

Eurachem/CITAC Scientific Workshop

Measurement uncertainty evaluation based on in-house validation data

25-26 October 2022

Online

Workshop Program

ISO/IEC 17025 includes detailed requirements concerning the evaluation of measurement uncertainty, including when it should be stated in the test reports. Evaluation of measurement uncertainty has been a topic dealt seriously within several sectors of testing and many organisations have published guidance during the last twenty years. Despite this, the practical implementation of measurement uncertainty in analytical measurement is still debated intensely.

Eurachem/CITAC is drafting a new guide, complementary to *Quantifying Uncertainty in Analytical Measurement* from 2012, that provides a simplified evaluation of the uncertainty of measurements in chemistry based on recovery and precision studies performed during the in-house validation. In order to present the principles of the draft Guide and discuss other important issues regarding measurement uncertainty evaluation, an on-line event will be held on **25-26 October 2022**.

The workshop aims to discuss

- Current approaches to the evaluation of measurement uncertainty
- Developments in uncertainty evaluation using validation and QC data
- Approaches for expressing large uncertainties
- Software for measurement uncertainty evaluation

Workshop program

Day 1 25 October Using in-house validation data for uncertainty evaluation

Session 1

Chair: Steve Ellison [LGC, UK]

11:00 *	Opening of the workshop Steve Ellison [LGC, UK]; Chair, Eurachem/CITAC MU & Traceability WG
11:10	Approaches to measurement uncertainty evaluation Ivo Leito [University of Tartu, EE]
11:40	Evaluation of measurement uncertainty based on in-house validation data Ricardo Bettencourt da Silva [Universidade de Lisboa, PT]
12:10	Evaluating the precision component of measurement uncertainty Bertil Magnusson, [Trollboken, SE]
12:30	Break
<h3>Session 2</h3> <p>Chair: Teemu Naykki [SYKE Finnish Environmental Institute, FI]</p>	
12:50	Evaluating the recovery component of measurement uncertainty Ricardo Bettencourt da Silva [Universidade de Lisboa, PT]
13:30	Variation of the measurement uncertainty with measurand level Eskil Sahlin [RISE Research Institutes of Sweden, SE]
13:50	Questions
14:00	<i>Close Day 1</i>

* All times in CEST (Paris, Brussels, Stockholm)

Day 2 26 October

Managing uncertainty evaluations | MU in practice

Session 1

Chair: Michela Segal [INRIM, IT / Past Chair, CITAC]

11:00*	Opening of Day 2 Steve Ellison [LGC, UK]
11:10	Handling allowable limits for recovery Steve Ellison [LGC, UK]
11:30	Example: Heavy metals in sediments Carla Palma [Instituto Hidrográfico, PT]
Software for MU evaluation based on in-house validation	
11:50	MUkit - Measurement Uncertainty kit Teemu Naykki [SYKE Finnish Environmental Institute, FI]
12:05	MU in Excel Michael Koch [Universität Stuttgart, DE]
12:20	Implementing the new Eurachem/CITAC Guide in Excel Ricardo Bettencourt da Silva [Universidade de Lisboa, PT]
12:40	Break
Session 2	
Chair: Francesca Pennechi [INRIM, IT]	
13:00	Experimental validation of the evaluated measurement uncertainty, Anders Svaneborg [Eurofins, DK]
13:20	Handling high uncertainty using the Uncertainty Factor, Bertil Magnusson [Trollboken, SE]
13:35	Suggested expressions for asymmetric measurement uncertainty intervals, Eskil Sahlin [RISE Research Institutes of Sweden, SE]
13:55	Closing discussion
14:15	Workshop Finish

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Speakers

- Bertil Magnusson, Trollboken, Sweden. Co-author of Nordtest guides on uncertainty for environmental labs (Guide 537)
- Stephen Ellison, LGC, UK. Co-author of the Eurachem guide “Quantifying Uncertainty in Analytical Measurement” and chair of the Eurachem/CITAC Measurement Uncertainty and Traceability WG
- Ricardo Bettencourt da Silva, University of Lisbon, Portugal. Chair of the Eurachem Qualitative Analysis WG and co-author for the Eurachem guide on Setting target measurement uncertainty
- Ivo Leito, Professor of Analytical Chemistry, University of Tartu, Estonia.
- Teemu Näykki, SYKE, Finland. Co-author of Nordtest guide on uncertainty for environmental labs
- Anders Svaneborg, Eurofins, Denmark. Member of the International Eurofins KGD group concerning Estimation of Uncertainty for Analytical Measurements.
- Michael Koch, Universität Stuttgart, Germany. Scientific Director of AQS Baden-Württemberg.
- Carla Palma, Instituto Hidrográfico, Portugal. Head of Marine Chemistry Division.
- Eskil Sahlin, RISE Research Institutes of Sweden.

Workshop Organising Committee

The workshop is organized under the auspices of the Eurachem/CITAC Measurement Uncertainty and Traceability Working Group, acting as the Scientific Committee.