

Abstract Submitted  
for the MAR06 Meeting of  
The American Physical Society

**Vortex Pinning in a  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  Thin Film** OPHIR M. AUSLAENDER, NICHOLAS C. KOSHINICK, KATHRYN A. MOLER, Stanford University, ROB A. HUGHES, JOHN S. PRESTON, McMaster University — Vortices, and the nanoscale structures that pin them, are important both fundamentally and for the development of high temperature superconductor technologies. We use a home-built magnetic force microscope (MFM) to determine the depinning forces required to move individual vortices in a 200nm thick  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  film. Our results indicate a wide distribution of depinning forces for different vortices. A comparison between distributions at various temperatures is underway, qualitatively showing a decrease of forces with increasing temperature.

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Date submitted: 30 Nov 2005

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