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The Cryosphere
Discussions

Interactive comment on "Evaluation of dynamically downscaled near-surface mass and energy fluxes for three mountain glaciers, British Columbia, Canada" *by* Mekdes Ayalew Tessema et al.

T. Mölg (Editor)

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Dear authors,

In my access review I mentioned that there is nothing wrong with the general approach and scope of the study, yet that I see some potential problems with the WRF setup/output. Both reviewers come to a similar conclusion, and provide more details on the model setup aspect.

While I would like to note that Michael Lehning's comment on model resolution must be

viewed in light of the specific goals of a study and cannot be generalized easily (e.g., simulating many years at <100 m is not feasible in typical instances), both reviewers agree in the fact that there are major shortcomings in the setup of WRF.

Hence, my main concern is that the modeling setup was not state-of-the-art, and thus some deficiencies in the results could have been averted. Aside from spatial resolution, the specification of the land cover, the treatment of the lower boundary (SST), and the calculation of diffusion were mentioned by the reviewers. The problem with the setup makes the conclusions on WRF's downscaling abilities unreliable.

To sum up, I think it is necessary that you re-do all simulations and experiment with the WRF setup a bit more. Since this requires time and a tight deadline for revision would be counterproductive, my decision is to not consider the paper in its present version further. I do hope, however, that the reviews gave you valid input to work on an improved version of the study. In this sense, I would also like to thank the two referees for their time and thoughtful comments.

Thomas Mölg, Handling Editor & Co-Editor-In-Chief TC

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