

We thank the reviewer for the valuable feedback. Their comments and suggestions helped to improve the manuscript. Below, we provide an answer to each point and explain the corresponding changes adopted in the manuscript. The original review comments are copied from the report (in black) and our answers are in blue. Manuscript changes are given in *italics*.

Anonymous Referee #2

- The influence of wind on sea level in the North Sea is large because it is shallow (Dangendorf et al. 2014). Most of the monthly time scale sea level variability is wind driven. Therefore I am surprised that there is no more discussion of the Dynamic Atmospheric Correction. Is the DAC-correction here the same as for the other two altimetry products? Why use a DAC based on atmospheric analysis? Using a DAC based on the ERA-interim reanalysis showed an improvement (Carrère et al. 2016) and ERA5 would improve further.

DAC is the only atmospheric loading correction that is freely available for the full period under investigation. We agree that DAC-ERA would be a better choice and would help to improve the results, especially for the early years. Unfortunately, DAC-ERA is only available until end of 2015. So we would miss more than three years. For that reason, we decide for the ECMWF driven DAC product instead of mixing different corrections.

We will include some more information on that in Section 3.2 (along-track data preprocessing). In addition, Dangendorf et al. (2014) will be cited in Section 2.1.

- I am curious if there are plans to keep this dataset up to date in the future. That could be mentioned somewhere.

We don't plan to extend the dataset as an operational service. However, we will update the dataset in irregular intervals to keep track of the long-term evolution in this area. This might also include product updates due to improved altimeter reprocessing (e.g. TOPEX) or improved correction models (e.g. DAC-ERA5).

A sentence on these plans will be put in the outlook.

- I strongly advise the authors to also share the code used to make the analysis in this manuscript. Especially since NorthSeal is not on a standard rectilinear grid the use of the data by other people would be greatly simplified with an example.

Thank you for this suggestion. In fact, we already published some useful software tools in the frame of the Baltic SEAL project. This includes a python code to interpolate the unstructured data to a regular grid. Baltic SEAL. Baltic SEAL is based on the same unstructured grid used in the current work in the North Sea. The software can easily be transferred to a different regions when the boundaries of the investigation area are adapted to the new region.

Please find the program, related descriptions and information as well as some examples here: http://balticseal.eu/wp-content/uploads/2021/02/BALTIC_SEAL_codes4Novices.zip.

We will add a paragraph on code availability to the manuscript saying "A set of Python codes for novice coders, which has been developed in the frame of the ESA Baltic SEAL project, can also be used for North SEAL. It provides tools to visualise the data and to convert it to other formats. It is available as a zipped file and can be downloaded from <http://balticseal.eu/outputs/>."

- I.292: It is interesting to compare with Wahl et al. 2013. As additional potential source of discrepancy you could also mention that their region was different, it extended further into the Channel and they found much smaller trend in the Channel (1.32 +-1.11) than in the inner North Sea (4.59 +-1.82). And the GIA uncertainty is also large.

Thank you very much for this information. *We will include it in the manuscript.*