

***Interactive comment on “Comparison of algorithms and parameterisations for infiltration into organic-covered permafrost soils” by Y. Zhang et al.***

**Anonymous Referee #2**

Received and published: 23 March 2010

General comments: The paper provides a very useful contribution to this field. It is well-written, although rather lengthy; the length comes from the fact that the authors include a rather comprehensive review of the subject matter as well as the algorithm comparison and testing. The review, however, is most useful in providing the reader with an overview of the history and variety of the techniques, the parameters involved as well as their significance. It should be published with only some minor revisions.

Specific comments: Because of the large amount of information (equation and parameter lists, and figures) I found it rather cumbersome moving back and forth between

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the text and the figures or tables. Hopefully, the final editing and placement of figures and tables will help in this matter. Section 5 is called Discussion and conclusions; however, essentially all of the discussion has been provided in section 4. The section titles could be modified to reflect this. Adding colour in figures can be quite useful. However, one should pay close attention to the selection of colours to be used; dark blue and black may be difficult to differentiate; the same may be true for certain shades of red. The difficulty to differentiate colours will be greater when the figures are reduced. The authors may want to review Figures 5 - 7 with a view to ensuring clarity.

Technical corrections:

p. 5707, line 5. the reference "Gusev, 2003" does not appear in the references list; should this be "Gusev and Nasonova, 2003"?

p. 5707, line 21. the word "macrospore" should read "macropore".

p. 5708, line 8. the reference "Kuchment et al., 2000" does not appear in the references list.

p. 5712, line 1. the reference "Quinton, 2008" should read "Quinton et al., 2008"?

p. 5724, line 29. Should read: "... as it does not allow water to infiltrate..."

p. 5742, Table 4. In order for the table to stand alone, the use of abbreviations should be avoided, or they should be explained. The full names should be used rather than the designations "SC-P", "WC\_F" and "WC\_A" in the column headers.

p. 5744, Table 6. See comments for Table 4. The column to the right (header "Thawed") appears not to be associated with any of the three sites. Is this simply a mis-placed column?

p. 5745, Table 7. In the table title, the word "accumulative" should be replaced with "cumulative".

p. 5746, Fig. 1. The boxes (a) and (b) refer to Granger Creek. This site has not been

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mentioned in the text. The location and/or description of this site should be provided in the figure caption as well as in section 3.2.6.

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