

# WORKSHOP ON VOCs

*- bringing in situ & remote communities  
together for a better data uncertainty estimation*

Location: [https://teams.microsoft.com/registration/Q2bc07e1mkagpcfGhML1pg,ThgA7vMKGkWK9Zq7\\_SNFTQ.Z2UxC30wkkWrcObthVf7cw,C1HME7z7xUOzEzcZ\\_q34Ww,2Br2TA9uc0u0z-UTi378JQ.BV378D4Bv0KplGAJecAxbw?mode=read&tenantId=3bdc6643-b5b7-469a-a0a5-c7c684c2f5a6](https://teams.microsoft.com/registration/Q2bc07e1mkagpcfGhML1pg,ThgA7vMKGkWK9Zq7_SNFTQ.Z2UxC30wkkWrcObthVf7cw,C1HME7z7xUOzEzcZ_q34Ww,2Br2TA9uc0u0z-UTi378JQ.BV378D4Bv0KplGAJecAxbw?mode=read&tenantId=3bdc6643-b5b7-469a-a0a5-c7c684c2f5a6)

Facilitators: Volker Ebert ([Volker.Ebert@ptb.de](mailto:Volker.Ebert@ptb.de))  
Céline Pascale ([Celine.Pascale@metas.ch](mailto:Celine.Pascale@metas.ch))

Date: 14.10.2021 Thursday

Time: 9:00 to 17:00 CET(Berlin)



9:00 – 9:05 Check-in, registration

9:05 – 9:10 Welcome Volker Ebert (PTB)

## Session 1

### Challenges, needs and efforts toward accurate and comparable VOC measurements

9:10 – 9:30	Introduction to the EMPIR MetClimVOC project and objectives	 Céline Pascale (METAS)
9:30 – 9:50	VOC monitoring in the ACTRIS network: in situ and remote	Paolo Laj (ACTRIS)
9:50 – 10:10	Importance of data quality for modellers and end users	Stefan Reimann (Empa)
10:10 – 10:20	Introduction on uncertainty basic concepts	Gang Li (PTB)

Coffee break (10:20-10:40)



The EMPIR initiative is co-funded by the European Union's Horizon 2020 research and innovation programme and the EMPIR Participating States

## Session 2

### **In situ VOC measurements: metrological aspects and uncertainty estimation**

10:40 – 11:00	Static reference gas mixture preparation and uncertainty	 Stefan Persijn (VSL)
11:00 – 11:30	Dynamic reference gas mixture preparation and uncertainty: permeation and diffusion methods	 Maitane Iturrate-Garcia (METAS) & Maricarmen Lecuna (POLITO)
11:30 – 11:50	Implementation of automatic validation parameters for continuous quantification of VOCs in ambient air using dual TD-GC FID-MS	Fanny Bachelier (Chromatotec/ICARE-CNRS (UPR3021))
11:50 – 12:10	Improvement of VOC measurement methods: challenges and best practices	 Thérèse Salameh (IMT)

## Lunch break (12:10 – 13:40)

## Session 3

### **Comparisons and verifications of different measurements modes: remote, ground based and in situ**

13:40 – 14:05	Dynamic generation of formaldehyde standards and their analysis by FTIR - methods and uncertainties	Joëlle Viallon (BIPM)
14:05 – 14:35	Comparing ground-based remote sensing measurements to in situ measurements at Jungfraujoch	Bart Dils (BIRA)
14:35 – 14:45	Moderated discussion	All, PTB, METAS



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## Coffee break (14:45-15:00)

### Session 4

#### **Remote sensing VOC measurements: metrological aspects and uncertainty estimation**

15:00 – 15:30	Comparison of spectroscopic data of SF6: their impact on retrieved atmospheric abundances of SF6 and derived mean age of stratospheric air.	Gabriele Stiller (KIT-IMK)
15:30 – 16:00	The HITRAN2020 molecular database	Iouli Gordon (Harvard CfA)
16:00 – 16:30	Atmospheric Chemistry Experiment (ACE)	Jeremy Harrison (UoL/NCEO)
16:30 – 16:45	High-resolution FTIR absorption cross-section measurements at PTB	Gang Li (PTB) 
<b>Close</b>	<b>Open discussion with moderators</b>	
16:45 – 17:00	Beyond the project: EMN for Climate and Ocean Observation (EMN-COO)	All, Céline Pascale, Volker Ebert

## MetClimVOC website

<https://www.metclimvoc.eu/>

## MetClimVOC consortium



POLITECNICO  
DI TORINO



Dutch  
Metrology  
Institute



Karlsruher Institut für Technologie



LABORATOIRE NATIONAL  
DE MÉTROLOGIE ET D'ESSAI



Physikalisch-Technische Bundesanstalt  
Braunschweig und Berlin

## Collaborators



## Stakeholder committee members

**Chris Boone** --- Project Scientist of the Atmospheric Chemistry Experiment ([ACE](#))

**Owen Cooper** --- Co-chair of the Tropospheric Ozone Assessment Report ([TOAR-2](#))

**Iouli Gordon** --- Director of the [HITRAN](#) spectroscopic database

**Lorenzo Labrador** --- Scientific officer at the World Meteorological Organization ([WMO](#))

**Paolo Laj** --- Scientific chair of [ACTRIS](#)-Europe and chair of WMO-GAW Scientific Advisory Group for Aerosols ([SAG-AERO](#))

**Michela Maione** --- Member of the Advanced Global Atmospheric Gases Experiment ([AGAGE](#))

**Josep Peñuelas** --- Director of CREAF-CEAB-CSIC-UAB [Global Ecology Unit](#)

**Tuukka Petäjä** --- Co-coordinator of the [ACTRIS Implementation](#) project

**Leonard Rivier** --- Director of the Integrated Carbon Observation System Atmosphere Thematic Centre ([ICOS-ATC](#))

**Norbert Schmidbauer** --- Senior scientist at the Norwegian Institute for Air Research ([NILU](#))

**Isobel J. Simpson** --- Member of the [WMO-GAW](#) Scientific Advisory Group for Reactive Gases (SAG-RG)

**Gabriele Stiller** --- Group leader, the Satellite-borne Remote Sensing of Trace Gases (SAT) at the Institute of Meteorology and Climate Research (KIT-IMK), division Atmospheric Trace Gases and Remote Sensing ([ASF](#))

**Oksana Tarasova** --- Chief of the WMO-Global Atmosphere Watch ([GAW](#)) programme

**Renato Zenobi** --- Head of the [Zenobi Group](#) at ETHZ Organic Chemistry Lab