Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

Study of Defect Scattering in the Pseudogap State of $Bi_2Sr_2CaCu_2O_{8+\delta}$[1] KENJIRO GOMES, ABHAY PASUPATHY, AAKASH PUSHP, MICHAEL VERSHININ, SHASHANK MISRA, Department of Physics and Frederick Seitz Materials Research Laboratory, University of Illinois at Urbana-Champaign, SHIMPEI ONO, CRIPEI, YASUSHI ABE, CERC (AIST), YOICHI ANDO, CRIPEI, ALI YAZDANI, Department of Physics and Frederick Seitz Materials Research Laboratory, University of Illinois at Urbana-Champaign — The pseudogap state in high-Tc superconductors continues to be one of the most puzzling aspects of these materials. The local response of this unusual electronic state to defects can potentially teach us about its underlying electronic correlations. Using a home-built scanning tunneling microscope (STM) we have performed spatially resolved measurements of the density of states in Ni and Zn doped $Bi_2Sr_2CaCu_2O_{8+\delta}$ samples in the pseudogap state above Tc. We will present these measurements and compare them to similar studies in the superconducting state.

[1]This work was supported by NSF DMR-03-1529632, U.S. Department of Energy grant DEFG-02-91ER4539 through the Frederick Seitz Materials Research Laboratory and Office of Naval Research grant N000140110071.

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Date submitted: 01 Dec 2004 Electronic form version 1.4