



EGUsphere, author comment AC2
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Reply on RC2

Britta Greenshields et al.

Author comment on "Oil-palm management alters the spatial distribution of amorphous silica and mobile silicon in topsoils" by Britta Greenshields et al., EGU Sphere, <https://doi.org/10.5194/egusphere-2022-281-AC2>, 2022

Egusphere-2022-281

Author's response for reviewer #2

Dear reviewer,

Thank you very much for your positive evaluation of our manuscript and for your valuable recommendations to improve the manuscript. Below, we respond to your proposed changes and explain how we plan to revise the manuscript.

Reviewer's remarks are highlighted in bold:

General response:

General comment:

Si plays an important role in terrestrial biogeochemical cycling. The study analyzed the spatial distribution of amorphous silica and mobile silicon in topsoil of oil-palm plantations. And the authors concluded that smallholders could efficiently reduce erosion and support Si cycling within the system by (1) maintaining a vegetation cover in oil-palm rows and interrows, (2) incorporating oil-palm litter into farm management and (3) preventing soil compaction and surface-crust formation. The paper was very interesting and well written. I recommend the paper publishing on EGU Sphere after minor revision.

Thank you for supporting the publication of our work after minor revision.

Detailed response:

Detailed comment:

Figure should be redone. Color Figures are more expressive and easier for readers to understand, especially for Figure 1.

Thank you for your feedback. We originally preferred black and white figures, but we agree that coloured figures can make it easier for the reader to catch the information at

first glance. In a revised manuscript, we will therefore use some unobtrusive colour in figures 1 and 2 to enhance comprehension. In the document attached, please find our new proposal for Figure 1.

PCoA ordination plot combined with multiple analysis of variance (adonis) may better reveal the research results.

Thank you for this comment. Indeed, PCoA ordination plot combined with multiple analysis of variance (adonis) is a very useful tool. We thought about this idea but came to the conclusion that our study set up and situation is quite clearly defined: the management practice of frond-pile stacking being the key factor, whereas all other parameters are very similar within a plot; a good understanding of the causal relationships underlying the observed spatial pattern (general principal of phytolith release from decomposing palm fronds as an easily mobilizable Si source). In our case, the focus of the statistical analysis was more on testing the observed differences for statistical significance than on exploring e.g., any clustering. For this reason, it seems more straightforward and appropriate to us to use the tests that we have described in the manuscript.

In the revised manuscript, we will highlight all changes based on recommendations of reviewer #1 in yellow, all changes based on comments of reviewer #2 in green, and all general changes to improve the readability of the manuscript in grey.

Please also note the supplement to this comment:

<https://egusphere.copernicus.org/preprints/2022/egusphere-2022-281/egusphere-2022-281-AC2-supplement.pdf>