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Climate of the Past Discussions

Interactive comment on "Orbital and freshwater forcing during the last interglacial: analysis of climate and vegetation response patterns" *by* G. Lohmann

Anonymous Referee #2

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This paper presents some results from a simulation of the climate of the last 140 000 yrs and the next 30 000 years.

I wouldn't recommend publication at this stage. The paper is very poorly written and the reader is left to guess what the scientific goals of this modeling exercise are.

The author runs the model for 170 000 years (actually 1700 years with a 10 fold acceleration technique) but only looks at the interglacial periods because the model is not able to reproduce ice age conditions. And the author deliberately chose not to represent ice age conditions. He fixed greenhouse gas concentrations to preindustrial values and used modern distribution of vegetation, land-ocean and continental ice.

Why then bother to run the 170000 years at all? The author doesn't discuss this choice of set up.

The author chooses to focus on the period from 120 kyBP to 115 kBP without much explanation and looks at the vegetation response to the changing climate for this period. This part is so poorly written that it is close to impossible to judge whether the experimental set up makes any sense at all (p 1226, lines 22-27, the captions of fig 6 has to be rewritten -what is an average dominant PFT ? - , the captions of fig 7 and 8 are incorrect). The science goal of this part is not clear either. Why focus on this period?

The author also wants to compare the climatic effect of a freshwater pulse in the Labrador Sea during an interglacial period to changes in orbital forcing. He therefore uses results from another model. Here also the experimental set up is very vague. I had to wait until the discussion section (p1231, lines 23-29) to realize that the author didn't force the ECHO-G model with a freshwater pulse (by forcing SSTs or a heating flux from ECHAM3/LSG for instance) but was just comparing results of the orbitaly forced ECHO-G to the existing simulation done with ECHAM3/LSG. And the author doesn't look at the effect of this pulse on vegetation, which I was expecting from the title of the paper.

There are also lots of typos, double sentences (ex: p 1224, lines 6-9 and 10-13), unfinished sentences (ex: p 1223 lines 15-16, p1225 lines 16-18).

For these reasons, I don't believe this work is ready for publication yet.

Interactive comment on Clim. Past Discuss., 2, 1221, 2006.