

Interactive comment on “Bathymetric Properties of the Baltic Sea” by Martin Jakobsson et al.

Thierry Schmitt (Referee)

thierry.schmitt@shom.fr

Received and published: 15 April 2019

The paper provides a nice overview of recent improvement of the bathymetric knowledge for the Baltic Sea. Recent improvements are principally originating from the European Bathymetric compilation EMODnet Bathymetry. The authors are presenting a comparison between the previous bathymetric Digital Elevation Model, the recent EMODnet Bathymetry and a high resolution recently acquired survey.

Following comments are originating from both the EMODnet community and the Swedish Maritime Administration, which holds some of the bathymetric information in the area:

Page 4 line 15:

“EMODnet DBM is to a large extent based on the same bathymetric source data as the

C1

BSBD”

Comment from me: A lot of data surveyed after 2012 has been added, Better data (300m resolution min and max values in true positions compared to 500m average) from Swedish Territorial waters, Better data delivery from Poland and Latvia, but sadly also a lower data resolution for Denmark.

Page 8 line 18:

“there are no maximum depths provided or, more precisely, those provided are the same as the mean”

Comment from me: This is the effect of that the source data is sparse. We have only been able to use a minimum and maximum values on their true positions filtered by a 300x300m grid due to legal restrictions in the Swedish Territorial sea. For the Finnish part only depths charted in their seacharts has been provided for their territorial area, also due to legal restrictions. All cells having only a mean depth is interpolated and all having the same min, max and mean depth contains a true measured value. In rare occasions both a min and a max value occurs in the same cell giving more trustworthy information about min, max and medium depth.

The resolution of data from the Swedish side of minimum and maximum values within 300m, gives the result that there is only theoretical possibility to populate 2 out of 14 cells.

In the case where the data comes from digitized older, and sparse, surveys (plummets) both the min and max depth in the SMA database (within the selection cell) will be identical and on identical position, hence populating only one of the 14 cells.

In rare cases a min and maximum value from the same or neighbouring selection cells falls within the same Emodnet cell of 115x57.5m (at Lat 60) valid min, max and average values should exist in the EMODNet cell.

In the end this means that even if the area are surveyed by modern methods, only 2

C2

(sometimes 1) of 14 (13.5) emodnet cells contains a measured sounding, the rest is filled by interpolated values.

If instead a cell of 115x115m would have been used the ratio would have been 2 populated cells out of 7 and less north southerly influence on the interpolation of the remaining empty 5 cells.

For the Finnish side the point density is even more sparse than on the Swedish

line 12 redundant use of "using"

Section 2.1. One must know that the fact that "standard deviation" improperly calculated for the EMODnet grid, is limited for the Baltic Sea, and not for the overall EMODnet Grid. You mention the specificity of the data source data locally (section 4.3), please make sure to announce this earlier.

Interactive comment on Ocean Sci. Discuss., <https://doi.org/10.5194/os-2019-18>, 2019.