

Abstract Submitted
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Goals and Status of MICE, the International Muon Ionization Cooling Experiment¹ PAVEL SNOPOK, Illinois Institute of Technology, MUON IONIZATION COOLING EXPERIMENT COLLABORATION — Muon ionization cooling provides the only practical solution to preparing the low-emittance muon beams suitable for a neutrino factory or a muon collider. The Muon Ionization Cooling Experiment (MICE) thus represents a strategic R&D project for neutrino physics. MICE is under development at the Rutherford Appleton Laboratory (UK). It comprises a dedicated muon beam line able to generate a range of input emittance and momentum values, with time-of-flight and Cherenkov detectors to ensure a pure muon beam. A first measurement of emittance will be performed in the upstream magnetic spectrometer with a scintillating-fiber tracker. A cooling cell will then follow, alternating energy loss in liquid-hydrogen absorbers and RF acceleration. A second spectrometer, identical to the first, and a second muon identification system provide a measurement of the outgoing emittance. In the 2010 run, completed in August, the beam and most detectors were fully commissioned. Results from this run will be presented. The plan for measurements of emittance and emittance reduction (cooling) that will follow in 2011 and beyond will also be reported.

¹On behalf of the Muon Ionization Cooling Experiment collaboration

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