



SACRAMENTO STATE

Department of Physics & Astronomy Fall 2007

Physics Colloquium Series

"Condensed Matter Theory: A High T_c Perspective"

The phenomenon of high temperature superconductivity, discovered in a class of transition metal oxides called Cuprates, has had a significant impact on the developments in theoretical condensed matter physics over the past 18 years. On the one hand it promises a technological revolution, if room temperature superconductivity can be achieved, while on the other, the observed properties of the materials being so anomalous, it emphasizes the incompleteness of our understanding of many body systems. While the former is yet to come to fruition, a number of new theoretical concepts have emerged in the hunt for an explanation of the physics of Cuprates. After a detailed introduction of the materials and the observed properties, I will describe one possible resolution of the mysteries of high temperature superconductors. Along the way I will emphasize the basic philosophy of theoretical condensed matter physics of understanding materials from their microscopic details to their macroscopic properties.

Vivek Aji

(Candidate for Faculty Position)

Physics Department, University of California, Riverside

Tuesday, December 18, 2007

***3:50-5:10 PM MND 1015**

Open & Free to all Students, Faculty & Public