
General Comments

Réveillet et al. have restructured the manuscript with the new title “Impact of forcing on sublimation simulations for a high mountain catchment in the semi-arid Andes” fundamentally with respect to the reviewer’s comments. The focus on the differences in sublimation depending on the forcing by AWS data or WRF model output is presented much more comprehensively in the updated version.

In general, the manuscript can be optimized by highlighting and rating the most important parameters, their representation in the different products (AWS, WRF) and their impact on processes controlling sublimation rates in the final conclusions. In addition, the advantage of using WRF data (I assume the application in forecast) should be pointed out with respect to the presented outlook.

The manuscript is worth for publishing after corrections according to the comments hereafter.

Specific Comments

- (1) The snow depth (SD) in Fig. 3 is presented in m w.e. First, I assume that this is SD in meter, and not the SWE. In section 4.2 the RMSE error is given by 0.15 m. This is about the same magnitude as the total snow depth in 2014, and considerable in relation to SD in 2015. Please discuss the ration of RMSE to total snow depth in order to rate the overall performance of SD simulations.
- (2) Within this study multiple parameters and processes are shown influencing the simulated sublimation. In addition to the high uncertainty in precipitation (and thus SD, SCA, SCD) also the roughness value is shown to have a high impact on results. Likewise, the ground level wind can be assumed to control turbulent heat fluxes considerably. On page28 line 24 several sources of uncertainty are mentioned. I would like to encourage the authors to present on the basis of the results and the discussion a final ranking of the largest uncertainties and their impact on simulated sublimation in the conclusion. Please also state which potential and advantages are expected by improving WRF using AWS data assimilation vs using MicroNet interpolation of AWS data (re-analysis or fore-cast? see last sentence (iii)).

P1 L21: To complete the information in the brackets add the catchment size

P1 L25: Here and throughout the text: please try to avoid the slash (here: melt/sublimation). It might be confusing if this is “and” or “or”. In this case it also can be read as the ratio of melt divided by sublimation.

P1 L28: Here more detailed information on the processes (SW radiation, sensible heat flux, ...) causing higher melt rates would be desirable.

P1 L29: One sentence might be added on the overall applicability of WRF output for forcing the snow-pack simulation.

P5 L9: Do you have experience or any data on how the temperature and RH measurements of the HOBO weather stations perform in comparison to the permanent AWS. Are the HOBO temperature sensors ventilated? Please add one or two sentences.

P12 L18: AWS 2014 vs 2015

P12 L24: Replace “larger number of clouds” by “higher degree of cloud cover”

P12 L30: Please present the relative difference in addition to the absolute value. Please also state that this sums up to a factor of three for highest elevations (see Fig. 4d).

P14 L1: What is the temperature along the precipitation event on June 21st 2015? Can the temperature threshold between rain and snow be also a reason for the overestimation of snow depth?

P16 L12ff and Fig. 5: Please discuss possible reasons for this high variation of SCA in the text.

P20 L9: For 2015 the modelled turbulent fluxes...

P24 L15: Please mention here why it would be advantageous to correct the regional WRF model output in contrast to use the MicroMet interpolation of station values.

P27 L13: Referring to the title, sublimation rates have been the specific focus. Of course snow depth and SCA play an important role since they result from precipitation, which is highly uncertain (see conclusions).

P27 L15: Since sublimation is most sensitive to the roughness value, wind at the ground level also plays an important role once a snow cover exists. Please add this information.

P28 L15: Delete “years” at the end of the sentence.

Figure 3:

- It's not clarified in the caption if hourly wind speed or daily mean values of wind speed are presented. I would suggest to present hourly values to enable a better estimate of potential wind transport and sublimation rates from the graph.

Figure 10

- Caption: Revise “Cumulated” by “Stacked”.