

Interactive comment on “Reconstruction of rainfall in Zafra (southwest Spain) from 1750 to 1840 from documentary sources” by M. I. Fernández-Fernández et al.

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We thank the reviewer’s comments. The three reviewers are agreeing that the methodology is the main weakness of the paper.

We think that the used methodology is not the best; and required some “leaps of faith”. The largest one is to assume that the precipitation regime of the period 1750-1840 is the same as that of the period 1960-1990. However, all the alternative methodologies also show important problems as we explain in our response to the referees: short
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overlapping period, different pluviometric regime (coastal instrumental stations), not homogeneous series, . . .

At this point and taking into account that the documentary source rescued shows high quality and temporal resolution (with no precedent in the Iberia historical climatology). We suggest to referees and editor that allow us to make a new version of the manuscript. We would present the series of indices (explaining in detail their characteristics and limitations), a study of the reliability of the index comparing with early instrumental data and other documentary sources (as rogation ceremonies).

This index will be very useful to understand the climate variability of the region in a longer term. Also the index will be a nice resource to compare future proxies in the region. Many indices (without the aim of obtaining reconstructions) have been fundamental to understand the past climate in other regions (Alcoforado et al., 2000; Barriendos and Martin-Vide, 1998; Brázdil et al., 2008; Garcia et al., 2003; Garnier et al., 2011; Rodrigo et al., 1994; Rodrigo et al., 1998).

We believe that our work is a great step forward in the study of the climate in the southwest of Spain in the second half of the eighteenth and early nineteenth centuries and would be of great interest for the readers of *Climate of the Past*.

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