

Answer to the editor comments on "COMPARISON OF TEMPERATURE AND WIND PROFILES BETWEEN GROUND-BASED REMOTE SENSING OBSERVATIONS AND NUMERICAL WEATHER PREDICTION MODEL IN THE ALPINE COMPLEX TOPOGRAPHY: THE MEIRINGEN CAMPAIGN.

The authors thank the editor for accepting the publication of the paper and for taking the time to review the paper. The answers to the comments are written in italic thereafter.

I read with interest the paper and I notice the great improvement in the text, which I now find easy to follow. In my opinion, you nicely responded and modified the work based on all the comments from the other reviewers. I just suggest some smaller modifications, to facilitate reading.

I suggest publishing after taking care of these final minor corrections:

1) line 89: you introduce the campaign in the Haslital here in the introduction. I suggest to provide here some small details (period, location), instead of postponing them in the methods and data section. It helps to give context, otherwise the reader has no idea about which campaign it is.

The following sentence was added to the introduction :” The measurement campaign took place from November 2021 to August 2022 at Meiringen, a small alpine village in the Haslital.”

2) lines 180-190: please refer to figure 1 when you mention the additional station from which you take data from. In this way the reader can find where they are located.

Done

3) line 193: how do you identify rainy conditions in the MWR? beware of wet radome effects after rain is over. Providing some details here does not hurt.

The producer of RPG Radiometer equipped the with precipitation sensor so that the data are flagged in case of rain. At the end of the precipitation event, a ventilator removes the remaining water droplets. The radome is moreover change two time a year to ensure a good removal of droplets. The following sentence was added to the manuscript: “Precipitation is detected by the MWR and the radome is ventilation thereafter. The data acquired during rainy conditions are consequently discarded.”

4) line 240 and around; I would start presenting the results from the results that are visible in the figure included in the paper, and then add the points coming from figures in supplementary material. The sentence "the maximum temporal gradient T.... " refers to figure S5 before figure 2 is introduced and we get a feeling of the situation you describe

I do not understand your remark since the two first sentences of the paragraph describe Fig. 2a and Fig. 2a is mentioned in the first sentence. There is then a sentence describing a result visible in the supplement to introduce T gradients. Finally, T inversions, which are a peculiar sort of gradient visible in Fig. 2a, are further described. The requirement of presenting first the results of the figure in the manuscript is therefore fulfilled.

5) For all plots: be consistent with the label of the time axis. Sometimes is "time of the day", sometimes "hours", some others have Time UTC. My suggestion, to have it consistent with the axis on the y, is to write "Time [hours UTC]".

The label of the time axis was replaced by "Time [h UTC]" in Fig. 2, 4, 5, 6, 7, 8, 9, 12a, S5, S7, S8 and S10. We chose to use "h" instead of "hours" since the Copernicus rules specify that standard abbreviation should be used for units.

6) some plots (fig 4, fig 12 in particular) compare lines in pink with lines in red and lines in blue. It is hard, sometimes impossible to distinguish the red and the pink. Please change colors.

The magenta color was changed in dark green in Fig. 4 and 12.

7) lines 319 - 324: do you really need these introductory lines? the section on wind is nicely structured and you could save some text, I think.

These introductory lines are effectively not absolutely necessary. They were added to manuscript during the first iteration of the review process to facilitate the reading of the manuscript as recommended by the second referee. We think that it is still important to mention at this point the location of the REM and in-situ instruments as well as to mention the use of observations from other stations. The last sentence was also added to answer the comment of a referee about the necessity to compare the results in MEE and MER. In an effort of coherence with the modifications required by the three referees during the review process, only the sentence about KENDA-1 analysis is now removed.

8) In section 3.2.3 you talk about N winds. Is it North winds? I would write it extensively. I did not get immediately what you meant.

North wind is now written extensively through the whole manuscript.

9) Please remove all sentences like "Figure X shows this is proportional to that", as it is in the sentence at line 419-420. You can rephrase all of them as "this is proportional to that (Fig x). In the example of the line 419-420 it can be written as: Clear warm days with low cloud coverage in July show a peculiar wind pattern along the Haslital (Figure 10a). Another case is in line 441-442.

The sentences beginning with “Fig. xx “ were suppressed at lines 241, 288, 357, 404 and 419. This kind of sentences allows anyhow to simplify the reading. They were consequently not modified when the merging of two sentences in one lead to long and complex sentences as at lines 396 and 441.

10) Arriving to the end of the paper, it is clear that you mainly aim for climatological variability. I think it is then worth highlighting it more in the abstract. Also the title does not reflect this point particularly. You mainly show diurnal cycles and means, but in the abstract only the performance for monthly temperatures and wind medians made me think about climatology. Maybe it is worth mentioning some specific keywords there "climatology", "monthly/seasonal means" or similar.

We add to remove the word “climatology” from the manuscript as judiciously requested by the second referee in the first review round. His remark was right and we will not re-introduce the notion of climatology for a 10-months campaign. The mention of a monthly analysis has been added to the abstract: “The findings of the present study mostly based on monthly averages allow to better understand the temperature distributions, the thermally driven wind system in a medium size valley, the interactions with tributary valley flows, as well as the performances and limitations of KENDA-1 in such complex topography.” Concerning the title, it seems us inappropriate to add the notion of “monthly average” first not to lengthen an already extensive title and second to acknowledge the fact that single profiles and hourly observations are also reported for case studies (see e.g. Fig. 10, 13, s6, s9, s11, s12 and s13)l.