Review of AMT-2018-395 – Revised Version 1

By Martin Lasser, Sungmin O and Ulrich Foelsche.

Manuscript title: Evaluation of GPM-DPR precipitation estimates with WegenerNet gauge data.

The revised version of the manuscript presents significant changes with respect to the original version. The authors mainly addressed the reviewers' comments, even if I am not totally convinced about the significance of new analyses. I particularly appreciate the analysis on the relationship between the DPR-Wegener error and the intra- and inter-footprint variability. At the same time, I retain that using the Wegener grid standard deviation to characterize the variability is not the better choice. Figure 4 shows standard deviation values generally higher than the mean rainfall rate measured by the rain gauges (Table 1) and comparable to the mean rainfall rate of most of the footprints (Figures 6-9). In their discussion, the authors state that there is no correlation between the intra-footprint variability and the error between DPR and Wegener. In my opinion, they should repeat the analysis with the coefficient of variation instead of the standard deviation to have a confirmation of what they assert. Furthermore, Figure 4 shows some points on the y-axis, that is standard deviation equal to zero. Which situation do they describe? Does the precipitation is uniform and higher than zero in each grid-point or is uniform but equal to zero in each grid-point?

Another focal point, is the calculation of binary statistical scores (i.e. POD, FAR, HSS, etc.) and the choice to include any positive rainfall rate. This could be acceptable for the rain gauges because their measure the precipitation, but it cannot be accepted for the DPR because it estimates the rainfall rate. The authors report in the manuscript the minimum resolution of both DF and Ka-/Ku-only algorithms (according to official GPM documents), but they not consider this condition in their analyses. They could even double check with the reflectivity measured by DPR that should be above the minimum detectable signal. This could further change the results shown in Tables 3 and 4.

These are the two main points that, together with minor points listed below, have to be correctly addressed before to retain the manuscript printable on Atmospheric Measurement Technique journal.

- Page 5, lines 8-9: the KaPR has 25 beams as the Matched Scan (MS).

- Page 19, line 6: I would say "…featuring light to moderate precipitation, up to almost 6 mmh^{-1}." From Figure 9, I do not see any points with rainfall rate higher than 6 mmh^{-1}.

- Figures 6-9: sometimes there is not spatial match between the Wegener stations and Wegener grid. For example, the sixth box of Figure 7 shows that the grid points closer to the stations with rainfall rate around 1.5 mmh^{-1} report almost zero rainfall rate , while the grid point farer from the stations report rainfall rate higher than 1 mmh^{-1}. Can you explain why?