

HYDROL70533R1: Editor's decision

010f0199477564b5-d85836b0-57c5-4795-804a-a2944f08904f-000000@mail.editorialmanager.com 代...

发给 zlj@lreis.ac.cn

2025-09-14 04:01 隐藏信息

发件人:

010f0199477564b5-d85836b0-57c5-4795-804a-a2944f08904f-000000@mail.editorialmanager.com<010f0199477564b5-d85836b0-57c5-4795-804a-a2944f08904f-000000@mail.editorialmanager.com> 代表 em<em@editorialmanager.com>

收件人: zlj@lreis.ac.cn<zlj@lreis.ac.cn>

时间: 2025年9月14日 (周日) 04:01

大小: 7 MB

 HYDROL70533_R1.pdf (5 MB)

Ref: "A spatially hybrid hydrological modeling approach based on spatial heterogeneity of watershed characteristics" (Dr. Liang-Jun Zhu)

Dear Dr. Zhu,

I very much regret to have to tell you that publication entitled, "A spatially hybrid hydrological modeling approach based on spatial heterogeneity of watershed characteristics" (Dr. Liang-Jun Zhu) in our journal is not recommended. An explanation for this decision is given in the attached review reports (and on <https://www.editorialmanager.com/hydrol/>). I hope that the comments contained therein will be of use to you.

Thank you for your interest in our journal.

With kind regards,

Yuefei Huang, Ph.D.
Editor
Journal of Hydrology

.....
Important note: If a reviewer has provided a review or other materials as attachments, those items will not be in this letter. Please ensure therefore that you log on to the journal site and check if any attachments have been provided.

COMMENTS FROM EDITORS AND REVIEWERS

Editor: The presented work actually has been through several rounds of reviewers. Chances have been given to potentially improve the work. However, it looks the revised work still has very critical issues which might not be easily corrected in short period. Therefore, I am sorry that I have to stop the process and really hope that the work can be published in other outlets based on comments from reviewers.

Reviewer #3: Dear authors,

I have completed my first read of your paper. I understand that this paper has been through at least

one round of reviews so far, and I would like to clarify that I have not seen your paper before. I have therefore reviewed it like I would any new submission. I have summarized my main thoughts below. Some extra comments can be found in the annotated PDF.

Summary

This paper introduces a modification to the SEIMS model, to allow the model to combine lumped and (semi-)distributed model setups, each with their set of equations, into a single watershed model. The effectiveness of this approach is shown by calibrating various model setups (fully conceptual, fully physics-based, hybrid) and comparing simulations accuracy at the outlet. Because the spatially hybrid approach reaches the best scores the approach is considered successful.

Comments

[Framing] Much of the framing in this paper presents this work as a proof-of-concept, intended to show that spatially hybrid modelling is possible. It is however not clear to me if there was really much doubt about this already. Existing frameworks like SUMMA and Raven (which the authors cite in their introduction) can be run in any spatial configuration (lumped basins, HRUs, grids), and allow users to change model decisions. Existing routing tools like mizuRoute can be used to route runoff from any spatial setup through a single river network. It would be somewhat cumbersome, but not impossible, to create a spatially hybrid setup from such existing tools. Similarly, the so-called "NextGen" framework under development by NOAA (<https://github.com/NOAA-OWP/ngen>) provides the same sort of capabilities and philosophies as the authors pursue here. This means that the potential novelty of the work shown here is somewhat limited. The idea is by no means a bad one, but there are other code bases out there that do what SEIMS does (either partially, or fully). There is of course nothing wrong with this, but it opens some questions about what research gap this paper actually addresses. I think the introduction needs to be clearer about which technical capabilities are already out there, and what this new development contributes to the current state-of-the-art.

In my mind, there aren't many technical barriers to implementing spatially hybrid setups, and the main challenges of such approaches are scientific in nature. The previously brought up scaling issue is one of these, but there are also questions about the spatial coherence of these hybrid model setups. For example, if one were to plot mean model states or fluxes on a map of the basin, would the resulting spatial field make sense or would it show sharp changes as a consequence of where model structures are different? A similar question can be asked about spatial coherence of model parameter fields, with the added practical question about how to effectively estimate parameters for such hybrid setups. I understand that such questions may go beyond the scope of this paper, but I think they are insufficiently discussed.

[Journal scope] Together, this leaves me to wonder if Journal of Hydrology is the right venue for this work. The main message of this work seems to be "spatially hybrid modelling is technically possible, and the model code to do so is freely available". I think this is a commendable outcome, but possibly outside the scope of JoH. To me, this manuscript reads like a model development paper, and would be more appropriate in something like Geoscientific Model Development or Environmental Modelling & Software.

[Testing and effectiveness of the approach] This brings me to my final point. As a model development paper I find the text on implementation and evidence of successful implementation too brief. Journals like GMD and EMS have certain guidelines and expectations about model development. GMD for example expects documentation of the model code as part of the submission, and EMS has certain requirements about describing the tests used to verify any code changes. These expectations exist for good reason: they are ways to promote robust model development.

I find the description of the model development process too brief in the current manuscript. I particularly would expect much more thorough tests about the various components of the model

that needed to be changed. If function-level testing is too cumbersome, I would at least expect (much) more thorough testing of the resulting code base. Five years of simulations from a single basin, assessed only through some aggregated efficiency scores and visual assessment of a small hydrograph plot is not sufficient. At the very least further diagnostic evaluation of the resulting hybrid setup needs to be shown to give the reader some reason to believe that the code changes had the intended effect.

[Conclusion] To repeat, I very much appreciate the authors goal of investigating novel ways of configuring models across space, and I commend their goal to so through open-source software, but I don't think JoH is the right venue for this sort of work. In it's current shapre, the manuscript would be better placed in a more model-development focused journal, not in the least because it will set clear expectations about the sort of descriptions and tests needed to robustly report work such as this.

If the manuscript would focus more on the scientific validity and challenges associated with spatially hybrid modelling, I could see it (potentially) end up in JoH. In it's current shape however the manuscript focuses too much on model development, and too little on using the resulting setup in ways that teach us something about the strengths and weaknesses of spatially hybrid modelling, for this to be a realistic option.

At Elsevier, we want to help all our authors to stay safe when publishing. Please be aware of fraudulent messages requesting money in return for the publication of your paper. If you are publishing open access with Elsevier, bear in mind that we will never request payment before the paper has been accepted. We have prepared some guidelines (<https://www.elsevier.com/connect/authors-update/seven-top-tips-on-stopping-apc-scams>) that you may find helpful, including a short video on Identifying fake acceptance letters (<https://www.youtube.com/watch?v=o5l8thD9XtE>). Please remember that you can contact Elsevier s Researcher Support team (<https://service.elsevier.com/app/home/supporthub/publishing/>) at any time if you have questions about your manuscript, and you can log into Editorial Manager to check the status of your manuscript (https://service.elsevier.com/app/answers/detail/a_id/29155/c/10530/supporthub/publishing/kw/stat

#AU_HYDROL#

To ensure this email reaches the intended recipient, please do not delete the above code

In compliance with data protection regulations, you may request that we remove your personal registration details at any time. ([Remove my information/details](#)). Please contact the publication office if you have any questions.