

Global high-resolution simulations of tropospheric nitrogen dioxide using CHASER V4.0: Response to the Executive Editor

We would like to thank the Executive Editor for his comment. We revised the manuscript and responded to considering reviewer's comments. The main changes are as follows:

- 1) Validation results of meteorological fields have been extended and moved to Section 3
- 2) An analysis of the impacts of convection and lightning NO_x has been added to Section 5.
- 3) An extended discussion has been added on the trade-off between horizontal model resolution and computational costs.

Individual comments (in black) and specific response to them (in blue) are listed below. *Text (Italicized)* from the revised manuscript is in quotes.

As explained in https://www.geoscientific-model-development.net/about/manuscript_types.html GMD is encouraging that authors upload the program code of models (including relevant data sets) as a supplement or make the code and data available at a data repository preferable with an associated DOI (digital object identifier) for the exact model version described in the paper. If for some reason the code and/or data cannot be made available in this form authors need to state the reasons, for why access is restricted (e.g. licensing restriction), in the code availability section. In the case of this manuscript I would like to encourage the authors to provide the source code as a supplement and also add some statements on the environment required to run the model (e.g. programming language, code dependencies).

Lutz Gross GMD Executive Editor

We cannot provide the CHASER V4.0 source codes as a supplement because of license restriction. The sentences have been rewritten as follows:

(p. 21, l. 2–3)

“The source codes for CHASER V4.0 are not publicly available because of license restriction. The source codes can be obtained from K. Sudo (kengo@nagoya-u.jp) upon request. Most of the source codes are written in Fortran 77 and 90.”