Clim. Past Discuss.,
https://doi.org/10.5194/cp-2017-104-RC3, 2017

Climate of the Past Discussions

Interactive comment on "Holocene aridification trend interrupted by millennial- and centennial-scale climate fluctuations from a new sedimentary record from Padul (Sierra Nevada, southern Iberian Peninsula)" *by* María J. Ramos-Román et al.

L. SADORI (Referee)

laura.sadori@uniroma1.it

Received and published: 16 October 2017

I found the new data from Padul record, presented by María J. Ramos-Román and colleagues, quite important and necessary to improve our knowledge of the environmental history of the last 5000 years.

The chronology is very well assessed and the sediment and pollen data are consistent.

Printer-friendly version

Discussion paper

I was very surprised by the fact that such a multidisciplinary dataset is not used to disentangle between the two main drivers of deforestation in the Mediterranean region: human impact and climate forcing. The authors in fact start the interpretation with pollen, embracing the climate party, but they HAVE TO DEMONSTRATE THIS with clear data, and we have to admit that pollen alone is not enough. I suggest re-writing of interpretation and discussion under this light. I just noticed that this is also the main concern of the other reviewer, I totally agree with her. This is in fact a never-ending dilemma of Holocene palaeoecology: is it possible to separate the effects due to climate change and human impact in the pollen records of the last millennia? (see for example the discussion in Marignani et al., 2017. Plant Biosystems). I want to add that my personal opinion is that climate is the most important factor in shaping the present landscape, but it is just an opinion if it is not clearly supported by data! Sometimes, in my personal experience, charcoal counting together with concentration data seemed to be resolutive (Sadori et al., 2004. The Holocene), but most times it is just the use of independent sediment and geochemical proxies (Giraudi et al., 2011, The Holocene; Morellon et al., 2016. Quaternary Science Reviews; Sadori et al., 2016 Quaternary Science Reviews) that can disentangle drivers, solving the "dilemma". You have good data from your own record that can be used in this sense! I found that the comparisons with other sites are too many and not always meaningful, so that the reader gets lost. The references are mostly up to date, but the discussion present in the pollen community about the cause of the deforestation (aridification vs. increased land use) is completely ignored. It should be included. I do think that the paper absolutely deserves to be published, and I recommend publication in Climate of the Past, but just after the above mentioned issues will be assessed. Please have a look also at the file with my comments.

Laura Sadori

Please also note the supplement to this comment:
https://www.clim-past-discuss.net/cp-2017-104/cp-2017-104-RC3-supplement.pdf

Interactive comment on Clim. Past Discuss., https://doi.org/10.5194/cp-2017-104, 2017.

Printer-friendly version

Discussion paper