

## ***Interactive comment on “Reflection and transmission of solar light by clouds: asymptotic theory” by A. A. Kokhanovsky and T. Nauss***

**Anonymous Referee #2**

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This is an interesting paper. The authors developed a computationally efficient radiative transfer (RT) code based on the asymptotic RT theory. The code has been validated against other codes (e.g., the code developed by Mishchenko et al., 1999). It is found that the model developed by the authors is quite accurate for the cases where the optical depths are larger than 5. Overall, the manuscript is well written; the technical approach is sound, and the results are reasonable. However, the authors are suggested to further edit the manuscript. I recommend that the manuscript be accepted for publication after some minor revisions.

Minor comments:

(1). Why the code is named CLOUD? Would it be better to call it as CLOUD-RT?

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(2) In the abstract, the authors should mention the limit of the code, i.e., the applicability of the code requires that the optical depth should be larger than approximately 5.

(3). The 1st line in the abstract: change “the radiative transfer model CLOUD for $\check{E}$ ” to “a radiative transfer model, CLOUD, for $\check{E}$ ”.

(4). The 5th line in the abstract: change “radiative transfer characteristics” to “radiative characteristics”.

(5) The 3rd line in the conclusion: change “The presented asymptotic theory” to “the present asymptotic theory”.

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Interactive comment on Atmos. Chem. Phys. Discuss., 6, 8301, 2006.

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