Biogeosciences Discussions

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Comment on bg-2021-134

Dario Omanović (Referee)

Referee comment on "Comparing CLE-AdCSV applications using SA and TAC to determine the Fe-binding characteristics of model ligands in seawater" by Loes J. A. Gerringa et al., Biogeosciences Discuss., https://doi.org/10.5194/bg-2021-134-RC2, 2021

In this work, the three commonly used CLE-AdCSV methods for speciation of Fe in marine waters were compared. Discrete synthetic ligands of known concentrations and isolated organic matter representing the natural heterogeneous ligand groups (humics) were studied. The study summarizes the experiments that confirmed the existing methodological problems of CLE-AdSCV in Fe speciation, most of which have been reported in the literature. The most important aftereffect is that this study in some way challenges the reliability of all previous research studies on Fe speciation in marine waters. This could have major consequences. The last sentence of the abstract best reflects the outcome of the manuscript:"...we need to search for new ways to determine the organic complexation of Fe in seawater".

This is my second review of this manuscript (originally submitted to Frontiers in Marine Sciences, as also noted by the authors). Most of my comments on the original version of the manuscript have been incorporated into the revised version, and I agreed that it was suitable for publication. This version is further polished, and I have no additional comments. My original review, with the authors' responses, is available upon request if it complies with journal policy.