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Comment

Interactive comment on “**Technical Note: Coupling of chemical processes with the Modular Earth Submodel System (MESSy) submodel TRACER**”
by P. Jöckel et al.

Anonymous Referee #1

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Referee report on the manuscript

Technical Note: Coupling of chemical processes with the Modular Earth Submodel System (MESSy) submodel TRACER

by

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I suggest to publish the manuscript in Atmospheric Chemistry and Physics after addressing some minor comments and suggestions given below.

General comments

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This manuscript is part of the documentation of the Modular Earth Submodel System (MESSy). The technical note is written well and clearly. Some minor comments and suggestions are given in the specific comments.

Specific comments

* p. 17076, line 24: I suggest to change "...(fast equilibrating species)..." to "...(fast equilibrating) species...".

* p. 17086, line 15 and p. 17087, line 27: The term "aerosol dynamical model" implies that the model calculates aerosol microphysics. This is not the case for PTRAC, as all aerosol properties remain constant throughout the whole model simulation. I therefore suggest to omit the word "dynamical" in these cases.

* p. 17087, line 15-17: It remains unclear how these additional data instances are treated when converting from tracer mode to family mode or vice versa.

* Does the implementation of tracer families reduce the computational burden of a model? There should be no more need to advect the individual family members. Is this taken into account by TRACER?

* Fig. 1: What is the purpose of rank 5? This is not mentioned in the text and remains unclear from Fig. 1.

* Fig. 3: What is the dashed box in the figure? The purpose of the red arrows remains unclear. What does the right arrow point to?

Specific comments: MESSy TRACER User Manual

* The terms "DP" and "STRLEN_MEDIUM" have not been defined. I would suggest to include this information in the beginning of the manuscript.

* p. 3, last paragraph ("The additional meta-information is contains one ..."): Remove "is".

* p. 4, 1st paragraph of Sect. 3 ("...to be called from the submodel..."): Change "submodel" to "submodel".

* Throughout the manuscript: I would prefer fortran syntax "DIMENSION" instead of "DIM" in the definitions of the variable types.

* p. 9, table, last row: Replace "(;,:;,:)" with "(;,:;,:)" (":" instead of ";").

* p. 12 ("processes in family mode; e.g., advection;"): Remove ";" at the end of this line.

Interactive comment on Atmos. Chem. Phys. Discuss., 7, 17069, 2007.

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