

## Overview of Monitoring activities at AWIPEV Base

R. Neuber, M. Maturilli, C. Ritter, M. Rex, P. von der Gathen, J. Boike, C. Kopsch  
Alfred Wegener Institute Helmholtz Centre for Polar- and Marine Research, Potsdam

P. Fischer, C. Wiencke, J. Laudien  
Alfred Wegener Institute Helmholtz Centre for Polar- and Marine Research, Bremerhaven

K. Bischof, J. Burrows, J. Notholt, M. Palm, F. Wittrock  
University of Bremen, Germany

C. Falck, M. Ramatschi, M. Semmling  
German Research Centre for Geosciences, Helmholtz-Centre Potsdam, Germany

R. Luff  
Federal Office for Radiation Protection, Rendsburg, Germany

The Arctic research base AWIPEV is in operation year-round thereby facilitating a suite of climate monitoring activities. The location at the western coast of Spitsbergen results in a comparatively mild climate due to the warm West-Spitsbergen current. It places Spitsbergen and Ny-Ålesund at a node of the Arctic climate change development. The AWIPEV climate monitoring activities cover the compartments atmosphere, permafrost soil, and ocean (the Kongsfjord) with permanently installed instrumentation.

At the dedicated Atmospheric Observatory of the AWIPEV Base we collect continuously meteorological parameters, incoming and outgoing radiation at the surface, and vertical profiles of several key climate parameters, including ozone and aerosols. Remote sensing techniques are employed to observe aerosols and trace gases using spectrometers, microwave-radiometers, and lidar. The stratospheric observations are carried out in co-operation with the University of Bremen.

The German Research Centre for Geosciences (GFZ) operates two satellite receiving antennas in Ny-Aalesund, as well as two GNSS stations and a high rate GPS receiver, in cooperation with Kings Bay AS, Kartverket and NILU/NPI, while the BfS runs a gamma radiation sensor.

All observations contribute to pan-Arctic and international networks and the data produced is made available through the respective data banks. These include the WMO GAW programme with the Baseline Surface Radiation Network (BSRN), the Network for the Detection of Atmospheric Composition Change (NDACC), the Permafrost network, and the COSYNA Coastal Observing System for Northern and Arctic seas. The observatories are foreseen to become a vital part of the SIOS infrastructure.

This paper presents some main findings of 20 years of observations.

More information about the observatories, online data displays, and links to data sources can be found at <http://www.awipev.eu>

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