

Interactive comment on “Late Cretaceous (Late Campanian–Maastrichtian) sea surface temperature record of the Boreal Chalk Sea” by N. Thibault et al.

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general comments The paper is a fine case study on late Campanian-Maastrichtian climate/sea surface temperature in the Boreal chalk sea. I see no major issues, the methods are ok, the results are presented nicely, and the conclusions are sound. More regional data like this is needed for better constraints to greenhouse palaeoclimate research.

specific comments: (1) The discussion may be a little broader in scope, i.e. include more data such as continental climate data of Gao et al., *Geology* 43/4, 287-290, 2015 (very similar time interval). (2) The sea-level

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relation to ice and isotopes may not be as straight forward as presented, see recent papers on greenhouse sea-level alternatives and oxygen isotopes by Wagreeich et al., 2014 (*Austrian Journal of Earth Sciences*, 107/1)- (http://www.univie.ac.at/ajes/archive/volume_107_1/wagreeich_et_al_ajes_107_1.pdf), and Wendler & Wendler, 2015 (*Palaeo-3*, <http://dx.doi.org/10.1016/j.palaeo.2015.08.029>). Gao et al. (2015) indicate high pCO₂ for the 66+ Ma lowstand of Miller et al., thus a questionable cool interval.

technical corrections: p.5050. I advise to use Ma, ka throughout (see Holden et al., 2011) p.5054. Nannofossil Temperature Index - there were several other NTIs suggested as I remember from literature, for different time intervals - use lower case? nannofossil temperature index p.5055 (and ice)? p.5071. Kominz; you may use a smoothed curve for your NTI here.

Great work!

Please also note the supplement to this comment:

<http://www.clim-past-discuss.net/11/C2432/2015/cpd-11-C2432-2015-supplement.pdf>

Interactive comment on *Clim. Past Discuss.*, 11, 5049, 2015.