

Title: DeepPrecip: A deep neural network for precipitation retrievals

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This paper presents a deep-learning model for surface precipitation accumulation retrieval using near-surface vertical column radar reflectivities and environmental parameters from ERA-5. One of the major contributions of this work is its improved high accuracy compared to traditional power-law relationships and a less complex RF model. Another major contribution is that the study not only analyzed the vertical column structure up to 3 km above the surface as a whole to retrieve precipitation accumulation, but also investigated the lower and upper vertical layers of profiles. The quantitative analysis of the comparison then help them to conclude that the combination of both layers can achieve the maximum retrieval accuracy. These make this paper matches the aim and scope of ATM.

In view of the other two reviewers' comments, the revised manuscript has been largely improved in a strict and thorough way. The topic of this paper is very interesting and important for continued investigation of using emerging techniques to improve remote sensing precipitation estimation. With sufficient literature review, the authors first acknowledge the current available methods as well as their advantages and drawbacks, and then identify the research gap and propose their new method for filling the gap. The data selection and methodology are clearly described. Detailed and quantitative result analysis provide enough supporting evidence for their reasoning. As a result, I recommend this manuscript to be accepted with minor revision.

Minor comments:

Line 4: it should be "develop a ... retrieval algorithm ...".

Line 108: references format needs correction.

Line 135: please write the full name of RF as this is the first times it is used rather than in Line 203.

Figure 4: I understand there is a standard deviation bar shown in (b), but it seems like it also appears in (a) since the authors state "1 standard deviation ... shown in the shaded regions"? If this is true, I don't see the standard deviation bar or shaded region in (a) ... Or is it actually referring to (c) and (d) rather than (a) where there are multiple light red and blue lines not explained?