

Interactive comment on “The climate of Granada (southern Spain) during the first third of the 18th century (1706–1730) according to documentary sources” by Fernando S. Rodrigo et al.

Anonymous Referee #2

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The paper entitled “The Climate of Granada (southern Spain) during the first third of the 18th century (1706-1730) according to documentary sources” by Fernando S. Rodrigo deals with an interesting topic of historical climatology. It discloses and analyses new documentary (1706-1730) and instrumental (1728-1730) data from the south of the Iberian Peninsula and contributes to improve the knowledge of past climate in this part of Iberia. The topic is no doubt within the scope of Climate of the Past. The author applies methods he has developed and published in his former works (Rodrigo, 2008; and Rodrigo, Gómez Navarro and Montávez-Gómez, 2012) to analyse newly found data. The presentation of the results is clear and well structured and the quality of figures and tables is very good. Although it is well written, I think the text should be

C1

proof- read by a native English speaker.

Main points to review Data used. The author is revealing new, interesting and useful data. It is one more important piece to complete the puzzle of historical climatology in Iberia in the 18th century. However, some more details about the data are needed. p.2, l.32 – Describe the qualitative data more accurately. Which type of “summary”? Specify the “climatic conditions” referred to by the author p. 2, l. 33-35 – From your sentence beginning with “We establish” and ending with “Year”, I would like to confirm that qualitative information only refers to certain years (as 1727 indicated on p. 3?). If so, this should be stated more clearly in the text. p.5, l.26-27 - Referring to instrumental data, couldn't you give more details? Or present a table as an example of one of Navarrete's? Or a facsimile as supplementary material? It is not indispensable but it would help the reader. Where in Granada were Navarrete's instruments placed?

Methodology I understand that the author does not want to repeat the statistical explanation in more detail, because the methodology has already been presented and discussed in former papers of the author (2008 and 2012). I agree with the author.

p.3, l.18 – ... “The risk is to consider that these events were the ‘normal’ conditions...” I am afraid that I do not agree with this sentence. It is well known that in documentary data mostly extreme weather episodes are recorded and usual conditions are not mentioned, as C. Pfister wrote when he first presented this methodology (e.g. Pfister 1992, reference in Brázdil, 2005). That is why for certain years/seasons/months there are no data, as I understand happens with your documentary data. I suggest that you state more clearly the advantages of this methodology in relation to Pfister's indices.

Results The comparison of the average and standard deviation of the reconstructed period (1706-1730) to those of two periods of the 20th century of different temperature signal gives very interesting results, particularly for temperature where data from the reconstructed period are more similar to the beginning of the 20th century, a cooler period that occurred before the 20th century warming. p.5, l.7 – The “Maunder Mini-

C2

mum" ending date is 1715, so the period you are studying is only partly "subsequent to the cold Minimum Maunder". Suggestions: write "the coldest years of the Maunder Minimum in Central and Northern Europe". Do not forget your studied period includes very cold years, such as 1709. And if you look at your Table 1, most of the other cold seasons you have detected are not from the beginning of the period: they occur between 1723 and 1730 (except for summer 1710). Could the coldest period have ended later in Southern than in Northern Europe? In Portugal (Taborda et al, 2004) the two first decades of the 18th century were very cold. This could be discussed.

Discussion is missing. Either you include a "Discussion section" with a examination of results and comparison of your outcomes with other not only in Iberia, but also in Europe. See also former paragraph.

Or you drop the discussion and in this case it is advisable to develop the conclusion.

Conclusion Conclusion to be developed if discussion is not included.

Minor points abstract, l.8 – after 1706 indicate also the last year of the documentary data (e.g. from 1706 to 1730) p. 1, l. 17 - after because include "they" p.1, l.18 – This sentence is unclear " ..using the methodological basis of historical climatology" p.1, l.22- Write "Alcoforado" unstead of "Alcaforado" p. 1, l.24 – review English formulation "in Spain normally has been considered" p.1, l.24 – What do you mean by "normally"? I think this word could be deleted because you have a reference at the end p.1, l. 29 – dated from instead of dated on p.1, l.29 - dated from instead of dated on p.1, line 33 – replace "since 1706" with "from 1706 to 1730" p. 2, l. 1 Indicate the dates of the beginning and the end of the Maunder Minimum (1645-1715) p.2, l.8 – "where he lived" instead of "where lived" p.2, l.9 and l.10 – "founded in" instead of "founded on" p.3, l.19 – What do you mean by "maintains this view"? p.3, l.20 – Refer that overlap period is essential not only to "validate the index" but to reconstruct long series of a climate variable (demonstrated by Brazdil et al., 2010, p. 16 and 17) p.4, l.23 – "applying the method". Explain p.4, l.37 – I suggest to delete global. p.7, l.28 – why this new

C3

reference period? p.8, l.1 – Until 1715 it was still the Maunder minimum and in this paper you are not comparing the period 1706-30 with former periods, so it would be better to reformulate this sentence (see also note referring to p.5, l.7)

Tables 1 and 2 –indicate data sources Fig.2- Insert more information within caption (Granada station, studied period ..)

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C4