

Results from MICE: the Muon Ionization Cooling Experiment

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The Muon Ionization Cooling Experiment (MICE) is a feasibility demonstration of a crucial emittance-reduction technique for future muon colliders and neutrino factories. MICE has studied the effect of ionization energy loss in low-Z absorber materials on a muon beam. Muons were focussed on lithium hydride and liquid hydrogen absorbers using a large-aperture solenoid. Particle tracking and identification detectors upstream and downstream of the absorber enabled the reconstruction of the phase-space coordinates of individual muons. The evolution of beam emittance was measured by studying the properties of ensembles of single muons using muon beams with varying input emittances and momenta. Data taken in 2016 and 2017 are currently being analyzed. The current status and most recent results are presented.

E-mail

kaplan@iit.edu

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Primary author: Prof. KAPLAN, Daniel (Illinois Institute of Technology)

Presenter: Prof. KAPLAN, Daniel (Illinois Institute of Technology)

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