

## ***Interactive comment on “Detecting instabilities in tree-ring proxy calibration” by H. Visser et al.***

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Visser et al present here a methodological paper. They developed a new to method to evaluate divergence problem in tree ring to climate relationships. They proposed a new calibration technique called “stochastic response function” which allows highlighting instabilities in tree-ring to climate relation ships, commonly called divergence problem. This method could improve the climate reconstitutions done from tree-rings and the confidence associated to. Indeed, divergence problem origins still an enigma and it is probably a multiple origins problem (sampling, standardisation, climate environnement). So it is today, difficult to turn around divergence problem without any diagnostic on stability of tree-ring series calibration. So, authors propose in this paper a valuable diagnostic tool. Moreover, this method applies on a large and controlled tree-ring network could be an interesting approach to evaluate DP origins.

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So this paper is of international interest and would have probably good repercussion on Divergence Problem knowledge's and climate reconstructions improvement. Methods used in this paper seem to be relevant. This paper is generally well writing, clear, and well organised.

Minor remarks :

Figure and table are well presented and clearly labelled. However I suggest to present figure 1 and "figure 1 continued" in the same figure (same remarks for other fig). It would be clearer. In Table 1 label in suggest calling figure 1 after "visuals inspections of SRF".

Bibliography

Authors have to list the reference chronologically when there is more than one cited work by author or team of authors. Moreover I found some small problems with references: Cook et al 2002 is cited in the text but is not in the reference list. Moberg 2005 is in the reference list but not cited in the text Esper et al 2009 cited in the text is not in the reference list, but authors probably referenced to Esper et al 2010 (not cited in the text) Page 241 line 24 add (2006) after Burger and Cubash as in the reference list Delete the empty line page 247 (line 21) in the reference list.

I believe this paper is an important contribution that can help to improve the quality of paleoclimate reconstructions. So I recommend this paper acceptance with minor revision

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