

Atmos. Chem. Phys. Discuss., editor comment EC1
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Comment on acp-2022-233

Paquita Zuidema (Editor)

Editor comment on "Acceleration of the southern African easterly jet driven by the radiative effect of biomass burning aerosols and its impact on transport during AEROCLOSA" by Jean-Pierre Chaboureau et al., Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2022-233-EC1>, 2022

Dear authors -

Both reviewers recommended major revisions, with the 2nd referee suggesting an additional review. As such I am asking the same referees to reevaluate the manuscript. I personally think you have done a good job addressing the referee concerns. The writing is more polished, and the additional work of adding in additional simulations to generate ensembles is valuable and appreciated. I do have some small additional comments of my own on the revised version, listed below.

P. 2 line 35: 'an increase' in what?

p.2 line 39: the changes in regional circulation also affects aerosol transport over the SEA of course...e.g. the ability to reach south America (Holanda et al., 2020, ACP <https://acp.copernicus.org/articles/20/4757/2020/>).

fig. 4 e and f: wind vectors difficult to read.

p. 12 line 258: remove 'there'

P. 15 line 300: What is the night-time cooling effect? Smoke doesn't have a long wave signature. Is this from water vapor? Is an altered water vapor transport also a feature of the AEJ-S in these simulations?

p. 15 line 309: an -> a

p. 15, line 318: is this really self-lofting, or is the air within the AEJ-S more vertically mixed, so that there is less thermal stratification discouraging the same buoyancy? I can't quite tell from the potential temperature lines.

P. 19 line 386: 'In consistency with a' -> 'consistent with'

the authors may also want to consider how this work relates to Kuete et al., 2021 <https://link.springer.com/article/10.1007/s00382-019-05072-w>. In addition Ryoo et al 2021 <https://acp.copernicus.org/articles/21/16689/2021/> provides some climatological context for the focus on September 2017 (mainly shows September 2017 had a slightly weaker AEJ-S than the climatological mean.) should that be of interest.

