Quantum Gas in a Box

Zoran Hadzibabic

Cavendish Laboratory, University of Cambridge, J. J. Thomson Avenue, Cambridge CB3 0HE, United Kingdom

For the past two decades harmonically trapped ultracold atomic gases have been used with great success to study fundamental many-body physics in a flexible experimental setting. Recently, we have achieved the first atomic Bose-Einstein condensate in an essentially uniform potential of an optical-box trap\(^1\), which has opened new possibilities for closer connections with other many-body systems and the theories that rely on the translational symmetry of the system. I will present some of our recent experiments on this new system, including the study of the (Kibble-Zurek) dynamics of spontaneous symmetry breaking in a quenched homogeneous gas\(^2\).

---
