

Interactive comment on “Impact of the Megalake Chad on climate and vegetation during the late Pliocene and the mid-Holocene” by C. Contoux et al.

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This paper provides a welcome contribution to the understanding of mid-Holocene and mid-Pliocene North African climates with respect to land surface boundary conditions. Additionally the work provides useful new data describing the influence of mega-lakes on numerical simulations of the atmosphere. This is an area where there is some inter-model disagreement.

The paper is well written, clear and concise and in my opinion meets the the criteria required for publication in Climate of the Past.

"specific comments"

C631

Page 1368, line 17: It would be interesting here to describe how the extent and shape of MLC was chosen for the simulations where a lake is imposed.

Page 1370, line 19: More detail about the SST distribution used would be useful here, how confident can we be in it? What is the reason for using anomalies?

Page 1377 Differences between models, including that of Krinner should be addressed in terms of each results reliability/uncertainty.

Page 1371, line 16 and Page 1372, line 2: Pre-industrial CO₂ levels of 280 ppm are used for the mid-Holocene experiment where as we might expect a slightly lower value. This choice should be discussed especially with consideration for the BIOME4 predictions which may be significantly different depending on the CO₂ level used. It may be appropriate to test the impact of lower CO₂ on the BIOME4 predictions. Attached are BIOME4 predictions for 6000 years ago driven by HadCM3 using 265 ppm (Fig1) and 280ppm (Fig2).

Page 1393, Fig 6 and Page 1393 Fig 7, How is significance tested/calculated here?

"technical corrections"

Page 1364, line 24: Consider rephrasing as anyone understanding terms such as 'Soudanian' would surely already be familiar with the region.

Page 1368, line 5: missing 'the' (beneath the continental water surface.)

Page 1368, line11: missing 'the' (and the surface scheme)

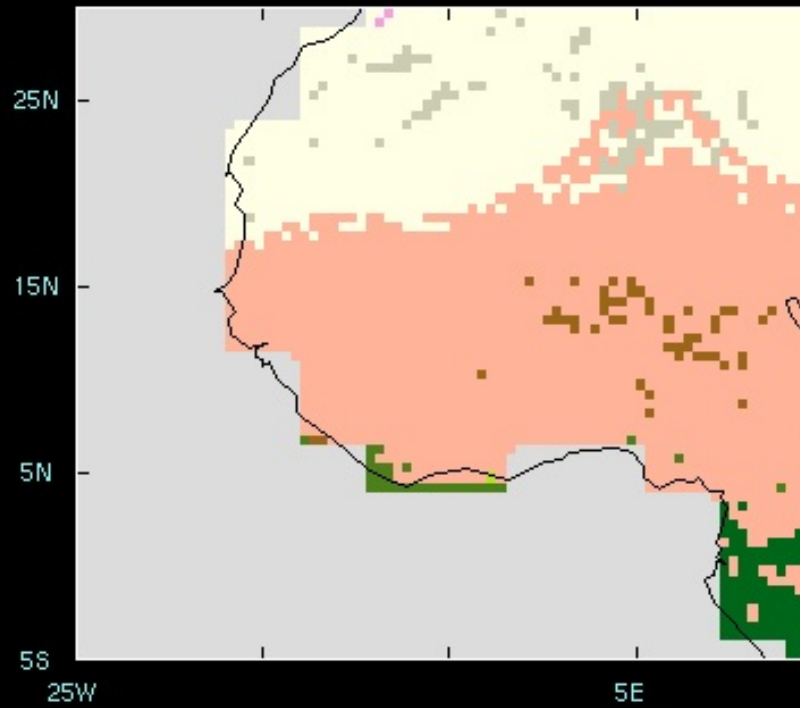
Page 1370, line14: missing 'the' (Because the precession parameter)

Page 1370, line15: northerly, not norther

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Biomes_alt_high_co2



Biomes_alt_high (using BIOME4)

