

DAMOP16-2016-020017

Abstract for an Invited Paper
for the DAMOP16 Meeting of
the American Physical Society

Bose Gases With Fully Resonant Interactions: Where Few-body Meets Many-Body?

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Starting from a weakly interacting Bose-Einstein condensate we quench suddenly to interactions which are formally infinite. The ensuing non-equilibrium evolution occurs over multiple timescales. We attempt to explain these observations in terms of the signatures of dilute, few-body physics that survive in the midst of a strongly interacting many-body system.