

Interactive comment on “CO₂-flux measurements above the Baltic Sea at two heights: flux gradients in the surface layer” by A. Lammert and F. Ament

A. Lammert and F. Ament

andrea.lammert@uni-hamburg.de

Received and published: 27 September 2015

Dear Jörg, Thank you for your comments and suggestions.

2) We have added more information about the sensor alignment.

2.1) On the basis of 10 min mean wind values we have used a so called sector wise tilt correction as alignment correction. This procedure is similar to a planar fit correction, but applied for 10° sectors instead of the whole plane.

Especially in autumn and winter high vertical velocities above the ocean are not unusual. The transport of cold air masses above relatively warm water causes a large exchange between water and atmosphere as large latent and sensible heat fluxes near

C326

the surface. The stability of the atmosphere prevents a transport to 8 km height.

2.2) The installation is identical at both heights. The sonic is installed overarm, the LICOR instrument below the sonic. This setting was chosen to minimize the distance of the measuring volumes of both instruments (the distance is 20 cm) and to enable an as large as possible sector without flow distortion. We have added a photo of the installation.

2.3) The sampling frequency of both instrument types, sonic anemometer and LICOR, is 10 Hz. We didn't analyse very high frequency losses.

2.4) The wind sector of the platform, between 285 and 35 degree, is removed from the data set.

2.5) The FINO2 platform is powered by a generator. Possible effects of the generator to our CO₂ measurements are removed by the wind direction filter (see 2.4). The platform is accessible just from water, not via helicopter as the other FINO platforms. Unfortunately the information about ship passages is not available in the official FINO data base. We have information only in case of our own technical checks. Therefore we haven't seen any effect to the CO₂ measurements.

3) At the moment the data are available with 30 min resolution. We think for the analyses of fluxes this resolution is the right one. If you are interested in the high resolution measurement quantities (10 Hz data over 1 one and a half year, for 7 quantities at two heights) please contact us.

4) We have seized your suggestion to concentrate on the data set description and to publish a detailed analyses and interpretation of the data in an additional paper.

Please find attached the new version of our paper.

Please also note the supplement to this comment:

<http://www.earth-syst-sci-data-discuss.net/8/C326/2015/essdd-8-C326-2015->

C327

