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Magn. Reson. Discuss., editor comment EC1
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Comment on mr-2022-4

Geoffrey Bodenhausen (Editor)

Editor comment on "A portable NMR platform with arbitrary phase control and temperature compensation" by Qing Yang et al., Magn. Reson. Discuss., https://doi.org/10.5194/mr-2022-4-EC1, 2022

This paper may a bit hard to read for spectroscopists who are not familiar with engineering.

It seems that the abbreviation “CMOS” could be removed from the title, since it is clearly defined in the abstract (“complementary metal-oxide-semiconductor (CMOS)”)

The abbreviations TX and RX could be replaced without inconvenience by “transmitter” and “receiver”.

While the expression "frequency reference and temperature compensation scheme” is clear, I do not understand what is meant by "phase-coherent detection” and “phase-synchronous detection". Surely nobody wants to have a detector that does not give any information about the phase of the signals? What are the alternatives? A diode-based detector? An absolute-value representation after Fourier transformation?

It seems that “non-zero IF” is a somewhat unfortunate expression. If the intermediate frequency (IF) is zero, the very concept loses its meaning. How about simply writing "intermediate frequency (IF)”?

It is not very clear how you define the difference between the “software TX signal from the pulse controller” and "the actual TX pulse”.