

Interactive comment on “Two millennia of Main region (southern Germany) hydroclimate variability” by Alexander Land et al.

Anonymous Referee #1

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Dear authors, I very much appreciate the attempt of analyzing and publishing some (why not all) of the unique oak ring-width data stored at the University of Hohenheim, Germany. This is a very important step towards generating exciting new science. However, I am reluctant in recommending acceptance of the submitted work, mainly because it represents an intermediate step rather than drawing methodological-sound conclusions from a final dataset (i.e. entire Holocene). This stepwise publishing procedure seems unnecessary in the case of central European oak ring-width measurements, as it has been successfully demonstrated in the recent past that such data are useful (and most relevant indeed) for reconstructing hydroclimate (i.e. a more complex reflection of spring to early-summer soil moisture availability instead of simple precipitation totals) on inter-annual to multi-centennial time-scales. While this has been done

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for several regions in Germany, France and England, Ed Cook's OWDA describes a European-wide milestone with regard to spatially explicit reconstructions of droughts and pluvials during the Common Era. In addition, the authors suggest that some of their data has been already incorporated into earlier studies (Büntgen et al., 2011, Cook et al., 2015), therefore only limited comparisons with these reconstructions are possible. Why did not the authors clarify this before? I am confident Büntgen and Cook would provide this information to the authors. In short, the submitted work does not provide any ground-breaking methodological and/or intellectual novelty, and the relatively small data(sub)set does not appear to be robust between ~800 and 1100 C.E. and again during the 4th century C.E. when the sample size dramatically drops (see Fig. 2 of the submitted draft). Although the EPS is above the common applied threshold of 0.85, the temporal replication changes can strongly affect the chronology behavior. Possible uncertainties might emerge from the integration of predominantly juvenile or mature/adult wood during these periods. Moreover, it is a pity that the low-frequency hydroclimate variability is not expressed in the presented reconstruction.

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