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Ocean Science
Discussions

Interactive comment on "Hybrid improved EMD-BPNN model for the prediction of sea surface temperature" *by* Zhiyuan Wu et al.

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Review of os-2018-101: Hybrid improved EMD-BPNN model for the prediction of sea surface temperature

General comments:

This manuscript reported an improvement for an SST predicting method based on improved empirical mode decomposition algorithms and back-propagation neural network, while Two different EMD algorithms have been applied extensively for analyzing time-series SST. The finding is useful and important for the climate research and modeling communities, although the present analysis/conclusions might be only fair. This is a very interesting paper improving the ability of SST predicting models and the issue

addressed in this study is very important since this has been a problem plaguing many predicted models and the authors have done a fine job. However, some points need clarification and I would suggest the following revisions.

Specific comments:

1) Method: The SST within the North Pacific Ocean has significant seasonal to decadal variability, which obviously influences the estimation of long-term trend. I need to know how the authors use what method to describe this nonlinearity?

2) Data: The authors used the OISST to calculate the long-term trend of SST in the North Pacific Ocean including the marginal seas. The authors claimed a 35-year long-term trend from 1982 until 2016 and SST trends in various specific periods, eg, in recent decade. However, it is well known that the SST observations is extremely sparse during the early weeks until the satellite measurements being available in the 1970s, especially within the marginal seas., a 35-year SST trend using such a dataset is should be questioned (especially talking about spatial pattern of SST trend). Concluding a long-term trend without considering of huge uncertainty is hard to accept. I think the authors should try to clarify the specific content of the data.

3) Novelty: The authors should clearly point out the innovations of this manuscript except stirring up old topics. I personally think that there are obvious innovations in the method. But not sure if this understanding is accurate.

From my point of view, the paper deserves to be published in the journal after minor revision.

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