1 Scientific Comments

For a study leveraging statistical methods, the manuscript betrays great naïveté about statistics. For instance, the authors use "hyperparameters" (which are specific to Bayesian inference) to mean "control parameters". This is misleading, and needs to be corrected least users be confused into thinking that the methods applied in this toolbox are Bayesian.

We had read in different publications the use of "hyperparameter" to mention control parameters from machine learning technics:

- Duan et al., 2003, https://doi.org/10.1016/S0925-2312(02)00601-X
- Bernard et al., 2009, https://doi.org/10.1007/978-3-642-02326-2_18
- Probst et al., 2019, https://doi.org/10.1002/widm.1301

And there are others.

Although "control parameter" seems to be more accurate as it is less confusing with "hyperparameter" from Bayesian inference, we don't think that its use in the last version of the manuscript is a misleading. We nevertheless changed the term into "control parameter" in the new version of the manuscript.

They also mention that "updates of ClimIndRec will be dedicated to propose other regression methods such as lasso regression", apparently ignorant of the fact that it is a special case of the Elastic Net regression they are using.

In the supplementaries of the last version manuscript, we included the mathematical details of regression methods used and clearly explained that Elastic Net is a combination of ridge and lasso regression. We also explain that if alpha=1 is equivalent to a ridge regression and alpha=0 is equivalent to a lasso regression. However, as Elastic-Net is actually used in ClimIndRec, it optimises both lambda and alpha. While implementing lasso regression in ClimIndRec might consist in only optimising lambda while alpha is set to 0. The sentence cited by the reviewer is actually a mistake from us. But we mentioned that lasso is a special case of Elastic Net in both the supplementaries and in the main text of the two previous versions of the manuscript. So we think that calling us "ignorants" and using this argument to say that readers might be warned that we are, is maybe a little bit unfair. We hope you understand we are a bit upset.

I am not sure that much can be done about the problem at this stage, but I do think it is a warning to all users that those who designed this toolbox are not on top of their statistical game.

We are sorry to hear that as both reviewer's arguments mentioned above do not seem really fair for us.

2 Editorial Comments

The writing is still rather tedious. Please see annotated PDF for suggestions.

We thank very much the reviewer for all these useful suggestions that we added in the new version of the manuscript.

Also note that we had a "bug" in the code when producing Shapiro-Wilks tests for Fig 11 that were not convincing at all. These bugs have been corrected in the code provided on Zenodo and Fig 11 has been updated.

It is the third time that I have to point out that "Pages 2K" should be "PAGES 2k" and I am getting really, really tired of it. For heaven's sake, please show respect for this working group and correct the mistake!

We are really sorry for this mistake we changed it everywhere in the main text but we forgot to modify our .bib file so that you find (another time) this mistake when we cited PAGES groups' papers.