Biogeosciences Discuss.,
https://doi.org/10.5194/bg-2019-102-RC1, 2019

Biogeosciences Discussions
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Interactive comment on "Technical note: Interferences of volatile organic compounds (VOC) on methane concentration measurements" *by* Lukas Kohl et al.

Anonymous Referee #1

Received and published: 26 April 2019

General comments

The paper by Kohl et al. describes cross sensitivities of several volatile organic compounds on methane measurements when using different optical analysers. I consider the results of the paper of major interest to all those monitoring methane fluxes in the field or laboratory from ecosystems and biological systems that are known to release VOC at substantial amounts. I found the manuscript to be well written and structured. The results are clearly presented and discussed in a straightforward manner, providing the scientific community with important information about how emissions of VOC released from the biosphere might interfere with measurements of methane when us-

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Discussion paper

ing state of the art optical measurement systems. I recommend publication of the manuscript as a Technical Note in Biogeosciences after minor revisions. I have only a few comments which I hope the authors might consider in their revised manuscript.

Specific comments

I would suggest using ppmv/ppbv/pptv (parts per million/billion/trillion by volume) throughout the whole manuscript instead of ppm/ppb/ppt.

Furthermore, the correct expression for ppmv would be mole fraction. However, I also understand if the authors would like to keep the more commonly used term “concentration”.

Methods: As water vapour might substantially affect measurements of methane (both concentrations and stable carbon isotopes) when using optical analyzers I would suggest to add a few sentences how the authors have dealt with this issue during their investigations in the field and in the laboratory.

Discussion: Please add some information what are typical emission rates of some VOC released from vegetation/trees in the field and put them into relation with the amounts that have been applied in the laboratory study.

Figure 4: There are too many subfigures included and for some subfigures it is rather difficult to decipher the information. Please revise and split into two or three figures to increase readability.

Technical corrections

Page 5, line 6, Results: add CH4 after 7 μg. . .

Page 5, line 25, Results: something is wrong with this sentence, revise

Page 6, line 23: change “weres” to “were”

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