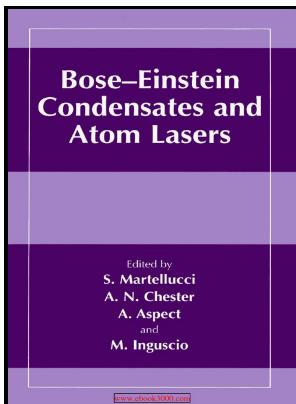


# Imperfect Bose gas

North-Holland Pub. Co. - BEC transition temperature of a dilute homogeneous imperfect Bose gas



Description: -

- Statistical mechanics.Imperfect Bose gas

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Studies in statistical mechanics -- v.2.

Studies in statistical mechanics -- v.2Imperfect Bose gas

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## Phys. Rev. 105, 776 (1957)

Non-zero Bose-Einstein condensate starts at the smaller critical density and continuously grows for a constant chemical potential until the second critical density. Information about registration may be found.

### Bose gas

Transition from three dimensions to one dimension in Bose gases at zero temperature. As a matter of fact, it is conceptually quite different from the well-known generation of BEC at finite temperatures for non-interacting bosons. .

## Phys. Rev. 105, 776 (1957)

It turns out that, as a function of the chemical potential, the discontinuity of the Bose condensate density at the phase transition {point} disappears as a function of the particle density. This can now be solved down to absolute zero in temperature.

### Nonuniform states of an imperfect bose gas

The larger s and N, the more of those new discrete energy levels occur. Model Hamiltonian To motivate our model, let us first recall that the possible presence of BEC depends in general not only on the spatial dimensionality and temperature but also on the ratio between kinetic and interaction energy.

### Bose gas

It is shown that there is a phase transition, which more closely resembles an ordinary gas-liquid transition than the Bose-Einstein condensation. A fictitious system with exactly such energy levels is considered. We prove that at this point the equilibrium state of the Sup-WIBG is a mixture of two low- and high-density pure phases related to two critical particle densities.

Observation of phase fluctuations in elongated Bose—Einstein condensates.

**[1609.08639v3] Phase diagram and correlation functions of the anisotropic imperfect Bose gas in  $d$  dimensions**

All thermodynamic quantities may be derived from the grand potential and we will consider all thermodynamic quantities to be functions of only the three variables  $z$ ,  $\beta$  or  $T$ , and  $V$ .

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