

Abstract Submitted  
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**Neutron Scattering Study of Magnetic Field Effect on the Stripe Order in LBCO** ZHIJUN XU, JINSHENG WEN, GUANGYONG XU, MARKUS HÜCKER, JOHN TRANQUADA, GENDA GU, BNL, BNL NEUTRON SCATTERING GROUP TEAM — We have been investigating the relationship of stripe order to high-temperature superconductivity in cuprates. In particular, our neutron scattering results indicate that spin-stripe order is present in  $\text{La}_{2-x}\text{Ba}_x\text{CuO}_4$  (LBCO) over a substantial range of doping about  $x = 1/8$ , where the bulk superconductivity is anomalously suppressed. Focusing on the  $x = 1/8$  composition, we have recently studied the impact on stripe order of a magnetic field applied along the  $c$ -axis [1]. Applying a field up to 7 T, we observed a small enhancement of the intensity of the incommensurate antiferromagnetic superlattice peaks and a slight increase in the ordering temperature. In measurements of the spin dynamics, the field had no significant impact on the small spin gap ( $\sim 0.5$  meV) found in the ordered phase [2]. [1] Jinsheng Wen *et al.*, arXiv:0810.4085. [2] J.M. Tranquada *et al.*, arXiv:0809.0711. Work supported by Office of Science, U.S. DOE, under Contract No. DEAC02-98CH10886

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