

Abstract Submitted
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Critical temperature and condensate fraction of ^{87}Rb Bose-Einstein condensation PETER ZHOU, University of Maryland, College Park — The momentum distribution of an ultracold gas of ^{87}Rb atoms was observed using absorption imaging after a time-of-flight (TOF) expansion. Measurements were made for ^{87}Rb atoms confined in an optical lattice of varying potential depths and for atoms without an optical lattice. The density profiles extracted from the TOF absorption imaging were analyzed to determine the temperature dependence of the condensate fraction and the critical temperature marking the onset of Bose-Einstein condensation (BEC). The Bragg scattering of light from the ^{87}Rb atoms was used to probe the transition to a Bose-Einstein condensate at the critical temperature.

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