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Longitudinal Spin Relaxation in Nitrogen-Vacancy Defect Centers in Diamond PAULI KEHAYIAS, ANDREY JARMOLA, University of California Berkeley, DMITRY BUDKER, Helmholtz Institute, JGU, Mainz, Germany — The negatively-charged nitrogen-vacancy (NV^-) color center in diamond is used in a range of applications, including quantum information and sensing. The longitudinal electronic spin relaxation time (T_1) of the NV ground-state magnetic sublevels is used for sensing paramagnetic spins, and T_1 represents a limitation to the NV spin-noise sensitivity. However, some fundamental aspects of T_1 relaxation remain a mystery, which we aim to resolve. We present the results of experimental NV T_1 studies done at the University of California Berkeley with collaborating laboratories.

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