

## ***Interactive comment on “Effects on the Czech Lands of the 1815 eruption of Mount Tambora: responses, impacts and comparison with the Lakagigar eruption of 1783” by R. Brázdil et al.***

**Anonymous Referee #3**

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The main aim of this paper is to present the consequences of the 1815 Mount Tambora eruption in the Czech Lands and to compare it with the 1783 Lakagigar eruption. The authors use two kinds of data: i) instrumental data - temperature and precipitation long series of Prague-Klementinum and Brno, as well as others series; ii) documentary data including contemporary press referring to the extremely cold and wet summers of 1815 and 1816 (the “year without summer”) and to grain production and prices. It is an important and informative paper. It also displays a synthesis of the effects of the Tambora and the Lakagigar eruptions in the Czech Lands. However, I think that the paper should be improved as follows:

1. There might be some problem in this paper’s structure and contents. The authors

C1

have centered their paper on the 1815 eruption and its consequences. But they also include information about the Lakagigar eruption mainly within the “results” section (only a short paragraph in the introduction). This is quite confusing. Even the title is too long and quite ambiguous. Moreover the two eruptions are rather different and so are their impacts.

I think the authors could consider two solutions

- A) Either concentrate on the 1815 eruption, as they possess more instrumental and documentary information

- B) Or write a paper on the comparison of the two eruptions and their consequences, change the title and modify the paper’s structure accordingly, using and developing the texts where this comparison is already carried out.

2. Introduction - Explain how an eruption in tropical site may affect the climate in central Europe. If you include the L. eruption, compare the features of both eruptions.

3. Data section – Documentary data and the notes that accompany some of the instrumental data should be described in more detail. In some cases, the authors refer to their own past publications, but a short sentence could clarify the content of each of the sources (e.g. 1), p. 3, l.11). Indicate clearly the new information brought about by this paper.

4. The methods section (p. 3) should be more clear and developed, particularly when it comes to documentary data (different steps that were necessary to construct a dataset from the documentary data). This is included in other papers from the same authors but should be incorporated here referring to these specific cases.

5. The results sections (p. 3- 7) should be reorganised according to your choice of A) or B) (see above, please). Should not the comparison of the two eruptions referring to climate and to their impacts be included in the results part? (if you follow B. If you select A, then these paragraphs should be deleted).

C2

6. Rewrite the discussion part adding some current explanations about the differences of the two eruptions and why are the impacts different (if you choose B), putting the events into European context.

p. 3, line 9 –Explain what are visual weather records

p.4, 2nd paragraph. As the authors notice there had been already a cool period in 1812-1814. Perhaps the authors should point out more clearly the differences between these two cold periods and the drop of temperature anomaly after 1815.

P. 4, line 16 (and Fig.4) – you refer that autumn 1817 shows strong negative anomalies, but autumn 1815 has also little rain. Please explain.

Figure 1 – indicate through different symbols the places from where you used meteorological and documentary data. If you have both data for the same site use a combined symbol.

Figure 2 – why are the anomalies calculated relatively to the five years' period pre-eruption?

Figure 3- The Figure caption is not clear and the two “temperature °C” in the vertical axes are confusing. You could write in the right one “Temperature anomalies in C.E.” and leave the left one as it is.

Figures 6 and 10 – there is no need to include both figures.

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