

Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Local moment and inhomogeneous hyperfine interaction in the CuO₂ plane of Bi₂Sr₂CaCu₂O_{8+δ} (Bi2212) single crystal by ¹⁷O NMR
BO CHEN, SUTIRTA MUKHOPADHYAY, WILLIAM HALPERIN, Northwestern University, PRASENJIT GUPTASARMA COLLABORATION¹, DAVID G. HINKS COLLABORATION² — The ¹⁷O NMR spectra of Bi₂Sr₂CaCu₂O_{8+δ} (Bi2212) single crystals were measured in the magnetic field of 8 T from 4 K to 200 K. The linewidth of the oxygen in CuO₂ plane, O(1), was found to follow a Curie temperature dependence in the normal state, where the Curie coefficient decreases with the increase of δ oxygen in the crystal. In the superconductive state, it decreases with decreasing temperature, proportional to the decreasing Knight shift. This temperature dependence of the linewidth identifies the existence of local moment and inhomogeneous hyperfine interaction in the CuO₂ plane.

¹University of Wisconsin-Milwaukee

²Argonne National Laboratory

Bo Chen
Northwestern University

Date submitted: 15 Nov 2006

Electronic form version 1.4