



Strong Correlation Physics and the Phenomenology of High Temperature Superconductivity

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Abstract

The seminars will introduce the subject of strong correlation physics and review the rich phenomenology of high temperature superconductivity. The focus will be on experimental observations, supplemented by the introduction of theoretical concepts. Various experimental methods will be explained and illustrated with examples from the HiTc literature. The material should be accessible to graduate and undergraduate students who have a basic knowledge of solid state physics at the level of Kittel's introductory textbook.

About the Speaker

Prof Patrick Lee joined the MIT Department of Physics in 1982 after approximately ten years with the Theoretical Physics Department at Bell Laboratories. He has made key contributions to the theory of disordered electronic systems and is a pioneer in "mesoscopic physics", the study of small devices at low temperatures. Prof Lee introduced the concept of universal conductance fluctuations to describe such devices. He was awarded the 2005 Dirac Medal of the International Center for Theoretical Physics and the Oliver Buckley Prize of the American Physical Society. Prof Lee's main research interests lie in the study of strongly correlated electronic systems. More recently, his research is focused on the problem of high temperature superconductivity. He is a member of the US National Academy of Sciences.