

Hydrol. Earth Syst. Sci. Discuss., referee comment RC2
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Comment on hess-2021-550

Anonymous Referee #2

Referee comment on "Revisiting parameter sensitivities in the variable infiltration capacity model across a hydroclimatic gradient" by Ulises Sepúlveda et al., Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2021-550-RC2>, 2021

The authors assessed application results of the VIC model on 101 basins in Chile to test how sensitive model results were to variations in 43 calibration parameters. They explained how some parameters could be adjusted by model users and others were hidden inside the coding of the model. Their results showed that 12 parameters exhibited significant sensitivity in soil, vegetation, and snow input variables. Their work seems to provide insight into the inner workings of the model and to contribute useful guidance for future advancement in the popular VIC model.

The paper is long and detailed with an extensive set of graphs and tables that will be of interest to modelers working on the finest details of the VIC model. The writing and presentation are excellent.

The paper would be more useful to hydrologists and modelers who are not part of the mainline VIC users if the authors would include brief information about the model's history and accessibility. Very little information of this nature is included. See Line 142 as an example of how the model is introduced.