

Abstract Submitted  
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**Superconductor-insulator transition in a stripe-ordered cuprate<sup>1</sup>**

JOHN TRANQUADA, Brookhaven Natl Lab, C. HOMES, G.D. GU, Q. LI, BNL, M. HUECKER, Weizmann Inst — We reconsider the case of  $\text{La}_{2-x}\text{Ba}_x\text{CuO}_4$  with  $x = 1/8$ , where spin-stripe order and 2D superconducting correlations develop simultaneously at 40 K. The thermal evolution of the in-plane optical reflectivity suggests the development of a Josephson plasma resonance (JPR) between charge stripes, by analogy with the JPR seen in *c*-axis reflectivity in the superconducting state of Josephson-coupled  $\text{CuO}_2$  planes. At low-temperature, when the superconductivity is suppressed by a magnetic field, the resistivity exhibits insulating character. We interpret this as suppression of the Josephson coupling between pair correlations in neighboring charge stripes, with single-particle transport suppressed by the surviving spin-stripe order. To obtain direct evidence that the high-field insulator involves hole pairs localized to 1D stripes will require further experiments.

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