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Interactive comment on "Copepod species abundance from the Southern Ocean and other regions (1980–2005) – a legacy" *by* Astrid Cornils et al.

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Response to Reviewer 2

General Comments This manuscript presents a series of datasets on copepod presence and abundance collected since the 1980s in various oceanic regions. These data are integrated by metadata and cruise reports and are available in PANGAEA. I like this manuscript very much because it recalls to the public attention a remarkable amount of zooplankton data that have been partially explored so far and can be further and thoroughly exploited to increase our understanding of copepod diversity and distribution. Moreover, it is the perfect example of true Open Science and a valuable tribute to the

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interesting research work of Sigi Schnack-Schiel, an unforgettable colleague of great scientific and human qualities. This manuscript deserves to be published in ESSD with minor amendments, in my opinion. I see the need to improve some points, as detailed in the following. The scope of this manuscript is clearly the presentation of a historical archive of copepod data. The abstract is basically a summary of the dataset content. I would suggest to add a few words about: 1) the biogeographic provinces explored,

- This information has been existent in the Abstract. We have however, added some more information why we added other regions apart from the Southern Ocean to the publication.

2) the most visited depth layer,

- We have added that during most expeditions to the Southern Ocean samples were taken between 0 – 1000 m, with 5 to 9 discrete depth intervals.

3) something about the abundance distribution (e.g. Fig 4),

- We have added a sentence on the abundance distribution as explored in Figure 4, showing that vertical distribution differs between genera and that abundant calanoid species may have sister species in tropical and subtropical waters.

4) the ecological questions that may be addressed by analyzing these data (as mentioned in Introduction). All this would give additional ecological value to the dataset presentation. Introduction lacks to present a link between the Antarctic and Atlantic datasets and the Red Sea dataset. Clearly they originate from different programs, but a link should be given here. I recommend to mention the Sigi's legacy also in Abstract and Introduction.

- We have removed the sentence on Sigi's legacy from the concluding remarks to the abstract and added more information in the introduction that also includes the studies Sigi has done on life cycle strategies of Antarctic calanoid copepods. Thus, we hope to have clarified that the data sets from the different locations are based on her efforts

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to enhance our knowledge on copepod distribution.

Technical comments L31: Schminke, 2007 is reported as 2006 in References

- changed to 2007

L41: Hopkins et al., 1985 is reported without “et al.” in References

- Deleted et al in text

L51-53: remve the three lines about details on CPR, not necessary here; they interrupt the flow.

- Done

L92: The first sentence is useless and should be removed (Plankton. . .organisms).

- done

L159: Cornils, Metz and Schnack-Schiel, 2017 should be reported and Cornils et al., 2017.

- changed

L180-181: individuals that could not be assigned to any family or genus should be named different from what reported here; I suggest: Calanoida n.i females, Calanoida n.i. males, Calanoida n.i. copepodies [not identified],because “Calanoida female” (not singular but plural) may be misleading and indicate total Calanoida females.

- We have changed the names to e.g Calanoida indeterminata, female with the abbreviation Calanoida indet f, which are the terms used in the database PANGAEA. Thus, it cannot be misinterpreted anymore as total Calanoida

L184 In Metadata, it would be interesting to report the biogeographic provinces covered by the present datasets.

- We will add the final abstract from the ESSD article to the data collection, which

includes also the locations of the individual datasets. Then, the information on the biogeographic provinces are also available in the splash page of the data collection. Furthermore, PANGAEA provides a map with the locations of the datasets.

L200: “Parameters” refer correctly to statistical parameters, here “variables” would be here a more appropriate term. L206: “Sonic depth” is more appropriate than “elevation”

- The terms “Parameters” and “Elevation” are predetermined by the database PANGAEA and cannot be changed.

L263: the sentence “all calanoid species. . ..copepodites” can be removed because this info is already on L214.

- done

L266: “copepod species list” is repeated twice

- removed

L270: Add the total number of families, i.e. “Of the XX copepod families, eleven were. . ..”

- added

L311: remove the sentence “We have also added. . ..sets” because the same info is given in the two following sentences.

- done

L335: It would be interesting to know which other zooplankton groups are reported in the archives.

- The focus of the article is on copepods. We have added as information that the zooplankton abundance data are from the same samples as the copepod data for the respective cruises, and that all zooplankton organisms have been counted. We are however, hesitant to add detailed information on these data sets as they are not part of

the collection.

L361-363: these three lines should be moved from Concluding remarks and placed in Introduction

- We have placed the sentence in the Introduction.

Table 2: The title should be change in “List of calanoid copepod families and genera, cyclopoid families, and other orders. . ...”. I guess that “x” indicates the presence of the family (not genera), but this should be clearly stated in the table title.

- We have changed the title of Table 2. It now reads: List of calanoid copepod families and genera, cyclopoid families and other orders compiled in this data collection. The number of species for each genus is written in parentheses. The presence of the calanoid and cyclopoid families and other copepod orders in the five different regions is marked (X). For a complete overview of all species see the “Copepod species list” at https://doi.pangaea.de/10.1594/PANGAEA.884619 .

Table 3: More than the number of datasets, it should be more useful and interesting to indicate the datasets where the copepodite stages are reported. This is really a remarkable information that should be adequately advertised.

- Thank you for this suggestion. We have added the cruise names to provide information for each cruise where species were separated in copepodite stages 1 - 5.

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