

Interactive comment on “Massive carbon addition to an organic-rich Andosol did not increase the topsoil but the subsoil carbon stock” by Antonia Zieger et al.

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Dear reviewer #2, we thank you for taking once again the time to provide us with a second feedback on the manuscript. We carefully considered your comments. Our responses and suggestions for possible changes are given below each comment. We will upload the revised manuscript at the end of the discussion together with changes suggested by other reviewers.

Interactive comment on “Massive carbon addition to an organic-rich Andosol did not increase the topsoil but the subsoil carbon stock” by Antonia Zieger et al. Anonymous Referee #2 Received and published: 27 November 2017

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The authors have revised the manuscript very well. I have only some minor comments.

1) In the Abstract, please revise it in a concise way. For example, the main result is in the line 15, only a sentence.

Author response: We will summarise the main result in one sentence at the end of the abstract.

2) Please give the full name of 'WRB' in page 4 Line22.

Author response: We will provide the full soil names according to the World Reference Base for Soil Resources (2015) in the Materials section.

3) In the Table 1, please give full information of 'Xox' in the table title in Page 5. Second, what is the unit for Alox and other mineral, g kg⁻¹ dry soil? or g kg⁻¹ organic C?

Author response: We will give full reference to Alox, Siox and Feox in the table title instead of referring to Xox. The oxalate-extractable metals are presented as g kg⁻¹ mineral part (or inorganic part) of the dry soil. We used this unit in order to evaluate the amount of oxalate-extractable metals in relation to total mineral constituents. The large and strongly varying concentrations of organic matter with depth masks the actual proportion of oxalate extractable minerals. For better comparability, we normalised the oxalate-extractable metals to the mineral soil component instead of to dry soil. For clarification, we will add explanations to section “2.5. Acid oxalate extraction...” and the table titles.

4) The similar description as above mentioned for Table 2 in Page 9.

Author response: see above (3)

5) In the result section, '3.2 sequential density fractionation' in Page 13 and Page 14, the description is not clear, please revise it in a concise way.

Author response: We assume that you find section 3.2.1 (p. 13 line 3 to p. 14 line 2) not clear. We will add additional information on the purpose of the data for each of the

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three paragraphs. However, we are not certain, what is unclear. Could you be so kind to give us more detailed suggestions? That would be very helpful.

6) In the figure 2, I am wondering why the sampling depths at the two sites are different?

Author response: We sampled in the middle of each horizon. Horizon thickness varied slightly between profiles, which is a common feature of forest soils. In result also the sampling depths for the profiles selected for density fractionation were not identical.

7) In Page 18, the methods and calculation description need to put in the material section? I am wondering why.

Author response: We think that this is a good point. We also discussed several times where to put the calculation description. As the hypothetical arguments became relevant after we obtained the results of the oxalate extraction and because their are disputable we choose to put them in the discussion section. Nevertheless they could be just as well be illustrated in the methods section.

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