

Earth Syst. Sci. Data Discuss., referee comment RC3
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Comment on essd-2022-148

Anonymous Referee #3

Referee comment on "Gridded pollen-based Holocene regional plant cover in temperate and northern subtropical China suitable for climate modelling" by Furong Li et al., Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2022-148-RC3>, 2022

Review of ESSD-2022-148 by Li et al.

This paper describes a new REVEALS data set of vegetation in China during the Holocene. As this data set is the first of its kind it's a welcome contribution for everyone interested in the vegetation and climate of the Holocene. I think that the paper describes the data set and methods well.

I have only one major concern, and that is about how the word "gridded" is used here. I understand that gridded information here means that several data point together represent a larger area, a grid cell, instead of being just point data. On the other hand, when I hear about a gridded data set I expect it to cover a larger region. If the grid contains more empty than filled grid cells it's not that different from point data. I understand the problems of creating such a data set for the Holocene in China. I think that it's perfectly fine to publish a data set like this, but I think that the authors should mention this, especially since you write that the data could be used in climate model simulations. The use for such a data set is limited in a climate model. The data can be used to evaluate results from climate or vegetation models, but it can't be used in a climate model simulation.

Comments

L140: Maybe it would be good to explain that the grey colours are fill colours in the boxes and not the grey lines mentioned earlier.

L155: "from 1 large and small sites." What does that mean?

L165: "350, 250 and 100 years" How does this fit with the requirement of 2 counts/500 years (L127)? Does it mean that the temporal resolution is higher in the last years, or that one point represents several time periods?

L180: "several adjacent grid cells (2-8)" Maybe I just don't get this, but I can't see more than 5-6 adjacent grid cells in figs 2-5.

L189: "atmospheric conditions" What's atmospheric conditions more than wind speed, and why is wind speed not considered an atmospheric condition? Please explain.

L245-247: I don't get this at all. What does it mean that the "map changes are expressed in comparison to the former"? One interpretation of this is that 80 % means 80 % of the cover in the previous time slice. If the first time slice shows 50 % and the second 80 % that would in fact mean 80 % of 50 % = 40 %. I don't think this is the case, because it would make it extremely complicated to calculate what the vegetation fractions are in 100 BP. Also, since the legends in figs 2-4 show 0-100 % I think that the absolute fractions are what is shown. Otherwise the scale would include negative values or values over 100. Please rephrase or explain.

L489-496: As said above, in its present form this data would be complicated to use in a climate model. That would require a denser grid. Maybe you could say something about that, or say that it's a long term goal to make it work in climate models.

Typos

L63: "Iii" I think it should be "III".

L69: LULC usually means more than land-use change as it would be interpreted here. Please spell out land-use and land-cover changes, if that's what you mean.

L204: "obtainedusing" -> "obtained using"

L457: "and The is a" Something is wrong with this sentence.

L469: "rby" -> "by"

L491: "Iii" -> "III"

L496: "coverl" -> "cover"