清华大学高等研究院

Institute for Advanced Study, Tsinghua University

物理学术报告
Physics Seminars (biweekly)

Title: **The scattering between ultracold atoms with spin-orbit coupling**

Speaker: **Prof. Peng Zhang (*Renmin University of China*)**

Time: **3:15pm, Wednesday, March 20, 2013**
(2:45~3:15pm, Tea, Coffee, and Cookie)

Venue: **Conference Hall 322, Science Building, Tsinghua University**

Abstract

We developed an ab.initio approach for the low-energy scattering problem of ultracold atom with spin-orbit (SO) coupling. We derive the modified Bethe-Peierles boundary condition for the systems with SO coupling, and obtain the analytical expression of the low-energy inter-atomic scattering amplitude, as well as the algebra equation for the two-atom bound-state energy. With our result we examine the validity of the effective contact interaction for the SO-coupled ultracold gases. Collaborating with the USTC experimental group, we also study the stability of excited dressed state with SO coupling.

张芃，2005年在中国科学院理论物理研究所获得理论物理专业博士学位，此后先后在美国佐治亚理工学院和日本东京大学进行博士后研究工作，2010年10月回国，现任中国人民大学物理系教授。主要研究兴趣为量子光学和超冷原子体系中的少体问题。