

Interactive comment on “Mid-Cretaceous paleoenvironmental changes in the western Tethys” by Cinzia Bottini and Elisabetta Erba

Anonymous Referee #1

Received and published: 2 May 2018

The manuscript "Mid-Cretaceous paleoenvironmental changes in the western Tethys, presented by Bottini and Erba is a very nice example how we can use nannofossil paleoenvironmental indicators to record short- and long-term surface water temperature and fertility changes during the late Barremian to Cenomanian, in particular in sedimentary records where the use of organic and/or inorganic temperature proxies (Mg/Ca, TEX86) is limited. The authors could demonstrate that mid-Cretaceous surface water fertility was mostly fluctuating independently from climatic conditions as well as from black shales intervals with fertility peaks during major Oceanic Anoxic Events. The similarity of western Tethys climatic and fertility fluctuations during OAE 1a, OAE 1b, the middle Albian and OAE 1d from other basins is striking - indicating that the changing conditions are of supraregional significance. I have only minor comments

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which might improve the manuscript.

I suggest to use the same scale (percentages, e.g. 0 – 50% or 0 – 25>%) in all figures where you show nannofossil percentages (Fig. 2-4). This gives the reader the possibility to assess which species dominates the signal in which interval.

Line 190: I am a bit unhappy with smoothing the records between Furlo and Le Breccie section differently. Did you use a simple running average or what do you mean with smoothing (e.g., Stineman function, weighted curve fit, ...)? I suggest treating the records in the same way.

Line 195: “and a few minor cooling intervals (c, d, e?).” The intervals with a “?” indicating cooler intervals. How significant are the presented peaks? I feel that this might be a little bit overinterpreted and I suggest deleting them from the discussion and the figures.

Interactive comment on Clim. Past Discuss., <https://doi.org/10.5194/cp-2018-34>, 2018.

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