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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Comparison of Box-Air-Mass-Factors and Radiances for Multiple-Axis Differential Optical Absorption Spectroscopy (MAX-DOAS) Geometries calculated from different UV/visible Radiative Transfer Models" *by* T. Wagner et al.

Anonymous Referee #3

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General comments

1. This paper presents comparison of different radiative transfer model calculations of radiances and so called Box-air mass factors (Box AMF) for multi axis differential optical absorption spectroscopy (MAX DOAS). These radiative transfer models are usually used for ground-based as well as for satelite observation of atmospheric trace gazes like ozone and NO2, as well as for aerosol.8 models are compared and four exercises

are conducted in this paper.

2. All teams and radiative transfer models involved in this paper have an international recognation, indicating the high quality of the paper.

3. Also, the general way the comparison exercices have been conducted are fully relevant for this sort of comparison, as well as the searched ways to interpret results and differences between models.

Major comment

1. Very difficult exercises driven in very friendly way. The complexity of models and calculations are fully described and interpreted in the paper.

2. A general link between exercises is missing. The reader has difficulty to understand the evolution in exercises, why they are made in this order and not differently. A comment at the begining of the chapter 3, Basic settings and test, a brief but constructive plan should be provided, in complement to the aims of the intercomparison provided at the end of chapter 2.

Detailled minor comments

1. p 9827, l. 25: ...combination of observations at several elevation angles... and several wavelengths

2. p 9828 l.5-6 : is multiple scattering enhancement solved for O2 - O4, if yes, please state.

3. p9837 l. 7 -8 and 11 - 12, remove jump between lines (in acpd-6-9823-2006-print pdf version)

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