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**Title:** *Spatial diversity of air temperature in the Forlandsundet region (Spitsbergen) from August 2010 to August 2011*

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A complete year-long cycle of measurements of topoclimatic conditions to the extent accomplished within the Arctic Climate and Environment of the Nordic Seas and the Svalbard - Greenland Area (AWAKE) project for the Forlandsundet had never been performed in Svalbard before. In the area of the Kaffiøyra, such long-term observations, although at 4 sites only, have been carried out even longer, since the summer of 2005, but have not been worked out and published yet. Therefore, this paper presents the first results of topoclimatic diversity in the area of the Forlandsundet, covering all the months and seasons of the year. The seasons were distinguished as follows: winter (November - March), spring (April - May), summer (June - August) and autumn (September - October). The basic monthly and seasonal statistical data concerning the air temperature at 14 measuring sites were collected for the area encompasses Kaffiøyra and Sarsøyra region, Prins Karls Forland and St. Jonsfjorden region.

An analysis of the mean monthly values shows that coldest sites were located in mountains. In the cold half of the year (in autumn and winter) the coldest site was Prins Heinrichfjella (PH), and - in the warm half - the Gråfjellet (GF) site. The average lowest temperature in the year was recorded at PH (-5.4°C). The areas with the highest temperatures, maintained over a few months, were: Sarstangen Peninsula (SAT) (Oct-Dec, March and April), coastal terrace (KT) in the Kaffiøyra region (February, April and Jun-Aug) and western part of Prins Karls Forland (January, Jul-Aug). Considering seasonal means, the markedly warmest was the KT site located approximately 2 km from the sea shore, except for autumn, in which the warmest site was SAT. In the spring, the mean value there was identical with the one recorded at KT. The place with the highest average temperatures in the year was Prins Karls Forland island and the area around the KT site.

All sites located at 100 m a.s.l. or higher, which are mostly colder than the reference site (Kaffiøyra-Heggodden) throughout the year, become notably warmer when the influence of absolute height is removed using a lapse rate of 0.6°C/100 m.

Differences in the mean seasonal values of air temperature between the sites, either actual or reduced to sea level, reached 2-3°C; considering their geographic proximity, they are therefore very significant.