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Atmospheric Measurement Techniques Discussions

Interactive comment on "Absolute accuracy and sensitivity analysis of OP-FTIR retrievals of CO_2, CH_4 and CO over concentrations representative of clean air and polluted plumes" *by* T. E. L. Smith et al.

Anonymous Referee #2

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The paper "Absolute accuracy and sensitivity analysis of OP-FTIR retrievals of CO2, CH4, and CO over concentrations representative of 'clean air' and polluted plumes"' by T. E. L. Smith et al. presents a laboratory study on the accuracy of OP-FTIR retrievals. The results are interesting and well suited for AMT. Therefore I would recommend the paper for publication in AMT after consideration of the following comments:

The statement that increasing the mixing ratio is equivalent to a longer path length is not true in general due to broadening effects (self-broadening, air broadening). It

needs to be shown that these effects do not play a role.

The paper is quite detailed and comprehensive, which is very good to get a complete overview. However, it takes a long time to read and it is sometimes difficult to extract the relevant results from the details. I would suggest a table that summarizes the accuracies for different path-lengths assuming typical atmospheric variations.

Interactive comment on Atmos. Meas. Tech. Discuss., 3, 3675, 2010.