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Muon Ionization Cooling Demonstration by Normalized Transverse Emittance Reduction in MICE 'Flip Mode'

Low emittance muon beams are central to the development of facilities such as a Neutrino Factory or a Muon Collider. The international Muon Ionization Cooling Experiment (MICE) was designed to demonstrate and study the cooling of muon beams. Several million individual muon tracks have been recorded passing through a liquid hydrogen or a lithium hydride absorber. Beam sampling routines were employed to account for imperfections in beam matching at the entrance into the cooling channel and enable an improvement of the cooling performance. A study of the change in normalized transverse emittance in a flipped polarity magnetic field configuration is presented and the characteristics of the cooling effect are discussed

Mini-abstract

Change in transverse emittance in MICE flipped polarity configuration is characterized and discussed

Experiment/Collaboration

MICE

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