

### *Comments to Authors*

Journal: BG

Title: Hydrological processes affecting the subtropical NE Atlantic (34–38N) over the last 30 ka:  
evidence from phyto- and zooplankton assemblages

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### **General Comments**

The major content in this manuscript is on the evaluation of dinocyst-based SST reconstruction, and the paleoceanographic discussion off Portugal, in Gulf of Cadiz, and off NW Morocco over the last 30kyrs. The availability of dinocyst as paleoenvironmental proxy in the study area is well documented. I feel that the contents in this manuscript are valuable for further advance in paleoceanography and micropaleontology. I have three minor comments and one editorial request. I wish that this manuscript is finally published in BG for the related international communities.

### **Specific Comments**

#### 3.2. Dinocyst analysis

I would like to see the species numbers in order to confirm that the sample size (300 dinocyst counts) or counting method (100 specimen counts except for *L. machaerophorum*) was adequate for quantitative discussion including dinocyst-derived SST. In addition, the information on confidence limit for species% data may be helpful for readers on the understanding of quantitative discussion including minor species% (less than 10%), because the confidence limit may be estimated as  $\pm 10-14\%$  for 100-400 specimen counts in general (UNESCO 2010: Microscopic and molecular methods for quantitative phytoplankton analysis. *Manuals and Guides* 55).

#### 5.2.2. Transfer functions vs. alkenones

It may be helpful for readers if authors supply additional information on the reliability of alkenone-SST as annual temperature proxy in the study area. I do not know whether the most productive season of coccolithophores producing alkenone had been maintained in fall in the study area for the past 30kyrs. The alkenone-SST in Holocene shows the middle between the February and August dinocyst-SSTs (Fig. 6). However, the alkenone-SST in the lower half of Core MD04-2805CQ is similar or nearly the same to February SST derived by dinocyst rather than middle SST between February and August SSTs.

#### 6.1.1. Last Glacial Maximum

In Fig. 5, I could not identify three warm periods in Gulf of Cadiz and NW Moroccan margin.

Although the authors state on the existence of these warmer periods, is the discussion of this section limited to the results from the SW Iberian margin?

#### **Technical Corrections**

Fig. 1. Modify the label of longitude “O” (garbled characters?) to “W”.