

Interactive comment on “A general theory on frequency and time-frequency analysis of irregularly sampled time series based on projection methods. I. Frequency analysis” by Guillaume Lenoir and Michel Crucifix

Anonymous Referee #1

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Review of “A general theory on frequency and time-frequency analysis or irregularly sampled time series based on projection methods. I. Frequency analysis. “ by Lenoir and Crucifix

Recommendation: Minor revisions

The manuscript develops a new method to analyse irregularly sampled time series which is very important for paleoclimate time series. This is a very useful contribution to data analysis. The manuscript is well written, though I needed to get used to the

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mathematical notion. I recommend to accept this manuscript after the authors have addressed my below points.

- 1) How long can the “gaps” in the time series be? How irregular can the time series be? This should be discussed.
- 2) Eq. (13): The notation of the SDE does not make sense to me. White noise is not differentiable. Wouldn't it make more sense to write the MA part as an memory kernel?
- 3) Does your significance test also test for trend significance?
- 4) All references in the manuscript are in the style (Author, year) but in many cases it should be Author (Year). This should be corrected.
- 5) Page 18, line 7: “This it” should be “This is”

Interactive comment on Nonlin. Processes Geophys. Discuss., <https://doi.org/10.5194/npg-2017-26>, 2017.

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