

Interactive comment on “How big is the influence of biogenic silicon pools on short-term changes of water soluble silicon in soils? Implications from a study of a ten-year-old plant-soil-system” by Daniel Puppe et al.

Anonymous Referee #3

Received and published: 23 September 2017

Silicon is one of the most important elements in terrestrial and marine ecosystems. Its flow and fate within these systems help to understand biogeochemical function and influences in between. Because of biological performance, the Si cycling is motivated via synthesized hydrated amorphous Silica. The authors selected an unique artificial catchment to observe the change of bio-Si driving by different biological functions, especially phytogenic pathway. The research findings are rather interesting.

However, there are a few points needed to be addressed in the MS prior to the acceptance for publication. 1) Total Si analysis. If total Si also significantly changed during

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this 9 years because of other factors than biological, portion of total Si, i.e., BSi may also change. Unfortunately, I did not see the analysis of total Si changes in tables or figures. 2) are other sources of Si outside this catchment significant? this applied to wet and dry air deposition. I would like to see the data on this. 3) are erosion/runoff significant for the temporary and spatial change of BSi? The data of land slope and erosion/runoff will help to address this issue. 4) Root, a substantial portion of plant biomass, actually are more important in the activating or demobilizing the Si from the soil or earth case, because of the interaction between root biomass and root exudate like acid, and mineral Si. Please add the analysis on this.

Other specific points: - please report soil texture in table and MS, a important indicator of soil erosion/runoff. - line 141-143: From October 2007 to 2016 (I assume 2016 because the authors did not tell the sampling year), and plant sampling year is 2015, it is only 9 years instead of 10 years. This is 10% difference of duration! - line 169-170: are MgCO₃ contents not significant in the soil? please provide the data and if not negligible, MgCO₃ should also be analyzed. - line 258: why not including root? - line 389-391: for each year or 9 years?

Interactive comment on Biogeosciences Discuss., https://doi.org/10.5194/bg-2017-177, 2017.

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