

***Interactive comment on* “Calibration of isotopologue-specific optical trace gas analysers: A practical guide” by David W. T. Griffith**

Anonymous Referee #2

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This short paper is, I think, a welcome and highly useful guide. It should be helpful to both researchers in the field commencing measurements with new isotopologue-specific analysers and also to students. The paper is well written and has a level of detail that is fit-for-purpose - as a practical guide. The worked examples are a nice addition, especially for students.

My one general comment would be that although the approach taken by the author does indeed side-step the concentration dependence arising if one calibrates using a ratio-based approach, IRMS methods arose because of the precision advantage arising when measuring a ratio. It is certainly still the case that the precision with which any of the isotopologue-specific optical instruments can measure the minor isotopologues is limited 0.1 ppm (generously), so this will impact the precision with which one

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can determine a delta value from these instruments via this otherwise straightforward approach. As such, there remain advantages in working with the ratio even with instruments that 'naturally' lend themselves to this approach. Some acknowledgement of this ought to be made in the text.

Specific comments:

P 3, line 12: Clumped isotopes are mentioned, but not described, but as I see great value in this manuscript for students, I think it would be helpful to extend the parentheses to something like: (i.e. clumped isotopes, is the term for isotopologues carrying two (or more) of the heavy, rare isotopes.)

p 9, line11: 2018 should read 2017.

p 9. line 25: I think case 7 needs a little more explanation to be clear to readers.

Interactive comment on Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2018-187, 2018.

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