

2nd review of the manuscript “The importance of an informed choice of CO₂-equivalence metrics for contrail avoidance” by A. Borella et al. (egusphere-2024-347)

Recommendation

The authors have addressed my comments in a careful and very satisfactory way, and consequently I now recommend their paper for publication in Atmospheric Chemistry and Physics.

I still give some further suggestions below for consideration by the authors, partly on text I left uncommented in the first review (sorry for this!). However, my recommendation “accept” in no way depends on whether or not these additional suggestions will be accounted for.

Optional suggestions

l. 91: As the term “efficacy” is itself somewhat un-specific but has a dedicated meaning in the framework of this paper, it might be sensible to introduce it as “the efficacy of contrail radiative forcing to induce surface temperature changes” (replacing “the contrail efficacy”).

l. 117: “... it is not an explicit measure of the climate response.” I now feel that this statement calls for another reference, which could be Fuglestvedt et al. (2010) in view of their respective considerations at lines 4655, 4656.

l. 174: “adjusted radiative forcing”: since the term is not clearly defined within the paper, I suggest to write “stratospheric-adjusted radiative forcing”, and to add references to Hansen et al., 2005, and to Forster et al., 2007 (AR4, chapter 2).

l. 177: Suggestion (after “... considerations”): “Note that use of instantaneous contrail RF (corresponding to EF) for contrails and use of stratospheric-adjusted RF for CO₂ is not inconsistent, as instantaneous and stratospheric-adjusted RF do not differ significantly for contrails (Dietmüller et al., 2016)”.

l. 201: After “AGWP” you might consider to add another explicit reference: “Fuglestvedt et al. (2003, their Eq. 7)”.

l. 243: “The distribution”, it might be specified which distribution is addressed.

l. 349: “The number of ...”, The meaning of this sentence is still somewhat cryptical to me, especially with respect to the “condition of maximum additional fuel”. By the way “5 times larger” or “5.5 times larges” (as you write in your reply)?

l. 362: “low energy contrails”, perhaps improve to “low EF contrails”?

l. 475: Is there a reference to back the statement made in preceding sentence?