

# ***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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Dear editor,

thank your for your for your comments and suggestions to improve our manuscript. We have addressed your remarks individually below. Please find also attached a pdf with the track changes made to the manuscript.

-please address the spatial location issues in good detail or each vessel and data set, namely whether the vessels moved (speed) or were stationary at deployment,

We have added in section 2.2 (Sampling gear) that all hauls were vertical hauls. This

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requires that the ship is stationary.

-what GPS system was used (private, bridge, contractor or science vessel system and name), how many decimals the coordinates carry and what geographic datum etc.

Coordinates as well as date/time and elevation were all recorded by systems of the different research vessels. We have added this in section 3.1. WE have also added that the geographic coordinates are in decimals with six decimal places.

-detection issues should not be a major topic of discussion in this data set, but it would be worthwhile to address those in basic terms for others being able to follow up later

Detection is easy as the sample is in water. In section 2.3 we have added to the sampling and analysis description that samples were counted using a Mini-Bogorov chamber with high transparency (see below).

-subsampling issues and details of the actual catch for taxonomic and abundance purposes (e.g. whether the full net catch or just a fraction was actually used and extrapolated on at the ship and in the lab later)

In the section 2.3 Sample processing and analysis. In the first paragraph we describe the sampling procedure,.

“All samples were preserved immediately after sampling in a 4% formaldehyde-seawater solution. Samples were stored at room temperature until they were sorted in the laboratory. The formaldehyde solution was removed, the samples were rinsed and copepods were identified and counted under a stereomicroscope, using a modified Mini-Bogorov chamber with high transparency as described in the ICES Zooplankton Methodology Manual (Postel et al. 2000). Abundant species were sorted from one fourth or less of the sample while the entire sample was screened for rare species. Samples were divided with a Motoda plankton splitter (Motoda, 1959; Van Guelpen et al., 1982). Abundance was calculated using the surface area of the net opening and the sampling depth interval or the recordings of the flowmeter. Samples for re-analysis

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are only available for the cruises M42/3 and M44/2.”

-details of the taxonomy and keys used and taxonomic serial numbers TSNs, WoRMS ID etc.

WoRMS IDs are provided in each data set, and in the additional species list on the splash page of the data collection (See section 2.3 and below). We have added in section 3.1 that the species names in the parameter list are linked to their WoRMS IDs, when clicking on their name. We have not provided a list of taxonomic keys here, because for copepod identification Elke Mizdalski mainly used species descriptions, and drawings from early Antarctic expeditions, because keys for the Antarctic were not available. All descriptions and drawings of marine planktonic copepods are compiled on the website of Razouls et al. (2005-2018) <https://copepodes.obs-banyuls.fr/>. Thus, we have given only a reference to this webpage in section 2.3.

“Previously published data sets were revised to ensure consistency of species names throughout the data set collection (Michels et al., 2012; Schnack-Schiel et al., 2007; Schnack-Schiel, 2010; Schnack-Schiel et al., 2010). In the present compilation we have used the currently acknowledged copepod taxonomy as published in WoRMS (World register of Marine Species (WoRMS Editorial Board, 2018)) and at Razouls et al. (2005 – 2018). Species names have been linked to the WoRMS database, so future changes in taxonomy will be tracked. In the parameter comments the “old” names are archived that were used initially when the specimens were identified. All used species names can be found as “Copepod species list” under “Further details” at <https://doi.org/10.1594/PANGAEA.884619> or at <http://hdl.handle.net/10013/epic.65463ec2-e309-4d57-8fe3-0ceb7d7dce70>. We provided also the unique identifier (Aphia ID) from WoRMS and notes on the distribution of each species.”

We hope that we could answer all questions sufficiently and that our manuscript may now be accepted for publication in ESSD.

With best regards,  
Astrid Cornils.

Please also note the supplement to this comment:  
<https://www.earth-syst-sci-data-discuss.net/essd-2018-36/essd-2018-36-AC4-supplement.pdf>

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Interactive comment on Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2018-36>, 2018.

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