

## ***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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Received and published: 8 April 2019

### General comments

The manuscript BG\_2019\_79 by Greco et al. study which factors that influence the depth habitat of the planktic foraminifera *Neogloboquadrina pachyderma* using both published and new data together with a suite of statistical methods. The scope of the study is very timely as the regions where this species dominates are subject to climate-ocean changes, hence in order to evaluate current changes and establish ro-

C1

bust natural baseline values a better understanding of this species' depth habitat is necessary. The manuscript is well-written and in an advanced state.

### Specific comments

1. Figure 10: Introduce this information and figure early on?
2. It would be beneficial to define what is a good correlation/a correlation/a weak correlation, e.g. what is the difference between the  $r$ - values of -0.28; -0.38 and -0.60. I am not an expert on statistics but  $\pm 0.28$  seems like a weak correlation? It would also be good to point out that it seems that the correlation improves with a smaller number of observations (e.g. 21 samples without sea-ice)?
3. The PLAFOM2.0 model is introduced somewhat superficially; more information would be useful.

### Technical comments

1. Overall: The use of “planktonic” vs “planktic”. Please refer to Emiliani 1991: [https://doi.org/10.1016/0377-8398\(91\)90003-O](https://doi.org/10.1016/0377-8398(91)90003-O)
2. Overall: There are many acronyms in the paper. Except for SST, SSS, DVM and DH they do not help reading the paper.
3. Page 5, lines 6-15 and lines 20-32 (“Materials and methods”): This seem more like a description of results, which it may benefit to move to the start of “Results”.

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Interactive comment on Biogeosciences Discuss., <https://doi.org/10.5194/bg-2019-79>, 2019.

C2