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Atmospheric Chemistry and Physics Discussions

Interactive comment on "UV variability in Moscow according to long-term UV measurements and reconstruction model" *by* N. Y. Chubarova

Anonymous Referee #2

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The paper presents a very interesting methodology for assessing and quantifying the effects of different atmospheric parameters on the erythemal irradiance at the surface. This concept has been proposed already by the author in previous papers, but here she is using different datasets and a more extended period. In addition the paper provides some useful climatological data of the UV Index in relation to the dose for vitamin D production for Moscow. Although the methodology is presented clearly, it can be further improved following the specific comments below. There is room for some improvements also in the language. Some suggestions are given in the technical comments below, but the entire text should be checked once again. I think that the paper should be accepted for publication with minor revisions.

The author uses two different concepts to describe the cloud effects in various places

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in the text and in Figure 3; namely the effective cloud amount transmission and the cloud optical thickness. I wonder if these two parameters can be safely considered independent of each other. This should be made clearer in the text.

Specific comments

896, 10: This sentence does not give enough information for the method of calculating the effective cloud transmission. I suggest either to provide some more details or to remove this sentence and give only the reference.

896, 20: What exactly represents the quoted uncertainty of 2%?

897, 1-3: Please include some discussion on using a different Angstrom parameter from the measured one in order to remove the \bias in AOT550.

899, 24: The agreement between measured and reconstructed data is not very good. Differences of at least 5% are evident. This should be discussed in the text. Similarly the quality of the reconstruction model cannot be regarded as *high*.

904, figure 1: The NO2 optical thickness is very small and hardly visible in the upper graph. On suggestion would be to multiply OTNO2 by 10 in order to make it more evident in the graph.

Technical comments

895, 15: radiative —> radiation

896, 21: delete *estimates of the* and

896, 23: replace *were also fulfilled* with *were estimated*

898, 8: cycle —> variation

898, 23: significant —> significance

899, 3: compare with the —> compared to

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899, 27: dominated comprising ś10% —> dominant explaining about 10% of the variations

900, 2: plays —> play

900, 9: is getting down —> decreases

900, 13: *work* on the Qer increase which comprises of —> result in Qer increase, which is estimated to

900, 27: for —> by

901, 11: people health during —> people’s health during the

Interactive comment on Atmos. Chem. Phys. Discuss., 8, 893, 2008.

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Interactive Comment