

Interactive comment on “Assessing the capabilities of the SWOT mission for large lake water surface elevation monitoring under different wind conditions” by Jean Bergeron et al.

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This paper describes the capabilities of the soon-to-be-launched SWOT ocean/hydrology mission to measure lake water surface elevations under different wind conditions, using a high-resolution hydrodynamic lake model and the JPL SWOT hi-res simulator.

The paper is very well written and should be of interest to a wider audience. It is indeed a welcomed addition to the existing SWOT precursor studies that are mostly focusing on rivers with regard to the hydrology part of the mission.

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I only have a few minor comments that should be addressed before publication.

- Paragraph L140: please describe briefly how the LiDAR DEM and SRTM DEM were merged/interpolated;
- L153: please specify which type of classification was used for the S-2 image;
- L160: Be sure to change the font type here to match the font type used throughout the manuscript;
- L202: Is the assumption of the noise being Gaussian justifiable? Please add some words about that here;
- L229: 4.3 section heading. Please specify what volume here. I suspect lake water volume?
- L270: section 5.1. Have you validated the model output in any way? I understand that for this synthetic case study, that may not be needed but it is nonetheless a good idea to indicate whether or not, model validation with independent data was performed and if so, how well did the model do; and if not, why not;
- L328: 5.3 section heading. Again, here, please specify that this is water volume;
- The error descriptions are sound and the conclusions reflect the results and analysis well.

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