

Abstract Submitted  
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**Spatial Correlation in the Three-band Copper Oxide Model: Dynamical Mean-field Study with Configuration Interaction Based Impurity Solver**<sup>1</sup> ARA GO, ANDREW J. MILLIS, Columbia Univ — The three-band copper oxide model is studied using the single-site and four-site dynamical mean-field theory with configuration interaction based impurity solver. Comparison of the single and four site approximations shows that short ranged antiferromagnetic correlations are crucial to the physics. In the undoped case, they increase the gap size, shift the metal-insulator phase boundary and enhance the conductivity at the gap edge. The relation of antiferromagnetism and the pseudogap is discussed for the doped case. The new solver permits the inclusion of more bath orbitals which are crucial for accurate studies of spectral properties near the gap edge.

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