

IV Arctic Metrology Workshop

A Ny-Ålesund Atmosphere Flagship event associated to the

Svalbard Science Conference

2019 November 7, 09:00-17:30

Venue: To be decide.

If you would like to take part in the workshop, send an email to Andrea Merlone a.merlone@inrim.it at or Angelo Viola at A.viola@isac.cnr.it

Multitudes of measurements are needed to understand the environment and its evolution. In the Arctic, dedicated efforts are motivated by the higher accuracy required to quickly capture faster trends, the extreme range and conditions of sensors exposure, a robust comparability asked by the different measurement networks, the need of special calibration procedures, the logistical problems associated with remote locations. Metrology, the science of measurement, can bring a unique contribution in establishing traceability, enforcing comparability and reducing uncertainties in data records. Arctic stations measurements, integrated projects and networks as well as scientific infrastructures, can benefit from the availability of dedicated measurements and calibration procedures, together with the opportunity to perform on site instruments validations. The scope of the session is to promote a discussion board for planning common activities between the metrology community and the scientific research communities operating in the Arctic, to improve data quality.

The **Svalbard** research community and infrastructures offer a unique opportunity to establish a fruitful cooperation with the metrology community, to improve data quality.



Following the previous three editions in Torino (Italy), Oslo (Norway), and Ny-Ålesund, the IV Arctic Metrology Workshop is proposed:

to address metrology experience and activities on the arctic environmental measurements and research.

to report on previous metrology activities and campaigns in the Arctic;

to present the expertise of European metrology Institutes to the scientific communities operating in the Arctic.

To report the project and ongoing activities plan to implement the **permanent common metrology laboratory and infrastructure in Ny-Ålesund**

As part of the Ny-Ålesund atmospheric scientific community will be involved in the observation programs of MOSAIC campaign, the workshop will represent an important opportunity to promote the achievements of full reliability and comparability in space and time of the measured records, traceability of the data and uncertainty evaluations. These metrological aspects will be discussed with experts to improve data reliability in the Arctic.

A round table is also proposed to close the event, to address the metrology laboratory activities towards the requirements of the scientific community operating in Ny-Ålesund and in the Svalbard.





Draft agenda and topics

9.00 Opening and introduction of the workshop: Angelo Viola ISAC-CNR

9.10 The Arctic Metrology workshops series and associated events: Andrea Merlone – INRiM and ISAC-CNR

9.20 EURAMET, The metrology for environment in Europe and for the Arctic (Hans Arne Frøystein /Åge Andreas Falnes Olsen – EURAMET Chair)

9.30 The WMO activities in metrology for climate monitoring: GCOS, GCW, CIMO, CCI initiatives: Andrea Merlone - INRiM/ ISAC- CNR

9.40 Metrology outreach and impact on Polar initiatives: Vito Vitale ISAC- CNR

9.50 The 2014 - 2019 Metrology campaigns in Ny-Ålesund Chiara Musacchio – INRiM and ISAC-CNR

10.00 The metrology lab in Ny-Ålesund: a common infrastructure for data quality. Mauro Mazzola ISAC-CNR

10.20 Coffee break

10.40 The Climate Change Tower measurements, improving the accuracy of temperature profiles and measurements by accurate calibrations: Angelo Viola – ISAC-CNR.

11.00 Metrology for CO₂ content in water: Michela Sega – INRiM (TBC)

11.20 Measurement of surface variables: issues and uncertainties: Mareile Astrid Wolf – Met Office (TBC)

11.40 TBC

12.00 Lunch

13.30 Roundtable – Implementing a permanent metrology infrastructure in the Svalbard.

17.00 Future plans and conclusion