

Interactive
Comment

Interactive comment on “Mobility of black carbon in drained peatland soils” by J. Leifeld et al.

J. Leifeld et al.

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On behalf of the authors I would like to thank the reviewers for their very helpful comments on our paper. All reviewers acknowledged the scientific relevance and importance of this piece of work. We think that consideration of their comments for the final paper in Biogeosciences will greatly improve the quality of the article. The reviewers comments can be grouped into three categories: Reviewer #3 suggested (comment S496) to be more cautious with the conclusions on BC mobility since the transport rates were derived from the actual distribution of BC in the profile rather than directly measured as a process. We think this is a reasonable claim and the argumentation in the final paper will be more balanced with respect to data interpretation. Secondly, two reviewers (comments S496 and S397) ask for a more detailed presentation of the results and discussion and criticise a very condensed presentation of the results and discussion. In particular, it is suggested to give a table with basic information on soil properties (bulk density, pore volume, C, N contents est.) plus a table showing the

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BC stocks per profile. We tried to keep the paper as short as possible and to provide almost all data as figures for reasons of clarity and consistency and at the same time gave the most important values in the corresponding text. However, we agree that a table showing the main data horizon-wise would improve the clarity of the text and will include such a table in the final version. The discussion of the data in Table 1 has also been criticized as inadequate and too short. Firstly, we would like to emphasize that the representation of the trends with depth is statistically correct because a correlation coefficient of rank was used. As such, the trends are significant as shown in Table 1. However, we agree that these trends can be described in more detail in the text and will do this in the final version of the paper with consideration of the non-linear trend with depth for BC contents and BC/OC ratios. We will also pick up the suggestion by P. Smith to discuss the relevance of our findings in a more general way and in comparison to site properties and management. However, due to a lack of data on BC mobility, for example from the cited Indonesian sites, such a comparison will be only qualitative in nature. A third, methodological, argument has been raised by reviewer #1 (S496) regarding the quantification of BC by DSC. In particular, the similarity of heats of reaction for different forms of BC is questioned. Results on this topic were presented in detail in the corresponding reference (Leifeld 2007), and we will summarize some of them in the material and methods to make the paper more comprehensible. All other editorial and technical comments, for example on the consistent use of units, mainly from reviewer #3, will be considered for the final version of the paper.

Interactive comment on Biogeosciences Discuss., 4, 871, 2007.

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4, S510–S511, 2007

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