

Interactive comment on “A general theory on frequency and time-frequency analysis of irregularly sampled time series based on projection methods. II. Extension to time-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 of irregular sampled time series based on projection methods. II. Extension to time-frequency analysis” by Lenoir and Crucifix. This is a fine piece of work on wavelet analysis which will be useful for many geoscience areas which deal with irregular sampled data. I recommend to accept the manuscript for publication after my points have been addressed.

Recommendation: Minor revisions

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This is the second part of a study on analysis methods for irregularly sampled time series.

1) Fig.1 shows a comparison between the method developed by the authors and a classical wavelet method for the NINO3 time series. I suggest to also compare the new method on the NINO3 time series which has been irregularly sampled by neglecting some values. That way the reader can better see how well the new method does.

2) The author also includes a trend component in their model. Trends can be hard to identify. For example, which appears to be a trend in a time series could in fact be part of a very low-frequency oscillation. While no method probably can distinguish between these two cases it might be good if the authors would comment on this in the manuscript.

3) As in part I, most citations are in the form (author, year) even though they should be Author (year).

4) I suggest the authors discuss the form of the irregular sampling of the d18O data.

5) page 10, Line 25: Should “drived” be “derived”?

Interactive comment on Nonlin. Processes Geophys. Discuss., <https://doi.org/10.5194/npg-2017-27>, 2017.

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