

Interactive comment on “The impacts of moisture transport on drifting snow sublimation in the saltation layer” by N. Huang and X. Dai

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In this study, a 2-D snow drift model is introduced. A saltation model is coupled with a treatment of moisture and temperature changes associated with snow drift. Much emphasis is placed on the description of the model, and it is relatively short on discussion of the model results. The paper is reasonably well written. A somewhat disappointing aspect of the paper is that it does not have measurements for comparison or even published data for comparison. May be this can be improved.

The self-limiting nature of snow drift process is clearly revealed. This self-limiting process is similar to saltation of sand with no sublimation, but appears to be more complex, as it involves the moisture process. It is not clear however how the modified stability of the flow influences the self-limiting process.

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The authors did not consider the effect of turbulence. While including turbulence may be more difficult, the authors may wish to discuss what might happen if turbulence is included. This is also important, because the stability of the saltation layer also affects the profile of the mean wind. Indeed, I do not see where thermal stability is included in the model.

There are minor writing problems which the authors should carefully check again, for example, DSS is not defined.

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