

Bose gas with repulsive interactions between particles

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Bose-Einstein condensation (BEC) and particle number fluctuations are considered in the gas of bosons with repulsive interactions between particles. Two different mean-field models of the interacting Bose gas are studied. They provide rather different predictions for the BEC transition temperatures and the scaled variances of particle number fluctuations. The behavior of the BE condensate in the different versions of the mean-field approach is also investigated.

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