

Authors' response to comments made by Executive Editor:

Dear authors,

Unfortunately, after checking your manuscript, it has come to our attention that it does not comply with our "Code and Data Policy".

https://www.geoscientific-model-development.net/policies/code_and_data_policy.html

First, although we are aware that you are not in a position to make public the MESSy code, this not necessarily applies to new developed modules. In this regard, we expect that you release publicly the new ORACLE-lite (v3.0) module. If there is a reason that explains that you can not publish new developed code, please, reply with it to this comment. If such reason does not exist, please, publish the ORACLE-lite code in an appropriate repository according to our policy, and reply to this comment with its link and permanent handler (e.g. DOI).

Also, you must publish the data used for comparison purposes, and state in the Code and Data Availability section how to access them. Currently you do not do it.

Therefore, you have to reply to this comment in a prompt manner with the information for the repositories containing all the above requested information. The reply must include the link and permanent identifier (e.g. DOI). Also, any future version of your manuscript must include the modified section with the new information.

I must note that if you do not fix this problem, we cannot continue with the peer-review process or accept your manuscript for publication in GMD.

Juan A. Añel

Geosci. Model Dev. Executive Editor

We thank the Executive Editor for pointing out these issues. Following the Editor's request, we have archived on Zenodo the exact version of the code used to perform the simulations presented in this study, with the permanent DOI [<https://zenodo.org/records/19204803>]. The archived version includes the newly developed ORACLE-lite v3.0 module together with the corresponding EMAC/MESSy model configuration in which it is implemented. ORACLE-lite is not a stand-alone model component; for example, the gas-phase reactions involving ORACLE species are implemented through the MECCA submodel and its KPP-generated chemical mechanism. ORACLE-lite is therefore implemented within the MESSy framework and relies on MESSy source code and interfaces that are subject to the MESSy licensing and distribution conditions. Therefore, open access to this archive is not possible because the MESSy source code is distributed under the MESSy Software Licence Agreement and is not publicly redistributable. Consequently, the Zenodo archive has restricted access in order to preserve the exact code used in this study while complying with the MESSy licensing and distribution conditions. The permanent DOI ensures that this specific version of the model is persistently archived, and access to the code can be requested through the Zenodo record.

Regarding the observational data used for model evaluation, these data have already been published and are publicly and permanently available as part of the Supplement of Tsimpidi et al. (2025). Specifically, the AMS/ACSM datasets used in the present evaluation, together with the corresponding measurement-site and campaign information, are provided in Tables S4–S17 of that Supplement [<https://doi.org/10.5194/acp-25-10183-2025-supplement>]. We have now explicitly

included this information in the Code and Data Availability section. In addition, following the Editor's comment, we have added a new Section 2.4 (“Observational data”), which describes the observational dataset used for the evaluation and explains how the model results were matched in space and time to the individual measurement datasets. The Code and Data Availability section of the manuscript has been revised accordingly to provide the permanent identifiers and access information for both the code and observational data.