

Abstract Submitted
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MICE, the international Muon Ionization Cooling Experiment

CHRIS HEIDT, University of California, Riverside, MICE MUON IONIZATION COOLING EXPERIMENT COLLABORATION — Ionization Cooling is the only practical solution to preparing high brilliance muon beams for a neutrino factory or muon collider. MICE is under development at the Rutherford Appleton Laboratory (UK). It is characterized by exquisite emittance determination by 6D measurement of individual particles, a cooling section comprising 23 MV of acceleration at 200 MHz and 3 liquid hydrogen absorbers totaling 1m of liquid hydrogen on the path of 140-240 MeV/c muons. The beam has already been commissioned successfully and first measurements of beam emittance performed. We are setting up for the final high precision emittance determination and the measurements of cooling in Li Hydrogen. The design offers opportunities to observe cooling with various absorbers and several optics configurations. Results will be compared with detailed simulations of cooling channel performance to ensure full understanding of the cooling process. Progress towards the full cooling experiment with RF re-acceleration will also be reported.

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