

## ***Interactive comment on “The MIS 5 palaeoenvironmental record in the SE Mediterranean coast of the Iberian Peninsula (Río Antas, Almería, Spain)” by T. Torres et al.***

**Anonymous Referee #2**

Received and published: 22 September 2015

This paper develops a multidisciplinary record on a Spanish site and intends to provide information for the interval MIS 5. This paper corresponds surely to a long work particularly if we consider the multiproxy approach. Nevertheless, the results presented inside this paper raise many and many questions:

1- The chronological framework points the sequence in the time interval that extends from MIS 11 to 3. However, in my opinion, the age model developed here is not sufficiently reliable. In fact, there are many age-inversions that are not really taking into account in the model which is not discussed critically. No table relates with precision dates in depth along the series and there is no figure showing the age model (relation age depth) used for the climate conclusions. Ages constantly intersect especially

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during the most important time interval. During the MIS 5e we have successively the dates 151.9 below the base and in order 168, 139.5, 136.6, 156.5, 117.9 kyr.

2- The number of samples presented for the pollen analyses are not sufficient to conclude about vegetation and climate. There are 31 samples only for a very large time-interval. We do not see on the diagram the relation between data and age. There are no pollen zone defined and no relation to the classic chronology in the diagram and it remains very difficult to situate the samples in a climatic picture. Same remark may be done for the other records.

3- There are not really comparisons between the different datasets presented in the paper (sedimentology, organic geochemistry, biomarkers, pollen) and then no discussion based on the multiproxy record in terms of climate. Consequently, the manuscript is a document hard to evaluate in terms of reliability of data in a climatic context.

Taking into account these remarks, I am so sorry about that but it remains impossible for me to recommend this paper in this present form for a potential publication in Climate of the Past. Authors may resubmit the paper after several rearrangements and improvements.

In that way, I propose few basic suggestions.

a- The age model have to be more detailed and discussed as it represents the basis of the discussion for climate considerations on the MISs and especially for MIS 5.

b- Each dataset (sedimentology, organic geochemistry, biomarkers, pollen) have to be presented with reference to age model and to the classic chronology. This will allow a better discussion of each dataset and more possibilities for a best comparison between datasets.

c- After presenting each dataset, the most important curves of the multiproxy dataset need, in a second step, to be presented in a synthetic figure to show directly the relations between the different proxies.

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d- At the end, authors have to try to replace the results in a broadly context in the Mediterranean, eventually in another figure, which might be one of the threads of discussion.

Some little additional remarks:

- Please define the acronyms: AAR?? Amino acid racemization dating?
- Increase character size in the figure, they are too little and part of the figures are unreadable.
- Authors have to provide detailed legends for the figures. Legends have to explain a little more what is presented in each figure. What represent the dotted and full lines in figure 5. It is interesting to show an ACP but is it reliable on 37 samples in such a long record? If authors consider it is, they have to underline the different units depicted in the schema by circle them (here we do not see which square correspond to which depth) and link them to the different time periods to help the reader.

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Interactive comment on Clim. Past Discuss., 11, 3897, 2015.

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