

# Interactive comment on “On the importance of multiple-component evaluation of spatial patterns for optimization of earth system models – A case study using mHM v5.6 at catchment scale” by Julian Koch et al.

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Received and published: 13 December 2017

GMD is encouraging authors to provide a persistent access to the exact version (??) of the source code used for the model version presented in the paper. As explained in [https://www.geoscientific-model-development.net/about/manuscript\\_types.html](https://www.geoscientific-model-development.net/about/manuscript_types.html) the preferred reference to this release is through the use of a DOI which then can be cited in the paper. For projects in GitHub (such as SEEM) a DOI for a released code version can easily be created using Zenodo, see <https://guides.github.com/activities/citable-code/> for details. For mHM you may consider to upload the program code of the specific version of the paper (including relevant data sets) as a supplement or make the code and data of the exact model version (v5.6) described in the paper accessible through a DOI (digital object identifier). In case your institution does not provide the possibility to make electronic data accessible through a DOI you may consider other providers (eg. zenodo.org or CERN) to create a DOI. Please note that in the code accessibility section you can still point the reader to the GitHub repository for the newest version even if you use a DOI for the relevant releases.

Lutz Gross GMD Executive Editor

*We would like to thank Executive Editor Lutz Gross for his comment. We will follow his suggestions and provide citable versions of the code used in our study. The hydrological model (mHM) is citable via Zenodo (10.5281/zenodo.1069202). All model code modifications used for this study, as described in detail by Demirel et al. (2018), are included in the recent mHM release (v.5.8). For the revision, we will update the version number of mHM respectively. The scripts for FSS and connectivity analysis are available in the SEEM repository on GitHub, which has been made citable using Zenodo (10.5281/zenodo.1154614). The code of the SPAEF metric is citable via ResearchGate using the following doi: 10.13140/RG.2.2.18400.58884. The exact version of the scripts including their DOIs will be provided in the revision. Forcing data and mHM parameter files will be made available upon request which will be clearly stated in the “Code and Data Availability” section in the revised manuscript. However, the DMI (Danish Meteorological Institute) forcing data can only be shared for pure research purposes and are available on the HOBE database (<http://www.hobecenter.dk/index.php/data>). The database requires a login, which can be obtained from the admin.*

*Demirel, M. C., Mai, J., Mendiguren, G., Koch, J., Samaniego, L., and Stisen, S.: Combining satellite data and appropriate objective functions for improved spatial pattern performance of a distributed hydrologic model, accepted for publication in Hydrol. Earth Syst. Sci., <https://doi.org/10.5194/hess-2017-570>, 2018.*