

We would like to thank the referee 2 for valuable comments on our article. Please find below our point-by-point replies (in blue) to the reviewer comments (in italics)

*This paper presents a detailed pollen record from the Adriatic Sea, covering most of the last 13,000 years (the last 2000 years are missing). Reconstructions of vegetation and climate are discussed and compared with regional and global climatic records. Overall, the data presented here are sound and the interpretations of the findings are convincing. However, there are a few issues in the data presentation and the format that need to be addressed.*

*Age model: We are told that the age model is based on 21 AMS 14C dates (and not 13C, please correct throughout the manuscript), and INTCAL04 is used. That is puzzling as dates are derived from marine plankton, so Marine09 (a more recent database) should be used. Furthermore, there is no information about the reservoir correction applied here. If possible, add a column for R (or deltaR) and ideally, using CLAM, an age-depth graph with the probability envelop. Because we cannot verify here the data, one can question one of the concluding points, with regards to the time lag with the ice core record.*

The age model was previously published by Siani et al (2001, 2010) and was based on precise independent past and pre-bomb (see Siani et al. 2000) reservoir 14C age estimations. This means that we establish our age model independently without using a database as Marine 09 that is essentially based on the Cariaco record (Hughen et al., 2004; Reimer et al. 2009) which has been clearly questioned during the last Congress of Radiocarbon held in Paris in July 2012.

The next calibration curve INTCAL12 (special Radiocarbon issue in press) will not involve the Cariaco record and will match better with INTCAL04. For this reason we believe that our age model, also supported by a detailed tephrochronology study (Siani et al. 2004), is certainly the most robust that we could get.

As this correspond to the age model used in the paper published in the same volume we think that it is better to use it in order to keep the homogeneity of age model used for the core 90-917 records presented the different papers published in the special issue.

The mistake between 13C and 14C was a typology error that has been unfortunately repeated again and again in the text. We apologize on that and we have corrected it.

*In section 5, page 1982, lines 11 to 15, SSTs are mentioned but not shown. It would strengthen the comparison if you could add it in your Fig 5 for instance.*

Plots are in a paper already published in the special volume and I refer to this paper that is in the same volume

We have added the foraminifer SST in the revised version of the paper to simplify the comparison..

*In section 6.1, page 1985, lines 10-15, I do not agree with the description of MTCO. In fact, they remain constant until 7700 y BP and then, you see fluctuations followed by an increase. MTWA show a strong decline until 7700 y BP. So, what we see here is a decrease of the seasonality between the beginning of the Holocene and 7700 y BP. I suggest that you add a horizontal line to indicate modern values for each of the variables.*

Yes it will be helpful to point the modern values and we will add it in the figures. We have done it in the revised manuscript. The general trend displays a slight but significant decrease in the first part of the Holocene which is more obvious in the Fig. 6 when using temperatures anomalies instead of temperatures.

*Fig. 5: How were the anomalies calculated? Caption should be more accurate and say “temperature anomalies”*

Anomalies are calculated as follows:

Temperature anomalies = reconstructed value – modern value

*Structure of the paper some sections should be moved in order to have a more coherent manuscript. - Section 2 should be included in the material section. - Section 3.4 (pollen inputs) belongs to the discussion. - Section 3.5 (Clay mineral origin) possibly in the discussion. - Section 4 should be called Material and methods*

According to the remark of the reviewer, we have changed the structure of the manuscript: these two sections (3.4 and 3.5) are now in a new item of the text. However, section 2 remains a separate part of the manuscript as it concerns only the age model and is not part of the new data, thus we prefer to separate this part from the analytical methods.

*Some minor corrections were also annotated in the text.*

Minor corrections have been taken into account in the revised version.

Concerning the mention of the Poaceae in the additional document, this taxon is not characteristic of the semi-desert/steppe vegetation. However, its increase is mentioned in the table 2 and we have now noted its presence as well as those of Asteraceae in the revised text.