**Atmospheric
Measurement
Techniques**
Discussions

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Interactive
comment

Interactive comment on "True eddy accumulation trace gas flux measurements: proof-of-concept" *by* Lukas Siebicke and Anas Emad

Anonymous Referee #2

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The paper needs several clarifications with respect to the experimental setup, the performed calculation of TEA fluxes and some results given in Fig.12-16.

Page 3, Line 10: The paper is now presented by 2 authors. L 23: The paper is now presented by 2 authors. Please give the reference to such studies.

P4: Fig.1: Please refer to section 1.1.3 Define DEA

L4: See page 3 Authors

P6, L15: Please explain the meaning of noise in this context ?

P6, L27-28: β varies between max. 0.3 and about 0.8 in special conditions. Please explain "the order of magnitude lower accuracy" due to β approach.

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Discussion paper

P6, end: "aggressive use" ? noise ?

P7, L11: noise in the flux ?

If somebody states a flux is uncertain, he must refer to the reference standard. What is the reference standard for a flux ?

P9,Items 1-3: Please add in the text or cite

P9-11: Please give a detailed description and diagram of the experimental setup of the TEA as it was used. For example, there is no information about i.e. the position of the flow controllers in the tubing, the pump, and no estimation of the influence i.e. of delays, stages of pressure drops and dead volumes. (Also section 3.2)

P14, L4: Please add the unpublished work in an appendix.

At the end of this section, please present exactly the method applied in the presented study.

Section 2.7: You have not shown any data about flow distortion for R3 and did not correct for any flow distortion. What is your estimated offset of R3 in w - axis ?

P16, Eq.7,8: if mean w = 0 the $F_c = 0$?

The TEA relies on : $\sum w^+ c^+ - \sum w^- c^- = \overline{w'c'}$.

Here it is replaced by eq.7 . Where is the difference to REA ?

In Fig.12 which w is used for TEA flux calculations?

In Fig.15 and 16 you show that the wind vector seems to follow approximately the terrain. This is a nice example for along slope wind and should be also discussed with respect to influence of the rotation method.