

## ***Interactive comment on “Permafrost temperature and active-layer thickness of Yakutia with 0.5 degree spatial resolution for model evaluation” by C. Beer et al.***

**Anonymous Referee #2**

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Journal: Earth System Science Data Title: Permafrost temperature and active-layer thickness of Yakutia with 0.5 degree spatial resolution for model evaluation Author(s): C. Beer et al. MS No.: essd-2013-4

Overall evaluation: Acceptable with minor revision

Comments

In this paper the authors introduce an original approach to convert a published in the 1990s detailed permafrost landscape map of Yakutia, Russia into a permafrost temperature and active layer thickness maps with 0.5 degree spatial resolution. The new

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maps developed in this study are very suitable for different models validation and for different types of spatial analysis of permafrost distribution and permafrost and active layer characteristics in the permafrost zone of East Siberia. It is a good paper and the publication of this kind of paper will be timely and beneficial for researchers working in the field of climate change including those involved in permafrost research.

The paper in review could be published in “Earth System Science Data” after a minor revision.

My suggestions for the improvement of this paper are:

1. The methodology and the sources of specific permafrost information that were used to develop the original permafrost landscape map should be discussed in details. For example, it is obvious that there is not enough information on measured permafrost temperatures and active layer thickness for the development of such a detailed map. Because of that some sort of modeling was used to create this original map. It is very important to describe the specific model(s) that were used for this purpose.
2. A combined big vector for each 0.5 degree grid sell will include parameter values that typically will have not normal statistical distribution but probably will have multi-modal distribution. It needs to be explained how the mean and the standard deviation of this parameter will be calculated in this case for each 0.5 degree grid sell. Even more difficult task is how to derive a meaningful mean and standard deviation in case of a discontinuous or sporadic permafrost distribution within such a grid sell.
3. There are several places in the text where the wording needs to be changed to make it more understandable. These places are the last three paragraphs in Section 2 “Methods” and the first paragraph in Section 3.

My other comments are:

The letter “B” is missing in the very first sentence.

“Isolated permafrost zone” is not correct term.

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“...permafrost underlain landscapes” is not correct term

“...the river Lena” should be “the Lena River”

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Interactive comment on Earth Syst. Sci. Data Discuss., 6, 153, 2013.