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Hydrology and Earth System Sciences
Discussions

Interactive comment on "A class of probability distributions for application to non-negative annual maxima" *by* Earl Bardsley

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Dear Earl,

I'm really sorry that you considered my comments as 'straw man tactics', since there is no tactics in my remarks. What advantages would I get from this public discussion? Actually, I would be quite foolish if I used 'straw man tactics' in an eponymous report. Fortunately, we are old enough to know that 'straw man tactics' along with 'conflict of interest' and other similar arguments are only stratagems used in our business.

By the way, in this case, I'm not a reviewer but just a commenter, so you can be sure that the review process will proceed in a transparent way. Moreover, the handling Editor has enough experience and expertise in statistics and hydrology to make a fair

and correct decision, filtering out my 'straw man' remarks.

Coming to technical stuff, I'm happy that you agree with me about the transformation Y = 1/X. In fact, in my comment, I only stressed that both Y = 1/X and Y=-X provide a switch between maxima and minima, and both are well known and already exploited, resulting in distributions already discussed in the literature and widely used. I mentioned Y=-X to highlight that also this transformation yields known results (even if I recognized that you did not consider it) because both Y = 1/X and Y=-X follow the same rationale with the same purpose. So, my question is very simple: do we really need a paper/technical note saying that 'for a Weibull random variable, Y = 1/X yields a Frechet/Inverse Weibull (...or any other of the names used along the years for this family) and Y=-X (if you want to add this case) yields a GEV'?

On the other hand, when we move to a general decreasing monotonic transformation Y=g(X), things become a little bit more complicated, making the general statement about switching between maxima and minima no so general, as recognized by Reviewer 1, who, unlike me, did not use 'straw man tactics', I hope.

In a nutshell, provided that X is Weibull, we already know the relationships between the distributions of X and Y in the case 'Y = 1/X' and 'Y=-X', and we already know that a general decreasing monotonic transformation Y=g(X) cannot be used without a careful (case-by-case) check of the fulfillment of the (non negligible) hypothesis required to make the results meaningful.

Now, if this statement (or part of it, excluding 'Y=-X') is the message of you paper, I simply cannot understand what is the content deserving a communication in a journal. By my side, I learned this stuff by reading books written 60 years ago. But reading old stuff is my perversion and fault.

That's all. If you, reviewers, and editorial board think that the message is worth a communication in HESS or wherever else, that's fine. I only highlighted that your message (and much more) can also be retrieved in good readings such as Gumbel (1958), books

from Kotz, Johnson and their colleagues, and other valuable texts. For me, spending time with those books/papers (i.e. getting in the giant's shoulders) is more enjoyable than writing papers.

I hope that this clarifies my position.

I wish you all the best

Sincerely

Francesco

PS: I always provide review reports as an eponymous reviewer (unless the Editors remove my signature due to journal's policies). So, if you did not agree with me in the previous review processes, you could have contacted me to discuss your point of view (regardless of Editor's decision), as we are doing now. I'm always open to exchange of opinions.

PS2: In the EMS review process, after recognizing your persistence in delivering your message, I suggested to the Editor to contact an additional reviewer, precisely a world-class expert in univariate and multivariate EVT (I do not mention his/her name here for the sake of correctness/privacy). So, we also agree on how a fair review process should proceed. I'm sorry that you did not have an additional opinion, but this did not depend on myself.

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