

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

Anonymous Referee #1

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Fernandez-Fernandez et al. report on a newly derived monthly precipitation series from 1750 to 1840. Unfortunately, the manuscript has flaws and not enough scientific merit to be published in CP. I therefore suggest rejection. Here I list a couple of critical points: 1) The authors do not present a reconstruction in a way that is commonly performed in historical climatology. An overlapping period with documentary information and instrumental data are needed for calibration. This allows to derive the statistical model between the documentary evidence and the measurements. These are calibrated/verified in an independent period. If the statistical relationship provides sufficiently good verification results the statistical model can then be applied to the past information. That is actually not what has been done in Fernandez-Fernandez et al. Instead they derive

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three indices that cannot be quantified in terms of mm precipitation for each class. The discrimination between the three classes is very problematic as well. In class 2 for instance are cases with continuous precipitation over one week or heavy precipitation for at least two days. This class makes now sense as the corresponding precipitation amount cannot be quantified. It is also questionable if in this area continuous rainfall is possible over a full week. Then the authors compare apples with pears as they do some kind of analyses within the 30 year period 1960-1990 and claim that this is the skill of the statistical model. Actually, this is just a linear transformation from monthly precipitation values to percentiles and the high correlations have nothing to do with the statistical performance related to the reconstruction period. Therefore, the presented estimates of past precipitation have nothing to do with a statistical reconstruction. Also in common reconstruction exercises an indication of the underlying uncertainties are missing. In summary, I don't think that the presented estimates have anything to do with the reality as there is no physical and statistical meaning behind the whole procedure and the way data are treated. 2) The paper is to a large extent descriptive and gives not enough interpretation about the underlying dynamics and comparison with other areas and periods with similar palaeo information.

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