

***Interactive comment on* “Conditional simulation of surface rainfall fields using modified phase annealing” by Jieru Yan et al.**

Jieru Yan et al.

yanjieru1988@163.com

Received and published: 4 February 2020

I am very grateful and value the suggestions from Professor Pegram on the amendment and improvement of the manuscript. It appears to me that every time after working through Professor Pegram’s annotated document, my skill in writing a proper scientific paper is improved substantially: correctness, accurate expressions, informative figures (color schemes, font sizes ...). Hopefully, Professor Pegram feels the same way as I do. Anyhow I will continually make efforts to improve the relevant skills and try to expend less of his effort next time.

As for the computational costs of the simulation process, we make the following descriptions, and it should be noted that all the following descriptions are based on the

[Printer-friendly version](#)

[Discussion paper](#)



performance of a normal laptop. Let's take the most expensive one (Stage 3) as an example. A single simulation cycle takes around 1 min which produces only one contributor. To obtain an expected realization consisting of 23 contributors, 23 min is required and 100 such realizations take around 38.3 h. Yet, to obtain 100 realizations using the strategies of either Stage 1 or Stage 2, it takes $(38.3 \text{ h}/23=)$ 1.67 h.

The above is the time consumption when the component directional asymmetry is not integrated into the objective function. If the additional component is considered, then all the above mentioned time consumptions are doubled (a single simulation cycle takes around 2 min in this case). If the trick is employed (take those contributors that weigh the most and being slightly conservative though), then the time consumption could be reduced to $(19/23)$ of the previous time consumption. Thus, to obtain 100 expected realizations, $(38.3*2*19/23=)$ 63 h is needed.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2020-4>, 2020.

Printer-friendly version

Discussion paper

