

Dear Prof. Otting, dear Gottfried,

Here is the revised version of our paper. We also attach a supplementary file to this revision with our home-written codes (in Matlab). In the main article, we have added a section "Code availability".

Here is the answer to specific comments:

- The new sentence "Such effects of couplings to heteronuclei are of relevance for abundant nuclei (protons), whereas for other nuclei they become important when uniform spin labelling is used." got me quite confused (for me, spin labels are radicals used in EPR) - I would have found it clearer like this: "Such effects of couplings to heteronuclei are of relevance for abundant nuclei such as protons or  $^{13}\text{C}$  spins in uniformly  $^{13}\text{C}$ -labelled molecules."

*Response: corrected. We agree that isotopic labelling should not be confused with spin labelling in the EPR sense.*

- In line 151, shouldn't it read " $\omega_3 = \dots \delta_3$ "?

*Response: Right, corrected*

- The shuttle times quoted in the legend of Fig. 2 differ from those in the main text. "REBURP" is spelled differently at different instances in the article.

*Response: the values of the shuttle times are now consistent.*

- In line 260, I guess you mean "withstand" instead of "stand".

*Response: Right, corrected.*

Sincerely yours,

Konstantin Ivanov, on behalf of all authors.