[general comments]
The authors of Abbate et al. developed a long-time desired tool to calculate the initial perturbation of the water surface in the tsunami source (Laplacian Smoothing Tool). The LST considers the smoothing effect of the water layer, and therefore significantly improves the accuracy of the input data for numerical tsunami modelling. The linear recombination of the unit sources for the Central Kuril Islands has been solved by in just 9 min, which allows us to hope that the developed tool will be in demand not only in retrospective tsunami studies, but also in real-time tsunami forecast. The paper and its supplementary materials describe the approach underlying LST and the details of the implementation of this approach. The material is well organized, written in clear language, and deserves publication after minor revisions (see comments below).

[specific comments]

The only weakness of the paper is the absence of a detailed comparison of LST with the more accurate methods of initial perturbation calculation. The amplitudes of the Kuril tsunamis calculated using LST are compared with similar amplitudes obtained by Rabinovich et al. 2008 and Nosov & Kolesov 2011. But it is difficult to get any insights from such a comparison of amplitudes alone, especially since the bathymetric and bottom deformation data were different in all these works.... However, considering that the main purpose of the paper was to describe and demonstrate LST, comparison of LST with methods of other authors can be postponed for further research.

The theoretical background of LST is based on Abrahams et al 2023, Davies & Griffin 2018 and Nosov & Kolesov 2011. It is not clear from Section 1 whether any of these papers compared the Kajiura-type filter (with the average ocean depth) and the solution of the full 3D Laplace problem (in the ocean with variable depth). I recommend the authors to emphasize the presence/absence of such a comparison, and to mention the paper by Sementsov & Nosov 2023 (https://doi.org/10.20948/mm-2023-02-06), in which the comparison of the Kajiura filter and the full Laplace problem solution was carried out for a 2D case (0XZ).

In Figure 2, tolerance is shown in colour (without units) and is also plotted on the vertical axis (in %). In the text of the article, the formula for MAE is given first, and the subsequent analysis is carried out in terms of tolerance. I recommend the authors to check the figure once again and briefly describe the connection between MAE and tolerance.

Section 3. The integration limit U and the optimal quadrature method (GLQ) for the 2D case were chosen based on the tests for 1D. A comment may need to be added that the 1D results can indeed be extended to 2D.

145-146: 'It should be recalled that the approximation is valid when both the bathymetry and coseismic displacement vary slowly within such a radius (4H0)'. Are there any quantitative limitations for this 'slowly'? If these limitations are violated, can the result be improved by reducing the cell size? (these questions can be discussed in the Discussion section up to the authors decision).

301-302: 'The LST appears thus to smooth about three-times more the uplifted sea surface than the subsided one for this event'. Why? Probably, because the uplift peak is located in shallow water while the subsidence peak is located in deep water?

305: It is also interesting to note that the filtered and unfiltered peaks are slightly shifted horizontally one relative to the other. Up to the authors decision this fact could be mentioned in the text.

338, 400: "nine models". Why nine, but not seven?
Kuril 2006: Vertical, A, B;
Kuril 2007, northwest dipping: Vertical, A;
Kuril 2007, southeast dipping: Vertical, A.
Seven in total!

[technical corrections]

Figure 5.
In the Figure: panel e is labeled f by mistake.
In the caption (3rd line): replace (b) with (d).
I guess, this Figure can be improved if the authors sign each panel 1D or 2D, respectively, indicate the depth H in panels (a)-(c), and indicate the value of a in panels (d)-(f). The reader can find all this information in the text, but it would be easier to perceive the figure if this information was shown on it directly.

253: typo, remove the 'a'.

298: Replace Fig.7 with Fig.6.

321: The sentence 'Findings...Fig.12' should be moved to the next paragraph.

Revised by Kirill Sementsov