

Subject: Cover Letter for 2nd Resubmission of Manuscript

Dear Prof. Dr. Garbarino, Dr. Hagedorn, Dr. Migliavacca and reviewers,

I am pleased to submit the revised manuscript, entitled 'The significant role of snow in shaping alpine treeline responses in modelled boreal forests' for your careful review and consideration for publication in your special issue on the interactions between abiotic and biotic factors shaping vegetation patterns in treeline ecotones.

I wish to express my sincere gratitude for your continued feedback and constructive comments during the review of the revised version of our manuscript. We have carefully addressed each of the reviewers' comments and recommendations, which has further improved the quality of our study. I am confident that the revised manuscript is now even more in line with the high standards set by *Biogeoscience*.

We are looking forward to your evaluation and the possibility of having the revised manuscript accepted for publication in *Biogeoscience*. Please feel free to contact me should you require any further clarification or information.
Thank you for your time and consideration.

Sincerely, on behalf of all authors,
Sarah Haupt

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Editor's Comments to Author and Author's Answers to Editor:

16 Sep 2025

Associate editor decision: Publish subject to minor revisions (review by editor)

Editor: One aspects it is still unclear to me is the extremely high tree density presented in the supplementary materials B1, and in Figure 7. I am not an expert of treelines, but from a brief literature review it seems that the values presented are rather high and I cannot find in the manuscript a comment on the tree density obtained by the model. Can you please comment on this point, provide references and a clarification on this aspect?

AC: Thank you very much for your observation. The figures in Figure 7 are correct, as tree density is presented here as a dimensionless value, with logarithmic transformation applied to improve data visualisation. You were right to note a conversion error in Figure B1; this has now been corrected, and the stem count values are accurate.

Editor: Other minor changes required: Figure 2 caption: please spell LAVESI

AC: As recommended, LAVESI has now been written out in full in the figure caption.

Editor: Figure 4: Please increase the label size of the legend (DEM, Slope, and TWI and associated unit).

AC: In accordance with your recommendation, the label font size in Figure 4 has been increased.

Editor: Please change the data and code availability statement to include the final Zenodo item

AC: All materials have now been uploaded to Zenodo, and the code availability statement has been revised accordingly.