

Review

remotesensing-2688839

24/10/2023

Title: An adaptive learning approach for tropical cyclone intensity correction.

Authors: R. Chen, R. Toumi, X. Shi, X. Wang, Y. Duan, W. Zhang.

Recommendation: Major Revision

GENERAL COMMENTS:

The work presented in the manuscript is a valuable contribution to the research problem of improving the accuracy of tropical cyclone intensity estimation using adaptive machine learning techniques. This topic is very relevant as weather hazards such as tropical cyclones cause damage to life and property every year. The work is well structured, written in simple and clear language, but there are minor remarks especially in the design of figures.

Some aspects of the methodology also need to be more clearly justified. I offer a few suggestions for improvement (see below).

MAJOR COMMENTS:

1. In Figure 1, the authors present a flowchart of the adaptive approach they used to conduct the study. Generally, adaptive approaches use feedback loops, and this is in the research. It would be desirable if the authors displayed the decision blocks in the flowchart and mentioned the cost function on the basis of which a particular decision (OR) is made. And the block diagram itself was depicted with feedback connections.
2. In the design of some figures, the authors made inaccuracies in the description and presentation of the legends and conditions of the experiments. In addition, there is no caption on the axes of the figure. The average reader can guess, of course, but it is desirable to correct inaccuracies.

MINOR COMMENTS:

1. Line 13. It is advisable for authors to provide a decoding of the abbreviation IBTrACS before its first use in the text of the manuscript.
2. Line 129. The degrees icon has disappeared from the 0.25 grid step designation. It can be restored.
3. Line 171. Table 3. The authors need to mention what the abbreviation W stands for. You can guess from the text below, but it is advisable to place the description in a timely manner. In addition, the authors indicated that they use a condition under which TC is considered if only $W > 0$. And the table shows cases for which $W > 64$. It is advisable to eliminate the inconsistency or explain it explicitly.
4. Figure 6. It is advisable to move the legend (train) from left to right to the legends (val+test). The legend covers the figure.
5. Line 286. Figure 7. The explanations to the figure are unclear. Why did the authors indicate that the color scale is brought to the same level if the labels on the scale axes do not match. There are no labels for the axes either. I would like to describe the results presented in the figure in more detail.

6. Table 6. The header of the table indicates an experiment that has "Testing dataset (2021-2022)" and validation (10%). Were these the conditions in experiment #2? It has 1/2 of the sample size.
7. Figure 8. The description of the figure and the designation in the legends is unclear. Not noted are the different cases of experiments explicitly in the figure.
8. Line 419, fig. 11. Replace mmd with MMD.