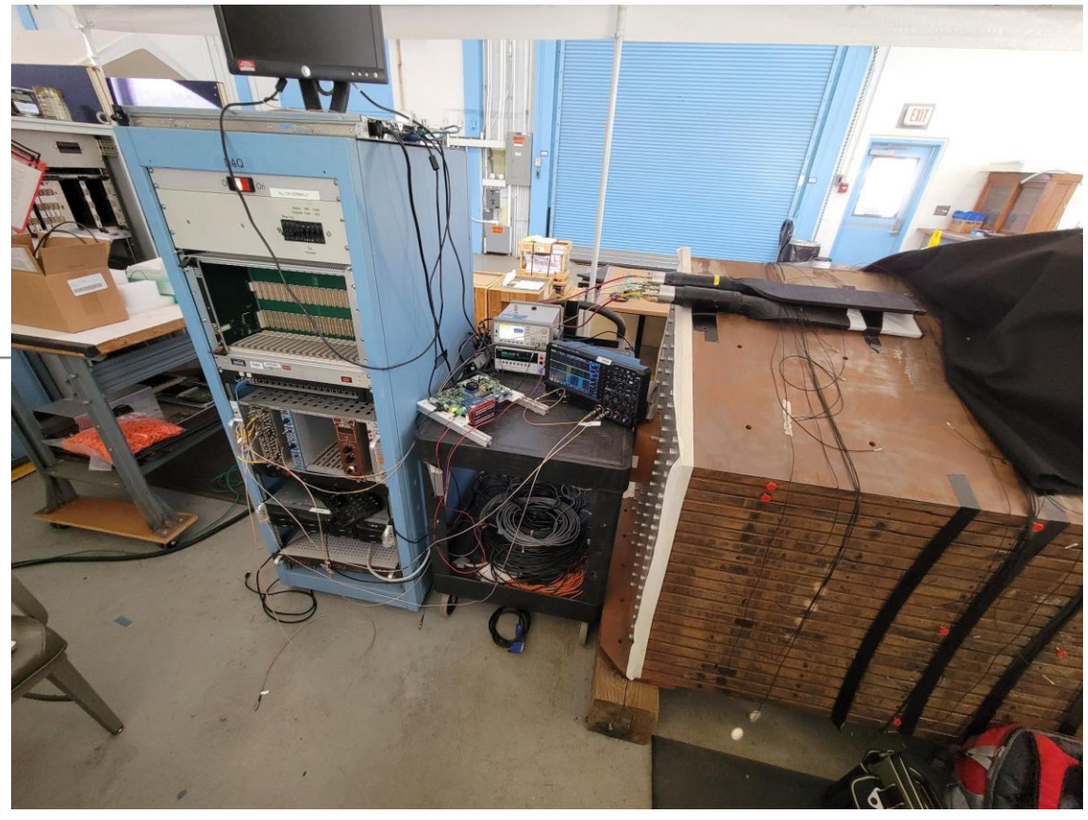
Cosmic(s) in the HighBay

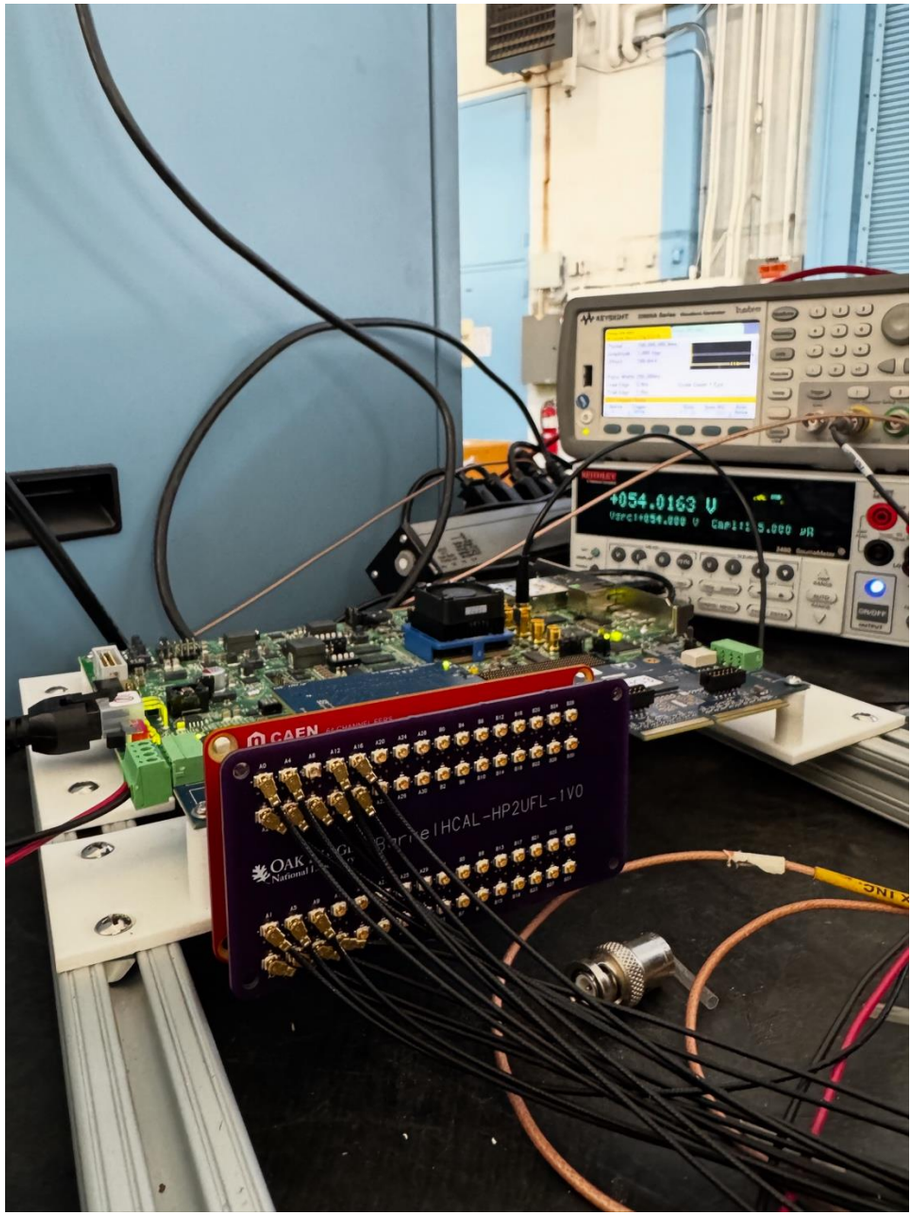


Anjaly, Martin

- Anjaly and I spent some time in the highbay to set up the cosmics trigger
- First Mike and then I had spent some time to clean it up, looks good
- The “computer rack” (that also holds a NIM crate, HV, etc) is moved close to the Hcal prototype to avoid long cable runs
- Trigger is set up (could probably benefit from a bit of re-timing and some scopeshots, next week)
- One “stack” of tiles -4 -- 20 total, 16 connected. It is hard to black out the lower ones, disconnected to save them and also the bias supply
- Today is just the “proof of principle” – there are tons of things that need to be re-visited

Cosmic(s) in the HighBay

BHCal prototype setup



16 channels in the HGCROC connected to the tiles

Cosmic(s) in the HighBay

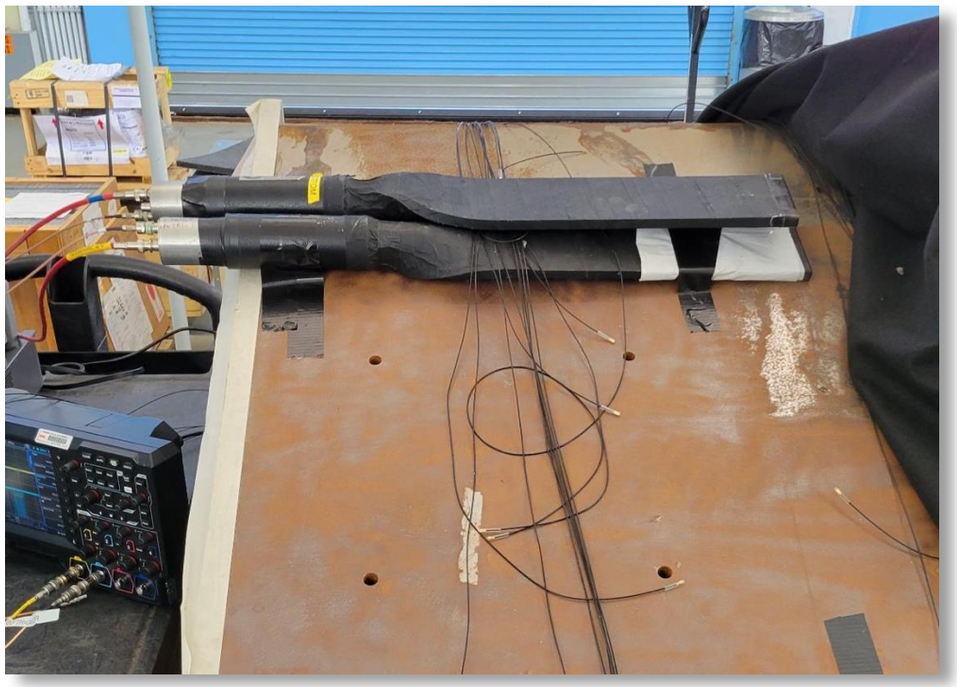
The HighBay setup is pretty much complete

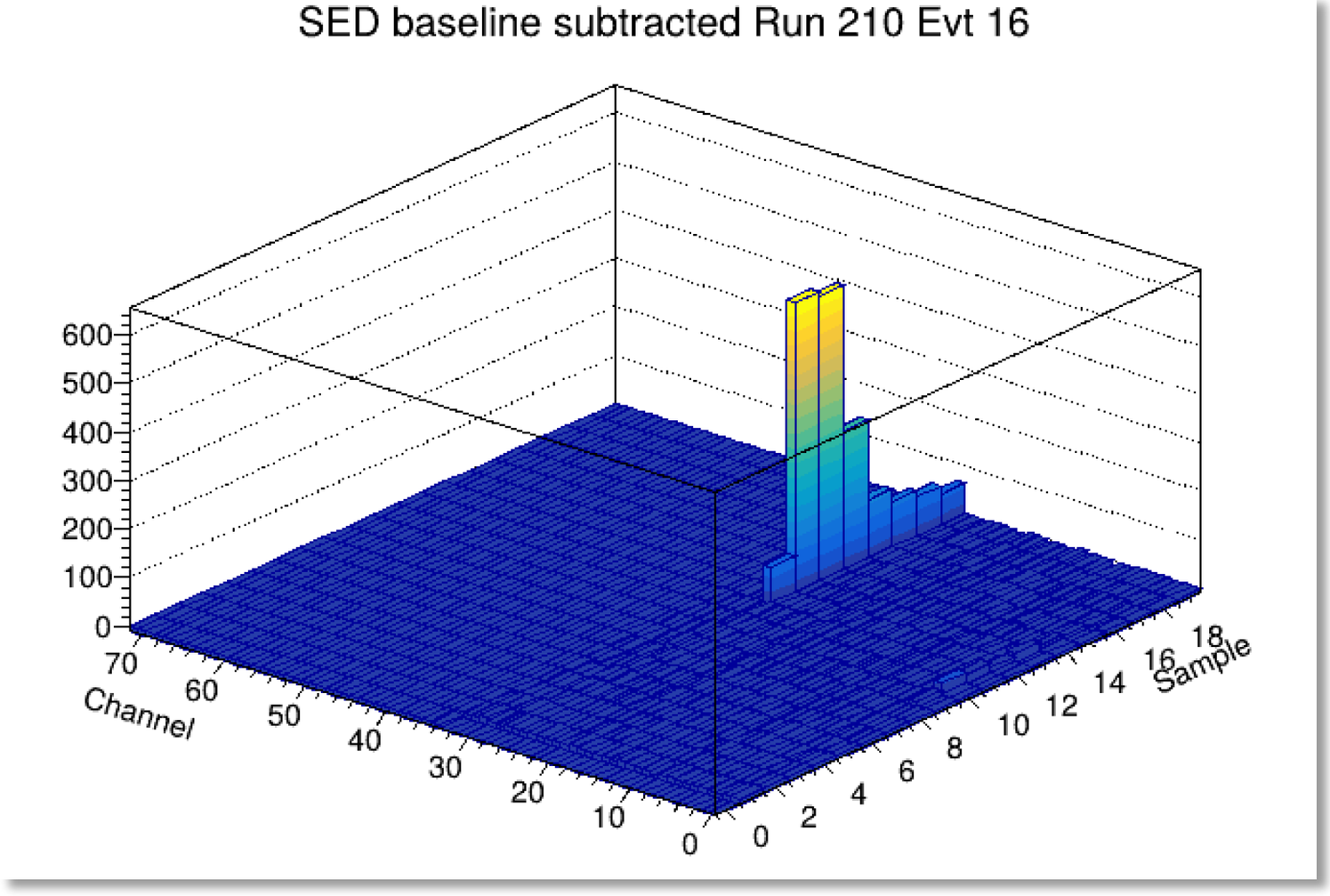
- The VA095 machine (it kept its name to preserve its legacy as the test beam workhorse) is connected via “highbaygw.phy.bnl.gov”. Completely analogous to hcalgw.phy.bnl.gov -> calororc2
- All accounts/passwords/keys are there, should just work
- VNC runs on port 5902
- Elog is on port 666
- I do **ssh va095 -L 5908:localhost:5902 -L 12666:localhost:666**

  and get the elog at http://localhost:12666

Initial Trigger paddle setup

- First I put the paddles on top of each other to get some rate
- This triggers on cosmics that can go whatever which way
- As expected, most channels see only noise, except one event that looks like a cosmic waveform we are used to
- If so, the timing is a bit early, but I suspect this is not a real triggered-on cosmic (seems the only one I can find)





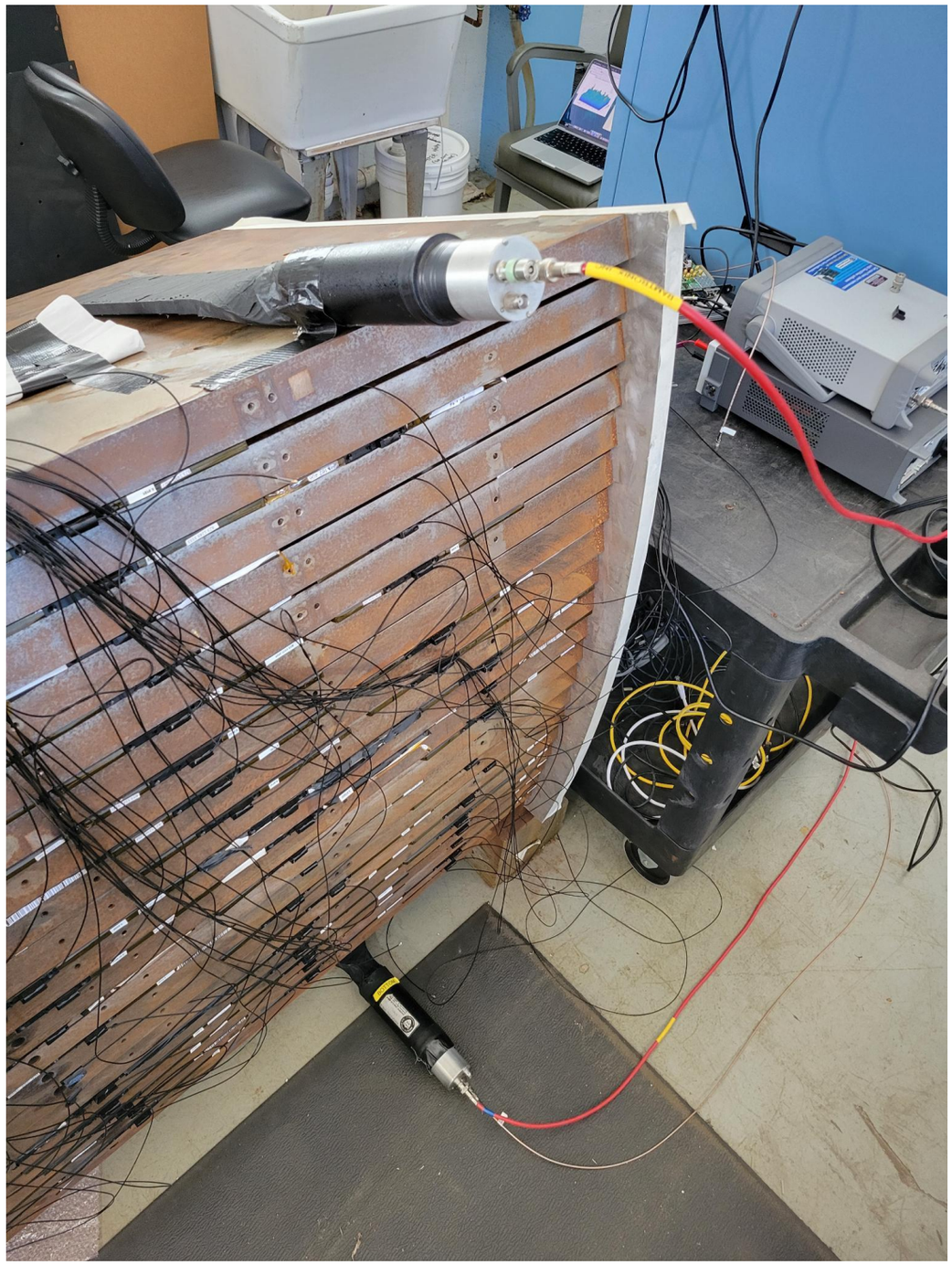
Trigger paddle setup top/bottom

- We then moved the paddles to a much more restrictive setting
- This gives a rate of about 0.2 Hz’
- It is meant to cover the right stack of 20 tiles.
- We connected all 20 tiles, going from top to bottom

Tile 0→ A0

Tile 1 -> A1 and so on.

- Input 8 has the broken connector at the board
- We then saw that with 20 tiles, the power supply ran into its limits
- We kept removing tiles until that stopped
- We then realized that there was too much ambient light
- Rearranging the blackout cloth helped.
- 16 tiles are now connected



No weekend running – no power

I had almost forgotten about this -

Please be advised that, as part of the ongoing electrical switchgear project led by MPO in the basement of Building 510, planned electrical shutdowns will occur over the next four weekends. These shutdowns are necessary to support the safe and timely completion of the project.

Because determining the exact impact to all areas of the building has proven challenging, we are planning for a complete building-wide shut down.

Each shutdown will begin Friday at 6:00 PM and power is expected to be restored by Sunday at 3:00 PM (tentative). MPO will send a follow-up notification confirming restoration once power is fully restored each Sunday.

September 12, 2025 (6:00 PM) – September 14, 2025 (3:00 PM, tentative)

September 19, 2025 (6:00 PM) – September 21, 2025 (3:00 PM, tentative)

September 26, 2025 (6:00 PM) – September 28, 2025 (3:00 PM, tentative)

October 3, 2025 (6:00 PM) – October 5, 2025 (3:00 PM, tentative)

For next week

- Get more blackout cloth to improve the noise situation
- I'll re-check the trigger timing setup where the CFD/coinc. widths seem marginal to me
- After we had removed the tile connectors to reduce the current, after the light improvement we re-connected #7++ in no particular oder (they are not labeled yet). Bring them in order
- Generate mapping from the connector's A0…. numbering to actual channels
- Devise better trigger scintillator positions?