

Abstract Submitted  
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**A competing order scenario of two-gap behavior in hole doped cuprates** TANMOY DAS, R.S. MARKIEWICZ, A. BANSIL, Northeastern University — Angle-dependent studies of the gap function provide evidence for the coexistence of two distinct gaps in hole doped cuprates, where the gap near the nodal direction scales with the superconducting transition temperature  $T_c$ , while that in the antinodal direction scales with the pseudogap temperature. We present model calculations[1] which show that most of the characteristic features observed in the recent angle-resolved photoemission (ARPES) as well as scanning tunneling microscopy (STM) two-gap studies are consistent with a scenario in which the pseudogap has a non-superconducting origin in a competing phase. Our analysis indicates that, near optimal doping, superconductivity can quench the competing order at low temperatures, and that some of the key differences observed between the STM and ARPES results can give insight into the superlattice symmetry of the competing order. Work is supported in part by the USDOE.

[1] Tanmoy Das, R. S. Markiewicz, and A. Bansil, arXiv/0711.0480.

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