Notre Dame Science
Department of Physics

ORDER, FLUCTUATIONS, AND NEW FRONTIERS IN QUANTUM MATERIALS

Colloquium

Dr. James Analytis ❖ SLAC National Accelerator Lab

Wednesday, February 15, 2012 ❖ 4:00 P.M. ❖ NSH 118
(Refreshments at 3:30 P.M. NSH 202)

Condensed matter systems are a playground for investigating new states of quantum matter. In correlated electron systems, quantum interactions usually lead to a number of exotic symmetry broken states, one of which is high temperature superconductivity. These phase transitions and their associated critical fluctuations can have dramatic consequences on the quasiparticle lifetime, resulting in novel transport properties over a wide range in temperature, observed in a number of materials. The recently discovered iron based superconductors are no exception, and I investigate the nature of the quasiparticle scattering across the thermodynamic phase diagram and attempt to understand how different thermodynamic ground states can be connected.

All interested persons are cordially invited to attend.