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Transverse Emittance Change in MICE 'Solenoid Mode' with Muon Ionization Cooling

Emittance reduction of muon beams is an important requirement in the design of a next-generation Neutrino Factory or Muon Collider. Ionization cooling has been proposed to meet this requirement, whereby beam emittance is reduced by passing a beam through absorbing material. Tight focussing is required in both horizontal planes, which is achieved in many designs using solenoid focussing. Ionization cooling has been demonstrated in the Muon Ionization Cooling Experiment (MICE) in 'flip' mode, where the solenoid field flips polarity across the absorber. We present the performance of MICE in 'solenoid' mode, where the field polarity does not change across the absorber.

Mini-abstract

We present performance of MICE in 'solenoid' mode, with no change of polarity across the absorber.

Experiment/Collaboration

MICE

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