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Visualizing antinodal pair decoherence in a high T_c cuprate YANG HE, Harvard Univeristy, YI YIN, Zhejiang University, ANJAN SOUMYANARAYANAN, MARTIN ZECH, TESS WILLIAMS, Harvard Univeristy, MICHAEL BOYER, Clark University, W. D. WISE, KAMALESH CHATTERJEE, Massachusetts Institute of Technology, TAKESHI KONDO, Ames Lab, TSUNEHIRO TAKEUCHI, HIROSHI IKUTA, Nagoya University, ERIC HUDSON, Penn State University, JENNIFER HOFFMAN, Harvard Univeristy — The relationship between the pseudogap phase and superconductivity in the cuprate superconductors remains mysterious. We use Fourier transform scanning tunneling spectroscopy to study the pseudogap in the cuprate superconductor $Bi_{2-x}Pb_xSr_2CuO_{6+\delta}$. We discover a new type of quasiparticle interference in the antinodal regions, presumed to be dominated by the pseudogap. Magnetic field induced spectral weight transfer shows that the pseudogap suppresses superconducting coherence but does not affect d-wave pairing at the antinode.

Yang He
Harvard Univeristy

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