

Dear Editor,

Thank you for your comments on our paper. Below you will find the answers to the minor points you raised.

- Section 3.1: after re-organising the text, it seems that PDE and FEM are no longer defined. Please also check if other issues are still present due to text removal.

The acronym PDE (partial differential equation) was already defined at its first occurrence (l. 172). The acronym FEM (finite-element method) was indeed not defined. It is now defined at its first occurrence (l. 198). We have checked that text removal did not introduce any other issues.

- Many sub- and superscripts in your equation variables are in italic, which should not be. Please keep as italic only variables, and set all other names to straight text (e.g. Eq. 7 - ice and further). Please verify and adapt all occurrences that need a fix.

Done.

- Please add a bibliography entry for the Zenodo link of your code, and refer to it in the manuscript (in the main text and/or in the code availability section)

Done.

Sincerely,

Julien Brondex for all the authors