

Abstract Submitted  
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**Spatial modulations of electronic states in the pseudogap phase of cuprates: ordering or interference?**<sup>1</sup> COLIN PARKER, AAKASH PUSHP, ABHAY PASUPATHY, KENJIRO GOMES, Princeton University, SHIMPEI ONO, CRIEPI, Japan, YOICHI ANDO, ISIR, Osaka University, JINSHENG WEN, ZHIJUN XU, GENDA GU, Brookhaven National Laboratory, ALI YAZDANI, Princeton University — Spatial modulations in the local density of states of the high temperature superconductor  $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+\delta}$  have now been reported both above and below  $T_c$ . At low energies and low temperatures, these modulations have been attributed to the so-called octet model of Bogoliubov Quasiparticle Interference (BQPI). At temperatures above  $T_c$ , non-dispersive modulations were found near optimal doping, suggestive of a translation symmetry breaking ordered state[1]. Recent observations of low energy, dispersive modulations above  $T_c$  in a highly underdoped sample have been taken as evidence for Bogoliubov excitations above  $T_c$ [2]. We extend these measurements to a regime where we know from other measurements, such as anomalous diamagnetism, that there are no superconducting correlations in order to clarify whether any aspects of these modulations are related to superconducting correlations or to potential ordering at  $T^*$ . [1] M. Vershinin, et al. Science 305, 1993 (2004) [2] J. Lee, et al. Science 325, 1099 (2009)

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