

Interactive comment on “Snowpack dynamics in the Lebanese mountains from quasi-dynamically downscaled ERA5 reanalysis updated by assimilating remotely-sensed fractional snow-covered area” by Esteban Alonso-González et al.

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Dear Johannes Horak, Thank you very much for your comments. As you noticed, the performance of ICAR is very sensitive to the setup of the model top. As a very novel model, more research should be developed related to the dependence of ICAR's performance on the choice of model top, including the physical and numerical reasons involved in such a dependence as it can greatly increase its applicability over ungauged

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regions. Unfortunately, there is not enough observational data over Lebanon to develop a sensitivity study for such variable, a limitation faced in choosing all parameterizations of the models involved in the study (ICAR, WRF and FSM). Thus, we had to choose the most likely configurations of the models considering the existing references in the topic, including Horak et al. 2019. However, in our case the uncertainty introduced by the forcing data should be greatly reduced by the fractional snow cover assimilation scheme implemented in the study.

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