**Atmospheric
Chemistry
and Physics
Discussions**

Interactive
Comment

Interactive comment on "Cospectral analysis of high frequency signal loss in eddy covariance measurements" by A. Wolf and E. A. Laca

Anonymous Referee #2

Received and published: 31 October 2007

I feel the need to add one more comment to the review posted yesterday: Your data processing accounts for density effects on CO_2 and water vapour fluxes measured with the open-path instrument only by applying the determined WPL term to the finite, i.e. time averaged covariance over 20 min. In your cospectra, these covariances then get used to normalise your frequency bins such that the integral equates unity. However, the high-frequency trace gas time series used to compute spectra and cospectra are still uncorrected for density effects, which might lead to an imbalance in certain spectral bands (depending on scalar similarity, i.e. which eddies of size f^{-1} transport scalar x). For a proper representation of the CO_2 and water vapour cospectra, it is therefore advisable to apply a point-by-point density correction to the high-frequency time series using the ratio of mean to instantaneous air density. By doing this, there is no need to

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper

EGU

apply the WPL term to the finite covariance, and both fluctuations and time averaged fluxes get corrected for density effects. Some of your scalar dissimilarity might also be resolved.

Interactive comment on Atmos. Chem. Phys. Discuss., 7, 13151, 2007.

EGU