

Collaborations and networks

Institutions collaborating with research projects at Jungfrauoch and Gornergrat in 2016:

| Institution / network | Country | Collaborating with project: |
|--|-----------|--|
| Australian Nuclear Science and Technology Organisation (ANSTO) Sydney Australia | Australia | Baseline characterization of air masses using radon-222 Department of Environmental Sciences University of Basel Bernoullistrasse 30 CH-4056 Basel |
| Ecotech Pty Ltd G. Kassell and Dr. M. Laborde | Australia | The Global Atmosphere Watch Aerosol Program at Jungfrauoch Paul Scherrer Institute Laboratory of Atmospheric Chemistry CH-5232 Villigen Switzerland |
| CSIRO Marine and Atmospheric Research Paul Krummel, Ray Langenfelds, Paul Steele Aspendale Australia | Australia | Isotopic composition of N ₂ O at Jungfrauoch High Altitude Station Empa Laboratory for Air Pollution and Environmental Technology Überlandstrasse 129 CH-8600 Dübendorf |
| Sonnblick Observatory Staff (B. Niedermoser, E. Ludewig et al.) Austria | Austria | Environmental radionuclides and stable isotopes as tracers for transport processes in snow Helmholtz Zentrum München German Research Center for Environmental Health Institute of Radiation Protection Ingolstädter Landstrasse 1 D-85764 Neuherberg Germany |
| Zentralanstalt für Meteorologie und Geodynamik (ZAMG) B. Hynek et al. Vienna, Austria | Austria | Environmental radionuclides and stable isotopes as tracers for transport processes in snow Helmholtz Zentrum München German Research Center for Environmental Health Institute of Radiation Protection Ingolstädter Landstrasse 1 D-85764 Neuherberg Germany |

| Institution / network | Country | Collaborating with project: |
|---|---------|--|
| Belgian Institute for Space Aeronomy Atmospheric physics and chemistry Dr. Michel Van Roozendael Ringlaan 3 B-1180 Brussels Belgium | Belgium | National Air Pollution Monitoring Network (NABEL) Empa Swiss Federal Laboratories for Materials Science and Technology Überlandstrasse 129 CH-8600 Dübendorf |
| IASB (Institut d'Aéronomie Spatiale de Belgique) | Belgium | High resolution, solar infrared Fourier Transform spectrometry. Application to the study of the Earth atmosphere University of Liège Institut d'Astrophysique et de Géophysique Allée du six Août, 19 - Bâtiment B5a B-4000 Sart Tilman (Liège, Belgium) |
| Université Libre de Bruxelles for IASI FORLI data validation | Belgium | Atmospheric physics and chemistry Royal Belgian Institute for Space Aeronomy Ringlaan 3 B-1180 Brussels |
| Université de Liège Institut d'Astrophysique et de Géophysique and NDACC Partners Allée du 6 août, 19 - Bâtiment B5a B-4000 Sart Tilman (Liège, Belgique) | Belgium | Atmospheric physics and chemistry Royal Belgian Institute for Space Aeronomy Ringlaan 3 B-1180 Brussels |
| Université de Liège Institut d'Astrophysique et de Géophysique Allée du six Août, 19 Bâtiment B5a B-4000 Liège | Belgium | National Air Pollution Monitoring Network (NABEL) Empa Swiss Federal Laboratories for Materials Science and Technology Überlandstrasse 129 CH-8600 Dübendorf |
| Carleton University Prof. Dr. Stephan Gruber Ottawa, Canada | Canada | PermaSense ETH Zürich Computer Engineering and Networks Laboratory (TIK) Gloriastrasse 35 CH-8092 Zürich |

| Institution / network | Country | Collaborating with project: |
|--|------------------|--|
| ACTRIS (Aerosol, Clouds and Trace Gases Research Network) | European network | Halogenated greenhouse gases at Jungfrauoch Empa Laboratory for Air Pollution / Environmental Technology Überlandstrasse 129 CH-8600 Dübendorf |
| ACTRIS (Aerosol, Clouds and Trace Gases Research Network) | European network | National Air Pollution Monitoring Network (NABEL) Empa Swiss Federal Laboratories for Materials Science and Technology Überlandstrasse 129 CH-8600 Dübendorf |
| Collaboration with S&T for the CAMS and QA4ECV and S5P Validation Server | European network | Atmospheric physics and chemistry Royal Belgian Institute for Space Aeronomy Ringlaan 3 B-1180 Brussels |
| Collaboration with European FTIR and UV-Vis teams and modelling teams in the frame of the EU projects GAIA-CLIM and QA4ECV | European network | Atmospheric physics and chemistry Royal Belgian Institute for Space Aeronomy Ringlaan 3 B-1180 Brussels |
| ECAC (European Center for Aerosol Calibration) Prof. A. Wiedensohler | European network | The Global Atmosphere Watch Aerosol Program at Jungfrauoch Paul Scherrer Institute Laboratory of Atmospheric Chemistry CH-5232 Villigen Switzerland |
| EMEP (European Monitoring and Evaluation Programme) | European network | National Air Pollution Monitoring Network (NABEL) Empa Swiss Federal Laboratories for Materials Science and Technology Überlandstrasse 129 CH-8600 Dübendorf |
| European FP7 Project Real-Time Database for High Resolution Neutron Monitor Measurements (NMDB) http://www.nmdb.eu/ | European network | Neutron monitors - Study of solar and galactic cosmic rays Universität Bern Physikalisches Institut Sidlerstrasse 5 CH-3012 Bern |

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|---|------------------|--|
| GAW-CH | European network | High resolution, solar infrared Fourier Transform spectrometry. Application to the study of the Earth atmosphere University of Liège Institut d'Astrophysique et de Géophysique Allée du six Août, 19 - Bâtiment B5a B-4000 Sart Tilman (Liège, Belgium) |
| ICOS Integrated Carbon Observation System https://www.icos-ri.eu | European network | Long-term observations of ¹⁴ CO ₂ at Jungfraujoch Universität Heidelberg Institut für Umweltphysik Im Neuenheimer Feld 229 D-69120 Heidelberg |
| ICOS Integrated Carbon Observation System http://www.icos-ri.eu | European network | National Air Pollution Monitoring Network (NABEL) Empa Swiss Federal Laboratories for Materials Science and Technology Überlandstrasse 129 CH-8600 Dübendorf |
| ICOS Integrated Carbon Observation System https://www.icos-ri.eu/ | European network | Continuous measurement of stable CO ₂ isotopes at Jungfraujoch, Switzerland Empa Swiss Federal Laboratories for Materials Science and Technology Überlandstrasse 129 CH-8600 Dübendorf |
| ICOS Integrated Carbon Observation System partners https://www.icos-ri.eu/ | European network | Flask comparison on Jungfraujoch Max Planck Institut für Biogeochemie Hans Knöll Str. 10 D-007745 Jena |
| ICOS Integrated Carbon Observation System partners https://www.icos-ri.eu/ | European network | High precision carbon dioxide and oxygen measurements at Jungfraujoch Universität Bern Physikalisches Institut Sidlerstrasse 5 CH-3012 Bern |
| InGOS (Integrated non-CO ₂ Greenhouse gas Observation System) | European network | National Air Pollution Monitoring Network (NABEL) Empa Swiss Federal Laboratories for Materials Science and Technology Überlandstrasse 129 CH-8600 Dübendorf |

| Institution / network | Country | Collaborating with project: |
|---|------------------|--|
| RINGO - Readiness of ICOS for Necessities of integrated Global Observations | European network | Continuous measurement of stable CO ₂ isotopes at Jungfrauoch, Switzerland Empa Swiss Federal Laboratories for Materials Science and Technology Überlandstrasse 129 CH-8600 Dübendorf |
| University of Helsinki Department of Physics Prof. M. Kulmala Helsinki, Finland | Finland | The Global Atmosphere Watch Aerosol Program at Jungfrauoch Paul Scherrer Institute Laboratory of Atmospheric Chemistry CH-5232 Villigen Switzerland |
| Centre national de la recherche scientifique (CNRS) Jeroen Sonke Toulouse France | France | Iodine, selenium, bromine, and sulfur speciation in precipitation from Jungfrauoch and Pic du Midi Eawag Department Water Resources and Drinking Water Überlandstrasse 133 CH-8600 Dübendorf |
| INRA (Institut national de la recherche agronomique) Pathologie vegetale Montfavet France | France | Biological ice nucleators at tropospheric cloud height University of Basel Department of Environmental Sciences Bernoullistrasse 30 CH-4056 Basel |
| LATMOS France (SAOZ) F. Goutail, J.-P. Pommerau, A. Pazmino | France | Atmospheric physics and chemistry Royal Belgian Institute for Space Aeronomy Ringlaan 3 B-1180 Brussels |
| National Meteorological Research Center CNRM-GAME Dr. G. Roberts Dr. T. Bourriane Toulouse, France | France | The Global Atmosphere Watch Aerosol Program at the Jungfrauoch Paul Scherrer Institute Laboratory of Atmospheric Chemistry CH-5232 Villigen Switzerland |
| Université J. Fourier Dr. David Amitrano ISTerre, CNRS Grenoble, France | France | PermaSense ETH Zürich Computer Engineering and Networks Laboratory (TIK) Gloriastrasse 35 CH-8092 Zürich |

| Institution / network | Country | Collaborating with project: |
|--|---------|--|
| Bavarian Avalanche Warning Service, Bavarian Environment Agency, H. Schmölz et al. Munich, Germany | Germany | Environmental radionuclides and stable isotopes as tracers for transport processes in snow Helmholtz Zentrum München German Research Center for Environmental Health Institute of Radiation Protection Ingolstädter Landstrasse 1 D-85764 Neuherberg Germany |
| Environmental Research Station Schneefernerhaus, Zugspitze, Germany (VAO) Staff and consortium (M. Neumann et al.) | Germany | Environmental radionuclides and stable isotopes as tracers for transport processes in snow Helmholtz Zentrum München German Research Center for Environmental Health Institute of Radiation Protection Ingolstädter Landstrasse 1 D-85764 Neuherberg Germany |
| Fraunhofer Institute for Applied Solid State Physics (IAF) Dr. Marcel Rattunde Freiburg, Germany | Germany | Development of an airborne sensor for the reliable discrimination of volcanic ash particles from water droplets or ice crystals Institute of Aerosol and Sensor Technology, University of Applied Sciences Northwestern Switzerland Klosterzelgstrasse 2 CH-5210 Windisch |
| Helmholtz-Zentrum Geesthacht Zentrum für Material- und Küstenforschung Prof. Dr. Ralf Ebinghaus Geesthacht, Germany | Germany | SwissQuick : Emissions and imissions of atmospheric mercury in Switzerland Institute for Chemical and Bioengineering ETH Zürich Vladimir-Prelog-Weg 1 CH-8093 Zürich |
| IMK (Forschungszentrum Karlsruhe) | Germany | High resolution, solar infrared Fourier Transform spectrometry. Application to the study of the Earth atmosphere University of Liège Institut d'Astrophysique et de Géophysique Allée du six Août, 19 - Bâtiment B5a B-4000 Sart Tilman (Liège, Belgium) |

| Institution / network | Country | Collaborating with project: |
|---|---------|---|
| Institute of Atmospheric Physics, DLR Dr. A. Petzold Oberpfaffenhofen, Germany | Germany | The Global Atmosphere Watch Aerosol Program at Jungfraujoch Paul Scherrer Institute Laboratory of Atmospheric Chemistry CH-5232 Villigen Switzerland |
| Johann Wolfgang Goethe Universität Frankfurt am Main Institut für Atmosphäre und Umwelt Prof. J. Curtius Frankfurt am Main, Deutschland | Germany | The Global Atmosphere Watch Aerosol Program at Jungfraujoch Paul Scherrer Institute Laboratory of Atmospheric Chemistry CH-5232 Villigen, Switzerland |
| Karlsruhe Institute of Technology (KIT) Institute of Meteorology and Climate Research Dr. Martin Schnaiter Dr. Corinna Hoose Karlsruhe, Germany | Germany | The Global Atmosphere Watch Aerosol Program at Jungfraujoch Cloud condensation nuclei-activity of black carbon particles during the CLOUD and Aerosol Characterization Experiment (CLACE) Paul Scherrer Institute Laboratory of Atmospheric Chemistry CH-5232 Villigen Switzerland |
| Leibniz Institut für Troposphärenforschung Dr. S. Mertes Prof. A. Wiedensohler D-04318 Leipzig Deutschland | Germany | The Global Atmosphere Watch Aerosol Program at Jungfraujoch Cloud condensation nuclei-activity of black carbon particles during the CLOUD and Aerosol Characterization Experiment (CLACE) Paul Scherrer Institute Laboratory of Atmospheric Chemistry CH-5232 Villigen Switzerland |
| Max-Planck Institute for Biogeochemistry Hans Knöll Str. 10 D-007745 Jena Germany | Germany | Continuous measurement of stable CO ₂ isotopes at Jungfraujoch, Switzerland Empa Laboratory for Air Pollution and Environmental Technology Überlandstrasse 129 CH-8600 Dübendorf |
| Max-Planck-Institut für Chemie Biogeochemistry Department Dr. U. Pöschl Mainz | Germany | The Global Atmosphere Watch Aerosol Program at Jungfraujoch Paul Scherrer Institute Laboratory of Atmospheric Chemistry CH-5232 Villigen Switzerland |

| Institution / network | Country | Collaborating with project: |
|---|---------|---|
| Max-Planck-Institut für Biogeochemie Jena | Germany | High precision carbon dioxide and oxygen measurements at Jungfraujoch Universität Bern Physikalisches Institut Sidlerstrasse 5 CH-3012 Bern |
| Max-Planck-Institut für Chemie Particle Chemistry Department Dr. J. Schneider Prof. S. Borrmann Mainz | Germany | The Global Atmosphere Watch Aerosol Program at Jungfraujoch Cloud condensation nuclei-activity of black carbon particles during the CLOUD and Aerosol Characterization Experiment (CLACE) Paul Scherrer Institute Laboratory of Atmospheric Chemistry CH-5232 Villigen Switzerland |
| Max-Planck-Institute Mainz, Germany Dr. Jacob Fugal | Germany | Field measurements of aerosols acting as ice nucleating particles and their influence on mixed-phase clouds Swiss Federal Office of Technology, ETH Zürich Institute for Atmospheric and Climate Science Universitätsstr. 16 CH-8092 Zürich Switzerland |
| SFC Energy AG Eugen-Sänger-Ring 7 D-85649 Brunenthal | Germany | Performance of Methanol fuel cells in alpine environments armasuisse S+T Test Centre Feuerwerkerstrasse 39 CH-3602 Thun Switzerland |
| University of Augsburg Institute of Geography K.-F. Wetzel et al. Augsburg, Germany | Germany | Environmental radionuclides and stable isotopes as tracers for transport processes in snow Helmholtz Zentrum München German Research Center for Environmental Health Institute of Radiation Protection Ingolstädter Landstrasse 1 D-85764 Neuherberg Germany |

| Institution / network | Country | Collaborating with project: |
|--|-----------------------|--|
| Universität Darmstadt Institut für Mineralogie Prof. S. Weinbruch Darmstadt, Germany | Germany | The Global Atmosphere Watch Aerosol Program at Jungfraujoch Paul Scherrer Institute Laboratory of Atmospheric Chemistry CH-5232 Villigen Switzerland |
| University of Munich Germany | Germany | Influences of the snowcover on thermal processes in steep permafrost rockwalls Long-term permafrost monitoring WSL Institute for Snow and Avalanche Research SLF Flüelastrasse 11 CH-7260 Davos Dorf, Switzerland |
| ACE-FTS science team http://www.ace.uwaterloo.ca/participants.html / | International network | High resolution, solar infrared Fourier Transform spectrometry. Application to the study of the Earth atmosphere University of Liège Institut d'Astrophysique et de Géophysique Allée du six Août, 19 - Bâtiment B5a B-4000 Sart Tilman (Liège, Belgium) |
| AGAGE (Advanced Global Atmospheric Gases Experiment) | International network | Halogenated Greenhouse Gases at Jungfraujoch Empa Laboratory for Air Pollution and Environmental Technology Überlandstrasse 129 CH-8600 Dübendorf, Switzerland |
| E-GVAP II (EUMETNET GPS Water Vapour Programme) | International network | Automated GNSS Network Switzerland (AGNES) Swiss Federal Office of Topography swisstopo Seftigenstrasse 264 CH-3084 Wabern |
| Both the UV-Vis and FTIR observations contribute to the international Network for the Detection of Atmospheric Composition Changes (NDACC) | International network | Atmospheric physics and chemistry Royal Belgian Institute for Space Aeronomy Ringlaan 3 B-1180 Brussels |

| Institution / network | Country | Collaborating with project: |
|---|------------------------|--|
| Global Atmosphere Watch (GAW) | International network | National Air Pollution Monitoring Network (NABEL) Empa Laboratory for Air Pollution and Environmental Technology Überlandstrasse 129 CH-8600 Dübendorf, Switzerland |
| Global Atmosphere Watch (GAW) | International network | Halogenated greenhouse gases at Jungfrauoch Empa Laboratory for Air Pollution and Environmental Technology Überlandstrasse 129 CH-8600 Dübendorf, Switzerland |
| Globalview | International networks | High precision carbon dioxide and oxygen measurements at Jungfrauoch Universität Bern Physikalisches Institut Sidlerstrasse 5 CH-3012 Bern |
| GNSS4SWEC (COST EU project) | International networks | Automated GNSS Network Switzerland (AGNES) Swiss Federal Office of Topography swisstopo Seftigenstrasse 264 CH-3084 Wabern |
| Collaboration with the OMI, TROPOMI (S5P), ACE and MetOp GOME-2 and IASI satellite communities | International networks | Atmospheric physics and chemistry Royal Belgian Institute for Space Aeronomy Ringlaan 3 B-1180 Brussels |
| NDACC (Network for the Detection of Atmospheric Composition Change, http://www.ndacc.org/) | International network | High resolution, solar infrared Fourier Transform spectrometry. Application to the study of the Earth atmosphere University of Liège Institut d'Astrophysique et de Géophysique Allée du six Août, 19 - Bâtiment B5a B-4000 Sart Tilman (Liège, Belgium) |
| Obspack | International network | High precision carbon dioxide and oxygen measurements at Jungfrauoch Universität Bern Physikalisches Institut Sidlerstrasse 5 CH-3012 Bern |

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| Radiation data submitted to the World Radiation Data Centre (WRDC, St. Petersburg, Russian Federation) within the framework of the Global Atmosphere Watch | International network | Global Atmosphere Watch Radiation Measurements Federal Office of Meteorology and Climatology MeteoSwiss Station Aérologique Ch. de l'Aérologie 1 CH-1530 Payerne |
| Satellite experiments: IASI (Infrared Atmospheric Sounding Interferometer), OMI, ENVISAT | International network | High resolution, solar infrared Fourier Transform spectrometry. Application to the study of the Earth atmosphere University of Liège Institut d'Astrophysique et de Géophysique Allée du six Août, 19 - Bâtiment B5a B-4000 Sart Tilman (Liège, Belgium) |
| World Meteorological Organization (WMO) | International network | Halogenated greenhouse gases at Jungfraujoch Empa Laboratory for Air Pollution and Environmental Technology Überlandstrasse 129 CH-8600 Dübendorf |
| Hebrew University of Jerusalem Assaf Zipori Daniel Rosenfeld | Israel | Field measurements of aerosols acting as ice nucleating particles and their influence on mixed-phase clouds Swiss Federal Office of Technology, ETH Zürich Institute for Atmospheric and Climate Science Universitätsstrasse 16 CH-8092 Zürich, Switzerland |
| Nagoya University Solar Terrestrial Environment Laboratory Prof. Y. Matsubara Prof. Y. Muraki Dr. T. Sako Dr. S. Masuda Nagoya 464-8601, Japan | Japan | SONTEL - Solar Neutron Telescope for the identification and the study of high-energy neutrons produced in energetic eruptions at the Sun Universität Bern Physikalisches Institut Sidlerstrasse 5 CH-3012 Bern |

| Institution / network | Country | Collaborating with project: |
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| Nagoya University | Japan | Development and scientific application of nuclear emulsion particle detectors to geological problems Institute of Geological Sciences University of Bern Baltzerstrasse 1+3 CH-3012 Bern and Laboratory for High Energy Physics University of Bern Sidlerstrasse 5 CH-3012 Bern |
| Korea Polar Research Institute KOPRI | Korea | Halogenated greenhouse gases at Jungfrauoch Empa Laboratory for Air Pollution and Environmental Technology Überlandstrasse 129 CH-8600 Dübendorf |
| Aerosol d.o.o. Grisa Mocnik and Int. Postgraduate School Jozef Stefan Ljubljana, Slovenia | Slovenia | The Global Atmosphere Watch Aerosol Program at Jungfrauoch Paul Scherrer Institute Laboratory of Atmospheric Chemistry CH-5232 Villigen, Switzerland |
| Aerosol Consulting ML Ennetbaden, Switzerland | Switzerland | The Global Atmosphere Watch Aerosol Program at Jungfrauoch Paul Scherrer Institute Laboratory of Atmospheric Chemistry CH-5232 Villigen, Switzerland |
| Astronomical Institute of the University of Bern (AIUB) Sidlerstrasse 5 CH-3012 Bern | Switzerland | Stellarium Gornergrat Center for Space and Habitability University of Bern Parkterrasse 14 CH-3012 Bern |
| Bundesamt für Umwelt (BAFU)/ Federal Office for the Environment (FOEN) | Switzerland | National Air Pollution Monitoring Network (NABEL) Empa Swiss Federal Laboratories for Materials Science and Technology Ueberlandstrasse 129 CH-8600 Dübendorf |

| Institution / network | Country | Collaborating with project: |
|---|-------------|---|
| Bundesamt für Umwelt (BAFU)/ Federal Office for the Environment (FOEN) | Switzerland | Halogenated greenhouse gases at Jungfrauoch Empa Laboratory for Air Pollution/Environmental Technology Ueberlandstrasse 129 CH-8600 Dübendorf |
| Bundesamt für Umwelt (BAFU) Dr. Hugo Raetzo Bern | Switzerland | PermaSense ETH Zürich Computer Engineering and Networks Laboratory (TIK) Gloriastrasse 35 CH-8092 Zürich |
| Burgergemeinde Zermatt Bahnhofstrasse 53 CH-3920 Zermatt | Switzerland | Stellarium Gornergrat Center for Space and Habitability Universität Bern Parkterrasse 14 CH-3012 Bern |
| Centre for Aviation, School of Engineering, Zurich University of Applied Sciences (ZHAW) Prof. Dr. Bruno Neininger Winterthur | Switzerland | Development of an airborne sensor for the reliable discrimination of volcanic ash particles from water droplets or ice crystals Institute of Aerosol and Sensor Technology, University of Applied Sciences Northwestern Switzerland Klosterzelgstrasse 2 CH-5210 Windisch |
| EAWAG Alfred Lück Überlandstrasse 133 CH-8600 Dübendorf | Switzerland | 7Be, 10Be and 36Cl in monthly precipitation ETH Zürich Labor für Ionenstrahlphysik Otto-Stern-Weg 5 CH-8093 Zürich |
| Empa Laboratory for Air Pollution/Environmental Technology Ueberlandstrasse 129 CH-8600 Dübendorf | Switzerland | High precision carbon dioxide and oxygen measurements at Jungfrauoch Universität Bern Physikalisches Institut Sidlerstrasse 5 CH-3012 Bern |
| Empa NABEL Laboratory for Air Pollution/Environmental Technology CH-8600 Dübendorf | Switzerland | Biological ice nucleators at tropospheric cloud height University of Basel Department of Environmental Sciences Bernoullistrasse 30 CH-4056 Basel |

| Institution / network | Country | Collaborating with project: |
|--|-------------|---|
| Empa Laboratory for Air Pollution/Environmental Technology Ueberlandstrasse 129 CH-8600 Dübendorf | Switzerland | High resolution, solar infrared Fourier Transform spectrometry. Application to the study of the Earth atmosphere University of Liège Institut d'Astrophysique et de Géophysique Allée du six Août, 19 - Bâtiment B5a B-4000 Sart Tilman (Liège, Belgium) |
| Empa Laboratory for Air Pollution/Environmental Technology Dr. C. Hüglin, Dr. S. Henne, Dr. S. Reimann, Dr. M. Steinbacher Ueberlandstrasse 129 CH-8600 Dübendorf | Switzerland | The Global Atmosphere Watch Aerosol Program at Jungfraujoch Cloud condensation nuclei-activity of black carbon particles during the CLOUD and Aerosol Characterization Experiment (CLACE) Paul Scherrer Institute Laboratory of Atmospheric Chemistry CH-5232 Villigen Switzerland |
| Empa Laboratory for Air Pollution/Environmental Technology Dr. Stephan Henne Überlandstrasse 129 CH-8600 Dübendorf | Switzerland | SwissQuick: Emissions and imissions of atmospheric mercury in Switzerland Institute for Chemical and Bioengineering ETH Zürich Vladimir-Prelog-Weg 1 CH-8093 Zürich |
| Empa Laboratory for Air Pollution/Environmental Technology Dr. Stephan Henne Überlandstrasse 129 CH-8600 Dübendorf | Switzerland | Iodine, selenium, bromine, and sulfur speciation in precipitation from Jungfraujoch and Pic du Midi Eawag Department Water Resources and Drinking Water Überlandstrasse 133 CH-8600 Dübendorf |
| Empa Laboratory for Air Pollution/Environmental Technology CH-8600 Dübendorf | Switzerland | Baseline characterization of air masses using radon-222 University of Basel Department of Environmental Sciences Bernoullistrasse 30 CH-4056 Basel |

| Institution / network | Country | Collaborating with project: |
|---|-------------|---|
| Empa Laboratory for Air Pollution/Environmental Technology Dr. Martin Steinbacher Dr. Stephan Henne CH-8600 Dübendorf | Switzerland | Field measurements of aerosols acting as ice nucleating particles and their influence on mixed-phase clouds Swiss Federal Office of Technology, ETH Zürich Institute for Atmospheric and Climate Science Universitätsstrasse 16 CH-8092 Zürich, Switzerland |
| ETH Zürich Swiss Federal Institute of Technology Computer Engineering and Networks Laboratory Dr. Jan Beutel Gloriastrasse 35 CH-8092 Zurich | Switzerland | Influences of the snowcover on thermal processes in steep permafrost rockwalls Long-term permafrost monitoring WSL Institute for Snow and Avalanche Research SLF Flüelastrasse 11 CH-7260 Davos Dorf, Switzerland |
| ETH Zürich Swiss Federal Institute of Technology Department of Earth Sciences Geological Institute Prof. Stefano Bernasconi Sonneggstrasse 5 CH-8092 Zürich | Switzerland | Iodine, selenium, bromine, and sulfur speciation in precipitation from Jungfrauoch and Pic du Midi Eawag Department Water Resources and Drinking Water Überlandstrasse 133 CH-8600 Dübendorf |
| ETH Zürich Swiss Federal Institute of Technology Institute for Atmospheric and Climate Science Prof. U. Lohmann Prof. T. Peter Universitätstrasse 16 CH-8092 Zürich | Switzerland | The Global Atmosphere Watch Aerosol Program at Jungfrauoch Paul Scherrer Institute Laboratory of Atmospheric Chemistry CH-5232 Villigen Switzerland |
| ETH Zürich VAW-Glaziologie A. Bauder Hönggerberggring 26 CH-8093 Zürich | Switzerland | Environmental radionuclides and stable isotopes as tracers for transport processes in snow Helmholtz Zentrum München German Research Center for Environmental Health Institute of Radiation Protection Ingolstädter Landstrasse 1 D-85764 Neuherberg Germany |

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| ETH Zürich Institute of Geodesy and Photogrammetry Stefano-Franscini-Platz 5 CH-8093 Zürich | Switzerland | Automated GNSS Network Switzerland (AGNES) Swiss Federal Office of Topography swisstopo Seftigenstrasse 264 CH-3084 Wabern |
| Institut für Aerosol- und Sensortechnik, Fachhochschule Nordwestschweiz, Windisch Prof. H. Burtscher Dr. E. Weingartner Dr. M. Fierz | Switzerland | The Global Atmosphere Watch Aerosol Program at Jungfrauoch Cloud condensation nuclei-activity of black carbon particles during the CLOUD and Aerosol Characterization Experiment (CLACE) Paul Scherrer Institute Laboratory of Atmospheric Chemistry CH-5232 Villigen |
| Jungfrau Railways train station Kleine Scheidegg – Andre Hofer | Switzerland | Effect of low atmospheric pressure on diploid sexual and triploid apomictic dandelions (<i>Taraxacum officinale</i> agg.) Institut für Pflanzenwissenschaften Universität Bern Altenbergrain 21 CH-3013 Bern |
| 3100 Kulmhotel Gornergrat Gornergrat 3100m CH-3920 Zermatt | Switzerland | Stellarium Gornergrat Center for Space and Habitability University of Bern Parkterrasse 14 CH-3012 Bern |
| METAIR AG Airfield LSZN Hausen am Albis | Switzerland | Development of an airborne sensor for the reliable discrimination of volcanic ash particles from water droplets or ice crystals Institute of Aerosol and Sensor Technology, University of Applied Sciences Northwestern Switzerland Klosterzelgstrasse 2 CH-5210 Windisch |
| MeteoSwiss | Switzerland | National Air Pollution Monitoring Network (NABEL) Empa Swiss Federal Laboratories for Materials Science and Technology Ueberlandstrasse 129 CH-8600 Dübendorf |

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| MeteoSwiss | Switzerland | Comprehensive Radiation Flux Assessment (CRUX) Physikalisch-Meteorologisches Observatorium Davos PMOD World Radiation Center WRC Dorfstrasse 33 CH-7260 Davos Dorf |
| MeteoSwiss, Zurich and Payerne | Switzerland | Automated GNSS Network Switzerland (AGNES) Swiss Federal Office of Topography swisstopo Seftigenstrasse 264 CH-3084 Wabern |
| MeteoSwiss, Payerne Office fédéral de météorologie et de climatologie MétéoSuisse Dr. D. Ruffieux ch. de l'Aérologie CH-1530 Payerne | Switzerland | The Global Atmosphere Watch Aerosol Program at Jungfraujoch Paul Scherrer Institute Laboratory of Atmospheric Chemistry CH-5232 Villigen, Switzerland |
| Paul Scherrer Institute Laboratory of Atmospheric Chemistry CH-5232 Villigen Switzerland | Switzerland | Biological ice nucleators at tropospheric cloud height University of Basel Department of Environmental Sciences Bernoullistrasse 30 CH-4056 Basel |
| Paul Scherrer Institute Laboratory of Atmospheric Chemistry Dr. Martin Gysel CH-5232 Villigen Switzerland | Switzerland | Development of an airborne sensor for the reliable discrimination of volcanic ash particles from water droplets or ice crystals Institute of Aerosol and Sensor Technology, University of Applied Sciences Northwestern Switzerland Klosterzelgstrasse 2 CH-5210 Windisch |
| Paul Scherrer Institute Laboratory of Atmospheric Chemistry CH-5232 Villigen Switzerland | Switzerland | Assessment of high altitude aerosol and cloud characteristics, cirrus climatology Swiss Federal Office of Technology, ETH Zürich Institute for Atmospheric and Climate Science Universitätsstrasse 16 CH-8092 Zürich, Switzerland |

| Institution / network | Country | Collaborating with project: |
|--|-------------|---|
| Paul Scherrer Institute Laboratory of Atmospheric Chemistry CH-5232 Villigen Switzerland | Switzerland | Baseline characterization of air masses using radon-222 University of Basel Department of Environmental Sciences Bernoullistrasse 30 CH-4056 Basel |
| Paul Scherrer Institute Laboratory of Atmospheric Chemistry Prof. Urs Baltensperger Dr. Erik Herrmann Dr. Nicolas Bukowiecki CH-5232 Villigen Switzerland | Switzerland | Field measurements of aerosols acting as ice nucleating particles and their influence on mixed-phase clouds Swiss Federal Office of Technology, ETH Zürich Institute for Atmospheric and Climate Science Universitätsstr. 16 CH-8092 Zürich, Switzerland |
| Paul Scherrer Institute Laboratory of Atmospheric Chemistry CH-5232 Villigen Switzerland | Switzerland | National Air Pollution Monitoring Network (NABEL) Empa Swiss Federal Laboratories for Materials Science and Technology Ueberlandstrasse 129 CH-8600 Dübendorf |
| Paul Scherrer Institute Laboratory of Atmospheric Chemistry CH-5232 Villigen Switzerland | Switzerland | Investigation of free tropospheric nucleation Department of Physics University of Helsinki Gustaf Hällströmin katu 2a FI-00560 Helsinki, Finland |
| Paul Scherrer Institute Analytical Chemistry M. Schwikowski CH-5232 Villigen Switzerland | Switzerland | Environmental radionuclides and stable isotopes as tracers for transport processes in snow Helmholtz Zentrum München German Research Center for Environmental Health Institute of Radiation Protection Ingolstädter Landstrasse 1 D-85764 Neuherberg Germany |
| PermaSense Network www.permasense.ch | Switzerland | Influences of the snowcover on thermal processes in steep permafrost rockwalls Long-term permafrost monitoring WSL Institute for Snow and Avalanche Research SLF Flüelastrasse 11 CH-7260 Davos Dorf, Switzerland |

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| PERMOS (Permafrost Monitoring Switzerland) http://www.permos.ch/ | Switzerland | Influences of the snowcover on thermal processes in steep permafrost rockwalls Long-term permafrost monitoring WSL Institute for Snow and Avalanche Research SLF Flüelastrasse 11 CH-7260 Davos Dorf, Switzerland |
| PERMOS (Permafrost Monitoring Switzerland) Dr. Jeannette Noetzli | Switzerland | PermaSense ETH Zürich Computer Engineering and Networks Laboratory (TIK) Gloriastrasse 35 CH-8092 Zürich |
| Studiengesellschaft Mont Soleil Les Brenet | Switzerland | Long-term study for the efficiency of photovoltaic elements in the high mountains Berner Fachhochschule BFH Technik und Informatik (TI) Labor für Photovoltaik Jlcoweg 1 CH-3400 Burgdorf |
| Study of solar photometry (aerosol optical depth) and long-wave infrared radiative forcing in collaboration with the Physikalisch Meteorologisches Observatorium Davos (PMOD), World Radiation Center (WRC) Dorfstrasse 33 CH-7260 Davos Dorf | Switzerland | Global Atmosphere Watch Radiation Measurements Federal Office of Meteorology and Climatology MeteoSwiss Station Aérologique 1 Ch. de l'Aérologie CH-1530 Payerne |
| Swiss Federal Office for the Environment (FOEN) | Switzerland | SwissQuick: Emissions and imissions of atmospheric mercury in Switzerland Institute for Chemical and Bioengineering ETH Zürich Vladimir-Prelog-Weg 1 CH-8093 Zürich |
| Swiss GCOS office | Switzerland | High precision carbon dioxide and oxygen measurements at Jungfraujoch Universität Bern Physikalisches Institut Sidlerstrasse 5 CH-3012 Bern |

| Institution / network | Country | Collaborating with project: |
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| Swiss Glacier Monitoring Network (GLAMOS) http://www.glamos.ch | Switzerland | Glaciological investigations on the Grosser Aletschgletscher ETH Zürich Versuchsanstalt für Wasserbau, Hydrologie und Glaziologie (VAW) Hönggerberggring 26 CH-8093 Zürich |
| Tofwerk AG Dr. M. Hutterli Thun, Switzerland | Switzerland | The Global Atmosphere Watch Aerosol Program at Jungfrauojoch Paul Scherrer Institute Laboratory of Atmospheric Chemistry CH-5232 Villigen Switzerland |
| Universität Basel Institut für Umweltgeowissenschaften Dr. Franz Conen Bernoullistrasse 30 CH-4056 Basel | Switzerland | The Global Atmosphere Watch Aerosol Program at Jungfrauojoch Paul Scherrer Institute Laboratory of Atmospheric Chemistry CH-5232 Villigen, Switzerland |
| University of Bern | Switzerland | Long-term study for the efficiency of photovoltaic elements in the high mountains Berner Fachhochschule BFH Technik und Informatik (TI) Labor für Photovoltaik Jlcoweg 1 CH-3400 Burgdorf |
| University of Bern Astronomical Institute (AIUB) Sidlerstrasse 5 CH-3012 Bern | Switzerland | Automated GNSS Network Switzerland (AGNES) Swiss Federal Office of Topography swisstopo Seftigenstrasse 264 CH-3084 Wabern |
| University of Bern Institute of Applied Physics (IAP) Sidlerstrasse 5 CH-3012 Bern | Switzerland | Automated GNSS Network Switzerland (AGNES) Swiss Federal Office of Topography swisstopo Seftigenstrasse 264 CH-3084 Wabern |
| University of Bern Physics Institute Climate and Environmental Physics Sidlerstrasse 5 CH-3012 Bern | Switzerland | National Air Pollution Monitoring Network (NABEL) Empa Swiss Federal Laboratories for Materials Science and Technology Ueberlandstrasse 129 CH-8600 Duebendorf |

| Institution / network | Country | Collaborating with project: |
|---|-------------|---|
| University of Bern Physics Institute Climate and Environmental Physics Prof. M. Leuenberger Sidlerstrasse 5 CH-3012 Bern | Switzerland | The Global Atmosphere Watch Aerosol Program at Jungfrauoch Paul Scherrer Institute Laboratory of Atmospheric Chemistry CH-5232 Villigen Switzerland |
| University of Bern Physics Institute Climate and Environmental Physics Sidlerstrasse 5 CH-3012 Bern | Switzerland | Continuous measurement of stable CO ₂ isotopes at Jungfrauoch, Switzerland Empa Laboratory for Air Pollution and Environmental Technology Überlandstrasse 129 CH-8600 Dübendorf |
| University of Bern Physics Institute Climate and Environmental Physics Sidlerstrasse 5 CH-3012 Bern | Switzerland | Flask comparison on Jungfrauoch Max Planck Institut für Biogeochemie Hans Knöll Str. 10 D-007745 Jena |
| Universität Bern Physikalisches Institut Klima- und Umweltphysik Dr. Roland Purtschert Sidlerstrasse 5 CH-3012 Bern | Switzerland | ⁸⁵ Kr Activity Determination in Tropospheric Air Bundesamt für Strahlenschutz Rosastrasse 9 D-79098 Freiburg Germany |
| Universität Bern Physikalisches Institut Klima- und Umweltphysik Sidlerstrasse 5 CH-3012 Bern | Switzerland | Glaciological and geophysical survey at Colle Gnifetti glacier for improved 3D flow modelling and ice core interpretation Institut für Umweltphysic Universität Heidelberg Im Neuenheimer Feld 229 D-69120 Heidelberg |
| Universität Bern Physikalisches Institut Sidlerstrasse 5 CH-3012 Bern | Switzerland | Influence of environmental parameters on secondary neutrons from cosmic rays at high altitudes in Alpine region Helmholtz Zentrum München Institute of Radiation Protection Ingolstädter Landstrasse 1 D-85764 Neuherberg |

| Institution / network | Country | Collaborating with project: |
|---|-----------------|---|
| Universität Fribourg Department of Geosciences Prof. Martin Hoelzle Chemin du Musée 6 CH-1700 Fribourg | Switzerland | Influences of the snowcover on thermal processes in steep permafrost rockwalls Long-term permafrost monitoring WSL Institute for Snow and Avalanche Research SLF Flüelastrasse 11 CH-7260 Davos Dorf, Switzerland |
| University of Fribourg | Switzerland | Glaciological and geophysical survey at Colle Gnifetti glacier for improved 3D flow modelling and ice core interpretation Institut für Umweltphysic Universität Heidelberg Im Neuenheimer Feld 229 D-69120 Heidelberg |
| University of Geneva Geneva Observatory Astronomy Department 51, Chemin des Maillettes CH-1290 Sauverny | Switzerland | Stellarium Gornergrat Center for Space and Habitability University of Bern Parkterrasse 14 CH-3012 Bern |
| University of Zurich Department of Geography Glaciology, Geomorphodynamics & Geochronology Winterthurerstr. 190 CH-8057 Zürich, Switzerland | Switzerland | Influences of the snowcover on thermal processes in steep permafrost rockwalls Long-term permafrost monitoring WSL Institute for Snow and Avalanche Research SLF Flüelastrasse 11 CH-7260 Davos Dorf, Switzerland |
| University of Zurich Department of Geography Dr. Martin Lüthi Winterthurerstr. 190 CH-8057 Zürich, Switzerland | Switzerland | PermaSense ETH Zürich Computer Engineering and Networks Laboratory (TIK) Gloriastrasse 35 CH-8092 Zürich |
| WSL Institute for Snow and Avalanche Research SLF Dr. Marcia Phillips Flüelastrasse 11 CH-7260 Davos Dorf | Switzerland | PermaSense ETH Zürich Computer Engineering and Networks Laboratory (TIK) Gloriastrasse 35 CH-8092 Zürich |
| Centre for Isotope Research CIO University of Groningen The Netherlands | The Netherlands | High precision carbon dioxide and oxygen measurements at Jungfraujoeh Universität Bern Physikalisches Institut Sidlerstrasse 5 CH-3012 Bern |

| Institution / network | Country | Collaborating with project: |
|---|-----------------|---|
| Centre for Isotope Research CIO University of Groningen The Netherlands | The Netherlands | Flask comparison on Jungfrauoch Max Planck Institut für Biogeochemie Hans Knöll Str. 10 D-007745 Jena |
| Zuiderzeemuseum Thomas Eyck Jules van den Langenberg Enkhuizen, The Netherlands | The Netherlands | Untitled (Jungfrau-Aletsch) Alike van der Kruijs De Perponcherstraat 86 2518 SX The Hague The Netherlands |
| Abant Izzet Baysal University Department of Physics Prof. Dr. Haluk Denizli Bolu / Turkey | Turkey | Φ dependence study of Tauwer prototype detector and correlation study of cosmic ray rate with solar activity Department of Electric and Electronics Engineering, Giresun University 28200 Giresun, Turkey |
| University of Bristol | UK | Halogenated greenhouse gases at Jungfrauoch Empa Laboratory for Air Pollution/ Environmental Technology Überlandstrasse 129 CH-8600 Dübendorf |
| University of Leeds School of Earth and Environment Collaboration with Martin Chipperfield Leeds, LS2 9JT United Kingdom | UK | Atmospheric physics and chemistry Royal Belgian Institute for Space Aeronomy Ringlaan 3 B-1180 Brussels |
| University of Leeds | UK | High resolution, solar infrared Fourier Transform spectrometry. Application to the study of the Earth atmosphere University of Liège Institut d'Astrophysique et de Géophysique Allée du six Août, 19 - Bâtiment B5a B-4000 Sart Tilman (Liège, Belgium) |
| University of Manchester School of Earth, Atmospheric and Environmental Sciences (SEAES) Prof. H. Coe Prof. T. Choularton Manchester, UK | UK | The Global Atmosphere Watch Aerosol Program at Jungfrauoch Paul Scherrer Institute Laboratory of Atmospheric Chemistry CH-5232 Villigen Switzerland |

| Institution / network | Country | Collaborating with project: |
|--|---------|---|
| University of Manchester Centre for Atmospheric Science SEAES Gary Lloyd and Tom Choularton Manchester, UK | UK | Field measurements of aerosols acting as ice nucleating particles and their influence on mixed-phase clouds Swiss Federal Office of Technology, ETH Zürich Institute for Atmospheric and Climate Science Universitätsstr. 16 CH-8092 Zürich, Switzerland |
| Aerodyne Research Dr. D.Worsnop | USA | The Global Atmosphere Watch Aerosol Program at Jungfraujoch Paul Scherrer Institute Laboratory of Atmospheric Chemistry CH-5232 Villigen Switzerland |
| NASA JPL | USA | High resolution, solar infrared Fourier Transform spectrometry. Application to the study of the Earth atmosphere University of Liège Institut d'Astrophysique et de Géophysique Allée du six Août, 19 - Bâtiment B5a B-4000 Sart Tilman (Liège, Belgium) |