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Atmospheric Measurement Techniques Discussions

Interactive comment on "Intercomparison of Hantzsch and fiber-laser-induced-fluorescence formaldehyde measurements" *by* J. Kaiser et al.

Anonymous Referee #1

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Review of "Intercomparison of Hantzsch and fiber-laser-induced-fluorescence formaldehyde measurements", by J. Kaiser, et al.

This technical note compares the measurements of formaldehyde using two different techniques (fluorescence spectroscopy and liquid phase fluorimetry) in the SAPHIR chamber at the Forschungszentrum Jülich. This is a well-written paper that describes measurements that will be useful for the readership of AMT. The figures are generally clear and contribute to the value of the paper. Overall this paper is publishable after some minor revisions. I have one general and a few specific comments for the authors to address.

The treatment of the measurement offsets (intercepts) is not as clear as the calibra-

tion (slope) comparison. I was left with the perception that there could be a significant offset in FILIF (or even both of the measurement techniques). I assume that this was not intended by the authors. Part of this offset, as the paper states, is due to changes in the calibrations (slopes) during the runs. I am curious if a different analysis or additional figure focused on the early times in the runs can clarify the magnitude of potential offsets in the measurements. Also, if you can clarify the zeroing of the Hantzsch instrument. In the early part of day 2 it looks as though the FILIF signal grows for the first few hours of the run with zero air while the Hantzsch stays constant at zero. Is this because the Hantzsch instrument is zeroed while the FILIF measures a few hundred ppt? There also seems to be an abrupt increase in the Hantzsch instrument on day 4 when H2O is added. Was the zeroing handled differently? If you believe these offsets are they because of sampling issues or to something inherent in the techniques?

page 238 line 5: Scott/Air liquide

page 240 line 6: affect line 25: what is weighted amount? also, powder.

page 243: How long is the calibration of the two instruments valid? Can you expect the FILIF to be unstable over any 24 hour period?

page 245: Is there any evidence for laser-generated HCHO in the FILIF white cell?

Figures: Error bars represent 3 sigma precision

Interactive comment on Atmos. Meas. Tech. Discuss., 7, 233, 2014.