



15th National GCOS Roundtable Minutes

Date:	Thursday, 25 January 2018, 10.00 – 16.00
Place:	Hotel Bern, Bern
Participants:	B. Calpini (MeteoSwiss), F. Fontana (MeteoSwiss, Chair), V. Aich (WMO), C. Ammann (Agroscope), A. Bauder (ETH Zurich), M. Begert (MeteoSwiss), S. Brönnimann (UniBe), B. Buchmann (Empa), L. Emmenegger (Empa), W. Eugster (ETH Zurich), A. Geiger (ETH Zurich), J. Gröbner (PMOD/WRC), A. Gubler (Agroscope), M. Gysel (PSI), W. Haeberli (UZH), M. Häni (WSL), M. Hirschi (ETH Zurich), M. Hoelzle (UniFr), N. Kämpfer (UniBe), T. Konzelmann (MeteoSwiss), C. Krug (UZH), M. Leuenberger (UniBe), G. Litsios (FOEN), S. Lutz (swisstopo), C. Marty (SLF), D. Mauree (EPFL), S. Morf-Graf (FOEN), U. Neu (ProClim), J. Nötzli (SLF), D. Odermatt (Eawag), O. Overney (FOEN), C. Pascale (METAS), P. Peduzzi (GRID-Geneva), G.-K. Plattner (WSL), M. Pozzoni (SUPSI), H. Raetzo (FOEN), R. Ramelli (IRSOL), M. Rebetez (WSL), C. Richter (WMO), M. Rixen (WCRP), C. Rohr (UniBe), M. Rohrer (Meteodat GmbH), S. Rösner (DWD), R. Röhrlisberger (FOEN), D. Ruffieux (MeteoSwiss), P. Schmockler-Fackel (FOEN), J. Schopfer (SERI), C. Schwierz (MeteoSwiss), M. Steinbacher (Empa), T. Stocker (UniBe), A. Streilein (swisstopo), D. Vonder Mühl (Systemsx), F. Weibel (FSO), M. Wild (ETH Zurich), M. Wüest (FOEN), S. Wunderle (UniBe), M. Zemp (UZH), M. Bizzozzero (MeteoSwiss), M. Stalder (Minutes, MeteoSwiss)
Excused:	S. Adler (ZAMG), K. Ammon (ProClim), N. Archinard (FDFA), R. Ballaman (FOEN), U. Baltensperger (PSI), E. Baltsavias (ETH Zurich), N. Buchmann (ETH Zurich), H. Bugmann (ETHZ), M. Conedera (WSL), M. Croci-Maspoli (MeteoSwiss), M. Funk (ETH Zurich), Y. Greiler (SDC), M. Grosjean (UniBe), M. Hama (MeteoSwiss), J. Hering (Eawag), E. Hiltbrunner (UniBas), R. Humbel (FSO), M. Huss (ETH Zurich), S. Kazadzis (PMOD/WRC), R. Kipfer (Eawag), C. Körner (UniBas), M. Krebs (FDFA), R. Meuli (Agroscope), F. Paul (UZH), T. Peter (ETH Zurich), C. Pfister (UniBe), C. Preiswerk (SCNAT), A. Rigling (WSL), M. Schaepman (UZH), C. Schär (ETH Zurich), K.-J. Schreiber (DWD), J. Schweizer (WSL SLF), S. Seneviratne (ETH Zurich), G. Silvestri (FOEN), K. Steffen (WSL), R. Stöckli (MeteoSwiss), A. Vieli (UZH), A. Wüest (Eawag), C. Zundel (FOAG)

1 Welcome

B. Calpini welcomes the participants to the 15th Swiss GCOS Roundtable. The agenda of the 15th Swiss GCOS Roundtable is adopted without changes. The minutes of the 14th Swiss GCOS Roundtable on 26 January 2017 are adopted.

2 Long time series – quality assurance and control

2.1 Meteorological parameters

M. Begert illustrates the work done at MeteoSwiss with regard to quality assurance and control of long-term series discussing two specific examples. In the case of Bad Ragaz it was shown that complete documentation of a station's history and regular visits can help identify negative external effects. In addition, long-term land use contracts are crucial in securing long time series. In the case of Magadino parallel measurements and continuous quality control were key factors for ensuring the long time series. A customized calibration concept further minimizes interventions at the instrumentation-level and at the same time prevents instruments from drifting. In summary, quality assurance starts

with avoiding unwanted influences on long time series and includes aspects of planning, continuous control and complete documentation.

2.2 Air pollutants

M. Steinbacher presents common quality assurance and control strategies when making atmospheric observations of air pollutants and greenhouse gases. At the global level, the Global Atmosphere Watch (GAW) provides a comprehensive quality assurance framework. Switzerland contributes among others with the operation of the World Calibration Center for surface ozone, carbon monoxide and methane (WCC-Empa) and the Quality Assurance/Scientific Activity Centre Switzerland (QA/SAC-CH). At the European level, the Integrated Carbon Observation System (ICOS) research infrastructure recently set up a harmonized greenhouse gas monitoring network to produce relevant high precision data. At the national level the National Air Pollution Monitoring Network (NABEL) provides the standard for high-quality observations of air pollutants. The Swiss observations adhere to the GCOS Climate Monitoring Principles. On the global scale, greenhouse gas and air pollution monitoring still suffers from the lack of long-term, sustained and high quality measurements in some data sparse regions.

2.3 Forest ecosystems

G-K. Plattner presents the EnviDat data portal as one part of the WSL strategy for research data. To make these publicly funded research data accessible and to ensure long-term access to it, WSL has set up the WSL Environmental Data Portal (EnviDat). It is linked to other Swiss, European and international initiatives and closely associated with the ETH Domain. The data base includes quality controlled data sets such as tree measurements from 2002-2016 from Pfywald including metadata. The infrastructure can also be used by external partners and will facilitate the publishing and the sharing of environmental data.

2.4 Permafrost

J. Nötzli highlights the work done within the Swiss permafrost monitoring network. Main challenges include extreme high mountain conditions, costly and challenging measurements of small invisible changes, and the research-driven set-up of the network with little standards available for the entire data acquisition chain. The case of the Murtél borehole illustrated the importance of parallel measurements. Data from the new borehole allowed for validating the old time series. In the coming years, focus will be put on securing long-term data storage, the improvement of new data by defining best practice guidelines, and improving existing data by detailed assessments of historical data.

2.5 Hydrology

S. Morf illustrates the quality control measures in the field of hydrology aiming at providing a consistent and homogenous data basis. The FOEN follows an established process for data quality control of actual data consisting of three control levels: first the data sets undergoes a timeliness and completeness check. Afterwards, data is validated with reference values and corrected if necessary. On a yearly basis, the data set is checked with a focus on spatial coherence. The last quality control level focusing on long time series is illustrated with three on-going projects at the FOEN. The quality-controlled data is archived together with metadata.

2.6 Discussion

The discussion covers several matters related to data quality assurance and control across the GCOS domains, e.g., the potential of automatic quality control measures to detect and deal with inconsistencies in data series. Automated flags, for example, would allow for timely assessment of factors having a negative impact on the observations. However, it is emphasized that experts would still be needed to interpret the results and to take action if needed. Linked to the issue of automatization is also the question as to whether data should be provided in (near-)real-time. There is a consensus among the participants that timely access to quality controlled data in general should be sought by reducing the time span between data acquisition and publication. At the same time, providing near-real-time data is not considered applicable to all GCOS domains, the reason being e.g. different measurement procedures or different user requirements. Further, the role of metadata in quality control is regarded as essential and overall coordination among the national partners of GCOS Switzerland with respect to quality assurance and control could be envisaged. F. Fontana concludes

that in implementing the GCOS Switzerland Strategy 2017-2026, a national workshop on the topic of quality assurance and control could be organized to discuss possible synergies in more detail. The Swiss GCOS Office will follow up on this at a later stage.

3 How (Swiss) climate observation contributes to WCRP

M. Rixen highlights the need for observations from a user perspective. Together with models and reanalyses, observations build the backbone of the World Climate Research Program (WCRP). Climate research without a high-quality data foundation is not possible. However, while research is pulled into a new and broader landscape (IPCC Assessment Reports, UNFCCC, GFCS, SFDRR) the fundamental science is seriously underfunded and many products are developed on best effort basis. He states that observations in general and the Swiss contribution to GCOS in particular are fundamental in the WCRP value chain. For the next 5-year implementation plan, WCRP will put focus on the better understanding of water, energy and the carbon cycle. This fits well into the priorities of GCOS and the GCOS Switzerland Strategy 2017-2026.

4 GCOS Switzerland Strategy 2017-2026: Implementation

F. Fontana presents the current status of implementation of the GCOS Switzerland Strategy 2017-2026. MeteoSwiss plans to regularly issue calls for proposals for studies that contribute to the implementation of the GCOS Switzerland strategy, in line with the GCOS Implementation Plan. All relevant information will be provided on www.gcos.ch/callforproposals. **M. Stalder** adds information on the status of the update of the national inventory report of the most valuable time series and international data and calibration centres. The report is available at www.gcos.ch/inventory.

5 Call for Proposals

T. Stocker, chair of the GCOS Switzerland Steering Committee presents the first GCOS Switzerland Call for Proposals. The aim is to address all pillars and priorities of the GCOS Switzerland Strategy 2017-2026 in a step-wise approach. The first call for proposals is available at www.gcos.ch/callforproposals and the deadline for submitting proposals is the 31 March 2018.

6 News from attending institutions

S. Brönnimann points to a workshop on “Early Instrumental Meteorological Series” to take place from 18-21 June 2018 in Bern. The goal is to discuss the state of knowledge on early instrumental meteorological series from the 18th and early 19th century. **D. Odermatt** informs about the establishment of two new groups at Eawag dealing with the integration of in-situ and satellite data. One group is led by D. Bouffard and the other by D. Odermatt. **M. Wüest** makes the participants aware of a new data portal for environmental data which is being developed by the FOEN. **R. Ramelli** shares information on a future project dealing with archiving of sunspot data. This will be done in cooperation with the ETH library and is supported by MeteoSwiss in the framework of GCOS Switzerland. **M. Keller** informed that the IG³IS Office will be staffed thanks to financial support by Switzerland and located at WMO (in the GAW Secretariat). **U. Neu** points to the intensified activities in climate communication. In this respect, the ProClim Flash has received a redesign and now offers the possibility to place information on specific institutions. Communication will also be one key topic at the forthcoming Swiss Global Change Day to take place on 19 April 2018 in Bern. Regarding communication, **M. Zemp** adds that action from the entire GCOS Switzerland community will be necessary to reach out to the public and to policy makers, to raise the awareness of the activities under the GCOS Switzerland umbrella. **C. Rohr** updates the participants on the Euro-Climhist database. Soon, data of the middle age at European scale will be available. **D. Mauree** informs about a recent project at EPFL on turbulences in urban areas to better understand urban heat islands.

7 Varia

The next GCOS Switzerland Roundtable will take place on Thursday, 24 January 2019 in Bern.