Geoscientific
Model Development
Discussions

Interactive comment on "The Variable Infiltration Capacity Model, Version 5 (VIC-5): Infrastructure improvements for new applications and reproducibility" *by* Joseph J. Hamman et al.

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The manuscript by Hamman et al. introduces a new version of the widely used and highly cited VIC model. It is, to my knowledge, the first time the model is properly published in a journal of the nature of GMD. This is a relatively short and well written manuscript, focusing on the latest version of VIC (5) and its implementation for distribution within the scientific community. The extensive use of VIC in the community already suggests that this will be a very welcome activity.

As such I have few comments:

[1] Is the African flood and drought monitor different from the global drought monitor? If yes, then maybe one could add this in the introduction section.

[2] The authors might have excluded it on purpose, but I would find it helpful to see the schematic figure of VIC that is widely used. This would be mainly helpful for people not familiar with VIC. My suggestion would be to include a version of it.

[3] Maybe the conclusions section could include a brief outlook paragraph in which the authors discuss what they see as the future evolution of VIC? It would be interesting to hear what the authors think is the future of this code as a scientific and/or operational tool for hydrology and water management.

[4] One issue that in the past has been problematic for LSMs is the detailed assessment of uncertainty (see Wood et al. vs Beven and Cloke discussion in WRR). I wonder what impact the re-structuring of the code in VIC-5 for the ability of modellers to undertake a detailed uncertainty analysis (especially of space-time fields)? Both in terms of memory requirements as well as in terms of model run times (on clusters).

[5] And finally, given the tremendous number of papers in which VIC is advanced and used, could the authors make some suggestions about what papers a new user should start with? Maybe a basic reading list. Where should a new user start after downloading VIC-5?