Biogeosciences Discuss.,
https://doi.org/10.5194/bg-2019-19-RC1, 2019

Biogeosciences Discussions
Open Access
EGU

Interactive comment on "Temporal variability in foraminiferal morphology and geochemistry at the West Antarctic Peninsula: a sediment trap study" *by* Anna Mikis et al.

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Received and published: 21 February 2019

The paper by Mikis et al. provides a six year long sediment trap time series showing the response of the planktonic foraminifer Neogloboquadrina pachyderma. It presents data on shell flux, morphology and stable isotopic composition of this species in the extreme environment next to Antarctica and relates these data to changes of measured environmental parameters. The paper is well-organized, well-written and hence guides the reader nicely through the story. Methods are clearly explained, statistics performed are appropriate, and by clearly describing the species/morphotype (good photographs) it prevents any misunderstanding compared to earlier papers on this species. Results

Printer-friendly version

Discussion paper

and interpretations are substantiated by providing additional information in the supplementary information. Results are clearly presented and discussions are convincing supported by the figures and tables. The set-up of the discussion section is elegant by putting questions mirroring the objectives of the research and giving answers to these questions by own data and putting the findings into the context of other research in this field. It shows the importance of seasonal and inter-annual variability influencing the measured parameters and showing the complexity. These findings should be taken into account when working on sediment material. It further provides an outlook how this ecosystem might change as the result of current and future climate changes. Figure 9 nicely summarizes the most important findings showing a typical annual cycle.

In the following I address a few point of attention to be changed: p.3, l.14: delete bracket after “site” p.6,l.11-16: only mention the conversion from VSMOW to VPDB as you show all data against the VPDB scale. In addition to the reference of Hut, 1987, which is difficult to get, use Coplen, 1988, Chemical Geology, 71, p293-297, which explains the normalization of isotope data.

p.9, l.1: add data in between “d18Oeq” and “at”

p.13, l.19: the paper would be improved if satellite images could be given to document this extreme flux from 2010, showing the sea-ice retreat and/or increase in primary production

p.21,fig.4: enlarge the font of the vertical axis numbers in the upper part of the figure

p.22, figure caption: species name in italics, same for fig.6 caption and maybe others

p.27, on the axis in the two lowermost figures: either Departure or departure

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