

***Interactive comment on “Upgraded global mapping information for earth system modelling: an application to surface water depth at ECMWF” by Margarita Choulga et al.***

**Anonymous Referee #2**

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- The abstract could be reviewed to make it easier for any kind of readers to understand what is this work about and what is addressed and expected. The abstract here started with many previous results which make it not easy to understand it.
- The paper is well structured and all information references are well cited.
- A lot of data are engaged and comparisons with other models and validation are present. Obtaining accurate and timely lake surface water temperature analyses from remote sensing remains difficult. Data gaps, cloud contamination, variations in temperature atmospheric profiles and moisture, and a lack of in situ observations provide challenges for satellite-derived surface water temperature for climatological analysis or

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input into geophysical models. The authors used different sources of data including Reanalysis to test the operational and new lake depths. The seasonal and annual variations may need further assessment mainly if the authors got time-series data. The upscaling or downscaling of satellite resolution is always a challenge but it is well addressed in this work.

- I congratulate the authors for such rich and rigorous paper, which will definitely add to the knowledge of the scientific committee in this field.

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