

***Interactive comment on “Towards a more
harmonized processing of eddy covariance CO₂
fluxes: algorithms and uncertainty estimation” by
D. Papale et al.***

D. Papale et al.

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Thank you to the referee for the constructive comments on the paper.

1) *The title as well as some other parts of the text can be misunderstood thus, ‘Eddy covariance fluxes’ should be replaced by ‘NEE’ as NEE can be determined as a sum of the turbulent flux (eddy covariance), the storage and advection term*

- We agree that the title could be not very clear because we discussed about storage and advection and not the eddy covariance part and for this reason we changed it in the final version submitted to BG using NEE instead of Eddy covariance.

2) *In discussion of the problems of the eddy covariance method on page 965, line*

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8-10, the given references are not very relevant and a private communication is not necessary when many papers are available

- The reference about the problems of the eddy covariance technique has been changed and the private communication removed.

3) *Spikes are extreme errors of single values in a time series for which correction methods are available (Højstrup, 1993; Vickers and Mahrt, 1997). The errors of mean (30 minutes) values, however, can be caused by spikes but also by biophysical reasons as you discussed. Perhaps in this context, you can replace spike by another term or you can give a more precise definition what you mean.*

- About the use of the term “spike” to indicate the “pick values” in the 30 min. average and the possible confusion with the high frequency spikes, we think that it is difficult to substitute this term in the community but at the same time that it is important to avoid confusion. For this reason we better specified the difference between the two in the final text

4) *You discuss on p. 964, line 14ff that the u^* criteria can not fully justify the reason for unrealistic data. Have you thought about other criteria which can do this (Ruppert et al., 2006). Unfortunately these criteria can not be applied on mean values but only raw data.*

- There are criteria proposed to filter the data that are not only based on the u_* threshold like the one suggested in the comment. However this is based on the raw data and the scope of this paper is to propose a method to standardize the quality check of all the datasets also if the raw data are not available. We specified this in the final version

All the other minor remarks have been accepted and changed in the text.

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