Dear Reviewer,
I appreciate your invaluable comments, and I would like to express my gratitude for the insights you provided. Please find our responses to the raised points below, highlighted in red font.

I appreciate the authors for very thorough responses to my concerns. It is easier for me to follow the merits of this work. After reading over this manuscript, I feel there are some vague statemens that may be clarified in the final stage.

1. Equation 18. Matrosov 2008 did not give the atteunation parameterizatoin at Ku-band, how did you get the parameters at Ku band? The used values should be specified in the main text. Also, Li and Moisseev (2019) suggested that Matrosov (2008) overestimates the attenuation, how would this affect your estimates?

Notably, Matrosov's study in 2008 did not encompass simulations at the Ku-band. Consequently, we opted to utilize parameters derived for the X-band. The rationale behind this decision, along with a brief discussion on the work of Li and Moisseev (2019), has been incorporated into the document, presented as follows:
"Here, γ_{ML} and δ_{ML} are wavelength-specific parameters. For the Ka-band, their values are 0.66 and 1.1, respectively. In the case of Ku-band simulations, we adopt the values obtained from X-band simulations, specifically 0.048 for γ_{ML} and 1.05 for δ_{ML}. Although we acknowledge that X-band attenuation is likely to be smaller than that of Ku-band, we use it solely as a soft constraint or a priori value. The final attenuation estimate is subsequently refined during the OE iterations. In the study of Li and Moisseev (2019), it was suggested that synthetic simulations by Matrosov tend to overestimate attenuation for snowfall rates exceeding 2.5 mm h^{-1}. However, their study was limited to radar measurements exhibiting clear signatures of supercooled clouds above the freezing level. This limitation implies that the study was restricted to rimmed particles only. To accommodate potential variations in the melting layer attenuation estimates, we operate under the assumption that they are subject to a factor of 2 uncertainty (see the next section)."

2. I checked the codes contributed by the authors, and it seems that the raw reflectivity was used. As far as I know, the dual-frequency radars were routinely calibrated by some offset parameters (Awaka et al., 2021). Have you checked that?

The data we employ has already undergone calibration. Based on our observation, the sole correction applied to reflectivity in the study by Awaka et al. (2021) is associated with the attenuation caused by non-precipitating particles and gases. To align with this methodology, we have explicitly included a statement in our article to convey this:
"The vector of measurements consists of the measured values of Z and the differential PIA that are corrected for attenuation by non-precipitating particles and atmospheric gases (Kubota et al., 2020)."