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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.

Anonymous Referee #1

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This paper is well written in good english and the work is exposed in a proper manner. However, even if I find the paper interesting, I found many caveats. I understood that the authors revisited a previous study presenting a conceptual model regarding the potential effect of plant diversity on climate-vegetation feedbacks published by Claussen. However, I found the approach not up to date. It's now clearly stated that niche based models are not the adequates tools to answer such questions and dynamic vegetation models should be used. For example, today, dynamic vegetation models are explicitely describing the competition for ressources (light, water, nutrients. . .) that cannot be described by niche based models. Identically, DVM can also give insights when it comes to the impact of an athmospheric CO2 concentration increase, which is important when

it comes to water uses efficiency. Generaly when it comes to vegetation function DVM should be prefered to niche based models (just usefulls to describe potential vegetation distribution). Secondly, the vegetation composition seems to be mainly driven by bioclimatic limits in this study and particularly mean annual amount of prcipitations. Recent studies show that for a identical amount mean annual amount of precipitation the vegetation composition can be drastically different depending of the seasonnality of these precipitations during the year. I would have liked also a figure presenting a temporal comparaison between recorded pollen data and model' simulation to estimate (at least visually) the model accuracy. However, I agree with the last statement of the authors that Âń The improved representation of plant diversity could in coupled GCM simulations allow for a more realistic consideration of plant-plant interaction and climate–vegetation feedback. Âż as long as the GCM is coupled with a DVM.

Interactive comment on Clim. Past Discuss., 11, 2665, 2015.