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Magn. Reson. Discuss., author comment AC3
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Reply on CC1

Sarah R. Sweger et al.

Author comment on "The effect of spin polarization on double electron–electron resonance (DEER) spectroscopy" by Sarah R. Sweger et al., Magn. Reson. Discuss., https://doi.org/10.5194/mr-2022-8-AC3, 2022

Thank you for the interesting insight into the work. Regarding the impact of inhomogeneity on the integral, we do not believe it would change the result. The attached plots show the results of Monte Carlo simulations in which the B-spins are distributed uniformly (top row), as the analytical theory assumes, or aggregated (bottom row). The result does not show a change in the presence, shape, or magnitude of the out-of-phase component and only changes the rate of decay, k = 0.5 $\mu s^{-1}$for the uniform distribution and k = 1.85 $\mu s^{-1}$for the aggregated distribution. As the decay rate is fit for each experimental dataset shown in the main text and the experimental conditions are such that aggregation should not be an issue, we do not expect that inhomogeneity is a concern and therefore have only addressed it briefly in the main text and supplement.

Please also note the supplement to this comment:
https://mr.copernicus.org/preprints/mr-2022-8/mr-2022-8-AC3-supplement.pdf