Review of *Advantages of G-Band radar in multi-frequency, liquid phase microphysical retrievals* Courtie, Battaglia, Mroz

First I would like to thank the authors for their effort in addressing my comments from the last review. In my opinion, the quality of the paper has improved significantly. I would still like to point out that without independent measurements of the DSD or LWC, some of the claims regarding the increased accuracy of the retrieval can not be made. I would suggest rephrasing those sections (see general and specific comments), or add additional observations/comparisons.

General comments:

1. I understand that the disdrometer you are using has its problems with measuring the DSD accurately, especially at small sizes, however, many radar observationalists (e.g Dias Neto et al. 2019, Myagkov et al.) are using disdrometers in order to calibrate the radar reflectivity by forward simulating the measured DSD and comparing the simulated reflectivity to the observed reflectivity. Since the radar blind zones are also an issue in this calibration, there of course arise uncertainties with respect to the reflectivity comparison. However, in cases with moderate rainfall in stratiform events, Myagkov et al. have shown that the comparison between disdrometer and radar provide an accurate estimate of radar reflectivity offset of the radar. So, in my opinion, in specific cases the comparison between disdrometer and radar can be possible. Have you tried to compare the retrieved DSD and the observed DSD? Are the measurements of the disdrometer really not usable? Could you at least compare the retrieved rain rates to the measured ones?
2. In the DSD retrieval, you are comparing dual-frequency (Ka-W) to triple-frequency (Ka-W-G) and you say that the inclusion of the G-Band increases the accuracy of the retrieval. If you want to sell the point that the G-Band has an added value, I would suggest to compare dual frequency (Ka-W) to dual-frequency (Ka-G) instead of triple-frequency, because most likely simply the introduction of a third frequency improves the retrieval, regardless of it being a G-Band radar of e.g. a X-Band radar. So I would suggest to include the retrieved DSD using only the Ka-G band as an additional comparison.
3. In the retrieval of the LWC using differential attenuation you claim that the Ka-G has a differential attenuation which is twice that of the Ka-W differential attenuation, therefore the retrieved LWC is twice as accurate. In my opinion you can not make that claim without an independent measurement of the LWC. I understand that the independent measurement is not available for you, but then in my opinion you can not make such a strong claim. I think it is justified to say that the stronger differential attenuation in Ka-G is most likely

increasing the accuracy, but without an independent measurement you can not say that definitively. So, I would suggest if you do not want to or can include other measurements to rephrase the paragraphs and to reduce the claim of two times better accuracy.

Specific comments:
1. Line 38/39: here you already mention differential mean doppler velocity, so you can already introduce DDV here as an acronym
2. Line 47: it should be either Doppler spectra are recorded or Doppler spectrum is recorded
3. Line 52: typing error in Rayleigh
4. Line 68: please introduce PRF
5. Figure 1: what do you mean by arbitrary power? (as the y-axis label)
6. Line 122: missing is: the Mie notch is 0.8mm
7. Line 132: missing a: This is not a desired behaviour
8. Line 161: I would suggest to replace around with approximately
9. Figure 5: what are the dashed lines in the figure? Could you add that to the caption?
10. Line 203: What does GRaCE stand for? you have not used this acronym before
11. Figure 7: Where can I see the reduction in error?m Is that the shaded area around the retrieved DSD? If so could you specify this in the caption? Also, the shaded area is hardly visible, perhaps you could change the line and shading colour of the retrieved DSD. Or is the reduced error the e.g. plus-minus 0.04mm/h you have added to the rain rate and Dm? Because then in my opinion the difference between Ka-W-G and Ka-W is not that large.
12. Line 299-304: Not really clear to me what you are doing/comparing here. Could you write that more clearly? E.g. specify that you are plotting the measured DDV against the from the disdrometer measured Dm in that plot. Also, from which specific height are you taking the DDVs?
13. Line 305: remove using (... retrieval was used based on lookup tables…)
14. Line 316: please introduce the acronym JWD