

Interactive comment on “Reconstruction of multi-millennial summer climate variations in central Japan by integrating tree-ring cellulose oxygen and hydrogen isotope ratios” by Takeshi Nakatsuka et al.

Anonymous Referee #1

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A nice paper. This manuscript presents two very long tree-ring stable isotopes (oxygen and hydrogen) series by measuring 67 different kind of wood samples, including living tree, archaeological wood and buried logs, over central Japan, a pretty remote region from which such information is novel. An important innovation of this manuscript is the authors created a novel method to remove age trend in tree-ring $d_{18}O$ by integrating physiological mechanism and correlation between the $d_{18}O$ and d_2H . The manuscript, which I believe to have already reviewed by top journals, and is almost mature to be published. Still, however, some points should be solved, and a general revision of

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the reorganization (see lines 69-84 as example), although not bad in its current state, would certainly strengthen the value of the paper.

Special comments are as follow.
• Title could be simplified, which may make general readers impressive. For example, A 2600-year summer climate reconstruction in central Japan by integrating tree-ring stable oxygen and hydrogen isotopes.
• Lines 25-26, change “living old trees, excavated archeological wood, old architectural wood, and naturally buried logs” to “living trees, archeological wood and buried logs”
• Lines 46-49, to my knowledge, any method cannot reserve low-frequency climatic signals of tree-ring width/density fully.
• Line 65 delete “summer”
• Lines 67-68, cite studies with long tree-ring $d_{18}O$ chronology in Asia, such as Liu et al., 2017
• Lines 69-84 describe methods on cellulose extraction and removing age trends. It’s better to move them in Section 2.
• Line 94, hundreds of rings

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