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Updates and Lessons Learned from NuMI Beamline at Fermilab

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The Neutrinos at the Main Injector (NuMI) beamline at Fermilab generates an intense muon neutrino beam for the NOvA (NuMI Off-axis ν_e Appearance) long-baseline neutrino experiment. Over the years, the NuMI beamline has been pivotal in advancing neutrino physics, providing invaluable data and insights. This presentation offers updates and a comprehensive review of the lessons learned from the operation, maintenance, and monitoring of the NuMI beamline. Key topics include the optimization of beam performance, challenges in maintaining beamline stability, and proposed Machine Learning implementations to enhance monitoring. The talk aims to share best practices and provide a roadmap for future beamline projects, including the Long-Baseline Neutrino Facility (LBNF).

Working Group

WG 3: Accelerator Physics

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