

Abstract Submitted
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Laser system for collinear laser spectroscopy on neutron-deficient potassium isotopes¹ A. SMITH, Dep. Physics, SVC, K. MINAMISONO, R. STRUM, NSCL/Dep. Physics and Astronomy, MSU, D.M. ROSSI, C.A. RYDER, NSCL, MSU, H.B. ASBERRY, P.F. MANTICA, NSCL/Dep. Chemistry, MSU — Nuclear moments and charge radii of neutron-deficient potassium isotopes, 35, 36, 37K, were investigated to study nuclear structure near proton dripline. The experiment was performed at the BEam COoling and LAsEr spectroscopy facility (BECOLA) at NSCL at MSU. Low energy radioactive ion beams were transported to BECOLA and laser light was collinearly overlapped with the ion beam. I was responsible for setting up the laser light for collinear laser spectroscopy (CLS) as well as ion beam polarization using an optical pumping technique. The laser light profile was adjusted by a telescope to be weakly focused along the 5-m long beam line with a 1 mm diameter at the detection region (a cooled PMT), which was verified using a CCD camera. A quarter wave plate was used to convert linearly polarized laser light into circularly polarized light, which was verified by measuring power variation after a polarizer. The optimum conditions for the laser system were determined by performing CLS on an offline 39K beam. The results of the offline tests as well as the online experiment will be reported.

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