

# ***Interactive comment on “Variable habitat depth of the planktonic foraminifera *Neogloboquadrina pachyderma* in the northern high latitudes explained by sea-ice and chlorophyll concentration” by Mattia Greco et al.***

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The paper provides interesting paired planktonic foraminifera and environmental data from an important oceanographic region both from new and yet published data in order to better understand the habitat depth preferences of *N. pachyderma*. This type of studies can help to better understand in which way environmental parameters control the habitat depth and behaviour of this important planktonic calcifier and has an impact on future palaeoecological and palaeoceanographic studies in this area and in other high latitude environments. The authors also compare their evidence to the outcome of

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the PLAFOM2.0 model, with limited results. The manuscript is well structured and the data well presented and relevant for future studies on the same issues. The amount of figures and tables is adequate to illustrate the results discussed in this paper. The paper deserves to be published in Biogeoscience after some minor revisions that I listed below and in the attached pdf file. I also suggest to the author a further check of the English language.

Technical points:

- please check the use of the acronyms along the text. Once you define them the first time, please use the same along the text (check in particular DVM, SST and SSS).
- choose between the term “habitat depth” and “depth habitat (DH)” as defined in the text and use it accordingly. - please check along the text the use of the term “compilation”. I would prefer dataset.
- Material and methods sections (from page 5/line 16 to page 6/line 11: In this part of the text some results are mixed with M&M. Please, check and move the results to the following section.
- Page 4/line 3-4: “We retained all other profiles, despite the differences in the mesh size, counted size fraction and vertical resolution”. This phrase is not clear, please re-phrase. What do you mean?
- page 9/line 11-12: "sedimentary and plankton specimens". Do you mean fossils and living specimens?

Please also note the supplement to this comment:

<https://www.biogeosciences-discuss.net/bg-2019-79/bg-2019-79-RC4-supplement.pdf>

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