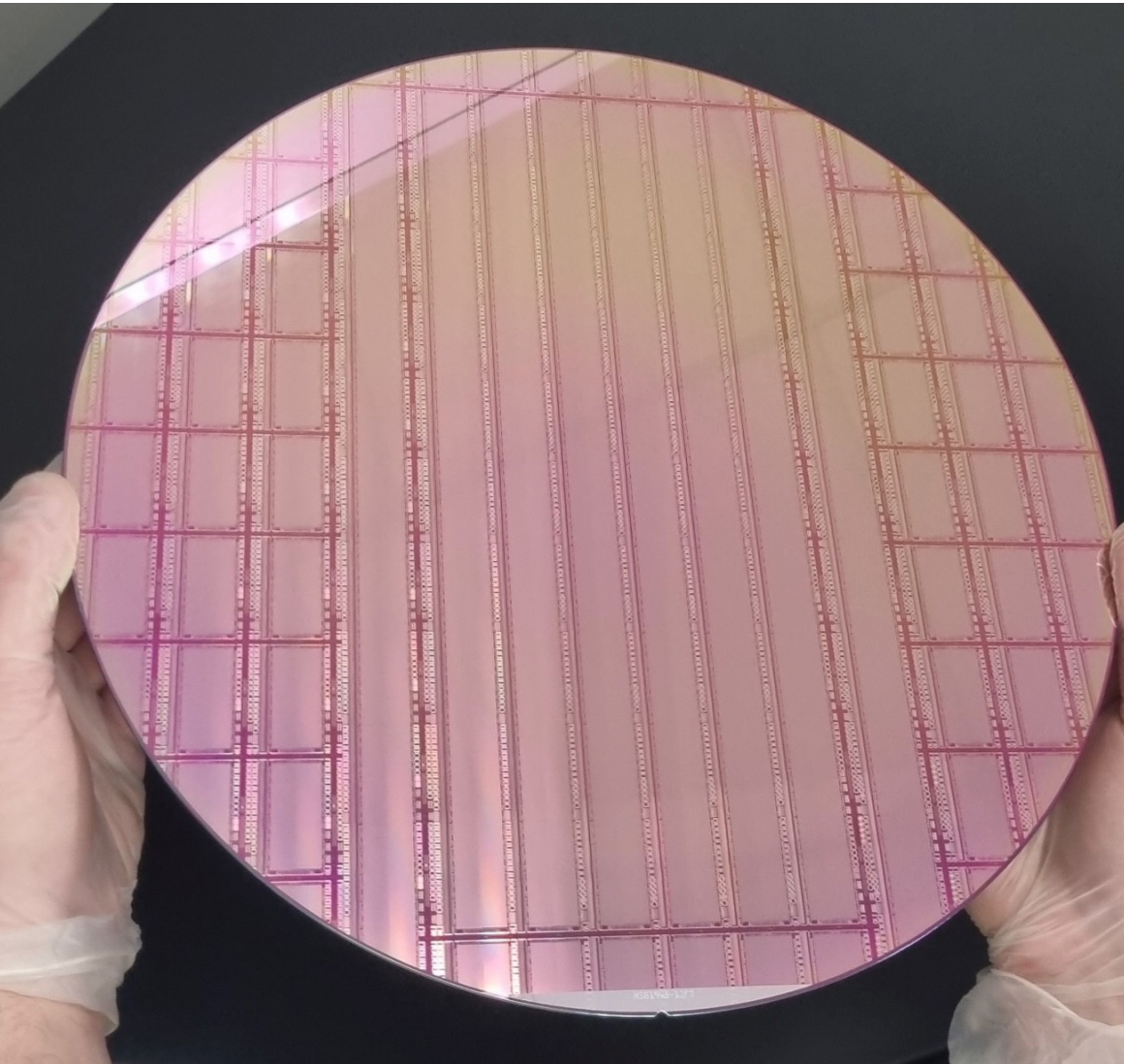

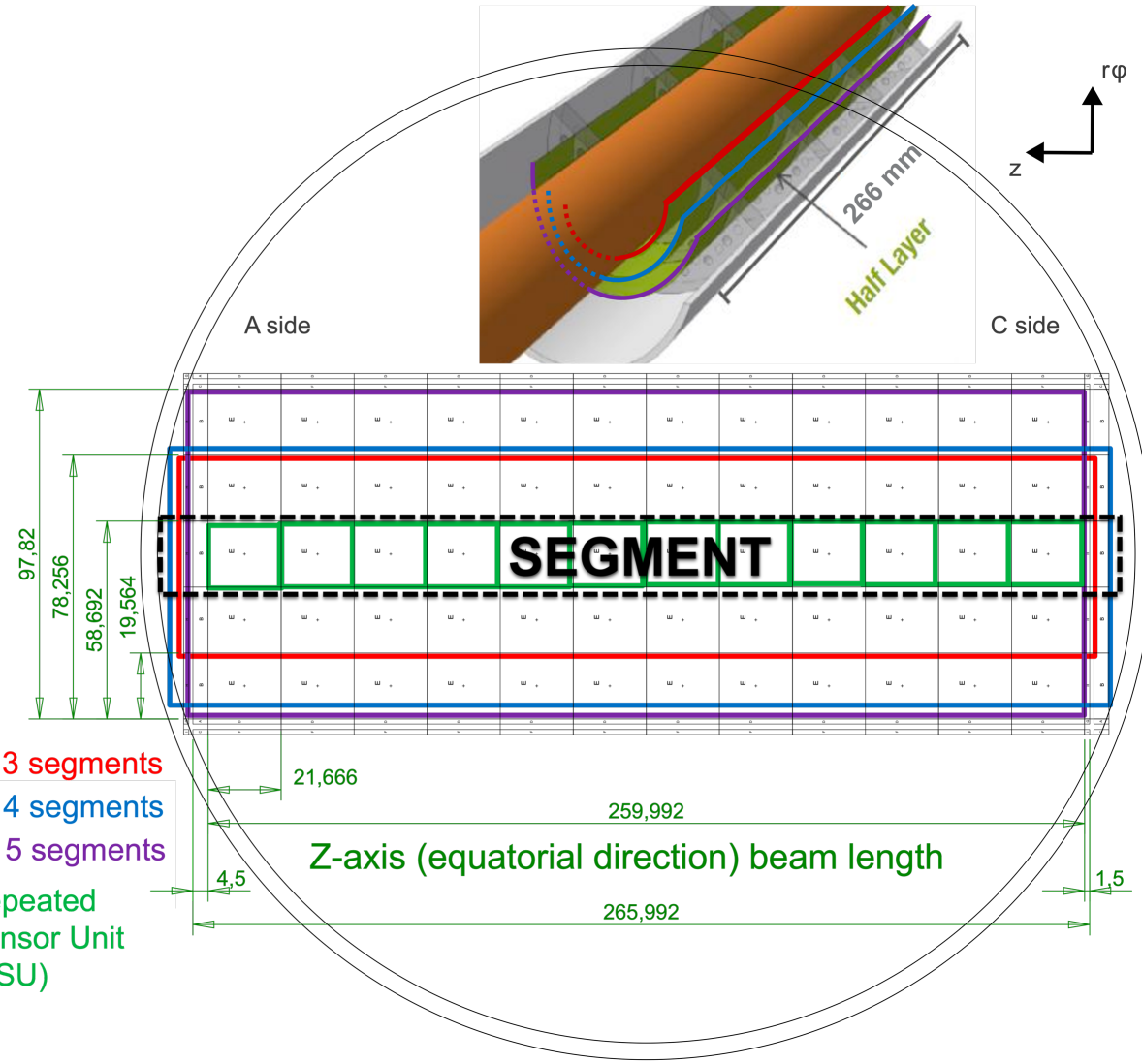


ALICE ITS3 ER1 Sensors

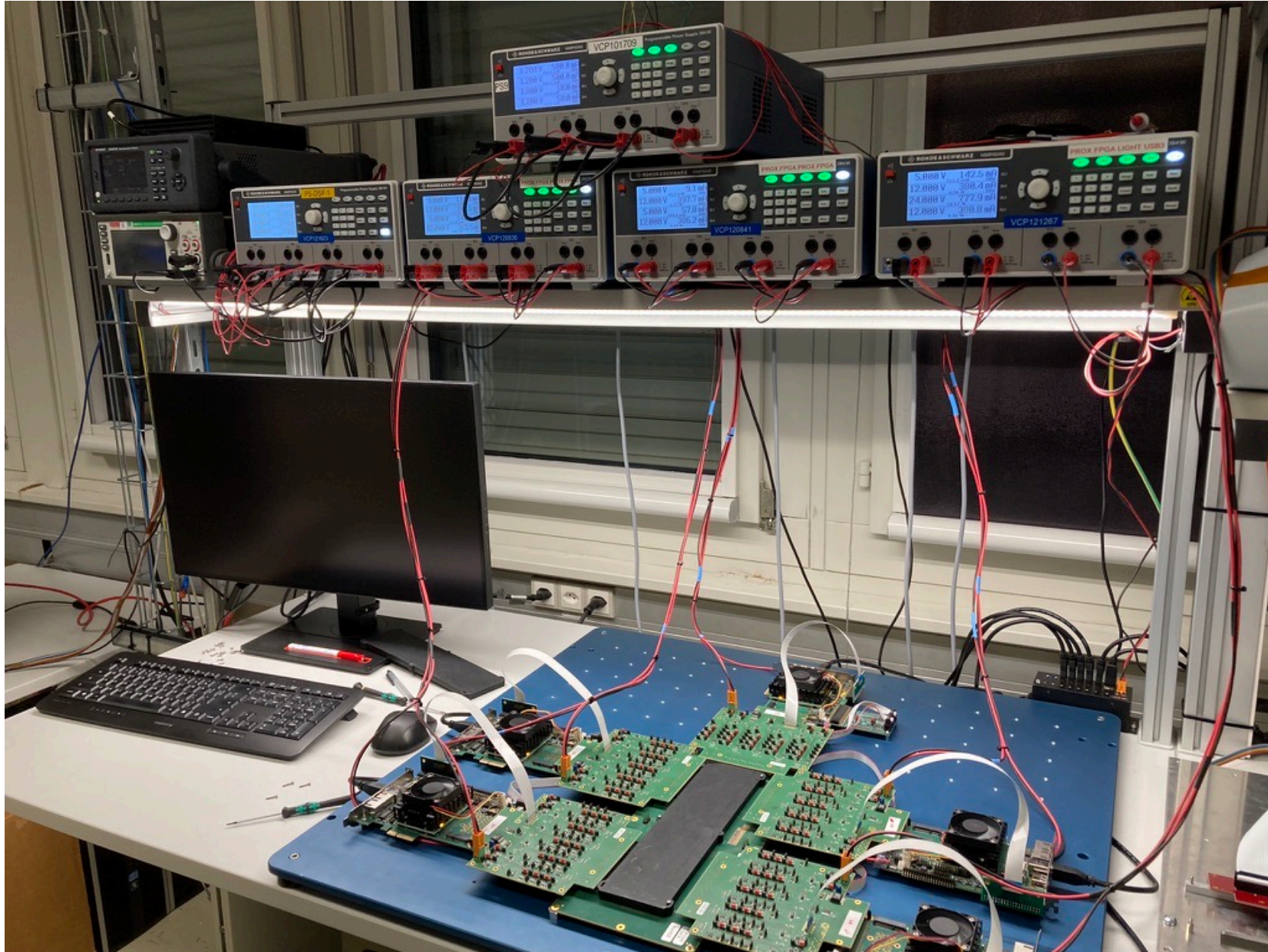


$R\phi$ (azimuthal direction)
folded around beam-pipe

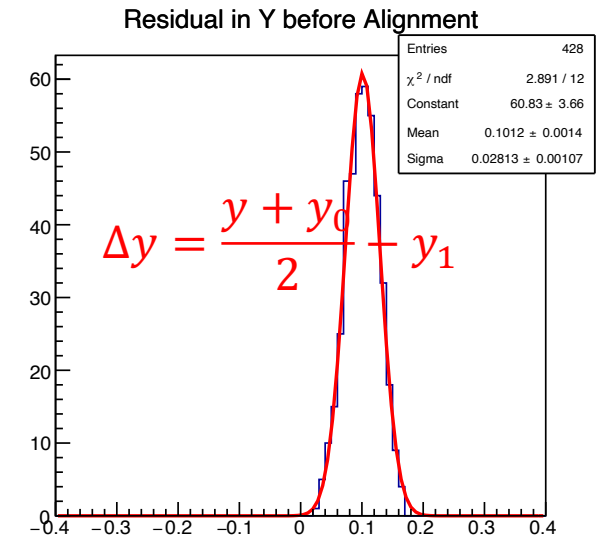
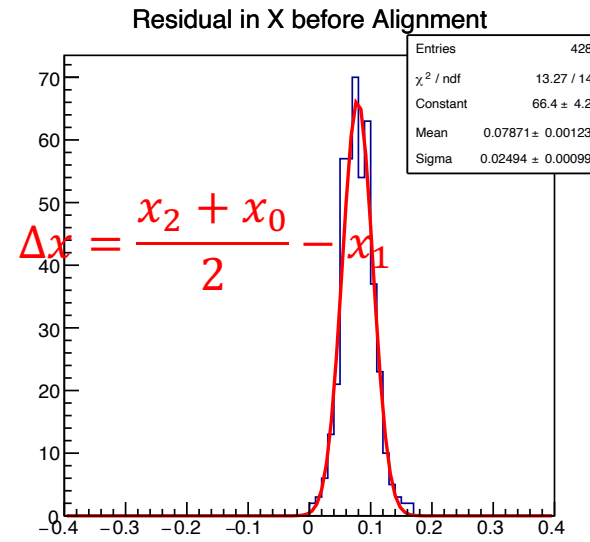
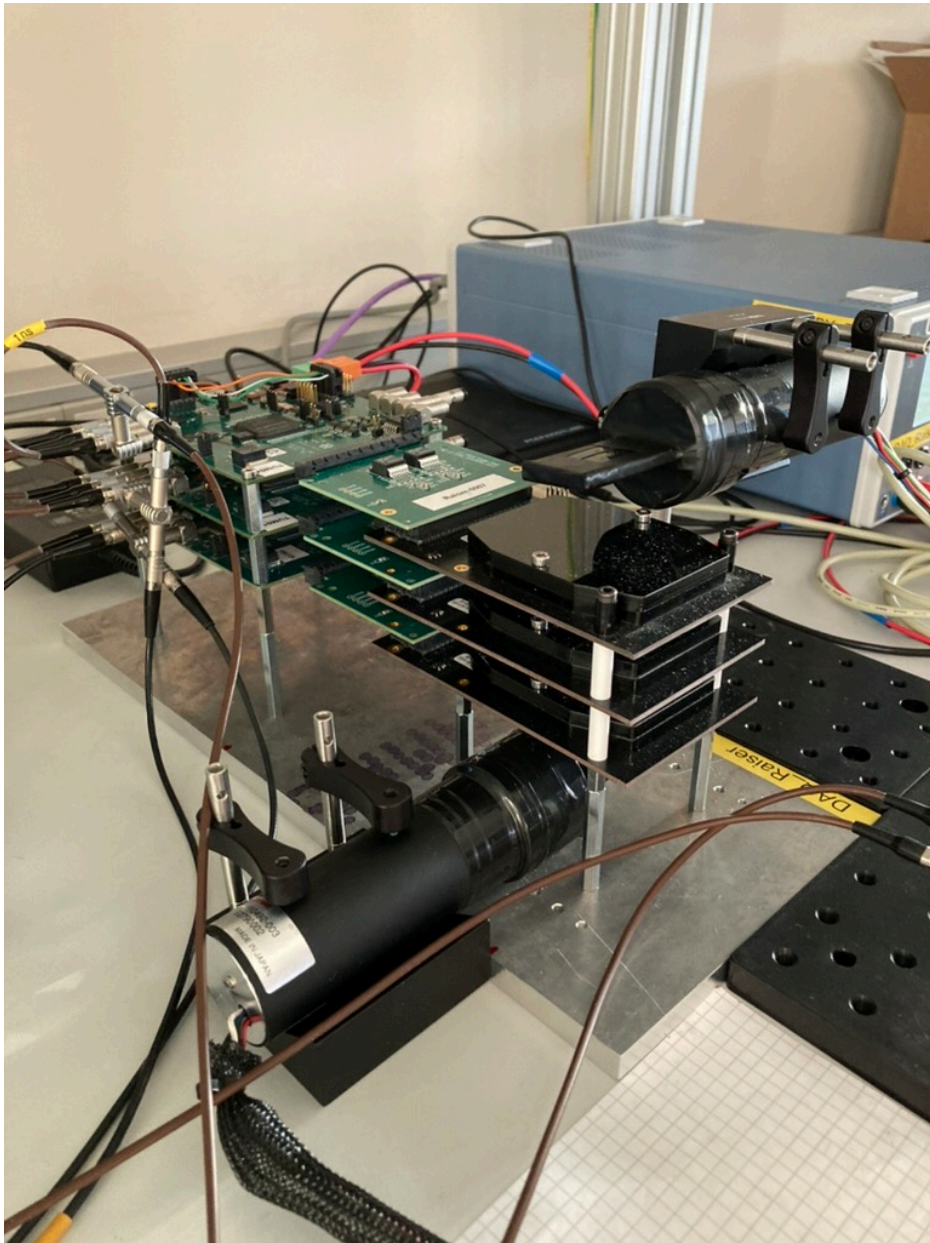
- Layer 0: 3 segments
- Layer 1: 4 segments
- Layer 2: 5 segments
-  Repeated Sensor Unit (RSU)



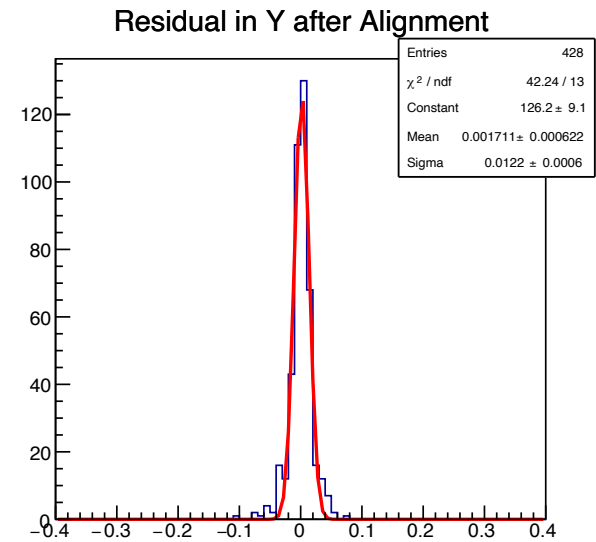
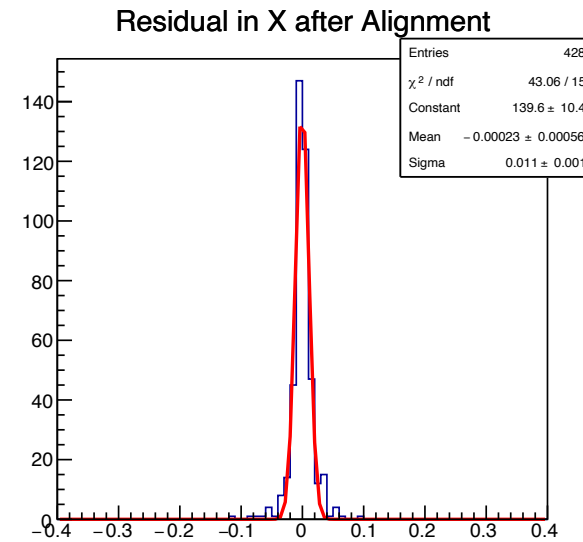
ALICE ITS3 ER1 - MOSS



ALICE ITS3 ER1 - BabyMOSS

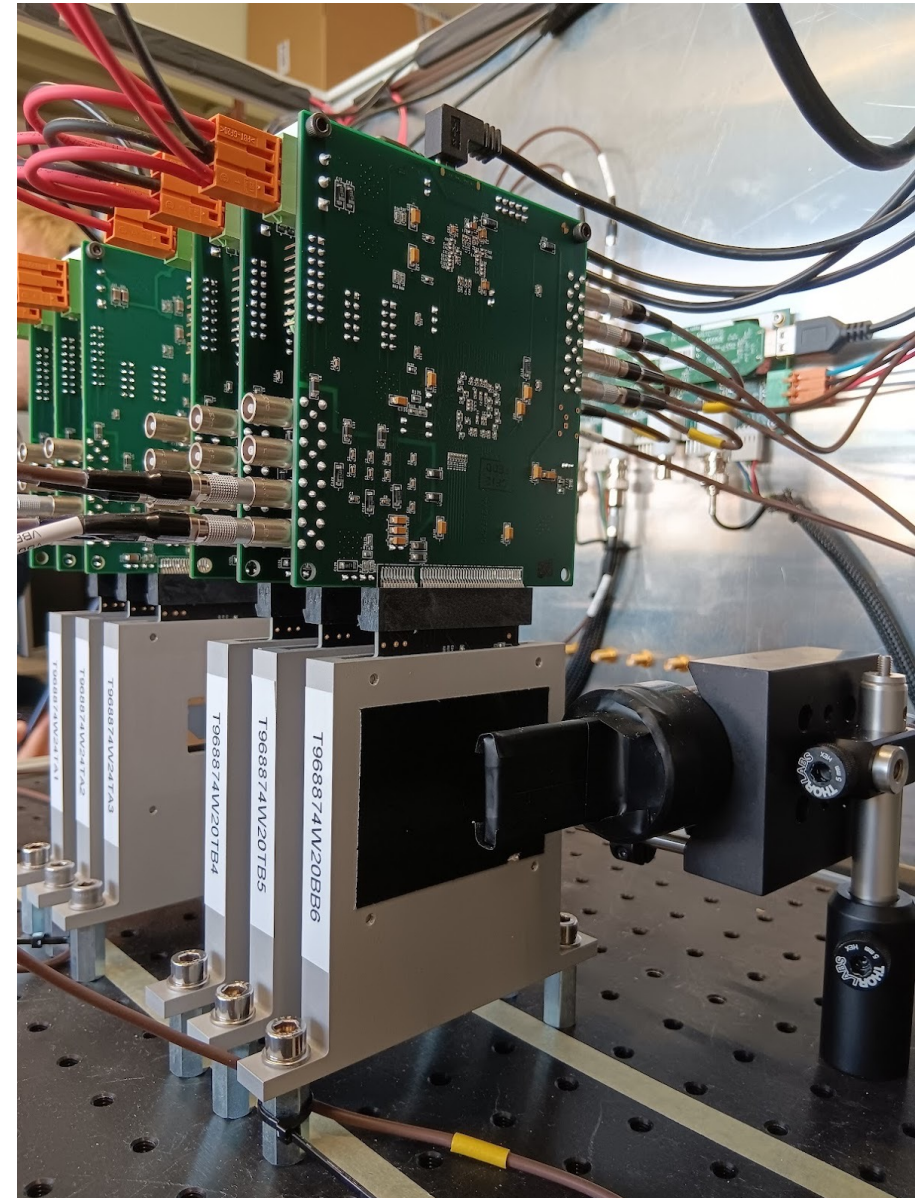
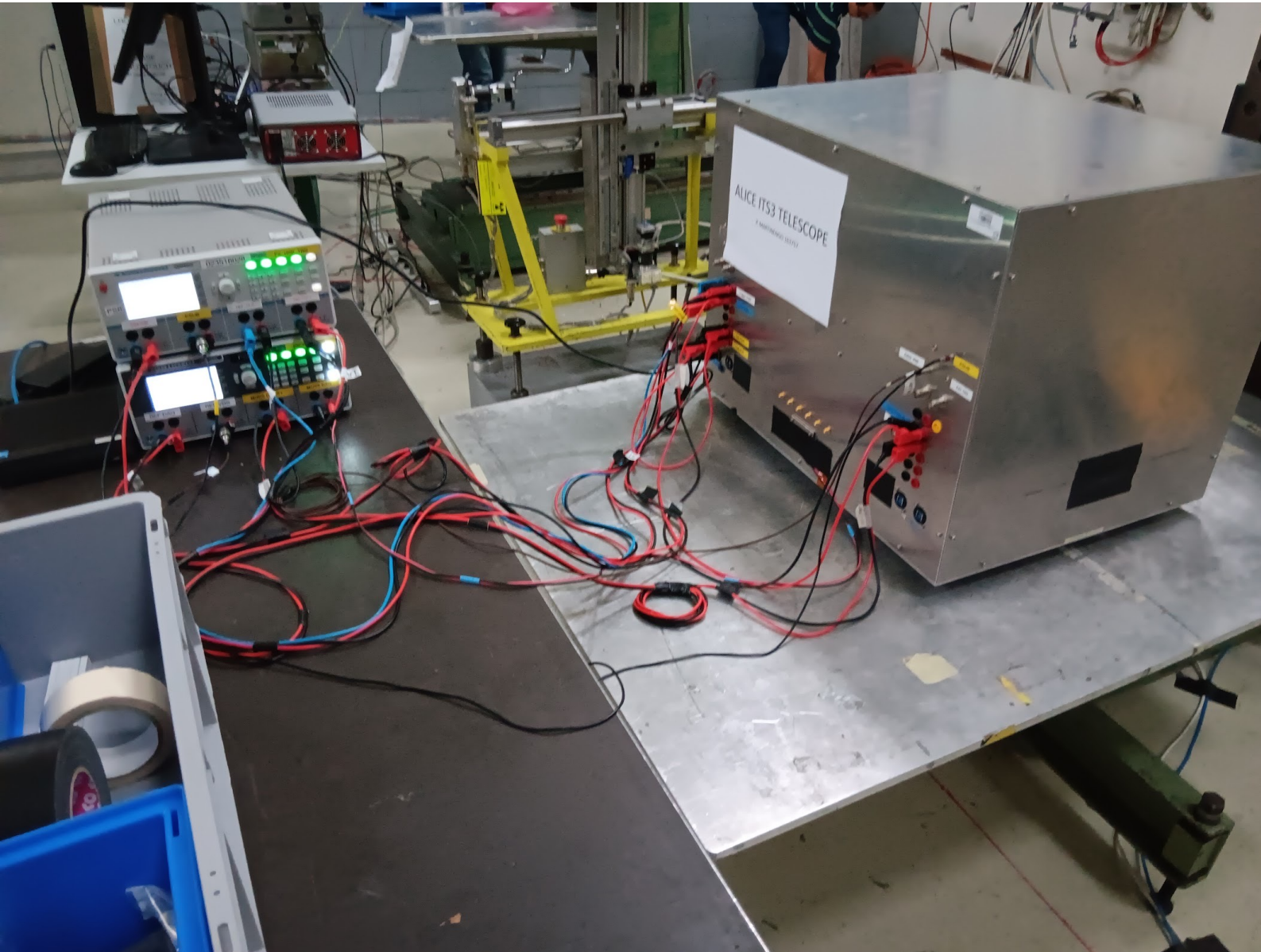


w/o alignment: 30 um residuals => ~17 um single plane resolution



with alignment: 12 um residuals => ~7 um single plane resolution

BabyMoss Beam Telescope



- Understand general sensor behavior:
 - Threshold scan, VSUB scan, register scan, DAC scan, temperature scan, ...
- Quantify sensor performance: efficiency, fake rate, spatial resolution, cluster size (versus incident angle)
 - March 22-April 2, April 10-16 at CERN
 - **Requested May 22-28 as primary beam time at Fermilab (may also run parasitically on May 29-June 4)**
 - **Requested an additional week of beam time as primary user at the end of June/beginning of July at Fermilab, and will include AC-LGAD sensors/ASICs in the telescope (TBC)**
 - ~~June 10-23 at DESY~~
 - **Jlab in Fall (TBC)**
- Quantify sensor radiation tolerance
 - SEL tests with heavy ion beams at UCLouvain HIF Facility on March 5-6, 2024
 - SEU tests with proton beams at NPI Cyclotron on April 2-3, 2024
 - **SEL/SEU tests at LBL BASE with Heavy Ions and UC Davis with protons (TBD)**
- **Sensor assembly**
 - **Ask for bare babyMoss sensors and carrier boards, tooling and and assemble some of them here (TBD)**

- Update BabyMoss Firmware/Software using the Moss FW/SW framework (a main goal for my CERN trip), and EUDAQ2 telescope framework.
- 10 BabyMoss (requested, compliance letter signed on March 25, will try to ship them to LBL in ~3 weeks)
- 7 raiser boards (requested, will try to ship them to LBL in ~3 weeks)
- 8 DAQ boards (in hand from LBL production, tested by Miao Peng)
- Power supplies (in hand from LBL)
- DAQ computer (in hand, the DPTS one)
- Telescope box (being fabricated at UIC machine shop)
- 1 trigger board (will ask if I can borrow one from ALICE ITS3)
- PMTs and Trigger scintillators (waiting for EIC eRD113 contract to purchase, ask UC Riverside Ken/Miguel?)