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Hydrology and Earth System Sciences Discussions

Interactive comment on "Possibilistic uncertainty analysis of a conceptual model of snowmelt runoff" *by* A. P. Jacquin

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As indicated by the different reviewers, the possibilistic approach for calibrating a hydrologic model is very interesting. However some important issues have been raised by the reviewers, compelling for a major revision of the paper. In the revised version, the author should carefully address the remarks made by the reviewers, with special attention to the following items:

1. The terminology often is not very precise. Several comments were made hereupon. I also suggest that clear definitions of possibilistic concepts are given as possibility theory still is not widely known as alternative to describe uncertainty.

2. It is not clear why the possibility distributions for the parameters was chosen to be

rectangular (most probably for computational reasons as you then only have one α-cut (i.e. $\alpha = 1$) to sample): such choice seems very strange with respect to describing the uncertainty: chosing a trapezoidal or triangular possibility distribution functions seems to be more logic and I would suggest that this option is implemented in the revised version.

3. Using a Monte Carlo simulation, which is a typical probabilistic technique, for sampling the parameter-space at an α-level, is quite confusing. Sampling all parameters at a certain α-level by discretizising the interval in a 'limited' number of points and simulating with all possible combinations on which the extension principle is applied seems to be more logical.

I am looking forward to receiving your revised manuscript.

Yours sincerely,

Niko Verhoest

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