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^{1}H NMR Spin-Lattice Relaxation Study of κ-(ET)$_2$Cu[N(CN)$_2$]Br J.C. GEZO, TAK-KEI LUI, R.W. GIANNETTA, C.P. SLICHTER, Loomis Laboratory of Physics, University of Illinois at Urbana-Champaign, IL 61801, J.A. SCHLEUTER, Material Sciences Division, Argonne National Laboratory, Argonne IL 60439 — The discovery of an anomalous Nernst signal in the organic superconductor κ-(ET)$_2$Cu[N(CN)$_2$]Br suggests the presence of magnetic flux vortices above T$_c$[1]. Previous studies below the transition temperature have shown that the additional fluctuating field created by vortices dramatically increases the ^{1}H NMR spin-lattice relaxation rate[2]. We revisit ^{1}H spin-lattice relaxation in κ-(ET)$_2$Cu[N(CN)$_2$]Br and provide new evidence of inhomogeneous behavior both above and below T_c. [1]M. S. Nam et al, Nature 449, 584-587 (2007) [2]H. Mayaffre et al, Phys. Rev. Lett. 76, 4951-4954 (1996) Work at UIUC supported by NSF DMR 10-05708 and the Center for Emergent Superconductivity, USDOE Award No. DE-AC0298CH1088. Work at Argonne supported by UChicago Argonne, LLC, Operator of Argonne National Laboratory, DOE Contract No. DE-AC02-06CH11357.

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