We would like to thank the referee 3 for valuable comments on our article. Please find below our point-by-point replies (in blue) to the reviewer comments (in italics)

I think this is generally a good manuscript and important contribution to the understanding of Mediterranean ecosystem- and climate development during the Holocene. Palynological results from core MD90-917 have already been published by some of the authors in 1998, but I always hoped that these would be complemented with a better age model and higher resolution, and this is what this manuscript, together with interesting sedimentological results, delivers. There is no doubt from my side that these datasets should be published, and I also think that the different aspects of the discussion are worth publishing.
However, it seems to me that parts of the text and the figures were done quite in a hurry, and there are some mistakes, which can be seen even when only quickly scanning the manuscript.
E.g., like reviewers 1 and 2, I was a little puzzled that "AMS 13C ages" are mentioned at several places in the manuscript. The manuscript delivers four different wrong spellings of the name "Schmiedl" (related to Schmiedl et al. 2010). There are many mistakes in the figures and figure captions

The mistake between ^{13}C and ^{14}C was a typology error that has been repeated again and again in the text. A similar error has been done on the reference Schmiedl
We apologize on that.This has been corrected.

The English, while not overall bad, seems to contain several "frenchisms" (see below). Since I am not a native speaker myself, I cannot tell in some cases if the grammar is correct or not, but I would definitely suggest to have a native speaker carefully check the complete manuscript!

We took this comment in account and Simon Goring, who is a native speaker co-author, will check the manuscript.

The abstract is a particularly serious example. I will discuss this in detail below. The authors have already submitted a revised version of one figure, but there are several mistakes and editing problems in others. In the following, some issues are mentioned more detailed. I also mention misspellings where I found any.

Some points concerning the content/interpretation have already been discussed by reviewers 1 and 2, I only mention additional points I found.

Abstract

1971, 4: "pollen data... allows us" change to plural: "pollen data... allow us" The first paragraph of the abstract is something I would put in an introduction, but not in an abstract. But even for an introduction, the first statement would be too imprecise. Of course, the past can be key to the future, but this sentence sound like future ecology in the Mediterranean will only return to earlier states. Generally, the abstract does not give any precise information. Shifts are mentioned (from what to what?), changes in precipitation are mentioned, but not quantified - although absolute values are one of

the strong points of this publication!

OK, the abstract has been rewritten.

1971, 21: Is it really necessary to state that multi-proxy-approaches are a good thing? I suggest to completely rewrite the abstract. Leave out unnecessary points, and give more precise statements of what you have found!

We have changed the abstract in the revised version and add quantified values for summer precipitation.

Introduction

The first two paragraphs appear quite complicated to me. I am sure it can be shortened significantly. Furthermore, some sentences are strange, e.g.:
1972, 11: "... past shifts in precipitation may help to envisage..." This sounds like the shifts themselves are doing interpretations. Analyses of past shifts may help...1972, 18: "Its central location.... should be highly sensitive..." The location itself is certainly not sensitive, but the regional climate and the ecosystems. Of course, everybody will understand what you are meaning, but still, you should avoid such sentences. There are more examples throughout the text. The second half of the introduction is okay in my opinion.

The introduction has been modified in the revised version. Nevertheless, some general sentences – modified – are necessary to underline the interest of the Adriatic basin in illustrating climate connections as it is located right at the junction of conflicting influences.

2 Lithology and age model
The point with 13C vs 14C dates was already mentioned by the other reviewers.

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

3. 1 Climate and atmospheric circulation patterns
1974, 7: Why not "Azores High"?

OK

5 Vegetation and climate for core MD 90-917

1981. 16 “”Combourieu Nebout” instead of “Combourieu Nebout” for the 2009 paper (see p1986, l12, although it is probably a strong spelling? Occurs several times in the text.

There are two ways to write my name but for bibliographic purpose and citations overview the Combourieu-Nebout spelling is preferred.

1981, 16: The Younger Dryas is only indirectly mentioned in Kotthoff et al. (2008, QSR), but discussed in more detail in Kotthoff et al. 2011 (JQS) which is already mentioned in the references, and the vegetation during the YD in the Eastern Mediterranean is discussed in Kotthoff et al. (2008, The Holocene),

We have changed the references

1982, 11-1983, 5: You seem to avoid discussing the second decrease in temperate forest pollen after the PBO (around 10 900 yr BP according to your age model). Interestingly, such a second decrease can also be found in Italy (Monticchio, Allen et al. 2002, Quaternary International) and in the Aegean region (Kotthoff et al., 2008, The Holocene). Does the question mark in Fig. 4 imply that you are not sure about the correlation with the ice core data, or not sure about the data point? Compare also comments to section 6.1!

I am sure of the PBO oscillation (increase in PB event and a following decrease just after (recorded by three samples) but the second event around 10 900 yr BP - underlined with a question mark – is more questionable because it only corresponds to a single point

6.1 Temperature pattern
I may misunderstand something here. You write: 1985, 10: "The lowest MTCO in the record occurs during the Preboreal anomaly, before 12 000 cal yr BP." I can see two significant declines in the MTCO, one at around 13 000 yr BP, at the onset of the YD according to your own interpretation, (fits well with other records) and a second around 10 900 yr BP, which is related to the decline in temperate forest pollen at the same time (see comments to section 5!). The PBO, according to your Fig. 4, is at around 11 800 yr BP (I agree with you, in spite of the slightly too old age that this may correlate with the decrease visible in NGRIP at 11 400 yr BP...). Your data does not reveal a significant decrease in the MTCO during the PBO, but in the MTWA. In the following:
1985, 24: "Temperature reconstructions indicate several cold..." you again do not refer to this event after the PBO. I think, however, this should be discussed in more detail.

We have changed the discussion to make it clearer and to delete some mistakes in the revised version. For instance:

- “before 12 kyr” which indeed refers to the onset of the YD is thus replaced by ‘YD”.
- The PBO anomaly is indeed characterized by a significant decrease in the MTWA and not MTCO (CPD submitted paper, Figure 4), and by a slight but significant temperature MTWA anomaly (CPD submitted paper, Figure 6)
- Moreover, the figure 6 displays anomalies for the last 12 000 yrs and thus does not show the onset of YD.

As mentioned above, the decrease at 10900 correspond to the event pointed in the figure 4 by a question mark. It seems that the slight decrease in temperate trees recorded by only one sample severely alters the climate reconstruction and temperature anomalies. We have changed the text accordingly to moderate the interpretation of this event.

In your Fig. 3, it looks like the event around 10 900 (I assume, it can be correlated to events around 10 500 yr BP in other records) is not just reflected in one sample, but in three subsequent samples...

We can hardly interpret the short event at 10.9 (recorded in the pollen record by one point) without more precise analyses. Nevertheless, although temperature decrease correspond to a single point, the associated temperature anomalies correspond to three points during this period, which may support the significance of the observed climatic event

1986, 3, 5: "Schmiedl" instead of "Schmield"

OK.

7 Conclusions
1990, 14-17: This sentence is confusing, avoid "provides... and provides", "provides the... signal... to... fluctuations" sounds strange.
The three points are fine, but, similarly to what I mentioned concerning the abstract, I wonder why you do not give some quantitative results here, e.g. concerning the precipitation peaks.

Conclusion paragraph have been corrected and now include quantitative estimates

References
I have not checked the references in detail, but since there are some references related errors in the text and the figures please check if there are more mistakes in the references!

References have been checked another time to avoid errors

1992. 23 "Combourieu Nebout" instead of "Combourieu-Nebout" (see above...)
1999, 11: "Schmiedl" instead of "Schmieldl"

OK. (see above for my name)

Tables
Table 1: 14C...
Table 2:
Is it on purpose that family names are written in italics?
"Q. ilex" instead of "Q. Ilex" (several times)

This have been corrected

Figures

The figures are generally well-organized, but there are so many mistakes...

All figures have been checked and corrected.

Fig. 2: Remove the points over the "i" in Cichorioideae and Asteroidea.

In my version, "Plantago" is bold instead of in italics, same with "Ephedra" and "Artemisia". Texts are overlapping in my version.
"YD" touches the line next to it.

Corrections have been done in the revised manuscript

Fig. 3: You mention "Pann, Twin, Tann, Tsum" in the text, in figure, I see PANN, MTCO, TANN, MTWA. What do you show, coldest month or winter?
"Corylus" and "Quercus" in italics, please.

Corrections have been done in the revised manuscript. We only show MTCO and MTWA, seasonal parameters are only provided for the precipitation.

Fig. 4: The color of the green and red text is not the same as that of the graph.
Are you sure the lines are of the same thickness?
Why are the numbers very close to the scales on the left, but far away on the right side?

The color of the green scale is now the same as that of the graph. Corrections have been done in the revised manuscript

Fig. 5: Change Age (kyrs) to Age (yr)! Remove the unnecessary "c"!

OK.

Fig. 6: Compare to comments to section 6.1: I can generally not follow some of the arrows you show in this figure. They look rather arbitrary. Why not use something like a running average?

We have removed the arrows as the trends are obvious. Nevertheless applying a polynomial test on our record provides the pattern underlined by arrows for MATW and MTCO with the same minima at around 7700 yr.

Fig. 7: On the right side, Age (yr) almost touches the numbers.
It is "Schmiedl et al." (see above!). Replace both "Schmieldt" (figure) and "Schieldt" (caption)!
Fletcher et al. 2013 (instead of 2012 in the figure)

This have been corrected.

Fig. 8: Consider using a real per-thousand symbol, not 0/00.
Why upper case for " Precipitation", but lower case for "discharge"?

This have been corrected.

Final note
Just to state it again, I am convinced this has the potential to be a good publication. The new data fill a gap concerning marine palynomorph records. One additional thing

I wondered: in Combourieu-Nebout et al. (1998), there were also dinocyst data – was the dinocyst dataset not improved the same way as pollen dataset? It would have been a helpful addition to this manuscript...

The dinocyst data were not completed so far, and it was not appropriated to show these low-resolution data in front of the new high-resolution pollen dataset.

Some sections only need minor edits, but some sections, particularly the abstract and the first half of the introduction, need a careful revision. A more detailed discussion of particularly the PBO and early Holocene would be fine. The figures and references should be carefully checked for additional mistakes.

This have been done.