Dear Editor,

Re: Submission of manuscript titled "AIRTRAC v2.0: a Lagrangian aerosol tagging submodel for the analysis of aviation SO_4 transport patterns" to GMD.

Thank you for reminding us to update the provided DOIs and to ensure that our Summary System Section complies with GMD's recommendations. Below, we provide our responses **in bold** and reproduce the referee's comments in *italics*.

Thank you again for considering our submission to GMD and we look forward to your response.

Sincerely, on behalf of all authors,

Irene Dedoussi

Topic editor

Please double-check the code availability and make sure that the latest model codes have been uploaded into a public repository. For example, the link of https://doi.org/10.4121/8d2cdb5f-b652-41db-95a2-5345b4c1e77c seems not accessible and needs to be removed if new links are shown.

We have now minted the referred DOI and removed the previous private link. The specific model code applied in the manuscript remains available via the cited DOI in the "Code and Data Availability" section: https://doi.org/10.5281/zenodo.15965933.

Notification to Authors

Your short summary system section includes scientific abbreviations (EMAC). Please avoid abbreviations to make it better understandable for non-experts and please pay attention to use only 500 characters including spaces.

Our new summary section no longer includes the EMAC abbreviation. The character count with spaces is 455.

"Aerosol-cloud interactions remain a major source of uncertainty in assessing aviation's net climate impact. We develop, evaluate and present a new Lagrangian tagging model that tracks aviation-emitted SO_2 and H_2SO_4 as they are chemically transformed into SO_4 aerosols and transported throughout the atmosphere. This development allows the identification of atmospheric regions with elevated potential for aerosol–cloud interactions with SO_4 from aircraft."