Clim. Past Discuss., 11, C1845–C1847, 2015
www.clim-past-discuss.net/11/C1845/2015/

Climate of the Past Discussions

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.

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Received and published: 29 September 2015

We thank the suggestions of Referee #2

1.-For the comparison of the ages it is definitive to look at the standard deviation, and not only to the mean. In this sense the amino acid racemization datings were calculated. The age calculation algorithms to establish the age of D/L values measured in ostracodes were presented in Ortiz et al. (2004). Age uncertainty is the standard deviation of all the numerical ages calculated from the amino acid D/L ratios. In general, the standard deviations of amino acid racemization ages (obtained using 5-6 analytical samples) were higher than those usually obtained with other dating methods which, tra-

ditionally, are performed using a single sample, the standard deviation being attributed only to the sample error. Our results highlight the importance of dating numerous specimens per horizon in geochronological studies (e.g., Goodfriend, 1989), that is to say, dating numerous individuals and using their ages to estimate the mean age of the horizon. This explains the higher values of samples dated by means of the standard deviations of samples dated by means of the amino acid racemization compared to other ages, as the former results involve the addition of genus-linked, intra-shell, taphonomical and analytical errors. In our manuscript, we do not establish the age (MIS and sub-stages) according to paleobiological or sedimentological interpretation but based on Amino Acid Racemization Dating. This dating method has been proved to be a feasible dating method in a special way when, as in this case, the samples consisted on ostracod shells. But as local thermal history differences can slightly interfere with the calculated ages we confirmed the accuracy of our data comparing with the U/Th published ages of the Alfaix tufa deposits, where we recovered our own samples for AAR dating (see manuscript). The Alfaix tufa deposits were dated by Schulte et al. (2008) using U/Th dating (169$\pm$9 ka and 148$\pm$8 ka) We will expand our discussion about AAR ages.

2.-Samples were prepared and observed under microscope but pollen was absent in the lower part of the record (MIS 11). In the rest of the core, we selected samples at 30 cm intervals, but in levels made of sands and conglomerates, we did not find pollen. In our view the number of samples (37) between 19 m and 3 m is sufficient to observe main palaeoenvironmental changes, all together with macro-palaeoentological, organic geochemistry and sedimentological information.

3.-In our view, the three types of information derived from sedimentary environments, organic geochemistry, and palynology were integrated in Figure 2, but we will amplify the Discussion to integrate more clearly the information provided by the different environmental proxies. Figure 2 showed an integration of the interpretation of all datasets, but we will present in a synthetic figure the most important curves of each proxy. We

will amplify the comparison of our results with other Mediterranean sites.

a.- See response to point 1.) b.- See response to point 2.) c.-Ages are presented in Figure 2, in which the interpretation of the different proxies was integrated, but we will present the chronological scale in Figures 3, 4, and 5. d.- We will amplify the comparison of our results with other Mediterranean sites.

Some little additional remarks.- We will considered all the suggestions.

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