

Final response (Manuscript "EGUSPHERE-2025-374")

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1 Introduction

We would like to thank the reviewers again for their feedback. In this response, we address the suggested edits from the report of Referee 2. For every comment, you can find (1) the comment, (2) the author's response (both with lines from submitted manuscript), and (3) the author's changes in the revised manuscript. The lines given for **author's changes in the manuscript** refer to the lines in the **revised manuscript**.

2 Specific comments

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- **L38:** L38: Make note that “cold peaks in brightness temperature” is specific to passive satellite observations.
Author's response: We revise the sentence to add more detail.
Author's changes in the manuscript: Lines 38f.: "When derived from passive satellite observations, cores are typically characterised by cold peaks in brightness temperature, surrounded by warmer anvil regions."
- **L162:** L162: “voxel” is a typo.
Author's response: Will be changed.
Author's changes in the manuscript: Lines 162f.: "The result is a labeled 3D cloud mask, where each pixel is either zero (indicating no cloud) or an integer label corresponding to a specific cloud object (Fioleau and Roca, 2013)."
- **L228:** L228: remove extra comma.
Author's response: Will be removed.
Author's changes in the manuscript: Lines 228-230: "The core area and height are derived from the column-wise maximum horizontal extent and vertical extent of the previously identified cores, similar to the cloud area and CTH. These metrics may help characterise the structural properties of detected cloud systems."
- **L489:** L489: put “Deng et al. (2016)” reference in parentheses.
Author's response: Will be changed.
Author's changes in the manuscript: Lines 488-490: "Over tropical Africa, our core distribution results are consistent with those derived for geostationary satellite data (Jones et al., 2024) or the CloudSat CPR (Deng et al., 2016), both of which found a high prevalence of clouds with one to three cores."
- **L513-514:** L513-514: Please refine the sentence—are you comparing the results to earlier months.
Author's response: Yes, here we want to compare the distribution of cloud tracks over land and sea along the period (i.e., July and August to earlier months of the period). We revise the sentence to be more clear.
Author's changes in the manuscript: Lines 513-516: "Between June and August, we detect overall a lower proportion of cloud tracks than between March and May. However, we see a shift regarding the distribution of cloud tracks over land and sea along the period: While we detect a higher proportion of cloud tracks over continental Africa in March and April, the number of detected clouds over the ocean exceeds those over land from May to August."