

16 February 2018

Dear Editor,

Thank you for considering our revised manuscript for publication in the Journal of Statistical Software. We have followed the reviewer recommendations and believe that the manuscript is considerably improved. Below, please find the reviewer comments and our responses.

Best,

Tim Meehan
Nicole Michel
Haavard Rue

Reviewer 1

1. “Another limitation that isn't directly addressed is that R-INLA doesn't appear to produce posterior distributions for the latent N variables. It appears as though they are integrated out of the likelihood as is done in the classical analysis. I think most practitioners will find this odd because people often adopt the Bayesian approach in order to obtain posteriors for the latent variables and random effects. Something about this should be stated in the manuscript.”

This limitation, not being able to generate posteriors for N , is now discussed in the discussion section of the manuscript. This comment by the reviewer motivated us to write a helper function for computing posteriors for fitted lambda values using the linear predictor. A user can employ this function to get expected abundance at sites to the extent that they differ by a covariate. In the end, the sum of fitted lambdas is very similar to the sum of N values, which is now shown in Example 1.

2. “Page 1: J Stat Soft does not request that 'et al' should be avoided in the in-line citations. Seems strange to write out each author's name.”

We used the JSS code snippet template to create this manuscript. The formatting of the citations was automatic. We assume it is correct as is.

3. “Page 2 It isn't really "the ratio of detections to non-detections" that is used.”

This has been corrected in the revision.

Reviewer 2

1. “The package must be called R-INLA. Not doing this makes is too confusing to call it R-INLA throughout the article.”

The package is indeed named R-INLA. We added new text that explains the naming history and the discrepancy between the package name and the code calls to INLA. This new text should help the reader avoid confusion.

2. “Make already on page 4 - before section 2 - clear that R-INLA is not on CRAN but can be installed from your site. The line `install.packages("R-INLA", repos="https://inla.r-inla-download.org/R/stable")` appears on page 5 before the `sim.nmix` code too late and too concealed.”

Discussion of the fact that R-INLA is not on CRAN, and the proper code to install the package, has been moved to page 4, as requested.

3. “Page 4, 2.1 Please describe the structural part of the model via a formula.”

A formula for the simulated data has been added. In the processes, we streamlined parameter and variable names in the text and code. It should be much clearer now.

4. “`sim.mix()` generates example data. Placing its code in the article gives meaning if you think that the reader has advantage of seeing the code. For this end, you must add structuring comments to the code.”

We have added comments to the `sim.mix()` code, as requested.

5. “Page 7, 3.2. Where is $x.p.3$? I see only $x.p.3.mean$ (compare to page 4 bottom).”

We have now simplified names for simulation parameters and variables and have made them consistent between the math formula and code.