

## Critical point in system of interacting bosons

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A system of bosons studied within the mean field framework has two fascinating phenomena: a liquid-gas first order phase transition and Bose-Einstein condensation. Interplay between these two phenomena is being investigated. Depending on the mean-field potential parameters one can observe two types of critical points (CP), called "Boltzmann" and "Bose", that belong to different universality classes with distinct sets of critical exponents. As examples of Bose and Boltzmann CPs pion and  $\alpha$  matter are considered, respectively. In general, the phase diagram can have one of the CPs or both of them.

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