

FD2 PDS Potential Contributions

Northern Illinois University

The Team

- Faculty:
 - M. Eads (Assoc. Prof.) and V. Zutshi
- Detector Expertise:
 - A. Dyshkant and K. Francis
- Graduate and Undergraduate students
- Collaboration with College of Engineering
- Staffed Electrical and Mechanical shops
- Can participate in activities on both the NIU and Fermi campuses

Potential Involvement

- Photosensor optimization and testing
 - ganging and devices
 - production testing center
 - the group has been involved with all aspects of SiPMs for DUNE from before the protoDUNE era
 - extended experience with SiPMs including serving as a production testing center for Mu2e ($\sim 25k$ MPPCs)

Potential Involvement

- FEE Commissioning
 - extensive experience with the Mu2e FEB which is the inspiration for the DAPHNE board
 - working with electronics team to commission the DAPHNE electronics
 - extend to the Vertical Drift ganging and devices (quite likely DAPHNE may serve as the warm electronics for VD at least in the R&D phase)
 - valuable experience for the evolving FEE for the VD

Potential Involvement

- Membrane/ Field Cage PDS
 - Simulation: understanding physics impact of scenarios, designs and constraints
 - Prototyping: detectors for test stands and test beams
 - Design: closely working with engineers to produce a realistic and viable system design
 - experience with design, prototyping, testing and installation of photon (scintillation and Cerenkov) detectors (from fiber trackers to scintillator plates) interfaced to SiPMs