

## ***Interactive comment on “Flux correction for closed-path laser spectrometers without internal water vapor measurements” by R. V. Hiller et al.***

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Dear Rebecca and co-authors,

Your paper nicely shows that a careful characterization of commercial laser spectrometers is still indispensable for accurate and reliable field measurements and I very much enjoyed reading it.

Allow me to point out a detail with respect to the damping loss correction which from my point of view is slightly confusing. On page 361, lines 13–15 you write: "A slight modification of the theoretical cospectral model introduced by Kaimal et al. (1972) is damped according to the inductance  $L$  [ $s^{-1}$ ] in an alternating-current circuit to match the calculated cospectra." My concern here (apart from the incorrect syntax and the

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wrong unit) is the term "inductance". The analogy with an electric circuit is a very useful concept to describe the damping of the cospectra. Eugster and Senn (1995), which you are referring to in the paper, showed that the damping can be nicely described in analogy with a low-pass RL-filter. However, the characteristic of such a first-order filter is described by a time constant and in case of the RL-filter the time constant is given by  $\tau = L/R$ . Thus,  $L$  as it is used here actually corresponds to the time constant  $L/R$  [s] and not to the inductance (which has units of Vs/A). When describing the damping of a first-order system (be it an eddy covariance instrument or an electric RL-filter) I would therefore suggest to use the term "time constant" and the symbol  $\tau$  instead of  $L$ .

Two other details I stumbled upon:

Page 356, line 10: "relatet" should be "related".

Page 358, line 7: I guess you have assessed the accuracy rather than the precision by using the NOAA standards.

Kind regards,  
Patrick Sturm

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