

LAr R&D Progress Updates

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12/3/24



Lab Safety and Space Management

▶ **QEW Field Audit for EDG group**

- Confirmed with lab safety the audit can be conducted by a designated person assigned by the manager
- Providing an example to Joel this week before the others

▶ **LAr ESR renewal**

- ESR renewal is overdue for a long time
- Achim kindly extend the current ESR for us
- Working on the revision following Peter's comments, expected to finish this week

▶ **Technical Rep Training**

- I took the in-person Technical Rep training 2

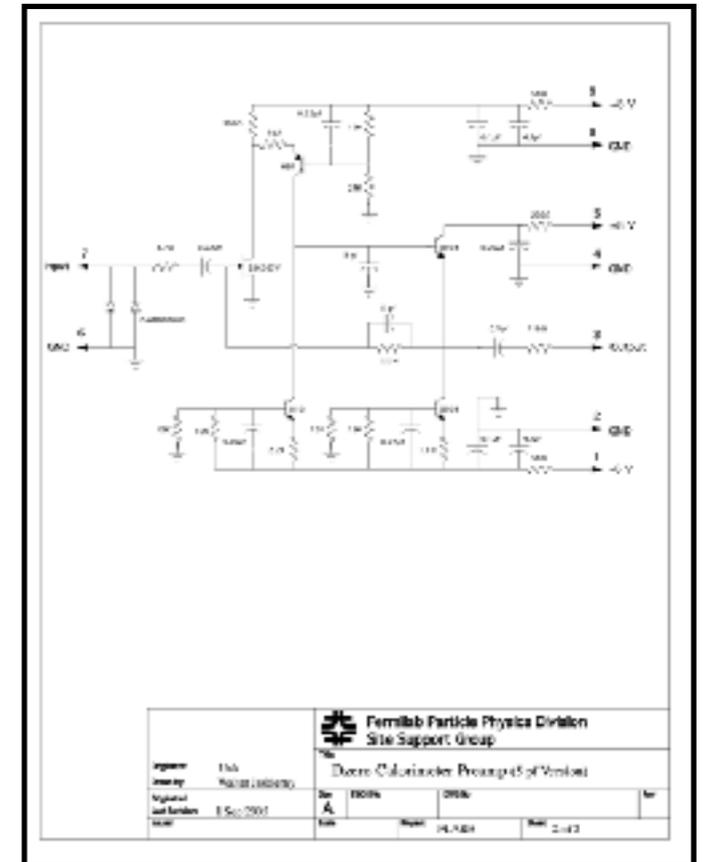
CPAD 2024

▸ Hold at UTK 11/18-11.22

- I mainly join the RDC 1, 2, 4
 - Noble elements section is mainly on dark matter experiment with Xenon
 - LArTPC related electronics focus on LArPix and Q-Pix
 - Brook gave a talk on LArPix: <https://indico.phy.ornl.gov/event/510/contributions/2282/>
 - Wenzhao gave a talk on Q-Pix: <https://indico.phy.ornl.gov/event/510/contributions/2165/>
- My talk on dichroic filter work was given at joint session of RDC 1,2 and 9 (Noble element, photon detection, calorimetry: <https://indico.phy.ornl.gov/event/510/contributions/2287/>)
- Milind gave talks on FLArE on FPF <https://indico.phy.ornl.gov/event/510/contributions/2290/>
- Steven gave a talk on THEIA: <https://indico.phy.ornl.gov/event/510/contributions/2301/>
- Prafull gave a talk on 65nm CE: <https://indico.phy.ornl.gov/event/510/contributions/2208/>
- Talk about dichroic filter measurement at Penn: <https://indico.phy.ornl.gov/event/510/contributions/2236/>
- TPC 50 plenary session, 50yrs after the invention of TPC
 - Dave Nygren gave a talk <https://indico.phy.ornl.gov/event/510/sessions/161/#20241120>
- CPAD 2025 will be held at UPenn

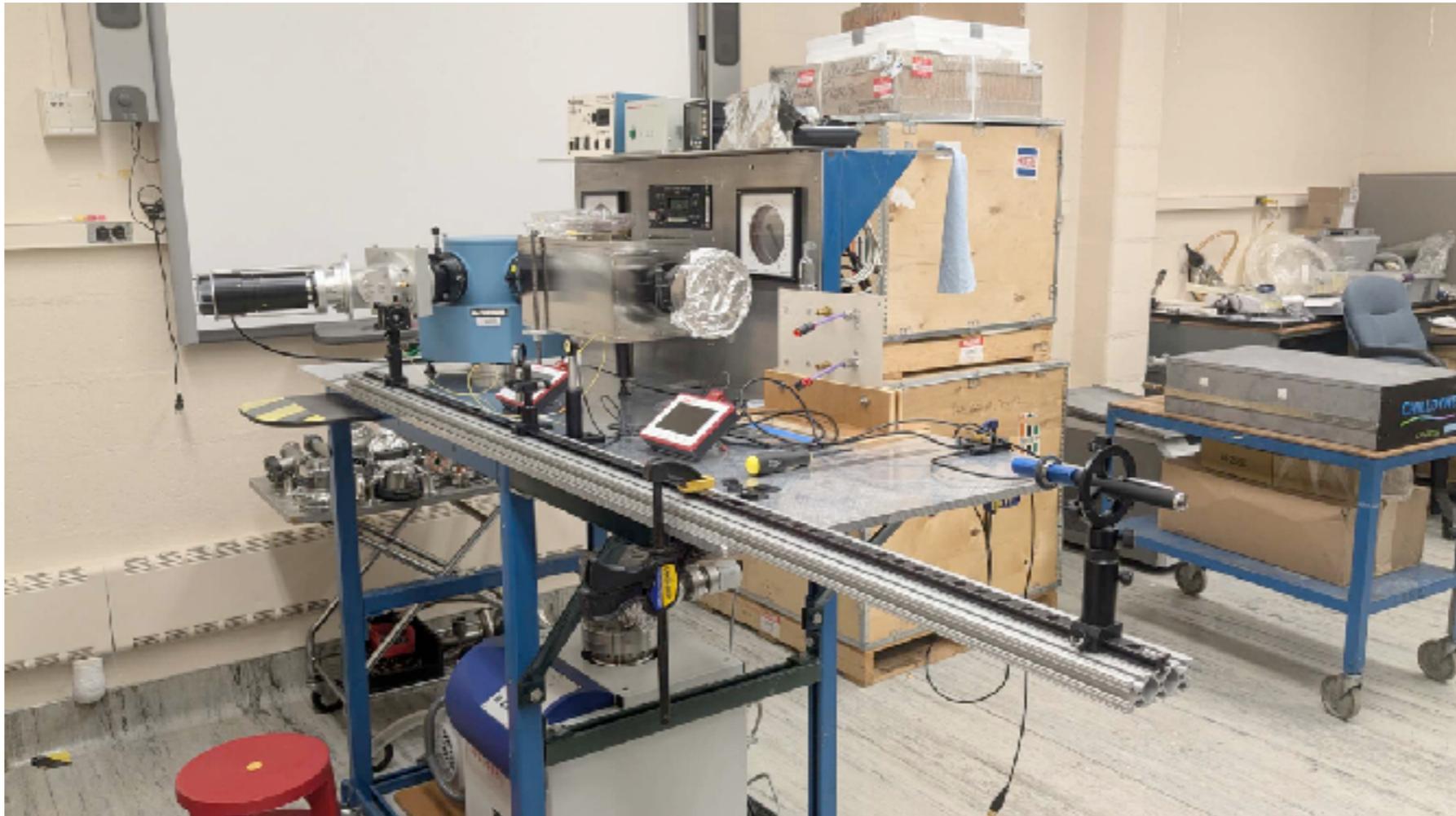
PrM Electronics

- ▶ **Thanks Milind's arrangement. I picked up 48x of DO preamp from Dean at SBU**
 - 28x with 5pF calibration capacitors
 - 20x with 10pF calibration capacitors
 - By the appearance and diagram, the 5pF version is the same as the ones in the PrM electronics
 - With test with Prafull on the malfunctioning module before sending back to UCI



Spectrometer Refurbishment

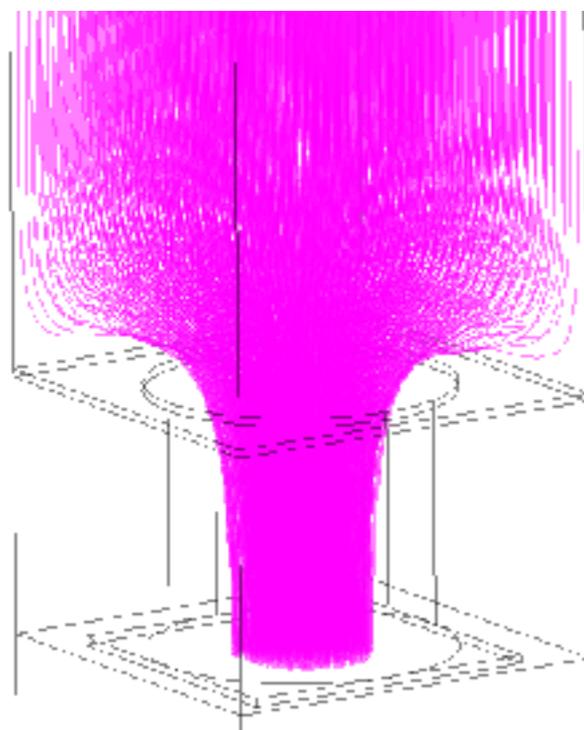
- Bob setup the track for spectrometer light spot measurement
- Currently used for the other measurement
- Will setup the Ar gas system this week and turn on the spectrometer next week



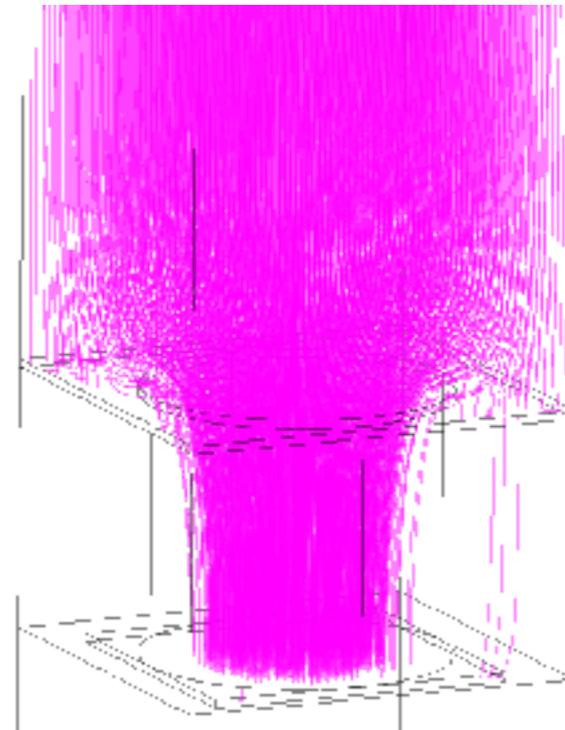
COMSOL Simulation for Pixel Readout

► Preliminary results: Transparency with different grid bias

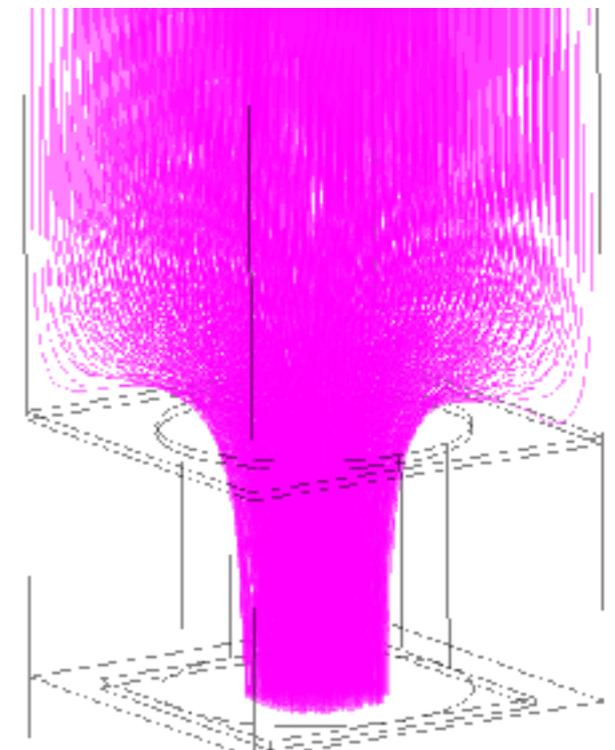
- Display issue resolved with Bo's help
- Given it is a 3D problem, the slice through the center of the holes is the best scenario with most openings
- 2D slice across the position right between holes with the least openings is hard to visualize.
- Reduced to ONE single cell for transparency study
- -1900V is the minimum voltage for full transparency with current geometry
- Doing a transparency scanning for different configurations



-2.0kV



-1.0kV



-1.9kV

New meeting time

- ▶ **Many of us have a conflict meeting today at 2pm that we need to have a new meeting time for LAr R&D**
 - Can we simply postpone the meeting by 1 hour starting at 3pm or 4pm?
 - A doodle poll set up at: <https://doodle.com/meeting/participate/id/bkBZ17Na>