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Identification and Reconstruction of Michel electrons in ProtoDUNE-SP[1] ALEENA RAFIQUE, Argonne National Laboratory, THE DUNE COLLABORATION COLLABORATION — The Deep Underground Neutrino Experiment (DUNE) is a cutting-edge experiment for neutrino science and proton decay studies. The single-phase liquid argon prototype detector at CERN (ProtoDUNE-SP) is a crucial milestone for DUNE that will inform the construction and operation of the first, and possibly subsequent 17-kt DUNE far detector modules. Michel electrons are distributed uniformly inside the detector and serve as a natural and powerful sample to study the detector's response for low-energy (tens of MeV) interactions as a function of position. I will present the current status of reconstructing Michel electrons from the decays of cosmic-ray muons in the ProtoDUNE-SP detector. We have developed selection tools to identify and reconstruct such Michel electrons which could benefit any LArTPC experiment generically.

Aleena Rafique
Argonne National Laboratory

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