

Abstract Submitted
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Magnetic field dependence of Interface Superconductivity in LSCO/LCO bilayers SCOTT RIGGS, MagLab/FSU, FEDOR BALAKIREV, ALBERT MIGLIORI, MagLab/LANL, GREG BOEBINGER, MagLab/FSU, GENA LOGVENOV, ANTHONY BOLLINGER, ADRIAN GOZAR, IVAN BOZOVIC, BNL, LANL COLLABORATION, BNL COLLABORATION — Interface superconductivity (IS) with a high T_c has been discovered recently in bi-layer films consisting of a thin layer of $\text{La}_{1.55}\text{Sr}_{0.45}\text{CuO}_4$ (overdoped and metallic but not superconducting) covered with a thin layer of La_2CuO_4 (undoped, insulating, and antiferromagnetic) grown by molecular beam epitaxy (MBE)¹. Here we report on a study of magneto-transport properties in such IS systems. By measuring the magnetic-field dependence of in-plane longitudinal and Hall resistivities we find the temperature dependence of the upper critical field (H_{c2}). Other findings and inferences on the nature of IS and T_c enhancement will be discussed as well. ¹A. Gozar, G. Logvenov, A. T. Bollinger and I. Bozovic, “Interface superconductivity between a metal and a Mott insulator”, submitted for publication.

Scott Riggs
MagLab/FSU

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