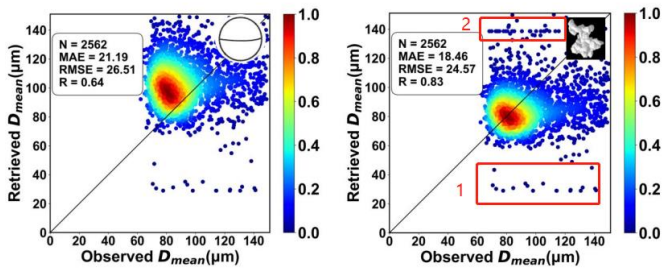
Full title: Retrieval of Terahertz Ice Cloud Properties from airborne measurements based on the irregularly shaped Voronoi ice scattering models
Authors: Li et al.

This paper investigated the ability of Sphere and Voronoi model in retrieving cloud microphysical properties such as ice water path (IWP) and effective particle radius (Re) using airborne measurements. Sensitivity results indicate that TOC BTDs between 640 and 874 GHz is used for IWP, while BTDs between 380, 640 and 874 GHz is used for Re. In addition, retrieved results of IWP and Re from Voronoi model are better than that of the Sphere model compared with airborne ones. Overall, this manuscript is clear. However, there are several issues that need to be taken care of before this paper becomes acceptable for publication.

Specific comments:

1. How about the previous research in terahertz band? In the introduction, I only saw Li's research (Li et al., 2016). How about the accuracy of retrieved IWP and Re of previous studies using different ICS models, like aggregates, hollow columns, flat plates, rosettes and spheres?
2. The “Inversion results” part is too short, and the results and validation sections are not insightful. You simply present the validation metrics like MBE, RMSE, and R, etc. Why is the Voronoi better than the sphere model?
3. For Figure 7, 2000 test data were generated by the RTSRA and plotted on the Figure 7 with black dots, why are there only 19 points?
4. Why do the problems of 1 and 2 in the figure occur, see below?



645 **Figure 10: The scatterplots of the retrieved IWP (top row) and D_{mc} (bottom row) against the CoSSIR-MCBI results for the Sphere (right column) and Voronoi (left column) ICS models.**

5. Increase the drawing range of Y in Figure 10, from currently 0 ~145, to 0 ~ 160. I

want to see the sphere have the same horizontal line problem.