

Interactive comment on “Thermal infrared laser heterodyne spectro-radiometry for solar occultation atmospheric CO₂ measurements” by Alex Hoffmann et al.

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Dear Dr. Weidmann,

thank you for your detailed reply. I am especially glad that you were able to clarify the high number of degrees of freedom (DOF) in your retrieval. Your explanation is fine. I was under the wrong impression that all the DOFs were related to the CO₂ profile. This does not seem to be the case and the resulting number of CO₂-DOFs is much closer to what I would have expected. This should be clarified in the manuscript as both myself as well as the editor did not interpret the text in the way you explained it in your comment.

About air mass: relying on external atmospheric profiles is risky. You should carefully estimate the error contribution from this approach on your retrieval scheme. The TC-CON experience is that even a high-accuracy (better than 0.1 hPa) surface pressure measurement on site - which is not a simple task itself - is not as good as actually measuring the O₂ column.

I am content with your other replies.

Kind regards

Dietrich Feist

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