Abstract Submitted
for the DNP13 Meeting of
The American Physical Society

Photon detection system for laser spectroscopy experiments with cooled/bunched beams at BECOLA facility at NSCL MAXIMILIAN HUGHES, Clemson University, KEI MINAMISONO, PAUL MANTICA, DOMINIC ROSSI, CALEB RYDER, ANDREW KLOSE, DAVID TARAZONA, RYAN STRUM, GEORG BOLLEN, RYAN RINGLE, BRAD BARQUEST, Michigan State University, CHRISTOPHER GEPPERT, University of Mainz — The BEam COoler and LAser spectroscopy (BECOLA) facility at NSCL is designed to determine fundamental properties of the atomic nucleus such as the charge radii, the spin and electromagnetic moments. Commissioning tests of BECOLA has been completed using a stable ^{39}K beam produced from an offline ion source. The ^{39}K beam was cooled and bunched and propagated collinearly with laser light. The resulting fluorescence was detected in a photomultiplier tube (PMT)sensitive to the wavelength of D1 transition of ^{39}K The PMT was cooled to minimize background due to dark counts. The resulting fluorescence light was measured as a function of laser frequency and time relative to the ^{39}K beam bunch. An EPICS-based Control Systems Studio (CSS) was used for data acquisition and the software package Root was used for data analysis. The performance characteristics of the photon detection system as well as the laser spectroscopy of bunched ^{39}K will be discussed. work was supported in part by the National Science Foundation, Grant PHY-11-02511.

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Date submitted: 30 Jul 2013 Electronic form version 1.4