

Interactive comment on “Hydrological modelling and future runoff of the Damma Glacier CZO watershed using SWAT. Validation of the model in the greater area of the Göschenalpsee, Switzerland” by Maria Andrianaki et al.

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Dear Editor,

many thanks for your comment on snow data. We are sorry that our response was not very clear. We used the glacier data for the set up of the model, to define the initial glacier coverage of our catchments, not only for the current situation but also for the climate change scenarios. What we probably did not make very clear in our response to the reviewer is that we also used observations of the glacier retreat and glacier melt

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during the manual calibration of the model, to ensure that the total simulated water budget is correct. The reason why we didn't do something more is that we wanted to test the performance of the model following the most common approach of applying SWAT. We think that this would be useful in cases with scarcity of data, where snow measurements aren't available.

The best way to improve SWAT performance in this case is to take into account the difference between snowmelt and glacier melt dynamics. Omani et al. (2017) addressed this issue by applying different snow parameters to the completely glacierised subbasins and different to those that aren't glacier covered. However, the subbasins of the Damma glacier watershed are partly glacierised and for this reason we decided to apply only one set of snow parameters.

Best wishes

Reference: Omani, N., Srinivasan, R., Karthikeyan, R., and Smith, P.: Hydrological Modeling of Highly Glacierized Basins (Andes, Alps, and Central Asia), *Water*, 9, 111, 2017

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