

Abstract Submitted  
for the MAR12 Meeting of  
The American Physical Society

**Role of the charge reservoir layer in cuprate superconductors**

THEODORE GEBALLE, SRINIVAS RAGHU, Stanford University — The high pressure measurements of Jorgensen et al., which show that  $T_c$  increases as the apical oxygen distance from the  $\text{CuO}_2$  plane decreases, is at odds with current theoretical predictions of  $T_c$ . Furthermore, the unusually close  $T_c$  (and similar NMR signatures) of Hg and Tl based families of cuprates, in addition to the facts that their  $T_c$  is significantly higher than superconductors without charge reservoir layers (CRLs), suggest that CRLs play a significant role in determining  $T_c$ . Based on recent studies of S. Raghu et al. on the effects of longer ranged interactions on unconventional superconductivity, we discuss the possibility of the generic role that the CRLs may have in enhancing  $T_c$  by considering their role in screening short-range repulsive Coulomb interactions within the  $\text{CuO}_2$  plane.

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Date submitted: 23 Nov 2011

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