

Interactive comment on “A universal error source in past climate estimates derived from tree rings” by Juhani Rinne et al.

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In lines 32-33 the authors claim that: “In fact, Franke et al. (2013) succeeded in showing that many present day state-of-the-art reconstructions still tend to be biased in the low frequency part of the spectra.”

However, more recent findings (Iliopoulou et al. 2016; Markonis and Koutsoyiannis 2016) suggest that this may not hold true. Following the approach of Bunde et al. [2013], in determining the low frequency bias by examining the long-term persistence behaviour of precipitation, it has been shown that the low frequency variability is evident in many different types of proxies and not only to the tree-rings. In addition, a simple explanation was provided for this behaviour based on the changing dependence structure of precipitation as the temporal scale increases [Markonis and Koutsoyiannis

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2016].

Long-term persistence, also known as Hurst-Kolmogorov behaviour is linked to the power spectrum by a simple mathematical transformation [Beran 1994] and has been shown that is a more robust estimator of low frequency variability than the spectrum [Dimitriadis 2015].

Therefore, the authors should at least acknowledge that there is an on-going debate of whether there are low-frequency non-climatic biases in paleo records and at what extent.

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