

Abstract Submitted  
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**Single Superconducting Vortex Depinning Force Measured with a Magnetic Force Microscope** JENNY E. HOFFMAN, Harvard University, ANDREW WHITEHEAD, Massachusetts Institute of Technology, NICK C. KOSHINICK, Stanford University, OPHIR M. AUSLAENDER, Stanford University, ERIC W. J. STRAVER, Stanford University, ROB A. HUGHES, McMaster University, JOHN S. PRESTON, McMaster University, DAN RUGAR, IBM Almaden, KATHRYN A. MOLER, Stanford University — The pinning of vortices plays an important role in superconductor applications, allowing transport currents to flow without dissipation. Measurements of vortex pinning to date have mostly been bulk measurements, yielding average properties without specific information about individual vortex pinning sites or strengths. We demonstrate the use of a magnetic force microscope to measure the depinning forces of single vortices in a superconducting  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  film.

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