

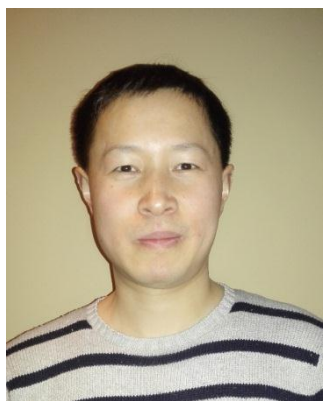


Weekly Seminar

Some exact results concerning the short-range correlations of ultracold atomic gases

Prof. Shina Tan (檀时钠)

Georgia Institute of Technology (佐治亚理工大学)



Time: 4:00pm, March. 22, 2017 (Wednesday)

时间: 2017年3月22日 (周三) 下午4:00

Venue: Room w563, Physics building, Peking University

地点: 北京大学物理楼, 西563会议室

Abstract

In ultracold atomic gases, the characteristic ranges of the atomic interactions are usually much shorter than the thermal de Broglie wave lengths of the atoms, as well as the average distances between the atoms. The atoms may therefore be treated as point particles having contact interactions to a good approximation. Within the model of contact interactions, many exact results may be derived. They relate the short-range correlations to other observables such as the energy and the momentum distribution and they are valid for both few-body and many-body systems. The ideas developed in the study of these extremely low-energy atoms, such as a mathematical approach to control the ultraviolet divergences, are directly relevant for high-energy particle physics, in which Special Relativity requires the fundamental interactions between elementary particles to be contact interactions.

About the speaker

檀时钠, 毕业于清华大学物理系, 曾获中科院理论物理研究所硕士和美国芝加哥大学物理系博士学位。先后在华盛顿大学核理论研究所、耶鲁大学物理系任博士后。2010年至今为佐治亚理工大学物理系助理教授、副教授。曾因其在冷原子领域的工作获得过美国物理学会George E. Valley, Jr. Prize, 欧洲Bose-Einstein Condensation Award, 美国Alfred P. Sloan Fellowship, National Science Foundation CAREER Award, APS Fellow等荣誉。