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European Geosciences Union

Atmospheric Chemistry and Physics Discussions

Interactive comment on "Emission scenarios for air quality management and applications at local and regional scales including the effects of the future European emission regulation (2015) for the upper Rhine valley" *by* J.-L. Ponche and J.-F. Vinuesa

Anonymous Referee #2

Received and published: 11 January 2005

A. General Comments

The paper first deals with the development of emission inventories for traffic scenario studies in the Upper Rhine Valley (regional scale) and in the city of Strasbourg. The authors deal with the 4 scenarios:

<sum> displacement of the private traffic from the city center of Strasbourg;

<sum> use of 3 modifies car fuels;

<sum> application of the 2015 European emission regulations to the Upper Rhine Valley, standard regulations;

<sum> application of the 2015 European emission regulations to the Upper Rhine Valley, more restrictive regulations.

In the second part, air quality model runs using the European zooming model (EZM) are described and the impact of the above emission scenarios on the local and regional air quality are discussed.

The authors give a quite comprehensive insight in the generation of emission inventories and scenarios. There is sufficient information on the regions of interest and of the emission inventories used in the study. The effect of these scenarios are quantitatively disussed in the body of the paper.

The abstract is a sufficient outline of what has been done. The summary and conclusions section, however, is too general. Readers who read only the abstract and the conclusions do not find any quantitative results.

B. Specific Comments Comments are written regular, paper texts are put in quotes (“), omissions are double striked through bold, corrections are written in italic bold .

Remark: the strikethrough / bold writing does don work on some browsers!!

p 8549, l 20ff Explain why ETBE and R2 are used as fuels in the scenario (less polluting, cheaper, renewable,..?)

p 8550, l 16ff Why does NOx concentration increase when using modified fuels? Are NOx emissions larger than for the regular fuel? If so, mention it in the text.

p 8557, l 21ff Is the quantity described in this paragraph identical with OTS in Table 6? There is a confusion between the units used in the text and those given in the table.

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p 8558, l 4ff Section 5 is very general and does not include any quantitative results. Omit the first paragraph. Give at least a few quantitative figures of the effect of the various abatement scenarios

C. Technical Corrections p 8543, l 23-24 “Thus, the models must to be able to ...”

p 8549, l 22 “This study aims to at quantifying Ě”

p 8555, l 25 “Ě the percent increase change of the NOx Ě”

p 8557, l 9 “Ě comments conclusions can be drawn Ě”

p 8563, row “Industry” Is “E” in “Energy self-production E” actually a variable or only a misprint?

p 8565, Table 3 The table is too small. Which are the thresholds for the classifications +, ++, -, –, etc.? “Ě not allow aclear a clear trend Ě”

p 8568, Table 6 What do “Overflow of the Threshold Surface (OTS)” and “Benchmark” mean? The last row seems to contain averages, not totals.

p 8571, Fig. 3. There is a mismatch of y-titles and the figure caption. Wrong figures?

p 8575, Fig. 7. light colors for high ozone would be more intuitive.

1) Does the paper address relevant scientific questions within the scope of ACP? yes

2) Does the paper present novel concepts, ideas, tools, or data? very few. The study deals with the common way of combining emissions and modeling to get gridded air quality data.

3) Are substantial conclusions reached? Yes, at least in the body of the text

4) Are the scientific methods and assumptions valid and clearly outlined? Yes

5) Are the results sufficient to support the interpretations and conclusions? Yes

6) Is the description of experiments and calculations sufficiently complete and precise

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to allow their reproduction by fellow scientists (traceability of results)? Obviously the fellow scientist has to become familiar with the model and the emission system to reproduce the results. Not possible in short time!

7) Do the authors give proper credit to related work and clearly indicate their own new/original contribution? Yes

8) Does the title clearly reflect the contents of the paper? Yes

9) Does the abstract provide a concise and complete summary? Yes

10) Is the overall presentation well structured and clear? Yes

11) Is the language fluent and precise? Yes

12) Are mathematical formulae, symbols, abbreviations, and units correctly defined and used? Mostly yes

13) Should any parts of the paper (text, formulae, figures, tables) be clarified, reduced, combined, or eliminated? See comments above

14) Are the number and quality of references appropriate? Yes

15) Is the amount and quality of supplementary material appropriate? Yes

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Interactive comment on Atmos. Chem. Phys. Discuss., 4, 8539, 2004.