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Cosmic Muon-Removal Technique For NOνA Experiment[1] NITIN YADAV, Indian Inst of Tech-Guwahati, HONGYUE DUYANG, SANJIB MISHRA, University of South Carolina, NOνA COLLABORATION[2] — The NOνA experiment is a ν_e appearance neutrino oscillation experiment at Fermilab. It identifies the ν_e signal by the electromagnetic (EM) showers induced by the electrons in the final state of neutrino interactions. Cosmic muon induced EM showers, dominated by bremsstrahlung, are abundant in NOνA far detector. We use the Cosmic Muon-Removal technique to get pure shower sample from cosmic data. The large Cosmic-EM sample can be used to characterize the EM signature and provides valuable checks of the MC simulation, reconstruction, PID algorithm, and calibration across the NOνA detector.

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