

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

Anonymous Referee #2

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Dear editor

I've read carefully the manuscript submitted by Bottini et al. The scope of the paper is appropriate for the review. The manuscript is well written with a high number of figures and tables, but may be too much figures and some of them are not clear, the references are up to date.

However, in this present form, the manuscript needs major revisions.

1 - Data concerning OAE 1a for the different settings considered in this work have been already published. The authors present new data, but it is really difficult to know what is new with respect to preceding works. It needs to be clarified.

2 - The methodology used in this work is the major problem. The authors present first

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raw data (stratigraphic curves of different proxies, and in particular, nannofossils). In order to better see the trends, the authors used statistical analysis, which is not well constrained! (see my detailed comments directly written on the manuscript). From the results of this factorial analysis, they construct nannofossil temperature and fertility indices. And from these indices, they construct two other synthetic curves. So there are not less than 4 transformations from raw data! It is not serious! and the statistical analysis is really not rigorous.

3 - The interpretations are based on the preceding step and seem highly speculative to me in this form. The stratigraphic curves presented by the authors present clear trends and are not sufficiently used by the authors. The raw data must be taken into consideration first for the interpretations. Some parts of the discussion need to be clarified and developed. For me, the new part does not concern the OAE 1a, already studied by the authors in the same and other settings, but the late Aptian and the earliest Albian and the interpretations concerning the late Aptian and the earliest Albian are not sufficiently documented and developed.

I've joined my comments directly written on the manuscript

Yours Sincerely

Fabienne Giraud

Please also note the supplement to this comment:

<http://www.clim-past-discuss.net/10/C337/2014/cpd-10-C337-2014-supplement.pdf>

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