Ocean Science

Discussions

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Interactive comment on "Bathymetric Properties of the Baltic Sea" *by* Martin Jakobsson et al.

Anonymous Referee #2

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This paper contains an assessment of Baltic Sea bathymetric properties, comparing results obtained from a older Digital Bathymetric Model (IOWTOPO) and a newly released DBM (EMODnet) and also compares these products to a local very high-resolution multibeam survey. The analysis subdivides the Baltic into several sub-basins to provide regional results.

The authors do a good job at demonstrating the improvements in resolution and accuracy of the newer DBM (EMODnet). They also include a good description of the geospatial pre-processing applied to these data prior to analysis, which is simple for the reader to understand, provides enough information for reproducibility (provided readers have access to the freely available software QGIS) and instills confidence that these data have been treated appropriately. The results, particularly the hyposometry analysis, is well presented and support the interpretation. The paper is logically organised and flows well. The figures are well constructed and well annotated, and the captions

are concise and provide all necessary information. There are no controversial points and the conclusions are clear.

It is pleasing that the authors provide links to all source data. It would be useful if they could also make the TRI map they derived as part of the study available as a gridded product.

Overall, this is a well constructed manuscript and is worthy of publication with minimal revisions. It provides a useful, updated assessment of Baltic Sea bathymetry and highlights the utility of high-resolution multibeam data.

Minor line by line comments/suggestions are provided below.

Page 1:

Line 10: The first sentence could be saved for the introduction and removed from the abstract.

Line 12: "here using the using the" replace with "using the"

Line 22: "we are" replace with "is"

Page 2:

Line 15: (Fig. 1): This is a very nice figure, but personally I find color palettes with more colour variation and/or hill shading more informative.

Line 17: DEM has a resolution of 1/16x1/16 arc minutes. Can you also say what portion is actually sampled at this resolution?

Page 4:

Line 13: "permitting the user to get a view of the source data" replace with "which allows the user to view the source data"

Page 5:

Line 20: "sometime" replace with "sometimes"

Page 7:

Line 9: Perhaps an explanation as to why the differences are largest in the Gulf of Finland and the Quark would be useful or a sentence like "Reasons for these differences are discussed in Section X"

Line 21: "area comes out" replace with "is"

Line 28: "which is as much as" replace with "which is"

Page 8:

lines 9/10: This is a good point. Can you add the section in the Discussion. "This will be addressed further in Section 4.X."

lines 16/17: "Therefore, the threshold..." I found this sentence a little confusing and had to reread it a few times. Could you reword it?

Page 9:

Lines 24/26: "While the wreck..." Again, I found this confusing. I think the word gird needs to be inserted after "2.5 x 2.5 m" on line 25. Also, need to add reference to what the full resolution is. In the caption it states 50 x 50 cm.

Page 10:

Line 26: "EMODnet, which must be considered rather close" replace with "EMODnet. These are close"

Line 31: "will affect the volume by making it smaller" replace with "decrease the total volume"

Page 11:

Line 2: remove word "overall"

Line 11: Reword the start of the ruggedness section. "of geoscientific fields as, for example, heterogeneous seafloor: (1) represents....; (2) has implications.... and (3) influences.."

Page 12:

Line 9: "High TRI values.." replace with "The high TRI values that exhibit a patchy distribution in figure 4c reflect.."

Line 22: "and in past" replace with "and in the past"

Page 13:

Line 25: "so that they lift of the seafloor" should be "lift off? the seafloor". Perhaps reword this.

Page 14:

Line 22: "cases likely even cause" replace with "cases like cause".

Caption for figure 5:

Add full stop after "Basin".