

Response to Reviewer

March 04, 2025

Detailed Comments

Responses are marked in [blue](#).

Anonymous Referee #1, 4 Dec 2024:

Dear authors,

Thank you for your responses. Please find below my responses:

[Dear referee,](#)

[Thank you once again for your thorough review and valuable feedback. We appreciate the time and effort you have dedicated to evaluating our work. Please find our responses to your latest comments below.](#)

1. I'm afraid I still fail to see why this framework is specific to S2S. I think it would actually make a stronger paper if you said it could be used for doing short range forecasting too.

[Thank you again for your valuable feedback. Our original intention was not to extend NN4CAST to short-range forecasting, as this would involve adapting the model to handle the larger volume of available data and the increased computational costs associated with such applications. In particular, the complexity of short-range forecasting models would likely require the use of GPUs and parallelization to ensure efficiency and scalability. However, for future extensions of the framework, we are open to exploring the feasibility of adapting NN4CAST for short-range forecasting. This could involve modifications to the model, such as optimizing computational processes, to accommodate the demands of shorter lead times while maintaining the framework's usability and interpretability.](#)

3. If this is the case then I think there needs to be more details on the model used. By this I do not mean the neural network theory (of which I still think there is too much) but instead the architecture you used for the results you showed e.g. number of layers etc.

[Thank you once again for your valuable feedback. In line with our previous response, the details of the model architecture used for the presented results are explicitly provided within the listings that include the example code. These listings not only outline the preprocessing steps but also specify the fundamental hyperparameters necessary for the model's construction, such as the number of layers, activation functions, and other key settings. This ensures full transparency regarding the model configuration and provides users with a clear framework to modify and adapt the architecture to their specific requirements if needed.](#)

4. Please could you add some of this clarification to the paper to make it more understandable for the reader.

Thank you for your suggestion. We have incorporated these clarifications into the manuscript to better explain the rationale behind our approach, including the use of cross-validation across different time periods and the considerations regarding data quality in the pre-satellite era.