



EGUsphere, referee comment RC2
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Comment on egusphere-2022-317

Anonymous Referee #2

Referee comment on "Reconciling different approaches to quantifying land surface temperature impacts of afforestation using satellite observations" by Huanhuan Wang et al., EGU sphere, <https://doi.org/10.5194/egusphere-2022-317-RC2>, 2022

The biophysical effects of deforestation/afforestation have drawn a lot of attention in the past few years. However, the results are not very consistent among different studies using different products and methods. The authors revealed the methodological differences among different studies and summarized them into one actual and two potential temperature effects. They also used afforestation in China as a test case to quantify the differences in biophysical effects using the three approaches and verify their hypotheses. The manuscript is well-structured, and the results are clearly represented. I would recommend the publication of this manuscript after minor revisions.

Some minor comments:

Language needs to be further polished throughout the text. Some long sentences are difficult to understand.

L30, "and that it ... explained", Not clear

In Methods, need to clarify how gridded effects were aggregated into the country mean for comparison among the three approaches, because different LC / LST data may have different coverage. How is the overlapped region representative for the whole country?

L275-277, afforestation from GFC is not consistent with the inventory data, so can the

results based on GFC be considered as the real biophysical effects of afforestation in China? I think this key message is important for policy makers.

L391, that's what I meant, the afforestation area is much smaller than the national inventory.

Fig. 4, better to show the latitudes on the left axis of (a)

Fig. 5, did you consider the spatial distribution of each bin? Whether the regions with higher Faff happen to be in the tropics with larger cooling effects?

Fig. 8, I guess the differences for changes in seasonal fluxes would be much larger between the partial and full coverage of each pixel, especially in the snowing regions in winter.

L742, should be Nature Communications