

Dear Editor,

Thank you for your positive assessment and for the opportunity to finalise our manuscript. We have carefully addressed all four points in the public justification and the notification regarding the Supplementary Material. Our point-by-point response is provided below. Revisions in the document have been marked using "Review" mode.

1. Code version, effective pressure, and GitHub/Zenodo synchronisation

We confirm that the codebase was modified, including the way effective pressure is accounted for. To avoid version mismatch, we have now synchronised the GitHub repository with the Zenodo archive. The latest GitHub release has been tagged as v1.0.1 and corresponds to the same commit as the latest Zenodo release (v1.0.1). We have also adopted semantic versioning (MAJOR.MINOR.PATCH) for future releases. The Code Availability statement and the relevant citation now refer to the exact version used in this study: <https://github.com/pxgxcxhs/ITMSL>, <https://doi.org/10.5281/zenodo.22712522>. Release notes document the changes in the effective pressure treatment.

2. Zenodo DOI link on line 568

We have removed the extra whitespace in the Zenodo DOI link on line 568. The link now resolves correctly: <https://doi.org/10.5281/zenodo.22712522>. We have also checked all other URLs and DOI links in the manuscript. **(Line 570)**

3. Colour perception and alternative presentations

We have revised the main text and the figures in the Supplementary Materials to improve readability for readers with color vision deficiencies. Specifically, we used a colour-blind-friendly palette, added distinct line styles, markers, hatching, and direct labels where appropriate. We also checked the figures with a colour-vision-deficiency simulator. For example:

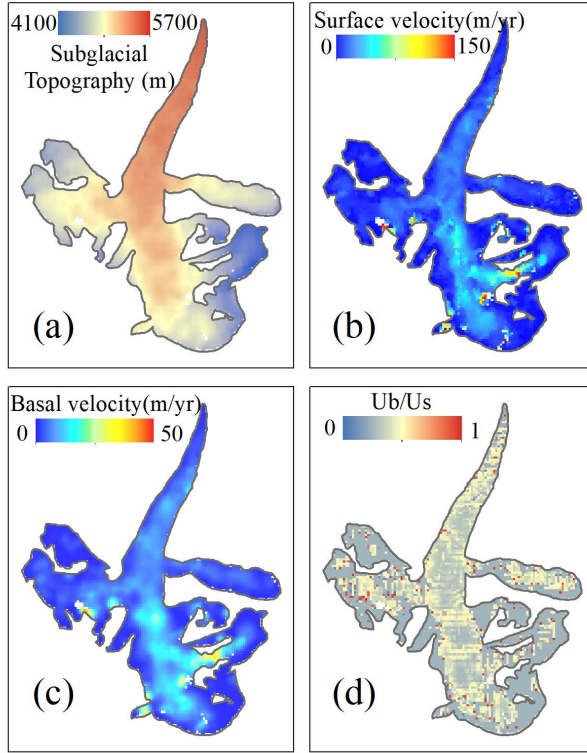


Figure 6: (a) CTSG glacier subglacial topography, (c) basal sliding, and (d) the ratio of sliding velocity to surface velocity inverted by ITMSL; (b) surface velocity used as input to ITMSL.

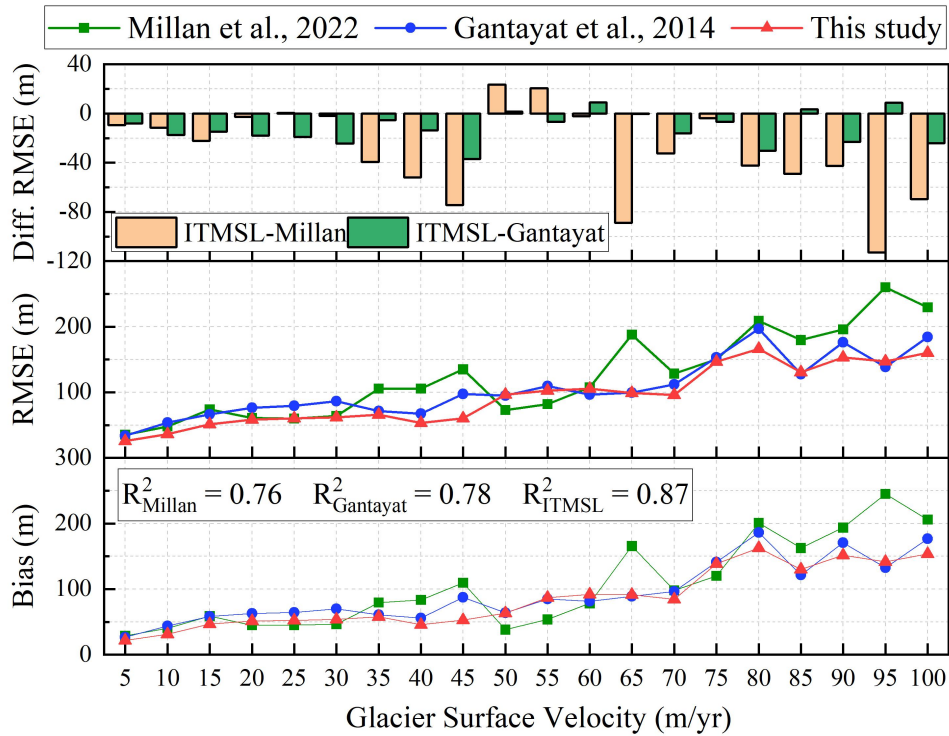


Figure 8: Comparison of ice-thickness inversion bias, root-mean-square error (RMSE), and their differences among ITMSL, Gantayat, and Millan models across surface velocity intervals.

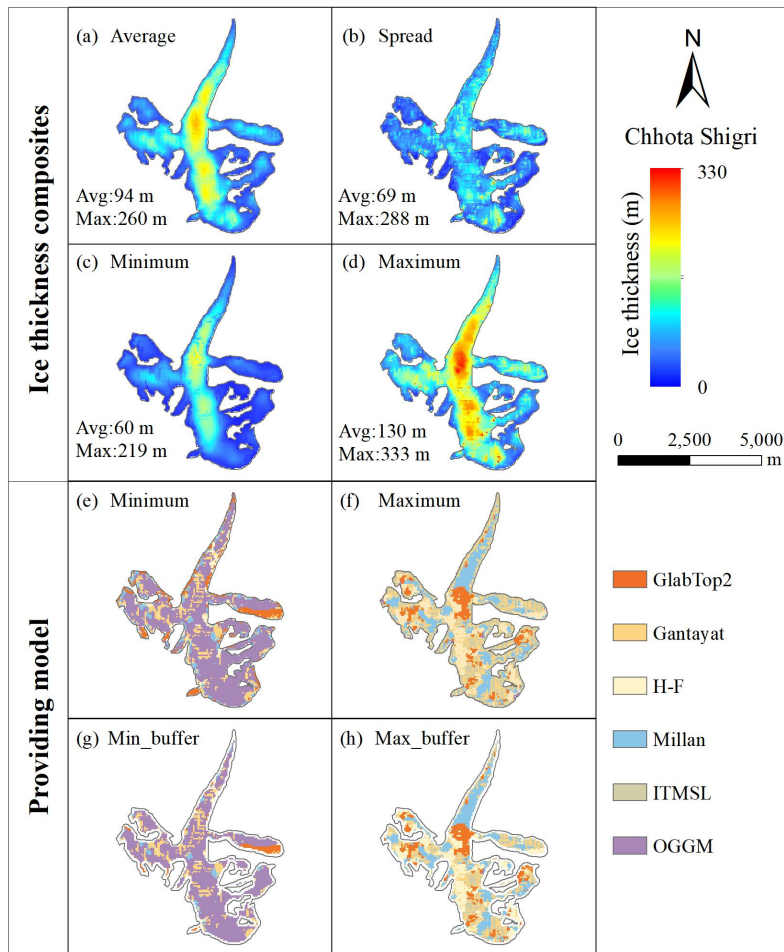


Figure 12: Comparison of simulated ice thickness among models. The first four panels present composite results from the models: (a) average, (b) spread, (c) minimal, and (d) maximal ice thickness distribution. The models corresponding to the minimum and maximum ice thickness at each pixel are shown in (e) and (f), respectively; Models corresponding to the minimum (g) and maximum (h) ice thickness at each pixel after excluding the 3×30 m buffer zone.

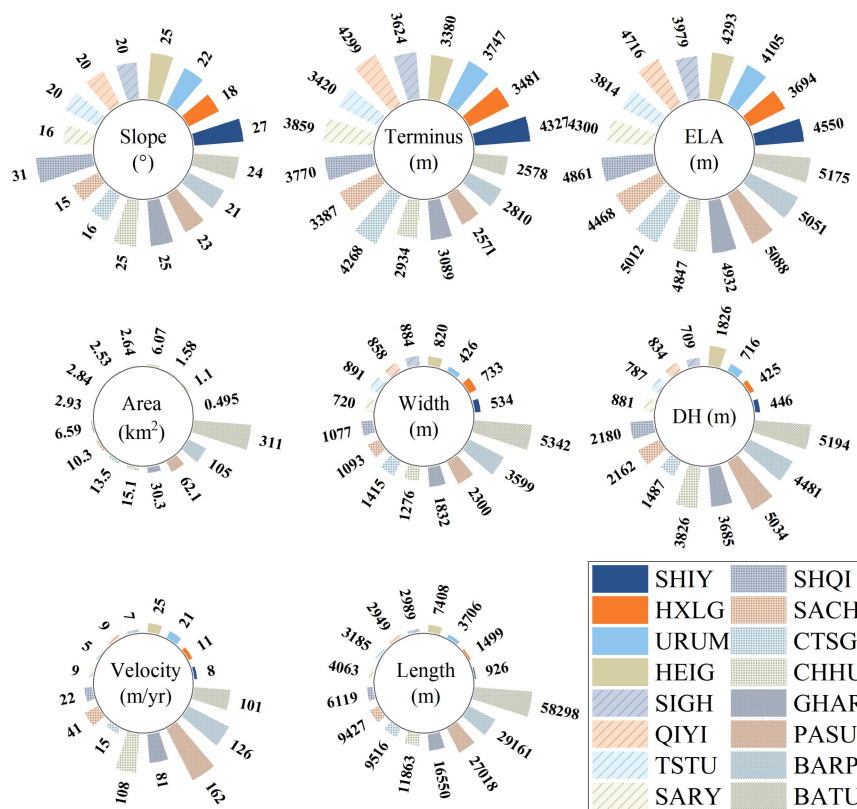


Figure 9: Characteristics of glacier surface slope, terminus elevation, equilibrium line altitude, area, mean width, difference in height (DH), ice velocity, length.

4. Potentially open items from file upload and revision

We have now cited the Supplementary Material in the main text. For example, Supplementary Figure S1 are cited in the Results (Line 320). In addition, we have uploaded a clean version of the Supplement. All tracked changes have been accepted, all comments have been removed, and Track Changes has been turned off. The previous tracked version has been replaced.

We hope the revised manuscript and supplementary files now meet the requirements. Thank you again for your guidance.

Sincerely,
Xiaoguang Pang