

This is a generally well-written manuscript focusing on the adjustment of “drizzle bias”. The topic is interesting as the climate models often overestimate the frequency of light rainy days while simultaneously underestimating the total amounts of extreme observed precipitation. Two statistical approaches were used in this research, including the thresholding and the Random Forest.

However, there is considerable room for improvement in this paper.

1. Paragraph 50, introduction, "The majority of bias correction (BC) methods alter the least wet days to dry, redistributing precipitation amounts over the remaining wet days"

I understand that the author wants to emphasize the importance drizzle bias correction, but there are many bias correction methods that do not follow the two-step method at present, but directly correct all precipitation days. For example, based on deep learning: cycle Gan (Pan et al., 2021; Hess, et al., 2022), UNIT (Fulton et al., 2023), etc., traditional bias correction: QM, CDF-t (Pierce et al., 2015), etc. These methods need to be mentioned if they have shortage on drizzle bias correction.

Pan B, Anderson G J, Goncalves A, et al. Learning to correct climate projection biases. *Journal of Advances in Modeling Earth Systems*, 2021, 13(10): e2021MS002509.

Hess P, Druke M, Petri S, et al. Physically constrained generative adversarial networks for improving precipitation fields from Earth system models. *Nature Machine Intelligence*, 2022, 4(10): 828-839.

Fulton D J, Clarke B J, Hegerl G C. Bias correcting climate model simulations using unpaired image-to-image translation networks. *Artificial Intelligence for the Earth Systems*, 2023, 2(2): e220031.

Pierce D W, Cayan D R, Maurer E P, et al. Improved bias correction techniques for hydrological simulations of climate change. *Journal of Hydrometeorology*, 2015, 16(6): 2421-2442.

2. Paragraph 90. “The selection of these models was deliberate, aimed at encompassing a range of model configurations” This sentence is ambiguous. Please give more reasonable reasons why you chose these three models. Maybe, there are obvious differences in the precipitation simulation results of these three models. They can represent different results of overestimate and underestimate of precipitation simulations.

3. As the threshold of rainy day is important, why you chose 0.1mm as an example?

4. Paragraph 145. The RF model structure should be more clear. 1) Establish a uniform model for all the month, or for each month, you generate a different model? 2) More detailed on model structure should be added, how many training data and test dataset; parameter setting such as depth or leaf node number, etc.

5. It will be clear if the author adds a flowchart figure to show the steps of the method part.

6. Paragraph 155. How to set month of the year as an input feature? Set March as 3? The model can be applied in all of the grid, or for each grid you generate a separate model? I notice there is no location (latitude and longitude) information in the training feature, how the model can identify different grid point if it is a uniform model can be applied on all of the grids?

7. For figure 3 and 4, it will be more clear if the regional division box in Figure 1 is placed on these maps, readers will be able to better correspond to the regions mentioned in the text.

8. Paragraph 340 “ an essential preliminary step in correcting daily precipitation biases for future climate scenarios.” After getting the ratio or the number of drizzle day, would the model help to tell which days these drizzle days will occur?