

Abstract Submitted  
for the DAMOP19 Meeting of  
The American Physical Society

**Molecular production in a quenched unitary Bose gas**<sup>1</sup> VICTOR COLUSSI, SILVIA MUSOLINO, SERVAAS KOKKELMANS, Eindhoven University of Technology — As the quenched unitary Bose gas evolves, the buildup of correlations leads to the formation of extended pairs bound purely by many-body effects, analogous to the phenomenon of Cooper pairing in the BCS regime of the Fermi gas<sup>2</sup>. We study how correlation growth, bound pairs, and three-body losses emerge in the fraction of unbound atoms remaining post sweep, finding quantitative agreement with experiment<sup>3</sup> and speculate on discrepancies. We also highlight more recent efforts to study effects of higher-order correlations in the many-body dynamics, including the Efimov effect.

<sup>1</sup>NWO Grant 680-47-623

<sup>2</sup>V. E. Colussi, S. Musolino, S. J. J. M. F. Kokkelmans, PRA 98, 051601(R) (2018)

<sup>3</sup>C. Eigen, J. A.P. Glidden, R. Lopes, N. Navon, Z. Hadzibabic, and R. P. Smith, PRL 119, 250404 (2017)

Victor Colussi  
Eindhoven University of Technology

Date submitted: 01 Feb 2019

Electronic form version 1.4