

Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Scanning SQUID measurements of the superconducting state of δ -doped SrTiO₃ heterostructures JULIE A. BERT, Stanford University, MINU KIM, CHRIS BELL, HAROLD Y. HWANG, University of Tokyo, KATHRYN A. MOLER, Stanford University — The discovery of interface superconductivity in complex oxide heterostructures has generated significant excitement. We used scanning SQUID microscopy to investigate the magnetic properties of one such heterostructure, δ -doped structures in SrTiO₃ thin films. We have observed a diamagnetic response and imaged vortices providing further evidence of a two-dimensional superconducting state. Finally we measured the magnetic susceptibility from which we observe spatial inhomogeneities in the superconducting response and can estimate the temperature dependence of the magnetic penetration depth.

Julie A. Bert
Stanford University

Date submitted: 28 Dec 2010

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