

Interactive comment on “Technical Note: The air quality modeling system Polyphemus” by V. Mallet et al.

V. Mallet et al.

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We thank the reviewer for his positive review and for his useful remarks.

1. Introduction

p.6460, l. 12–15: The models are mature enough for given applications such as operational forecast, which enables further development (more detailed models, and advanced forecasting methods). We agree this was not clearly stated. We modified the first two sentences accordingly.

pp. 6460–6461: There is no reference to other modeling systems, *on purpose*. We aim at describing Polyphemus, not at comparing it with other systems. Any comparison with a given system is difficult to achieve without an extended analysis

of the differences. Otherwise the comparison might seem incomplete, erroneous and finally unfair. In addition, there are so many systems available that it would be difficult to choose the systems to mention, especially in our case since Polyphemus covers several areas. Hence we did our best to write a paper that describes Polyphemus without external reference points.

2.1 Overall architecture

p. 6461: We refer to “atmospheric dispersion models”. Input data comes from meteorological models, chemical databases, emission inventories, ... We modified the text accordingly.

pp. 6461–6463: We added a note about portability: “A careful implementation guarantees a good portability of most parts of the system on Unix, Linux and Windows and on different hardware architectures.” Currently, parallelization is not supported, although at least one Eulerian model (Polair3D) should be parallelized soon. The computational costs depend on the model (it is not the same for the two Gaussian models or for the two Eulerian models), the methods used with them (data assimilation, ...) and of course the configuration. The computational time ranges from seconds to days or weeks.

2.2 Data processing and physical parameterization

p. 6464, l. 18–21: We added: “When stored, every input data field is saved with its own timestep (e.g., hourly emissions), independently of the model timestep.”

3.4 Other abilities

p. 6470: It is possible to nest Eulerian models. This is offline nesting (hence one-way nesting). We added a reference to this ability.

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4. A few illustrations

pp. 6470–6472: On page 6468, last paragraph, we mentioned the papers that evaluate the performances of the models.

p. 6472, l. 14–20: We have such an example plot in the paper we mention in the same sentence [Mallet and Sportisse(2006a), see Figure 8]. We prefer not to include it in this paper because it requires many explanations. In addition, there is already a figure related to ensemble forecasting and we would like to keep a balanced section between the different abilities.

5. Conclusions

p. 6474: We added the suggested information.

Interactive comment on Atmos. Chem. Phys. Discuss., 7, 6459, 2007.

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