Review to "Modelling of snow processes in catchment hydrology by means of downscaled WRF meteorological data fields"

Referee 2.

General comments:
I appreciate the changes proposed by the authors. In particular the comparison with the temperature-index method driven by observed temperature and precipitation. Now, the advantages (and limitation) of using LAM data for hydrological modeling in the Sieber catchment are more clear. The study is interesting if one is considering the possibility of using LAM data (partially or totally) for forcing snow models. In particular, the adoption of four snow models helps in investigating the actual usefulness of WRF data and makes the results more robust. The results demonstrate that for this catchment it is possible to get acceptable hydrologic simulations using LAM inputs and avoiding observations. An interesting point is that dynamic downscaling in complex topography is expected to be improved in the future, thanks to the numerous researches directed to this target. Thus, in perspective the use of LAM fields without observational dataset may be regarded with higher interest. I think that this concept should be stressed in the introduction. Your work gives an indication in this direction. However, you have still used observed precipitation for the calibration. This helps the performance since simulated precipitation did not fit well observations. In your work, analysis and results are still partially dependent from observations. I think this limitation should be highlighted, at least in the conclusions.

Then, Some points need further clarifications.
Introduction:
In my opinion, this question is know clear: "to what extend does LAM data enhance model performance?" First: the right expression in English should be "to what EXTENT" Second: You use the word "enhance". In comparison to what? Are you wondering if it is possible to increase model performance using LAM instead of observations (of temperature and precipitation)? Are you discussing the value of LAM data in general, as alternative data source? I think your point is the second one, since in the abstract you stated: "...are better reproduced by application of observed meteorological input data".

Focusing on your work, I think the right question could be something like: "Given the possible lack of observed data on several meteorological fields (eg humidity, wind speed, and sometimes even temperature - as the Editor stated in her comment to the first version -) does LAM data represent a worth alternative to observations for modeling snow processes in hydrology? Could LAM downscaled fields help in areas where there are no observations available, for instance providing some meteo fields necessary for the energy-balance?" The answer is: yes, for this case study. But if at least observed temperature and precipitation are available, a simple degree-day method is still able to exceed the performance of complex snow model driven by WRF meteorological fields.

Model calibration:
Is there a specific reason why you calibrated the hydrologic model manually? 10 parameters would suggest a calibration using a algorithm or Monte Carlo

method. Please put light on the reasons for your choice and explain why you believe that your calibration is satisfactory. All the results depend on it. However, the efficiency seems good enough in my view.

Results and discussion:
Please introduce this Section by stating his structure and content in few lines. I don't like the jump 3 - 3.1 - 3.2 without any explanation on what the reader is going to read.
Please add an additional summary table, such as Tab. 3, with model efficiency for the validation period 2010/2011.

Summary and conclusions:
- I cannot find the answer to the question 1) presented in the introduction.
- Please, state that your study shows even that the temperature-index approach, despite its simplicity, is still able to reach the performance of more complex energy balance model, when it is forced by observation while the others by WRF data. The choice of a hydrologic modeller could be: a) no observations: WRF data and energy balance approach, expecting reasonable results both at point and catchment scale (better than temperature-index driven by WRF). b) Only temperature and precipitation data available: temperature-index using observations or energy balance coupling LAM with observed data. Only observed precipitation (common situation for the Alps, as stated by the Editor): energy balance approach, using WRF downscaled data and observed precipitation.

- P 22 L 4 Please state clearly that your study gives also an indication about where are located the limits of WRF downscaled data for hydrologic applications (in downscaled precipitation). This is an interesting result by itself. Here, give another hint about your previous study using observed precipitation coupled with WRF data (previous version of the manuscript): it was certainly interesting but it did not agree with title and abstract.