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## ID: 3667 The Anticipated Performance of MICE Step IV

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**Abstract** The international Muon Ionization Cooling Experiment (MICE), under construction at the Rutherford Appleton Laboratory in Oxfordshire (UK), is a test of a prototype cooling channel for a future Neutrino Factory. The experiment aims to achieve, using liquid hydrogen absorbers, a 10% reduction in transverse emittance, measured to an accuracy of 1% by two scintillating fibre trackers within 4 T solenoid fields. Step IV of MICE will begin in 2012, producing the experiment's first cooling measurements. Step IV uses an absorber focus coil module, placed between the two scintillating-fibre trackers, to house liquid hydrogen or solid absorbers. A lithium hydride wedge absorber will also be used to measure 6D cooling. The performance of Step IV using various absorber materials was simulated, including the reconstruction resolution of the trackers.

**Funding Agency** STFC

**Type of Presentation** Poster

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