



Climatic reconstruction of the Iberian Range using proxy and instrumental data

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In the current context of climate change in which future scenarios show increases in temperatures and recurrence of extreme weather events, it is particularly important to study the evolution of the climate to be able to predict the future climate with greater accuracy.

The following work has been conducted within the project 'Characterization of the climate of northeastern Spain from the sixteenth century, integrated analysis through information multiproxy and instrumental (MEC-247-184)'. In order to be able to make a climate reconstruction as long as possible with proxy data, *Pinus sylvestris* and *Pinus uncinata* have been chosen, as these are two of the most long-lived and species extended within the Ebro Valley. Therefore, 413 trees were sampled and 826 cores were collected throughout the Iberian Range (10 sites) and the Pyrenees (12 sites). The age range of the trees varies between 80 and 420 years in order to collect the whole range of the forest structure.

Once the processing and analysis of the samples has been completed, a first climate reconstruction of the Iberian Mountain range spanning the period 1650-2012 has been done. To calibrate the dendrochronological information, climate data from the grid of the CRU TS 3.1 (Mitchell and Jones, 2005) has been taken.

First results show a cold period by the end of the 17th century and beginning of the 18th century. Accordingly, phases corresponding with the Little Ice Age have been observed. At the same time, droughts in specific years (pointed years) have been corroborated with consulted historical documents (prayers, in this case) coinciding with historical hungers and turbulent periods in the society. Finally, as expected, an increase in temperatures since the second half of the 20th century has been observed.