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1. INTRODUCTION

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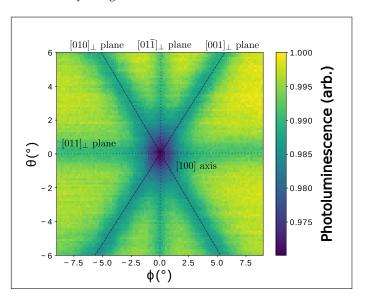


Fig. 1. NV⁻ photoluminescence as a function of a scanning magnetic field around the [100] crystalline directions with a fixed amplitude |B|=115G. The planes orthogonal to the [010],[001],[011], and [01 $\bar{1}$] directions are indicated in dashed lines.

A. Sample Table

Table 1 shows an example table.

4. SAMPLE EQUATION

Let $X_1, X_2, ..., X_n$ be a sequence of independent and identically distributed random variables with $E[X_i] = \mu$ and $Var[X_i] = \mu$

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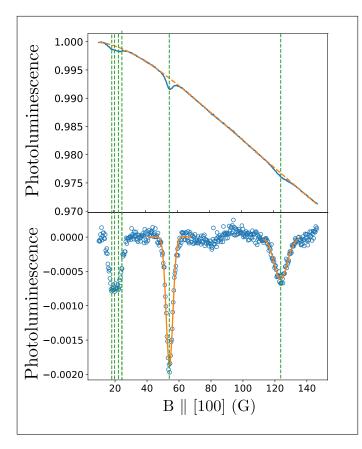


Fig. 2. Optical detection of cross-relaxations. **Top** NV⁻ photoluminescence while scanning the magnetic field along the [100] crystalline direction (plain line) and polynomial fit to the fourth order (dashed line). **Bottom** Subtraction of the previous signal by the polynomial fit (circles), simulated CR magnetic field amplitude (dashed,vertical) and gaussian fits for the second and third dips (plain line)

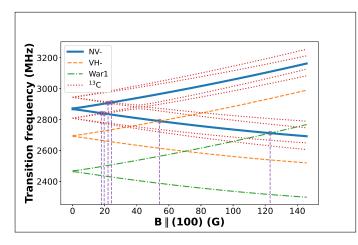


Fig. 3. Simulated energy levels as a function of a magnetic field aligned along the [100] axis for the various spins considered. NV centers are in plain lines, VH^- are in dashed line, WAR1 in dashdotted line and ^{13}C -NV pair in dotted line. The amplitudes of the magnetic field where the energy level of the NV center crosses the one of another species are represented by vertical dashed lines

Table 1. Zero-field splitting parameter D_z for the different spin-1 species

D_z estimation (MHz)	Cruddace's work[1]	Our work
NV-	2872(7)	*
$ m VH^-$	2706(30)	2694(5)
WAR1	2466(60)	2470(10)

 $\sigma^2 < \infty$, and let

$$S_n = \frac{X_1 + X_2 + \dots + X_n}{n} = \frac{1}{n} \sum_{i=1}^{n} X_i$$
 (1)

denote their mean. Then as n approaches infinity, the random variables $\sqrt{n}(S_n - \mu)$ converge in distribution to a normal $\mathcal{N}(0, \sigma^2)$.

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\url{Visualization 1}.

B. Sample Dataset Citation

1. M. Partridge, "Spectra evolution during coating," figshare (2014) [retrieved 13 May 2015], http://dx.doi.org/10.6084/m9.figshare.1004612.

C. Sample Code Citation

2. C. Rivers, "Epipy: Python tools for epidemiology" (Figshare, 2014) [retrieved 13 May 2015], http://dx.doi.org/10.6084/m9.figshare.1005064.

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REFERENCES

- R. Cruddace, "Magnetic resonance and optical studies of point defects in single crystal cvd diamond," Ph.D. thesis, University of Warwick (2007).
- C. Glover, M. E. Newton, P. Martineau, D. J. Twitchen, and J. M. Baker, Phys. Rev. Lett. 90, 185507 (2003).