The Cryosphere Discuss., 4, C1589–C1590, 2011
www.the-cryosphere-discuss.net/4/C1589/2011/


The Cryosphere Discussions



# *Interactive comment on* "Retrieval of snow albedo and grain size using reflectance measurements in Himalayan basin" *by* H. S. Negi and A. Kokhanovsky

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Received and published: 29 January 2011

Interactive comment: Nice work on snow albedo modeling. It has also been reported that dust along with soot do influence the snow albedo. Soot effect is considered here, wondering how dust would change the albedo. Lab measurements have shown that dust is good ice nuclei and could be observed within snow crystal core. Any thoughts.

Reply to Dr. G. Kulkarni: In the present study we have used the inversion technique to retrieve snow grain size from the NIR reflectance measurements, where soot effect on grain size estimation was considered. The dust effect was not considered in the present study due to many unknowns in case of dust (i.e. dust optical properties as well as its

physical characteristics). This can be modeled with some assumptions, but that may not be applicable to all the places due to variations in dust properties. The study of dust influence on snow albedo is the subject of our current work and this topic will be addressed in our subsequent publication. However, now lots of work have reported the effect of dust on snow cover extent or snow melt, e.g. Painter et al. Geophysical Research Letters, 34, L12502, doi:10.1029/2007GL030284, 2007

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Interactive comment on The Cryosphere Discuss., 4, 2337, 2010.