

## ***Interactive comment on “The extreme drought of 1842 in Europe as described by both documentary data and instrumental measurements” by Rudolf Brázdil et al.***

**Anonymous Referee #2**

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The extreme drought of 1842 in Europe as described by both documentary data and instrumental measurements.

This is overall a nice paper that sheds light on an important European drought event. The paper is well written and presented and does a good job of illustrating the power of bringing together both qualitative and quantitative data to understand an important historical event. That said, I have some comments that need to be addressed by the authors.

The most significant comment I have is around the structure of the paper. It seems that results are presented throughout the paper including in the introduction which high-

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lights some of the documentary impacts of the 1842 drought, and in the discussion where new results are presented to the reader. In particular I would interpret section 5.1 and 5.2 as results. I will leave it to the editor to decide this but I would prefer to see these integrated into results as the paper is using documentary and instrumental data. If the authors would prefer to have the proxy tree ring data as part of the discussion then I can understand that. The role of the discussion section should be to discuss the results and place them in a broader spatial/temporal context and to discuss any limitation, assumptions etc that were part of the analysis. The latter in particular could be fleshed out a bit more than is presently the case. Taken together with other comments below I feel that the outcome should be accept with minor revision as little new analysis would be required.

Other comments Acronyms are used in the abstract, while some like NAO are widely known others like CEZI, SPI, SPEI, Z-index may not be, please spell these out for the reader.

It would be useful to have a map of Europe showing from where instrumental and documentary sources are derived from. This would help convey the continental nature of this event and its impacts.

In describing the Pauling et al data please give a references for the gridded analysis from 1901-2000.

Does the Pauling et al data include precipitation from the individual series that you present later from across Europe and if so does this introduce a circularity into using these as independent pieces of information to assess the magnitude of the drought?

In addition, perhaps I missed it but in the data section an overview of the precipitation gauges used later in the paper is not provided. In addition are there other series and regional precipitation records that might be usefully used to extend the quantitative assessment?

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Why did you use SPI/SPEI 1 and not longer accumulations given that much of the focus is on agricultural, hydrological and socio-economic drought. Some thoughts on this either in the methods or in the discussion would be welcome. Does the result change if you do?

More detail is needed on how the drought indicators were derived, just saying that 'These series were then worked up' does not allow the work to be repeated.

Has the homogeneity of the various instrumental records used been assessed? If so/not this needs to be stated and if necessary returned to in the discussion. This is an early period in the observational history and gauges and their exposure often very different than today. More comment is needed on this.

In terms of the consideration of hydrological drought why not look at 1842 in the context of the long term mean as you have done with precipitation? Only two adjacent years are used. Is the data not available? It seems it is from what is presented.

Use of documentary sources is very good and indeed a standard to be aspired to.

See points above on discussion where I think most work is needed in revising.

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Interactive comment on Clim. Past Discuss., <https://doi.org/10.5194/cp-2019-77>, 2019.