



Comment on **essd-2021-256**

Anonymous Referee #2

Referee comment on "High-resolution bathymetry models for the Lena Delta and Kolyma Gulf coastal zones" by Matthias Fuchs et al., Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2021-256-RC2>, 2022

In their manuscript "High-resolution bathymetry models for the Lena Delta and Kolyma Gulf coastal zones", Fuchs et al. provide bathymetric models of 50 m and 200 m resolution of the Lena Delta and Kolyma Gulf coastal zones. The data underlying the models is based on nautical charts published since the 1940's. The authors provide a comparison with recent depth measurements independent of the nautical charts, showing a very good agreement. The authors make it very convincing that their bathymetry is a significant step forwards for these poorly surveyed region, and especially the near coastal zone.

I find little to criticize with this paper. It is well structured, easy to follow with well annotated figures. The Pangaea-download contents are easy to load and understand in GIS. Congratulations to the authors for their work.

I have a few suggestions, which are however not critical for acceptance in Earth-System Science Data (were I to decide).

Abstract: I am missing a mention of the resolution of the available models here. Also, it is not clear to the reader of the abstract what "large-scale" nautical maps are.

95ff The difference could also be related to the decades inbetween the measurements of the map. This comes up in the discussion later on, but the thought could be introduced here as well. I agree with the procedure using the higher resolution maps though. In this regard, it would be a suggestion to provide maps showing the boundaries and overlapping areas of the nautical charts. It appears the boundaris could be easily added to Figure C1 and C2 in the supplement (they "shine through" in the point densitis anyway). A further

suggestion would be to add the date of the nautical chart (or reference to the nautical chart) as an attribute to the shape file. It may be relevant for future studies to have the age of the depth measurement. I fully realize the effort to do so may be prohibitive and this cannot be done.

170 Is it certain that the CTD profiles were cast down to the seafloor?

229: It could be argued to integrate chapter 4.1 and 4.2 to chapter 3, although this is probably a matter of taste.

244: I do not agree with this argumentation. The outliers deviate by partly more than 5 m up to almost 20 m. If these were real bathymetric features, it would be worthwhile to plot their location somewhere.

339ff: What would the values of the astronomical tides be?