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Interactive comment on "HIDRA 1.0: Deep-Learning-Based Ensemble Sea Level Forecasting in the Northern Adriatic" *by* Lojze Žust et al.

Anonymous Referee #1

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This manuscript designed a deep-learning-based model to predict the sea level in the Northern Adriatic. It comprehensively analyzed the model performances under different model structures and then compared it with a numerical model (NEMO v3.6). It is interesting and worth being published after clarifying some minor issues:

1) The authors tend to apply the HIDRA model for business forecasting. However, the input for the model contains the atmospheric data in the future. Please clarify the data source in the business forecast process.

2) The authors declare "Extending the historical horizon beyond 24 hours did not significantly affect the prediction accuracy". Please give a concise description of how to

find the trade-off between the model forecast accuracy and the computing resource.

3) In Equation (1), there is a "20" on the "sum" signal, which represents the different spatial position on the feature maps, which is confusing that where this value comes from. Please clarify the changes of the feature maps during the fore-propagation process in the Figure. 3, especially in Figure 3(a). Such as marking the size of the convolution kernel and the output size in the red boxes.

4) Line 298: results → result.