

Abstract Submitted
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Finite Size Effects in YBCO Films in Zero and Non-Zero Field¹

SU LI, Center for Superconductivity Research, Department of Physics, University of Maryland, College Park, HUA XU, Center for Superconductivity Research, Department of Physics, University of Maryland, College Park, M. C. SULLIVAN, Department of Physics, Ithaca College, STEVEN M. ANLAGE, Center for Superconductivity Research, Department of Physics, University of Maryland, College Park, C. J. LOBB, Center for Superconductivity Research, Department of Physics, University of Maryland, College Park — The phase transition in high T_c superconductors in a magnetic field has been intensely studied. However, only a few papers have discussed finite-size effects (Phys. Rev. B **69**, 214524 (2004)). Neglecting finite size effects can cause misinterpretation of the experimental data leading to incorrect critical exponents. We will report results of DC transport measurements on YBa₂Cu₃O_{6.95} films in zero field (less than 50 nT) as well as in fields up to 6 T. The results will be analyzed in terms of field-induced finite size effects and thickness-induced finite size effects.

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