

Interactive comment on “A stochastic model for drought risk analysis in The Netherlands” by Ferdinand L. M. Diermanse et al.

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This short comment is just to highlight that the modeling framework proposed in this paper is a special case of the so-called conditional-copula approach widely applied in econometrics for more than a decade (see e.g. Grégoire et al. (2008) and Patton (2009) for gentle introductions). Of course, this approach has been already applied in hydrology and for more challenging tasks (e.g., Vogl et al. (2012), Villarini et al. (2014), Serinaldi and Kilsby (2014, 2017), among others)

Concerning the problem of reproduction of the cross-correlation, it is partly related to lack separability of spatio-temporal dependence structures and partly related to the effect of the marginal distributions on the correlation coefficients. This problem

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is described and addressed by Papalexiou (2018), who also provides a more efficient and accurate procedure (in a meta-Gaussian framework) for simulating hydro-environmental variables with arbitrary (discrete, continuous, and mixed) marginals and prescribed space-time correlations, including lagged cross-correlations as well.

Honestly, I think that the proposed procedure is not novel and does not add any new to existing literature, which in turn is widely overlooked and should be acknowledged. As usual in my review reports, I strongly suggest an accurate literature review before writing a paper. Often, the same problem has been already addressed (and better) by others, and often this was done several years ago, perhaps in different areas of research.

Sincerely

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