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Neutrons in MINERvA's Nuclear Targets

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Planning for future long baseline neutrino oscillation experiments has revealed that neutrons produced by neutrino interactions could contribute significantly to the total uncertainty budget for DUNE with present models. Neutrino-produced neutrons that go undetected can skew energy reconstruction and cause events to be misclassified. The MINERvA experiment at Fermilab has demonstrated that plastic scintillator detectors can reconstruct an important fraction of the $O(100 \text{ MeV})$ neutrons typical of the neutrino interactions expected at DUNE. This talk previews work to expand MINERvA's neutron reconstruction to neutrino interactions in iron and lead targets.

Summary

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