Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

NMR study of $\mathbf{Pr_{2-x}Ce_xCuO_{4-y}}$ ($x = 0.17$) GUOQING WU, W.G. CLARK, S.E. BROWN, F. ZAMBORSZKY, UCLA, H. BALCI, R.L. GREENE, Univ. of Maryland — Recent studies of the electron-doped high-temperature superconductor $Pr_{2-x}Ce_xCuO_{4-y}$ (PCCO) show very unusual physical properties at the doping level $x = 0.17$. Transport experiments are consistent with the existence of a quantum critical point in the normal state. Within the superconducting state, specific heat measurements in a magnetic field are interpreted as evidence for a transition in superconducting order parameter symmetry. We report the ^{63,65}Cu-NMR spectrum and spin dynamics of PCCO single crystals with $x = 0.17$ and contrast their properties with crystals of $x = 0.15$. The anisotropic Knight shifts are dominated by the Pr^{3+} moments and change little between the samples. The spin lattice relaxation rates are affected by the doping, as are the linewidths at low temperatures.
*This work is supported at UCLA by NSF Grants DMR-0334869 (WGC) and 0203806 (SEB).

Guoqing Wu

Date submitted: 14 Dec 2004 Electronic form version 1.4