

Proposal Summary

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My proposed research objectives, for the one-year duration of the fellowship, are two-fold.

- **Improve the design of the DUNE high voltage system**

- Analysis of the ProtoDUNE-SP high voltage data
- Study near-term R&D subjects for the DUNE high voltage system
- Development on the DUNE camera system
- Development on EM wave detection using antenna

- **Proton analysis for DUNE**

- Developing tools for proton identification, calorimetry, and event reconstruction
- Study of the recombination of electron-ion pairs produced by ionizing tracks using beam data samples of stopping protons
- Evaluation of systematic uncertainties of the reconstruction algorithms and their impacts on the DUNE far detector