



16th National GCOS Roundtable Minutes

Date:	Thursday, 24 January 2019, 10:15 – 16:00
Place:	Haus des Sports, Ittigen
Participants:	Valentin Aich (WMO), Christof Ammann (Agroscope), Leonie Bernet (UniBe), Michael Bock (FOEN), Stefan Brönnimann (UniBe), Brigitte Buchmann (Empa), Achille Capelli (WSL SLF), Mischa Croci-Maspoli (MeteoSwiss), Werner Eugster (ETH Zurich), Fabio Fontana (MeteoSwiss), Julian Gröbner (PMOD/WRC), Martin Grosjean (UniBe), Martin Gysel (PSI), Wilfried Haeberli (UZH), Matthias Häni (WSL), Thomas Häusler (SRF), Martin Hoelzle (UniFr), Matthias Huss (ETH Zurich), Stelios Kazadzis (PMOD/WRC), Thomas Konzelmann (MeteoSwiss), Andreas Linsbauer (UniFr), Glenn Litsios (FOEN), Christoph Marty (WSL SLF), Dasaraden Mauree (EPFL), Urs Neu (ProClim), Jeannette Nötzli (WSL SLF), Daniel Odermatt (Eawag), Céline Pascale (METAS), Frank Paul (UZH), Maurizio Pozzoni (SUPSI), Martine Rebetez (UniNe), Christian Rohr (UniBe), Mario Rohrer (Meteodat GmbH), Stefan Rösner (DWD), Petra Schmocker-Fackel (FOEN), Sonia Seneviratne (ETH Zurich), Markus Stoffel (UniGe), André Streilein (swisstopo), Clara Streule (MeteoSwiss), Rene Stübi (MeteoSwiss), Daniel Vonder Mühl (ETH Zurich), Felix Weibel (FSO), Martin Wild (ETH Zurich), Markus Wüest (FOEN), Stefan Wunderle (UniBe), Michael Zemp (UZH), Manuela Bizzozzero (MeteoSwiss, Minutes)
Excused:	Alex Murk (UniBe), Silke Adler (ZAMG), Natália Archinard (FDFA), Richard Ballaman (FOEN), Emmanuel Baltsavias (ETH Zurich), Andreas Bauder (ETH Zurich), Nina Buchmann (ETH Zurich), Harald Bugmann (ETH Zurich), Bertrand Calpini (MeteoSwiss), Daniel Felder (FOAG), Andreas Gubler (Agroscope), Janet Hering (Eawag), Niklaus Kämpfer (UniBe), Manuel Keller (MeteoSwiss), Markus Leuenberger (UniBe), Reto Meuli (Agroscope), Renzo Ramelli (IRSOL), Carolin Richter (WMO), Kathy Riklin (OccC), Regine Röthlisberger (FOEN), Christoph Schär (ETH Zurich), Jürg Schweizer (WSL SLF), Martin Steinbacher (EMPA), Thomas Stocker (UniBe), Reto Stöckli (MeteoSwiss), Andreas Vieli (UZH), Christine Zundel (FOAG)

1 Welcome

T. Konzelmann welcomes the participants to the 16th GCOS Switzerland Roundtable. He points out that the number of Roundtable participants has increased significantly in recent years and sees this as a sign of a strong national GCOS community. At the same time, he emphasizes that MeteoSwiss does not intend to increase the number of participants any further. Also, the Roundtable should maintain its character as a platform for overarching strategic discussions with respect to the national climate observation system.

The agenda of the 16th GCOS Switzerland Roundtable is adopted without changes. The minutes of the 15th GCOS Switzerland Roundtable on 25 January 2018 are adopted.

2 GCOS Switzerland Strategy 2017-2026: implementation status update

F. Fontana presents the current status of implementation of the GCOS Switzerland Strategy 2017-2026. Amongst others, he points to the renewal of the Swiss Permafrost Monitoring Network (PERMOS) agreement for the period 2019-2022, the support for the Global Energy Balance Archive (GEBA) for the same period, and the projects supported in connection with the first GCOS Switzerland call for proposals. Further, he informs on the second open call for proposals. As an outlook, he

mentions the up-coming GCOS Switzerland workshop on snow monitoring organized by SLF and notes that the invitations will be sent soon. Finally, he points to the planned joint national GCOS/GAW Symposium to take place in 2020, organized by MeteoSwiss.

3 GCOS Climate Monitoring Principles

F. Fontana briefly introduces the [GCOS Climate Monitoring Principles](#) (GCMP) to which effective monitoring systems for climate should adhere.

3.1 We are about to lose what we are supposed to monitor

M. Huss presents the impressive retreat of different glaciers during recent years. He summarizes the variables observed by the programme GLAMOS (Glacier Monitoring Switzerland) and their development over time. He refers to the challenge of measuring retreating glaciers, the potential associated loss of long-term observational series and the problems arising through disintegration of glaciers. An overview of measurement series at risk due to glacier melting is presented including an outlook on if, how and when GLAMOS intends to replace these series. M. Huss also emphasizes that Switzerland has outstanding glacier change observations with long-term (>100 years) and comprehensive monitoring activities. He highlights that especially small glaciers are expected to disappear soon and that GLAMOS intends to shift the focus of monitoring to larger glaciers with higher resilience to climate change while still guaranteeing sufficient overlap between measurement series.

3.2 The world's longest ozone column monitoring series – and it has to relocate

R. Stübi illustrates the application of the GCMP in connection with the changes of measurement practices of the world's longest ozone column series in Arosa. First, he mentions that measurements originally performed manually were automated. In accordance with GCMP #1, a comparison of these methods has been done before implementation. Second, he specifies that in Arosa there are multiple instruments of two different types: the overlap period between the old and new instruments as well as between instruments of the same type is more than 20 years long which is suitable according to GCMP #2. Then, an overview of the historical meta information collection (GCMP #3) as well as the continuous quality control of the data (GCMP #4) is presented. Finally, the results of the analysis of coincident measurements at Arosa and Davos are discussed with the perspective of a change of measurements site.

3.3 The international data centre perspective: GEBA

M. Wild presents the Global Energy Balance Archive (GEBA), a database for the worldwide measured surface energy fluxes. He explains why from the GEBA perspective, adherence to the GCMP is essential. The GCMP ensure long term continuous records, the inclusion of meta data information, and the proper handling of new instrumentation or instrument replacements. Further they secure an adequate spatial and temporal coverage of observations and the buildup of adequate reference datasets. M. Wild emphasizes that these are critical prerequisites for scientific applications that rely on GEBA, such as the quantification of the global energy balance, the estimation of changes in energy fluxes in the context of climate change, the evaluation of climate models and satellite products and practical applications, such as in the areas of solar power production and agriculture.

3.4 Discussion

The participants discuss the value of parallel measurements and agree that there is a need to store parallel measurements and make them available either together with the homogenized data series or in a dedicated data base. It is noted that one of the biggest challenges in the future will be increasing costs as a result of storage, and user-friendly distribution of increasing amounts of data. Further, the participants discuss the meaning of a "suitable" period of overlap of new and old monitoring systems. The length of this overlap is not clearly defined and it depends on variability and long-term changes in observed variables. In that sense, it is crucial to understand why observations of the same variable using different monitoring systems lead to different results. From a scientific point of view, a suitable period of overlap is reached when the differences are fully understood and explained. From a

management's point of view, financial limitations of operating parallel measurements must also be taken into account. Finally, the question how to deal with monitoring gaps due to system failures and lack of parallel measurements is posed. Data interpolation is brought forth as one possible solution.

4 Enhance the visibility of GCOS Switzerland

4.1 What to consider from a media perspective

T. Häusler discusses which aspects a programme like GCOS Switzerland should take into consideration if it wants to be adequately covered by the general media. He emphasizes the importance of understanding the different players in the media world. In particular, it is important to understand how these function and which audiences they serve. He emphasizes that GCOS Switzerland partners need to decide which of these players and audiences they want to target and tailor their message and mode of messaging accordingly. T. Häusler then gives a short analysis of the media market and how it can be targeted.

4.2 Example “Cryosphere”: Towards a communication strategy for cryospheric monitoring networks

A. Linsbauer presents the results of the GCOS Switzerland project «Initiative towards a communication strategy of the Swiss Cryosphere Monitoring Network». The project shows that the communication of the cryospheric monitoring network (web-sites, press releases, reports, public talks and interviews) has a wide media reach. Two key challenges are that the media interest does not always correlate with data availability and that scientists responsible for collecting data are at the same time responsible for communication. Training of scientists in communication and social media is therefore considered important, in particular to address the younger generations. A broad need for the appointment of a communication expert at a suitable institution (e.g. SCNAT) to organize and support a future-oriented communication is highlighted. Also, cryospheric monitoring networks plan to improve communication in discussion with and with the support of communication offices of the involved institutions. Finally, media are often interested in the experts “behind” the data (personal experiences, assessments or emotions of researchers). Preparing a list of experts and topics to be shared with the media could therefore be considered.

4.3 Discussion

The participants discuss the challenge of anticipating topics of interest to the media, given that media interest is mainly driven by current national and international events. Further, the challenge of conveying the scientific methodology to the public is discussed; something that is often not done explicitly but implicitly through stories. Furthermore, the participants address the need to foster a mutual understanding between researchers and the media, and the challenge of meeting the different needs and expectations of communication officers from different institutions, journalists and academics. The idea for an event where media and scientists come together to discuss climate observations and the current state of the climate is brought forth.

5 News from attending institutions

V. Aich (GCOS Office) informs about several regional workshops planned in collaboration with partners and points to the GCOS Joint Panel Meeting, 18-22 March 2019 in Marrakesh. **L. Bernet (UniBe)** informs about the University's plans to continue the microwave remote sensing of stratospheric ozone, wind and in particular water vapour. The latter was classified as “not secured” in the GCOS Switzerland inventory report. **W. Eugster (ETHZ)** updates the participants on ICOS Switzerland and that its funding is secured until 2021. A proposal has been submitted to SERI in May 2018 and as a result ICOS was placed on the 2019 Roadmap for Research Infrastructures, which serves the Confederation as basis for financial decision for 2021-2024. **B. Buchmann (Empa)** (on behalf of M. Gysel, PSI) informs about ACTRIS, a European Research Infrastructure for the observation of aerosols, clouds and trace gases. ACTRIS, at the national level led by PSI, was also

considered in the 2019 Roadmap for Research Infrastructures. **S. Kazadzis (PMOD)** presents the objectives of the new GCOS Switzerland Project “The Global Atmosphere Watch Precision Filter Radiometer (GAW-PFR) Network for Aerosol Optical Depth long term measurements”. **D. Mauree (EPFL)** summarizes the research done and planned by EPFL on urban meteorology and climate, e.g. a characterisation of the climate in urban areas, and a first campaign with high frequency measurements. **J. Nötzli (WSL SLF)** informs about the renewal of the PERMOS agreement, the replacement drilling for the borehole Schilthorn, and the new record values for near surface temperatures and active layer thicknesses in 2018. She further highlights the PERMOS contribution to the publication “Permafrost is warming at a global scale” in “nature communications”. **C. Pascale (METAS)** makes the participants aware of the newly established European Metrology Networks (EMNs) which include the three domains “Earth (remote) & Land”, “Atmosphere”, and “Ocean”. She notes that METAS is in the lead for the “Atmosphere” network. **S. Rösner (DWD)** summarizes the 13th National GCOS Meeting in Germany and informs about the planned update of the inventory report on the German Climate Observing System in 2020. **P. Schmocker-Fackel (FOEN)** points to the national groundwater report to be published in summer 2019. She further informs about FOEN’s ambitions to have continuous digital runoff and water level time series starting 1900, and to continue the hydrological atlas of Switzerland (HADES) for the next four years. **F. Weibel (FSO)** shares information on the new results regarding the ECV Land cover use and informs about ADELE (Arealstatistik Deep Learning), a new technology for automatic interpretation of aerial photos. **C. Rohr (UniBe)** updates the participants on the inclusion of a new time series from Paris into the historical database Euro-Climhist. **U. Neu (SCNAT)** points to a congress (K3) on climate communication taking place on 24/25 September 2019 in Karlsruhe.

6 Varia

The next GCOS Switzerland Roundtable will not take place in this format; instead a joint national GCOS/GAW Symposium will be organized in 2020. Participants will be informed on further details in due time.