Atmospheric Chemistry and Physics Discussions

Atmos. Chem. Phys. Discuss., referee comment RC2
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Comment on acp-2021-210

Anonymous Referee #2

Referee comment on "The climate impact of COVID-19-induced contrail changes" by Andrew Gettelman et al., Atmos. Chem. Phys. Discuss., https://doi.org/10.5194/acp-2021-210-RC2, 2021

Review of Gettleman et al.

This paper is aimed at analyzing the effects of the reduction in flights during the pandemic period in 2020 to examine the effect on resulting contrails. The NCAR model used in the study has been previously evaluated for analyses of contrails in previous years. The analyses are interesting and have scientific value. The paper is well written and should be publishable after revision.

I have two major comments:

Although the contrail derivation capabilities used in the model were evaluated in much earlier papers (from 2012 and 2013), an update on the capabilities are warranted relative to observations and analyses of contrails that have happened since those papers were published. A complete reanalysis is not required but perhaps as much of a page update on the capabilities of the contrail derivation from the model relative to the literature would be very helpful.

On page 4, line 75: Please justify the lack of considering aviation aerosol impacts on contrails in the study. If they had been included, how much of an impact could they have had on the results.

Please also note the supplement to this comment:

https://acp.copernicus.org/preprints/acp-2021-210/acp-2021-210-RC2-supplement.pdf