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Structure of intra-unit cell C_{4v} symmetry breaking domains in $Bi_2Sr_2CaCu_2O_{8+\delta}$ from SI-STM MOHAMMAD HAMIDIAN, INES FIRMO, KAZUHIRO FUJITA, Cornell University; Brookhaven National Lab, HIROSHI EISAKI, National Institute of Advanced Industrial Science and Technology, Japan, SHIN-ICHI UCHIDA, University of Tokyo, Japan, MICHAEL LAWLER, EUN-AH KIM, Cornell University, J.C. DAVIS, Cornell University; Brookhaven National Lab; University of St. Andrews, Scotland; Kavli Institute, Cornell — Mounting evidence from a number of experimental probes supports the idea that the electronic structure of the cuprate pseudogap phase breaks rotational symmetry. Furthermore, ARPES, neutron scattering and spectroscopic imaging scanning tunneling microscopy (SI-STM) data all point to an intra-unit cell origin. We present new findings for near optimally doped $Bi_2Sr_2CaCu_2O_{8+\delta}$(BSCCO) which elucidate the domains associated with intra-unit cell C_{4v} symmetry breaking in the electronic structure. The analysis method will be motivated by the preceding talk, 'Phase Determination of Intra-Unit Cell Fourier Transform STM – Picometer Registration of Zn Impurity States in $Bi_2Sr_2CaCu_2O_8$' given by I. A. Firmo.

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