

Interactive comment on “A tree-ring perspective on temporal changes in the frequency and intensity of hydroclimatic extremes in the territory of the Czech Republic since 761 AD” by P. Dobrovolný et al.

Anonymous Referee #2

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General comments:

The manuscript is interesting and of value for the readers of “Climate of the past” journal. I recommend it for publication in “Climate of the past” journal after major corrections. Despite the progress of dendroclimatological research in Central Europe, there is a lack of millennia long data. From this point of view the presented new proxy data are sound and valuable for further regional comparisons and therefore should be published. Poor correlation with climate is an obvious shortcoming, but for areas outside the upper timberline, located at this latitude we do not have better results. Never-

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theless, I think that it is important to discuss opportunities and constraints offered by dendro data in this part of Europe. In general, the results are sound, also the methods are appropriate, but the state of art and discussion parts of the manuscript must be reworked and requires some additions and explanations. The authors are not aware of existing research results on dendroclimatological studies from this part of Europe and it is failing of this work. It is necessary to highlight the international importance of the obtained data against the wider background of existing research.

Specific comments:

The state of art part needs additions. Lack of some important citations in the field of dendroclimatology of Central Europe, which should be discussed and added especially in the introduction part and for comparisons. For example many papers on dendroclimatic reconstructions were recently published for area of Poland, in the context of Central Europe (see for example: Przybylak et al. 2010, Szychowska-Krapiec, 2010, Koprowski et al. 2012, Opala and Mendecki 2014, Opala 2015). There is also much more literature considering potential of oak chronologies and its growth responses (see for example: Krapiec 1998, 2001, Ufnalski 2006, Cedro 2007, Bronisz et al. 2012). Check also the new findings connected with dendrochronology of oak in Europe published by Wazny et al (2015). You are only given examples of papers. Please pay more attention to look through literature.

Very weak and short part connected with study area should be extended (give some information on relief differentiation, altitudes, soils, etc.). There is disproportionate amount of information on statistical methods. Better description of study area and some information about wood origin (since you utilize a lot of timber) is needed.

The article describes the extreme years over the last 1250 years, but I did not find the exact dates of the particular extreme years in the text. It is hard to read these information from Fig. 3 or table 1 (only selected time period is presented). Since authors made a lot of effort collecting materials for long chronology this information should be

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described more precisely. Please modify table 1, or give full list of distinguished extreme years elsewhere. In the table 1 you should also give the years for which you did not find historical information.

In general more comparisons to extremes in other TR data are essential (for example check recently published paper by Opala M. 2015, dealing with TR record from closely located Silesia region, and paper by Szychowska-Krapiec E. 2010 from Malopolska region). Such comparisons are especially important as you did not find full match with historical records. In discussion the authors based mainly on the Buntgen et al. works, which are high quality, but there is much more research from this part of world.

Results of correlation with climate are weak. Therefore, this part of the manuscript requires more ecological explanations and comparisons with other studies from similar environmental conditions. Please consider the research results described in the other papers.

Technical corrections:

Böhm et al., 2009 or 2010, which date is true?

Wetter and Pfister, 2013 are cited in the text as Wetter et al. 2013, this is not consistent with the requirements of the journal

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