

Interactive comment on “Origin of the Residual Linewidth Under FSLG-Based Homonuclear Decoupling in MAS Solid-State NMR” by Johannes Hellwagner et al.

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I thank the authors for their response and helpful changes. I now understand what they meant by "static rf field inhomogeneity" and agree that the change to "time-independent part of the rf field inhomogeneity under MAS" solves the problem.

The explicit literature references to the operator definitions addresses my second issue. I guess I missed this reference in the original submission. Making it explicit in the figure caption is a good idea.

With respect to point 3, most of the points are now clear. I do still wonder, however,

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precisely what is meant by "We checked the phase and amplitude of the rf pulses and found no significant deviations from the intended shape in the experimental implementation.". The issue here is exactly how the phase (in particular) was checked. The only reliable way to do this (that I am aware of) would be to use an antenna to pick up the rf generated in the coil itself. The phase of this would have to be determined by comparison with a reference wave with the same frequency (and which would also switch in frequency with the FSLG). Was this, or a similar procedure, used? I think the authors should clarify exactly how the phase and amplitude were checked, for a frequency-switched rf waveform driving a narrowband tuned circuit such as found in an NMR probe. If such a procedure were not used then the article should make it clearer that doubts remain about the frequency-dependent phase of the frequency-switched waveform, at the site of the NMR sample.

Interactive comment on Magn. Reson. Discuss., <https://doi.org/10.5194/mr-2019-5>, 2019.

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