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Atmospheric Measurement Techniques Discussions

Interactive comment on "Technical note: Dimensioning IRGA gas sampling system: laboratory and field experiments" *by* M. Aubinet et al.

T. Foken (Referee)

thomas.foken@uni-bayreuth.de

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I am sorry that I am late with my review of the Technical Note about IRGA gas sampling systems. I have seen that there was already a very intensive discussion about the paper. Therefore, I will not repeat topics which are already mentioned in the open discussion. However, I recommend major revisions of three as yet undiscussed topics:

The aim of your paper is obviously a standardization of the eddy-covariance system (p. 10736, line 25ff). I disagree that such standardization is useful and I am happy that we have a good selection of gas analyzers and sonic anemometers. The choice of instrumentation depends very much on measuring height, canopy height, climate

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zone, wind roses, footprint etc., and you can find for all conditions an optimal instrumentation. Maybe ICOS found a standard instrumentation for a certain climate zone and measuring height, but for the reader it would be important to be informed of what is ICOS specific and what is of general importance.

Your paper has a relatively long theoretical part with many equations. I cannot see that the result part has any relationships to the theory. Of course, you have included Eq. 1 in Fig. 3 and another equation (which one?) in Fig. 4. But what are the settings? Eq. 5 does not have the typical form of a transfer function. Some more information is necessary here.

It is a great pleasure that a similar paper from NEON was published at the same time in the same journal (Metzger et al. AMTD-8-10983-2015). The NEON group obviously knows your research (reference to the conference presentation De Ligne et al., 2014). The ICOS group probably did not have information regarding the conference paper by Metzger et al. (2014). Both groups should make a reference to the other article (AMTD or better AMT with support by Copernicus). For the reader it is interesting and important to compare different laboratory and field experiments. There are two similar figures (ICOS Fig. 3 and NEON Fig. 3 and ICOS Fig. 4 and NEON Fig.2). It would be great if both groups could communicate with each other and include in their figures a comparison with the findings of the other group, maybe for the Swagelok FW 2μm filter.

Small remarks:

p. 10740, line 4: (GSMA) include “University of Reims”

p. 10742, line 23: Include the reference: Kolle, O. and Rebmann, C. (2007) Eddysoft - Documentation of a software package to acquire and process eddy covariance data. Max-Planck-Institute for Biogeochemistry, Jena, 88 p.

p. 10746, line 16/17: If the article is not yet published, give the journal etc. where it is

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“in press”

Figure 2: The relationship between the two x-axes is wrong (seconds and Hz)

Perhaps the following paper is also a relevant reference for you: Moravek A., Trebs I., and Foken T. (2013) Effect of imprecise lag time and high-frequency attenuation on surface-atmosphere exchange fluxes determined with the relaxed eddy accumulation method. J Geophys Res: Atmosph. 118:10,210-10,224.

Interactive comment on Atmos. Meas. Tech. Discuss., 8, 10735, 2015.