This paper study the possibility of using the MWRI-RM data for the retrieval of temperature and humidity atmospheric profiles. A AR-CNN is used to perform this retrieval.

1) The retrieval of temperature and humidity profiles from MW and IR data is very large. The literature review is too sparse and this reflects on the paper maturity. More references are required. NN retrieval dates back from the end of the 90s.

2) The analysis is performed only in one month of data. This is very limited and not sufficient to compare to other retrievals. You mentioned that training, validation and testing has been chosen randomly, this means that there are no true independency between them because two neighboring pixels are almost the same. This is not standard practice.

3) Some figures are not optimal. Figure 1 is useless, we can understand a 5x5 input window for a target as atmospheric profile. Figure 2 os tpp sùamm and almost cannot be read. I would like more comments on the architecture itself. Figure 4 is not necessary. If you want to comment on extremes, better graph can illustrate.

4) Section 3.2 us useless

5) Comments about the extreme cases... you need to read the literature. For example the boucher et al recent paper about extremes, CNN and dampening effect.

6) you don't compare your results with more simple, and older techniques like: linear regression, MLP, etc... I am quite sure that a MLP will give similar results than what you obtain with this complex model.

7) The way to analyse the interpretation of the model is not correct. For instance, if you perturb one input channl by 1K random noise, it is not correct. Channels are highly correlated, and introducing incoherencies in inputs is not physical. If you want to measure the information content of the channels when using a MLP, you can add hierarchically the channels, or suppress them, to see the impact on the results.

8) Figure 5 right, indicate the channels frequency. Cannot identify the channels with the colours, need to change that. Left part, this is not reliable I think for the reasons I mentioned.

9) Figures A1 and A2 cannot show differences considering the spread of the colorbar. They are not useful. You should rather do a bias and RMS map of the errors.