

Interactive comment on “Palaeo plant diversity in subtropical Africa – ecological assessment of a conceptual model of climate–vegetation interaction” by V. P. Groner et al.

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We thank the referees very much for comments and suggestions, and we address the main issues arising out of the comments in the corresponding responses. Based on the comments by referees and the editor, we made some major changes in the manuscript (among others):

1. Concerning the interest of our approach according to DVM approaches and other approaches taking into account more processes, we explained in the author responses that the purpose of the presented work was the revision of Claussen et al., (2013), including an assessment of the study and an extension of the model by plant types

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after pollen reconstructions within the possibilities of the model structure. We did not aim to go towards a new class of models. We are aware of the limited applicability of our conceptual approach. Therefore, we propose not to complicate it any further but to step towards a DGVM for future studies. We extended our final conclusions by a paragraph discussing implications for further studies (DVM, GCM).

2. Regarding the use of the niche concept, we agree that this was not clearly stated in the manuscript. We use the term 'niche' in terms of 'ecological space' regarding moisture requirements, not in terms of 'geographical space'. We adjusted the terminology in the manuscript.

3. We assigned the typical North African physiognomic vegetation types to the four phytogeographic AHP plant types when we introduced the latter in our first manuscript. We understand that it is difficult for the reader to remember this grouping throughout the text and that this might lead to confusions. In the revised manuscript, we introduced a new paragraph after the grouping that describes our usage of terminology. We use the terminology of plant types after Hely et al., (2014) when we consider our work, including the description of the adjusted model and simulations as well as results, discussion and conclusions. Since literature usually refers to the terminology of physiognomic vegetation types, we stick with their terminology in citations and indicate the corresponding phytogeographical plant type after Hely et al., (2014) in brackets to prevent confusions.

4. We extended the discussion towards previous work by Claussen in the context of the assessment of their conclusions in section 2.3 as well as in our final summary and conclusions.

5. We modified the abstract in order to better present our main results.

6. We addressed the suggestion of referee 2 to include sensitivity studies on the sensitivity parameter DB and added a series of plots in the appendix. The effect of different feedback coefficients was already shown by Liu et al., (2006), the work that provides

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the baseline for the model by Claussen et al., (2013) and our model. We therefore prefer not to discuss the effect of DB in great detail in our main manuscript.

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