

Interactive comment on “A database of paleoceanographic sediment cores from the North Pacific, 1951–2016” by Marisa Borreggine et al.

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Thank you very much for your constructive comments and suggestions. Below we comprehensively respond to each request and critique.

“This is a very useful compilation, and the authors are complimented on their hard work. It would be nice to have follow ups for other parts of the world’s oceans. For this study, limitations include that only cores north of 30deg N were included.”

We thank you for your comment, and agree that follow-ups for other parts of the global ocean would be useful to the paleoceanographic community. A good starting point may be the Equatorial Pacific and the Southern Ocean.

“The paper needs critical discussion of cores having benthic O18 stratigraphy and mag-

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netostratigraphy seems missing too. These are essential for anyone seeking to identify cores useful in Quaternary paleoceanography.”

We thank the reviewer for this critique. In total, there are 236 planktonic $\delta^{18}\text{O}$ records, and 178 benthic $\delta^{18}\text{O}$ records. This information is in section 3.3, line 174. We now include text explicitly discussing the 129 cores with benthic $\delta^{18}\text{O}$ and 98 cores with magnetostratigraphy. We have added this information in section 4.1, line 227, after we discuss the use of planktonic stratigraphy. We have additionally added Figure 4 to visualize the distribution of both benthic and planktonic $\delta^{18}\text{O}$ stratigraphy across the pacific.

“Which raises the question, do the authors know the oldest sediments deposited in the cores, or at least some of them.”

The oldest sediments in our database are 120,000 ka. We have added information about this in line 145.

“I raised the cruise report topic too. Can they discuss briefly the quality of cruise reports for non-DSDP/ODP cores? Is there a repository for cruise reports or PDFs of older reports? These resources would be critical for cores not yet published on.”

The IODP cruise reports were the gold standard for accessibility, organization, and thoroughness. Cruise reports were often available for JAMSTEC, GEOMAR, and Scripps cruises, but others were harder to find, and usually found as citations in the papers published on the cores taken during said cruises. Some were print-only and located in the University of Washington library or borrowed from the inter-library network. We extracted metadata from hand-written notes, text, or report tables. In summary, there is no common repository for all cruise reports, but in cases where dois are reported or url for the reports were published, we cited them in our database’s bibliography. We have added this information into section 4.3, line 263.

“So, I suggest minor revisions. I made a few comments in the attached PDF supple-

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ment. Please also note the supplement to this comment: <https://www.earth-syst-sci-data-discuss.net/essd-2017-49/essd-2017-49-RC1-supplement.pdf>.”

Below we address line-by-line edits.

Line 35: “Is lithophysical a word? Physical properties? Lithological?”

We change the word lithophysical to lithological across the manuscript.

Line 40: “No oxygen?”

Thank you for catching this oversight. We have added oxygen to this example of our isotopic proxy evidence in line 40.

Line 105: “Or millions?”

We use ka, thousands of years ago for most sediment cores, though a few reach millions of years. We have added this distinction into line 99.

Line 132: “Please comment here about how often cruise reports are available, how you handled the un-evenness of who did a cruise report and is it accessible.”

Cruise reports were available mostly for iterations of IODP cruises, as well as modern research institutions such as Scripps, JAMSTEC, and GEOMAR. Where cruise reports were unavailable, we grouped cores by common publications and the notes about the cruises included within said publications. This information is provided in section 4.3, line 263.

Line 147: “Not 2016?”

We have not documented new cores after 2010, which we speculate is a product of the delay between the coring, research, and publication process.

Line 178: “OR benthic, not AND; lots of studies lack both”.

Thank you for this catch. We see this difference and since changed the format of this text in line 173.

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Line 183: “Paleobiology is one word typically.”

We have changed this phrase to one word in line 105.

Line 190: “Or not and”

We have changed “and” to “or” in line 182.

Line 191: “Typically an age range or a min/max age.”

We have changed “date” to “age range” in line 184.

Line 195: “What about paleomagnetism, magnetostratigraphy, or MS etc., somewhere in these paragraphs?”

We have added text regarding the presence of magnetostratigraphy in Pacific paleoceanographic sequences, and have added information about it in section 3.3, line 176.

Line 356: “Define benthic delta 18 Ob = benthic, etc”

We have added a description of the benthic and planktonic subscripts to table 4 in the caption. Line 358: Table 4: “What about calc. nannofossil biostrata. More important than forams for the Quaternary.”

Thank you for this. We have added regional numbers for calcareous nannofossil biostratigraphy, including coccolithophores, and ostracods, into table 4.

Line 390: “I think it is essential to show, discuss how many cores had BENTHIC oxygen isotope stratigraphy for chronology, tuning to orbital patterns, use in the LR04 and other stacks.”

We agree, thank you for the note on this oversight. We have added two maps as figure 4 showing where benthic isotope stratigraphy and planktonic isotope stratigraphy are used in age models, and added text to results section 3.3 (line 175) and conclusion section 4.1 (line 227).

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Please also note the supplement to this comment:
<https://www.earth-syst-sci-data-discuss.net/essd-2017-49/essd-2017-49-AC2-supplement.pdf>

Interactive comment on Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2017-49>, 2017.