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Atmospheric Chemistry and Physics Discussions



# *Interactive comment on* "Intercomparison exercise between different radiative transfer models used for the interpretation of ground-based zenith-sky and multi-axis DOAS observations" *by* F. Hendrick et al.

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General comments:

The paper presents results of an intercomparison exercise of several radiative transfer model. Calculations have been made with radiative transfer models very well known in the community. Exercises are original and often not done before at such level in the international community, justifying the need for such difficult exercise. I encourage

strongly publication of the paper.

Specific comments:

This comment can be taking into account but is not determinant for the quality of the paper. At the end of chapters 5 and 6, concerning interpretation of differences between models for aerosol impact and ground albedo impact, the authors are involving further tests to find out the detailed reasons of differences. Some effort can be done, using existing results and main author's own model to propose solution (s) or to explore solutions. Next intercomparisons will be able to validate author's propositions.

Technical corrections:

Abstract: "Concerning the MAX simulations, ...relative azimuth effects" should come before the last sentence of the abstract to have all zenith sky and Max presented separatly and in the same order as in the paper

End of part 4.1: the author should indicate the % of MS in the total, justifying conclusion in Wittrock et al., 2004.

Table 4. Mie scattering is included in part 5. It should be indicated somewhere as a note.

Questions:

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? Yes

3) Are substantial conclusions reached? Yes, but could be improved

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 to allow their reproduction by fellow scientists (traceability of results)? Yes



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Interactive Comment

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? Yes

13) Should any parts of the paper (text, formulae, figures, tables) be clarified, reduced, combined, or eliminated? No

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., 5, 7929, 2005.