

Abstract Submitted
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Spin Susceptibility of Underdoped Cuprates: Insight from Stripe-Ordered $\text{La}_{1.875}\text{Ba}_{0.125}\text{CuO}_4$ ¹ MARKUS HÜCKER, GEN D. GU, JOHN M. TRANQUADA, Brookhaven National Laboratory — The low-temperature decrease of the bulk magnetic susceptibility in underdoped high-temperature superconductors has commonly been cited as evidence for a pseudogap; however, the interpretations range from a Fermi-liquid perspective, with the susceptibility being proportional to the density of free carriers, to strong coupling pictures, with the susceptibility resulting from antiferromagnetic correlations among local moments. Analysis of the susceptibility of a particular cuprate, the stripe ordered $\text{La}_{1.875}\text{Ba}_{0.125}\text{CuO}_4$, sheds new light on this remarkable system and puts tight constraints on possible interpretations. The recently discovered magnetic transition in high magnetic fields will also be discussed.

[1] M. Hücker, G. D. Gu, J. M. Tranquada, cond- mat/0503417v2.

[2] Q. Li, M. Hücker, G. D. Gu, A. M. Tsvelik, J. M. Tranquada, Phys. Rev. Lett. 99, 067001 (2007).

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