

Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

A Dynamical Mean Field Study of the Three-Band Copper-Oxide Model¹ XIN WANG, Columbia University, LUCA DE' MEDICI, Rutgers University, CAPONE MASSIMO, Università di Roma La Sapienza, ANDREW J. MILLIS, Columbia University — We apply the dynamical mean field theory to study the three-band Copper-Oxide Model related to the High-Tc Cuprates. Both continuous-time quantum Monte Carlo and Exact Diagonalization impurity solvers are used. The spectral function, mass enhancement and optical conductivity in both paramagnetic and antiferromagnetic case are computed. We determine the contribution of antiferromagnetic order to the gap observed in the undoped material. We show that in the paramagnetic Mott insulating regime the quasiparticle mass enhancement is larger for hole than for electron-doped compounds, but an opposite trend in matrix elements means that a the optical conductivity in these two cases is comparable.

¹Supported by NSF-DMR-0705847, NSF-DMR-0528969 and MIUR PRIN 2005, Prot 200522492.

Xin Wang
Columbia University

Date submitted: 01 Dec 2008

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