**Climate
of the Past**

Open Access

Discussions

Interactive
Comment

Interactive comment on "Climate variability and relationship with ocean fertility during the Aptian Stage" *by* C. Bottini et al.

C. Bottini et al.

cinzia.bottini@unimi.it

Dear Editor, We are grateful for the very helpful comments of the two Reviewers, and also by your own supportive comments. We have responded in the two rebuttal letters to all the points raised by the Reviewers, Alexis Godet and Fabienne Giraud. As far as the Review by F. Giraud, in addition to the rebuttal letter we uploaded the pdf of the annotated ms with individual replies to specific criticisms-requests.

The major concern raised in your own comments regards the statistical analysis (FA and PCCA) as stressed by Reviewer #2. In our replies we clarified how we selected the taxa used in FA and PCCA, and the statistical approach adopted after the methodology first outlined by Roth and Krumbach (1986) and successfully applied in subsequent papers. These statistical analyses were used to verify the occurrence, in the selected

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper

sections, of factors identifying nannofossil taxa groups similar to those found in previous works in other sections and settings. Indeed we found the same factors (fertility and temperature related), although the percentages are quite low. As in previous papers the extracted factors explain only up to 50% of the variance, suggesting that nannofossil assemblages are influenced by a complex interaction of various paleoenvironmental parameters. We underline that the results of the statistical analyses are not taken into account in the calculation of the nannofossil Temperature and Nutrient indices that, therefore, are totally independent. We, in fact, calculated the NI and TI indices starting from "raw data" (i.e. calcareous nannofossil relative abundances) applying the formulae proposed by Herrle et al. (2003) who selected the nannofossil species on the basis of their paleoecological affinities as reconstructed in previous studies. The statistical analyses were included to show that the results are consistent with previous investigations. However, we agree that this part maybe considered weak from a rigorous statistical point of view and does not provide crucial information. Since the statistics constitute only an additional part to the entire work, we prefer to delete FA and PCCA text and figure in the revised version of the ms. We stress the fact that results and interpretations will not be affected, because Temperature and Nutrient Indices are absolutely independent and the paleoclimate-paleofertility reconstructions stand without the statistical analyses. If our proposal of deleting text and figure related to statistical analyses (FA and PCCA) is accepted, we will submit a revised ms accordingly (chapter 2.3, page 702 line 25 to page 705 line 2, page 712 line 26-27, Figure 6 and Tables 1 to 6 in the Supplementary material will be removed).

Your sincerely Cinzia Bottini

Please also note the supplement to this comment:
http://www.clim-past-discuss.net/10/C634/2014/cpd-10-C634-2014-supplement.pdf

———————————————————

Interactive comment on Clim. Past Discuss., 10, 689, 2014.