

Interactive comment on “A new high-resolution pollen sequence at Lake Van, Turkey: Insights into penultimate interglacial-glacial climate change on vegetation history” by Nadine Pickarski and Thomas Litt

Anonymous Referee #2

Received and published: 31 January 2017

General comments:

This is an exciting and valuable new data set and a major contribution to the knowledge of past climate and vegetation development in the Middle East.

As you clearly show in your discussion, vegetational development, i.e. transitions from open steppe vegetation to various stages of deciduous and coniferous woodland (and vice versa) are not only driven by temperature, but largely by moisture sources and availability. Thus it is somewhat risky to directly relate the Lake Van pollen and oxygen isotope records to the marine isotope stratigraphy and to use the MIS terminology. I

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suggest to interpret the Lake Van record with regard to regional climate and vegetational change and use it as a basis for discussing possible correlations to the MIS, insolation etc.

Be careful with the term 'succession'; I think it may not be used in a central european sense. At Lake Van there is a distinct gradient in moisture from south-west to north-east; the 'succession' from open steppe to deciduous oak woodland as described here might rather be a movement of the different vegetation formations from SW to NE than an all-over woodland expansion.

Minor improvements and suggestions:

(Linguistic and grammatical improvements suggested by referee#1 are not repeated here)

Line 114: please provide some additional information on how you did the synchronization

Lines 157 ff.: you may replace 'forest' by 'woodland', '(sparsely) wooded landscape'

Line 163: Chenopodiaceae max. 70%

Line 217: how did the vegetation change?

Lines 231-234: please give a brief description of this relationship

Lines 239-241: What is the link from the Lake Van vegetation to the MD01-2447 record based on?

Line 315: delayed - relative to what?

Line 347: replace 'during' by 'between'

Line 379: Do you have any idea, why this evidence is missing at Lake Van?

Line 426: 'dense' does not really fit with a steppe-forest - maybe 'well developed'

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Lines 441-444: Please add a few words saying what is different / new / special at Lake Van

Fig. 2b: Why is *Thalictrum* in the aquatic group? there are about 30 species in Antolia, most of them adapted to dry conditions, some prefer humid soils, but there is no real aquatic species.

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