

Abstract Submitted
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Spin dynamics in $\text{LiY}_{0.998}\text{Ho}_{0.002}\text{F}_4$ via ^{19}F NMR and μSR ¹ M. J. GRAF, Boston College, A. LASCIALFARI, Univ. of Milano, J. LAGO, F. BORSA, Univ. of Pavia, A. AMATO, Paul Scherrer Inst., J.S. LORD, S.R. GIBLIN, ISIS, B.Z. MALKIN, Kazan State Univ., A.M. TKACHUK, Vavilov Optical Inst., B. BARBARA, Lab. Louis Neel — The ^{3+}Ho ion doped into the host LiYF_4 is a single-ion magnet demonstrating slow dynamics at the avoided level crossings (ALCs) in the hyperfine-coupled electronuclear Zeeman diagram. We have studied ^{19}F NMR and μSR in dilute $\text{LiY}_{0.998}\text{Ho}_{0.002}\text{F}_4$ to probe these dynamics and find clear evidence for an increase in the spin-lattice relaxation rate $1/T_1$ at field values corresponding to ALCs using both techniques. We will discuss using these signatures as probes to measure the tunnel splitting Δ and the level broadening, as well as the onset of magnet correlations for increasing Ho concentration.

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