MAR14-2013-020467

Abstract for an Invited Paper
for the MAR14 Meeting of
the American Physical Society

Electronic ordering and disorder effects in the pseudogap state of $YBa_2Cu_3O_y$[1]

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We report NMR measurements in the normal state of underdoped $YBa_2Cu_3O_y$. While unambiguous indication of charge-density-wave ordering is found in the pseudogap state, we interpret this as short range CDW order nucleated around native defects. We discuss the connections of this result to the initial evidence of CDW order in $YBa_2Cu_3O_y$ from NMR in high magnetic fields, to the more recent X-ray scattering data in the normal state as well as to a wider body of experimental results which have been considered to characterize the pseudogap state.

[1]Work performed in collaboration with Tao Wu, Hadrien Mayaffre, Steffen Krämer, Mladen Horvatic & Claude Berthier (LNCMI), Ruixing Liang, Walter N. Hardy and Douglas A. Bonn (UBC).