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## ***Interactive comment on “Variability of summer humidity during the past 800 years on the eastern Tibetan Plateau inferred from $\delta^{18}\text{O}$ of tree-ring cellulose” by J. Wernicke et al.***

### **Anonymous Referee #2**

Received and published: 19 December 2014

Dear editor and authors of the manuscript “Variability of summer humidity during the past 800 years on the eastern Tibetan Plateau inferred from  $18\text{O}$  of tree-ring cellulose”,

I fully agree with referee #1 on the importance of the reconstruction, the strong data and also all general and specific comments which were raised. I therefore have only very few additional comments and I do recommend publication of the manuscript after these minor revisions.

Even though the study focusses on  $d18\text{O}$  as a climate proxy, it would be interesting to read more about the ring-width data. It is mentioned in the text (line 125) that tree-ring growth is limited by temperature and spring precipitation, but as I understand it, this

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conclusion is derived from trees different from the ones used in the present study? In any case, I think a brief description and discussion about the climate sensitivity of ring-width data would be helpful. Please also provide information about the segment length of the five trees (it is hard to see that in figure 2) and whether the youngest part of each tree has been omitted (juvenile effect).

Line 140: Is it possible to quantify the amount (ratio) of snow? According to figure 1, temperatures are below zero during December and January. I'm not sure if the numbers in the climate diagram are readable in the printed version (too small?). It is known from a number of studies that snow can have a large effect on the isotope ratio in tree rings since the highly depleted melt water gets incorporated in the tree, with some temporal offset (depending on soil properties).

Line 156: Can you specify whether one core or two cores per tree were used?

Line 167: Please provide the reproducibility for d18O mass spectrometer analysis.

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Interactive comment on Clim. Past Discuss., 10, 3327, 2014.

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