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Supplement to "High-accuracy measurements of snow Bidirectional Reflectance Distribution Function at visible and NIR wavelengths – comparison with modelling results"

M. Dumont[1], O. Brissaud[2], G. Picard[1], B. Schmitt[2], J.-C. Gallet[1], and Y. Arnaud[3]

[1]Laboratoire de Glaciologie et de Géophysique de l'Environnement, 54 rue Molière, 38402 Saint Martin d'Hères cedex, France
[2]Laboratoire de Planétologie de Grenoble BP 53, 38401 Grenoble Cedex 9, France
[3]IRD-LTHE, Laboratoire de Glaciologie et de Géophysique de l'Environnement, 54 rue Molière, 38402 Saint Martin d'Hères cedex, France

Correspondence to: M. Dumont (mdumont@lgge.obs.ujf-grenoble.fr)

References

Mishchenko, M. M., Dlugach, J. M., Yanovitskij, E. G., and Zakharova, N. T.: Bidirectional reflectance of flat, optically thick particulate layers: an efficient radiative transfer solution and applications to snow and soil surfaces, J. Quant. Spectrosc. Radiat. Transfer, 63, 409–432, 1999.

Picard, G., Arnaud, L., Dominé, F., and Fily, M.: Determining snow specific surface area from near-infrared reflectance measurements: numerical study of the influence of grain shape, Cold Region Science and Technology, 56, 10–17, 2008.

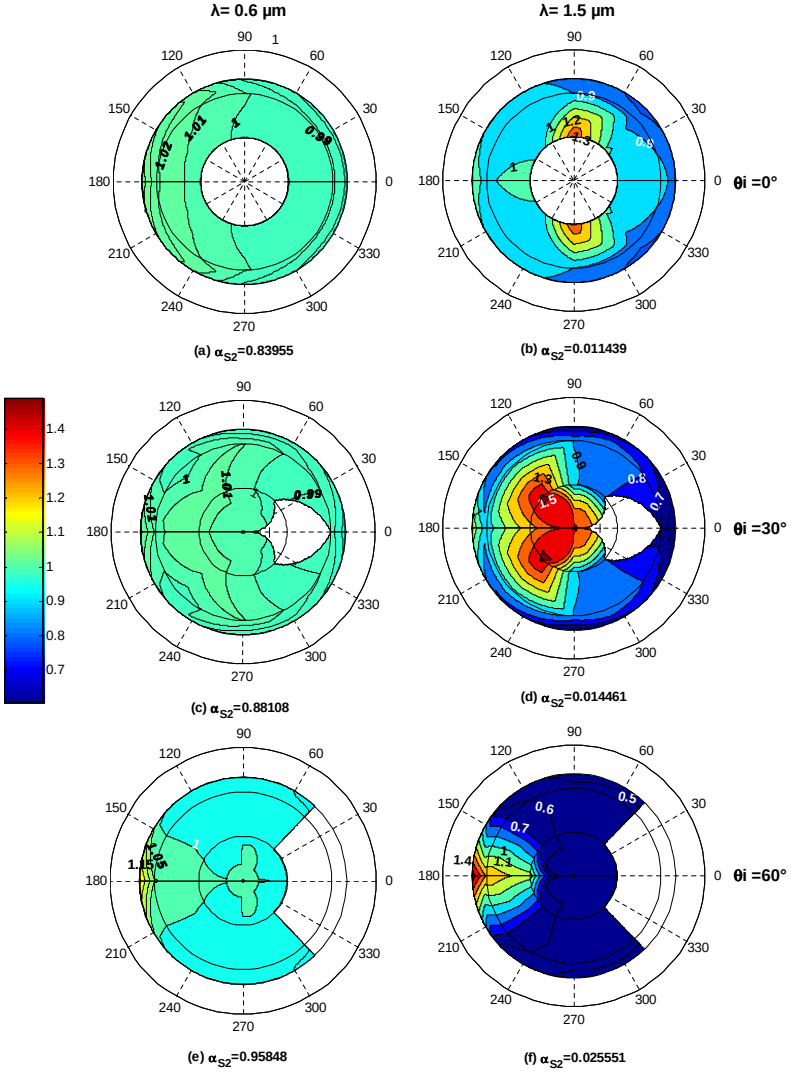

Fig. 1. Ratio of the anisotropy factor R between samples S1 and S2 ($\frac{R(S1)}{R(S2)}$) at 0, 30 and 60° incident beam and for two wavelengths. .

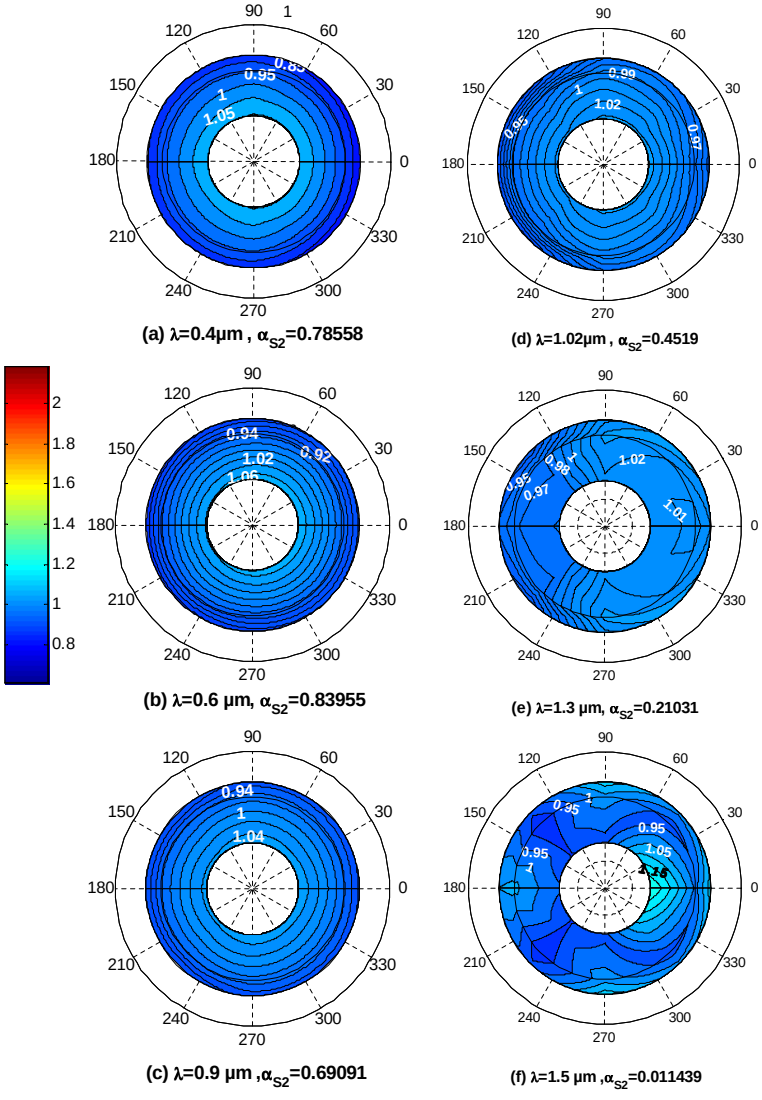

Fig. 2. S2 Anisotropy factor, $R(\theta_v, \phi)$ at 0.4, 0.6, 0.9, 1.0 and 1.5 μm. Incident angle is 0°. Data at $0.4\,\mu$m can only be used as anisotropy factor and not as absolute values of reflectance since calibration of the reference within 400-500 nm is not enough accurate.

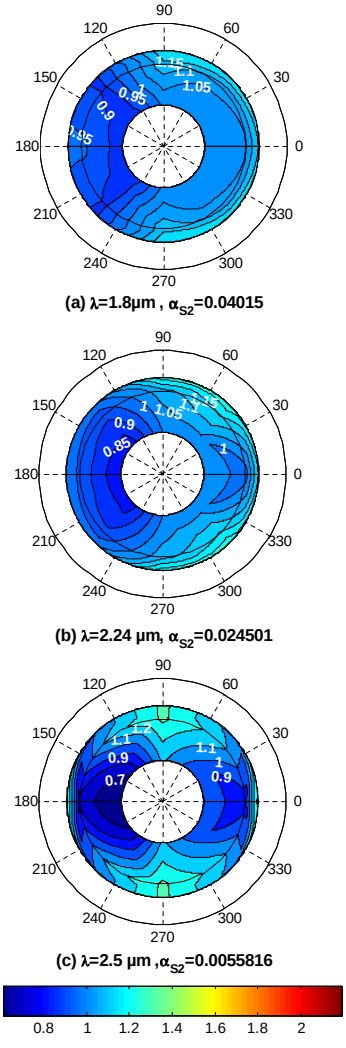

Fig. 3. S2 Anisotropy factor, $R(\theta_v, \phi)$ at 1.8, 2.24 and 2.5 μm. Incident angle is 0°.

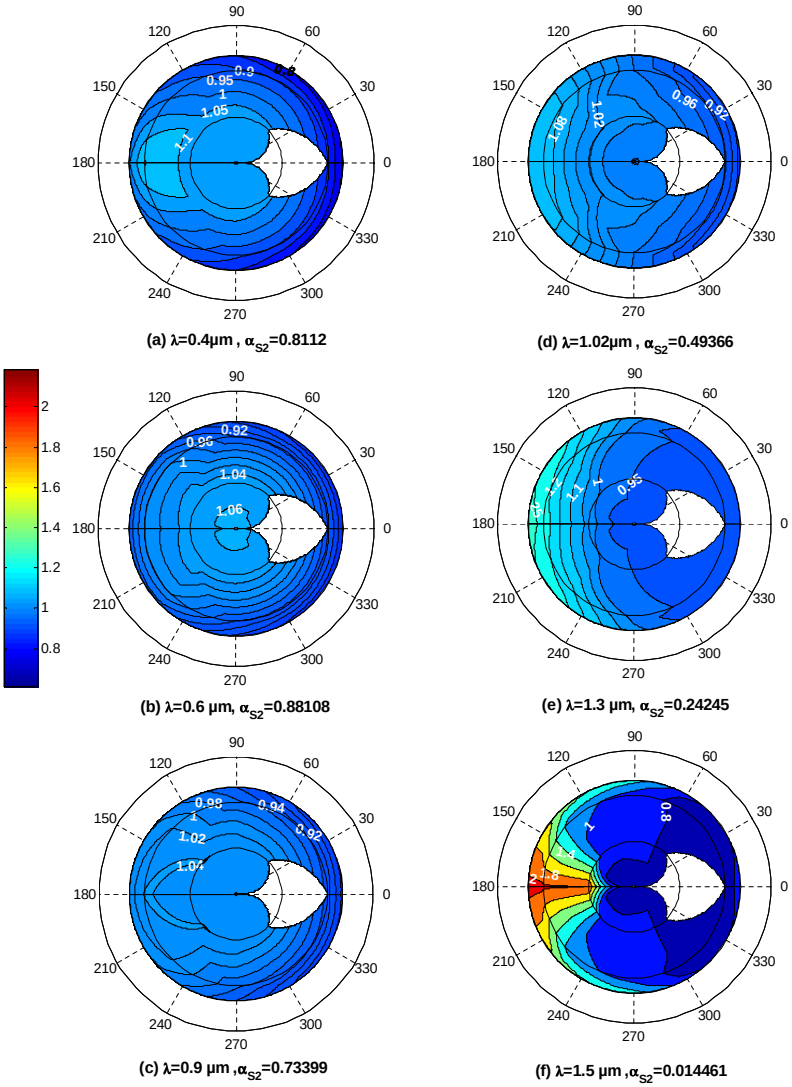

Fig. 4. S2 Anisotropy factor, $R(\theta_v, \phi)$ at 0.4, 0.6, 0.9, 1.0 and 1.5 μm. Incident angle is 30°.

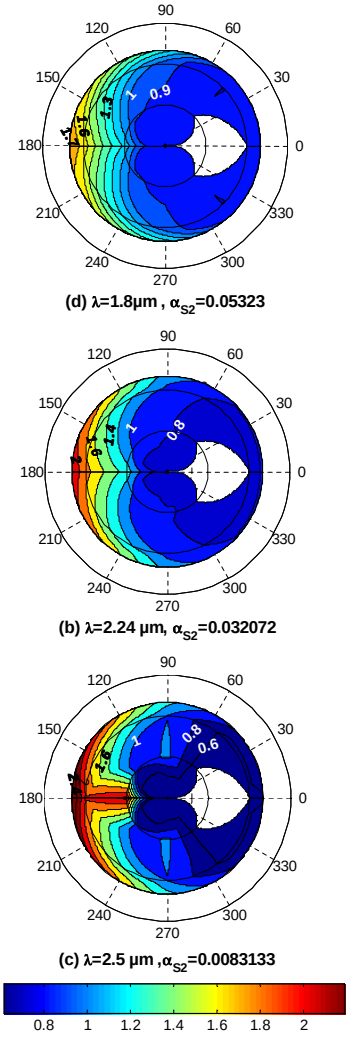

Fig. 5. S2 Anisotropy factor, $R(\theta_v, \phi)$ at 1.8, 2.24 and 2.5 μm. Incident angle is 30°.

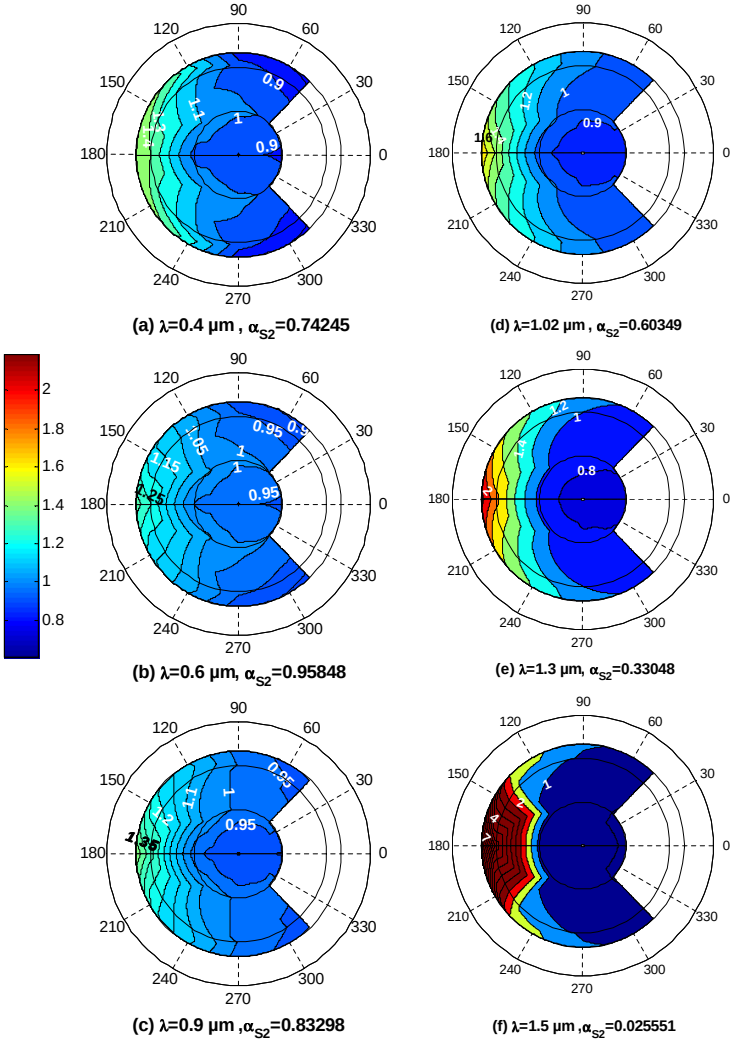

Fig. 6. S2 Anisotropy factor, $R(\theta_v, \phi)$ at 0.4, 0.6, 0.9, 1.0 and 1.5 μm. Incident angle is 60°.

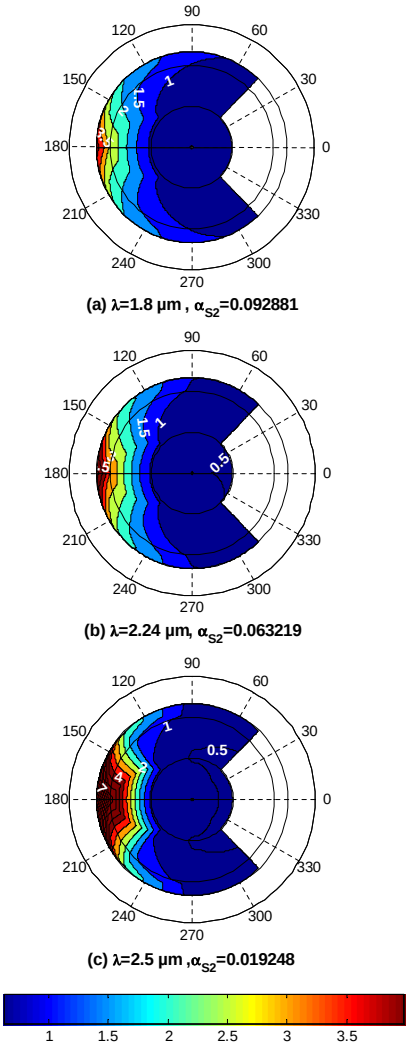

Fig. 7. S2 Anisotropy factor, $R(\theta_v, \phi)$ at 1.8, 2.24 and 2.5 μm. Incident angle is 60°.

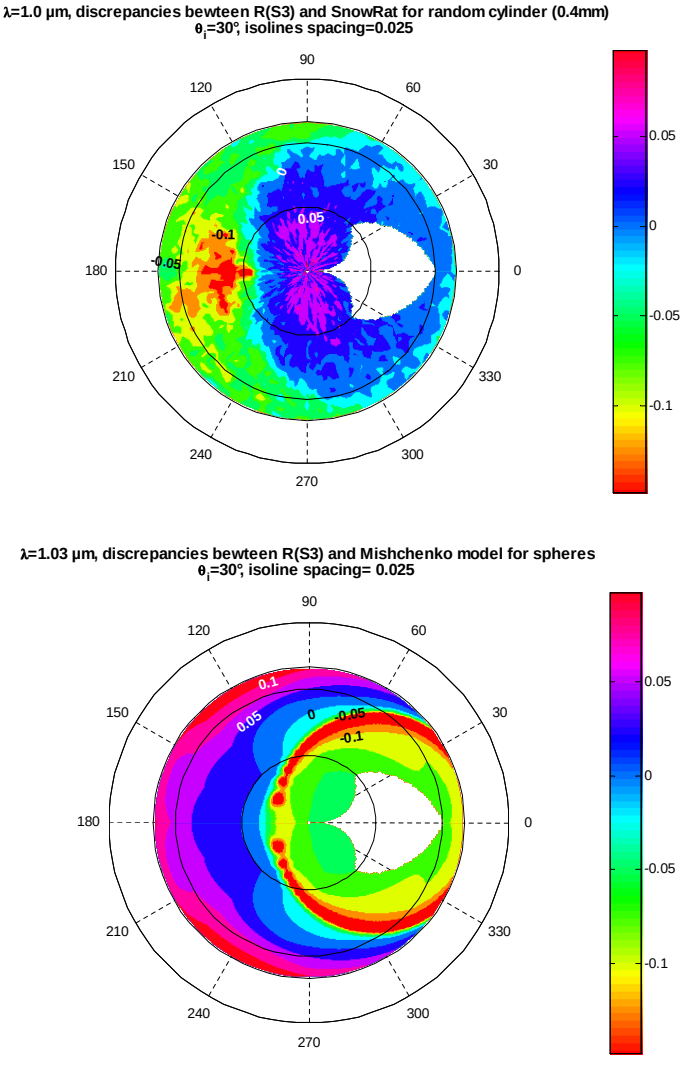

Fig. 8. R(S3)-R(modelled) at 1.0 μm (SnowRAT, random cylinder, radius=0.4 mm, lenght=0.8 mm)(Picard et al., 2008)) and at 1.03 μm (Mishchenko model, spheres, same distribution as in the paper))(Mishchenko et al., 1999))