

Interactive comment on “Pollen-based temperature and precipitation changes in the Ohrid Basin (western Balkans) between 160 and 70 ka” by Gaia Sinopoli et al.

Gaia Sinopoli et al.

alessia.masi@uniroma1.it

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After a debate among authors, we decide to reply more in detail to the referees clarifying how we intend to improve the manuscript. We would ask the editor and the referees to consider this version.

The quantitative palaeoclimate reconstructions during the Quaternary is an important to understand the climate changes and its potential forcing mechanisms, thus can helpful for predicting climate changes in future global warming. In this study, a quantitative reconstruction of climate parameters was provided based on the pollen data from the Lake Ohrid in southern Europe, using two complementary approaches including

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'Modern Analogues Technique' and 'Weighted Averaging Partial Least-Squares Regression' during the period from 160 to 70 ka. It is useful for better understanding climatic changes during the key periods of MIS 6 and MIS 5 in the South Europe. In current version I would suggest a minor revision before accepting it for publication. C1 Here are a few basic comments that could guide the authors to submit a more detailed manuscript. 1. For the reconstruction, Pinus has been excluded in this study due to its overwhelming presence in the DEEP would potentially masks climatically controlled environmental signals from other taxa. Because this change should effect on the quantitative reconstruction, so a more detail comparison on reconstruction of climate parameters between Pinus including and its excluding is best presented in the supplementary information.

OF COURSE, OUR FIRST TEST WAS WITH PINUS. AS SUGGESTED BY THE REVIEWER, WE WILL ADD, IN THE SUPPLEMENTARY INFORMATION, A FIGURE ON THE CLIMATE RECONSTRUCTION WITH PINUS INCLUDED. WE DON'T DISCUSS IT BECAUSE THE RESULTS ARE CLEARLY LESS GOOD THAN THE FINAL RESULTS OBTAINED EXCLUDING PINUS. WE ATTACH A PRELIMINARY VERSION OF THE FIGURE.

2. In Figure A2, the most values of Squared-chord distance between the first and the last analogue for a chosen climate parameter (TANN) calculated by MAT method are more than 0.3. The values may be larger than the no-analog/analog threshold that could accurate and precise palaeoclimate reconstruction. Therefore, a systematically analysis between the Squared-chord distance and precision of palaeoclimate reconstruction need to employ.

WE ARE NOT SURE TO UNDERSTAND WHAT THE REVIEWER MEANS: THE DIFFERENCE BETWEEN THE FIRST AND THE LAST ANALOGUE IS CLOSE TO 0.1, NOT TO 0.3. THE THRESHOLD FOR THE ANALOGUES SELECTION IS DEFINED BY THE METHOD (SEE GUIOT ET AL. FOR DETAILS), AND HERE NO NO-ANALOGUE SITUATION HAS BEEN DETECTED.

3. Results suggest that the Lake Ohrid palaeoclimate reconstruction shows greater similarity with climate patterns inferred from northern European pollen records than with southern European records in figure 6. Because the Lake Ohrid locates in the southern European, thus a more detail explanation and possible mechanism should be mentioned.

WE DID IT, PLEASE LOOK MORE IN DEPTH THE DISCUSSION. FOR EXAMPLE: "THIS SIMILARITY IS PROBABLY DUE TO ITS HIGH ELEVATION, CAUSING ENHANCED PRECIPITATION IN RELATIVE TO THE REST OF SOUTHERN EUROPE AND MAKING IT SIMILAR TO REGIONS DIRECTLY SUBJECTED TO THE NORTH-ATLANTIC CIRCULATION" AND "THE CONNECTION BETWEEN LAKE OHRID AND THE NORTH ATLANTIC (FIG. 7), IS ALSO HIGHLIGHTED BY THE EVIDENCE OF THE MELISEY I STADIAL, WHICH CORRESPONDS TO NORTH ATLANTIC EVENT C24 (AND TO GS25), THE MONTAIGU EVENT, CORRESPONDING TO C23 (AND GS24), AND THE MELISEY II STADIAL, WHICH CORRESPONDS TO C21 (AND GS22)".

4. Please check all the language in the text, and correct it to the English, e.g. page 5 lines 1-3, and page 6 lines 35-36.

SURE, THANK YOU

Interactive comment on Clim. Past Discuss., <https://doi.org/10.5194/cp-2018-71>, 2018.

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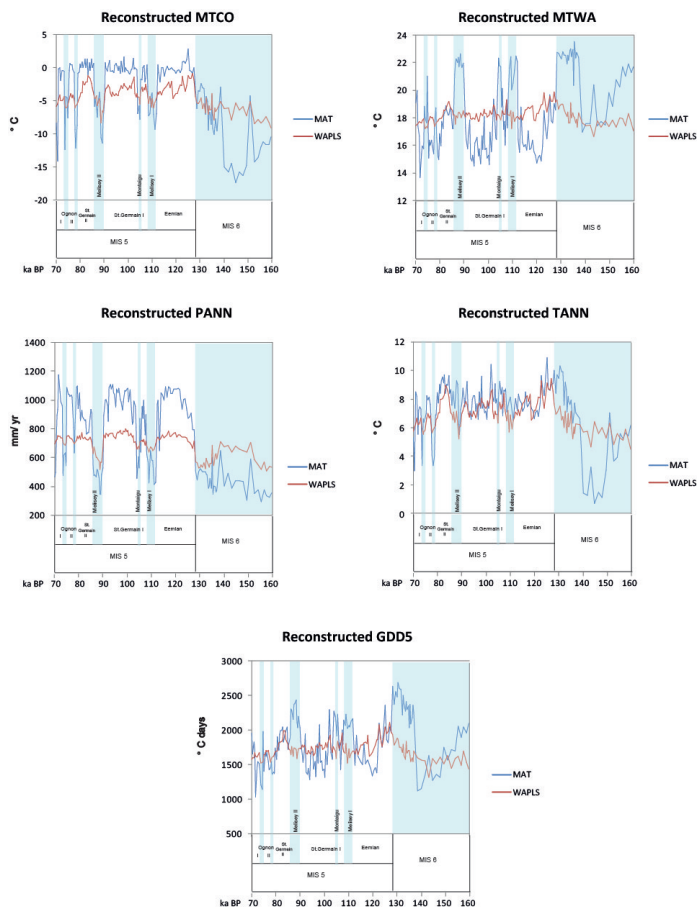


Fig. 1. Climate parameters obtained including Pinus