

Hydrol. Earth Syst. Sci. Discuss., author comment AC3
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Comment on hess-2021-609

Francois Ritter

Author comment on "Technical note: A procedure to clean, decompose, and aggregate time series" by François Ritter, Hydrol. Earth Syst. Sci. Discuss.,
<https://doi.org/10.5194/hess-2021-609-AC3>, 2022

Dear Anke Hildebrandt and dear Jens Schumacher,

Thank you for all the time you put in this manuscript. I have addressed the changes asked by the reviewer and removed the very small sample case ($n < 9$) from the Logbox procedure. Another change came from an independent reviewer (Dr. Rob Hyndman), who mentioned that an important reference was missing: Barbato et al. (2011).

I was not aware of the study from Barbato et al. (2011), but it appears that they found a law similar to logbox ($\alpha = A \cdot \log(n) + B$) but with a different reasoning (heuristic approach) and calibrated on the Gaussian distribution only (A and B are constant). I had to include this approach in part I, and to compare its performance to Logbox (Fig. 2 updated). The discussion has been slightly modified to include this new model, but the conclusion remains the same.

Please find below a list of changes:

Part I:

- the very small sample case ($n < 9$) has been removed and the method section has therefore been simplified.
- m.star is not exactly a predictor of the kurtosis excess (which takes into account the two tails of a distribution), but it is more a predictor of the weight of the heavier tail. The description of m.star has been updated accordingly.
- Barbato et al. (2011) has been included in the introduction and the discussion.

Part II: unaffected

References:

- updated to the HESS format.

supplementary material:

- The very small sample case ($n < 9$) has been removed, and Fig. S1 updated.

Acknowledgement:

- I will personally fund the publication of this article, and I therefore removed the "fonds de dotation O" from the acknowledgement.

Code

- the code has been updated on https://github.com/fritte2/ctbi_article to account for the changes in Part I.

Ref:

Barbato, G., Barini, E. M., Genta, G., and Levi, R.: Features and Performance of Some Outlier Detection Methods, *Journal of Applied Statistics*, <https://doi.org/10.1080/02664763.2010.545119>, 2011.

Best regards,

François Ritter