

Interactive
Comment

Interactive comment on “Limitations of using a thermal imager for snow pit temperatures” by M. Schirmer and B. Jamieson

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Really interesting paper, commendable because the originators of the technique to measure snow temperature profiles via thermal infrared photography now recognize problematic issues. As the late David Simonett remarked, "An expert is one who understands the sources and magnitudes of error is his/her own work."

The good news in this publication lies in its identification of grain-scale processes that significantly affect the skin temperature of a volume of snow. The bad news is that we probably still need to use stem thermometers to measure a snowpack temperature profile.

My suggestions for minor revision:

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Interactive Discussion

Discussion Paper



1. The rapid evolution of the skin temperature after the pit wall has been shaved must balance the turbulent (sensible and latent), radiative, and conductive heat exchanges. The paper's explanation does not truly articulate how these processes might be affected individually by the micro-scale surface geometry. At this stage, a mathematical model is not necessary, but a more fleshed-out conceptual model might help.
2. In this context, data on the air's humidity during the field and lab experiments would be useful.
3. Finally, the images should have real length scales on the axes, rather than pixel dimensions.

[Interactive comment on The Cryosphere Discuss.](#), 7, 5231, 2013.

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