Abstract Submitted
for the DAMOP16 Meeting of
The American Physical Society

Universal dynamics in a Unitary Bose Gas CATHERINE KLAUSS, XIN XIE, JOSE D'INCAO, DEBORAH JIN, ERIC CORNELL, JILA, NIST and University of Colorado, Boulder — We investigate the dynamics of a unitary Bose gas with an ^{85}Rb BEC, specifically to determine whether the dynamics scale universally with density. We find that the initial density affects both the (i) projection of the strongly interacting many-body wave-function onto the Feshbach dimer state when the system is rapidly ramped to a weakly interacting value of the scattering length a and (ii) the overall decay rate to deeper bound states. We will present data on both measurements across two orders of magnitude in density, and will discuss how the data illustrate the competing roles of universality and Efimov physics.

Catherine Klauss
JILA, NIST and University of Colorado, Boulder

Date submitted: 29 Jan 2016 Electronic form version 1.4