

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: Cuprate high- T_c superconductivity: Insights from a model system

Speaker: Prof. Yuan Li

International Center for Quantum Materials, Peking University

Time: 3:15pm, Wednesday, Nov. 21, 2012

(2:45~3:15pm, Tea, Coffee, and Cookie)

Venue: Conference Hall 322, Science Building, Tsinghua University

Abstract:

High-temperature superconductivity has been one of the most intensely studied subjects in physics since its discovery. Among all superconductors discovered to date, the cuprates have the highest T_c , and the mercury-based family of compounds stands out with the highest T_c among all the cuprates. In this talk, I will give an overview of some recent experimental advances in the single-CuO-layer member of this family, $\text{HgBa}_2\text{CuO}_{4+\delta}$. This material offers a unique combination of high T_c with structural simplicity and electronic tuneability. The focus of the talk will be on spectroscopy results that elucidate several important issues of high T_c , such as (1) the nature of the pseudogap, (2) the type of excitations that help bind electrons into Cooper pairs, and (3) the ingredients that might be the essential for a successful microscopic model.

个人简介: 李源博士 2010 年 2 月于美国斯坦福大学取得博士学位, 2010 年至 2012 年获德国洪堡基金资助, 在马克斯-普朗克学会固体研究所从事研究工作, 2012 年入选中组部第二批“青年千人计划”, 加入北京大学量子材料科学中心。

李博士近年来主要从事关于高温超导机理的实验研究, 工作内容涵盖从材料生长到散射谱学测量等多个环节。自 2006 年来共发表学术论文 30 余篇, 其中大部分见于有影响的国际学术期刊, 如 Nature, Nature Physics, Nature Communications, Advanced Materials, Physical Review Letters, Physical Review B 等。李博士在北京大学的实验组将致力于研究具有超导、磁性和强自旋轨道耦合的电子强关联材料。