

Biogeosciences Discuss., referee comment RC1  
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## Comment on bg-2022-75

Shoubing Wang (Referee)

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Referee comment on "Diversity and assembly processes of microeukaryotic community in Fildes Peninsula Lakes (West Antarctica)" by Chunmei Zhang et al., Biogeosciences Discuss., <https://doi.org/10.5194/bg-2022-75-RC1>, 2022

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Microeukaryotes are wide distribution and play importance role in aquatic ecosystem. Diversity and assembly processes of microeukaryotes should be paid more attention. Antarctic freshwater lakes are a kind of non-pollution freshwater ecosystem and Microeukaryotes are important contributor of primary producer. Diversity and assemblage of microeukaryotes would give us a clue to get insight into the whole ecosystem. Five freshwater lakes' microeukaryotic communities on the Fildes Peninsula were screened in this manuscript, ample data were provided, diversity, co-occurrence patterns and assembly processes have been analyzed. In my opinion, this work is very interesting and provided a better understanding of the dynamic patterns and ecological processes of microeukaryotic community structure inc oligotrophic lakes. I recommend it is worthy to be published after minor revision.

1. As parameter of diversity, Shannon index should be mentioned in the abstract.
2. WT and PO<sub>4</sub>-P should be mentioned in the abstract, but not the "Environmental factors".
3. In the discussion, dominant taxa and keystone species were mentioned, is there any difference between the two? If there is no difference, please use the same one.
4. The conclusion is too long and should be shortened.