

Interactive comment on “Time-variable gravity fields and ocean mass change from 37 months of kinematic Swarm orbits” by Christina Lück et al.

Anonymous Referee #2

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The article is an good study of the capabilities of the Swarm data to determine the mass change in the ocean and in a small selection of large hydrological basins, following the short-arc approach and using the kinematic orbits provided by ESA.

I find the study and its results extremely interesting, important to the geophysical community and timely given the on-going gap between the GRACE and GRACE-FO missions. For these reasons, I support its publication.

In spite of this, I suggest that a few minor issues are addressed:

- often the results are described without any physical interpretation. This has the unfortunate consequence of making the article somewhat weaker than its potential, and leaving most of the important interpretations to the reader;

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- the article reports a large amount of results, which is very welcome and clearly shows the exhaustive nature of the study. Unfortunately, this also means the discussion needs to be proportionally detailed. I have noted a few aspects of the study that have been left out in the discussion in the annotated PDF document;

- section 4.9 is disconnected form the remaining article, it is unnecessary for the interpretation of the main results and feels as if it was a last-minute addition (with a motivation that is unclear to me); i suggest the authors consider removing it.

Additional stylistic remarks, comments, questions and suggestions are provided in the annotated PDF, attached to this review.

Please also note the supplement to this comment:

<https://www.solid-earth-discuss.net/se-2017-127/se-2017-127-RC2-supplement.pdf>

Interactive comment on Solid Earth Discuss., <https://doi.org/10.5194/se-2017-127>, 2017.

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