

Interactive comment on “Convective damping of buoyancy anomalies and its effect on lapse rates in the tropical lower troposphere” by I. Folkins

Anonymous Referee #1

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Review of Folkins, “Convective damping of buoyancy anomalies and its effect on lapse rates in the tropical lower troposphere”

Overall assessment: This is an interesting paper. I’m not sure it’s right, but I think it’s worth getting the paper out there for the community to read and assess.

Suggested revisions: My main issue with the paper is that it is difficult to read. This is both because it is a conceptual paper and because there are silly mistakes in it (references to Fig. 4 and 5 are mixed up several times in the text, other grammatical errors, etc.). I recommend the author spend some time carefully re-reading and clarifying the manuscript. It might be possible to make a more compact argument – at least it’s worth

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trying.

Particular places for clarification: * I find figure 3 to be confusing * I find figure 4 to be very very confusing * I could not understand section 6 and how your argument in that section worked

The paper relies heavily on the results of Bretherton and Smolarkiewicz. If their results are wrong, then it's likely (I think) that this paper is also wrong. Because the argument relies so heavily on this paper, the author should spend a few sentences talking about the paper, discussing their methodology, and discussing how confident we should be in it.

I found the discussion about the effect of clouds on heating rates (end of sect. 5) to be hand-wavy and unconvincing. It would be good to get something more definitive in there on this issue.

Interactive comment on Atmos. Chem. Phys. Discuss., 5, 7309, 2005.

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