

6 Juin 2015

BIPM Workshop on Measurement Uncertainty

15 - 16 June 2015

Agenda

15 June 2015

08:30 – 08:55 Registration

08:55 – 09:00 Information about the organization of the day

09:00 – 09:05 Welcome and statement of the scope
Dr Martin Milton, Director of the BIPM

Session 1

Chair: Martin Milton

The GUM and its revision

09:05 – 09:35 The GUM and its Supplements, W. Bich, INRiM

09:35 – 10:05 GUM revision and its impact, M. Cox, NPL

10:05 – 10:20 Discussion

10:20 – 10:50 Tea/coffee break

10:50 – 11:15 Feedback from JCGM MOs and NMIs to the circulated JCGM 100 and 110
Committee Drafts, C. Michotte, BIPM

11:15 – 11:45 Updating the Guidelines for the evaluation and expression of the uncertainty
of NIST measurement results, A. Possolo, NIST

11:45 – 12:15 Discussion

12:15 – 13:30 Lunch

Session 2

Chair: Maurice Cox

Methods and principles of measurement uncertainty evaluation

- 13:30 – 14:30 The frequentist approach
- When is an uncertainty analysis fit for purpose?, D.R. White, MSL
 - Examples of coverage intervals with very good and very bad long-run success rate, N. Giaquinto, Politecnico di Bari
- 14:30 – 15:30 The Bayesian approach
- Embracing Bayesian inference in metrology, A. O'Hagan, Sheffield
 - From model uncertainty to approximate Bayesian computing (ABC), C. Robert, Université Paris-Dauphine
- 15:30 – 15:45 Discussion
- 15:45 – 16:15 Tea/coffee break*
- 16:15 – 16:45 Markov Chain Monte Carlo methods, K. Klauenberg, PTB
- 16:45 – 17:05 Bayesian uncertainty analysis for repeated measurements affected by a systematic error and application to conformity assessment, C. Carobbi, Università degli Studi di Firenze
- 17:05 – 17:25 When the model doesn't cover reality, S. Pommé, IRMM
- 17:25 – 17:45 Evaluation of uncertainty in the adjustment of fundamental constants, O. Bodnar, PTB
- 17:45 – 18:00 Discussion
- 18:15 Departure for Dinner*
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16 June 2015

Session 3:

Chair: Walter Bich

Applications of the GUM and its Supplements

- 08:30 – 09:00 The 2014 CODATA determination of the best values and uncertainties of the fundamental constants, D. Newell, NIST
- 09:00 – 09:30 What will the 'new GUM' mean for 'old GUM' laboratories, S. Sidney, ILAC
- 09:30 – 10:00 Trusting numbers – Measurement uncertainty in laboratory medicine, G. White, IFCC
- 10:00 – 10:15 Discussion
- 10:15 – 10:45 Tea/coffee break (+ photograph)*

- 10:45 – 11:05 The measurement uncertainty of complex quantities, B. Hall, MSL
- 11:05 – 11:25 Reliability of Key Comparison results for validation of Calibration and Measurement Capabilities, B. Mickan, PTB
- 11:25 – 11:40 Discussion
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Session 4

Chair: Antonio Possolo

Beyond the GUM

- 11:40 – 12:10 Uncertainty assessment for calculated atomic, molecular and nuclear data and implications for GUM, B. J. Braams, IAEA Nuclear Data Section
- 12:10 – 13:10 Uncertainty evaluation in curve fitting and regression problems, C. Elster, PTB
Case study: Bayesian analysis of a flow meter calibration problem, G. Kok, VSL
Case study: Inference of thermo-physical properties, N. Fischer, LNE
- 13:10 – 14:25 Lunch*
- 14:25 – 14:55 Uncertainty evaluation in chemistry and molecular biology: From Reproducibility to Bayes, S. Ellison, LGC
- 14:55 – 15:15 Uncertainty analysis of nano-cytotoxicity from an inter-laboratory dose-response experiment, B. Toman, NIST
- 15:15 – 15:35 Convolution in metrology – three case studies on practical examples not covered by the GUM, S. Eichstädt, PTB
- 15:35 – 16:05 Challenges in applying the GUM to: (1) test value uncertainty of indicating instruments; and (2) extreme value measurands in low signal to noise measurements, S. Phillips, NIST
- 16:05 – 16:30 Discussion
- 16:30 – 16:40 Conclusion of the Workshop
- 16:40 – 17:10 Tea/coffee*