

Atmospheric Chemistry and Physics - Manuscript
ACP-2025-4517 - Revision 1:

“Snow microphysical processes in orographic turbulence revealed
by cloud radar and in situ snowfall camera observations”
by A. Kötsche , M. Maahn, V. Ettrichrätz and H. Kalesse-Los

1 Recommendation

The authors took into account my comments in general and modified the submitted version accordingly. But there are also some unsatisfactory answers, not on major aspects though. A list is provided below. I hence recommend to send the manuscript back to the authors for minor revisions.

2 General comments

1. New Figure 12: thanks for adding this figure, quite helpful. But I have some questions/suggestions:
 - (a) I would recommend to use the same number of variables in the same order for all quadrants, to ease the comparison from one to the other.
 - (b) I would start by Ze and MDV, which gradients are defining the quadrants.
 - (c) I do not understand how Ze can both increase and decrease in Quadrant III. By definition, it should only decrease, no?
 - (d) Similarly for Quadrant IV: Ze and MDV should only be decreasing. If you want to indicate if the gradient is small or large, please find another visual "marker".
 - (e) We cannot know if the VISSS derived variables increase or decrease in space, only if they are rather small or large. So here as well use another visual marker. Or do you refer to changes in time?
2. I asked a question about supersaturation with respect to liquid water (to form dendrites) and you answered with a figure about supersaturation with respect to ice... Please update.

3 Specific comments

1. Figure B1: please add a scale and orientation to this map!
2. Question about attenuation and new sentence on l.192 (and section 2.1.2): please clarify what you did for attenuation correction at 94 GHz! If you correct for gaseous attenuation at 35 GHz, you should do it at 94 GHz...

3. Question about temperature inversion at Gothic Mountain top height: I did not understand the response involving subsidence, could you please clarify/elaborate?
4. Figure 5: if you consider that this is a standard plot and that all ACP readership is familiar with it, then why defining the curves corresponding to temperature, dew point temperature, wind barbs, and not the others curves (lapse rates, mixing ratio...)? I would suggest to define all curves displayed in the plot.
5. Question about kinetic energy and number of splinters: please add the explanation and the reference at this location of the main the text.