

Application for the Intensity Frontier Fellowship

Proposal Summary

This is a proposal for a 12-month single period at Fermilab's site in order to contribute with hardware R&D and simulations for the SBND and DUNE experiments. The main contribution would be in the form the ARAPUCA photon detection system, an innovative technology develop in Brazil to enhance the collection efficiency for single-photon detectors. We hope to optimize its already distinctive performance in order to install some units on real scale applications, such as ProtoDUNE and SBND. Proposals have been submitted to both collaborations and the perspectives are quite optimistic. Besides the hardware R&D, it is also proposed the continuation of the simulation and software work that is already being done, since being onsite makes it easier to connect with the experts build upon existing work.

Sincerely,

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