

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

### **Anonymous Referee #2**

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The article by Kaniewski et al. reviews the available high-resolution paleoclimate data from the Levant for the 4.2 ka event. The authors are probably among the most appropriate researchers to provide such review. They seem to embrace the available literature, report and discuss the last articles published in the literature, and I encourage the publication after minor modifications.

I agree with comments performed by Reviewer 1, and instead of suggesting improvements on the science in itself - which is slightly off my own scientific topic - I'll comment on details that hit me while reading the manuscript.

Along with uncertainties associated with the chronological details pointed out by the Reviewer 1, I think the authors should reformulate parts of their statements regarding uncertainties on the Y-axis. In fact, I personally found that many records presented in Figures 2 to 4 do not always seem, at naked eye, to follow the idea suggested in parallel

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in the text while commenting on one particular dataset. There are probably 2 reasons for that: (i) some low-resolution datasets seem to have been interpolated when some others don't, which is - unless I miss an important point - not always clearly justified, and (ii) the authors seem to be, sometimes, too eager to dismiss the fact that particular datasets do not contain evidence for a  $\sim 4.4$  ka climate anomaly as much as the authors would like to see.

(i) If I'm not mistaken, at least on figures 2 lower panel, 3 middle panel and 4 lower panel - and possibly other -, the authors apparently interpolated data between the raw data values. Hence it is difficult to evaluate whether the climate anomaly discussed in the text is due to an outlier or not. I noted many statements in the text with which I was seriously puzzled after having a look at the figure, and thought sometimes you overstated what data actually say.

(ii) In the same vein, other high-resolution records, interpolated or not, do not seem to be drastically affected by the 4.2 ka event. For example, your discussion on the “W-shape” climate anomaly is not convincing at all, when the magnitude of the anomaly discussed relies on a very small excursion within the 4.2 ka event time window: as long as you have at least 3 (4) points within this window you likely (certainly) get a data point defining an anomaly, the magnitude of that anomaly being likely associated with noise if it is small and defined by a limited number of data points. Also, some records do show a climatic excursion at 4.2, which does not appear as extraordinary as many other climate excursions occurring before or after the 4-4.5 ka time window, but the magnitude of the 4.2 climate anomaly is not always discussed in parallel with those other climate phenomenon. Sometimes, the 4.2 time window represents more a shift in the climatic background than a single event, too.

Those aspects, along with uncertainties on the X-axis and the fact that many records are discussed without showing the data, leads the reader to doubt about the text as a whole that has been crafted nicely enough to cradle the inattentive reader. Then I simply suggest the authors to pay more attention the terms used, and eventually

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reformulate some of them. For the sake of integrity I let the authors decide themselves which statements could have been overstated.

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Interactive comment on Clim. Past Discuss., <https://doi.org/10.5194/cp-2018-82>, 2018.