

DEEP TEMPORAL CONVOLUTIONAL NETWORKS FOR F10.7 RADIATION FLUX SHORT-TERM FORECASTING

Luyao Wang, Hua Zhang, Xiaoxin Zhang, Guangshuai Peng, Zheng Li, and Xiaojun Xu

MAJOR CHANGES RECOMMENDED

Page 4: Figure 1. Caption inadequate. Need to explain the black, red, blue colors (in addition to the legend on the top right hand corner) and mention the "leave-one-out" method.

Page 4: No need of Table 1 and I recommend removing it. Describe the software and hardware details in words.

These are all standard software and hardware information in the context of machine learning and therefore, no need to highlight in the form of a table.

Page 5: Figure 2: Explain the diagram.

Pages 6-7: Figures 3 and 4. These two figures are the same as the two panels in the figure in Bai et al., 2018.

I strongly recommend removing the two figures from the manuscript as they are not newly developed for the current work/manuscript.

After removing the figures, you could simply refer to the Bai et al., 2018 figure in the text. Explain the difference, if any, in the architecture you have chosen for the current work/manuscript.

Page 11: Figure 5: Panel numbering is not clear.

Suggestions: "Panel (a)", "Panel (b)" and "Panel (c)" or simply, "(a)", "(b)" and "(c)" at the top right hand corner.

Page 12: Figure 6.

If you extend the Y-axis slightly, the plot will have a cleaner and clearer look. I strongly recommend this.

Page 13: Make similar changes as the one on the line above for Figures 7 and 8.

For figure 7, you may want to choose the top left corner for giving the panel names.

For Figure 8, you need to extend the Y-axis because the numbers over the bars are falling outside of the top axis. Then you may use the top left corner for placing the panel names.

There are lots of typos such as spacing throughout the text (e.g. Caption of Figure 4). I have pointed put some instances but I recommend you do a through check.

SOME SPECIFIC CORRECTIONS SUGGESTED

Line 56: "...RNN (...)" Change this to, "...recurrent neural network (RNN) ..."

Line 59: Expand "TCN".

I see that this is expanded in the abstract but I suggest giving the full form with the acronym in parenthesis where this is first introduced in the main text as well.

Make this change to other acronyms not explained in the main text, if there are any. Please check.

Line 62: This is a repetition - use only RNN because it is already defined on Line 56.

Line 101: Remove the second sentence.

Line 155: Use "ReLU", which I guess is the standard.

Line 191: Change "rest" to "remaining".

Line 192: See the comment above for Line 191 - apply the same.

Line 193: Replace "relatively poor" by "larger".

Line 193: Remove "relatively" before the word "better".

(You do not need to use "relatively" if you are using comparatives such as "better". A similar usage is seen in many other places - you may want to correct them as well.)

Line 194: See the comment above for Line 193.

Line 196: Same as before - remove "relatively" before "poorer".

Line 205: delete "we see that".

Lines 210-214: The figure caption contains too many repetitive words/phrases. This can be rewritten in a simpler manner.

For example, change the sentence to, "Figure 5: shows the frequency distribution of the difference between the observed values and the model predictions during 1996-2019 (solar cycles 23 and 24) for 1-day ahead (Panel (a)), 2-day ahead (Panel (b)), and 3-day ahead (Panel (c)) observations and the corresponding model predictions."

Line 211: insert space after "23" and "and". Also, between "9" and "(".

Line 217: It must be Figure 6, please check.

Line 291: Again, this must be Figure 6.

Lines 224-225: Caption of Figure 6 is inadequate. Explain all the symbols and lines briefly and if more details are needed, write within brackets, e.g. "(see text for further details)" and provide the necessary details in the section where the figure is discussed.

For example, though the panels show the legends for the blue dots and the lines, explain them briefly in the caption as well.

Line 227: Check the spacing after the parenthesis.

Line 232: insert “that” after “shows”.

Line 233: insert “with” after “compared”.

Line 292: Change “variation” to “vary”.

Lines 245-247: See comment above for Lines 210-214. I suggest simplifying the caption. For example,

“Figure 7: Comparison of the prediction performance of SWPC and TCN for, Panel (a) 1-day ahead, Panel (b) for 2-day ahead, and Panel (c) for 3-day ahead”