Estimation of snow surface patterns between Showa Station and Dome-Fuji Station of Antarctica using camera images

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Snow surface patterns in Antarctica are of practical concern and are important from the standpoint of developing an optimum route in Antarctica. In this study, we estimate snow surface patterns between the coast and the inland of Antarctica using camera images during JARE-59. The interval camera was used to capture the image of snow surface. Snow surface was photographed from November 13, 2017 to January 24, 2018. One screen was divided into eight zones to distinguish a small-scale snow surface pattern. The pattern of snow surface was classified in three kinds such as 1) sastrugi, 2) snow dune/barchan, and 3) snow ripple. We judged the snow surface patterns by sight. The frequency of the three patterns of round-trip snow surface was obtained. The analyzed results of altitude dependence agreed with the previous research qualitatively. However, the altitude of the spot where large sastrugi appeared became higher than a previous research. From this point we might go on to an even more detailed research of a time scale of the surface pattern changes.

Keywords: sastrugi, snow dune, snow barchan, snow ripple

