

Interactive comment on “Evaluation of air-soil temperature relationships simulated by land surface models during winter across the permafrost region” by W. Wang et al.

Anonymous Referee #2

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The manuscript is trying to evaluate the quality of the snow modules in currently used GCMs. It is the important problem to solve.

Most of the analysis is based on using the meteorological data across the Russian territory from 1980-1990. Unfortunately, there is no in-depth analysis of the observations and why these data can be used. Observations at many meteorological stations are performed at the disturbed conditions and thus only a small subset of this data could be used in the direct comparison. The authors simply assume that just all data could be used. The meaningful comparison of the model to observations at the disturbed sites could be done if the model also simulates the disturbed conditions. Second, it is unclear why the authors used 250 kg/m³ to obtain the snow depth from the satellite measured

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SWE. Why not to use the SWE directly? How would the results change if 300 kg/m³ is used?

Please find the specific comments in the attached pdf.

Please also note the supplement to this comment:

<http://www.the-cryosphere-discuss.net/tc-2016-36/tc-2016-36-RC2-supplement.pdf>

Interactive comment on The Cryosphere Discuss., doi:10.5194/tc-2016-36, 2016.

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