

*A review of Space-time kriging extension of precipitation variability at 12 km spacing from tree-ring chronologies and its implications for drought analysis, by F. Biondi.*

*This paper was submitted as a review paper. However, in that sense it misses the point, because there is no proper review carried out: a long list of papers is attached, but the focus is, as the title indicates, on a very specific narrow topic, one could almost say a case study. It would have been different when the title and the contents of the manuscript would be something like 'Spatial interpolation of tree rings', or similar. That might have (or might have not) the same case study, but that would then just be there to serve as a standard reference example. I have therefore reviewed the manuscript as if it were a specific research study.*

ANSWER: The manuscript was written, and submitted, as a research article, which in this journal is initially called a "Discussion Paper". It is unclear why the Referee thought the manuscript was a "review paper".

*In that sense the study has some merits, although it reads very much like just another application of Pebesma's new R package. The methodology part is not strong. It reads very much like an 'and then', 'and then' story, without a proper motivation why particular techniques were selected and what purpose they served in the final analysis.*

ANSWER: The final model used in the study is a variant of the Bayesian hierarchical approach proposed and explained in detail by Fassò and Cameletti 2009, 2010 (see article citations; also see page 4305, lines 1-5). The product-sum covariance model used by Pebesma 2013 was considered (page 4311, lines 19-29), but not used for the final space-time kriging results (page 4312, lines 1-4).

*There is only one equation, and although the notation is a bit odd, it serves its purpose. I could imagine that some more equations would clarify the analysis process, in particular as the aim is to present a 'Space-time kriging extension...'*

ANSWER: The space-time kriging equations would take considerable space, and are given in full by Fassò and Cameletti 2009, 2010 (see article citations).

*In the current manuscript, for example, it is not clear why the 'cubic smoothing spline...' was fitted at all. Is that the common standard in this domain of science? For a scientific study at least a motivation should be given, a sensitivity analysis would be useful and the choice should be compared with other possibilities.*

ANSWER: This equation was given because it summarizes the dendrochronological standardization method, which is typical of this domain of science but often described in relatively vague terminology. The choice of a cubic smoothing spline was justified in detail, including its motivation and comparison with other possibilities, by Biondi and Qeadan 2008b (see article citations, and also page 4306, lines 26-29).

*The Results section is a mix of results from the case study and a Discussion of the results in the light of other studies. I doubt whether such an approach adds to the readability of the paper and the authors*

*should move discussion items to the Discussion section. Also, some more methodology is presented, referring to Pebesma 2013. That could also be moved, but this time to the Methodology section.*

ANSWER: Because there are no specific page and line numbers, this comment cannot be properly answered with regard to the Results and Discussion sections. The Pebesma 2013 citation refers to the pooled variogram, whose model choice is part of the study results.

*If the authors agree that the manuscript should serve as a research study, then a conclusion section should be added.*

ANSWER: A Conclusion section was added in the revised version of the manuscript.

*For the rest the analysis seems to be OK, as it is done with a standard software package that comes from a reliable source. The results are not very exciting, but there is little wrong with it. Different maps come out, and some interpretation is given, but there is little of generic value coming out of the study.*

ANSWER: As shown above, the Referee made puzzling remarks with regard to the nature of the manuscript and the model used for the final space-time kriging. The value of the Results obtained in this study, within the stage that was set in the Introduction, is clarified in the Discussion and Conclusion sections.

*If the editor accepts to continue with the paper, I would suggest the authors to better structure the paper, to change the title such that it emphasizes that a specific case study is done, and to better motivate the choice of techniques that they apply. That would then be a minor revision. As a review paper I must reject it, however.*

ANSWER: As mentioned above, this is a research article, not a review paper. A minor revision was prepared to address the comments made by both Referees.

The Referee's contribution was acknowledged in the revised version of the manuscript.