

Interactive comment on “The impact of land cover generated by a dynamic vegetation model on climate over East Asia in present and possible future climate” by M.-H. Cho et al.

Anonymous Referee #3

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General comments

The authors use a range of HadGEM2 simulations to investigate the impact of land cover changes and the related changes in dust on the East Asian climate. The study uses a similar design as ML12 comparing simulations with different processes turned on or off in the model. I would like to see a clearer description of how this study is different to ML12. It is for instance not clear to me if the same simulations are used.

There are 17 figures in the manuscript, which seems to me a very large number to get a main point across. I got lost when trying to understand what the key points of the paper are. What are the main conclusions? The last paragraph seems to be very similar to

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the conclusions in ML12 and therefore I am not convinced if this study is adding any new insights. I suggest to decrease the number of figures and focus more on the main objectives. The first objective to investigate the physical influence of land cover and aerosols on the temperature and rainfall is addressed well, but the second objective about uncertainties is not. How is the uncertainty defined and investigated? I also expected a more elaborate discussion where the results are compared to other model and observational studies. For instance, how do the results relate to observational data of dust?

The comparison of the different models is interesting, but I suggest to improve the manuscript by being much clearer about the objectives and then addressing these, presenting only the key figures needed to support the main conclusions.

Specific comments

Title: the title suggest a main focus on land cover, but the paper primarily deals with dust. Could you be more specific in the title about this?

Please check the English grammar of the manuscript, I noticed quite some errors. Also make sure there is no text copied directly from ML12, as it seems to be very similar at some places.

Is figure 5 the same as figures 6c with the only difference the scale?

Interactive comment on Earth Syst. Dynam. Discuss., 5, 1319, 2014.

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