

Abstract Submitted
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BECOLA commissioning tests with bunched beams¹ D.M. ROSSI, NSCL, MSU, K. MINAMISONO, B.R. BARQUEST, G. BOLLEN, NSCL / Department of Physics and Astronomy, MSU, M. HUGHES, NSCL, MSU, A.M. KLOSE, P.F. MANTICA, NSCL / Department of Chemistry, MSU, R. RINGLE, C.A. RYDER, R. STRUM, D. TARAZONA, NSCL, MSU — The Beam Cooling and Laser spectroscopy (BECOLA) facility has been fully realized at NSCL and performance tests were completed with a stable ^{39}K ion beam extracted at 29.7 keV from an off-line ion source. The ^{39}K ions were cooled, bunched and subsequently neutralized by charge exchange with Na vapor. Laser light was co-propagated with the neutral ^{39}K beam and the laser frequency was Doppler-tuned into resonance by adjusting the velocity of the ^{39}K ions. The fluorescence induced by the laser probing of the ^{39}K atomic beam was collected in a photomultiplier. A newly-developed DAQ system, which integrates a FPGA-based time-resolved scaler into a real-time acquisition system, was used to record the observed fluorescence as a function of both time and ion velocity.

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Dominic Rossi
NSCL, MSU

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