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The MICE Experiment ULISSE BRAVAR, University of New Hampshire, MICE COLLABORATION — The International Muon Ionization Cooling Experiment (MICE) was designed to demonstrate the ionization cooling of muons for the first time, a process in which the emittance of a muon beam is reduced in a very limited time frame, compatible with the short lifetime of muons. Ionization cooling represents a fundamental step in the construction of high intensity muon accelerators, e.g. for a Neutrino Factory of Muon Collider. MICE will reduce 6D emittance of muon beams over a range of beam momenta from 140 to 240 MeV/c over a 5.5 m long cooling channel with various magnetic field configurations and measure that reduction. The muon beam will be extracted from pions produced at a dedicated beamline at the ISIS source at Rutherford Appleton Laboratory in the UK. The MICE beamline is presently in the final stages of commissioning. Measurements will begin in early 2008 with first results becoming available later during the year.

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