

Interactive comment on “Technical note: The libRadtran software package for radiative transfer calculations – description and examples of use” by B. Mayer and A. Kylling

Anonymous Referee #1

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General comments

This paper describes the software package libRadtran which consists of the uvspec program and a collection of corresponding software tools to model radiative transfer in the atmosphere. The software is extremely flexible regarding the use of different RTE solvers and user defined parameters like atmospheric constitution, wavelength range as well as aerosol-, cloud- and surface properties. The various features are illustrated by adequate examples. Despite the complexity of the subject the paper is clearly written although there are a large number of technical abbreviations. The extensive list of

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references permits access to more specific information on single subjects. The classification of the paper as a technical note is reasonable.

I would like to take the opportunity to compliment the authors on making the software available to the public. The paper should be published after minor modifications.

Specific comments

1) I was confused about the polar angle integration limits in Eqs. (4) and (6) which imply a sign convention. For example in the case of an isotropic radiation field ($L=\text{const.}$) integration of Eqs. (5) and (6) yield $2\pi L$ for $F \downarrow$ and $-2\pi L$ for $F \uparrow$. Thus the net (vertical) flux cancels out, but of course the total flux corresponds to $4\pi F$. The authors should address this point.

2) On page 1328, line 26 and the following, layer and level properties are discussed. The layer concept used by the program is also illustrated in Fig. 4. The authors should add a note on how many layers are used in the actual RT calculations and whether or not this is an adjustable parameter.

Technical corrections

1) Page 1329, line 22 (twice) and 1351, lines 11 and 13: Replace 'specie' by 'species'. Species is both singular and plural.

2) Page 1352, line 5: Replace 'automagically' by 'automatically' (unless magic *is* involved in RT calculations).

3) A wavelength should be indicated in Fig. 7.

Interactive comment on *Atmos. Chem. Phys. Discuss.*, 5, 1319, 2005.

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