

Overview — Kendall (30'+15')

Laser System overview (focus on laser ionization system) — Jose (30'+15')

Photoelectron Laser and Laser Positioning System — Jelena (30'+15') (remote)

Laser-HV interface — Bo (20'+15')

MicroBooNE Laser (what have we learnt?) — Yifan (20'+10') (remote)

Pulsed Neutron Source — Bob/Jingbo (30'+15')

Radioactive source system — Juergen (30'+15')

PDS calibration system — Zelimir (20'+10')

June 4-5 Review of DUNE-SP High Voltage System

June 17 Far Detector Background Mitigation Workshop

June 18 Far Detector Calibration Workshop

June 19 Far Detector Cryogenic Instrumentation Workshop

June 20 Double-drift Detector Configuration Workshop

Charge:

Based on recommendations from the calibration task force, the DUNE EB formed a calibration consortium whose initial goals were to design and prototype a laser calibration system, neutron generation system, and possible radioactive source system in preparation for the TDR. The specific scope to be associated with each of these systems was not something addressed within the original EB recommendation. We ask the review committee to make a general assessment of the current plans being put forth by the calibration consortium and calibration task force, as laid out in the current TDR draft, in terms of their ability to meet the physics requirements of the experiment. We also ask the committee to assess plans for other calibration systems such as the flasher system for the photon detector systems that sit outside the current scope of the calibration consortium. We would like the committee to review plans for each of the proposed systems and answer if they are in total appropriate for properly calibrating DUNE far detector data. Within the context of answering this basic question, the committee should also attempt to address the following:

Laser system

- In general, what level of coverage of the liquid volume is required to meet the physics requirements both in terms of the coverage within a specific region of the detector and the need to provide coverage over all regions of the detector?
- Is the proposed system without field cage penetrations adequate? If not, which of the alternatives provides the best option (balancing risk versus coverage)?
- Is one laser per port required or is there any way to “share” a smaller number of lasers?

- Is the planned testing program for ProtoDUNE-II adequate to ensure that the system meets requirements and mitigates as much as possible identified risks to stable TPC operation?
- Is the current proposal to add photo-electron targets to the cathode plane a useful addition to the primary system, and if so, are there any potential risks associated with installing these devices on the cathode plane or from the light that they emit?
- Are any potential effects of the laser system on the Photon Detectors understood and accounted for?

Pulsed Neutron System

- The baseline design uses two human access ports to cover full detector. Are other options being considered and what are the benefits and risks of these alternative options?
- Please comment on outstanding issues as well as plans for R&D and the implementation of a prototype system for ProtoDUNE-II?

Radioactive source

- Based on studies over the last year, please re-assess the motivation for a radioactive source system, in particular whether the low energy region is adequately covered with the pulsed neutron system.
- Please comment on test plans for ProtoDUNE-II and whether source data collected with the ProtoDUNE-II detector could be sufficient for carrying out the energy calibration of the data to be collected with the far detector.

Photon Detector Monitoring System

- Was the monitoring system as implemented and operated in the ProtoDUNE-SP detector sufficient for commissioning and operating the photon detection system?
- Are plans for installing the photon detector flashers on the CPA planes understood and are plans for routing the associated optical fibers through cryostat flanges compatible with the existing infrastructure and needs of other systems?