

Chez Pierre

Presents ...

Monday, May 1, 2017

12:00pm noon

MIT Room 4-331

Chez Pierre Seminar

James Analytis – University of California, Berkeley

“Magnetic Field-Temperature Scaling in the Magnetotransport Properties of Unconventional Superconductors.”

The transport properties of unconventional superconductors and other quantum critical metals deviates strongly from the conventional theory of transport in metals. The dramatic T-linear temperature dependence observed in cuprate, iron-pnictide and heavy fermion superconductors is thought to be a signature of quantum critical physics and is often used as evidence for the proximity to a quantum critical point. We discover that this same physics may be manifest in the magneto-transport properties of these materials. This talk focuses on a study of the longitudinal and transverse magnetoresistance of BaFe_2As_2 near its quantum critical point. We reveal a new manifestation of this physics, leading to an unusual scaling relationship in field and temperature that suggests magnetic field affects scattering in a similar way to temperature.

