

Interactive comment on “Spectral reflectance of solar light from dirty snow: a simple theoretical model and its validation” by A. Kokhanovsky

F. Dominé (Editor)

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Based on the reviews, your responses to the reviewers, and my own careful reading of your paper, I encourage you to submit a revised version. I believe this paper will be very useful to the community studying snow optics because it will allow a much simplified and faster way to treat the impact of impurities on snow reflectance in models. However, I recommend that you do your best to make your paper appealing to as wide a community as possible. In particular, a significant fraction of potential readers will not be comfortable with equations and theory, and it is important to make your paper as easily accessible to them as possible. In the interest of the dissemination of your work, of your readers and of the journal, I therefore strongly recommend that you do consider with interest some of the reviewers' recommendations. Also please keep in mind that

C347

it is much nicer for readers if they do not have to look up references to understand a paper. Please do your best to ensure that your paper is self-contained. If this requires a brief reminder of procedures, methods or results detailed in previous work, then a brief summary of relevant parts of those previous papers will be appreciated and will increase the readability and appeal of your work.

Specific recommendations include:

1- Re. point 2 of reviewer 1, please consider making a brief summary of experimental aspects.

2- Re. point 6 of reviewer 1, I believe making more explicit titles will be more informative. Please consider following the reviewer's suggestions, although of course you should feel free to select your own wording.

3- Re. the point on the derivation of eq. 4 made by reviewer 1, please be aware that many readers are not familiar with handling equations and that the reviewer's suggestion in fact makes your reasoning much simpler to follow.

4- Re. the comparison with DISORT suggested by reviewer 2. Today, most scientists making optical calculations for snow probably use DISORT. Using your equations will save time but you have to convince DISORT users that your equations will give valid results and most of them will want to see a comparison with their favorite tool. It may therefore be a valuable addition to show comparisons with DISORT.

5- Re. the addition of a table of symbols. Some readers may be familiar with the symbols you use, but most readers will certainly be helped by such a Table. Please consider including one in your revised version.

In summary, both reviewers and I are very positive about your paper which promises to be very welcome by the snow optics community. I believe that, while changes in substance are not necessary, changes in style, as suggested above and by the reviewers, will greatly improve the readability and appeal of your paper. In the interest of

C348

everyone, I therefore recommend that you consider making the changes in style that we suggest.

Interactive comment on The Cryosphere Discuss., 7, 533, 2013.