

Interannual Characteristics of Snow Falling and Melting Process in Jozankei, Sapporo

***Nobutaka Hosoi**

Nobutakah.7512@gmail.com

Graduated school of Engineering, Hokkaido University, Hokkaido, Japan.

Tomohito Yamada

Faculty of Engineering, Hokkaido University, Hokkaido, Japan

Terumasa Nishihara

Civil Engineering Research Institute, Hokkaido, Japan

In cold region, snow is important for water resources in spring and in early summer. In catchment area of the Iwaonai-dam in Shibetsu city in northern Hokkaido, we used snow water equivalent (SWE) to estimate the amount of snow melting water flowing into the dam. To estimate the SWE, we used two observation data, snow depth and snow density. Snow changes drastically depending on time and on place. From our observation data, the maximum snow depth has more than 1m difference and the snow density increases from 0.06 g/cm³ for fresh snow to 0.5 g/cm³ in melting season. In addition, we can accurately measure the snow depth over a large area, but it is not the case for the snow density. Therefore, the amount of snow melting water into a dam is not easy to be estimated.

Meteorological observation and snow survey are ongoing, not only during the snow melting season, but also during the whole snowy season, in order to simulate the change of snowpack. The meteorological observation and the snow survey have been observed for more than 10 years at the Jozankei-dam in Sapporo city, and these data are used as input data for numerical model. The analysis of the observation data permitted to discuss about the behavior, to simulate a model and finally to find out the annual characteristics of snowpack.