

Abstract Submitted
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Large N Model of Bose Gas KE KE, LEO RADZIHOVSKY, University of Colorado at Boulder — We construct the large N model of bose gas. Using an artificial parameter $1/N$ to do the perturbative analysis to study two models: $U(N)$ bose gas and $U(1) \times O(N)$ bose gas. We find that for $U(N)$ bose gas we get Bogoliubov spectrum and LHY thermal dynamical relations which is the same as the usual weak coupling bose gas models. For $U(1) \times O(N)$ bose gas model, however, we calculate the non-perturbative quantum correction to the depletion, chemical potential, free energy and dispersion relations.

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