Bar Ilan University , Optics Seminar

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Bose-Einstein condensation of Rubidium atoms

Abstract:

A setup for preparing the Bose–Einstein condensate of Rubidium atoms is described. The condensate consists of 10^5–10^6 ^{87}Rb atoms in the hyperfine state $F_g = 2$ of the ground electronic state. Three key indications of condensation, a sharp increase in the phase space density of atoms, the threshold emergence of two fractions in the cloud, and anisotropic expansion of the condensate, have been observed.

The future experiments with the Rubidium BEC are discussed. The plans are to create very cold samples using BEC and to study the properties of BEC at variable interatomic interactions.