

***Interactive comment on* “Simulation of solar radiation during a total solar eclipse: a challenge for radiative transfer” by C. Emde and B. Mayer**

C. Emde and B. Mayer

Received and published: 8 March 2007

We thank the referee for the comments which helped to improve the manuscript. Most of the comments will be included in the revised version. Detailed answers to the specific comments are given below; original reviewer comments are included in italics.

Reply to “Specific comments”:

In abstract, introduction and in conclusion the authors mention their hope that their results are helpful to optimize observations during future solar eclipses. This aspect I do not understand.

The ability to accurately predict radiation levels before a campaign can help to optimize measurements, e.g. to focus on the wavelength regions where the detection

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limit is small enough or to optimize integration time.

Figs. 5 and 8 should show the same area

See reply to reviewer 1.

Figure 16 is nice, but nothing more. It is not necessary to demonstrate the results.

Here we do not agree. Figure 16 is more than just nice. As we did not have any quantitative measurements, the photograph was the only “measurement” that we could use to validate the model, at least qualitatively. For the figure radiance spectra are calculated for different directions from zenith to horizon. These spectra are then converted to colors using a well established scheme (see references). So the figure is a very strong indication that the model works correctly.

Last line before Chap 3: Say "...be taken into account" instead of "..not be neglected."

Will be included.

Interactive comment on Atmos. Chem. Phys. Discuss., 7, 499, 2007.

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