

## ***Interactive comment on “The 4.2 ka BP event in the Levant” by David Kaniewski et al.***

### **Anonymous Referee #1**

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Comments to the Climate of the Past Discussion article "The 4.2 ka BP event in the Levant" by David Kaniewski, Nick Marriner, Rachid Cheddadi, Joël Guiot, Elise Van Campo.

The article is well written, and the relevant literature generally well taken into account. Unluckily the 4.2 event is not visible in all Mediterranean records. The authors decided anyway (for brevity sake?) not to consider records without the 4.2 signal in the long introduction. This was on the contrary done for the Levant, even if too much emphasis is given to pollen data in presence of human- independent proxy-records from the region.

Scarce attention is paid to the fact that chronologies of single records could be wrong and so the 4.2 event is probably not always well positioned over time.

The conclusions paragraph should be improved, it deserves more work. It's not even

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clear to me if this 4.2 event (clear in central Mediterranean and at least in most of northern hemisphere according to the authors - but in this case only records recording 4.2 event are used) is clear in the Levant or if it is not. Pollen data cannot be used to assess this issue, they can just be a corollary to independent climatic proxies.

I agree with the comment posted by Darrell Kaufman and Nick McKay on the fact that original data should be provided and be available in a public repository.

Please pay attention to these comments on the text lines: 51-54 Pollen is not a good proxy to attest climate changes in recent periods (Li et al. 2014, Human influence as a potential source of bias in pollen-based quantitative climate reconstructions. Quaternary Science Reviews 99, 112-121) in the Mediterranean: many vegetation changes (e.g. forest clearance!) can be human-induced in the last 5 ka. 84-86 Which climate models? Please add references. 88-107 Here the authors mix up different proxy-records. Please note that in case of palynology the vegetation signal cannot be univocally interpreted, due to human induced changes. In fig. 2 no important change (i.e. 0.5 m at maximum) is recorded in the Accesa record around 4.2 ka if compared with previous lake level changes (>2 m). 99 Republic of Macedonia 111 and 121 There are other records in which the 4.2 event is not clear. They should be quoted as well even if the authors decide (line 111) not to use them. 126-128 Floods are documented also in the Near East! See Benito et al., 2015 fig. 3 136-137 Libya is not so further East than Tunisia. . . Have a look also at Mercuri, 2008. Human influence, plant landscape evolution and climate inferences from the archaeobotanical records of the Wadi Teshuinat area (Libyan Sahara). Journal of Arid Environments 72, 1950- 1967. 238-241 It's difficult to rely on a climate reconstruction in this period for such region! Human impact is proved to have been overwhelming! 286-287 Not all data available from other regions have been used. The 4.2 event is complex everywhere! 351-353 This is the first time that the "chronological issue" is considered in this paper. No mention to the fact that single chronologies can float some centuries is made!

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