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Bose statistics and classical fields

Of several computational methods proposed to describe a weakly interacting Bose gas at nonzero temperature, the one called classical field approximation is perhaps conceptually the simplest. Its biggest handicap is the need for the ultraviolet cut-off. Studying statistical properties of an ideal Bose gas we are now able to choose the cut-off using a rational criterion. A new approach to the statistics of weakly interacting Bose gas in terms of a finite classical fields system is now available. Monte Carlo methods may be used to generate the relevant canonical ensemble.



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