

SI RENEWABLE ENERGY

Chairmen: Gert RIETVELD - VSL (The Netherlands) and Jean-Rémy FILTZ - LNE (France)

- 9:00 ■ Strategic research agenda for energy metrology research up to 2025
Mr RIETVELD - VSL / The Netherlands
- 9:20 ■ PhotoClass: a new metrology for opto-electric performance of photovoltaic modules
Mr DUBARD, Mr VALIN - LNE / France
- 9:40 ■ Calibration of currentmeters in direction: results obtained on a stock of instruments with a new calibration platform
Mr LE MENN - SHOM / France
- 10:00 ■ Influence of gas and liquid viscosity on turbine and positive displacement meters calibration
Mr PEDISIUS, Mr ZYGMANTAS, Mr MASLAUSKAS - Lithuanian Energy Institute / Lithuania
- 10:20 ■ Advances in oil condition monitoring permits preventive maintenance before damage occurs assuring asset protection and achieving theoretical component lifetimes
Mr MAUNTZ, Mr PEUSER - CMC Instruments, Mr KUIPERS - Fachhochschule Südwestfalen / Germany
- 10:40 ■ Temperature and heat measurement using thin or thick films: benefits, fabrication and applications
Mr GARNIER - POLYTECH' NANTES / France

11:05



11:35



S3 APPLICATIONS IN GAZ FLOW

Chairmen: Isabelle CARE - CETIAT (France) and Vito FERNICOLA - INRIM (Italy)

- 11:35 ■ Evaluation of vortex flowmeters by Exera
Mrs CARE - CETIAT, M. VEAU - EDF / France
- 12:00 ■ Discrete dynamic bell type instrument of combined work principle for the calibration of gas meters
Mr RAK, Mr MAZUR, Mr SHCHUPAK - Ukrmetrteststandard / Ukraine
- 12:25 ■ Determination of the blockage effect on a thermal anemometer using a small open jet wind tunnel
Mr RICKABY - Trescal / United Kingdom

12:50



13:45

S2 UNCERTAINTY MANAGEMENT

Chairmen: Carol HOCKERT - NIST (USA) and Marc PRIEL (France)



- 9:00 ■ Numerical simulation will be mandatory for a better management of measurement process?
Mr RAGEADE - Biomérieux / France
- 9:20 ■ Multilevel Monte Carlo approach to evaluate the process closer to physics
Mr HENNEBELLE - University of Bourgogne, Mr COOREVITS - Arts et Métiers ParisTech, Mr VINCENT - CETIM / France
- 9:40 ■ Comparison of different performances scoring strategies in proficiency testing by interlaboratory comparison
Mrs DESENFANT - LNE / France & all
- 10:00 ■ Monte Carlo propagation: when increasing input variance decreases output variance
Mr PERNOT - CNRS, Mrs DESENFANT - LNE, Mr DIMARCO - LNE-SYRTE, Mr HENNEBELLE - University of Bourgogne / France
- 10:20 ■ ~~Uncertainty in dynamic measurements, an overview~~
~~Mr ZAFAR - DAE SYSTEMS / Saudi Arabia~~
- 10:40 ■ Possibility and probability: application examples and comparison of two different approaches to uncertainty evaluation
Mr FERRERO, Mr PRIOLI, Mrs SALICONE - Polytechnic of Milan / Italy, Mr POU - Delta Mu / France

11:05  11:35

S4 CHALLENGES IN MECHANICS

Chairmen: Thierry COOREVITS - Arts & Métiers Paris Tech (France) and Medina NIEVES - CEM (Spain)

- 11:35 ■ Very low frequency calibration of geophones
Mr MENDE - Spektra / Germany
- 12:55 ■ Additive manufacturing and control needs
Mrs OBATON, Mr MOSCHETTA - LNE, Mr BERNARD - Ecole Centrale de Nantes, Mr TAILLANDIER - AFPR / France
- 12:15 ■ Elementary research on the effect of acceleration distribution of hammer in dynamic force calibration
Mr MENG - National Institute of Metrology / China
- 12:35 ■ Last advances in the development of the LNE metrological atomic force microscope
Mr DUCOURTIEUX - LNE / France

12:50  13:45

BEST PRACTICE IN HEALTHCARE: CONTRIBUTION OF METROLOGY

9:00 ■ In a highly regulated context, the healthcare sector has a natural obligation to **control its risks**. Measurement will play a central role here as **an objective element in inspections, vital in decision-making**. It will be involved at several levels: during equipment approval processes, during the production and release of a batch of drugs, during storage, during biological analysis etc.

Debates about key questions:

- What is the contribution of metrology in healthcare?
- What role can the metrology function play in mastering this best practice?
- How to minimise risk with metrology?

11:00 ■ Animation: Mr CLAUDEL - CETIAT / France
With: Mr BOUDY - AGEPS / France, Mr ERNY - COFRAC / France, Mr PEYRET - BIOMERIEUX / France, Mr VALENTIN - GSK / Belgium



S5 WATER QUALITY

Chairmen: Bernd GUETTLER - PTB (Germany) and Florence SALVETAT - Ifremer (France)

11:35 ■ Development and implementation of a DI-MS based method with uncertainty estimate to achieve measurement of pharmaceutical residus in natural waters

Mrs LARDY-FONTAN - LNE / France & all

12:00 ■ Traceable measurement of total organic carbon

Mrs SORENSEN, Mr LILJEGREN - Novo Nordisk / Denmark

12:25 ■ Estimation process of uncertainties measurement in a research laboratory: contribution and perspectives. Examples in hydrology for aquatic environments

Mrs BEAULIEU - LNE, Mr PINEAU, Mr BALLU, Mr DAVID - University of Poitiers / France

S6 METROLOGY OF MEDICAL LABORATORIES

Chairman: Jean CHAUDAUDRA - ip (France)

- 15:30 ■ Metrological requirements for accredited laboratories
Mr TSIMILLIS - Pancyprian Union of Chemists, Mrs MICHAEL - Ministère de la Santé / Cyprus
- 15:50 ■ Practical metrology in a medical laboratory
Mr BOZONNET - Dijon Center cancer control / France
- 16:10 ■ Metrology at the French agency for blood: periodicities, calibration, test, criticality, risk analyse
Mr REIFENBERG, Mr BEGUE - EFS Pyrénées-Méditerranée / France
- 16:30 ■ Management of the temperature metrology in a laboratory of medical assisted reproduction
Mrs LEMARQUIS - LBM BILLIEMAZ / France
- 16:50 ■ Nucleic acid analysis in new fields of metrology
Mrs CAMLOH - National Institute of Biology / Slovenia
- 17:10 ■ Metrological traceability of PCR to the SI system in the ISO 15189 accreditation context
Mr LE TOUZÉ - A+ Métrologie / France

S7 ENVIRONMENT AND CLIMATE

Chairman: Richard BROWN - NPL (United Kingdom)

- 15:30 ■ Traceability for mercury measurements
Mrs FISICARO - LNE / France, Mr ENT - VSL / The Netherlands, Mrs SWART - PTB / Germany, Mr GOENAGA-INFANTE - LGC / United Kingdom, Mrs HORVAT - IJS / Slovenia
- 15:55 ■ Development of a calibration method for on-line analyser of atmospheric particle mass concentrations
Mr GAIE-LEVREL - LNE / France
- 16:20 ■ European project: metrology for ammonia in ambient air (MetNH₃)
Mr POGANY - PTB / Germany
- 16:45 ■ Metrology for remote sensing of the environment and climate
Mr FOX - NPL / United Kingdom
- 17:10 ■ Assessment of metrological performances of distributed temperature sensing techniques
Mr FAILLEAU - LNE / France & all

ENERGY TRANSITION: METROLOGY MEETS CHALLENGES

15:30 ■ The revolution of energy transition aims to **better manage the world's energy resources** for the benefit of present and future generations. The objective is to **reduce the consumption** of fossil fuels to **support the development of renewable energy sources** as an accepted energy mix. Metrology appeared as a useful tool to optimise the transition process.

Debates about key questions:

- Production and conversion
- Transport and storage
- The end use and applications
- Current research and industrial initiatives

Animation: Mr FILTZ - LNE / France

With: Mr BECCA VIN - CERTISOLIS / France, Mr CASSAGNE - TOTAL / France, Mr MASOERO - University of Turin / Italy,

17:30 ■ Mr PETERSEN - DFM / Denmark, Mr RIETVELD - VSL / The Netherlands

18:00

■ COCKTAIL



POSTER - 13:45 to 15:15

HEALTH

- Temperature monitoring in thermostatic chambers: use(s) of the control thermometer
Mr BLANQUART, Mr CRÉTINON, Mr BOREL / France
- Organisation of an interlaboratory comparison in the field of disinfectants and antiseptics
Mr GEYNET - CT2M / France
- Calibration of H₂O₂ transmitter or portable probe through the use of physical and chemical properties of H₂O₂
Mr BOREL, Mr SERRE - VIRBAC, Mr GUERRIN - ARECO / France
- Metrology serving the quality control of the equipment used in the biological and pharmaceutical analysis laboratory
Mr EL BEKKAYE, Mrs SIDQI - Regional Center for Blood Transfusion / Morocco
- Medical metrology studies at TÜBITAK UME
Mr KARABOCE - TÜBITAK UME / Turkey



POSTER - 13:45 to 15:15

MECHANICAL QUANTITIES

- Comparison between a reference torque standard machine and a deadweight torque standard machine to be used in torque calibration
Mr MENG - National Institute of Metrology / China
- Miniaturized Nd-Yag laser as photo-elastic transducer for small forces sensing
Mr KHELIFA - LCM LNE-CNAM / France
- Interlaboratory comparisons in the field of Rockwell's scales
Mr SKLIAROV - National Scientific Centre / Ukraine
- Calibration of bridge standard for strain gauge bridge amplifier
Mr CORMINBOEUF - METAS / Switzerland
- Very low frequency calibration of geophones
Mr MENDE, Mr IWANZCIK - Spektra / Germany, Mr LARSONNIER - CEA / France
- Uncertainty determination of in situ airborne sound insulation measurements
Mr JOHANSSON - SM Quality / Sweden
- Calibration of force and displacement transducers for measurements in sodium from ambient temperature up to 350°C and examples of results
Mr PORTIER - CEA, Mr SABATE - PRESCAMEX, Mr BUISSON - RBCconsultant, Mr PERISSE - AREVA NP / France
- Investigation on the effects of loading pads hardness on the calibration results of force transducers
M. GOUDA - National Institute for standard / Egypt



LEGAL METROLOGY

- Cloud computing in legal metrology
Mr THIEL, Mr ESCHÉ, Mr PETERS, Mr GROTTKER - PTB / Germany
- Decision C-423/13: 1st decision of the European Court of Justice on MID and smart devices
Mr BOCK - METAS / Switzerland

POSTER - 13:45 to 15:15

STATISTICS / UNCERTAINTY

- Accuracy and statistical intervals in the field of method validation
Mrs YARDIN - LNE / France
- Interlaboratory comparisons in calibration and testing. Experience feedback
Mrs AMAROUCHE - LNE / France
- Comparison of methods for the uncertainty calculation of a calibration function
Mrs SUGLIANO - CT2M / France
- Uncertainty chain for correct decision-making in vehicle testing
Mr LAU, Mr KALLGREN - SM Quality / Sweden
- Inter-instruments comparisons
Mr COQUET - L.A. Métrologie, Mr POU - Delta Mu / France
- Numerical evaluation of uncertainty of microwave holography using planar near-field scanner
Mr CHARLES, Mr LE SAGE, Mrs VINCENT-DROUART, Mr LERAT - LNE / France
- Evolutionary method to adapt the measurement capability process to the industrial context
Mr LELONG - PSA / France
- MCM: an interfaced software for a simple and validated implementation of GUM-S1
Mrs EBRARD, Mr FISCHER, Mr ALLARD - LNE / France
- Control of quantity of prepackages: new statistical multistep sampling procedure
Mr VATERLAUS, Mr LI - METAS / Switzerland
- Statistical study of the drift of calipers
Mr DUBOIS - Delta Mu / France
- Building acoustics: uncertainty of the apparent sound insulation index R'_w
by Monte Carlo approach
Mr REBOUL - Bureau Veritas, Mr POU - Delta Mu / France



POSTER - 13:45 to 15:15

ENVIRONMENT

- Measurements of traceable amount of substance fractions through infrared spectroscopy at PTB
Mr EBERT - PTB / Germany
- Perfecting methods of metrological traceability of priority air pollutants using UV absorption spectroscopy
Mr KONOPELKO, Mr BELOBORODOV, Mr RUMIANTSEV, Mr SELUKOV - DI Mendeleev Metrology Institute / Russia
- Spectrophotometric method for the determination of the pH_T of sea water
Mrs LAMANDÉ, Mrs SALVETAT, Mrs LE BIHAN - Ifremer / France
- Environmental metrology enabling sustainable use of groundwater resources
Mr DEPRAZ - IMAGEAU / France
- Metrology to underpin future regulation of industrial emissions
Mrs RAUSCH - PTB / Germany
- Participation in IAEA-TEL-201304/28 ALMERA proficiency test exercise on determination of anthropogenic radionuclides in water and flour samples
Mr VISETROTJANAKIT - Office of Atoms for Peace / Thailand
- Validation of an alternative to BOD₅
Mr DUDAL, Mrs MAGNIN, Mr MULLER - Envolution, Mrs GUERIN, Mr ROCHER - SIAAP / France
- Reliability of organic compounds measurement in environmental monitoring. The key role of analytical standard substance
Mrs LARDY-FONTAN, Mrs LALERE - LNE, Mrs CHATELLIER, Mr LESTREMAU, Mrs STRUB - INERIS / France
- Establishing satellite-derived biophysical product traceability through characterization of in-situ sensors
Mrs NIGHTINGALE - NPL / United Kingdom

FLOW

- EMRP: sensor development and calibration method for inline detection of viscosity and solids content of non-Newtonian liquids
Mr BALLEREAU - LCM LNE-CNAM / France, Mr PELEVIK - VSL / The Netherlands
- Discharge coefficient behaviour in presence of four perforated plates flow conditioners
Mr LARIBI - University of Khemis-Miliana, Mr ABDELLAH HADJ - University of Medea / Algeria
- The specification, selection and use of liquid flow rate measuring devices
Mr FERTELL - Proteus Industries / USA
- The new method for calibration and testing of the bell type prover
Mr TONKONOGIJ - Lithuanian Energy Institute / Lithuania