

Authors' Response to the comments on the manuscript:

Radar shows graupel and increased turbulence near small-scale intermittent lightning discharges at the top of intense thunderstorms

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Preprint Egusphere-2025-6253

#. **Reviewer's comment.** AR: Authors response. CH: Changes to manuscript with new text and removed text

Note: Line numbers correspond to the document created with latexdiff, not the manuscript from first submission.

This document addresses the comments from the file validation.

1. ***A "Short summary" system section contains scientific abbreviations. Please provide a written-out version to ensure it is understandable for non-experts. Kindly remember that the short summary is limited to a maximum of 500 characters (including spaces)***

AR: I believe that I edited the short summary during the previous submission. However, I cannot find this revised version back. I will to add an updated version again, not using the LOFAR acronym and also changing a bit of the content.

CH: New short summary:

Comparing high resolution lightning images to data from a weather radar, we try to learn about sparkles; small-scale lightning that flashes intermittently at the top of intense thunderstorms. Near sparkles, we observe much turbulence and much graupel – a particular type of ice particle. It seems that in this case study, small pockets of charge were created by turbulent mixing or folding of clouds, leading to the small and intermittent discharges.

2. ***Please ensure that the colour schemes used in your maps and charts allow readers with colour vision deficiencies to correctly interpret your findings. Please check your figures using the Coblis – Color Blindness Simulator (<https://www.color-blindness.com/coblis-color-blindness-simulator/>) and revise the colour schemes accordingly with the next file upload request. -> Fig. B1***

AR: Thank you for pointing this out. I have changed the colors in figure B1. I have also improved the colormaps of the Vrad and HMC variables for the plots of radar data.