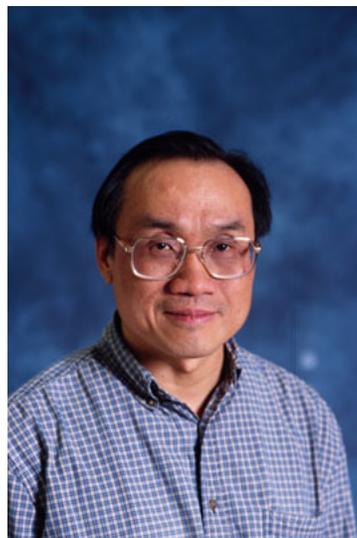


T_cSAM Bi-Weekly Brown Bag Seminar

Texas Center for Superconductivity and Advanced Materials

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A Complete Charge Model of the Under-doped $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$ Superconductors

Friday, May 21, 2004

University of Houston Science Center

Room 102

12:00 p.m. – 1:00 p.m.

Abstract

Based on the transport and far-infrared (far-IR) reflectivity measurements in the direction parallel (ab-plane) and perpendicular (c-axis) to the CuO_2 planes, we present a complete picture of the electronic structure of $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$ (LSCO) superconductors in under-doped regime. Contrary to the common belief, we found conclusive experimental evidence that the c-axis charge transport is intrinsically *coherent* and the c-axis scattering rate (Γ_c) is extremely small and temperature (T)-independent. Our findings suggest that the normal state of LSCO in the under-doped regime is an unconventional anisotropic metal built upon a three-dimensional (3D) Wigner hole lattice resulting from the 3D ordering of the two-dimensional (2D) square hole lattices formed in the ab-planes.

Persons with disabilities who require special accommodations in attending this lecture should call (713) 743-8210 as soon as possible.

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