

Interactive comment on “The effects of past climate variability on fire and vegetation in the cerrão savanna ecosystem of the Huanchaca Mesetta, Noel Kempff Mercado National Park, NE Bolivia” by S. Y. Maezumi et al.

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Review for Climate of the Past Discussions, 11, 135-180, 2015 Maezumi, S.Y., Power, M.J., Mayle, F.E., McLauchlan, K., Iriarte, J., The effects of past climate variability on fire and vegetation in the cerrado savanna ecosystem of the Huanchaca Mesetta, Noel Kempff Mercado National Park, NE Bolivia.

This paper focus on the interrelationships between climate, fire frequency, length of

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seasonal dryness (climate), and vegetation. The authors use an interesting combination of proxies to shed new light on this issue with much relevance for understanding deep-time ecological processes and generating new arguments for nature conservation. By using several records with high temporal resolution millennial-scale variability has been addressed. This paper is well written, has a good structure, a sharp line of reasoning, and shows at the end very relevant conclusions. It is not easy to distinguish natural phenomena from anthropogenic impact but using a combination of proxies the authors reached convincing conclusions. Therefore, this paper is of interest for a wide international audience and certainly should be published in 'Climate of the Past'.

I have pencilled many corrections and improvements in the text: I have uploaded a scan of the annotated manuscript which is part of this review report. I assume the authors will make the corrections as indicated. In the text below I focus on a selection of issues that I will explain in more detail:

- Title: The title is very long and is a burden for all that like to make reference to this paper. A shortened version with the same content could read as follows: "Effects of past climate variability on fire and vegetation in the cerrado savanna of the Huanchaca Mesetta, NE Bolivia".

25: There is an essential difference between 'prediction' and 'projection'. IPCC reports make projections (if unclear, please ask for my class room slide).

31: Geological formations are written with caps (e.g. Lower, Middle, and Upper Mekkelhorst Member) whereas intervals of time are written in lower case (e.g. early, middle, and late Holocene). Corrections are needed all over the manuscript.

40: In Latin America it is very usual to use commas in ages below 10,000. However, there is no need to do so. Please omit all commas in ages below 10,000 all over the manuscript (saves much space)

119: 'cal yr BP' is a unit. As units are not abbreviations no points should be used. Thus

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“B.P” and “B.P.” should be corrected into “BP” all over the manuscript (saves another time much space and improves readability)

257: On page 43 I have monitored where acronyms have been first introduced: corrections are needed in lines 257, 271, and 281. Figure 6 is not in sequence and should be re-numbered.

305: cc is not a unit of the metric system: cm³ should be used.

320: I am confused by reading this sentence. I guess you mean ‘charcoal influx’ which has the unit “particles cm⁻² yr⁻¹”.

393: a confusing situation here: because you write “Late Glacial” instead of “Lateglacial” (compare Pleniglacial), it seems that “Late” should be written here in lower case. However, “Late Glacial” is a geological interval of time and, therefore, correctly written with a cap. To be consequent with Pleniglacial, beter to write “Lateglacial”. It should be kept in mind that each glacial of the Pleistocene has a ‘late glacial’ (not “Late Glacial”) interval, but not a “Lateglacial” as the latter is restricted to the interval of ca. 15,000-11,500 cal yr BP !

- The list of references shows many mistakes, and inconsequent use of issue numbers of journals. In the current electronic era, issue numbers are not relevant any more. A book reference always should mention: publisher, city, and country.

1028: Indeed Dutch names such as “T. van der Hammen” may cause problems. Always insert the author under “V”, not under “H”. According to the rules of Dutch language the correct spelling is “van der Hammen, T”. However, to serve the foreign reader I always write “Van der Hammen, T.” to make clear that the family name should not be split up. Thus, in line 1028 “. . . and Drecht, G. Van” should read as “. . . and Van Drecht, G”.

Table 1: give the last column a unit.

Fig. 2: along the X-axis ‘cal BP’ = ‘cal yr BP’ Delete all “cal yr BP” along the curve.

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Fig. 3: Give the X-axis a unit.

Fig. 4 Show the unit above the column of ages, and delete the unit after each dated sample. Records c, d, and e are missing the unit in which values are expressed.

Fig. 5: Curve (a): $D_{13}C = \delta_{13}C$

Fig. 6: figure caption and on top figure: charcoal accumulation = charcoal influx. at curves a) and c): Particle/cm²/yr = particles cm⁻² yr⁻¹ at curve e) Fire Episodes per 1000years⁻¹ = Fire episodes 1000 yr⁻¹ (mind that “per” is equivalent to “-1”) Fig. 7: same corrections needed as in previous figures Curve J showing insolation: W/M² = W m⁻²

In summary, only a large number of corrections are needed. The paper is exiting and deserves publication.

Henry Hooghiemstra, Amsterdam, 18 Feb 2015.

Please also note the supplement to this comment:

<http://www.clim-past-discuss.net/11/C31/2015/cpd-11-C31-2015-supplement.pdf>

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