

Interactive comment on “Vegetation dynamics in the Northeastern Mediterranean region during the past 23 000 yr: insight from a new pollen record from the Sea of Marmara (core MD01-2430)” by V. Valsecchi et al.

Anonymous Referee #2

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General comments This manuscript presents a new and very interesting pollen diagram from a marine core in the Sea of Marmara covering the last 23 cal. ka. Owing to the multidisciplinary study on this core, comparisons with dinocyst data and alkenone-derived SST are possible. A good chronology is available. However some important limitations are highlighted.

The abstract is well written.

Section 3.2 I would remain very dubious for sums lower than 200 grains! It may nec-

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essary to increase the pollen sums by counting more slides. Lycopodium cannot be included in this sum as it is foreign to the assemblages. The reference of Finsinger and Tinner (2005) is only for charcoal and not for assemblages with many different pollen taxa. If you want to follow Rull (1987) you need to make sure you do not have any samples with total pollen sum lower than 200. Add a comment on the preservation state of the pollen grains. There is obviously a large difference between the base of the core (MD30-1) and the rest. I am surprised that you put Ephedra and Hippophae in the group of the temperate types. Can you justify it? Although you have an excellent time resolution for the glacial section and most of the Holocene, a time interval of 420 ± 100 cal. years between samples in the Lateglacial is extremely low (contrary to what you say you will do on page 4185, lines 14-15, and page 4186, lines 7-8), especially if you want to show what is happening in relatively short periods such as the Younger Dryas. Could you not increase the number of samples slightly? Does the Lateglacial correspond also to low sums? If yes, this decreases even further more the reliability of your results.

Results Vegetation set back: of your 4 vegetation set back in the Holocene, I can see only one (2.1 ka) and I have looked hard for 20 % retreats in AP/forest. I cannot see 9.2 ka at all. 5.5 ka seems to be only one sample but it is hard to see, and the fall of oaks does not correspond to the levels with the increase of Chenopod and Artemisia. The change at 7.9 ka is not more different than other changes in the sequence that have not been highlighted. You need to define much more clearly these set backs, describe in more details what is happening, let us know in how many samples, and therefore provide an estimated of their durations, since you have a robust age-depth model.

Discussion Page 4200, lines 1-2: in order to be assertive regarding the absence of human indicators you need to have pollen sums 2 or 3 times higher than what you have now, as many indicators are poor pollen producers.

Minor comments Check the use of italics for pollen taxon names: "Chenopodiaceae,

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Poaceae, Asteraceae, Ericaceae. . .” are not in italics, species names are without capital (page 4187, lines 9 and 12) Page 4184, line 15: from the same core Line 22: Dansgaard Page 4186, line 24: River Page 4187, lines 15-25: call fig. 1 Page 4188, line 9 and page 4194, line 15: Mediterranean Sea Page 4189, line 3: before 31 ± 15 , provide the rate in cm kyr⁻¹ Page 4190, line 2, page 4190, line 2, page 4196, line 18 and elsewhere: Mediterranean with a capital letter M Line 4: between adjacent . . . what? Page 4191, line 23: forests in zone 6 indicate Line 24: pollen zone (zone 5), which Line 27: percentages Page 4192, line 13: I cannot see this increase of steppic elements on your diagram. Be more precise. Lines 25-29: you could consider moving these lines to the discussion Page 4193, line 8: (caspi-brackish) sea. Dominance Line 18: indicate the potential presence of cold-tolerant Page 4194: if you have chosen to write your manuscript in British English all the ‘paleo’ should be ‘palaeo’, eg line 8 and elsewhere. Page 4196, line 20: 8-7.9 Line 21: does not Page 4197, line 10: occurs at 12 cal ka in Nisi Fen [I suppose that here you do not need to write “at only”] Figure 6: provide the meaning of the 2 types of crosses.

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