

Mu2e: Modeling Drift of Ionized Particles with ML

The Mu2e experiment searches for charged lepton flavor violation through muon-to-electron conversion in the field of a nucleus. The signal is a monoenergetic electron with an energy of 104.97 MeV. Its momentum is reconstructed using information from drifting ionized particles. This project analyzes the drift of ionized particles with a deep neural network to help improve the momentum reconstruction process. The model yields a 20% improvement in resolution from a reference linear model.

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