

Interactive comment on “Brief communication “Modeled rain on snow in CLM3 warms soil under thick snow cover and cools it under thin”” by J. Putkonen et al.

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Following two rather critical reviews and the author's responses to them, this editorial comment is intended to provide guidance with respect to the requirements for a possible resubmission.

This manuscript has received two detailed reviews that both acknowledge the importance of the general topic but raise fundamental concerns about the robustness and, therefore, relevance of the results presented. These concerns can be summarized in three main topics:

(1) Are the assumptions appropriate to lead to relevant insight? (e.g., unrealistic artificial event)

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(2) Is the tool used appropriate to lead to relevant insight? (e.g., bias in CLM3)

(3) Is the methodology appropriate to lead to relevant insight? (e.g., preference of a spatial study over systematic experimentation)

The authors have provided careful responses to the Reviewer comments. In these they acknowledge many of the Reviewers concerns and state that the "...manuscript is more of a starting point..." and that "...the result is rather robust across a wide geographic area...".

Certainly, a manuscript can be a starting point and outline an important phenomenon before it is understood in detail. But what is shown must be robust enough to justify publication. Based on the reviews and the responses given, however, I am not yet convinced of the robustness of the results and believe that considerable additional work or justification would be required for this.

To be suitable for final publication in The Cryosphere, a resubmission of this manuscript has to demonstrate the robustness and relevance of its results and outline possible uncertainties where these are important.

If they are willing to go through the additional effort, I encourage the authors to resubmit a revised version of this manuscript. It is an exciting and relevant topic.

Interactive comment on The Cryosphere Discuss., 5, 2557, 2011.