

Author's response

Dear. Dr. Fenicia

Please find attached with this document the new version of our manuscript, which incorporates the changes suggested during the review process. Attached to this document, you will find the revised manuscript along with a tracked changes version. Below, we provide a summary of the changes made.

Changes proposed by Anonymous Referee #1.

Following the feedback of Anonymous Referee 1, and based on our responses from the discussion phase:

- Line 25-26: We modified the sentence.
- Lines 95 -107: We expanded the example's explanation and explicitly indicated that the number of timesteps processed in each frequency is a hyperparameter.
- Line 159: We added a figure in the appendix comparing the full NSE distributions.

Changes proposed by Anonymous Referee #2.

Following the feedback of Anonymous Referee 2, and based on our responses from the discussion phase:

- Line 15: We added the requested information.
- Line 18: We added the requested information.
- Line 50: We added the requested information
- Line 98: We added the requested information.
- Line 112-118: We expanded the explanation to further clarify the structural differences between the MTS-LSTM and the MF_LSTM. Moreover, we added a figure in the appendix to illustrate how the MTS-LSTM model works.
- Line 131: In conclusions, we acknowledged as a limitation the fact that we transferred the hyperparameters from Gauch et al. (2021).
- Line 137: We modified the sentence.

Moreover, to further clarify the added advantages that the MF-LSTM provides, with respect to the existing methods, we expanded *Section 2.2* and *Conclusions*

Language suggestions

- Line 76: We modified this sentence.
- Line 87: We modified this sentence.
- Line 88: We modified this sentence.
- Line 91: We modified this sentence.
- Caption Figure 1: We modified the caption.
- Line 167: We modified this sentence.

We believe the modifications made cover the changes proposed by the referees. We would like to thank both referees, as their input in the review process allowed us to produce a better manuscript.

Kind regards,
Eduardo Acuña on behalf of the co-authors.