

Abstract Submitted  
for the DAMOP13 Meeting of  
The American Physical Society

**High Spatial Resolution Imaging and Addressing of 2D Quantum Gases** LI-CHUNG HA, ERIC L. HAZLETT, LOGAN W. CLARK, University of Chicago, ULRICH EISMANN, University of Chicago, ENS Paris, CHENG CHIN, University of Chicago — We report on our method of both imaging 2D Bose gases and imprinting arbitrary potentials onto 2D quantum gas of cesium atoms. By carefully characterizing our imaging systems we are able to attain imaging and addressing resolutions of  $\sim 1 \mu\text{m}$ . With this versatile system we are exploring exotic trapping geometries that are otherwise very difficult to prepare. Our system can allow for the investigation of novel quantum phenomena, such as quantum critical dynamics and quantum gases in fractional dimensions.

Eric Hazlett  
University of Chicago

Date submitted: 28 Jan 2013

Electronic form version 1.4