

***Interactive comment on* “Typical distribution of the solar erythemal UV radiation over Slovakia” by A. Pribullová and M. Chmelík**

Anonymous Referee #1

Received and published: 22 May 2008

General Comments:

The paper concerns an important topic that has outstanding significance in environmental physics of today. Each study of the specific characteristics of solar erythemal UV radiation in different areas helps the scientific community that research UV radiation in several respects to improve the general knowledge of behaviour of UV radiation reaching the Earth's surface and affects biosphere. So this paper addresses relevant scientific questions and present novel data that has not been known exactly so far.

The scientific methods and assumptions are clearly outlined, only some small detail is not fully clear or is to be completed. The results are sufficient to support the conclusions. The description of their calculations is sufficiently precise to allow their repro-

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duction by fellow scientists.

The title clearly reflects the content of the paper.

Specific Comments:

1. Page 2, first paragraph: It would be important to show the type of the broadband detector that was used for the measurements.
2. Page 2, fourth paragraph: It would be reasonable to list very briefly (in parenthesis, for example) the most important specifications of Brewer spectrophotometer (sensitivity range, spectral resolution) for those readers who are not familiar in UV spectrophotometry.
3. Page 2, 12. row after Equation (1): To mention some main specifications of model TUV would be useful.
4. Page 2, 15. row after Equation (1): the term 'aerosol optical depth of radiation with wavelength. . . .'" correctly is as follows: 'aerosol optical depth at 340 nm' (the cause of the error: a radiation has no aerosol optical depth).
5. Page 2, 7. row of the second paragraph after Eq (1): Has it any specific reason that 0.5 h was used as integration time step?
6. Page 3, 11. row of Section 2.3: Has it any specific reason that authors selected probability limits of 50 % and 70 % for the determination of altitudes above which snow effects on the UV radiation was incorporated into the model?
7. Page 4, 2. row of the second paragraph: instead of 'determined' it would be more correct to use the word 'found'.
7. Page 4, second paragraph: Have authors any assumption whether what could be the physical reason(s) for that the lowest correlation coefficient between modelled and measured data was found for February, March, October and November? Based on the months mentioned it can be supposed first that the goodness of the correlation

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depends on the intensity (solar elevation), but the relatively high correlation coefficient for January contradict it.

8. Page 4, 11. row of second paragraph and in 7. row of fourth paragraph of Section 3.3: the dot is not needed between the kJ and m in $\text{kJ}\cdot\text{m}^{-2}$.

9. Page 4, 7. row of third paragraph of Section 3.3: Instead of the word 'copy' the word 'follow' is to be used.

10. It would be useful to enlarge Figures 1, 2 and 3.

Interactive comment on Atmos. Chem. Phys. Discuss., 8, 5919, 2008.

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