



Title	Compression of Thin Section of Snow : A motion Picture
Author(s)	WAKAHAMA, Gorow
Citation	Physics of Snow and Ice : proceedings, 1(2), 909-909
Issue Date	1967
Doc URL	http://hdl.handle.net/2115/20349
Type	bulletin (article)
Note	International Conference on Low Temperature Science. I. Conference on Physics of Snow and Ice, II. Conference on Cryobiology. (August, 14-19, 1966, Sapporo, Japan)
File Information	2_p909-909.pdf



[Instructions for use](#)

Compression of Thin Section of Snow*

— A Motion Picture —

Gorow WAKAHAMA

若 浜 五 郎

*The Institute of Low Temperature Science
Hokkaido University, Sapporo, Japan*

Abstract

Thin section of snow, 0.7~1 mm thick and of area 2×2 cm, prepared by Kojima's method, were laterally compressed at slow constant speeds (strain rate 1~10%·hr). In order to see the changes occurring in the microscopic ice network of snow during the compression, time-lapse motion pictures were taken with 16 mm movie camera under polarized light. Experiments were carried out in a cold room at -5 and -15°C.

The compression caused many kinds of deformation to occur in the ice grains composing the snow. It was found that the predominant processes in plastic deformation of snow were basal glide, slip at grain boundary and separation of ice grains. Internal fracture in ice grains, migration of grain boundary and cell formation in ice grains were also observed.

Acknowledgments

The author wishes to express his deep appreciations to Prof. Zyungo Yosida for valuable discussions and criticisms. Thanks are also due to the members of research group for snow and ice in this Institute. This work was partially supported by the Grant-in-Aid for Fundamental Scientific Research from the Ministry of Education.

References

- 1) WAKAHAMA, G. 1960 Internal strain and changes in the microscopic texture of snow caused by compression, I-II. *Low Temp. Sci.*, A 19, 37-95. (In Japanese with English summary).
- 2) KOJIMA, K. 1960 Thin section of snow cut by a heated wire. *Contr. Inst. Low Temp. Sci.*, 16, 47-59.

* Contribution No. 801 from the Institute of Low Temperature Science.