

Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

⁹³Nb

NMR investigation of the multiferroic system $\text{Ba}_3\text{NbFe}_3\text{Si}_2\text{O}_{14}$ ¹ LLOYD LUMATA, NHMFL/Physics, Florida State University, M.J.R. HOCH, H.D. ZHOU, J.S. BROOKS, P.L. KUHNS, A.P. REYES, C.R. WIEBE, NHMFL/Physics, FSU — We present ⁹³Nb nuclear magnetic resonance spectroscopy and relaxation data on the new multiferroic system $\text{Ba}_3\text{NbFe}_3\text{Si}_2\text{O}_{14}$. The spin-lattice relaxation rate ⁹³1/T₁ and spin-spin relaxation rate ⁹³1/T₂ show a peak at 26 K accompanied by broadening of the NMR lineshapes, characteristic of Néel ordering. Salient features of ⁹³Nb NMR lineshapes in the ordered phase and temperature-dependent ⁹³Nb Knight shifts will be discussed in relation to the possible bulking or tilting of the NbO₆ octahedra (caused by magneto-lattice coupling) around the transition.

¹This work was supported in part by NSF DMR-0602859 and performed at the National High Magnetic Field Laboratory, which is supported by NSF Cooperative Agreement No. DMR-0084173, EIEG grant, by the State of Florida, and by the DOE.

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Date submitted: 30 Jan 2009

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