

# Andrew Millis

Columbia University



## Superconductivity and the Pseudogap in Theory and in Copper-Oxide Based Superconductors

Department of Physics Colloquium



In the “high- $T_c$ ” copper oxide materials, superconductivity is believed not to arise from the electron-phonon coupling which causes superconductivity in conventional materials such as lead or mercury and is believed to be related in some way to the physics of the correlation driven (“Mott”) metal insulator transition. In this talk I will summarize what is known about the underlying physics of the materials, explain why the theoretical problem is (NP) hard and present recent theoretical and computational progress which has led to new insights into electronically mediated superconductivity.

