

Water Resources Research

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MS000679: Climate Change, Hurst Phenomenon and Hydrologic Statistics

Dr. Demetris Koutsoyiannis
National Technical University
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GREECE

Dear Dr. Koutsoyiannis:

Enclosed please find two reviews of the above-referenced manuscript. Based on these reviews and the recommendation of the Associate Editor who managed the review process, I am rejecting your contribution in its present form. Major revisions are required which could lead to a publishable paper.

Reviewer 1 finds your paper to be an important contribution but takes exception to the overemphasis on the distinction between stochastic and deterministic processes. There is also a repeated tendency to overstate the implications of the analysis. Reviewer 2 is far more critical. This reviewer find the motivation for the study to be very confusing, lacking rigor, and ignoring important contributions in other fields. This is consistent with the first reviewer's comment that the implications are overstated. Reviewer 2 also suggests that the paper ignores alternative explanations for the observed statistical behavior in the time series and recommends that the paper be reduced to a Technical Note (a focused contribution of not more than 16 manuscript pages including references, figures, text, and tables) showing only the statistical techniques and one brief application. The AE has indicated that rather than reducing the paper to a TN, there is enough important material to justify a full paper provided the text is rewritten. The following specific changes are required:

- The work must be placed in better context of related advances in the field through an improved literature search.
- Take a more simple and pragmatic approach to motivate the presentation of the paper's contributions. It is enough to quote references that have used simple scaling in climate and hydrology. State the definition and go directly to the present section 3 and the case studies.

- Be much more careful with interpretation and in stating the implications of the analysis keeping in mind that a statistical model is not an explanation but a description. Much is known on the physical side on the driving processes of climate and hydrology, but this has not entered the context of the present manuscript. As a remedy, it may suffice to be more modest with the claims the paper makes.
- Discuss alternative explanations for the observed statistical behavior in the time series such as large but finite correlation lengths, composite random processes with components with significantly different scales and power law trends. Also discuss how the method proposed here relates to the alternative explanations.

These items and the detailed comments of the reviewers should provide a useful basis to you for revision and resubmission of your manuscript.

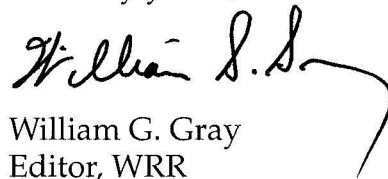
If you choose to resubmit, please note in your cover letter that the manuscript was previously considered as number 000679. Send the submission to:

Editors
Water Resources Research
American Geophysical Union
2000 Florida Avenue, N.W.
Washington, DC 20009

Please include a detailed statement indicating how you have addressed each of the points raised by the reviewers. Upon receipt, the manuscript will be given a new number. Although it will be treated as a new submission, the editor assigned to the manuscript will ask the same AE to manage the review, if possible, so that the process can proceed efficiently.

I appreciate your sending your manuscript to *Water Resources Research* for consideration and hope that the review comments are helpful to you in presenting your work.

Sincerely yours,


William G. Gray
Editor, WRR

Enc. 2 reviews

cc: AE, DE, file