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Comment

## ***Interactive comment on “Ozone Monitoring Instrument spectral UV irradiance products: comparison with ground based measurements at an urban environment” by S. Kazadzis et al.***

**S. Kazadzis et al.**

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Response to Reviewer #2

We would like to thank the reviewer for his her comments. Here are the responses

General comment

How large part of the grid is covered by urban area and how much is ocean?

The following phrase was added in the Materials and Methods - ground based measurements section: The OMI grid includes 50% of the urban area and 50% of city suburbs, rural area and sea (25%).

Special comments

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1. p. 17471 Line 23. Is there a reference for the correlation between PM 10 and AOD at this site?

The correlation between PM10 and AOD for the area is related with the contribution of transported aerosols to the total column AOT. A related publication that was accepted just recently in Atmospheric Environment Journal (PM10 regional transport pathways in Thessaloniki, Greece by E. Katragkou et al.) provide some information about distinctive cases of Shararan dust and biomass burning aerosol transport and the correlation of AOT with PM10. In any case the PM10 study referred in this section (Kazadzis et al., 2007) is providing PM10 results in addition to the AOD to show the improvement of the air quality in the specific area fro the given period.

2. p. 17472 line 1. Why are only three wavelength compared, why not 310 and 340 nm line 17.

We limited the comparison to 305nm (UVB), 325nm (UVB UVA limits), 380nm (UVA) and erythemal dose in order to cover the whole wavelength range. Ratios at 310nm was considered to have similar behavior with 305nm and 340nm are not available from OMI instrument.

3, Descibe briefly how SSA is retrieved at 340 nm (Bais 2005) line 26.

Paragraph added: In this study the modification of clear-sky global irradiances by the aerosol SSA, as a function of AOT and solar zenith angle was investigated using radiative-transfer model calculations. The model-derived relations were combined with UV irradiances at the surface and the AOT measured with the Brewer MkIII spectroradiometer, developing an indirect method of estimating an effective SSA.

4. p. 17474 line 14. Why use the median of RT?

We tried to be in line with the Tanskannen et al., 2007 publication presented a large number of similar Omi GB ratios, in which is mentioned that: Because most of the RT distributions do not resemble a normal distribution, statistical methods applicable

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to normal distributions were abandoned. Instead the distributions were analyzed by calculating the median of RT, that is less affected by rare abnormal values of RT.

5. Line 20. Is there any background for setting SSA to 0.90.

A sentence was added: (which is the long term mean SSA from CIMEL measurements at 440nm)

6. Line 25. Table 1. I do not see the point of giving W10 and W20 values in Table 1 with three decimals.

There is only 1 decimal.

7. p. 17476 line 16. Why is 324 nm used to calculate AOT?

We have chosen the 324nm wavelength as it is an OMI UV measured wavelength. Because 305nm AAOT is highly uncertain according to Bais et al., 2005 and AAOT at 380nm would include an additional uncertainty from the SHICRIVM produced (extended) global spectral irradiance use.

8. p. 17485 Title of the table show reflect content. RT statistics. Use rather OMI/GB ratio of .

Table 1 was renamed OMI/GB ratio (RT) statistics

9. p. 17486 replace RT. Replace methodology with aerosol absorption optical thickness corrections

Table 2 was renamed: Results of the aerosol absorption optical thickness corrections: RT was replaced by OMI/GB ratio (RT).

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Interactive comment on Atmos. Chem. Phys. Discuss., 8, 17467, 2008.

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