Publisher's note: the content of this comment was adjusted on 27 March 2026 after approval of the GMD executive editors since some formulations were inappropriate.

Dear editor,

[redacted]

Finally, while centimetre-scale deviations in ice surface elevation may not pose a major numerical issue per se, they do not preclude a quantitative comparison against a reference solution. Given the nonlinearity of the SIA formulation used here, even seemingly small variations (e.g. in ice thickness) can significantly affect the results. This aspect should be acknowledged.

Of course, the SIA is nonlinear. However, the reviewer does not argue about the deviations observed here, but about a potentially huge, invisible deviation. He apparently assumes that the solution converges for $f \to 0$, but not to the "right" solution of the SIA. It is probably possible to construct PDEs with such properties mathematically, but we would need discontinuities in the PDE itself. A "regular" nonlinearity as in the SIA would hardly cause such a behavior. I added a very short version of the results of the convergence analysis (lines 242–253). However, the discussion about the accuracy is already focused too much on the concerns of one person and is rather distracting.

Add a concise information describing software compilation and execution on Unix and Windows platforms (README, project website, and/or Zenodo).

I think that is was already explained sufficiently in the first version that MinSIA only provides the basic computing part and that data handling is left to the user. I extended the text about the "installation" (which does not deserve this name) a bit (lines 423–426) and added a note how to compile with gcc in the description of the Zenodo repository, but I still cannot imagine Linux users who are not able to find out how to compile 100 lines C++ code with the help of YouTube or any AI-based tool.

Add a brief note clarifying under which conditions smoothed and non-smoothed solutions may overlap (referring to your latest reply).

Still not sure what I am supposed to write here. I added the information that smoothing starts if the thickness exceeds $\frac{\delta x}{2f}$ (line 180). But the suggestion of the reviewer to use $\delta x = 1$ km came out of the blue and does not make sense in alpine valleys. So I cannot find a good place where to write that there would be no smoothing at $\delta x = 1$ km.

Add a brief addition discussing solver performance considerations (referring to your latest reply).

As mentioned, I do not accept to be forced to buy a high-end NVIDIA card, but I also do not want to keep anyone off from testing it. It was already mentioned that the performance of the C++ solver is better than that of the MATLAB solver, which is already good. So I added a few lines about alternative solvers and a warning about the potential of parallel computing (lines 427–432), but I feel no need to justify my decision not to buy an NVIDIA card by a detailed analysis of performance.

Best regards,
Stefan Hergarten