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Biogeosciences
Discussions

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 #3

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The manuscript brings interesting conclusions about the carbon storage capacity of andosols. The analyzes are well documented and lead to the description of interesting mechanisms to explain an important carbon storage capacity in the subsoil when the topsoil binding capacities are exhausted. The manuscript would need a thorough English proofreading. Comments and suggestions: 1) The authors could reformulate the title to state the positive result first (C storage in subsoils). 2) Page 2, L.3: "Soil holds more organic carbon (OC) than there is carbon in the global vegetation and atmosphere combined": the authors should provide reference(s) from scientific literature. 3) Page 2, L. 12: "the main factor": the authors should be more specific (of what?). 4) Page 4, L. 9-10: the authors could discuss the fact that higher vegetation in the saw-

dust site may have consequences on carbon intakes from the soil. Could the fact that vegetation is higher be due to sawdust additions? 5) Page 4, L. 16-19: a schema or photo of a soil profile would help to understand how horizons were delimited. It could be added as an appendix. 6) Page 5, Table 1: For each element presented in the table, the number of data that were pooled to calculate the mean value could be specified in the table (eg : "BD, g.cm-3, n=2" or "C/N, n=5). Standard deviations (rather than standard errors) should probably be used in tables. In column BD, why isn't the standard error/deviation specified? 7) Page 9, Table 2 / Page 11, L.7: How was the "representative" profile chosen? 8) Page 13, L. 3 / Page 14, L.5: The authors should explain how values can exceed 100 wt%. 9) Page 13, L. 5-6 / Page 14, L.6: Could the authors explain why normalizations were performed? 10) Paragraph 4.4: The authors should emphasize more on the fact that the very low number of data used for comparing the sites may also be responsible for the absence of significative differences. 11) Page 23, L.30: The authors could add a sentence on the potential of mineral phases for carbon storage. 12) Page 24, L. 3-5: the absence of significative difference could also be due to the fact that the number of data was to small to detect it.

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