

Dear Authors,

Your article is close to final approval. However, as you can see from the comments of the two reviewers, some minor changes have been requested.

Please consider these suggestions and submit a new revision along with a document showing your changes.

Thanks for the further comments from the editor and two reviewers. We addressed all comments in this revision. Please see the response below. All line numbers refer to that in the changes-tracked manuscript. We also made minor editions in other places to improve the readability.

I just have a few details:

- p 6, l.173: Correct: Indicators

Corrected, please see line 149.

- p 19, l.536: Correct "decease" to "decrease"?

Corrected, please see line 455.

- p 21, l.674: "... we did not ...".

Corrected, please see line 475.

- p 22, l.813: "use the difference"

Corrected, please see line 494.

- p 24, l.875: "to the global models"

Corrected, please see line 555.

[1] Abstract: You do not define RSR in the abstract, which makes it impossible to understand the abstract before reading the paper. The same is true for the introduction section of the paper.

We added the definition of RSR into the abstract and the introduction. Please see lines 34–35 and 129–130.

[2] Line 154: “An RSR value of 1.0 suggests a good performance while 0.5 suggests an excellent performance (O’neill et al., 2021).” While I appreciate the additional comments made by the authors on this point, I still think this sentence is misleading and should be taken out. The authors use the same statements of excellent performance etc later in the manuscript. It is sufficient to state what the optimal value is given that the rest is purely subjective opinion. Currently you explain that this subjective analysis should not be done, but then you do it.

In this revision, we edited this sentence to “In this study, we expect a satisfied performance with an RSR value less than 1.0 while 0.5 is preferable”. We also removed all “good” and “excellent” anywhere in the text and figures. Please see lines 35, 37, 130–131, 211, 213, 389, 431, 553, and new figures 2 and 4.

[3] Figure 10: I like the addition of this figure which is interestingly different to the previous study

mentioned. The additional discussion is now placing the results in the context beyond the models directly used in this study, as does the added discussion of Karst.

Thanks!

[4] The Summary and Outlook section is appropriately titled. One additional consideration to point (4) could be that much useful information is probably hidden in system conceptualizations done for previous modelling studies. Particularly in the context of groundwater system, hydro-geologists have interpreted available data in many places before – which holds valuable information due to the regional combination of expertise and data.

Good point. We added this suggestion into the manuscript. Please see lines 608–613.