

## CHARACTERISTICS OF TEMPERATURE FLUCTUATION IN SVALBARD IN THE ARCTIC (ABSTRACT)

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This study investigated characteristics of seasonal changes of air temperature in Svalbard. The daily-mean air temperature varied little from May to August. In this season, the daily-mean temperature exceeded zero degrees. Considerable heat was used for melting of ice. In addition, the air in the lower troposphere should mix easily due to the absence of an inversion. In Svalbard, the lowest variability of summer temperature in the Arctic can be observed.

In contrast to summer, the highest variability of air temperature in the Arctic occurs in winter in Svalbard. A warming of air temperature occurs in winter in many years. This warm spell is called a "warm core". An automatic weather station at Ny-Alesund observed the warming of air temperature in January 1992. Synoptic weather charts show that advection of warm air from south occurred over Svalbard. The duration and intensity of the warm core are considered to be important factors for the high variability in winter temperature.

The air temperature inversion could be destroyed by warming, then mixing of air can occur in the lower troposphere. This event may affect the winter concentration of polluted air which causes arctic haze in the following spring.

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