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**First Ever Ionization Cooling Demonstration in MICE** VARRICK SUEZAKI, Illinois Inst of Tech, VITTORIO PALLADINO, Univ and INFN Napoli — The Muon Ionization Cooling Experiment (MICE) at RAL has studied the ionization cooling of muons. Several million individual particle tracks have been recorded passing through a series of focusing magnets in a number of different configurations and a liquid hydrogen or lithium hydride absorber. Measurement of the tracks upstream and downstream of the absorber has shown the expected effects of the 4D emittance reduction. This invited talk presents and discusses these results, and projects the future of ionization cooling.

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