



中心系列讲座 ICQM Weekly Seminar Series “Myths around Bose-Einstein Condensation”



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Time: 4:00pm, Feb. 23, 2011 (Wednesday)

时间: 2011年2月23日 (周三) 下午4:00

Venue: Room 607, Conference Room A, Science Building 5

地点: 理科五号楼607会议室

Abstract

In the literature on systems with Bose-Einstein condensate, there are several widespread erroneous beliefs. They are surprisingly common, being a kind of myths that people accept without checking whether these beliefs are correct. But using principally wrong ideas yields incorrect and often absolutely unreasonable results. The most common such myths are discussed and mistakes leading to their appearance are elucidated. These myths include the following wrong statements:

1. There exists in nature the uniform ideal Bose-condensed gas.
2. The ideal Bose-condensed gas can exist in low-dimensional traps.
3. Bose-Einstein condensation can be described without gauge symmetry breaking.
4. The canonical and grand canonical ensembles are not equivalent for characterizing Bose-condensed systems.
5. In the description of Bose-condensed systems, it is possible to neglect anomalous averages.
6. Bose-condensed systems display non-thermodynamic particle fluctuations.
7. It is possible to introduce the phase operator by the Dirac representation.
8. Mean kinetic energy can be found from the Landau-Lifshits formula.

All are welcome. Light refreshments served.