

Interactive comment on “Quality control of CarboEurope flux data – Part II: Inter-comparison of eddy-covariance software” by M. Mauder et al.

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The authors would like to thank Georg Wohlfahrt for his short comment. Such feedback is very helpful for both authors and readers of this article. Indeed, among other differences in the underlying assumptions, differences in the spectral corrections due to spectral models or due to the integration method chosen may well be the cause for some of the observed differences in final fluxes.

The authors agree that that these points would be worthwhile to be considered in an approach to improve ACCURACY of the flux, which is a different concept than QUALITY or PRECISION. It was not the goal of this study to debate about assumptions made in eddy-covariance flux measurements, rather to validate whether different software produce the same or at least comparable results for CO₂ fluxes based on more or less similar assumptions. The authors will change the wording in the introduction

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section of the revised version and try to define the goal of this study more precisely and more clearly.

In order to give an example for the variety of assumptions in two similar software packages, the cospectral models used in TK2 and EdiRE were given on p. 4081, l. 5-9, including the references (Moore, 1986; Moncrieff et al., 1997; Kaimal et al., 1972; Højstrup, 1981). Giving complete information about all details of each software would be beyond the scope of this study.

The authors agree that the applicability of the Kaimal cospectra is probably not universal, and that for an appropriate correction, it should be checked if the cospectral model matches the measured model. In particular, deviations from the model spectra are often found in the low-frequency part (e.g. Sakai et al., 2001; Finnigan et al., 2003; Mauder and Foken, 2006). However, as mentioned in the short comment, this is not necessary for the intercomparison.

The authors are aware of the variety of methods for frequency-response corrections (e.g. Moncrieff et al., 1997; Horst, 2000; Massman, 2000, 2001; Rannik, 2001; Massman and Clement, 2004; Horst and Oncley, 2006; Ibrom et al., 2007). However, for this comparison, only the two methods of Moore (1986) and Eugster and Senn (1995) were relevant. Since the purpose of this paper is not a review about spectral corrections, we decided not to cover more procedures than these two. Instead, we propose to change this one sentence in section 2 (p. 4071, l. 11-13) for clarification in the revised version:
“The software packages compared in this study employed the approaches of Moore (1986) and Eugster and Senn (1995) to correct for spectral losses.”

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