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Interactive comment on "Impact of aircraft NO_x emissions on the atmosphere – tradeoffs to reduce the impact" *by* M. Gauss et al.

Anonymous Referee #3

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The paper by Gauss et al. is a useful contribution to the literature towards understanding the effects of aircraft emissions on tropospheric and stratospheric ozone. Particular of interest are the analyses of alternative scenarios that investigate the effects of increased polar routing and change sin mean cruise altitude. I recommend publication after the issues discussed below have been resolved.

First, both in the abstract and in the main paper, there is inadequate discussion of the baseline reference scenario and what it represents. In particular, there needs to be more discussion of the basis for the reference scenario and the methodology used (referring to the Gardner et al. report which does not appear in the peer-reviewed literature is inadequate). It would also be useful to compare this reference database

with previously published emissions databases.

On pages 5 and 6, I remain concerned about the coarse resolution of the CTM-2 model, and would like to see further discussion on its adequacy for the studies addressed here, perhaps through further comparisons with observations or pointing at previous papers that have discussed this issue.

On page 7, explain FESG. Could also reference to IPCC (1999).

On pages 9-12, it would be useful to give further analysis relative to previous studies for similar reference scenarios to be clearer on what is similar and what is new in the studies done here.

The sensitivity studies are quite interesting, but it would be useful again to put these into perspective relative to prior studies.

Interactive comment on Atmos. Chem. Phys. Discuss., 5, 12255, 2005.