

Ocean Sci. Discuss., author comment AC2
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Reply on RC2

Qian Tian et al.

Author comment on "Occurrence of structural aluminium (Al) in marine diatom biological silica: visible evidence from microscopic analysis" by Qian Tian et al., Ocean Sci. Discuss., <https://doi.org/10.5194/os-2021-78-AC2>, 2021

Authors' general reply:

We are very grateful for your comments and recognition of our work, which have been quite helpful in the improvement of our manuscript. Prof. Beck and Prof. Gehlen proposed Al occurrence in BSi based on the XANES analysis, showing tetrahedral coordination of Al in BSi, and we agree that the Al was attributed to the incorporated Al in BSi. However, the visible evidence lacks and the XAS analysis can not showing the content and distribution of structural Al. Moreover, the Al-detection by XAS is difficult in avoiding the interference of adsorbed Al and Al-bearing minerals from the sediments which may contain some minerals with tetrahedral coordinated Al, such as illite and mica, as described in the paper (*Despite our best efforts to isolate clean diatom frustules, a contamination by adhering clay particles cannot be excluded at this stage. Gehlen et al, 2002*). Therefore, our study provided a visible evidence of Al in BSi, showed more information about incorporated Al in BSi, and proposed an effective method to detect the BSi by avoiding any interference of adsorbed Al and Al-contained minerals. Considering the contribution of Beck and Gehlen, we changed the expression, accordingly.

The replies to the major issues and the corresponding revisions are briefly summarized and listed on Supplement. Please keep us informed if any more questions are raised or further discussion is requested. Thank you very much.

Please also note the supplement to this comment:

<https://os.copernicus.org/preprints/os-2021-78/os-2021-78-AC2-supplement.pdf>