

QA/SAC Switzerland and QA/SAC Japan

contributions to the quality of GAW's GHG observations

Martin Steinbacher¹, Yoshifumi Kameoka², Shinya Takatsuji², Christoph Zellweger¹, Lukas Emmenegger¹, Brigitte Buchmann³, Atsuya Kinoshita²

¹ Empa, Laboratory for Air Pollution / Environmental Technology, Duebendorf, Switzerland

² JMA, Atmospheric Environment and Ocean Division, Atmosphere and Ocean Department, Tokyo, Japan

³ Empa, Department Mobility, Energy and Environment, Duebendorf, Switzerland

Introduction

- GAW data need to be consistent, traceable to common references, of known and adequate quality, and require appropriate documentation.
- GAW's quality management framework supports quality control, dissemination, scientific guidance, training and technical developments of the global network.
- Quality Assurance / Science Activity Centres (QA/SACs) support the programme through quality assurance activities, training and technical support, and the scientific exploitation of GAW data.
- QA/SAC Switzerland, hosted by Empa, and QA/SAC Japan, hosted by the Japan Meteorological Agency (JMA) are both specifically targeting the observations of greenhouse gases.

QA/SAC Switzerland

QA/SAC Switzerland (QA/SAC-CH) was established in 2000. It is closely linked to one of the World Calibration Centres (WCC) also hosted by Empa.

QA/SAC-CH's main tasks are

- **research activities**, like the evaluation of new measurement techniques, promotion of technical progress, and scientific data analysis.

- **capacity building**, training, twinning, and GAW station support in setup, operation, maintenance and troubleshooting of long-term observations.



- **contribution to GAW outreach** such as measurement guidelines as well as other related publications.



- **cooperation and networking** with other programmes and projects to ensure consistency and to advance the system.

QA/SAC Japan

QA/SAC Japan was established in 1995. It is responsible for Asia and the South-West Pacific and cooperates with WCC Japan and the World Data Centre for Greenhouse Gases (WDCGG) at JMA.

JMA's GAW activities are advised by a group of experts in terms of observation techniques, quality management, data analysis, and dissemination of research products.

QA/SAC Japan's main tasks are

- **research activities** to maintain and improve data quality and to promote data analysis.



- **contribution to GAW outreach** like the analysis of round-robin experiments and evaluation of the traceability of measurements in the region.

- **cooperation and networking** with activities of GAW and other programmes: Recently, QA/SAC Japan provided technical advice to the laboratories in Indonesia and Malaysia with regard to data submission to WDCGG.

Conclusions & Way Forward

- QA/SAC's Terms of Reference cover a wide range of different activities.
- Thus, QA/SACs usually focus on specific variables and/or geographical areas.
- Collaboration and communication among the QA/SACs is about to be fostered to exploit synergies and to optimize the benefit for the GAW programme.
- QA/SAC-CH and QA/SAC Japan will strengthen their common activities in Southeast Asia where both centres support the GAW programme.