

Abstract Submitted  
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**Spin incommensurability varies linearly with hole content in single-layer Bi2201 cuprate**<sup>1</sup> JOHN TRANQUADA, Brookhaven National Lab, M. ENOKI, M. FUJITA, T. NISHIZAKI, K. YAMADA, Tohoku U., S. IIKUBO, Kyushu Inst. Tech., D.K. SINGH, S. CHANG, CNR — We have performed inelastic neutron scattering measurements on the single-layer cuprate  $\text{Bi}_{2+x}\text{Sr}_{2-x}\text{CuO}_{6+y}$  (Bi2201) with  $x = 0.2, 0.3, 0.4$  and  $0.5$ , a doping range that spans the spin-glass (SG) to superconducting (SC) phase boundary [1]. The doping evolution of low energy spin fluctuations ( $\lesssim 11$  meV) was found to be characterized by a change of incommensurate modulation wave vector from the tetragonal [110] to [100]/[010] directions, while maintaining a linear relation between the incommensurability and the hole concentration,  $\delta \approx p$ . In the SC regime, the spectral weight is strongly suppressed below  $\sim 4$  meV. Similarities and differences in the spin correlations between Bi2201 and the prototypical single-layer system  $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$  will be discussed.

[1] M. Enoki *et al.*, arXiv:1205.3301.

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