

**We thank Juraj Parajka for his comments. We address his issue (in italics) below. Changes in the manuscript are given in blue, the answer to the reviewer is given in black.**

*The only remark I have is the Discussion section which is somewhat extensive and still reads as a summary rather than real discussion of the results. Please consider to reduce the "summary" part and add some text which highlight the implications of the results, e.g. for hydrologic modelling.*

We prefer to keep our style for the Discussion section. **However, we rephrased the last paragraph of the discussion and highlighted some practical implications at the end of it (page 22 line 1-24 in the new manuscript).**

*What are the practical benefits of the findings? E.g. How can the results be applied to improve simulations of snow in the regions with large topographical gradients?*

Our parameterization for the snow-covered area is developed for mountainous (though treeless) regions.

**As mentioned above, we now discuss some practical implications in the last paragraph.**

*To what spatial domains can one extrapolate the findings?*

The larger the grid cell  $L$  (domain size) compared to the subgrid lateral topographic features  $\xi$ , the more accurate the dominant snow cover shaping processes are captured.  $L$  has to be chosen sufficiently large compared to the correlation length, i.e.,  $L \gg \xi$ . As long as this condition is fulfilled, there should be no upper limit for a large grid cell resolution (at least when considering topography only). Our parameterization (Eq. 2) also includes the  $L/\xi$ -ratio, a correction term for finite grid sizes, where the above condition might not be met (cf. Helbig and Löwe, 2014).

Due to a lack of highly-resolved snow depth data we could not investigate grid cell sizes larger than the 3 km. From our scale analysis, we found less scatter for larger grid cell sizes, and thus higher correlations between terrain parameters and the standard deviation of snow depths (e.g. Fig. 6). Our parameterization for the snow depth distribution also shows higher accuracies for larger  $L$  (Fig. 8a). Please also see our detailed answer to your second question in your first report which was very similar.

**To avoid misunderstandings, we rephrased our explanation on grid cell resolutions at the end of the discussion and hope it is more clear now.**