



EGUsphere, referee comment RC1
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Comment on egusphere-2022-648

Anonymous Referee #1

Referee comment on "Deep learning models for generation of precipitation maps based on Numerical Weather Prediction" by Adrian Rojas-Campos et al., EGU sphere,
<https://doi.org/10.5194/egusphere-2022-648-RC1>, 2022

comments:

The authors trained and evaluated five different deep learning models to generate precipitation maps. The manuscript is well-written in overall and provide clear description of results. There are some comments to help the authors to further improve this manuscript.

1. Introduction section

(1) there is a confusion about scientific question. Did it compare different model algorithms or generate precipitation map or both?

(2) What is the novelty of this study? Just complete set of variables?

(3) There is a lack of some references in this section, such as line 22 "Among the most successful methods are the Numerical Weather Predictions models (NWP), which consist of systems of equations that simulate the dynamics of the atmosphere and provide highly accurate weather forecasts over long periods." Line 27 "However, NWP models still preserve some limitations, the most important being the large number of computational resources

needed to generate forecasts" and so on. Please double check the whole text.

2. Data section

(1) I think it is not well-structured. There is no information about study area, and some information lacks of reference. Thus, I do not know is it your result or others, such as "The south-western part is characterized by low precipitation amounts between 500 and 700mm/yr due to lee effects of the Eifel mountain range".

(2) Please give more descriptions about COSMO-DE-EPS forecast, providing more information or reliability for readers.

(3) Please give full name of "RW, YW, RQ" when they are first used in this study.

3. Methodology section

Please give more descriptions about five deep learning models, such as:

(1) Why choose these five models in this study?

(2) How to setup these models in this study? For example, how to choose variables? How to calibrate and validate model parameters? How to deal with the correlation of independent variables?

(3) The setup is done by this work or referred from other study?

4. Result section

In this section, the key information is from Table 2 and Figure 3. But it confused me that COSMO-DE-EPS data in Table 2 is original data or after correction? Maybe I missed some information. If it had been corrected by observation, it is not surprised that it has good performance.

5. Conclusions section

In this section, authors presented a summary of results. Maybe authors can discuss some uncertainties about five models, such as the parameters and the influences of model uncertainty on precipitation generation results.