

Interactive comment on “Commentary on comparison of MODIS snow cover and albedo products with ground observations over the mountainous terrain of Turkey” by A. Ü. Şorman et al.

Anonymous Referee #2

Received and published: 17 January 2007

This study evaluates the MODIS snow cover and albedo products over the eastern part of Turkey by using field measurements. Although I am convinced about the potential of this manuscript to be published in HESSD, some revision are needed before publication. Some parts of the manuscript should be better explained in order to avoid repetition and to facilitate the reading. Furthermore, an English native speaker should revise grammar. Therefore I suggest that prior to resubmitting the manuscript, it be revised according my suggestions and comments.

1. Abstract. The meaning of SWE should be specified.

2. Introduction. pp 3657, line 8: beside the study of Parajka and Blöschl (2006) other investigations should be cited. pp 3658, line 1: DEM derived terrain parameters are also required in distributed snow models. pp 3658, lines 5-10: the main objective of the paper should be better explained.

3.1. Snow depth measurements. In this section the authors should provide a more robust presentation of the snow depth measurements, including the number of sampled data and the range (and other statistics) of snow depth data. In this section a better discussion of distribution and site condition (homogeneous vs heterogeneous sites) should be detailed.

pp 3659, line 4: data on MODIS images should be moved in the section 4.

pp 3659, line 6: it is not clear the meaning of “similar study”. Please explain better

3.2. Albedo measurements. It should be useful to specify the time measurements of the albedo and plot their diurnal variability.

4. MODIS data methodology. The authors should better explain how they performed the comparison between instantaneous MODIS albedo estimation and ground data.

5. Analysis. The authors should provide some motivation for the selection of their thresholds. Moreover, I would like to see how the accuracy vary with changing thresholds.

I would like to see a new Figure with the statistical evolution of in situ snow depths and albedo measurements for those days when MODIS underestimates the presence of snow cover and when there are discrepancies with albedo measurements.

6.1. Comparison of snow maps with ground observations. pp 3662, line 24. It is not clear how passive microwave images can improve snow cover mapping or reduce cloud cover problems. Please explain these issues, otherwise the authors should omit

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this sentence. The authors should explain why AQUA can not be used as alternative for snow cover.

I might be missing something, but I do not understand the discussion on the “contin-gency table”. I think that the authors should include this table. Moreover, the authors should show the total errors, overall accuracy and the Kappa value.

Figures and Tables. The quality of Figures is poor and their caption are difficult to read. Table captions should be also carefully revised before publication.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 3, 3655, 2006.

HESSD

3, S1815–S1817, 2007

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