

We thank Lukas Emmenegger for his comments and would like to give our responses as below:

Comment: I fully agree with the general remarks by the reviewers concerning the importance of this paper and the technical comments. Given my background, I would like to stress two aspects, mainly the pressure broadening effect and transferability:

1) The paper in its current state does not allow to separately quantify water vapor dilution and the pressure broadening effect. This is very unfortunate and should be improved in view of future work with similar analyzers and for comparisons with analyzers using other techniques and wavelength. Given the potential for future developments and applications of this type of analyzers, I should also mention that for eddy covariance measurements, the water vapor dilution can be corrected for by independent water flux measurements. For pressure broadening effects, this is not possible and thus of great importance in the corresponding scientific community. In fact, these aspects have already been quantified and published in Neftel, A., et al. *Agric. Forest Meteorol.* (2009), doi:10.1016/j.agrformet.2009.07.013.

Reply: We agree that quantifying the water vapor dilution and pressure-broadening effects is limited by the accuracy of water vapor concentration measurements. However, the water vapor corrections derived from laboratory experiments do not require fully understanding and separating the two effects. As for eddy covariance measurements, the water corrections could also be derived from laboratory experiments, which will be able to compensate both the dilution and pressure-broadening effects. One should also note that the measurements of water vapor mixing ratios might not be accurate but should be precise and stable.

2) Transferability is highly relevant. However, comparing two analyzers is statistically not significant. It would be very helpful to add data from more analyzers and/or different points in time. Otherwise, the conclusions about transferability should be made with much more care.

Reply: We realize that the statistics from testing two analyzers is still weak. Further water tests are ongoing with various analyzers.