

We want to thank the reviewer for the feedback. Below you will find our response detailing the modifications we have made in relation to the last comments and suggestions.

I have one suggested edit (I don't think this affects the scientific conclusions, but may be important for reproducibility), and noticed a few minor technical corrections:

1) Can the authors clarify the model initialization/trajectory conditions: L150 says initial latitude trajectory is set at 25S, but Fig 1 shows trajectory latitudes moving between 16S and 6S, while Table 1 has latitudes around 11S? Are these all referring to different runs?

Thanks for noticing this. We have added the following sentences to paragraph starting on L160:

“The trajectories pass over Ascension Island (8°S, 14.4°W) between 10:30 and 13:30 UTC on a specific day. In our simulations we only use the section of the trajectories within the 64 hours before and 3 hours after noon (or closest available time) when they pass over Ascension Island (Figure 1 b).”

\*Therefore the trajectories we show in Fig 1 don't start at 25°S (the initial section of the trajectories was not used)

Technical corrections:

-- L70: "the moisture... can result in the relatively humid air being entrained"? (extra word or verb tense here?) **Fixed**

-- L89: instead of -, suggest "and" between the two named campaigns **Fixed**

-- L181: in the revised sentence, suggest "the differences are due to a combination of all effects" or "the differences are due to all effects combined" but both words reads as redundant. **Fixed**

-- Table 1: specify times are(?) in UTC, in addition to the Latitude comment above (also if Longitude varies as Fig 1 suggests, should that be stated as well?). **Times are in UTC. Fixed**

-- Fig 3 caption: I think you lost the 1 from AUG31 in the process of revision. **Fixed**

Regarding the “Remarks from the preceding review file validation”:

We changed the colors in Figures 1, 5, 6, 7, 9 and 10. Now we use colors from the “seaborn-colorblind palette” in python. We also use different line styles to make the lines more distinguishable.