Abstract Submitted
for the DAMOP14 Meeting of
The American Physical Society

Experimental studies of excitations in a BEC in light-induced gauge fields CHUAN-HSUN LI, School of Electrical and Computer Engineering, Purdue University, West Lafayette, IN 47906, USA, DAVID BLASING, ABRAHAM OLSON, ROBERT NIFFENEGGER, YONG P. CHEN, Department of Physics, Purdue University, West Lafayette, IN 47906, USA — We present our experimental studies of various excitation processes in a ^{87}Rb Bose-Einstein condensate (BEC) in the presence of Raman light-induced gauge fields. We have systematically studied controllable inter-band excitations by modulating the strength of the Raman coupling, and probed the resultant decay from the upper dressed bands and heating of the BEC. We also present preliminary results probing the effects of synthetic spin-orbit coupling and gauge fields on collective excitations as well as photoassociation processes in the BEC.

Chuan-Hsun Li
School of Electrical and Computer Engineering, Purdue University

Date submitted: 31 Jan 2014 Electronic form version 1.4