

# Second review

*In addition to the reviewer's comment, the reference list has also been updated to follow the style Atmospheric Chemistry and Physics (ACP) / Copernicus Publications reference style.*

## Comment

I think the authors responded well to all of the reviewer comments, either modifying the paper or explaining why suggestions were not incorporated. The only thing that I think should be addressed is my comment #41 (repeated below for convenience) about the inconsistencies between Figures 7, 8b, and 9b. The authors explain these inconsistencies by the differences in sampling, but given the fact that all of the figures present accumulations over time (and for Figure 9b also averaged in space) it is extremely unlikely that sampling will cause such large discrepancies. This is especially apparent in the comparison with the CML (Fig. 9b), where the spatial average (over the link) of the accumulation (over the entire event) is over 60 mm, whereas the average over the link path from Fig. 7 is probably below 30 mm. This cannot be explained by sub-grid variability, which would not have such a large effect on these averages over space and time.

I think the paper is suitable for publication after this has been thoroughly addressed.

Comment #41:

Figure 9b: when I look at the mean rainfall depth recorded by the X-band radar, and I compare this to the map in Fig. 7, these figures are inconsistent. Fig. 9 shows more than 60 mm, whereas the maximum rainfall depth on the link path in Fig. 7 is in the 50-60 mm class. Given the fact that parts of the link are in areas that received only 10-20 mm of rain according to Fig. 7, the numbers cannot be correct. The same holds for Fig. 8b where the graph indicates almost 80 mm of rain, but Fig. 7 shows between 50 and 60 mm. Please check the data behind Figures 7, 8, and 9, and correct where necessary.

## Response

Thank you for your insights and for pointing this out. The previous version of Figure 7 was indeed made with an erroneous rainfall grid where many timesteps were missing from the calculation, leading to underestimated total depths. It was also not projected correctly. The figure has been updated with a new grid, where the total depth in the northwestern part of the area of interest is 50-70 mm (where it previously was 5-30 mm) and up to 90 mm at the center of the storm.

The new grid was created by converting valid polar bins to surface lat/lon coordinates, and then applying linear interpolation on a Delaunay triangulation to assign values to the grid-cell centers. This approach reduces underestimation caused by locally missing radar bins – an issue, which, as we discussed earlier, occurred for a few time steps and bins at the most intense part of the storm. It is, however, not ideal for coarse grids whose spacing is much larger than the native radar-bin spacing, which is why a 250m grid was used instead of 500m. The total accumulation was then computed from the interpolated grid.

2025-12-11

Louise Petersson Wårdh  
louise.petersson.wardh@smhi.se

## Changes

Lines 309-310, 447-455 and Figure 7 – referring to line numbers in the manuscript with **track changes**.