

Particle identification for proton and pion event discrimination using the SuperFGD prototype detector

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A novel three-dimensional projection scintillator tracker called SuperFGD is one of the key components of the near detector upgrade of the T2K experiment. Due to the nanosecond timing resolution and fine granularity, SuperFGD will provide essential data for studying neutrino interactions. A prototype of the SuperFGD detector was exposed to a neutron beam at LANL to study its response to neutron interactions, which is critical for future studies of neutrino interactions involving a neutron in the final state in the T2K SuperFGD near detector. This poster will present preliminary results on the implementation of particle identification (PID) for distinguishing proton and pion events using the SuperFGD prototype detector simulation. This PID development will enable future measurements of neutron-induced proton and pion production cross-sections on the scintillator using the SuperFGD prototype data.

Working Group

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