

Contribution Title: THE LEE-HUANG-YANG FORMULA FOR DILUTE  
BOSE GASES  
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Invited speaker: Topical session  
YRS seminar: NO

I will discuss the ground state energy of a Bose gas in the dilute limit. I will consider the usual model where the Bose particles are interacting through a two-body potential. In standard Bose gas experiments the Bose particles are atoms and it is in this case of course an idealization to model the interaction by two-body forces. For the model in question It is believed that there is at least a two term expansion of the energy in the dilute limit, where the potential appears only through its scattering length. The leading term has been known rigorously for some time. The next to leading term often referred to as the Lee-Huang-Yang term is still an open problem. There has recently been some progress in understanding this term and I will review it in this talk. The problem is interesting not only for establishing the formula, but also because it will validate aspects of Bogolubov's theory for Bose gases.