

Interactive comment on “Late Pleistocene paleoproductivity patterns during the last climatic cycle in the Guyana Basin as revealed by calcareous nannoplankton” by G.-E. López-Otálvaro et al.

G.-E. López-Otálvaro et al.

Received and published: 18 April 2008

Dear Dr. A. Negri,

We acknowledge your valuable comments and careful revision that helped to improve this manuscript. We briefly explain here our reply in response to your suggestions which will be further considered in the final revised manuscript:

Concerning the general comments about the figures: The current discussion format does not allow to display the original size of the figures, but they will be turned and expanded in the final revised manuscript.

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Interactive Discussion

Discussion Paper



1. A brief review of previous studies in the region will be added to the final manuscript that will include some earlier micropaleontological studies such as Kinkel et al. (2000), (Vink et al., (2000, 2001), Vink (2004), geochemical studies such as Rühlemann et al. (2004), or Bassinot et al. (1997).

2.2. LINE 9 López-Otálvaro citation will be changed by López-Otálvaro et al. (in prep.)

2.3. Variations of CEX' index:

As far as we know the original CEX index proposed by Dittert et al. (1999) measures the relationship between a delicate species, *E. huxleyi*, and a strong calcified species, *C. leptopus*. Later, Böeckel and Baumann (2004) and Böeckel et al. (2006) suggested a modified CEX index (called CEX' index), adding the small and delicate species *G. ericsonii*.

Following your suggestions we indicate the species used in this work to calculate the CEX' index: *E. huxleyi* and *G. ericsonii* and small reticulofenestrids smaller than 3 μm . Concerning this index we made the following considerations:

1. The abundance of *E. huxleyi* is not consistent throughout the record. Additionally, when it is present, it is low abundant even during marine stages 2-4, which is traditionally identified as the acme interval of this species. Consequently, the statistical behavior of this species can mask the CEX index.
2. *G. aperta* was preset with very low abundances (much lesser than 1%) and was not included in this index because of its strong shape in spite of their smaller size.
3. Reticulofenestrids smaller than 3 μm are generally difficult to identify at species level, using the light microscope. Especially because the abundance of gephyrocapsids could be underestimated when the bridge is absent in the specimens.

Consequently, higher values of CEX' index indicate better preservation of the coccolith carbonate (the most delicate species such as *E. huxleyi*, *G. ericsonii* and small

reticulofenestrids are well preserved), and lower values of CEX' index are related to dissolution of the coccolith carbonate (poor preservation of those delicate species).

3. Results

Page 19, Lines 1 and 2. The order suggested will be considered.

Page 19, Line 5. The order suggested will be considered.

4. Discussion

Page 21, Line 5. The change suggested will be considered.

Page 21, Line 12. The change suggested will be considered.

Page 21, Line 28. The change suggested will be considered.

Page 22, Line 4 to the end of the page. These paragraphs will be summarized and re-organized in the text in order to avoid confusion and to facilitate the reading comprehension.

4.2. Runoff and reworked specimens

In effect, evidences of river runoff can be seen through the influence of reworked specimens. But reworked individuals (calcareous nannofossils, planktonic foraminifers, diatoms) or freshwater-related species (phytoliths or freshwater diatoms) were not recognized in this study. Although this observation was not included in the original manuscript it can be added in the final revised manuscript. However, although runoff influence is not recorded by the current micropaleontological data, its influence on the sedimentary section studied cannot be discarded.

Interactive comment on eEarth Discuss., 3, 11, 2008.

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