

Interactive comment on “Assessment of 21 years of Arctic Ocean Absolute Sea Level Trends (1995–2015)” by Carsten Ankjær Ludwigsen et al.

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I had hoped that this manuscript would prove interesting from reading the Abstract, but I regret to say that I was disappointed. The authors promised to extend the record of sea level change in the Arctic, while decomposing that change into mass and steric components. However, there are numerous problems with the manuscript. The material is disordered; many acronyms are used before they are defined, or not defined at all; ECCO is used without any calibration or validation, assuming it to be somehow "correct", or least better than GRACE; many maps are shown, but no time series; no material comparisons are made with other publications in terms of results, to show whether or how the new material is an improvement over existing results; references and relevant comparisons are missing, such as the work by authors like Laxon and

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Giles to address between-mission differences in altimetric height measurements; prior results describing Arctic mass changes from GRACE are not discussed (work by Morison); there are incorrect statements like "mass change (also called Ocean Bottom Pressure" and "ASL measured by satellite altimetry is measured relative to the Earth's center". Again with regret - this work reads like a technical report that has not properly matured into a scientific study, and I do not think that it merits publication.

The manuscript has been completely altered and the more specific points in the comment by reviewer #2 have all been addressed. Since the above comment has a more general character, we don't list all the changes made, but refer to points addressed by reviewer #1 and the attached pdf with track changes. We hope that the reviewer will find the manuscript significantly improved.

Please also note the supplement to this comment:

<https://os.copernicus.org/preprints/os-2020-87/os-2020-87-AC2-supplement.pdf>

Interactive comment on Ocean Sci. Discuss., <https://doi.org/10.5194/os-2020-87>, 2020.

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