Contribution ID: **45** Type: **Talk**

NuMI Beam Monitoring Simulation and Data Analysis

Thursday, August 4, 2022 2:50 PM (30 minutes)

With the Main Injector Neutrino Oscillation Search (MINOS) experiment decommissioned, muon and hadron monitors became an important diagnostic tool for the NuMI Off-axis ν_e Appearance (NOvA) experiment at Fermilab to monitor the Neutrinos at the Main Injector (NuMI) beam. The goal of this study is to maintain the quality of the monitor signals and to establish correlations with the neutrino beam profile. And with the muon monitor simulation, we carry out a systematic study of the response of the muon monitors to the changes in the parameters of the proton beam and lattice parameters. By combining individual pixel information from muon monitors and pattern recognition algorithms, we use simulation resluts and measurement data to build a machine learning-based predictions of the muon monitor response and neutrino flux.

Attendance type

In-person presentation

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