

Calibration Group

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Goals for Calibration

Measure electric field, purity, electron lifetime, drift velocity, electron recombination, temperature, fiducial volume, etc. Many of these quantities vary by location and time.

There is also specific-physics topic related work

1. Provide key information for offline data reconstruction and calibration, background separation, etc.
2. Serve as a way to monitor the status of the detector [online, slow control]
3. Study the detection challenges to the precision measurements for a long-baseline large scale experiment [make an impact to DUNE detector design]

Calibration Activities

As we briefly introduced in last week's prototype general meeting, there are a broad list of activities, and at different levels

<https://indico.fnal.gov/conferenceDisplay.py?confId=10051>

Want to emphasize here. Calibration work needs fundamental knowledge on both detection tech and physics

- 1) A great place to train students and junior researchers
- 2) Contribution could be at various levels: from basic physics studies (undergrad assignment?) to sub-system responsibilities
- 3) Your contribution would have a broad impact and is distinctive
- 4) Collect significant experience – some are very new and important for larger-scale experiments

Near-term plan

According to the most-recent schedule for the prototype experiment

Prototype roof design by 9/30/2015, review by 12/30/2015

Cryostat design by 11/18/2015, review by 2/25/2016

Cryostat top design by 5/19/2016

Support structure by 5/19/2016

Calibration system would have significant impact to these designs as well as the TPC's design.

We should work out quickly on

- 1) What system to build (already have some preliminary ideas)
- 2) What interface would be needed for the cryostat, TPC, experimental space, etc.

Involvement

We have heard 4 universities with their specific interests for this effort

I believe we will hear more in this meeting

Of course, we want to hear even more in the future

We want to hear (don't need to be very specific, but give us a fairly clear picture is helpful)

- 1) Your interest
- 2) Your funding situation and needs
- 3) Number of people (undergrads, grads, post-docs, faculties)

Group meeting

Important to keep up the progress

How often: how about initially bi-weekly, then switch to weekly when the work ramps up

When: we have colleagues from UK to Hawaii. There would hardly be a perfect time for everybody. How about 1 or 2 pm central time? Will send out a Doodle poll.