

Interactive comment on “Climate of the last glacial maximum: sensitivity studies and model-data comparison with the LOVECLIM coupled model” by D. M. Roche et al.

D. M. Roche et al.

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Reviewer 1, while acknowledging the interest of our study, requests that part of the discussed LGM vegetation presented should be discussed with more caution.

In particular:

- 1) a lot of forest cover in SW Europe
- 2) an apparent expansion of forest in central Africa
- 3) a lot of forest in SE Asia and NE China.
- 4) Depending on precise definitions, the extensive savanna across northern Australia is probably too moist for the LGM.

In all these areas there is a range of sources of evidence suggesting much drier, open and even treeless vegetation.

We recognize that indeed the model does not exactly represent the conditions found in the data for these areas and therefore we modified the text in paragraph 4.1 in accordance with the request expressed by reviewer 1.

In particular, we emphasise now that 1) the too warm/moist conditions are simulated over SW Europe leading to an overestimation of the trees in this area, not consistent with available data for the area 2) the too extensive cover of forest in simulated central/east Africa due to overestimation of the precipitation of the central to east side of the continent; this feature is mainly due to a displaced zone of maximum precipitation toward the east in the ECBilt atmospheric component, already known for present-day conditions. We now clearly acknowledge that this is unrealistic. 3) We added the fact that we simulate too extensive tree cover in SE Asia and NE China, whereas data would indicate more steppish like conditions. 4) In the definition we use of Savanna (see Table 1) we have a dominance of the herbaceous PFT. However, trees can still be present depending on climatic conditions prevailing. The extensive Savanna across northern Australia reflects the warm but dry conditions we simulate there. There is no real tree cover, the Savanna mentioned in this area being composed of 60% of herbaceous (PFT) and 40% of bare soil. Conditions are therefore compatible with data reconstruction mentioned by the reviewer 1. This precision is added to the new version of the paper.

Interactive comment on Clim. Past Discuss., 2, 1105, 2006.

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Interactive Discussion

Discussion Paper