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A ^{51}V NMR Investigation of the Quasi-1D Antiferromagnet $\text{BaCo}_2\text{V}_2\text{O}_8$: Is there a New ordered Phase? T. BESARA, Department of Chemistry, Florida State University, Tallahassee, FL, USA, L.L. LUMATA, Department of Physics, Florida State University, Tallahassee, FL, USA, K.-Y. CHOI, Department of Physics, Chung-Ang University, Seoul, Republic of Korea, A.P. REYES, P.L. KUHNS, National High Magnetic Field Laboratory, Tallahassee, FL, USA, N.S. DALAL, Department of Chemistry, Florida State University, Tallahassee, FL, USA, J.S. BROOKS, H.D. ZHOU, C.R. WIEBE, Department of Physics, Florida State University, Tallahassee, FL, USA — We report on detailed ^{51}V ($I=7/2$) NMR spectral and spin-lattice relaxation time (T_1) measurements on the quasi-1D antiferromagnet $\text{BaCo}_2\text{V}_2\text{O}_8$. Our major focus was on probing the possible existence of the new ordered state in its field-induced phase above the critical field $H_c=3.9\text{T}$. This phase is believed to be of the incommensurate type, and thus quite amenable to investigation by NMR line shape and T_1 measurements. T_1 data were obtained using a spin-echo pulse sequence. Measurements were done on a single crystal, with the field parallel to the easy axis (c-axis). Details of the lineshape and T_1 analysis in terms of the evolution of the anticipated new phase will be presented.

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