

Interactive comment on “The climate of Granada (southern Spain) during the first third of the 18th century (1706–1730) according to documentary sources” by Fernando S. Rodrigo et al.

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Reply to Referee#2

Thank you very much for your comments and suggestions. They will be taken into account in the revised version of the manuscript.

In your Interactive Comment you include the following question: Could the coldest period have ended later in Southern than in Northern Europe? In Portugal (Taborda et al, 2004) the two first decades of the 18th century were very cold. This could be discussed.

C1

Effectively, my results contrast with the analysis by Taborda et al (2004) on southern Portugal, where the two first decades of the 18th century were very cold. A possible explanation may be the variation of climate conditions from west to east in southern Iberian Peninsula. The climate of Granada is characterized by a diminishing of the Atlantic mechanisms that affect southwestern Iberian Peninsula, and strengthening influence of the Mediterranean mechanisms. The convenience of distinguish between western and eastern stations (particularly in winter) was highlighted in a previous work (Rodrigo, 2018). We must note that the period 1706-1730 is immediately subsequent to the coldest years of the Maunder Minimum in Central and Northern Europe. Luterbacher et al. (2004, 2007) and Xoplaki et al. (2005) found a warming trend in European winter and spring temperatures from the late Maunder Minimum, culminating in the late 1730s. On the other hand, the mean value of the autumn temperature in Central England between 1729 and 1738 was 10.5 °C, equal to that recorded during 1991-2000 (Jones and Briffa, 2006). Warming from the markedly cold decade of the 1690s to the 1730s is probably due to the scarcity of major explosive volcanic eruptions from the early 1700s compared to the previous two decades (Jones and Briffa, 2006). If there were differences between southern and northern Europe is an open question, but our results suggest that temperature trends in Granada were similar to those of central and northern Europe.

This comment will be included in the revised version of the manuscript, where a new section (Discussion) will be included, as you suggest.

Reference:

Rodrigo, F.S.: A review of the Little Ice Age in Andalusia (southern Spain): results and research challenges. *Geographical Research Letters*, 44: 245-265. doi: <http://doi.org/10.18172/cig.3316>, 2018.

Thank you again for your comments,

F.S. Rodrigo

C2

