

Name of research institute or organization:

Paul Scherrer Institut, Laboratory of Atmospheric Chemistry

Title of project:

GAW Aerosol Project

Project leader and team:

PD Dr. Urs Baltensperger, project leader

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Short project description:

The Global Atmosphere Watch (GAW) Programme has been established by the World Meteorological Organisation (WMO) to provide measurements, scientific assessments, and other information on changes in the global chemical composition and related physical characteristics of the atmosphere. Concerning aerosols, the objective of the GAW program is to determine the spatio-temporal distribution of aerosol properties related to climate forcing and air quality up to multi-decadal time scales. Presently, GAW consists of some 20 Global stations, which cover different types of aerosols: Clean and polluted continental, marine, arctic, dust, biomass burning, and free troposphere. The Swiss contribution to GAW is sponsored by Meteoswiss.

The European GAW Baseline station comprises the Zugspitze/Hohenpeissenberg (2962 m, Germany), the Jungfrauoch (3454 m, Switzerland) and Sonnblick (3106 m, Austria) high-alpine stations. The National Weather Institutes of all three countries have agreed to combine measurements under the DACH (Germany, Austria, Switzerland) agreement. In order to obtain as extensive a database as possible, each station will focus on a particular physical/chemical aspect of climatically important aerosol parameters.

The following aerosol parameters are continuously measured on the Jungfrauoch: optical depth, major ionic components in two size fractions, scattering and hemispheric backscattering coefficient at various wavelengths, absorption coefficient at various wavelengths, and the aerosol number concentration. For most parameters a continuous 7-year record is now available. Data are managed by the World Data Centre for Aerosols in Ispra (Italy), and it is planned to establish a World Calibration Centre under the auspices of the Institute for Tropospheric Research in Leipzig, to ensure global data comparability. With the global coverage of the sites and the large number of aerosol parameters measured, the GAW aerosol program is believed to be an excellent candidate for ground truthing of satellite data.

Key words:

Aerosol particles, direct and indirect climate forcing, Global Atmosphere Watch, WMO

Collaborating partners/networks:

H. Burtscher, University of Applied Sciences, Windisch, Switzerland
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Scientific publications and public outreach 2001:

Peer-reviewed publications:

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