

Clim. Past Discuss., author comment AC1
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Reply on RC1

Martin Stangl and Ulrich Foelsche

Author comment on "Climate history of the principality of Transylvania during the Maunder Minimum (MM) years (1645–1715 CE)" by Martin Stangl and Ulrich Foelsche, Clim. Past Discuss., <https://doi.org/10.5194/cp-2021-117-AC1>, 2022

Answer to Reviewer 1: "Climate history of the principality of Transylvania during the Maunder Minimum (MM) years (1645 - 1715 CE)"

We thank reviewer 1 for his or her very thorough comments on our submitted paper "Climate history of the principality of Transylvania during the Maunder Minimum (MM) years (1645 - 1715 CE)". Even though Reviewer 1 opts for rejection of the paper, we are glad that he or she drew attention to several weak points, which could in our opinion be addressed in a careful revision of our paper.

First of all, we want to clear up some misunderstandings, which probably arose from our failure to define the purpose of the paper clearly enough and misunderstandings regarding suspected lack of historical understanding and criticism:

- We are very aware of the role of Hungarian history, culture and science for Transylvania and in no ways intended not to appreciate it. Misspelling of proper names and grammatical errors are, we agree, not tolerable, however, they can be fully corrected by us with the help of Hungarian native speakers, who support our project. We would be happy to put everything right in a revision of the paper.

- Unfortunately, we did not make it clear enough from title, abstract and introduction, that we focused on sources in German language. This is because the data used have been taken from a new database in preparation by us that compile climate-relevant sources in German language. This is the same reason why we compared the data from the German settlement area within Transylvania mainly with Austria, Germany and Switzerland and not with other regions of (East-)Central Europe. We will make this clear during the revisions, and we will also change the title of the paper accordingly.

- While dendrochronological and other proxy studies do exist for Transylvania as well as for Germany, Austria and Switzerland, our database indeed focuses on descriptive sources. We invite researchers in the field of proxy studies to compare their results with ours.

- A similar misunderstanding is why solar activity is the only forcing studied by us. The actual purpose of the paper is to do so. As mentioned in the introduction, we understand

the epoch of the Maunder Minimum (MM) strictly as defined by astrophysics, i.e. the years 1645 to 1715 CE and as meaning a Grand Solar Minimum and so we tried to compare the astrophysical conditions with the climatological ones in order to see if any probable relations do exist. We will reformulate the introduction to make this clear.

- Although we agree that a higher data density might be achieved with the use of other databases, especially ones that rely on sources in Hungarian language, we still feel that the data used by us are robust and proper to make at least a first comparison between solar activity and climate during the mentioned period on which other researchers might continue and contribute.

- The SNN values we use as a measure of solar activity are the best available at the moment. They do NOT, as reviewer 1 supposes, represent telescopic sunspot counts, since those are not reliable for the period. The SNN values used by us are reconstructed values from isotopic studies.

- We are especially thankful for drawing our attention to several important scientific papers by Lajos Rácz and others. While we, as mentioned above, focus in this paper on sources written by the German minority, we will of course follow the suggestions in order to give an overview of the state of research by our Hungarian colleagues, so that the unfortunate impression of ignorance of those very important contributions in the field will hopefully vanish. Of course, the most important of those scientific papers will also be consulted and included within the list of references.

- Geographical imprecisions regarding the different extensions of the region and the principality and its change during time will be addressed, as well as addressing Transylvania as part of Central, not Eastern Europe.

- A map giving the locations of mentioned localities will replace the table given by us. Since we gave geographical coordinates, we regarded the table as sufficient, but we agree with Reviewer 1 that a map gives a more readily visible overview.