

# LAr R&D Progress Updates

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# Lab Safety and Space Management

## ▶ **QEW Field Audit for EDG group**

- Annual field audit required for Qualified Electrical Work
- Me, Volodya, Shanshan, Lingyun identified as the QEWs in the group
- Talked to Joel about the audit, it can be done between QEWs, I will start one with Volodya to check with Joel
- Audit paper due by Dec.1st

## ▶ **Thermal Chamber**

- The thermal chamber has been fixed and returned to us
- I turned it on and it can go down to  $\sim -40^{\circ}\text{C}$  now
- Put it back to the second floor lab



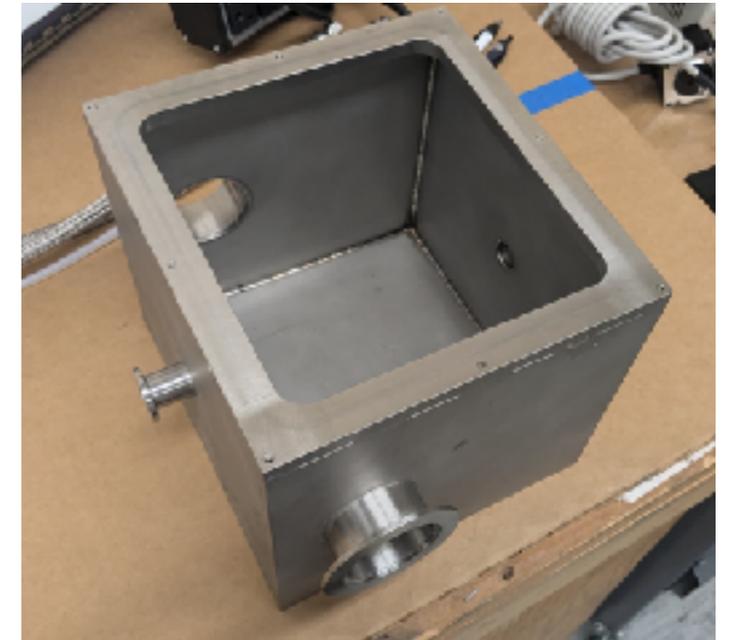
# Spectrometer refurbishment(Phase 1)

## ► Optical chamber design

- The PMT to conflat adapter needs to be fabricated
- Finalizing the adapter design for the mount to the optical box with KF50 connector
- Using the existing adapter for 2-inch PMT as an example

## ► Spectrometer test

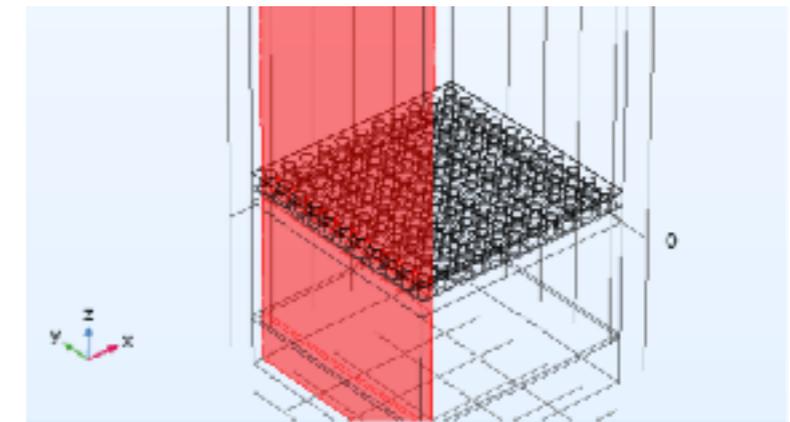
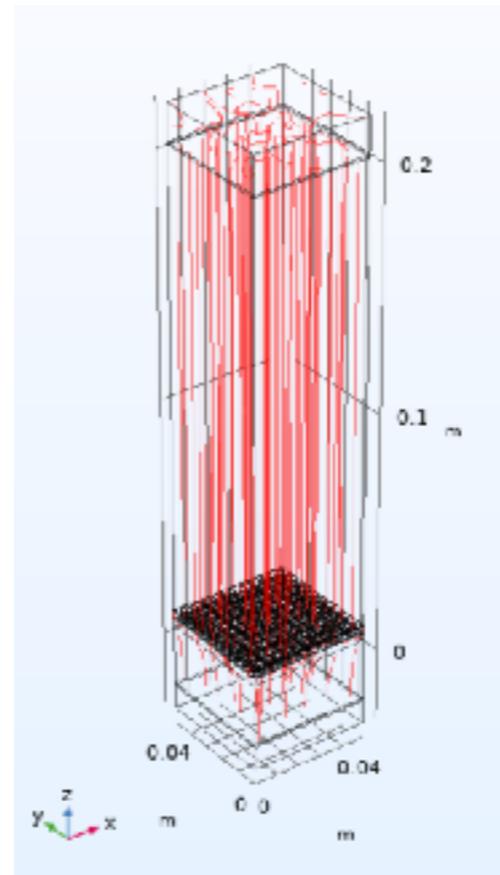
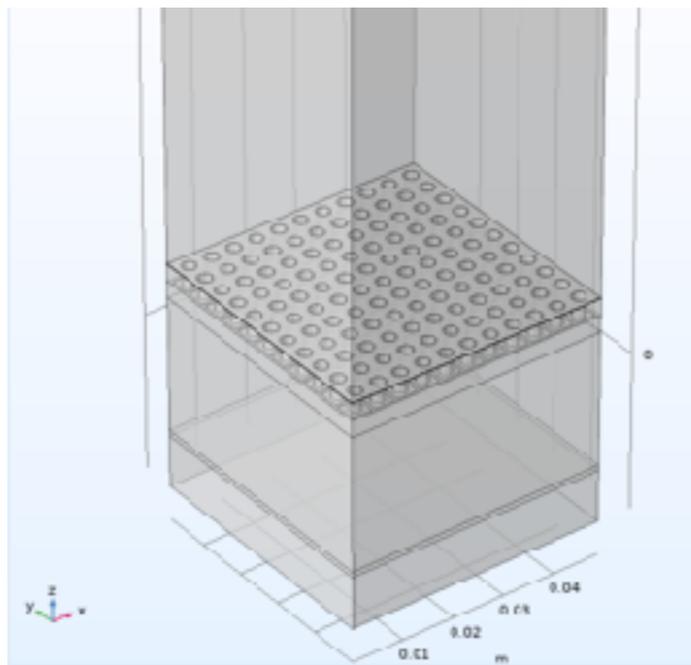
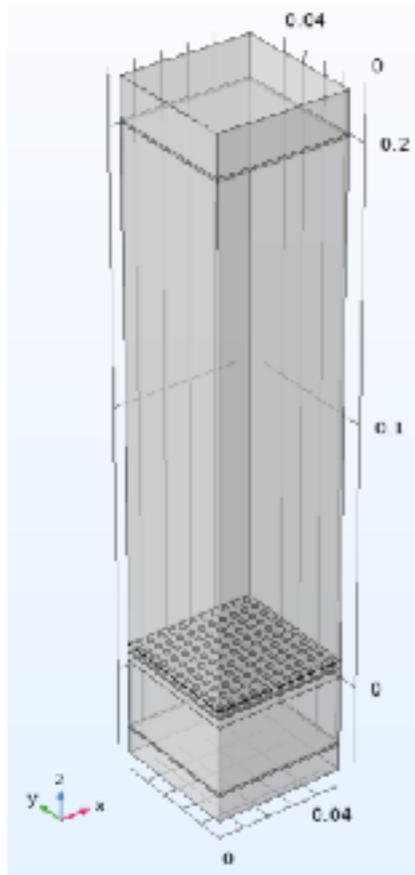
- Bob has not turned on the lamp yet
- Will coordinate with him for the beam profile observation



# COMSOL Simulation for Pixel Readout

## ► Simulation for grid plane in from pixel readout

- Per the request by ND pixel readout
- Adding a grid lane to eliminate the long range induction signal on the pixel readout
- A 11x11 pixel model built in COMSOL to study the transparency conditions for the input for 3D field response function
- Flexible model with all parameter adjustable, e.g. pixel size, gap between pixels, hole size, gap between grid plane and pixel readout
- One slide across the center of first place chosen for demo

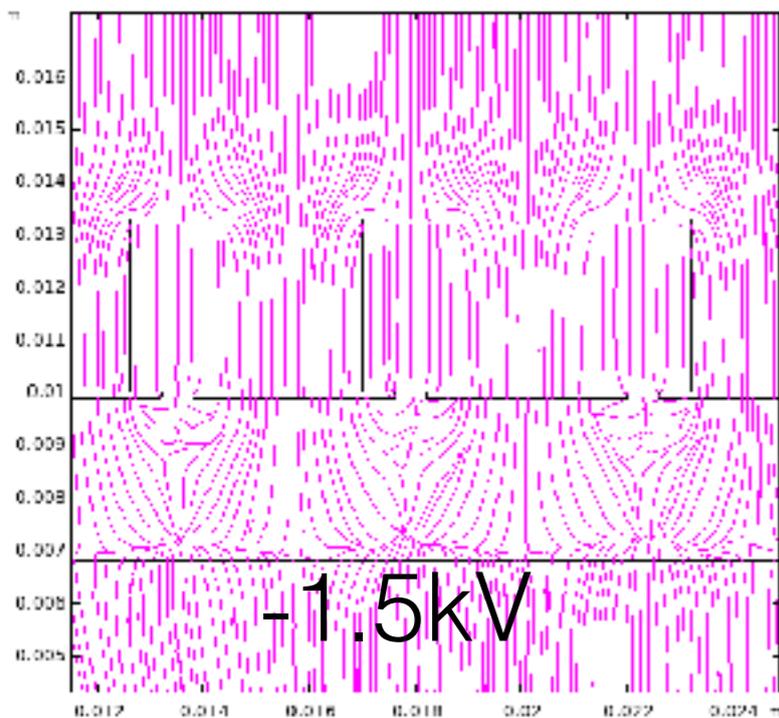


# COMSOL Simulation for Pixel Readout

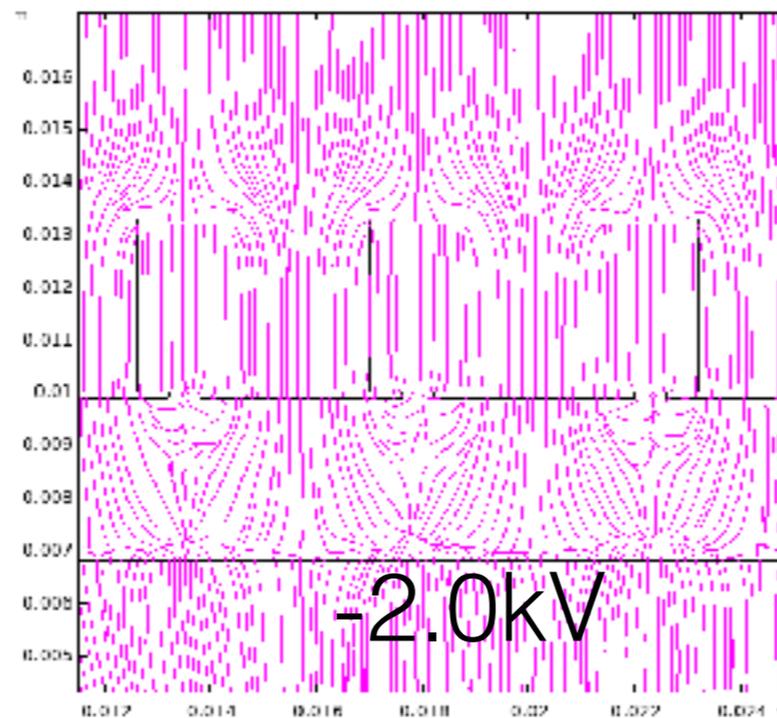
## ► Preliminary results

- Plot field line with different bias on grid plane to do a quick check on the results
  - The change of transparency is noticeable
  - Still debugging the model can configuration
- Will implement electron tracking later
- Schedule to have a discussion with Bo on thurs.

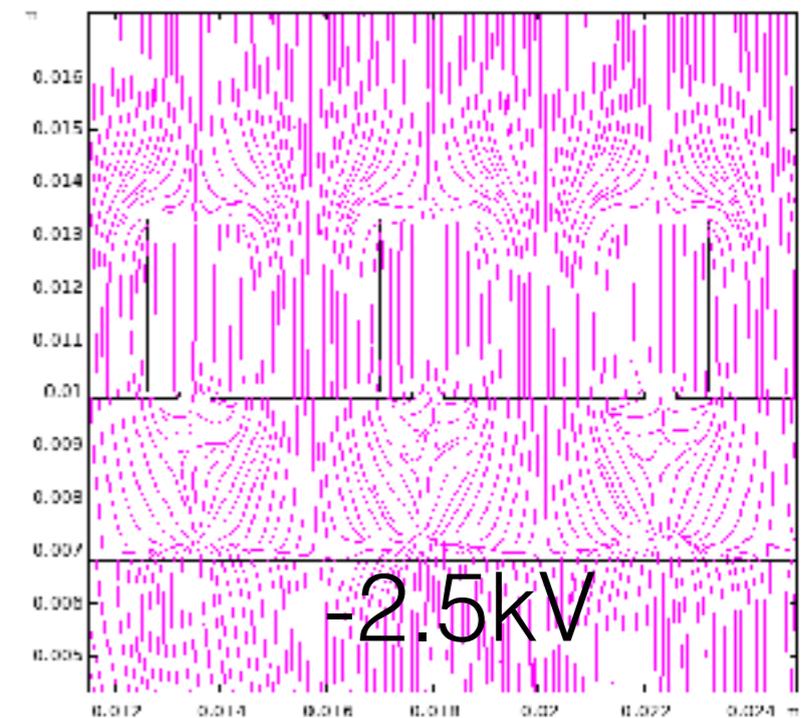
Streamline Electric field



Streamline Electric field



Streamline Electric field



# Plan for the next run

- Have another run before the end of this year
  - Will run through the plan on next technical meeting
- Heater construction
  - Mocking assembly with the 30ohm resistor found in the stock room with no temperature rating
  - Burning found with one resistor after powered on at 50W
  - Ordering high temperature resistors with 275 C tolerance
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