

***Interactive comment on “Technical Note:
Implementation of prescribed (OFFLEM),
calculated (ONLEM), and pseudo-emissions
(TNUDGE) of chemical species in the Modular
Earth Submodel System (MESSy)” by A. Kerkweg
et al.***

Anonymous Referee #3

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This paper presents three submodels that handle different types of emission sources in the Modular Earth Submodel System (MESSy). OFFLEM treats offline emissions read in from data bases such as EDGAR, while ONLEM calculates emissions online in cases where they are dependent on variables calculated by the base model, in this case MESSy. TNUDGE is used for nudging species to observed distributions, e.g. at the upper and lower boundaries of the model.

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An important aspect is that the submodels will be available to the scientific (modelers') community. Given the highly modular approach that is followed in the coding, the submodels are flexible and easy to implement in models other than MESSy. To this end also the supplementary document with a more detailed description of the code is useful.

The paper is well-written, concise and to-the-point, and, as part of a special issue in which other parts of MESSy are presented along with model results, it is worth being published in ACP after the following minor revisions:

page 5490, line 2: 'not affected' is misleading in this case. I suggest writing 'not directly affected' or something similar, as tracers are indeed affected by boundary conditions through, e.g. transport.

page 5490, last paragraph should start "An additional software tool, EDGAR2NC, can be used to convert data from the ASCII-based EDGAR format . . ."

page 5493, remove comma after Guelle et al. (2001)

page 5498: In the summary, the high flexibility and modular nature of the code could be mentioned once again, as the ease of implementation into other models is an important aspect.

page 5501: In caption of Fig.1 replace 'type is 3-D, if the' with 'type is 3-D. If the'

page 5502: In caption of Fig. 2 how about writing 'base model' instead of 'base model layer' and calling the BML box for BM. Also, I'd let the arrow go directly from the BML box to ONLEM rather than from somewhere in between BML and DATA, and leave out the parenthesis in the last sentence of the caption. The main message to get across is that ONLEM uses data from the base model. The dashed arrow complicates the figure unnecessarily. Why not including the emission types in the NCREGRID box, e.g. in parentheses?

page 5504: Change Left/Right into Top/Bottom (also in the text page 5498, line 2).

Interactive comment on Atmos. Chem. Phys. Discuss., 6, 5485, 2006.

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6, S2190–S2192, 2006

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