Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

^{11}B Nuclear Magnetic Resonance Measurements of Antiferromagnetic HoB_4 Single Crystals J.H. KIM, B.J. MEAN, K.H. KANG, I.N. HYUN, S.K. KWON, S.K. NAM, S.H. CHOI, S.H. KIM, MOOHEE LEE, Konkuk University, Seoul 143-701 Korea, B.K. CHO, GIST, Gwangju 500-712 Korea, J.H. CHO, Hangyoung FLHS, Seoul 134-710 Korea — ^{11}B nuclear magnetic resonance (NMR) measurements have been performed on single crystals of HoB_4 to investigate local electronic structures and $4f$ spin dynamics. ^{11}B NMR spectrum, Knight shift, spin-lattice and spin-spin relaxation rates were measured in the temperature range of 3.5 - 300 K under magnetic field of 8 T. ^{11}B NMR shift and linewidth are huge and strongly temperature-dependent due to $4f$ moments of Ho. The spin-lattice relaxation rate $1/T_1$ is independent of temperature above T_N=8 K whereas it decreases significant below T_N indicating huge suppression of $4f$ spin fluctuation. Also the spin-spin relaxation rate $1/T_2$ shows similar behavior characteristic of $4f$ electronic spin dynamics change associated with antiferromagnetic ordering.

Moohee Lee
Konkuk University, Seoul 143-701 Korea

Date submitted: 02 Jan 2007 Electronic form version 1.4