

***Interactive comment on “On the retrieval of snow
grain morphology, the accuracy of simulated
reflectance over snow using airborne
measurements in the Arctic” by Soheila
Jafariserajehlou et al.***

Alexander Kokhanovsky

a.kokhanovsky@vitrocisetbelgium.com

Received and published: 17 April 2020

I support the publication of this paper. One major comment is that the selection of the appropriate snow grain shape and size must be performed usnig both angular and spectral measurements. The authors discuss mainly the angular patterns. It is interesting to see how differ spectral reflectances for different best models shown in Table 2 and how they agree with spectral reflectance measurements at 14 Cloud Absorption Radiometer (CAR) spectral channels. Please, list the CAR channels in the paper. The authors can easily reproduce such a figure using SCIATRAN. Also asymmetry param-

C1

eters in the visible must be given for all cases shown in Table 2. The authors assume clean snow. I think, the authors must show some evidence in the paper that the measured spectra have not been affected by possible snow pollution. Minor comments:line 4, leads->lead;line 32, to be ->is;line 46 (AA);line 204, is reference available?;line 210, did you assume rough Koch crystals?;line 240, the wavelength of 1.24 microns is more suitable for the grain size retrieval (larger sensitivity to the grain size);line 250, matrix->function;line 271, a priori;line 276, remove 'on the snow layer';line 295, remove #please#.

Interactive comment on Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2020-58, 2020.

C2