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## Authors Response to CC: Suryanarayanan Balasubramanian

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Dear Suryanarayanan,

We thank you for taking interest in our work and commenting on it. Below we respond (in red text) to your concerns (in black text).

1. The definition of daytime seems to vary throughout the text, for example, in Figure 10, Table 3, Figure 13. I would guess the daytime time period was chosen solely based on solar angle and shadow effects. Why is this the case?

In Figure 13 (revised manuscript), the daytime was defined between 08:00 and 17:00 IST. Previously we thought that if we could show maximum day-hours to show how sublimation varies in different meteorological clusters. However, following your concern and to keep it uniform, we intend to make this daytime range consistent and therefore, considered daytime as 09:00-16:00 IST throughout the manuscript.

2. Beyond daytime, what is the value of the cloud factor? Is it not defined then?

We do not have cloud factor ( $CF$ ) information for the night time because our  $CF$  calculation is based on incoming short-wave radiation ( $S_{in}$ ) data (please refer to Sect. 3.3; revised manuscript) which is unavailable during night. In addition,  $S_{in}$  data is often uncertain during early morning and dusk hours when solar angles are flatter. Therefore, to avoid the steep valley wall's shading effect during the morning and evening time, we restricted our  $CF$  calculation for the daytime only (09:00-16:00 IST). Therefore, we could not define  $CF$  beyond daytime hours.

3. In Table 5, what does the abbreviation "Do" mean?

Thanks for catching this issue. In the original manuscript we forgot to mention this in the table caption. 'Do' refers to the same method as in the row immediately above.