



## **The retrieval of snow spectral and broadband albedo using OLCI measurements**

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The snow albedo is a major snow property controlling light reflection and absorption by a snow cover. Many types of optical remote sensing instruments (especially those placed on satellite platforms) do not measure albedo directly but provide snow bidirectional reflection distribution function (BRDF) at a given observation geometry. Therefore, there is a need to develop techniques to transfer measured BRDF to the spectral and broadband albedos.

In this paper we propose a new method for snow BRDF – albedo conversion using asymptotic radiative transfer equation valid for semi-infinite weakly absorbing snow layers. Also the technique to determine the snow grain size is proposed. This enables the determination of snow albedo at any wavelength and also calculation of snow broadband albedo. The technique is applied to the data of Ocean and Land Color Instrument (OLCI) on board ESA Sentinel-3 mission, and it has been implemented in the SNAP toolbox for public availability. The inter-comparison with collocated ground measurements is performed.