

Comparison of results from statistical analysis of meteorological data from Lakselv and Honningsvåg located in the European Arctic region

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The studies of the Arctic are focused on climate sensitive regions and climate sensitive aspects of this environment. In this presentation we discuss long-term changes in air temperature (AT), humidity (H), wind speed (WS) and direction (WD) in the Porsanger fjord in the northern Norway.

We have used data from two meteorological stations: Lakselv and Honningsvåg. Data were provided by the Norwegian Meteorological Institute. The first station is located in the inner part of the fjord, the second – in the outer. Because of limited connectivity of the inner zone of fjord, the local environment in this zone differs significantly from the other parts of the region.

We have estimated the 58-year trends (1957-2014) of air temperature and humidity based on once per day data measured always at the same hour. In addition we have carried out of statistical analysis of the 10-year time series (2005-2014) of AT, H, WS and WD with hourly resolution. We use these data to show seasonal variability and differences between the two locations.

The trends presented in this study have been calculated using linear regression analysis (statistically significant at 95% confidence level). The 58-year trend of increasing annual mean air temperature has been estimated as 0.016°C per year in Honningsvåg and 0.027°C per year in Lakselv. The 58-year trend of decreasing annual mean humidity is about 0.182% per year in Lakselv and 0.153% per year in Honningsvåg. The most frequent wind direction was from the North and South at both station. We also discuss how climate related trends and atmospheric conditions changed in time and seasons of the year.