Abstract Submitted for the MAR05 Meeting of The American Physical Society

Effects of Disorder on the Normal State of $Pr_{2-x}Ce_xCuO_{4-\delta}^1$ J.S. HIGGINS, Y. DAGAN, M.C. BARR, R.L. GREENE, Center for Superconductivity Research, Department of Physics, Univ. of Maryland, College Park, MD 20742, B.D. WEAVER, Naval Research Laboratory, Washington D.C. 20375 — We present a study on epitaxial thin films of the electron-doped superconducting cuprate $Pr_{2-x}Ce_xCuO_{4-\delta}$ (PCCO) as a function of disorder and oxygen content. Overdoped samples (x = 0.17, 0.19) were made using a pulsed laser deposition technique. Oxygen content was adjusted during the annealing process and disorder was induced by proton irradiation. The evolution of the resistivity and the Hall coefficient is examined, with a focus placed on the normal state properties in the regime T < T_c and H > H_{c2}. Results are compared between optimally prepared, oxygenated, and irradiated samples.

 $^1\mathrm{This}$ work was supported by NSF Grant DMR-0352735 and, in part, by ONR

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Date submitted: 23 Dec 2004

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