

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: Two-fluid model and emergent states in heavy electron materials

Speaker: Yi-feng Yang

Institute of Physics, Chinese Academy of Sciences

Time: 3:15pm, Wednesday, Jan. 9, 2013

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

Venue: Conference Hall 322, Science Building, Tsinghua University

Abstract: Heavy electron materials provide a useful prototype for exploring the underlying mechanism of unconventional superconductivity and new magnetism. Among them is the first d-wave superconductor CeCu₂Si₂ discovered in 1979. The last ten years have seen many important progresses such as novel quantum criticality, "hidden" order and topological Kondo insulator. However, we still don't have a satisfactory microscopic theory after thirty years of research. In this talk, I will introduce a phenomenological model and show how it leads to a dramatic change in our interpretation of experimental observations and hence the discovery of new universal properties. I will then discuss some recent progresses and the proposal of a new unified framework that may help us better understand heavy electron physics.

杨义峰，1997 年入北京大学物理系并获得学士和硕士学位，2003 年起在德国马普学会固体研究所学习并获得斯图加特大学博士学位。2007 年起先后在美国加州大学 Davis 分校物理系和 Los Alamos 国家实验室做博士后研究，2010 年底回中科院物理所工作并入选中科院百人计划。主要方向为强关联电子体系的理论和数值研究。