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Comment

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

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Generally, we (MIPAS group at Oxford University) found that perhaps there was a little too much detailed math in the paper and this made it difficult to follow. For instance, for clarity's sake, perhaps you could consider doing a more extensive definition section (Spherical vs plane albedo? Global vs diffuse transmittance? Global vs diffuse absorption? Asymmetry vs symmetry parameter? Escape function?). There are so many parameters used that it would be more useful if when you use a symbol in the text you should always write the parameter name next to it. In fact, maybe a schematic picture which explains the different parts of the equations and terms would be the easiest and clearest way to describe/define the parameters of interest.

As well, a few questions were raised: 1) Have you applied this to any real measure-

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ments? From which instruments? 2) Can you really use LUT's calculated for one effective radius for other effective radii as well? 3) The introduction mentions "cloud retrieval algorithms" but doesn't mention the sort of satellite instruments to which these are applied (and Nakajima and Nakajima 1995 isn't in the references section). Surely there must have been a more recent application of cloud retrievals from satellite data than 1995? 4) What percentage of the earth is covered/what is the frequency of occurrence of types of clouds that correspond to an optical depth of greater than about 5? 5) How do the CPU times compare between the new algorithm and the old ones to retrieve the cloud characteristics?

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

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