



## Long-term climate variations on Svalbard using early instrumental observations

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The first permanent observation station on Spitsbergen, Svalbard was established in December 1911 by The Norwegian Meteorological Institute. Except for a period during the WW II there have been continuous observations on the island. Before the permanent station was established, i.e. in the late 19th and early 20th centuries the institute had to rely on hunting expeditions. These were equipped mainly with standard meteorological instruments of the same kind that was in current use on the mainland. However, homogenisation of the time series will be difficult as the series are short and are spread over large distances.

As a part of the multidisciplinary project: Arctic Climate and Environment of the Nordic Seas and the Svalbard – Greenland Area (AWAKE) the observations are controlled and found to be of sufficient quality for use. For the homogenisation and quality check different statistical tests will be applied along with existing metadata.

During the summer 2010 four stations will be re-established for measurement at the old sites (Kvalpynten, Sørkappøya, Axeløya and Sorgfjorden). This will enable a direct study of the temperature changes that have taken place since the start of each measurement series. Moreover, this will also make the basis for a study of spatial variations of the Spitsbergen climate during different seasons, taking, cloud cover, wind and ice conditions into consideration. This knowledge will be used for the construction of a composite time series for Svalbard starting in 1898, 13 years before the permanent measurements started.