**Reviewer 1**

*The authors describe a significant improvement to the practicality and availability of NOAH techniques for the rapid acquisition of multiple types of spectra. The paper is well-written and timely, and merits publication. Minor suggestions for changes: […]*

We thank the reviewer for their positive comments and very meticulous suggestions for improvements! All of these have been implemented essentially as-is, with the sole exceptions of the following:

*throughout, drop superfluous definite articles before pulse sequence abbreviations (the COSY, the HSQC …)*

Wherever “the X” is written it often means one of “the X spectrum”, “the X module”, or “the X experiment”. In all cases the definite article cannot be omitted. We have, however, edited the wording to remove this ambiguity wherever it arises.

**Reviewer 2**

*In this manuscript Yong et al. describe the implementation of a program for the automatic constructtion of NMR supersequences. While such combined NMR experiments are a very active field of research their actual implementation can provide a challange for routine NMR labs due to the inherent complexity. The approach provided in this paper offers a much easier access to such pulse-sequences. Overall I feel that the paper is well presented and suitable for Anal.Chem.*

We thank the reviewer for their positive comments as well.

*Two minor points should be considered before publication:*

*1) The readers might not be very familiar with supersequences and in the paper only advantages are mentioned. It would be good to include a sentence or two about the relative sensitivities of such combined sequences compared to conventional NMR experiments.*

The Introduction has been expanded to include some general discussion of the expected sensitivity.

*2) Some parts of Figure 1,especially the indicated decoupling during acquisition are very hard, if not impossible to read. Should be enlarged/changed.*

We have removed this text and added an explanatory note in the figure caption.