November 2, 2022

	SESSION 1	SESSION 2
8:30	WELCOME **Grand Amphithéâtre**	
9:00	OPENING OF THE CONFERENCE **Grand Amphithéâtre**	
9:30	***Chairperson: Nicolas Fischer*** INVITED SPEAKER: Walter BICH The Joint Committee for Guides in Metrology: trying to establish some certainty in measurement uncertainty **Grand Amphithéâtre**	
10:10	INVITED SPEAKER: Louise WRIGHT MathDigiMet: How mathematics & statistics will support digital metrology **Grand Amphithéâtre**	
10:50	BREAK	
	Amphithéâtre FOURNEL ***Chairperson: Antonio Possolo***	**Amphithéâtre BEZIER** ***Chairperson: Alistair Forbes***
11:20	Key comparison and conformity assessment Dark uncertainty in volume key comparisons and supplementary EURAMET comparisons *E. Batista, A. M. H. van der Veen, J. A. Sousa*	Unscented Transform method to estimate the predictive input uncertainty in neural networks: Application to the characterization of TiO_2 nanoparticles *P. Monchot, L. Coquelin, N. Fischer, E. Le Pennec* Machine learning and uncertainty
11:40	Conformity assessment of a sample of items – an extension of the JCGM 106:2012 *F. Pennecchi, I. Kuselman*	A setup to experiment with machine learning systems: Towards an evaluation procedure for model performance and its uncertainty *S. Zaugg, M. Zeier, H. Lehmann*
12:00	Dark uncertainty in key comparisons in the gas analysis area *A. M. H. van der Veen*	Uncertainty propagation for random forests *T. Adel, A. Thompson*
12:20	LUNCH	
13:20	***Chairperson: João A. Sousa*** INVITED SPEAKER: Sebastian HEIDENREICH The strategic research agenda of European Metrology Network MATHMET: From artificial intelligence to virtual metrology **Grand Amphithéâtre**	
14:00	***Chairperson: Francesca Pennecchi*** Round table MATHMET **Grand Amphithéâtre**	
14:50	BREAK	
	Amphithéâtre FOURNEL ***Chairperson: Katy Klauenberg***	**Amphithéâtre BEZIER** ***Chairperson: Gertjan Kok***
15:20	Statistical calibration and regression problems Novel boundary rejection step for point cloud registration *L.-F. Lafon, A. Vissiere, C. Mehdi-Souzan, M. L. Bouazizi, N. Anwer,*	The "Metrology for Artificial Metrology in Medicine (M4AIM)" Programme of PTB *H. Rabus, S. Haufe* Machine learning and applications
15:40	Automation and uncertainty evaluation for self-calibrating thermocouples *S. Bilson, M. McCrory, A. Thompson, D. Tucker, J. Pearce*	Explainability for deep learning in mammography image quality assessment *N. Amanova, J. Martin, C. Elster*
16:00	Linear Calibration Methods and the Measurement Uncertainty: Comparison of the Empirical Coverage Probabilities *V, Witkovsky, G. Wimmer*	Improving the assessment of kidney transplant variability *X. Loizeau, I. Partarrieu, J.T. Ayorinde, M. Romanchikova, S. A.*
16:20	Deep Gaussian Processes for Bayesian Calibration of Computer Models *S. Marmin, M. Filippone*	Bayesian Machine Learning and variational inference for on-site sensor calibration in Smart Bay Santa Teresa seawater monitoring *Q. Ma, G. Durin, F. Pennecchi, C. Lombardi, C. Petrioli*
16:40		Variational Approximate Bayesian Computation (V-ABC) and Applications to Thermocouples and ECG *T. Adel, A. Thompson, S. Thomas, D. Tucker, J. Pearce*
17:00	Meeting of the MATHMET EMN Members **Salle des Conseils** *not part of the conference - only for MATHMET EMN members	
18:00		

November 3, 2022

	SESSION 1	SESSION 2
9:00	***Chairperson: Markus Bär*** INVITED SPEAKER: Olaf DÖSSEL Machine Learning in Medical Systems **Grand Amphithéâtre**	
9:40	***Chairperson: Nicolas Fischer*** INVITED SPEAKER: Nicolas BOUSQUET Auditable Bayesian modeling for quality measurements **Grand Amphithéâtre**	
10:20	BREAK	
	Amphithéâtre FOURNEL ***Chairperson: Stephen Ellison***	**Amphithéâtre BEZIER** ***Chairperson: Clemens Elster***
10:50	Meta-analysis: Multivariate meta-analysis based on generalized random effects model *O. Bodnar, T. Bodnar*	Modeling and inverse problems I: Solving inverse scattering problem efficiently using Lorentz reciprocity theorem *Yifeng Shao, Wim M. J. Coene, Paul H. Urbach*
11:10	Meta-analysis of key comparison data in radionuclide metrology *R. Coulon, C. Michotte, V. Gressier*	Bayesian Target-Vector Optimization for Efficient Parameter Reconstruction *M. Plock, M. Hammerschmidt, S. Burger, P.-I. Schneider*
11:30	Meta-analysis of Dosimetry Audits for Assessing Radiotherapy *S. A. Thomas, E. Cooke, M. Hussein, C. H. Clark, N. A. S. Smith*	Generative models as prior in Bayesian inverse problems *M. Marschall, G. Wübbeler, F. Schmähling, C. Elster*
11:50	LUNCH POSTER SESSION	
	Amphithéâtre FOURNEL ***Chairperson: Maurice Cox***	**Amphithéâtre BEZIER** ***Chairperson: Francesca Pennecchi***
13:20	Measurement uncertainty I: GUM-compliant propagation of conformance statements and maximum permissible errors *K. Klauenberg, G. Foyer*	Modeling and inverse problem II: Computational Imaging for Correction of non-isoplanatic Aberrations in Optical Wafer Metrology *W. Coene, S. Konijnenberg, A. Koolen, T. Tukker, M. Van Kraaij, A. Den Boef, R. Buijs, P. Van Schaijk, T. Cromwijk, M. Adhikary, C. Messinis*
13:40	Rejection sampling for Bayesian uncertainty evaluation using the Monte Carlo techniques of GUMS1 *M. Marschall, G. Wübbeler, C. Elster*	Bayesian uncertainty analysis of inversion model applied to thermal measurements *S. Demeyer, V. Le Sant, A. Koenen, N. Fischer, J. Waeytens, R. Bouchié*
14:00	Explainability and the interpretability of the GUM methodologies *A. B. Forbes*	Pixel-wise uncertainty quantification in electric properties tomography *A. Arduino, S. Mandija, F. Pennecchi, C.A.T. van den Berg, L. Zilberti*
14:20	Analysis and comparison of Bayesian methods for type A uncertainty evaluation with prior knowledge *Ignacio Lira*	Joint regression and compressed sensing for chemical mapping in nano-FTIR *G. Wübbeler, M. Marschall, E. Rühl, B. Kästner, C. Elster*
14:40	BREAK	
	Amphithéâtre FOURNEL ***Chairperson: Walter Bich***	**Amphithéâtre BEZIER** ***Chairperson: Markus Bär***
15:10	Measurement uncertainty II: KALMAN filtering to extract patterns and metrological data from dynamic flowmeter calibrations *J. Noël, F. Ogheard*	Uncertainty quantification for computationally: Sensitive Hearts: Challenges with Sensitivity Analysis of Cardiac Models *L. Wright J. Venton*
15:30	When k = 2 yields at least 95 % coverage *M. G. Cox, L. Nielsen*	High-Dimensional Exponentiation with guaranteed Error Control for Bayesian Likelihood Approximation *N. Farchmin, P. Trunschke, M. Eigel, S. Heidenreich*
15:50	Matching the parabolic curve to both correlated coordinates of tested points by the linear regression method *J.Puchalski, Z.L.Warsza*	Scalable uncertainty quantification for scene completion *M. Dziemian, J. Venton, A. Thompson, F. Bazyari, A. Forbes*
16:10	BREAK	
	Chairperson: Alistair Forbes **Grand Amphithéâtre**	
16:40	ENBIS: Spatial correction of low-cost sensors observations for fusion of air quality measurements *M. Bobbia, J.-M. Poggi, B. Portier*	ENBIS
17:00	A review of maintenance methods based on reinforcement learning *A. Pievatolo*	
17:20	Errors-in-Variables for deep learning: rethinking aleatoric uncertainty *J. Martin, C. Elster*	
17:40		
19:00	GALA DINNER	

November 4, 2022

	SESSION 1		SESSION 2	
	Amphithéâtre FOURNEL *Chairperson: Séverine Demeyer*		**Amphithéâtre BEZIER** *Chairperson: Sebastian Heidenreich*	
9:00	Measurement uncertainty III	On the linearisation of a measurement model – An objective legitimacy criterion *L. Callegaro, F. Pennecchi, W. Bich*	POSIRed – Reduction of Postoperative Wound Infections through fusion of CFD and XR *M. Jablonskis, T. T. Harsem*	Virtual measurements and digital twins
9:20		Modernising Receiver Operating Characteristic (ROC) curves *L R Pendrill, J Melin, G Nordin*	Metrological characterisation of quantitative MRI techniques in completely controlled conditions *S. Marmin, A. Arduino, A. Bosnjakovic, L. Zilberti*	
9:40		Estimation of the effective sample size in multivariate correlated random processes *C. Carobbi, R. Serra*	Simulation-based prediction of the flow behind manifold elbow geometries *A. Weissenbrunner, M. Straka, A. Ekat, S. Schmelter*	
10:00		Optimal measurement strategies based on an algorithm of Gu and Eisenstat *A. B. Forbes*	Uncertainty calculation using virtual experiments: a case study for a virtual scatterometer *G.J.P. Kok, G. Wübbeler, C. Elster*	
10:20	BREAK			
10:50	*Chairperson: Maurice Cox* INVITED SPEAKER: Stephen ELLISON Beyond the dot-and-bar plot: Graphical methods for interlaboratory data analysis **Grand Amphithéâtre**			
11:30	*Chairperson: Leslie Pendrill* INVITED SPEAKER: Antonio POSSOLO Measurement science meets the reproducibility challenge **Grand Amphithéâtre**			
12:10	CLOSING SESSION **Grand Amphithéâtre**			
12:40	LUNCH			
13:30	Meeting of the MATHMET EMN Members **Salle des Conseils** *not part of the conference - only for MATHMET EMN members			
15 :00				