

Interactive comment on “The significance of vertical moisture diffusion on drifting Snow sublimation near snow surface” by Ning Huang and Guanglei Shi

Anonymous Referee #1

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The authors present a relatively comprehensive snow drift model, taking into consideration of vertical diffusion of humidity. The results are compared with published data. It is shown that the results are at least qualitatively consistent with the observations and in some aspect also quantitatively consistent. I see considerable value in the further development of the model to a full scale comprehensive model. This model is a very good starting point, as it already has all the ingredients.

The text can be improved. The introduction can be shorter. The very first sentence in the abstract is a very long sentence trying to say too much. Also, the model formulation can be made more concise, e.g., Equation (1). It is unnecessary to write it in such a

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complex way.

The discontinuity of the model results is somewhat surprising, like in Figure 2a. The authors should explain what makes the model to behave like that and how it can be improved.

I hope the authors can give a critical assessment of their model and point out the potential for further development.

In general, I find the work very interesting and represents a very useful contribution to snow drift modelling. As it has been revised and many question from the earlier review reports have been considered, I think the paper is now of good quality.

Interactive comment on The Cryosphere Discuss., <https://doi.org/10.5194/tc-2017-116>, 2017.

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