

Abstract Submitted
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^{69,71}Ga NMR Probe of the Spin Dynamics in the Rare-Earth Kagomé Pr₃Ga₅SiO₁₄¹ LLOYD LUMATA, Department of Physics and National High Magnetic Field Laboratory, Florida State University, K.-Y. CHOI, Department of Physics, Chung-Ang University, Seoul, South Korea, T. BESARA, M. J. R. HOCH, H. D. ZHOU, J. S. BROOKS, P. L. KUHNS, A. P. REYES, N. S. DALAL, C. R. WIEBE, NHMFL/FSU — We report ^{69,71}Ga nuclear magnetic resonance investigation of the spin dynamics in the rare-earth kagomé system Pr₃Ga₅SiO₁₄. We find that the spin-lattice relaxation rate ⁶⁹1/*T*₁ exhibits a peak around 30 K, below which the Pr³⁺ spin correlation time τ shows novel field-dependent behavior consistent with a field-dependent gap in the excitation spectrum. The spin-spin relaxation rate ⁶⁹1/*T*₂ exhibits a maximum at a lower temperature (10 K) below which field-dependent power-law behavior close to *T*² is observed. These results point to the interplay of single-ion anisotropy and field-induced formation of nanoscale magnetic clusters consistent with recent neutron scattering measurements.

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