

Abstract Submitted  
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**Neutron Scattering Studies of the Copper Oxide Superconductor  $\text{La}_{1.925}\text{Ba}_{0.075}\text{CuO}_4$**  SARAH DUNSIGER, YANG ZHAO, BRUCE GAULIN<sup>1</sup>, HANNA DABKOWSKA, Department of Physics and Astronomy, McMaster University, Hamilton, Ontario, Canada, WILLIAM BUYERS, ZAHRA YAMANI, National Research Council, Chalk River, Ontario, Canada — The interplay between superconductivity and magnetism is a central issue in the study of the high  $T_c$  cuprates. The first to be discovered, the Bednorz-Müller materials have been much less extensively studied due to the difficulty of growing single crystals. We report recent neutron scattering studies of a large single crystal of  $\text{La}_{1.925}\text{Ba}_{0.075}\text{CuO}_4$ . Incommensurate elastic peaks, evidence of static spin stripe order, develop below 40 K and persist into the superconducting state ( $T_c \sim 25$  K). Investigations of the low energy incommensurate spin fluctuations show the dynamical spin susceptibility increases as  $T_c$  is approached from above, remaining roughly constant below  $T_c$ . A similar variation in the incommensurability indicates a temperature dependent stripe spacing. We compare our results with studies of  $\text{La}_{1.875}\text{Ba}_{0.125}\text{CuO}_4$  in the normal state [1]. [1] M. Fujita et al, cond-mat/0403396 (2004).

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