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Search for nanoscale electronic phase separation in lightly doped CuO using STM FRANCOISE KIDWINGIRA, KO MUNAKATA, MALCOLM BEASLEY, Geballe Laboratory for Advanced Materials, Stanford University — High temperature superconductivity is widely believed to come from the CuO planes of the quasi-two-dimensional cuprate compounds. It is therefore a natural to ask to what extent their properties are shared with the 3 dimensional cuprate CuO. Static electronic phase separation seems to be one of these shared properties: charge stripes have been observed in a number cuprates, most notably LSCCO, and more recently in CuO single crystals. We report here STM measurements of lightly doped thin films of Cu and observe strong evidence for electronic inhomogeneity on the nanometer scale. Work supported by BES-DoE.

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