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# Interactive comment on "The climate in south-east Moravia, Czech Republic, 1803–1830, based on daily weather records kept by the Reverend Šimon Hausner" *by* Rudolf Brázdil et al.

## Anonymous Referee #1

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The paper presents a very detailed analysis of weather and climate in south-east Moravia in the years 1803–1830 based on a newly-discovered daily weather diary from Buchlovice written by Šimon Hausner, a priest in Buchlovice. Although meteorological observations exist for this time period for some stations in the Czech Republic, including the closest station in Brno, the value of such long series of visual observations is very important, not only for improving the climate knowledge of the region, but even more for estimation of the usefulness of that kind of weather excerpts for climate reconstruction, including estimation of its uncertainty. The main weakness of the paper, which necessarily must be supplemented, is a lack of information concerning the way that air temperature and precipitation values are attributed to a specific index in the 7-

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degree scale. In Section 3.2 there should be information about threshold values used in the process of indexation based on monthly frequencies of warm or cold days in case of temperature and number of days with precipitation in case of precipitation. Do you use data from Brno station for this purpose, e.g. number of days with precipitation? Why did you not make daily indexation using e.g. a 3-degree scale? Does Hausner's weather diary allow for such indexation or not? When he started weather observations, Hausner was a mature man, thus probably his weather descriptions concerning its extremity were related to his weather experience in the late 18th century, a period which was warmer than 1803–1830. This is probably the reason why your indexation revealed significantly more months described as extremely cold and very cold compared to extremely warm and very warm, in particular in winter months (Table 1). For the entire year the statistic is the following: for -3 and +3 ( 13 and 4, respectively), and for -2 and +2 (37 and 23). The second possibility is that the person who made the indexation compared Hausner's descriptions of weather with the present period, which is also warmer. My next doubt concerns the reference period: why did you not use the latest normal period 1981–2010, as recommended by the WMO? Such comparison will give a better estimate of climate change and variability between historical and present periods.

Minor remarks: 1. Page 1, last line – I suggest to add here for the 18th century the recently published paper by Filipiak et al. (2019) presenting results for Gdansk for the period 1721–1786 based on Reyger's weather observations (https://doi.org/10.1002/joc.5845), 2. Quite a lot of shortcomings which exist in the paper should be supplemented, e.g. p. 10, lines 18-19: "With the exception of February and March, all months were also more variable in terms of standard deviation than the reference period", p. 10, lines 39-40: "Despite generally close agreement between the Hausner series (ref. comm.: there are a lot of variables analysed in the paper: does the statement concern all variables or only temperature and precipitation?) and those for Brno, some instances of greater or smaller disagreement appear", etc. 3. Fig. 13 – I suggest more contrastive colours be used to show data from Brno and Stare Mesto.

It is difficult to guess which of the mentioned stations the data in Fig. c represents, 4. Fig. 13 – in the caption there is information that strong winds were estimated as those with force ïĆş 7oB. In Section 3.1 there is no information on how this was estimated based on Hausner's weather descriptions. I suggest this information be added, 5. The authors should maybe reconsider the presentation of Section 3.1 (or part of it) in the form of a Table, in particular for temperature and precipitation. It seems to me that the text will then be more clear for readers. I can recommend acceptance of the paper for publication in the Climate of the Past journal only on the condition that the listed remarks and suggestions will be satisfactorily taken into account.

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