Interactive comment on “Retrieval of snow grain size and albedo of Western Himalayan snow cover using satellite data” by H. S. Negi and A. Kokhanovsky

Anonymous Referee #1

Received and published: 16 May 2011

The paper is technically correct and provides a very useful introduction to the retrieval problem, its techniques and methods and data. The paper is well written and it is very helpful for a wide range of readers, from the most experienced colleagues dealing with retrieval of snow parameters from multispectral or hyperspectral data to newcomers.

There are few minor technical suggestions that I am suggesting at the bottom.

Though I understand the difficulties of finding a validation data set for the grain size, it would have been important to show the results of a snow model, for example, showing the differences between the results of the algorithm and those obtained with the snow model. I would strongly encourage the authors to perform such exercise in the future.
Another point that I would have liked to see is the comparison of the results from Hype-
rion with those obtained from other sensors with a similar resolution such as LANDSAT
or ASTER. Finally, it would be good to have a sensitivity analysis of how the results
would be affected when different atmospheric corrections (that might be used for this
case) are applied.

Minor suggestions:

- p 607 - contamination, of what? specify
- p 607 - 'snow characteristics' - Specify and expand
- p 607 - Line 16 - 'initially' -> in previous studies reported in the literature
- p 607 Line 22 - this sentence does not make sense. Please elaborate
- p 610 - The word 'significant' should be used only in a statistical sense. Please replace
  it with, for example, 'considerable' or similar
- p 611 - at Sect. 5 - in Sect. 5
- p 611 - Line 10 - delete Average (if that's a range how can that be the average?)
- p 611 - Line 19 – highly glaciated - what do you mean?
- p 612 - what is the 'standing snow'? please use technical terms
- p 615 why did you pick up 0.6 as a new NDSI value? why not 0.5 or another number?
- p 626 Line 2 - is simple: sometyhing seems to be missing here
- p 626 Line 6 - were used -> was used

Interactive comment on The Cryosphere Discuss., 5, 605, 2011.