We sincerely thank the referee for the encouraging assessment of our work and for highlighting some points which were unclear. In the following we have tried to answer and accordingly incorporate the referee's suggestions. The referee comments are shown in black and our responses are in blue.

Comment 1: Lines 232-235, Figure 4b: the differences between the two temperatures are positive in most regions. However, "clear sky" temperature is lower "all sky" temperature in the northernmost part (red). Can authors explain why?

Response 1:
We thank referee for pointing this out. The differences in "clear-sky" and "all-sky" temperatures are shaped by changes in the shortwave and longwave radiations due to clouds. Clouds reduces the solar insolation at the surface (hence a cooling effect) but also increases the downwelling longwave radiation (a warming effect). Over most of the Indian region the reduction in shortwave is substantially greater than increase in downwelling longwave (Figure 3b) and thus they produce a localised cooling effect over most regions. However, the Northern most part of India is the high-altitude cold Himalayan region. These high-altitude regions are more sensitive to changes in longwave radiations. As a result, there is a significant increase in longwave radiation with increase in cloud cover which compensates for the cooling due to reduction in shortwave. In the map shown in figure 4b we have isolated extreme precipitation days which corresponds to highly overcast conditions. Due to this compensating effect of longwave radiations, "Clear sky" temperature is lower than "all-sky" temperature over those grid points.
To show this with observations, we have attached a figure which show the mean annual cycles of difference in fluxes (clear sky – all sky) for both shortwave, longwave and total heating over these grid points.
A note about this will be added in the revised version of the manuscript

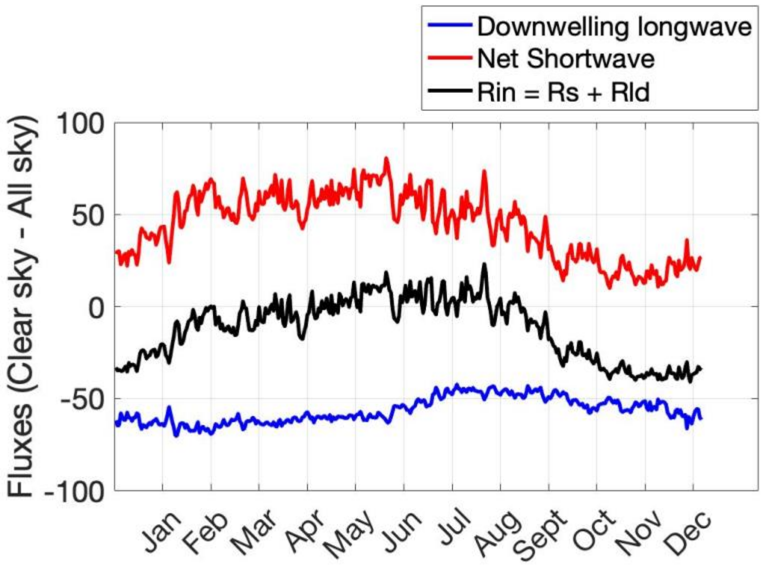

Figure shows the daily mean annual cycles of difference in "clear-sky" and "all-sky" fluxes of net shortwave (red), downwelling longwave (blue) and total radiative heating (black) for the grid points over the Himalayan region of India

Comment 2: The modeled monthly temperature is evaluated in section 3.1. However, the daily temperature is used for the precipitation-temperature scaling. How good is the daily temperature calculated from equation (7)?

Response 2:

We thank the reviewer for highlighting out this point. The RMSE in the figure 2 was already shown for daily temperatures, However, monthly temperatures were used in timeseries comparison and regression plot which made things unclear and created confusion. We have now modified all the sub-plots in figure 2 for daily temperatures.

Modified Figure 2:

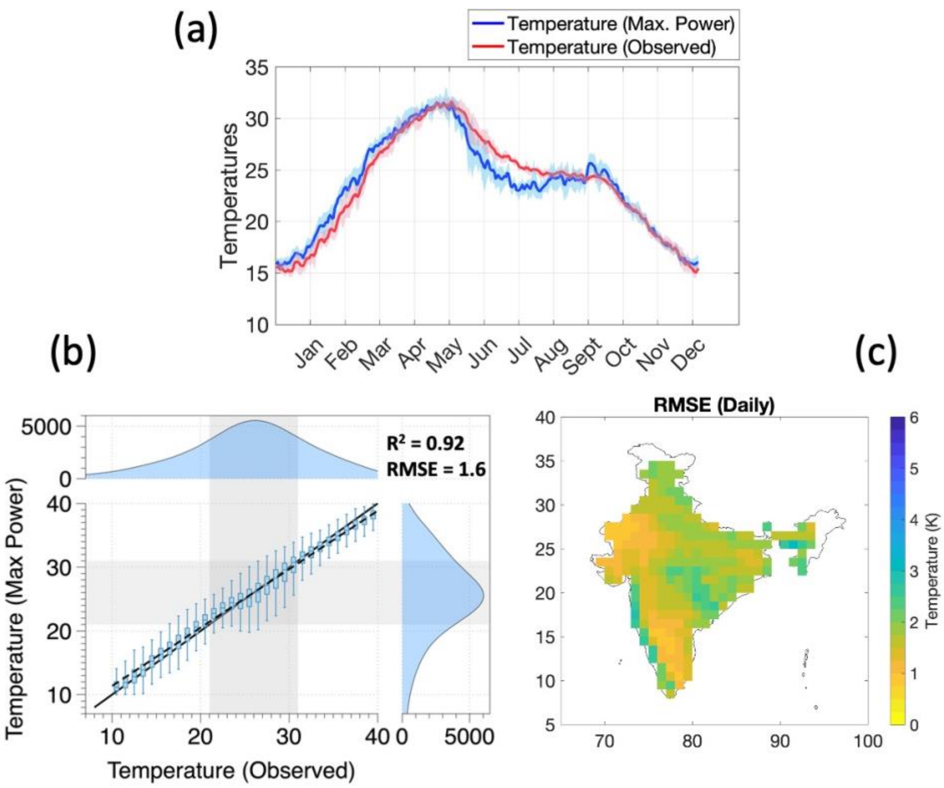

Figure 2: Comparison of daily annual cycle of temperature for observed (IMD) and estimated "all-sky" surface temperatures, averaged over all grid points. (B) Regression between the two temperatures at the grid-point scale. (C) Spatial variation of the root mean squared error (RMSE) in temperature estimates from maximum power compared to observed temperatures.

Comment 3: The radiative effect of cloud on surface temperature can explain the breakdown of the P-T scaling curve. Can authors provide us with the observation-based cloud information to further validate the statement? For example, the map of cloud over.

Response 3:

As per referee's suggestion, we have now added the map of observed cloud area fraction from NASA-CERES dataset into the Appendix.

Figure added:

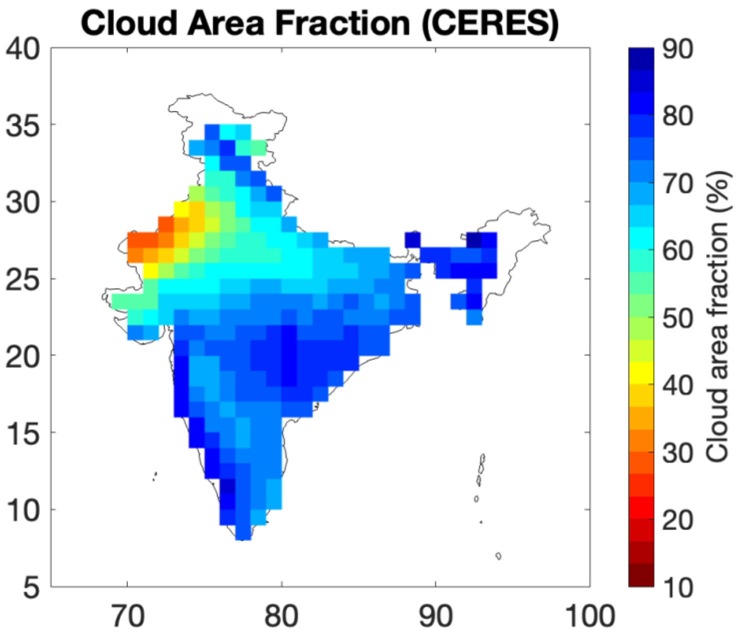

Figure: shows the mean cloud area fraction map over Indian region averaged over wet days. Dataset used is NASA-CERES Syn1deg.

Comment 4: Extreme precipitation increases monotonically with temperature when the cloud cooling effect is removed. Is there any implication for the future prediction of extreme precipitation based on the monotonical P-T relationship?

Response 4:
This is a very important point. The answer is yes, the monotonic increase of precipitation extremes with "clear-sky" temperatures has major implications for future predictions. One of the major issues with peak structure in scaling is that it raises a question if future intensification in precipitation extremes will be constrained by this peak and not increase beyond this point. However, studies using climate model simulation have shown a positive increase in these extremes which is in contrast to estimated negative scaling at high temperatures (See also yin et al., 2021). After resolving the peak by removing the cloud radiative effects, we find a monotonic increase in extremes with temperature which is consistent with model simulations and implies that the peak will not constrain the increase in extremes with anthropogenic warming. Although in this study our main focus was on understanding the "peak" and we have not explicitly used climate model simulations but it remains an important area for future research and a complementary study on this work. A small discussion about the same will also be added in the revised version of the manuscript.

Minor comments:

Line numbers are not continuous.
Will be corrected

Line 100: the equation (1) -> equation (1)
Will be corrected

Line 121: "Detailed derivation about the same can be found in ……". I guess that "same" here is a typo.
Will be corrected

Line 201: following -> aforementioned
Will be changed

Figure 1: the symbols used for the flux-type variables in the figure are not consistent with the symbols in the text.
Will be corrected

Figure 2: in the figure caption, (a) is missing, and (B) and (C) should be lower cases. In addition, 2003 should be placed on the beginning the curve. Otherwise, it gives a wrong impression that the data before 2003 is used in this study.
Will be corrected

Appendix A: observed (yellow) and "all-sky" (red) temperatures are mentioned. However, there is no "all-sky" temperature in Figure A1.

The figure is now modified and the scaling with "all-sky" temperatures is added.
Modified figure A1:

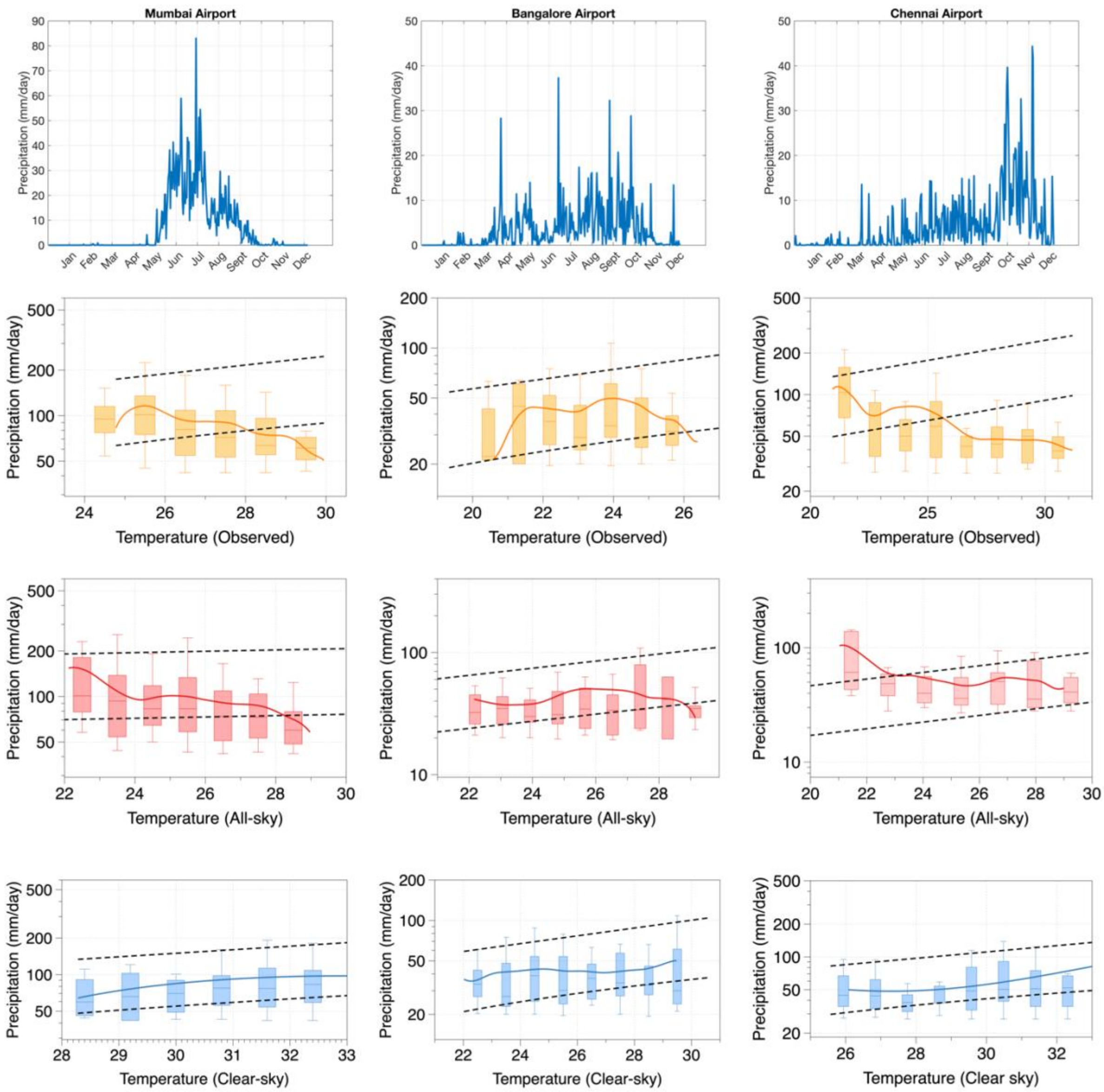

Figure A1. (Row 1) shows the annual cycle of mean daily precipitation over GSOD sites in Mumbai airport, Bangalore airport and Chennai airport respectively. Extreme precipitation – temperature scaling curves for observed temperatures (yellow), "all-sky" temperatures (red) and "Clear-sky" temperatures (in blue) are presented for all the three sites. Yellow/Red/Blue solid lines indicate the LOESS regression lines. Grey dotted lines indicate the Clausius-Clapeyron scaling rate. Note Logarithmic vertical axis.

Figure A1: it is better to use the actual date instead of days for x-axis in (a), (b), and (c). As such, one can see the seasonal variation of precipitation from the figure more clearly.

As per referee's suggestion, Months are added to the x-axis to better understand the seasonal variations.