Clim. Past Discuss., 3, S733–S735, 2007
www.clim-past-discuss.net/3/S733/2007/

Climate of the Past Discussions

Interactive comment on "Maximum growing season temperature in Western Europe: multi proxy reconstructions in Fontainebleau from 1596 to 2000" *by* N. Etien et al.

Anonymous Referee #1

Received and published: 4 December 2007

Review of the manuscript entitled "Maximum growing season temperature in Western Europe: multi proxy reconstructions in Fontainebleau from 1596 to 2000" by Etien et al. submitted to Climate of the Past.

Summary The paper presents a combined (grape harvest/tree-ring isotopic 18O ratios) growing season (April-September) temperature reconstruction (1596-2000) from Fontainebleau (Western Europe).

Comments The manuscript includes interesting thoughts and concepts towards multi-proxy approaches of reconstructing past European climate variability. However, the article is far too long, with the overall structure and English style obscuring its readabil-

ity.

The Abstract is patchy and needs to be rewritten. As it stands, there is no flow and important information (on research question and objectives, data and methods, as well the key findings) is largely missing.

The introduction is not well written and unfocused. As an example, the first paragraph is examined: (1) The second sentence needs at least one reference (line 25, page 1064). (2) The third sentence is incorrect, as various recent studies have proved the ability of tree-ring data to retain low frequency information. This is particularly the case for the herein used reference (Esper et al. 2002, Science), which introduced a tree-ring width based millennial-long temperature reconstruction representative for large parts of the NH, which allowed multi-centennial trends to be well preserved. (3) Sentence four addresses the "segment length curse" that is valid for individual tree-ring detrending, but should cite Cook et al. (1995, The Holocene) instead. (4) Sentence five is out of place and fairly incomprehensible without any reference. However, I assume that the authors refer to Moberg et al. (2005), a study that certainly should not be claimed "classic". (5) The authors provide an absolutely incorrect list of references when stressing EU-scale temperature reconstructions (line 9-11, page 1065). I have to admit that, after such a sloppy start, it is a kind of difficult to stay interested in such a lengthy manuscript on the combination of two records. The five introduction subchapters (1-5) are not well balanced, and their connection is partly missing. The authors introduce: (1) a broad paleoclimatic perspective, (2) general perspectives on potentials and limitations of various tree-ring parameters, (3) grape harvest data from Burgundy, (4) the ability of an existing (in review) multi-proxy reconstruction (1900-present) from this data (living oak trees in Fontainebleau), and (5) the structure of this study. The authors further refer to a paper in review at Climatic Change, which seems to be of some methodological relevance for this study. This overlap becomes even more critical, when 20th century data are shared.

The data and methods section is over excessive! The authors provide all kinds of side

CPD
3, S733–S735, 2007

EGU

information regarding sampling site (2.1), local forest and castle history (2.2), sample preparation (2.3), isotopic analysis (2.4), and grape harvest data (2.5). In fact, most of these detailed descriptions are not really necessary to understand the reconstructed temperature history, and only distract from those information that are directly related to the multi-proxy approach. Therefore, I strongly recommend shortening this chapter by approximately 2/3, which is particularly valid for 2.1-2.3. In contrast, methodological explanation of the final reconstruction (data merging and calibration) is largely missing (see below).

The results chapter is poorly structured, since it comprises misplaced methodological elements that should be moved to previous chapters or removed entirely. It is also mixed with components from the discussion. A more rigorous presentation of key findings would greatly improve traceability and the study's overall flow.

A discussion chapter is missing (see my earlier comment).

The conclusion and perspective chapter is reasonably well written and straight to the point.

In short, the manuscript's current version doesn't reach the quality necessary for publication in Climate of the Past, even though the data utilized are merit. The paper is in a form, which makes it virtually impossible to review the key methodological steps and uncertainties. The primary reasons for this conclusion are relate to the poor organization and unbalanced presentation of the paper (e.g., imprecise introduction, unnecessary data description, unclear presentation of the key findings, no discussion chapter, overestimation of results), and the low level of accuracy (e.g., choice of references, repetitions, English style), which all contribute to a substantial lack of focus. Nevertheless, a more condensed article considering careful interpretation of data, focused writing, and simplified figures could perhaps add towards a paper that would allow the science in this analysis to be better reviewed.

Interactive comment on Clim. Past Discuss., 3, 1063, 2007.