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### Abstract:

Weakly interacting atomic gases provide an excellent example of an equilibrium Bose-Einstein condensate (BEC). However, these systems also allow controllable studies of non-equilibrium many-body dynamics. I will discuss two recent experiments on non-equilibrium condensation effects in an atomic Bose gas with tuneable interatomic interactions. First, by quenching the strength of interactions in a degenerate gas close to the condensation point, we induce non-equilibrium growth of the BEC and study its dynamics. Second, by dynamically decoupling the condensate from the surrounding decohering bath of thermal atoms, we create a "superheated" gas in which a BEC survives above the equilibrium condensation temperature. For vanishing interactions the metastable condensate persists for up to a minute and for total number of atoms in the gas up to three times smaller than the equilibrium critical value. This study provides an example of non-equilibrium stalling of a continuous, second-order phase transition.