Abstract Submitted
for the DAMOP19 Meeting of
The American Physical Society

Dynamical interplay of few-body correlations in a thermal unitary Bose gas[1] VICTOR COLUSSI, BJORN VAN ZWOL, Eindhoven University of Technology, JOSE D'INCAO, JILA, NIST and Department of Physics, University of Colorado, Boulder, SERVAAS KOKKELMANS, Eindhoven University of Technology — We study the growth of few-body correlations in an ultracold Bose gas quenched to unitarity. This is encoded in the dynamics of the two- and three-body contacts. By connecting many-body correlations dynamics with few-body models[2], we map out signatures of the Efimov effect. For the thermal resonantly interacting Bose gas where the contact dynamics have been measured experimentally[3], we find that atom-bunching leads to an enhanced growth of few-body correlations. These atom-bunching effects also highlight the interplay between few-body correlations that occurs before genuine many-body effects enter on Fermi timescales.

[1]NWO Grant 680-47-623, NSF Grant PHY-1607204, and NASA
[2]V. E. Colussi, J. P. Corson, and J. P. D'Incao, PRL 120 (10), 100401 (2018)
[3]R. J. Fletcher, R. Lopes, J. Man, N. Navon, R. P. Smith, M. W. Zwierlein, and Z. Hadzibabic, Science 355, 377 (2017)

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Date submitted: 01 Feb 2019 Electronic form version 1.4