

Abstract Submitted  
for the MAR08 Meeting of  
The American Physical Society

**Doping dependence of the dynamic critical exponent in  $\text{Pr}_{2-x}\text{Ce}_x\text{CuO}_4$** <sup>1</sup> M.C. SULLIVAN, J. SOUSA, M. SALVAGGIO, Department of Physics, Ithaca College, Ithaca NY, R.L. GREENE, Center for Nanophysics and Advanced Materials, Department of Physics, University of Maryland, College Park — Scaling analysis of voltage vs. current isotherms is a favorite tool to study the normal-superconducting phase transition in cuprate superconductors. This measurement has never been performed on the electron-doped cuprate superconductor  $\text{Pr}_{2-x}\text{Ce}_x\text{CuO}_4$ , despite unusual behaviors which may alter this phase transition and yield interesting results (behaviors such as the extended doping range of the anti-ferromagnetic phase and the quantum critical point). This is perhaps due to the lack of consensus regarding the analysis of voltage vs. current isotherms, due in part to finite-thickness effects even in thick ( $d \approx 3000\text{\AA}$ ) films.<sup>2</sup> If finite-thickness effects are taken into consideration, we can find the dynamic critical exponent  $z$  in our  $\text{Pr}_{2-x}\text{Ce}_x\text{CuO}_4$  films. We present our results of the dynamic critical scaling exponent  $z$  as a function of doping.

<sup>1</sup>Supported by NSF grant DMR-0706557.

<sup>2</sup>Phys. Rev. B **69**, 214524 (2004)

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Date submitted: 21 Nov 2007

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