

RESPONSE TO REVIEWER'S COMMENTS

We would like to thank the reviewer's valuable suggestions for our manuscript. The corrections and suggestions made by the reviewer improved our manuscript. The comments from the reviewer also provide us with future research directions.

Comments from Reviewer 2:

Comment 1: *The written quality of this manuscript is poor. I recommend re-structuring the result section.*

Response: Thanks for your suggestion. We have separated the experimental setup and results, and re-structuring the result section (Section 5).

Comment 2: *Same as comment 1, more detailed descriptions for Fig. 7-11 need be included. In addition, in Figure 12, a general conclusion that the extrapolation of the new method is superior to other methods was given, the reason behind the results obtained in the manuscript should be provided. The false prediction showed in the lower right corner of the figure should be mentioned and explained.*

Response: Thanks for your advice. We have summarized the figures more concisely and provided a detailed description. We also have analyzed the reasons behind the results. The false predictions have been mentioned and explained (Page 12, Line 289-300; Page13, Line 304-306; Page 16, Line 341-345; Page 16, Line 347-353).

Comment 3: *Precipitation nowcasting is generally defined as the prediction within 0-2 hours, but in the manuscript, the extrapolation results for a longer time (such as 1h, or one hour later) are not mentioned and presented. please state this in the discussion part (that this work only focuses on the 45-minute prediction?).*

Response: Thanks for your advice. We have retrained and retested the data to achieve 1-hour extrapolation. The results and discussions have been updated (Section 5; Section 6.1).

Comment 4: *The description of input and output parameters of model training is too brief. Although the code is provided, more detailed model parameters should be listed.*

Response: Thanks for your suggestion. We have provided the hyperparameters of ConvLSTM, ConvGRU, GA-ConvGRU, GAN-argcPredNet v1.0, and GAN-argcPredNet v2.0 in the supplement.

Comment 5: The conclusion section of this manuscript is too brief. As a neural network-based study, many key concerns were not discussed. I recommend proposing a separate discussion section to summarize evaluation results, comparisons with other works.

Response: Thanks for your suggestion. We have proposed a discussion section where we discuss and compare the model prediction results in detail, while analyzing the reasons (Section 6.1). The current structure of the manuscript consists of Introduction, Related Work, Model, Data and experimental Setup, Results, Discussions and conclusions.