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06/23/2025

Calo Workfest 2025 at ORNL

Friederike Bock, Oskar Hartbrich

ORNL

Calorimetry Workfest at ORNL – June 2-6
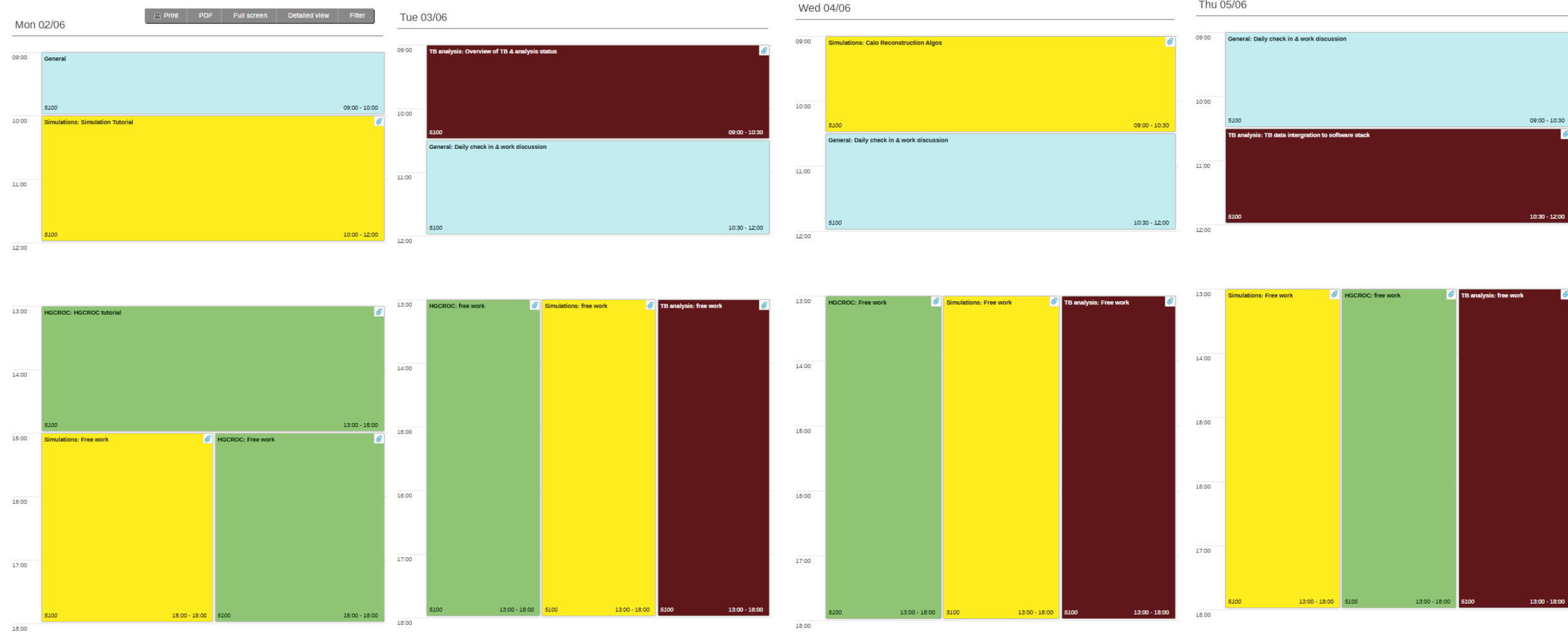
- https://indico.phy.ornl.gov/event/680/
- Full week: Mo-Fri
  - Tutorial lectures, project coordination every morning
  - Separation into dedicated working groups around lunch
- 17 participants in-person (+ several remote)
  - From UK, Lehigh, OSU, Valpo, UTK, BNL, ANL, ISU, UIUC, ORNL, …
  - Ranging from experts to undergrad summer interns
- Subgroups working on: ePIC simulation, LFHCAL test beam analysis, HGCROC lab tests
  - Onboarding tutorials on ePIC simulations, LFHCAL test beam analysis, HGCROC+rcdaq operation
  - nHCAL simulation debugging, HGCROC data model
  - SiPM digitization model for eicrecon
  - Integrating LFHCAL HGCROC beam data into test beam analysis software
  - Set up first HGCROC cosmics measurement with LFHCAL tiles at ORNL

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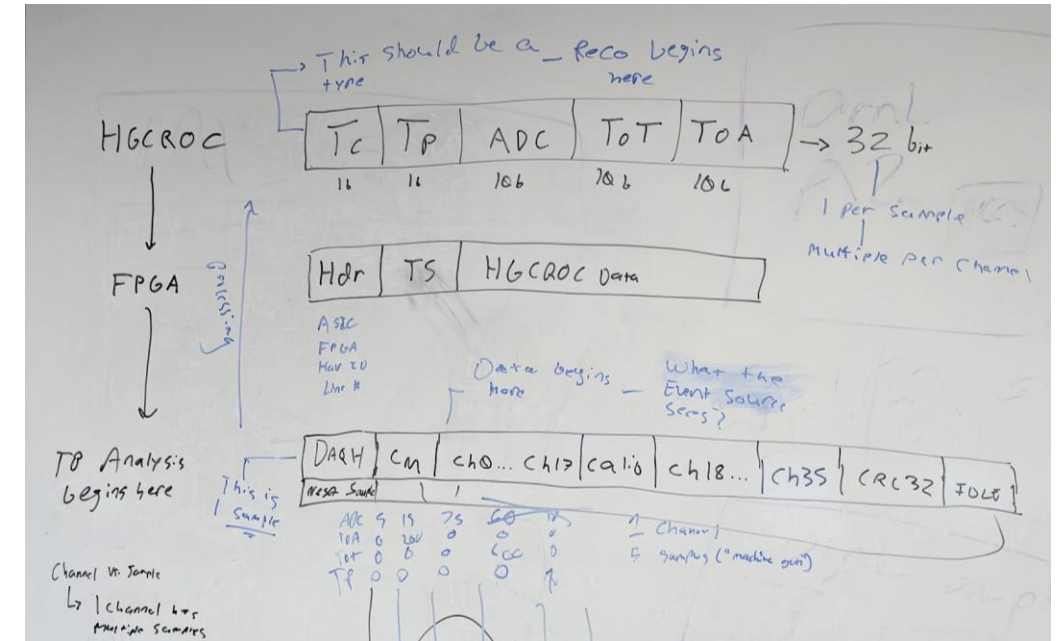# Calorimetry Workfest at ORNL – June 2-6

Morning Sessions

Onboarding Tutorials

- ePIC simulation and reconstruction framework – Dmitry Kalinkin

- LFHCAL testbeam analysis framework – Friederike Bock

- rcdaq and HGCROC integration into rcdaq – Martin Purschke

- HGCROC experiences in ePIC testbeams – Tristan Protzman

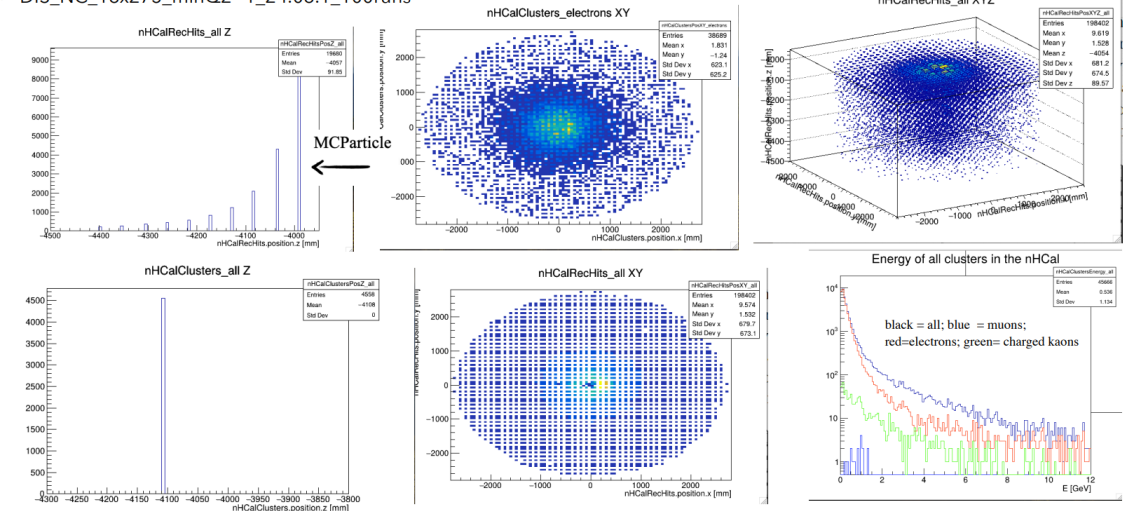- Clustering, Calo reconstruction + edm4EIC in EICrecon – Derek Anderson

- At least 10 aspiring software and testbeam experts trained ☺

eicsoft Simulation Improvements

- Design of HGCROC data type for eicrecon

  - https://github.com/eic/EDM4eic/pull/116

- Strong progress on nHCAL simulations

  - Strong participation from OSU and UIUC

- SiPM digitization model progress

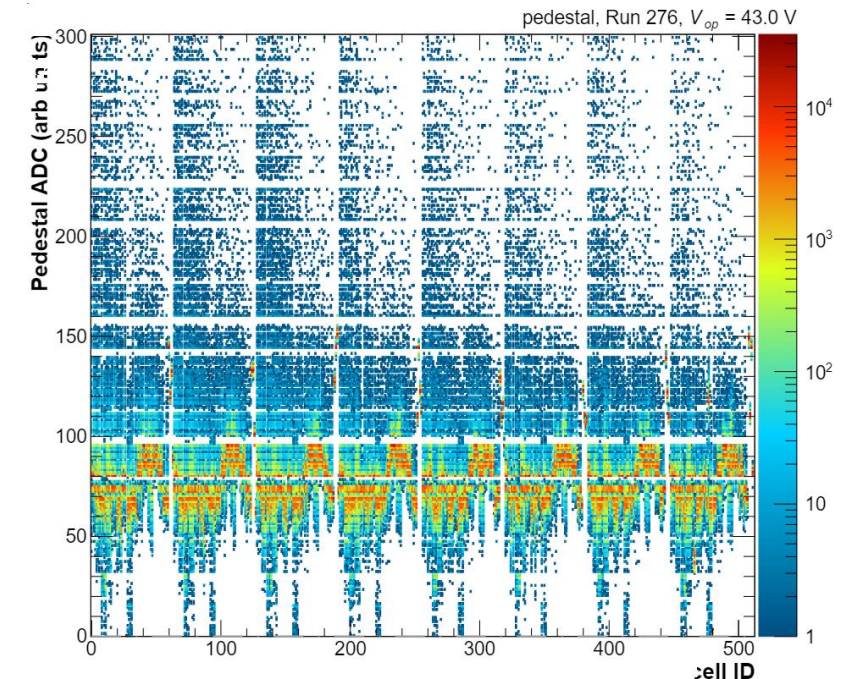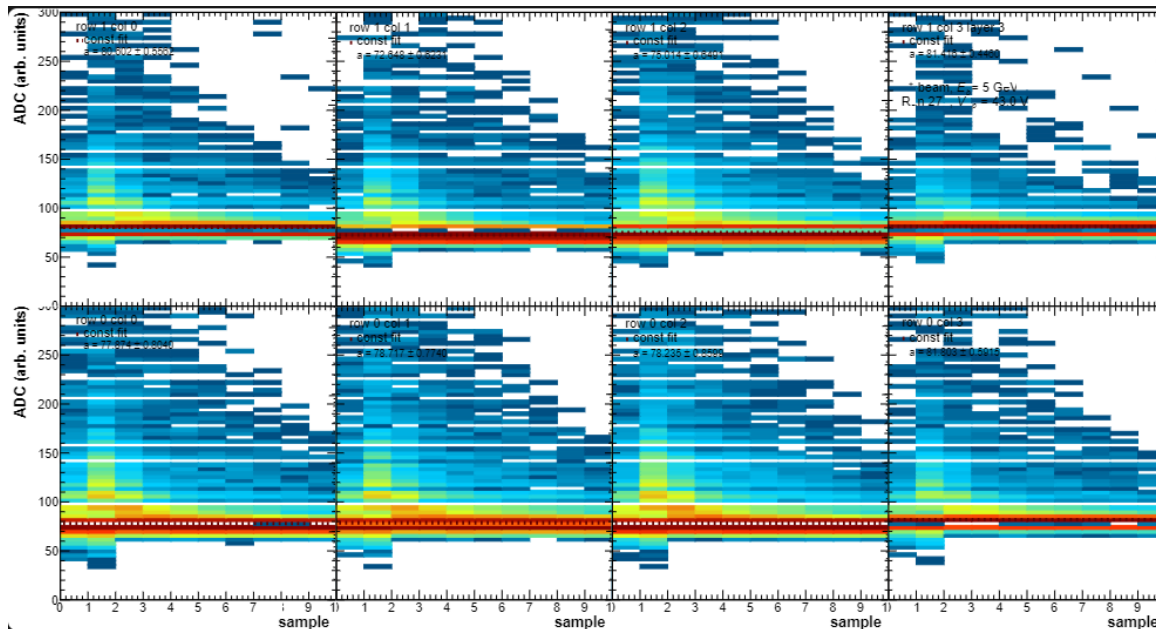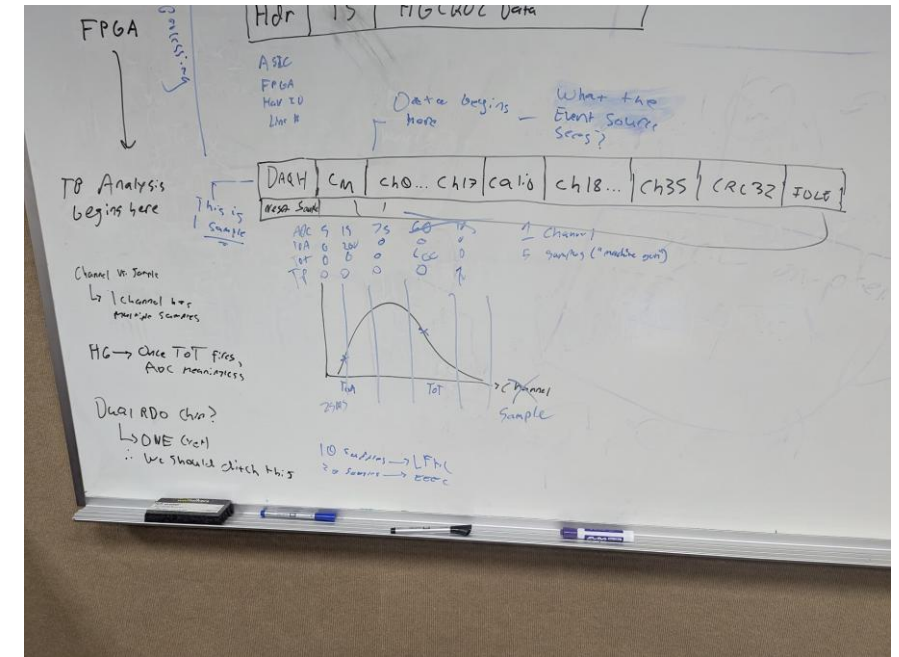- Testbeam simulation geometry

  - https://github.com/eic/epic/pull/881

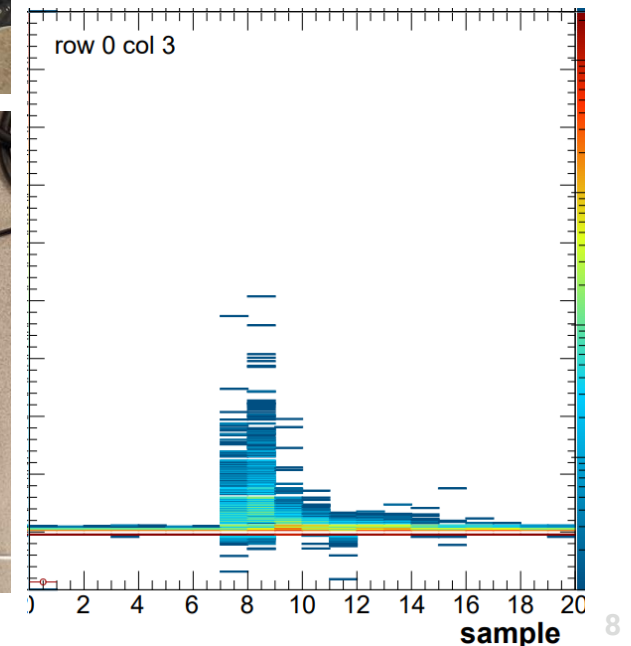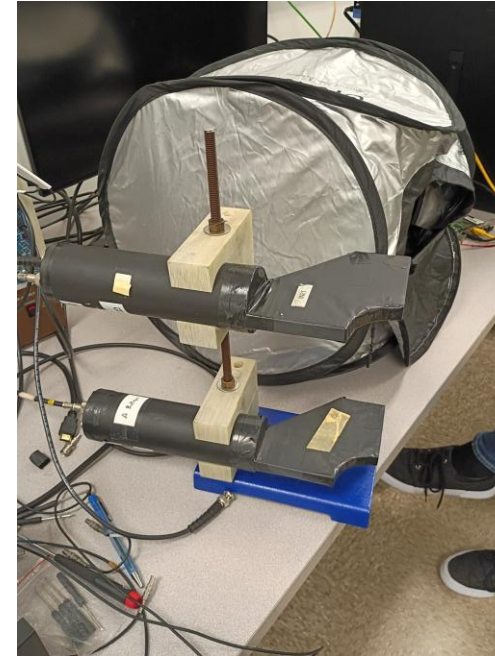- DIS_NC_18x275_minQ2=1_24.08.1_100runs

HGCROC into LFHCAL Software

- LFHCAL testbeam analysis framework now largely compatible with HGCROC data

    - Working towards transparent analysis between CAEN and HGCROC data

    - All documented here:
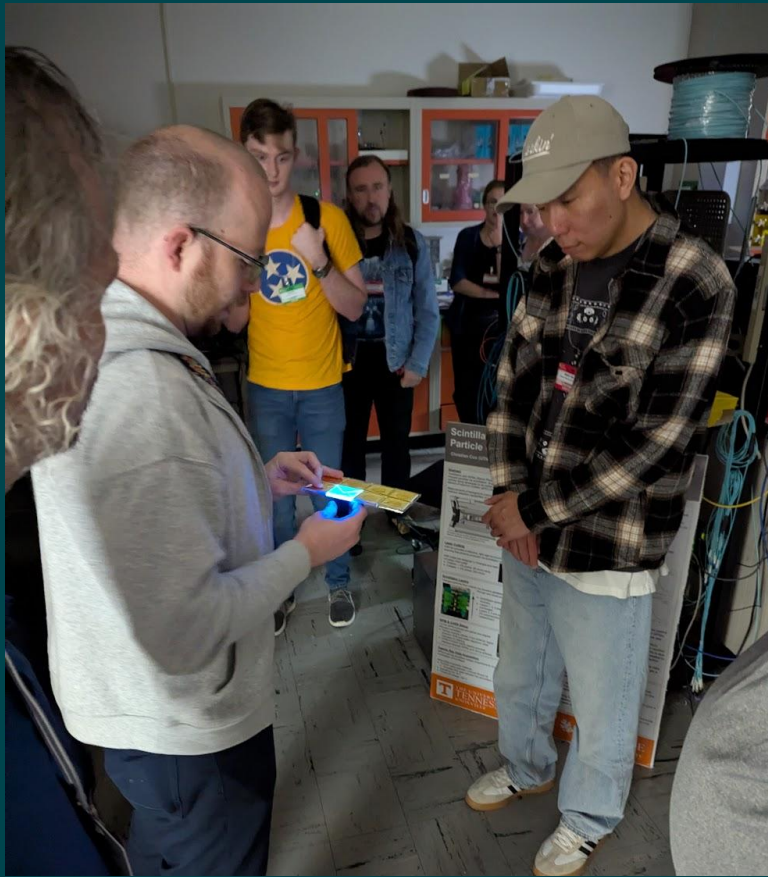   https://friederikebock.gitbook.io/epiclfhcaltb-ana

First Cosmics with HGCROC at ORNL
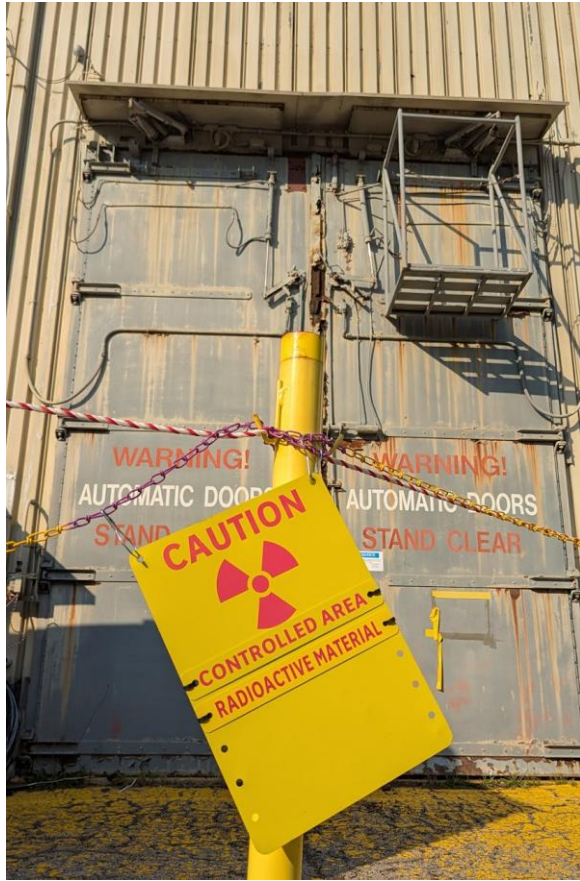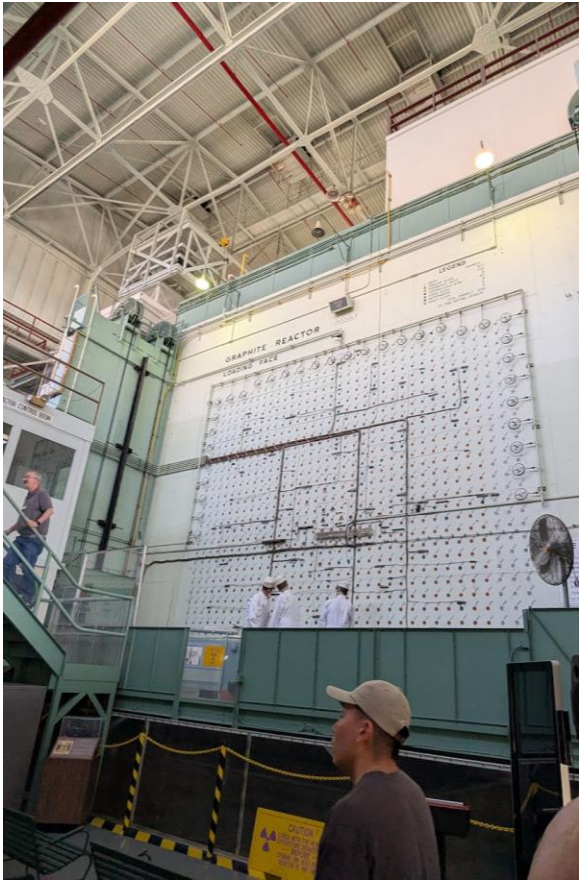
- With powers combined:

  - Dark tent from Valpo

  - FPGA + HGCROC from ORNL

  - Trigger scintillators from BNL

  - LFHCAL testbeam layers

  - Expertise by Tristan Protzman

  - Software Integration by Fredi Bock

- Some ongoing issues with interpretation and setup…

  - … but generally works ☺

LFHCAL Lab Tour

ORNL Exploration

And of course Dinner