

Interactive comment on “ESCIMO.spread (v2): parameterization of a spreadsheet-based energy balance snow model for inside-canopy conditions” by T. Marke et al.

Anonymous Referee #1

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This paper presents a modified version of a previously published one dimensional snow model that accounts for canopy influences on snow processes. Although the paper does not add anything fundamentally new to the discourse on snow modeling since the authors mostly just assembled model bits that have already been published, it does constitute credible incremental research that is worth publication. My primary concern is that it is not clear from the data presented that this model substantially improved simulations over the previous version. Since that is the main point, it would be valuable on figures 10 and 11 to show the model results without the modifications (also the associated statistics in table 2).

Minor comments:

C2503

Eq 13. Does this represent the average wind speed in the canopy? Is it only valid for the part of the canopy above the "canopy reference level" (which I assume is the same as the zero plain displacement height?). Is the wind speed zero below the canopy reference level? Presumably this equation is only valid away from the canopy edge?

All the time series figures: Please consider making the y-axis scales better match the maximum values being shown; Figures 6, 8, and 9 have ranges about twice as large as needed – Figure 11 is ok because it matches the companion figure, Figure 10. Also, it would be nice to see plots of predicted vs. observed to better see the range of scatter and whether there are any systematic biases, which I think are really important in evaluating a model.

While the three evaluation metrics used are ok, I typically like to see something like root mean square error or relative difference, which I think are more meaningful and are easier to interpret than indices that do not really tell me how good predictions are in general; the index of agreement might do this and I am just not as familiar with that statistic.

Interactive comment on Geosci. Model Dev. Discuss., 8, 8155, 2015.

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