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CONCURRENT ANALYSIS ON DIRT AGGREGATION AND ALBEDO CHANGES ON A MELTING SNOW SURFACE

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## ABSTRACT

*Albedo of a dirty snow surface is strongly controlled by the concentration of dirt particles and their behavior (mainly aggregation phenomena) during conditions of the surface melting. The aggregation in fact causes a full or partial overlapping of the particles leading to a decrease of the total surface area of the particles projected on the surface, which in turn increases the surface albedo. A simple conceptual approach to calculate surface albedo with aggregates of dust particles has been presented, which agreed reasonably with the observation. The present approach incorporated the effect of surface morphological change caused by the migration of dust particles on albedo. This change resulted in decrease of surface albedo. The results indicate that the behavior of dust particles on a melting snow surface is an important factor that controls the surface energy budget.*

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*Reference: Adhikary, S., K. Ogawa and Y. Yamaguchi; Concurrent Analysis on Dirt Aggregation and Albedo Changes on a Melting Snow Surface, Journal of Environmental Hydrology, Vol. 10, Paper 1, May 2002.*

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