

Interactive comment on “A new disjunct eddy-covariance system for BVOC flux measurements – validation on CO₂ and H₂O fluxes” by R. Baghi et al.

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We are grateful to the reviewer for the insightful comments which helped to improve the paper. Below are our responses to her/his comments and the corrections to the manuscript. The original Reviewer's Comments are reproduced in *Italics* under heading of **RC**. The Author Responses are under the headings of **AR**.

***RC :** It appears that some sections still need significant copy-editing, I suggest to have this done by the AMT copy editing service or have the manuscript edited by a native English speaker. I have indicated some obvious issues below, which are probably by*

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no means complete.

AR : The manuscript will be edited by a native English speaker as requested by the referee.

***RC :** The test performed on June 15th appeared to be on a day, when turbulence measurements might have been challenging - more analysis on stationarity etc. might be needed to evaluate the accuracy of the calculated DEC and EC fluxes.*

AR : For this study, we did not feel that stationarity assessment was necessary as the main goal was to compare two statistical estimations of the flux. The physical sense of the measured fluxes has less importance here. In case of challenging surface layer conditions both methods will be affected identically. This information will be added to the section 4.4 of the manuscript.

***RC :** Discrepancy between the latent heat flux measurements: could this be due to a dampening effect of the disjunct sampler? Water vapour measurements are often plagued by surface passivation effects, which can introduce a significant dampening effect.*

AR : We agree with this comment, the discrepancy observed between latent heat fluxes measured by EC and DEC can be due to a dampening effect as well as different analyser response. It is difficult to assess the effect of each phenomenon, Massman et al. (2008) and Lenschow et al. (1991) have made efforts to characterize the dampening of concentration fluctuation of water vapor through sampling tubes but this effect is not fully understood. This discussion will be added to the section 4.6 of the manuscript.

***RC :** 4176: last sentence is unnecessary – delete – why are you willing to improve the G95 algorithms if you then state it is beyond the scope of this manuscript?*

AR : This sentence has been removed from the manuscript.

***RC :** Page 4172: what is a determination coefficient? Probably correlation coefficient*

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is meant here.

AR : For a linear regression, the coefficient of determination refers to r^2 i.e. the square of the correlation coefficient (r).

AR : The copy editing comments were taken into account and corrections will be added to the revised version of the manuscript.

References:

Lenschow, D. H., et M. R. Raupach. "The Attenuation of Fluctuations in Scalar Concentrations through Sampling Tubes". *Journal of Geophysical Research* 96, n?. D8 :15259-15,268, 1991.

Massman, W. J., et A. Ibrom. "Attenuation of concentration fluctuations of water vapor and other trace gases in turbulent tube flow". *Atmos. Chem. Phys.* 8, n?. 20 : 6245-6259, 2008.

Interactive comment on *Atmos. Meas. Tech. Discuss.*, 5, 4157, 2012.