Abstract Submitted
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^{11}B Nuclear Magnetic Resonance Measurements of Antiferromagnetic DyB_4 Single Crystals I. N. HYUN, B. J. MEAN, K. H. KANG, J. H. KIM, 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 pulsed nuclear magnetic resonance (NMR) measurements have been performed to investigate local electronic structures and $4f$ spin dynamics in antiferromagnetic DyB_4 single crystals. ^{11}B NMR spectrum, Knight shift, spin-lattice and spin-spin relaxation rates, $1/T_1$ and $1/T_2$, were measured down to 4.3 K under magnetic field of 8 T. The ^{11}B NMR shift and linewidth are huge and strongly temperature-dependent due to $4f$ moments of Dy. In addition, both are proportional to magnetic susceptibility, indicating that the hyperfine field at the boron site originates from the $4f$ spins of Dy. BelowT_N =20 K. the single broad resonance peak of ^{11}B NMR splits into several peaks reflecting the local magnetic fields developed due to the antiferromagnetic spin arrangement. The relaxation rates $1/T_1$ and $1/T_2$ are very large and independent of temperature much above T_N and then decrease significantly below T_N confirming the suppression of spin fluctuation and the huge change in $4f$ spin dynamics associated with the antiferromagnetic ordering.

Moohee Lee
Konkuk University, Seoul 143-701 Korea

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