Geoscientific
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Discussions

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Interactive comment on "$^{\text{GA}}$SAKe: forecasting landslide activations by a genetic-algorithms based hydrological model" *by* O. G. Terranova et al.

Anonymous Referee #2

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In my opinion, the approach proposed by the authors is very interesting and promising. Also, in general, the paper is well written, clear, and easy to follow, except in some critical points, where its readability can still be improved.

First, the adopted fitness definition deserves a more robust discussion and motivation in the manuscript. Moreover, the authors should mention if they performed an investigation on alternative metrics. In fact, according to the literature, the adopted fitness can significantly affect the results of calibration procedures, both in terms of achieved maximum and potential overfitting (which affects validation accuracy).

As for the family of "optimal kernels", my advice is to better explain such a concept.

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In fact, a single-objective GA typically provides a single optimal (or "best") individual, thus the mentioned concept of "family of optimal kernels" provided by the procedure can confuse the reader.

The same applies to the concept of "average kernels" introduced in section 5. Currently, the reader has to struggle to understand why the authors average kernels when they have a "best kernel", or what is the origin of the 100 averaged kernels.

Also, in section 6, it is not clear why the progressive calibration procedure was also labelled as "self-adaptive".

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