

Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

Precursor Charge Density Waves in La_{1.875}Ba_{0.125}CuO₄¹ HU MIAO, Brookhaven National Laboratory, Y PENG, CNR/SPIN, A AMORESE, F YAKHOU-HARRIS, K KUMMER, N BROOKES, ESRF, J LORENZANA, SMC-INFM, G SEIBOLD, BTU Cottbus, G GU, Brookhaven National Laboratory, G GHIRINGHELLI, L BRAICOVICH, CNR/SPIN, M DEAN, Brookhaven National Laboratory — The observation of charge density wave (CDW) correlations in numerous different samples has provided increasing support to the concept that these correlations are an intrinsic property of the high temperature superconducting cuprates. It has long been hypothesized that long-range CDW order arises from the pinning of precursor high-temperature CDW fluctuations, but while precursor spin density wave (SDW) correlations have been studied in detail, the corresponding transition between long-range ordered and precursor CDW correlations has never been observed. Here, using resonant inelastic x-ray scattering (RIXS), we report the discovery of precursor CDW correlations in La_{1.875}Ba_{0.125}CuO₄.

¹H. M and M. P. M. D. are supported by the Center for Emergent Superconductivity, an Energy Frontier Research Center funded by the US DOE, Office of Basic Energy Sciences.

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Date submitted: 30 Oct 2016

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