

Interactive comment on “The long-term spatio-temporal variability of sea surface temperature in the Northwest Pacific and the Near China Sea” by Zhiyuan Wu et al.

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Response to comments of Reviewers

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Anonymous Referee #1 Received and published: 20 Sep 2019

The authors are grateful to this reviewer for pin-point and pertinent comments and checking the paper. All comments are addressed point by point, each starting with an original comment and followed by a response in italic, as follows.

C1

The manuscript “The long-term spatio-temporal variability of sea surface temperature in the Northwest Pacific and the Near China Sea” by Zhiyuan Wu et al., Presents the variability of the sea surface temperature (SST) in Northwest Pacific the last 164 years, on seasonal, annual and interannual scales based on monthly data sets. The analysis is well presented, and the results are interesting in terms of global warming. Response: Thank you for these comments. The positive comments in our solid professional skills are good encouragement to us.

The correlations found are mostly expected, especially between the SST and the T2, since the temperature at 2 m and SST are strongly linked. The changes in the SST and the SSTA are closely related to El Niño 3.4. The important part of this study is the increasing SST linear trend of $0.033\text{ }^{\circ}\text{C}/10\text{ yr}$ and especially of $0.306\text{ }^{\circ}\text{C}/10\text{ yr}$ in the last ten years, which shows an “acceleration” in the temperature increase in the Northwest Pacific. Response: We are grateful to these positive comments.

On the other hand, it is interesting the change that the authors find in the SST around 1998. Although they do not propose an explanation for this change, it would be excellent if they tried to give some comment or proposed a hypothesis. Response: Thank you for your comment. As the reviewer said, we found a very interesting phenomenon about the changes in the SST around 1998. We believe that this phenomenon has an important relationship with the El Niño, which can be confirmed in Figure 5. And the same phenomenon reappeared around 2016, we can understand this phenomenon from the NINO3.4 index. These discussions are in Section 3.1, lines 269 to 288 of the manuscript.

A minor issue is in Figure 12, placing a, and b on the figures to be consistent with the figure caption. Response: Thanks for your careful checking. We revised the Figure 12.

The manuscript deserves to be accepted. Response: We are grateful to the positive comment and encouragement.

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Please also note the supplement to this comment:
<https://www.ocean-sci-discuss.net/os-2019-69/os-2019-69-AC1-supplement.pdf>

Interactive comment on Ocean Sci. Discuss., <https://doi.org/10.5194/os-2019-69>, 2019.