

Interactive comment on “Some fundamentals of handheld snow surface thermography” by C. Shea and B. Jamieson

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Received and published: 26 November 2010

Excluding bare ice, the emissivity values found in Hori et al. for direct thermographic measurement range from 0.997 to 0.971 across all measured snow crystal sizes. This does not seem an especially strong variation by grain size, given that other references cite snow emissivity generally around 0.99 to 0.98, and the calibration error declared in Hori et al. is up to 0.004. Thus, as our summary already advises using 0.99 or 0.98 (tending toward fine grain, or coarse grained snow / frost, respectively as discussed in the morphology section) this additional information does not change the emissivity values currently in the manuscript.

Much of their differences in emissivity discussed elsewhere in the paper come from photographic angle effects, and it seems that they have found more effect from angle

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than we have in our studies. Their findings seem to better agree with Dozier and Warren (1982), and the manuscript section on photographic angle effects already mentions that our findings for the effects of photographic angle are a fraction of that found in other work.

The reference is a good one, thank you. It will be added to the revision in both the emissivity section (Section 5.1) and the section on the effects of morphology (Section 6.2).

Interactive comment on The Cryosphere Discuss., 4, 1467, 2010.