

Interactive comment on “Exploring the effects of missing data on the estimation of fractal and multifractal parameters based on bootstrap method” by Xin Gao and Xuan Wang

Anonymous Referee #1

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The writing of this manuscript is poor and the English language needs revision. I do not recommend to accept this manuscript. It needs complete rewriting.

From the beginning this manuscript is poorly written. List of problems in the introduction: Line 77: what is PM2.5? Line 78: what is DEM? Line 80: how is H defined? The H value in itself does not prove that the studied process is a Brownian motion or a fractional Brownian motion. Line 82: what is α ? Line 105: what is the relation of this scientific ms. with comparative politics or international relations? Line 194: there is a - sign in the exponent

I could follow (with pain) the idea of the manuscript until section 2.3. I could not under-

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stand this section. Why is resampling needed?

Globally the problem of missing values in measured time series is very relevant and the question of parameter estimation for scaling processes is a legitimate question. But this manuscript suffers many weaknesses: - there is no review of the literature on this topic. Many papers have been devoted to such general topic. The authors should also mention the estimation of spectral slopes of scaling processes with missing or irregular data, for which there is a vast literature; - the authors should quantify and characterize the missing values: irregular missing values, or by blacks, and how many compared to the total length of the series? - why perform classical interpolations for a scaling fractal or multifractal field having huge fluctuations? - the authors should separate pure cascade processes from non stationary processes with stationary increments (fBm) since the results will be clearly different; - why is bootstrap necessary for such topic? - for numerical studies, very long time series with many realizations should be considered (with billions of data points) and not 1000 or 2048 data points (lines 350-354).

Interactive comment on Nonlin. Processes Geophys. Discuss., https://doi.org/10.5194/npg-2018-38, 2018.

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