Data on Snow Cover in Nagaoka (4)  
(November 1979-April 1980)  

By  
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Abstract  
Observations of weather, total snow depth, new snow depth and the density of new snow were carried out in a period from November 1979 to April 1980 at an observation field of the institute, which is situated at lat. 37°25' N, long. 138°53' E and at the height of 97m above sea level. Observations were made daily at 9:00 a.m. coinciding with the official meteorological observation time.  
Total snow depth was measured with a snow stake and new snow depth by the snow board method. The density measurement was made by using the following technique: a cake of snow deposited on the snow board was cut vertically with a plastic cylinder of known section (area: 50cm²) and weighed. Water equivalent of new snow was calculated from the data of the depth and the density of new snow.  
All numerical data are tabulated in the present report, and the figures showing of the changes of total snow depth, new snow depth and the changes of sum of daily new snow depth are also included.
1. まえがき


これらの観測資料はすべて手作業によって得られたものであるが、とくに降雪の深さと新積雪の密度の二量については、現在では手作業のほかに測定手段がない。それゆえ積雪観測は、雪害実験研究所の推進、雪害の強弱を知る研究機関においてのみ、長期にわたっての実施が可能であるといえよう。

雪害実験研究所の位置する長岡市は、世界有数の多雪地域にあって、近年高速道路や高速鉄道が整備されつつあり、冬季における都市機能の高度保持が、これまでになく具体化される傾向にあるが、このためには、長期にわたって継続実施された積雪観測の結果が、基礎資料として必要不可欠である。今冬で16年実施されている雪害実験研究所の積雪観測と、その成果の重要性は、今後ますます強まるであろう。

2. 観測場所

観測は雪害実験研究所横内気象観測場で行われた。当研究所の位置は、北緯37°25′、東経138°53′、海拔97mである。

3. 観測方法

観測方法は、「積雪観測法」（清水・弘、1970）および「地上気象観測法」（気象庁編、1971）に準拠した。詳細は、防災科学技術研究所報告第25号「長岡における積雪観測資料（1976年10月）」に記述した。

4. 観測資料の説明

観測値は午前9時の値である。新積雪の相当降水量は、降雪の深さに新積雪の密度を乗じて求めめた。また、天気、積雪の深さの観測値は、観測当日欄に記入し、降雪の深さ、新積雪の密度、新積雪の相当降水量は、前日午前9時から当日午前9時までの値を前日欄に記入した。積雪の深さは、雪面が沈降したり、とけたりするので、降雪のない場合はもちろん、いくら
か降雪があっても前の観測時より減少することがある。また降雪の深さは、雪板上と自然の雪面とでは、雪の積方や沈降の様子が違うので、それに応じる積雪の深さの差とは異なることがある。また地面や雪面には新しい雪が積っても、雪板上には風で吹き払われたり、とけて積らないことがある。そこで、降雪の深さは雪板によってのみ測定し、前日の観測後に降雪があったか雪板上に雪のない場合は「0 cm」とし、降雪の全くなかった場合は「－」と記録して区別した。逆に降雪があって雪板上に雪がある場合には、地面に雪がなくても、雪板上の雪の深さを降雪の深さとして記録した。

本資料に使用する単位・天気記号は次のとおりである。

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表1-2 積雪観測記録（1979-1980）

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図1 降雪の深さの変化状況
図2 極雪の発生の変化状況

- 11 -
図3 積算した降雪の深さの変化状況